



FCC CFR47 PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

**CELL PHONE WITH GSM/CDMA/WCDMA/LTE+BT LE+802.11ABGN (HT20) + NFC
WITH WIRELESS BACK COVER**

**MODEL NUMBER: LG-VS930 and VS930
FCC ID: ZNFVS930**

REPORT NUMBER: 12U14331-9

ISSUE DATE: MAY 08, 2012

Prepared for
**LG ELECTRONICS INC.
60-39 GASAN-DONG, GEUMCHEON-GU
SEOUL, KOREA 153-801, SOUTH KOREA**

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NVLAP LAB CODE 200065-0

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
	05/08/2012	Original	T. LEE

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS INC.
60-39 GASAN-DONG, GEUMCHEON-GU
SEOUL, KOREA 153-801, SOUTH KOREA

EUT DESCRIPTION: CELL PHONE WITH GSM/CDMA/WCDMA/LTE+BT
LE+802.11ABGN (HT20) WITH WIRELESS BACK COVER

MODEL: LG-VS930 and VS930

SERIAL NUMBER: 990000760004152

DATE TESTED: MARCH 25-APRIL 20, 2012

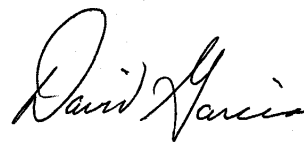
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass

Compliance Certification Services (UL CCS) 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 CCS 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 CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL CCS By:

Tested By:



TIM LEE
STAFF ENGINEER
UL CCS

DAVID GARCIA
EMC ENGINEER
UL CCS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2, and FCC CFR 47 Part 15

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

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:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

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 1000 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 Cell Phone with GSM/CDMA/WCDMA/LTE+BT LE+802.11abgn (HT20) + NFC with Wireless Back Cover

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	8.43	6.97

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA (Planar Inverted F Antenna) with a maximum peak gain of -2.44dBi.

5.4. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was VS930_0311

The test utility software used during testing was FCC Test - LG.

The firmware used during testing was 3.0.8.00001_g114383

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1 GHz and power line conducted emissions were performed with the EUT set to the channel with highest output power.

For the fundamental investigation, since the EUT is a portable device that has three orientations; X, Y and Z orientations have been investigated, also with AC/DC adapter, and earphone, and the worst case was found to be at Y orientation with AC adapter and earphone.

Worst-case data rates used based on an input from the client were as follows:

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

STANDARD AND INDUCTIVE COVER

PERIPHERAL SUPPORT EQUIPMENT LIST			
Description	Manufacturer	Model	Serial Number
AC ADAPTER	LG ELECTRONICS	MCS-01WT	TA1Z0000522
HEADSET	LG ELECTRONICS	NA	N/A

INDUCTIVE CHARGER WITH INDUCTIVE COVER

PERIPHERAL SUPPORT EQUIPMENT LIST			
Description	Manufacturer	Model	Serial Number
AC ADAPTER	LG ELECTRONICS	WCAD01WT	TA120012180
HEADSET	LG ELECTRONICS	NA	N/A
INDUCTIVE CHARGER PAD	LG ELECTRONICS	WCP-700	A1108WP000002

I/O CABLES

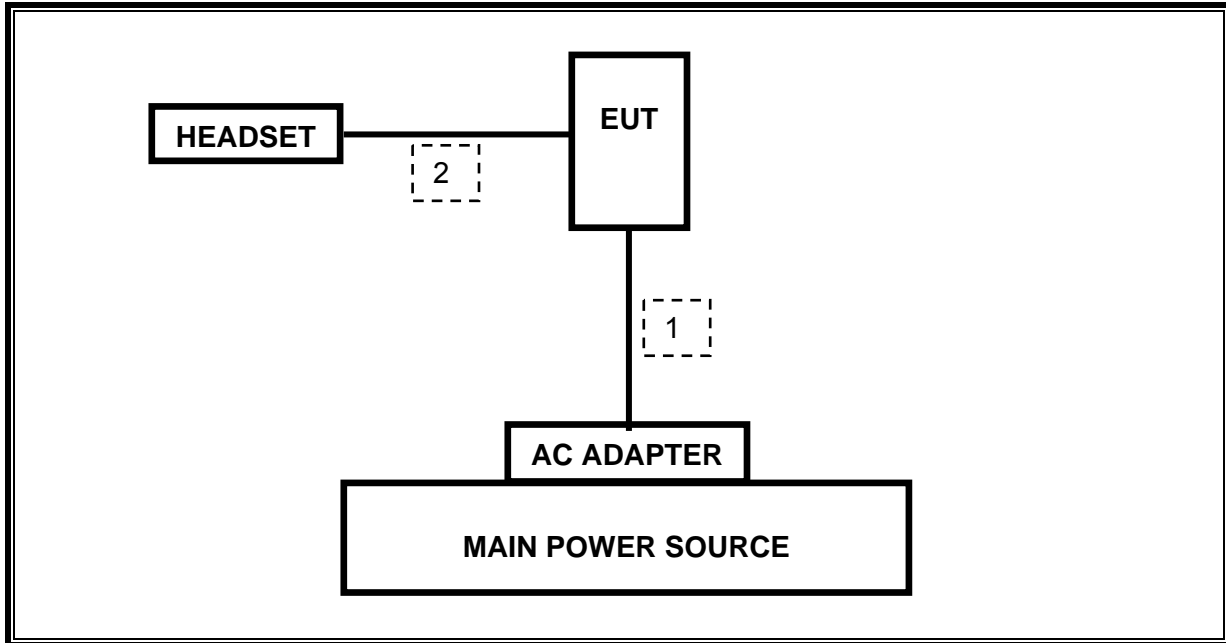
STANDARD OND INDUCTIVE COVER

Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	MINI USB	UN-SHELDED	1.0m	N/A
2	AUDIO	1	MINI JACK	UN-SHELDED	1.0m	Volume control on cable

TEST SETUP

SETUP DIAGRAM FOR TESTS

STANDARD AND INDUCTIVE COVER



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
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	07/12/12
Antenna, Horn, 18 GHz	EMCO	3115	C00872	06/29/12
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	07/16/12
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	11/11/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	07/12/12
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	07/06/12
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11/10/12
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRM50702	N02685	CNR
Peak Power Meter	Agilent / HP	E4416A	C00963	03/22/13
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/12
Bluetooth Test	R&S	CBT	NA	05/01/13
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00589	07/28/12

7. ANTENNA PORT TEST RESULTS

7.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

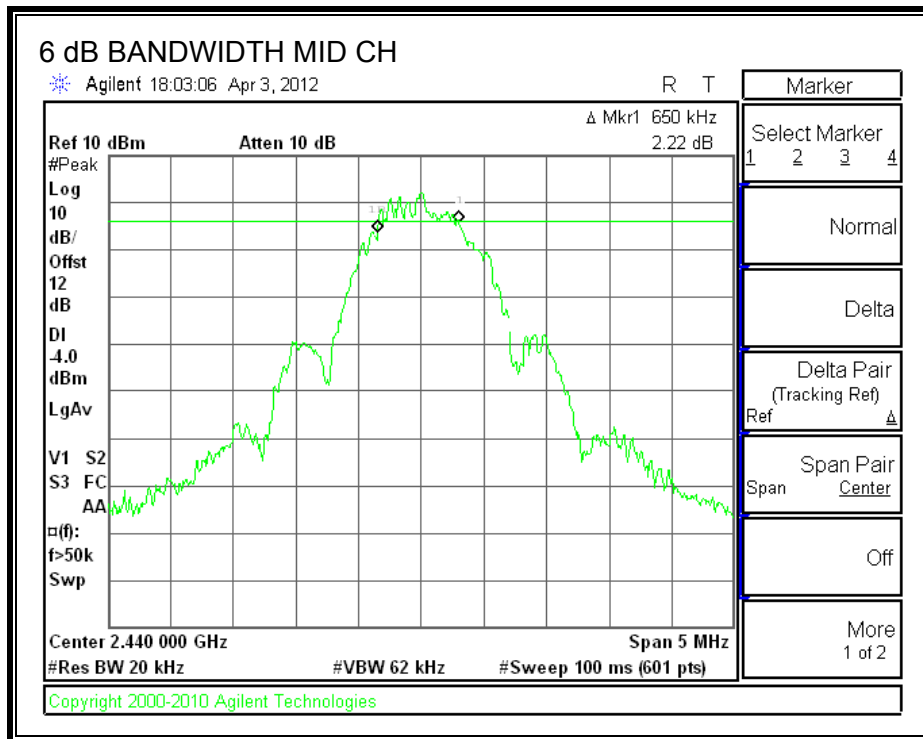
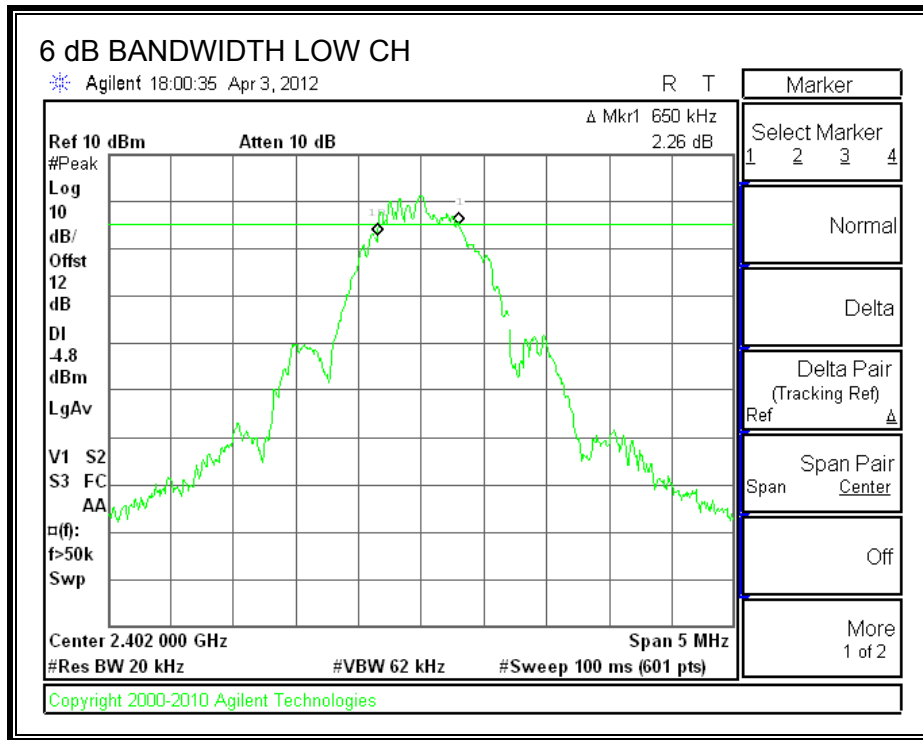
TEST PROCEDURE

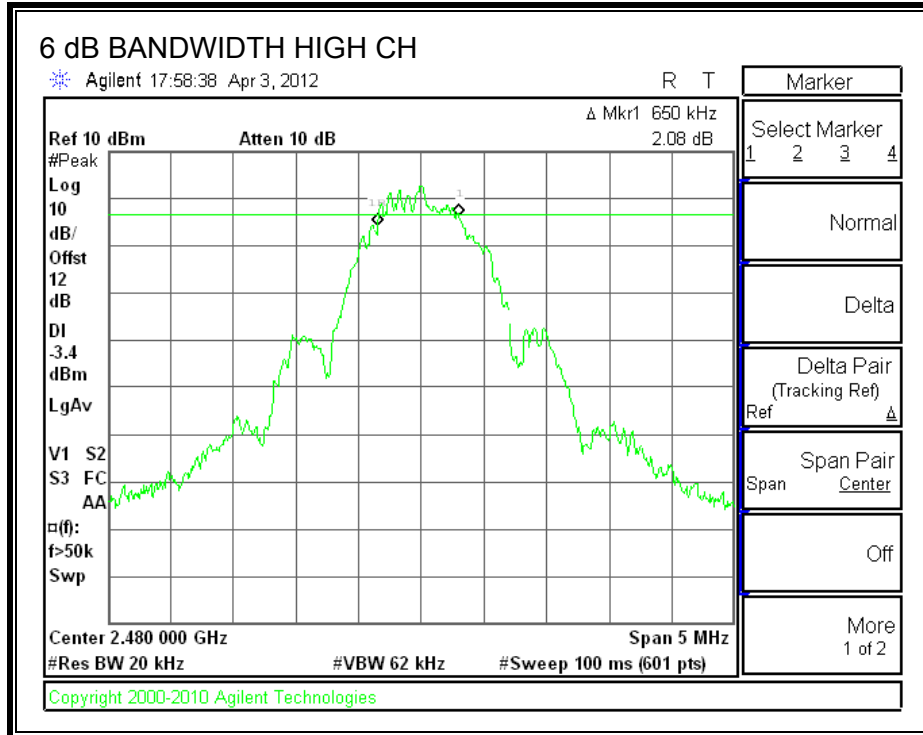
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.650	0.5
Middle	2440	0.650	0.5
High	2480	0.650	0.5

6 dB BANDWIDTH





7.2. 99% BANDWIDTH

LIMIT

None; for reporting purposes only.

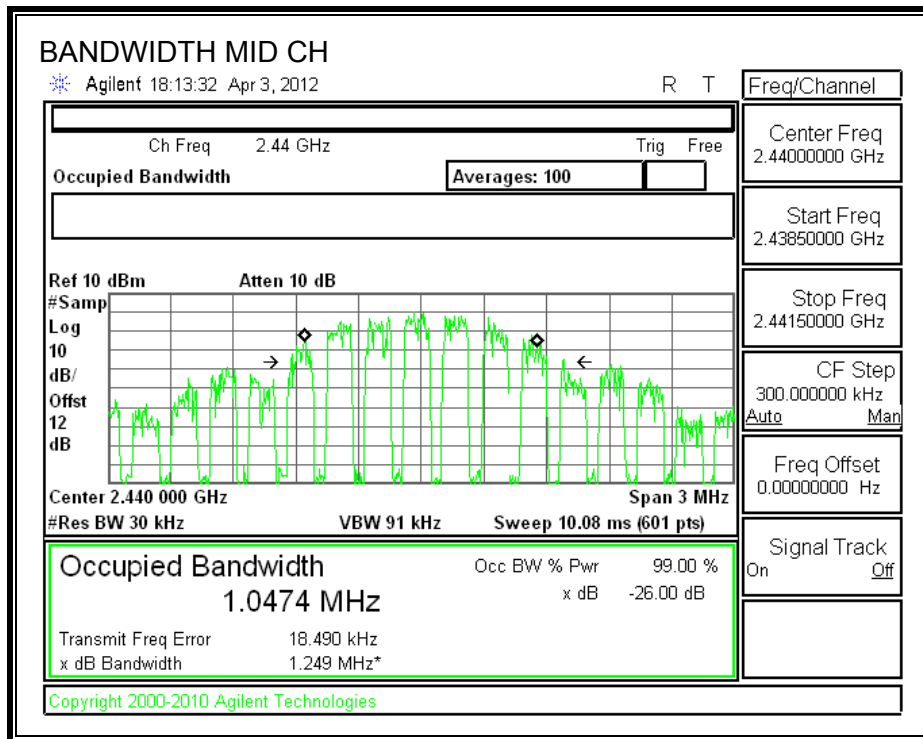
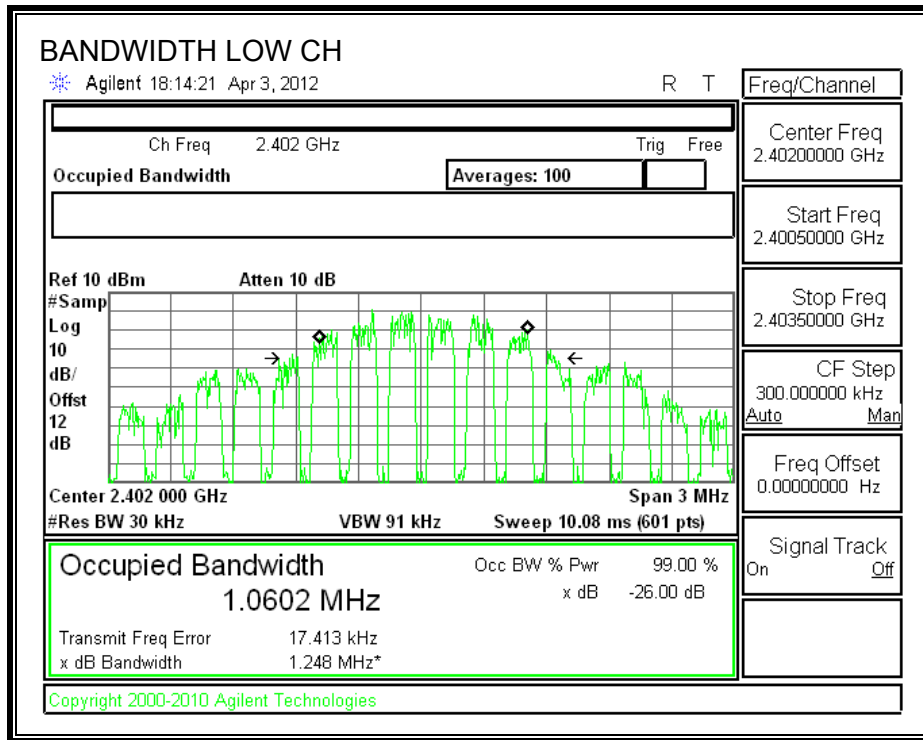
TEST PROCEDURE

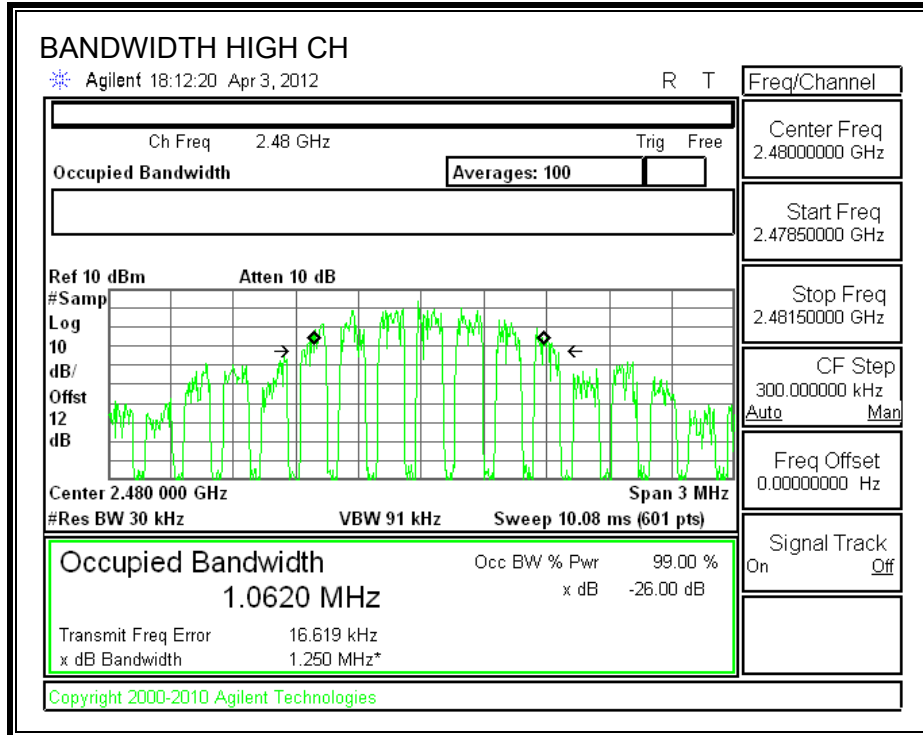
The transmitter output is connected to a spectrum analyzer. The RBW is set to $\geq 1\%$ of the 20 dB bandwidth. The VBW is set to \geq RBW. The sweep time is coupled.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0602
Middle	2440	1.0474
High	2480	1.0620

99% BANDWIDTH





7.3. OUTPUT POWER

LIMIT

§15.247 (b) (1)

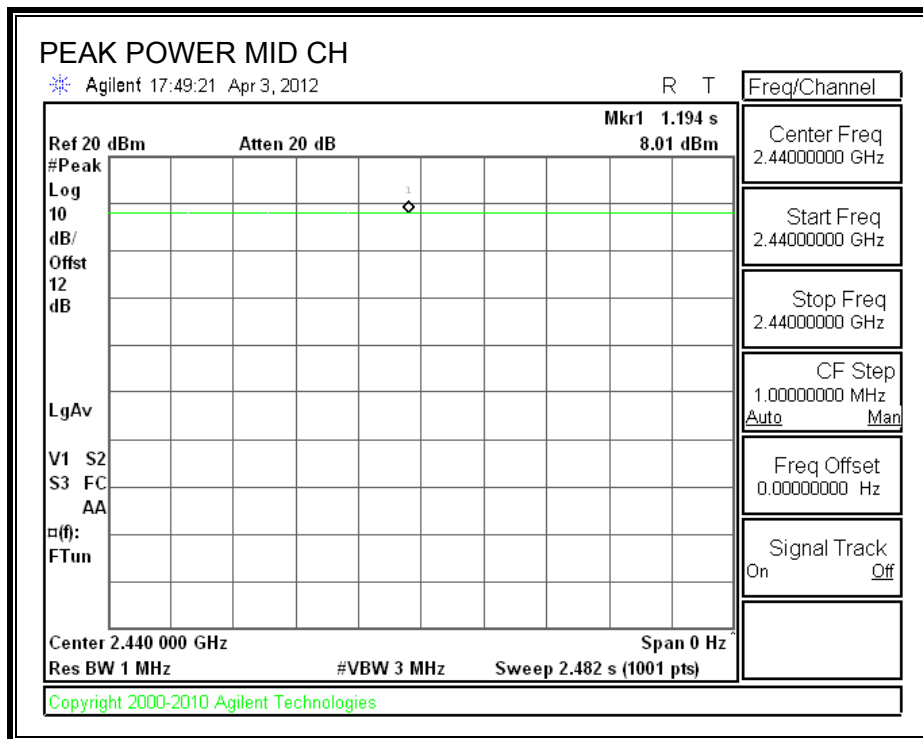
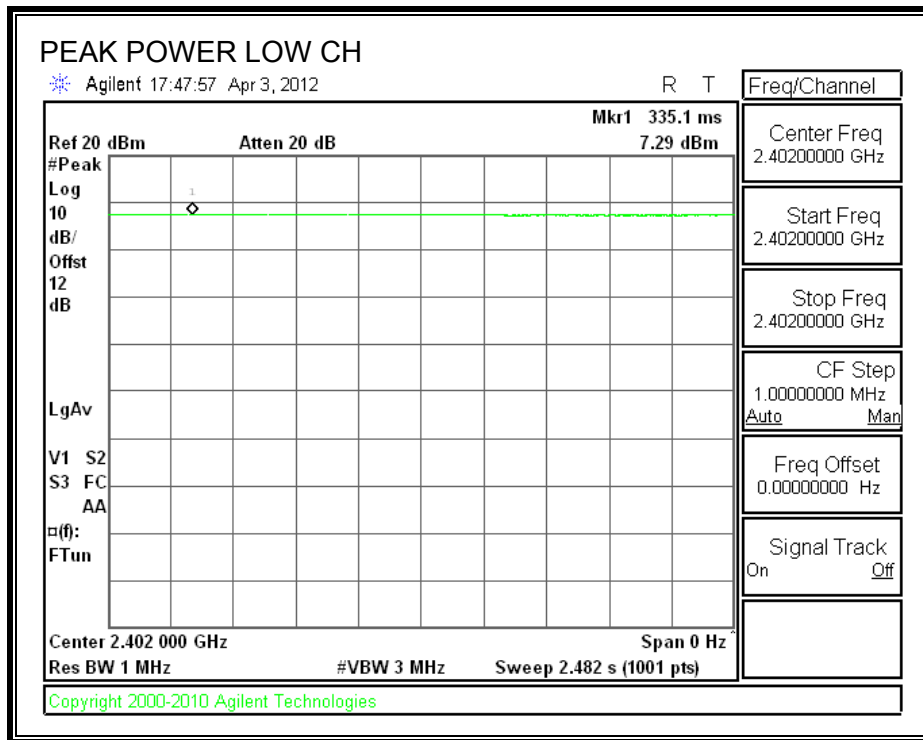
The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm.

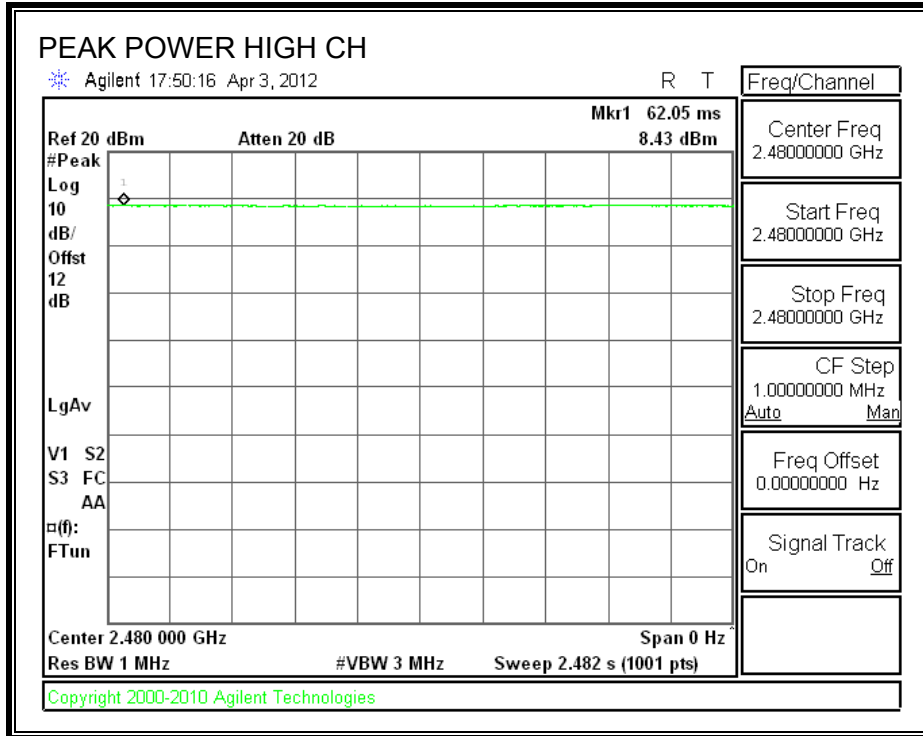
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer, and the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

RESULTS

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	7.29	30	-22.71
Middle	2440	8.01	30	-21.99
High	2480	8.43	30	-21.57





7.4. AVERAGE POWER

LIMIT

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)	Average Power (dBm)
Low	2402	6.78
Middle	2441	7.46
High	2480	7.89

7.5. 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.

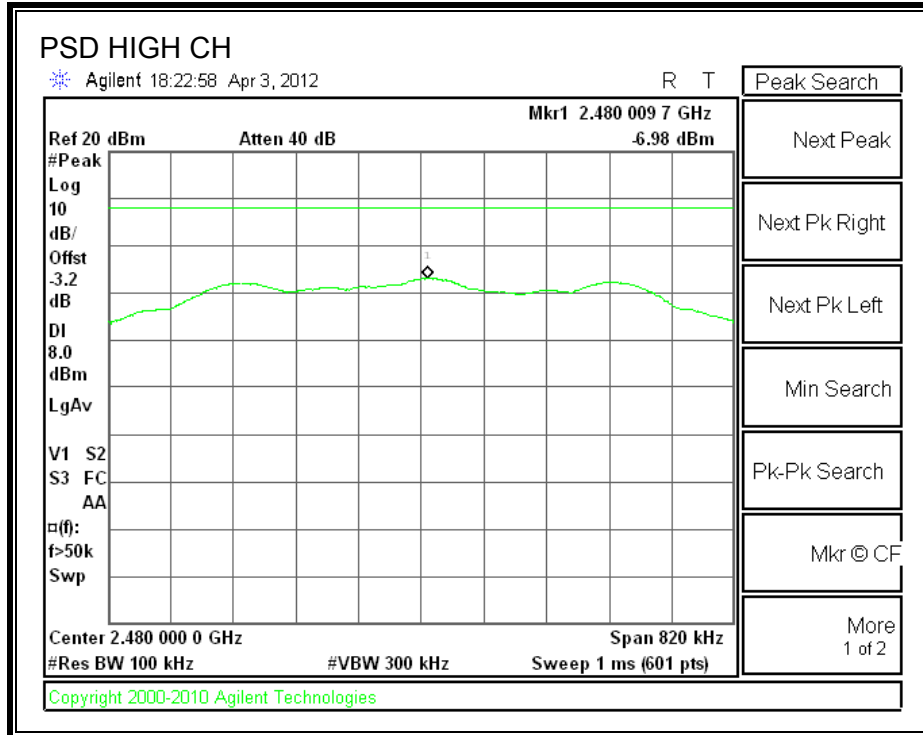
TEST PROCEDURE

Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

RESULTS

Note: Offset = Attenuation + Cable Loss – 10log (3 KHz/100KHz) = --3.2

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.15	8	-16.15
Middle	2437	-7.40	8	-15.40
High	2462	-6.98	8	-14.98



7.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

Limit = -20 dBc

TEST PROCEDURE

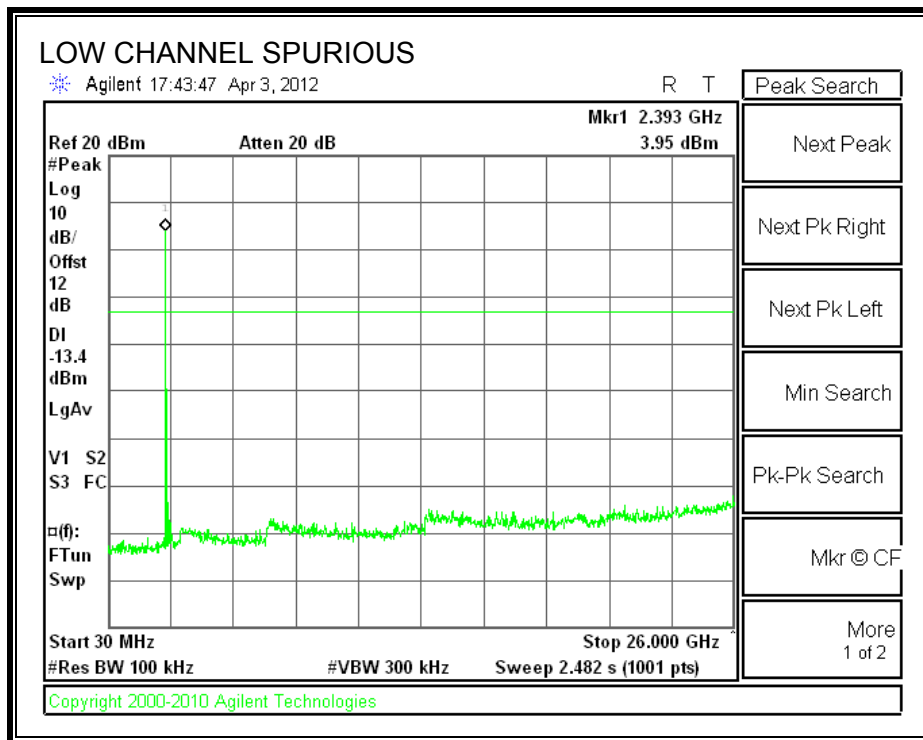
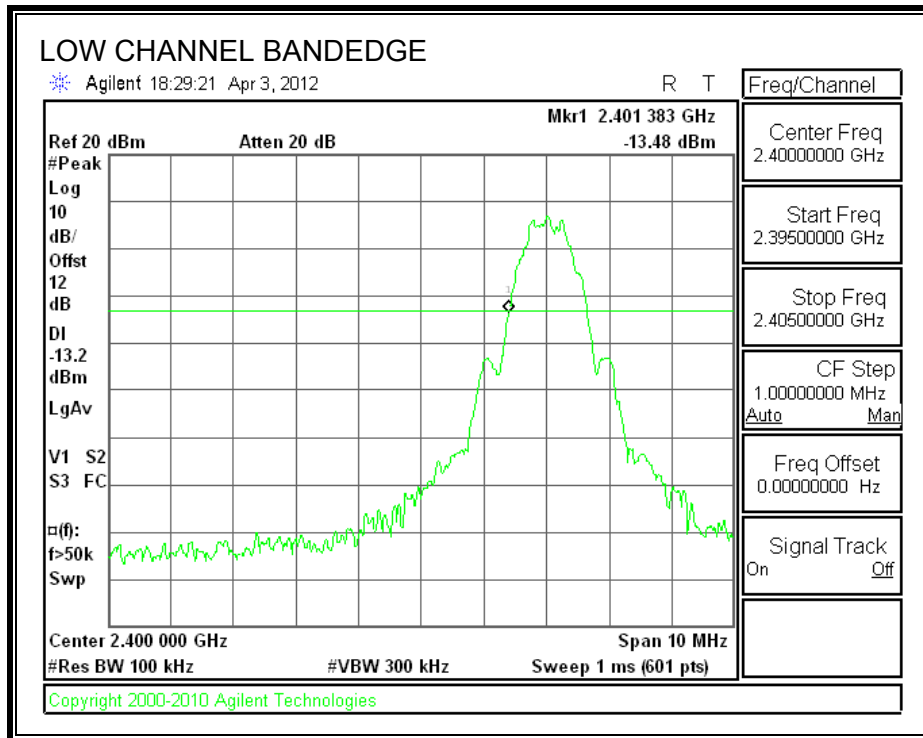
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

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

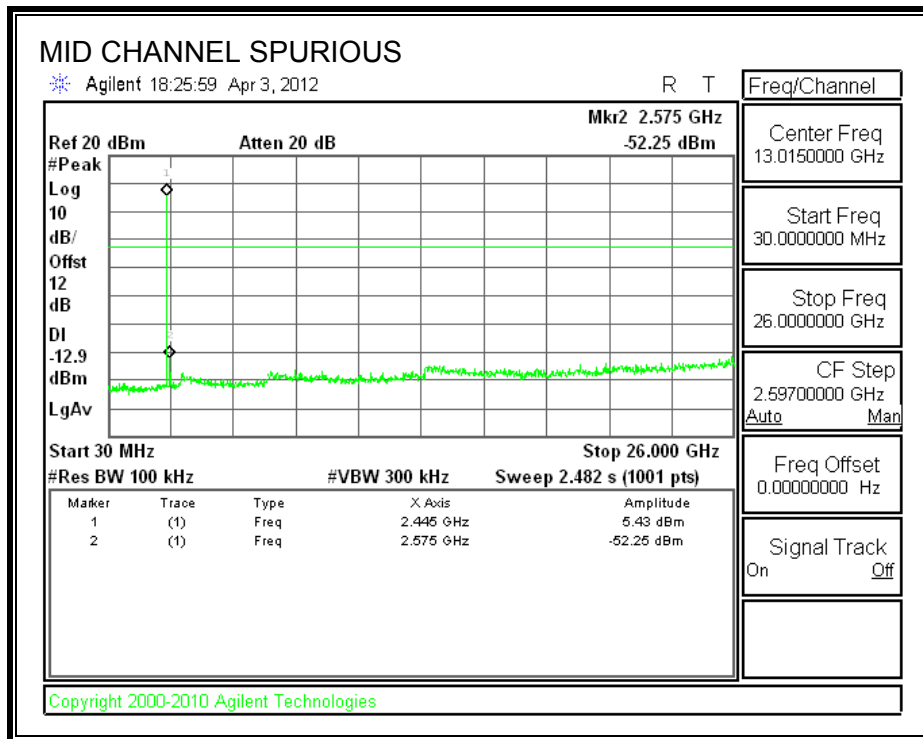
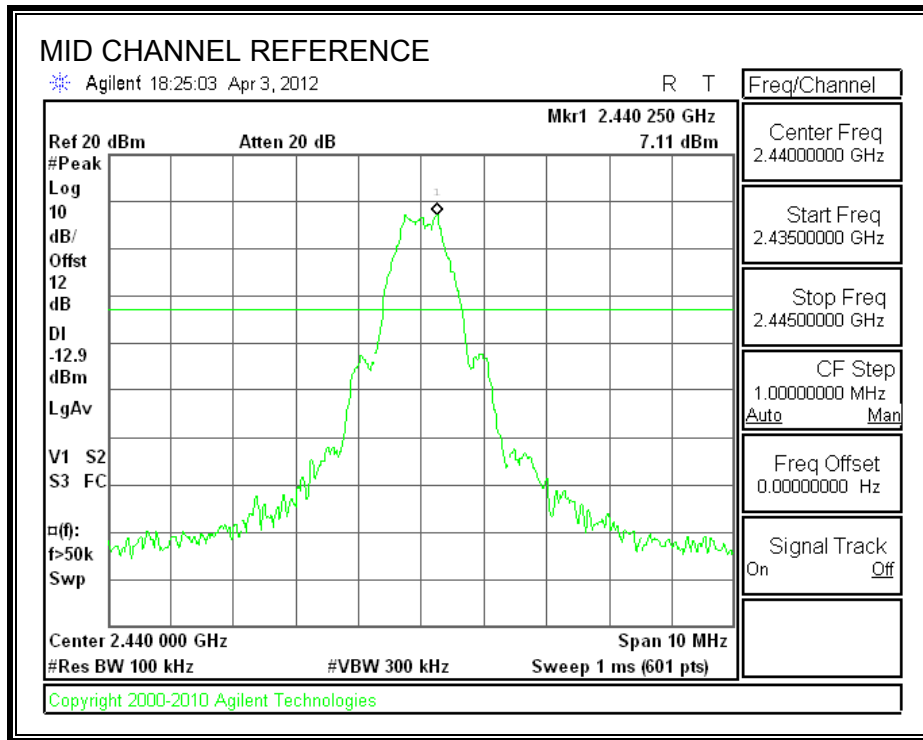
The band edges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

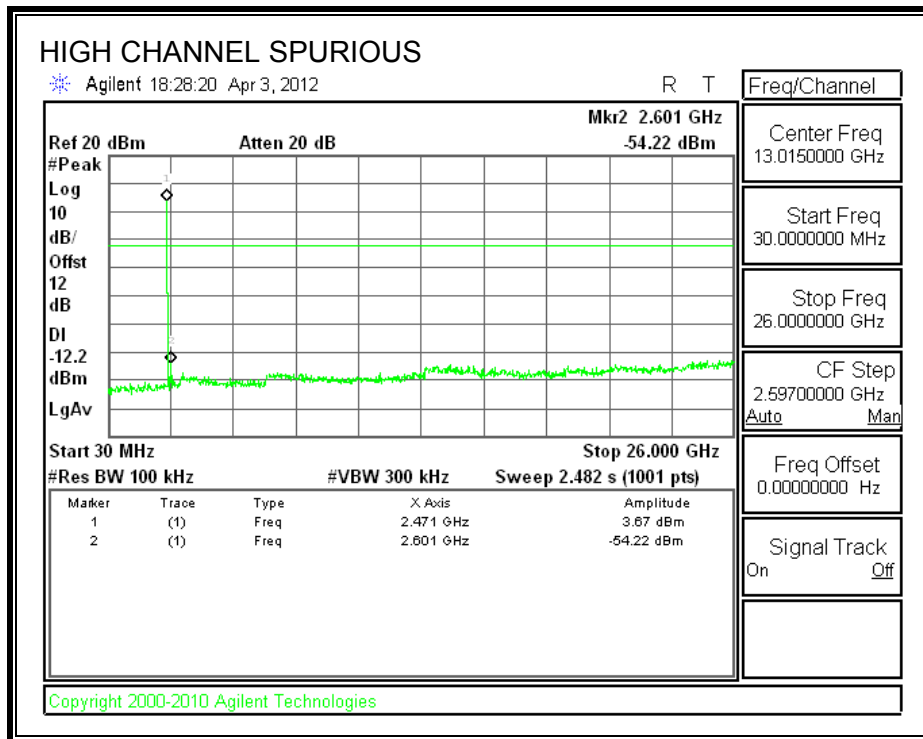
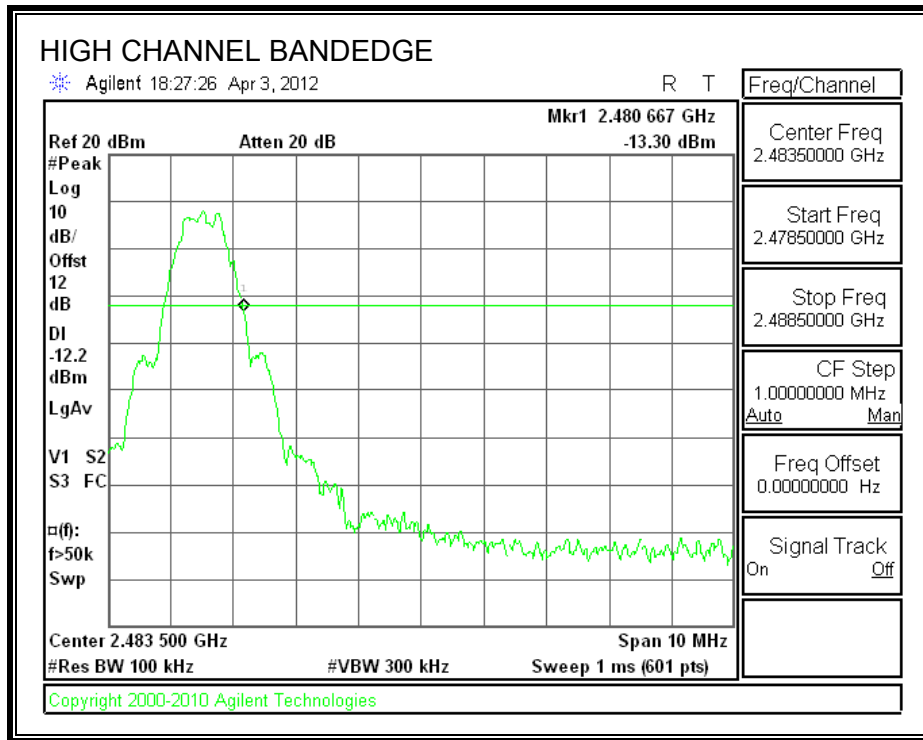
SPURIOUS EMISSIONS, LOW CHANNEL



SPURIOUS EMISSIONS, MID CHANNEL



SPURIOUS EMISSIONS, HIGH CHANNEL



8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. 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 10 Hz for average measurements.

For 2.4 GHz band, 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.

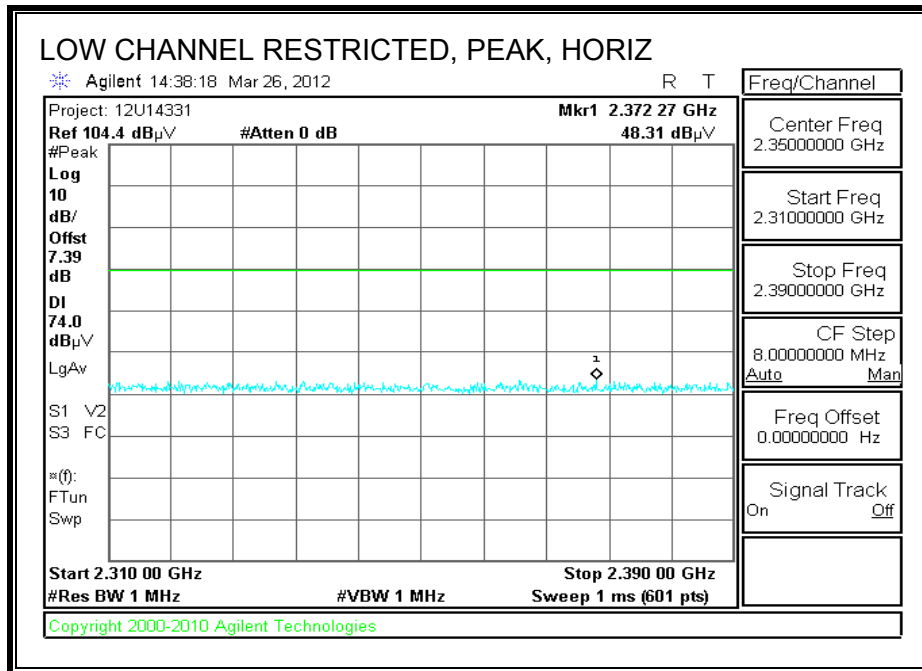
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

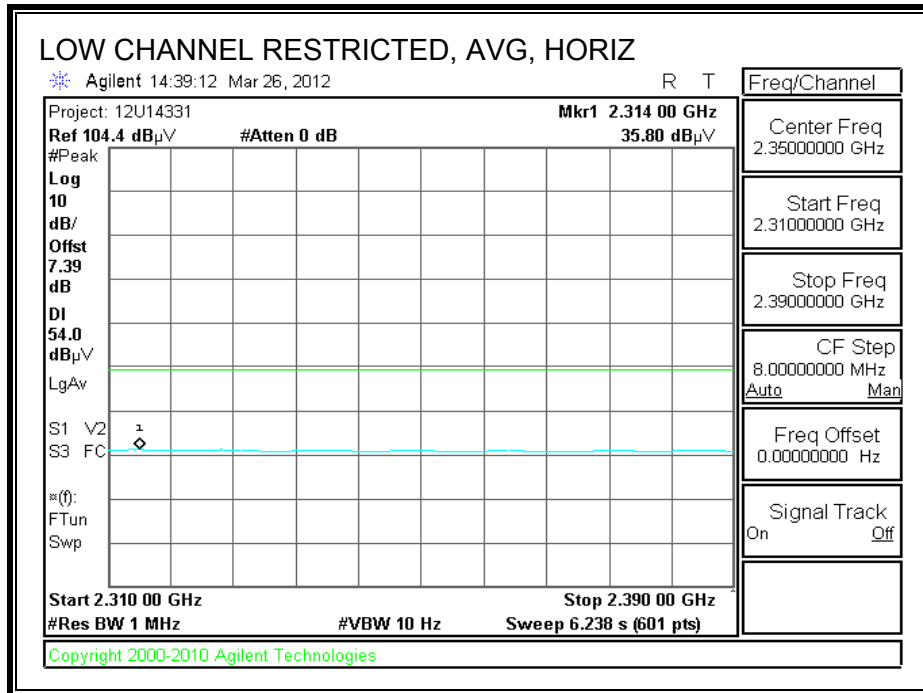
8.2. TRANSMITTER ABOVE 1 GHz

STANDARD COVER

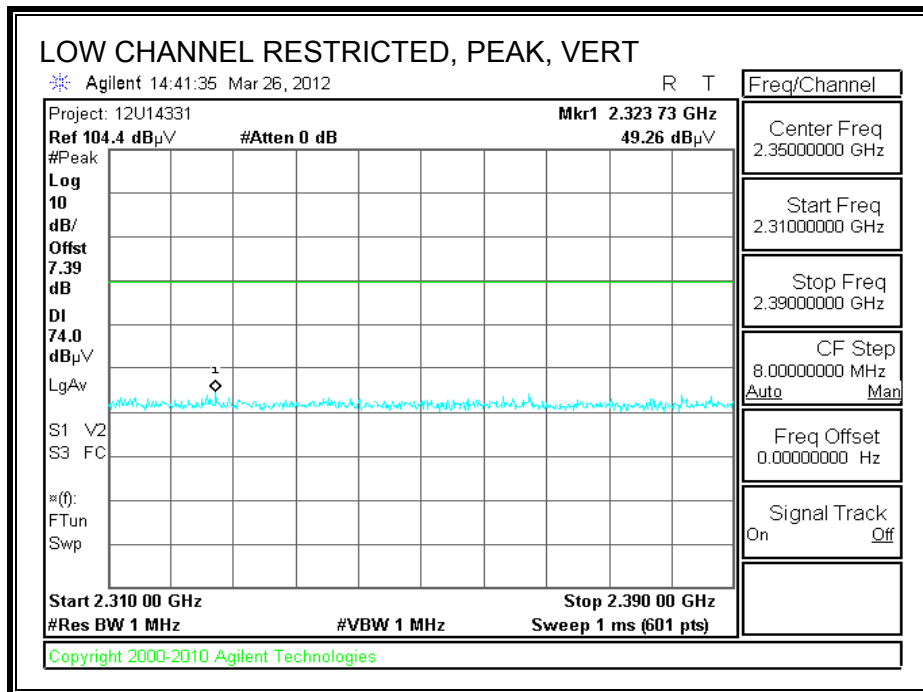
Note: Based on preliminary testing, it was determined that standard cover was the worst case from the 3 configurations of standard cover, inductive cover, and inductive cover with charger. Therefore, only standard cover data is presented.

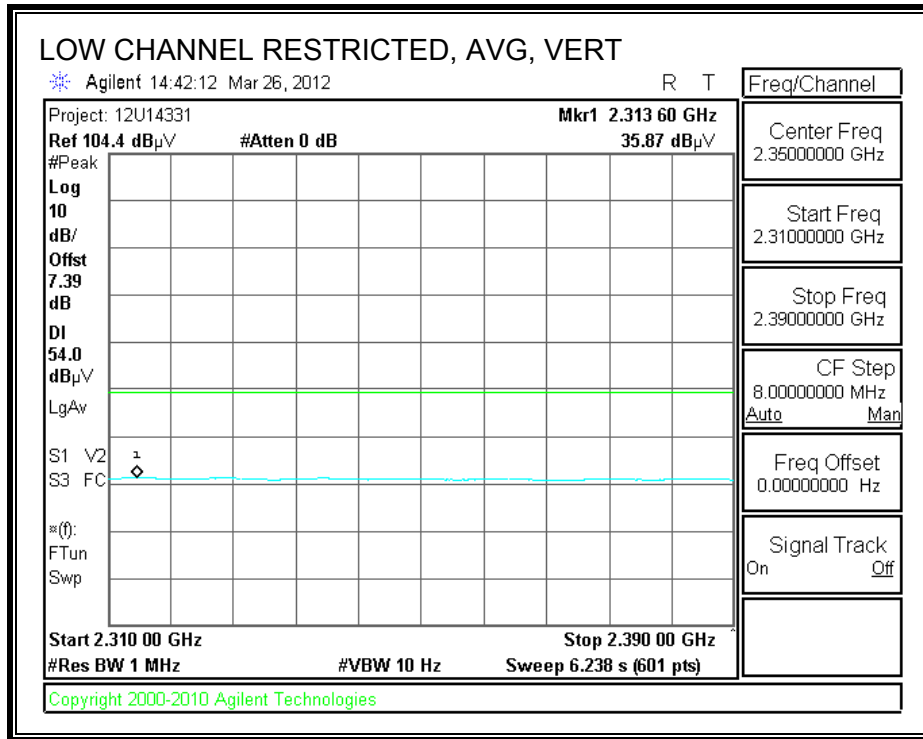
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



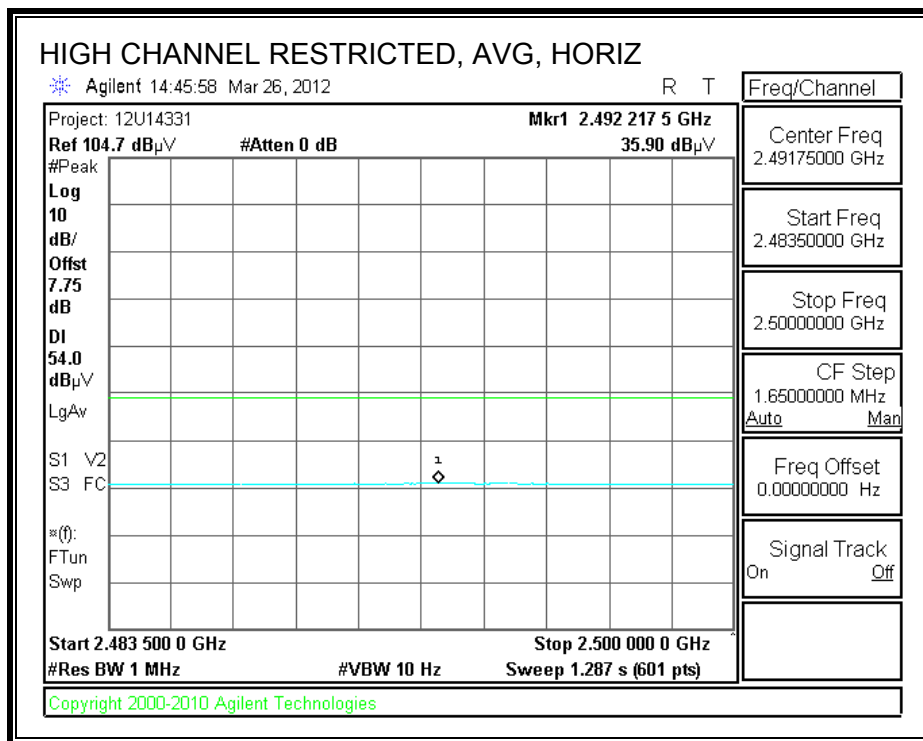
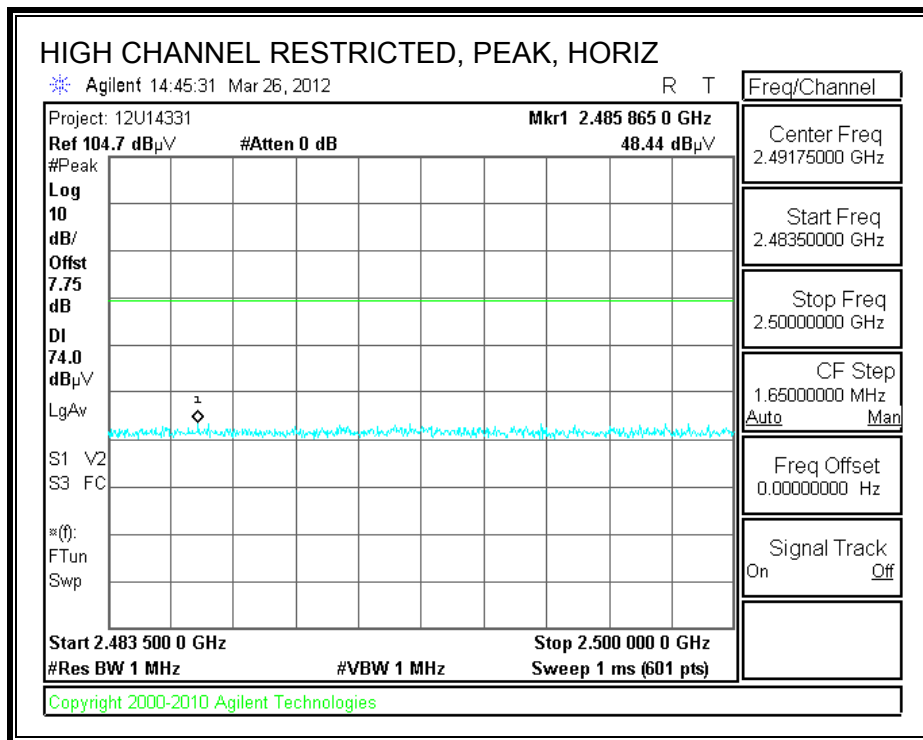


RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

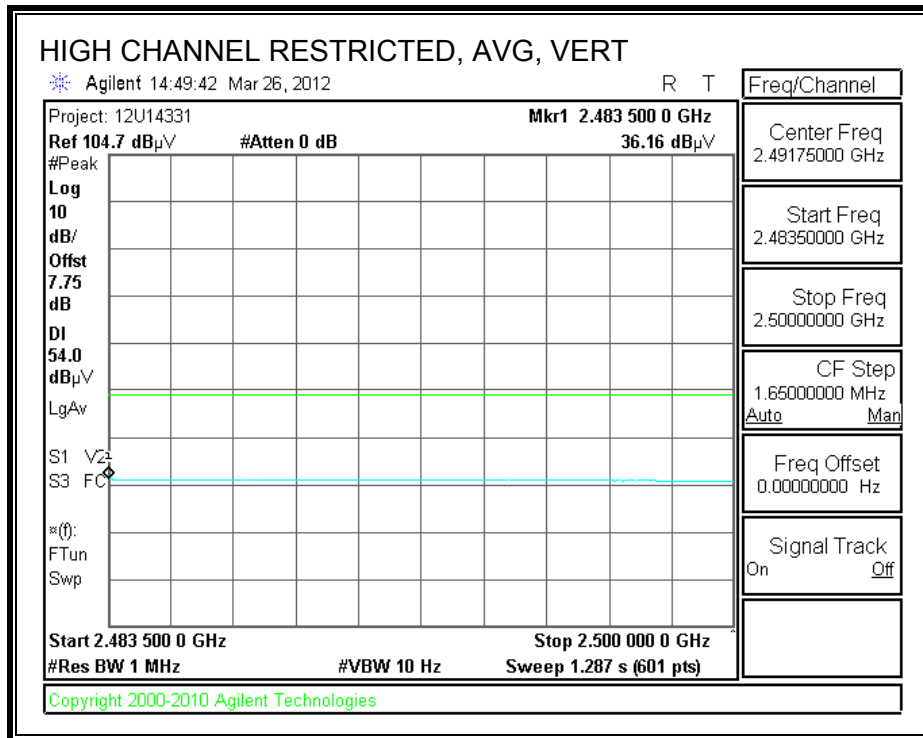
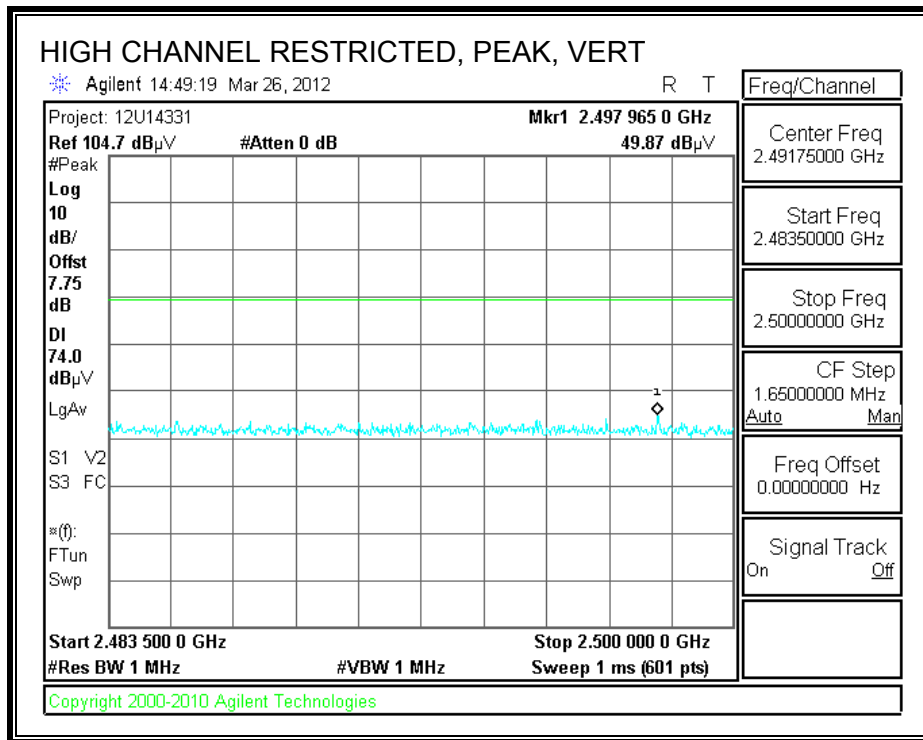




RESTRICTED BANDEGE (HIGH CHANNEL, HORIZONTAL)



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
 Compliance Certification Services, Fremont 3m Chamber

Company: LG
 Project #: 12U14331
 Date: 3/26/2012
 Test Engineer: D. Garcia
 Configuration: X position (worst case), AC adapter, standard back cover
 Mode: BLE

Test Equipment:

Horn 1-18GHz T60; S/N: 2238 @3m	Pre-amplifier 1-26GHz T34 HP 8449B	Pre-amplifier 26-40GHz	Horn > 18GHz	Limit FCC 15.205
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Hi Frequency Cables

3' cable 22807700 3' cable 22807700	12' cable 22807600 12' cable 22807600	20' cable 22807500 20' cable 22807500	HPF	Reject Filter R_001	Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz
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f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fldr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
Low Channel: 2402 MHz															
4.804	3.0	40.7	29.8	33.1	6.8	-34.1	0.0	0.0	46.5	35.6	74	54	-27.5	-18.4	H
4.804	3.0	39.2	28.2	33.1	6.8	-34.1	0.0	0.0	45.0	34.0	74	54	-29.0	-20.0	V
Mid Channel: 2440 MHz															
4.880	3.0	42.3	31.1	33.2	6.8	-34.0	0.0	0.0	48.2	37.0	74	54	-25.8	-17.0	H
7.320	3.0	40.3	28.1	36.3	9.1	-33.1	0.0	0.0	52.6	40.4	74	54	-21.4	-13.6	H
4.880	3.0	40.8	27.9	33.2	6.8	-34.0	0.0	0.0	46.7	33.8	74	54	-27.3	-20.2	V
7.320	3.0	40.1	30.9	36.3	9.1	-33.1	0.0	0.0	52.4	43.2	74	54	-21.6	-10.8	V
High Channel: 2480 MHz															
4.960	3.0	40.6	29.4	33.2	6.9	-34.0	0.0	0.0	46.7	35.5	74	54	-27.3	-18.5	H
7.440	3.0	44.4	31.0	36.5	9.1	-33.0	0.0	0.0	56.9	43.5	74	54	-17.1	-10.5	H
4.960	3.0	40.1	30.5	33.2	6.9	-34.0	0.0	0.0	46.2	36.5	74	54	-27.8	-17.5	V
7.440	3.0	44.8	32.9	36.5	9.1	-33.0	0.0	0.0	57.3	45.5	74	54	-16.7	-8.5	V

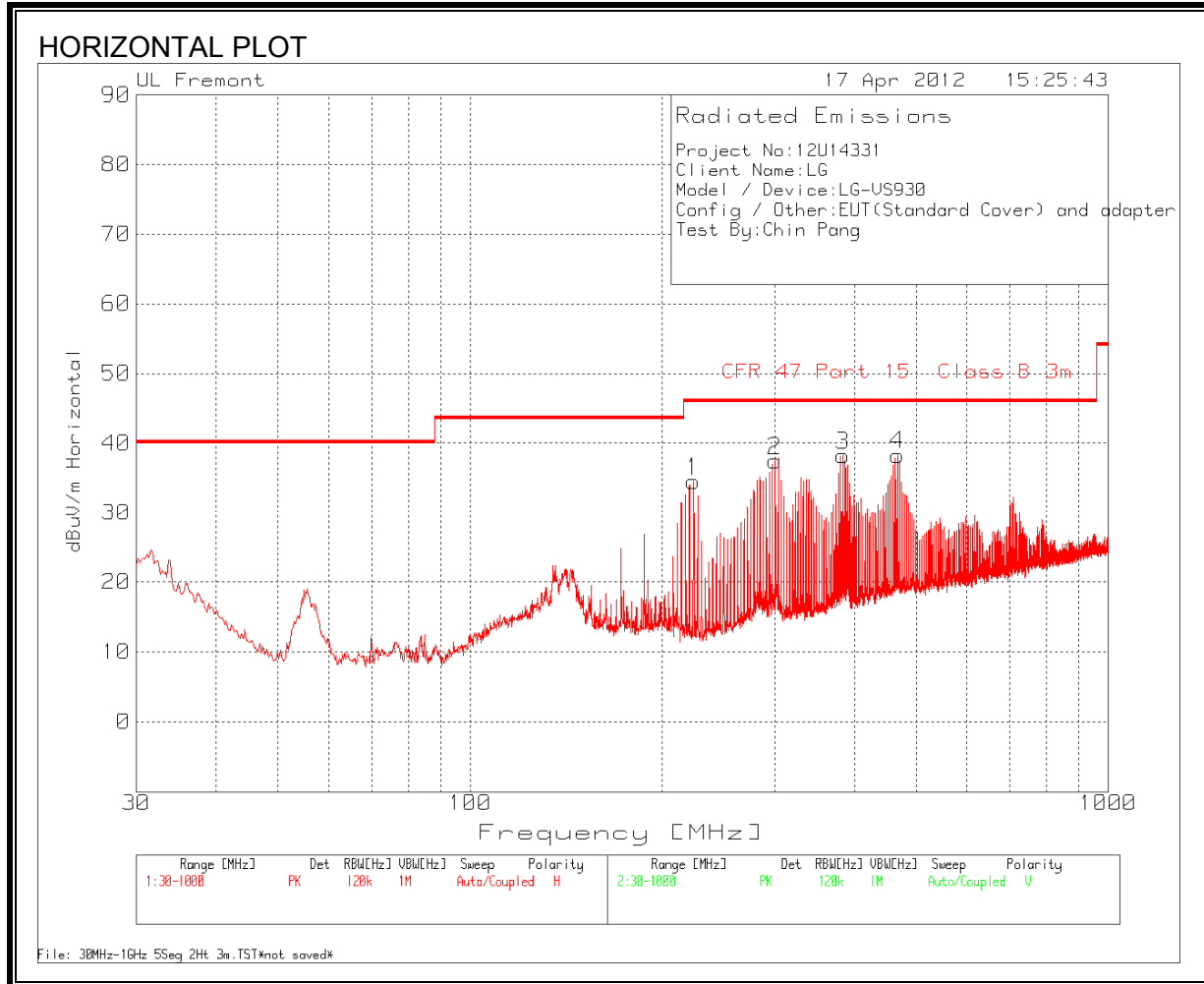
Rev. 07.08.11

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

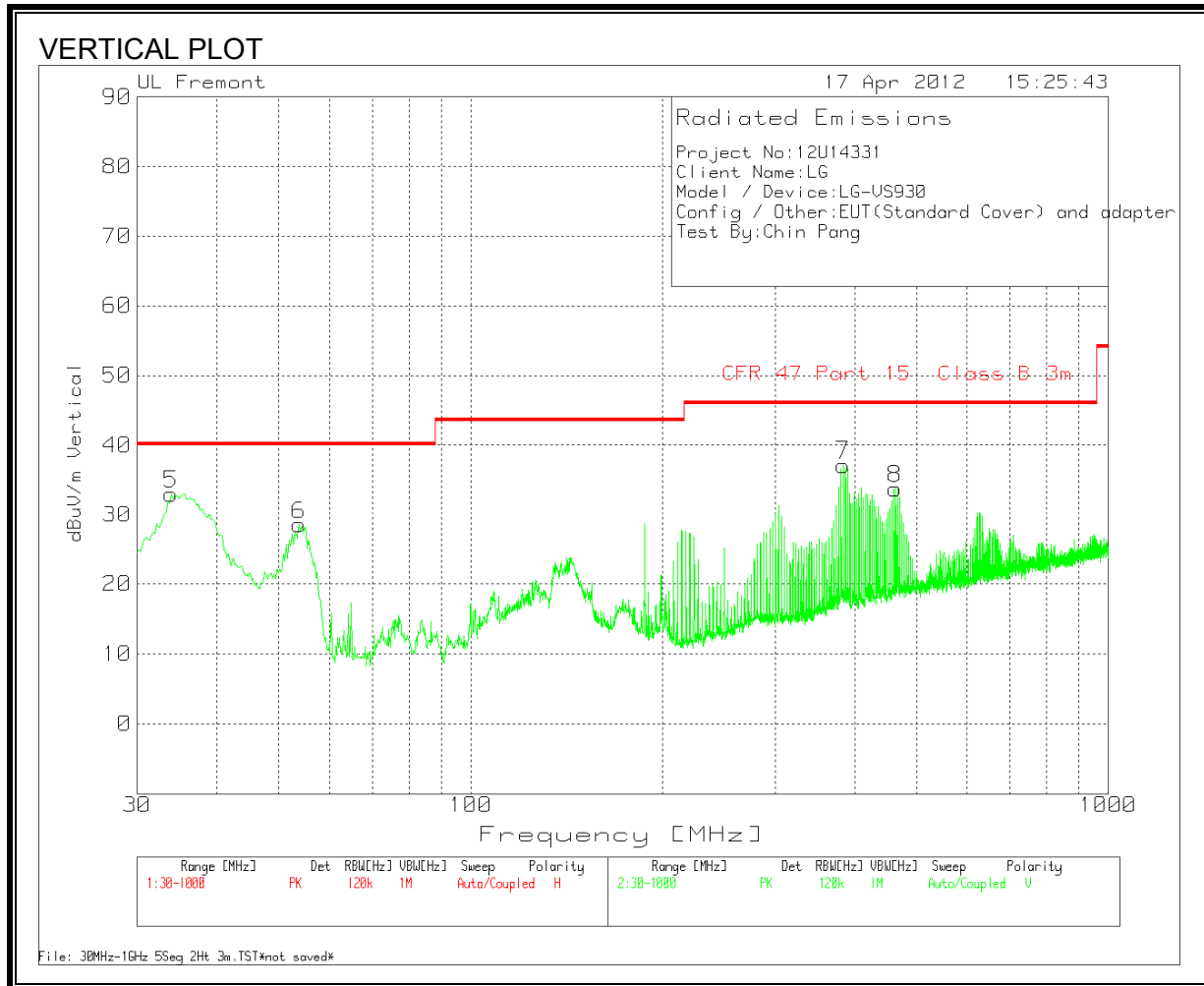
WORST-CASE BELOW 1 GHz

STANDARD COVER

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



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



HORIZONTAL AND VERTICAL DATA

Project No:12U14331									
Client Name:LG									
Model / Device:LG-VS930									
Config / Other:EUT(Standard Cover) and adapter									
Test By:Chin Pang									
Range 1 30 - 1000MHz									
Test Frequency	Meter Reading	Detector	25MHz-1GHz ChmbrA Amplified.TX [dB]	T243 Sunol Bilog.TXT [dB]	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Height [cm]	Polarity
223.8449	49.94	PK	-26	10.6	34.54	46	-11.46	100	Horz
300.8014	50.08	PK	-25.8	13.2	37.48	46	-8.52	100	Horz
383.9608	48.56	PK	-25.3	15	38.26	46	-7.74	100	Horz
467.3141	46.31	PK	-25.1	17.1	38.31	46	-7.69	200	Horz
Range 2 30 - 1000MHz									
Test Frequency	Meter Reading	Detector	25MHz-1GHz ChmbrA Amplified.TX [dB]	T243 Sunol Bilog.TXT [dB]	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Height [cm]	Polarity
33.8769	42.17	PK	-27.6	18.4	32.97	40	-7.03	109	Vert
53.8429	48.43	PK	-27.3	7.3	28.43	40	-11.57	109	Vert
383.9608	47.45	PK	-25.3	15	37.15	46	-8.85	109	Vert
464.0188	41.9	PK	-25	16.9	33.8	46	-12.2	109	Vert

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

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 C63.4

RESULTS

6 WORST EMISSIONS

STANDARD COVER

Project No:12U14331									
Client Name:LG									
Model/Device:VS930									
Test Volt/Freq:115VAC/60Hz									
Test By:D. Garcia									
Line-L1 .15 - 30MHz									
Frequency	Reading	Detector	Cable Loss	dB[uVolts]	Part 15B QP	Margin	Part 15B A	Margin	
0.159	44.39	PK	0.1	44.49	65.5	-21.01	-	-	
0.159	30.36	Av	0.1	30.46	-	-	55.5	-25.04	
0.51	44.23	PK	0.1	44.33	56	-11.67	-	-	
0.51	30.67	Av	0.1	30.77	-	-	46	-15.23	
1.6485	39.93	PK	0.2	40.13	56	-15.87	-	-	
1.6485	26.98	Av	0.2	27.18	-	-	46	-18.82	
4.9155	43.53	PK	0.2	43.73	56	-12.27	-	-	
4.9155	28.48	Av	0.2	28.68	-	-	46	-17.32	
6.153	42.88	PK	0.2	43.08	60	-16.92	-	-	
6.153	26.99	Av	0.2	27.19	-	-	50	-22.81	
7.764	42.72	PK	0.2	42.92	60	-17.08	-	-	
7.764	27.74	Av	0.2	27.94	-	-	50	-22.06	
Line-L2 .15 - 30MHz									
Frequency	Reading	Detector	Cable Loss	dB[uVolts]	Part 15B QP	Margin	Part 15B A	Margin	
0.159	44.95	PK	0.1	45.05	65.5	-20.45	-	-	
0.159	21.88	Av	0.1	21.98	-	-	55.5	-33.52	
0.4965	41.17	PK	0.1	41.27	56.1	-14.83	-	-	
0.4965	25.98	Av	0.1	26.08	-	-	46.1	-20.02	
0.663	39.96	PK	0.1	40.06	56	-15.94	-	-	
0.663	19.93	Av	0.1	20.03	-	-	46	-25.97	
1.491	34.06	PK	0.2	34.26	56	-21.74	-	-	
1.491	15.74	Av	0.2	15.94	-	-	46	-30.06	
4.65	37.46	PK	0.2	37.66	56	-18.34	-	-	
4.65	22.97	Av	0.2	23.17	-	-	46	-22.83	
7.116	37.39	PK	0.2	37.59	60	-22.41	-	-	
7.116	22.65	Av	0.2	22.85	-	-	50	-27.15	

INDUCTIVE COVER

Project No:	12U14331								
Client Name:	LG								
Model/Device:	VS930 w/INDUCTIVE COVER								
Test Volt/Freq:	115VAC/60Hz								
Test By:	D. Garcia								

Line-L1 .15 - 30MHz

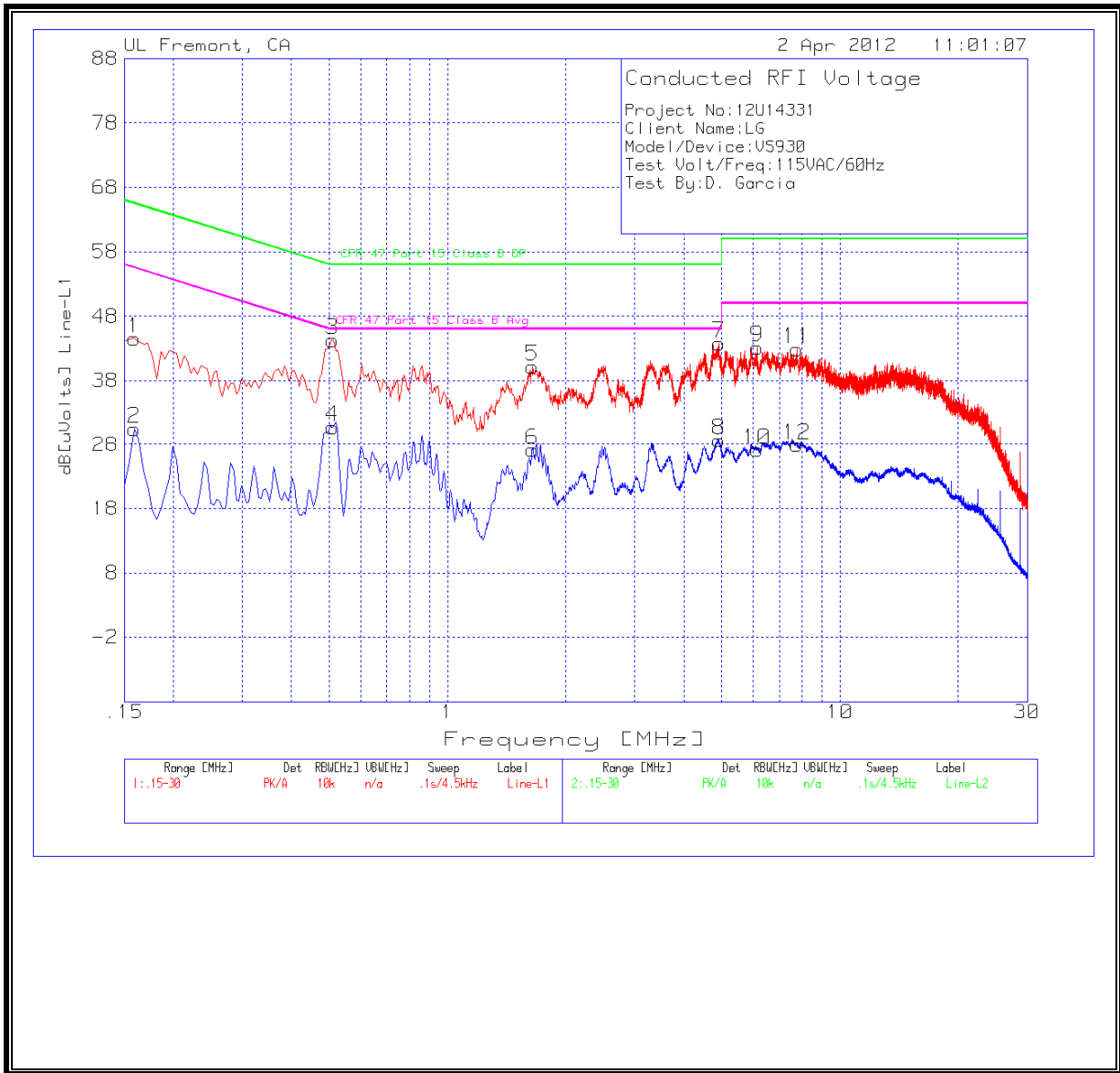
Test Frequency	Meter Reading	Detector	T24 IL L1.TXT [dB]	LC Cables 1&3.TXT [dB]	dB[uVolt s]	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.15	54.83	PK	0.1	0	54.93	66	-11.07	-	-
0.15	46.02	Av	0.1	0	46.12	-	-	56	-9.88
1.0545	47.22	PK	0.1	0	47.32	56	-8.68	-	-
1.0545	40.39	Av	0.1	0	40.49	-	-	46	-5.51
1.3605	46.59	PK	0.1	0.1	46.79	56	-9.21	-	-
1.3605	38.94	Av	0.1	0.1	39.14	-	-	46	-6.86
26.4705	50.2	PK	0.5	0.3	51.00	60	-9.00	-	-
26.4705	22.38	Av	0.5	0.3	23.18	-	-	50	-26.82
26.934	50.04	PK	0.5	0.3	50.84	60	-9.16	-	-
26.934	40.92	Av	0.5	0.3	41.72	-	-	50	-8.28

Line-L2 .15 - 30MHz

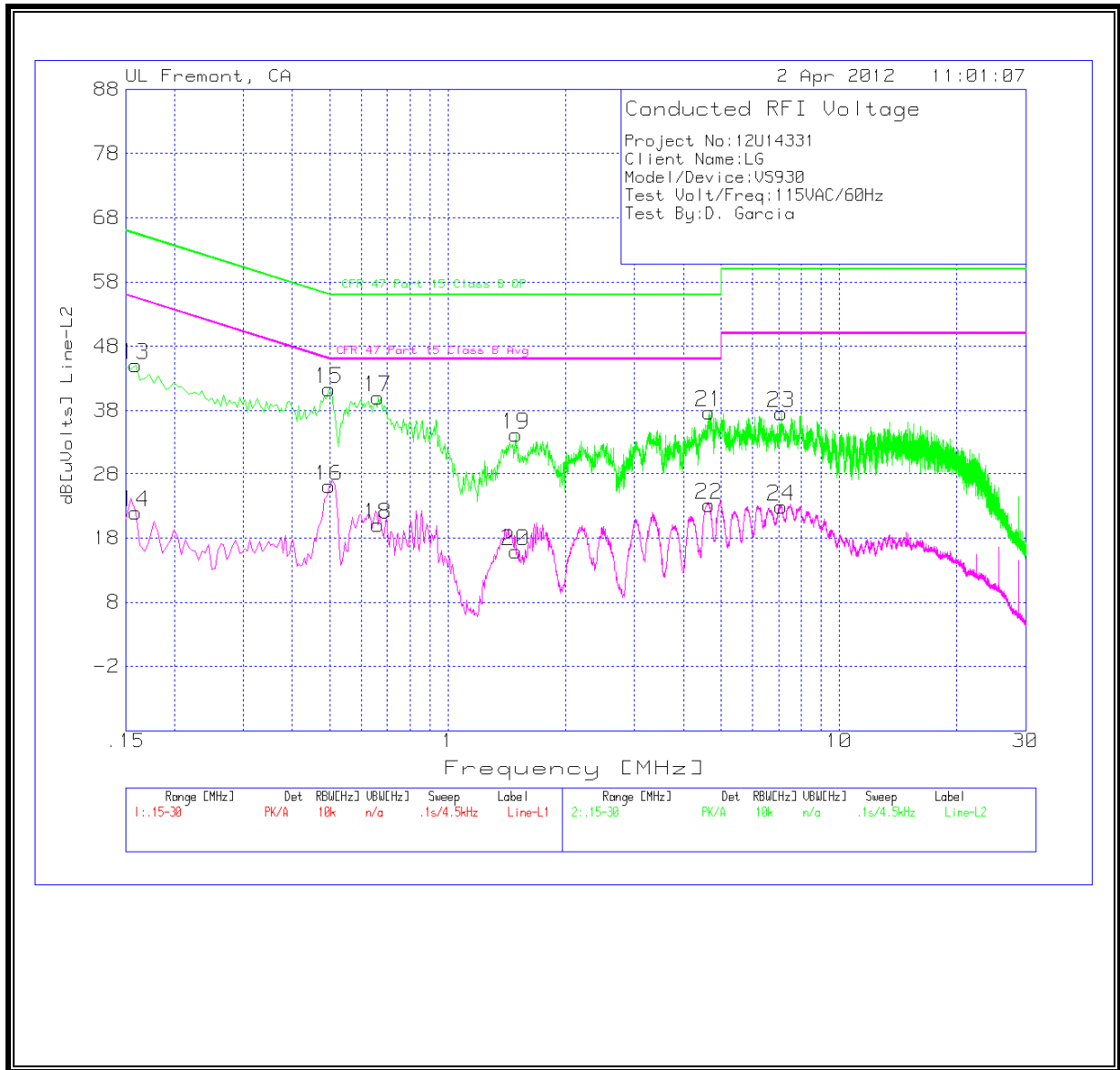
0.15	50.74	PK	0.1	0	50.84	66	-15.16	-	-
0.15	38.2	Av	0.1	0	38.30	-	-	56	-17.70
0.456	44.4	PK	0.1	0	44.50	56.8	-12.30	-	-
0.456	33.54	Av	0.1	0	33.64	-	-	46.8	-13.16
1.068	43.18	PK	0.1	0.1	43.38	56	-12.62	-	-
1.068	34.72	Av	0.1	0.1	34.92	-	-	46	-11.08
25.6065	42.46	PK	0.5	0.3	43.26	60	-16.74	-	-
25.6065	36.68	Av	0.5	0.3	37.48	-	-	50	-12.52
26.2185	42.55	PK	0.5	0.3	43.35	60	-16.65	-	-
26.2185	36.4	Av	0.5	0.3	37.20	-	-	50	-12.80
29.0625	41.17	PK	0.5	0.3	41.97	60	-18.03	-	-
29.0625	32.92	Av	0.5	0.3	33.72	-	-	50	-16.28
29.6745	40.82	PK	0.5	0.3	41.62	60	-18.38	-	-
29.6745	34.62	Av	0.5	0.3	35.42	-	-	50	-14.58

STANDARD COVER

LINE 1 RESULTS

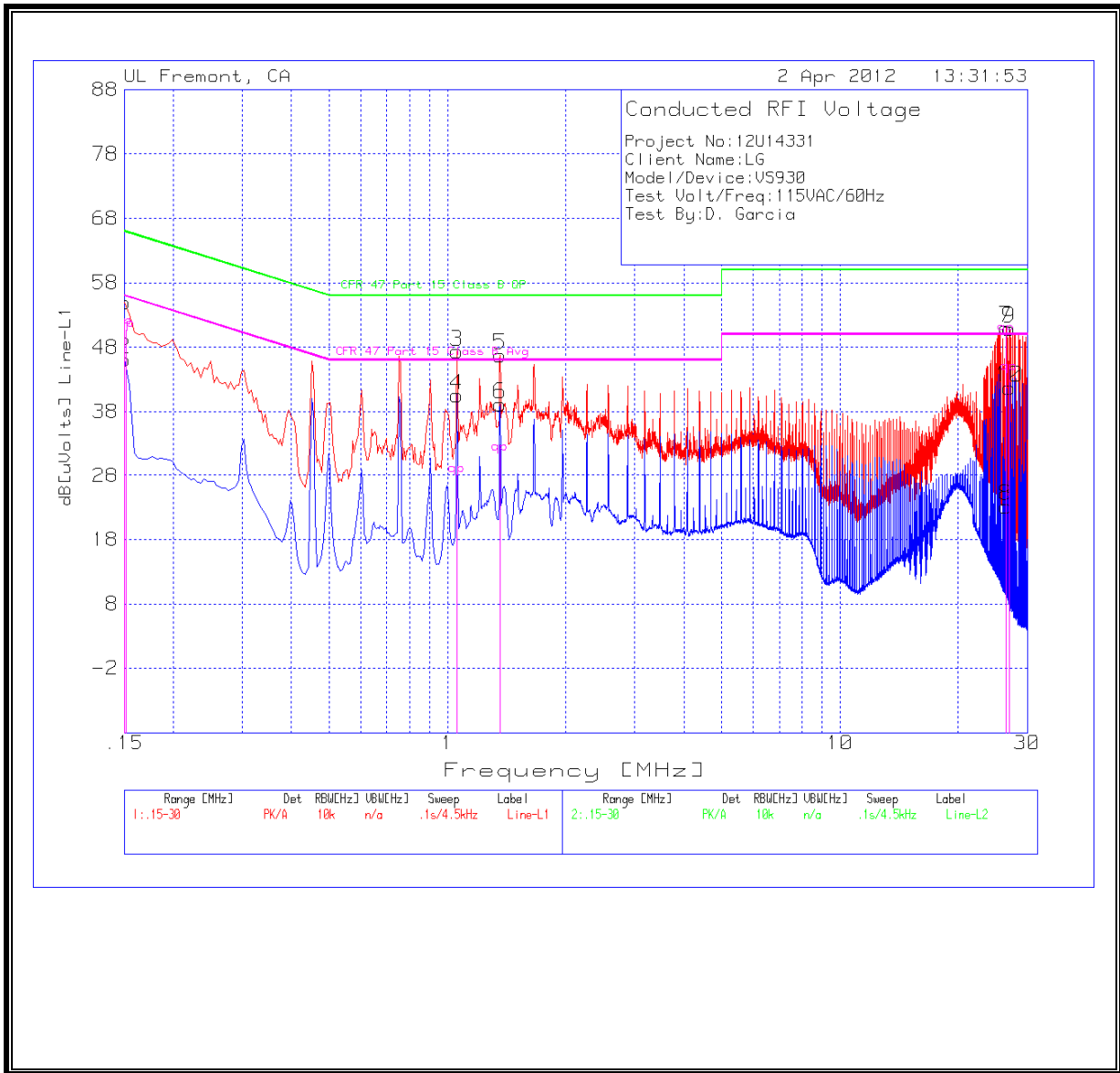


LINE 2 RESULTS



INDUCTIVE COVER

LINE 1 RESULTS



LINE 2 RESULTS

