FCC CFR47 PART 15 SUBPART C

CLASS II PERMISSIVE CHANGE
TEST REPORT

FOR

802.11 b/g/n Radio Module with 2.4GHz Whip Antenna

MODEL NUMBER: WL11D

FCC ID: ACJ9TGWL11D

REPORT NUMBER: 11J13842-1

ISSUE DATE: JUNE 22, 2011

Prepared for
PANASONIC CORPORATION OF NORTH AMERICA
ONE PANASONIC WAY, 4B-8
SECAUCUS, NEW JERSEY 07094, U.S.A.

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	06/22/11	Initial Issue	F. Ibrahim

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	PANASONIC CORPORATION OF NORTH AMERICA ONE PANASONIC WAY, 4B-8 SECAUCUS, NEW JERSEY 07094, U.S.A.
EUT DESCRIPTION:	802.11 b/g/n Radio Module with 2.4GHz Whip Antenna
MODEL:	WL11D
SERIAL NUMBER:	N/A
DATE TESTED:	JUNE 20-21, 2011

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:

FRANK IBRAHIM
EMC SUPERVISOR
UL CCS

Tested By:

TOM CHEN
EMC ENGINEER
UL CCS

2. 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.

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%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11b/g/n is an Atheros Communications AR5B95, 802.11n 1x1 PCIe Minicard Transceiver that operates in the 2.4GHz. The card supports 1x1 for 802.11n in both the 20MHz and 40MHz channels and in legacy modes is supported.

The radio module is manufactured by Atheros.

5.2. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The major change filed under this application is adding external antenna.

5.3. MAXIMUM OUTPUT POWER

Same power values were used from original report;(Report No 81029005).

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

Whip antenna with 5dBi in 2.4GHz is added.

5.5. SOFTWARE AND FIRMWARE

The test utility software used during testing was Atheros ART R0.9 B34.

5.6. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power. Radiated Emissions below 1 GHz was performed with EUT set to transmit at the channel with highest output power.

Worst-case data rates used per input from the client are as follows:

11b: 1Mbps
11g: 6 Mbps
11n HT20: MCS0 6.5Mbps.
11n HT40: MCS0 13.5Mbps

5.6 DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Panasonic	Toughbook (CF-31)	CF31JEGAXMM	DoC
Laptop Deck	Panasonic	CF-VEB272	9DKSA 02245	DoC
AC/DC	Panasonic	CF-AA5713A M1	5713AM110Z12971A	DoC

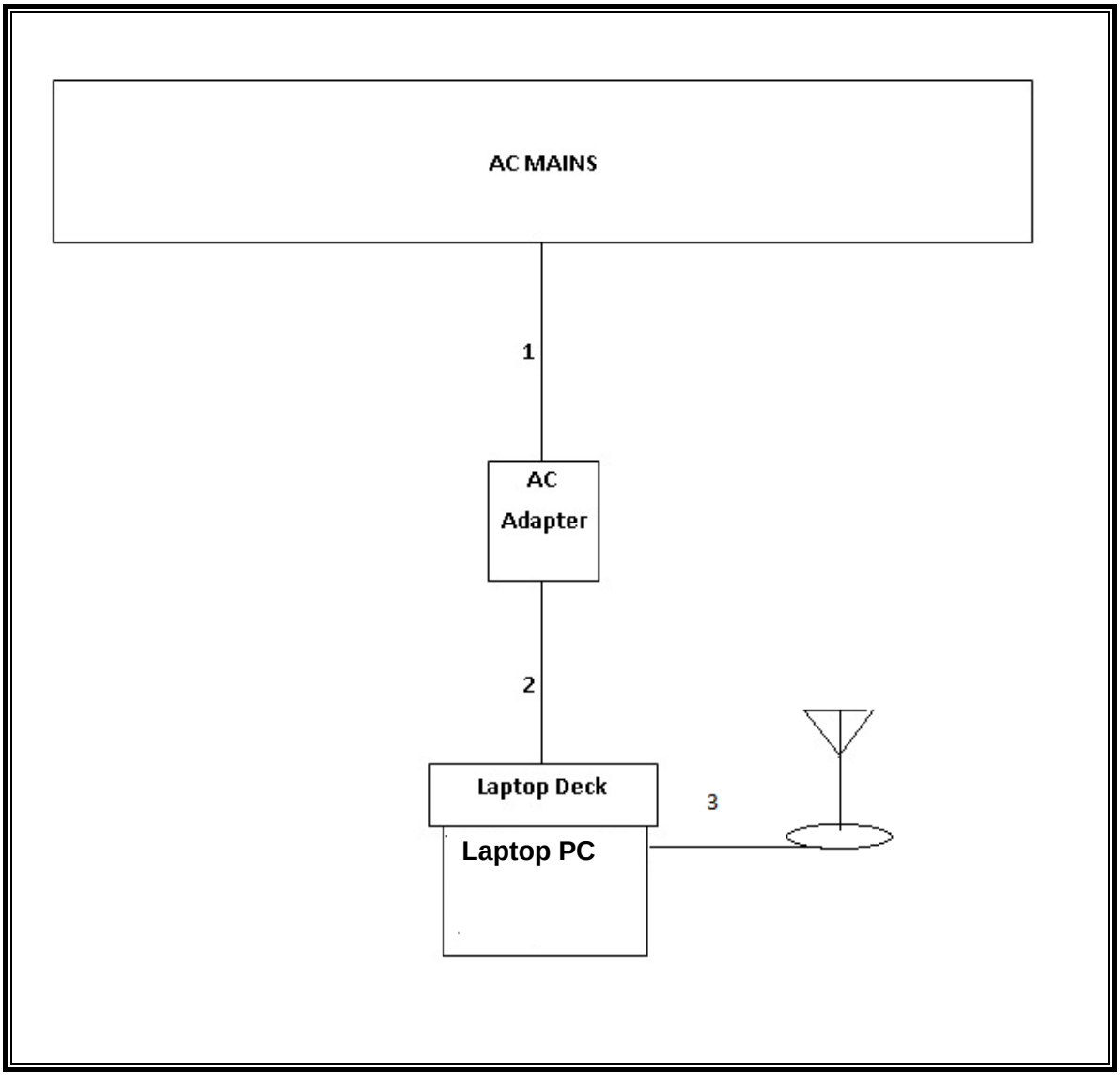
I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	AC	1	AC	Un-Sheilded	180 cm	N/A
2	DC	1	DC	Un-Sheilded	180 cm	N/A
3	ANT	1	SMA	Sheilded	90 cm	N/A

TEST SETUP

The EUT is installed in a host laptop computer during the tests. Test software exercised the radio card. A laptop computer was used to configure the EUT to continuously transmit at a specified output power or continuously receive on the channel specified in the test data. For transmit modes the worst case was evaluated.

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, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	07/12/10	07/12/11
Antenna, Horn, 18 GHz	EMCO	3115	C00783	06/29/10	06/29/11
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	07/14/10	07/14/11
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	01/27/11	01/27/12
Reject Filter, 2.4-2.5 GHz	Micro-Tronics	BRC13192	N02683		CNR
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	06/08/11	06/05/13
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/30/10	08/30/11
LISN, 30 MHz	FCC	LISN-50/250-2	N02625	11/10/10	11/10/11

7. RADIATED TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

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.

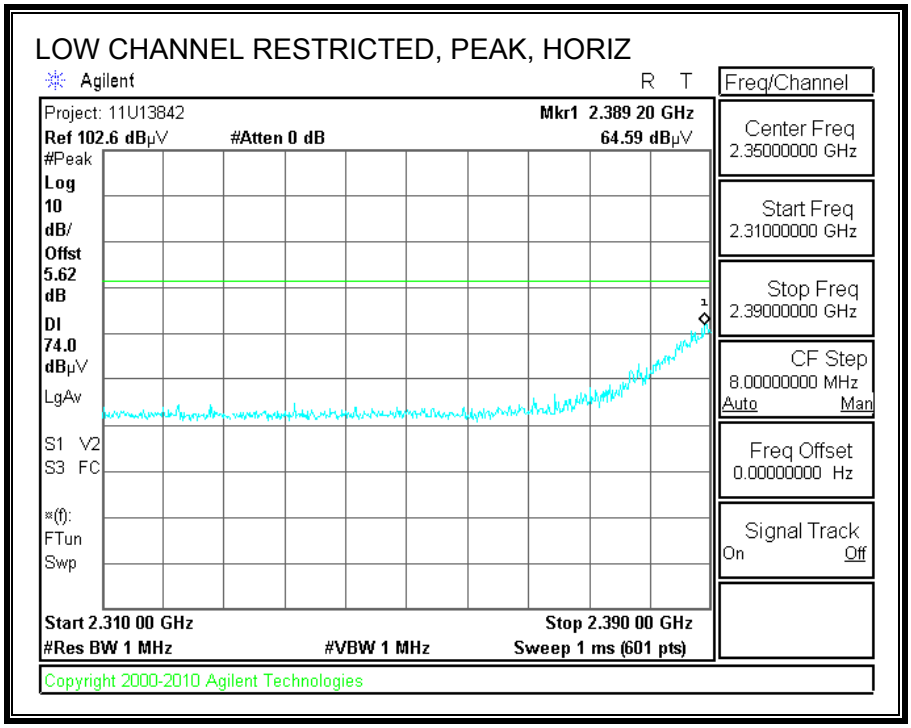
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

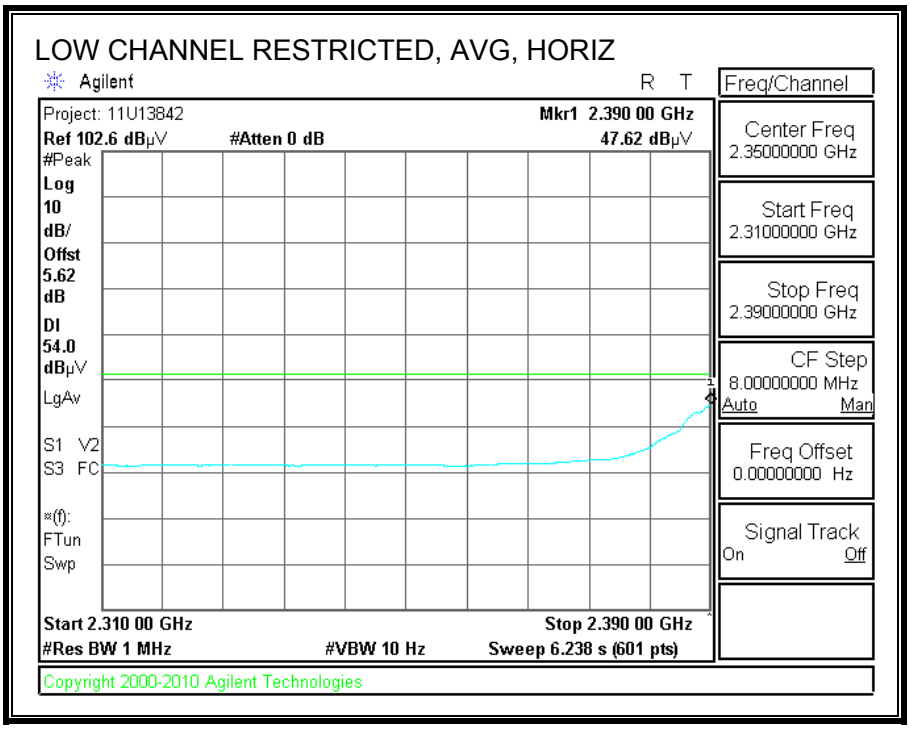
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

7.2. TRANSMITTER ABOVE 1 GHz (worst-case modes)

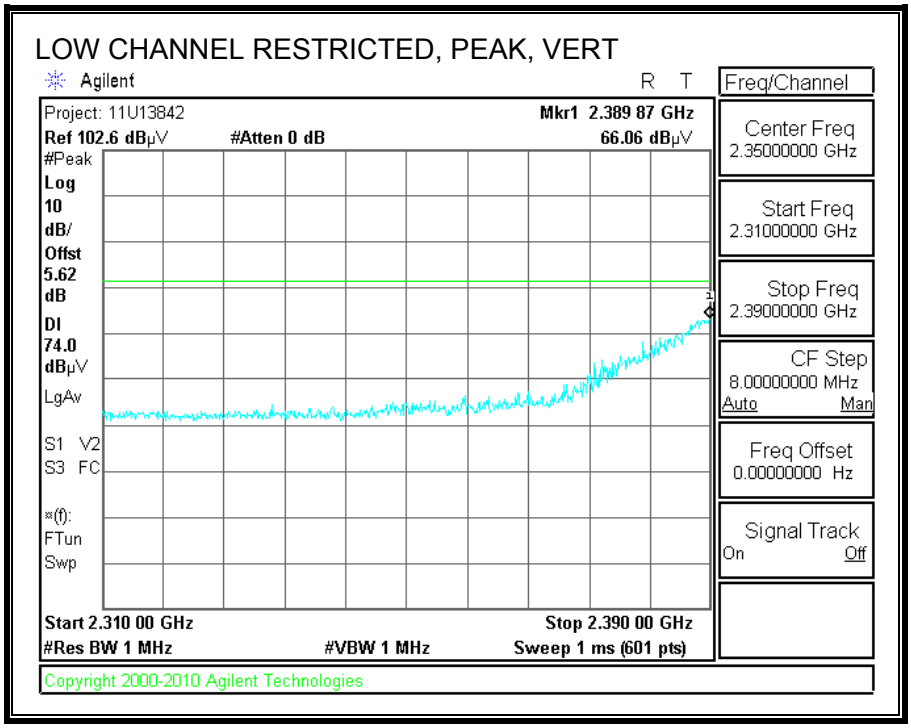
7.2.1. 2.4 GHz BAND b MODE

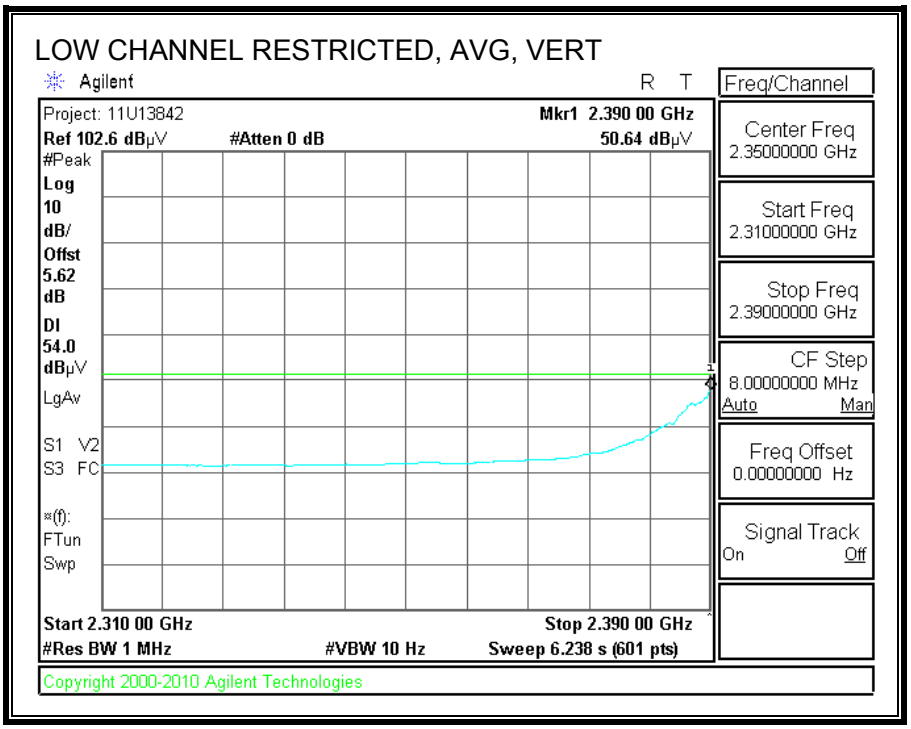
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



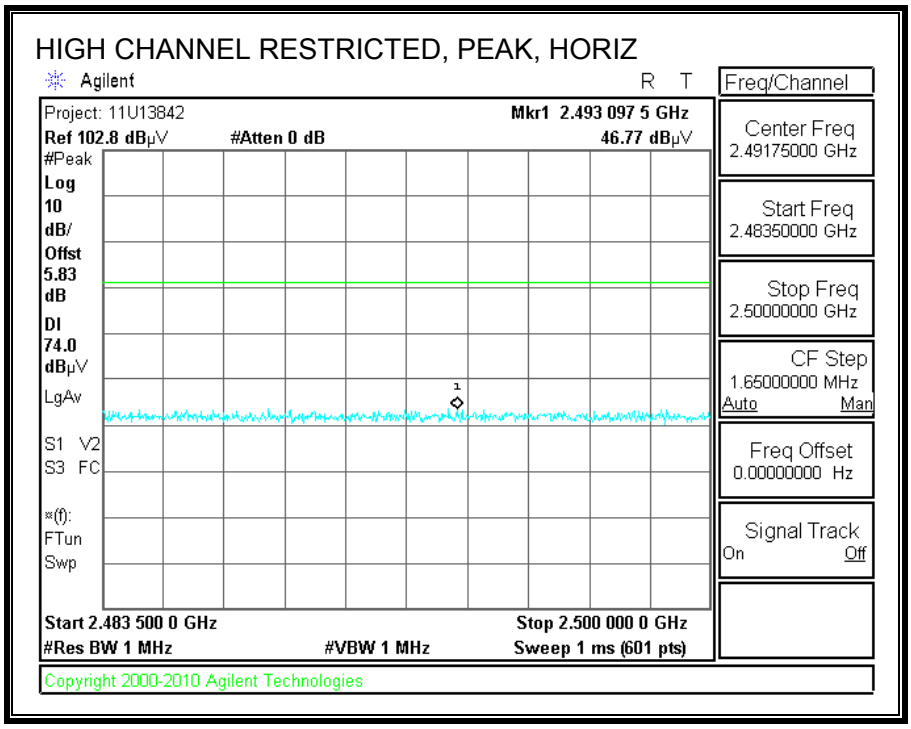


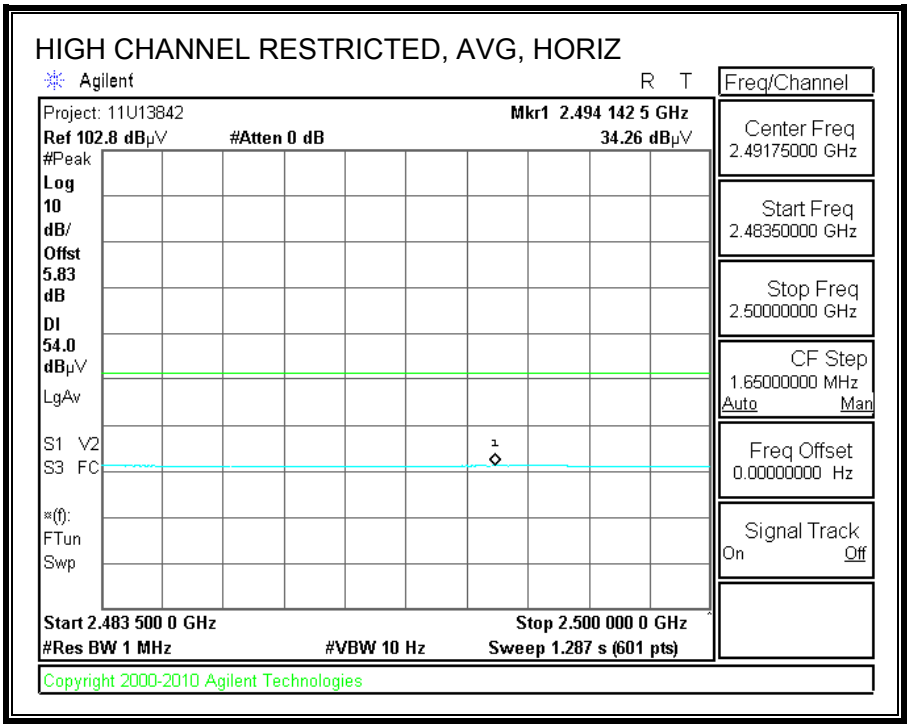
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



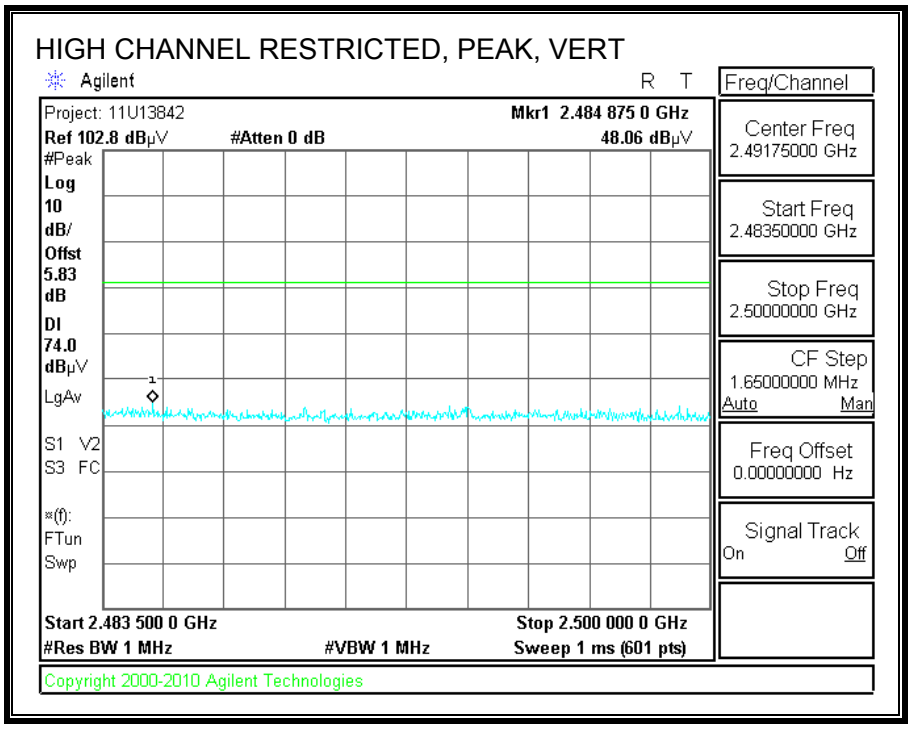


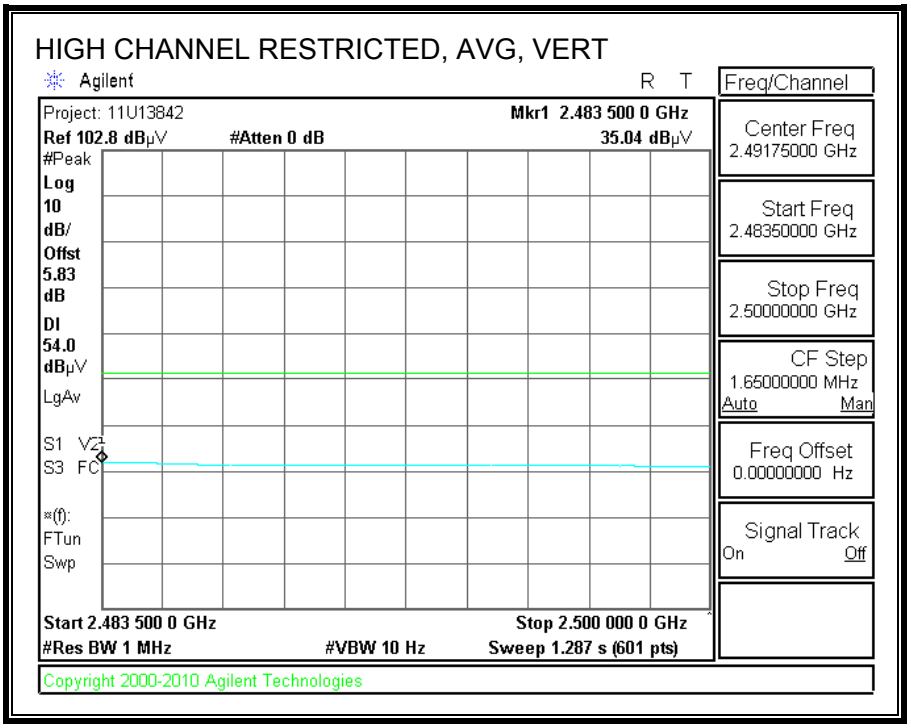
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Tom Chen
Date: 06/20/11
Project #: 11J13842
Company: Panasonic
Test Target: FCC Class B
Mode Oper: b mode, TX

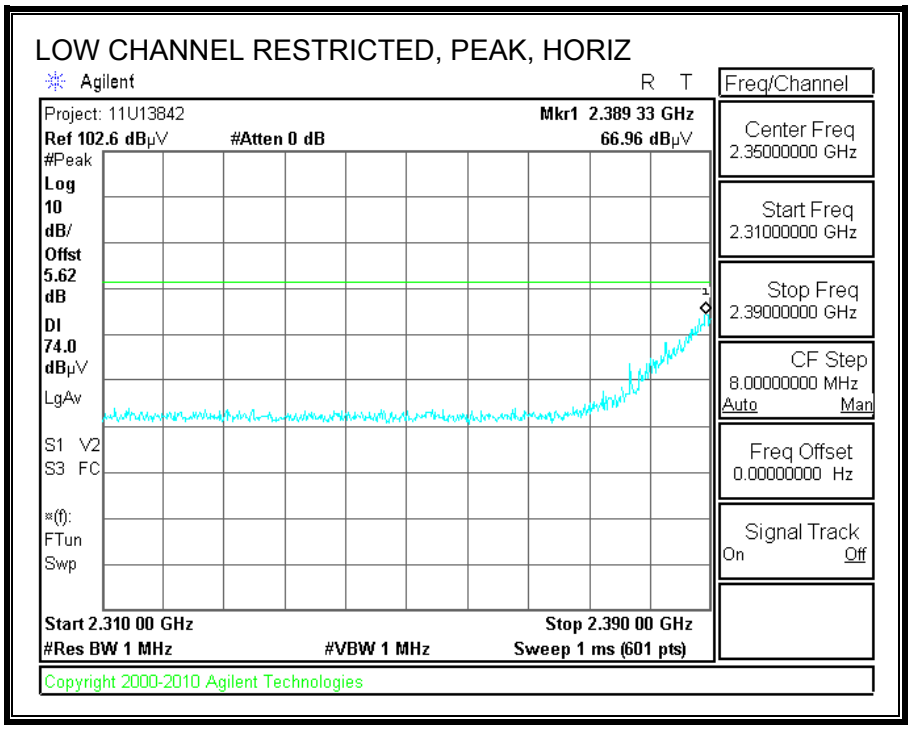
f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin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

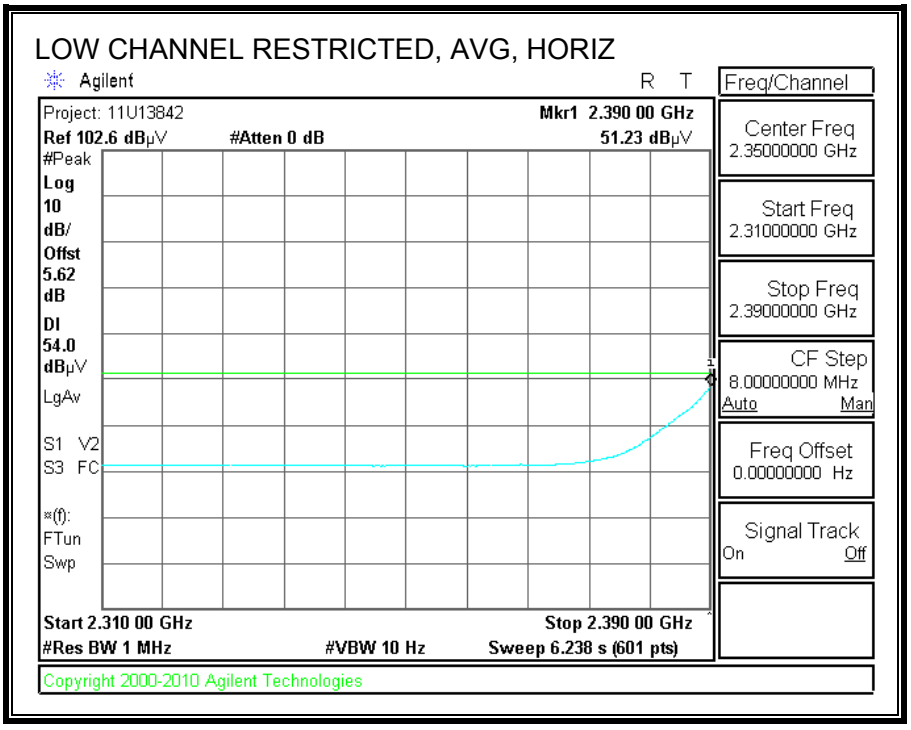
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
2412 MHz, b mode													
4.824	3.0	37.4	32.7	5.8	-34.8	0.0	0.0	41.0	74.0	-33.0	H	P	
4.824	3.0	29.0	32.7	5.8	-34.8	0.0	0.0	32.6	54.0	-21.4	H	A	
4.824	3.0	36.4	32.7	5.8	-34.8	0.0	0.0	40.1	74.0	-33.9	V	P	
4.824	3.0	26.1	32.7	5.8	-34.8	0.0	0.0	29.7	54.0	-24.3	V	A	
2437 MHz, b mode													
4.874	3.0	43.1	32.7	5.8	-34.8	0.0	0.0	46.8	74.0	-27.2	V	P	
4.874	3.0	39.4	32.7	5.8	-34.8	0.0	0.0	43.1	54.0	-10.9	V	A	
4.874	3.0	46.3	32.7	5.8	-34.8	0.0	0.0	50.0	74.0	-24.0	H	P	
4.874	3.0	44.1	32.7	5.8	-34.8	0.0	0.0	47.8	54.0	-6.2	H	A	
2462 MHz, b mode													
4.924	3.0	41.7	32.7	5.9	-34.8	0.0	0.0	45.5	74.0	-28.5	H	P	
4.924	3.0	37.5	32.7	5.9	-34.8	0.0	0.0	41.3	54.0	-12.7	H	A	
7.386	3.0	35.1	35.6	7.3	-34.1	0.0	0.0	43.9	74.0	-30.1	H	P	
7.386	3.0	23.3	35.6	7.3	-34.1	0.0	0.0	32.1	54.0	-21.9	H	A	
4.924	3.0	39.0	32.7	5.9	-34.8	0.0	0.0	42.8	74.0	-31.2	V	P	
4.924	3.0	31.7	32.7	5.9	-34.8	0.0	0.0	35.5	54.0	-18.5	V	A	

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

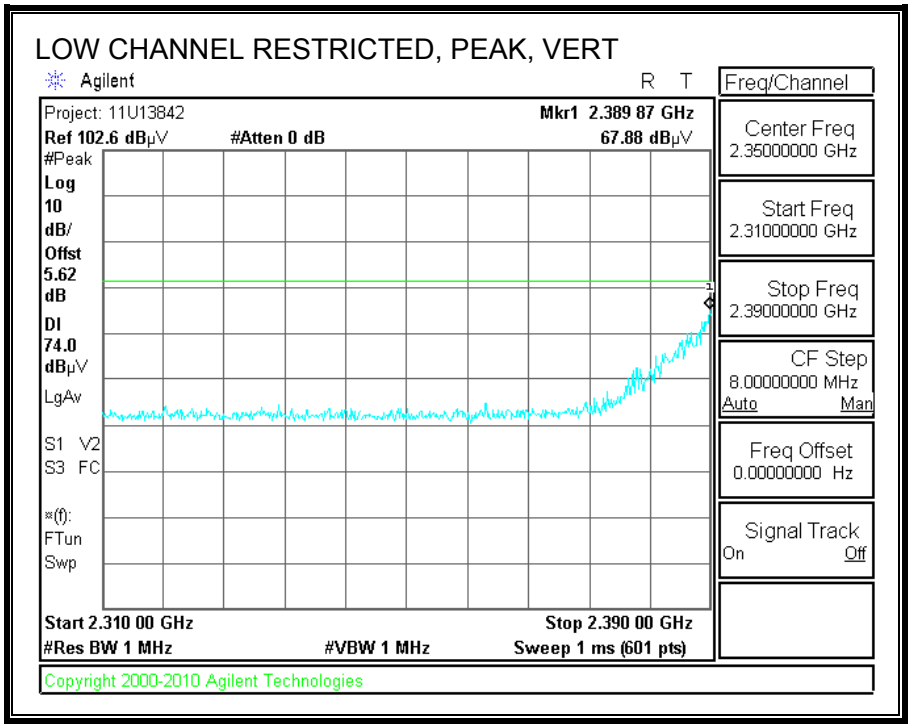
7.2.2. 2.4 GHz BAND g MODE

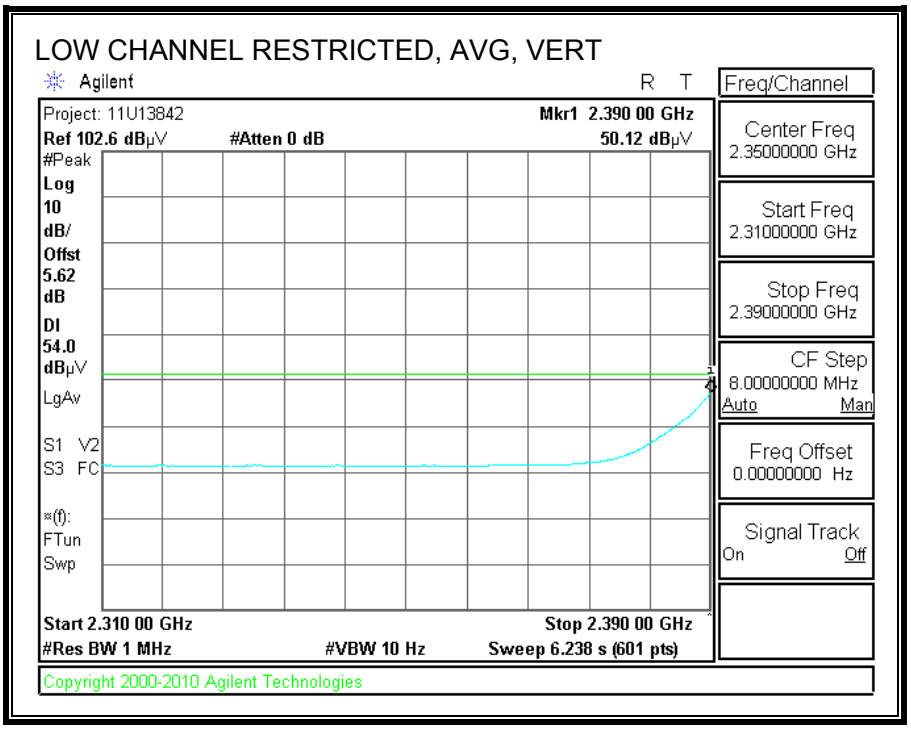
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



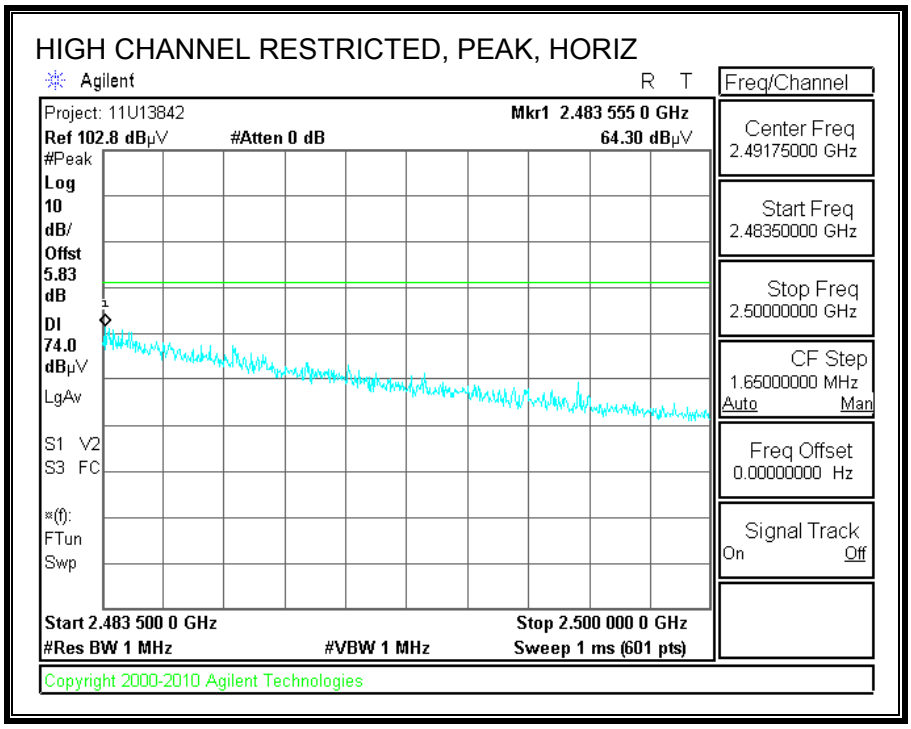


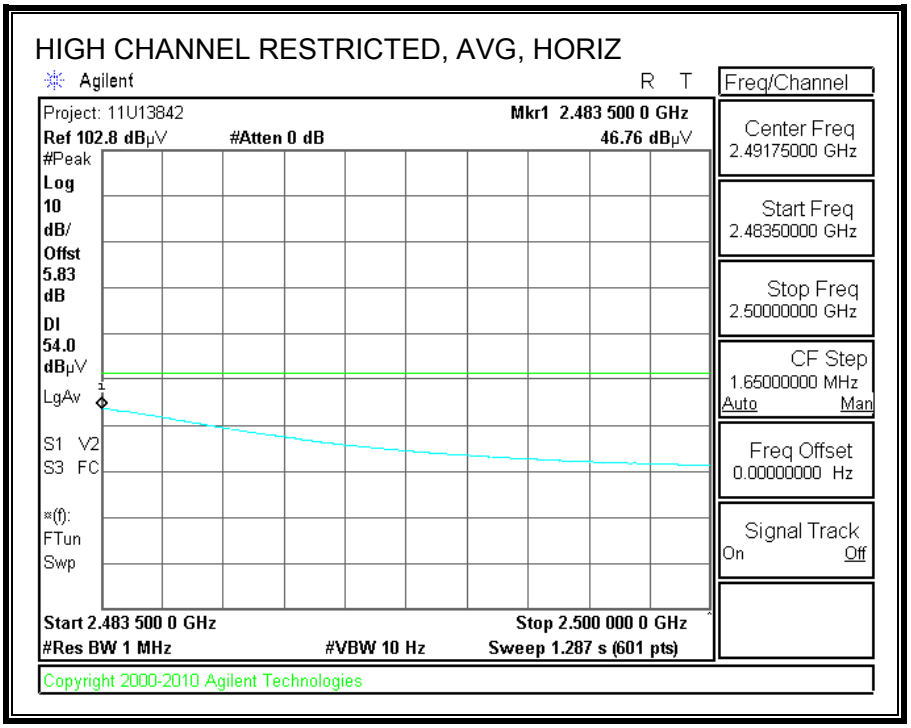
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



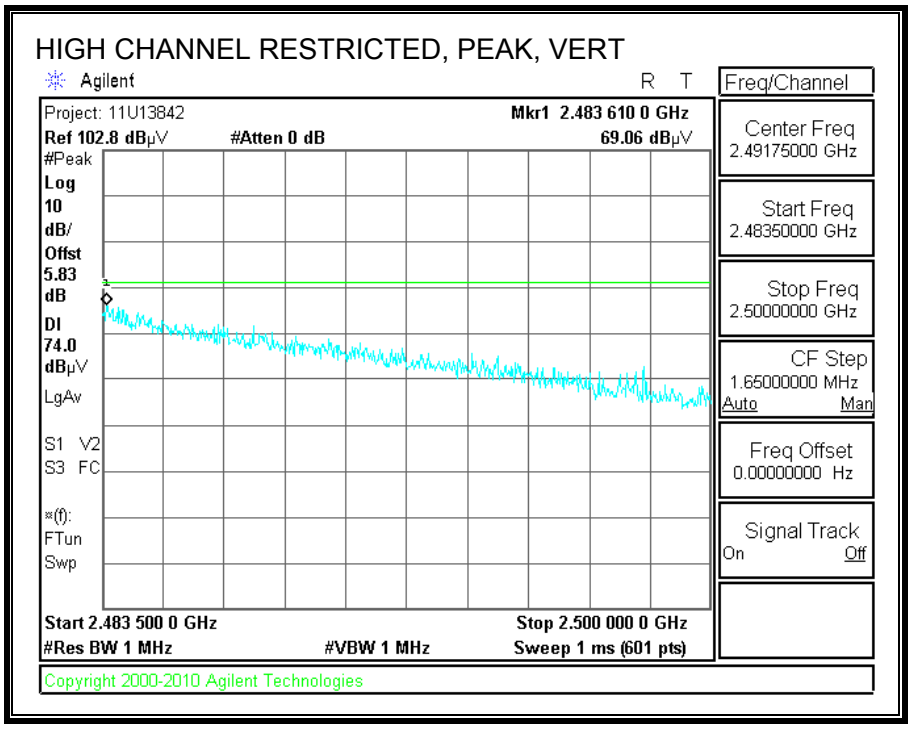


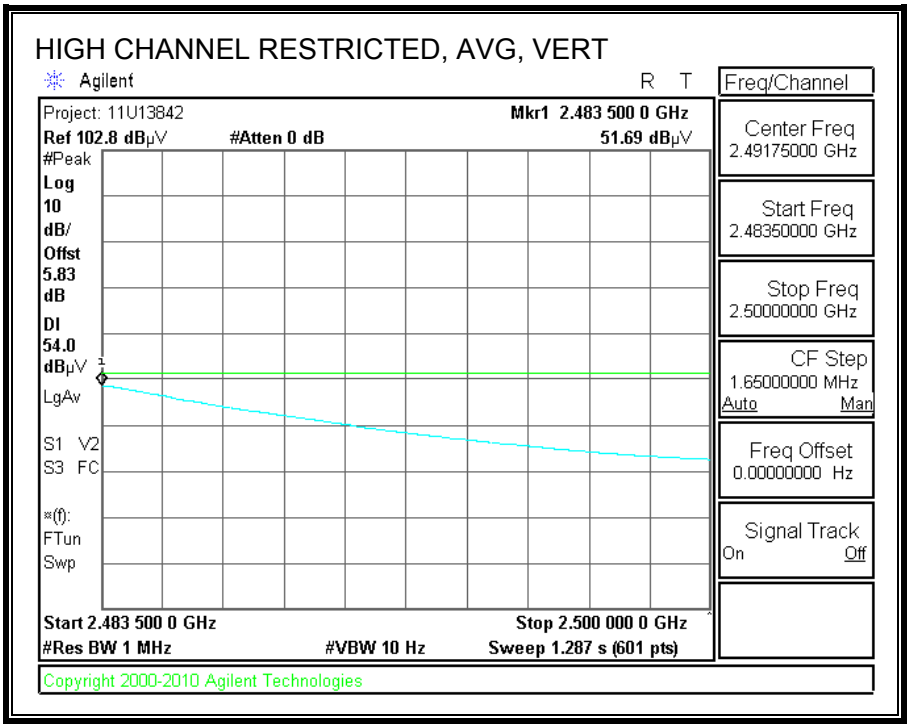
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Tom Chen
Date: 06/20/11
Project #: 11J13842
Company: Panasonic
Test Target: FCC Class B
Mode Oper: g mode, TX

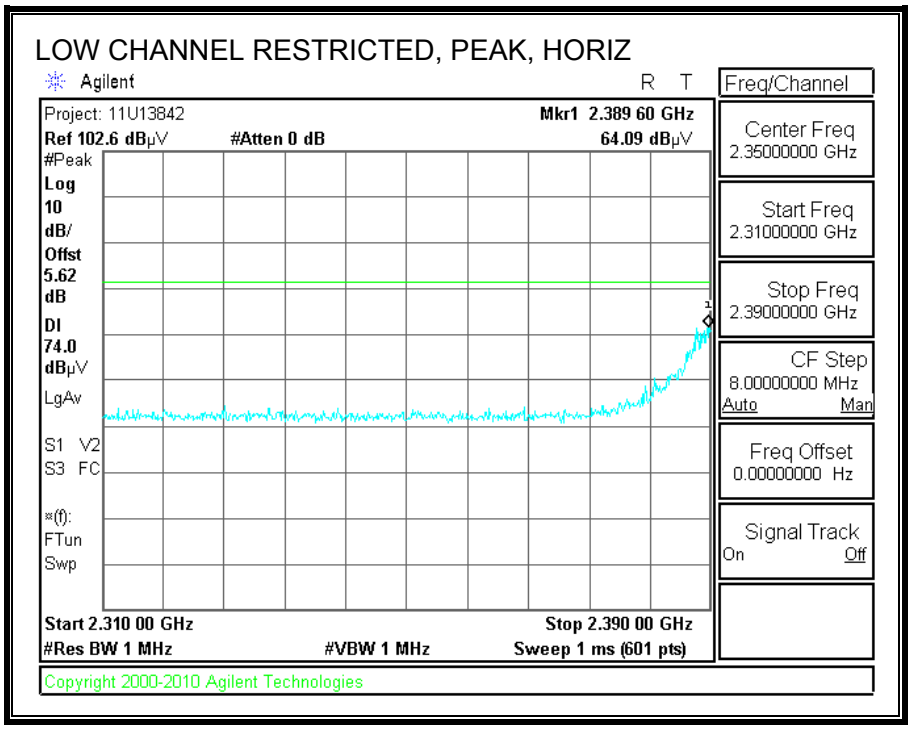
f	Measurement Frequency	Amp	Preamp Gain		Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters		Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m		Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength		Margin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

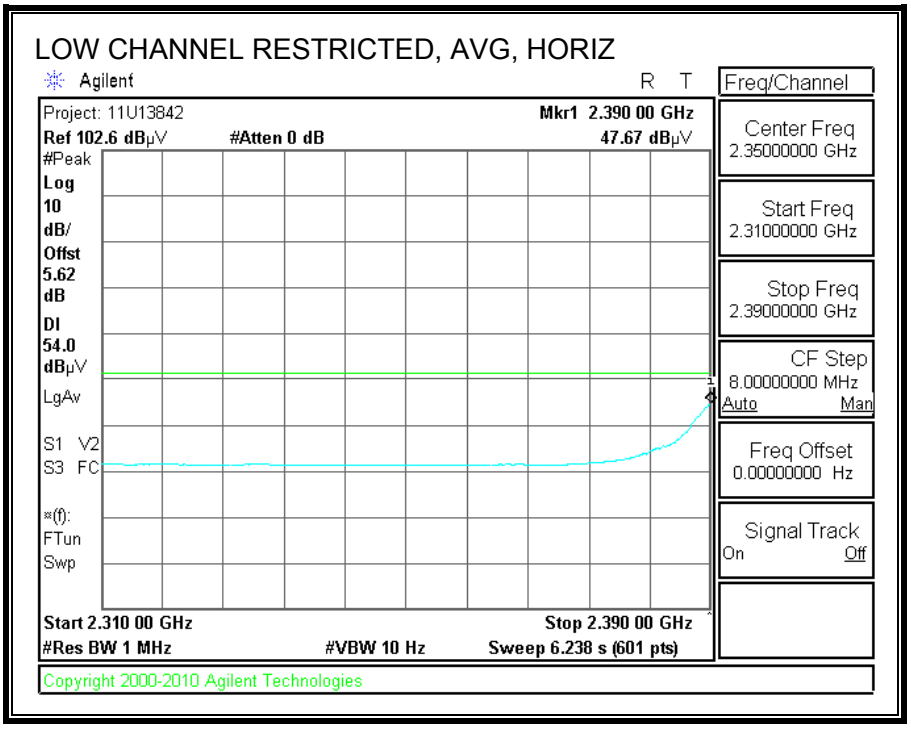
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
2412 MHz, g mode													
4.824	3.0	38.7	32.7	5.8	-34.8	0.0	0.0	42.3	74.0	-31.7	H	P	
4.824	3.0	25.6	32.7	5.8	-34.8	0.0	0.0	29.2	54.0	-24.8	H	A	
4.824	3.0	35.6	32.7	5.8	-34.8	0.0	0.0	39.2	74.0	-34.8	V	P	
4.824	3.0	23.9	32.7	5.8	-34.8	0.0	0.0	27.5	54.0	-26.5	V	A	
2437 MHz, g mode													
4.874	3.0	41.8	32.7	5.8	-34.8	0.0	0.0	45.5	74.0	-28.5	V	P	
4.874	3.0	29.3	32.7	5.8	-34.8	0.0	0.0	33.0	54.0	-21.0	V	A	
4.874	3.0	48.7	32.7	5.8	-34.8	0.0	0.0	52.4	74.0	-21.6	H	P	
4.874	3.0	35.6	32.7	5.8	-34.8	0.0	0.0	39.3	54.0	-14.7	H	A	
2462 MHz, g mode													
4.924	3.0	38.3	32.7	5.9	-34.8	0.0	0.0	42.1	74.0	-31.9	V	P	
4.924	3.0	25.7	32.7	5.9	-34.8	0.0	0.0	29.5	54.0	-24.5	V	A	
4.924	3.0	42.7	32.7	5.9	-34.8	0.0	0.0	46.5	74.0	-27.5	H	P	
4.924	3.0	28.8	32.7	5.9	-34.8	0.0	0.0	32.6	54.0	-21.4	H	A	

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

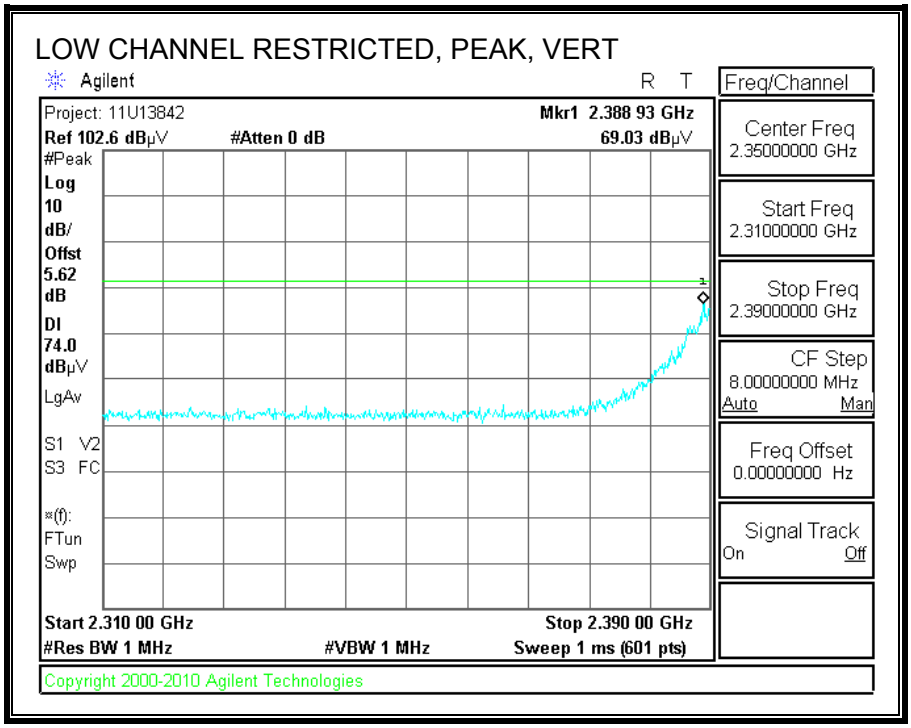
7.2.3. 2.4 GHz BAND 11n HT20 MODE

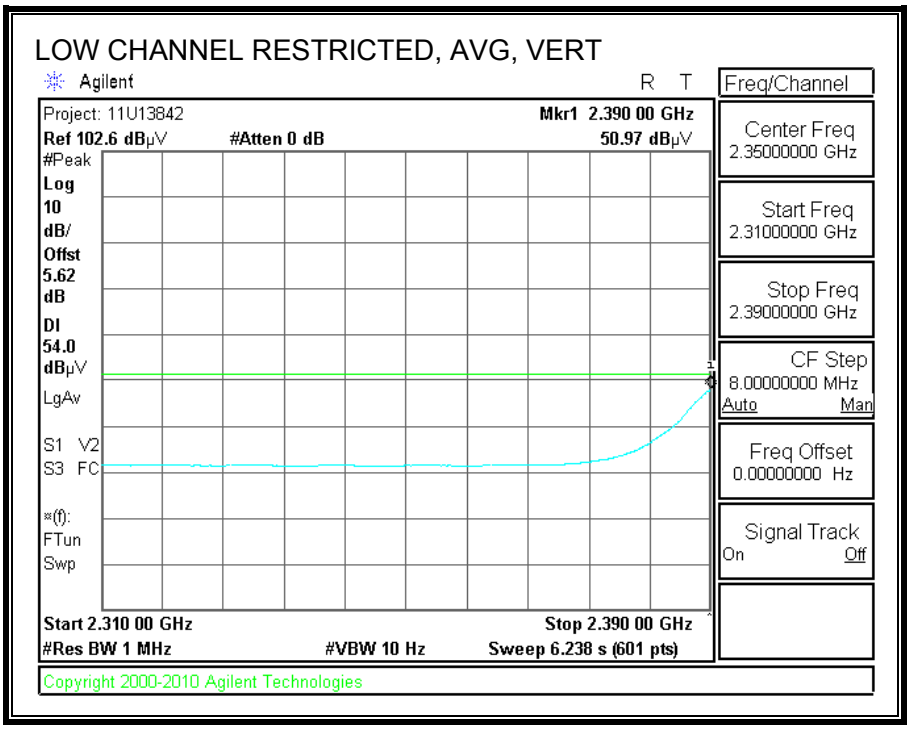
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



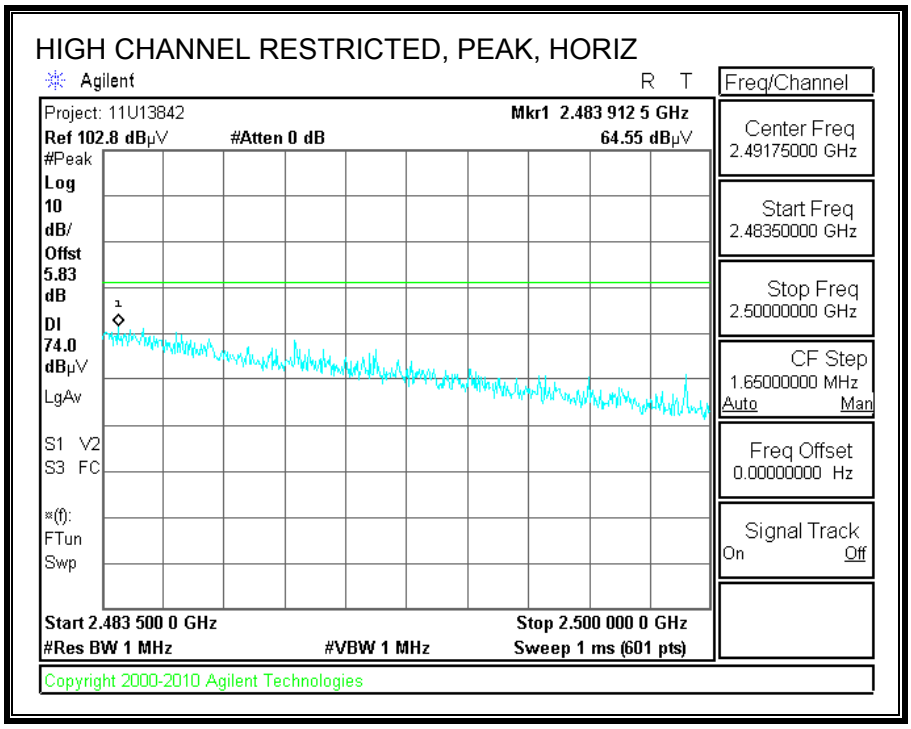


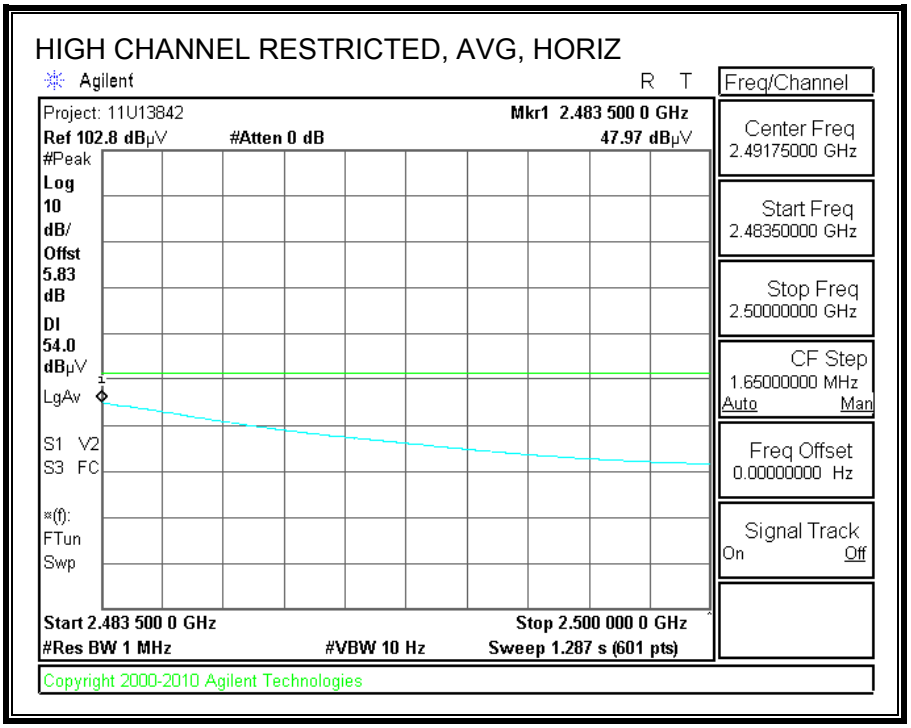
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



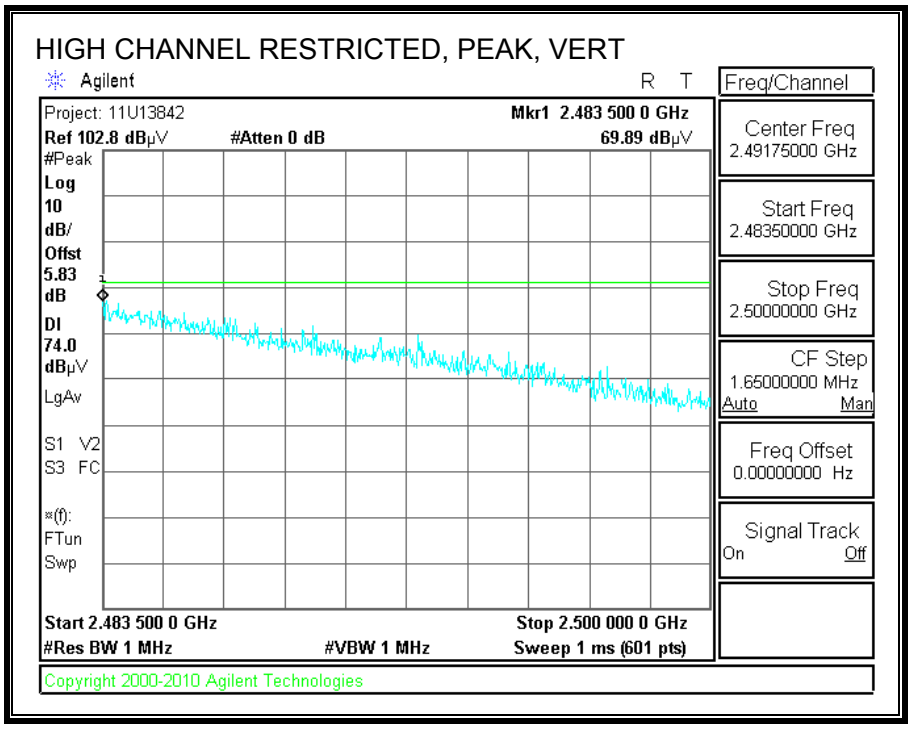


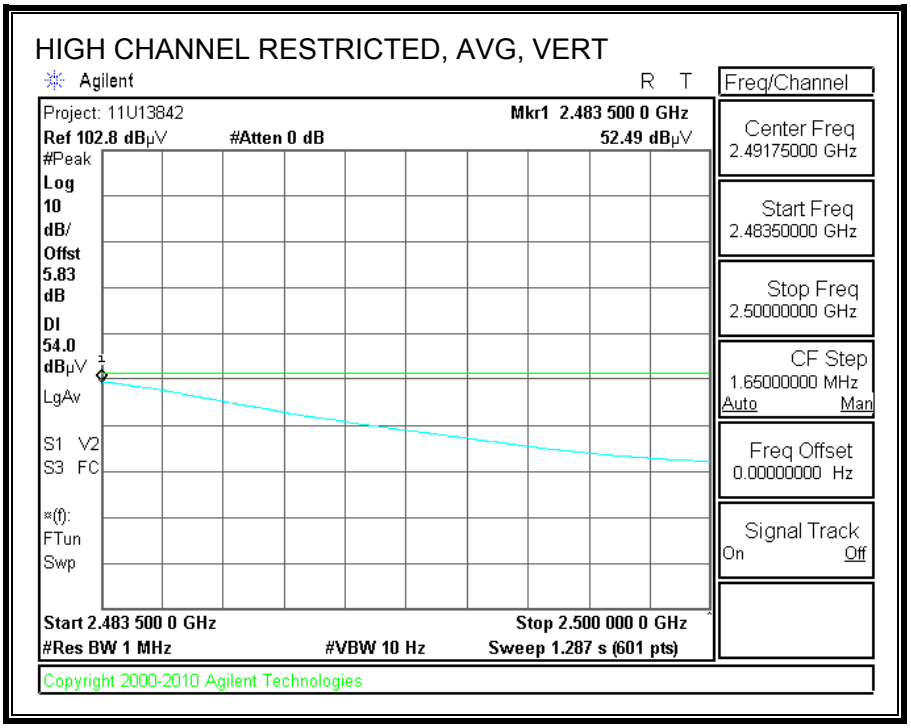
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

Test Engr: Tom Chen
Date: 06/21/11
Project #: 11J13842
Company: Panasonic
Test Target: FCC Class B
Mode Oper: HT20 ,TX mode

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

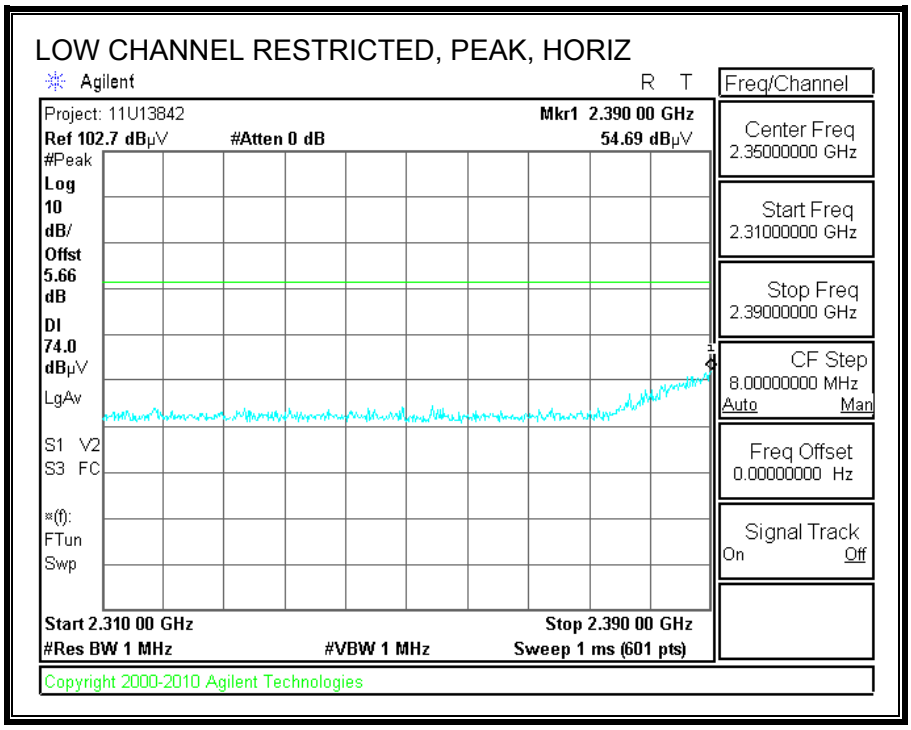
Average Field Strength Limit			
Peak Field Strength Limit			
Margin vs. Average Limit			
Margin vs. Peak Limit			

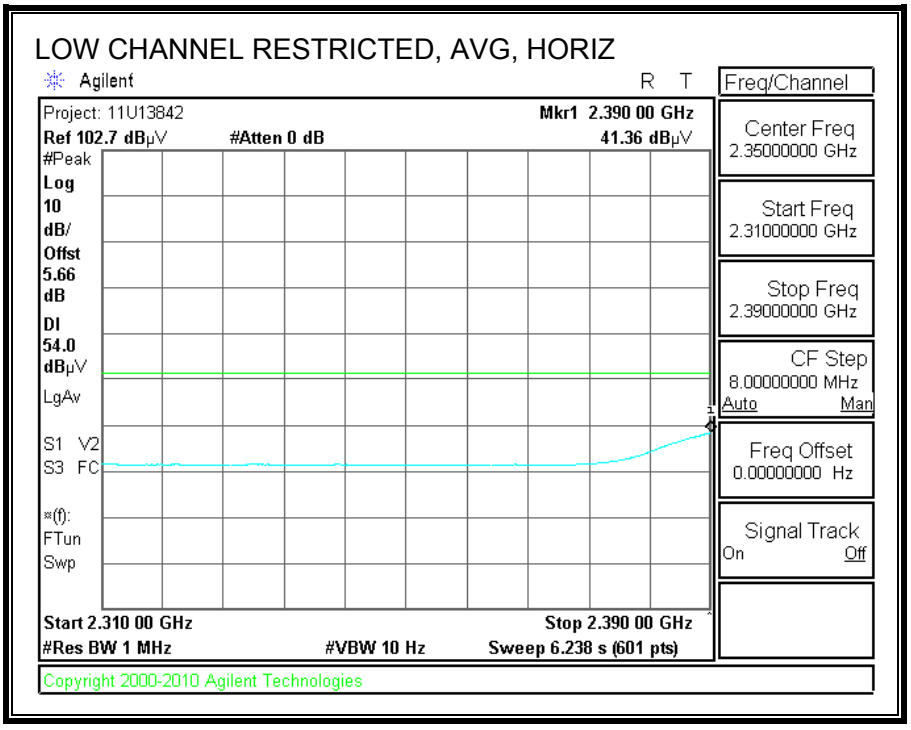
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
2412 MHz, HT20													
4.824	3.0	37.2	32.7	5.8	-34.8	0.0	0.0	40.9	74.0	-33.1	H	P	
4.824	3.0	24.1	32.7	5.8	-34.8	0.0	0.0	27.7	54.0	-26.3	H	A	
4.824	3.0	36.0	32.7	5.8	-34.8	0.0	0.0	39.6	74.0	-34.4	V	P	
4.824	3.0	24.0	32.7	5.8	-34.8	0.0	0.0	27.7	54.0	-26.3	V	A	
2437 MHz, HT20													
4.874	3.0	41.3	32.7	5.8	-34.8	0.0	0.0	45.1	74.0	-28.9	V	P	
4.874	3.0	28.6	32.7	5.8	-34.8	0.0	0.0	32.3	54.0	-21.7	V	A	
4.874	3.0	50.0	32.7	5.8	-34.8	0.0	0.0	53.7	74.0	-20.3	H	P	
4.874	3.0	35.9	32.7	5.8	-34.8	0.0	0.0	39.6	54.0	-14.4	H	A	
2462 MHz, HT20													
4.924	3.0	43.9	32.7	5.9	-34.8	0.0	0.0	47.7	74.0	-26.3	H	P	
4.924	3.0	29.5	32.7	5.9	-34.8	0.0	0.0	33.3	54.0	-20.7	H	A	
4.924	3.0	39.6	32.7	5.9	-34.8	0.0	0.0	43.4	74.0	-30.6	V	P	
4.924	3.0	26.4	32.7	5.9	-34.8	0.0	0.0	30.2	54.0	-23.8	V	A	

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

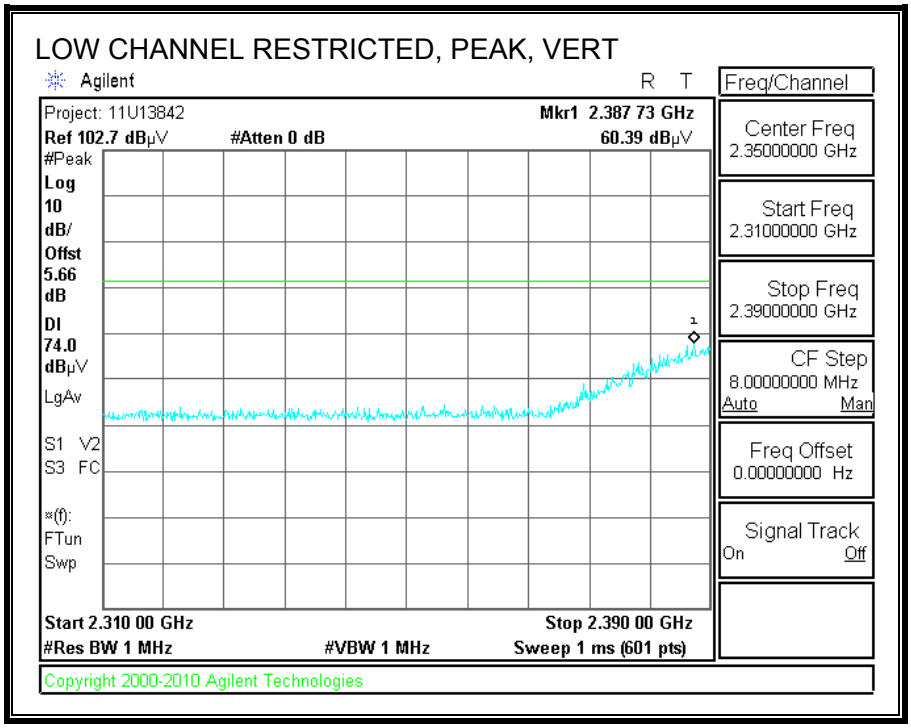
7.2.1. 2.4 GHz BAND 11n HT40 MODE

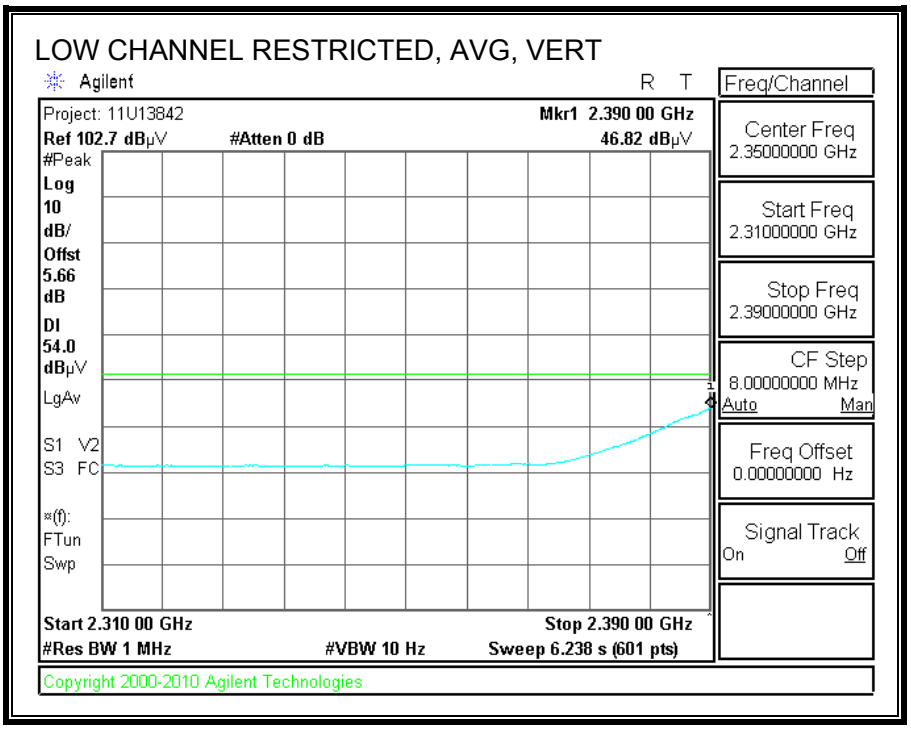
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



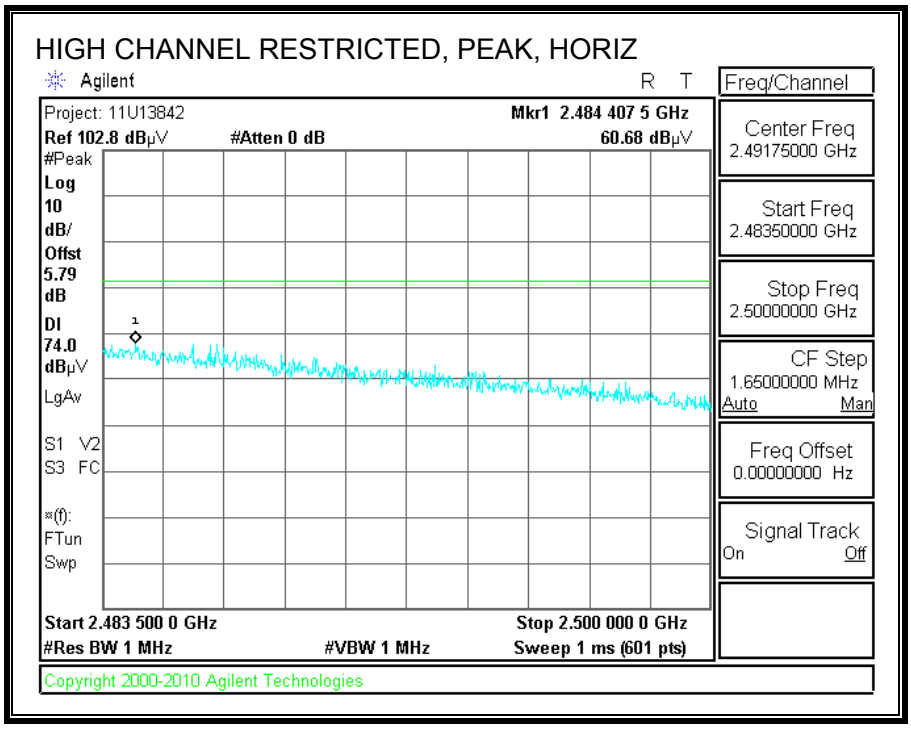


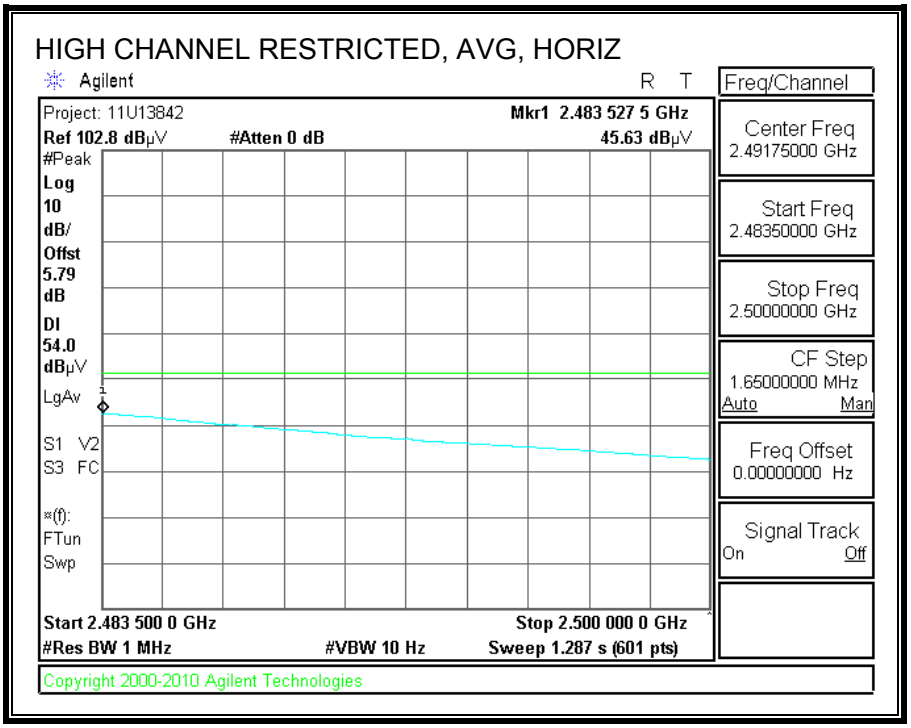
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



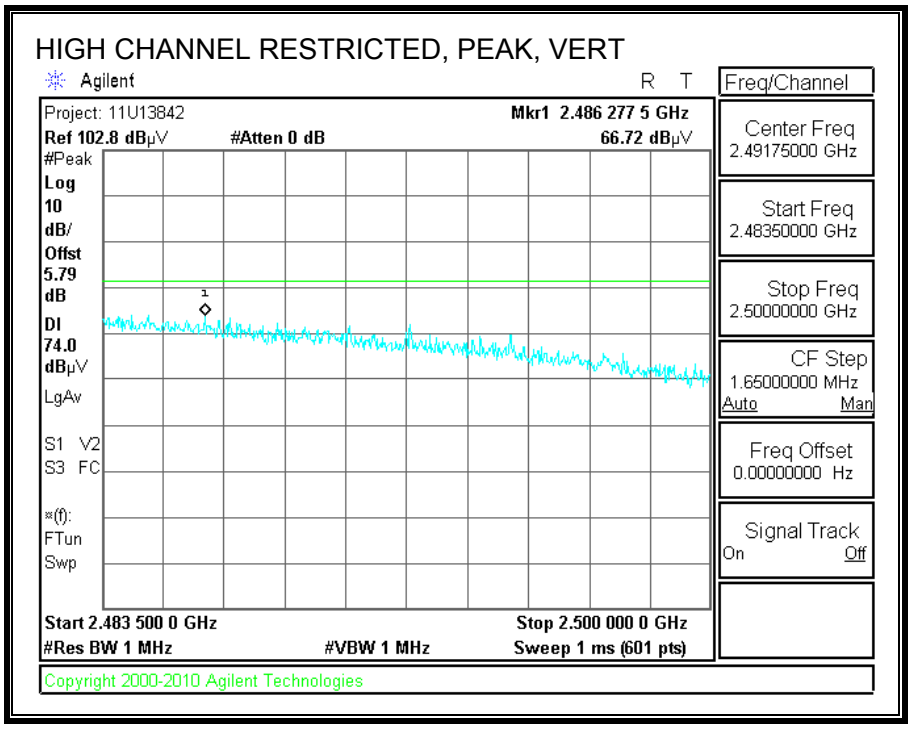


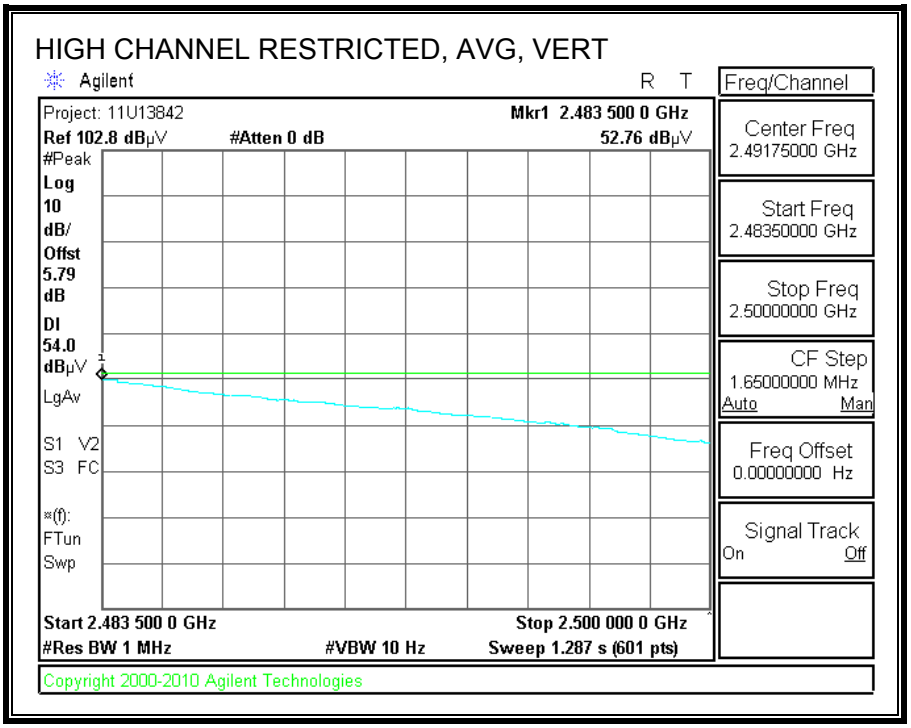
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber

Test Engr: Tom Chen
Date: 06/21/11
Project #: 11J13842
Company: Panasonic
Test Target: FCC Class B
Mode Oper: HT40 ,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		

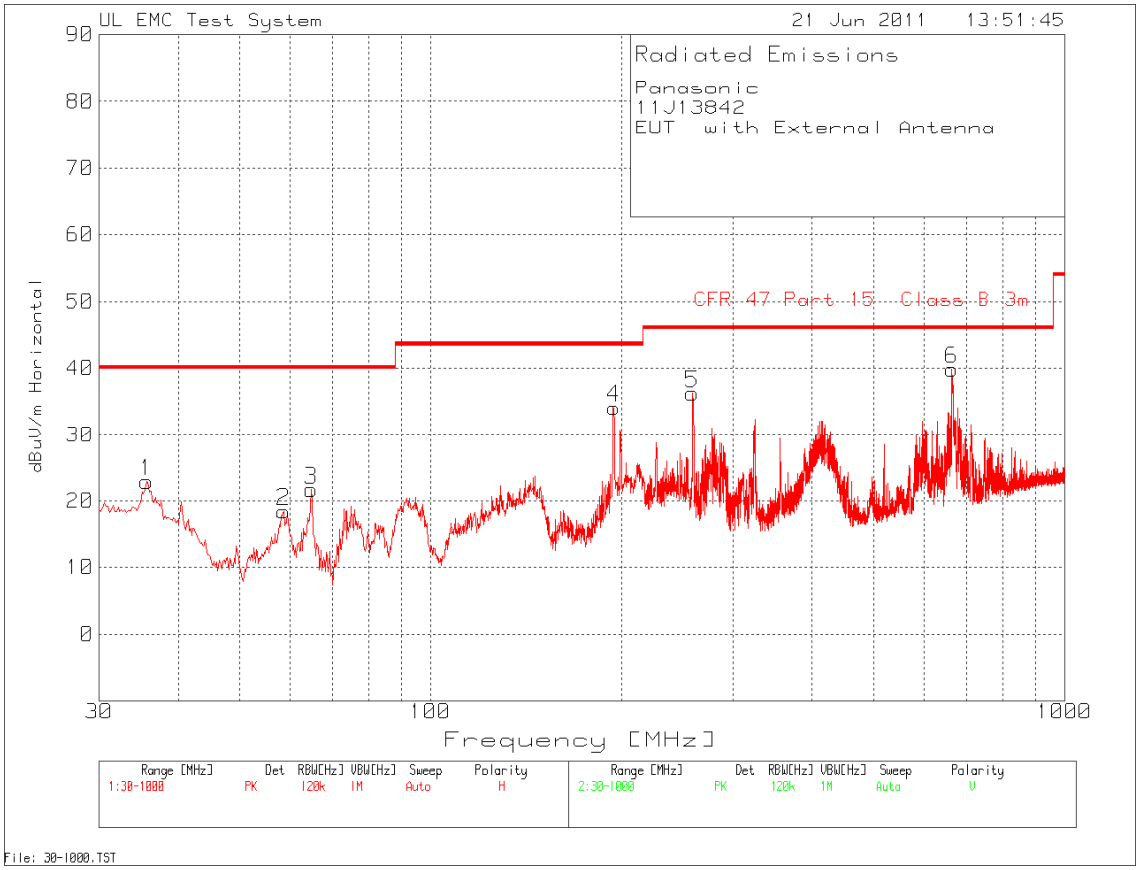
f GHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol. V/H	Det. P/A/QP	Notes
2422 MHz, HT40													
4.844	3.0	36.5	32.7	5.8	-34.8	0.0	0.0	40.2	74.0	-33.8	V	P	
4.844	3.0	24.1	32.7	5.8	-34.8	0.0	0.0	27.8	54.0	-26.3	V	A	
4.844	3.0	36.0	32.7	5.8	-34.8	0.0	0.0	39.7	74.0	-34.3	H	P	
4.844	3.0	24.1	32.7	5.8	-34.8	0.0	0.0	27.8	54.0	-26.2	H	A	
2437 MHz, HT40													
4.874	3.0	37.5	32.7	5.8	-34.8	0.0	0.0	41.2	74.0	-32.8	H	P	
4.874	3.0	25.1	32.7	5.8	-34.8	0.0	0.0	28.8	54.0	-25.2	H	A	
4.874	3.0	37.7	32.7	5.8	-34.8	0.0	0.0	41.4	74.0	-32.6	V	P	
4.874	3.0	25.1	32.7	5.8	-34.8	0.0	0.0	28.8	54.0	-25.2	V	A	
2452 MHz, HT40													
4.904	3.0	36.9	32.7	5.9	-34.8	0.0	0.0	40.7	74.0	-33.3	V	P	
4.904	3.0	24.2	32.7	5.9	-34.8	0.0	0.0	28.0	54.0	-26.0	V	A	
4.904	3.0	37.7	32.7	5.9	-34.8	0.0	0.0	41.5	74.0	-32.5	H	P	
4.904	3.0	25.0	32.7	5.9	-34.8	0.0	0.0	28.8	54.0	-25.2	H	A	

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

7.3. WORST-CASE BELOW 1 GHz

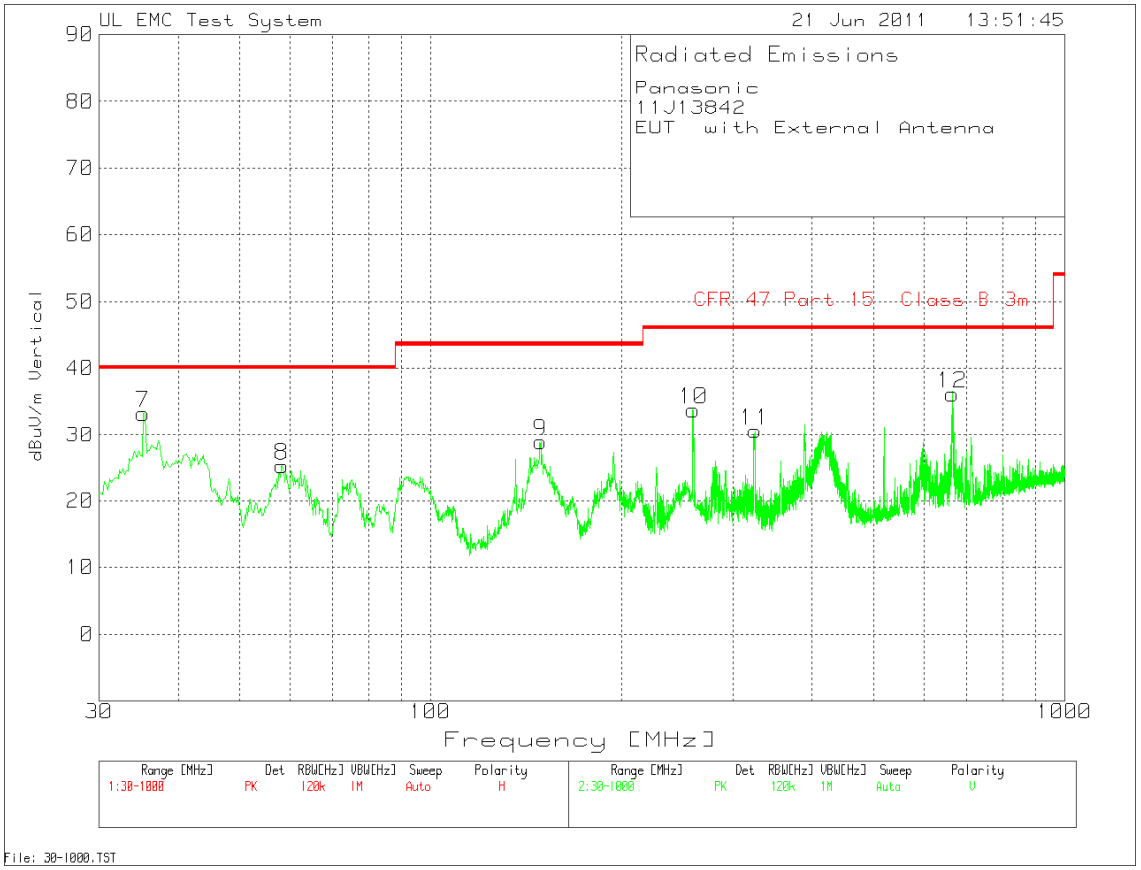
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



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

VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

Panasonic
11J13842
EUT with External Antenna

Horizontal 30 -1000 MHz

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Transducer Factor [dB]	Gain/Loss Factor [dB]	Level dBuV/m	Limit:FCC		Margin [dB]	
1	35.62	33.49	0.70	-11.30	22.89	40.00	Horz	-17.11	PK
2	58.69	37.73	0.80	-20.10	18.43	40.00	Horz	-21.57	PK
3	64.89	40.86	0.90	-20.10	21.66	40.00	Horz	-18.34	PK
4	194.77	48.80	1.40	-16.10	34.10	43.50	Horz	-9.40	PK
5	258.93	49.94	1.60	-15.30	36.24	46.00	Horz	-9.76	PK
6	664.26	46.75	2.70	-9.60	39.85	46.00	Horz	-6.15	PK

Vertical 30- 1000 MHz

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Transducer Factor [dB]	Gain/Loss Factor [dB]	Level dBuV/m	Limit:FCC		Margin [dB]	
7	35.23	43.52	0.60	-10.90	33.22	40.00	Vert	-6.78	PK
8	58.30	44.52	0.80	-20.10	25.22	40.00	Vert	-14.78	PK
9	149.21	42.90	1.20	-15.20	28.90	43.50	Vert	-14.60	PK
10	259.90	47.44	1.60	-15.30	33.74	46.00	Vert	-12.26	PK
11	324.84	42.16	1.90	-13.50	30.56	46.00	Vert	-15.44	PK
12	665.81	43.05	2.70	-9.60	36.15	46.00	Vert	-9.85	PK

Note: No other emissions were detected above noise floor

7.4. AC MAINS LINE CONDUCTED EMISSIONS

TEST PROCEDURE

ANSI C63.4

LIMIT

§15.107 (a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency range	Limits (dBμV)	
(MHz)	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Notes: 1. The lower limit shall apply at the transition frequencies 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

RESULTS

6 WORST EMISSIONS

Panasonic
11J13842

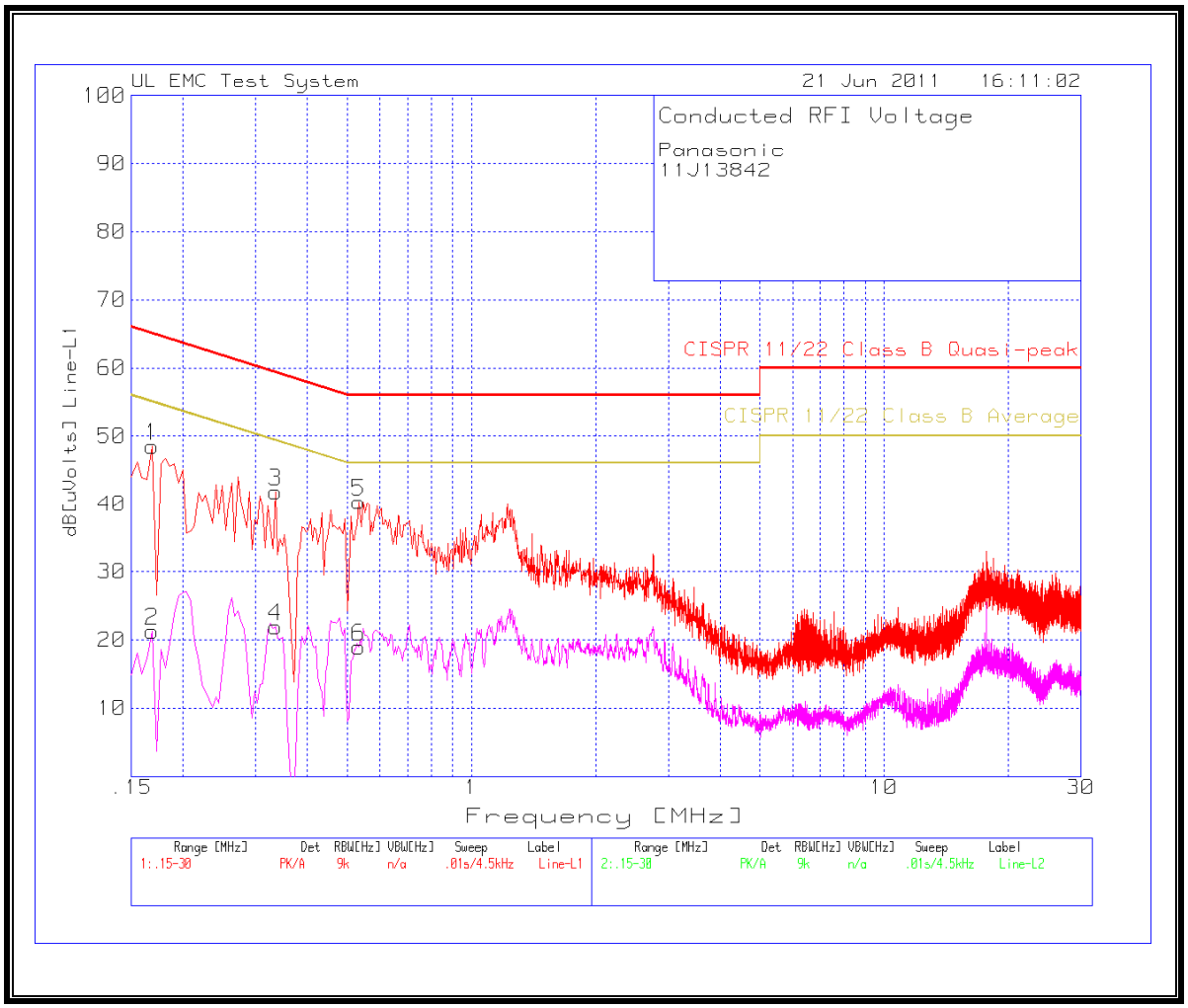
Line-L1 .15 - 30MHz

Test Frequency	Meter Reading	Detector	dB[uVolts]	CISPR 11/22 Class B Quasi-peak	Margin	CISPR 11/22 Class B Average	Margin
0.17	48.45	PK	48.45	65.10	-16.65	55.10	-6.65
0.17	21.31	Av	21.31	-	-	55.10	-33.79
0.33	41.82	PK	41.82	59.30	-17.48	49.30	-7.48
0.33	21.86	Av	21.86	-	-	49.30	-27.44
0.53	40.23	PK	40.23	56.00	-15.77	46.00	-6.37
0.53	18.90	Av	18.90	-	-	46.00	-27.10

Line-L2 .15 - 30MHz

Test Frequency	Meter Reading	Detector	dB[uVolts]	CISPR 11/22 Class B Quasi-peak	Margin	CISPR 11/22 Class B Average	Margin
0.17	47.21	PK	47.21	65.10	-17.89	55.10	-7.89
0.17	18.35	Av	18.35	-	-	55.10	-36.75
0.34	31.45	PK	31.45	59.10	-27.65	49.10	-17.65
0.34	17.82	Av	17.82	-	-	49.10	-31.28
0.58	32.56	PK	32.56	56.00	-23.44	46.00	-13.44
0.58	15.29	Av	15.29	-	-	46.00	-30.71

LINE 1 RESULTS



LINE 2 RESULTS