



**FCC CFR47 PART 15 SUBPART C  
CLASS II PERMISSIVE CHANGE**

**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: 12U14433-3**

**ISSUE DATE: JUNE 6, 2012**

*Prepared for*  
**LG ELECTRONICS MOBILECOMM U.S.A., INC.  
1000 SYLVAN AVE.  
ENGLEWOOD CLIFFS, NJ  
UNITED STATES 07632**

*Prepared by*  
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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>
	06/06/12	Original	T. LEE

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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** LG ELECTRONICS MOBILECOMM U.S.A., INC.  
1000 SYLVAN AVE.  
ENGLEWOOD CLIFFS, NJ  
UNITED STATES 07632

**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:** MAY 15-JUNE 6, 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

TOM CHEN  
EMC ENGINEER  
UL CCS

## 1. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, and FCC CFR 47 Part 15.

## 2. 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>.

## 3. CALIBRATION AND UNCERTAINTY

### 3.1. 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.

### 3.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

### 3.3. 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%.

## 4. EQUIPMENT UNDER TEST

### 4.1. DESCRIPTION OF EUT

The EUT is a Cell Phone with GSM/CDMA/WCDMA/LTE + BT + 802.11abgn + NFC w/ Wireless Back Cover

The unit supports AFH mode. The manufacturer attested the following.

- It is in compliance with Bluetooth Specification 1.2 or later specification.
- The number of hopping channel in AFH mode is 79 channels
- The output power do not transmit over than 125 mW
- The channel separation is based upon 2/3 of 20 dB channel bandwidth

### 4.2. MAXIMUM OUTPUT POWER

The measured average power values were within  $\pm 0.5$  dB of the original values. Refer to original report number "12U14331-3A FCC IC BLUETOOTH Report" for exact output power values and for all antenna port results.

### 4.3. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The change filed under this application has the following changes.

- Changed BT/WIFI matching value.
- Changed Shield CAN structure.
- Changed minor HW for improvement of durability and reliability

### 4.4. DESCRIPTION OF AVAILABLE ANTENNAS

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

### 4.5. 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

### 4.6. MODEL DIFFERNECE

Model LG-VS930 is identical to Model VS930 except for model designation.

#### 4.7. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power.

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

#### 4.8. DESCRIPTION OF TEST SETUP

##### RADIATED TESTS SUPPORT EQUIPMENT

##### STANDARD OR 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

**CONDUCTED TESTS I/O CABLES**

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	MINI USB	UN-SHELDDED	1.0m	N/A
2	RF	1	RF	SHELDDED	0.1m	N/A
3	RF	1	SMA	SHELDDED	0.6 m	N/A

**RADIATED TESTS I/O CABLES**

**STANDARD OR INDUCTIVE COVER**

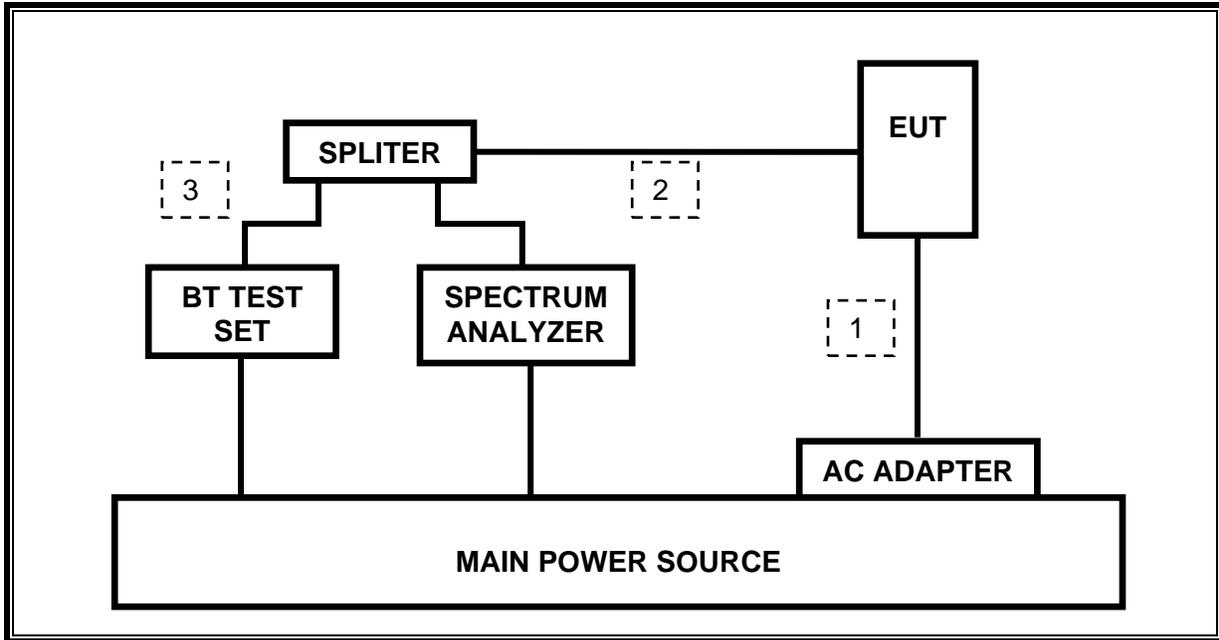
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	MINI USB	UN-SHELDDED	1.0m	N/A
2	AUDIO	1	MINI JACK	UN-SHELDDED	1.0m	Volume control on cable

**INDUCTIVE CHARGER WITH INDUCTIVE COVER**

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	MINI USB	UN-SHELDDED	1.0m	External ferrite added
2	AUDIO	1	MINI JACK	UN-SHELDDED	1.0m	Volume control on cable

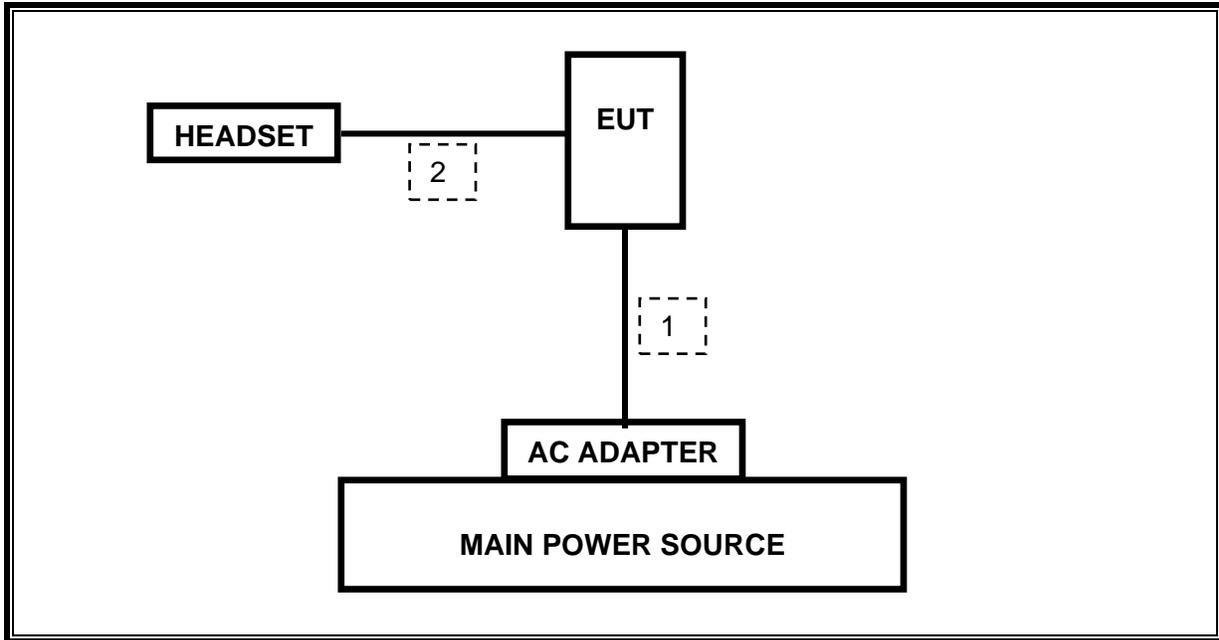
**CONDUCTED SETUP DIAGRAM FOR TESTS**

**STANDARD OR INDUCTIVE COVER**

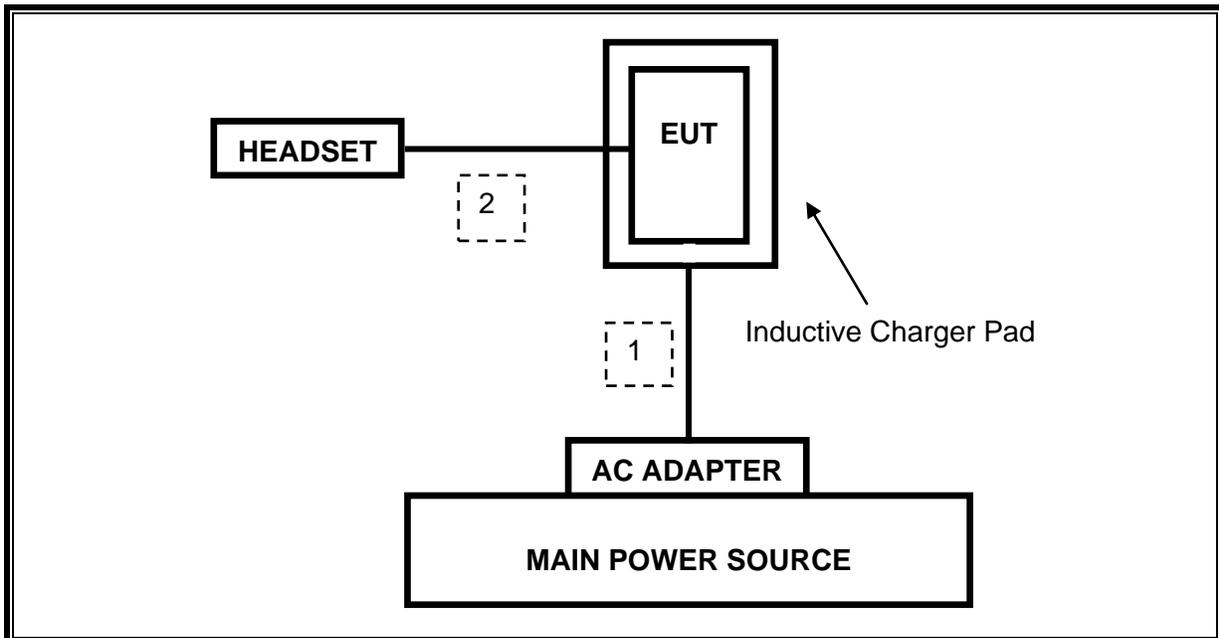


**RADIATED SETUP DIAGRAM FOR TESTS**

**STANDARD OR INDUCTIVE COVER**



**INDUCTIVE CHRGRER AND INDUCTIVE COVER**



## 5. 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
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	11/11/12
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	03/22/13
Antenna, Horn, 18 GHz	EMCO	3115	C00783	06/29/12
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	C00981	06/14/12
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	07/12/12
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRM50702	N02685	CNR
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11/10/12
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	07/06/12
Peak Power Meter	Agilent / HP	E4416A	C00963	03/22/13
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/12
BT Test set	Agilent / HP	N4010A	N/A	04/22/13
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR

## 6. RADIATED TEST RESULTS

### 6.1. LIMITS AND PROCEDURE

#### LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (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. 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.

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.

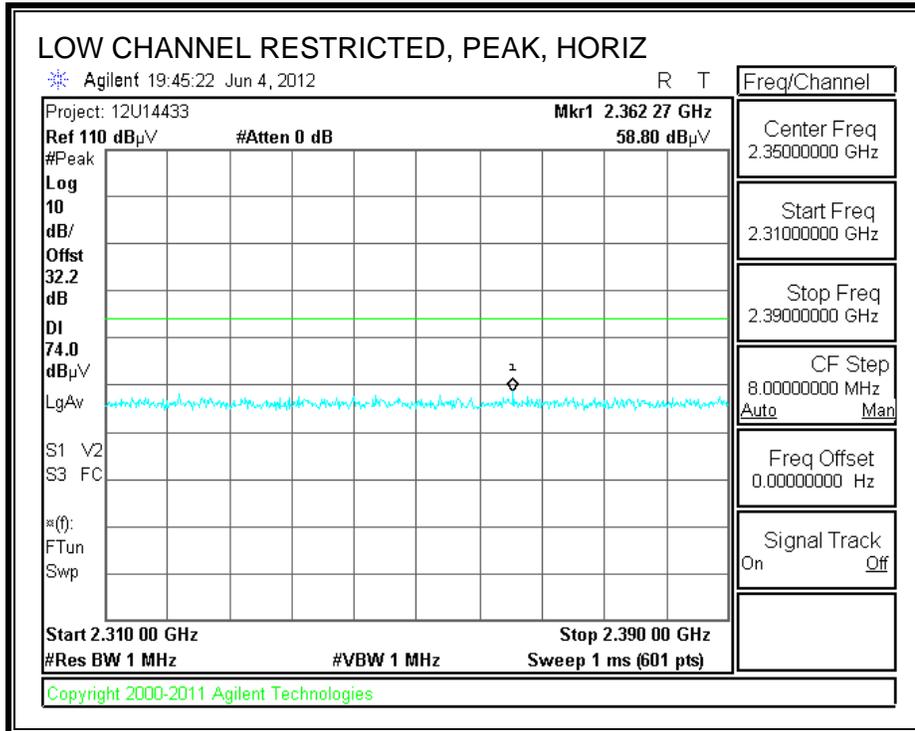
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

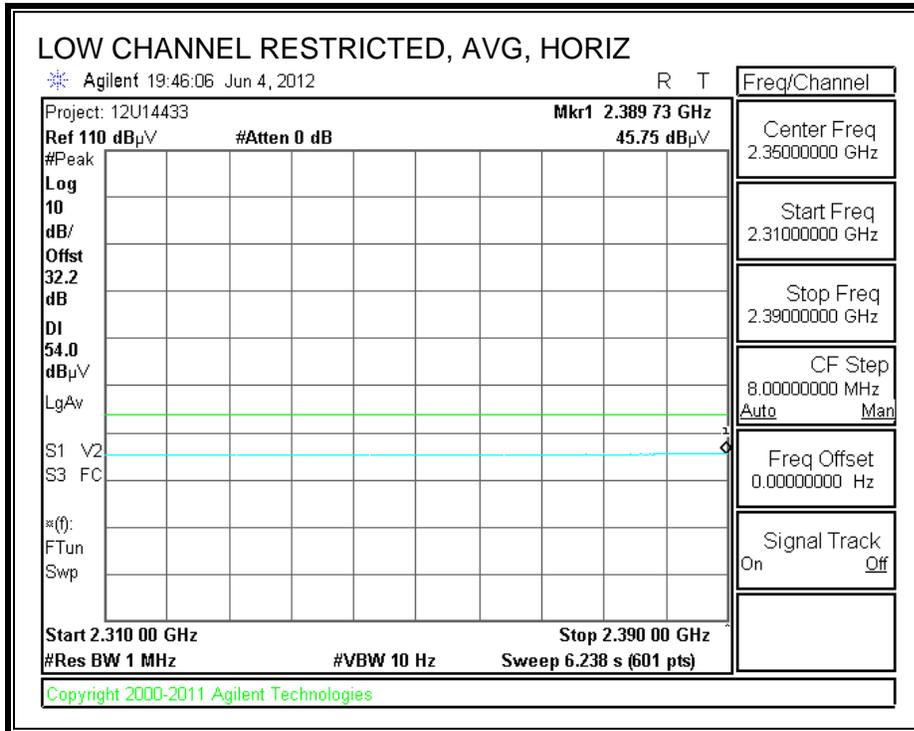
## 6.2. TRANSMITTER ABOVE 1 GHz

### 6.2.1. BASIC DATA RATE GFSK MODULATION

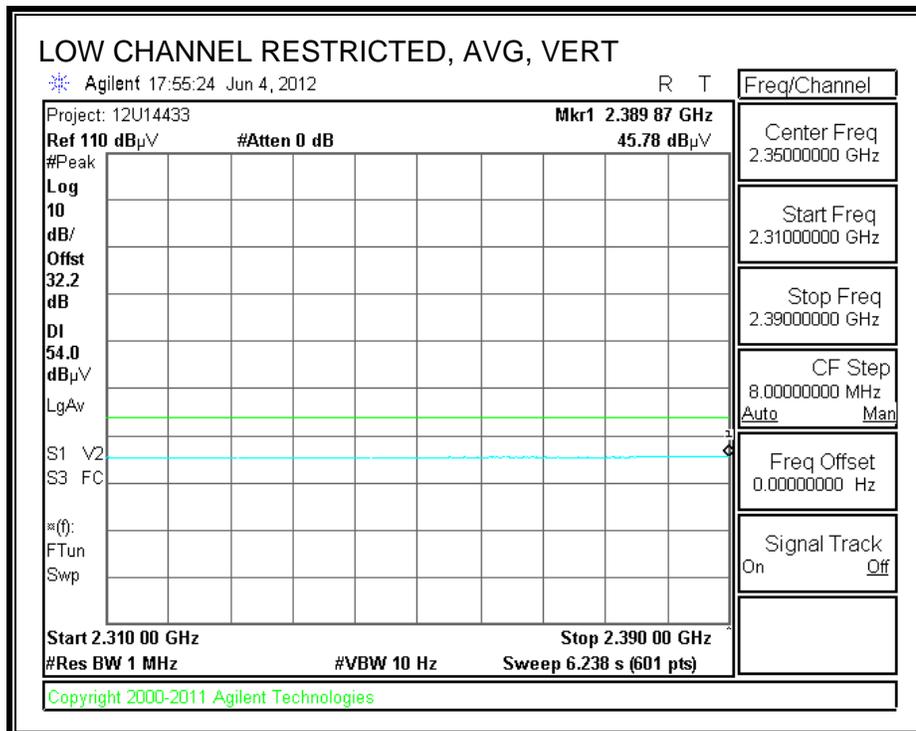
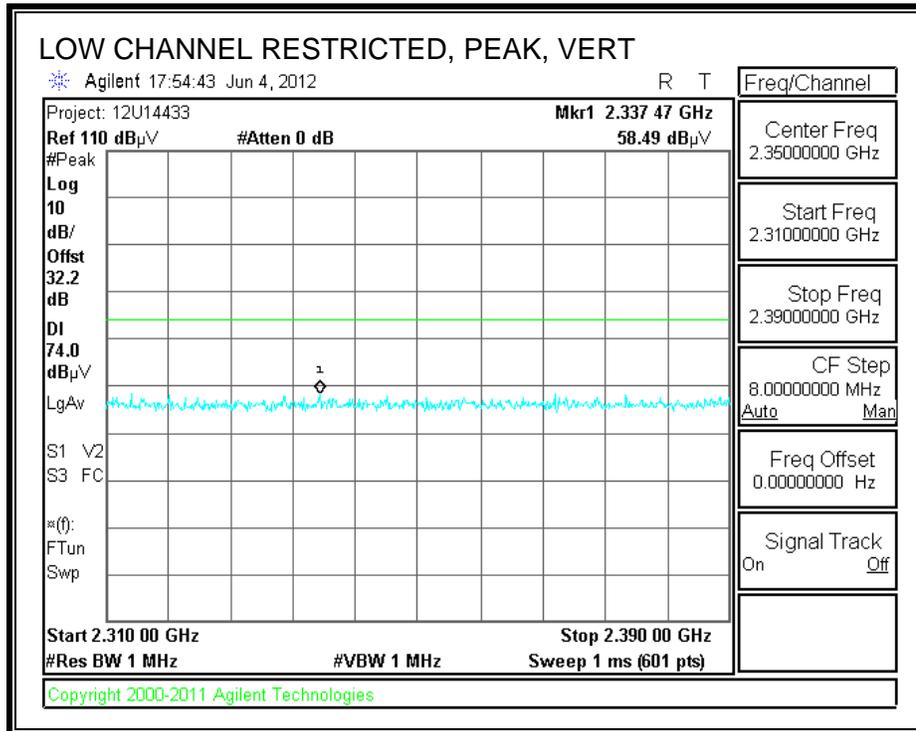
#### STANDARD COVER

#### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

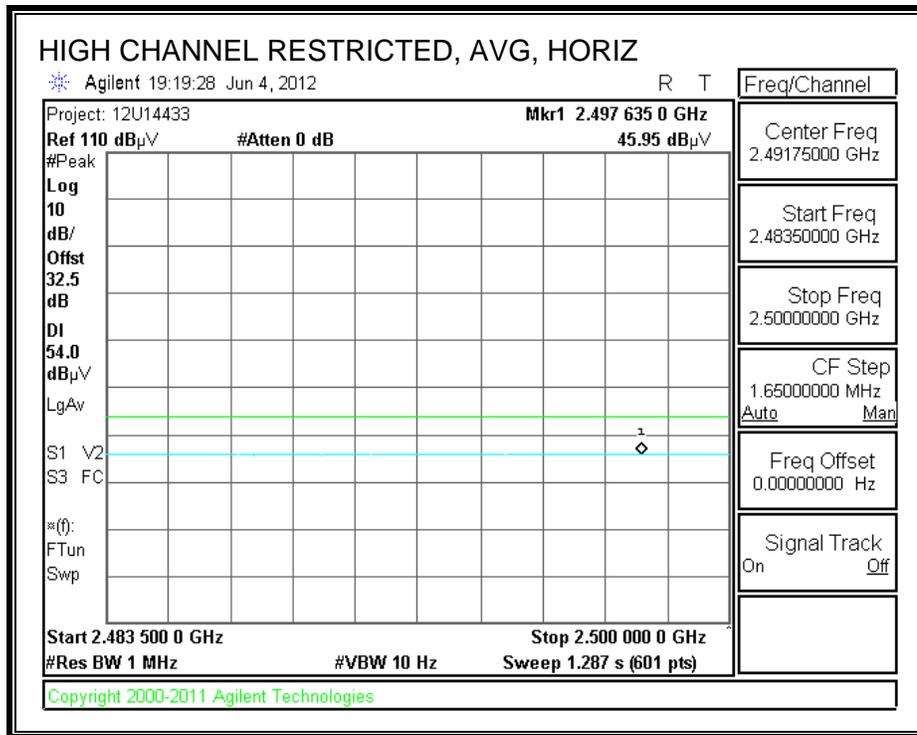
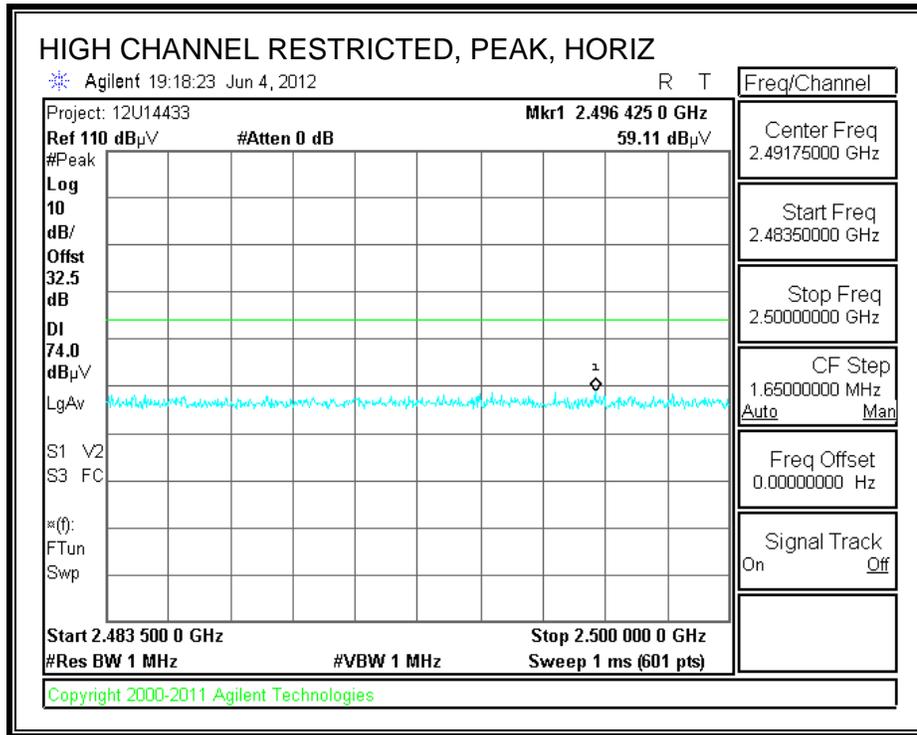




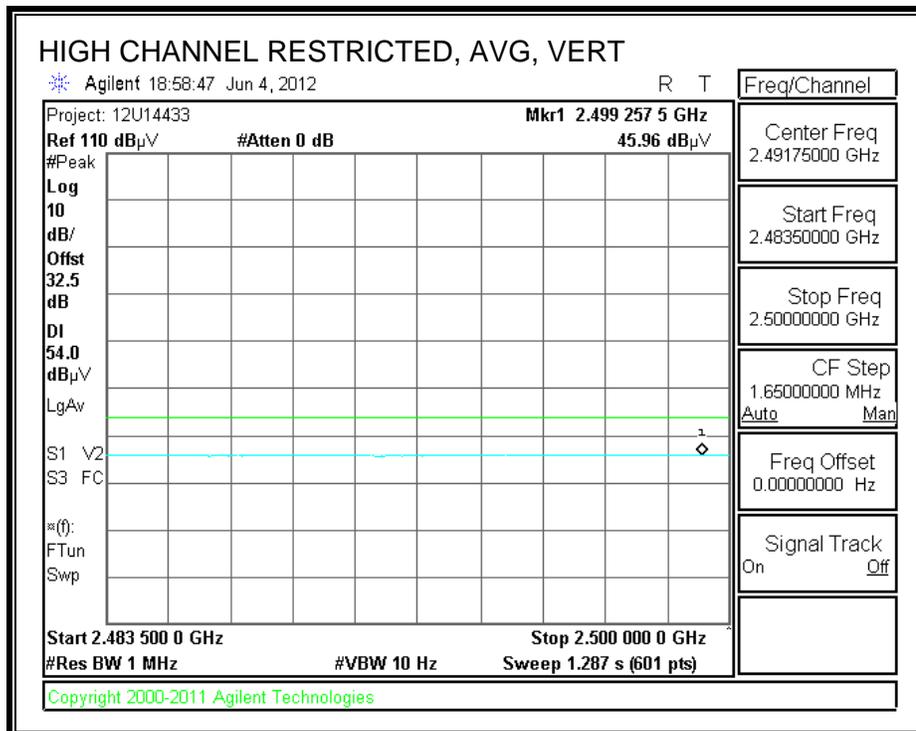
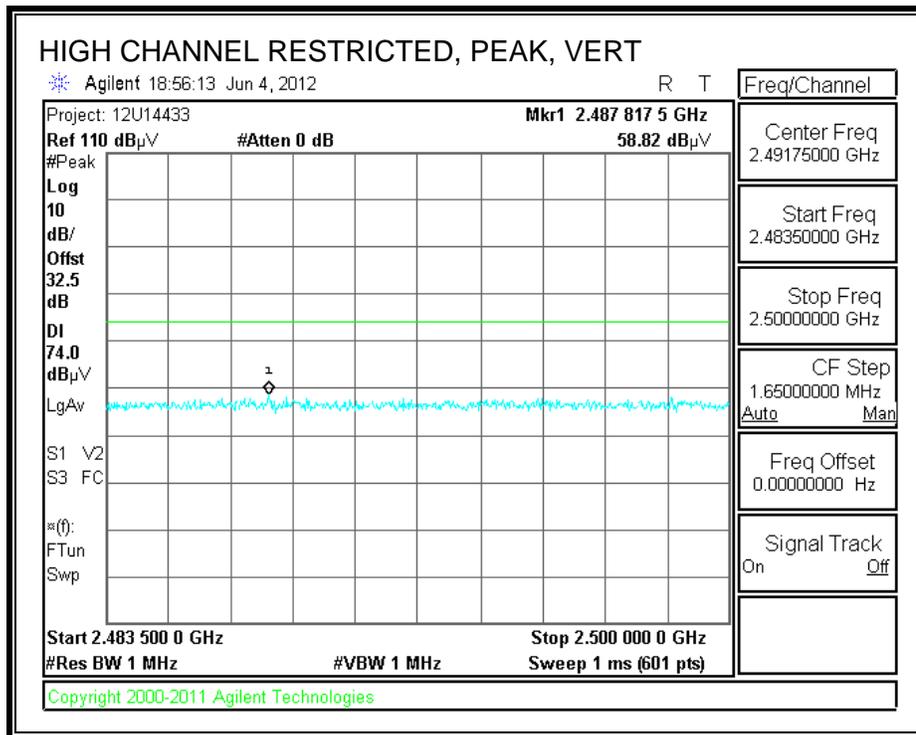
**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

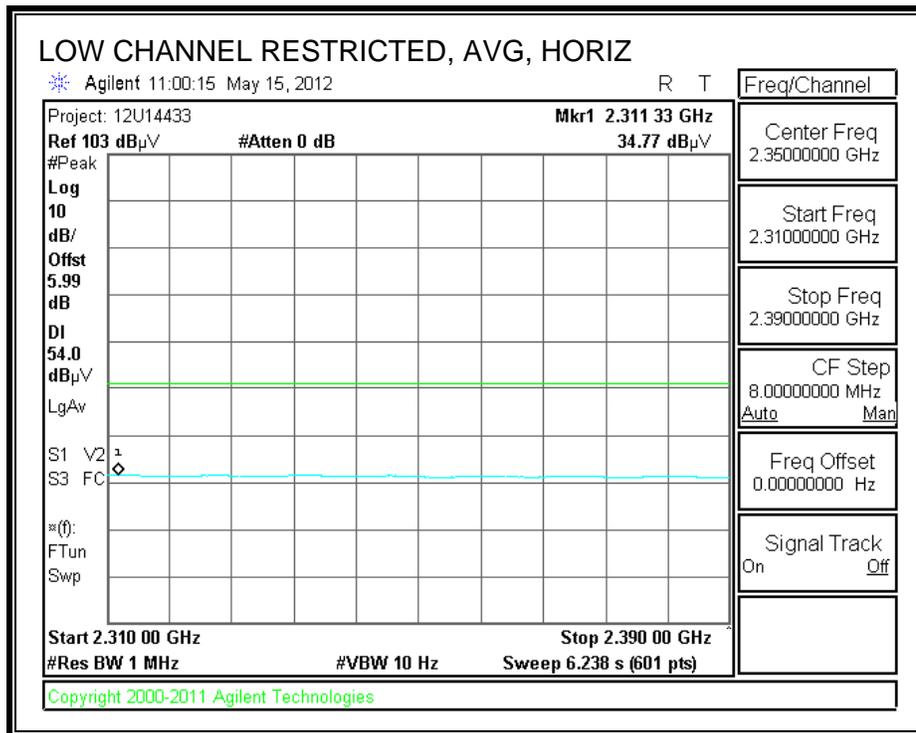
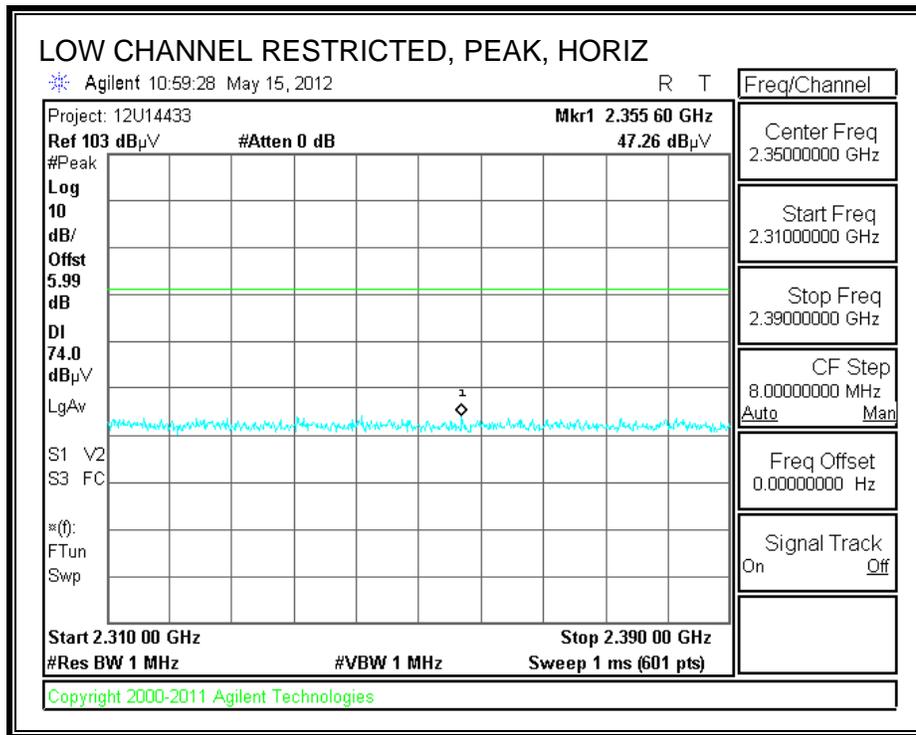


**HARMONICS AND SPURIOUS EMISSIONS**

High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Tom Chen											
Date:		06/05/12											
Project #:		12U14433											
Company:		LG Electronics Inc.											
Test Target:		FCC Class B											
Mode Oper:		Bluetooth GFSK, TX mode											
f	Measurement Frequency	Amp	Preamp Gain	Average Field Strength Limit									
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Peak Field Strength Limit									
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Margin vs. Average Limit									
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Margin vs. Peak Limit									
CL	Cable Loss	HPF	High Pass Filter										
f	Dist	Read	AF	CL	Amp	D Corr	Filtr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
<b>2402 MHz GFSK</b>													
4.804	3.0	40.9	33.1	6.3	-34.8	0.0	0.0	45.4	74.0	-28.6	H	P	
4.804	3.0	32.7	33.1	6.3	-34.8	0.0	0.0	37.2	54.0	-16.8	H	A	
4.804	3.0	44.7	33.1	6.3	-34.8	0.0	0.0	49.3	74.0	-24.7	V	P	
4.804	3.0	37.7	33.1	6.3	-34.8	0.0	0.0	42.2	54.0	-11.8	V	A	
<b>2441 MHz GFSK</b>													
4.882	3.0	43.5	33.1	6.3	-34.8	0.0	0.0	48.2	74.0	-25.9	V	P	
4.882	3.0	36.5	33.1	6.3	-34.8	0.0	0.0	41.1	54.0	-12.9	V	A	
4.882	3.0	45.7	33.1	6.3	-34.8	0.0	0.0	50.4	74.0	-23.6	H	P	
4.882	3.0	38.9	33.1	6.3	-34.8	0.0	0.0	43.5	54.0	-10.5	H	A	
<b>2480 MHz GFSK</b>													
4.960	3.0	47.3	33.2	6.4	-34.8	0.0	0.0	52.1	74.0	-21.9	H	P	
4.960	3.0	40.7	33.2	6.4	-34.8	0.0	0.0	45.4	54.0	-8.6	H	A	
4.960	3.0	44.4	33.2	6.4	-34.8	0.0	0.0	49.1	74.0	-24.9	V	P	
4.960	3.0	37.7	33.2	6.4	-34.8	0.0	0.0	42.4	54.0	-11.6	V	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

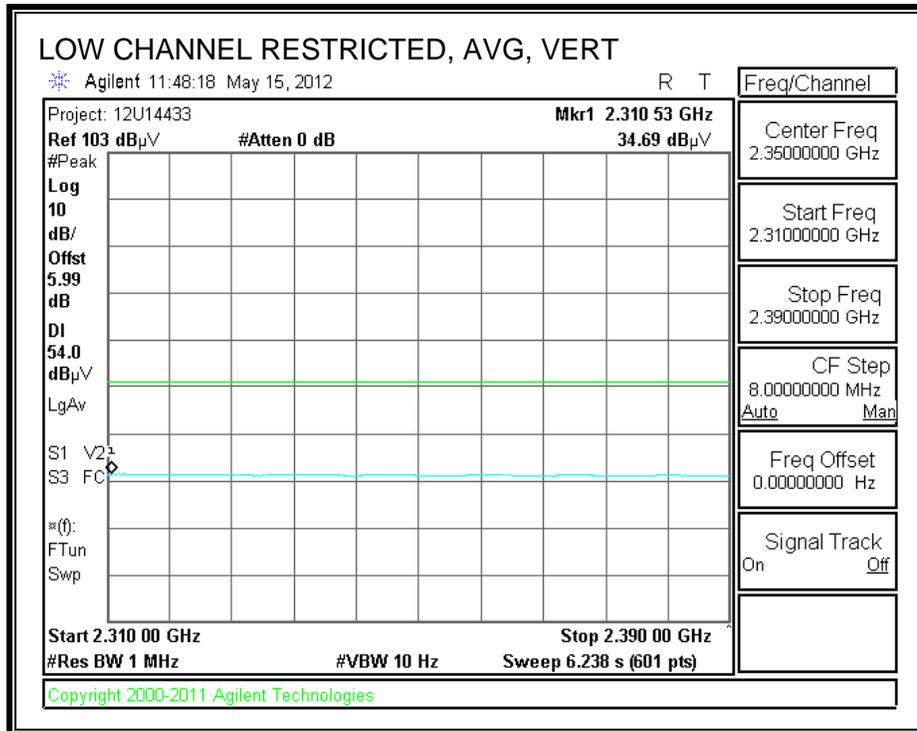
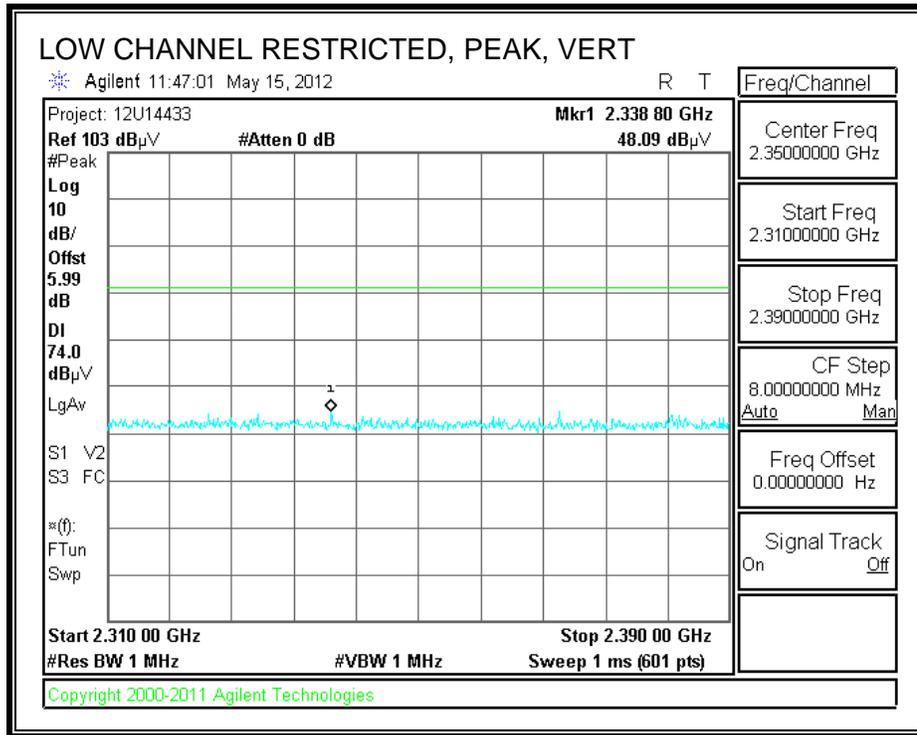
**INDUCTIVE COVER**

**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

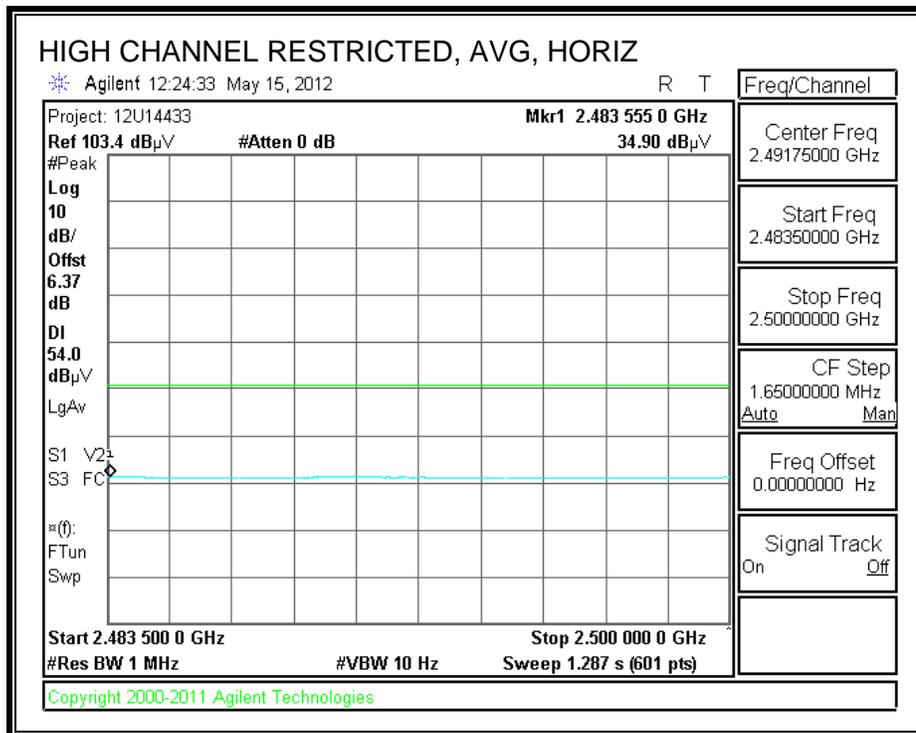
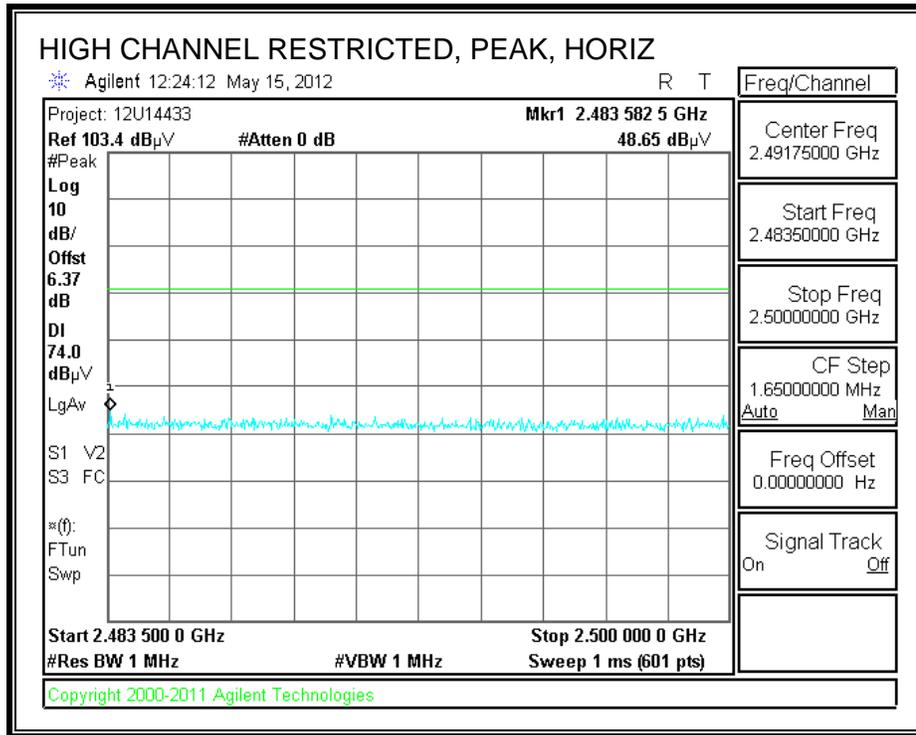




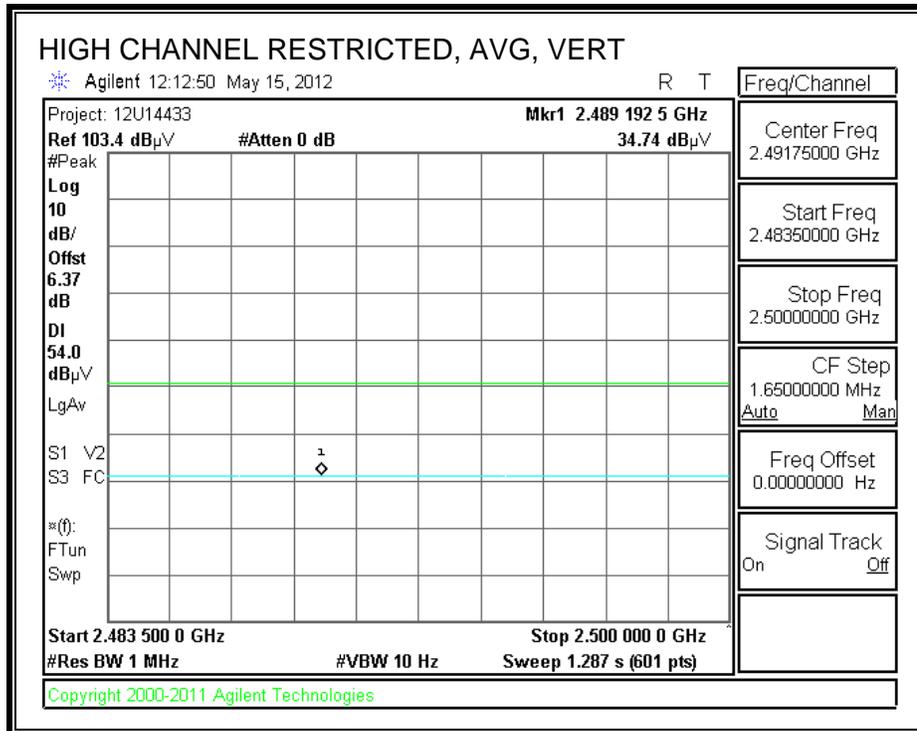
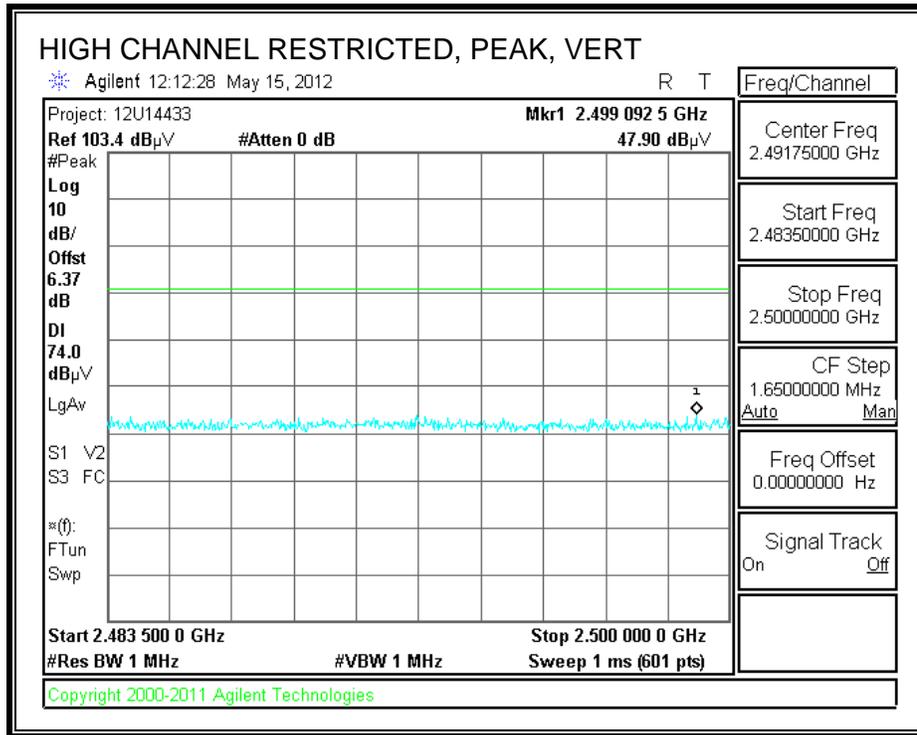
**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**



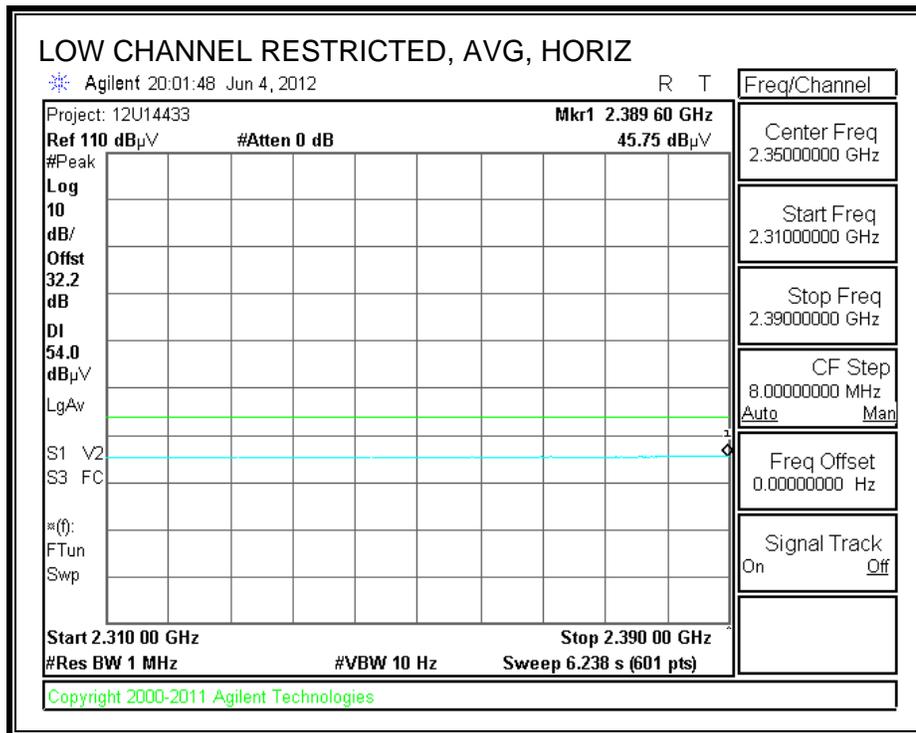
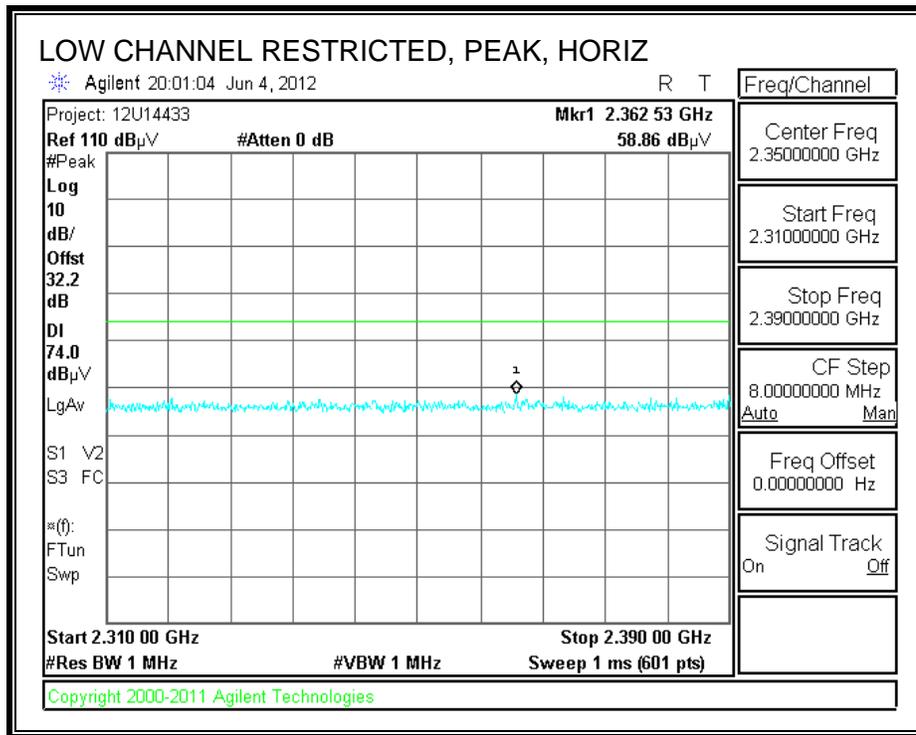
**HARMONICS AND SPURIOUS EMISSIONS**

High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Tom Chen											
Date:		05/17/12											
Project #:		12U14433											
Company:		LG Electronics Inc.											
Test Target:		FCC Class B											
Mode Oper:		Bluetooth GFSK, TX mode											
f	Measurement Frequency			Amp	Preamp Gain			Average Field Strength Limit					
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Peak Field Strength Limit					
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Margin vs. Average Limit					
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Margin vs. Peak Limit					
CL	Cable Loss			HPF	High Pass Filter								
f	Dist	Read	AF	CL	Amp	D Corr	Fltr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
<b>2402 MHz GFSK</b>													
4.804	3.0	42.2	33.1	6.3	-34.8	0.0	0.0	46.8	74.0	-27.2	H	P	
4.804	3.0	34.0	33.1	6.3	-34.8	0.0	0.0	38.6	54.0	-15.4	H	A	
4.804	3.0	46.1	33.1	6.3	-34.8	0.0	0.0	50.6	74.0	-23.4	V	P	
4.804	3.0	39.0	33.1	6.3	-34.8	0.0	0.0	43.6	54.0	-10.4	V	A	
<b>2441 MHz GFSK</b>													
4.882	3.0	44.8	33.1	6.3	-34.8	0.0	0.0	49.5	74.0	-24.5	V	P	
4.882	3.0	37.8	33.1	6.3	-34.8	0.0	0.0	42.4	54.0	-11.6	V	A	
4.882	3.0	47.1	33.1	6.3	-34.8	0.0	0.0	51.7	74.0	-22.3	H	P	
4.882	3.0	40.2	33.1	6.3	-34.8	0.0	0.0	44.9	54.0	-9.2	H	A	
<b>2480 MHz GFSK</b>													
4.960	3.0	48.6	33.2	6.4	-34.8	0.0	0.0	53.4	74.0	-20.6	H	P	
4.960	3.0	42.0	33.2	6.4	-34.8	0.0	0.0	46.8	54.0	-7.2	H	A	
4.960	3.0	45.7	33.2	6.4	-34.8	0.0	0.0	50.5	74.0	-23.5	V	P	
4.960	3.0	39.0	33.2	6.4	-34.8	0.0	0.0	43.8	54.0	-10.2	V	A	

Rev. 4.1.2.7  
 Note: No other emissions were detected above the system noise floor.

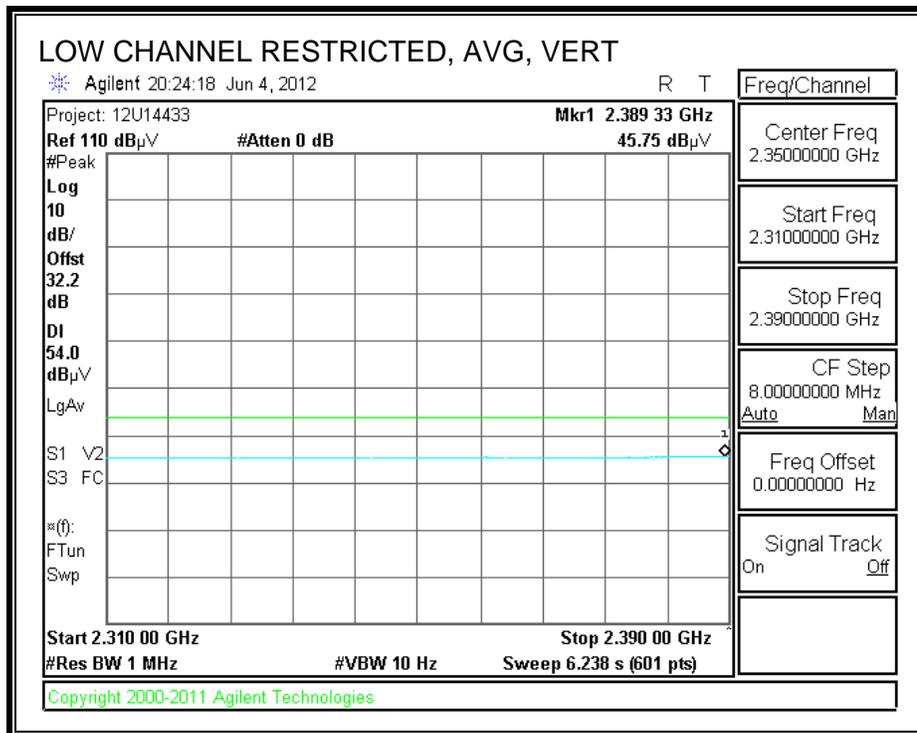
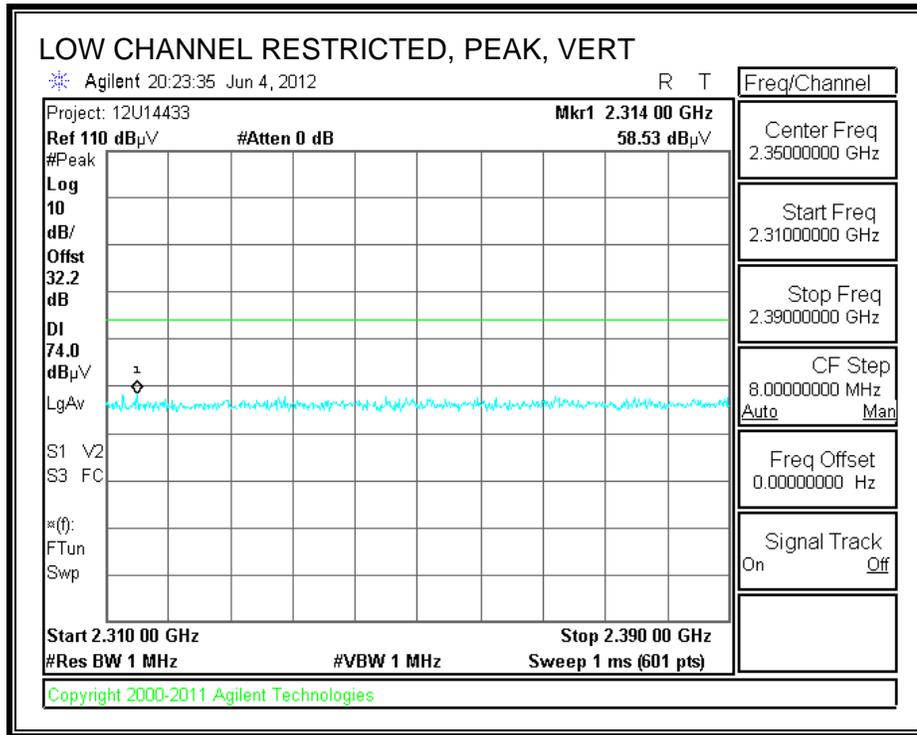
**INDUCTIVE CHARGER AND INDUCTIVE COVER**

**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

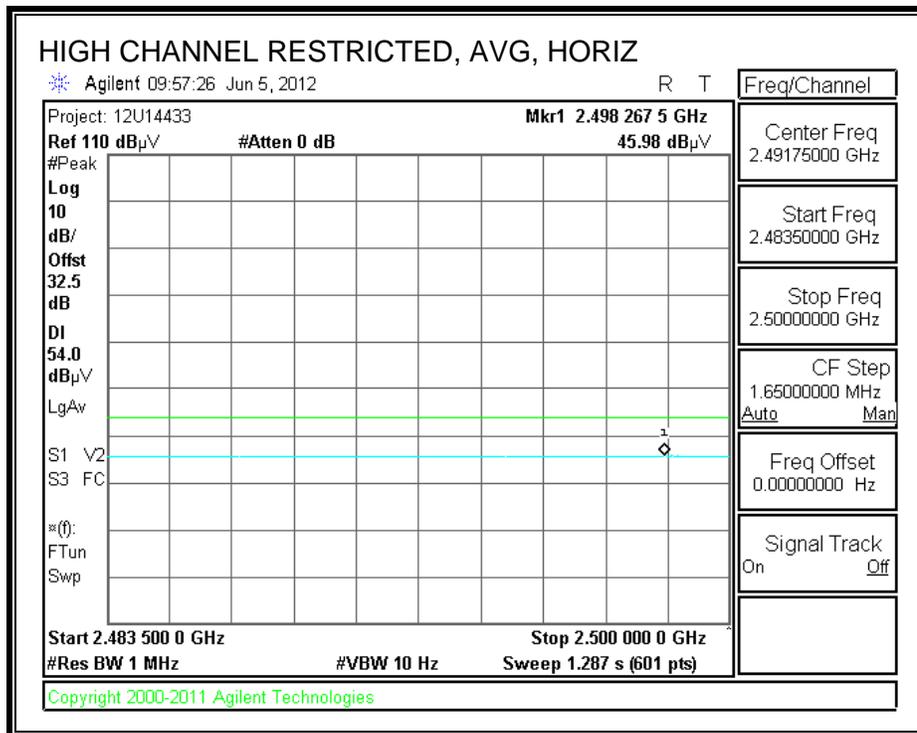
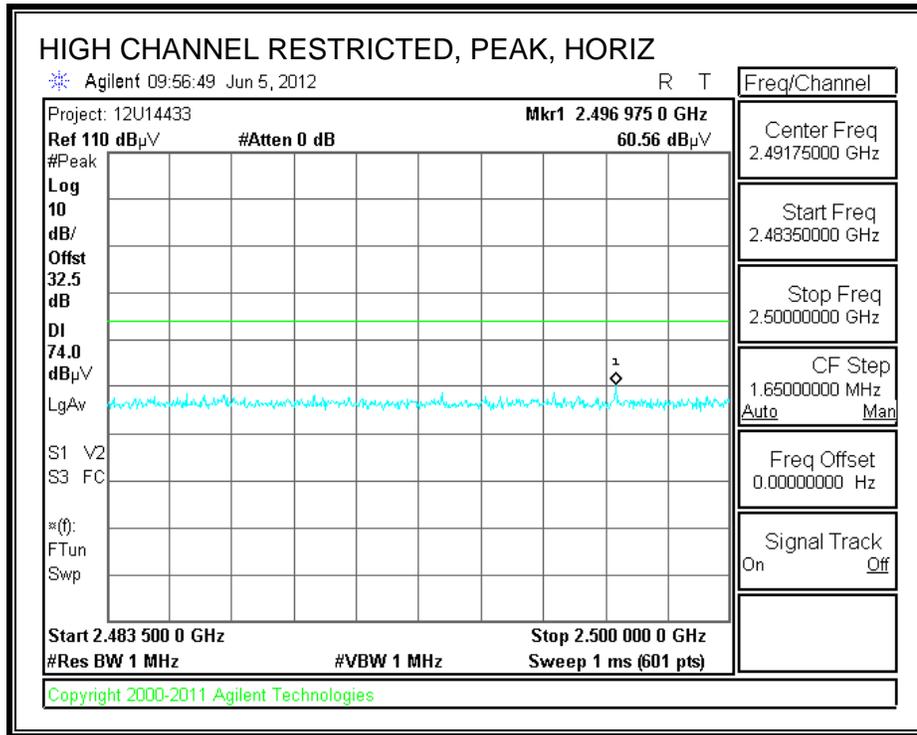




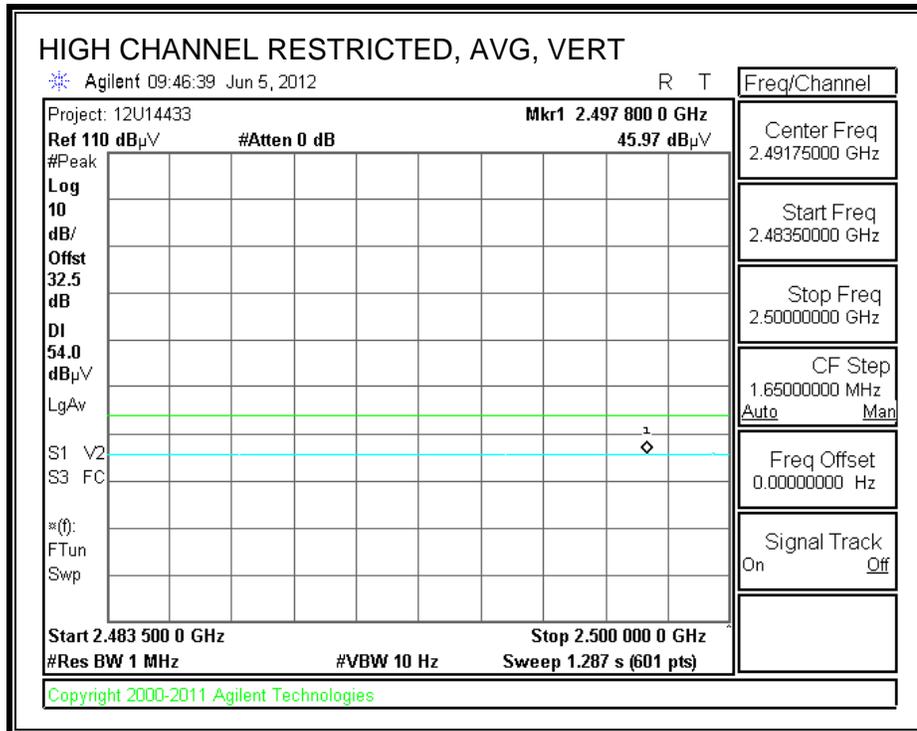
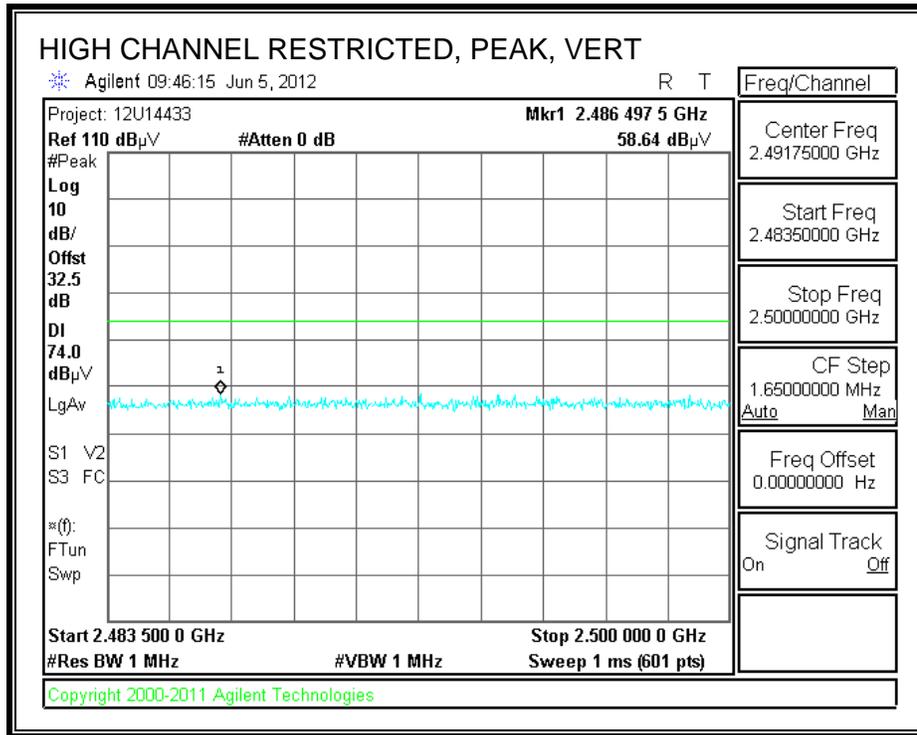
**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**



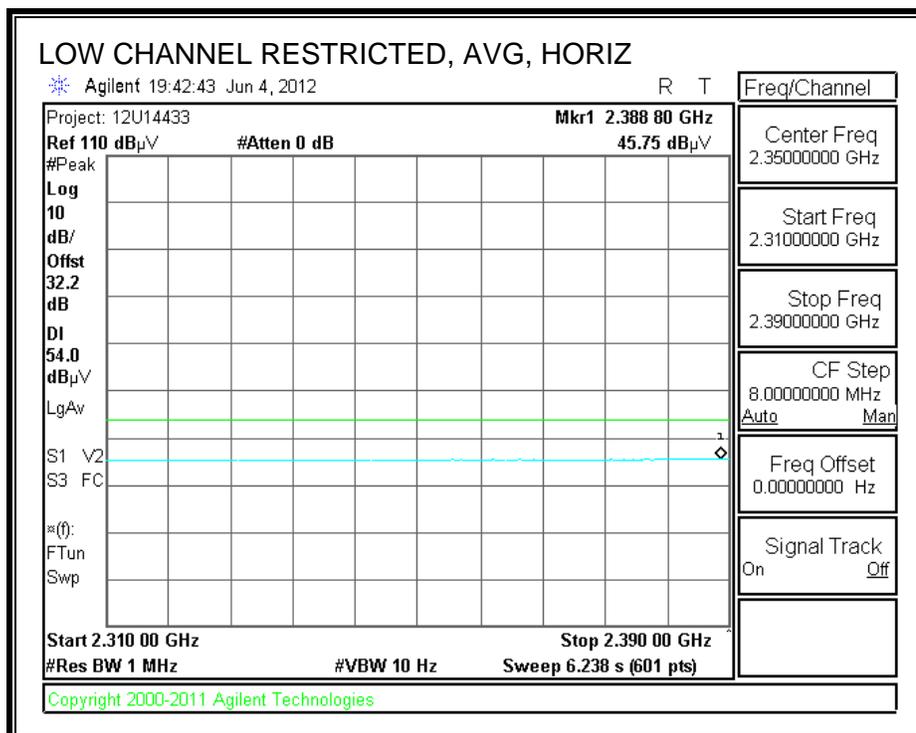
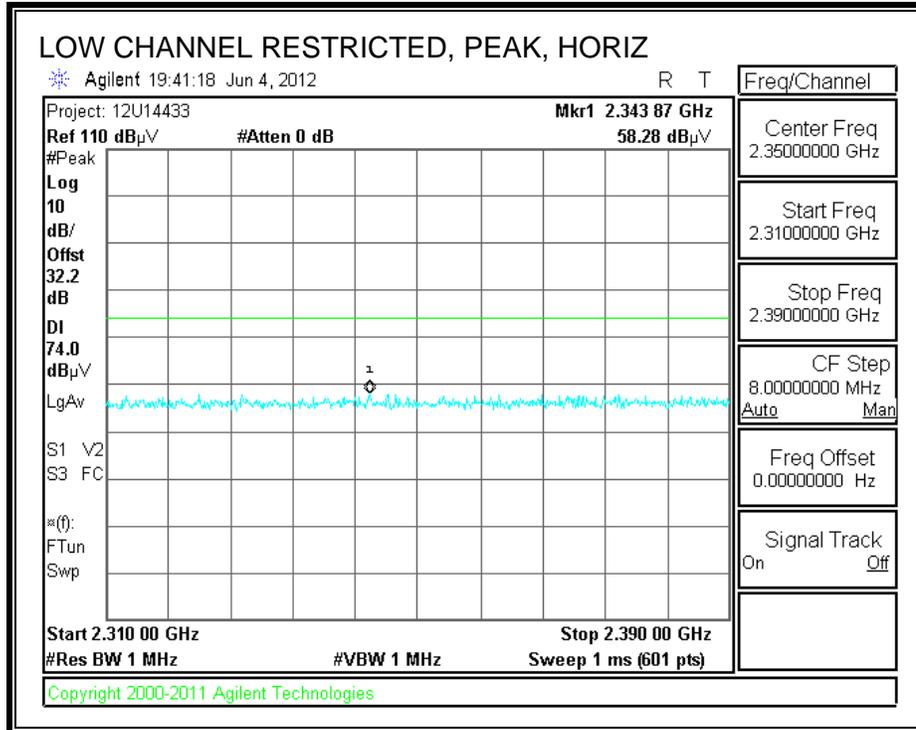
**HARMONICS AND SPURIOUS EMISSIONS**

High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Tom Chen											
Date:		06/05/12											
Project #:		12U14433											
Company:		LG Electronics Inc.											
Test Target:		FCC Class B											
Mode Oper:		Bluetooth GFSK, TX mode											
f	Measurement Frequency			Amp	Preamp Gain			Average Field Strength Limit					
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Peak Field Strength Limit					
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Margin vs. Average Limit					
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Margin vs. Peak Limit					
CL	Cable Loss			HPF	High Pass Filter								
f	Dist	Read	AF	CL	Amp	D Corr	Fltr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
<b>2402 MHz GFSK</b>													
4.804	3.0	39.6	33.1	6.3	-34.8	0.0	0.0	44.1	74.0	-29.9	H	P	
4.804	3.0	28.4	33.1	6.3	-34.8	0.0	0.0	32.9	54.0	-21.1	H	A	
4.804	3.0	41.5	33.1	6.3	-34.8	0.0	0.0	46.0	74.0	-28.0	V	P	
4.804	3.0	30.5	33.1	6.3	-34.8	0.0	0.0	35.0	54.0	-19.0	V	A	
<b>2441 MHz GFSK</b>													
4.882	3.0	42.0	33.1	6.3	-34.8	0.0	0.0	46.6	74.0	-27.4	V	P	
4.882	3.0	30.5	33.1	6.3	-34.8	0.0	0.0	35.1	54.0	-18.9	V	A	
4.882	3.0	38.6	33.1	6.3	-34.8	0.0	0.0	43.3	74.0	-30.7	H	P	
4.882	3.0	27.8	33.1	6.3	-34.8	0.0	0.0	32.5	54.0	-21.5	H	A	
<b>2480 MHz GFSK</b>													
4.960	3.0	40.6	33.2	6.4	-34.8	0.0	0.0	45.4	74.0	-28.6	H	P	
4.960	3.0	28.9	33.2	6.4	-34.8	0.0	0.0	33.7	54.0	-20.3	H	A	
4.960	3.0	42.6	33.2	6.4	-34.8	0.0	0.0	47.4	74.0	-26.6	V	P	
4.960	3.0	31.4	33.2	6.4	-34.8	0.0	0.0	36.2	54.0	-17.8	V	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

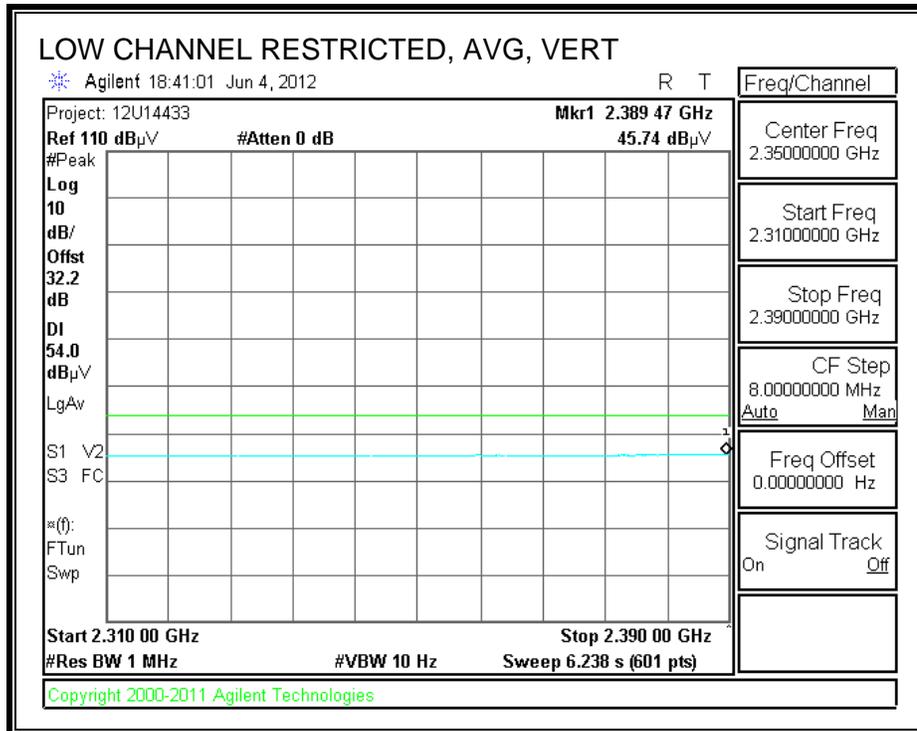
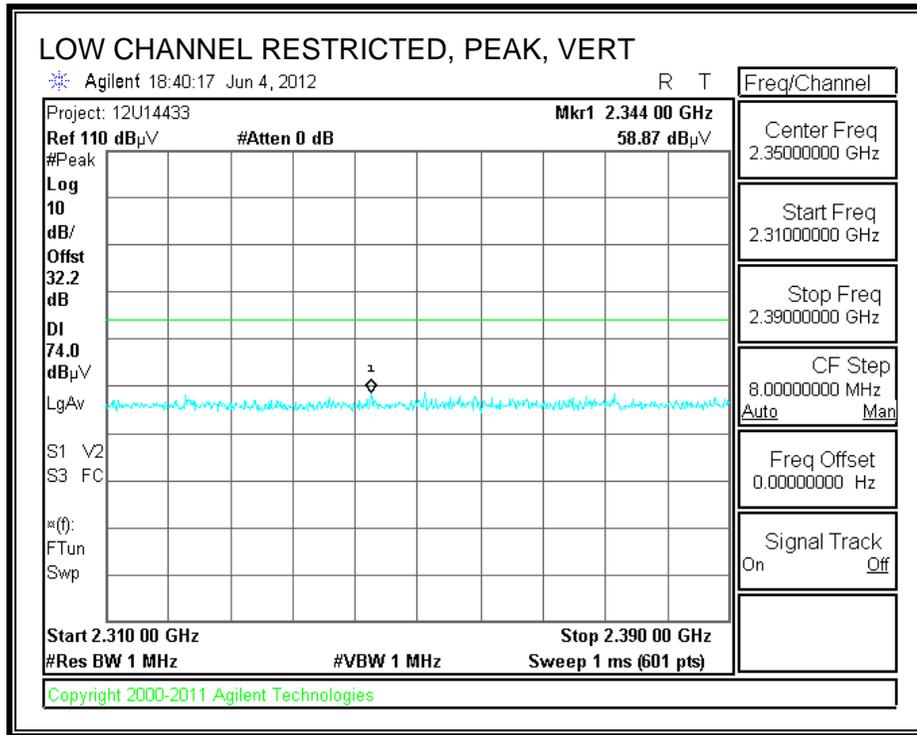
## 6.2.2. DQPSK MODULATION

### STANDARD COVER

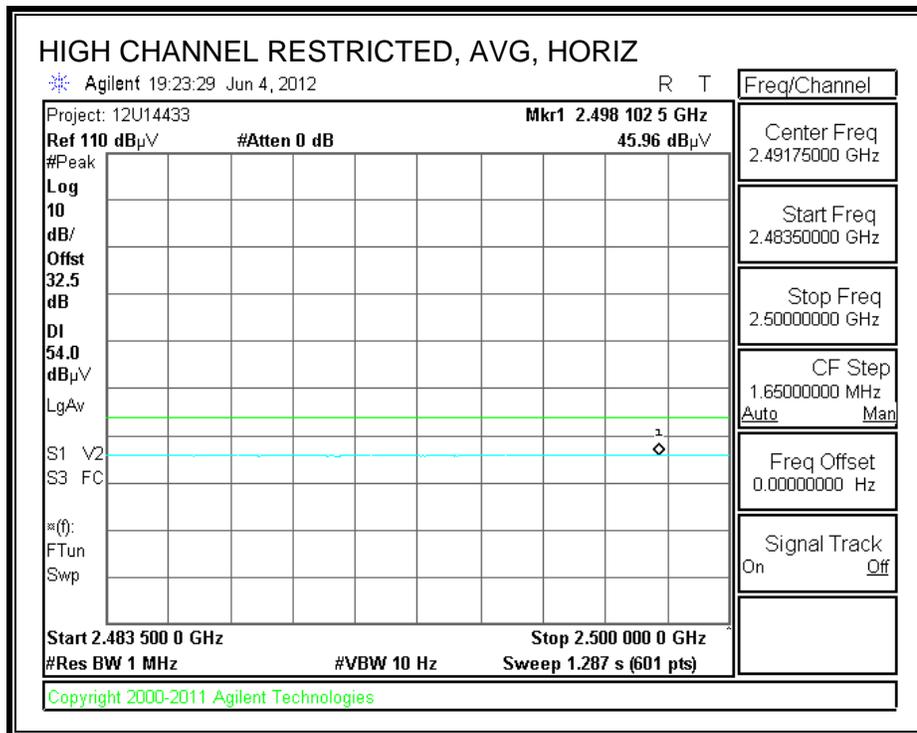
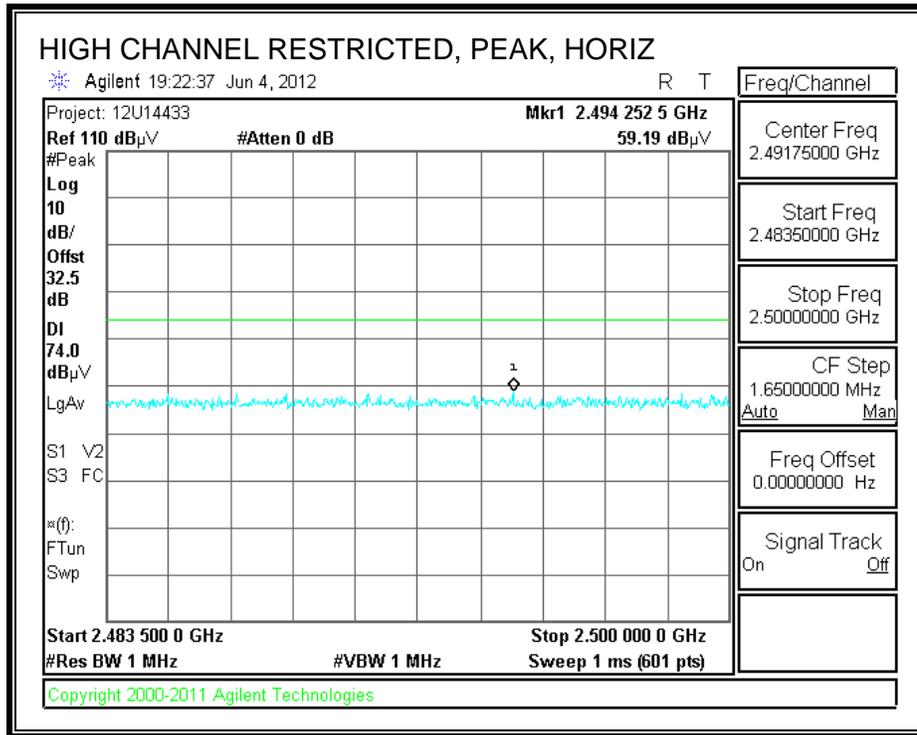
### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



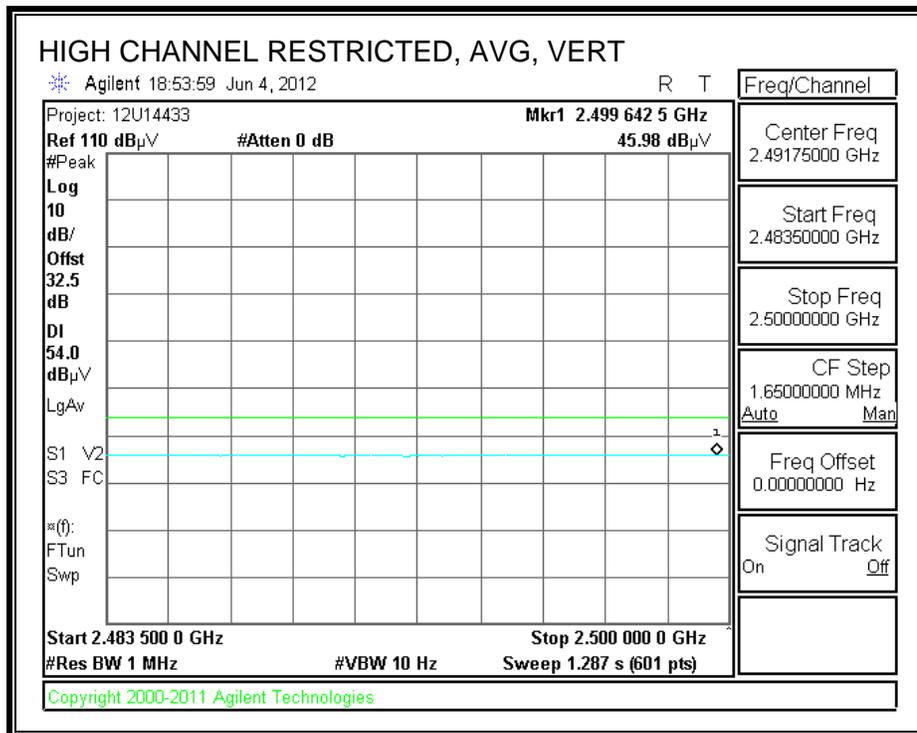
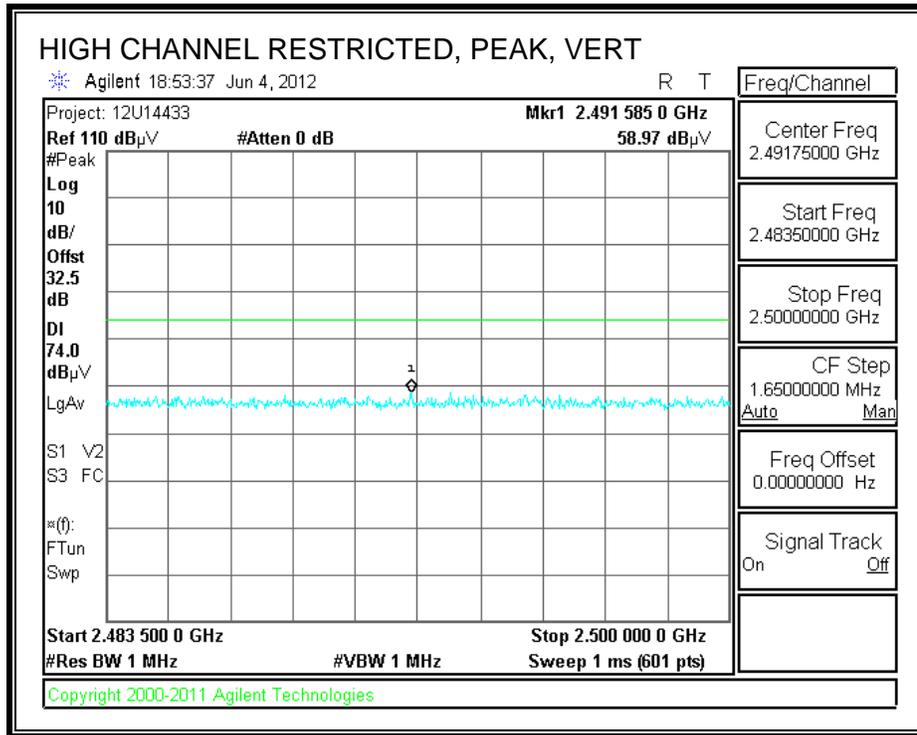
**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

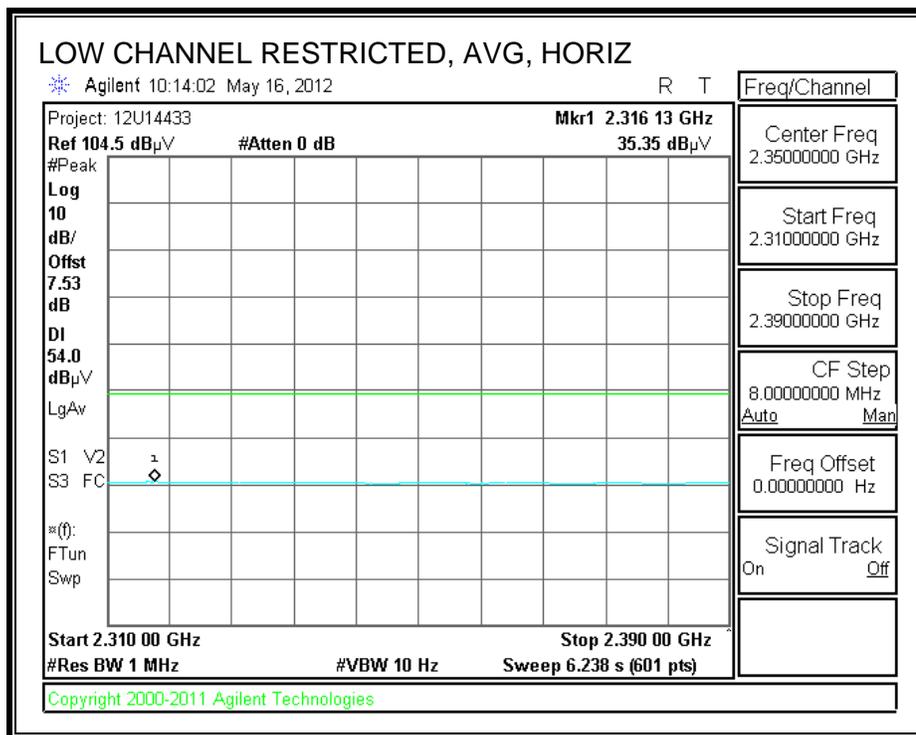
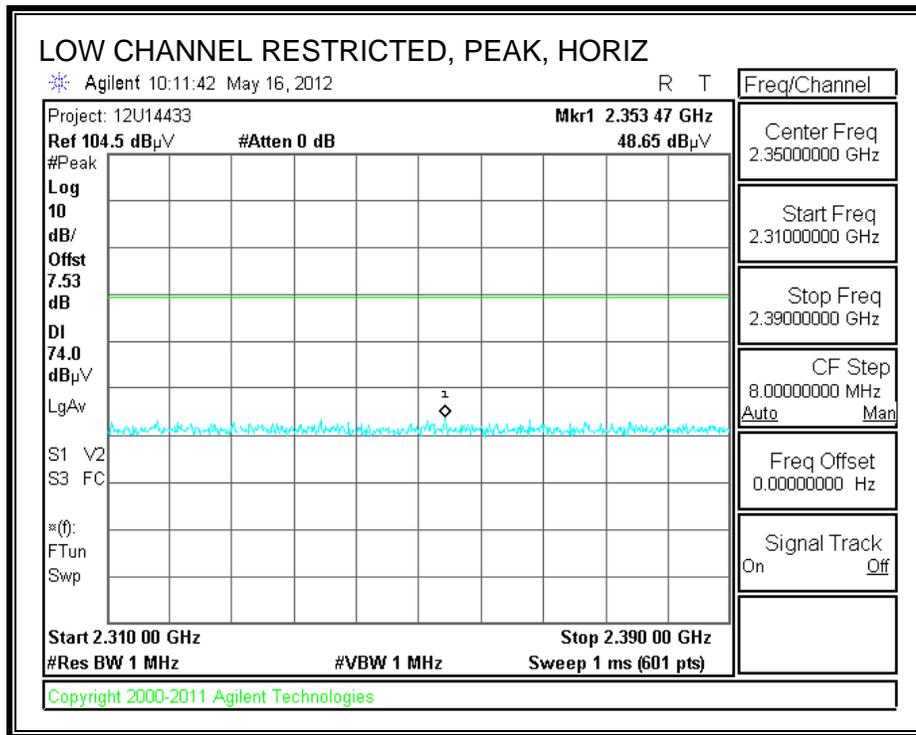


**HARMONICS AND SPURIOUS EMISSIONS**

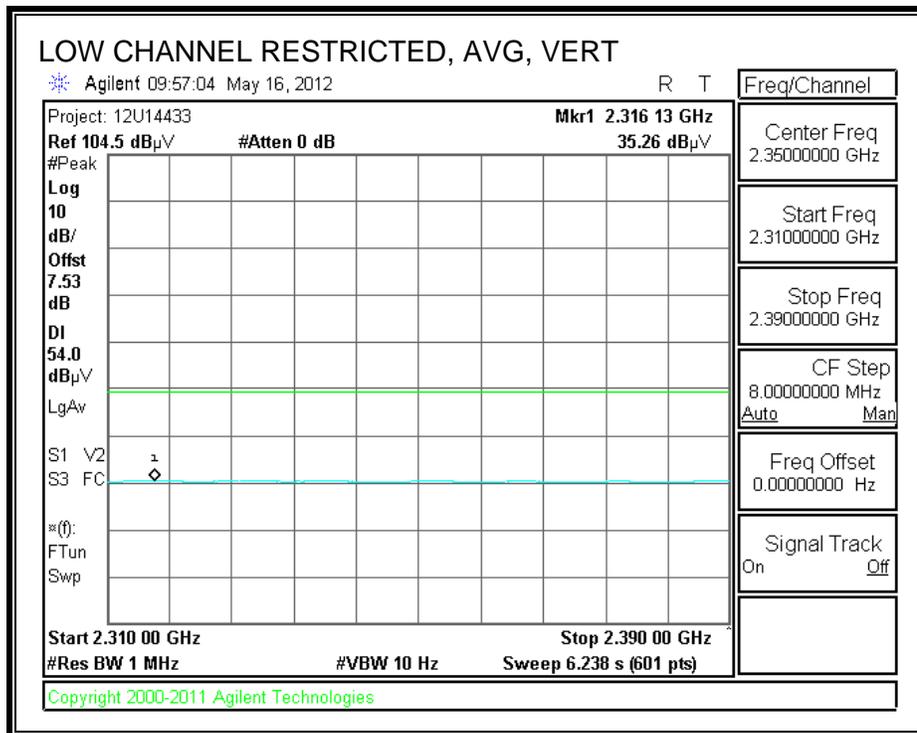
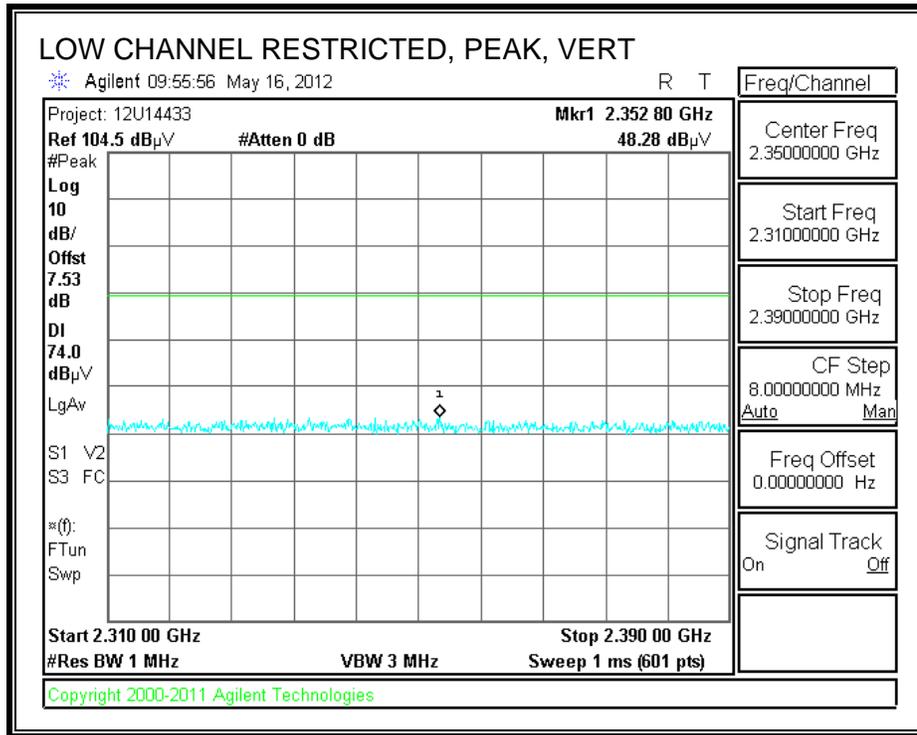
High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Tom Chen											
Date:		06/05/12											
Project #:		12U14433											
Company:		LG Electronics Inc.											
Test Target:		FCC Class B											
Mode Oper:		Bluetooth DQPSK, TX mode											
f	Measurement Frequency			Amp	Preamp Gain			Average Field Strength Limit					
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Peak Field Strength Limit					
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Margin vs. Average Limit					
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Margin vs. Peak Limit					
CL	Cable Loss			HPF	High Pass Filter								
f	Dist	Read	AF	CL	Amp	D Corr	Filtr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
<b>2402 MHz DQPSK</b>													
4.804	3.0	42.3	33.1	6.3	-34.8	0.0	0.0	46.8	74.0	-27.2	V	P	
4.804	3.0	30.7	33.1	6.3	-34.8	0.0	0.0	35.2	54.0	-18.8	V	A	
4.804	3.0	44.5	33.1	6.3	-34.8	0.0	0.0	49.0	74.0	-25.0	H	P	
4.804	3.0	32.1	33.1	6.3	-34.8	0.0	0.0	36.6	54.0	-17.4	H	A	
<b>2441 MHz DQPSK</b>													
4.882	3.0	42.3	33.1	6.3	-34.8	0.0	0.0	46.9	74.0	-27.1	H	P	
4.882	3.0	30.7	33.1	6.3	-34.8	0.0	0.0	35.3	54.0	-18.7	H	A	
4.882	3.0	39.4	33.1	6.3	-34.8	0.0	0.0	44.0	74.0	-30.0	V	P	
4.882	3.0	28.7	33.1	6.3	-34.8	0.0	0.0	33.4	54.0	-20.6	V	A	
<b>2480 MHz DQPSK</b>													
4.960	3.0	41.2	33.2	6.4	-34.8	0.0	0.0	45.9	74.0	-28.1	V	P	
4.960	3.0	29.9	33.2	6.4	-34.8	0.0	0.0	34.7	54.0	-19.3	V	A	
4.960	3.0	43.5	33.2	6.4	-34.8	0.0	0.0	48.2	74.0	-25.8	H	P	
4.960	3.0	31.2	33.2	6.4	-34.8	0.0	0.0	36.0	54.0	-18.0	H	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

**INDUCTIVE COVER**

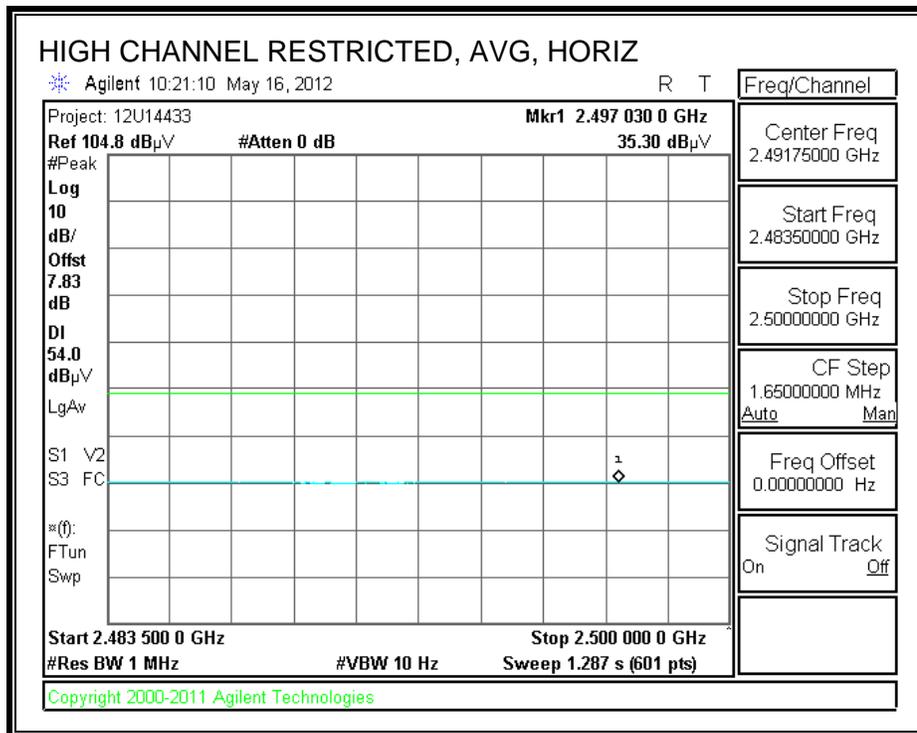
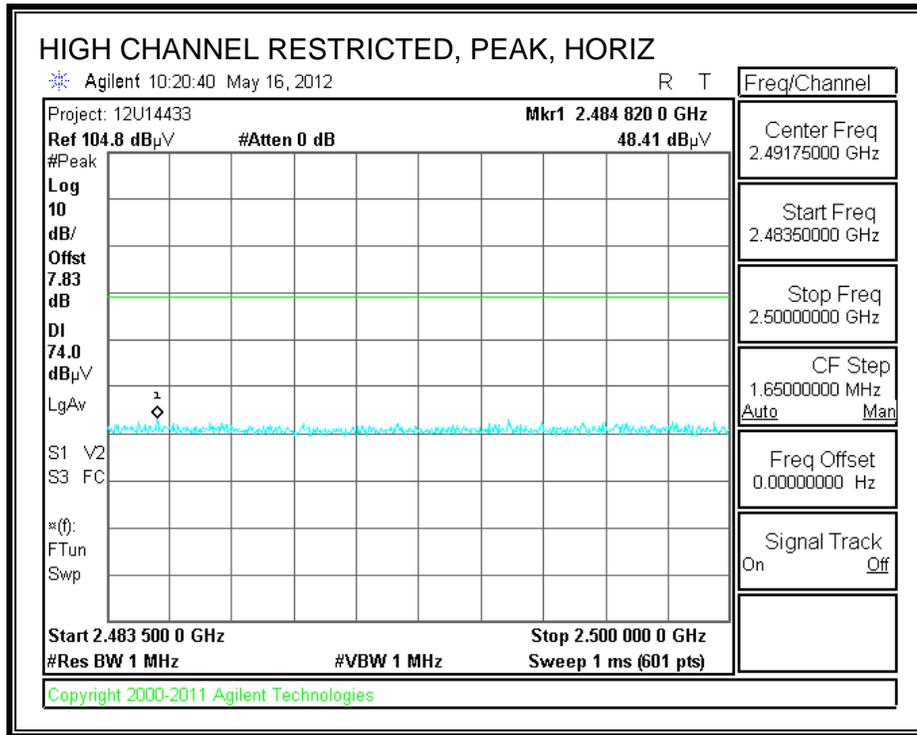
**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**



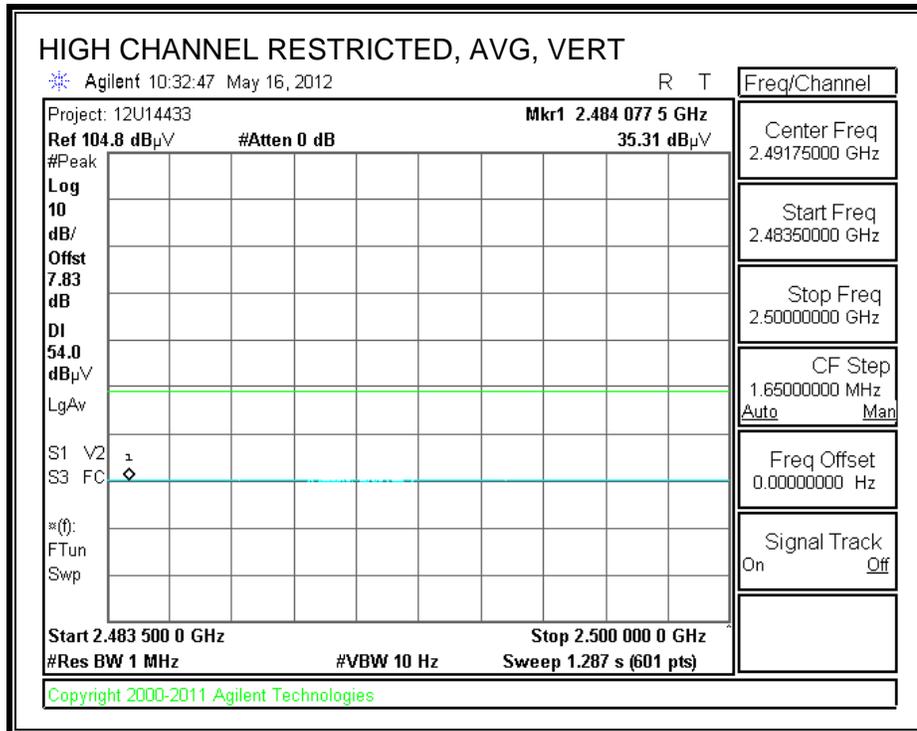
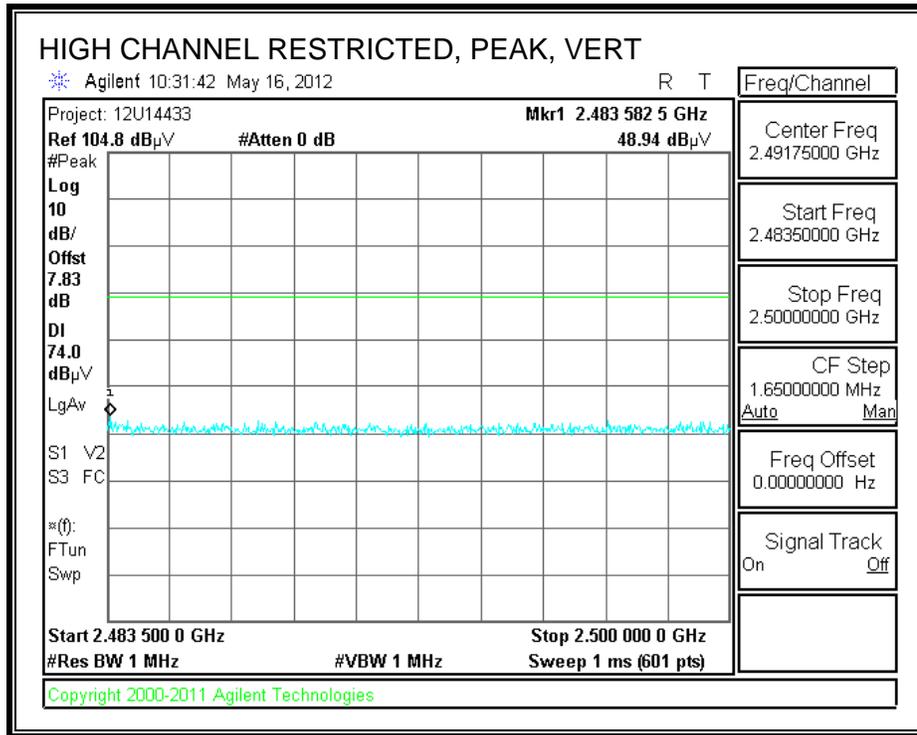
**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

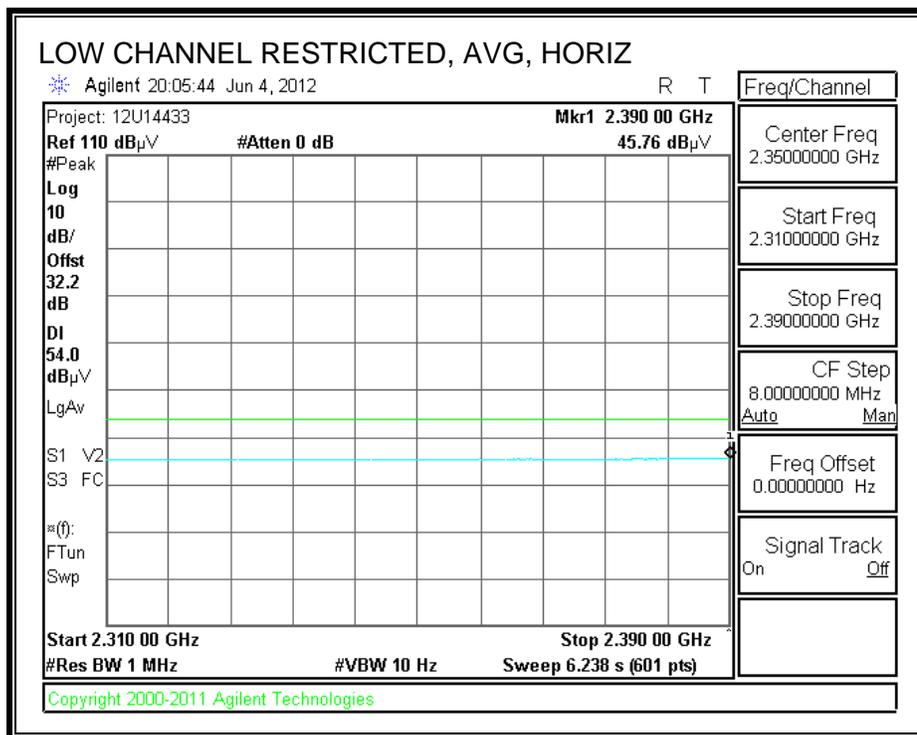
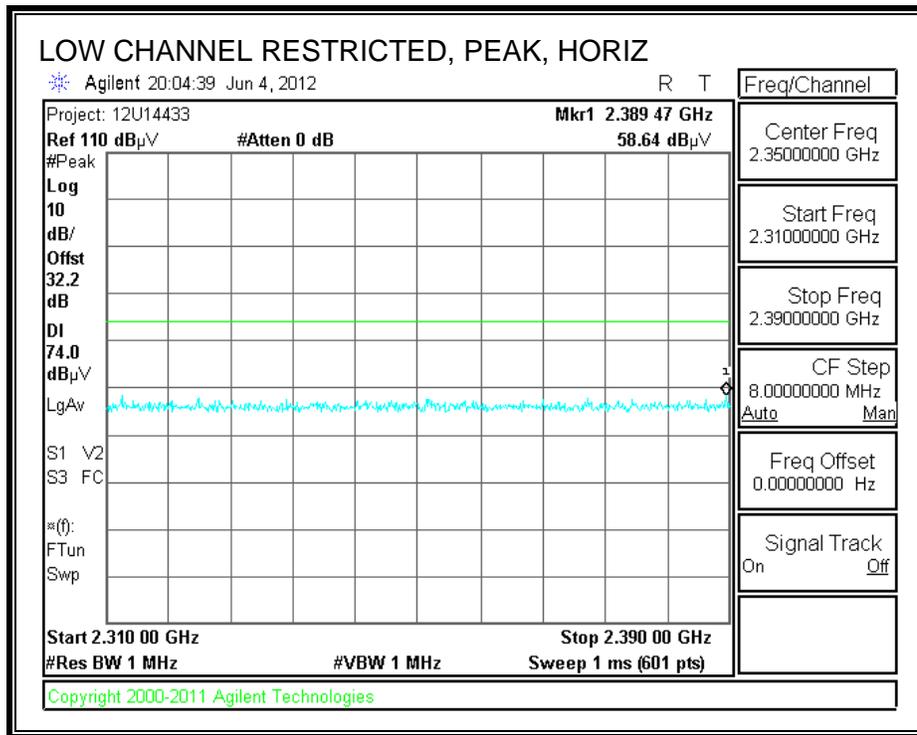


**HARMONICS AND SPURIOUS EMISSIONS**

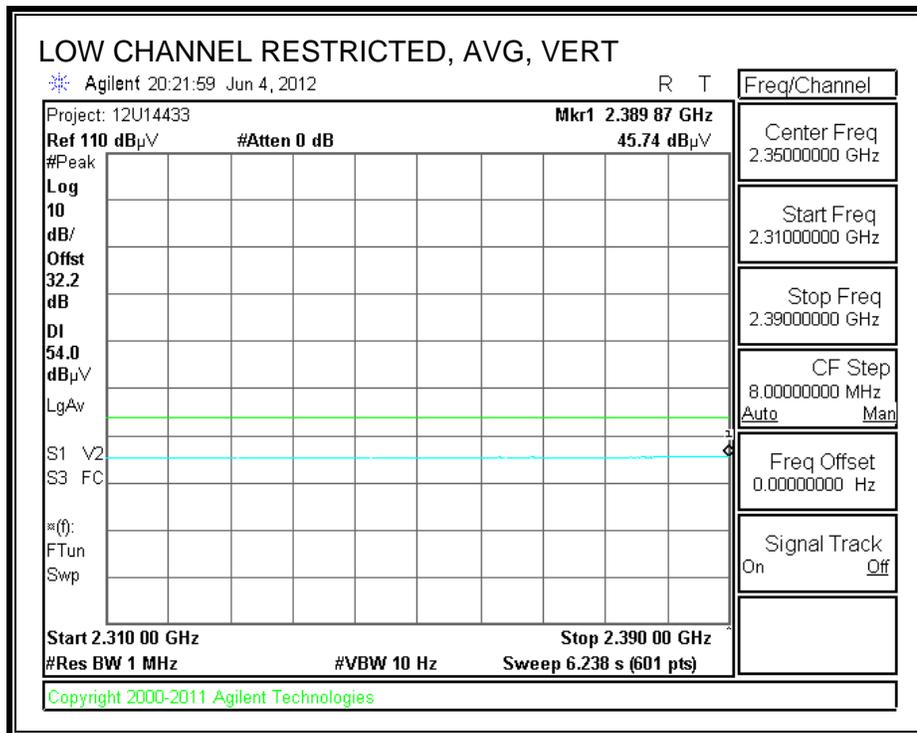
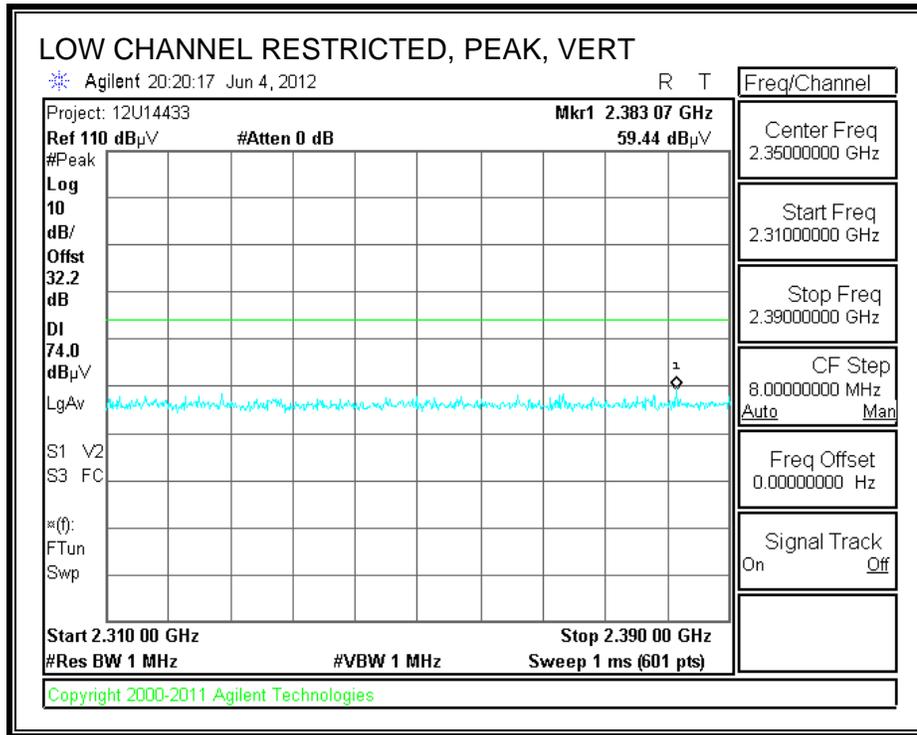
High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Tom Chen											
Date:		06/05/12											
Project #:		12U14433											
Company:		LG Electronics Inc.											
Test Target:		FCC Class B											
Mode Oper:		Bluetooth DQPSK, TX mode											
f	Measurement Frequency			Amp	Preamp Gain			Average Field Strength Limit					
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Peak Field Strength Limit					
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Margin vs. Average Limit					
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Margin vs. Peak Limit					
CL	Cable Loss			HPF	High Pass Filter								
f	Dist	Read	AF	CL	Amp	D Corr	Fltr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
<b>2402 MHz DQPSK</b>													
4.804	3.0	45.0	33.1	6.3	-34.8	0.0	0.0	49.5	74.0	-24.5	V	P	
4.804	3.0	33.3	33.1	6.3	-34.8	0.0	0.0	37.9	54.0	-16.1	V	A	
4.804	3.0	47.2	33.1	6.3	-34.8	0.0	0.0	51.7	74.0	-22.3	H	P	
4.804	3.0	34.7	33.1	6.3	-34.8	0.0	0.0	39.3	54.0	-14.7	H	A	
<b>2441 MHz DQPSK</b>													
4.882	3.0	44.9	33.1	6.3	-34.8	0.0	0.0	49.6	74.0	-24.4	H	P	
4.882	3.0	33.3	33.1	6.3	-34.8	0.0	0.0	38.0	54.0	-16.0	H	A	
4.882	3.0	42.0	33.1	6.3	-34.8	0.0	0.0	46.7	74.0	-27.3	V	P	
4.882	3.0	31.4	33.1	6.3	-34.8	0.0	0.0	36.0	54.0	-18.0	V	A	
<b>2480 MHz DQPSK</b>													
4.960	3.0	43.8	33.2	6.4	-34.8	0.0	0.0	48.6	74.0	-25.4	V	P	
4.960	3.0	32.5	33.2	6.4	-34.8	0.0	0.0	37.3	54.0	-16.7	V	A	
4.960	3.0	46.1	33.2	6.4	-34.8	0.0	0.0	50.9	74.0	-23.1	H	P	
4.960	3.0	33.9	33.2	6.4	-34.8	0.0	0.0	38.7	54.0	-15.3	H	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

**INDUCTIVE CHARGER AND INDUCTIVE COVER**

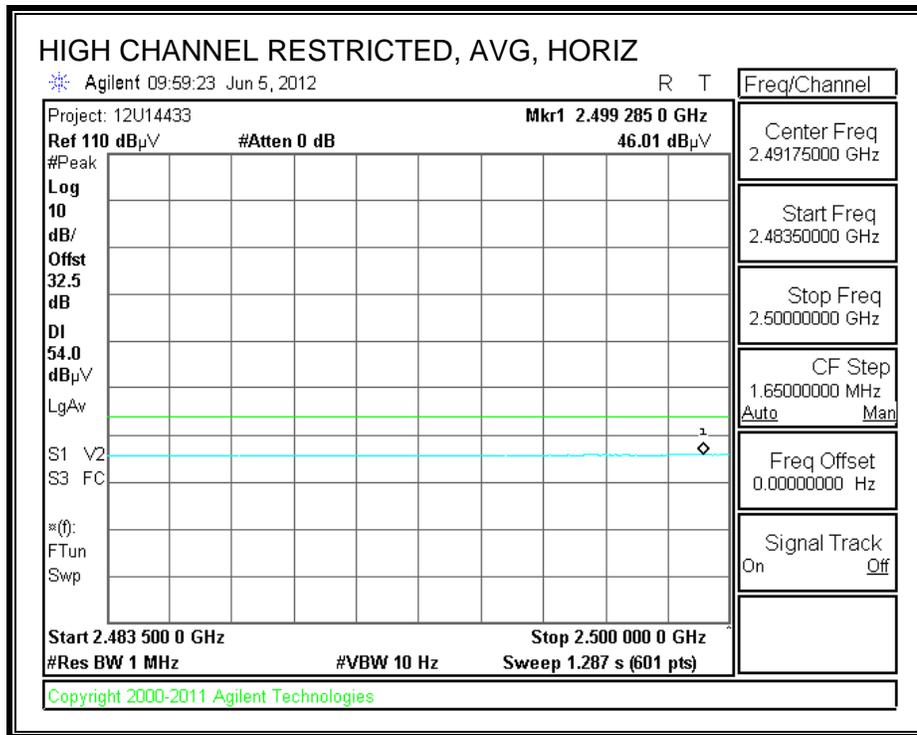
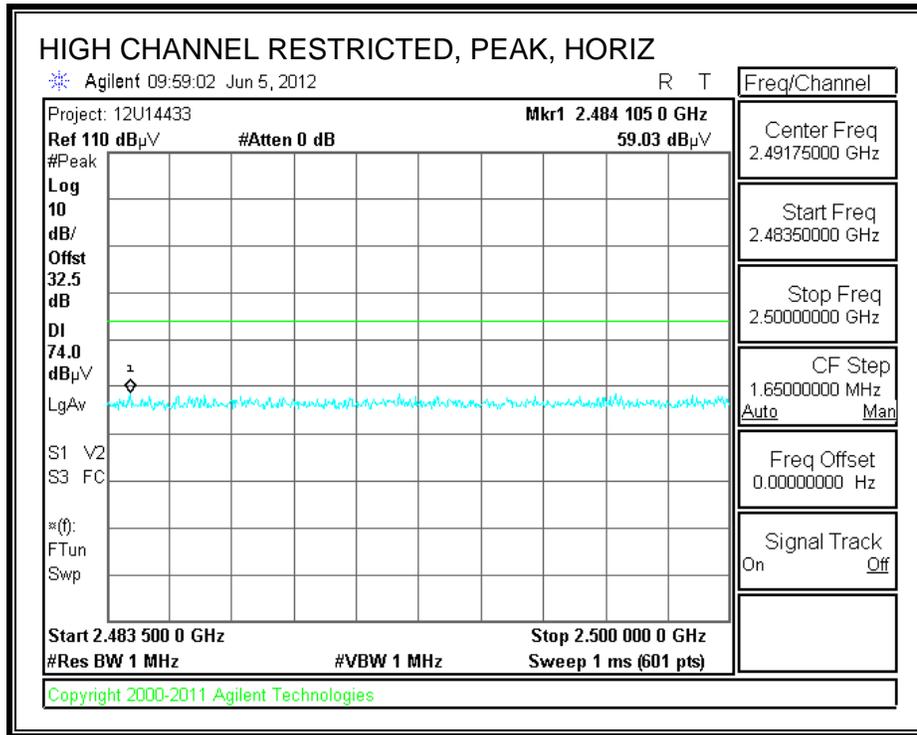
**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**



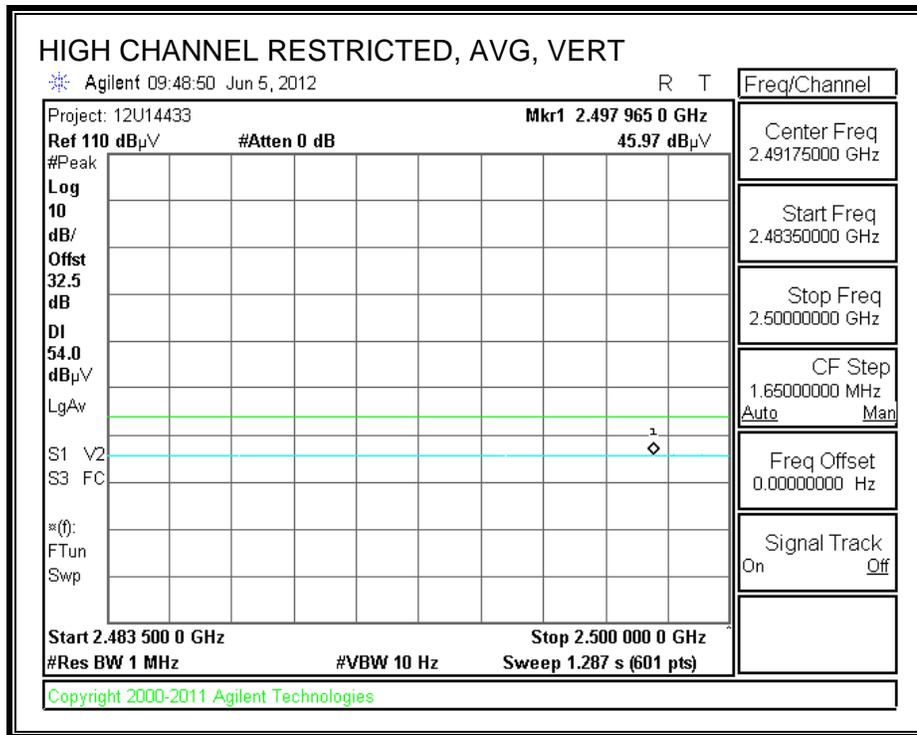
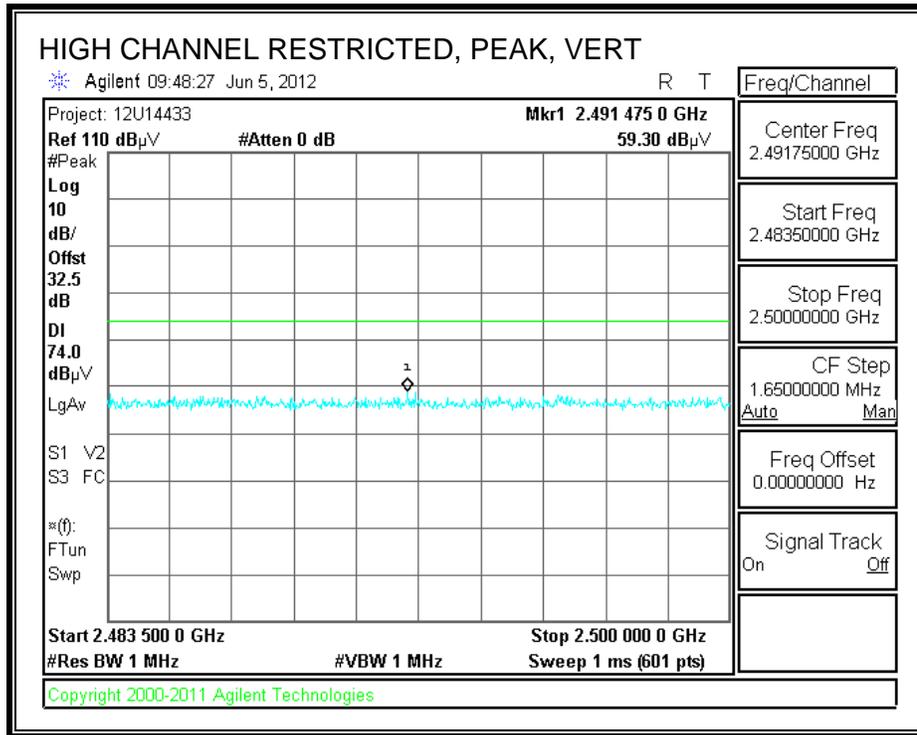
**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**



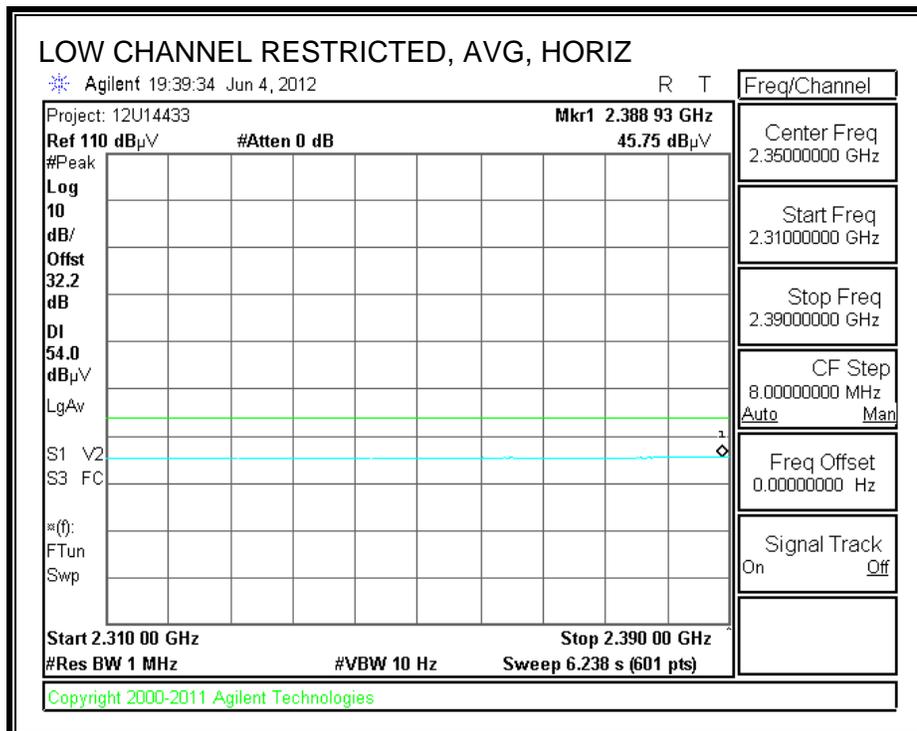
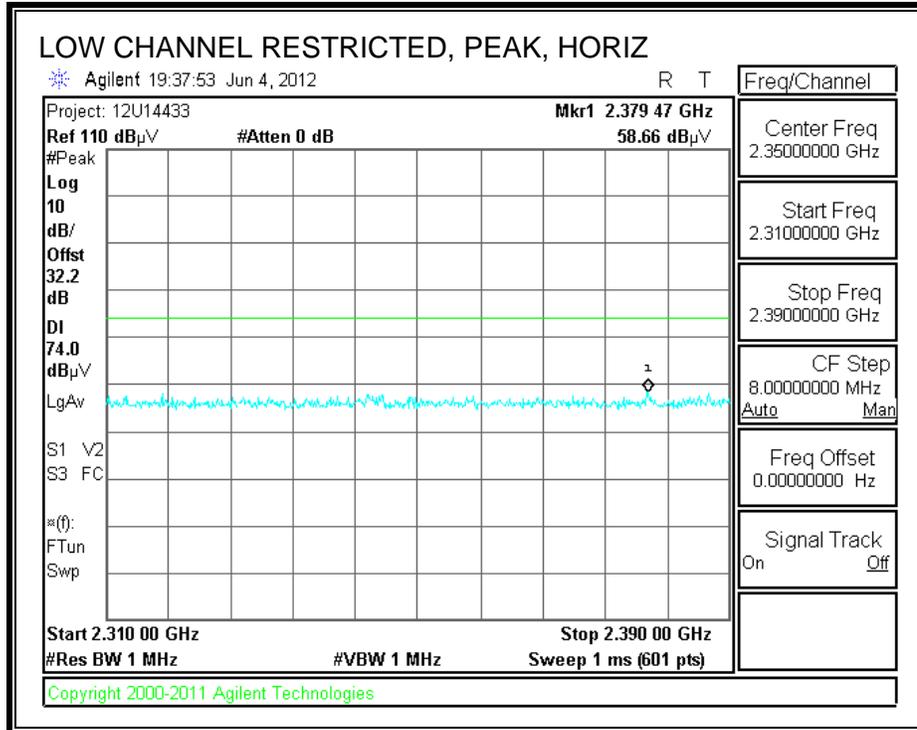
**HARMONICS AND SPURIOUS EMISSIONS**

High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Tom Chen											
Date:		06/05/12											
Project #:		12U14433											
Company:		LG Electronics Inc.											
Test Target:		FCC Class B											
Mode Oper:		Bluetooth DQPSK, TX mode											
f	Measurement Frequency			Amp	Preamp Gain			Average Field Strength Limit					
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Peak Field Strength Limit					
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Margin vs. Average Limit					
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Margin vs. Peak Limit					
CL	Cable Loss			HPF	High Pass Filter								
f	Dist	Read	AF	CL	Amp	D Corr	Filtr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
<b>2402 MHz DQPSK</b>													
4.804	3.0	38.9	33.1	6.3	-34.8	0.0	0.0	43.4	74.0	-30.6	H	P	
4.804	3.0	27.1	33.1	6.3	-34.8	0.0	0.0	31.7	54.0	-22.3	H	A	
4.804	3.0	40.5	33.1	6.3	-34.8	0.0	0.0	45.0	74.0	-29.0	V	P	
4.804	3.0	28.7	33.1	6.3	-34.8	0.0	0.0	33.2	54.0	-20.8	V	A	
<b>2441 MHz DQPSK</b>													
4.882	3.0	39.8	33.1	6.3	-34.8	0.0	0.0	44.4	74.0	-29.6	V	P	
4.882	3.0	28.7	33.1	6.3	-34.8	0.0	0.0	33.4	54.0	-20.6	V	A	
4.882	3.0	38.7	33.1	6.3	-34.8	0.0	0.0	43.4	74.0	-30.6	H	P	
4.882	3.0	26.7	33.1	6.3	-34.8	0.0	0.0	31.3	54.0	-22.7	H	A	
<b>2480 MHz DQPSK</b>													
4.960	3.0	40.5	33.2	6.4	-34.8	0.0	0.0	45.3	74.0	-28.7	V	P	
4.960	3.0	30.0	33.2	6.4	-34.8	0.0	0.0	34.8	54.0	-19.2	V	A	
4.960	3.0	39.5	33.2	6.4	-34.8	0.0	0.0	44.3	74.0	-29.7	H	P	
4.960	3.0	27.0	33.2	6.4	-34.8	0.0	0.0	31.7	54.0	-22.3	H	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

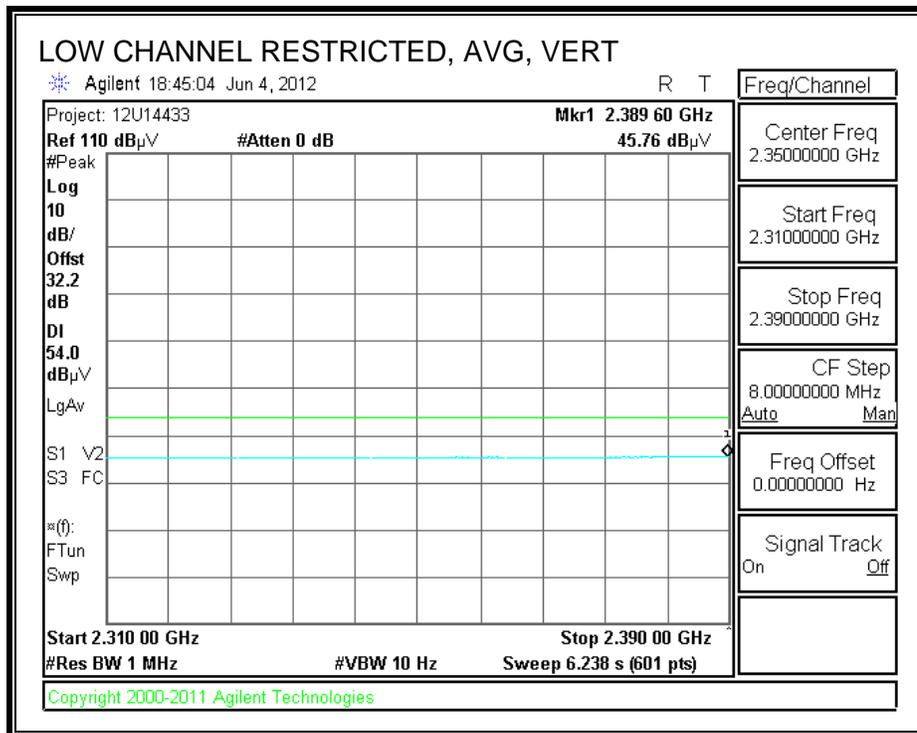
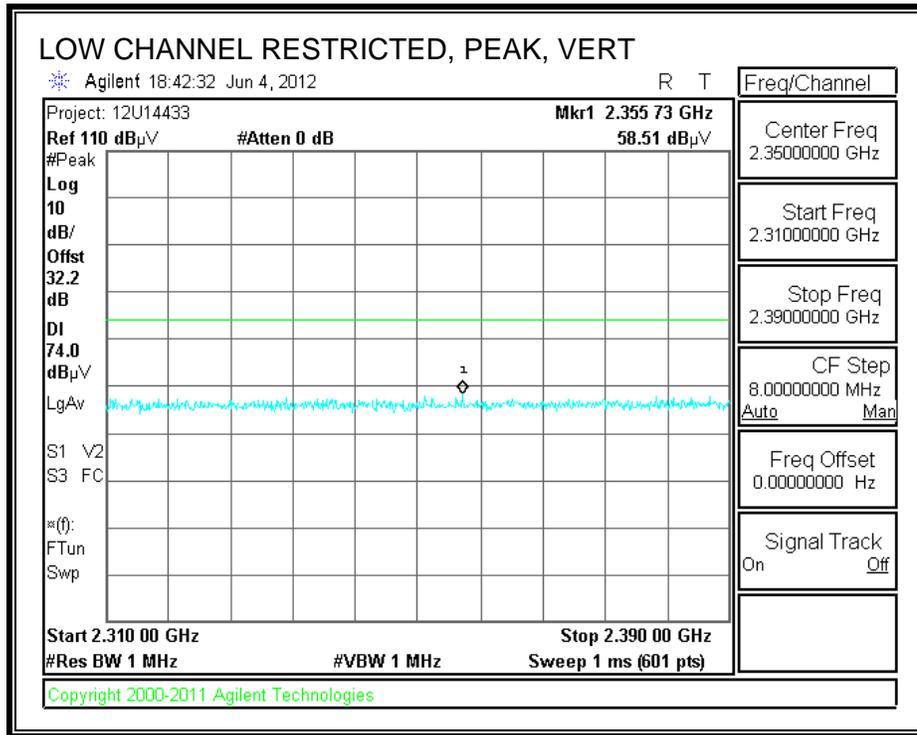
### 6.2.3. ENHANCED DATA RATE 8PSK MODULATION

#### STANDARD COVER

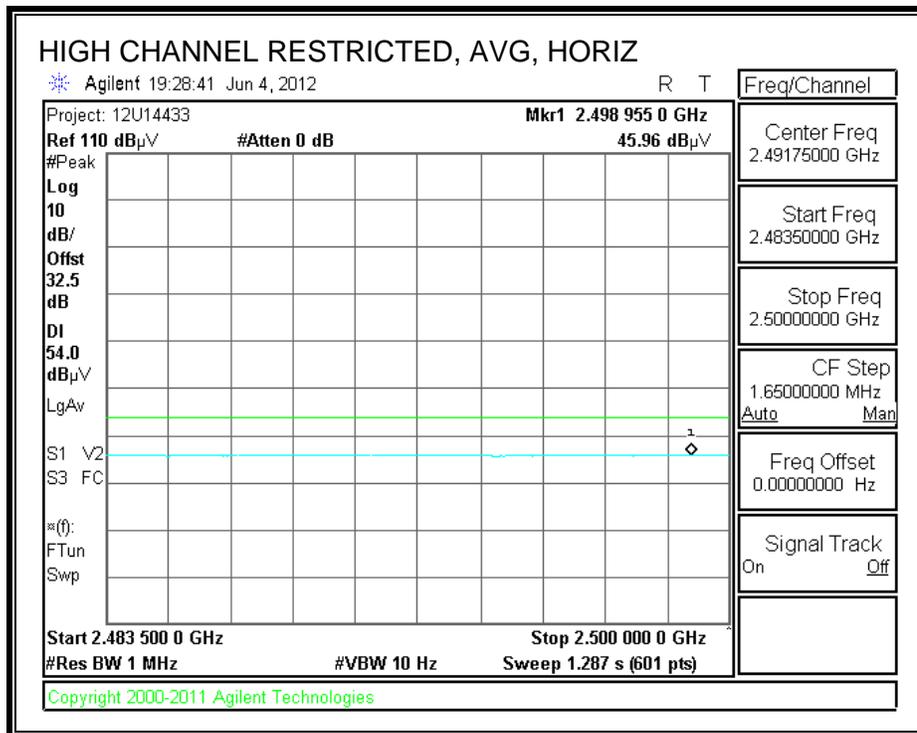
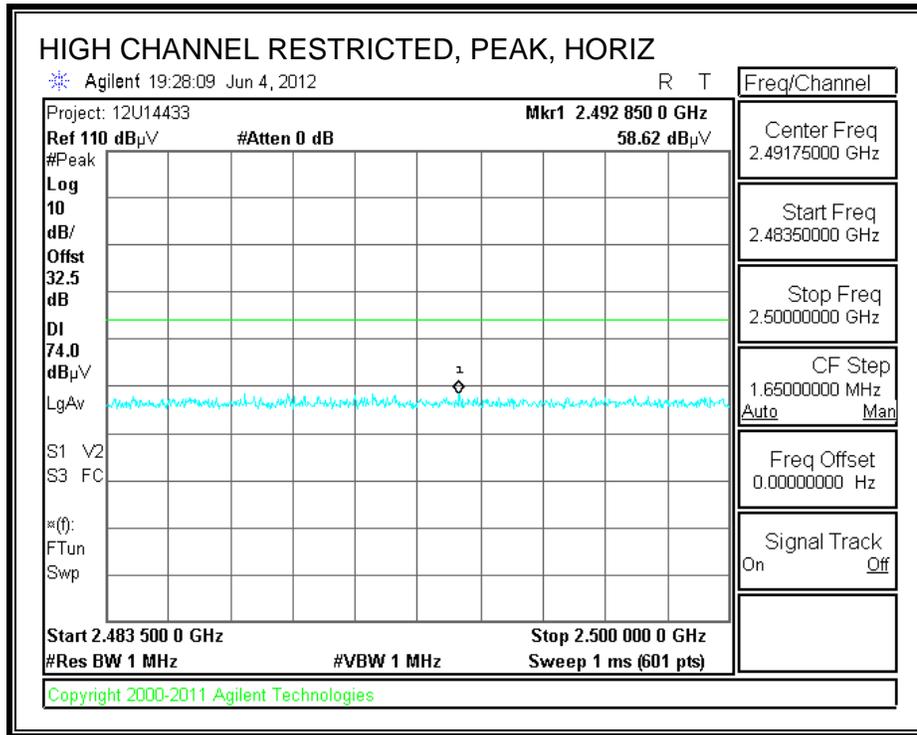
#### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



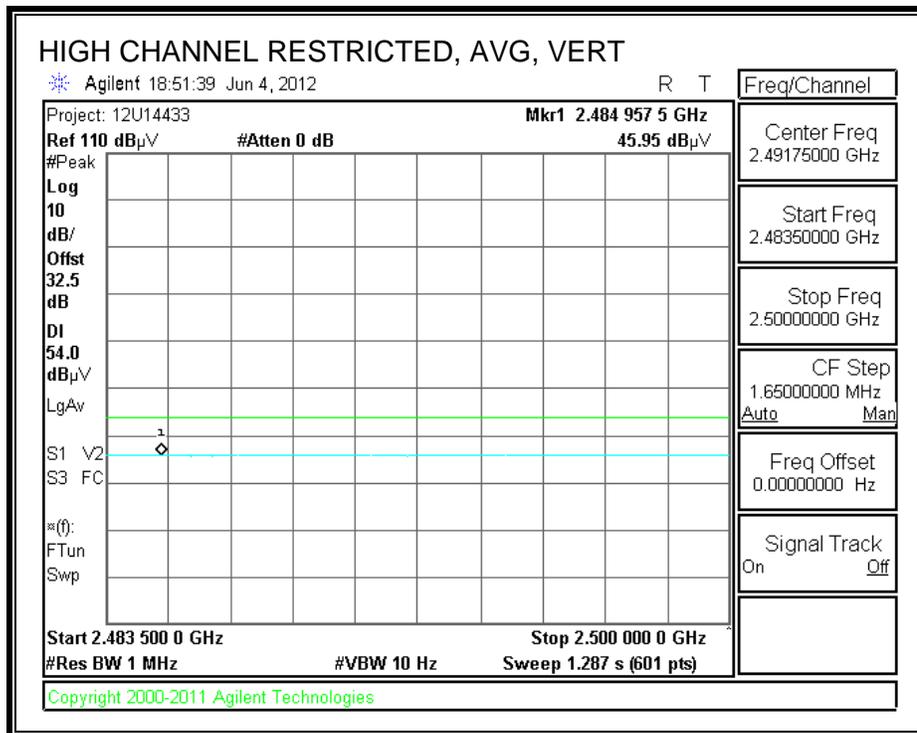
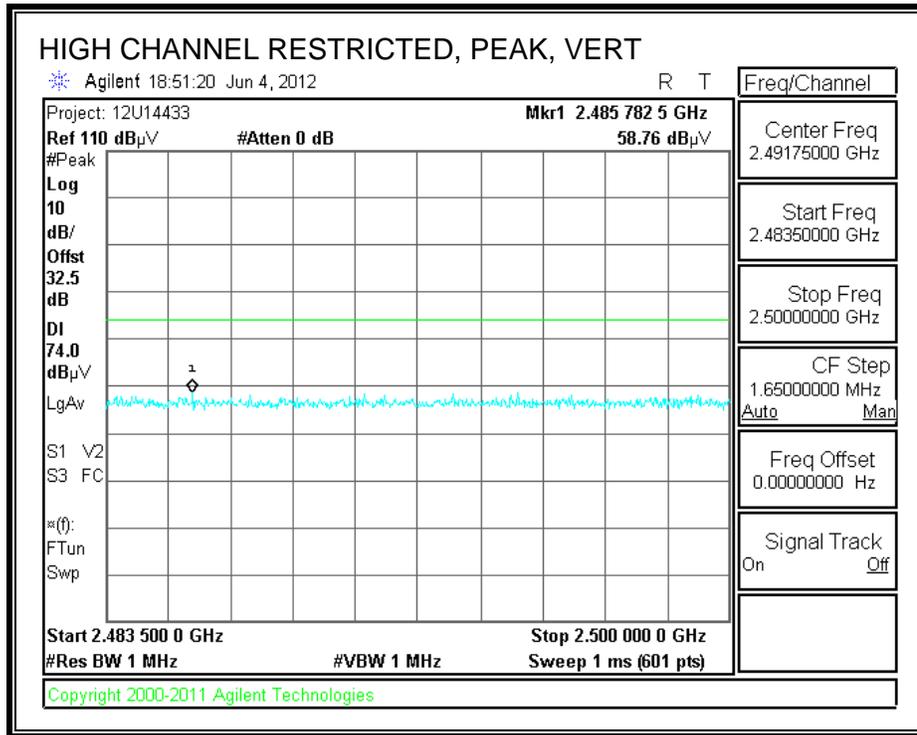
**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

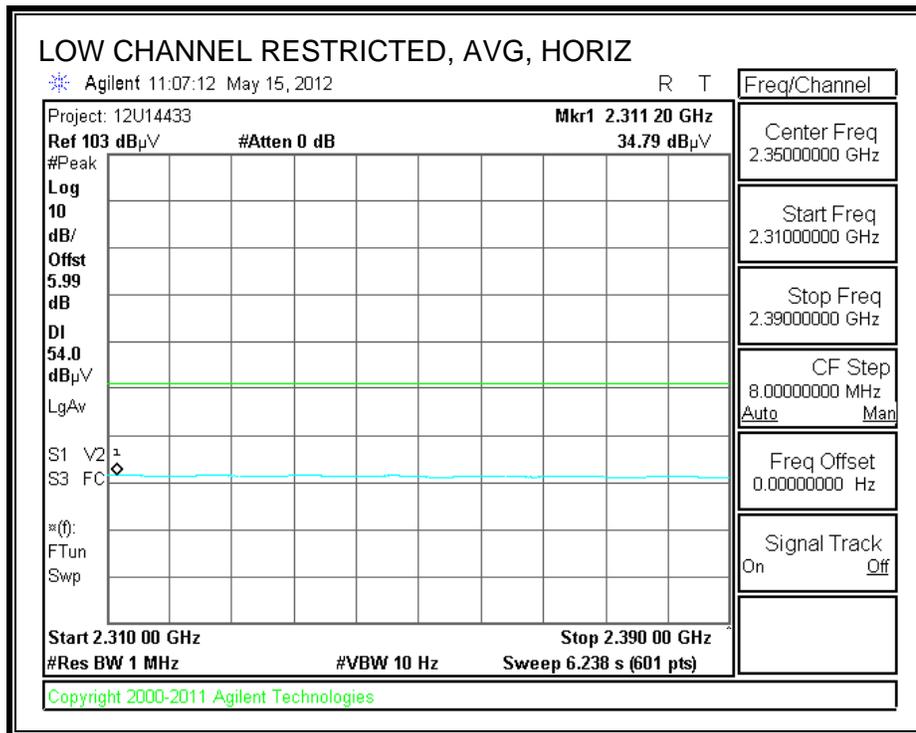
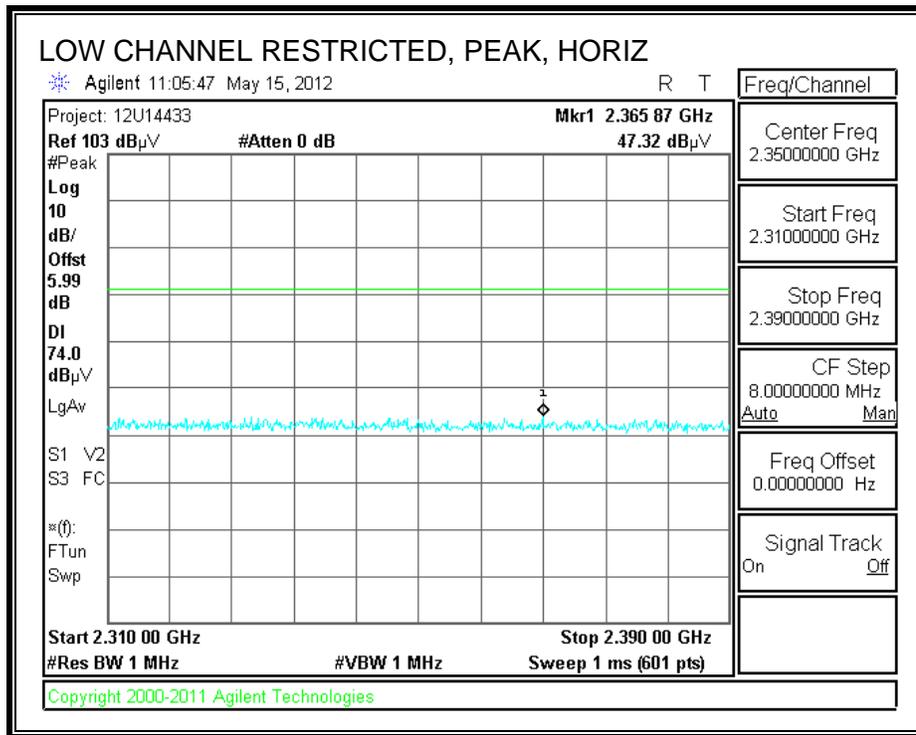


**HARMONICS AND SPURIOUS EMISSIONS**

High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Tom Chen											
Date:		06/05/12											
Project #:		12U14433											
Company:		LG Electronics Inc.											
Test Target:		FCC Class B											
Mode Oper:		Bluetooth 8PSK, TX mode											
f	Measurement Frequency			Amp	Preamp Gain			Average Field Strength Limit					
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Peak Field Strength Limit					
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Margin vs. Average Limit					
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Margin vs. Peak Limit					
CL	Cable Loss			HPF	High Pass Filter								
f	Dist	Read	AF	CL	Amp	D Corr	Fltr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP
<b>2402 MHz 8PSK</b>													
4.804	3.0	43.0	33.1	6.3	-34.8	0.0	0.0	47.6	74.0	-26.4	V	P	
4.804	3.0	30.9	33.1	6.3	-34.8	0.0	0.0	35.4	54.0	-18.6	V	A	
4.804	3.0	45.9	33.1	6.3	-34.8	0.0	0.0	50.4	74.0	-23.6	H	P	
4.804	3.0	32.6	33.1	6.3	-34.8	0.0	0.0	37.2	54.0	-16.8	H	A	
<b>2441 MHz 8PSK</b>													
4.882	3.0	44.5	33.1	6.3	-34.8	0.0	0.0	49.1	74.0	-24.9	H	P	
4.882	3.0	31.4	33.1	6.3	-34.8	0.0	0.0	36.0	54.0	-18.0	H	A	
4.882	3.0	41.3	33.1	6.3	-34.8	0.0	0.0	45.9	74.0	-28.1	V	P	
4.882	3.0	29.2	33.1	6.3	-34.8	0.0	0.0	33.8	54.0	-20.2	V	A	
<b>2480 MHz 8PSK</b>													
4.960	3.0	44.3	33.2	6.4	-34.8	0.0	0.0	49.0	74.0	-25.0	H	P	
4.960	3.0	31.8	33.2	6.4	-34.8	0.0	0.0	36.6	54.0	-17.4	H	A	
4.960	3.0	42.8	33.2	6.4	-34.8	0.0	0.0	47.6	74.0	-26.4	V	P	
4.960	3.0	30.5	33.2	6.4	-34.8	0.0	0.0	35.2	54.0	-18.8	V	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

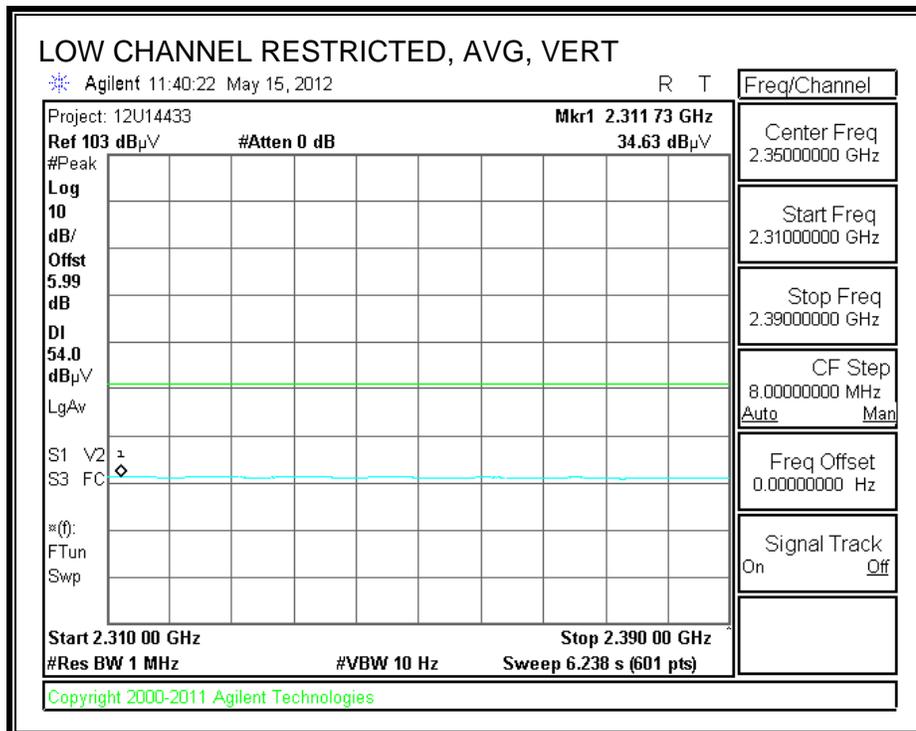
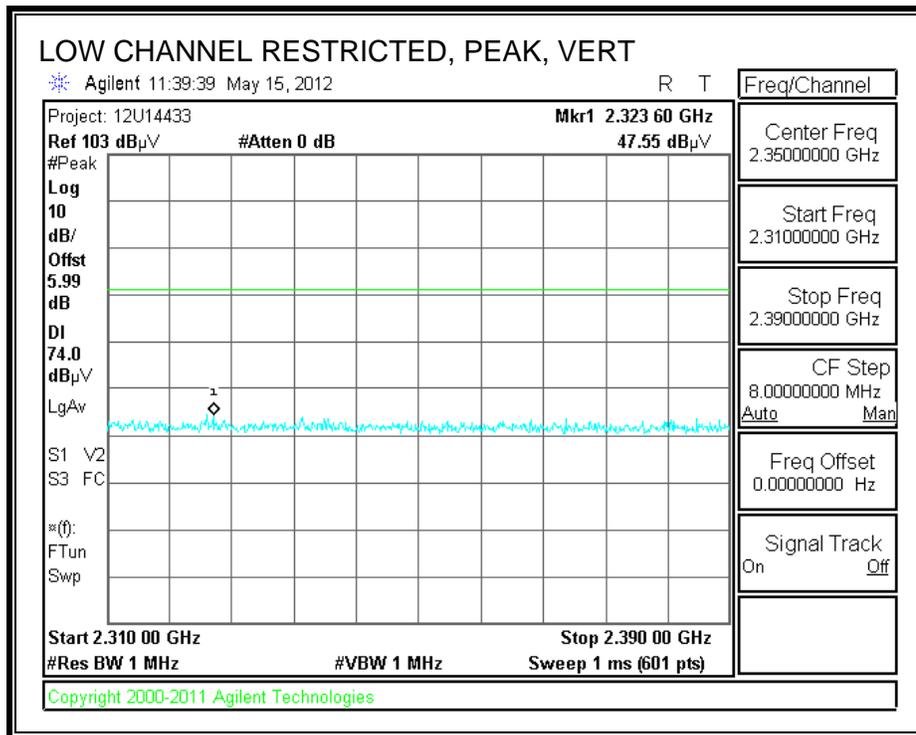
**INDUCTIVE COVER**

**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

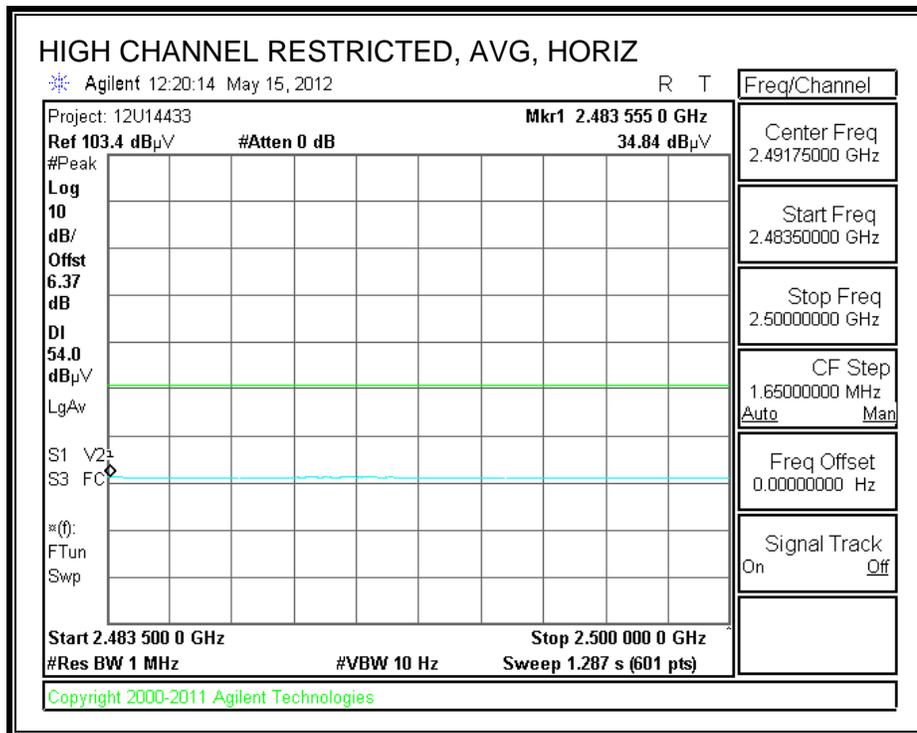
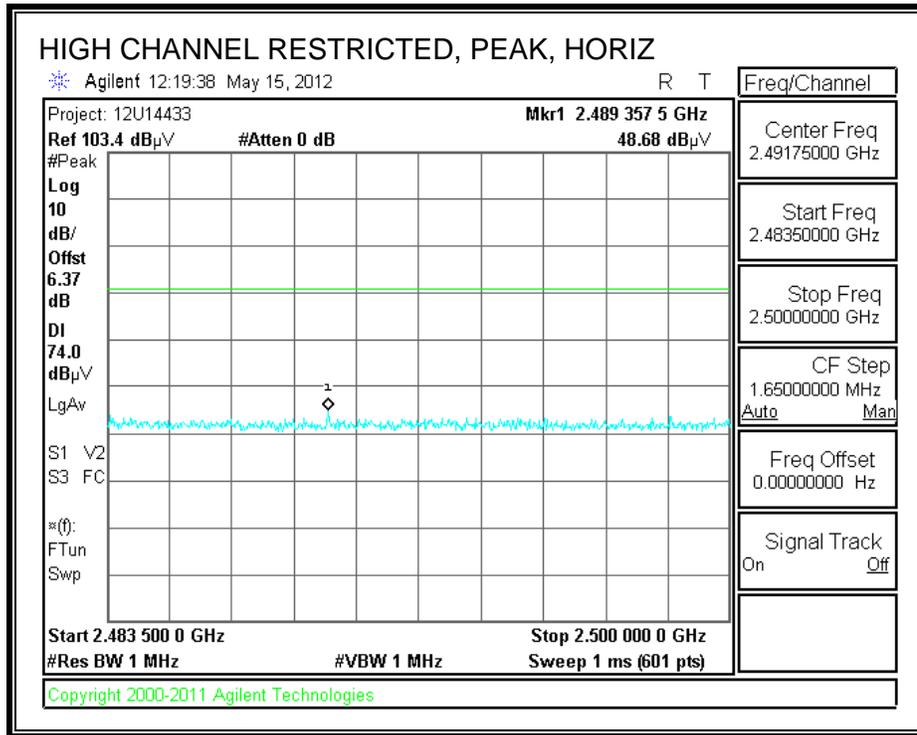




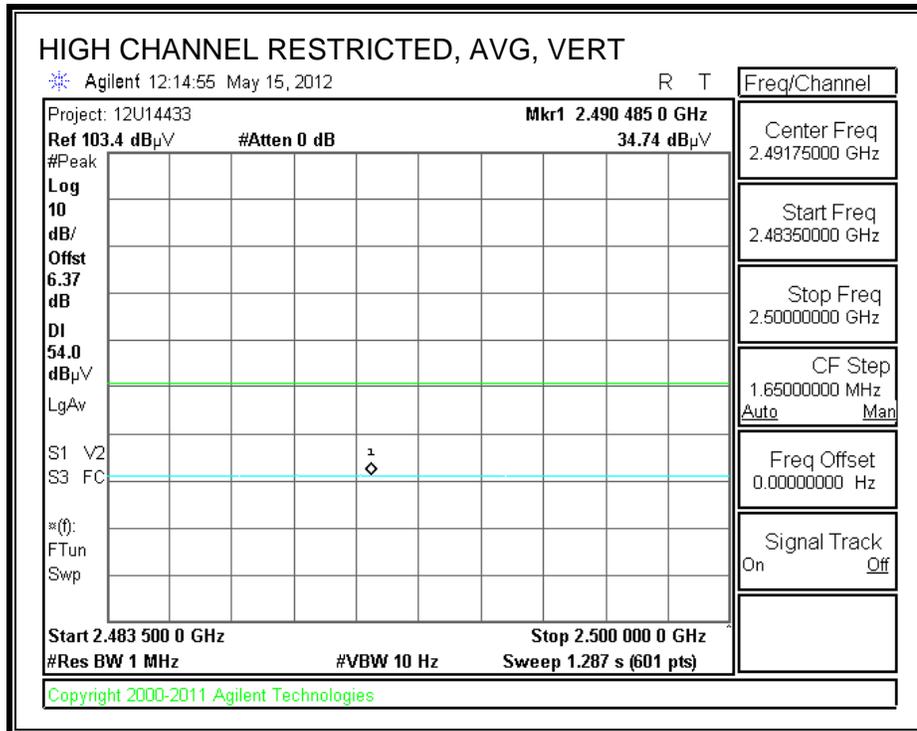
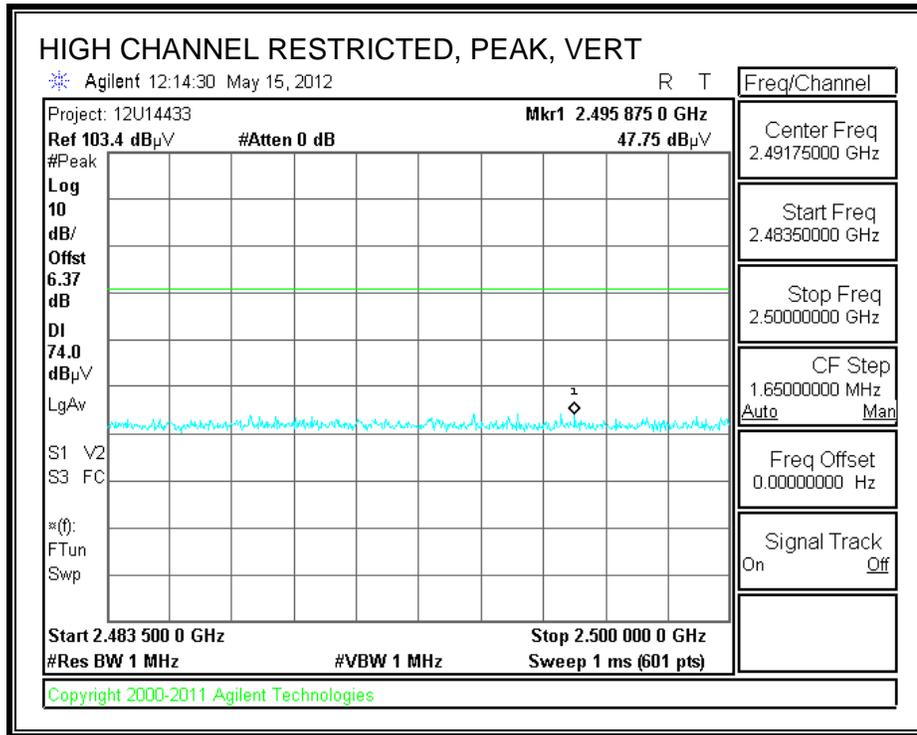
**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

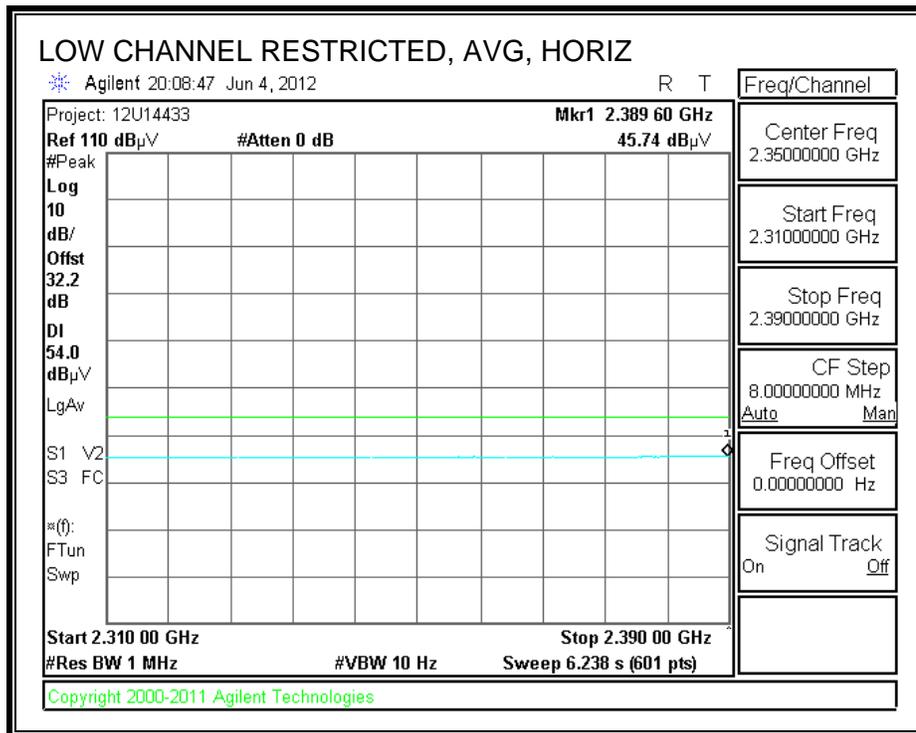
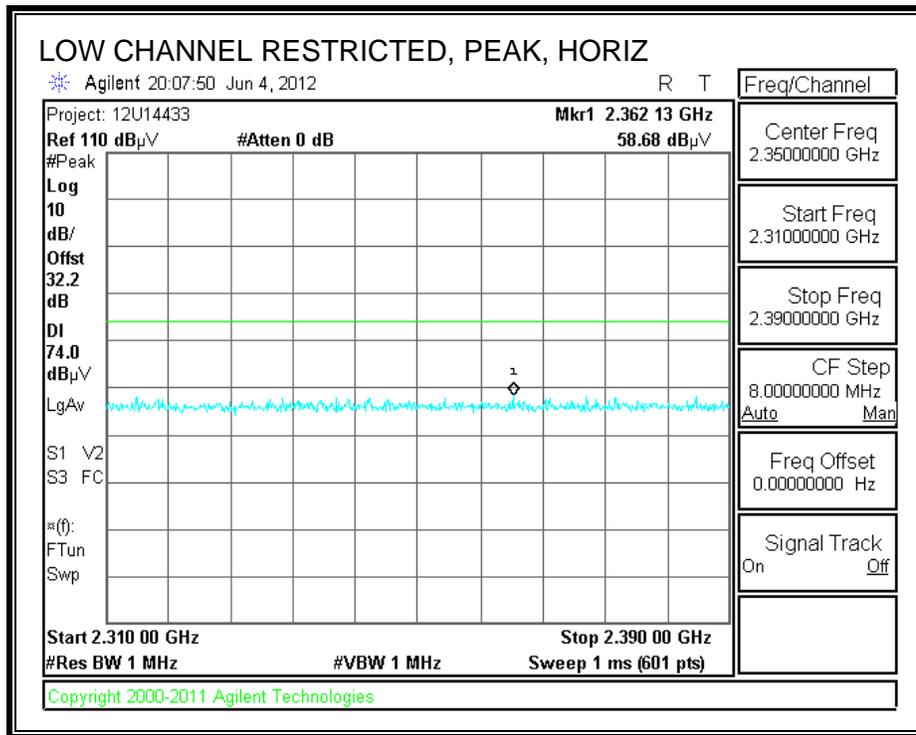


**HARMONICS AND SPURIOUS EMISSIONS**

High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Tom Chen											
Date:		06/05/12											
Project #:		12U14433											
Company:		LG Electronics Inc.											
Test Target:		FCC Class B											
Mode Oper:		Bluetooth 8PSK, TX mode											
f	Measurement Frequency			Amp	Preamp Gain			Average Field Strength Limit					
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Peak Field Strength Limit					
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Margin vs. Average Limit					
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Margin vs. Peak Limit					
CL	Cable Loss			HPF	High Pass Filter								
f	Dist	Read	AF	CL	Amp	D Corr	Filtr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
<b>2402 MHz 8PSK</b>													
4.804	3.0	44.4	33.1	6.3	-34.8	0.0	0.0	48.9	74.0	-25.1	V	P	
4.804	3.0	32.2	33.1	6.3	-34.8	0.0	0.0	36.8	54.0	-17.2	V	A	
4.804	3.0	47.2	33.1	6.3	-34.8	0.0	0.0	51.7	74.0	-22.3	H	P	
4.804	3.0	34.0	33.1	6.3	-34.8	0.0	0.0	38.5	54.0	-15.5	H	A	
<b>2441 MHz 8PSK</b>													
4.882	3.0	45.8	33.1	6.3	-34.8	0.0	0.0	50.5	74.0	-23.5	H	P	
4.882	3.0	32.7	33.1	6.3	-34.8	0.0	0.0	37.3	54.0	-16.7	H	A	
4.882	3.0	42.6	33.1	6.3	-34.8	0.0	0.0	47.3	74.0	-26.7	V	P	
4.882	3.0	30.5	33.1	6.3	-34.8	0.0	0.0	35.2	54.0	-18.8	V	A	
<b>2480 MHz 8PSK</b>													
4.960	3.0	45.6	33.2	6.4	-34.8	0.0	0.0	50.4	74.0	-23.6	H	P	
4.960	3.0	33.2	33.2	6.4	-34.8	0.0	0.0	38.0	54.0	-16.0	H	A	
4.960	3.0	44.1	33.2	6.4	-34.8	0.0	0.0	48.9	74.0	-25.1	V	P	
4.960	3.0	31.8	33.2	6.4	-34.8	0.0	0.0	36.6	54.0	-17.4	V	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

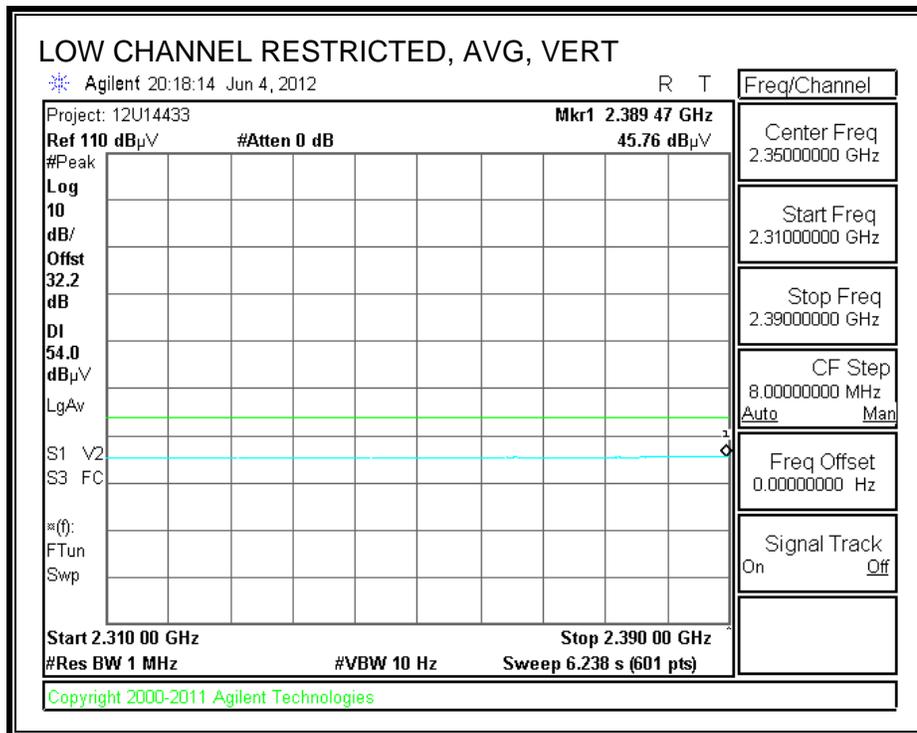
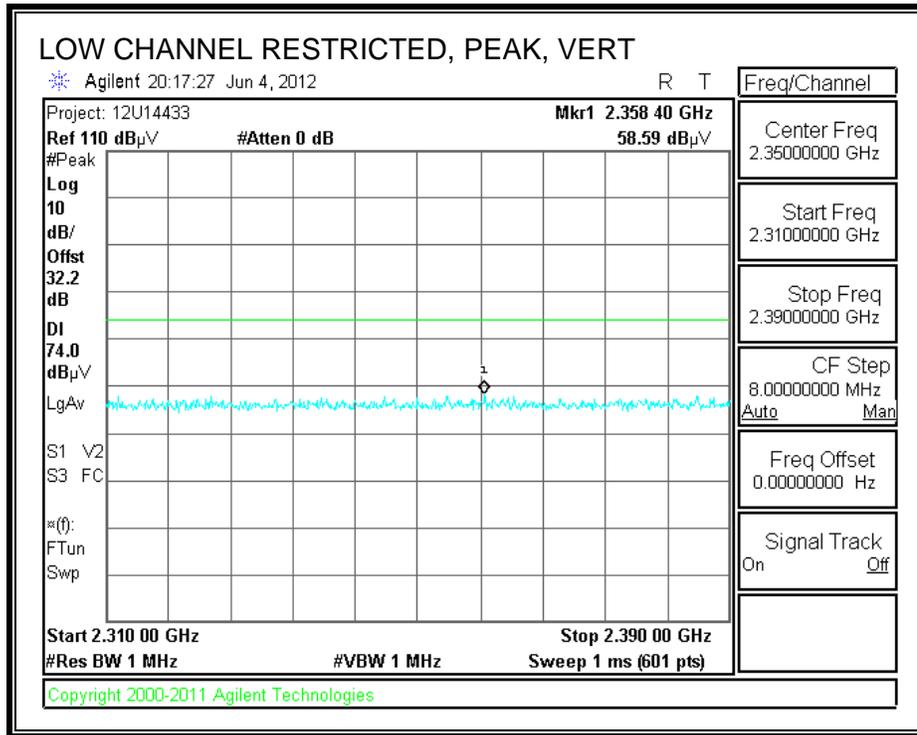
**INDUCTIVE CHARGER AND INDUCTIVE COVER**

**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

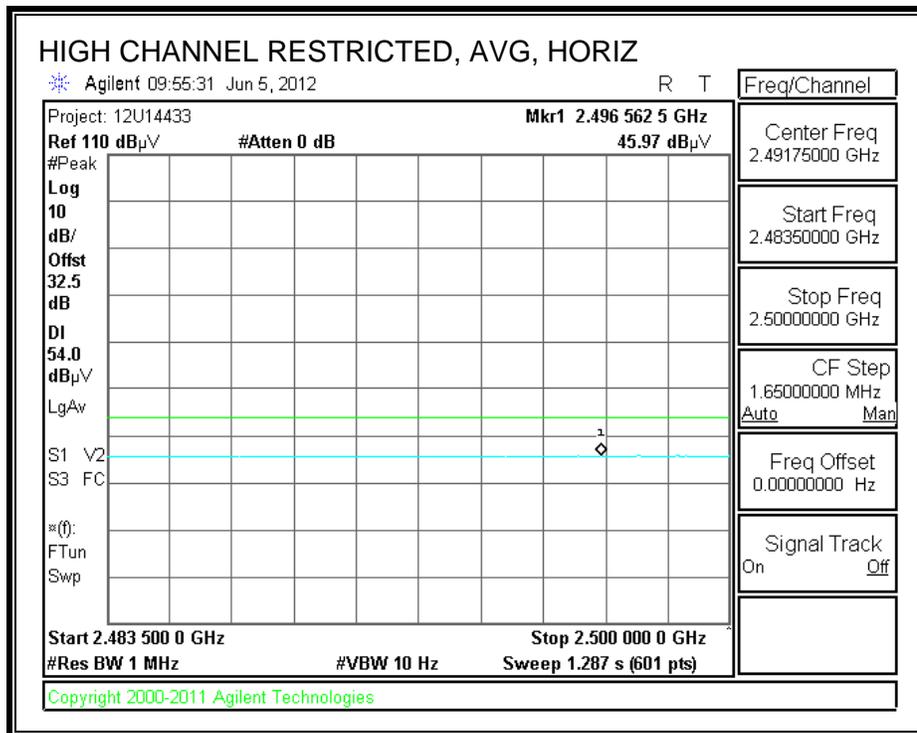
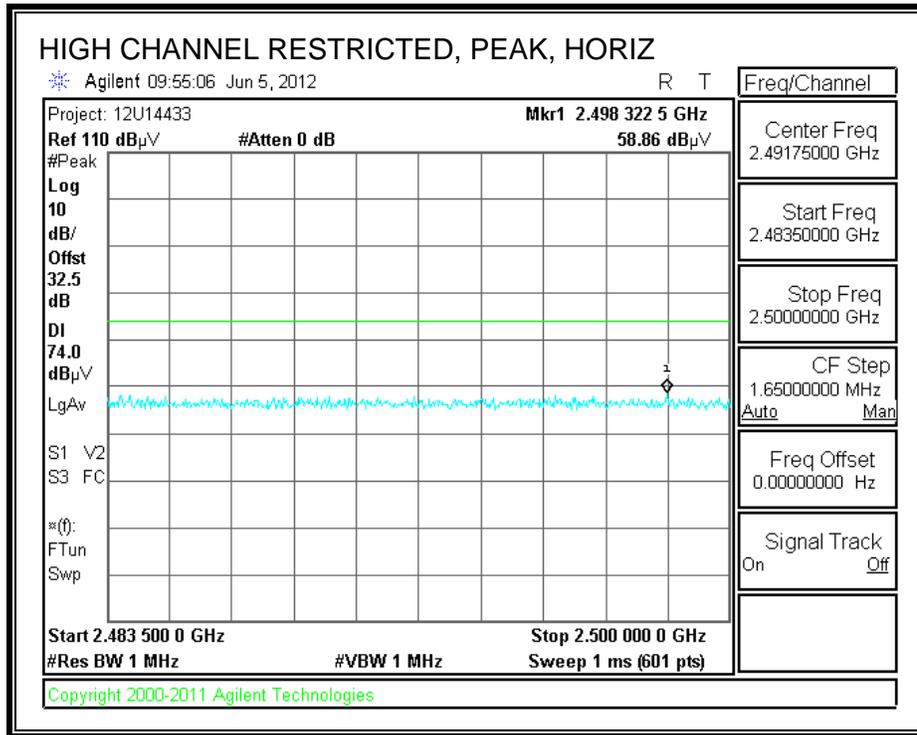




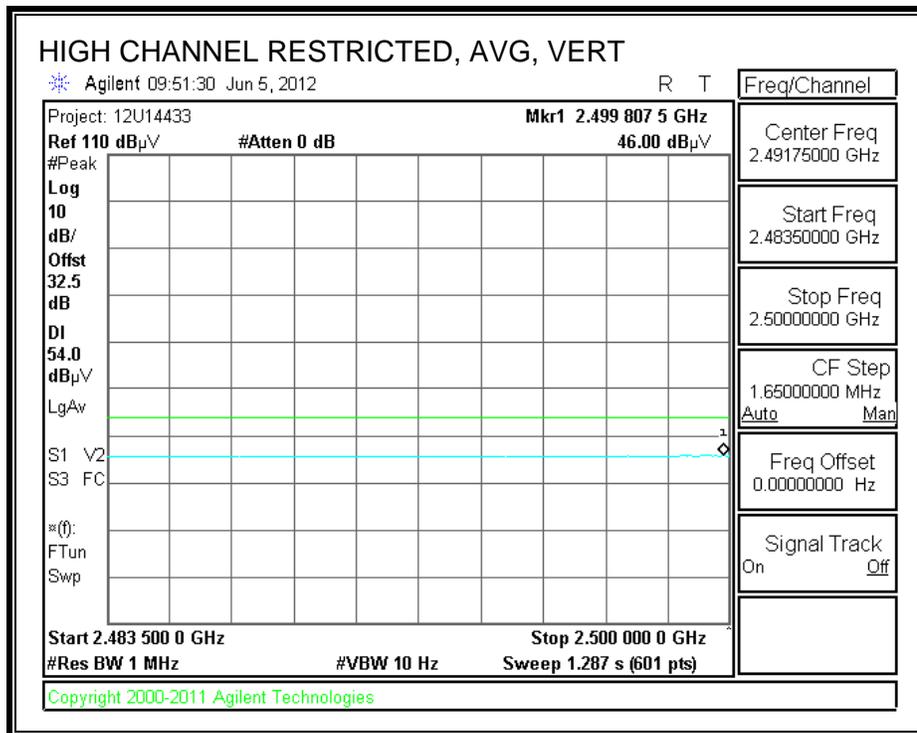
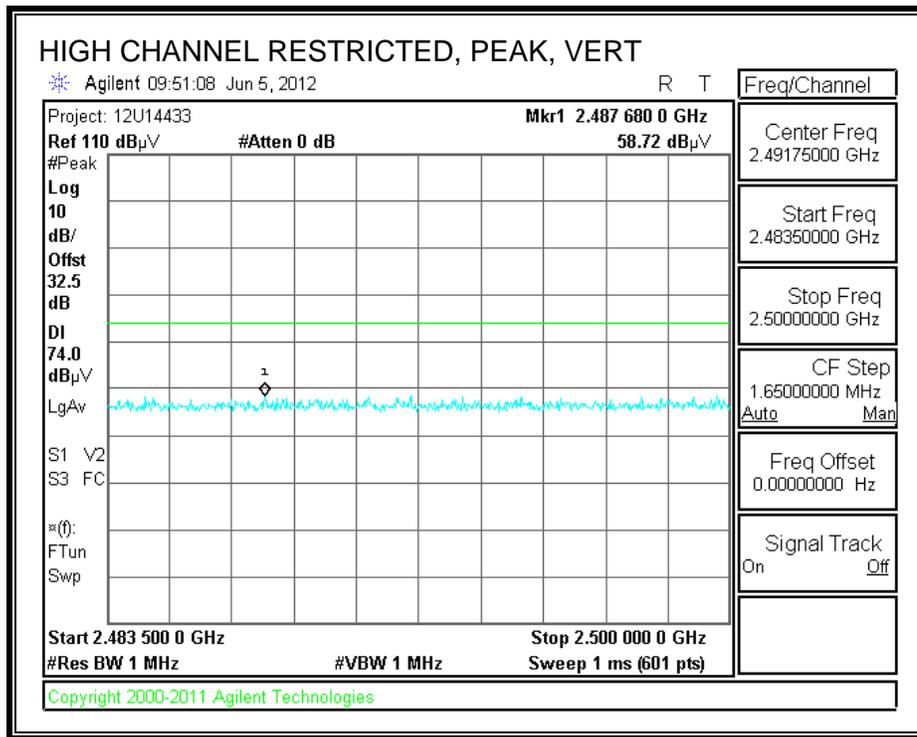
**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**



**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**



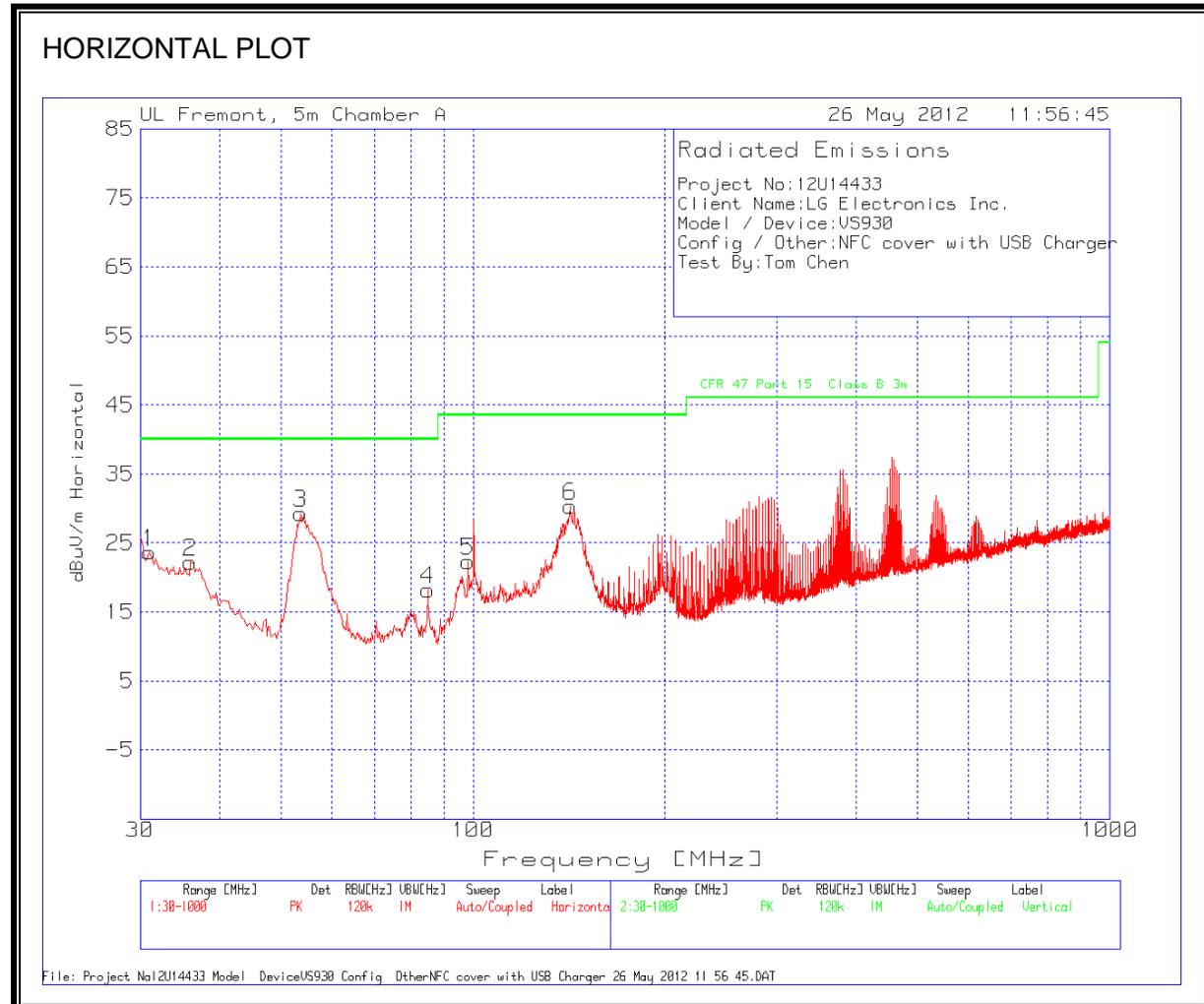
**HARMONICS AND SPURIOUS EMISSIONS**

High Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Tom Chen											
Date:		06/05/12											
Project #:		12U14433											
Company:		LG Electronics Inc.											
Test Target:		FCC Class B											
Mode Oper:		Bluetooth 8PSK, TX mode											
f	Measurement Frequency			Amp	Preamp Gain			Average Field Strength Limit					
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Peak Field Strength Limit					
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Margin vs. Average Limit					
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Margin vs. Peak Limit					
CL	Cable Loss			HPF	High Pass Filter								
f	Dist	Read	AF	CL	Amp	D Corr	Filtr	Corr.	Limit	Margin	Ant. Pol.	Det.	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
<b>2402 MHz 8PSK</b>													
4.804	3.0	38.8	33.1	6.3	-34.8	0.0	0.0	43.3	74.0	-30.7	H	P	
4.804	3.0	27.0	33.1	6.3	-34.8	0.0	0.0	31.5	54.0	-22.5	H	A	
4.804	3.0	40.4	33.1	6.3	-34.8	0.0	0.0	45.0	74.0	-29.0	V	P	
4.804	3.0	28.7	33.1	6.3	-34.8	0.0	0.0	33.2	54.0	-20.8	V	A	
<b>2441 MHz 8PSK</b>													
4.882	3.0	40.4	33.1	6.3	-34.8	0.0	0.0	45.0	74.0	-29.0	V	P	
4.882	3.0	28.4	33.1	6.3	-34.8	0.0	0.0	33.1	54.0	-20.9	V	A	
4.882	3.0	39.3	33.1	6.3	-34.8	0.0	0.0	44.0	74.0	-30.0	H	P	
4.882	3.0	26.6	33.1	6.3	-34.8	0.0	0.0	31.3	54.0	-22.7	H	A	
<b>2480 MHz 8PSK</b>													
4.960	3.0	39.8	33.2	6.4	-34.8	0.0	0.0	44.6	74.0	-29.4	H	P	
4.960	3.0	27.3	33.2	6.4	-34.8	0.0	0.0	32.1	54.0	-21.9	H	A	
4.960	3.0	41.8	33.2	6.4	-34.8	0.0	0.0	46.6	74.0	-27.4	V	P	
4.960	3.0	29.3	33.2	6.4	-34.8	0.0	0.0	34.1	54.0	-19.9	V	A	
Rev. 4.1.2.7													
Note: No other emissions were detected above the system noise floor.													

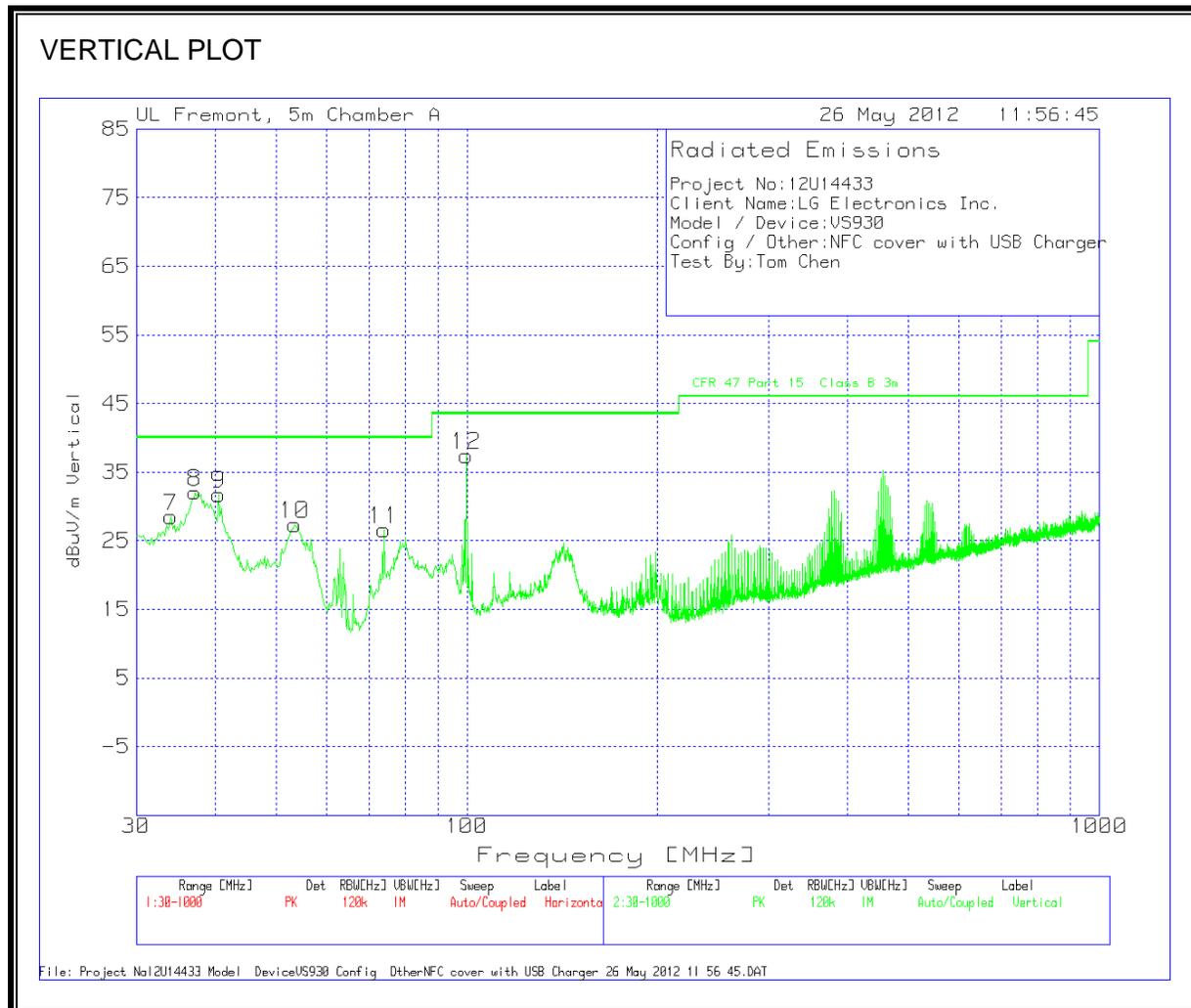
## 7. WORST-CASE BELOW 1 GHz

### 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:12U14433									
Client Name:LG Electronics Inc.									
Model / Device:VS930									
Config / Other:NFC cover with USB Charger									
Test By:Tom Chen									

**Horizontal 30 - 1000MHz**

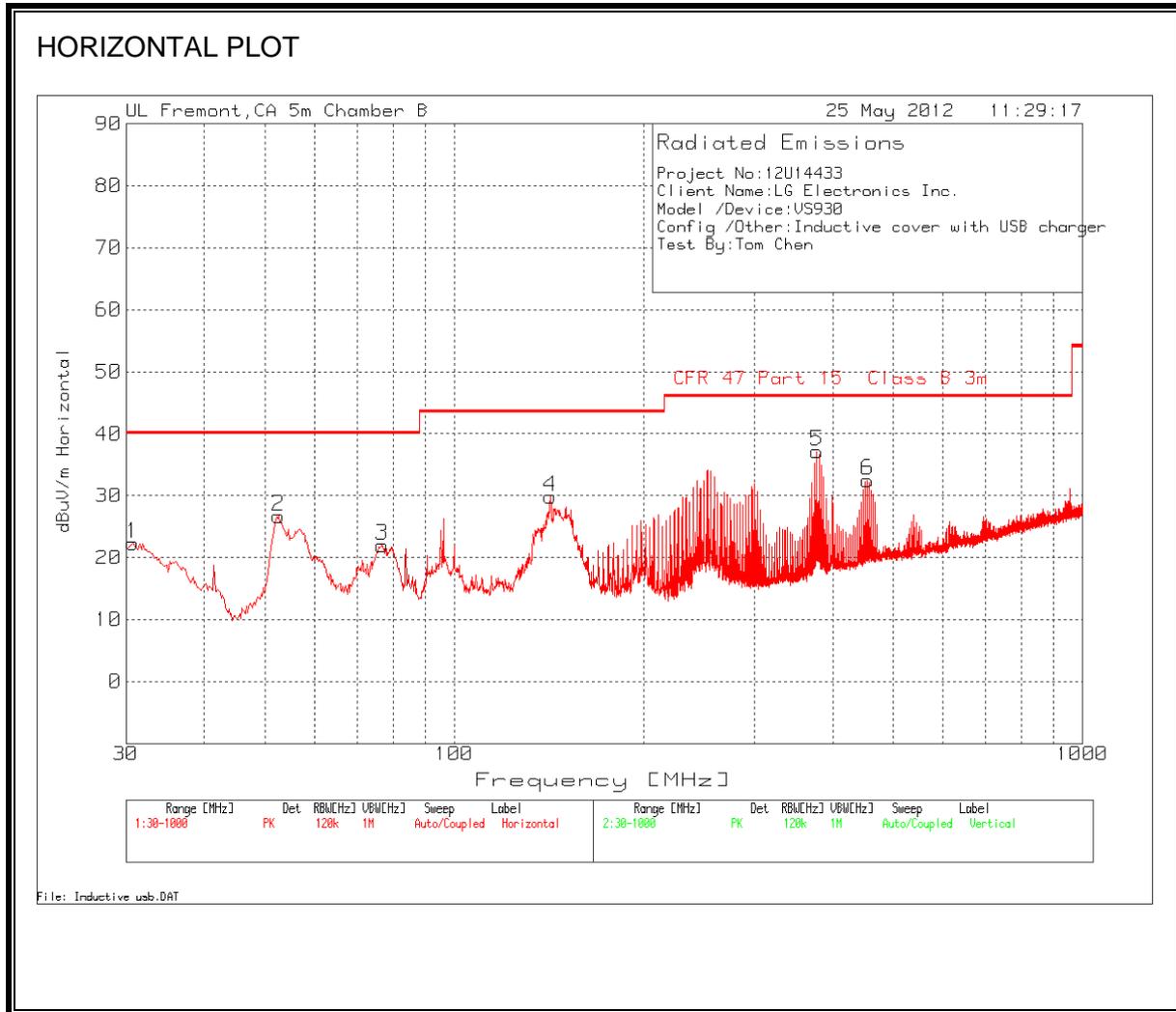
Test Frequency	Meter Reading	Detector	25MHz-1GHz ChmbrA Amplified.TX (dB)	T243 Sunol Bilog.TXT (dB)	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Polarity
30.9692	30.79	PK	-27.5	20.4	23.69	40	-16.31	Horz
36.0092	32.85	PK	-27.5	16.9	22.25	40	-17.75	Horz
53.6491	49.25	PK	-27.3	7.3	29.25	40	-10.75	Horz
84.8581	38.02	PK	-27.1	7.3	18.22	40	-21.78	Horz
98.2334	39.54	PK	-26.9	9.7	22.34	43.5	-21.16	Horz
142.2362	44.22	PK	-26.6	12.7	30.32	43.5	-13.18	Horz

**Vertical 30 - 1000MHz**

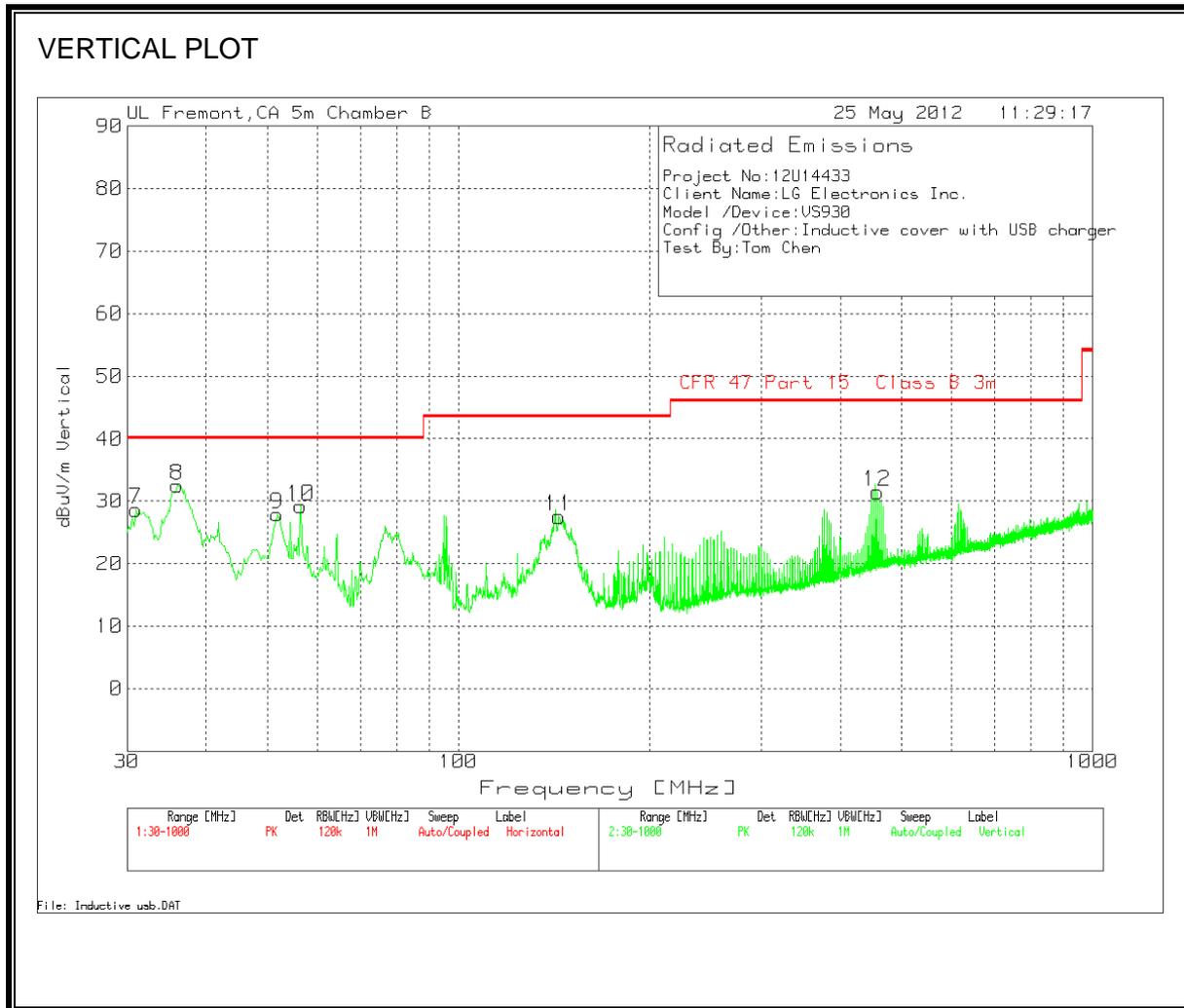
Test Frequency	Meter Reading	Detector	25MHz-1GHz ChmbrA Amplified.TX (dB)	T243 Sunol Bilog.TXT (dB)	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Polarity
34.0707	37.77	PK	-27.6	18.3	28.47	40	-11.53	Vert
37.1723	43.47	PK	-27.4	16	32.07	40	-7.93	Vert
40.4676	45.46	PK	-27.3	13.6	31.76	40	-8.24	Vert
53.4552	47.35	PK	-27.3	7.3	27.35	40	-12.65	Vert
74.0028	45.69	PK	-27.1	8	26.59	40	-13.41	Vert
99.7842	54.17	PK	-26.9	10.1	37.37	43.5	-6.13	Vert

**INDUCTIVE 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:12U14433								
Client Name:LG Electronics Inc.								
Model /Device:VS930								
Config /Other:Inductive cover with USB charger								
Test By:Tom Chen								

Horizontal 30 - 1000MHz

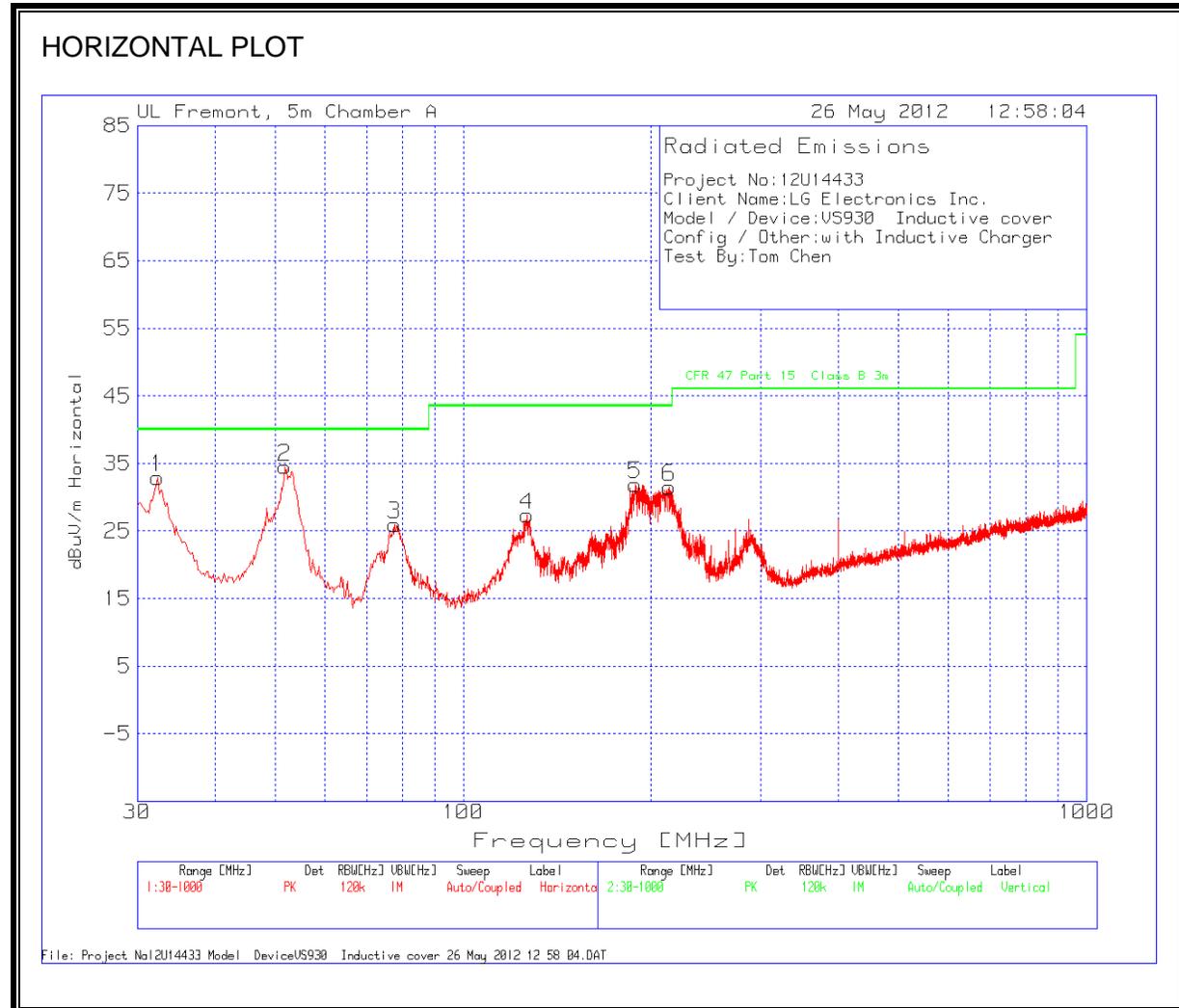
Test Frequency	Meter Reading	Detector	T122 Sunol Bilog.TXT (dB)	5mB Amp Path 30-1000MHz (dB)	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Polarity
30.7754	30.71	PK	20.9	-29.3	22.31	40	-17.69	Horz
52.486	48.09	PK	7.6	-29	26.69	40	-13.31	Horz
76.7166	42.82	PK	8	-28.8	22.02	40	-17.98	Horz
142.2362	44.96	PK	13	-28.1	29.86	43.5	-13.64	Horz
377.5639	48.93	PK	15	-26.8	37.13	46	-8.87	Horz
454.5204	42.55	PK	16.9	-27	32.45	46	-13.55	Horz

Vertical 30 - 1000MHz

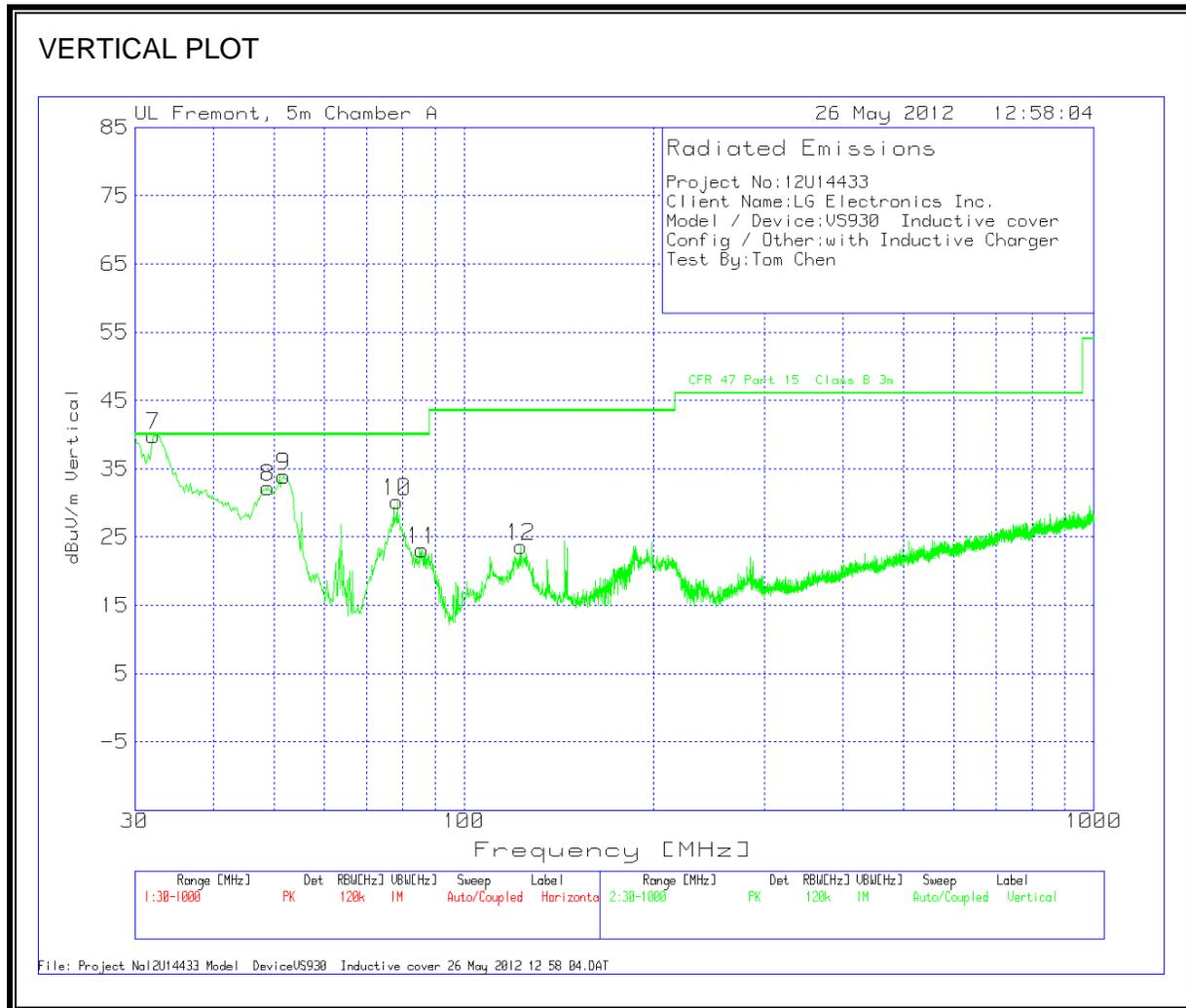
Test Frequency	Meter Reading	Detector	T122 Sunol Bilog.TXT (dB)	5mB Amp Path 30-1000MHz (dB)	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Polarity
30.9692	37.22	PK	20.7	-29.3	28.62	40	-11.38	Vert
36.0092	44.92	PK	16.8	-29.2	32.52	40	-7.48	Vert
51.7106	49.22	PK	7.7	-29	27.92	40	-12.08	Vert
56.3629	51.03	PK	7.2	-29	29.23	40	-10.77	Vert
143.9808	42.82	PK	12.8	-28.1	27.52	43.5	-15.98	Vert
457.6219	41.44	PK	17	-27	31.44	46	-14.56	Vert

**INDUCTIVE CHARGER WITH INDUCTIVE 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:12U14433									
Client Name:LG Electronics Inc.									
Model / Device:VS930									
Config / Other: Inductive cover with Inductive Charger									
Test By:Tom Chen									

**Horizontal 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	Polarity
32.3261	41.05	PK	-27.6	19.5	32.95	40	-7.05	Horz
51.7106	54.12	PK	-27.2	7.6	34.52	40	-5.48	Horz
77.6859	45.28	PK	-27.1	7.8	25.98	40	-14.02	Horz
126.7286	40.31	PK	-26.8	13.8	27.31	43.5	-16.19	Horz
188.759	46.89	PK	-26.3	11.3	31.89	43.5	-11.61	Horz
214.3465	47.18	PK	-26.2	10.5	31.48	43.5	-12.02	Horz

**Vertical 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	Polarity
32.086	47.53	QP	-27.5	19.7	39.73	40	-0.27	Vert
48.803	51.02	PK	-27.3	8.5	32.22	40	-7.78	Vert
51.7106	53.56	PK	-27.2	7.6	33.96	40	-6.04	Vert
78.2674	49.49	PK	-27.1	7.8	30.19	40	-9.81	Vert
85.8273	42.77	PK	-27	7.4	23.17	40	-16.83	Vert
123.2394	36.36	PK	-26.7	14	23.66	43.5	-19.84	Vert

## 8. 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 <sup>*</sup>	56 to 46 <sup>*</sup>
0.5-5	56	46
5-30	60	50

<sup>\*</sup> Decreases with the logarithm of the frequency.

### TEST PROCEDURE

ANSI C63.4

**RESULTS**

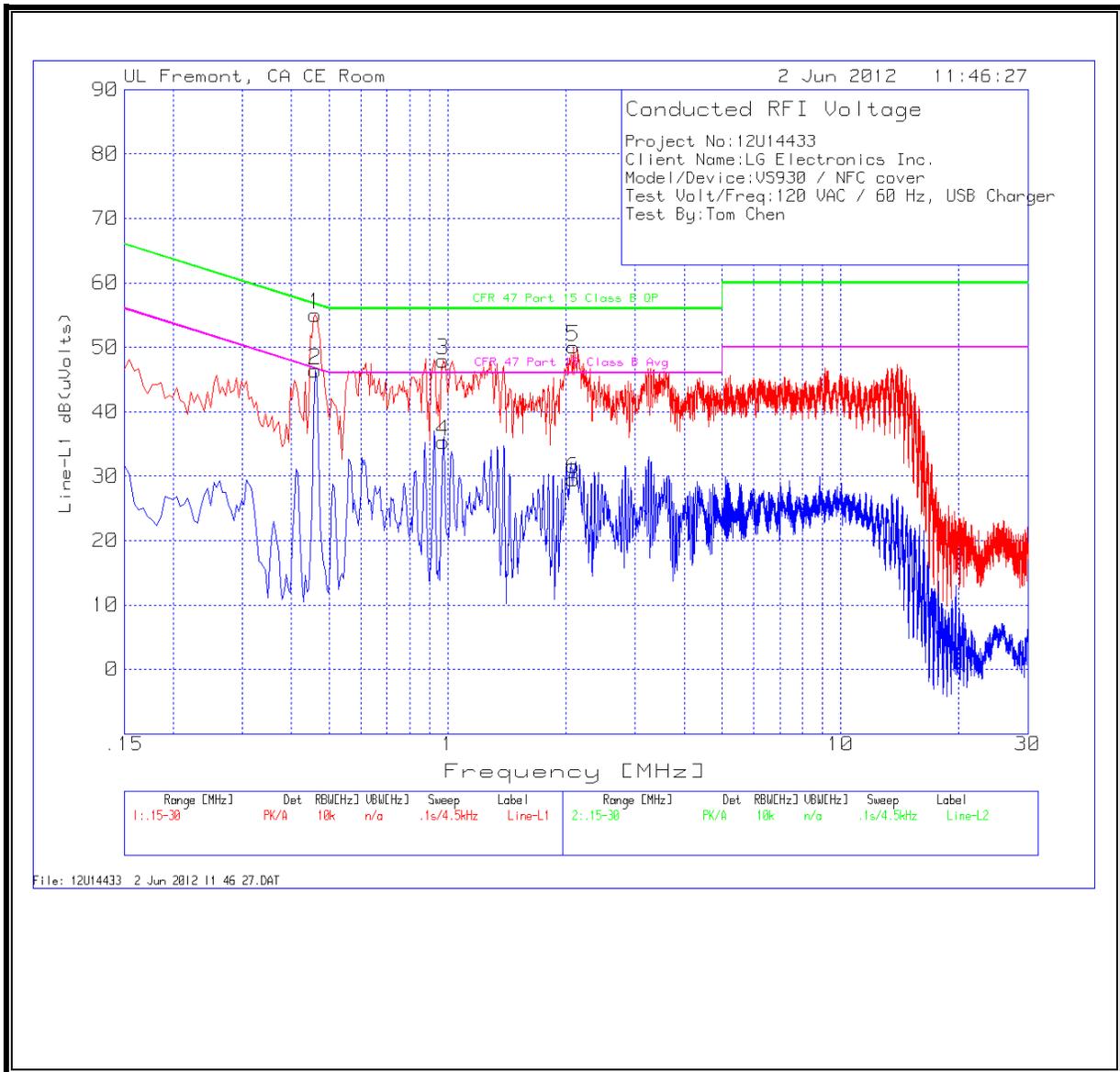
**STANDARD COVER**

**6 WORST EMISSIONS**

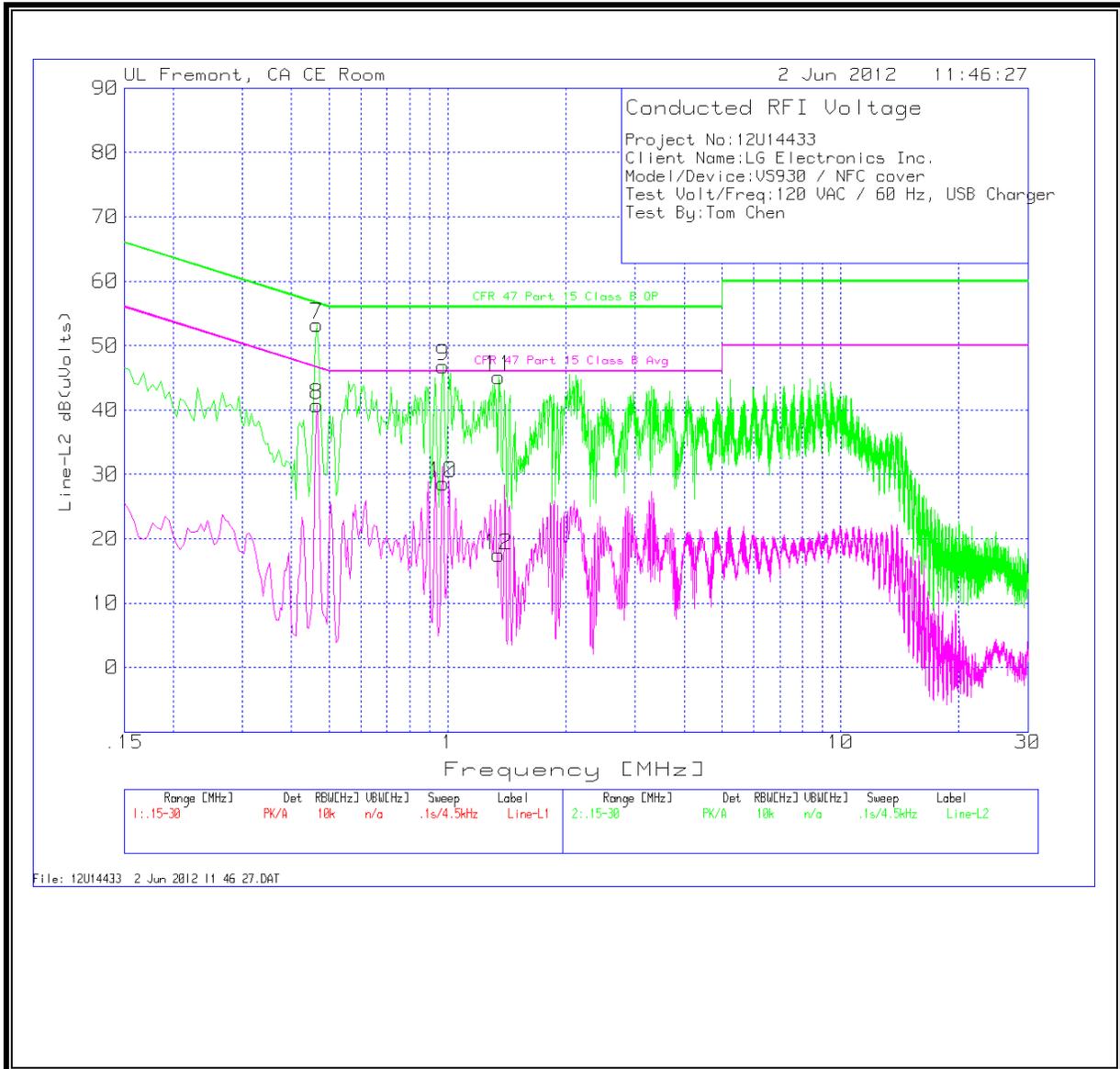
Project No:12U14433									
Client Name:LG Electronics Inc.									
Model/Device:VS930 / NFC cover									
Test Volt/Freq:120 VAC / 60 Hz, USB Charger									
Test By:Tom Chen									
Line-L1 .15 - 30MHz									
Test Frequency	Meter Reading	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.4605	54.91	PK	0.1	0	55.01	56.7	-1.69	-	-
0.4605	46.34	Av	0.1	0	46.44	-	-	46.7	-0.26
0.9735	47.82	PK	0.1	0	47.92	56	-8.08	-	-
0.9735	35.23	Av	0.1	0	35.33	-	-	46	-10.67
2.085	49.89	PK	0.1	0.1	50.09	56	-5.91	-	-
2.085	29.36	Av	0.1	0.1	29.56	-	-	46	-16.44
Line-L2 .15 - 30MHz									
Test Frequency	Meter Reading	Detector	T24 IL L2.TXT (dB)	LC Cables 2&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.465	53.1	PK	0.1	0	53.2	56.6	-3.4	-	-
0.465	40.67	Av	0.1	0	40.77	-	-	46.6	-5.83
0.9735	46.56	PK	0.1	0.1	46.76	56	-9.24	-	-
0.9735	28.43	Av	0.1	0.1	28.63	-	-	46	-17.37
1.347	44.98	PK	0.1	0.1	45.18	56	-10.82	-	-
1.347	17.28	Av	0.1	0.1	17.48	-	-	46	-28.52

**STANDARD COVER**

**LINE 1 RESULTS**



**LINE 2 RESULTS**



**RESULTS**

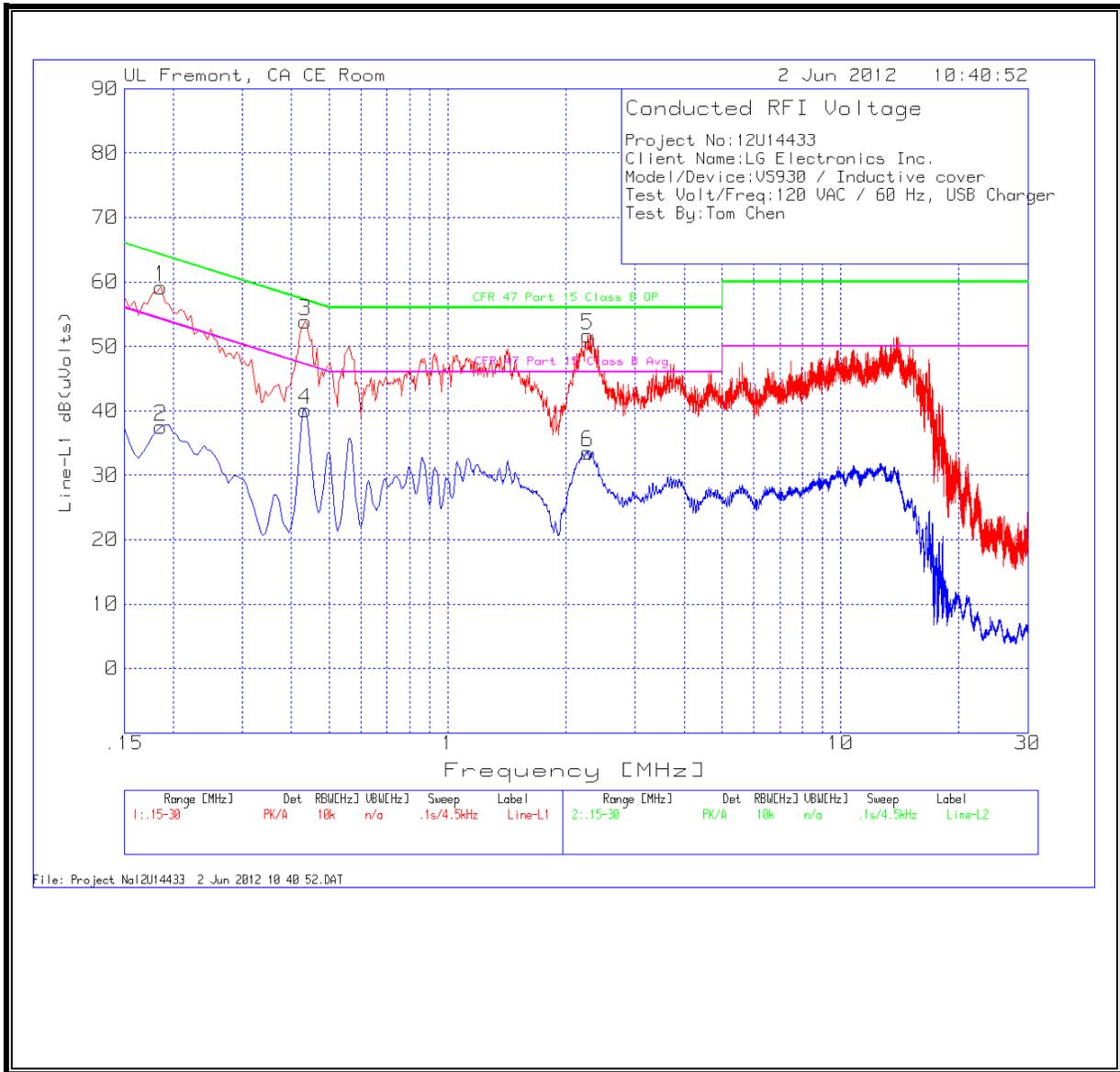
**INDUCTIVE COVER**

**6 WORST EMISSIONS**

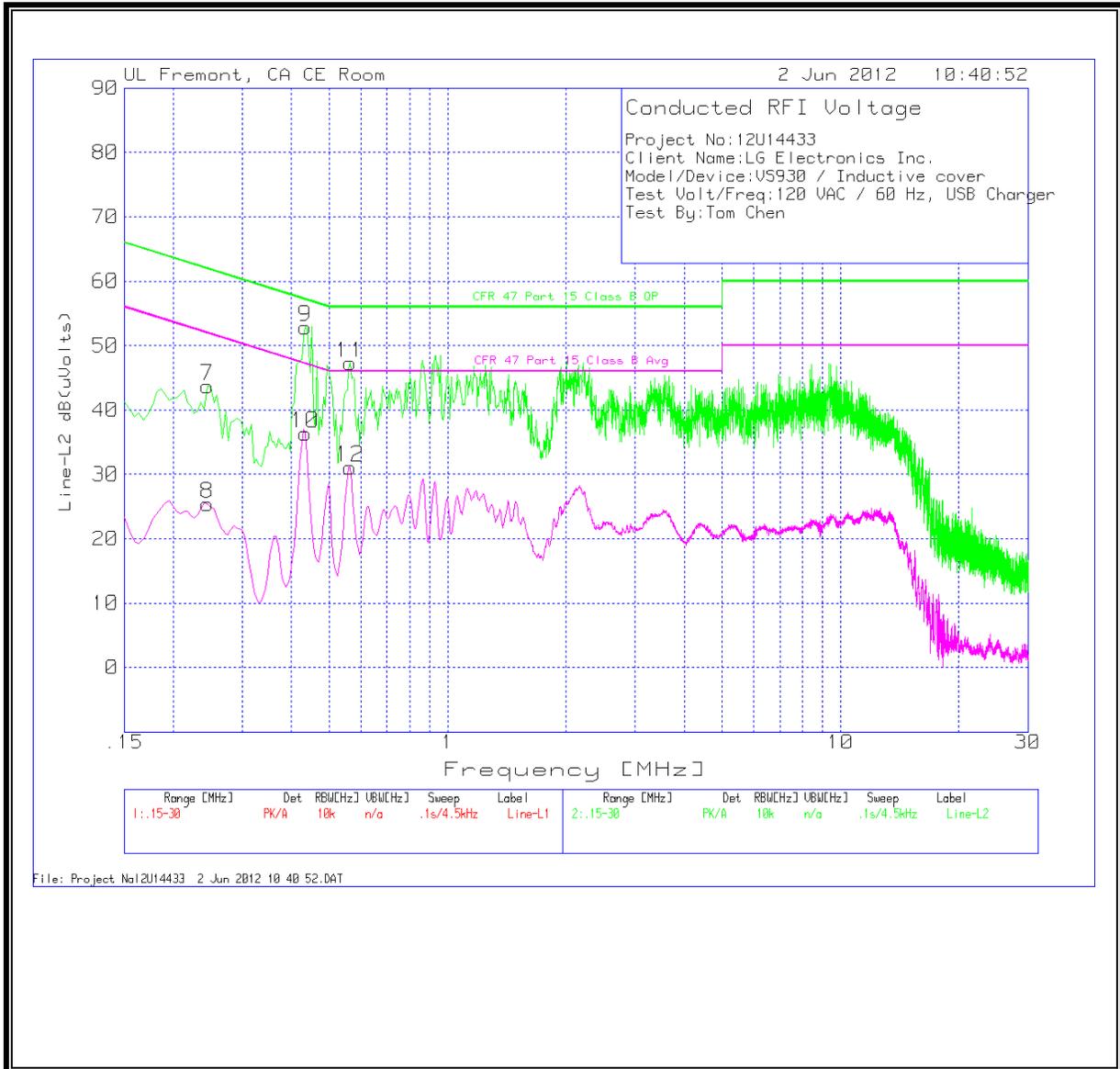
Project No:12U14433									
Client Name:LG Electronics Inc.									
Model/Device:VS930 / Inductive cover, USB charger									
Test Volt/Freq:120 VAC / 60 Hz									
Test By:Tom Chen									
Line-L1 .15 - 30MHz									
Test Frequency	Meter Reading	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.186	59.04	PK	0.1	0	59.14	64.2	-5.06	-	-
0.186	37.37	Av	0.1	0	37.47	-	-	54.2	-16.73
0.4335	53.83	PK	0.1	0	53.93	57.2	-3.27	-	-
0.4335	39.99	Av	0.1	0	40.09	-	-	47.2	-7.11
2.274	51.51	PK	0.1	0.1	51.71	56	-4.29	-	-
2.274	33.31	Av	0.1	0.1	33.51	-	-	46	-12.49
Line-L2 .15 - 30MHz									
Test Frequency	Meter Reading	Detector	T24 IL L2.TXT (dB)	LC Cables 2&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.2445	43.57	PK	0.1	0	43.67	61.9	-18.23	-	-
0.2445	25.36	Av	0.1	0	25.46	-	-	51.9	-26.44
0.4335	52.74	PK	0.1	0	52.84	57.2	-4.36	-	-
0.4335	36.22	Av	0.1	0	36.32	-	-	47.2	-10.88
0.564	47.16	PK	0.1	0	47.26	56	-8.74	-	-
0.564	30.94	Av	0.1	0	31.04	-	-	46	-14.96

**INDUCTIVE COVER**

**LINE 1 RESULTS**



**LINE 2 RESULTS**



**RESULTS**

**INDUCTIVE CHARGER PAD**

**EUT WITH ANTENNA**

**6 WORST EMISSIONS**

Project No:12U14433									
Client Name:LG Electronics Inc.									
Model/Device:VS930 / Inductive cover,pad									
Test Volt/Freq:120 VAC / 60 Hz, NFC on									
Test By:Tom Chen									
Line-L1 .15 - 30MHz									
Test Frequency	Meter Reading	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
1.2255	49.73	PK	0.1	0.1	49.93	56	-6.07	-	-
1.2255	41.85	Av	0.1	0.1	42.05	-	-	46	-3.95
1.4955	49.25	PK	0.1	0.1	49.45	56	-6.55	-	-
1.4955	40.74	Av	0.1	0.1	40.94	-	-	46	-5.06
13.56	62.01	PK	0.2	0.2	62.41	60	2.41	-	-
13.56	56.46	Av	0.2	0.2	56.86	-	-	50	6.86
Line-L2 .15 - 30MHz									
Test Frequency	Meter Reading	Detector	T24 IL L2.TXT (dB)	LC Cables 2&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
1.2345	47.35	PK	0.1	0.1	47.55	56	-8.45	-	-
1.2345	37.24	Av	0.1	0.1	37.44	-	-	46	-8.56
1.5135	47.23	PK	0.1	0.1	47.43	56	-8.57	-	-
1.5135	37.29	Av	0.1	0.1	37.49	-	-	46	-8.51
13.6635	51.36	PK	0.2	0.2	51.76	60	-8.24	-	-
13.6635	36.45	Av	0.2	0.2	36.85	-	-	50	-13.15

**EUT WITH 50 OHM TERMINATOR**

**6 WORST EMISSIONS**

Project No:12U14433									
Client Name:LG Electronics Inc.									
Model/Device:VS930 / Inductive cover,pad									
Test Volt/Freq:120 VAC / 60 Hz, NFC on									
Test By:Tom Chen									

Line-L1 .15 - 30MHz

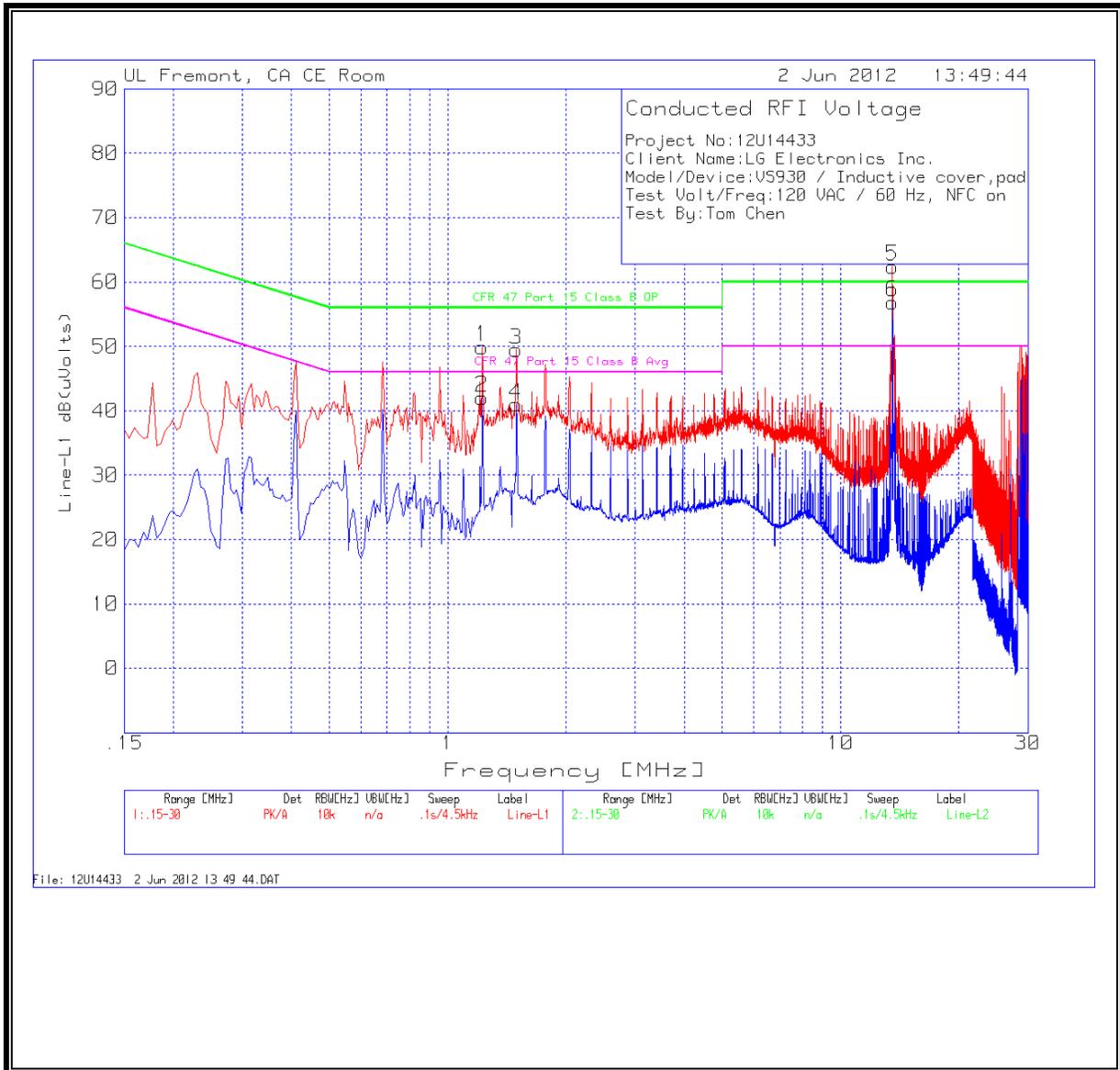
Test Frequency	Meter Reading	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.4605	41.94	PK	0.1	0	42.04	56.7	-14.66	-	-
0.4605	28.71	Av	0.1	0	28.81	-	-	46.7	-17.89
1.2615	45.67	PK	0.1	0.1	45.87	56	-10.13	-	-
1.2615	28.12	Av	0.1	0.1	28.32	-	-	46	-17.68
13.56	54.98	PK	0.2	0.2	55.38	60	-4.62	-	-
13.56	49.5	Av	0.2	0.2	49.9	-	-	50	-0.1

Line-L2 .15 - 30MHz

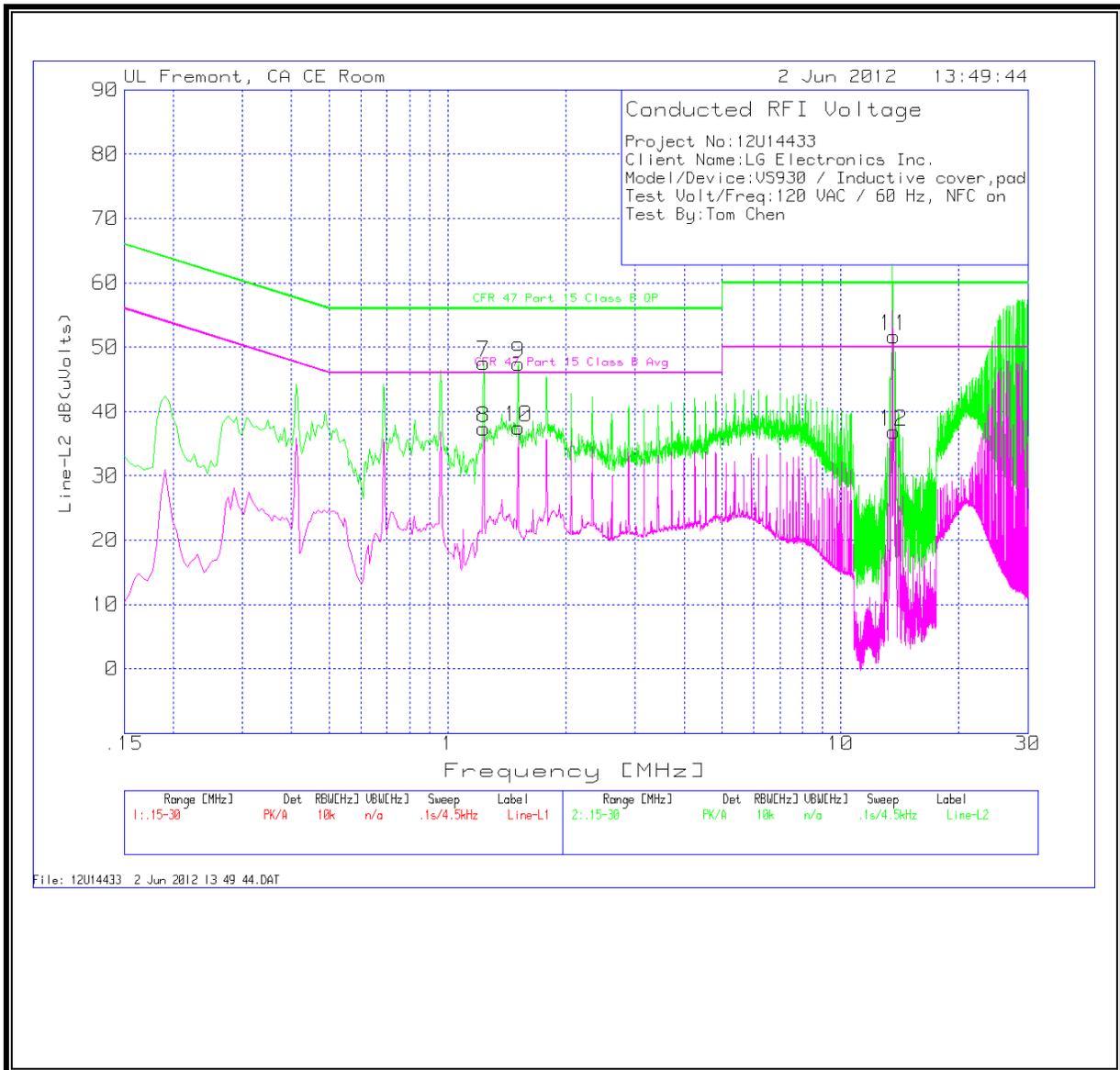
Test Frequency	Meter Reading	Detector	T24 IL L2.TXT (dB)	LC Cables 2&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.456	37.69	PK	0.1	0	37.79	56.8	-19.01	-	-
0.456	24.42	Av	0.1	0	24.52	-	-	46.8	-22.28
1.554	33.47	PK	0.1	0.1	33.67	56	-22.33	-	-
1.554	14.62	Av	0.1	0.1	14.82	-	-	46	-31.18
13.7175	29.67	PK	0.2	0.2	30.07	60	-29.93	-	-
13.7175	7.36	Av	0.2	0.2	7.76	-	-	50	-42.24

**INDUCTIVE CHARGER PAD WITH ANTENNA**

**LINE 1 RESULTS**

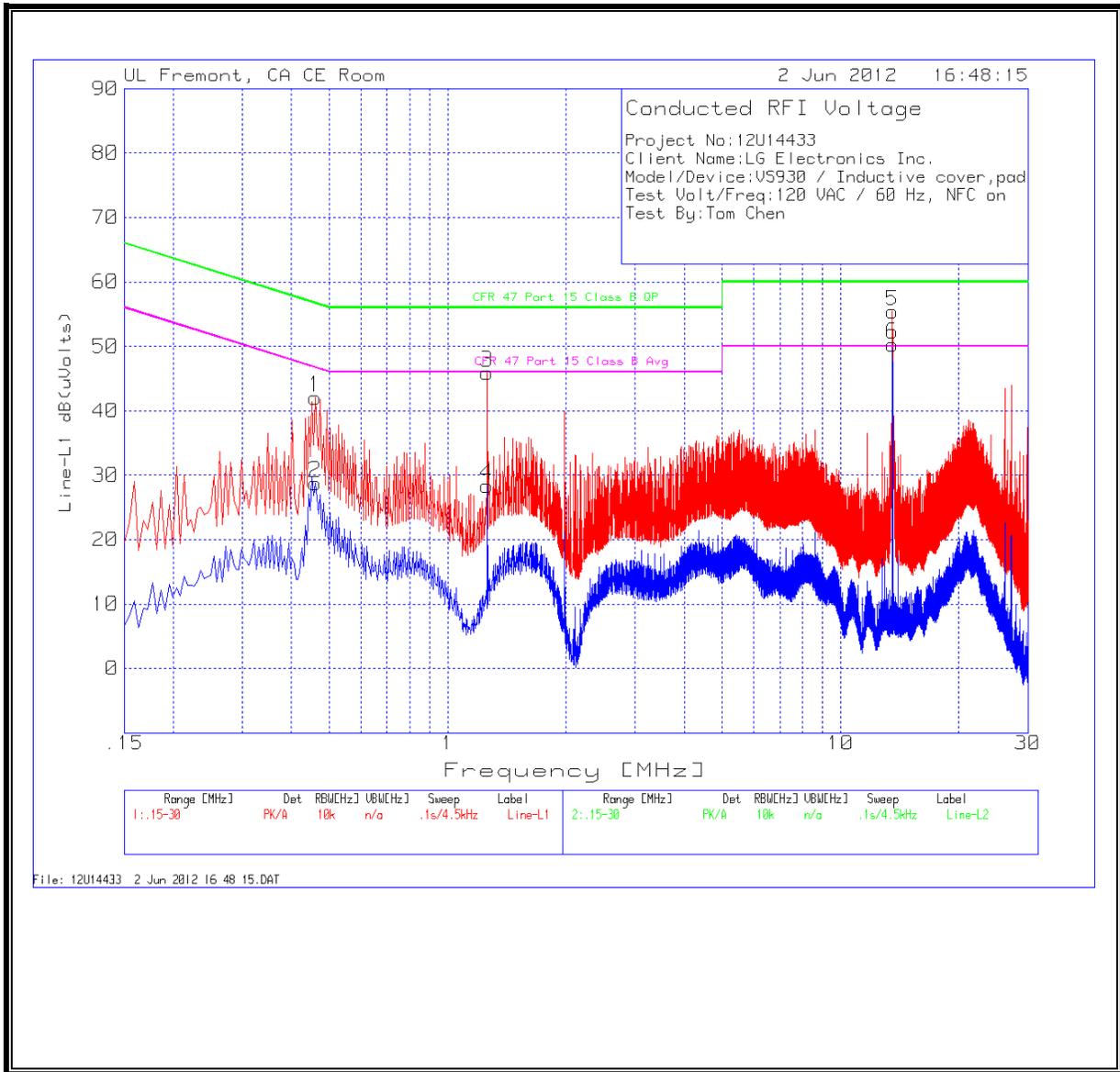


**LINE 2 RESULTS**



**INDUCTIVE CHARGER PAD WITH 50 Ohm Terminator**

**LINE 1 RESULTS**



**LINE 2 RESULTS**

