FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8

BLUETOOTH LOW ENERGY
CERTIFICATION TEST REPORT

FOR

LTE PHONE BLUETOOTH, WLAN (2.4GHZ & 5GHZ) AND NFC

MODEL NUMBER: LG-D500, LGD500, D500, LGMS500, LG-MS500, MS500

FCC ID: ZNFD500

REPORT NUMBER: 13U14980-5

ISSUE DATE: MAY 14, 2013

Prepared for
LG ELECTRONICS MOBILECOMM U.S.A., INC.
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS, NEW JERSEY 07632

Prepared by
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	05/14/13	Initial Issue	P. Kim

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS, NEW JERSEY 07632

EUT DESCRIPTION: LTE PHONE BLUETOOTH, WLAN (2.4GHZ & 5GHZ) AND NFC

MODEL: LG-D500, LGD500, D500, LGMS500, LG-MS500, MS500

SERIAL NUMBER: 303KPHG337169

DATE TESTED: MAY 14, 2013

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	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 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 Verification Services Inc. By:

PHILIP KIM
WiSE PROGRAM MANAGER
UL Verification Services Inc.

Tested By:

MENGISTU MEKURIA
WiSE ENGINEER
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

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

UL Verification Services Inc. 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:

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 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 LTE phone supports BLUETOOTH, WLAN (2.4GHZ & 5GHZ) AND NFC

5.2. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2462	802.11b		1.00
2412 - 2462	802.11g		1.00
2412 - 2462	802.11n HT20		1.00
2422 - 2452	802.11n HT40		1.00

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an Inverted F antenna, with a maximum gain of 1.04 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was 4.1.2
The test utility software used during testing was D500_LAP8930JR130328.

5.5. 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 Y orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Y orientation.

5.6. DESCRIPTION OF TEST SETUP

SU SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MCS-01WR	RB320071516	DoC
Earphone	Cresyn	EAB62410801	N/A	N/A

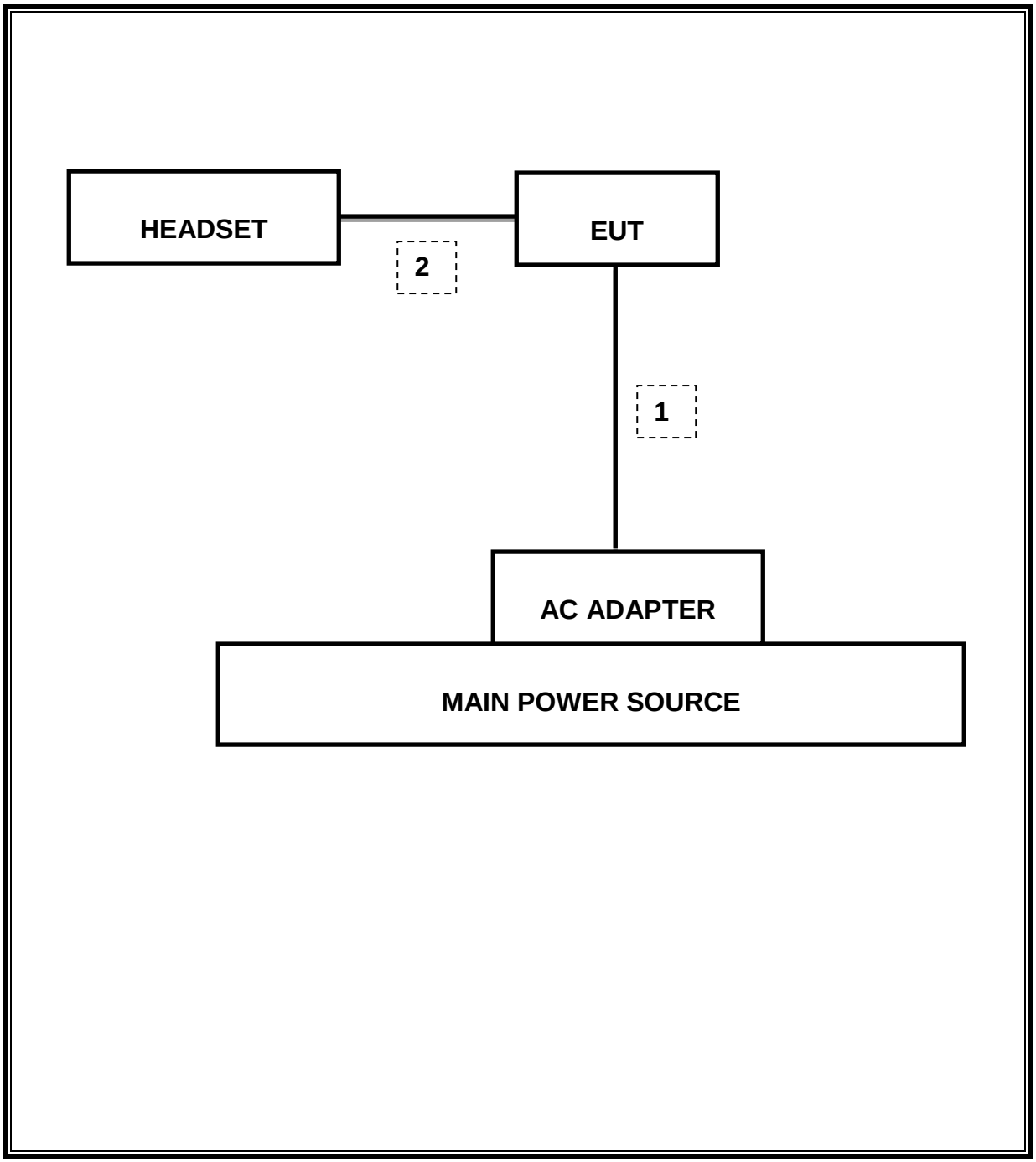
I/O CABLES

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

TEST SETUP

The EUT is continuously communicating to the Bluetooth tester during the tests.
EUT was set in the Hidden menu mode to enable BT communications.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01171	02/13/14
Antenna, Horn, 18GHz	EMCO	3115	C00783	10/25/13
Antenna, Horn, 25.5 GHz	ARA	MWH-1826/B	C00980	11/14/13
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	01/28/14
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	10/22/13
Peak Power Meter	Agilent / HP	E4416A	C00963	12/13/13
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/13/13
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/14
Reject Filter, 2.4GHz	Micro-Tronics	BRM50702	N02684	CNR

TEST SETUP

The EUT is a stand-alone unit during the tests. Test software exercised the radio card.

7. ANTENNA PORT TEST RESULTS

7.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

IC RSS-210 A8.2 (a)

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

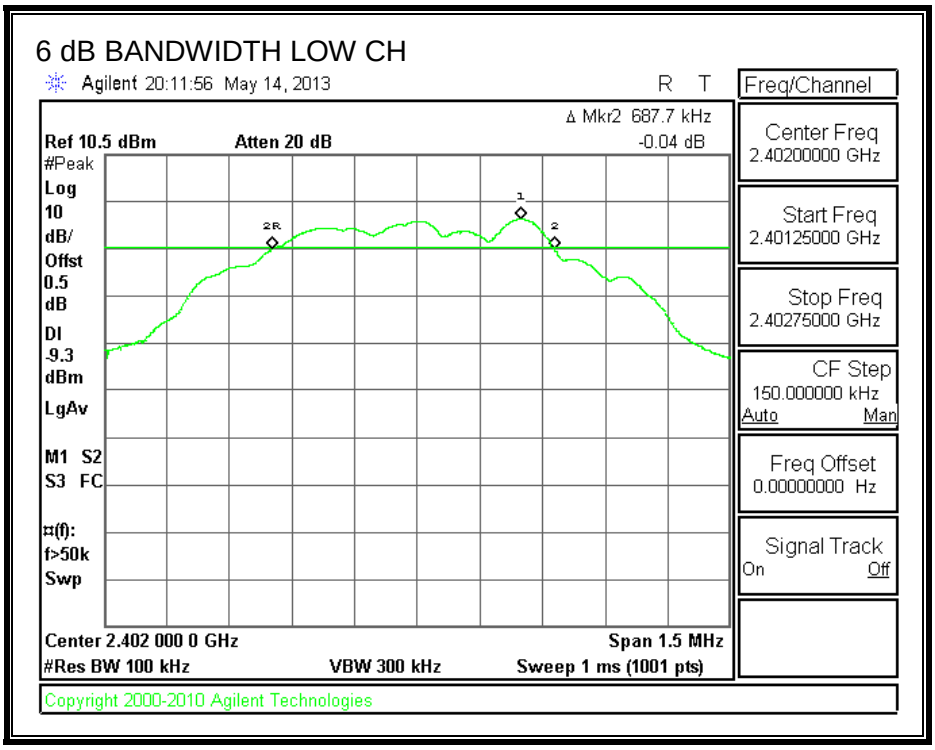
TEST PROCEDURE

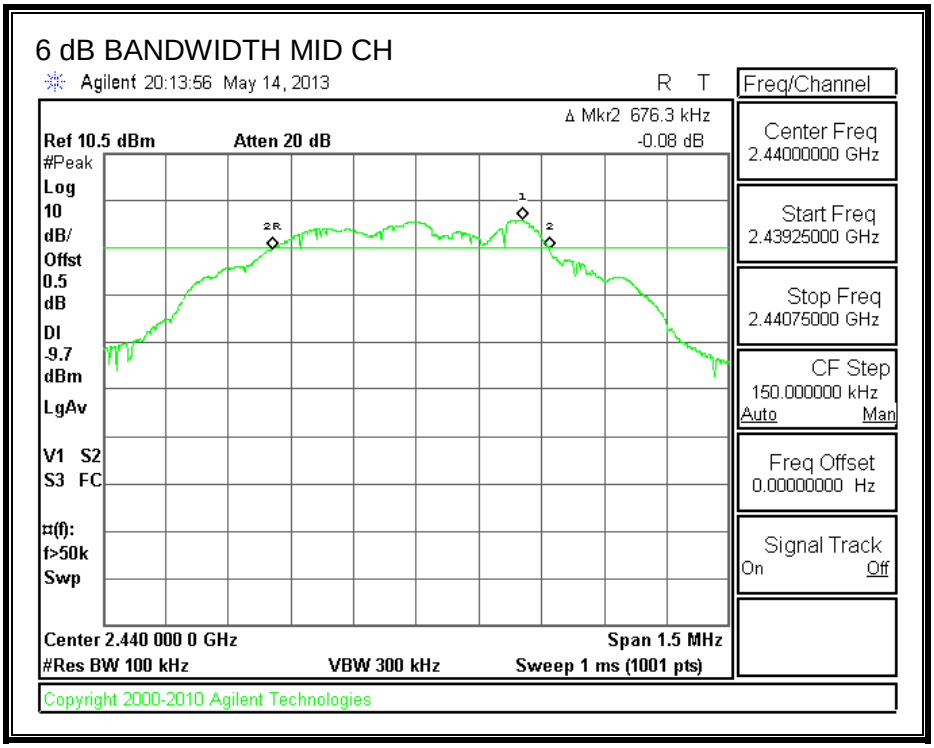
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

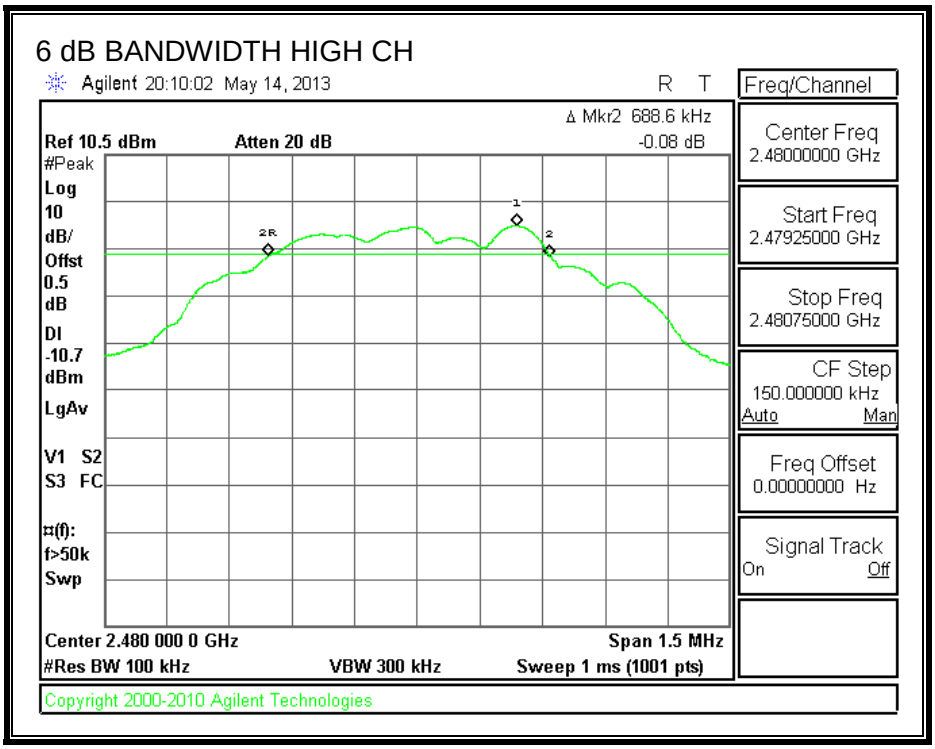
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6877	0.5
Middle	2440	0.6763	0.5
High	2480	0.6886	0.5

6 dB BANDWIDTH







7.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

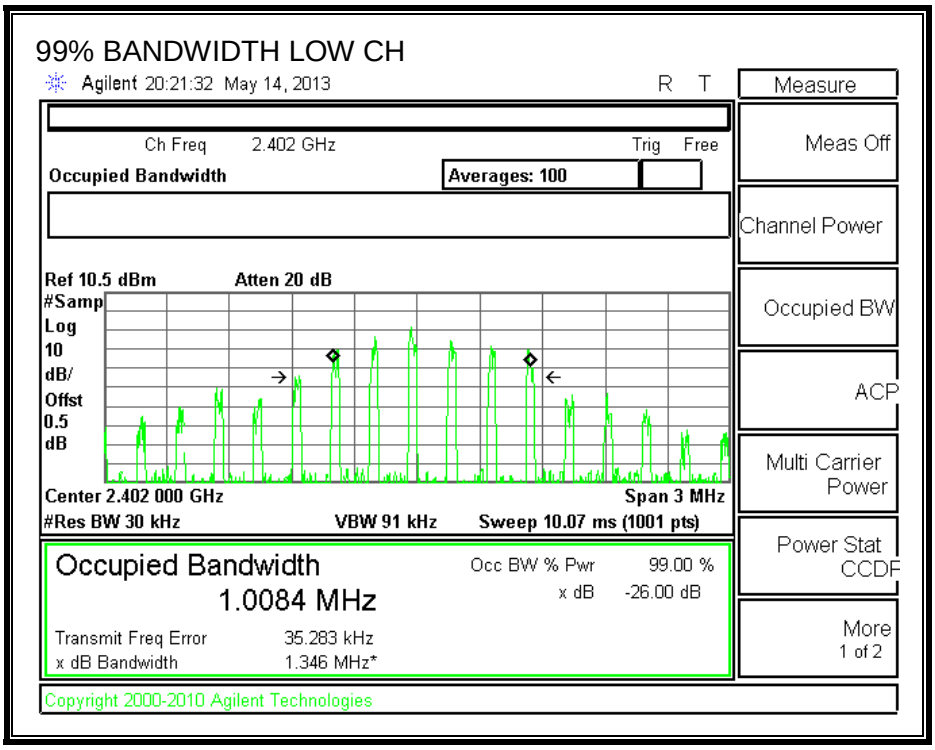
TEST PROCEDURE

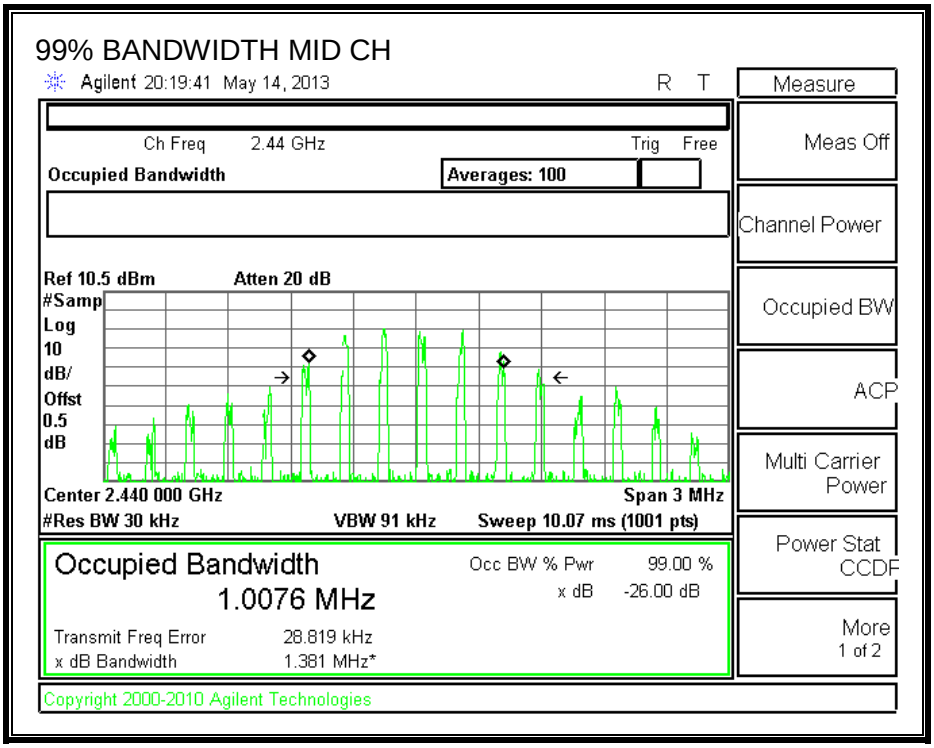
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth and to 1% of the span. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

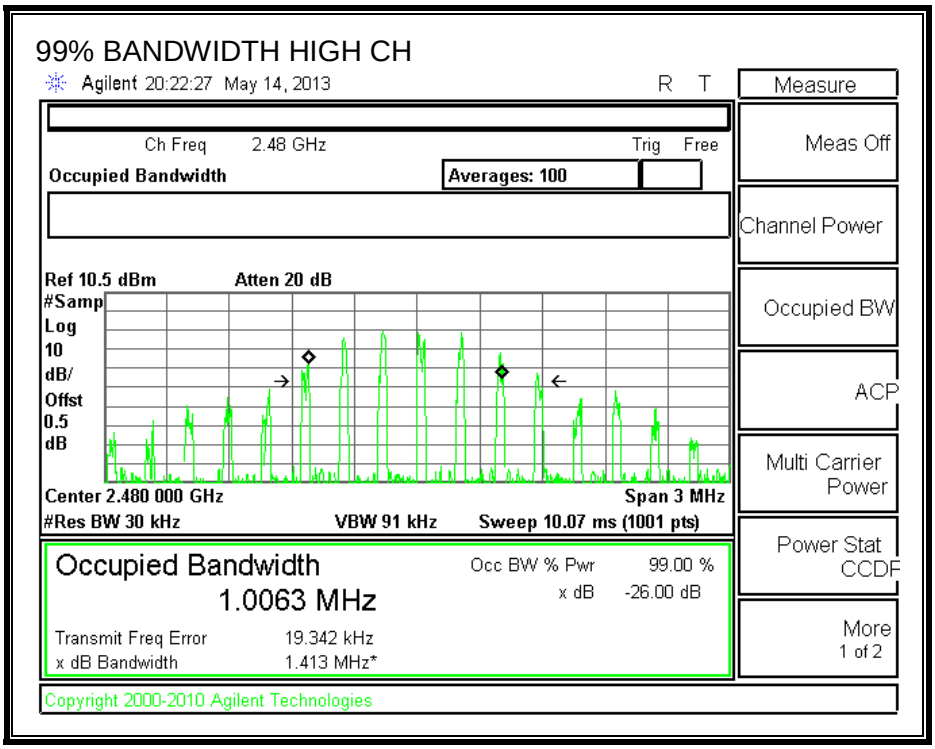
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0084
Middle	2440	1.0076
High	2480	1.0063

99% BANDWIDTH







7.3. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

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

EST PROCEDURE

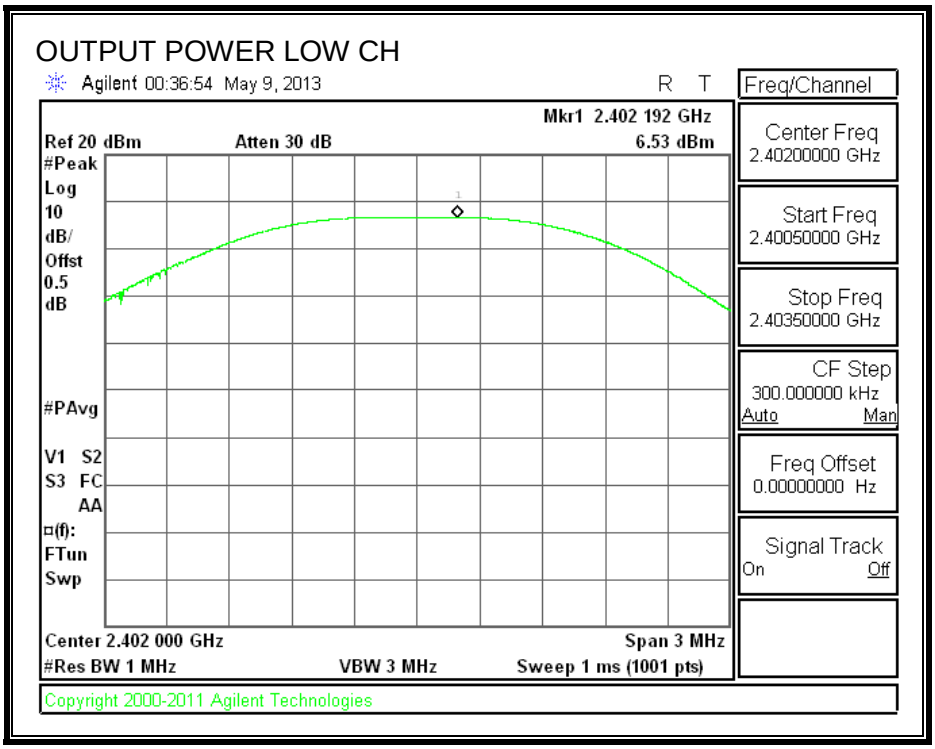
Peak power is measured using the Channel bandwidth Alternative peak output power procedure specified in "TCB Training for Devices covered under Scopes A1 - A4" by Joe Dichoso, May 2003.

Peak power is measured using wide bandwidth Peak Power Meter.

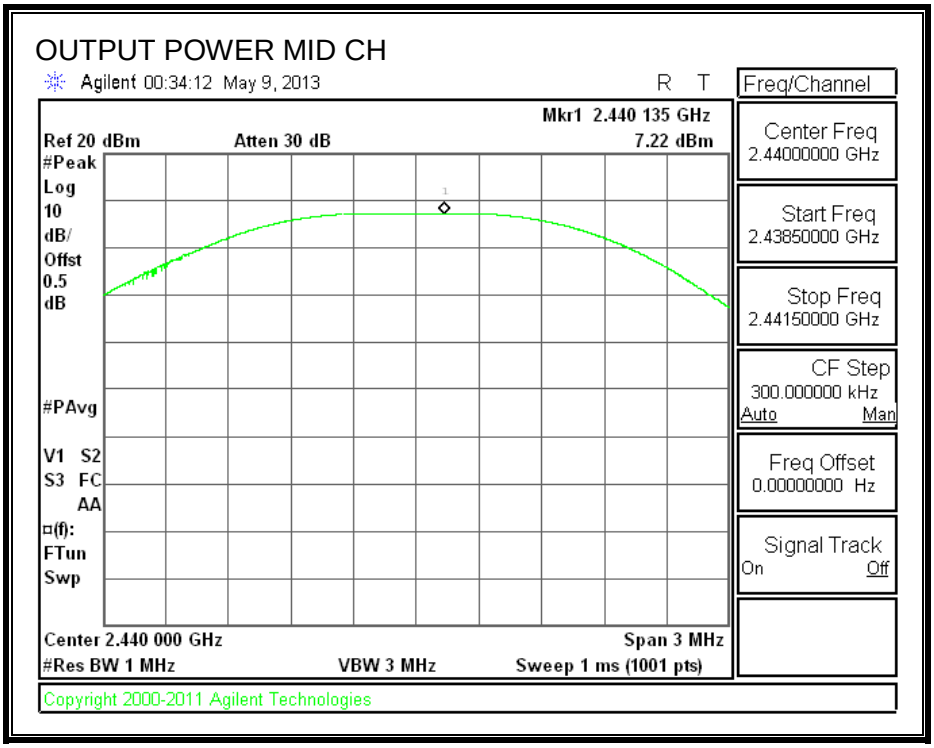
RESULTS

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	6.53	30	-23.470
Middle	2440	7.22	30	-22.780
High	2480	7.71	30	-22.290

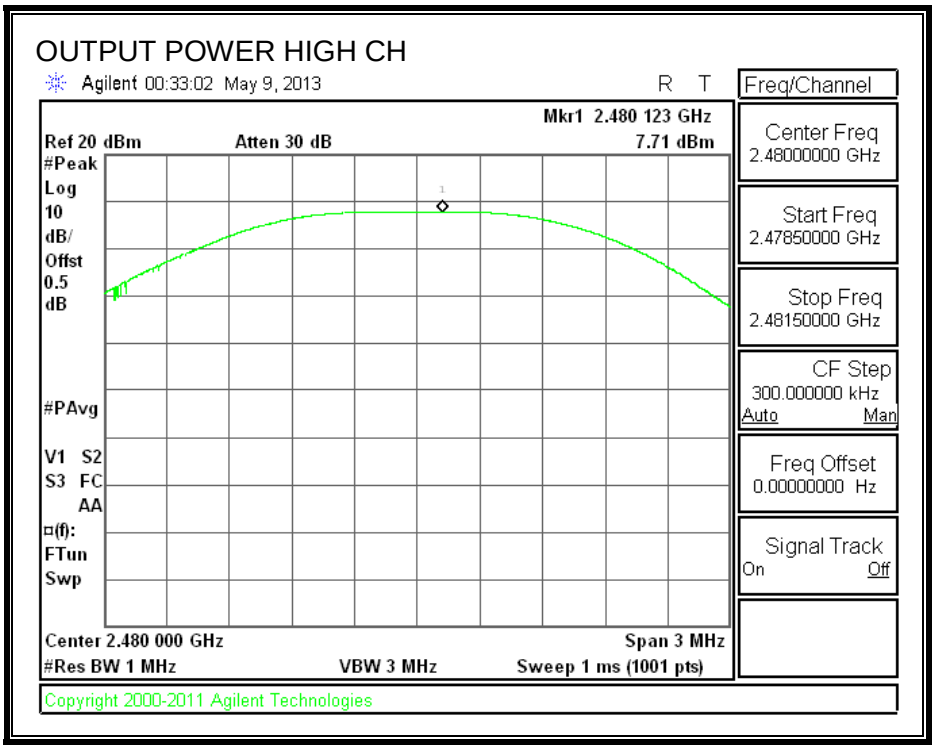
OUTPUT POWER



OUTPUT POWER MID CH



OUTPUT POWER HIGH CH



7.4. 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 .5dB was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	7.88
Middle	2440	7.19
High	2480	7.52

7.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

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.

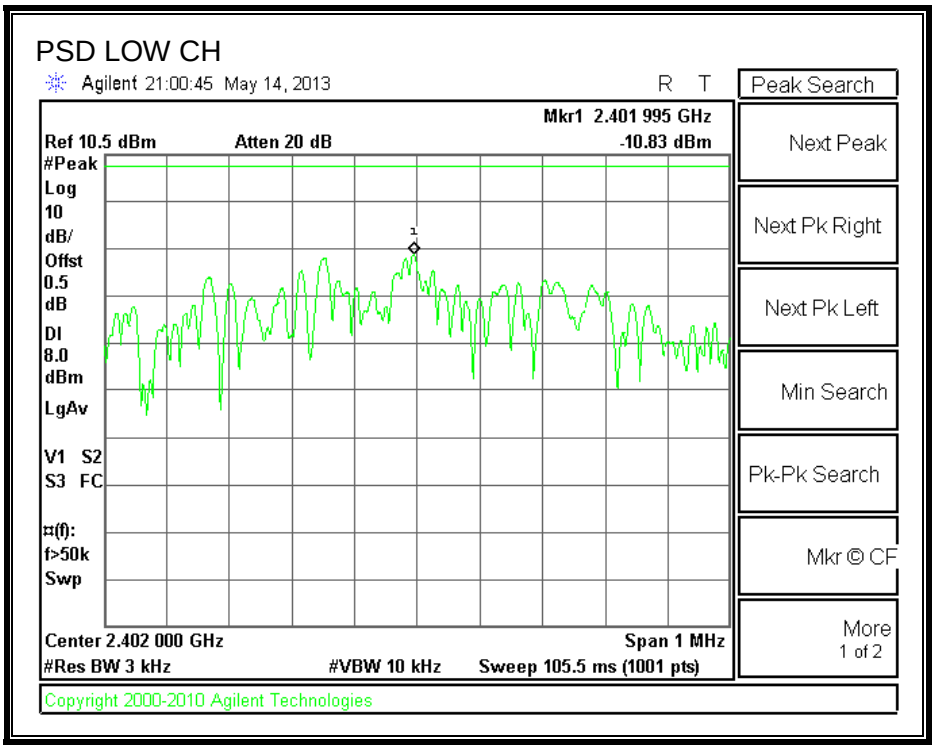
TEST PROCEDURE

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.

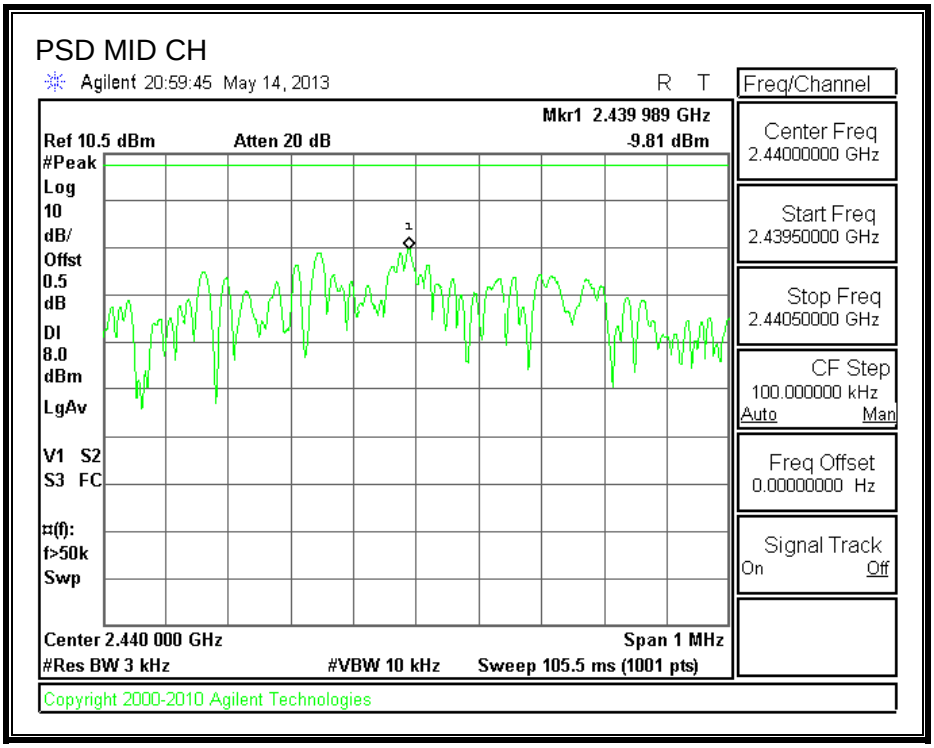
RESULTS

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-10.83	8	-18.83
Middle	2440	-9.81	8	-17.81
High	2480	-8.39	8	-16.39

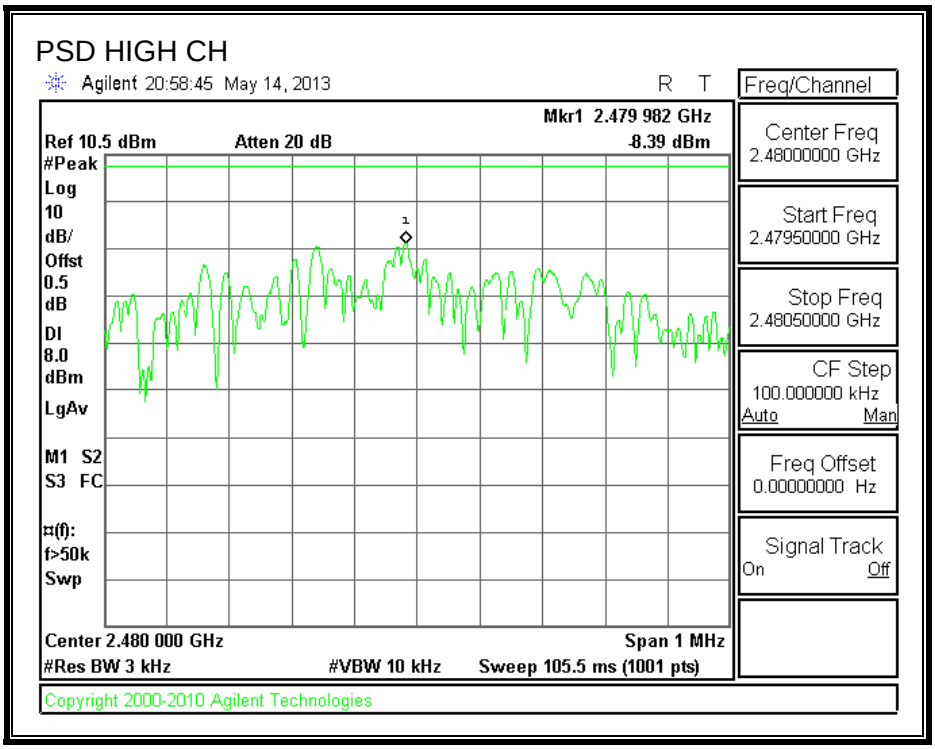
POWER SPECTRAL DENSITY



PSD MID CH



PSD HIGH CH



7.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

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

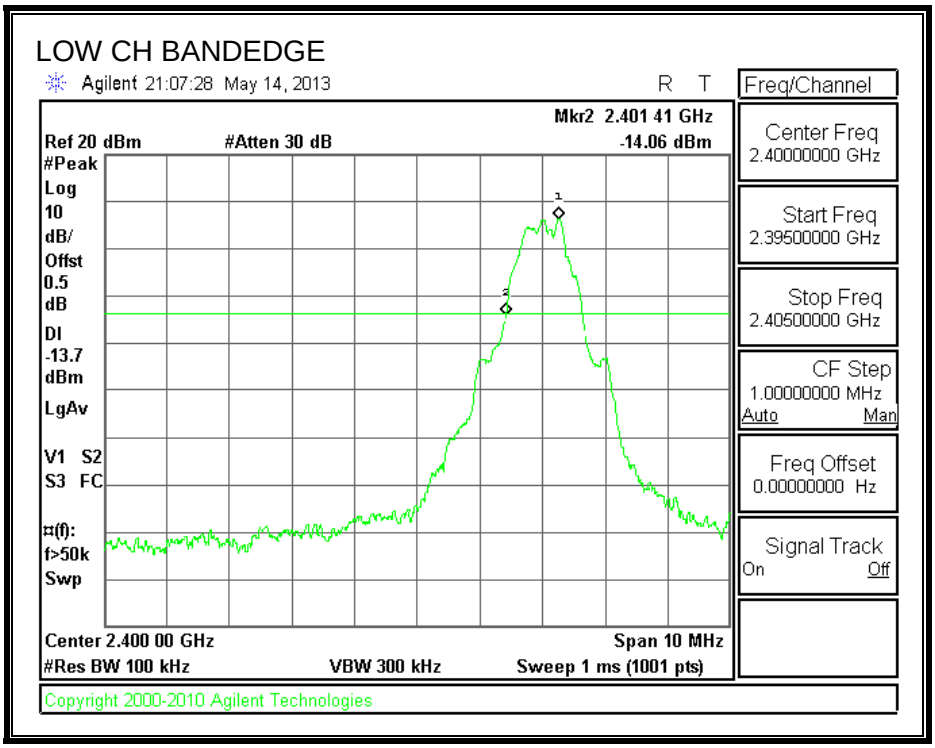
TEST PROCEDURE

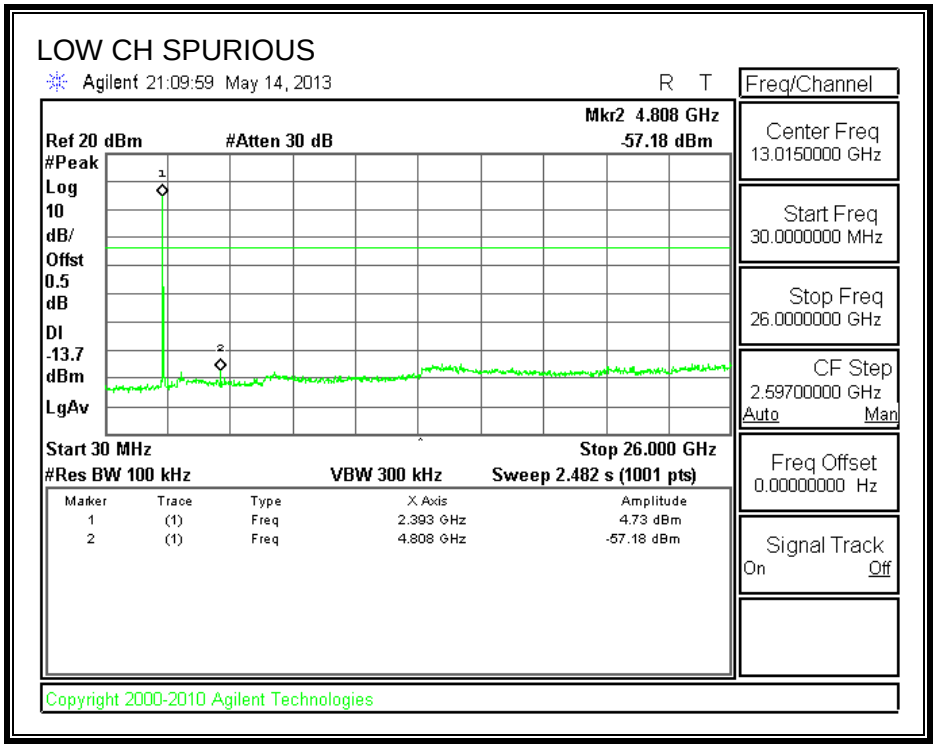
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

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

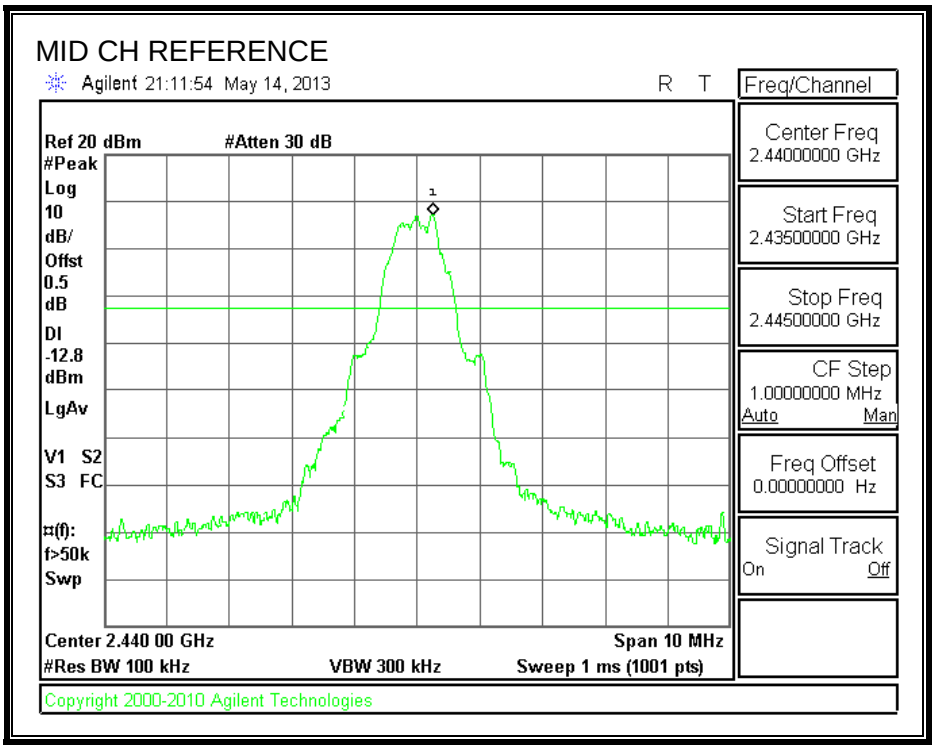
RESULTS

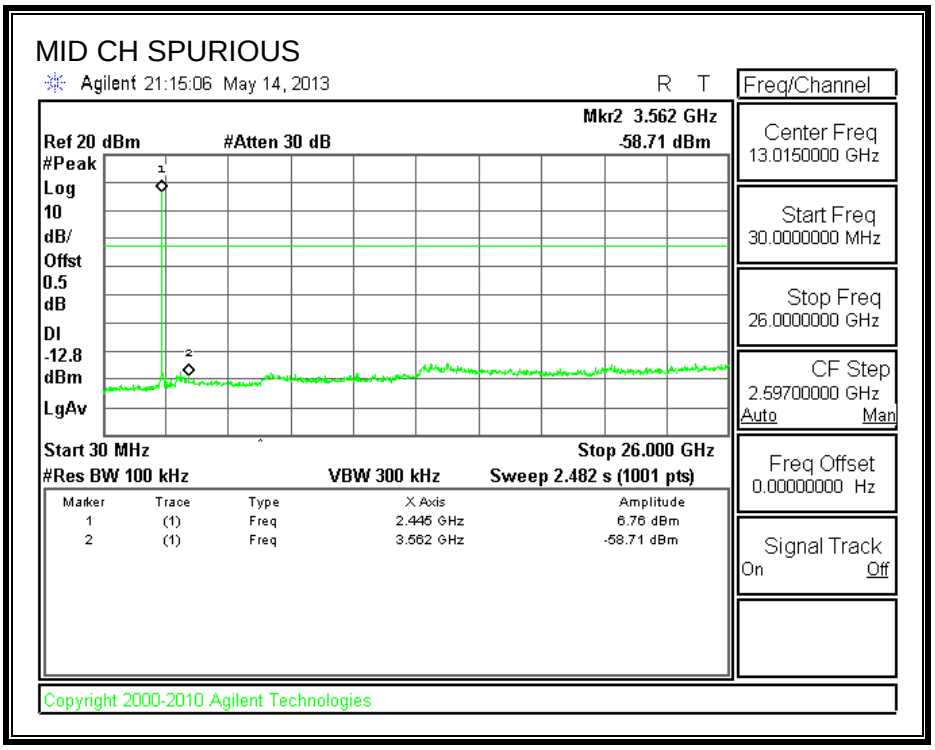
SPURIOUS EMISSIONS, LOW CHANNEL



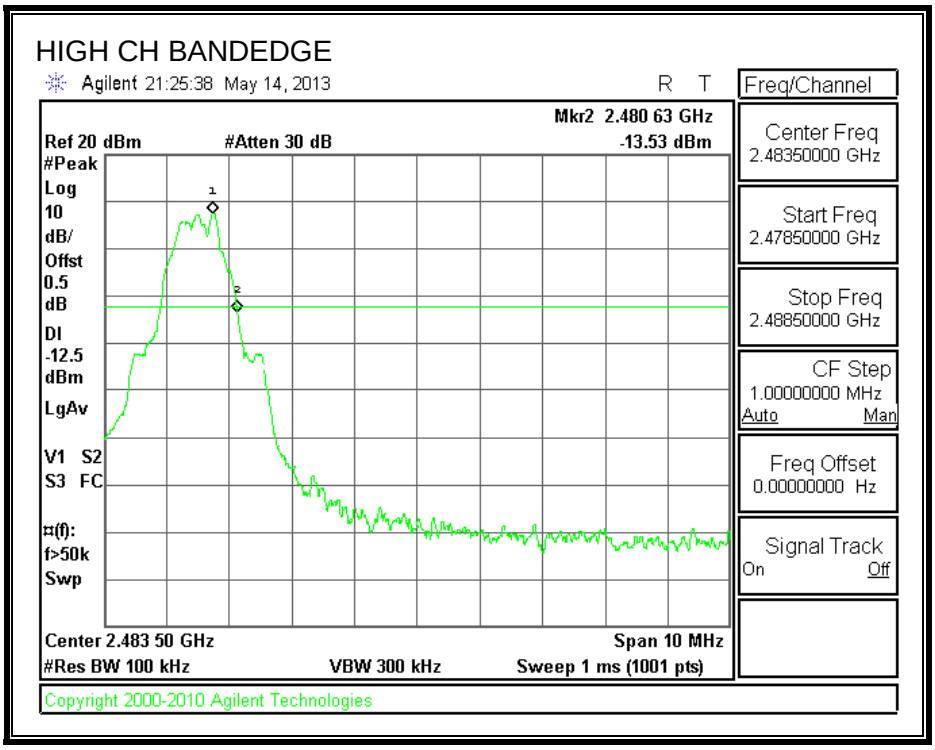


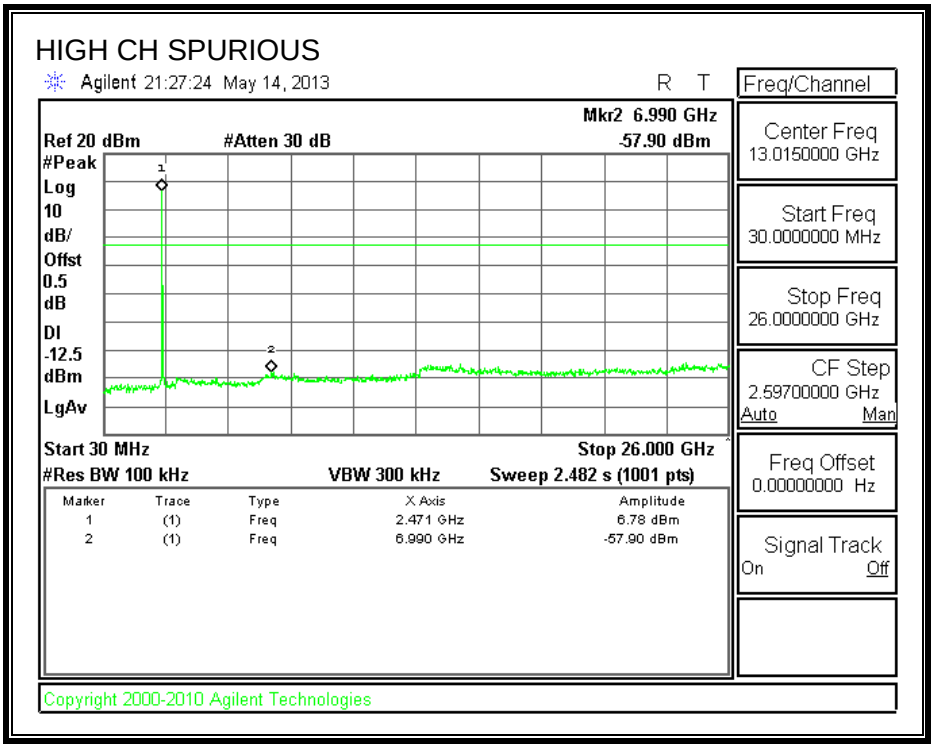
SPURIOUS EMISSIONS, MID CHANNEL





SPURIOUS EMISSIONS, HIGH CHANNEL





8. RADIATED TEST RESULTS

8.1. 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.

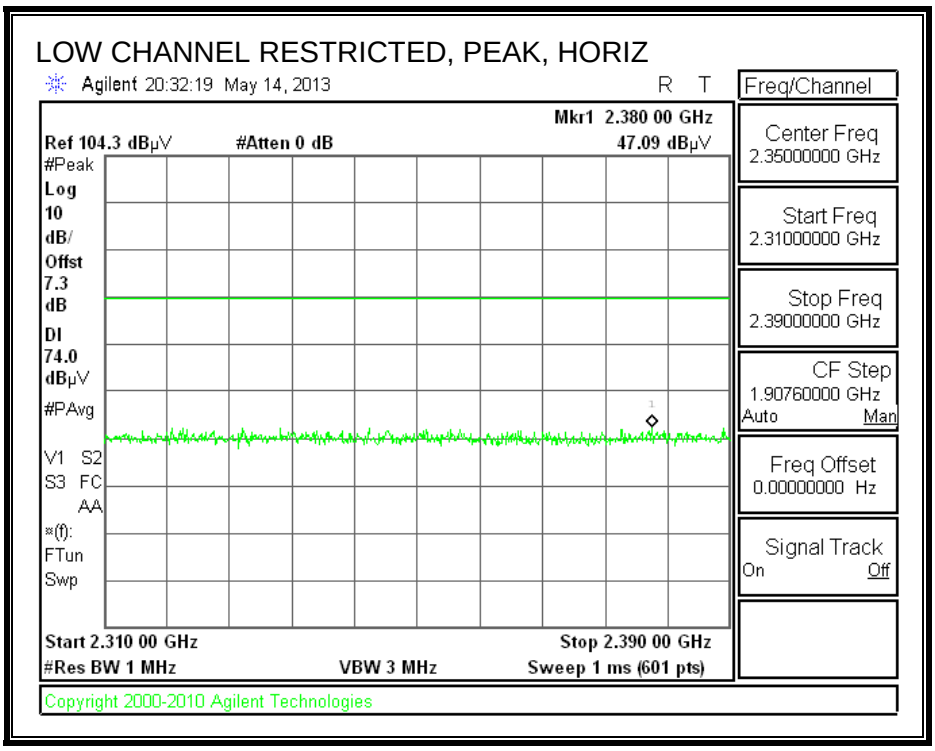
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

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

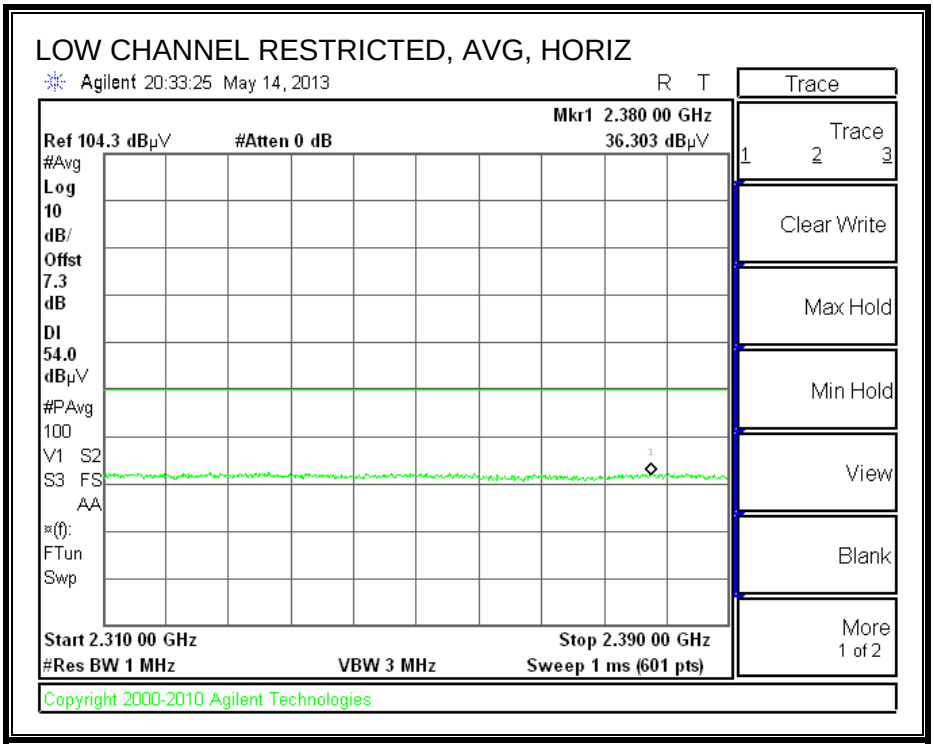
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

8.2. TX ABOVE 1 GHz FOR BLUETOOTH LOW ENERGY MODE

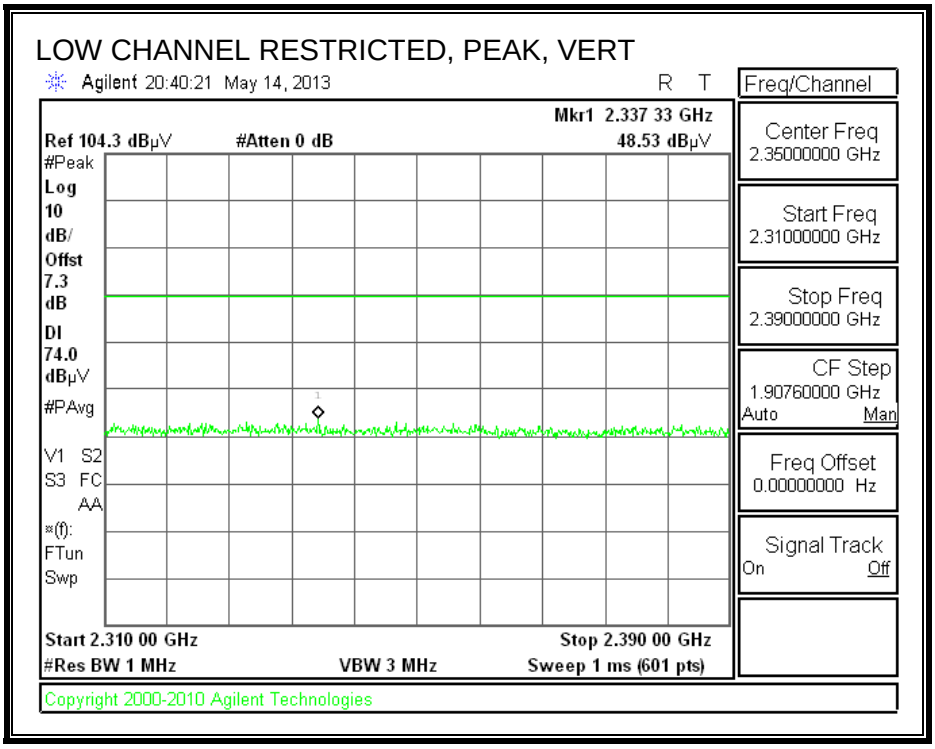
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

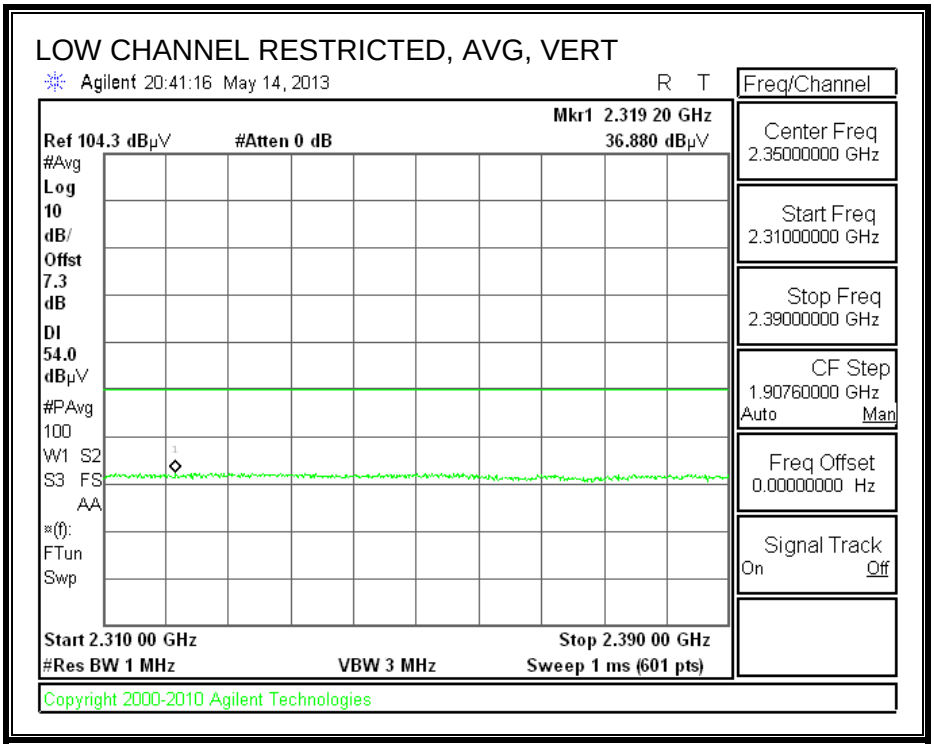


LOW CHANNEL RESTRICTED, AVG, HORIZ

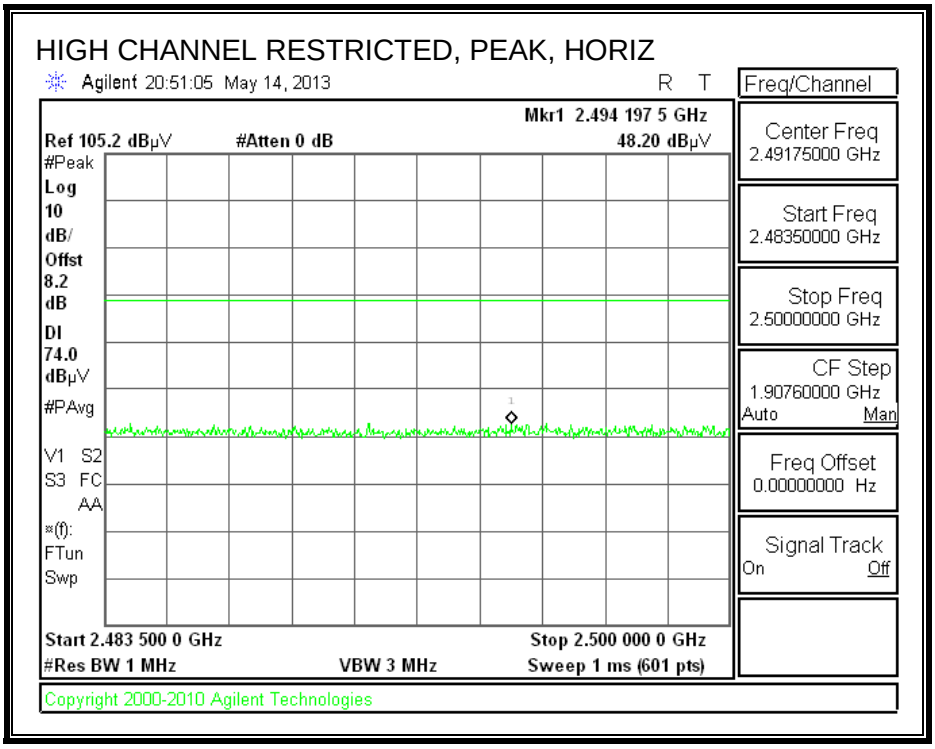


RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

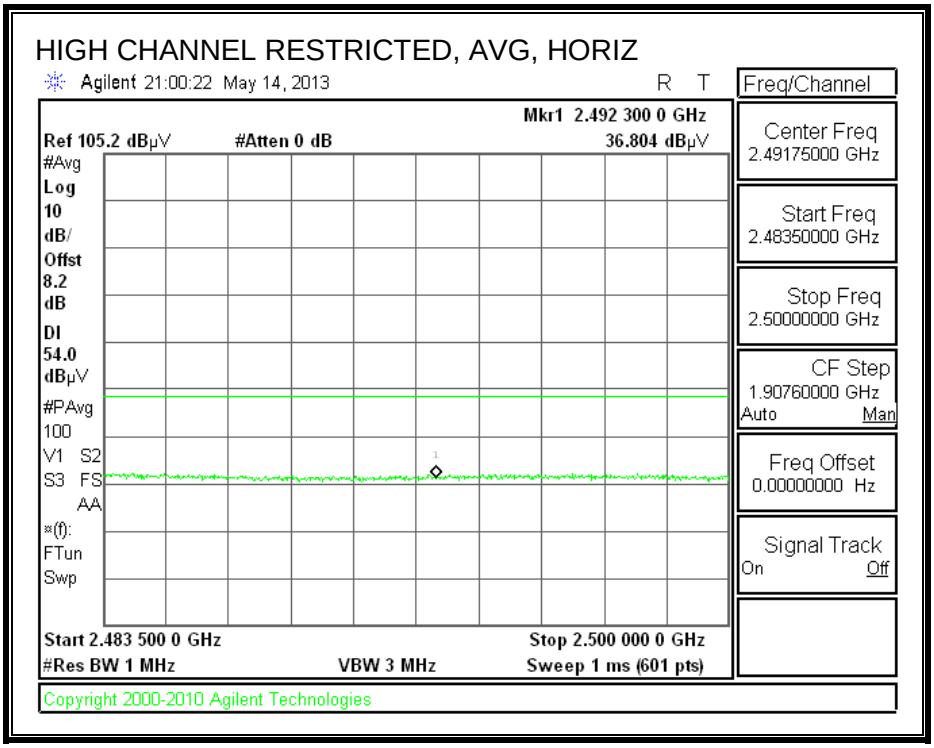




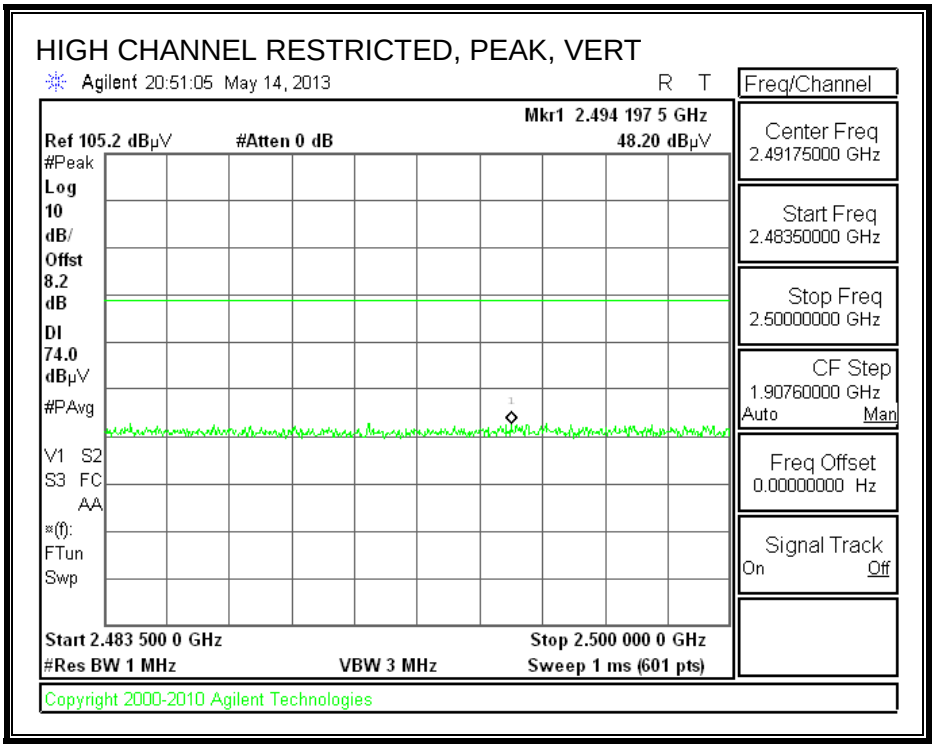
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

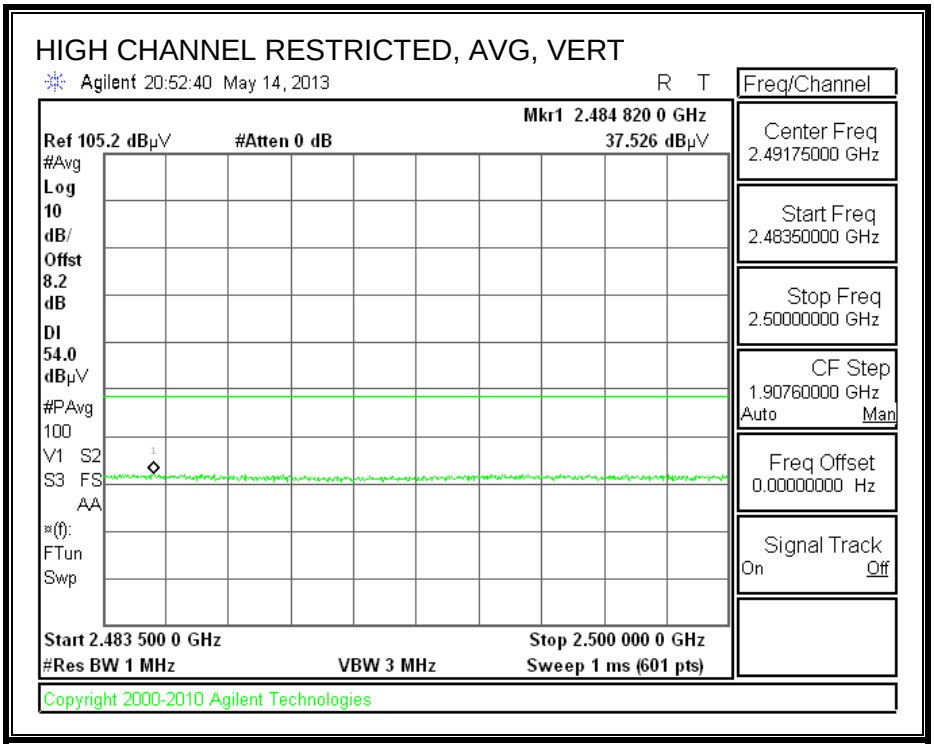


HIGH CHANNEL RESTRICTED, AVG, HORIZ



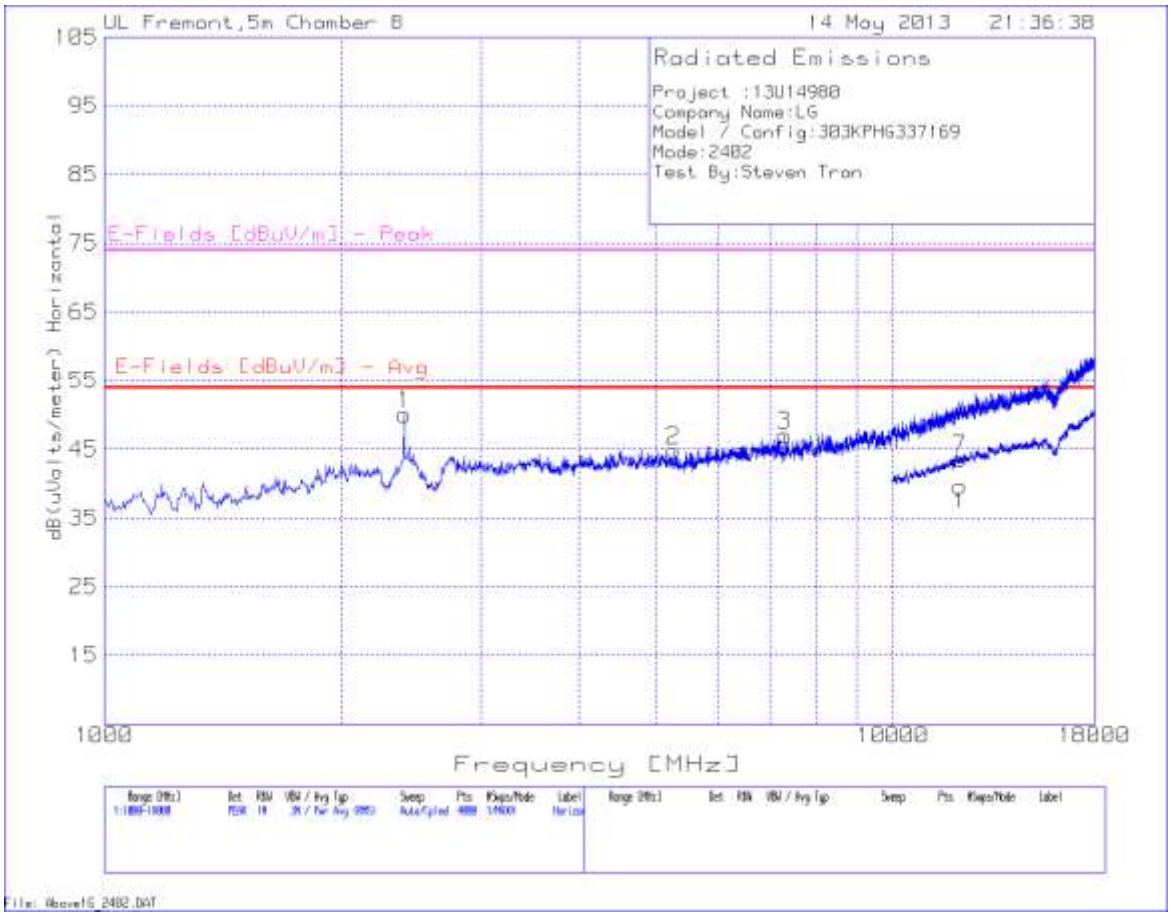
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





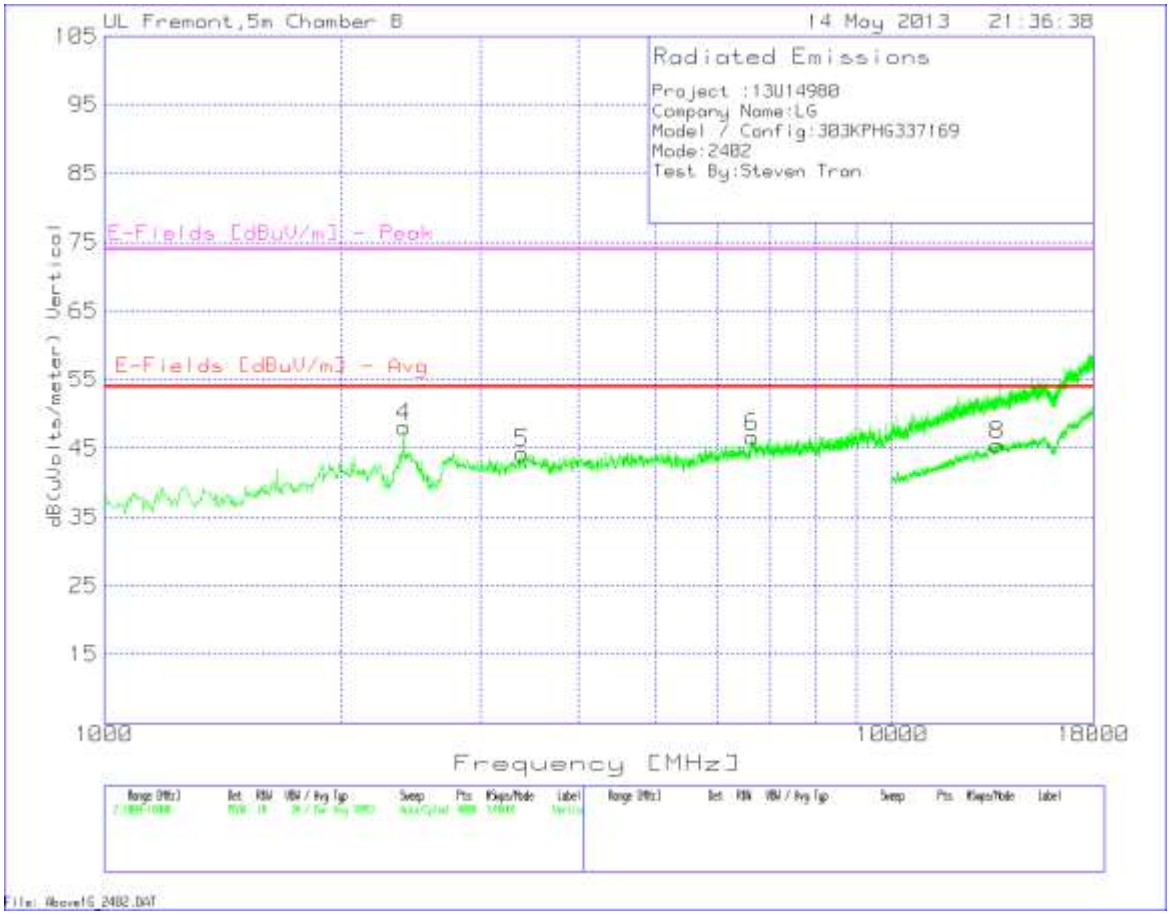
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL H ORIZONTAL PLOT



VERTICAL

LOW CHANNEL VERTICAL PLOT



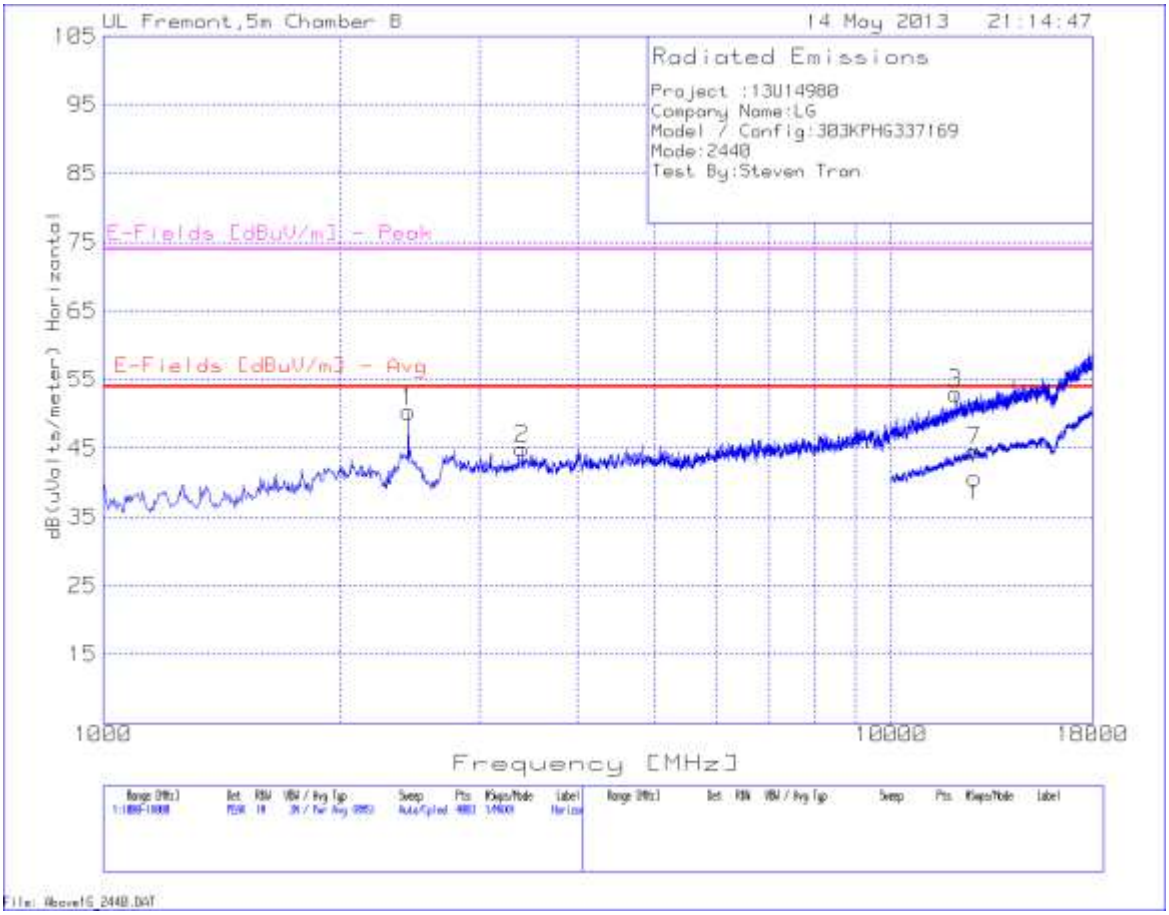
LOW CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13U14980
Company Name:LG
Model / Config:303KPHG337169
Mode:2402
Test By:Steven Tran

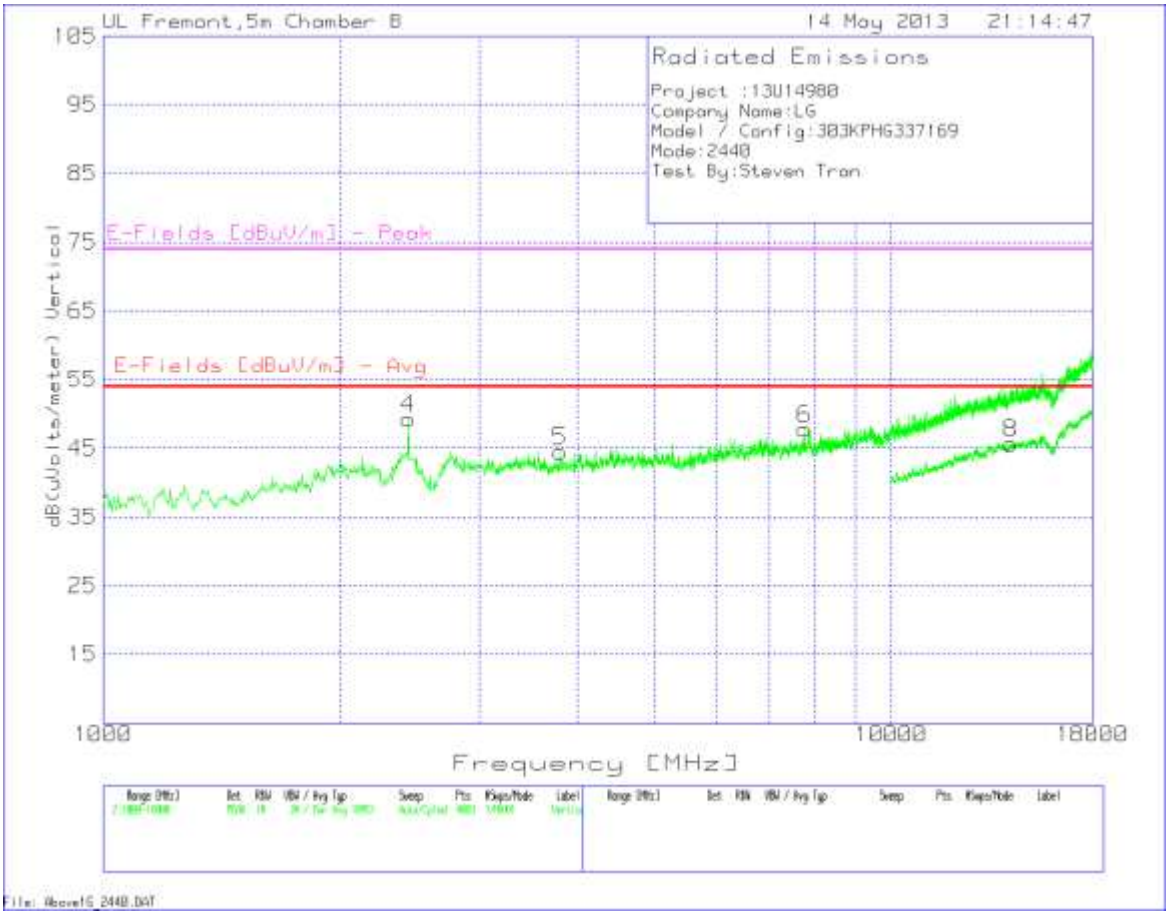
Marker No.	Test Frequency	Meter Reading	Detector	T345 Ant Factor [dB/m]	T145 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 18000MHz														
1	2401.449	47.33	PK	32.3	-35	4.6	0.9	50.13	53.97	-3.84	74	-23.87	100	Horz
2	5268.049	37.2	PK	34.9	-34.9	7.4	0.2	44.8	53.97	-9.17	74	-29.2	100	Horz
3	7289.533	37.02	PK	35.8	-35	8.9	0.3	47.02	53.97	-6.95	74	-26.98	200	Horz
Vertical 1000 - 18000MHz														
4	2401.449	45.25	PK	32.3	-35	4.6	0.9	48.05	53.97	-5.92	74	-25.95	200	Vert
5	3395.204	40.1	PK	33.2	-35.1	5.6	0.5	44.3	53.97	-9.67	74	-29.7	100	Vert
6	6635.523	37.17	PK	35.8	-35	8.4	0.3	46.67	53.97	-7.3	74	-27.33	100	Vert
Horizontal 10000 - 18000MHz														
7	12154.923	25.26	PK	39.2	-33.1	11.6	0.6	43.56	53.97	-10.41	74	-30.44	100	Horz
Vertical 10000 - 18000MHz														
8	13610.195	25.51	PK	39.1	-32	12.4	0.4	45.41	53.97	-8.56	74	-28.59	100	Vert

PK - Peak detector
Av - Average detector

MID CHANNEL HORIZONTAL PLOT



MID CHANNEL VERTICAL PLOT



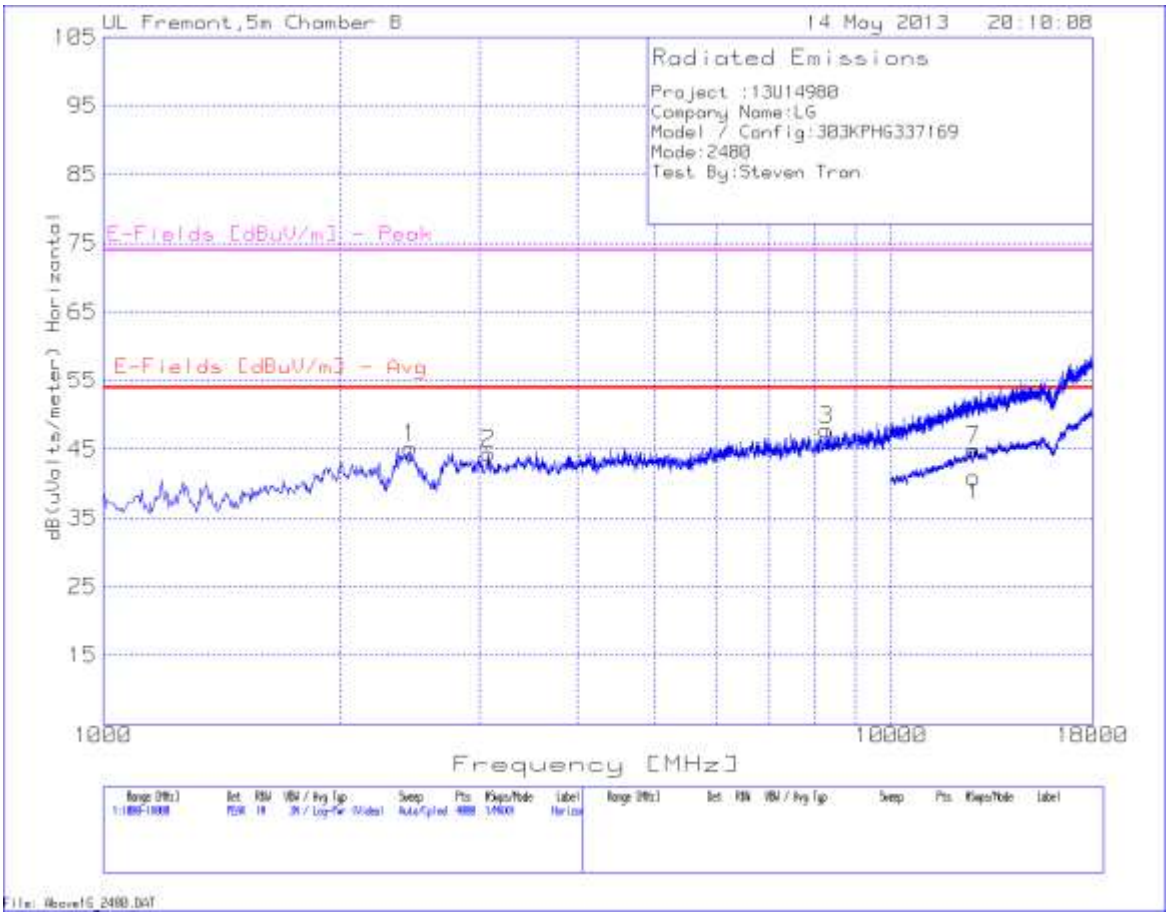
MID CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13U14980
Company Name:LG
Model / Config:303KPHG337169
Mode:2440
Test By:Steven Tran

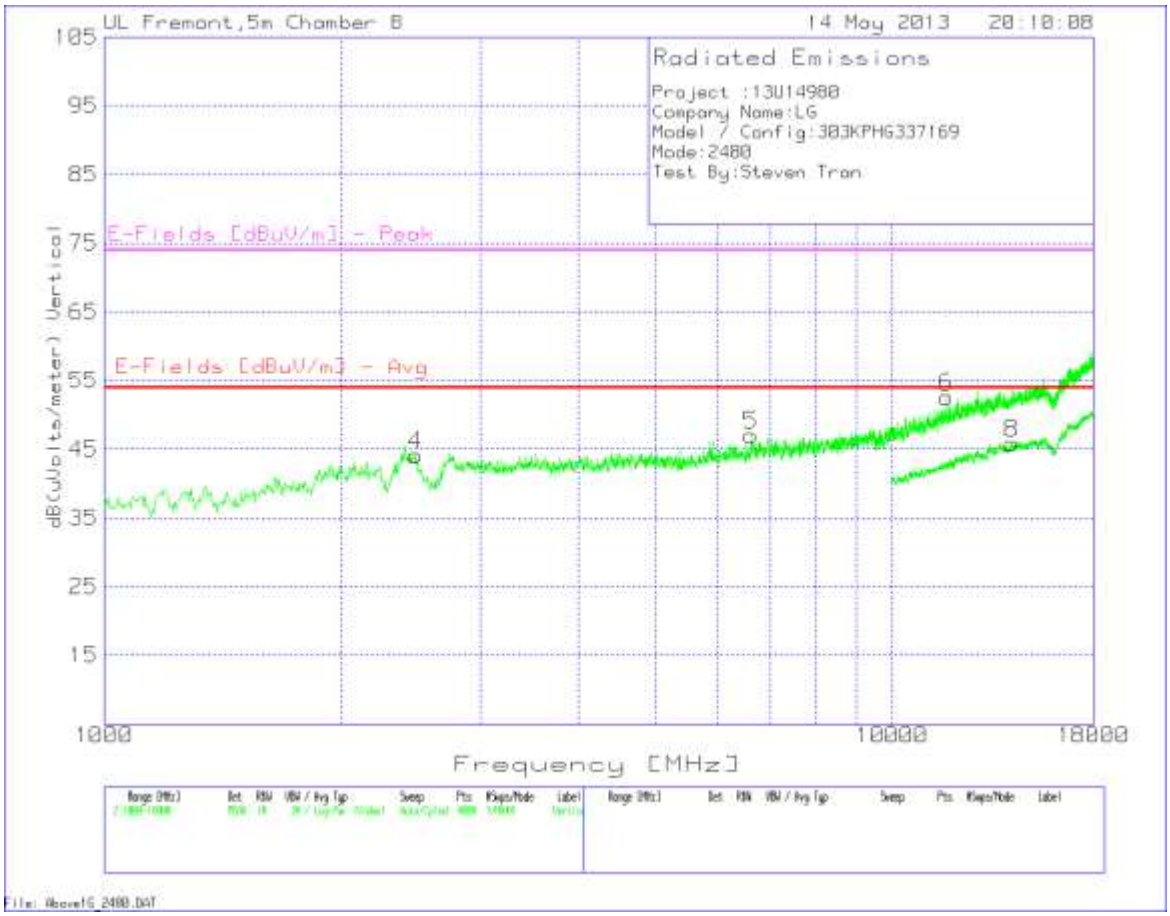
Marker No.	Test Frequency	Meter Reading	Detector	T345 Ant Factor [dB/m]	T145 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 18000MHz														
1	2439.67	47.35	PK	32.4	-35	4.7	0.9	50.35	53.97	-3.62	74	-23.65	100	Horz
2	3403.697	40.62	PK	33.2	-35.1	5.7	0.5	44.92	53.97	-9.05	74	-29.08	100	Horz
3	12054.459	34.66	PK	39.2	-33.3	11.6	0.8	52.96	53.97	-1.01	74	-21.04	200	Horz
Vertical 1000 - 18000MHz														
4	2439.67	46.29	PK	32.4	-35	4.7	0.9	49.29	53.97	-4.68	74	-24.71	200	Vert
5	3802.898	39.19	PK	33.8	-34.9	6	0.4	44.49	53.97	-9.48	74	-29.51	200	Vert
6	7756.682	37.3	PK	36.2	-35.1	9.1	0.3	47.8	53.97	-6.17	74	-26.2	100	Vert
Horizontal 10000 - 18000MHz														
7	12762.619	25.2	PK	39.2	-32.1	12	0.4	44.7	53.97	-9.27	74	-29.3	200	Horz
Vertical 10000 - 18000MHz														
8	14185.907	25.57	PK	39.4	-32.3	12.7	0.4	45.77	53.97	-8.2	74	-28.23	200	Vert

PK - Peak detector
Av - Average detector

HIGH CHANNEL HORIZONTAL PLOT



HIGH CHANNEL VERTICAL PLOT



HIGH CHANNEL HORIZONTAL AND VERTICAL DATA

Project :13U14980
Company Name:LG
Model / Config:303KPHG337169
Mode:2480
Test By:Steven Tran

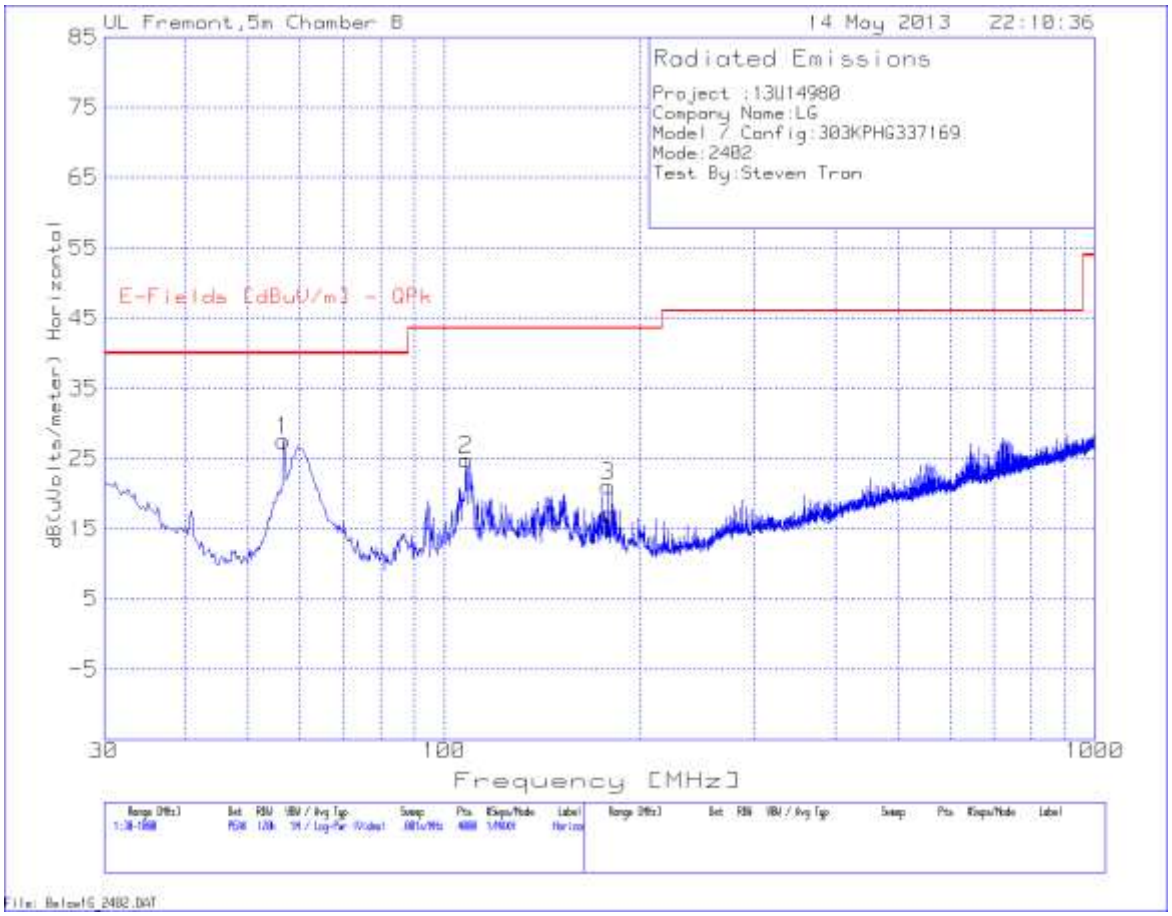
Marker No.	Test Frequency	Meter Reading	Detector	T345 Ant Factor [dB/m]	T145 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 18000MHz														
1	2456.658	42.15	PK	32.4	-35	4.7	0.9	45.15	53.97	-8.82	74	-28.85	100	Horz
2	3085.186	40.65	PK	33.2	-35.2	5.3	0.5	44.45	53.97	-9.52	74	-29.55	100	Horz
3	8279.041	37.18	PK	36.1	-35.2	9.5	0.3	47.88	53.97	-6.09	74	-26.12	100	Horz
Vertical 1000 - 18000MHz														
4	2486.385	41.03	PK	32.5	-35	4.7	0.9	44.13	53.97	-9.84	74	-29.87	100	Vert
5	6618.536	37.41	PK	35.9	-35	8.4	0.3	47.01	53.97	-6.96	74	-26.99	100	Vert
6	11714.714	35.05	PK	39	-33.5	11.4	0.6	52.55	53.97	-1.42	74	-21.45	200	Vert
Horizontal 10000 - 18000MHz														
7	12738.631	25.41	PK	39.2	-32.2	12	0.5	44.91	53.97	-9.06	74	-29.09	100	Horz
Vertical 10000 - 18000MHz														
8	14185.907	25.67	PK	39.4	-32.3	12.7	0.4	45.87	53.97	-8.1	74	-28.13	200	Vert

PK - Peak detector
Av - Average detector

8.3. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



HORIZONTAL DATA

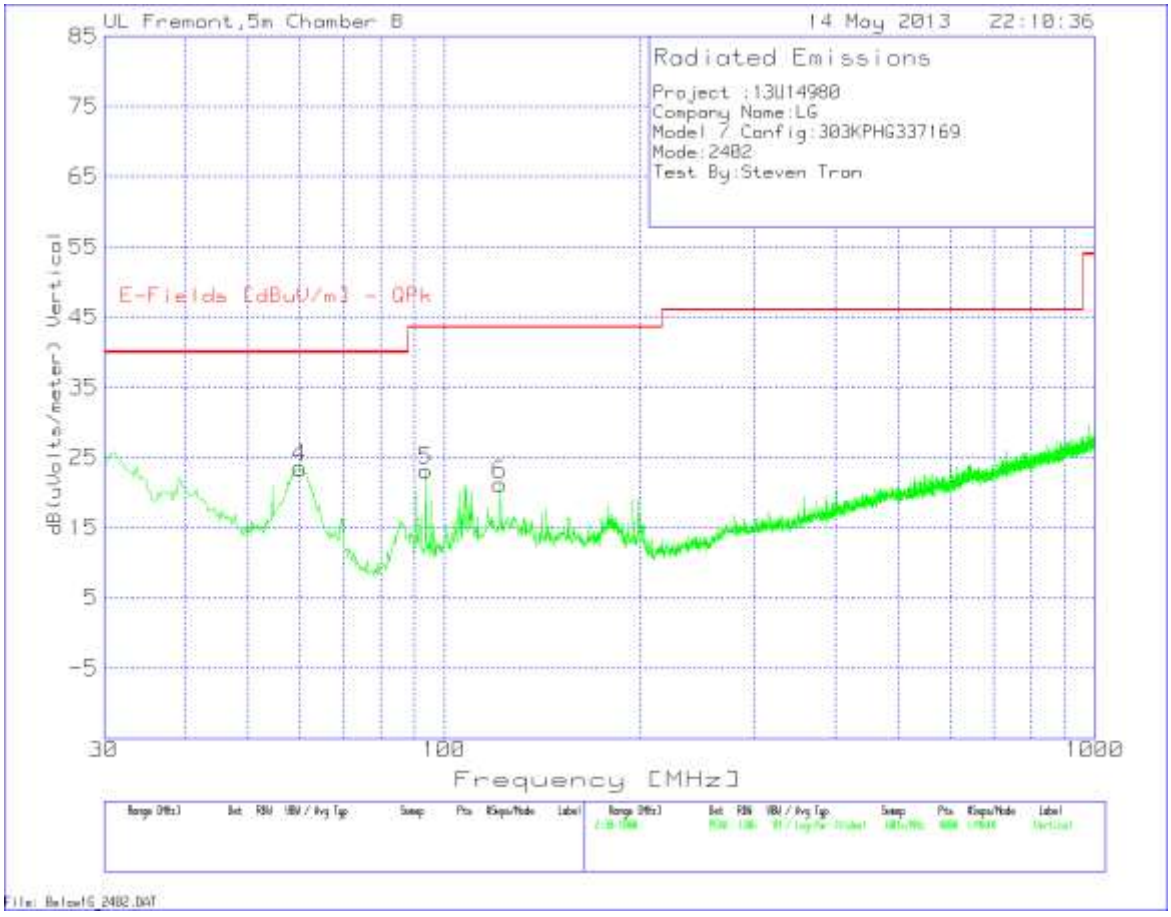
Project :13U14980
Company Name:LG
Model / Config:303KPHG337169
Mode:2402
Test By:Steven Tran

Marker No.	Test Frequency	Meter Reading	Detector	T243 Antenna Factor dB/m	T10 preamp/ Cable loss [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - QPk	Margin (dB)	Height [cm]	Polarity
Horizontal 30 - 1000MHz										
1	56.655	49.47	PK	6.9	-28.8	27.57	40	-12.43	400	Horz
2	108.0265	40.9	PK	12.2	-28.3	24.8	43.52	-18.72	200	Horz
3	179.0257	37.6	PK	11	-27.5	21.1	43.52	-22.42	200	Horz

PK - Peak detector
Av - Average detector

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

VERTICAL PLOT



VERTICAL DATA

Project :13U14980
Company Name:LG
Model / Config:303KPHG337169
Mode:2402
Test By:Steven Tran

Marker No.	Test Frequency	Meter Reading	Detector	T243 Antenna Factor dB/m	T10 preamp/ Cable loss [dB]	dB(uVolts/meter)	E-Fields [dBuV/m] - QPk	Margin (dB)	Height [cm]	Polarity
Vertical 30 - 1000MHz										
4	60.0475	45.18	PK	7.1	-28.8	23.48	40	-16.52	300	Vert
5	93.7297	43.17	PK	8.3	-28.4	23.07	43.52	-20.45	200	Vert
6	121.8386	35.33	PK	14	-28.1	21.23	43.52	-22.29	200	Vert

PK - Peak detector
Av - Average detector

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

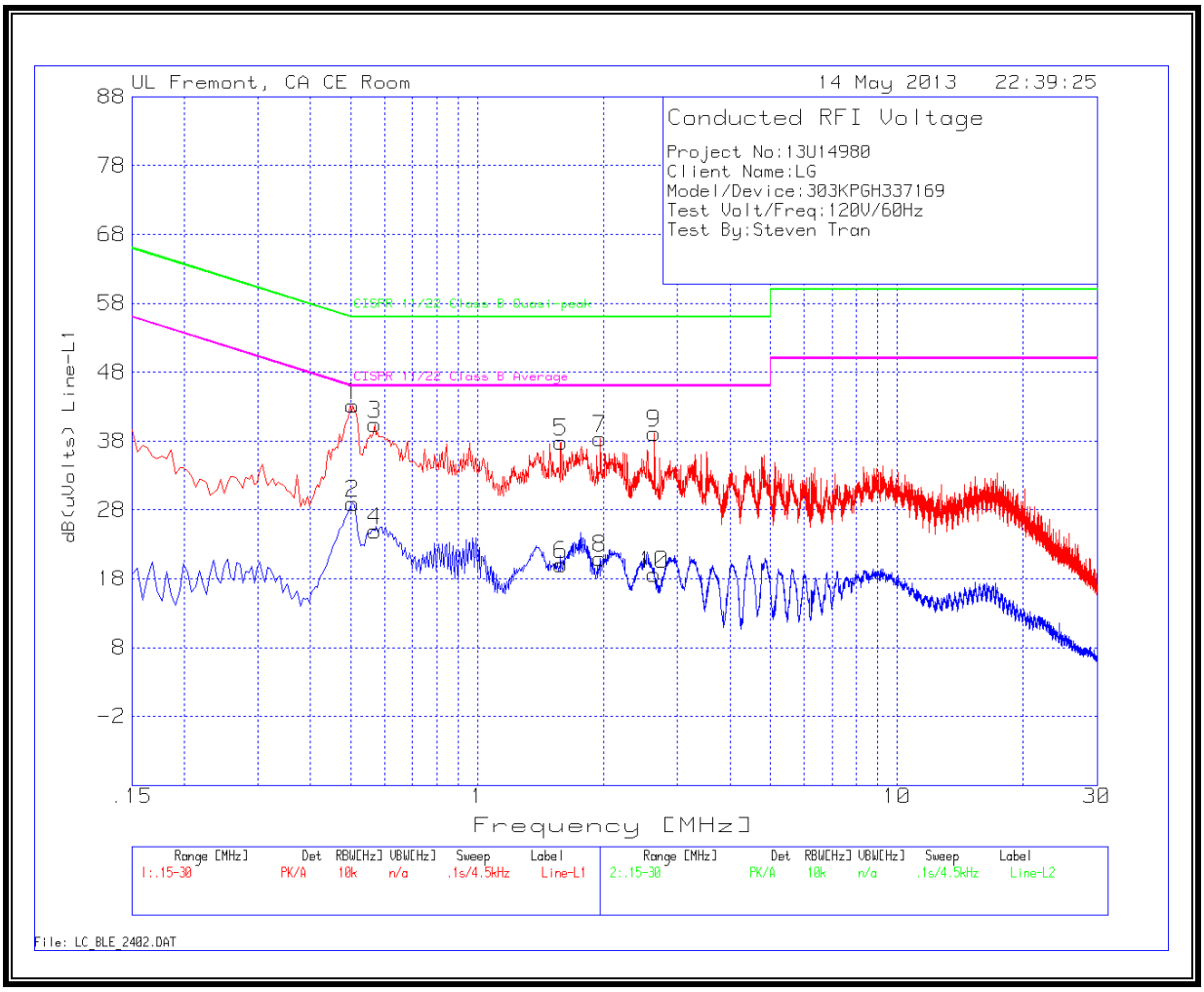
6 WORST EMISSIONS

Project No:13U14980
Client Name:LG
Model/Device:303KPGH337169
Test Volt/Freq:120V/60Hz
Test By:Steven Tran

Test Frequency	Meter Reading	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin	CISPR 11/22 Class B Average	Margin
Line-L1 .15 - 30MHz									
0.5055	43.09	PK	0.1	0	43.19	56	-12.81	-	-
0.5055	28.81	Av	0.1	0	28.91	-	-	46	-17.09
0.5685	40.28	PK	0.1	0	40.38	56	-15.62	-	-
0.5685	24.81	Av	0.1	0	24.91	-	-	46	-21.09
1.581	37.67	PK	0.1	0.1	37.87	56	-18.13	-	-
1.581	19.81	Av	0.1	0.1	20.01	-	-	46	-25.99
1.9635	38.12	PK	0.1	0.1	38.32	56	-17.68	-	-
1.9635	20.8	Av	0.1	0.1	21	-	-	46	-25
2.643	38.97	PK	0.1	0.1	39.17	56	-16.83	-	-
2.643	18.49	Av	0.1	0.1	18.69	-	-	46	-27.31
Test Frequency	**Meter Reading**	**Detector**	**T24 IL L2.TXT (dB)**	**LC Cables 2&3.TXT (dB)**	**dB(uVolts)**	**CISPR 11/22 Class B Quasi-peak**	**Margin**	**CISPR 11/22 Class B Average**	**Margin**
Line-L2 .15 - 30MHz									
0.51	38.77	PK	0.1	0	38.87	56	-17.13	-	-
0.51	25.88	Av	0.1	0	25.98	-	-	46	-20.02
0.6315	37.46	PK	0.1	0	37.56	56	-18.44	-	-
0.6315	19.75	Av	0.1	0	19.85	-	-	46	-26.15
0.8025	36.39	PK	0.1	0	36.49	56	-19.51	-	-
0.8025	17.39	Av	0.1	0	17.49	-	-	46	-28.51
1.41	34.51	PK	0.1	0	34.61	56	-21.39	-	-
1.41	16.13	Av	0.1	0	16.23	-	-	46	-29.77
1.707	35.22	PK	0.1	0.1	35.42	56	-20.58	-	-
1.707	17.63	Av	0.1	0.1	17.83	-	-	46	-28.17

PK - Peak detector
Av - Average detector

LINE 1 RESULTS



LINE 2 RESULTS