FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-247 ISSUE 1

BLUETOOTH LOW ENERGY CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & NFC

MODEL NUMBER: LG-H791, LGH791, H791

FCC ID: ZNFH791

REPORT NUMBER: 15I21237-E3V1

ISSUE DATE: JULY 23, 2015

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	7/24/15	Initial Issue	C. S.OOI

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION:	GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & NFC
MODEL:	LG-H791, LGH791, H791
SERIAL NUMBER:	Conducted: 1ZBRT ; Radiated: 1ZBRK, 1ZBRL
DATE TESTED:	JULY 21 -23, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-247 ISSUE 1	Pass
INDUSTRY CANADA RSS-GEN ISSUE 4	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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Tested By:

CHARLES VERGONIO
CONSUMER TECHNOLOGY DIVISION
LAB ENGINEER
UL VERIFICATION SERVICES INC

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, KDB 558074 D01 v03r03, ANSI C63.10-2009 for FCC.

ANSI C63.10-2009 Deviation

Radiated spurious emission above 1GHz was performed with the EUT elevated at 1.5m instead of 0.8m. 1.5m is the required height in ANSI C63.10:2013 as referenced by RSS GEN issue 4.

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.

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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%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & 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	1.51	1.42

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -0.05dBi.

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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.

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	LG	MCS-N04WS	SA560000030	DoC
Earphone	LG	-	-	

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

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

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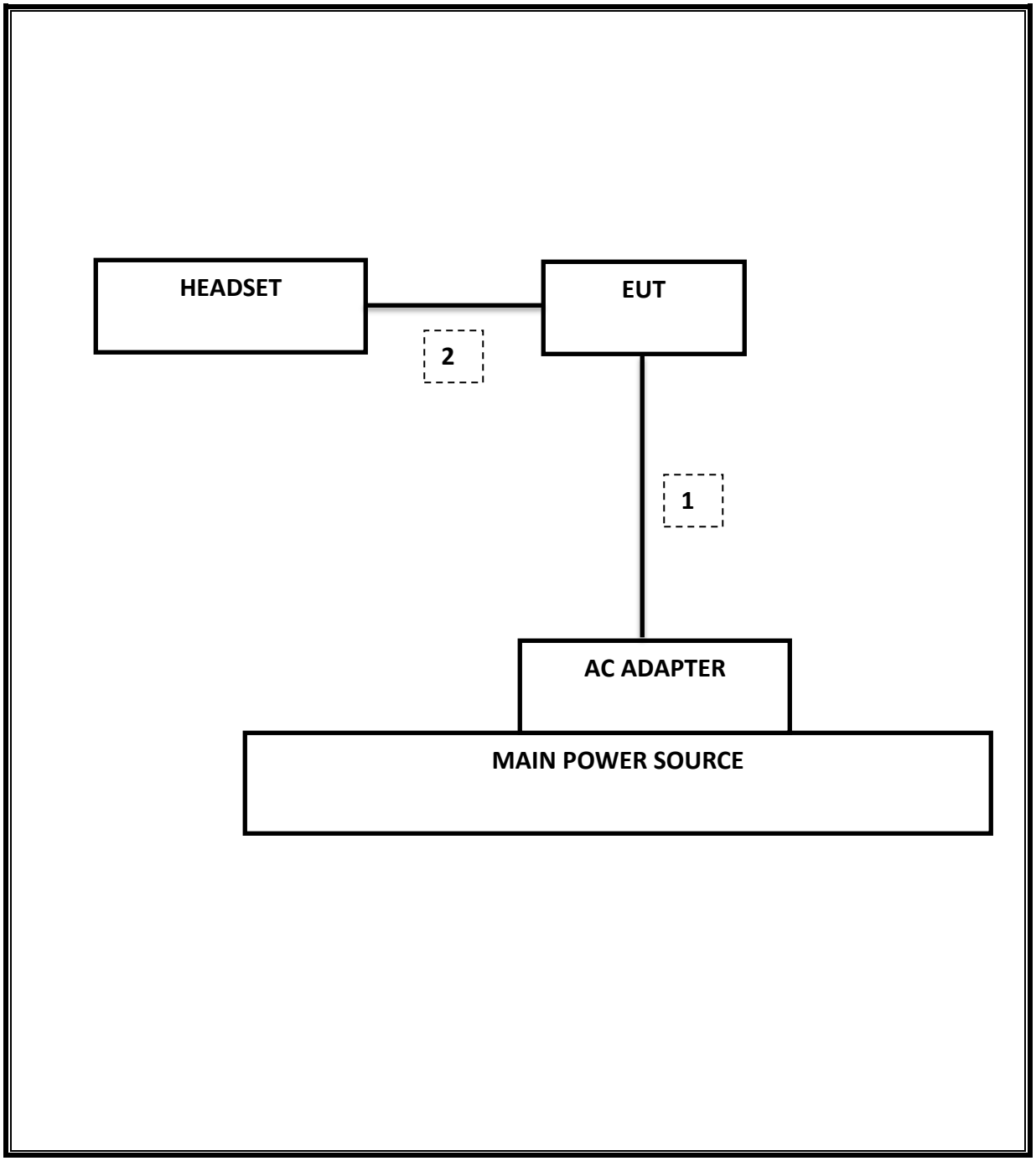
SETUP DIAGRAM FOR TESTS



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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	04/01/16
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	02/21/16
Antenna, Horn,18- 26 GHz	ARA	MWH-1826/B	C00946	11/12/15
Antenna, Horn, 26-40 GHz	ARA	MWH-2640	C00891	06/28/16
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	T243	03/06/16
RF Preamplifier, 1GHz - 18GHz	Miteq	NSP4000-SP2	924343	03/23/16
RF Preamplifier, 1GHz - 26.5GHz	HP	8449B	T404	06/29/16
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 5GHz	Micro-Tronics	LPS17541	F00219	05/23/16
High Pass Filter 6GHz	Micro-Tronics	HPS17542	F00222	05/22/16
High Pass Filter 3GHz	Micro-Tronics	HPM17543	F00224	05/22/16

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

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7. SUMMARY

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	0.692 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-49.23 dBm
15.247	RSS-247 5.4 (4)	TX conducted output power	<30dBm		Pass	1.51dBm
15.247	RSS-247 5.2 (2)	PSD	<8dBm		Pass	0.72dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	45dBuV(PK)
15.205, 15.209	RSS-GEN 8.9	Radiated Spurious Emission	< 54dBuV/m		Pass	42.972dBuV/m

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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	0.692	0.5
Middle	2440	0.696	0.5
High	2480	0.674	0.5

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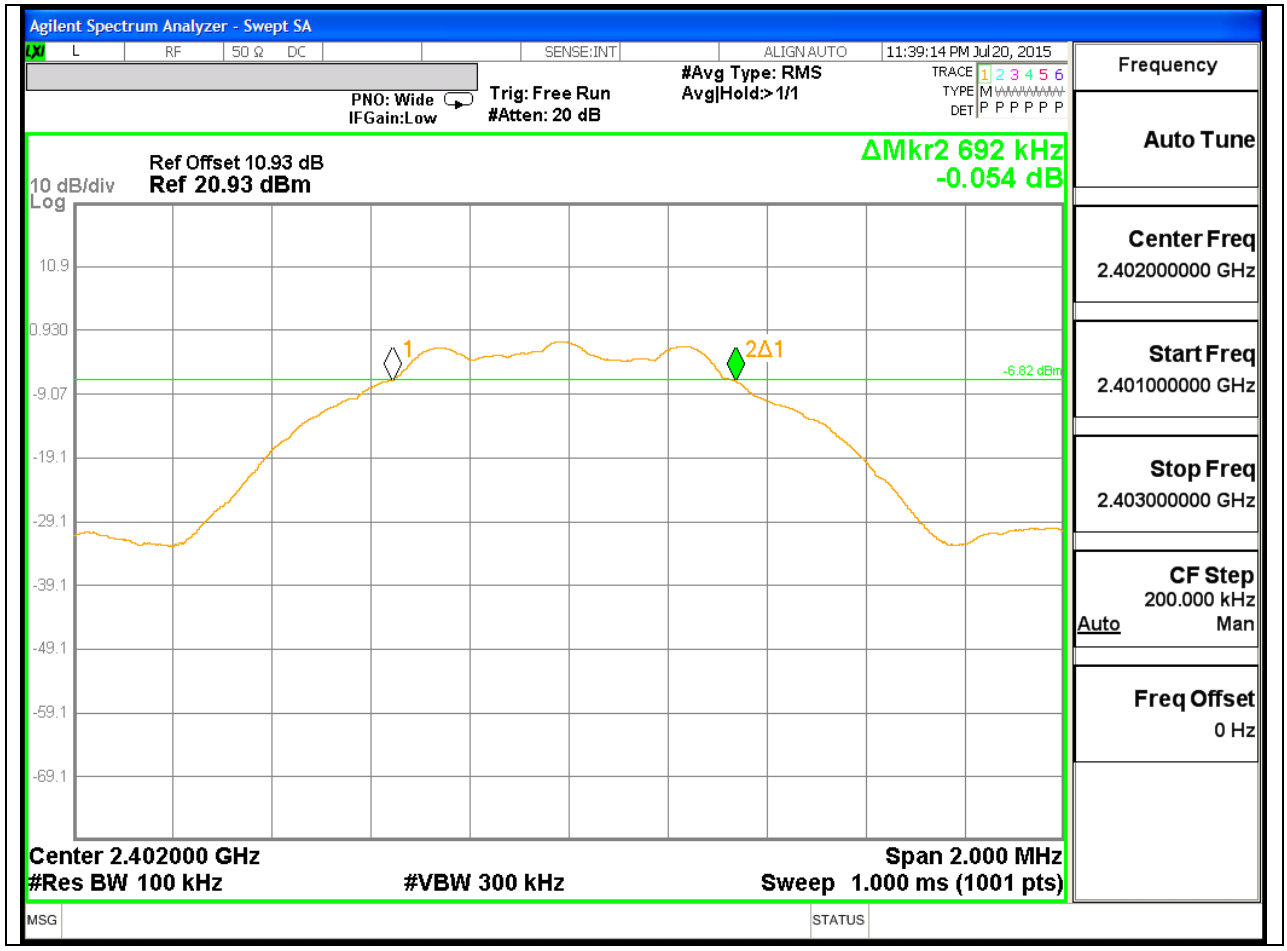
6 dB BANDWIDTH PLOTS

LOW CHANNEL



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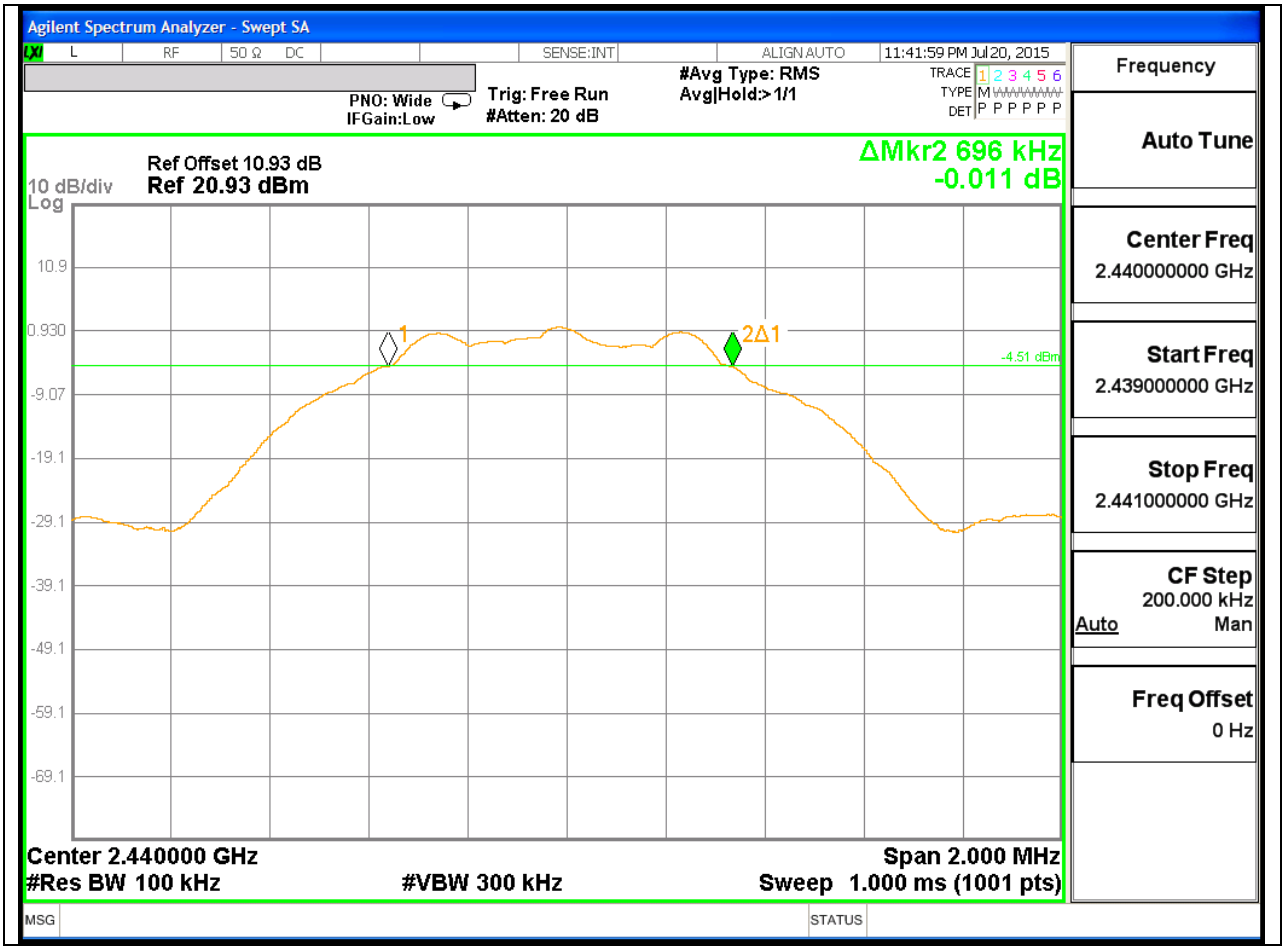
MID CHANNEL



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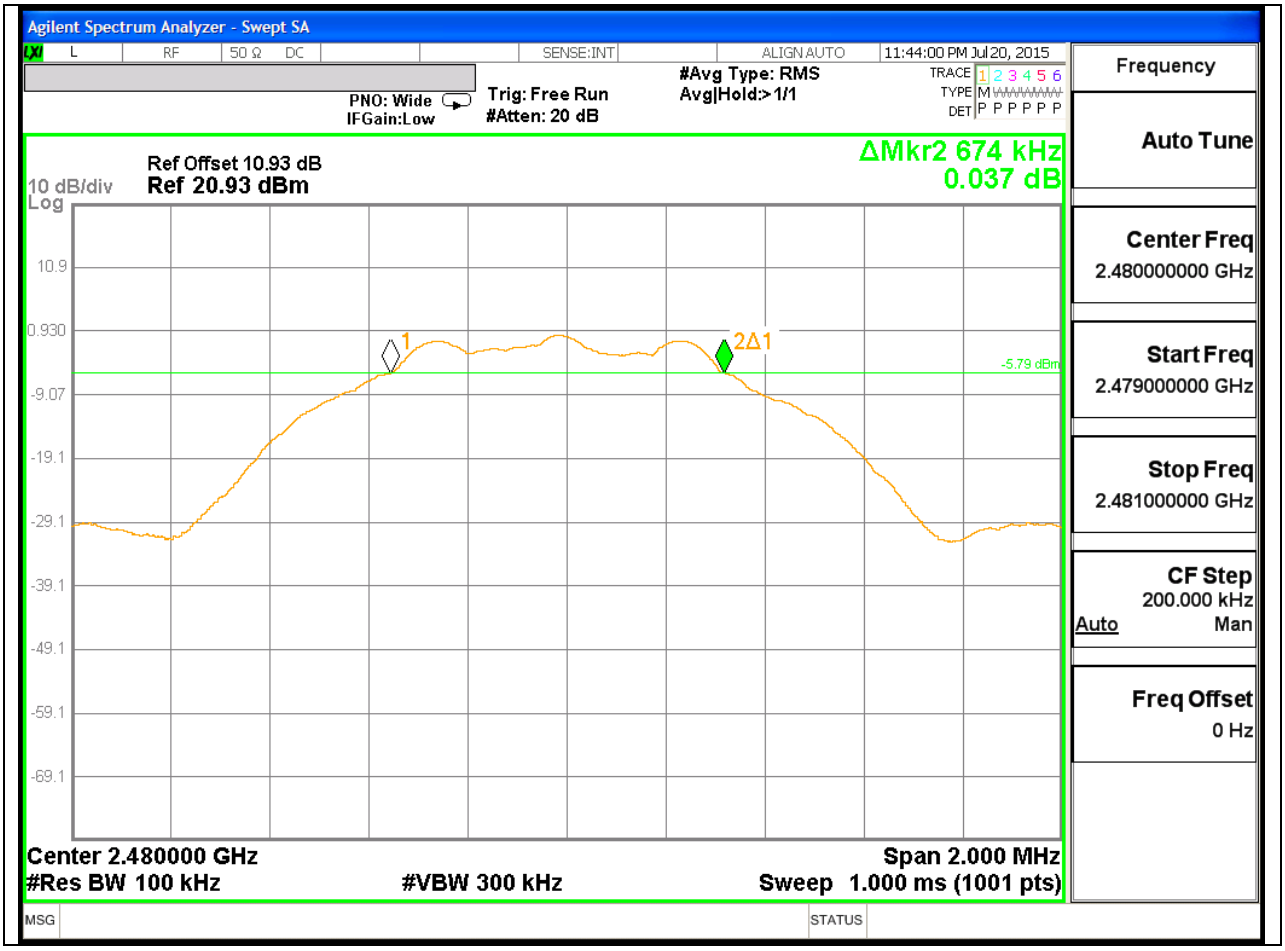
HIGH CHANNEL



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8.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Reference to KDB558074 D01 DTS Meas Guidance v03r02: 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	1.0598
Middle	2440	1.0571
High	2480	1.0671

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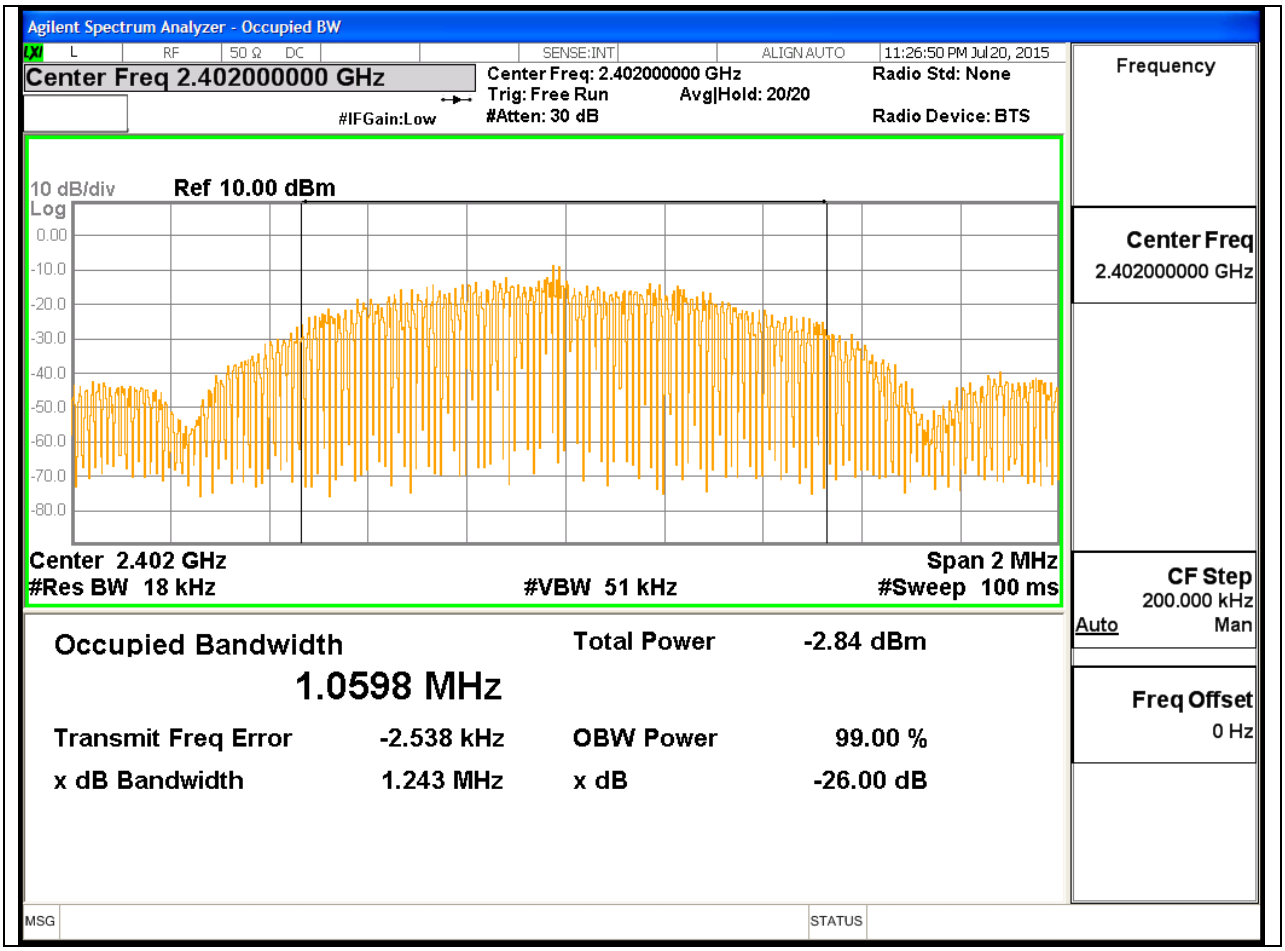
99% BANDWIDTH PLOTS

LOW CHANNEL



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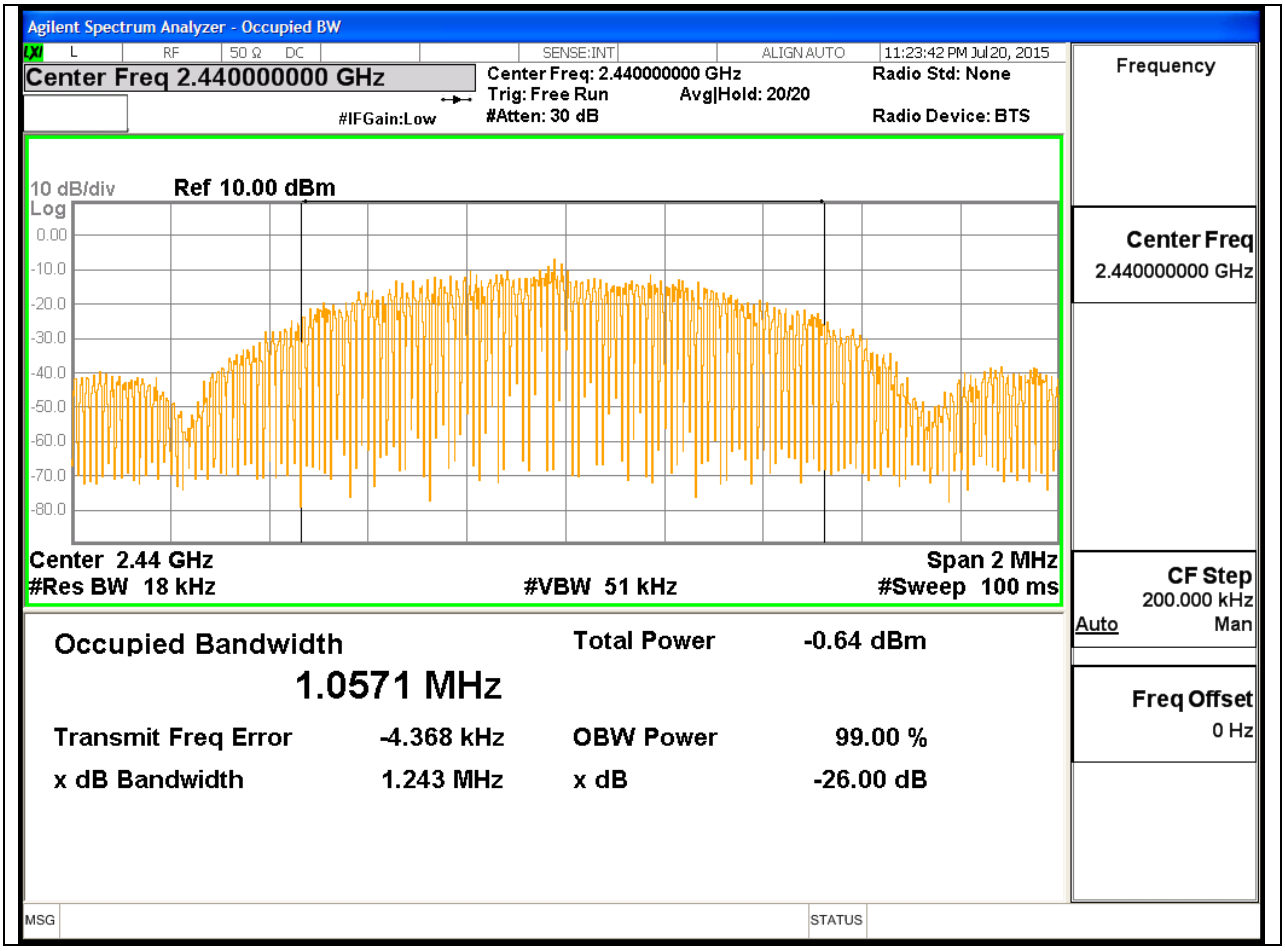
MID CHANNEL



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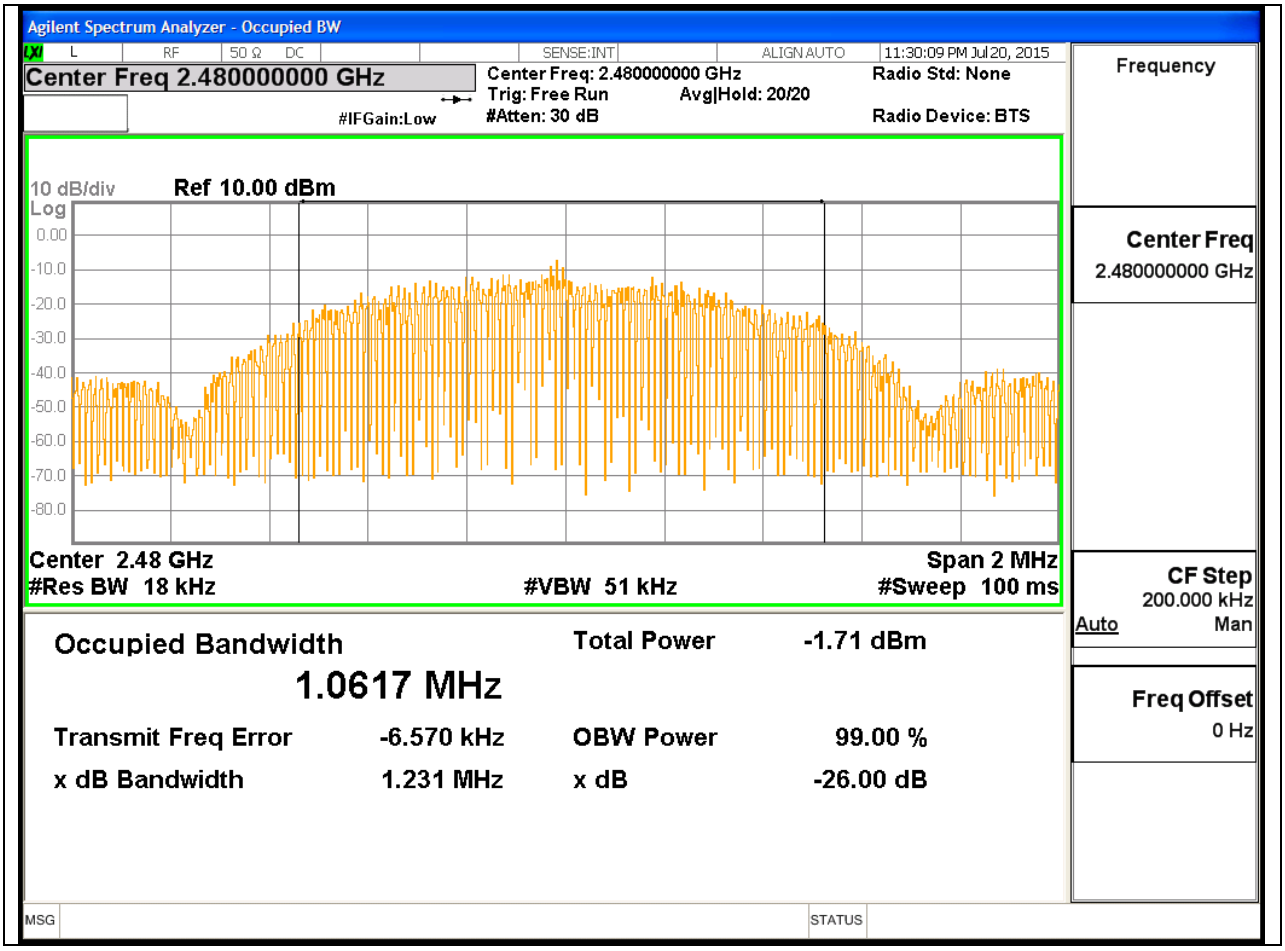
HIGH CHANNEL



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8.3. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-247 5.4.4

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 v03r02 utilizing spectrum analyzer.

RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-0.66	30	-30.660
Middle	2440	1.51	30	-28.490
High	2480	0.44	30	-29.560

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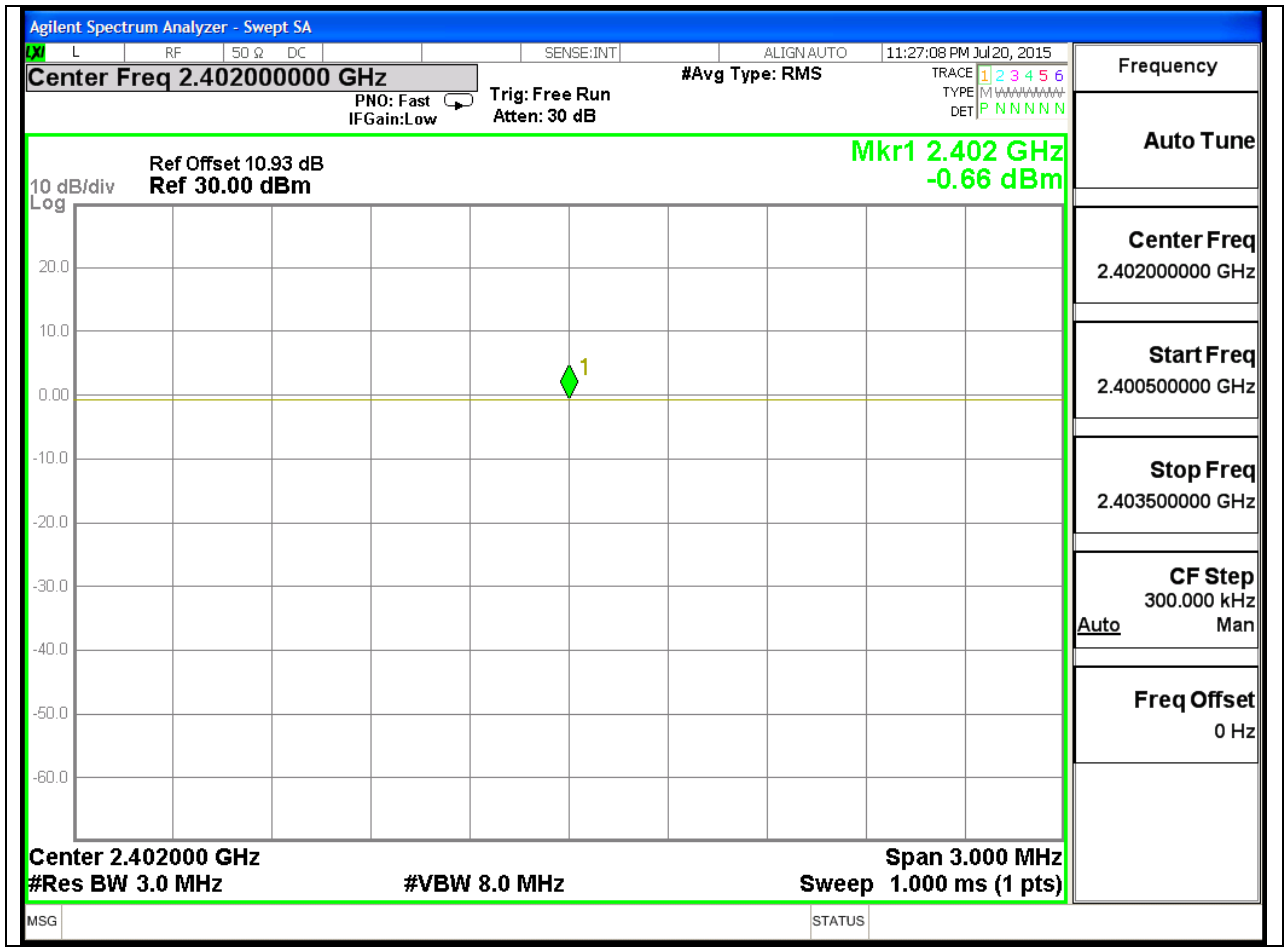
OUTPUT POWER PLOTS

LOW CHANNEL



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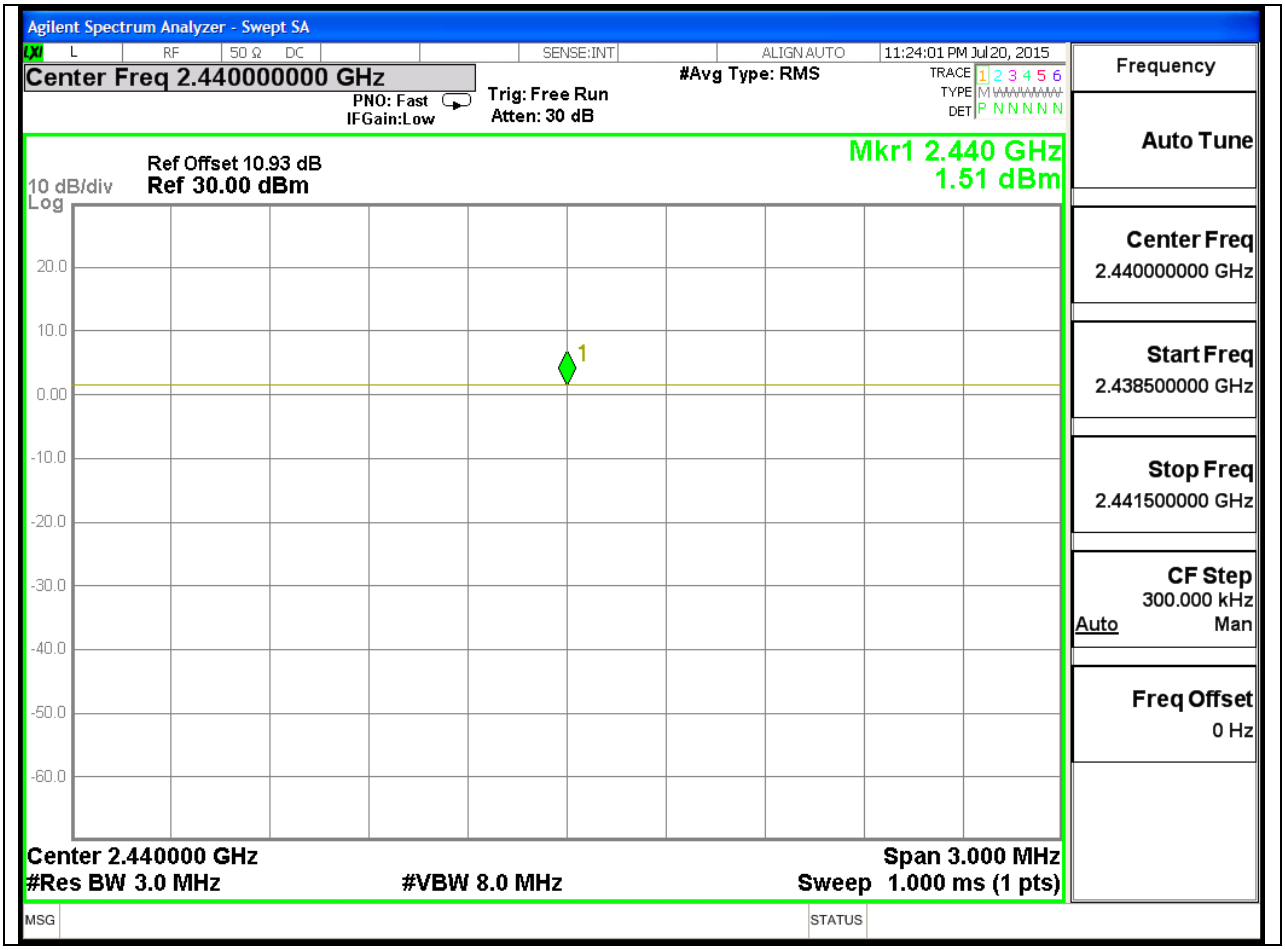
MID CHANNEL



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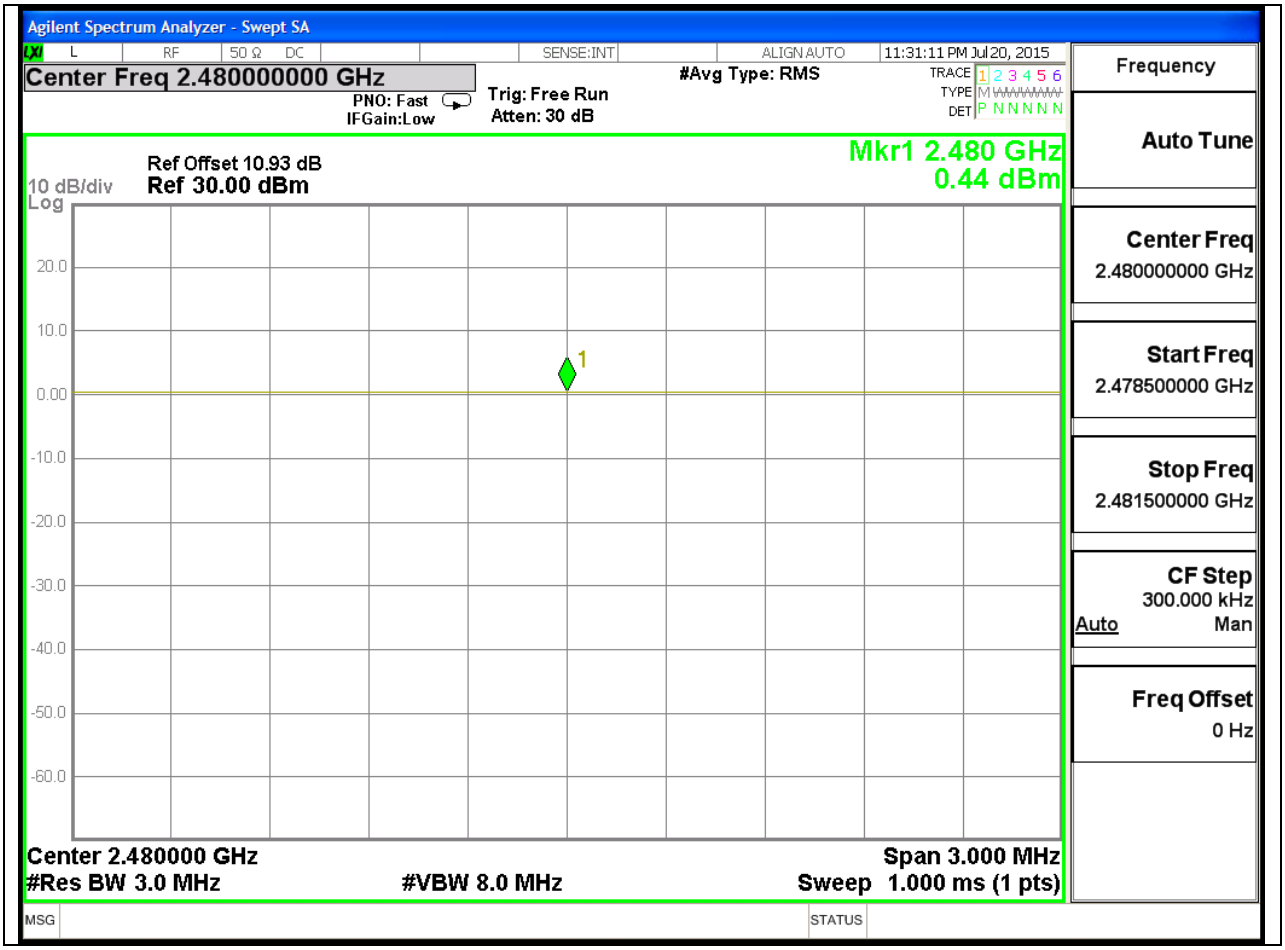
HIGH CHANNEL



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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	-1
Middle	2440	1.4
High	2480	0.2

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8.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-247 5.2.2

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 v03r02.

RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-6.77	8	-14.77
Middle	2440	0.72	8	-7.28
High	2480	-2.79	8	-10.79

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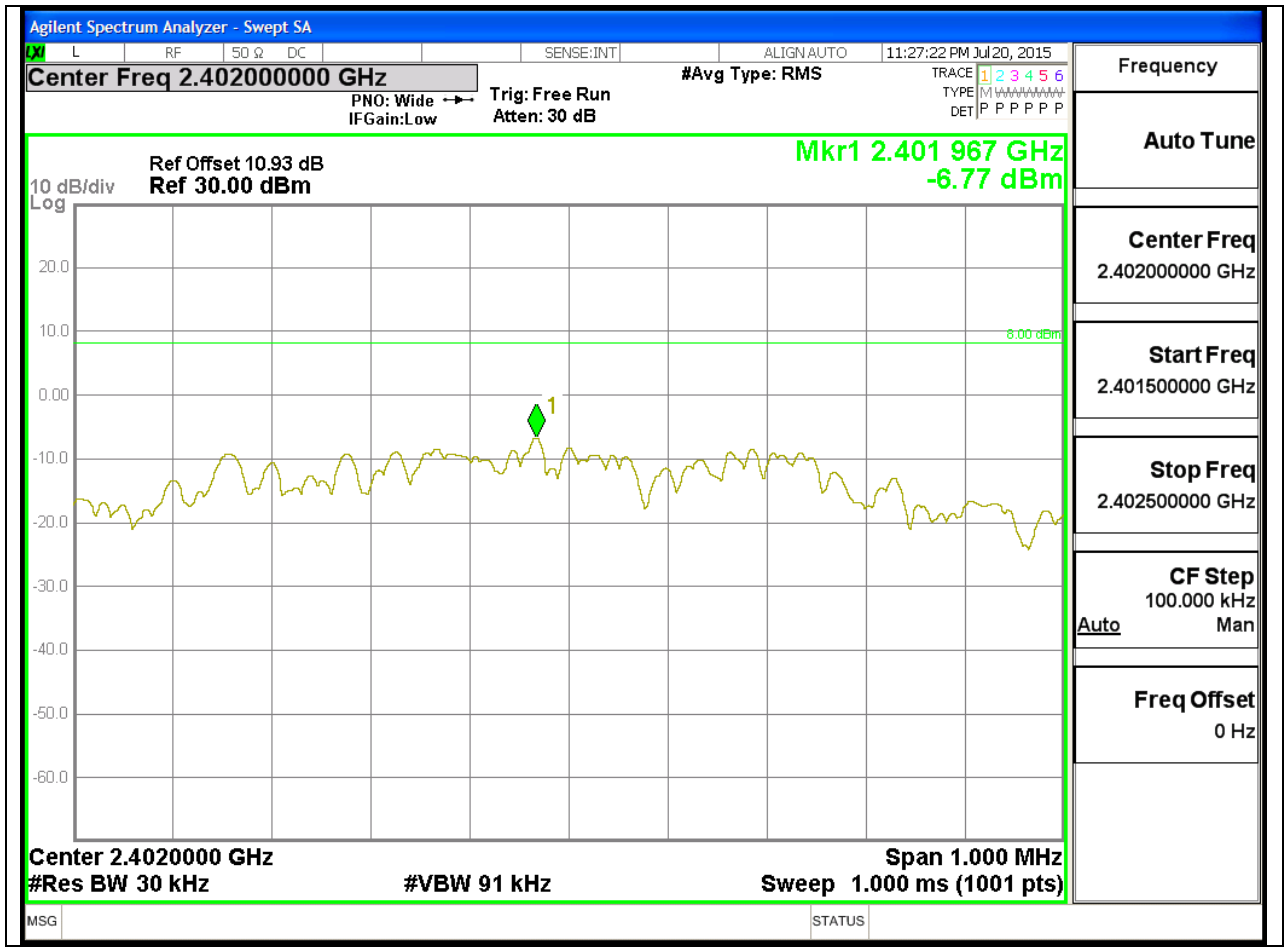
POWER SPECTRAL DENSITY PLOTS

LOW CHANNEL



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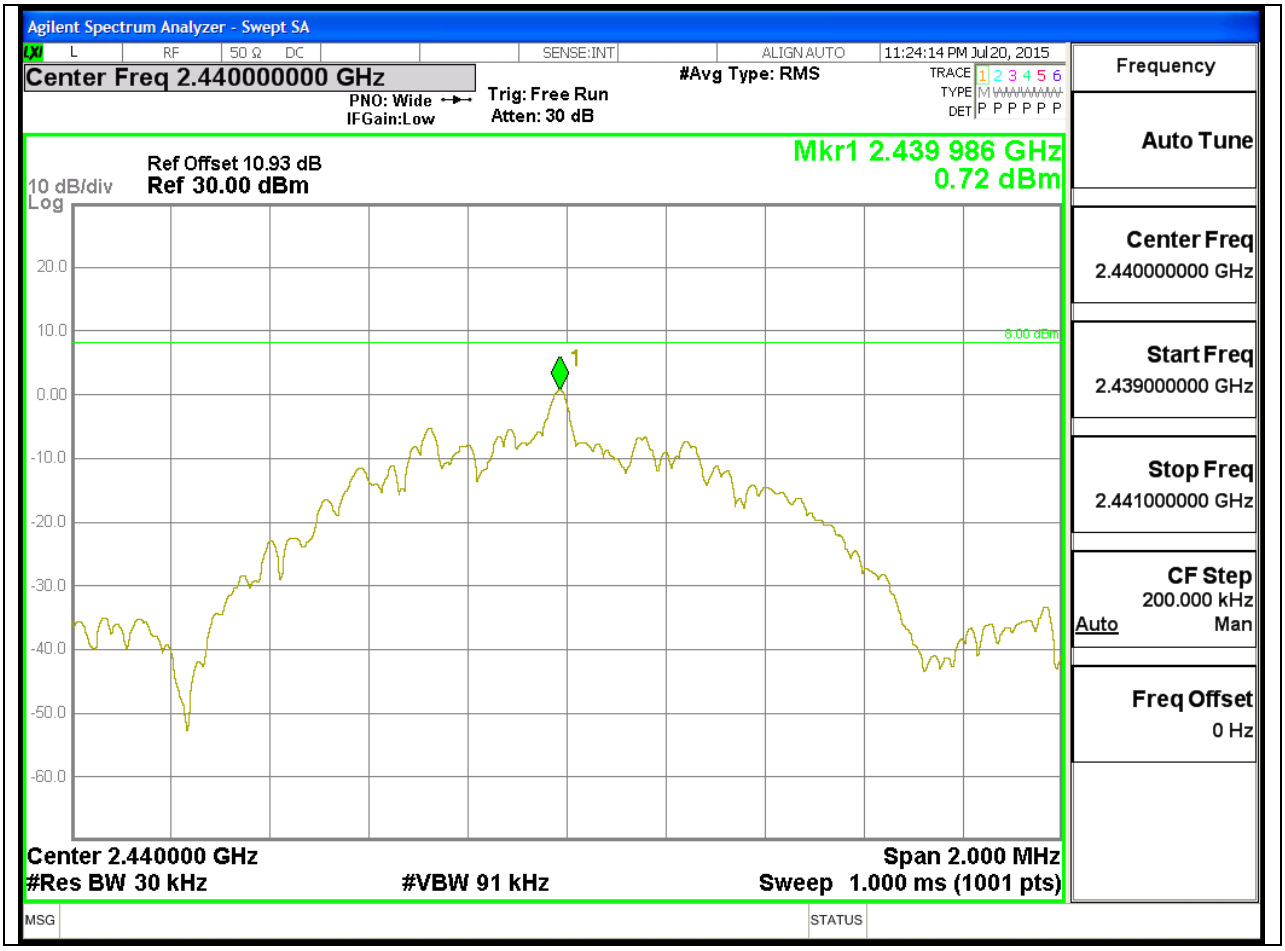
MID CHANNEL



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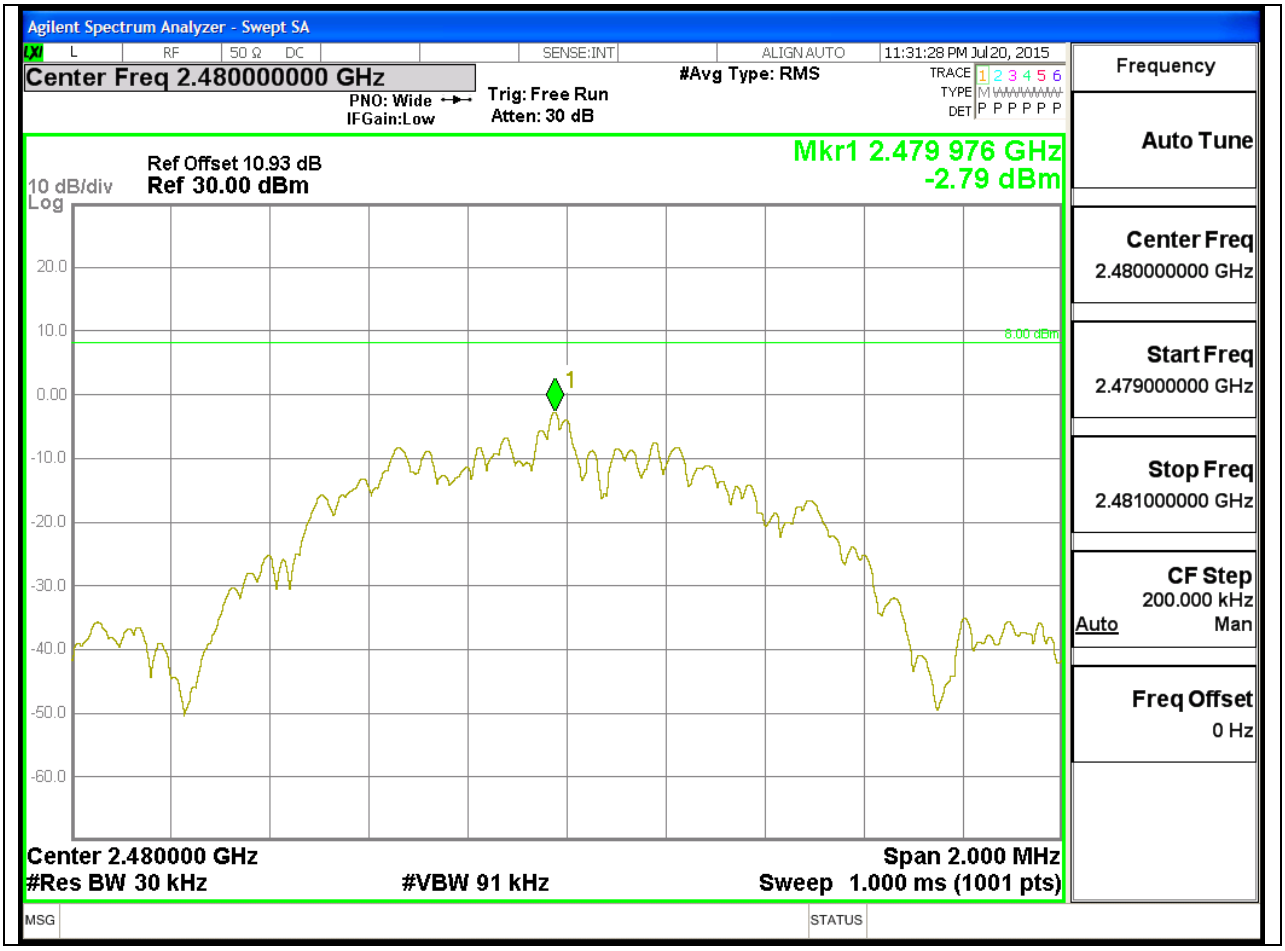
HIGH CHANNEL



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8.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 5.5

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.

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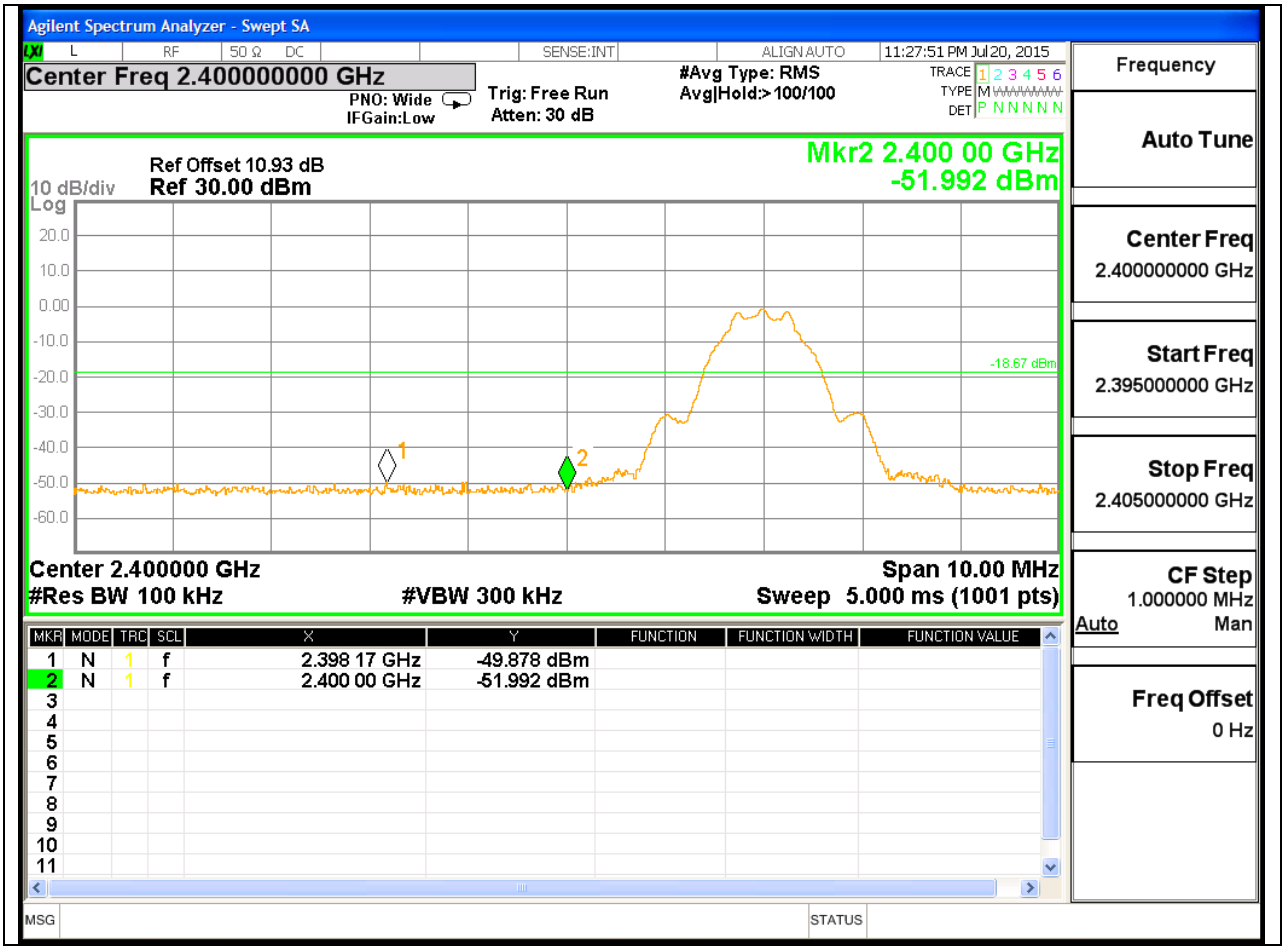
RESULTS

SPURIOUS EMISSIONS, LOW CHANNEL

LOW CHANNEL BANDEDGE



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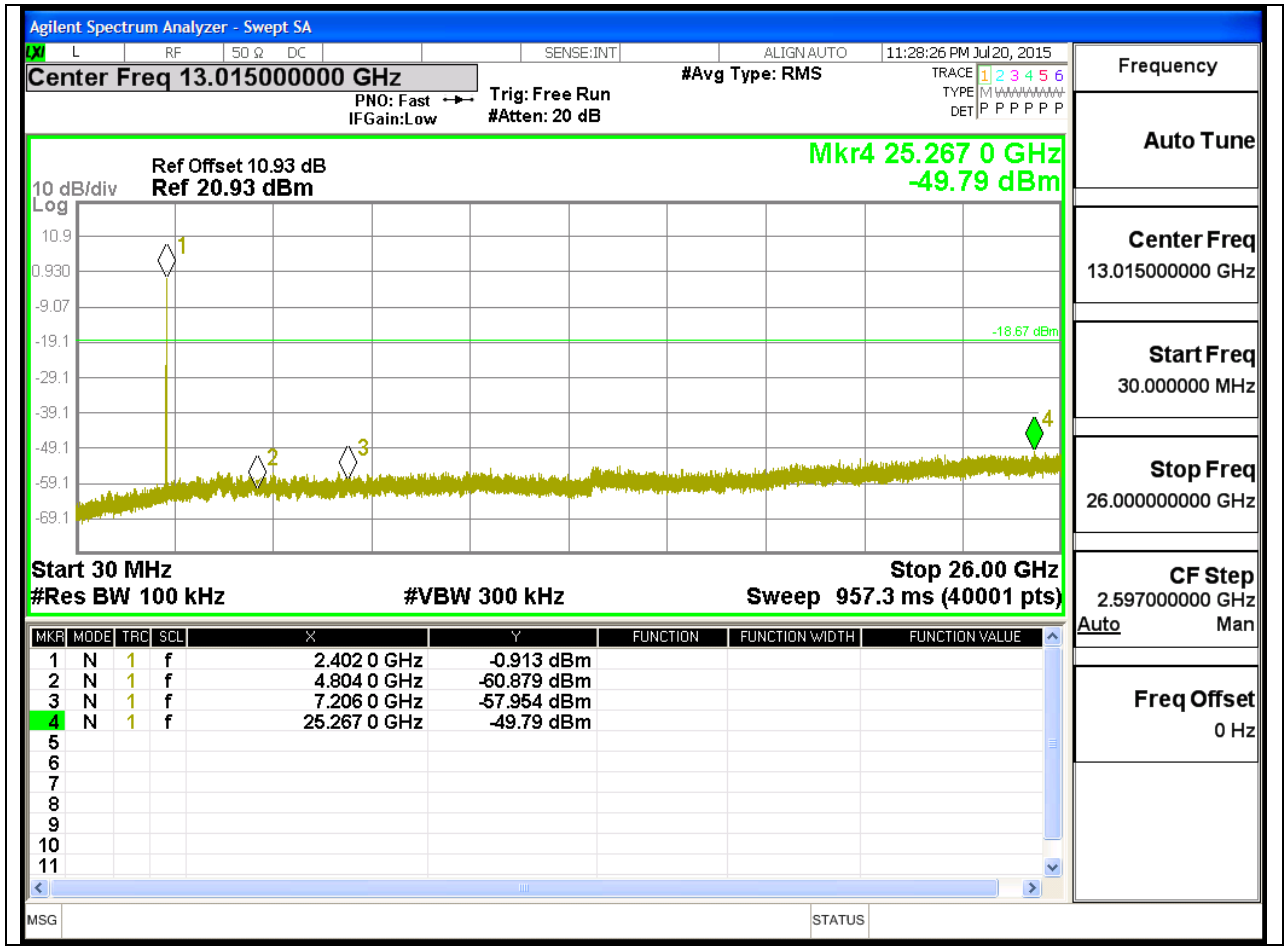
LOW CHANNEL SPURIOUS



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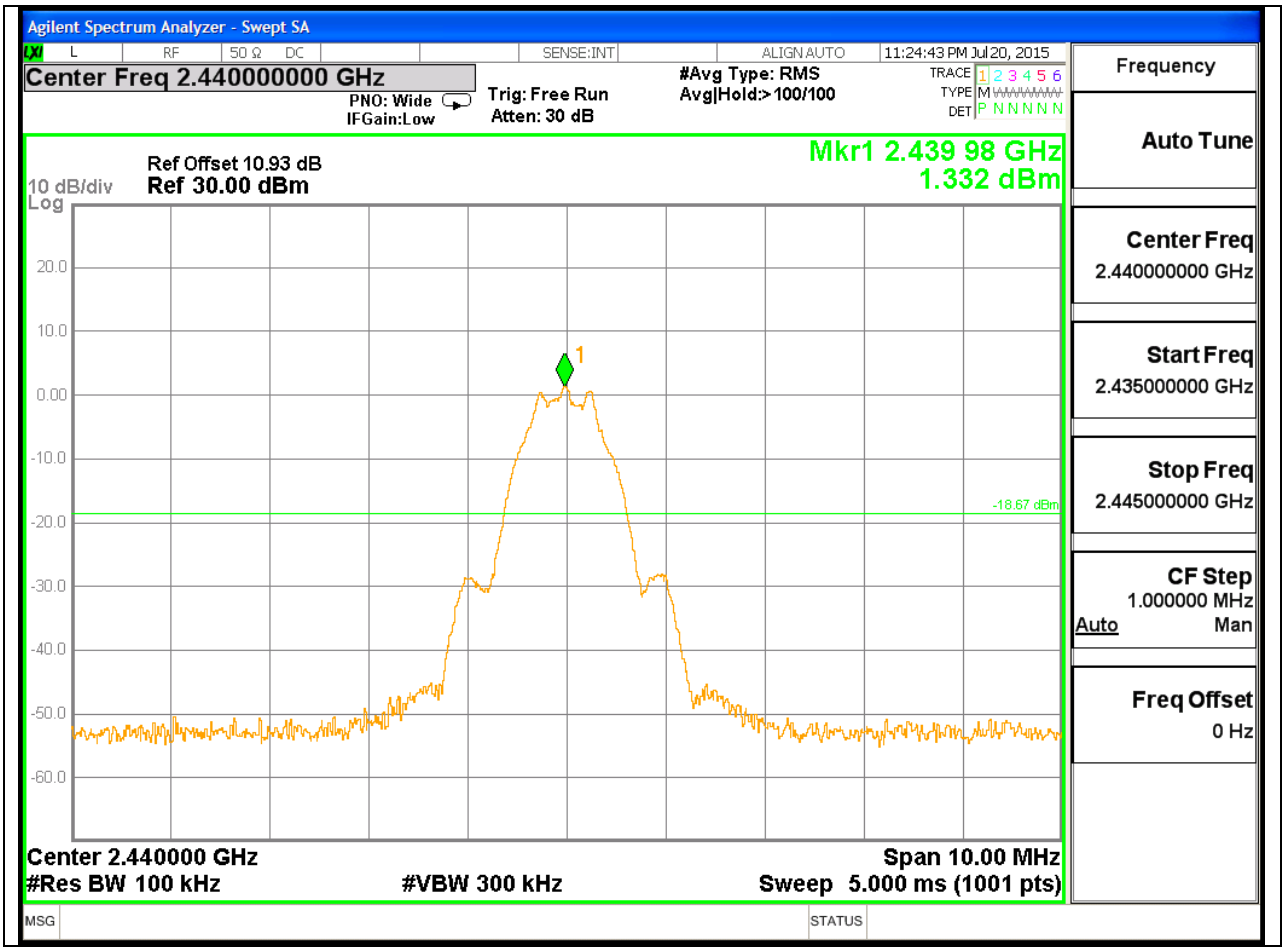
SPURIOUS EMISSIONS, MID CHANNEL

MID CHANNEL REFERENCE



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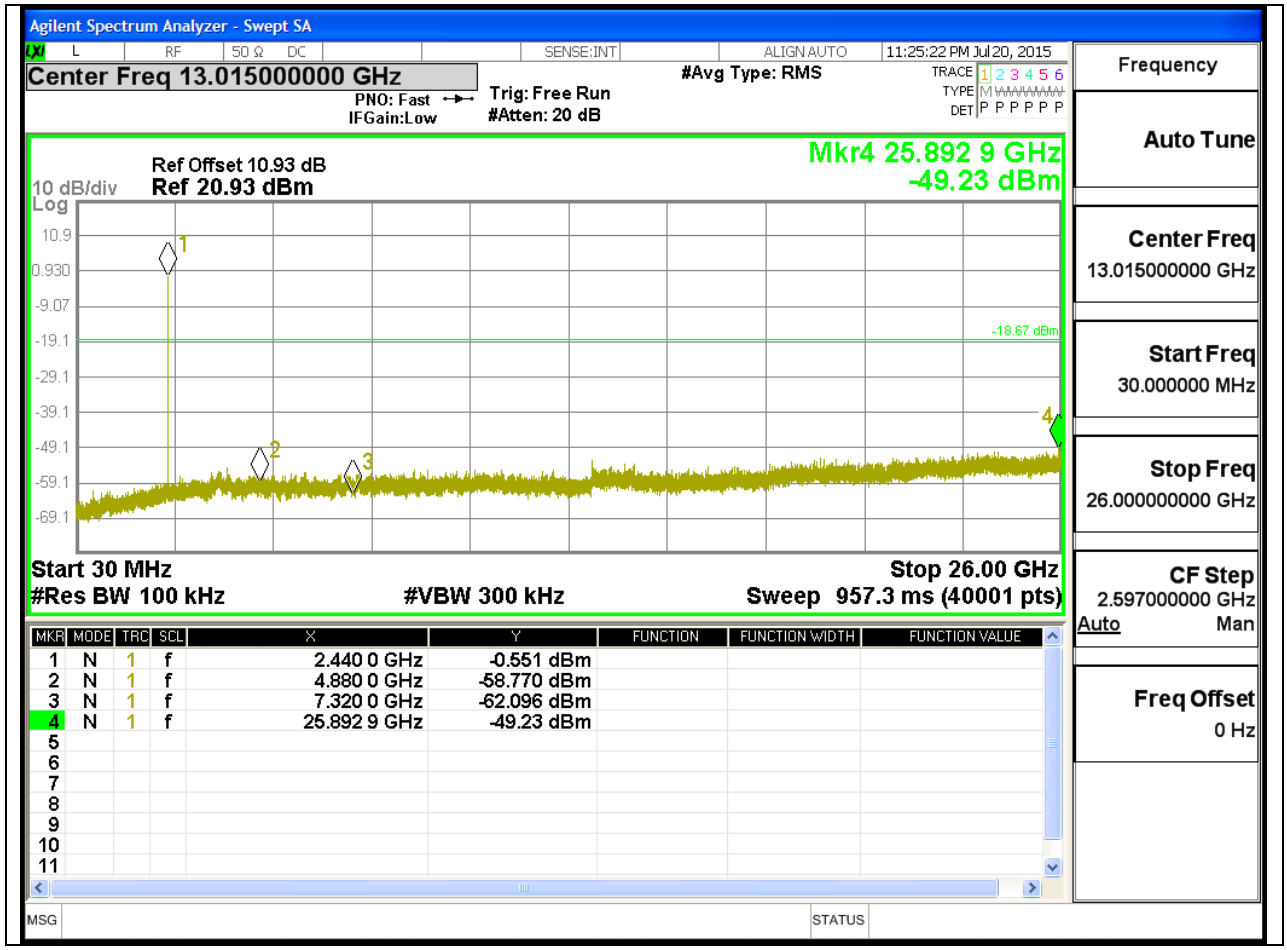
MID CHANNEL SPURIOUS



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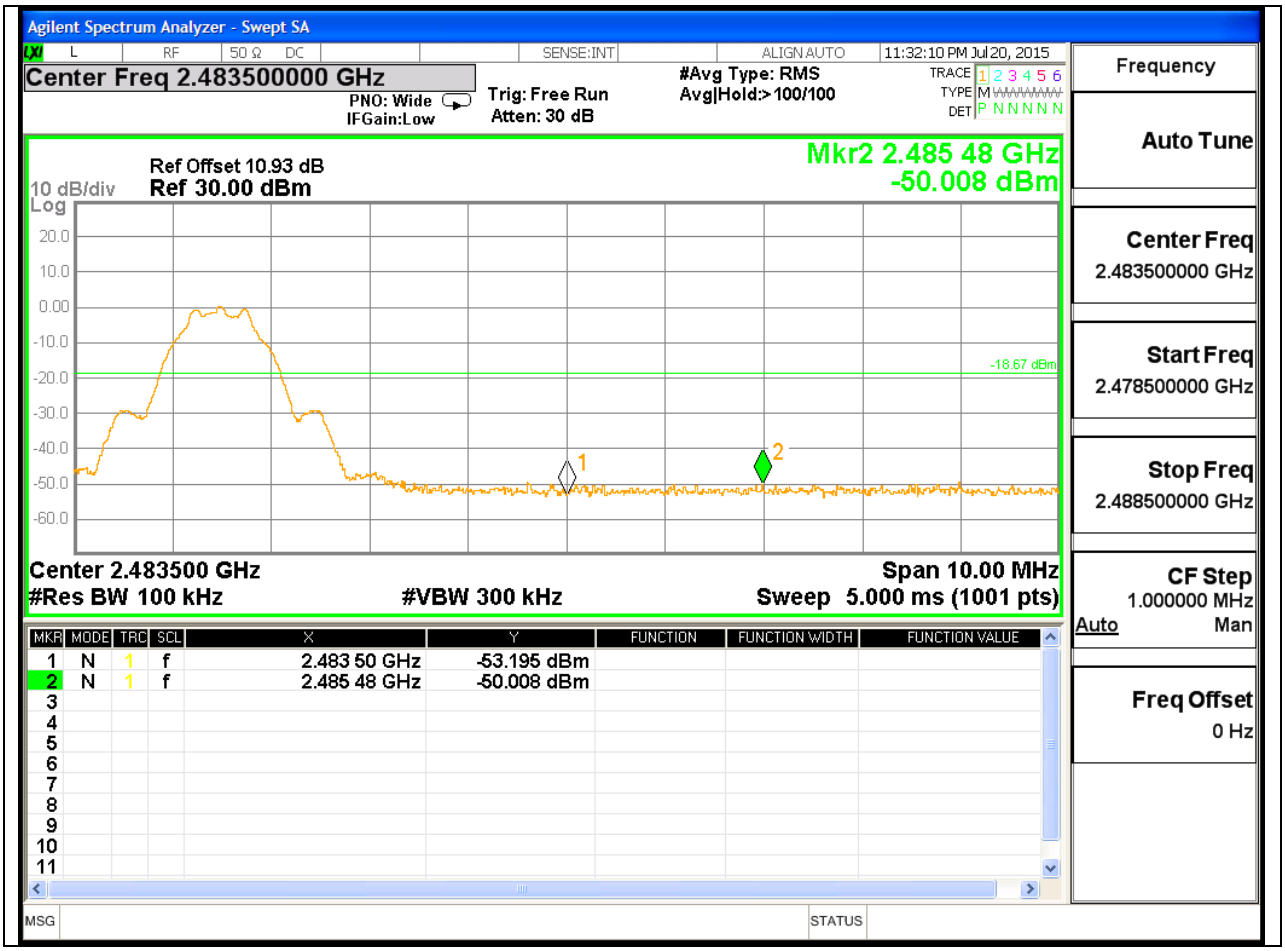
SPURIOUS EMISSIONS, HIGH CHANNEL

HIGH CHANNEL BANDEDGE



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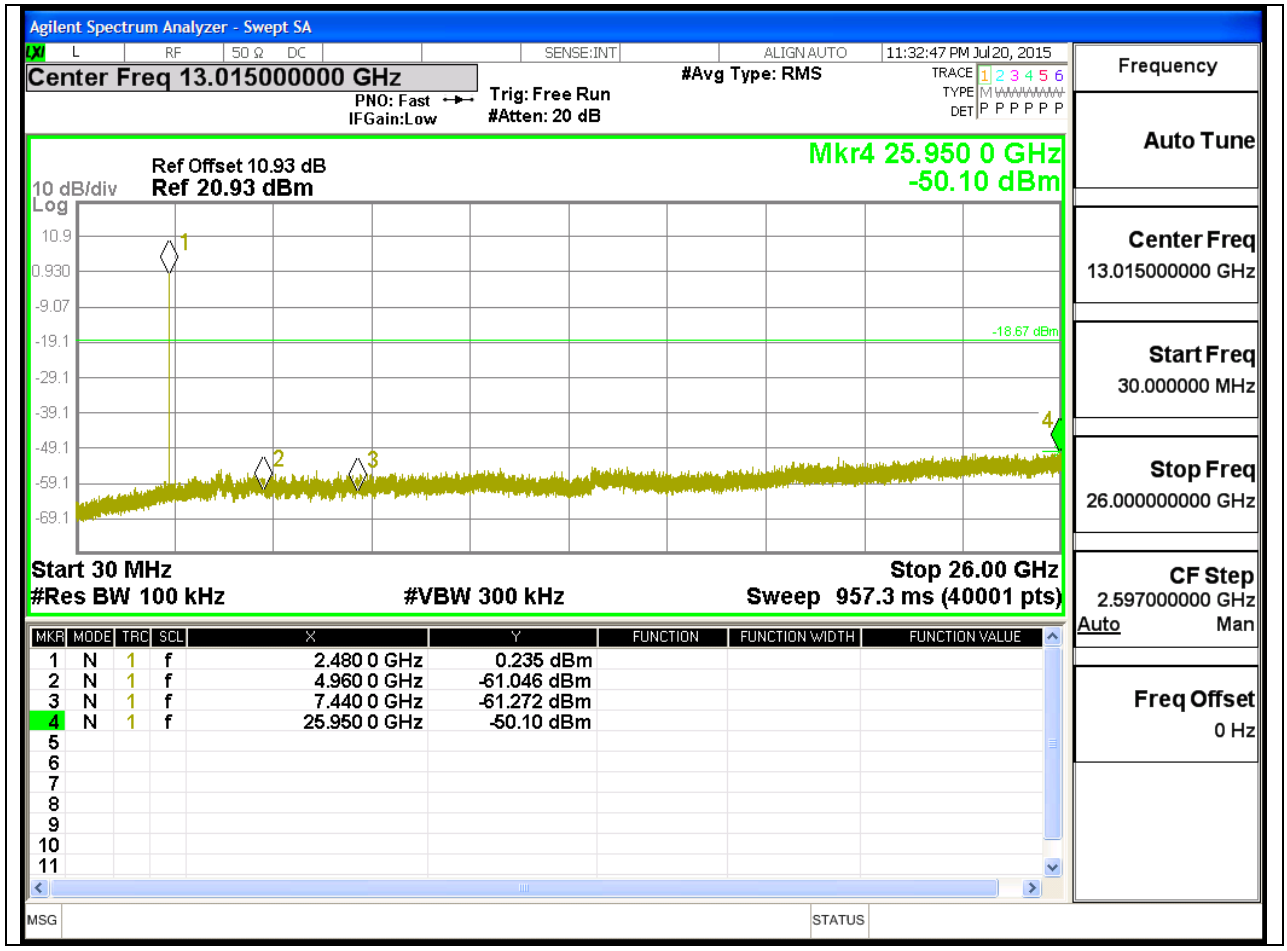
HIGH CHANNEL SPURIOUS



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9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209
IC RSS-GEN Clause 8.9 (Transmitter)
IC RSS-GEN Clause 7 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane 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 = 10log(1/0.65)=1.87 dB

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.

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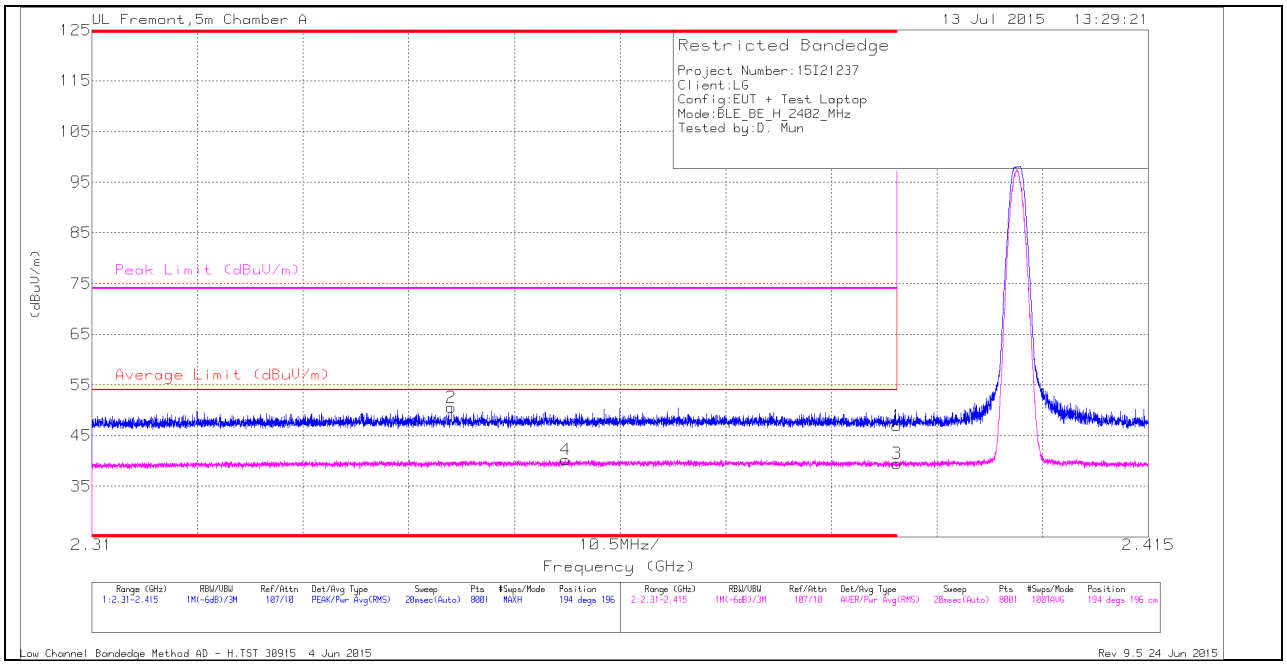
9.2. TRANSMITTER ABOVE 1 GHz

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	39.83	Pk	32	-24.9	0	46.93	-	-	74	-27.07	194	196	H
2	* 2.346	43.68	Pk	31.9	-25	0	50.58	-	-	74	-23.42	194	196	H
3	* 2.39	30.47	RMS	32	-24.9	1.87	39.44	54	-14.56	-	-	194	196	H
4	* 2.357	31.51	RMS	31.9	-25	1.87	40.28	54	-13.72	-	-	194	196	H

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

Pk - Peak detector

RMS - RMS detection

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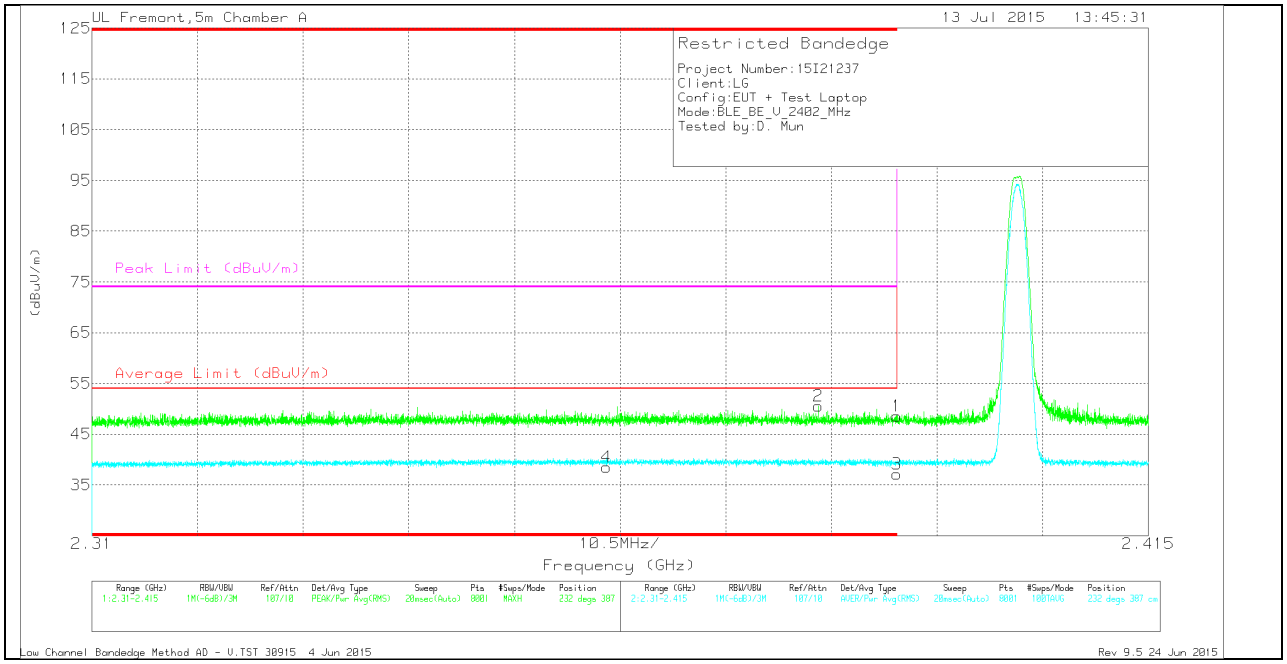
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	41.47	Pk	32	-24.9	0	48.57	-	-	74	-25.43	232	387	V
2	* 2.382	43.59	Pk	31.9	-24.9	0	50.59	-	-	74	-23.41	232	387	V
3	* 2.39	30.07	RMS	32	-24.9	1.87	39.04	54	-14.96	-	-	232	387	V
4	* 2.361	31.48	RMS	31.9	-24.9	1.87	40.35	54	-13.65	-	-	232	387	V

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

Pk - Peak detector

RMS - RMS detection

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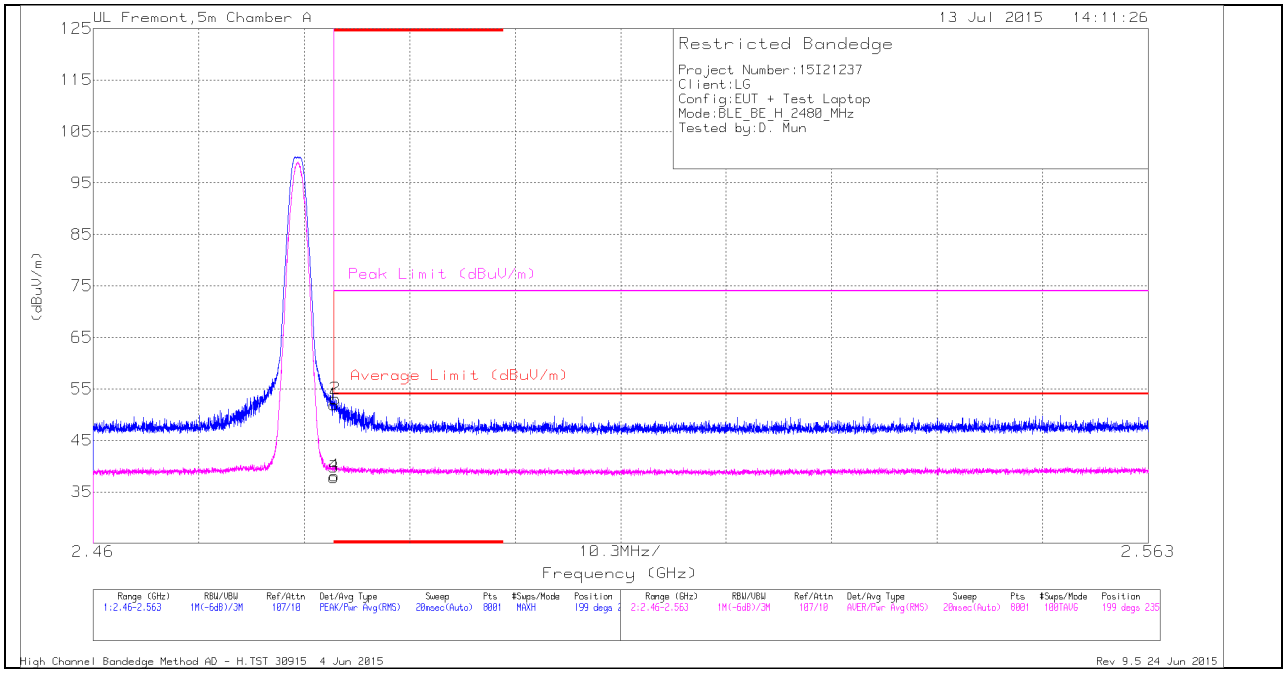
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	44.64	Pk	32.1	-24.8	0	51.94	-	-	74	-22.06	199	235	H
2	* 2.484	45.78	Pk	32.1	-24.8	0	53.08	-	-	74	-20.92	199	235	H
3	* 2.484	30.52	RMS	32.1	-24.8	1.87	39.69	54	-14.31	-	-	199	235	H
4	* 2.484	30.87	RMS	32.1	-24.8	1.87	40.04	54	-13.96	-	-	199	235	H

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

Pk - Peak detector

RMS - RMS detection

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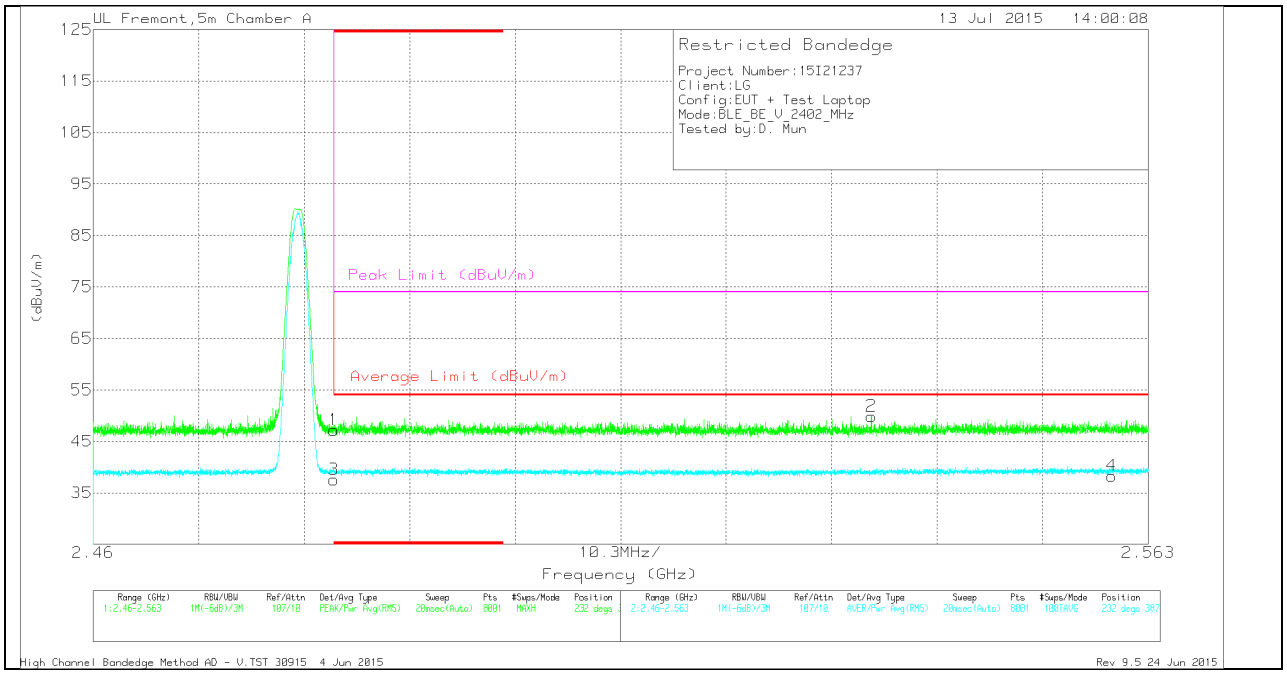
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (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	39.93	Pk	32.1	-24.8	0	47.23	-	-	74	-26.77	232	387	V
3	* 2.484	30.28	RMS	32.1	-24.8	1.87	39.45	54	-14.55	-	-	232	387	V
2	2.536	42.48	Pk	32.1	-24.7	0	49.88	-	-	74	-24.12	232	387	V
4	2.559	30.8	RMS	32.2	-24.7	1.87	40.17	54	-13.83	-	-	232	387	V

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

Pk - Peak detector

RMS - RMS detection

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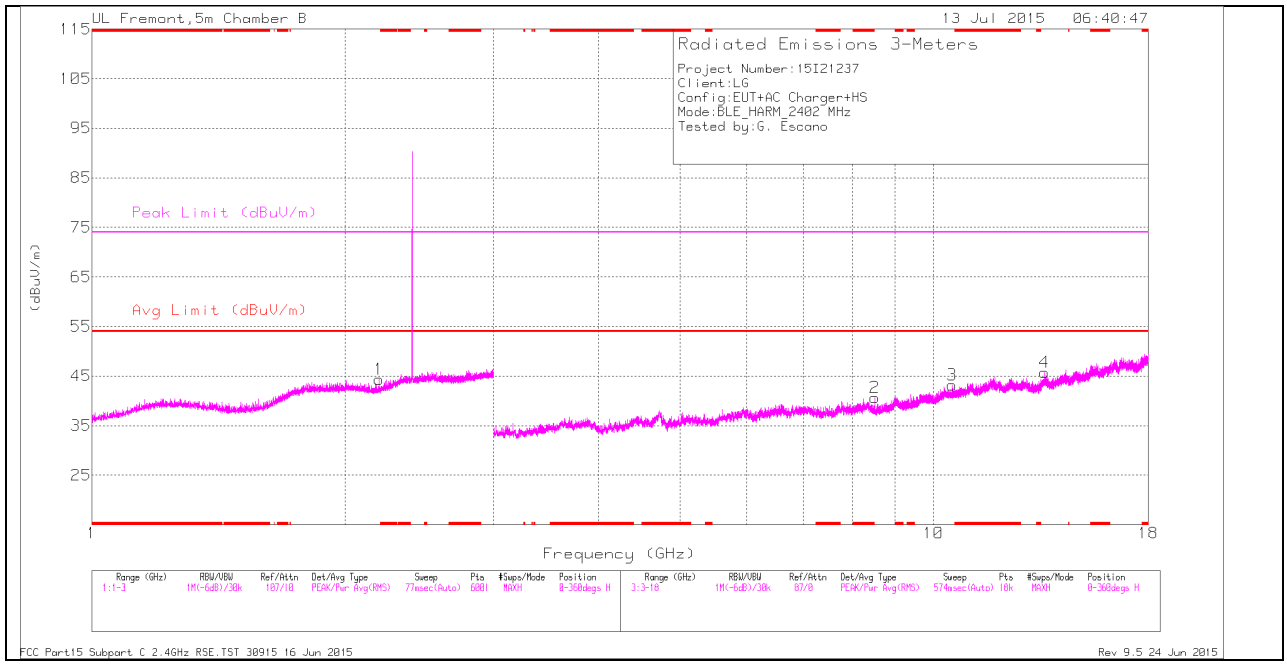
HARMONICS AND SPURIOUS EMISSIONS

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.

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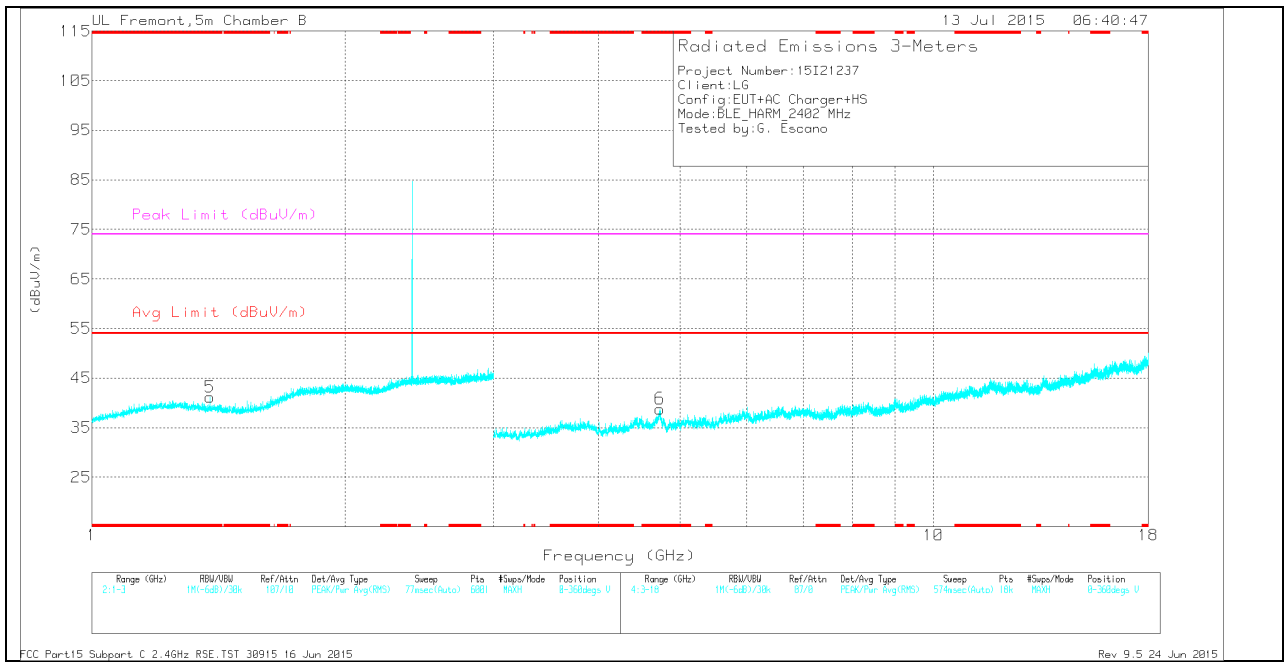
LOW CHANNEL VERTICAL



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

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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
5	* 1.382	35.61	Pk	29.4	-23.8	0	41.21	-	-	74	-32.79	0-360	200	V
6	* 4.733	32.41	Pk	34.3	-27.9	0	38.81	-	-	74	-35.19	0-360	199	V
1	2.194	35.55	Pk	31.1	-22.3	0	44.35	-	-	-	-	0-360	101	H
2	8.518	30.5	Pk	35.7	-25.6	0	40.6	-	-	-	-	0-360	101	H
3	10.522	28.01	Pk	37.5	-22.3	0	43.21	-	-	-	-	0-360	101	H
4	13.56	26.36	Pk	38.9	-19.5	0	45.76	-	-	-	-	0-360	101	H

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	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
* 1.381	43.18	PK2	29.4	-23.8	0	48.78	-	-	74	-25.22	302	219	V
* 1.38	31.72	MAv1	29.4	-23.8	1.87	39.19	54	-14.81	-	-	302	219	V
* 4.734	40.35	PK2	34.3	-27.8	0	46.85	-	-	74	-27.15	256	219	V
* 4.735	28.17	MAv1	34.3	-27.9	1.87	36.44	54	-17.56	-	-	256	219	V
2.196	42.49	PK2	31.1	-22.4	0	51.19	-	-	-	-	360	101	H
8.52	36.83	PK2	35.7	-25.6	0	46.93	-	-	-	-	241	155	H
10.52	34.8	PK2	37.5	-22.3	0	50	-	-	-	-	301	145	H
13.558	33.53	PK2	38.9	-19.5	0	52.93	-	-	-	-	349	136	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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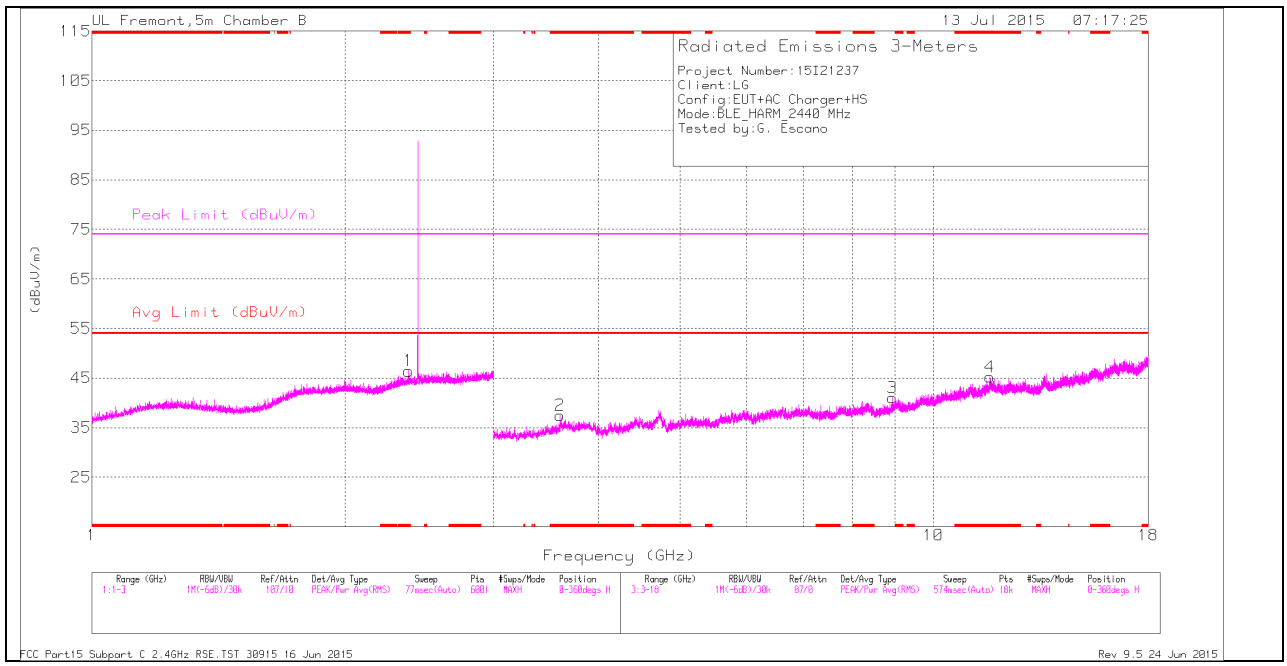
MID CHANNEL HORIZONTAL



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

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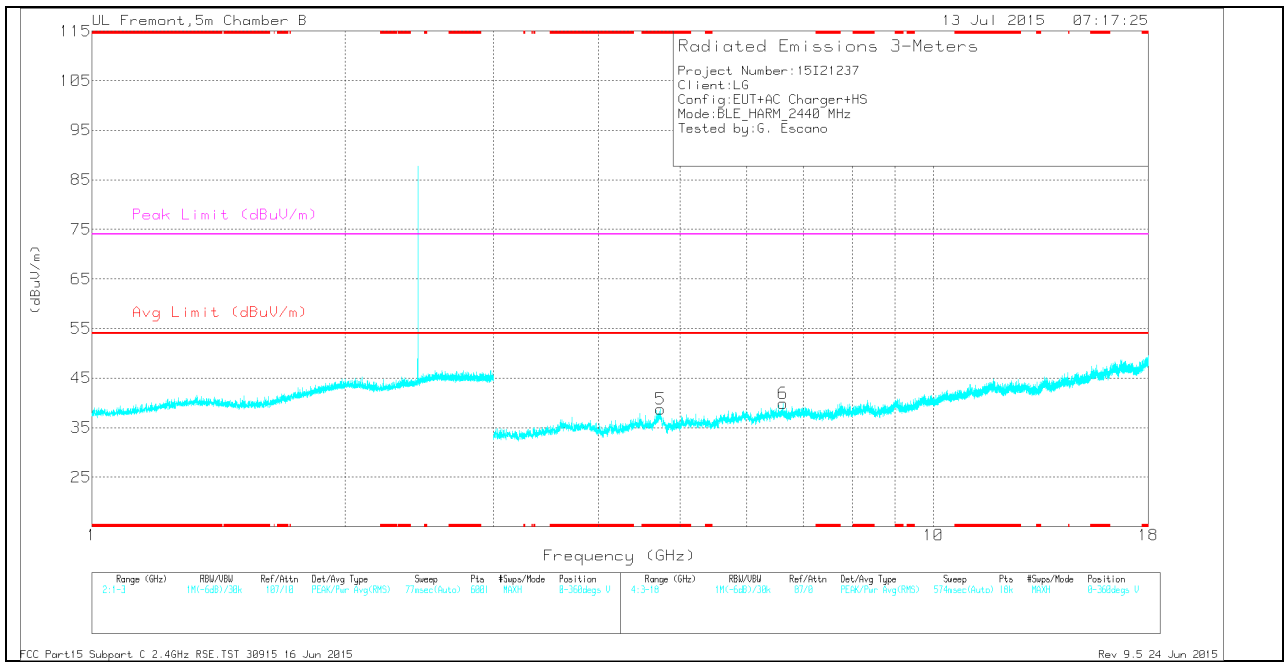
MID CHANNEL VERTICAL



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

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MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.377	36.53	Pk	31.9	-22	0	46.43	-	-	74	-27.57	0-360	101	H
2	* 3.601	33.87	Pk	33.8	-30.2	0	37.47	-	-	74	-36.53	0-360	101	H
4	* 11.67	27.27	Pk	38.5	-20.6	0	45.17	-	-	74	-28.83	0-360	101	H
5	* 4.74	32.59	Pk	34.3	-28.1	0	38.79	-	-	74	-35.21	0-360	200	V
6	6.627	31.15	Pk	35.9	-27.2	0	39.85	-	-	-	-	0-360	101	V
3	8.938	29.66	Pk	36	-24.6	0	41.06	-	-	-	-	0-360	101	H

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	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
* 2.377	42.86	PK2	31.9	-22	0	52.76	-	-	74	-21.24	27	116	H
* 2.378	30.4	MAv1	31.9	-22	1.87	42.17	54	-11.83	-	-	27	116	H
* 3.601	40.92	PK2	33.8	-30.2	0	44.52	-	-	74	-29.48	69	123	H
* 3.6	29.42	MAv1	33.8	-30.2	1.87	34.89	54	-19.11	-	-	69	123	H
* 11.67	34.88	PK2	38.5	-20.6	0	52.78	-	-	74	-21.22	113	186	H
* 11.671	23.2	MAv1	38.5	-20.6	1.87	42.97	54	-11.03	-	-	113	186	H
* 4.739	40.45	PK2	34.3	-28.1	0	46.65	-	-	74	-27.35	2	211	V
* 4.74	28.45	MAv1	34.3	-28.2	1.87	36.42	54	-17.58	-	-	2	211	V
6.628	38.21	PK2	35.9	-27.3	0	46.81	-	-	-	-	35	144	V
8.936	36.08	PK2	36	-24.6	0	47.48	-	-	-	-	7	109	H

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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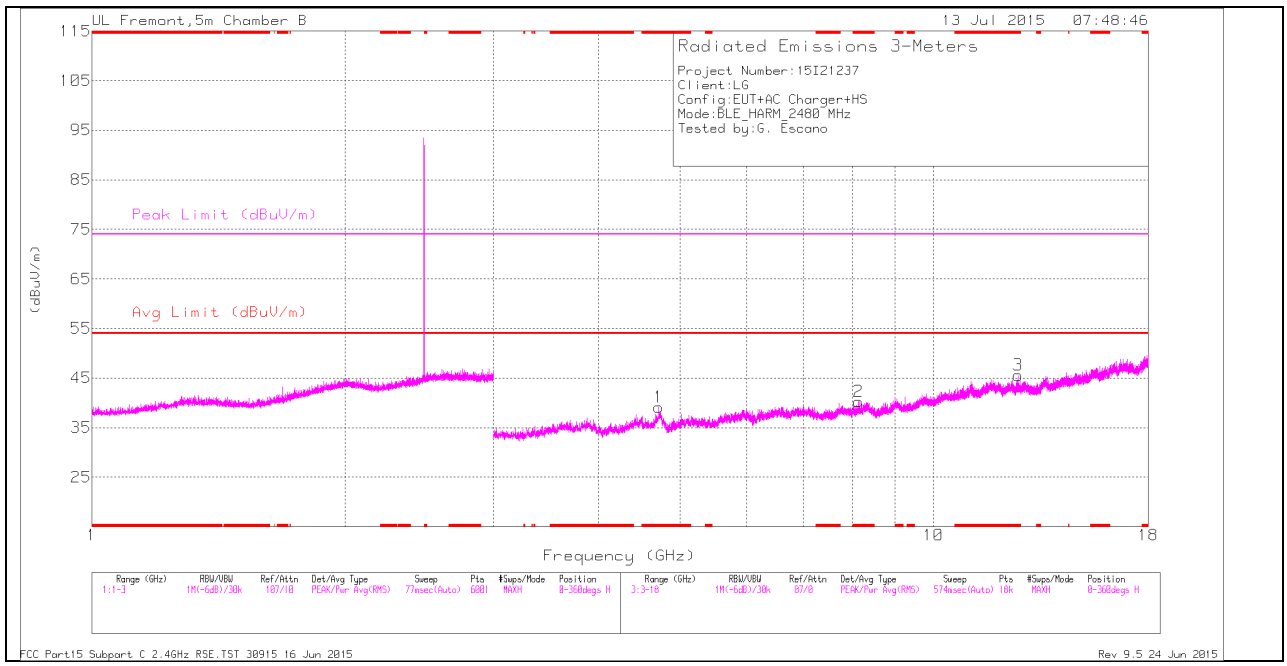
HIGH CHANNEL HORIZONTAL



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

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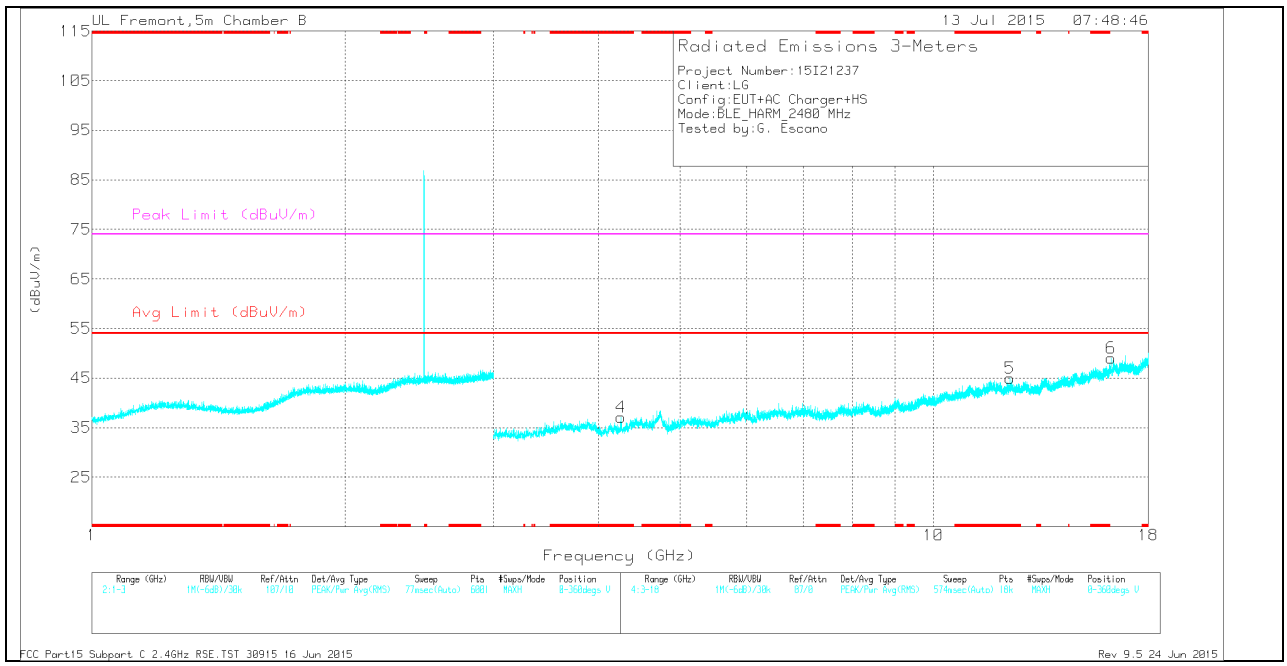
HIGH CHANNEL VERTICAL



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

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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
1	* 4.717	33.38	Pk	34.2	-28.5	0	39.08	-	-	74	-34.92	0-360	200	H
2	* 8.14	29.91	Pk	35.7	-25.3	0	40.31	-	-	74	-33.69	0-360	101	H
3	* 12.615	27.74	Pk	38.7	-20.9	0	45.54	-	-	74	-28.46	0-360	200	H
4	* 4.249	33.28	Pk	33.5	-29.7	0	37.08	-	-	74	-36.92	0-360	200	V
5	* 12.334	27.25	Pk	38.6	-20.9	0	44.95	-	-	74	-29.05	0-360	200	V
6	16.25	26.86	Pk	41	-18.8	0	49.06	-	-	-	-	0-360	101	V

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

Pk - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T345 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	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
* 4.718	40.68	PK2	34.2	-28.5	0	46.38	-	-	74	-27.62	216	273	H
* 4.718	28.67	MAv1	34.2	-28.5	1.87	36.24	54	-17.76	-	-	216	273	H
* 8.14	36.87	PK2	35.7	-25.3	0	47.27	-	-	74	-26.73	145	134	H
* 8.14	25.9	MAv1	35.7	-25.3	1.87	38.17	54	-15.83	-	-	145	134	H
* 12.615	34.1	PK2	38.7	-20.9	0	51.9	-	-	74	-22.1	92	185	H
* 12.614	22.09	MAv1	38.7	-20.9	1.87	41.76	54	-12.24	-	-	92	185	H
* 4.249	40.74	PK2	33.5	-29.7	0	44.54	-	-	74	-29.46	356	272	V
* 4.249	28.17	MAv1	33.5	-29.7	1.87	33.84	54	-20.16	-	-	356	272	V
* 12.334	34.86	PK2	38.6	-20.9	0	52.56	-	-	74	-21.44	42	188	V
* 12.333	22.45	MAv1	38.6	-20.9	1.87	42.02	54	-11.98	-	-	42	188	V
16.249	34.23	PK2	41	-18.8	0	56.43	-	-	-	-	2	138	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

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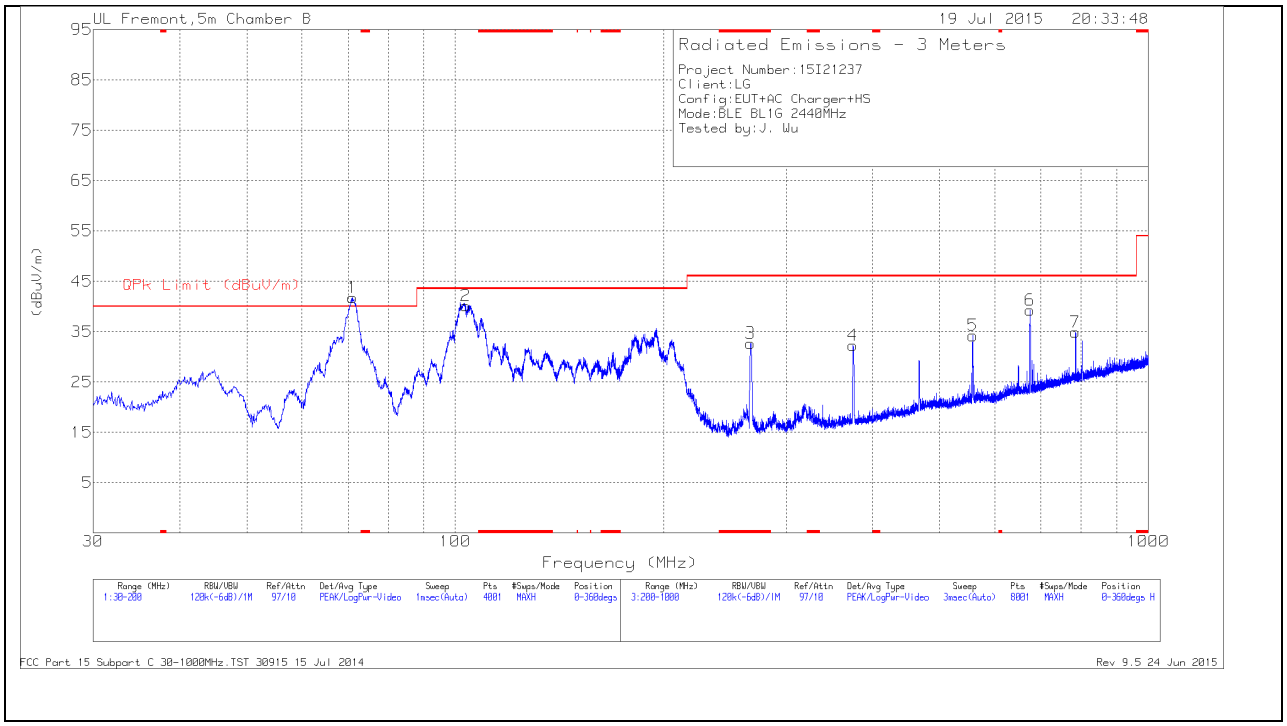
9.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



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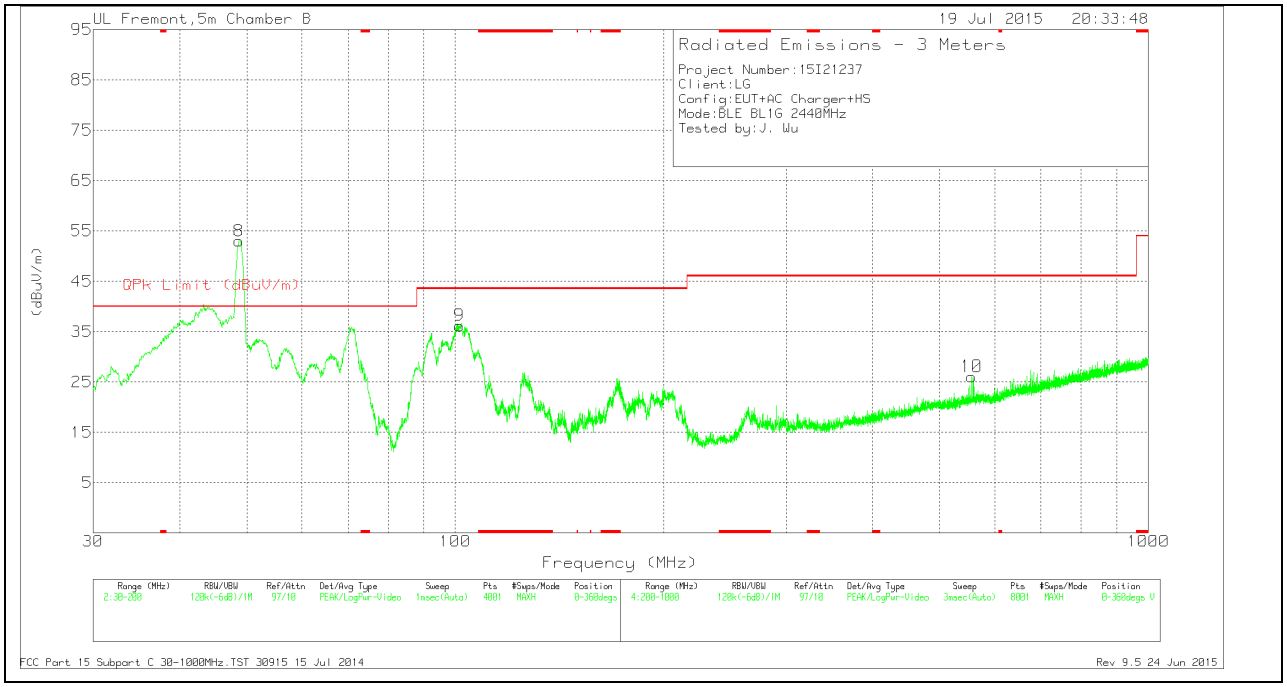
VERTICAL PLOT



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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
3	* 266.8	45.66	Pk	13.1	-26.1	32.66	46.02	-13.36	0-360	299	H
8	48.7425	73.01	Pk	8.6	-28.6	53.01	40	13.01	0-360	101	V
1	71.0975	61.94	Pk	8.1	-28.3	41.74	40	1.74	0-360	199	H
9	101.3575	53.61	Pk	10.6	-28	36.21	43.52	-7.31	0-360	101	V
2	103.44	56.85	Pk	11.2	-27.9	40.15	43.52	-3.37	0-360	199	H
4	374.8	42.84	Pk	15.2	-25.8	32.24	46.02	-13.78	0-360	101	H
10	556	32.85	Pk	18.6	-25.4	26.05	46.02	-19.97	0-360	101	V
5	558.1	41.02	Pk	18.6	-25.4	34.22	46.02	-11.8	0-360	299	H
6	675.2	44.07	Pk	19.9	-24.7	39.27	46.02	-6.75	0-360	199	H
7	785.3	37.08	Pk	21.4	-23.6	34.88	46.02	-11.14	0-360	299	H

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

Pk - Peak detector

Radiated Emissions

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
48.3225	48.21	Pk	8.8	-28.6	28.41	40	-11.59	26	108	V
70.9895	52.1	Pk	8.1	-28.3	31.9	40	-8.1	79	292	H
103.452	52.35	Qp	11.2	-27.9	35.65	43.52	-7.87	137	157	H

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

Pk - Peak detector

Qp - Quasi-Peak detector

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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

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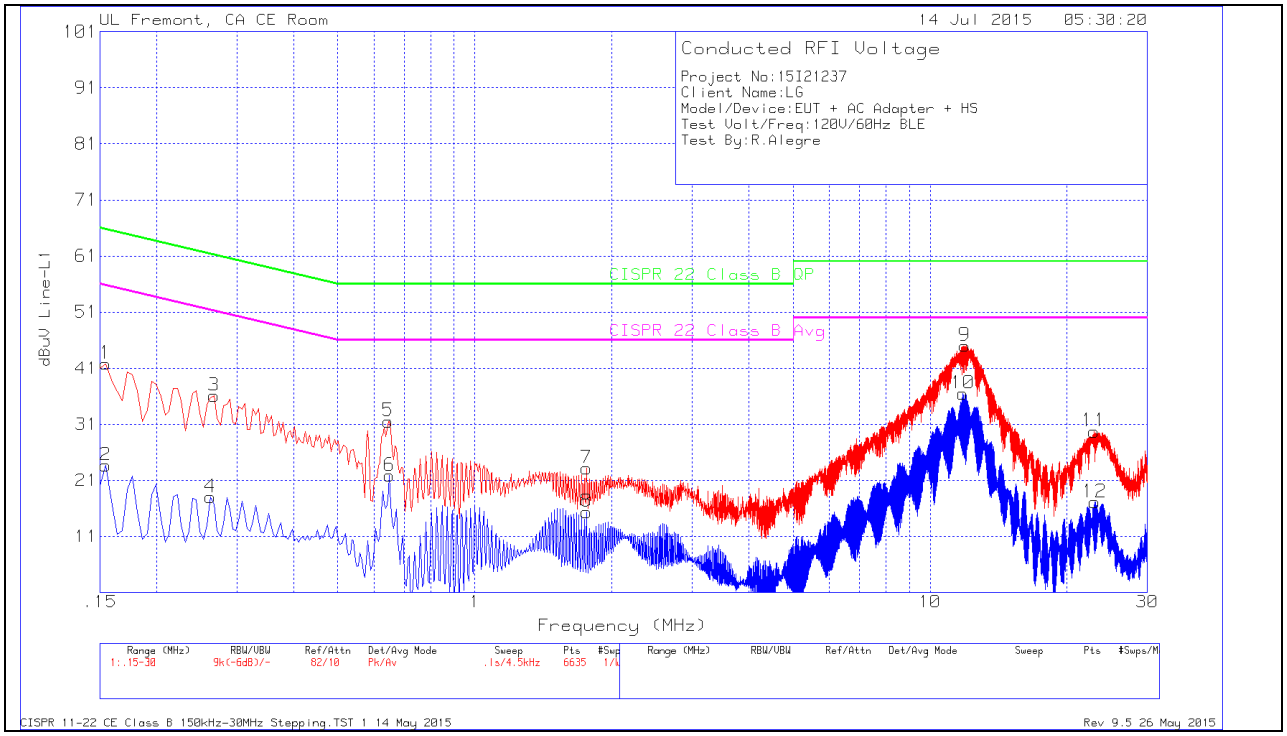
LINE 1 PLOT



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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	.1545	40.5	Pk	1.3	0	41.8	65.75	-23.95		
2	.1545	22.35	Av	1.3	0	23.65	-	-	55.75	-32.1
3	.267	35.47	Pk	.6	0	36.07	61.21	-25.14		
4	.2625	17.31	Av	.7	0	18.01	-	-	51.35	-33.34
5	.645	31.23	Pk	.3	0	31.53	56	-24.47		
6	.6495	21.54	Av	.3	0	21.84	-	-	46	-24.16
7	1.761	22.84	Pk	.2	.1	23.14	56	-32.86		
8	1.761	15.08	Av	.2	.1	15.38	-	-	46	-30.62
9	11.922	44.6	Pk	.2	.2	45	60	-15		
10	11.8095	36.06	Av	.2	.2	36.46	-	-	50	-13.54
11	22.92	29.23	Pk	.3	.2	29.73	60	-30.27		
12	23.019	16.61	Av	.3	.2	17.11	-	-	50	-32.89

Pk - Peak detector

Av - Average detection

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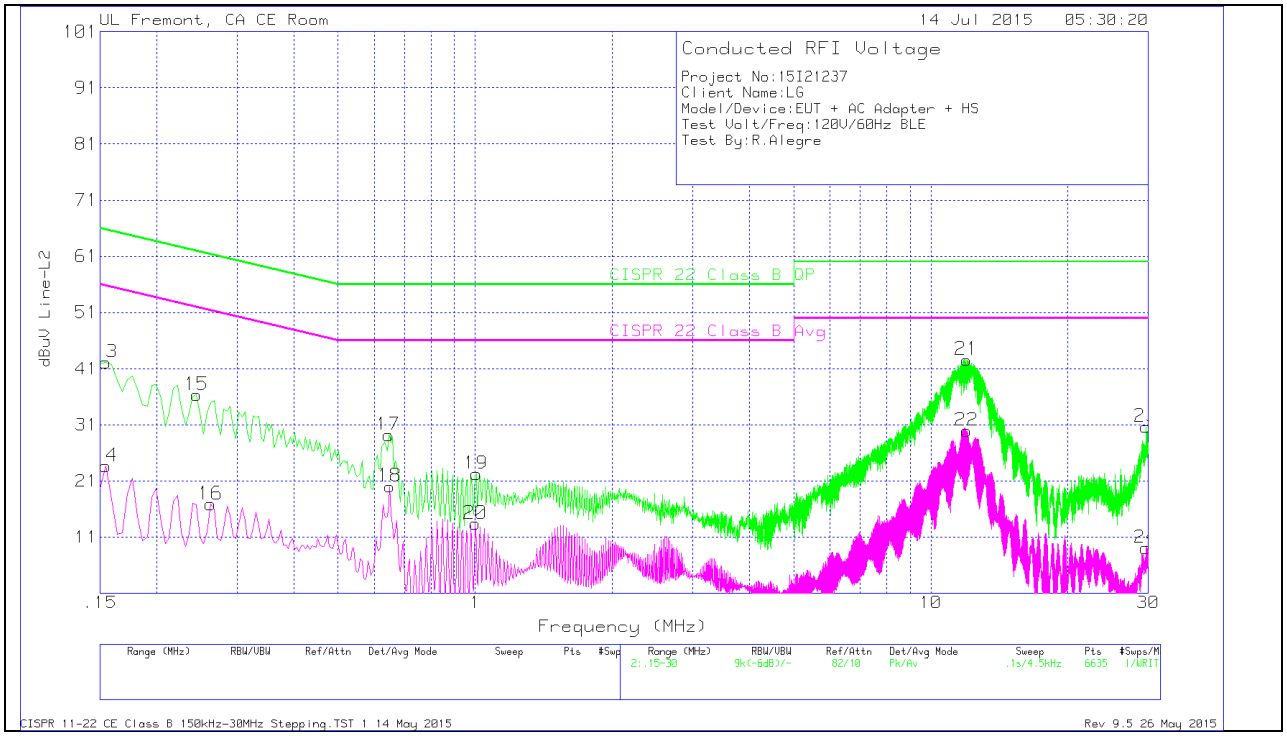
LINE 2 PLOT



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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)
13	.1545	40.7	Pk	1.4	0	42.1	65.75	-23.65		
14	.1545	22.24	Av	1.4	0	23.64	-	-	55.75	-32.11
15	.2445	35.51	Pk	.8	0	36.31	61.94	-25.63		
16	.2625	16.15	Av	.7	0	16.85	-	-	51.35	-34.5
17	.645	28.86	Pk	.3	0	29.16	56	-26.84		
18	.6495	19.72	Av	.3	0	20.02	-	-	46	-25.98
19	1.005	21.94	Pk	.3	0	22.24	56	-33.76		
20	1.0005	13.1	Av	.3	0	13.4	-	-	46	-32.6
21	11.9895	42.17	Pk	.2	.2	42.57	60	-17.43		
22	11.9895	29.55	Av	.2	.2	29.95	-	-	50	-20.05
23	29.688	30.06	Pk	.3	.3	30.66	60	-29.34		
24	29.688	8.48	Av	.3	.3	9.08	-	-	50	-40.92

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