FCC CFR47 PART 15 SUBPART E
CLASS II PERMISSIVE CHANGE

CERTIFICATION TEST REPORT

FOR

DUAL BAND PHONE WITH BT & WLAN

MODEL NUMBER: LG-P769, LGP769, P769

FCC ID: ZNFP769

REPORT NUMBER: 12U14595-3

ISSUE DATE: AUGUST 28, 2012

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

Prepared by
UL CCS
47173 BENICIA STREET
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	08/28/2012	Initial Issue	T. LEE

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This report shall not be reproduced except in full, without the written approval of UL CCS.

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBLILECOMM USA,INC. 1000 SYLVAN AVENUE ENGLEWOOD, NJ 07632, USA
EUT DESCRIPTION:	DUAL BAND PHONE WITH BT & WLAN
MODEL:	LG-P769, LGP769, P769
SERIAL NUMBER:	208KPTM229281 (Conducted) 205KPYR203930 (Radiated)
DATE TESTED:	AUGUST 23RD TO 28TH, 2012

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass

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:

TIM LEE
STAFF ENGINEER
UL CCS

Tested By:

STEVE AGUILAR
EMC TECNICIAN
UL CCS

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033, ANSI C63.10-2009, 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 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:

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%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11a/b/g/n transceiver.

The radio module is manufactured by Broadcom with Chipset: BCM4330X.

5.2. MAXIMUM OUTPUT POWER

The measured average power values were within ± 0.5 dB of the original values. Refer to original report number 12U14516 for exact output power values and for all antenna port results.

5.3. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The change filed under this application has the following changes.

Antenna pattern shape and length changed to improve RF performance.

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna, with a maximum gain of -2.75 dBi.

5.5. SOFTWARE AND FIRMWARE

The Baseband version was LGP769AT-00-V08k_310-260-JUL 9-2012+0.
The Kernel version was 3.0.21. The HW version was Rev.1.0

The firmware installed in the EUT during testing was Version 4.0.4.

The EUT software version installed during testing LGP769-V08k.

The test utility software used during testing was WLAN Test.

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

Worst-case data rates were determined to be:

802.11a mode: 6 Mbps
802.11n mode: MCS0 (6.5Mbps)

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5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
USB Travel Adapter	LG Electronics	MCS-02WR	RA250126222	N/A
Headphones	LG Electronics	N/A	N/A	N/A

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB	Shielded	1.2m	None.
2	Headphone	1	Audio	Unshielded	1.15m	None.

TEST SETUP

The EUT is a stand-alone device.

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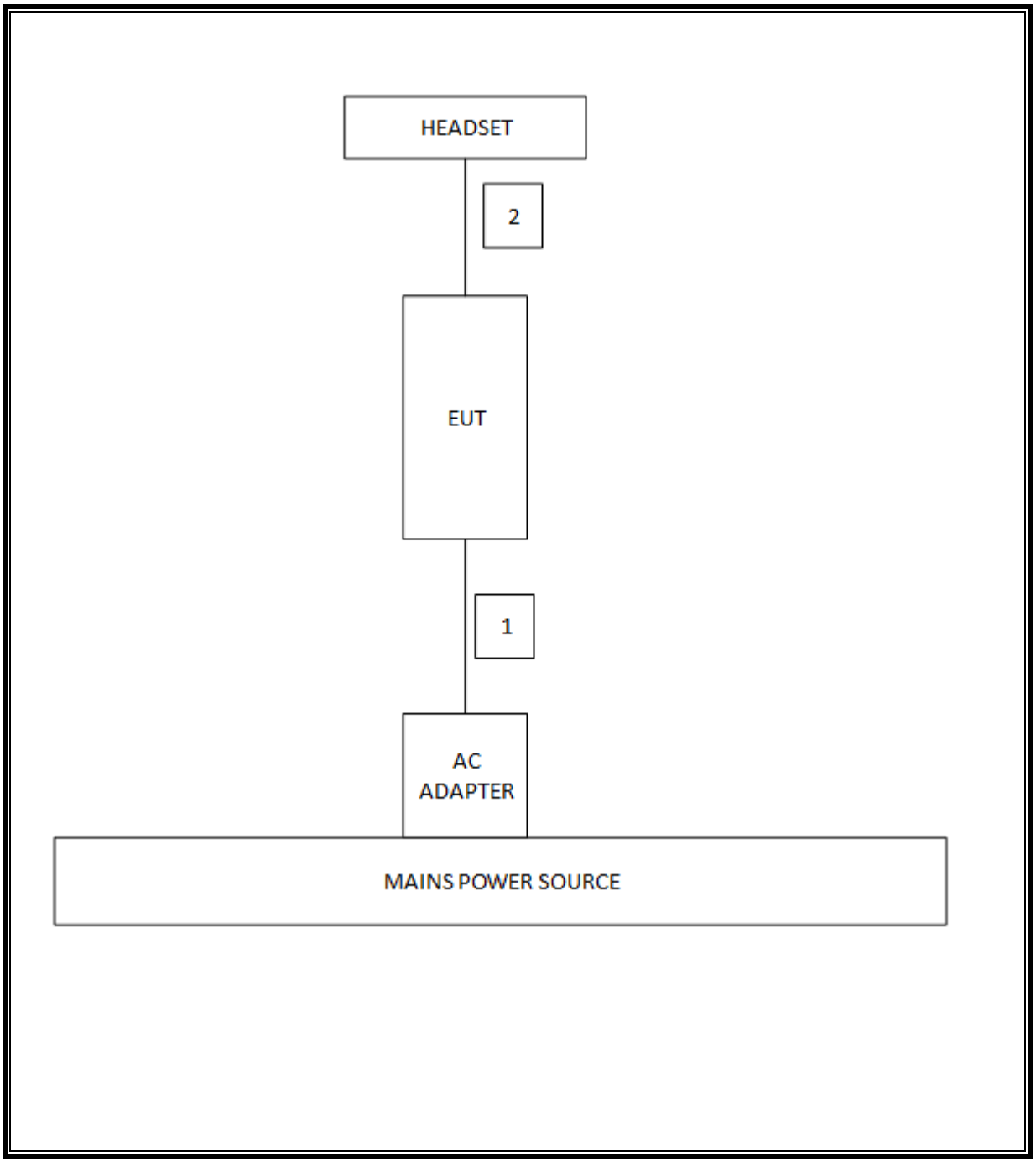
SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List					
Description	**Manufacturer**	**Model**	**Asset**	**Cal Date**	**Cal Due**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	9/2/2011	9/2/2012
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	3/22/2012	3/22/2013
Power Meter	Agilent / HP	437B	--	8/9/2012	8/9/2013
Power Sensor, 18 GHz	Agilent / HP	8481A	--	8/21/2012	8/21/2013
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00589	7/28/2011	10/28/2012
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	11/11/2011	11/11/2012
Antenna, Horn, 18 GHz	EMCO	3115	C00872	9/20/2011	9/20/2012
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01011	3/23/2012	3/23/2013
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	11/11/2011	11/11/2012
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	8/8/2012	8/8/2013
LISN, 30 MHz	FCC	50/250-25-2	C00626	12/13/2011	12/13/2012
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	C00981	6/14/2011	6/14/2013
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	8/2/2011	8/2/2013

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7. ANTENNA PORT TEST RESULTS

7.1. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.1.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11a 20 MHz	2.07	2.17	0.954	95.4%	0.20	0.484
802.11n HT20	1.92	2.02	0.951	95.1%	0.22	0.521

7.1.2. MEASUREMENT METHOD FOR AVERAGE SPURIOUS EMISSIONS ABOVE 1 GHz

The Duty Cycle is less than 98% and consistent, KDB 789033 Method VB with Power RMS Averaging is used.

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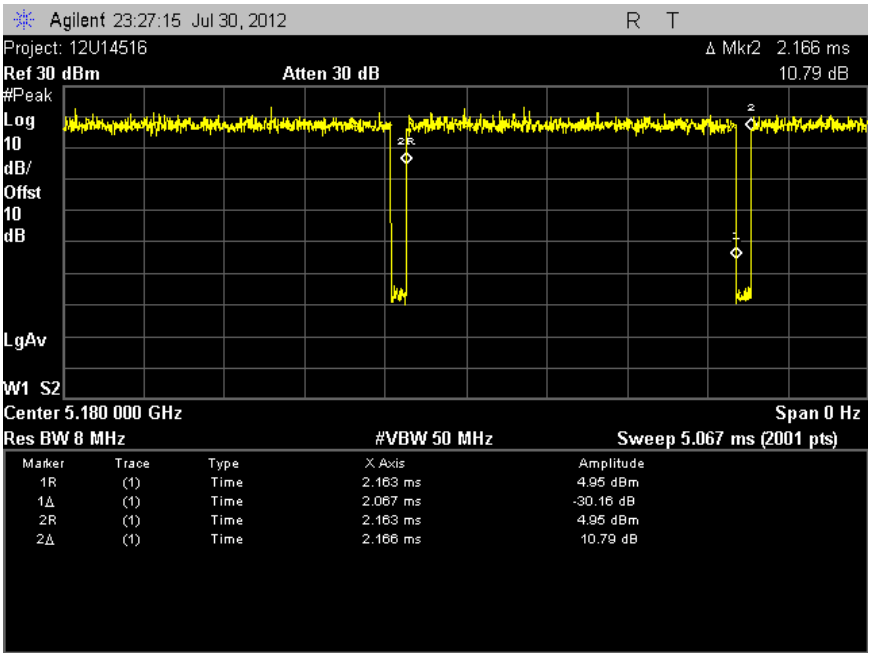
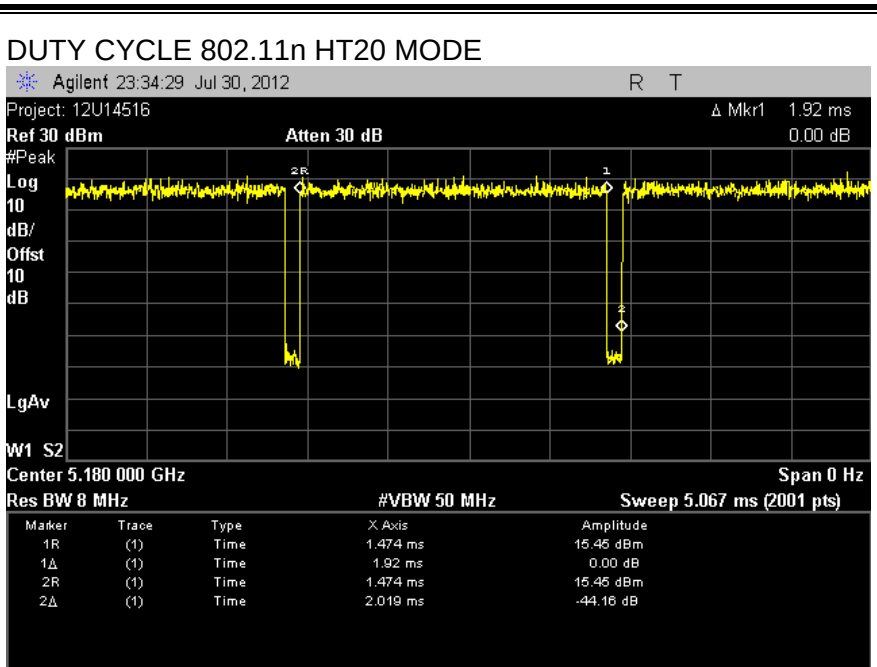
7.1.3. DUTY CYCLE PLOTS

DUTY CYCLE 802.11a MODE



DUTY CYCLE 802.11n HT20 MODE



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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.

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; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements.

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

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

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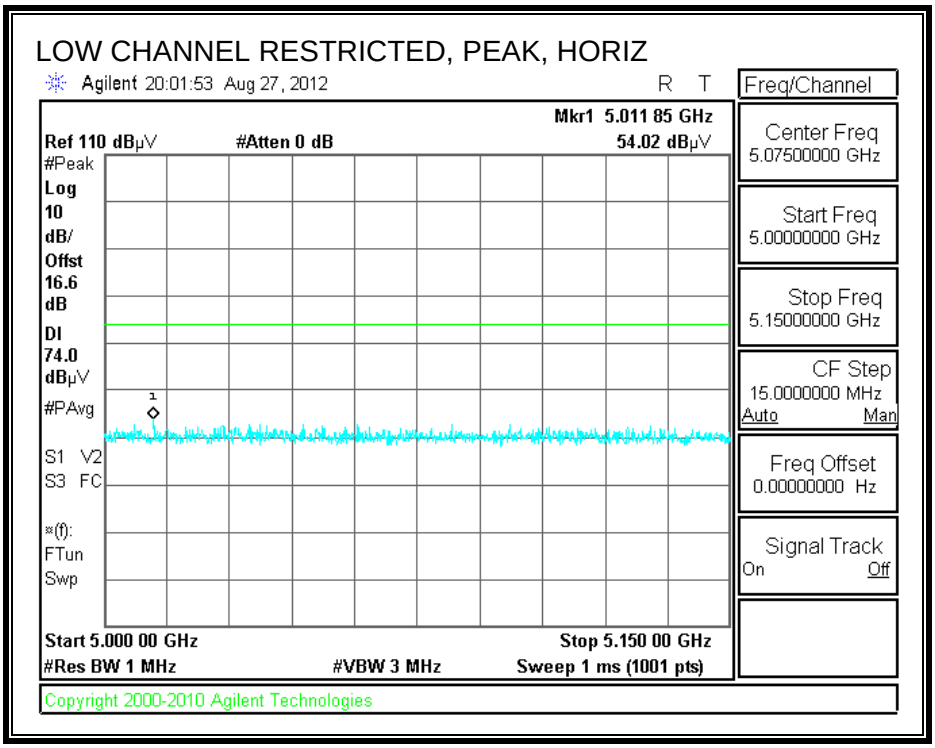
8.2. TRANSMITTER ABOVE 1 GHz

8.3. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



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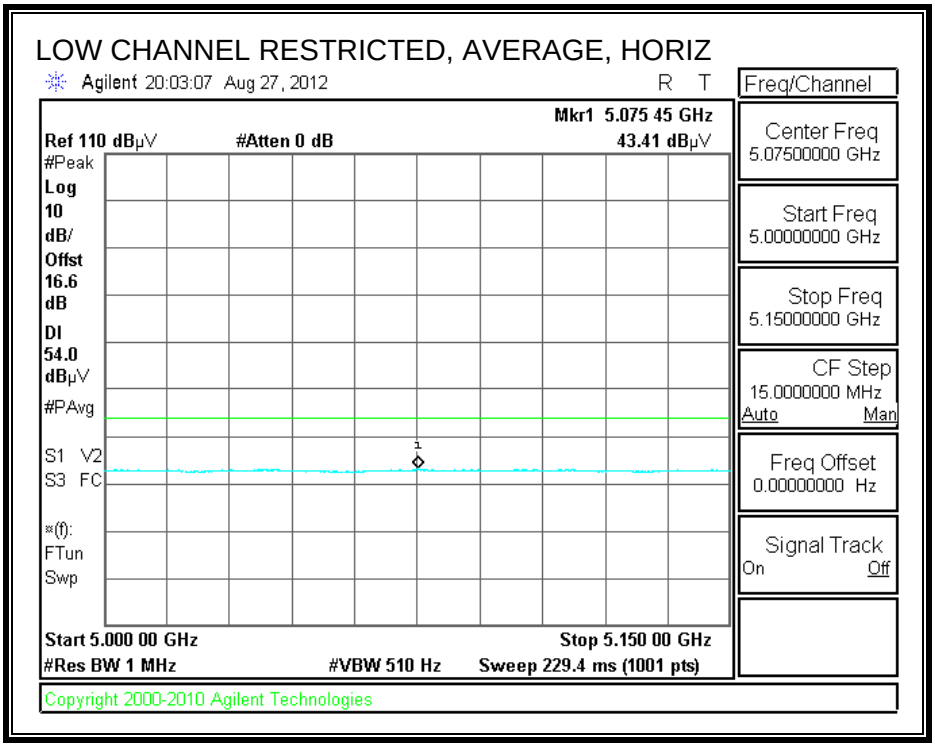

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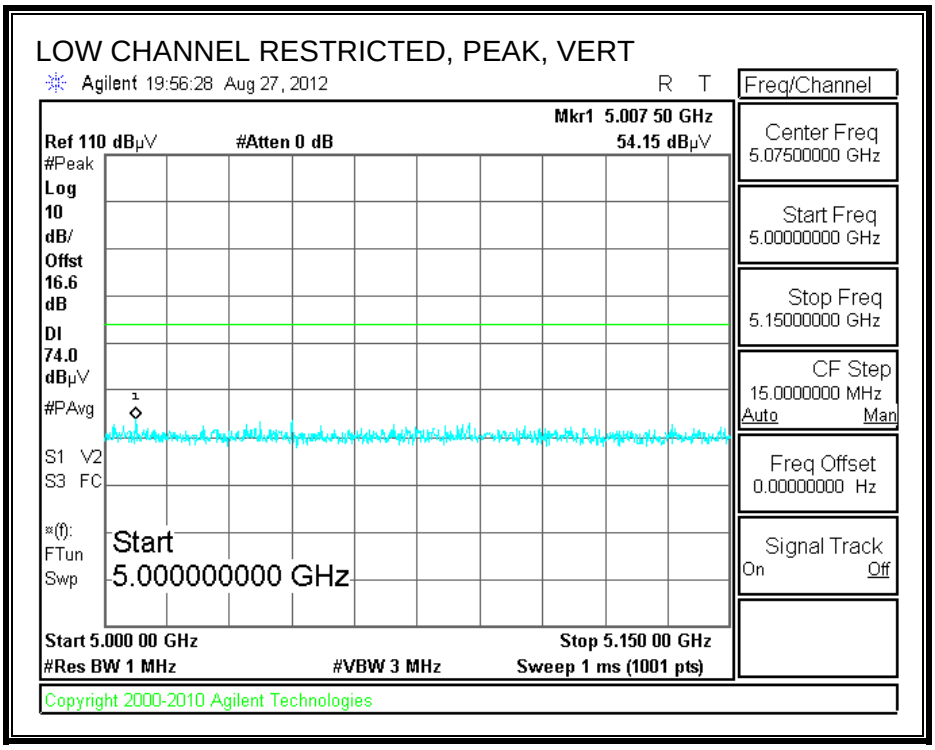

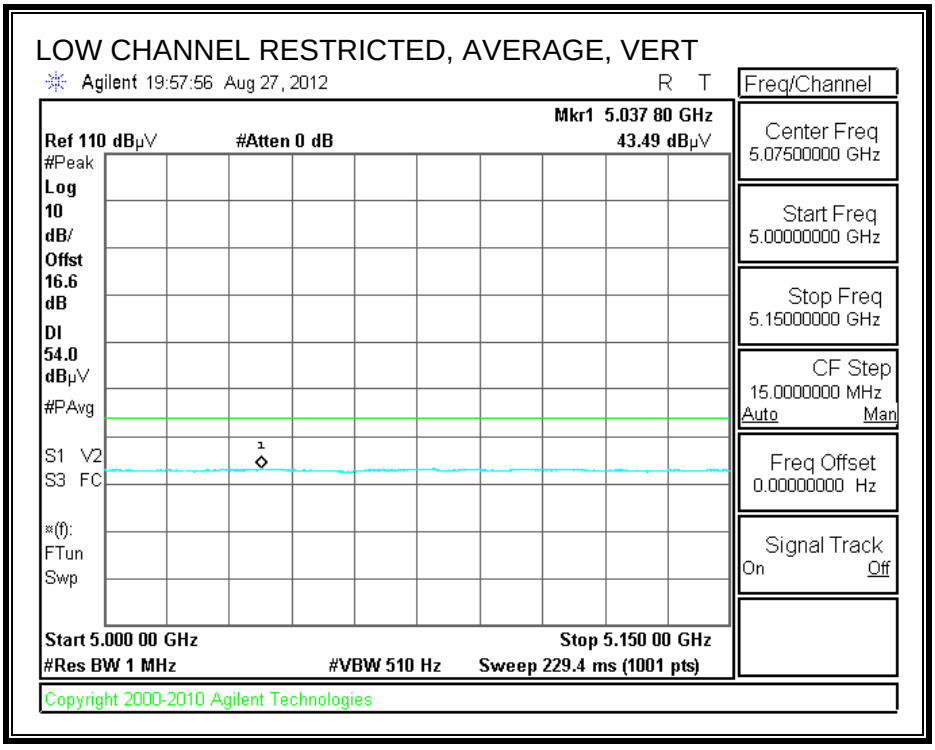

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HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Company: LG
Project #: 12U14595
Date: 8/27/2012
Test Engineer: S.Aguilar
Configuration: Worst Case. Adapter + Headphone
Mode: 11a Mode. 6Mbsp 5.2GHz Band

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B	T88 Miteq 26-40GHz	T39; ARA 18-26GHz; S/N:1013	FCC 15.209

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW 1Mhz, VBW=3Mhz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr 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 (5180MHz)															
15.540	3.0	35.62	25.08	39.1	13.0	-31.9	0.0	0.0	55.7	45.2	74	54	-18.3	-8.8	H
15.540	3.0	34.88	25.16	39.1	13.0	-31.9	0.0	0.0	55.0	45.3	74	54	-19.0	-8.7	V
Mid Channel (5200MHz)															
10.400	3.0	36.54	22.41	38.4	9.6	-32.5	0.0	0.0	52.1	37.9	74	54	-21.9	-16.1	H
10.400	3.0	35.07	24.83	38.4	9.6	-32.5	0.0	0.0	50.6	40.3	74	54	-23.4	-13.7	V
15.600	3.0	35.22	25.05	38.8	13.0	-31.9	0.0	0.0	55.1	45.0	74	54	-18.9	-9.0	H
15.600	3.0	35.58	22.54	38.8	13.0	-31.9	0.0	0.0	55.5	42.5	74	54	-18.5	-11.5	V
High Channel (5240MHz)															
15.720	3.0	34.19	24.46	38.4	13.1	-31.9	0.0	0.0	53.8	44.1	74	54	-20.2	-9.9	H
15.720	3.0	33.72	24.32	38.4	13.1	-31.9	0.0	0.0	53.3	43.9	74	54	-20.7	-10.1	V

Rev. 11.10.11

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

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		

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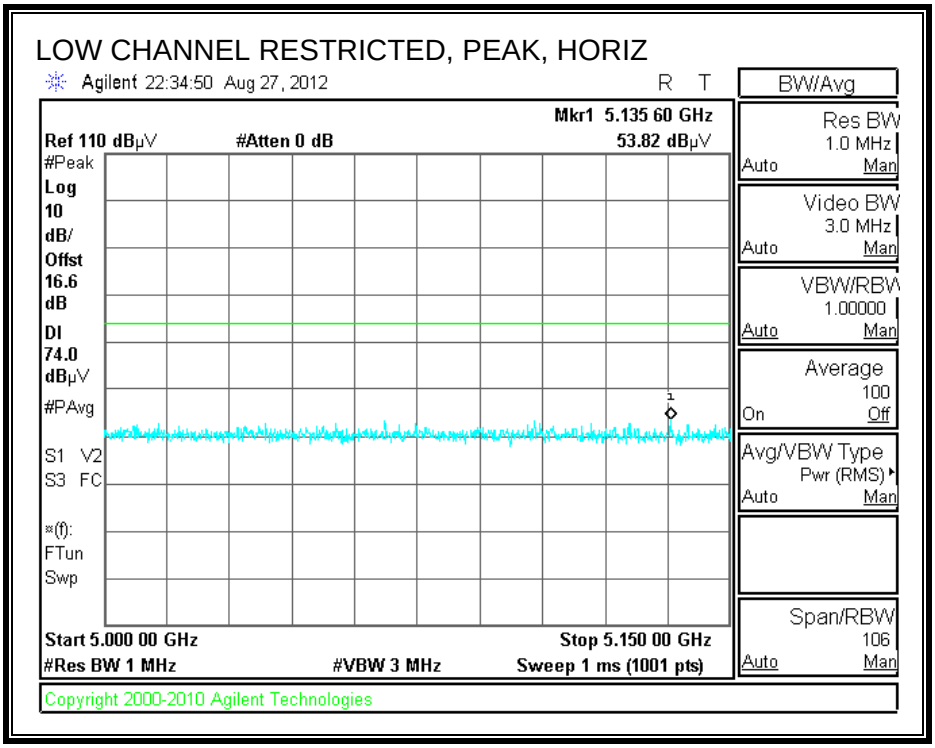
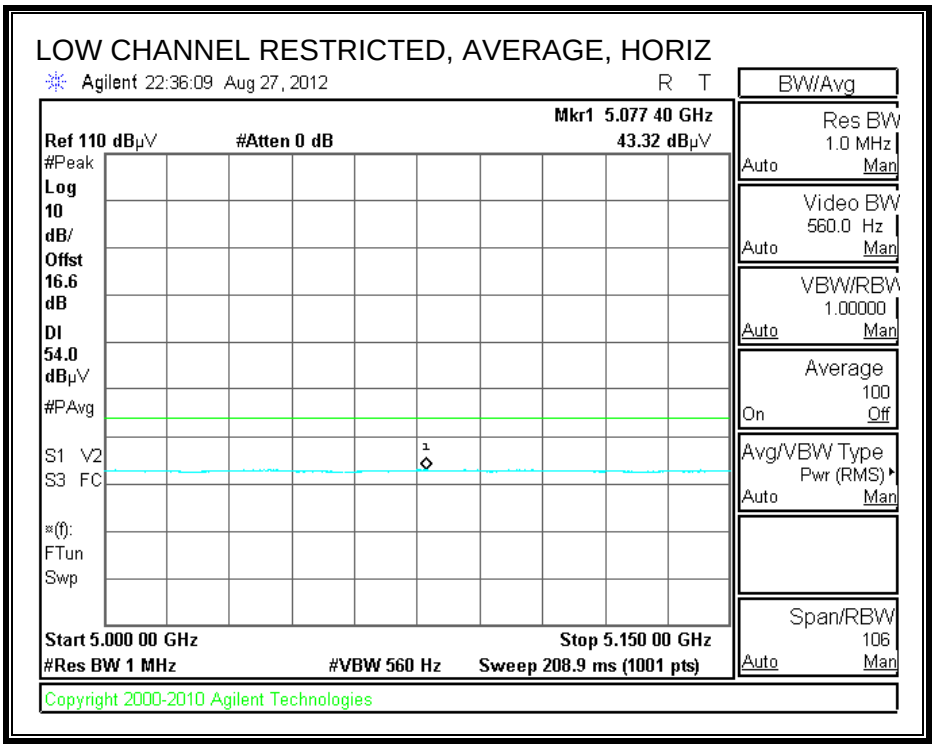
8.4. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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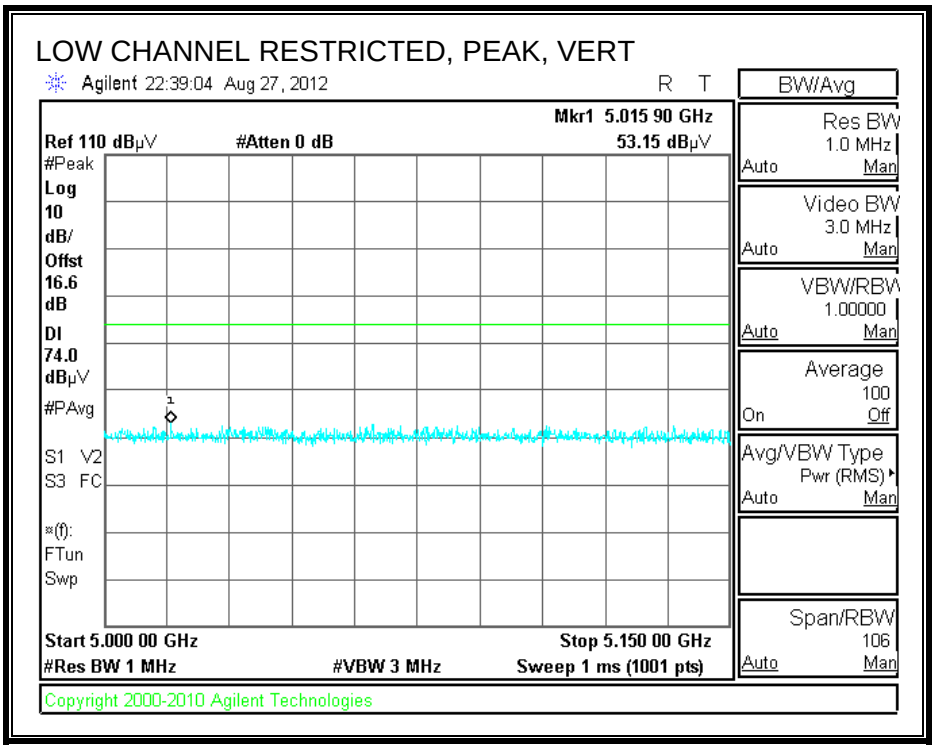

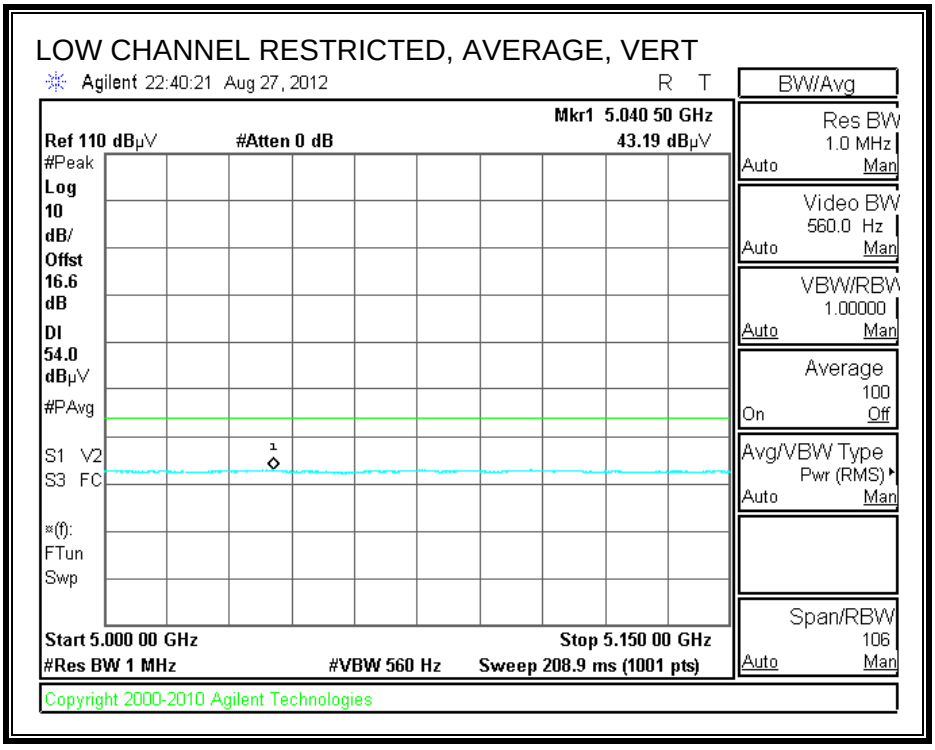

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Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B	T88 Miteq 26-40GHz	T39; ARA 18-26GHz; S/N:1013	FCC 15.209

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW 1Mhz, VBW=3Mhz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr 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 (5180MHz)															
15.540	3.0	34.64	24.89	39.1	13.0	-31.9	0.0	0.0	54.7	45.0	74	54	-19.3	-9.0	H
15.540	3.0	34.42	22.49	39.1	13.0	-31.9	0.0	0.0	54.5	42.6	74	54	-19.5	-11.4	V
Mid Channel (5200MHz)															
15.600	3.0	34.70	24.93	38.8	13.0	-31.9	0.0	0.0	54.6	44.9	74	54	-19.4	-9.1	H
15.600	3.0	34.61	24.89	38.8	13.0	-31.9	0.0	0.0	54.5	44.8	74	54	-19.5	-9.2	V
High Channel (5240MHz)															
15.720	3.0	34.23	24.93	38.4	13.1	-31.9	0.0	0.0	53.8	44.5	74	54	-20.2	-9.5	H
15.720	3.0	34.11	24.35	38.4	13.1	-31.9	0.0	0.0	53.7	43.9	74	54	-20.3	-10.1	V

Rev. 11.10.11

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

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
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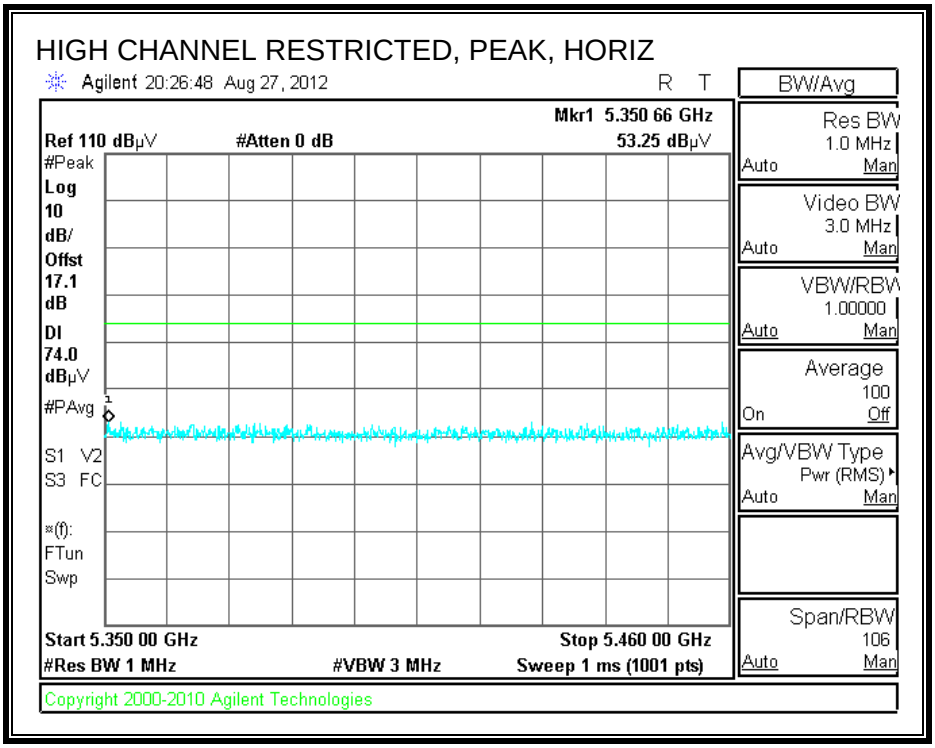
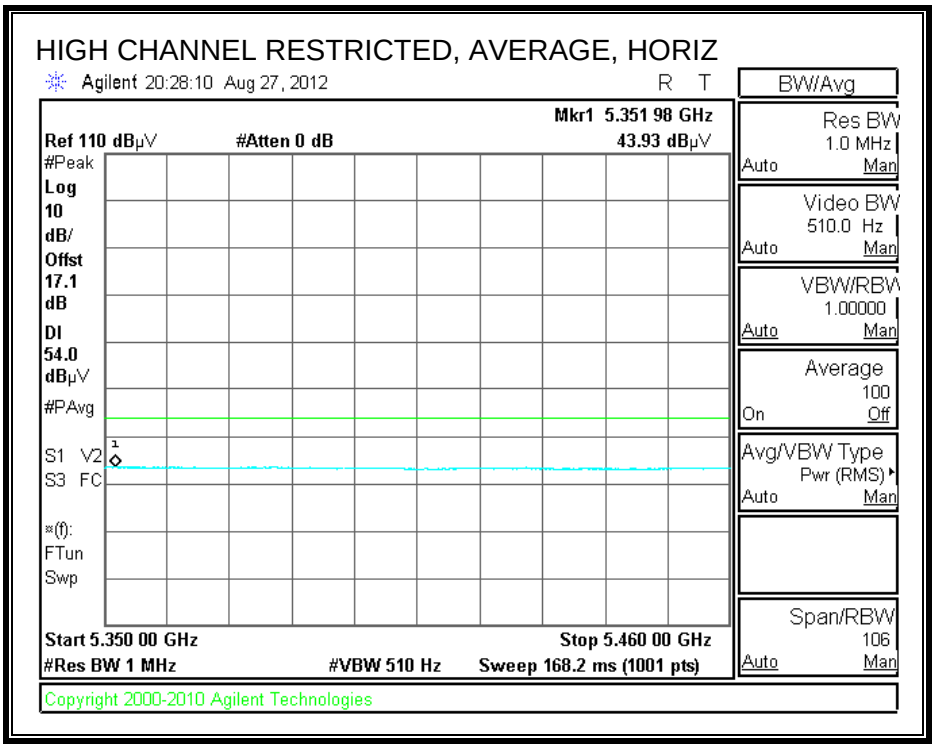
8.5. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)





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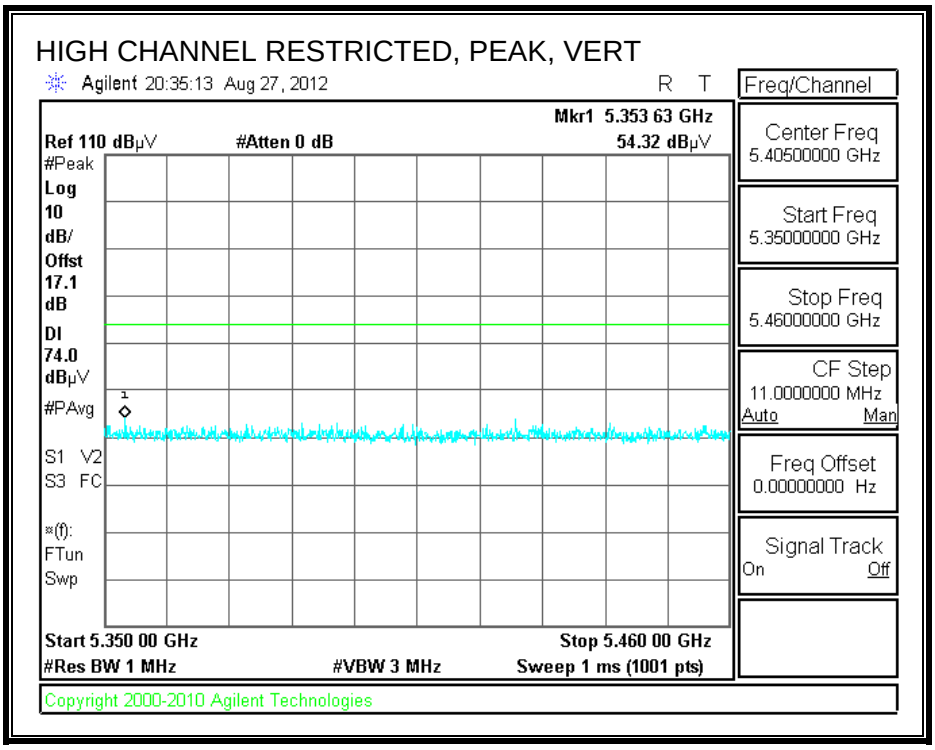
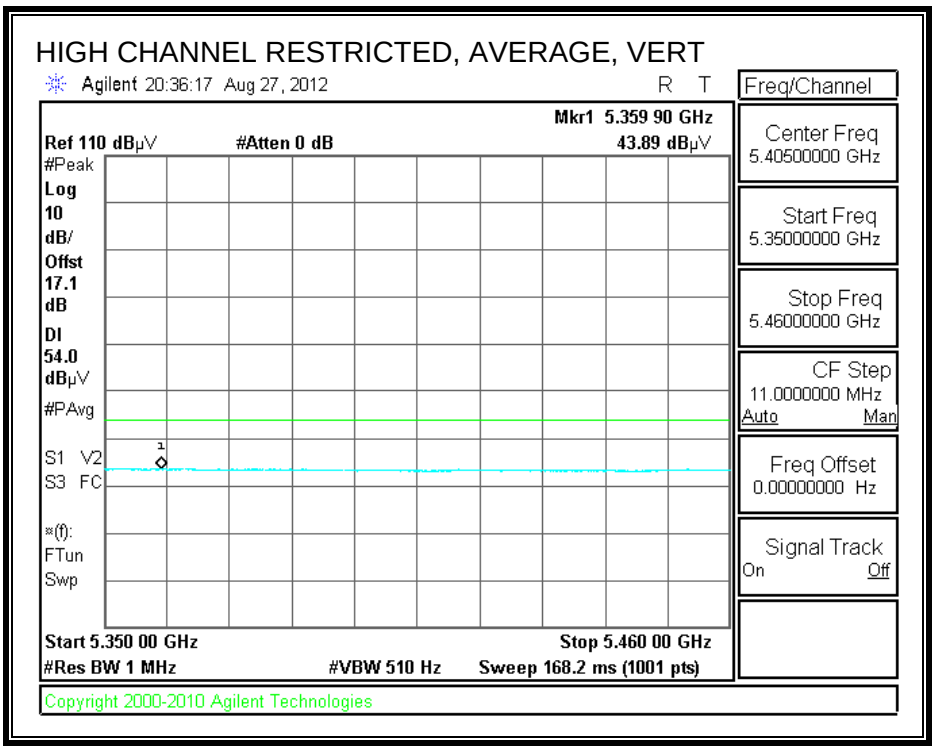
HIGH CHANNEL RESTRICTED, PEAK, VERT



HIGH CHANNEL RESTRICTED, AVERAGE, VERT



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RBW 1Mhz, VBW=3MHz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr 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 (5260MHz)															
15.780	3.0	35.22	21.93	38.2	13.1	-31.9	0.0	0.0	54.6	41.4	74	54	-19.4	-12.6	H
15.780	3.0	32.78	24.35	38.2	13.1	-31.9	0.0	0.0	52.2	43.8	74	54	-21.8	-10.2	V
Mid Channel (5300MHz)															
10.600	3.0	34.21	22.34	38.4	9.9	-32.5	0.0	0.0	50.0	38.2	74	54	-24.0	-15.8	H
10.600	3.0	36.25	26.78	38.4	9.9	-32.5	0.0	0.0	52.1	42.6	74	54	-21.9	-11.4	V
15.900	3.0	34.77	24.87	37.8	13.2	-31.8	0.0	0.0	53.9	44.0	74	54	-20.1	-10.0	H
15.900	3.0	34.64	24.84	37.8	13.2	-31.8	0.0	0.0	53.7	43.9	74	54	-20.3	-10.1	V
High Channel (5320MHz)															
10.640	3.0	35.12	22.35	38.4	10.0	-32.5	0.0	0.0	51.0	38.2	74	54	-23.0	-15.8	H
10.640	3.0	34.85	25.03	38.4	10.0	-32.5	0.0	0.0	50.7	40.9	74	54	-23.3	-13.1	V
15.960	3.0	34.51	25.01	37.6	13.2	-31.8	0.0	0.0	53.4	43.9	74	54	-20.6	-10.1	H
15.960	3.0	34.24	24.36	37.6	13.2	-31.8	0.0	0.0	53.2	43.3	74	54	-20.8	-10.7	V

Rev. 11.10.11

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

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		

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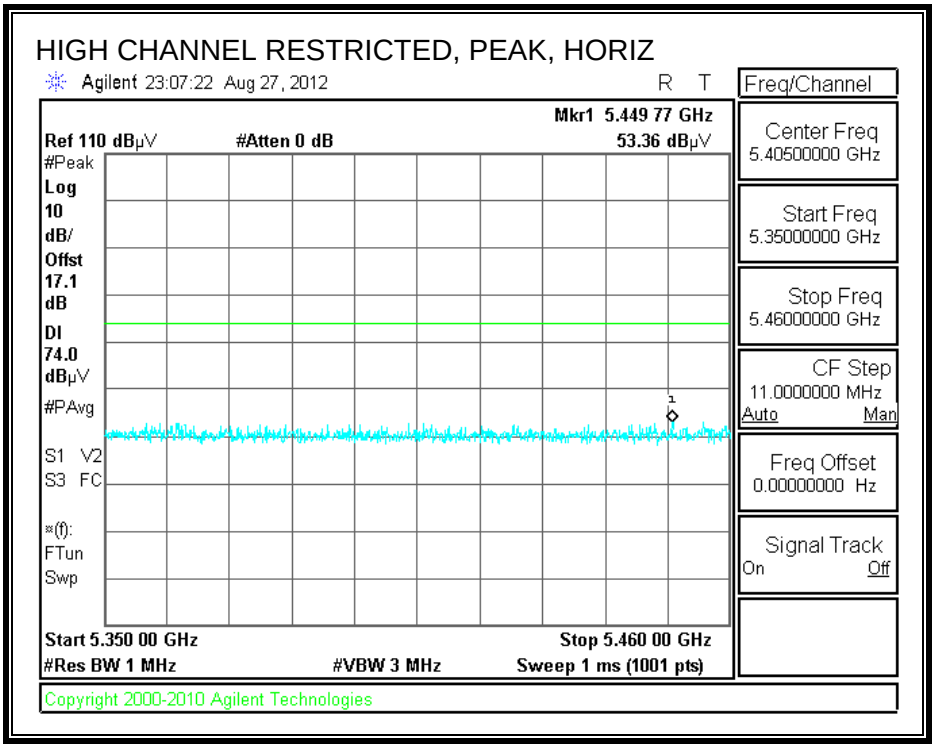
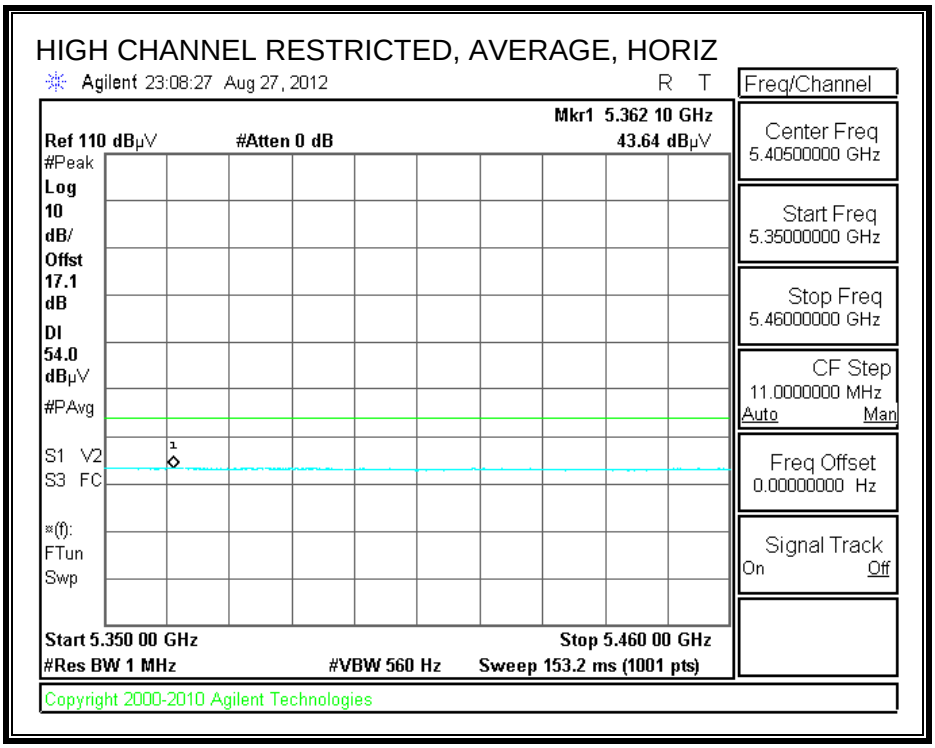
8.6. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)





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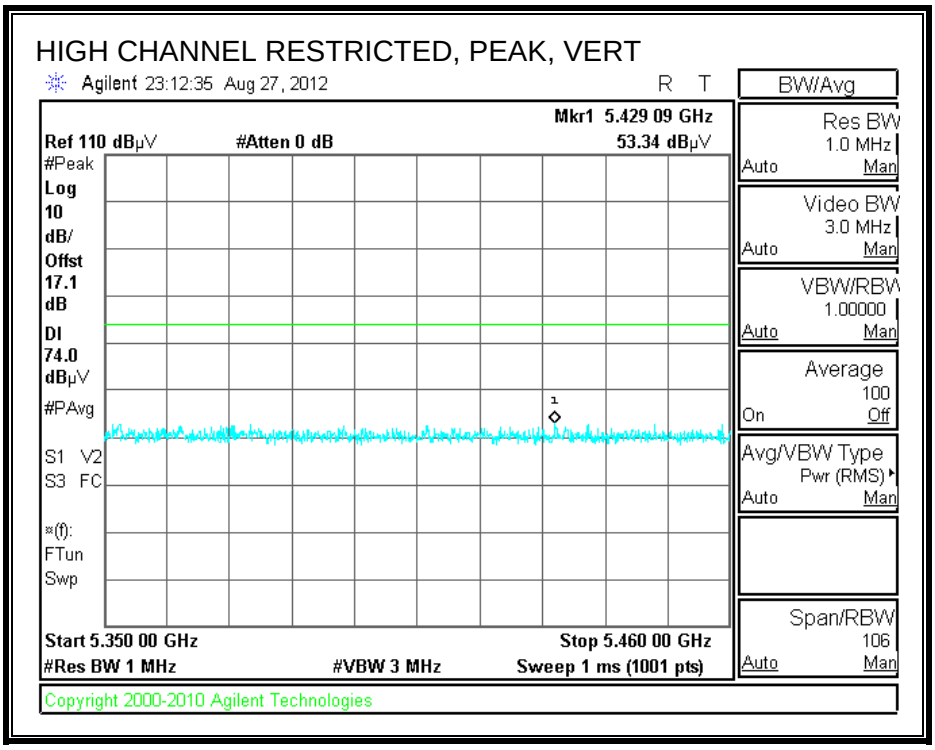

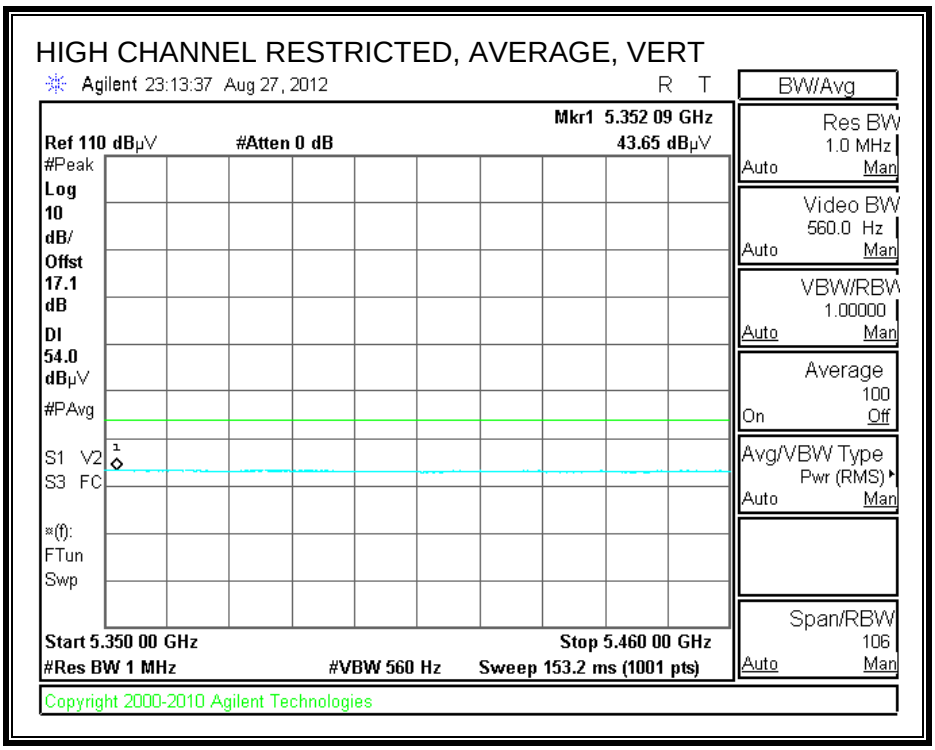

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HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Company: LG
Project #: 12U14595
Date: 8/28/2012
Test Engineer: S.Aguilar
Configuration: Worst Case. Adapter + Headphone
Mode: 11n Mode. 6.5Mbsp 5.3GHz Band

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B	T88 Miteq 26-40GHz	T39; ARA 18-26GHz; S/N:1013	FCC 15.209

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW=VBW=3MHz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr 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 (5260MHz)															
15.780	3.0	35.17	24.60	38.2	13.1	-31.9	0.0	0.0	54.6	44.0	74	54	-19.4	-10.0	H
15.780	3.0	34.38	24.54	38.2	13.1	-31.9	0.0	0.0	53.8	44.0	74	54	-20.2	-10.0	V
Mid Channel (5300MHz)															
10.600	3.0	34.77	24.56	38.4	9.9	-32.5	0.0	0.0	50.6	40.4	74	54	-23.4	-13.6	H
10.600	3.0	34.36	25.06	38.4	9.9	-32.5	0.0	0.0	50.2	40.9	74	54	-23.8	-13.1	V
15.900	3.0	34.74	24.77	37.8	13.2	-31.8	0.0	0.0	53.8	43.9	74	54	-20.2	-10.1	H
15.900	3.0	34.87	24.90	37.8	13.2	-31.8	0.0	0.0	54.0	44.0	74	54	-20.0	-10.0	V
High Channel (5320MHz)															
10.640	3.0	34.96	24.90	38.4	10.0	-32.5	0.0	0.0	50.8	40.8	74	54	-23.2	-13.2	H
10.640	3.0	37.34	26.55	38.4	10.0	-32.5	0.0	0.0	53.2	42.4	74	54	-20.8	-11.6	V
15.960	3.0	33.03	25.04	37.6	13.2	-31.8	0.0	0.0	52.0	44.0	74	54	-22.0	-10.0	H
15.960	3.0	35.41	24.95	37.6	13.2	-31.8	0.0	0.0	54.3	43.9	74	54	-19.7	-10.1	V

Rev. 11.10.11

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

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		

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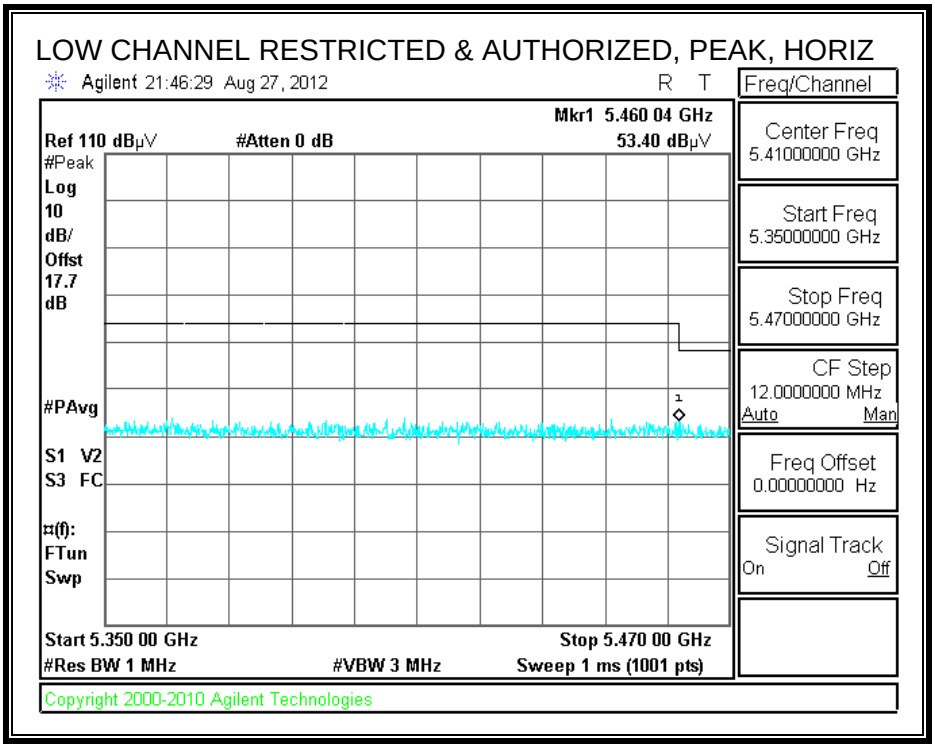
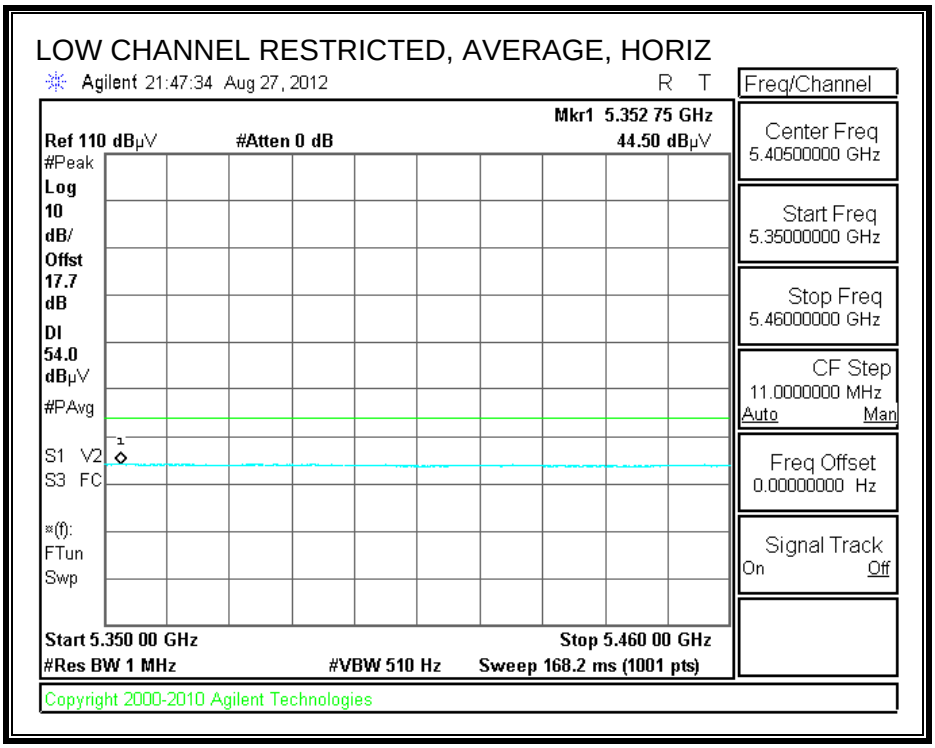
8.7. TX ABOVE 1 GHz 802.11a MODE IN THE 5.6 GHz BAND

RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)





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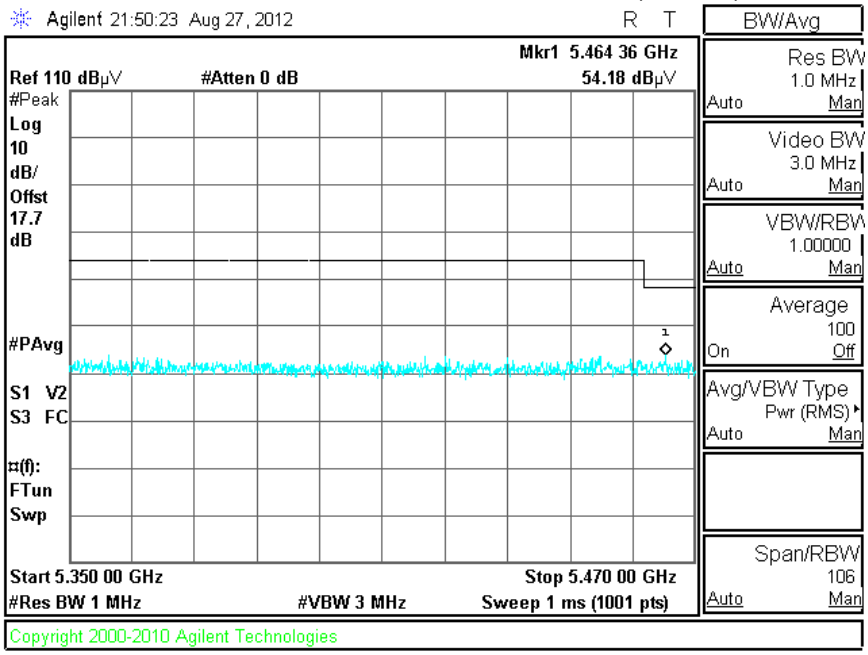
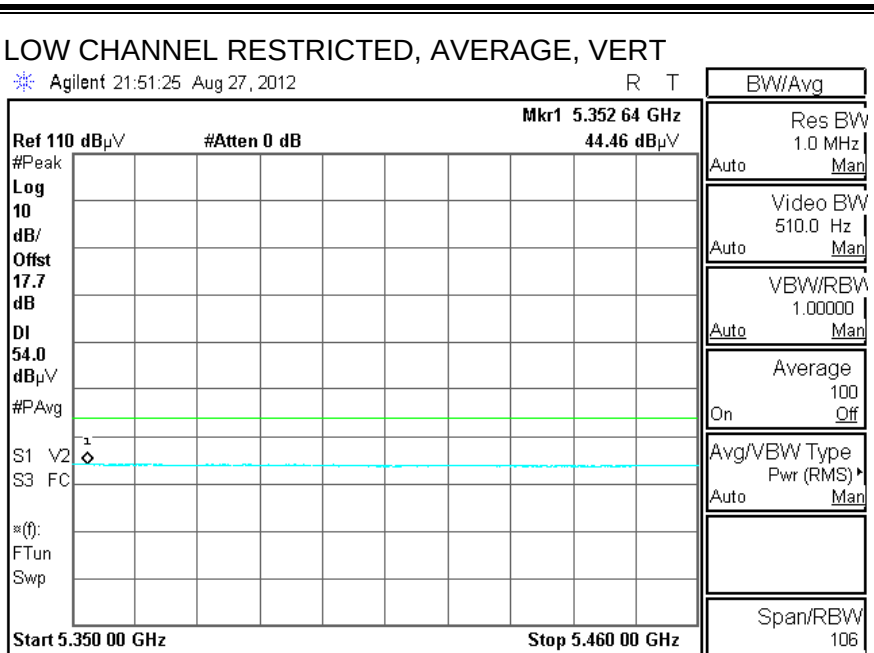
LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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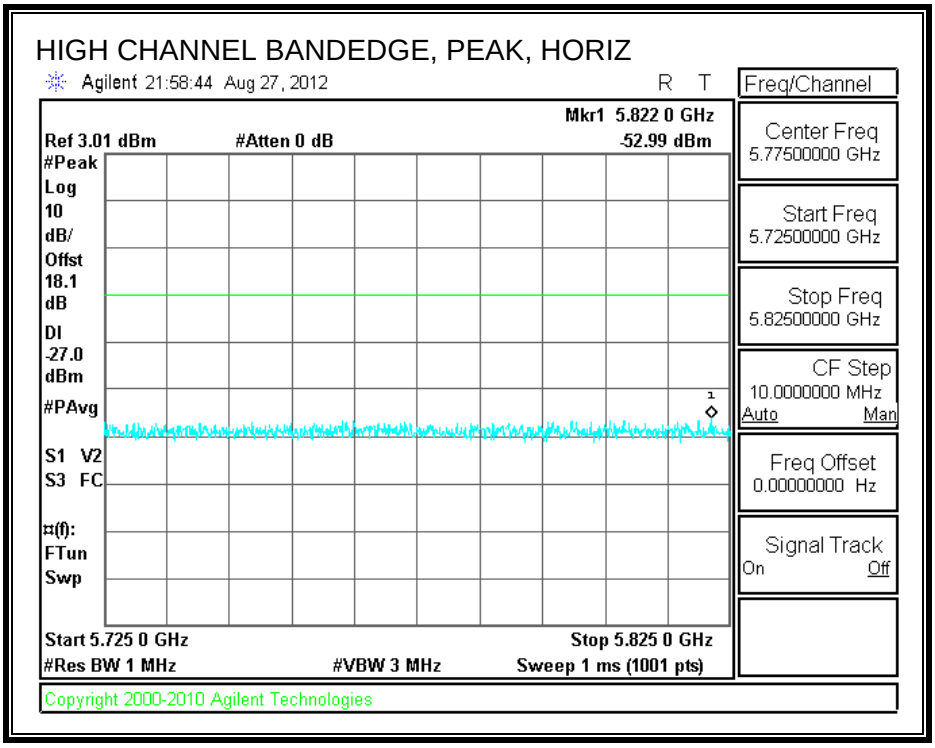
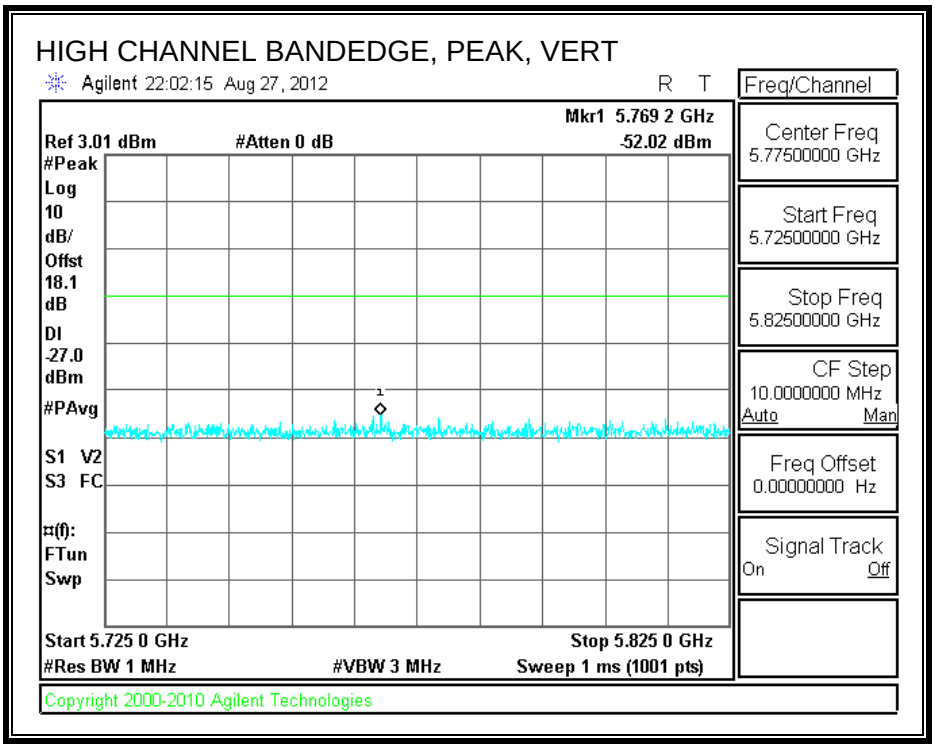
AUTHORIZED BANDEDGE (HIGH CHANNEL)





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HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Company: LG
Project #: 12U14595
Date: 8/28/2012
Test Engineer: S.Aguilar
Configuration: Worst Case. Adapter + Headphone
Mode: 11a Mode. 6Mbsp 5.6GHz Band

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B	T88 Miteq 26-40GHz	T39; ARA 18-26GHz; S/N:1013	FCC 15.209

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW 1Mhz, VBW=3Mhz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr 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 (5500MHz)															
11.000	3.0	34.44	25.00	38.4	10.5	-32.4	0.0	0.0	50.9	41.4	74	54	-23.1	-12.6	H
11.000	3.0	34.49	25.16	38.4	10.5	-32.4	0.0	0.0	50.9	41.6	74	54	-23.1	-12.4	V
Mid Channel (5580MHz)															
11.160	3.0	33.82	24.50	38.5	10.7	-32.4	0.0	0.0	50.7	41.3	74	54	-23.3	-12.7	H
11.160	3.0	34.32	24.77	38.5	10.7	-32.4	0.0	0.0	51.2	41.6	74	54	-22.8	-12.4	V
High Channel (5700MHz)															
11.400	3.0	33.39	23.02	38.8	11.1	-32.4	0.0	0.0	50.8	40.5	74	54	-23.2	-13.5	H
11.400	3.0	33.78	23.03	38.8	11.1	-32.4	0.0	0.0	51.2	40.5	74	54	-22.8	-13.5	V

Rev. 11.10.11

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

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		

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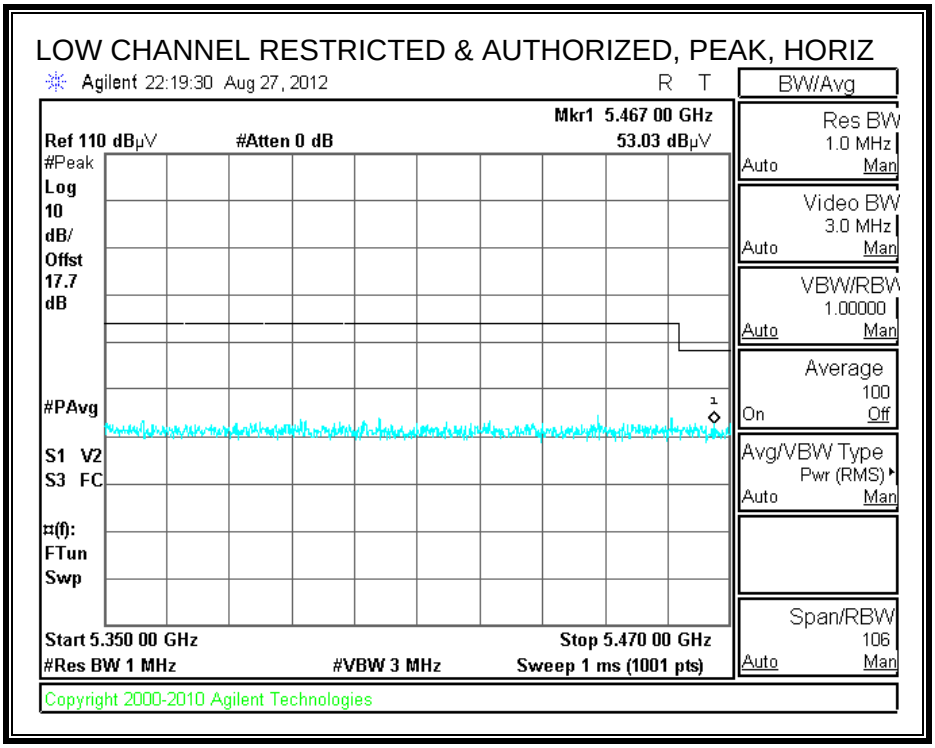
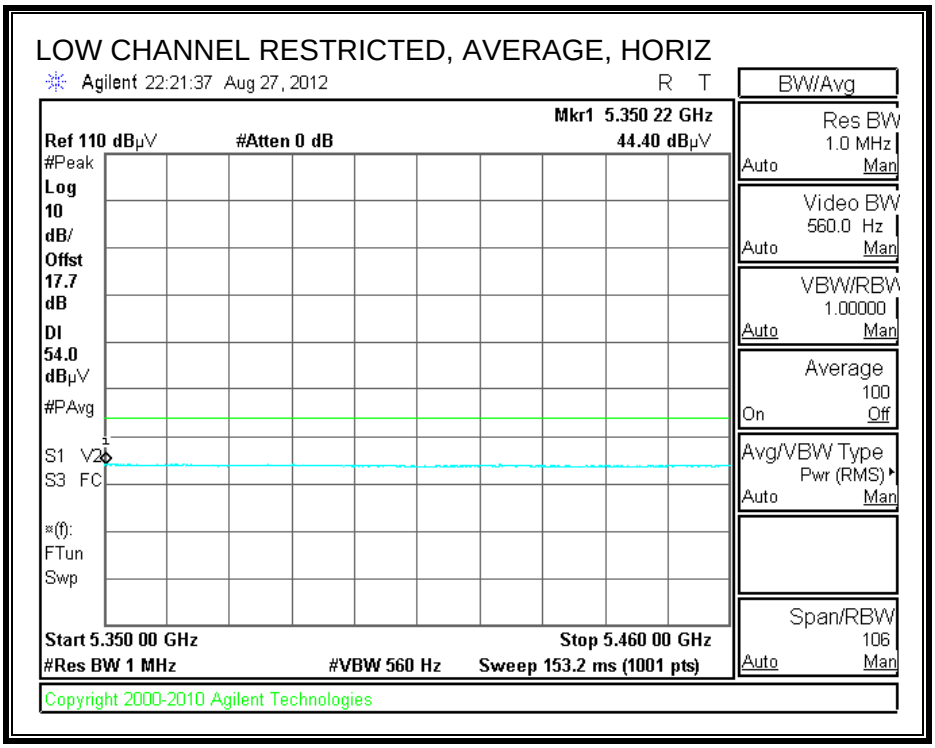
8.8. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.6 GHz BAND

RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)





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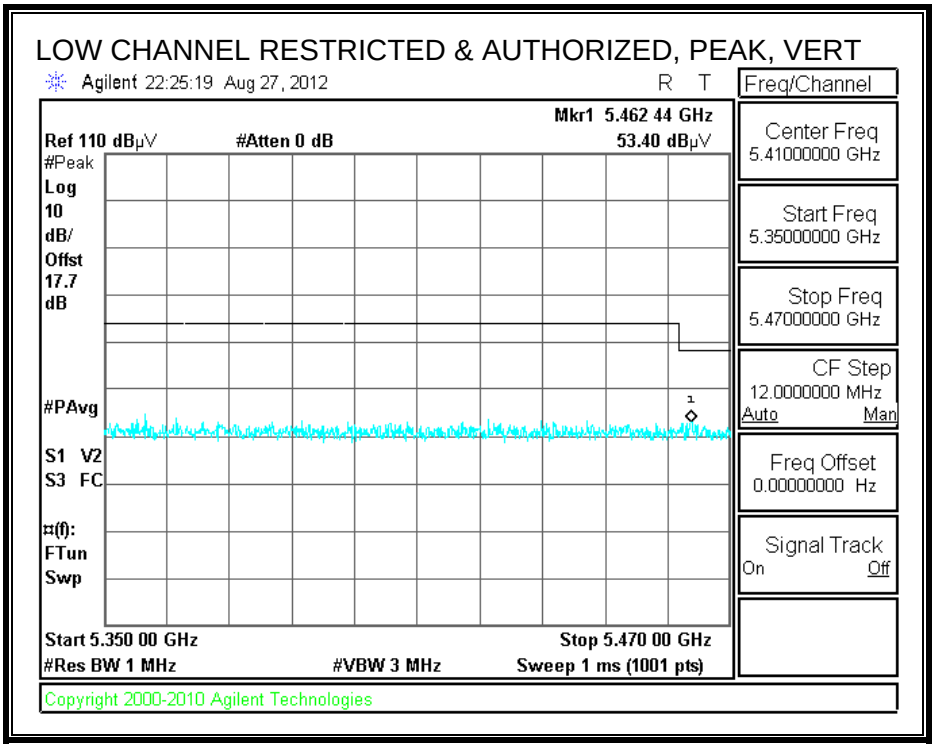
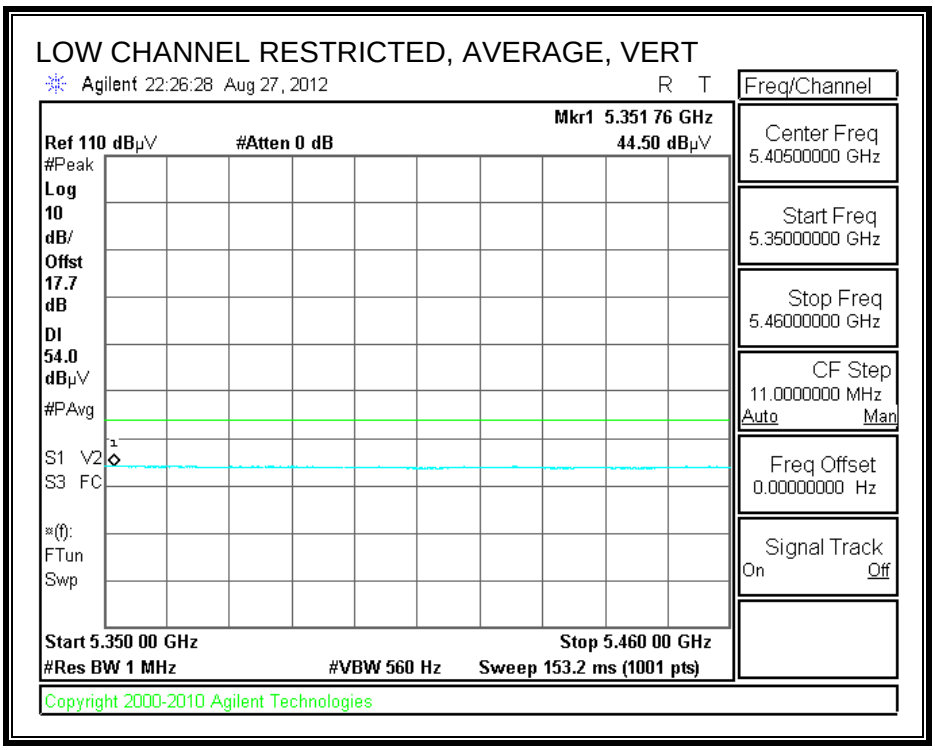
LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK, VERT



LOW CHANNEL RESTRICTED, AVERAGE, VERT



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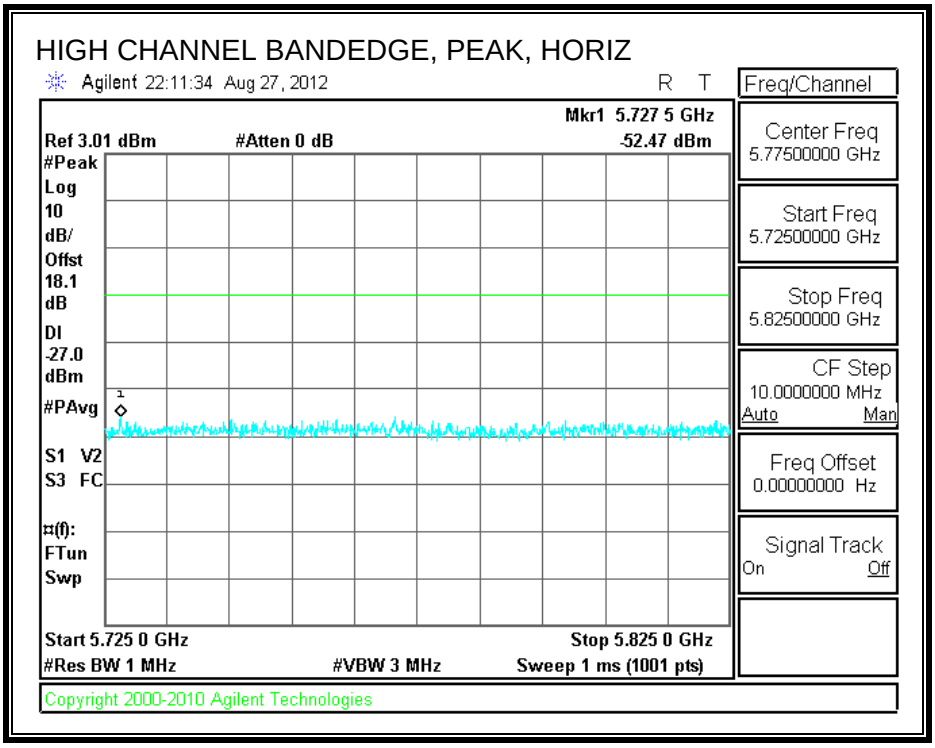
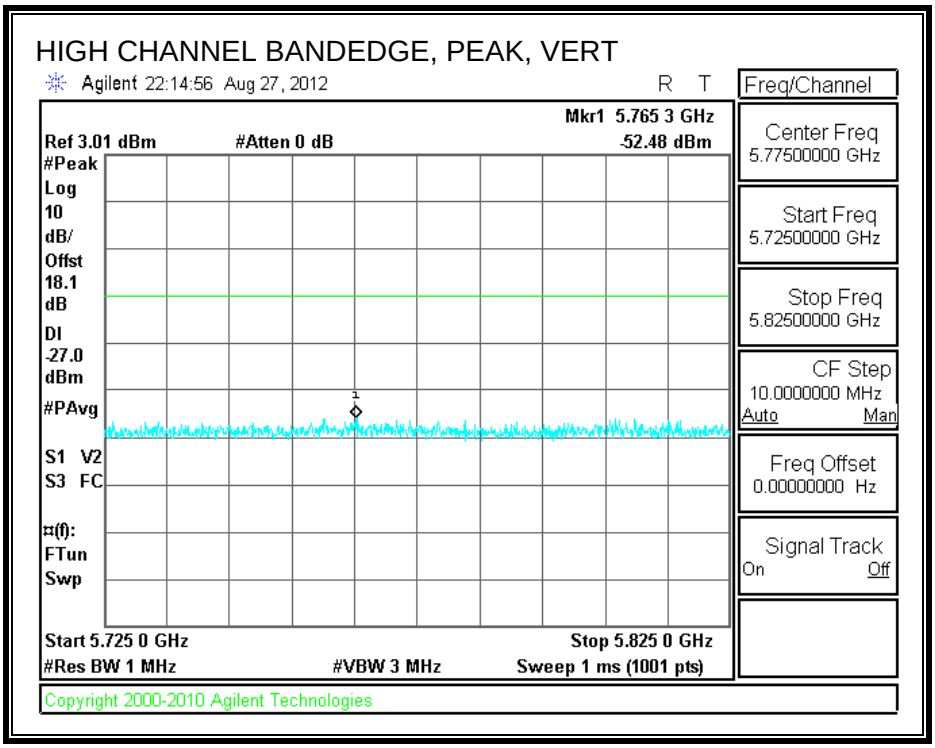
AUTHORIZED BANDEDGE (HIGH CHANNEL)





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HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Company: LG
Project #: 12U14595
Date: 8/28/2012
Test Engineer: S.Aguilar
Configuration: Worst Case. Adapter + Headphone
Mode: 11n Mode. 6.5Mbsp 5.6GHz Band

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B	T88 Miteq 26-40GHz	T39; ARA 18-26GHz; S/N:1013	FCC 15.209

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW 1Mhz, VBW=3Mhz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr 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 (5500MHz)															
11.000	3.0	34.82	24.81	38.4	10.5	-32.4	0.0	0.0	51.3	41.3	74	54	-22.7	-12.7	H
11.000	3.0	34.60	25.11	38.4	10.5	-32.4	0.0	0.0	51.0	41.6	74	54	-23.0	-12.4	V
Mid Channel (5580MHz)															
11.160	3.0	34.61	24.16	38.5	10.7	-32.4	0.0	0.0	51.5	41.0	74	54	-22.5	-13.0	H
11.160	3.0	34.06	24.01	38.5	10.7	-32.4	0.0	0.0	50.9	40.9	74	54	-23.1	-13.1	V
High Channel (5700MHz)															
11.400	3.0	34.48	21.69	38.8	11.1	-32.4	0.0	0.0	51.9	39.1	74	54	-22.1	-14.9	H
11.400	3.0	34.15	21.72	38.8	11.1	-32.4	0.0	0.0	51.6	39.2	74	54	-22.4	-14.8	V

Rev. 11.10.11

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

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		

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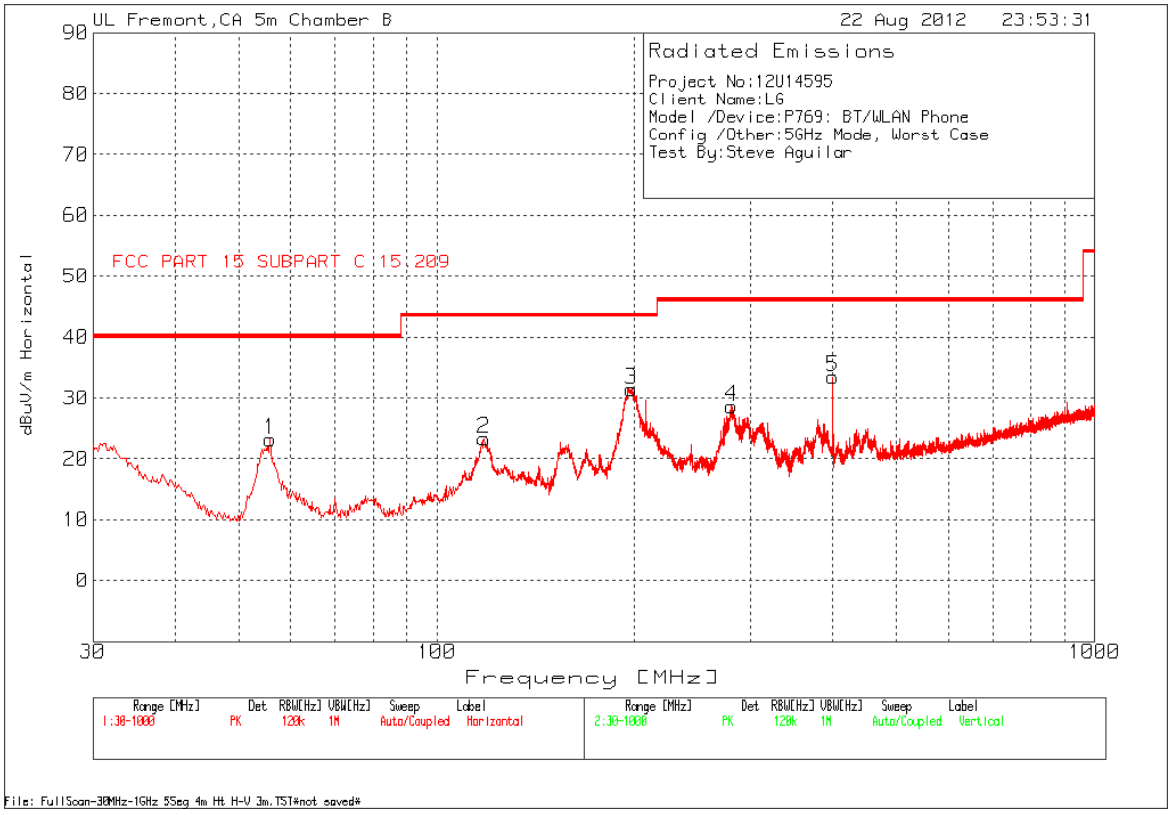
8.9. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



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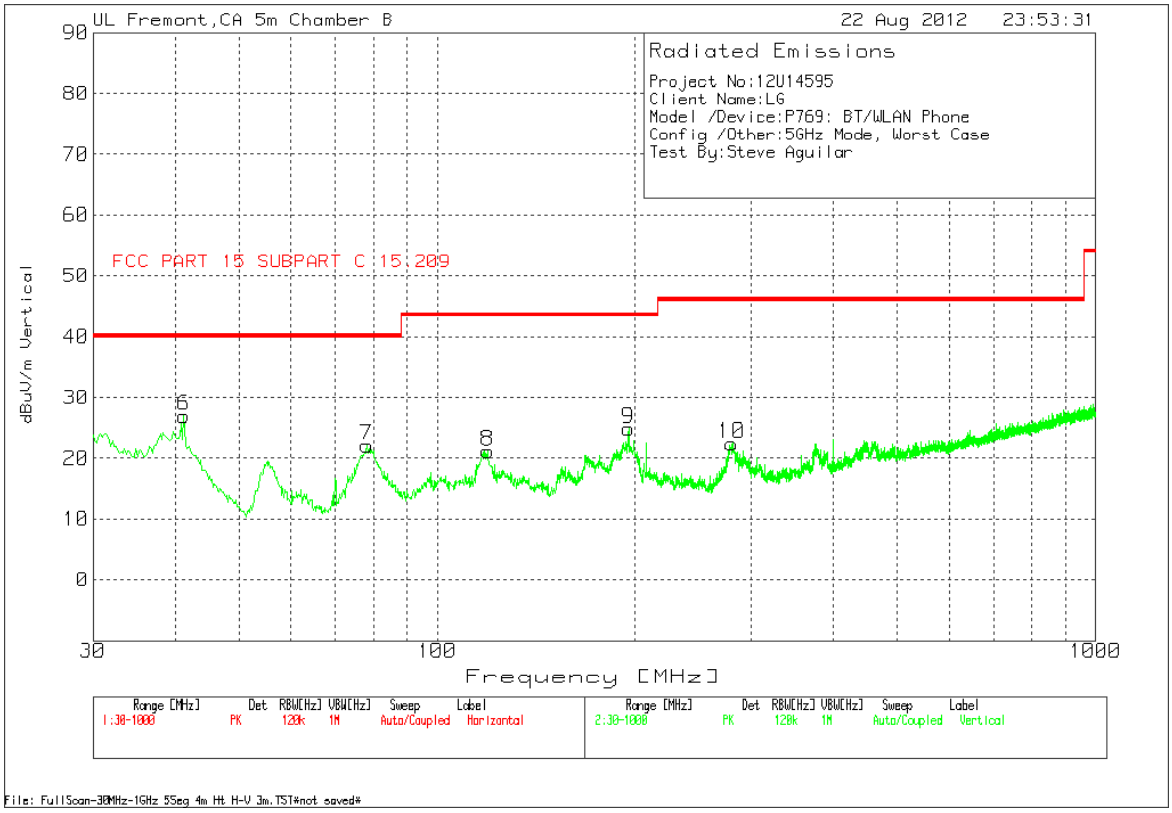
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



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HORIZONTAL AND VERTICAL DATA

Company Name: LG
Project: 12U14595
Date: 8/23/2012
Configuraiton: EUT + Adapter + Headset
Mode: 5 GHz , Worst Case
Tested by: S. Aguilar

Test Frequency [MHz]	Meter Reading [dB(µV)]	Detector	Pre Amp Factor [dB]	Antenna Factor [dB/m]	Corrected [dB(µV/m)]	Class C PK limit [dB(µV/m)]	QP Margin [dB]	Height [cm]	Polarity
Range 1 30 - 1000MHz									
55.7814	45.01	PK	7.2	-29	23.21	40	-16.79	400	Horz
118.0056	37.73	PK	13.9	-28.3	23.33	43.5	-20.17	200	Horz
197.6759	46.56	PK	12.4	-27.6	31.36	43.5	-12.14	100	Horz
280.4476	42.25	PK	13.3	-26.9	28.65	46	-17.35	100	Horz
399.8561	44.92	PK	15.5	-27	33.42	46	-12.58	100	Horz
Range 2 30 - 1000MHz									
41.243	43.39	PK	12.8	-29.2	26.99	40	-13.01	200	Vert
78.2674	42.92	PK	8	-28.8	22.12	40	-17.88	100	Vert
119.3625	35.47	PK	14	-28.3	21.17	43.5	-22.33	100	Vert
195.3497	40.45	PK	12	-27.6	24.85	43.5	-18.65	100	Vert
280.2538	36	PK	13.3	-26.9	22.4	46	-23.6	200	Vert

PK - Peak detector
QP - Quasi-peak detector

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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

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

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6 WORST EMISSIONS

Company Name:	LG
Project:	12U14595
Date:	8/24/2012
Configuraiton:	120VAC / 60 Hz
Mode:	5 GHz TX mode Worst Case
Tested by:	S. Aguilar

Line-L1 .15 - 30MHz

Test Frequency [MHz]	Meter Reading [dBuV]	Detector Type	LISN [dB]	Cables [dB]	Corrected [dB(uV)]	Class B QP Limit	QP Margin	Class B Av Limit [dB(uV)]	Av Margin [dB]
0.15	40.81	PK	0.1	0	40.91	66	-25.09	-	-
0.15	19.01	Av	0.1	0	19.11	-	-	56	-36.89
0.3435	33.5	PK	0.1	0	33.6	59.1	-25.5	-	-
0.3435	19.35	Av	0.1	0	19.45	-	-	49.1	-29.65
1.6125	33.19	PK	0.1	0.1	33.39	56	-22.61	-	-
1.6125	16.75	Av	0.1	0.1	16.95	-	-	46	-29.05
2.2965	32.5	PK	0.1	0.1	32.7	56	-23.3	-	-
2.2965	12.79	Av	0.1	0.1	12.99	-	-	46	-33.01

Line-L2 .15 - 30MHz

Test Frequency [MHz]	Meter Reading [dBuV]	Detector Type	LISN [dB]	Cables [dB]	Corrected [dB(uV)]	Class B QP Limit	QP Margin	Class B Av Limit [dB(uV)]	Av Margin [dB]
0.1545	36.8	PK	0.1	0	36.9	65.8	-28.9	-	-
0.1545	18.29	Av	0.1	0	18.39	-	-	55.8	-37.41
0.33	35.32	PK	0.1	0	35.42	59.5	-24.08	-	-
0.33	22.2	Av	0.1	0	22.3	-	-	49.5	-27.2
0.411	31.93	PK	0.1	0	32.03	57.6	-25.57	-	-
0.411	15.95	Av	0.1	0	16.05	-	-	47.6	-31.55
23.802	31.07	PK	0.4	0.2	31.67	60	-28.33	-	-
23.802	10.04	Av	0.4	0.2	10.64	-	-	50	-39.36

PK - Peak detector
QP - Quasi-Peak detector
Av - Average detector

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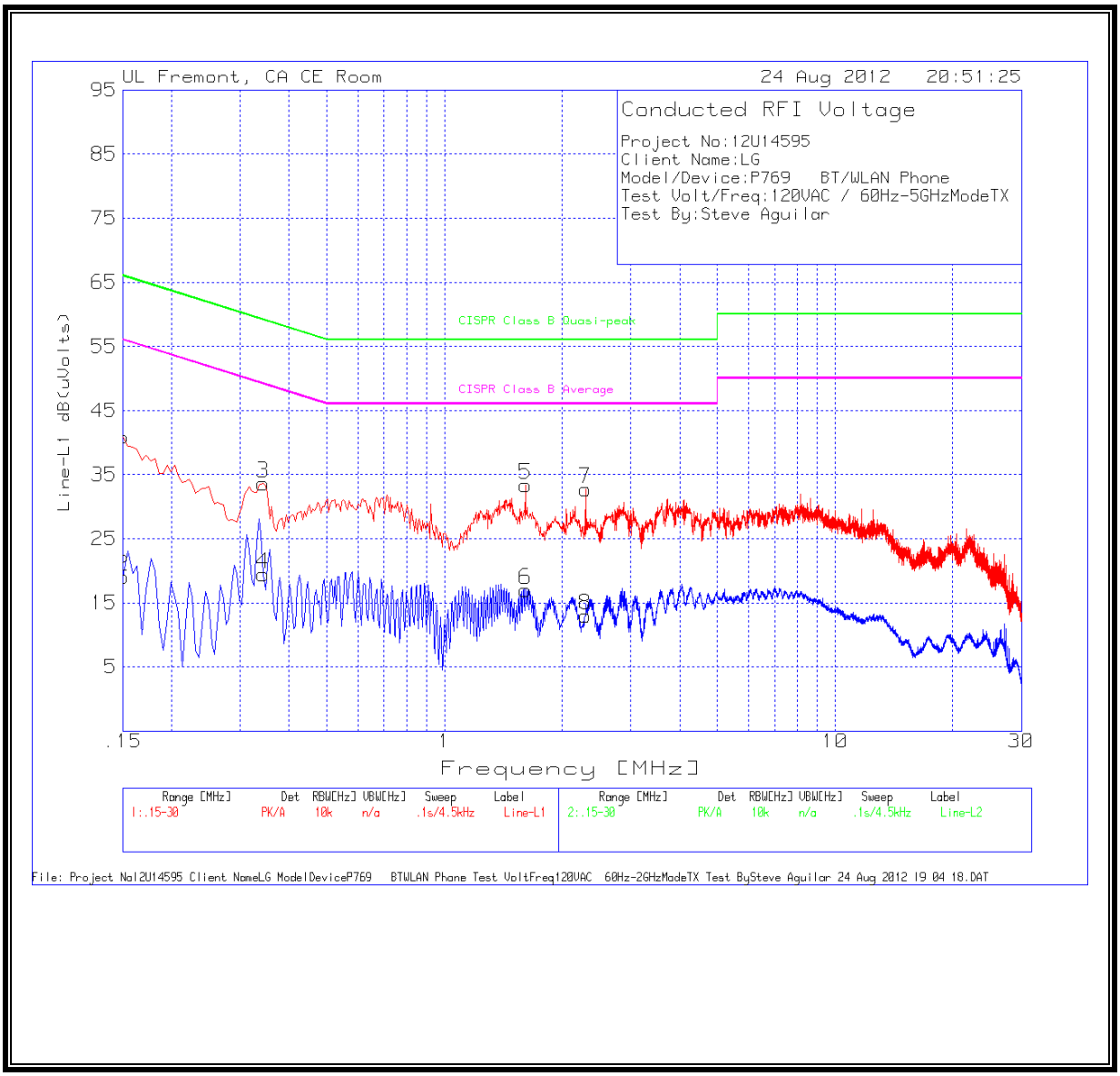
LINE 1 RESULTS



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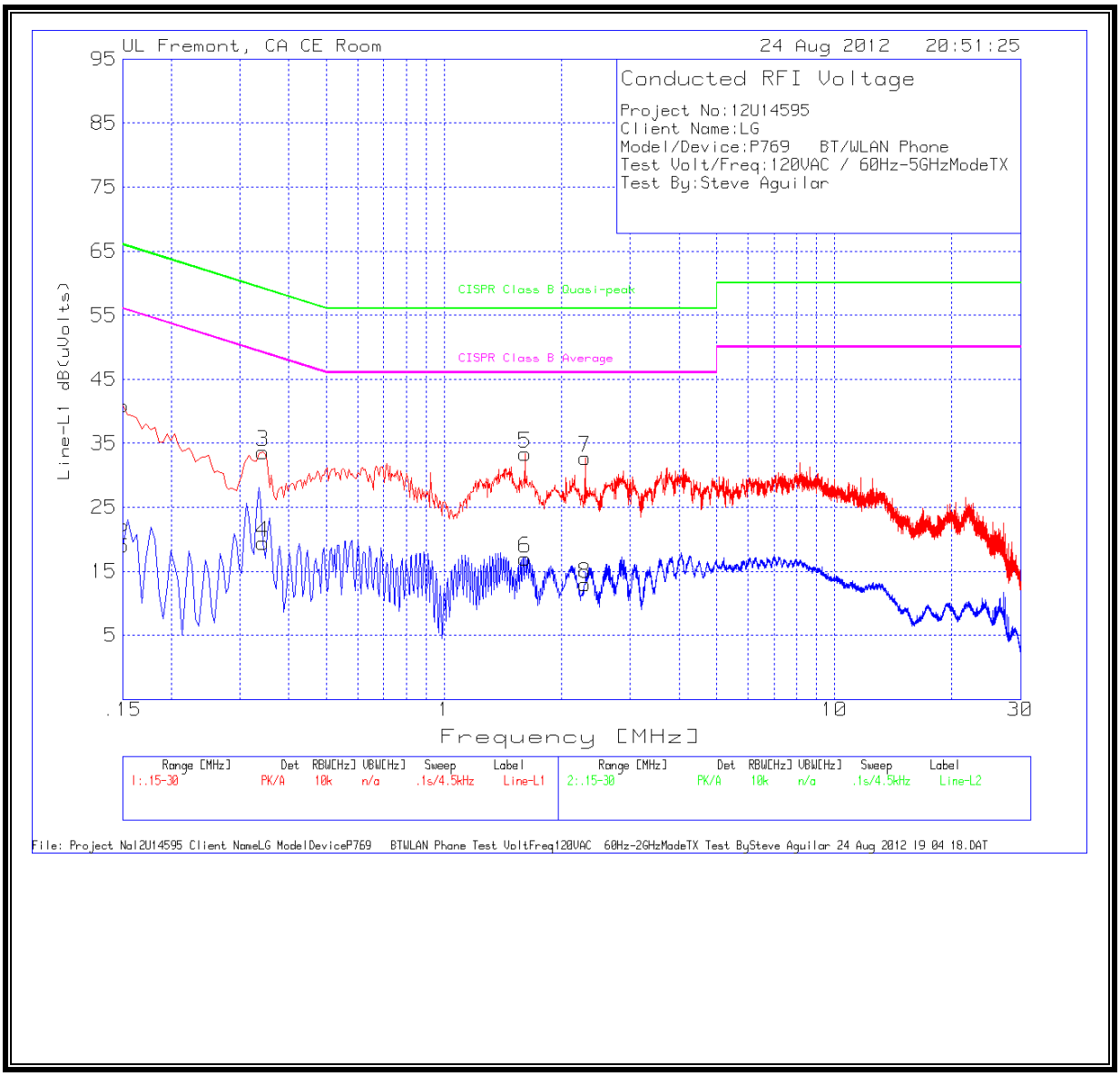
LINE 2 RESULTS



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