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

BLUETOOTH LOW ENERGY CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER: LG-H790, LGH790, H790

FCC ID: ZNFH790
IC ID: 2703C-H790

REPORT NUMBER: 15I21235-E3V1

ISSUE DATE: AUGUST 31, 2015

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	08/31/15	Initial Issue	

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC.
EUT DESCRIPTION:	CDMA/GSM/WCDMA/LTE PHONE + BLUETOOTH, DTS/UNII a/b/g/n/ac & NFC
MODEL:	LG-H790, LGH790, H790
SERIAL NUMBER:	1ZC51, 1ZC4Z (Conducted) 1ZC50, 1ZC4Y (Radiated)
DATE TESTED:	JULY 17-19, 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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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15 C, KDB 558074 D01 v03r03, ANSI C63.10-2009 for FCC and ANSI C63.10-2013 for IC, RSS-GEN Issue 4, and RSS-247 Issue 1.

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.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a CDMA/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	2.61	1.82

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIF (Planar Inverted F) antenna, with a maximum gain of -0.05 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 Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z 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

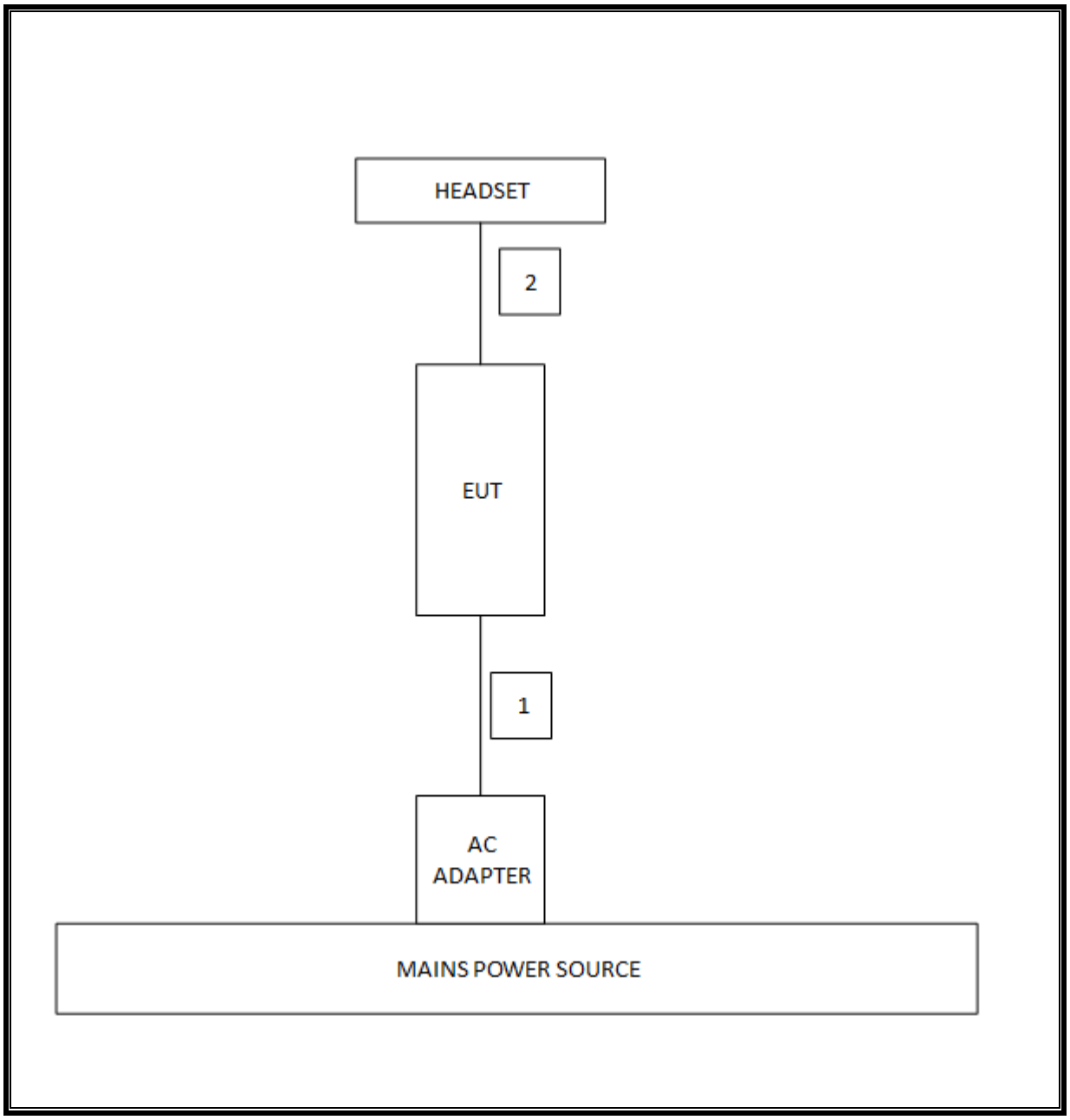
I/O CABLES

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	1.0m	N/A

TEST SETUP

EUT was set in the BLE 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**
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

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	0.638MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-52.78dBm
15.247	RSS-247 5.4 (4)	TX conducted output power	<30dBm		Pass	2.61dBm
15.247	RSS-247 5.2 (2)	PSD	<8dBm		Pass	-1.03dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Radiated	Pass	45.7dBuV(PK)
15.205, 15.209	RSS-GEN 8.9	Radiated Spurious Emission	< 54dBuV/m		Pass	43.06dBuV/m

ANTENNA PORT TEST RESULTS

8.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)
IC RSS-247 5.2.1
The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

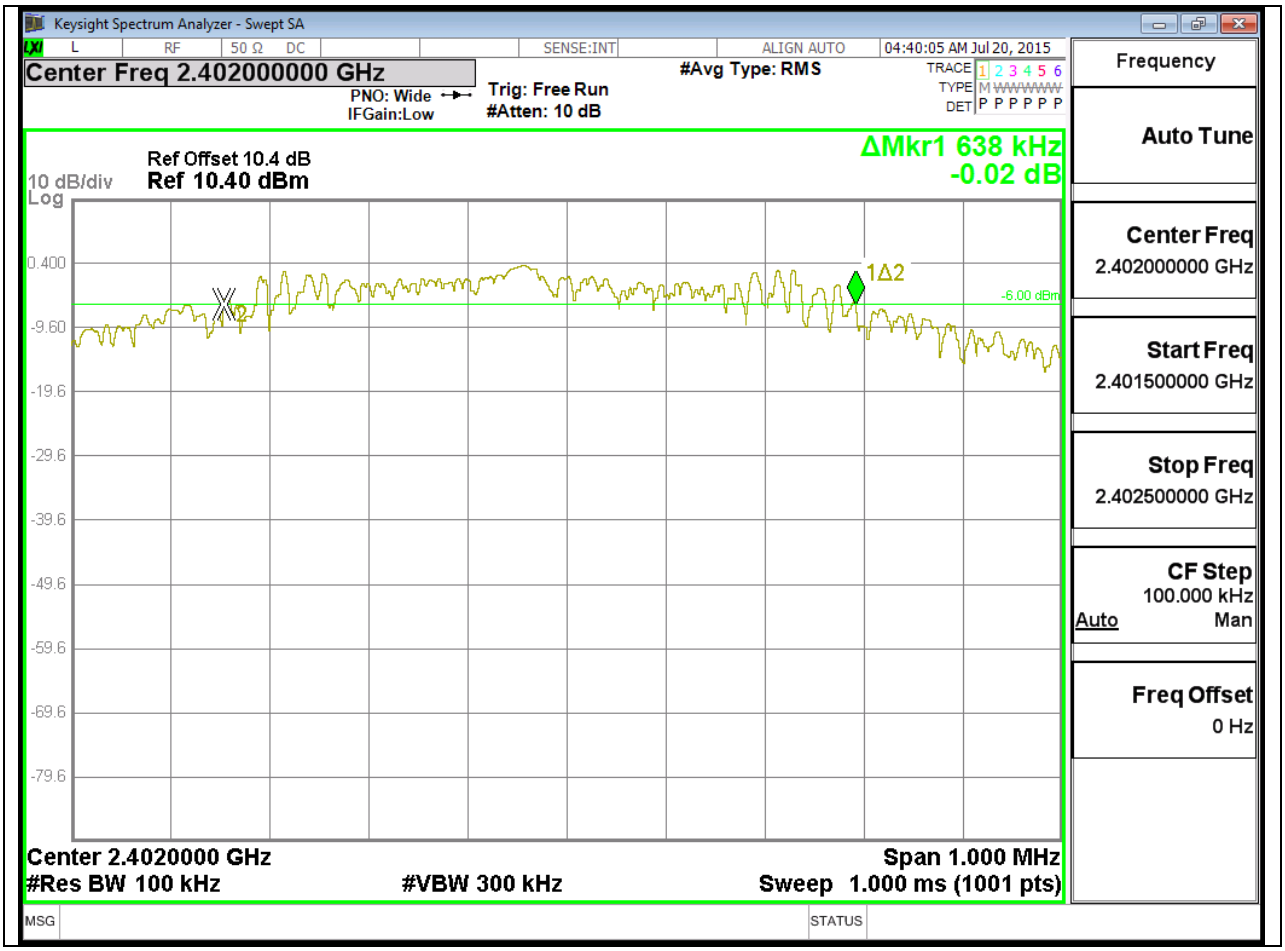
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

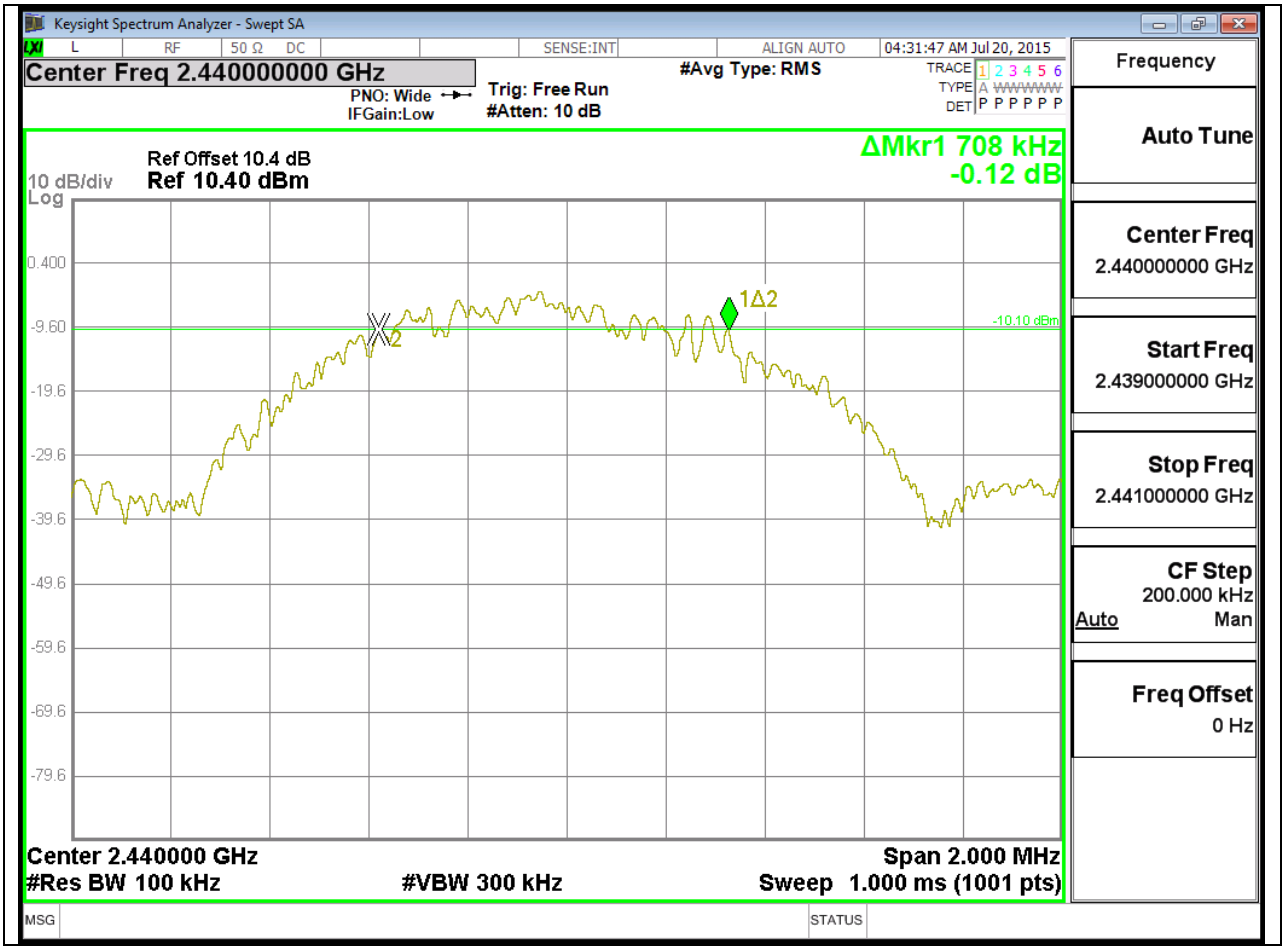
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.638	0.5
Middle	2440	0.708	0.5
High	2480	0.722	0.5

6 dB BANDWIDTH PLOTS

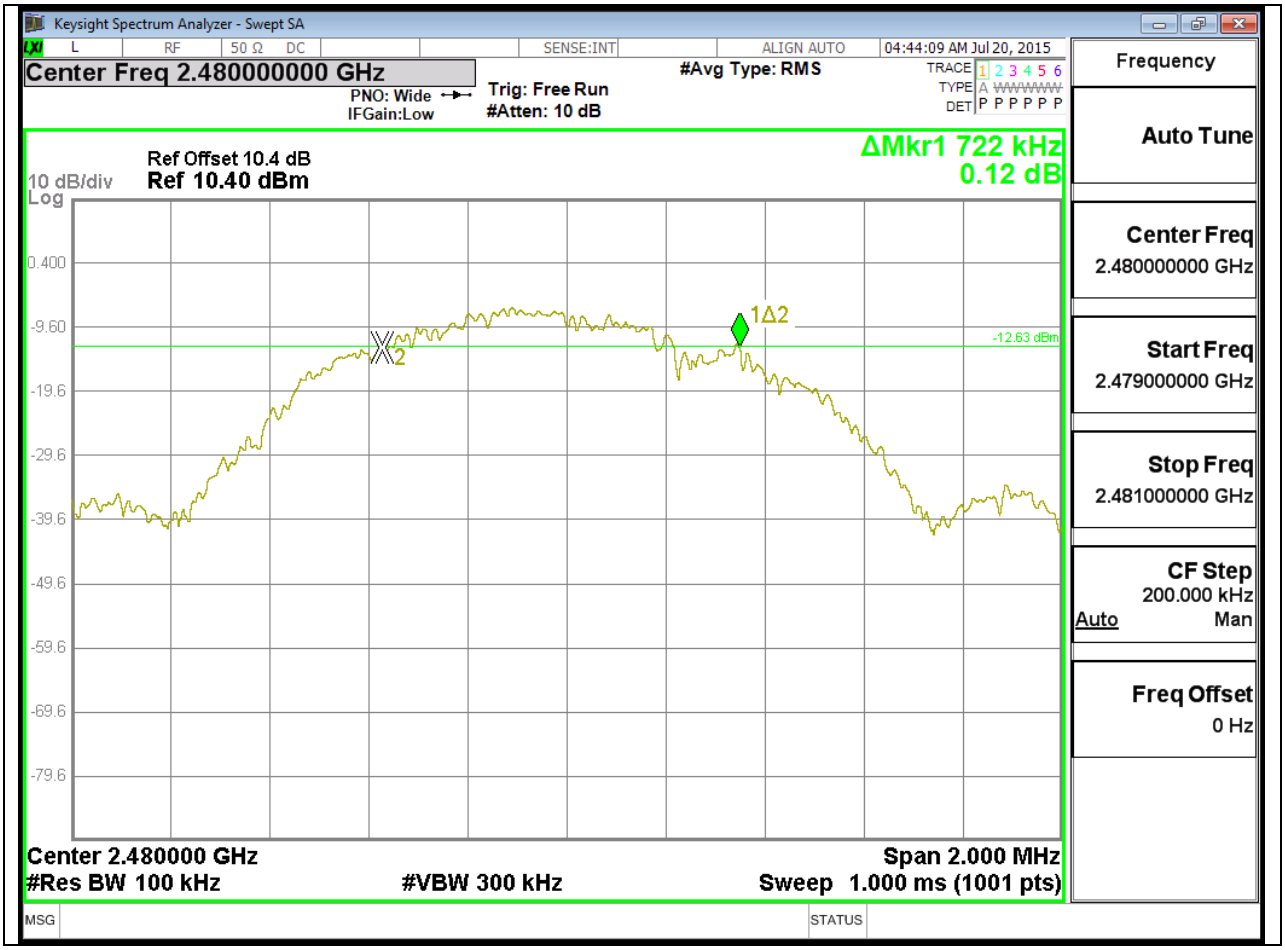
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

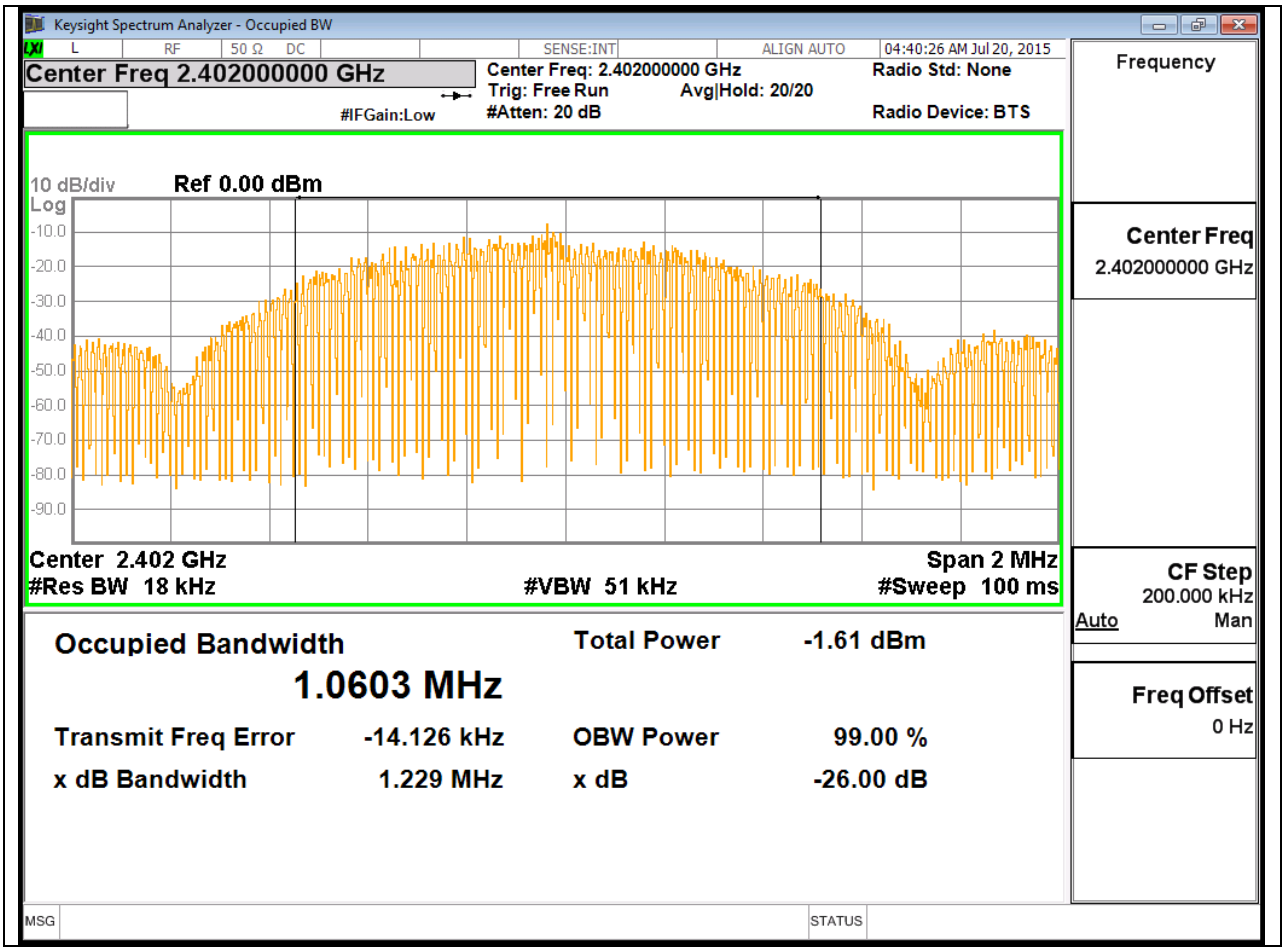
Reference to KDB558074 D01 DTS Meas Guidance v03r02: The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

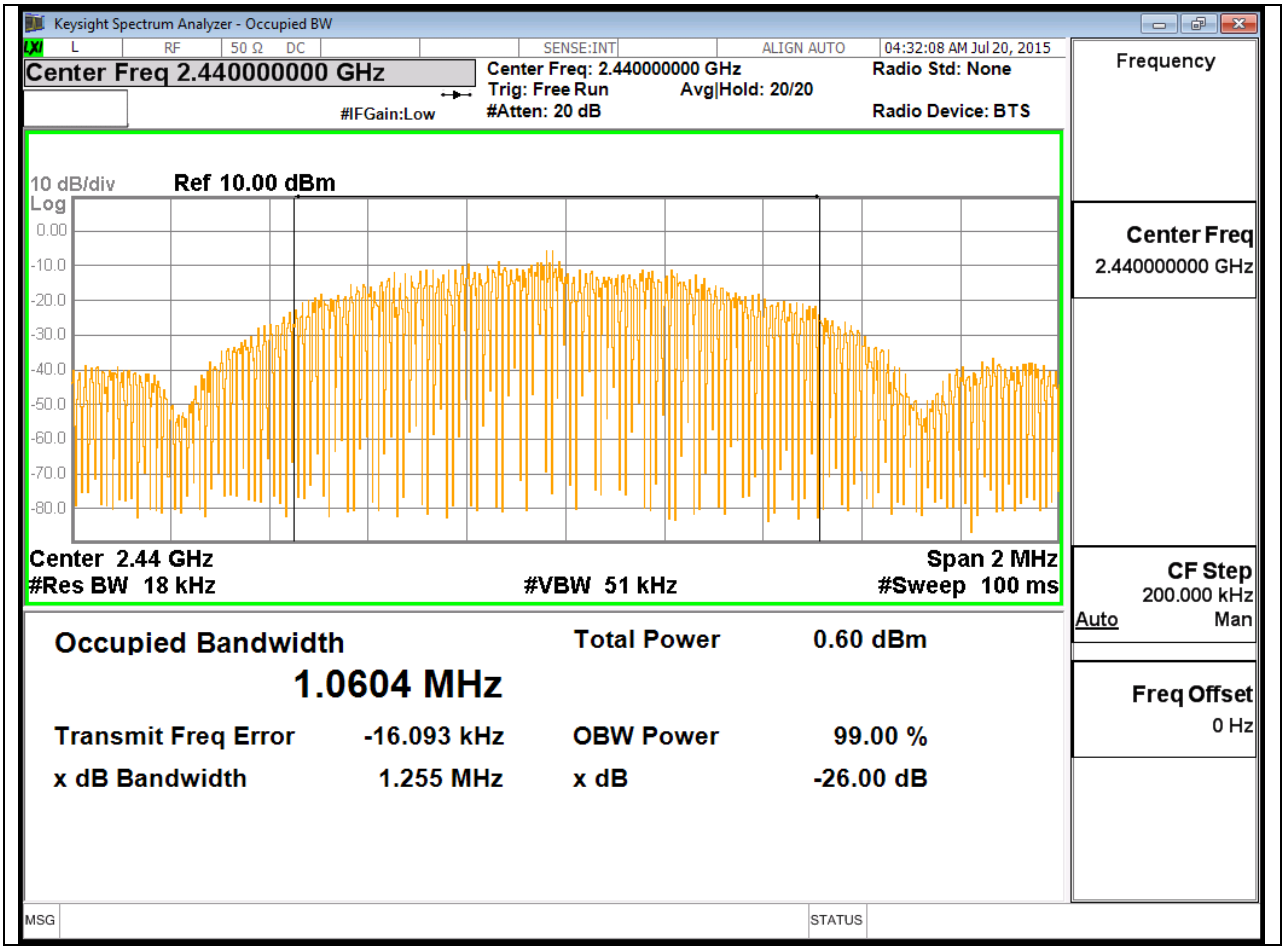
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0603
Middle	2440	1.0604
High	2480	1.0563

99% BANDWIDTH PLOTS

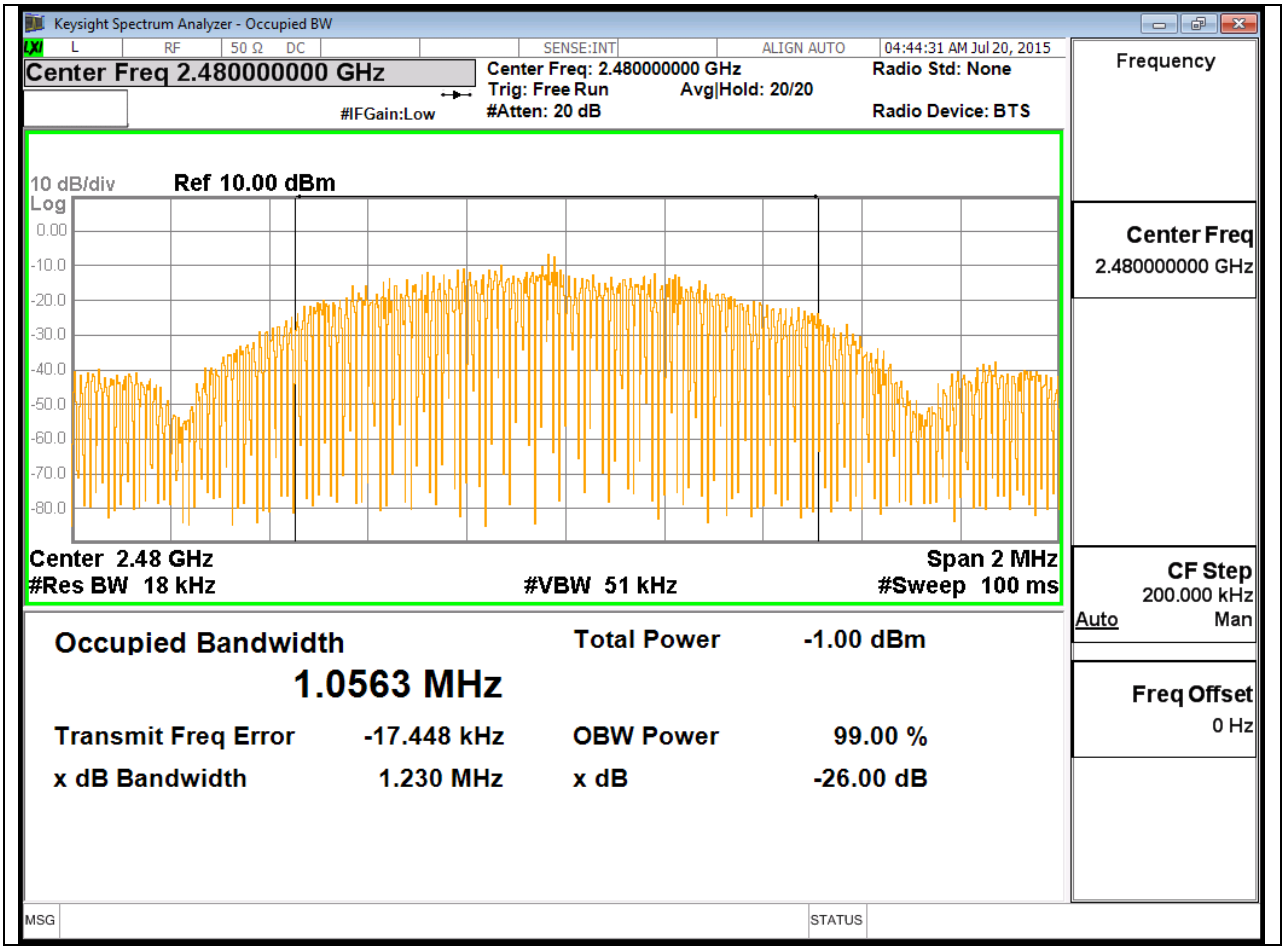
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



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

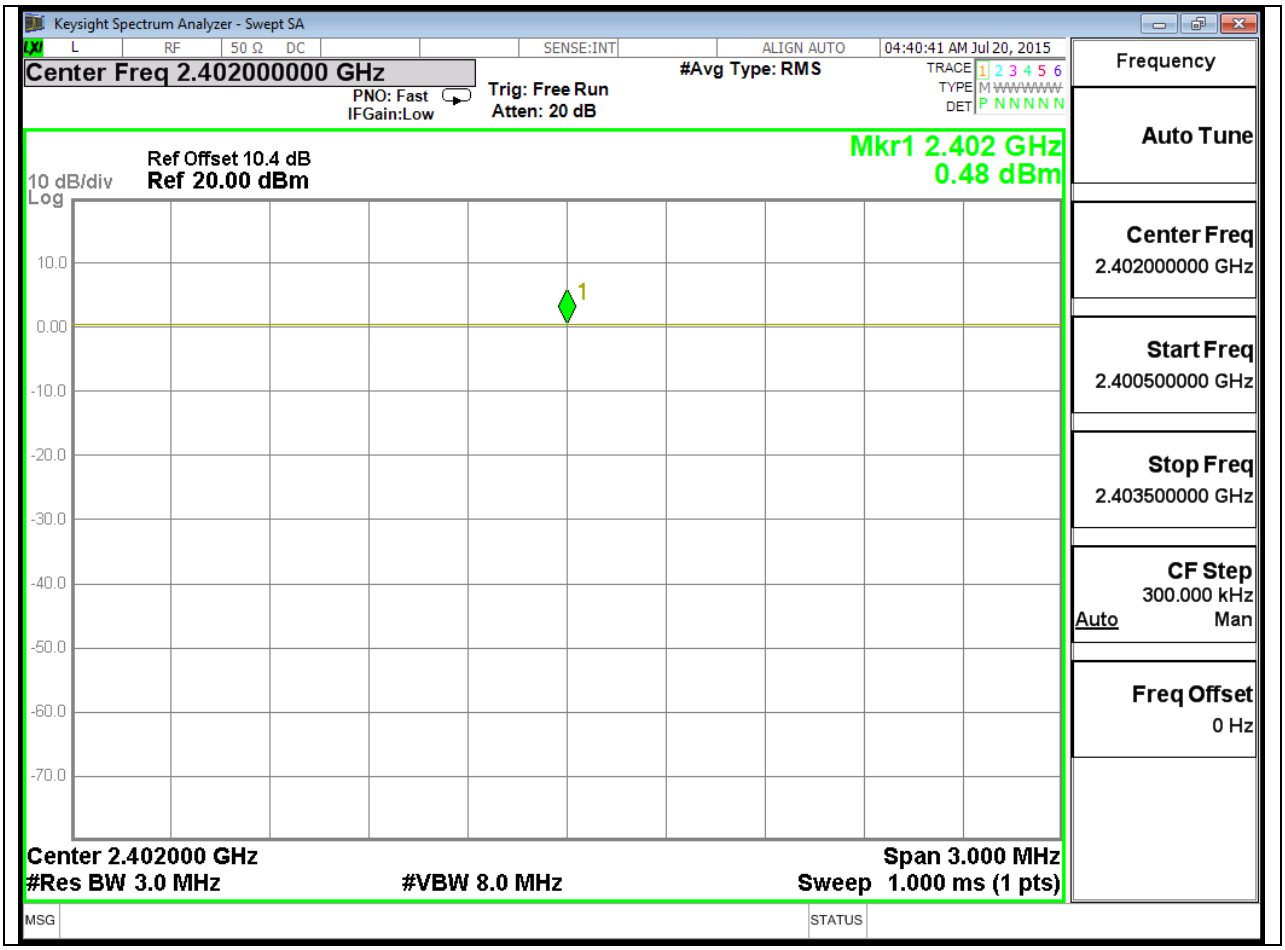
Peak power is measured using KDB558074 D01 DTS Meas Guidance v03r03 utilizing spectrum analyzer.

RESULTS

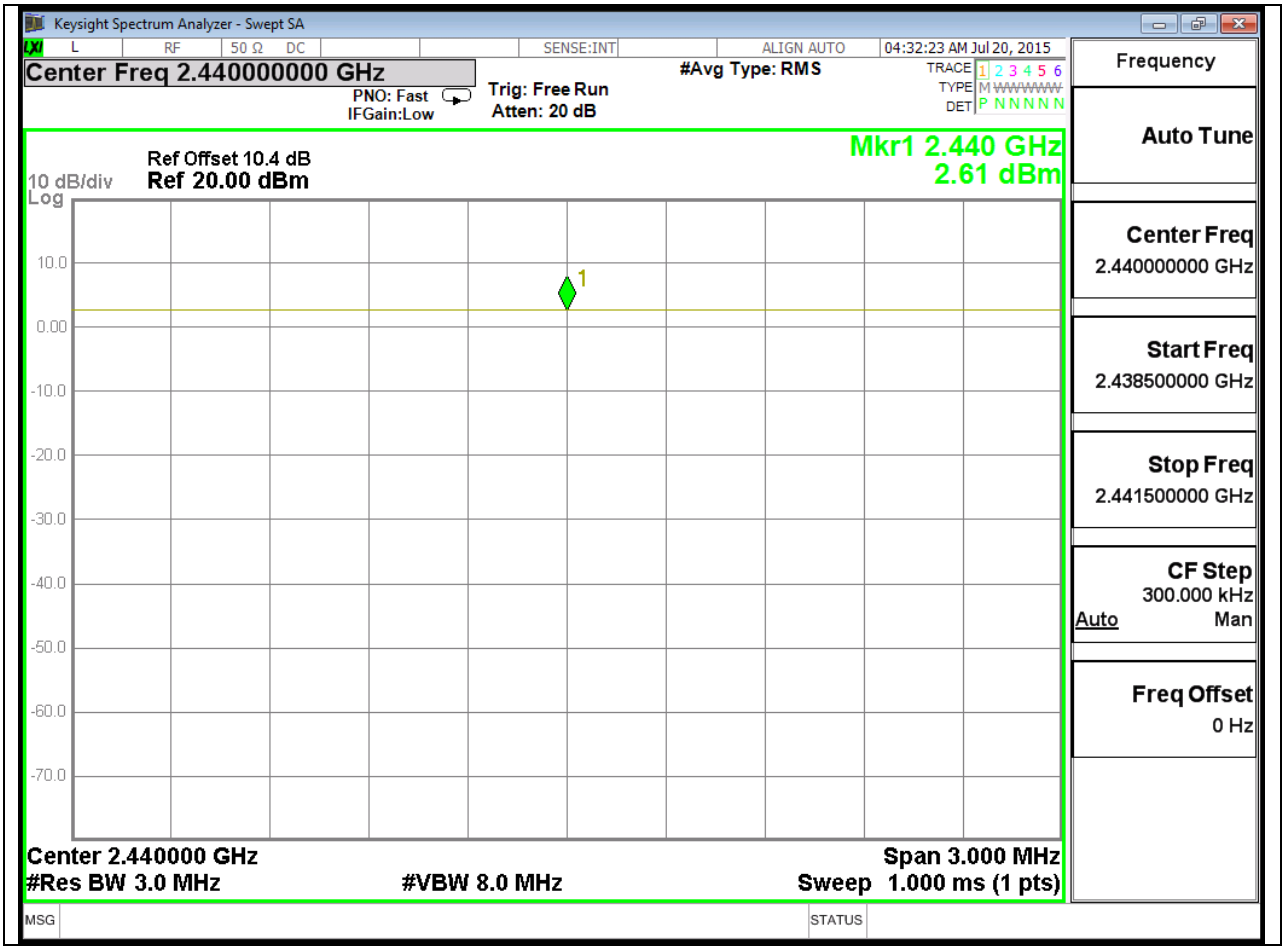
Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	0.48	30	-29.520
Middle	2440	2.61	30	-27.390
High	2480	1.01	30	-28.990

OUTPUT POWER PLOTS

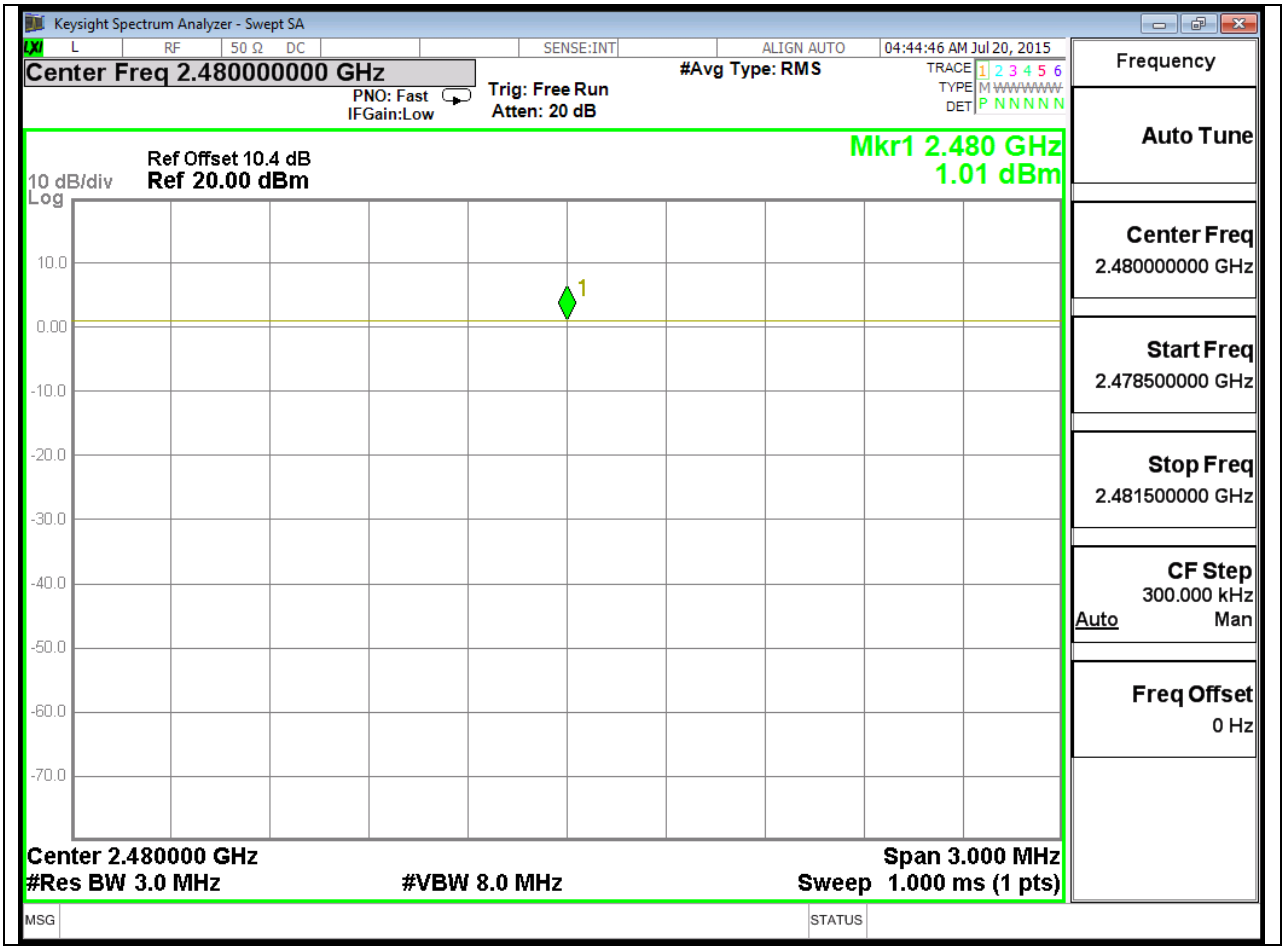
LOW CHANNEL



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	-1.47
Middle	2440	1.2
High	2480	-0.1

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

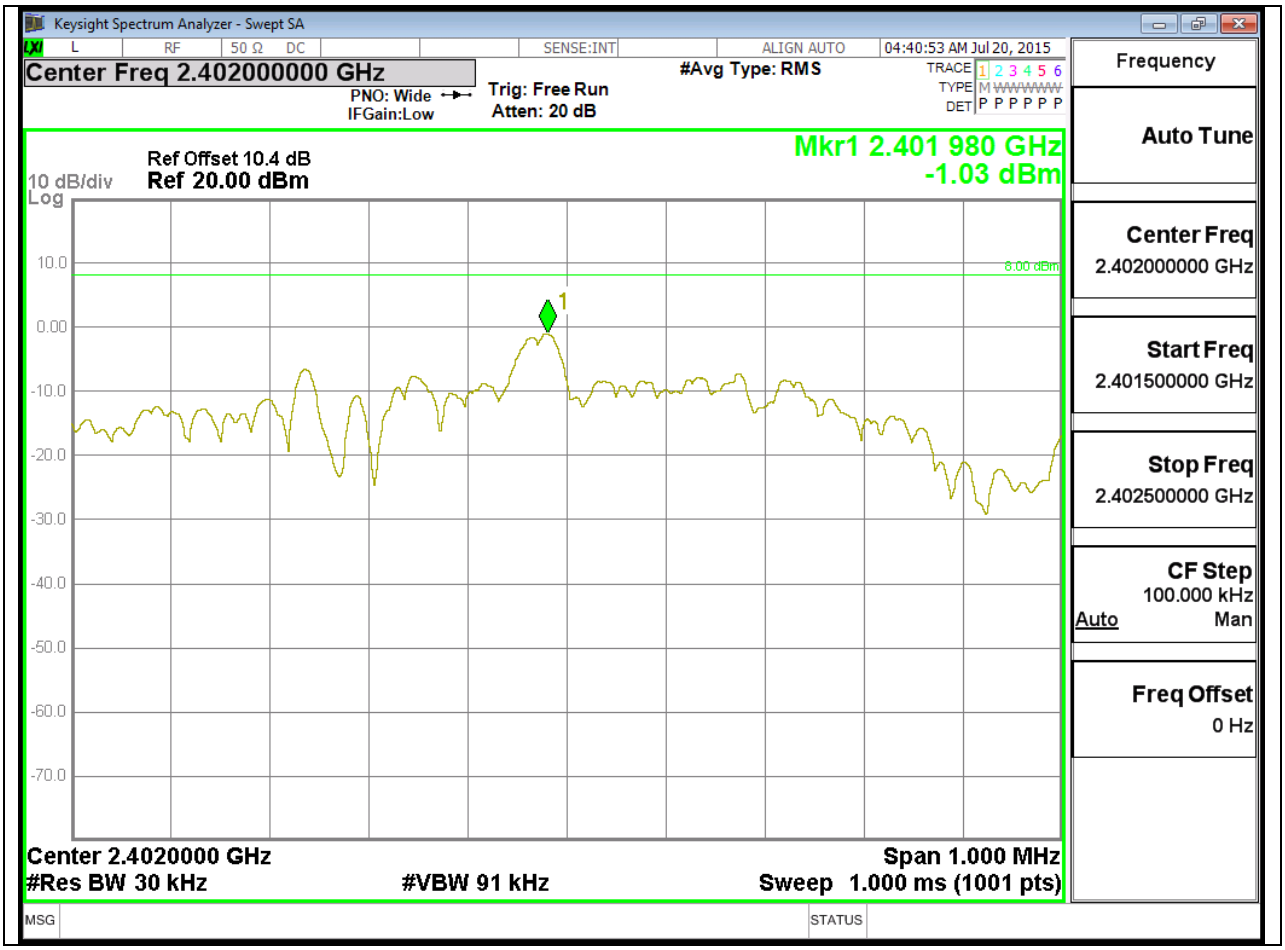
Power Spectral Density was performed utilizing the "Method PKPSD (Peak PSD)" under KDB558074 D01 DTS Meas Guidance v03r02.

RESULTS

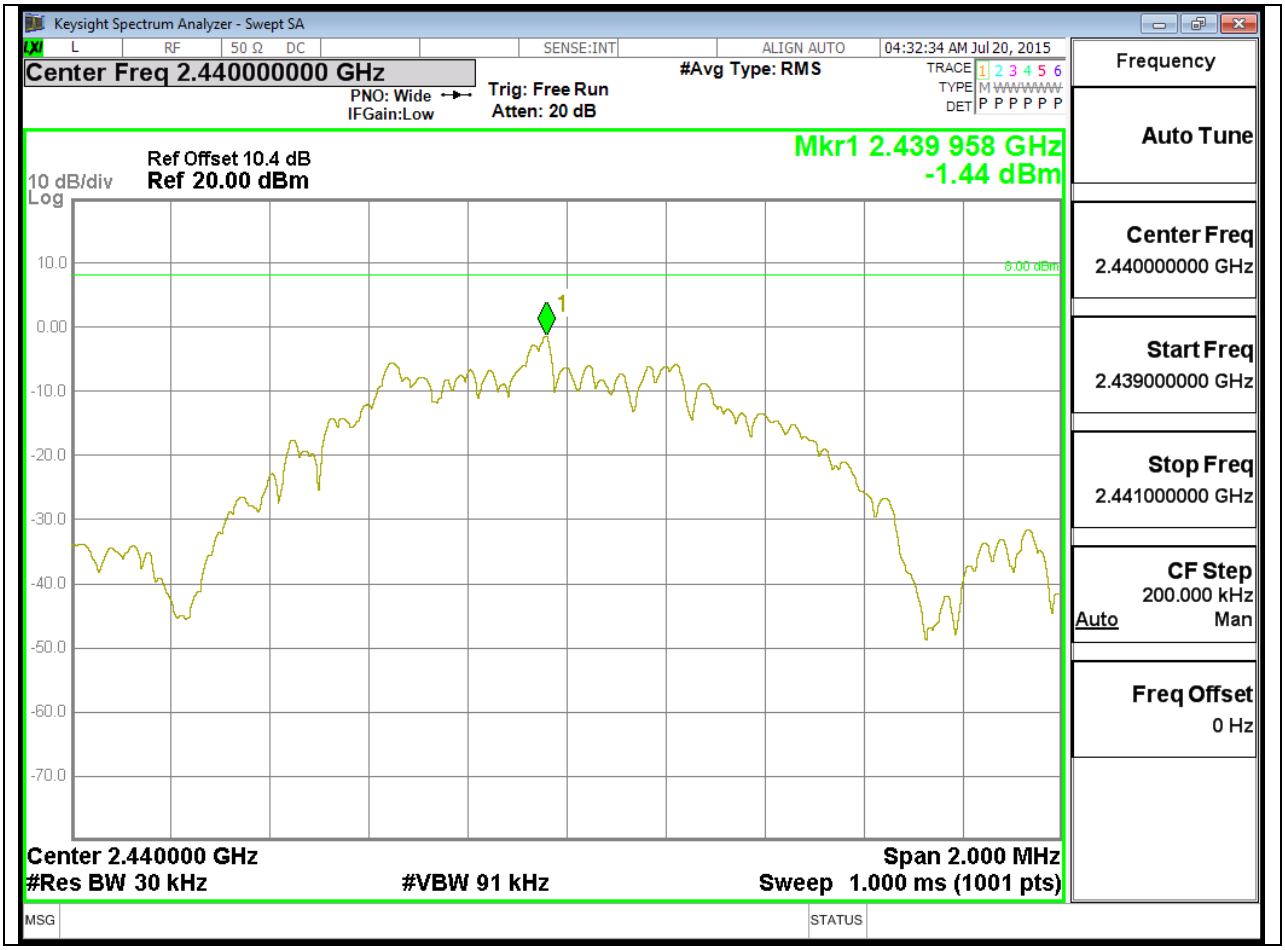
Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-1.03	8	-9.03
Middle	2440	-1.44	8	-9.44
High	2480	-4.47	8	-12.47

POWER SPECTRAL DENSITY PLOTS

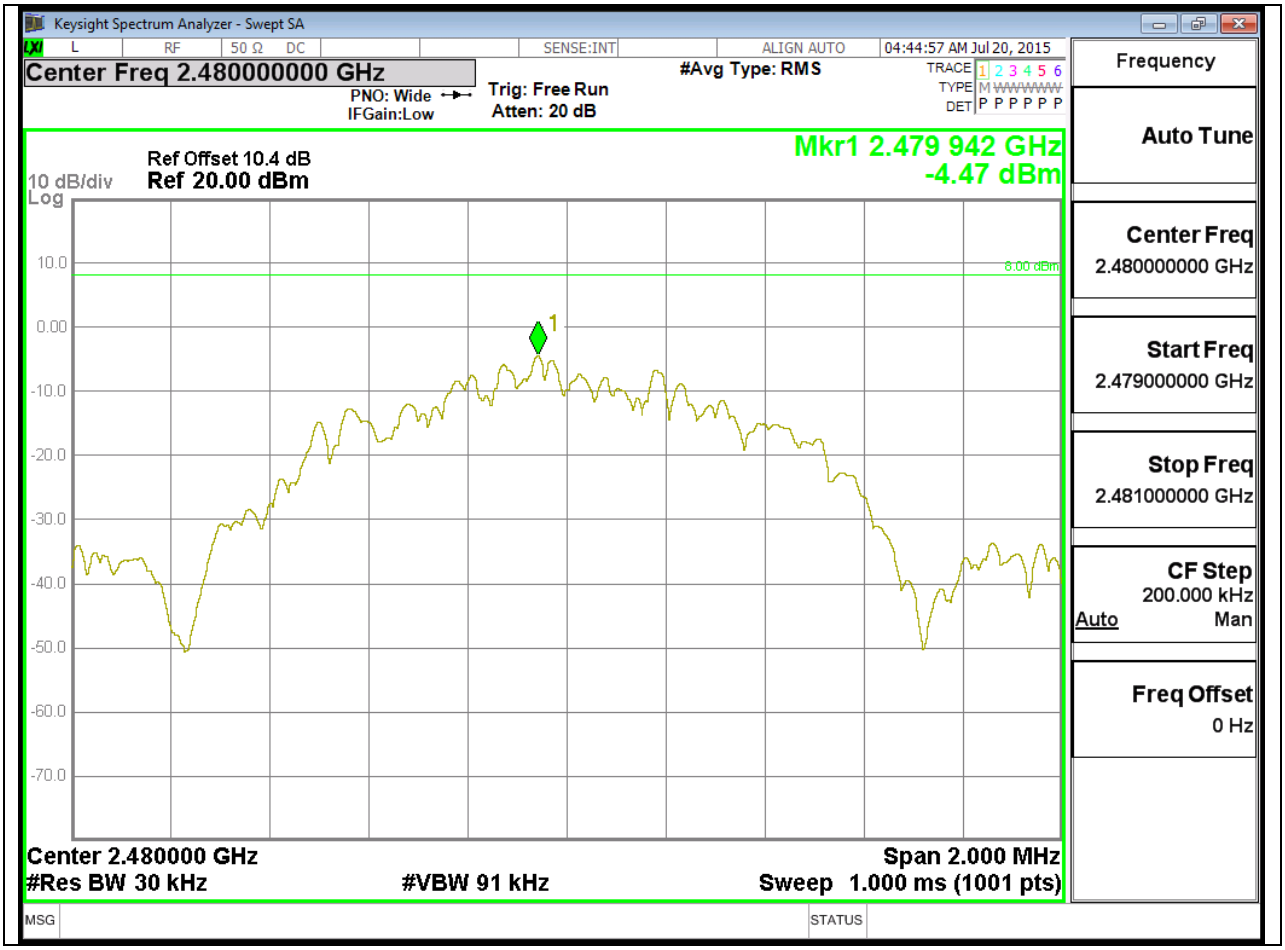
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



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

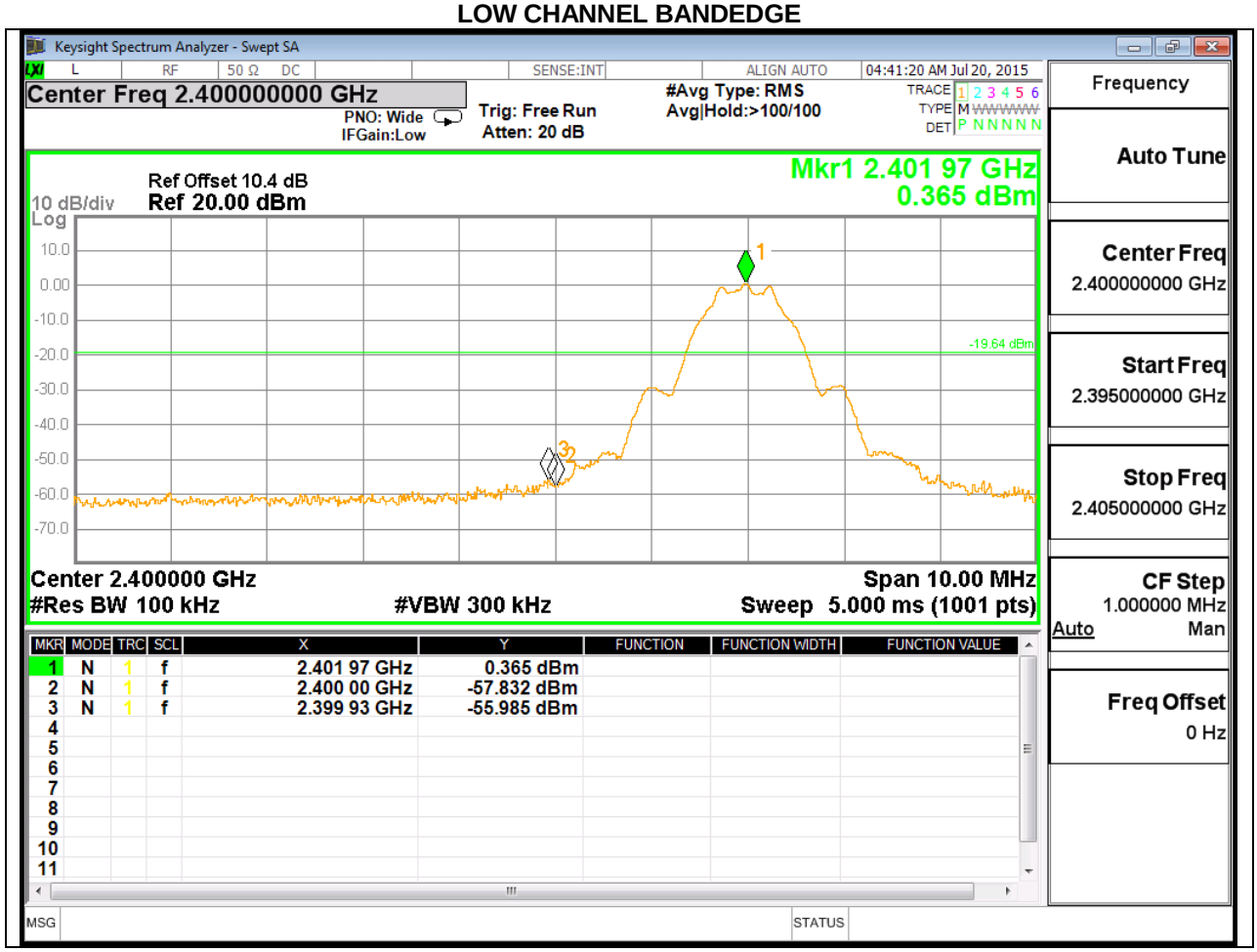
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

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

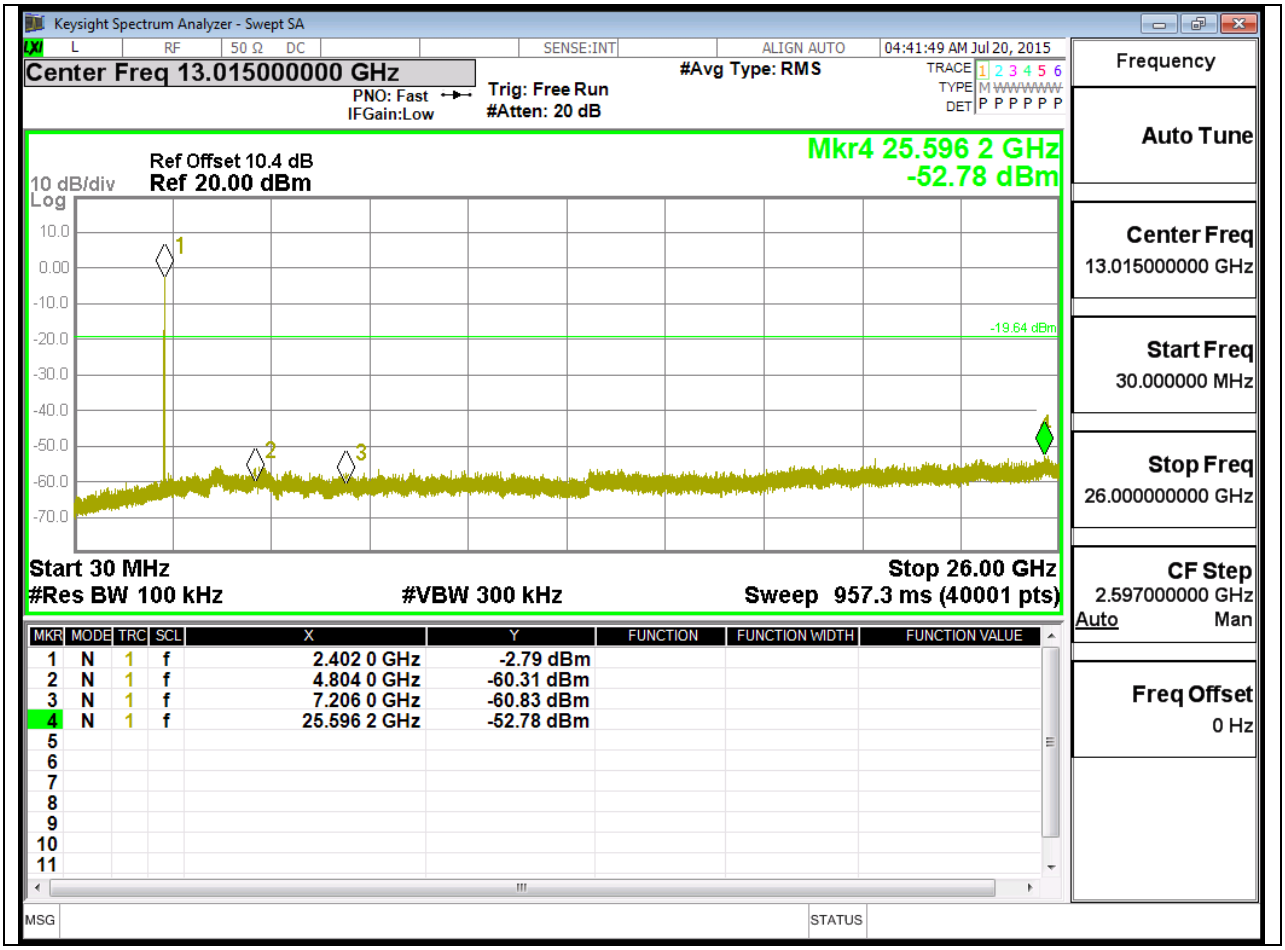
RESULTS

SPURIOUS EMISSIONS, LOW CHANNEL

LOW CHANNEL BANDEDGE

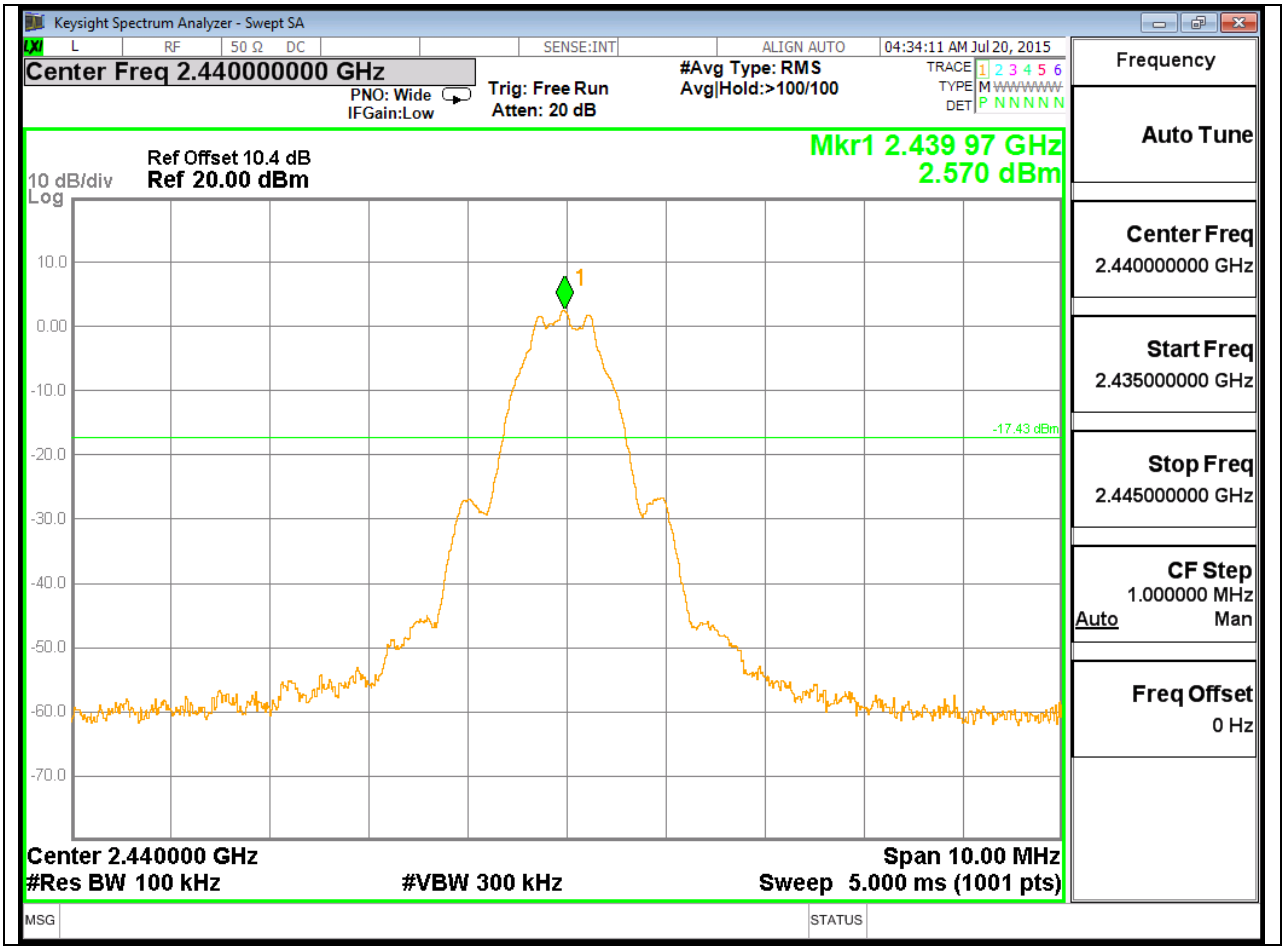


LOW CHANNEL SPURIOUS

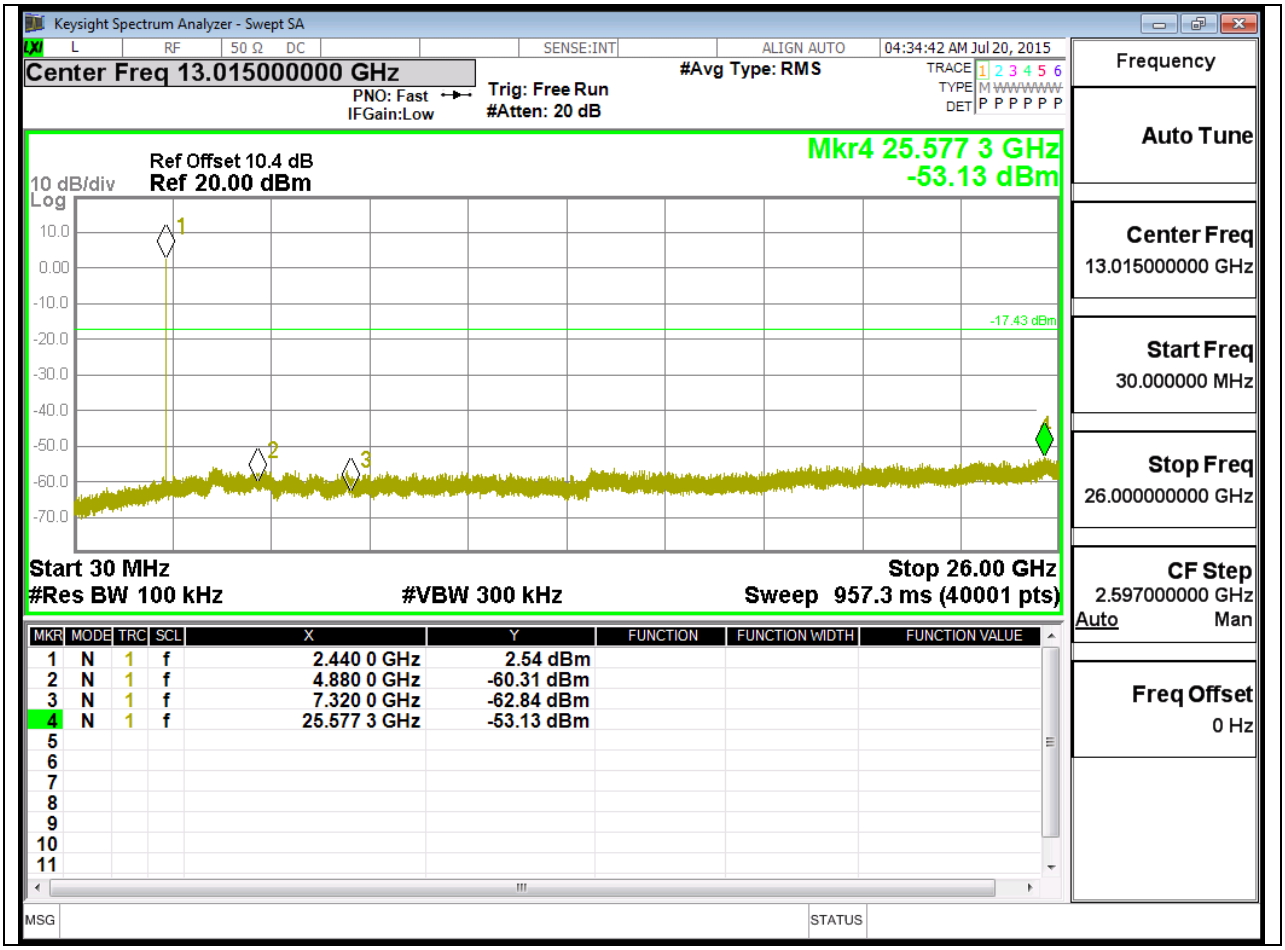


SPURIOUS EMISSIONS, MID CHANNEL

MID CHANNEL REFERENCE

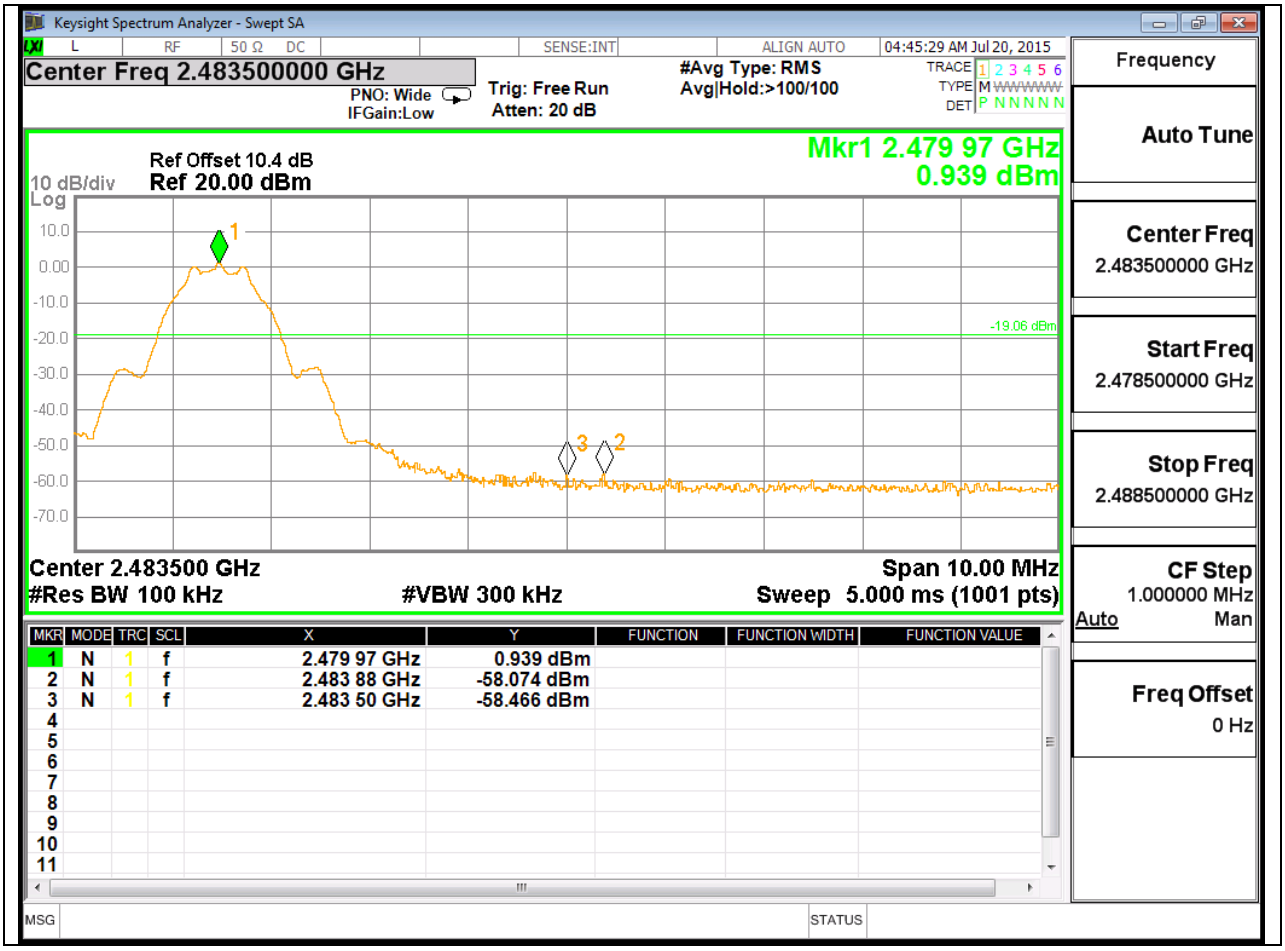


MID CHANNEL SPURIOUS

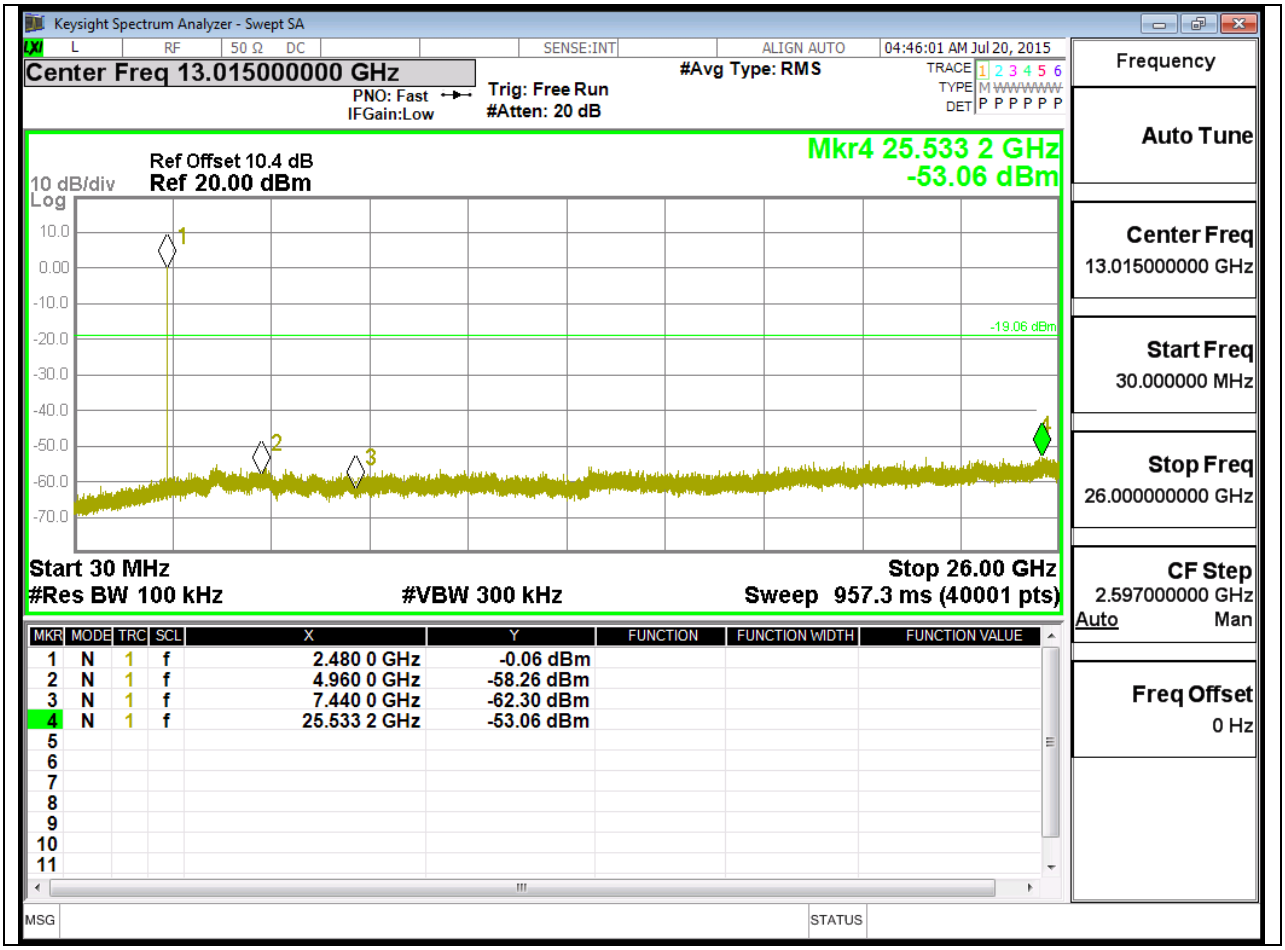


SPURIOUS EMISSIONS, HIGH CHANNEL

HIGH CHANNEL BANDEDGE



HIGH CHANNEL SPURIOUS



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.

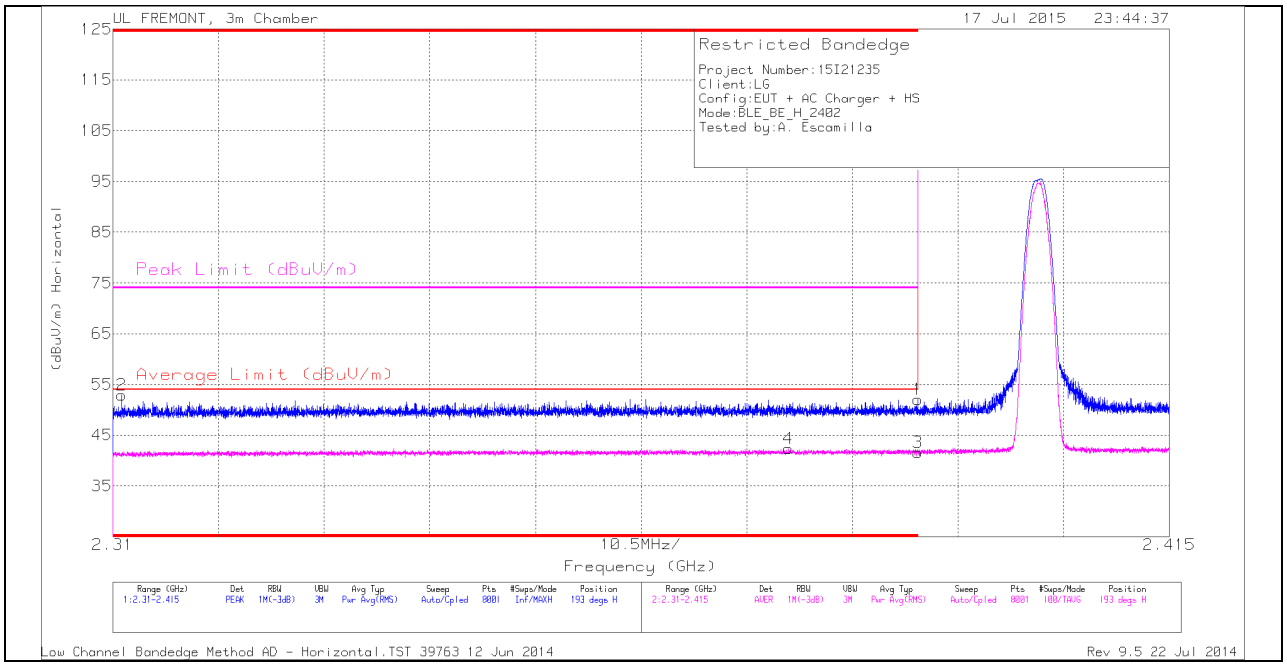
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

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.

9.2. TRANSMITTER ABOVE 1 GHz

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

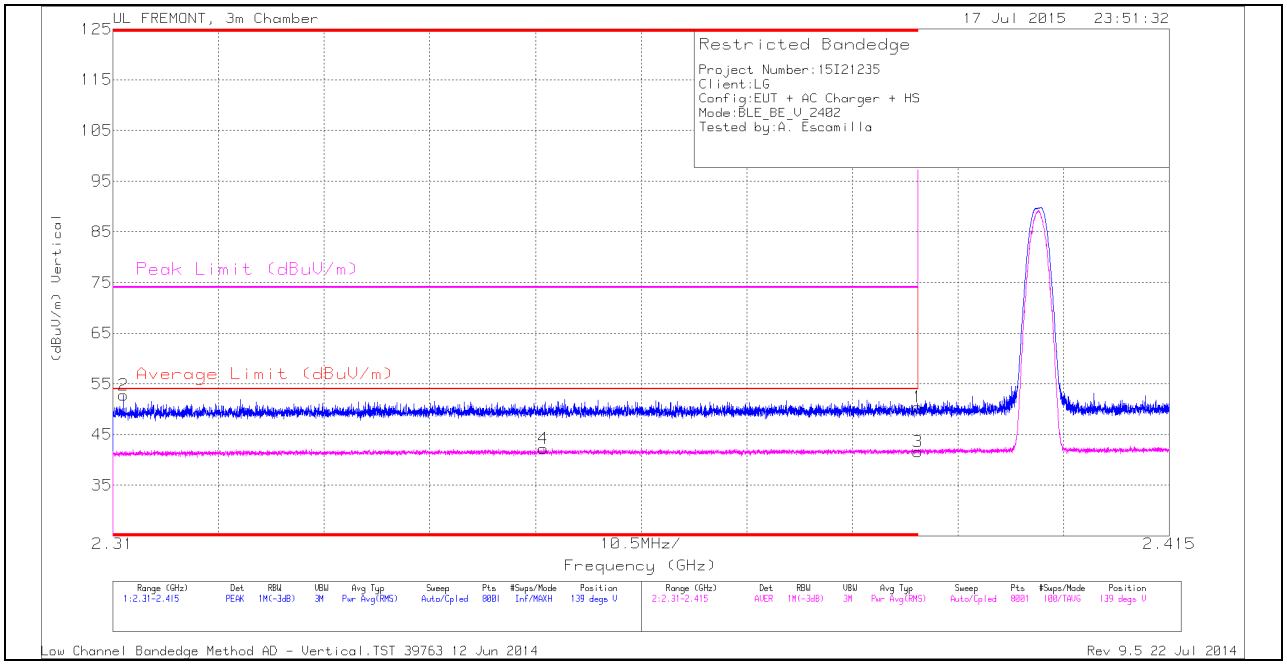
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.311	43.64	PK	31.7	-22.4	0	52.94	-	-	74	-21.06	193	254	H
4	* 2.377	30.97	RMS	31.9	-22.4	1.87	42.34	54	-11.66	-	-	193	254	H
1	* 2.39	42.38	PK	32	-22.4	0	51.98	-	-	74	-22.02	193	254	H
3	* 2.39	30.15	RMS	32	-22.4	1.87	41.62	54	-12.38	-	-	193	254	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
2	* 2.311	43.52	PK	31.7	-22.4	0	52.82	-	-	74	-21.18	139	302	V
4	* 2.353	31	RMS	31.8	-22.4	1.87	42.27	54	-11.73	-	-	139	302	V
1	* 2.39	40.77	PK	32	-22.4	0	50.37	-	-	74	-23.63	139	302	V
3	* 2.39	30.09	RMS	32	-22.4	1.87	41.56	54	-12.44	-	-	139	302	V

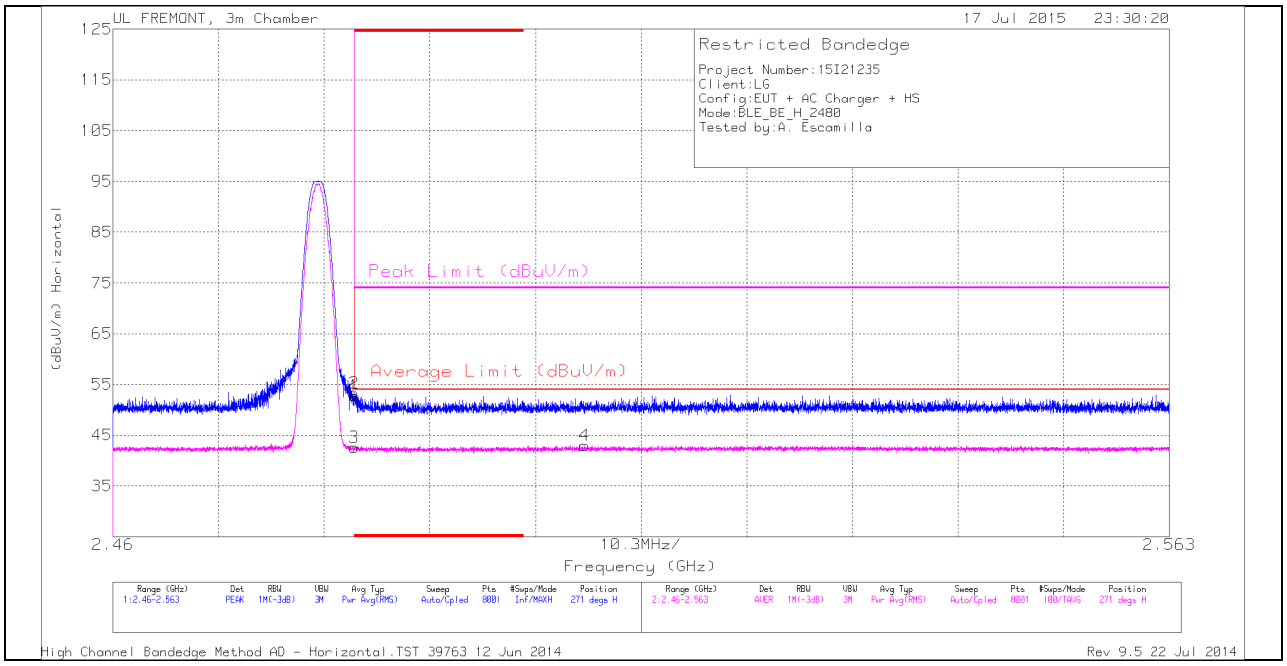
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

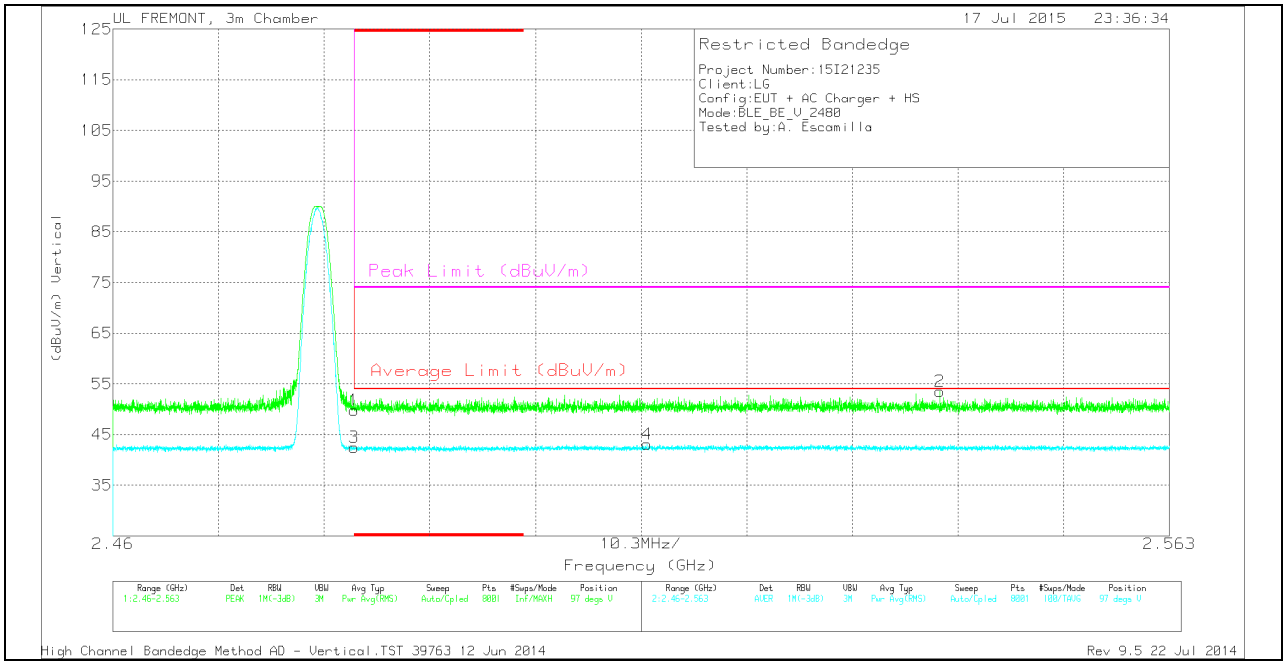
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	42.62	PK	32.3	-22.1	0	52.82	-	-	74	-21.18	271	272	H
2	* 2.484	43.1	PK	32.3	-22.1	0	53.3	-	-	74	-20.7	271	272	H
3	* 2.484	30.49	RMS	32.3	-22.1	1.87	42.56	54	-11.44	-	-	271	272	H
4	2.506	30.9	RMS	32.3	-22.1	1.87	42.97	54	-11.03	-	-	271	272	H

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

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	39.58	PK	32.3	-22.1	0	49.78	-	-	74	-24.22	97	253	V
3	* 2.484	30.45	RMS	32.3	-22.1	1.87	42.52	54	-11.48	-	-	97	253	V
4	2.512	30.89	RMS	32.3	-22	1.87	43.06	54	-10.94	-	-	97	253	V
2	2.541	43.04	PK	32.4	-21.9	0	53.54	-	-	74	-20.46	97	253	V

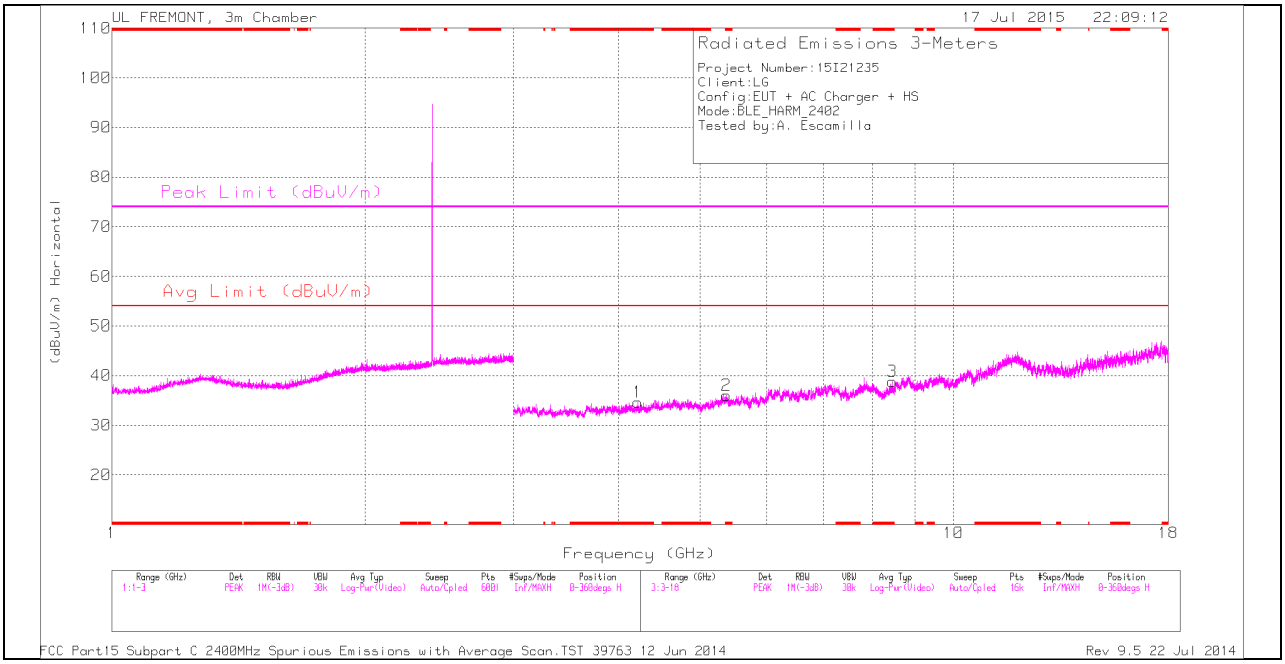
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

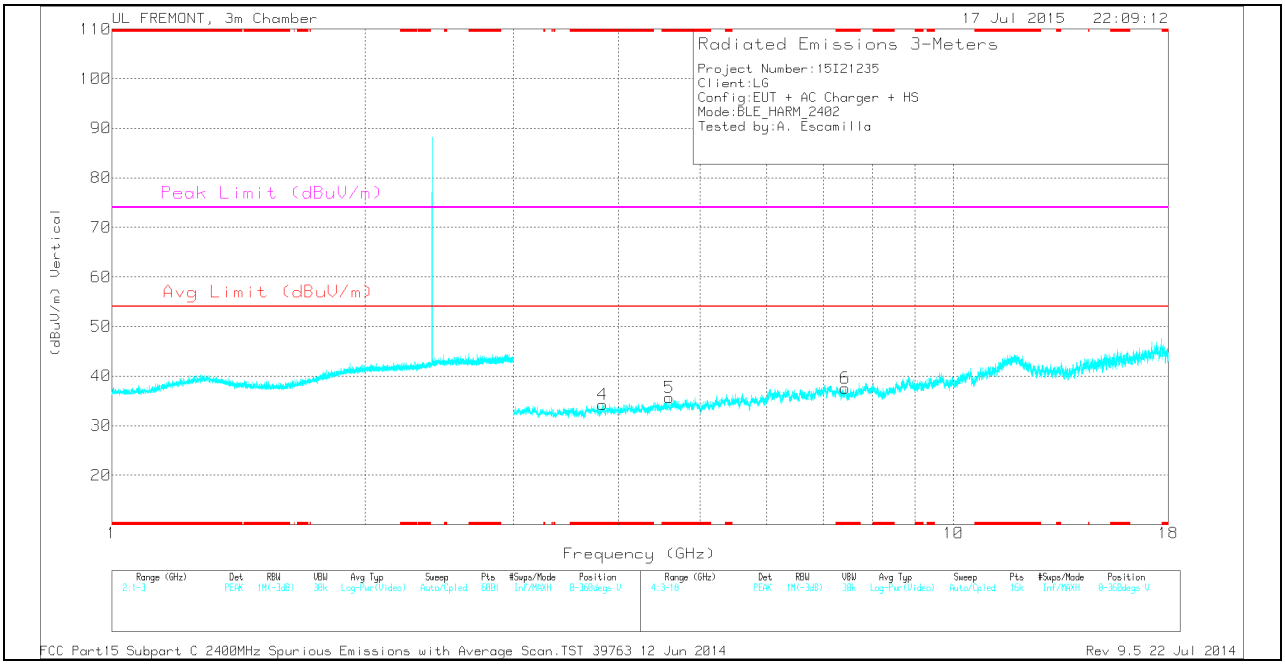
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



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

LOW CHANNEL VERTICAL



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

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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	* 4.218	31.21	PK	33.4	-30	0	34.61	-	-	74	-39.39	0-360	100	H
2	* 5.373	30.87	PK	34.6	-29.4	0	36.07	-	-	74	-37.93	0-360	100	H
3	* 8.459	29.48	PK	35.8	-26.4	0	38.88	-	-	74	-35.12	0-360	200	H
4	* 3.829	31.41	PK	33.1	-30.3	0	34.21	-	-	74	-39.79	0-360	100	V
5	* 4.594	31.77	PK	33.9	-30	0	35.67	-	-	74	-38.33	0-360	200	V
6	* 7.441	29.49	PK	35.7	-27.6	0	37.59	-	-	74	-36.41	0-360	100	V

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

PK - Peak detector

Radiated Emissions

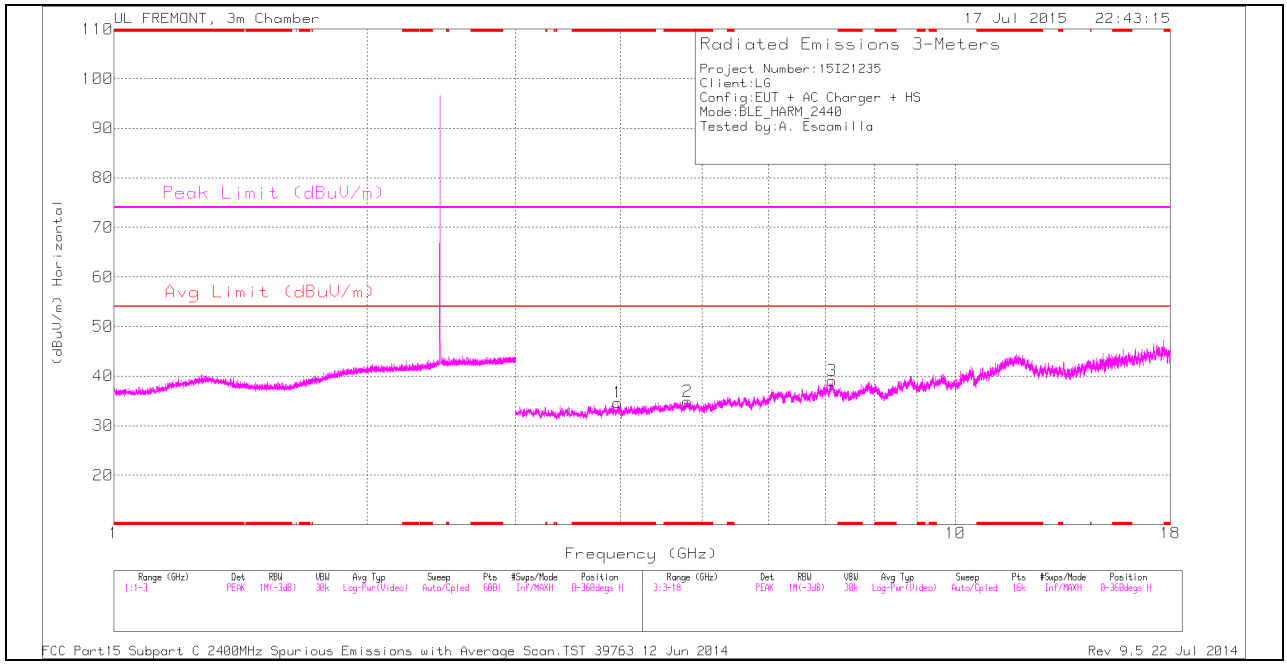
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.219	40.59	PK2	33.4	-30.1	0	43.89	-	-	74	-30.11	341	257	H
* 4.217	28.67	MAv1	33.4	-30	1.87	33.94	54	-20.06	-	-	341	257	H
* 5.374	40.62	PK2	34.6	-29.4	0	45.82	-	-	74	-28.18	301	156	H
* 5.375	28.8	MAv1	34.6	-29.4	1.87	35.87	54	-18.13	-	-	301	156	H
* 8.458	37.86	PK2	35.8	-26.4	0	47.26	-	-	74	-26.74	231	174	H
* 8.457	26.54	MAv1	35.8	-26.4	1.87	37.81	54	-16.19	-	-	231	174	H
* 3.828	40.47	PK2	33.1	-30.2	0	43.37	-	-	74	-30.63	178	212	V
* 3.83	29.08	MAv1	33.1	-30.3	1.87	33.75	54	-20.25	-	-	178	212	V
* 4.594	40.54	PK2	33.9	-30	0	44.44	-	-	74	-29.56	34	210	V
* 4.594	28.79	MAv1	33.9	-30	1.87	34.56	54	-19.44	-	-	34	210	V
* 7.439	39.86	PK2	35.7	-27.5	0	48.06	-	-	74	-25.94	20	186	V
* 7.439	27.55	MAv1	35.7	-27.5	1.87	37.62	54	-16.38	-	-	20	186	V

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

PK2 - KDB558074 Method: Maximum Peak

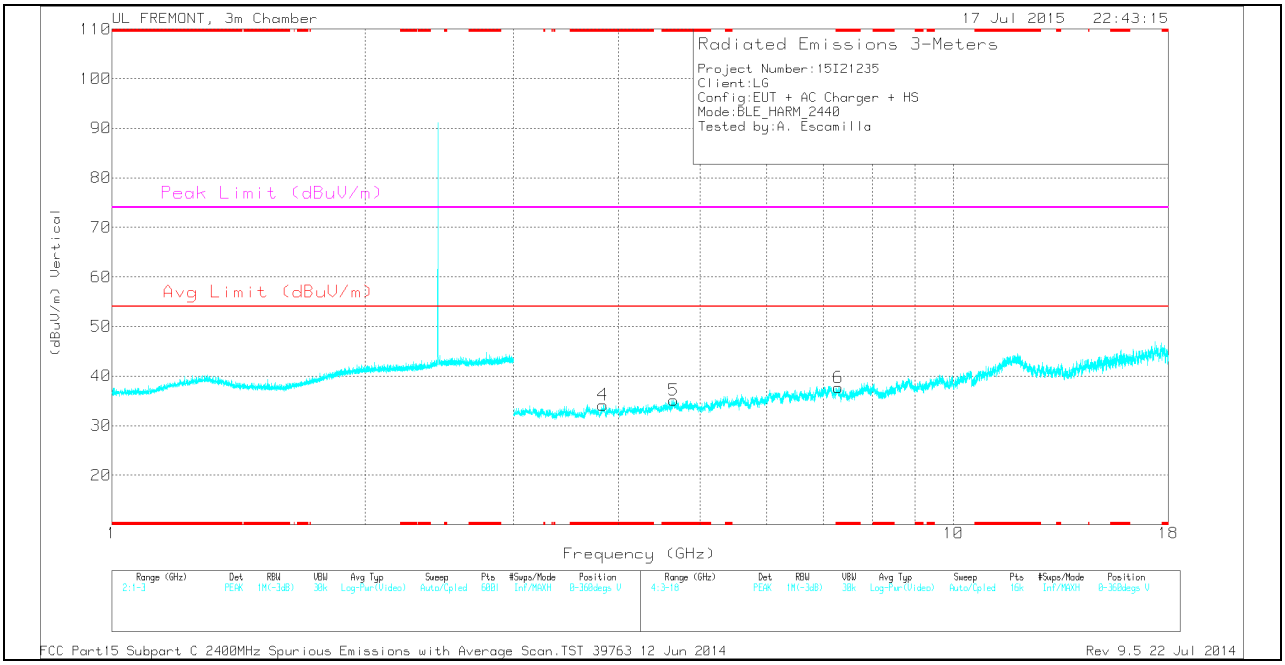
MAv1 - KDB558074 Option 1 Maximum RMS Average

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/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.973	31.98	PK	33.2	-30.6	0	34.58	-	-	74	-39.42	0-360	100	H
2	* 4.804	30.34	PK	34	-29.4	0	34.94	-	-	74	-39.06	0-360	100	H
4	* 3.832	31.39	PK	33.1	-30.3	0	34.19	-	-	74	-39.81	0-360	100	V
5	* 4.654	31.12	PK	34	-30	0	35.12	-	-	74	-38.88	0-360	100	V
6	* 7.302	29.91	PK	35.6	-27.8	0	37.71	-	-	74	-36.29	0-360	100	V
3	7.14	30.63	PK	35.6	-27.2	0	39.03	-	-	-	-	0-360	100	H

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

PK - Peak detector

Radiated Emissions

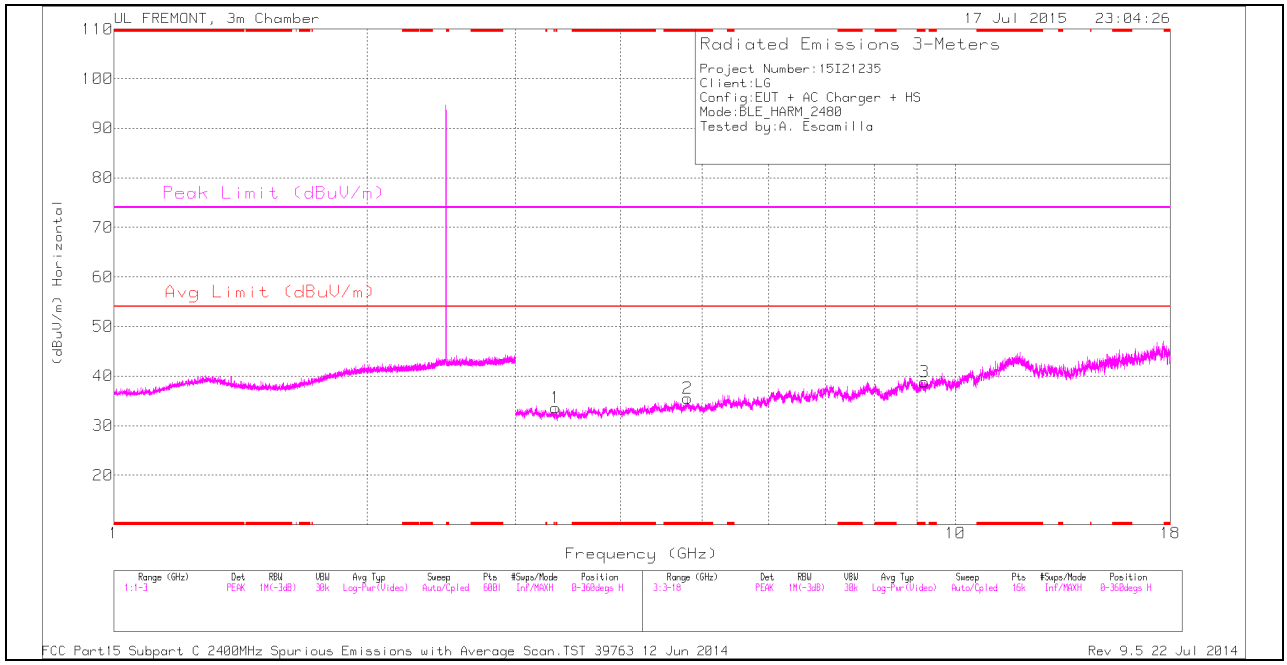
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.974	40.51	PK2	33.2	-30.6	0	43.11	-	-	74	-30.89	16	153	H
* 3.972	29.04	MAv1	33.2	-30.5	1.87	33.61	54	-20.39	-	-	16	153	H
* 4.803	39.99	PK2	34	-29.4	0	44.59	-	-	74	-29.41	43	203	H
* 4.803	28.64	MAv1	34	-29.4	1.87	35.11	54	-18.89	-	-	43	203	H
* 3.832	40.51	PK2	33.1	-30.4	0	43.21	-	-	74	-30.79	61	160	V
* 3.832	28.94	MAv1	33.1	-30.4	1.87	33.51	54	-20.49	-	-	61	160	V
* 4.653	40.43	PK2	34	-30	0	44.43	-	-	74	-29.57	92	168	V
* 4.655	28.99	MAv1	34	-30	1.87	34.86	54	-19.14	-	-	92	168	V
* 7.304	39.12	PK2	35.6	-27.7	0	47.02	-	-	74	-26.98	79	149	V
* 7.304	27.27	MAv1	35.6	-27.7	1.87	37.04	54	-16.96	-	-	79	149	V
7.141	38.49	PK2	35.6	-27.2	0	46.89	-	-	-	-	76	179	H
7.141	27.22	MAv1	35.6	-27.2	1.87	37.49	-	-	-	-	76	179	H

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

PK2 - KDB558074 Method: Maximum Peak

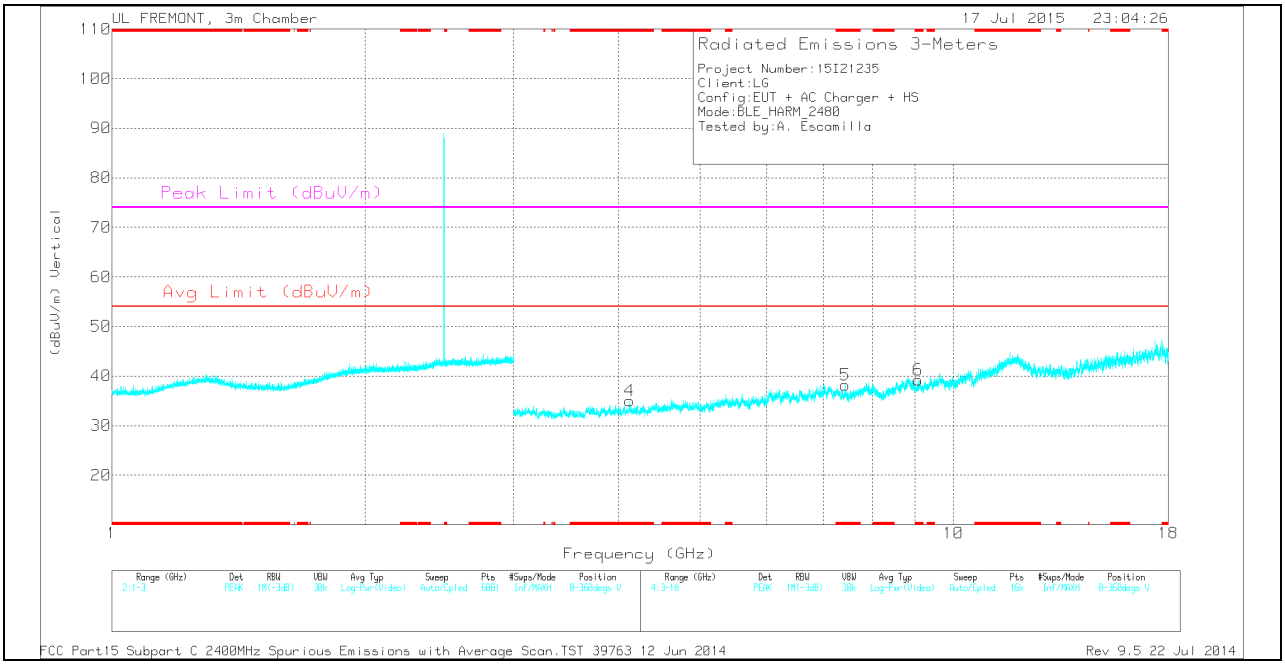
MAv1 - KDB558074 Option 1 Maximum RMS Average

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/Cbl/Fltr /Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.351	31.63	PK	32.6	-30.6	0	33.63	-	-	74	-40.37	0-360	200	H
2	* 4.802	30.97	PK	34	-29.4	0	35.57	-	-	74	-38.43	0-360	200	H
3	* 9.186	27.2	PK	36.2	-24.6	0	38.8	-	-	74	-35.2	0-360	200	H
4	* 4.121	32.11	PK	33.3	-30.4	0	35.01	-	-	74	-38.99	0-360	200	V
5	* 7.441	30.09	PK	35.7	-27.6	0	38.19	-	-	74	-35.81	0-360	100	V
6	* 9.083	28.44	PK	36.1	-25.3	0	39.24	-	-	74	-34.76	0-360	200	V

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

PK - Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (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
* 3.35	39.79	PK2	32.6	-30.6	0	41.79	-	-	74	-32.21	27	200	H
* 3.349	28.63	MAv1	32.6	-30.6	1.87	32.5	54	-21.5	-	-	27	200	H
* 4.801	40.05	PK2	34	-29.4	0	44.65	-	-	74	-29.35	52	222	H
* 4.802	28.48	MAv1	34	-29.4	1.87	34.95	54	-19.05	-	-	52	222	H
* 9.186	36.57	PK2	36.2	-24.6	0	48.17	-	-	74	-25.83	40	203	H
* 9.184	25.58	MAv1	36.2	-24.6	1.87	39.05	54	-14.95	-	-	40	203	H
* 4.121	40.86	PK2	33.3	-30.4	0	43.76	-	-	74	-30.24	94	196	V
* 4.119	29.29	MAv1	33.3	-30.5	1.87	33.96	54	-20.04	-	-	94	196	V
* 7.442	38.75	PK2	35.7	-27.6	0	46.85	-	-	74	-27.15	125	177	V
* 7.441	27.43	MAv1	35.7	-27.6	1.87	37.4	54	-16.6	-	-	125	177	V
* 9.082	36.93	PK2	36.1	-25.3	0	47.73	-	-	74	-26.27	153	182	V
* 9.083	25.69	MAv1	36.1	-25.3	1.87	38.36	54	-15.64	-	-	153	182	V

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

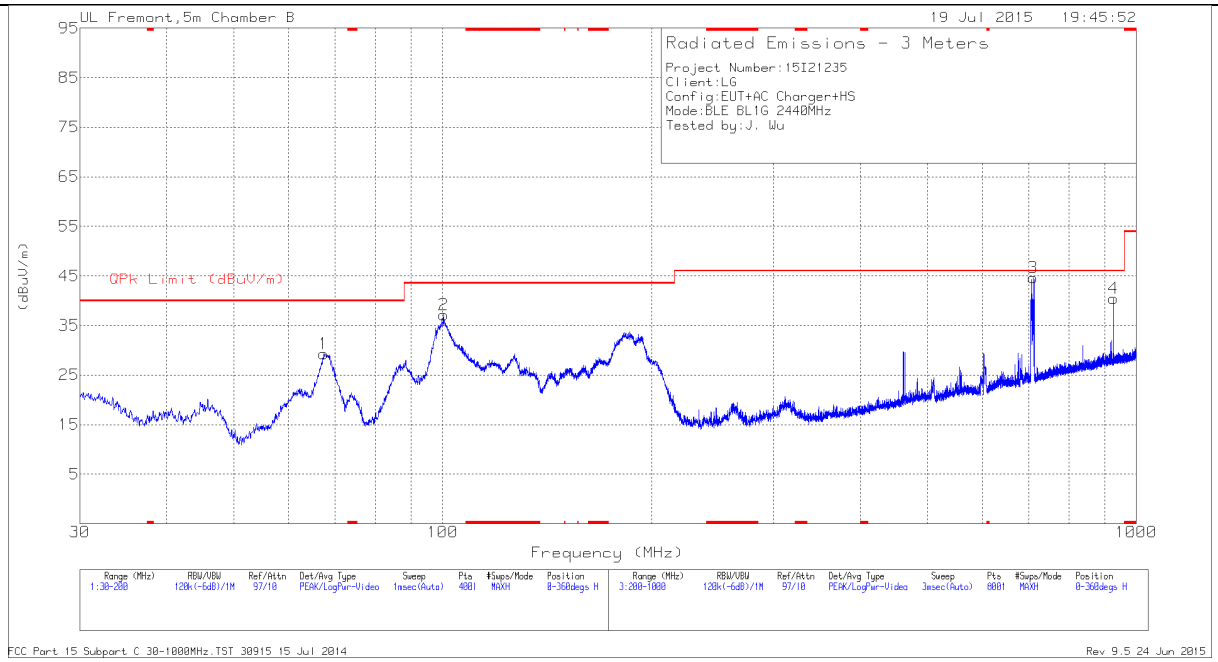
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

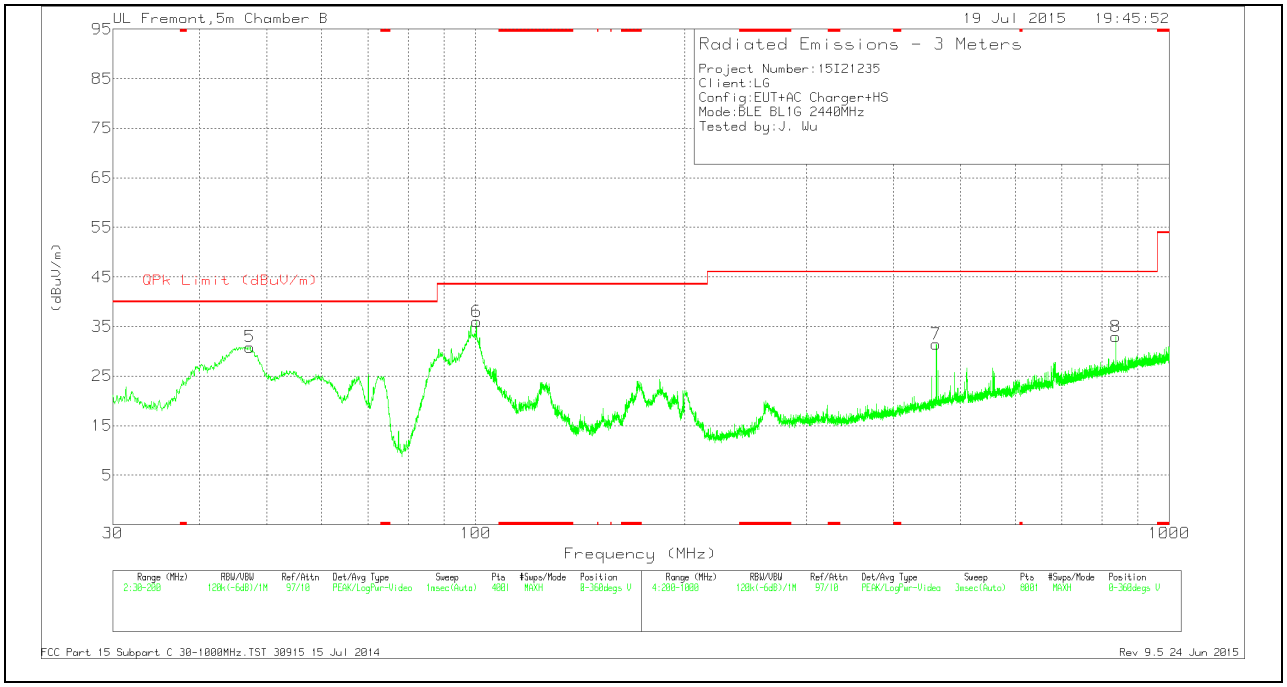
9.3. WORST-CASE BELOW 1 GHz

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
5	47.2975	50.07	Pk	9.3	-28.5	30.87	40	-9.13	0-360	101	V
1	67.4425	49.6	Pk	8	-28.3	29.3	40	-10.7	0-360	299	H
6	100.295	53.66	Pk	10.3	-28	35.96	43.52	-7.56	0-360	101	V
2	100.3375	54.9	Pk	10.3	-28	37.2	43.52	-6.32	0-360	199	H
7	461.5	39.99	Pk	17.1	-25.7	31.39	46.02	-14.63	0-360	101	V
3	710.4	48.51	Pk	20.4	-24.3	44.61	46.02	-1.41	0-360	199	H
8	836.7	34.24	Pk	21.9	-23.2	32.94	46.02	-13.08	0-360	101	V
4	926.6	40.3	Pk	22.6	-22.5	40.4	46.02	-5.62	0-360	399	H

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
711.428	22.79	Qp	20.4	-24.3	18.89	46.02	-27.13	255	257	H
926.872	22.09	Qp	22.6	-22.5	22.19	46.02	-23.83	315	193	H

Qp - Quasi-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.

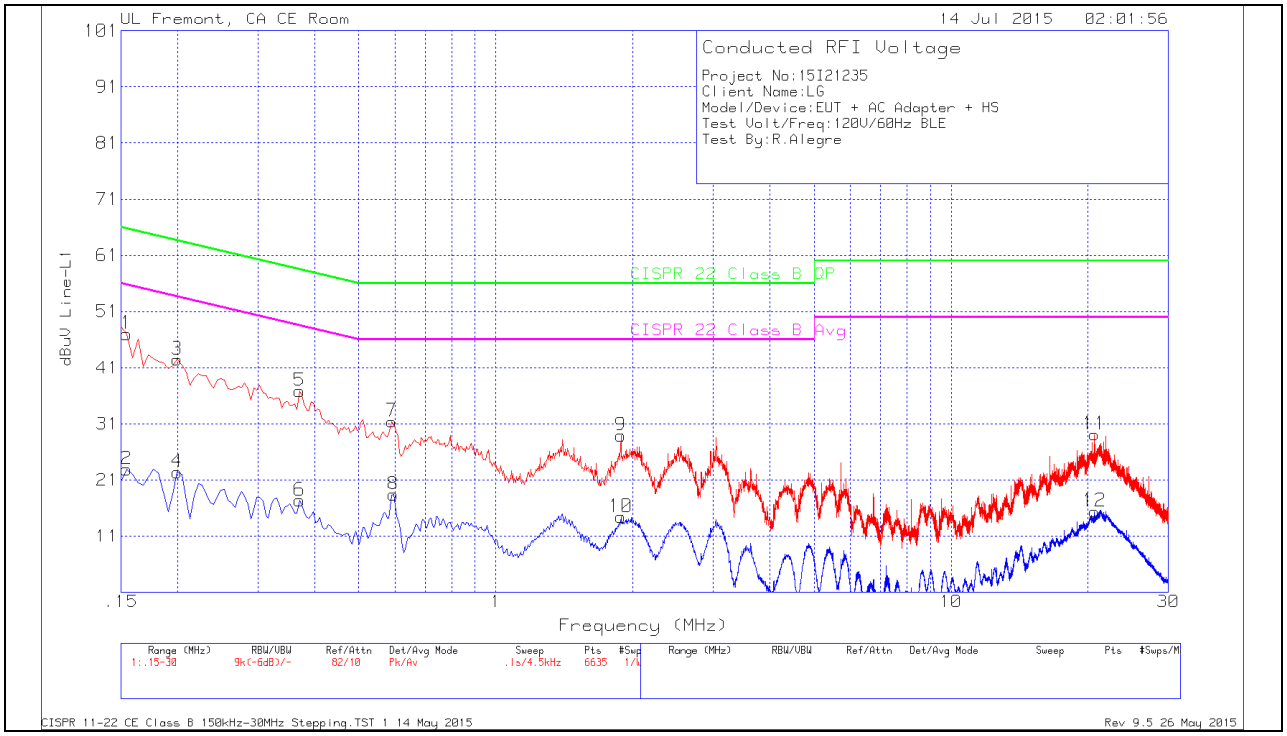
TEST PROCEDURE

ANSI C63.10

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



LINE 1 RESULTS

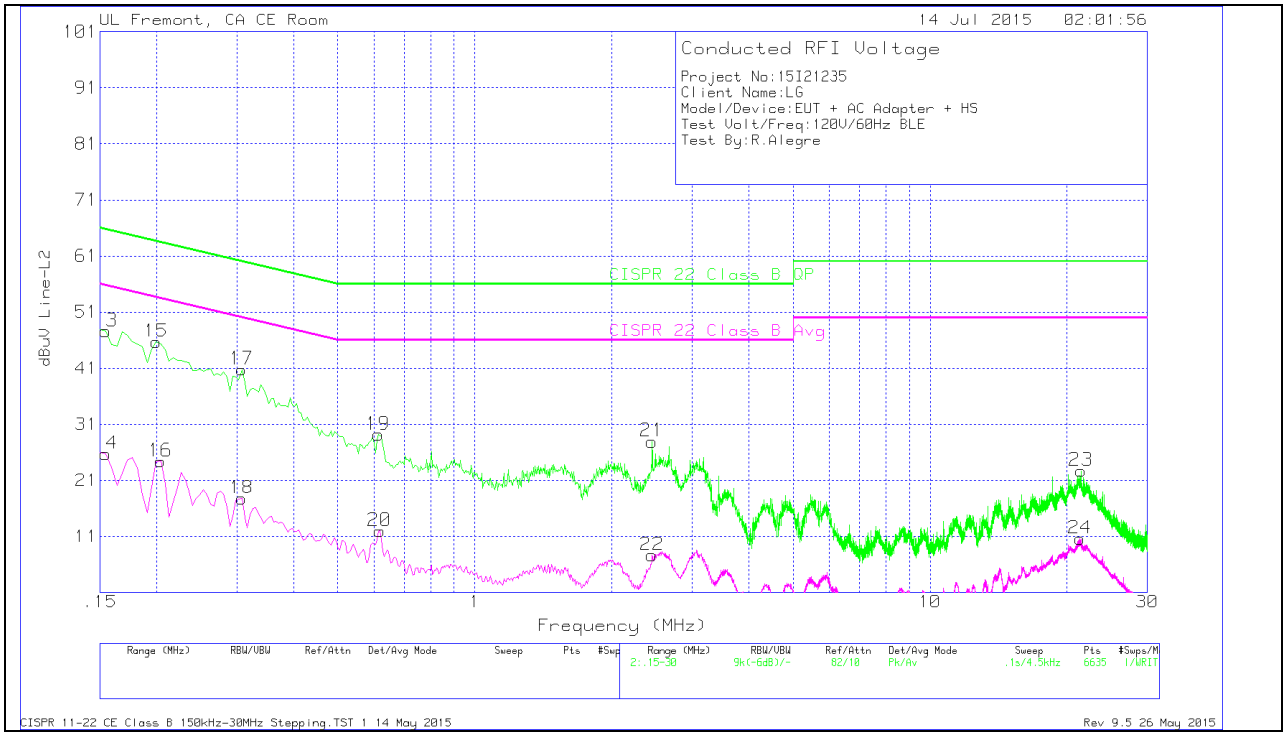
Range 1: Line-L1 .15 - 30MHz

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	.1545	45.72	Pk	1.3	0	47.02	65.75	-18.73		
2	.1545	21.62	Av	1.3	0	22.92	-	-	55.75	-32.83
3	.1995	41.55	Pk	.9	0	42.45	63.63	-21.18		
4	.1995	21.51	Av	.9	0	22.41	-	-	53.63	-31.22
5	.3705	36.45	Pk	.4	0	36.85	58.49	-21.64		
6	.3705	16.96	Av	.4	0	17.36	-	-	48.49	-31.13
7	.591	31.13	Pk	.3	0	31.43	56	-24.57		
8	.5955	18.11	Av	.3	0	18.41	-	-	46	-27.59
9	1.8825	28.64	Pk	.2	.1	28.94	56	-27.06		
10	1.8825	14.11	Av	.2	.1	14.41	-	-	46	-31.59
11	20.6655	28.62	Pk	.3	.2	29.12	60	-30.88		
12	20.6655	14.91	Av	.3	.2	15.41	-	-	50	-34.59

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)
13	.1545	46.19	Pk	1.4	0	47.59	65.75	-18.16		
14	.1545	24.32	Av	1.4	0	25.72	-	-	55.75	-30.03
15	.1995	44.7	Pk	1	0	45.7	63.63	-17.93		
16	.204	23.39	Av	1	0	24.39	-	-	53.45	-29.06
17	.3075	40.16	Pk	.6	0	40.76	60.04	-19.28		
18	.3075	17.18	Av	.6	0	17.78	-	-	50.04	-32.26
19	.6135	28.84	Pk	.3	0	29.14	56	-26.86		
20	.618	11.67	Av	.3	0	11.97	-	-	46	-34.03
21	2.4495	27.64	Pk	.2	.1	27.94	56	-28.06		
22	2.4495	7.34	Av	.2	.1	7.64	-	-	46	-38.36
23	21.462	22.22	Pk	.3	.2	22.72	60	-37.28		
24	21.3495	10.13	Av	.3	.2	10.63	-	-	50	-39.37