FCC CFR47 PART 15 SUBPART C

INDUSTRY CANADA RSS-210 ISSUE 7

CLASS II PERMISSIVE CHANGE

TEST REPORT

FOR

802.11ag/Draft 802.11n WLAN PCI-E Mini Card
Installed inside HP Galileo, Model: HSTNN-I46C

MODEL NUMBER: BCM94322MC
FCC ID: QDS-BRCM1036
IC: 4324A-BRCM1036

REPORT NUMBER: 08U11813-1

ISSUE DATE: JUNE 19, 2008

Prepared for

BROADCOM CORPORATION
190 MATHILDA PLACE
SUNNYVALE, CA 94086, USA

Prepared by

COMPLIANCE CERTIFICATION SERVICES
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	6-19-08	Initial Issue	Sunny Shih

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	BROADCOM CORPORATION 190 MATHILDA PLACE SUNNYVALE, CA 94086, USA
EUT DESCRIPTION:	802.11ag / Draft 802n WLAN PCI-E Mini Card (Installed Inside HP Galileo, Model: HSTNN-I46C)
MODEL:	BCM94322MC
SERIAL NUMBER:	78110P1029 (Laptop PC)
DATE TESTED:	May 29 – June 18, 2008

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C and Subpart E	Pass
RSS-210 Issue 7 Annex 8 and RSS-GEN Issue 2	Pass

Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All expressions of Pass/Fail in this report are opinions expressed by CCS based on interpretations of the test results. 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 CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

SUNNY SHIH
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:

VEIN TRAN
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 2, and RSS-210 Issue 7.

3. FACILITIES AND ACCREDITATION

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

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. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Power Line Conducted Emission	+/- 2.3 dB
Radiated Emission	+/- 3.4 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11ag/Draft 802.11n Wireless LAN Transceiver module and manufactured by Broadcom, model number is BCM94322MC.

5.2. DESCRIPTION OF CLASS II CHANGE

The major changes filed under this application are:

- Adding portable platform, HP HSTNN-I46C (HP Galileo)

The EUT was tested and certified under CCS project # 07U11529, Therefore, only the Radiated Emission and AC mains line conduction tests are performed.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The following antenna was added:

Manufacturer	Type	Model	Peak gains w/ cable loss (dBi)	
			2400 – 2500 MHz	5725 – 5825 MHz
WNC	PIFA	137I410B(221) - Main	2.79	1.33
		137I560W(221) - Aux	**2.82**	-0.15
Yageo	PIFA	CAN4313671012501B - TX1	2.09	**2.30**
		CAN4313671 022501B - TX2	0.75	1.43

Tested antennas:

- Use WNC AUX antenna for 2.4 GHz band.
- Use Yageo MAIN antenna for 5.8 GH band.

5.4. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was Broadcom Internal driver, rev. 4.170.86.0.

The test utility software used during testing was wl_tool, rev. 4.170.RC86.0.

5.5. WORST-CASE CONFIGURATION AND MODE

The worst-case mode/configuration is based on original test report and CCS Test plan.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	HP	Galieo 1.0	78110P1029	N/A
AC Adapter	HP	PA-1650-02HC	7Z03609405	N/A

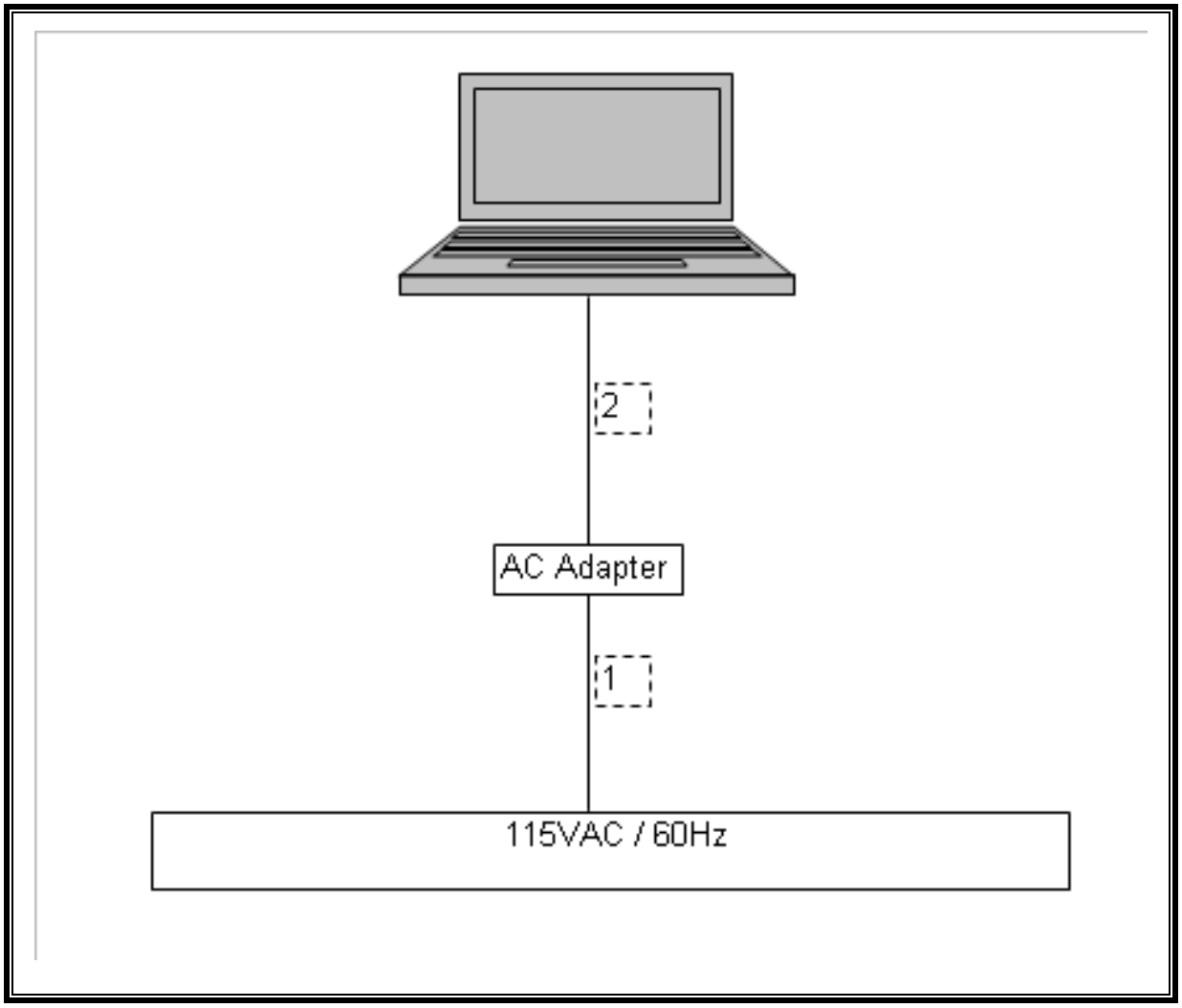
I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identica Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	AC	1	US115V	Unshielded	2.0m	N/A
2	DC	1	DC	Unshielded	2.0m	N/A

TEST SETUP

The EUT is installed in a host laptop computer during the tests. Test software exercised the radio card.

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 Date**	**Cal Due**
Antenna, Horn, 18 GHz	EMCO	3115	C00945	04/15/07	07/15/08
Bilog Antenna	Sunol Sciences	JB1	C01016	10/13/07	10/13/08
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	08/03/07	09/27/08
Preamplifier, 1300 MHz	Agilent / HP	8447D	C01064	05/09/07	05/09/08
RF Filter Section, 2.9 GHz	Agilent / HP	85420E	C00958	02/06/07	06/12/08
Peak Power Meter	Agilent / HP	E4416A	C00963	02/14/07	12/02/08
Peak / Average Power Sensor	Agilent	E9327A	C00964	02/14/07	12/02/08
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	10/16/07	01/27/09
LISN, 10 kHz ~ 30 MHz	Solar	8012-50-R-24-BNC	N02481	09/15/06	09/15/08
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	09/15/06	09/15/08
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	05/02/06	08/07/08

7. RADIATED TEST RESULTS

7.1. 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, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

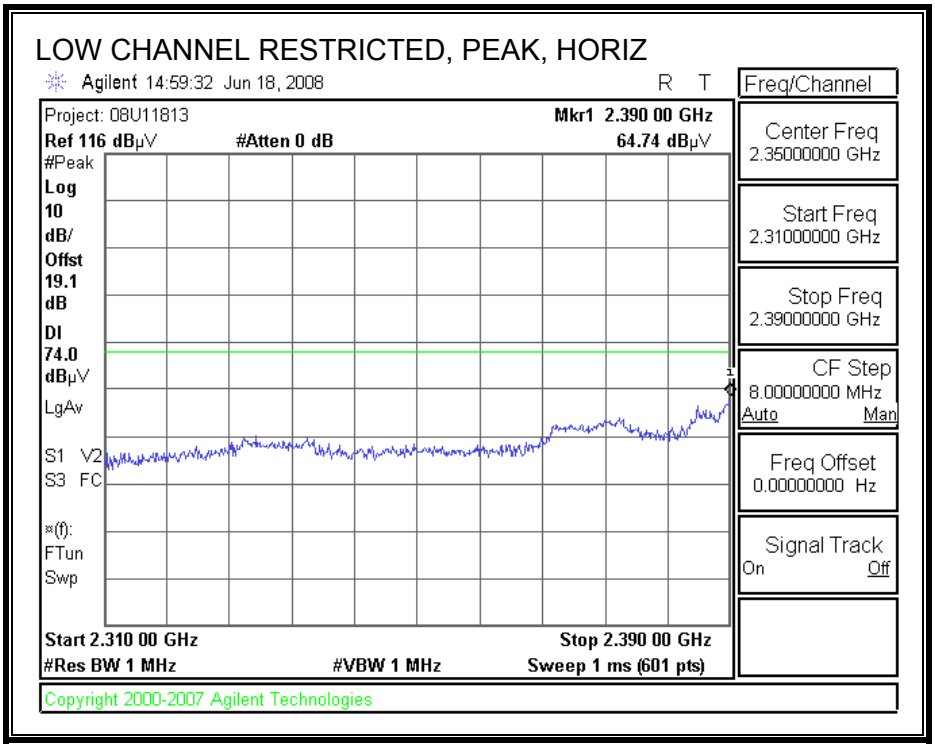
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 5 GHz band.

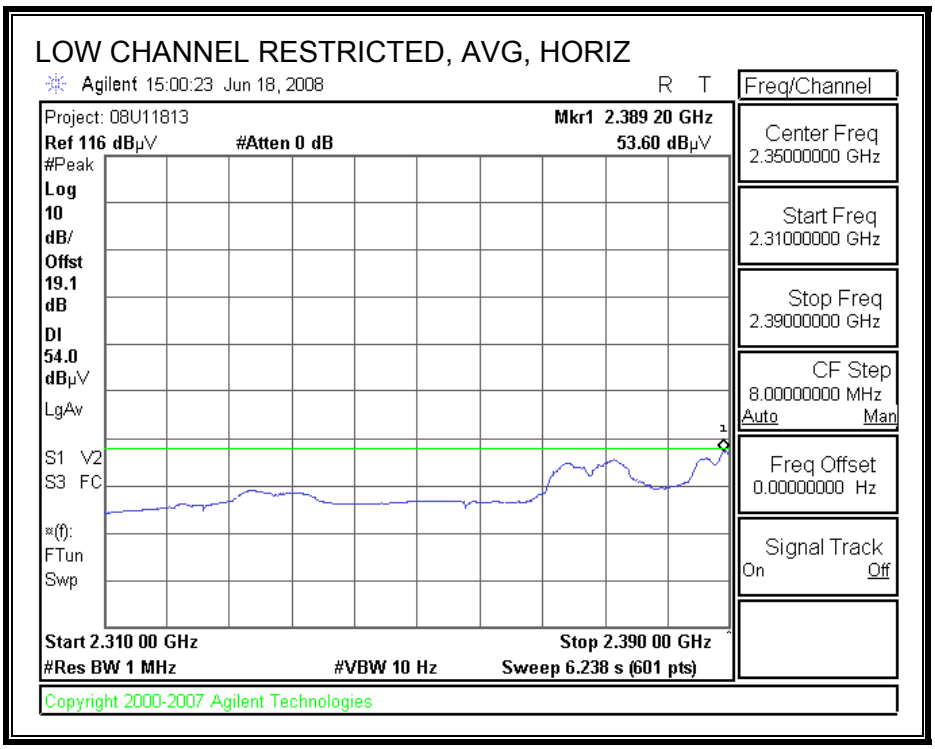
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

7.2. TRANSMITTER ABOVE 1 GHz

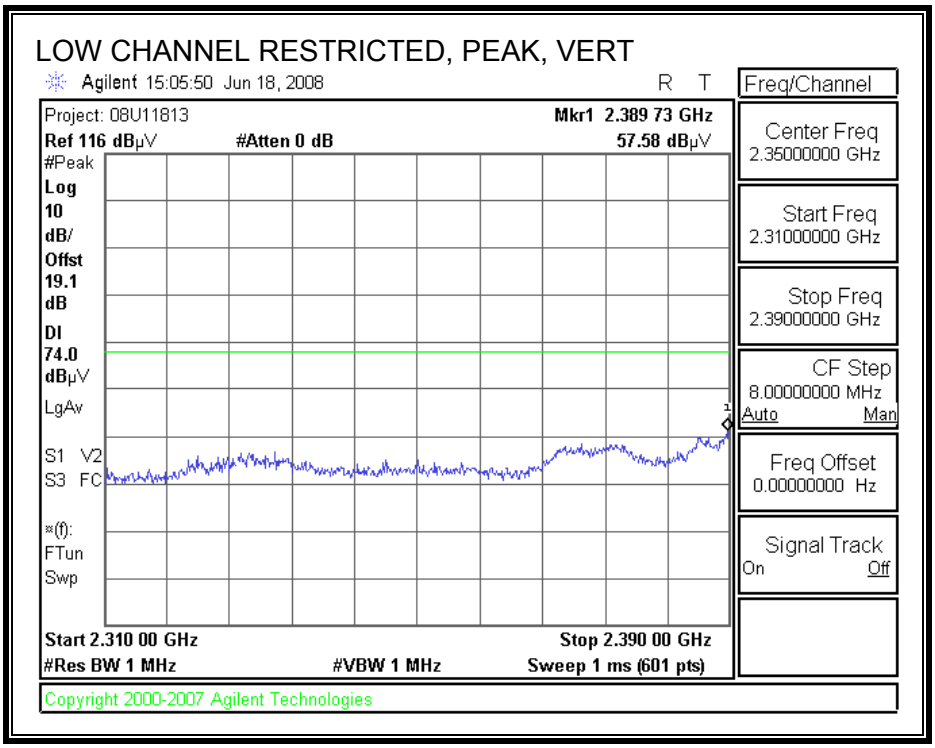
7.2.1. 802.11b MODE

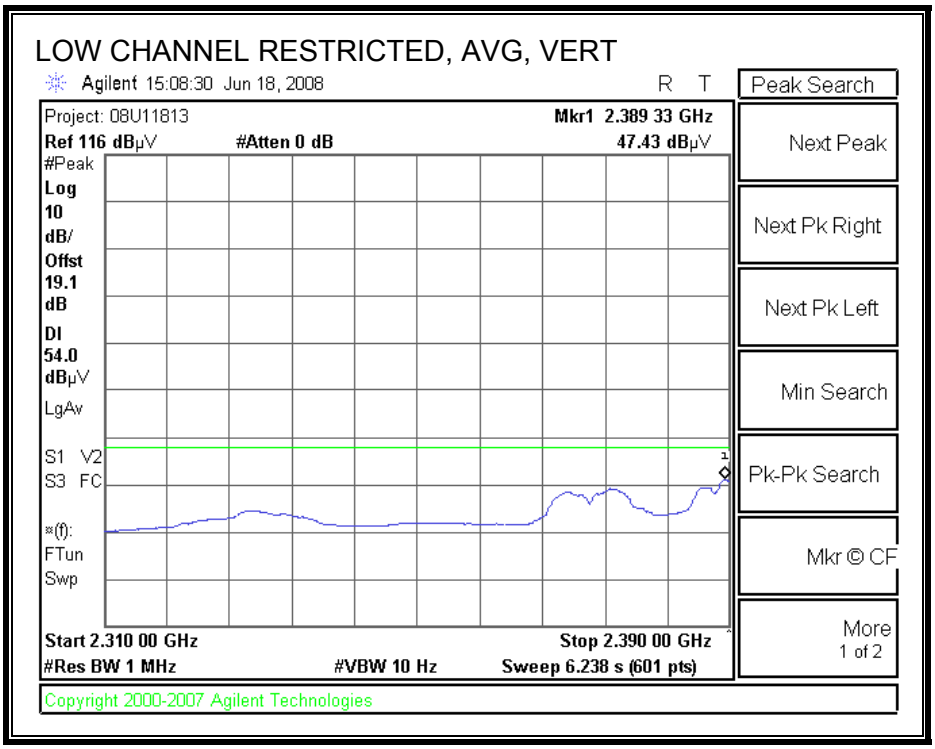
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



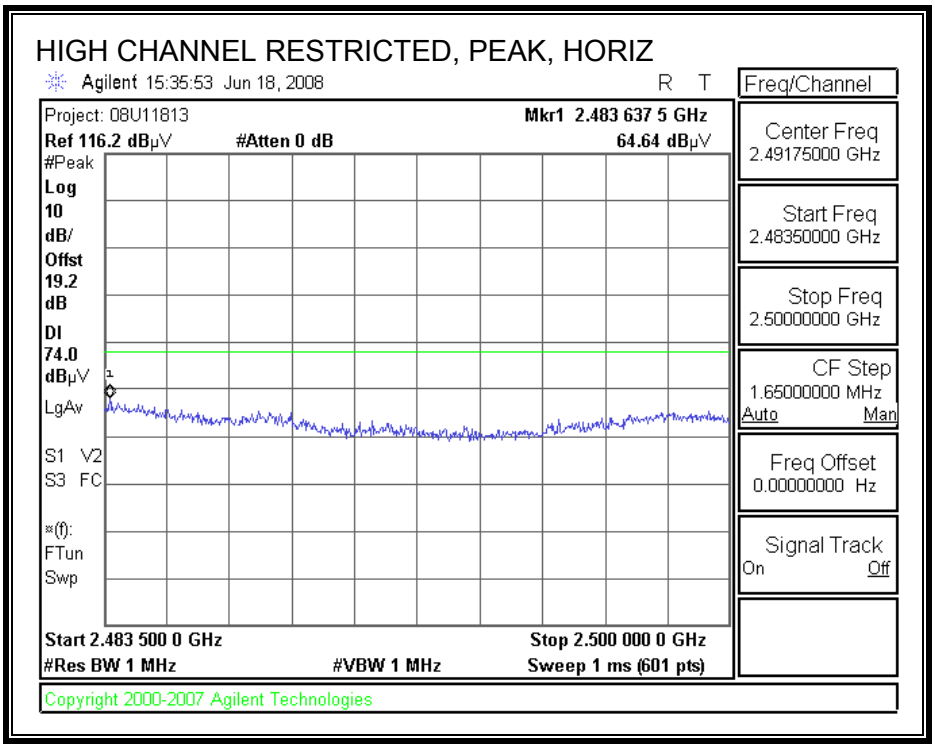


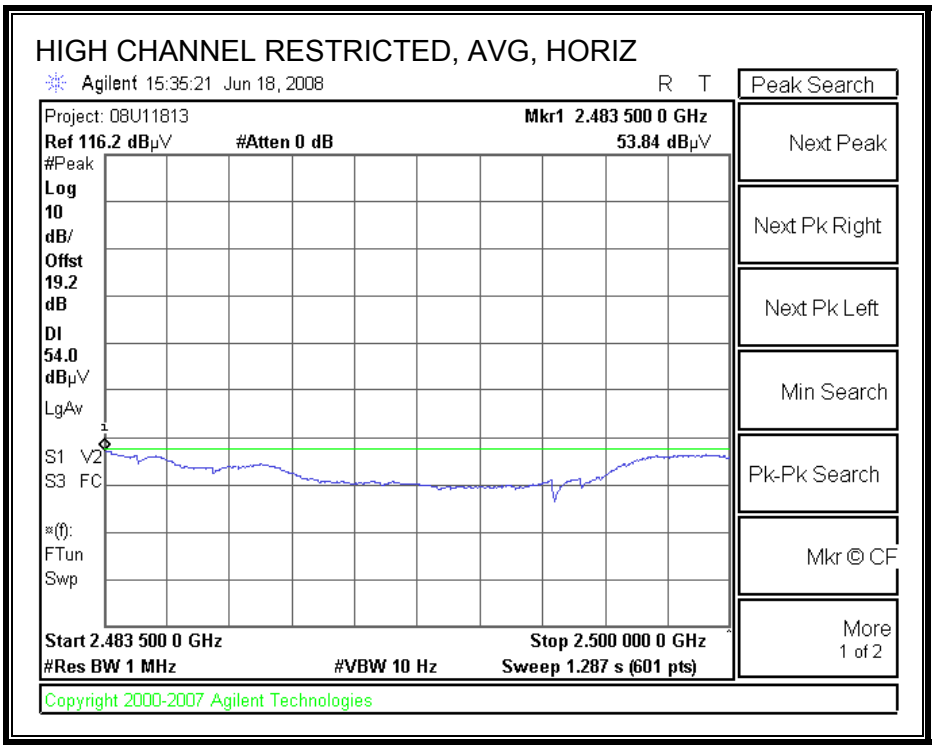
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



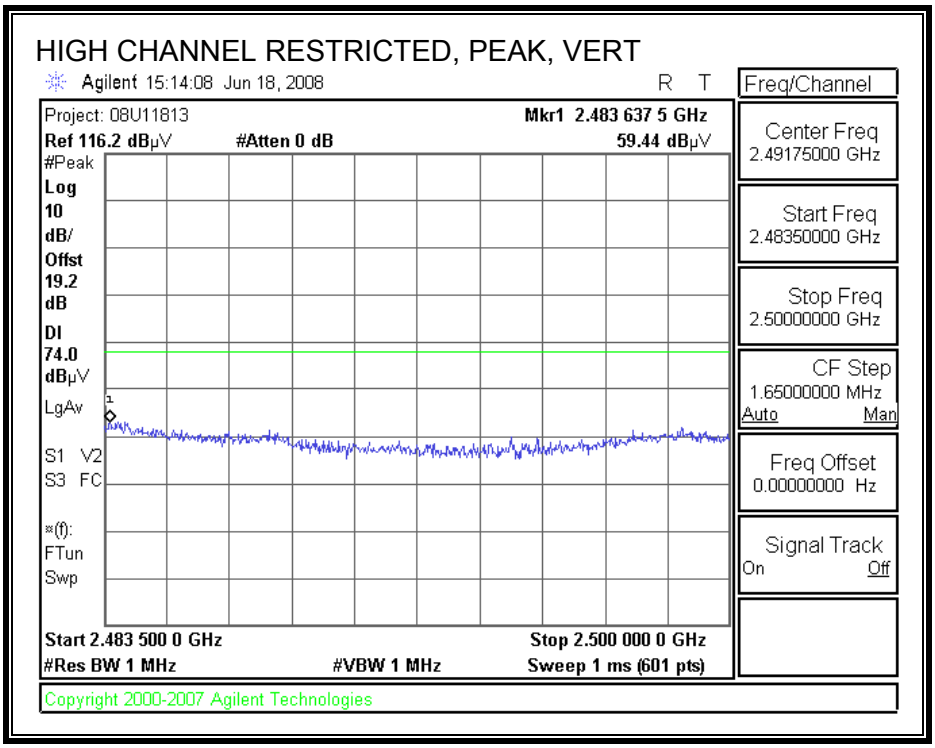


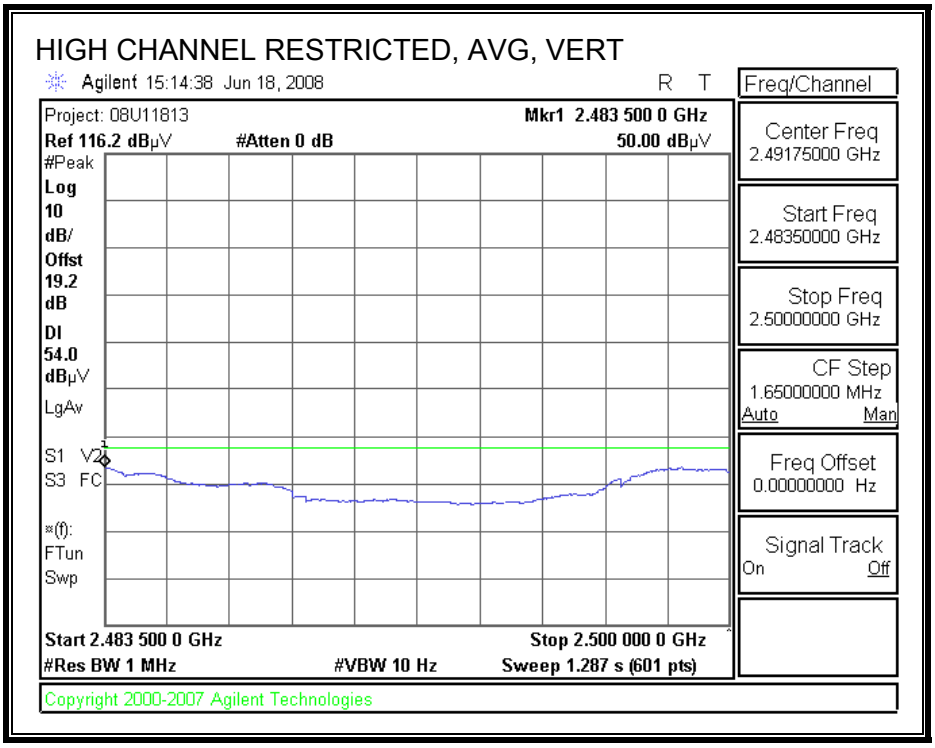
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: Broadcom
Project #: 08U11813
Date: 6/10/2008
Test Engineer: Devin Chang
Configuration: EUT alone
Mode: 2.4GHz 11b mode Tx

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T145 Agilent 3008A005(			FCC 15.209

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
		C-5m Chamber		R_001

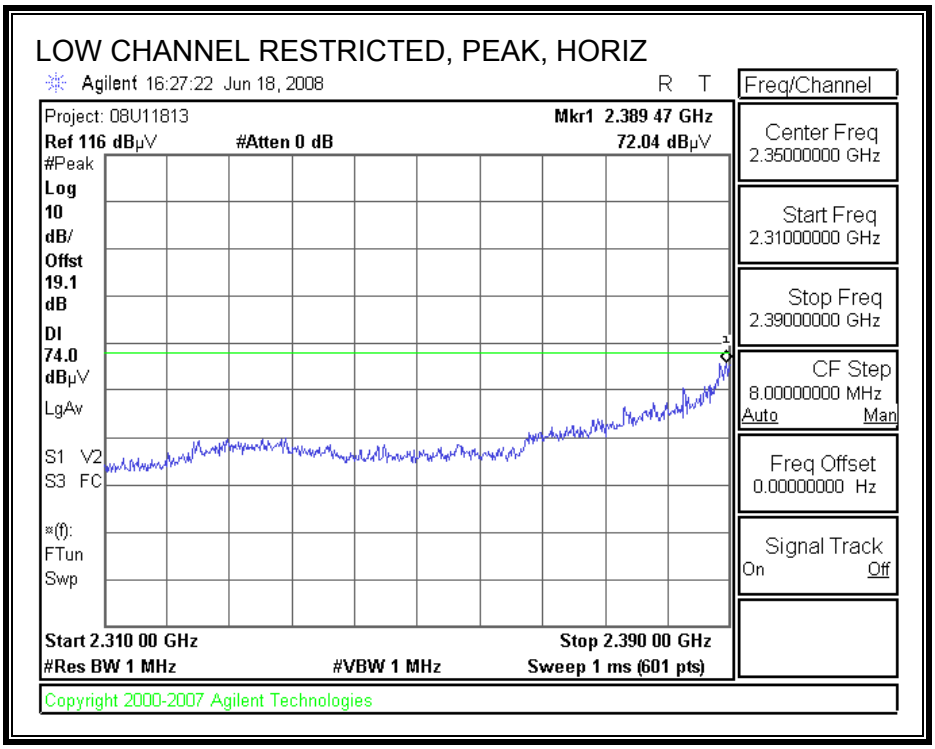
Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

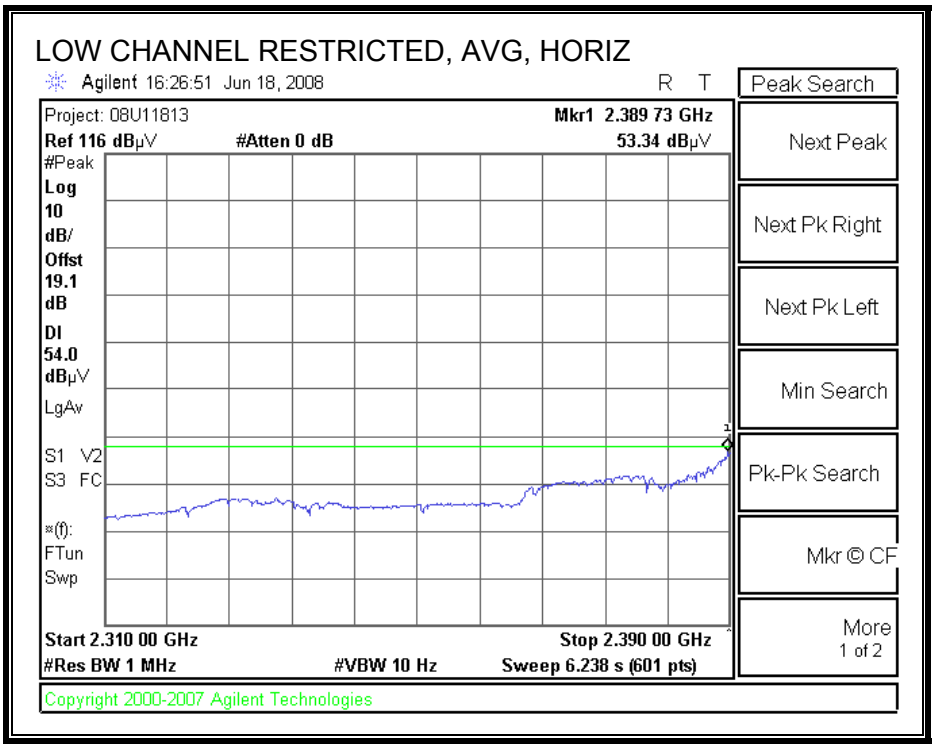
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
Low Ch. 2412MHz															
4.824	3.0	47.6	39.9	33.0	0.0	-34.8	0.0	0.0	45.8	38.0	74	54	-28.2	-16.0	H
7.236	3.0	45.9	36.4	35.4	0.0	-34.7	0.0	0.0	46.7	37.1	74	54	-27.3	-16.9	H
4.824	3.0	46.2	38.4	33.0	0.0	-34.8	0.0	0.0	44.4	36.6	74	54	-29.6	-17.4	V
7.236	3.0	47.9	42.3	35.4	0.0	-34.7	0.0	0.0	48.6	43.1	74	54	-25.4	-10.9	V
Mid Ch. 2437MHz															
4.874	3.0	47.7	41.5	33.1	0.0	-34.9	0.0	0.0	45.9	39.7	74	54	-28.1	-14.3	V
7.311	3.0	45.9	36.8	35.5	0.0	-34.7	0.0	0.0	46.8	37.6	74	54	-27.2	-16.4	V
4.874	3.0	45.9	38.1	33.1	0.0	-34.9	0.0	0.0	44.1	36.3	74	54	-29.9	-17.7	H
7.311	3.0	48.0	42.7	35.5	0.0	-34.7	0.0	0.0	48.8	43.5	74	54	-25.2	-10.5	H
High Ch. 2462MHz															
4.924	3.0	47.3	40.0	33.1	0.0	-34.9	0.0	0.0	45.5	38.2	74	54	-28.5	-15.8	H
7.386	3.0	44.2	33.4	35.6	0.0	-34.6	0.0	0.0	45.1	34.3	74	54	-28.9	-19.7	H
4.924	3.0	46.6	38.7	33.1	0.0	-34.9	0.0	0.0	44.8	36.9	74	54	-29.2	-17.1	V
7.386	3.0	45.0	33.6	35.6	0.0	-34.6	0.0	0.0	45.9	34.5	74	54	-28.1	-19.5	V

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		

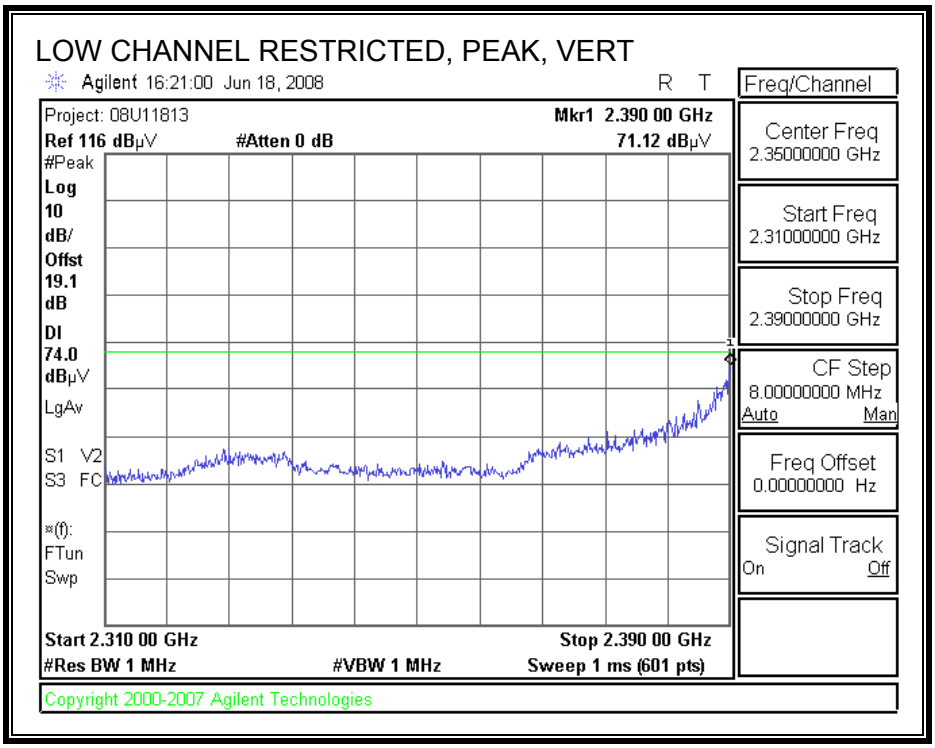
7.2.2. 802.11g MODE

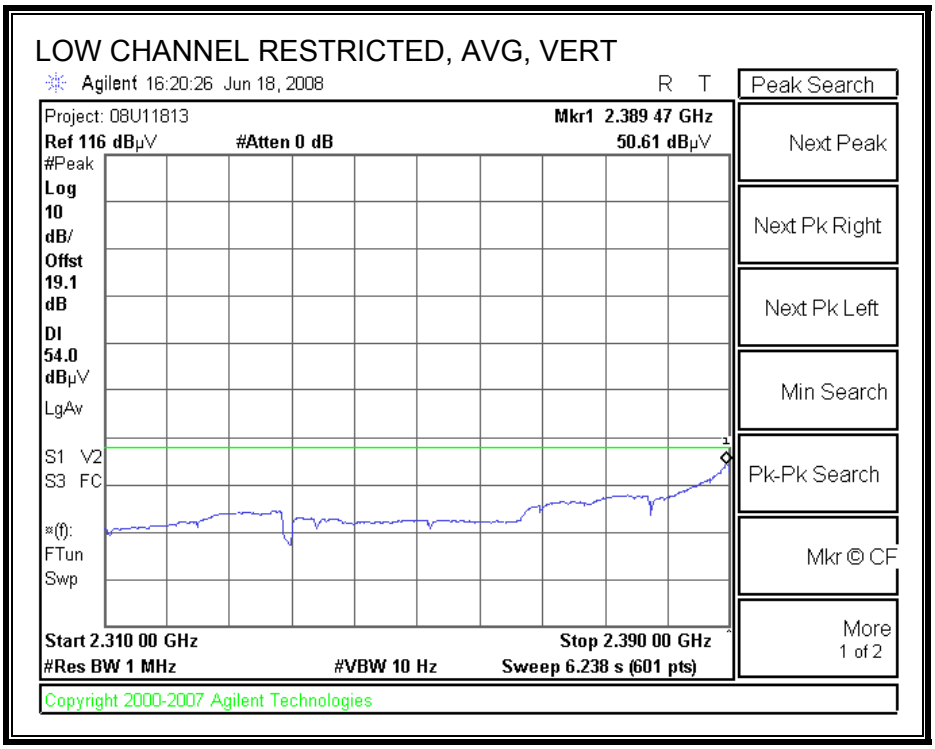
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



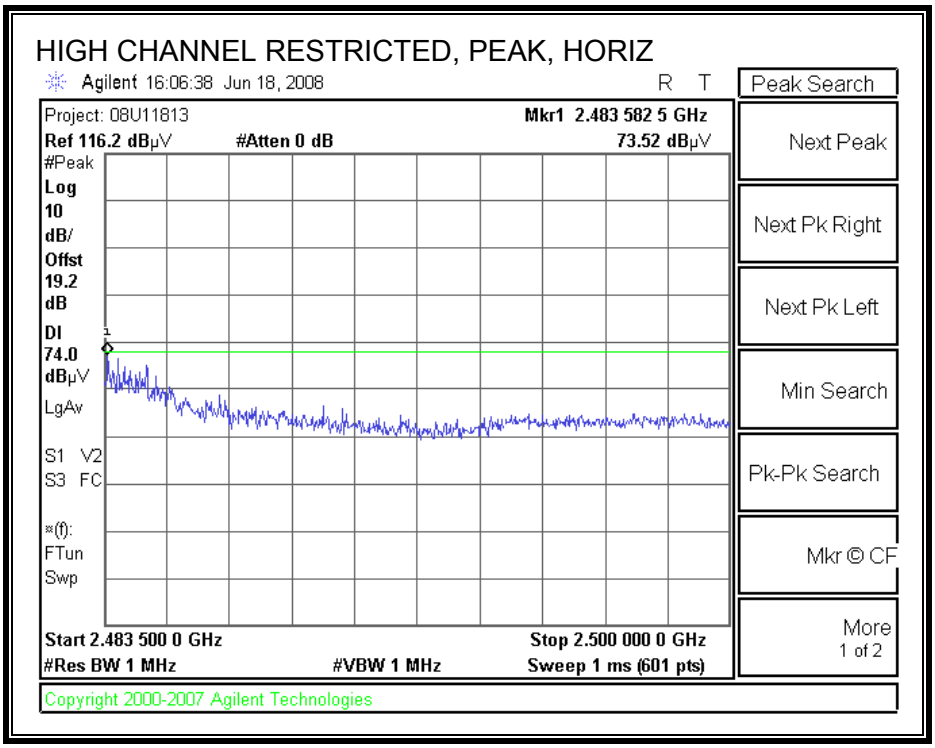


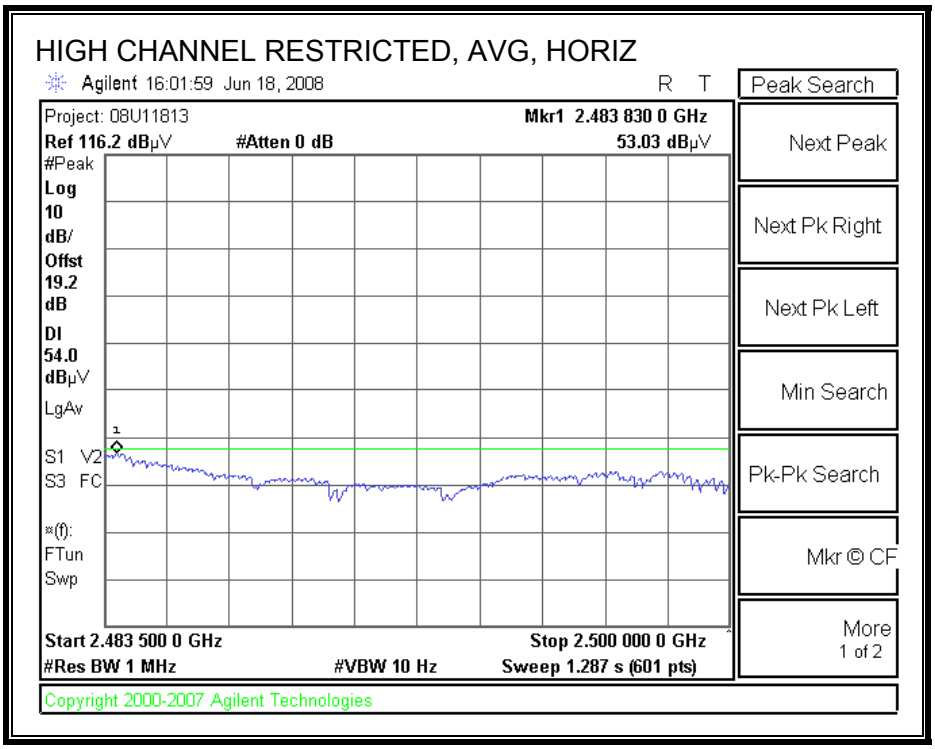
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



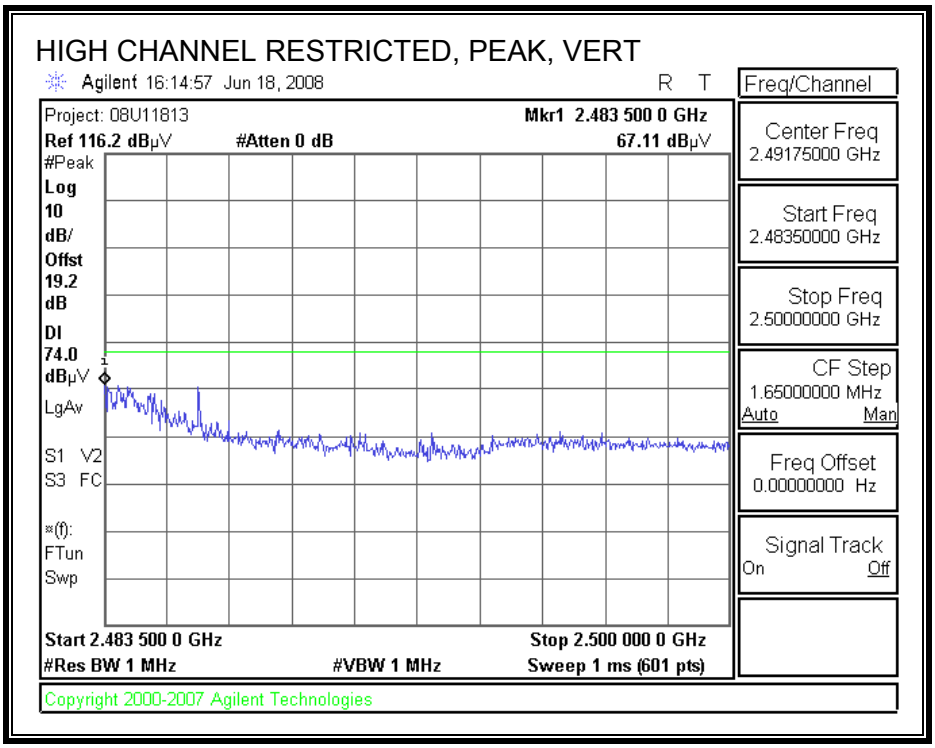


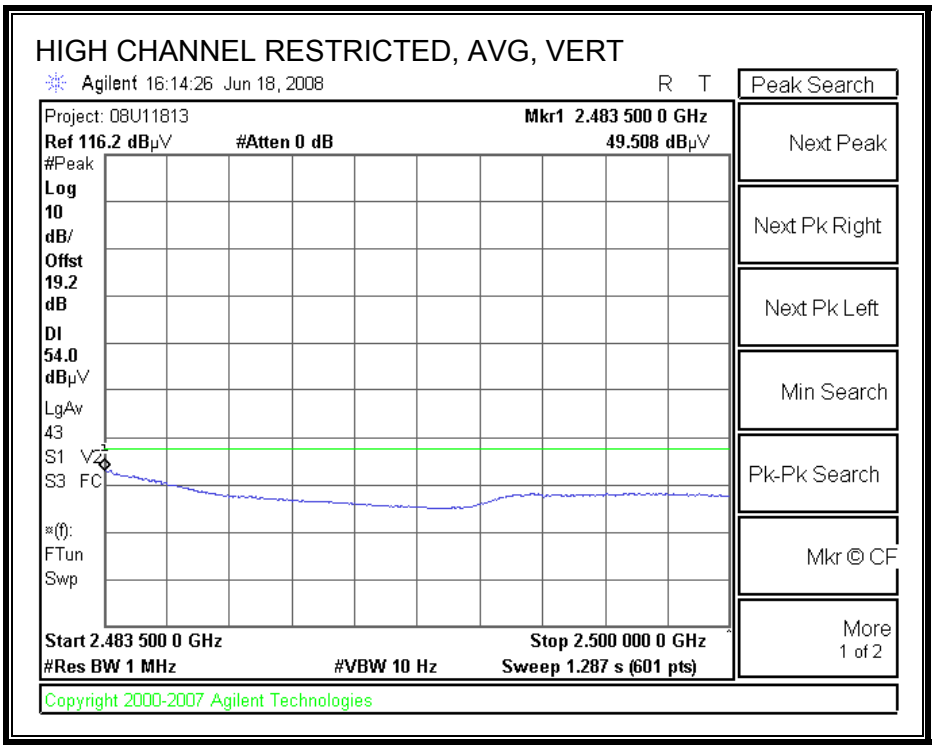
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: Broadcom
Project #: 08U11813
Date: 6/10/2008
Test Engineer: Devin Chang
Configuration: EUT alone
Mode: 2.4GHz 11g mode Tx

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T145 Agilent 3008A005(			FCC 15.209

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
		C-5m Chamber		R_001

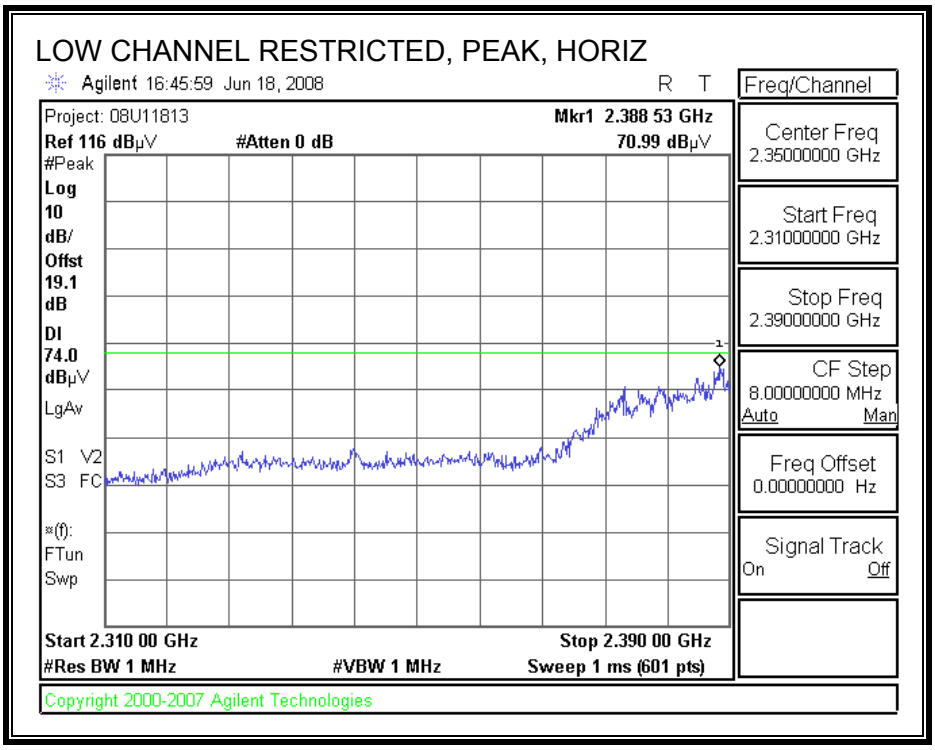
Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

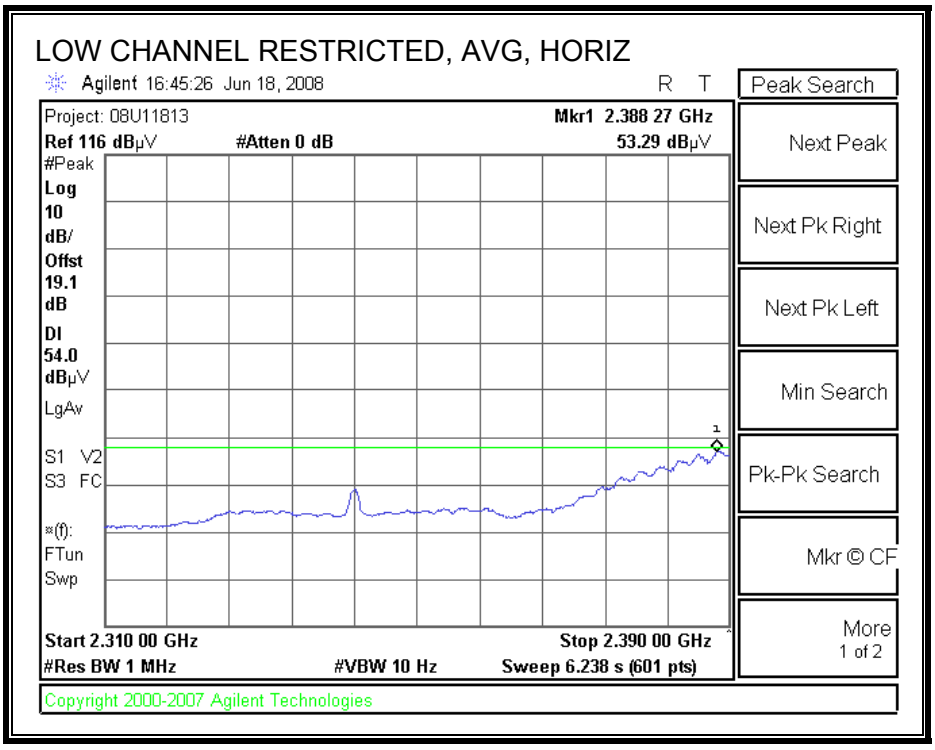
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
Low Ch. 2412MHz															
4.824	3.0	42.4	31.2	33.0	0.0	-34.8	0.0	0.0	40.5	29.4	74	54	-33.5	-24.6	H
4.824	3.0	47.3	33.8	33.0	0.0	-34.8	0.0	0.0	45.5	32.0	74	54	-28.5	-22.0	V
7.236	3.0	45.9	32.7	35.4	0.0	-34.7	0.0	0.0	46.7	33.5	74	54	-27.3	-20.5	V
Mid Ch. 2437MHz															
4.874	3.0	43.5	32.2	33.1	0.0	-34.9	0.0	0.0	41.7	30.4	74	54	-32.3	-23.6	V
4.874	3.0	47.7	34.8	33.1	0.0	-34.9	0.0	0.0	45.9	33.0	74	54	-28.1	-21.0	H
7.311	3.0	47.1	34.4	35.5	0.0	-34.7	0.0	0.0	47.9	35.3	74	54	-26.1	-18.7	H
High Ch. 2462MHz															
4.924	3.0	44.0	30.6	33.1	0.0	-34.9	0.0	0.0	42.2	28.8	74	54	-31.8	-25.2	H
4.924	3.0	46.2	32.3	33.1	0.0	-34.9	0.0	0.0	44.4	30.6	74	54	-29.6	-23.4	V
7.386	3.0	43.6	31.3	35.6	0.0	-34.6	0.0	0.0	44.6	32.2	74	54	-29.4	-21.8	V

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		

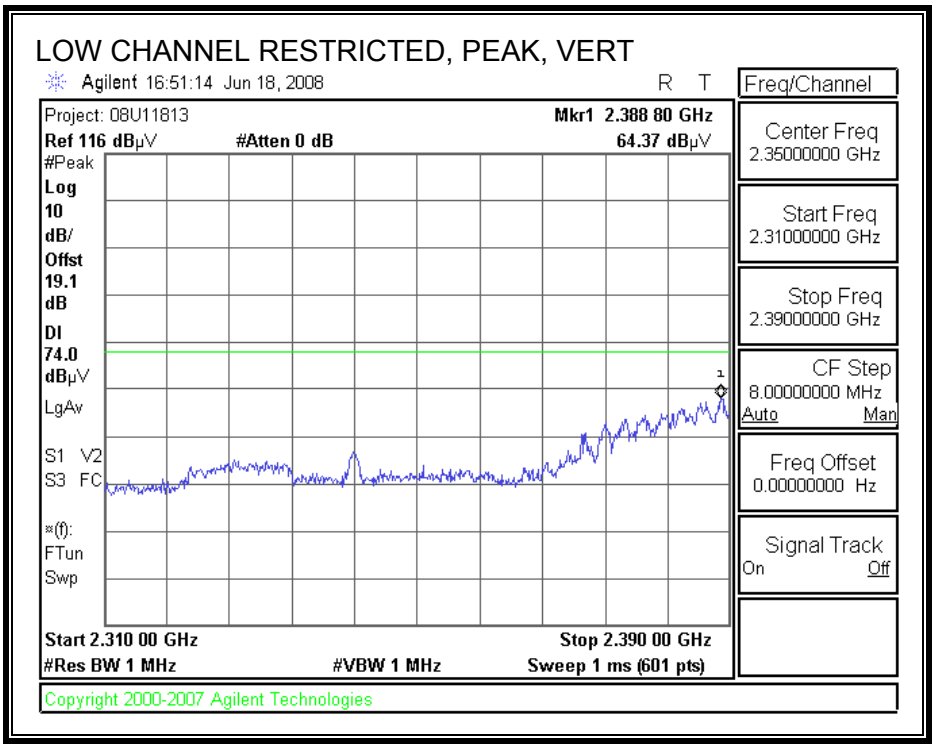
7.2.3. 802.11n HT40 MODE IN THE 2.4 GHz BAND

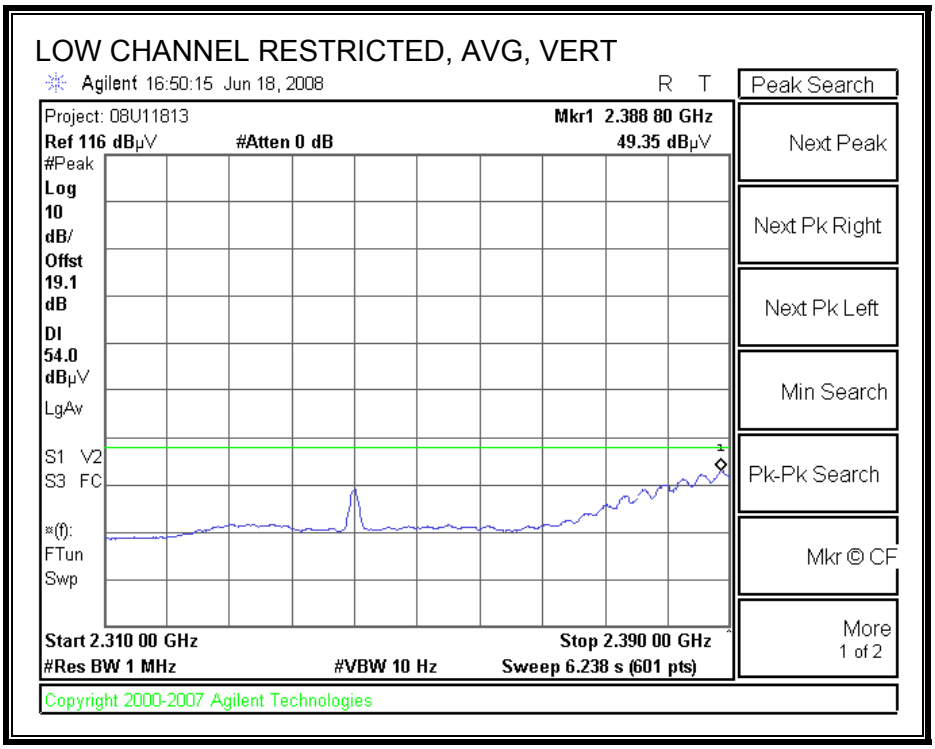
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



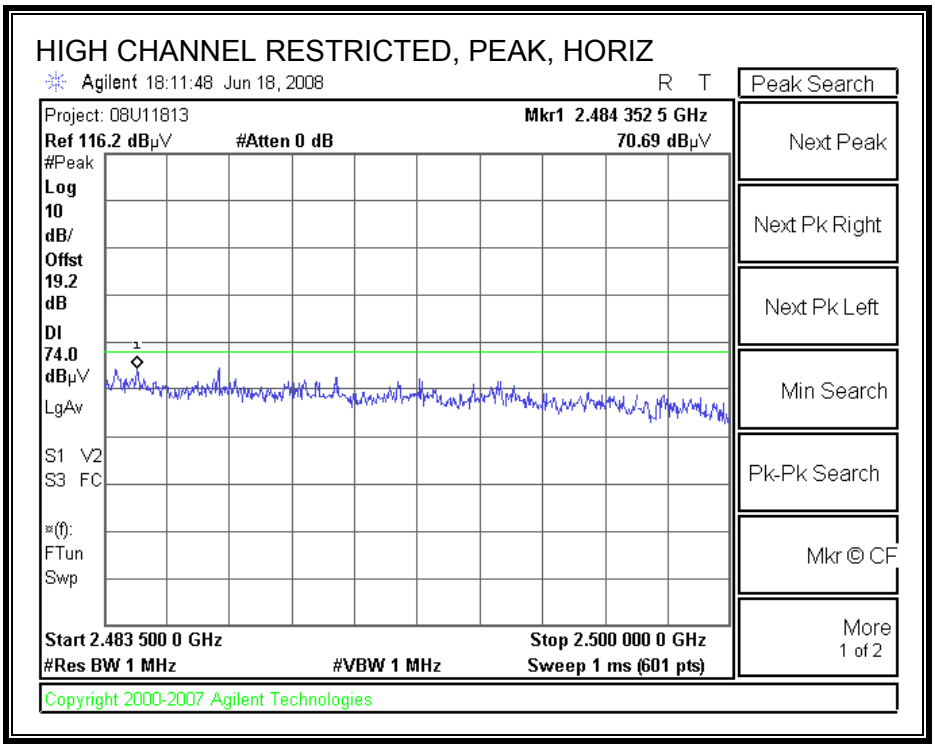


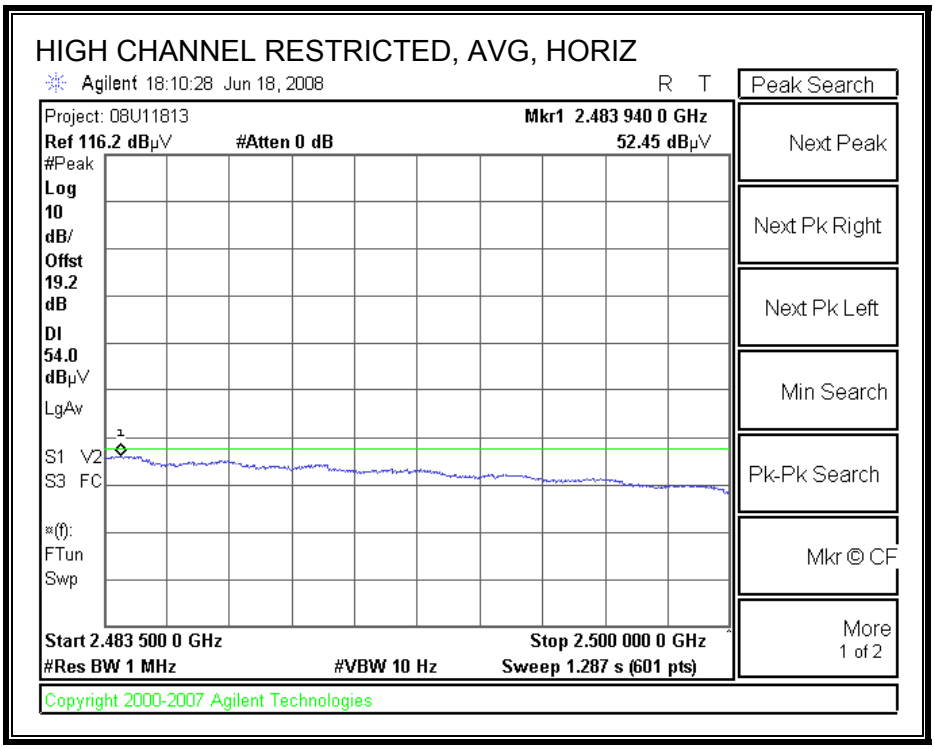
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



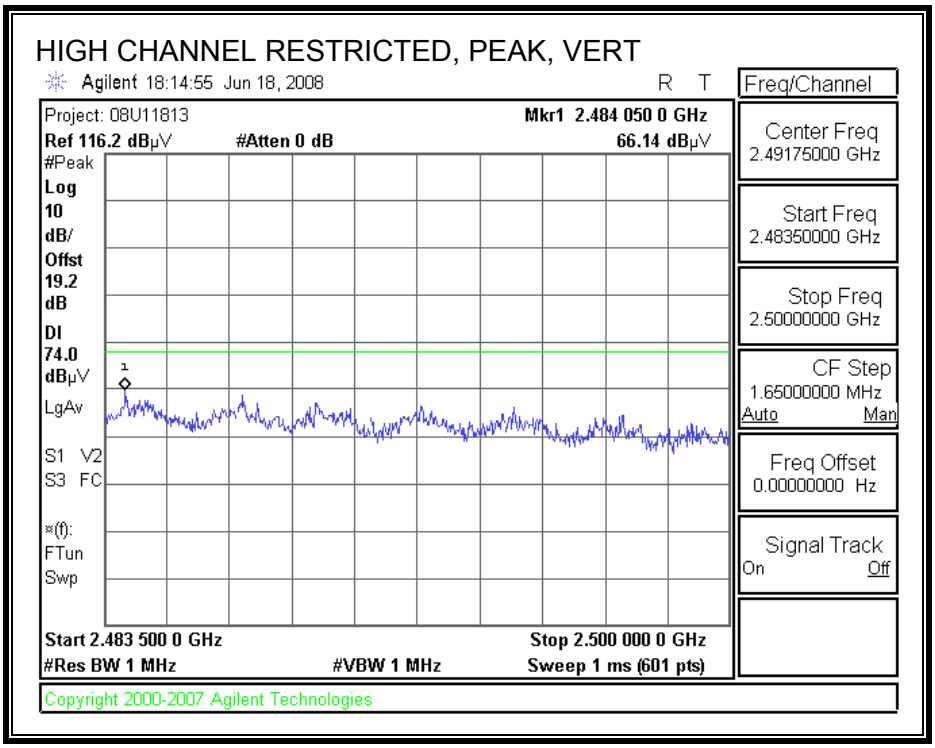


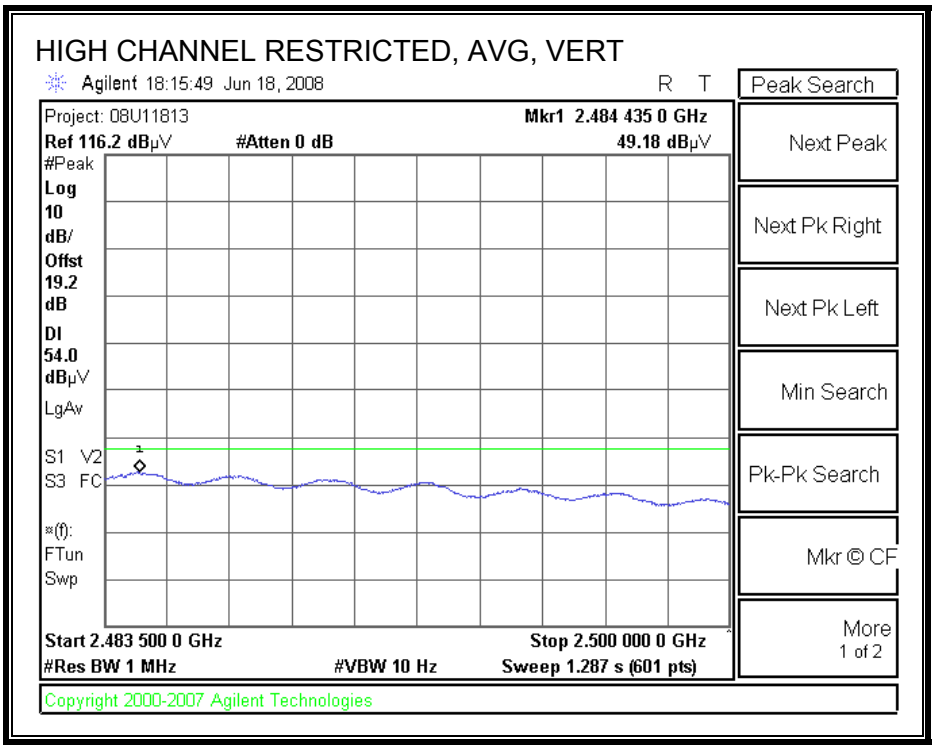
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: Broadcom
Project #: 08U11813
Date: 6/10/2008
Test Engineer: Devin Chang
Configuration: EUT alone
Mode: 2.4GHz HT40 mode Tx

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T145 Agilent 3008A005(			FCC 15.209

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
		C-5m Chamber		R_001

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

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 Ch. 2422MHz															
4.844	3.0	42.4	31.2	33.0	0.0	-34.8	0.0	0.0	40.5	29.4	74	54	-33.5	-24.6	H
4.844	3.0	42.5	31.1	33.0	0.0	-34.8	0.0	0.0	40.6	29.3	74	54	-33.4	-24.7	V
Mid Ch. 2437MHz															
4.874	3.0	43.5	31.2	33.1	0.0	-34.9	0.0	0.0	41.7	29.4	74	54	-32.3	-24.6	V
4.874	3.0	43.7	31.8	33.1	0.0	-34.9	0.0	0.0	41.9	30.0	74	54	-32.1	-24.0	H
High Ch. 2452MHz															
4.904	3.0	44.0	30.6	33.1	0.0	-34.9	0.0	0.0	42.2	28.8	74	54	-31.8	-25.2	H
4.904	3.0	43.2	32.1	33.1	0.0	-34.9	0.0	0.0	41.4	30.3	74	54	-32.6	-23.7	V

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		

7.2.4. 802.11n HT40 MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: Broadcom
Project #: 08U11813
Date: 06/3/2008
Test Engineer: William Zhuang
Configuration: EUT alone
Mode: 5.8GHz HT40 mode

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T73; S/N: 6717 @3m	T144 Miteq 3008A00931			FCC 15.209

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
		A-5m Chamber	HPF_7.6GHz	

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

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 Ch.															
11.510	3.0	34.9	22.1	37.5	11.6	-35.8	0.0	0.7	48.8	36.1	74	54	-25.2	-17.9	V
17.265	3.0	34.9	22.2	41.9	13.3	-33.8	0.0	0.6	56.9	44.2	74	54	-17.1	-9.8	V
11.510	3.0	34.6	22.5	37.5	11.6	-35.8	0.0	0.7	48.6	36.5	74	54	-25.4	-17.5	H
17.265	3.0	35.1	22.1	41.9	13.3	-33.8	0.0	0.6	57.1	44.2	74	54	-16.9	-9.8	H
High Ch															
11.590	3.0	36.6	23.3	37.5	11.7	-35.8	0.0	0.7	50.8	37.5	74	54	-23.2	-16.5	V
17.385	3.0	34.2	21.8	42.3	13.3	-33.8	0.0	0.6	56.7	44.3	74	54	-17.3	-9.7	V
11.590	3.0	34.8	23.2	37.5	11.7	-35.8	0.0	0.7	49.0	37.3	74	54	-25.0	-16.7	H
17.385	3.0	34.3	21.8	42.3	13.3	-33.8	0.0	0.6	56.8	44.3	74	54	-17.2	-9.7	H

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		

7.3. RECEIVER ABOVE 1 GHz

7.3.1. 40 MHz BANDWIDTH IN THE 2.4 GHz BAND

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: Broadcom
Project #: 08U11813
Date: 6/11/2008
Test Engineer: Devin Chang
Configuration: EUT alone
Mode: 2.4GHz Rx mode

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T145 Agilent 3008A005(			FCC 15.209

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
		C-5m Chamber		R_001

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

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)
1.079	3.0	53.1	46.1	25.6	0.0	-36.1	0.0	0.0	42.6	35.6	74	54	-31.4	-18.4	H
1.100	3.0	52.5	47.3	25.7	0.0	-36.1	0.0	0.0	42.1	36.9	74	54	-31.9	-17.1	H
1.666	3.0	55.2	39.1	27.1	0.0	-35.6	0.0	0.0	46.6	30.6	74	54	-27.4	-23.4	H
1.080	3.0	51.8	44.6	25.6	0.0	-36.1	0.0	0.0	41.3	34.2	74	54	-32.7	-19.8	V
1.500	3.0	53.4	46.5	26.7	0.0	-35.8	0.0	0.0	44.3	37.4	74	54	-29.7	-16.6	V
3.000	3.0	52.8	44.7	30.5	0.0	-35.2	0.0	0.0	48.1	39.9	74	54	-26.0	-14.1	V

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		

7.3.2. 40 MHz BANDWIDTH IN THE 5.8 GHz BAND

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: Broadcom
Project #: 08U11813
Date: 05/30/2008
Test Engineer: Can Ming Chung
Configuration: EUT alone
Mode: 5.8GHz HT40 mode RX with worst case

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T145 Agilent 3008A005(			RX RSS 210

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
Thanh 177079008		C-5m Chamber		

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

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)
1.500	3.0	56.7	36.5	26.7	0.4	-35.8	0.0	0.0	48.0	27.8	74	54	-26.0	-26.2	H
1.661	3.0	56.1	38.6	27.1	0.4	-35.6	0.0	0.0	47.9	30.4	74	54	-26.1	-23.6	H
2.323	3.0	54.7	41.5	28.4	0.5	-35.1	0.0	0.0	48.5	35.3	74	54	-25.5	-18.7	H
1.658	3.0	61.5	43.9	27.1	0.4	-35.7	0.0	0.0	53.3	35.7	74	54	-20.7	-18.3	V
2.331	3.0	65.1	45.4	28.4	0.5	-35.1	0.0	0.0	58.9	39.1	74	54	-15.1	-14.9	V
2.659	3.0	56.5	39.9	29.4	0.5	-35.2	0.0	0.0	51.3	34.6	74	54	-22.7	-19.4	V

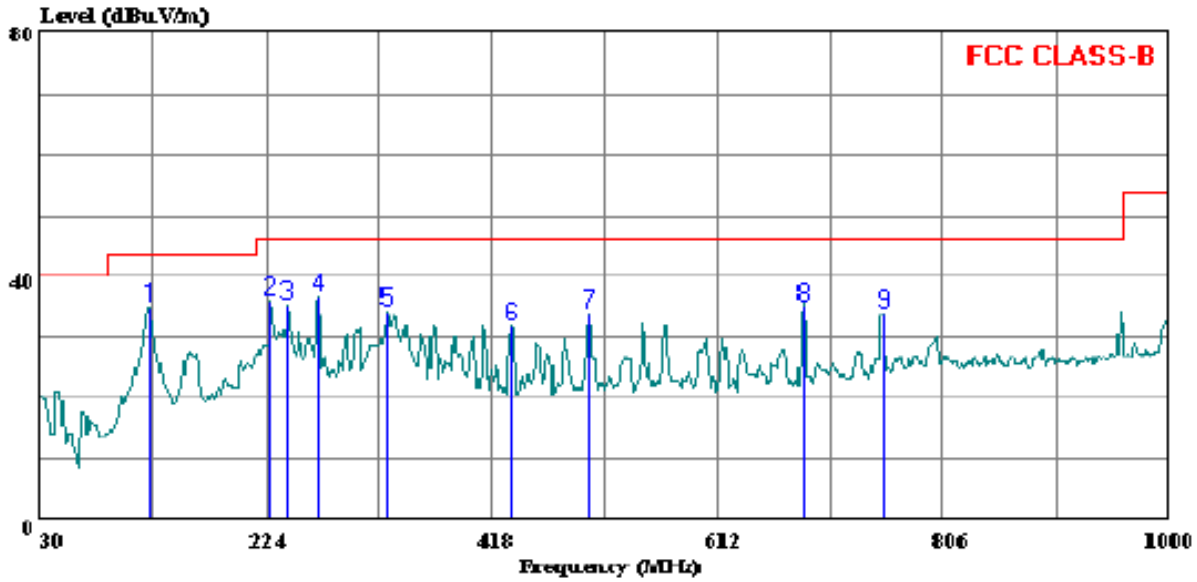
f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field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

7.4. WORST-CASE BELOW 1 GHz

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

Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 6 File#: 08u11813.emi Date: 05-29-2008 Time: 10:27:13



Trace: 5 Ref Trace:

Condition: FCC CLASS-B HORIZONTAL
Test Operator:: Chin Pang
Project #: : 08U11813
Company: : Broadcom
Configuration:: EUT Alone
Mode : : TX Worst-case
Target: : FCC Class B

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	124.090	51.55	-16.52	35.03	43.50	-8.47	Peak
2	227.880	54.48	-18.57	35.91	46.00	-10.09	Peak
3	242.430	53.34	-18.02	35.32	46.00	-10.68	Peak
4	269.590	53.67	-17.05	36.62	46.00	-9.38	Peak
5	327.790	49.25	-15.12	34.13	46.00	-11.87	Peak
6	434.490	44.39	-12.61	31.78	46.00	-14.22	Peak
7	502.390	45.23	-11.30	33.93	46.00	-12.07	Peak
8	685.720	43.82	-8.67	35.15	46.00	-10.85	Peak
9	754.590	41.77	-7.68	34.09	46.00	-11.91	Peak

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

Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

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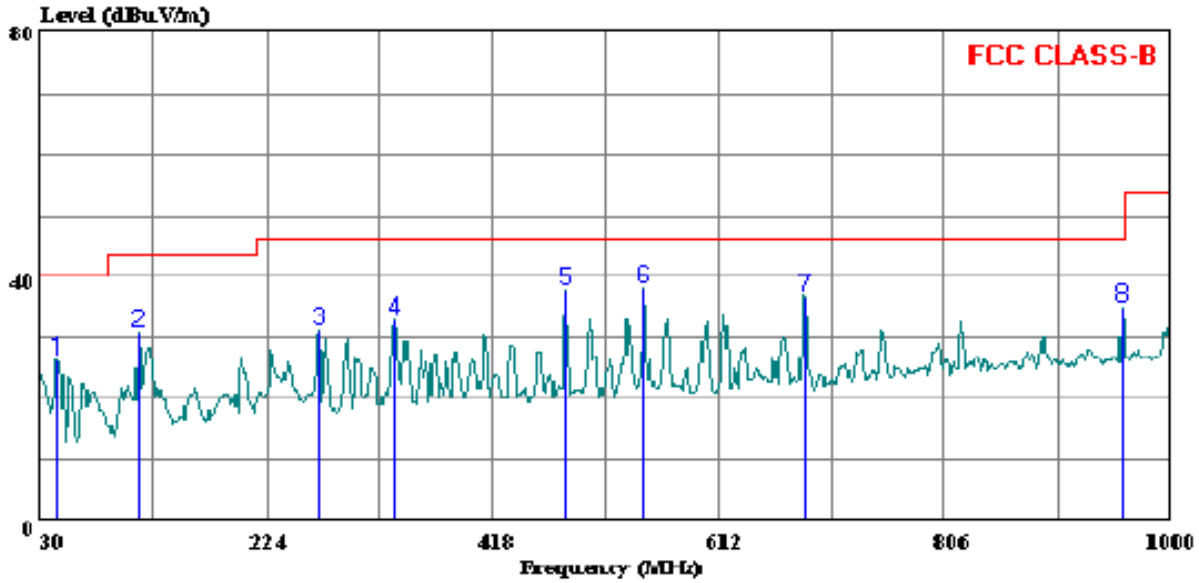


Trace: 1 Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator:: Chin Pang
Project #: : 08U11813
Company: : Broadcom
Configuration:: EUT Alone
Mode : : TX Worst-case
Target: : FCC Class B

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	44.550	45.14	-18.84	26.30	40.00	-13.70	Peak
2	114.390	48.45	-17.76	30.70	43.50	-12.81	Peak
3	269.590	48.28	-17.05	31.23	46.00	-14.77	Peak
4	334.580	47.86	-14.99	32.87	46.00	-13.13	Peak
5	480.080	49.56	-11.67	37.89	46.00	-8.11	Peak
6	547.980	48.33	-10.40	37.93	46.00	-8.07	Peak
7	685.720	45.21	-8.67	36.54	46.00	-9.46	Peak
8	958.290	38.58	-3.70	34.88	46.00	-11.12	Peak

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 *	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

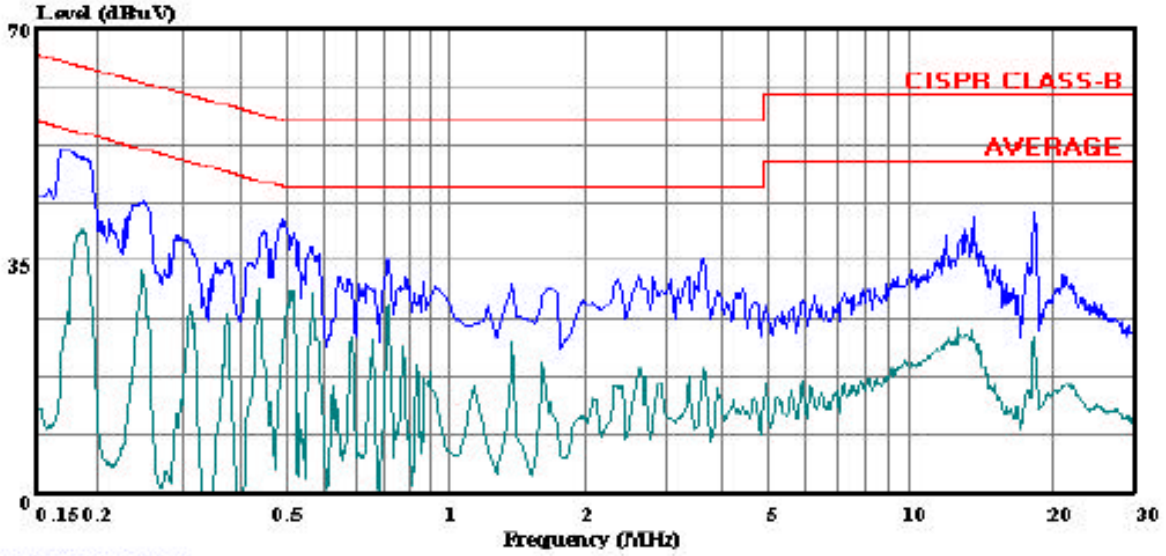
CONDUCTED EMISSIONS DATA (115VAC 60Hz)

Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.17	51.86	--	39.32	0.00	64.96	54.96	-13.10	-15.64	L1
0.49	40.53	--	30.28	0.00	56.10	46.10	-15.57	-15.82	L1
13.77	41.42	--	24.43	0.00	60.00	50.00	-18.58	-25.57	L1
0.19	49.03	--	39.48	0.00	63.99	53.99	-14.96	-14.51	L2
0.49	42.52	--	32.00	0.00	56.18	46.18	-13.66	-14.18	L2
13.84	41.64	--	26.93	0.00	60.00	50.00	-18.36	-23.07	L2
6 Worst Data									

LINE 1 RESULTS

Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 7 File#: 08U11813.EMI Date: 05-29-2008 Time: 14:03:34



(Line Conduction)

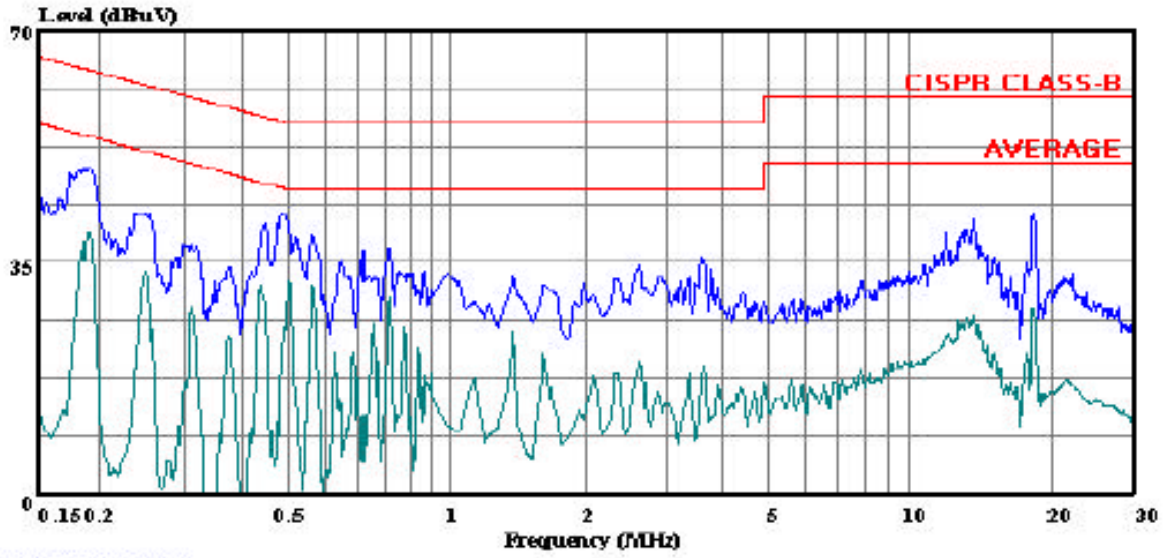
Trace: 5 Ref Trace:

Condition: CISPR CLASS-B
Test Operator:: Chin Pang
Project #: : 08U11813
Company: : Broadcom
Configuration:: EUT alone
Mode: : TX (Worst Case)
Target: : FCC Class B
Voltage: : 115VAC/ 60Hz
: L1: Peak (Blue); Avg (Green)

LINE 2 RESULTS

Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 14 File#: 08U11813.EMI Date: 05-29-2008 Time: 14:12:33



(Line Conduction)

Trace: 12 Ref Trace:

Condition: CISPR CLASS-B
Test Operator:: Chin Pang
Project #: : 08U11813
Company: : Broadcom
Configuration:: EUT Alone
Mode: : TX (Worst Case)
Target: : FCC Class B
Voltage: : 115VAC/ 60Hz
: L2: Peak (Blue); Avg (Green)