FCC Part 15C

Measurement and Test Report

For

AsiaRF Co., Ltd

1F., No.2, Lane45, Shuiyuan Street., Yonghe City, Taipei County 234, Taiwan

FCC ID: TKZAWUN2410

Report Concerns: Original Report	**Equipment Type:** Wireless USB Dongle
Model:	AWUN2410
Report No.:	STR11108100I-1
Test Date:	2011-10-18 to 2011-10-21
Issue Date:	2011-10-25
Tested By:	Jason Jiang / Engineer
Reviewed By:	Lahm Peng / EMC Manager
Approved & Authorized By:	Jandy so / PSQ Manager

Prepared By:

SEM.Test Compliance Service Co., Ltd
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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: AsiaRF Co., Ltd

Address of applicant: 1F., No.2, Lane45, Shuiyuan Street., Yonghe City, Taipei County 234, Taiwan

Manufacturer: AsiaRF Co., Ltd

Address of manufacturer: 1F., No.2, Lane45, Shuiyuan Street., Yonghe City, Taipei County 234, Taiwan

General Description of E.U.T

Items	Description
EUT Description:	Wireless USB Dongle
Trade Name:	/
Model No.:	AWUN2410
Rated Voltage:	DC 5V
RF Output Power:	Max. 14.27dBm (Conducted)
Antenna Gain:	-2 dBi
Frequency range:	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40)
Number of channels:	11/7
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna

Note: The test data is gathered from a production sample, provided by the manufacture.

1.2 Test Standards

The following report is prepared on behalf of the AsiaRF Co., Ltd in accordance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes

were adapted with Low Channel, Middle Channel and High Channel, accordingly in reference to the Operating Instructions.

1.4 Test Facility

- **FCC – Registration No.: 994117**
  SEM.Test Compliance Services Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**
  The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**
  Shenzhen SEM.Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Exercise Software

The EUT exercise program used during the testing was designed to exercise the system components.

1.6 Accessories Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	ASUS	X50R	74N0AS297138
/	/	/	/

1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

2. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 15.203; § 15.247(c)(1)(i)	Antenna Requirement	Compliant
§ 15.207	Conducted Emission	Compliant
§ 15.247(e)	Power Spectral Density	Compliant
§ 15.247(a)(2)	6 dB Bandwidth	Compliant
§ 15.247(b)(3)	Power Output	Compliant
§ 15.209(a)(d)	Radiated Emission	Compliant
§ 15.247(d)	Band edge	Compliant

3. CONDUCTED EMISSIONS

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

3.2 Test Equipment List and Details

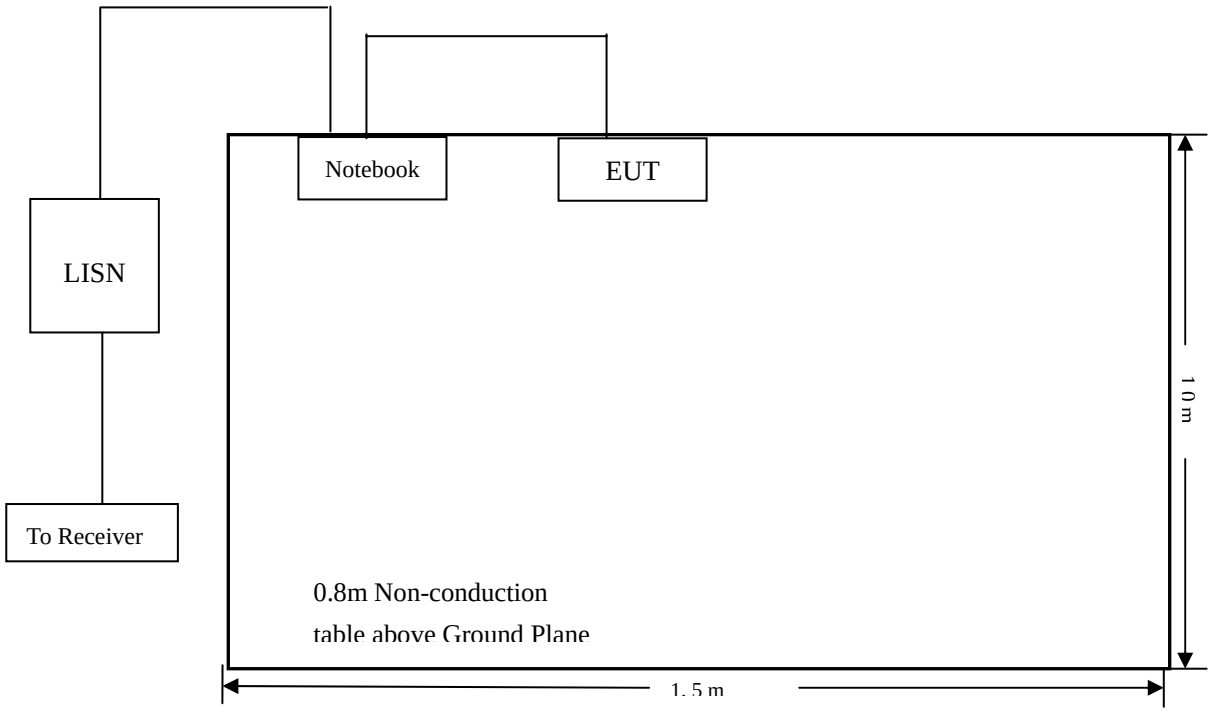
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2010-12-20	2011-12-19
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2010-12-20	2011-12-19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2010-12-20	2011-12-19

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	20° C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC Part 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

-10.21 dBμV at 0.318 MHz in the **Line** mode**, Pk** detector, **0.15-30MHz**

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

Conducted Disturbance

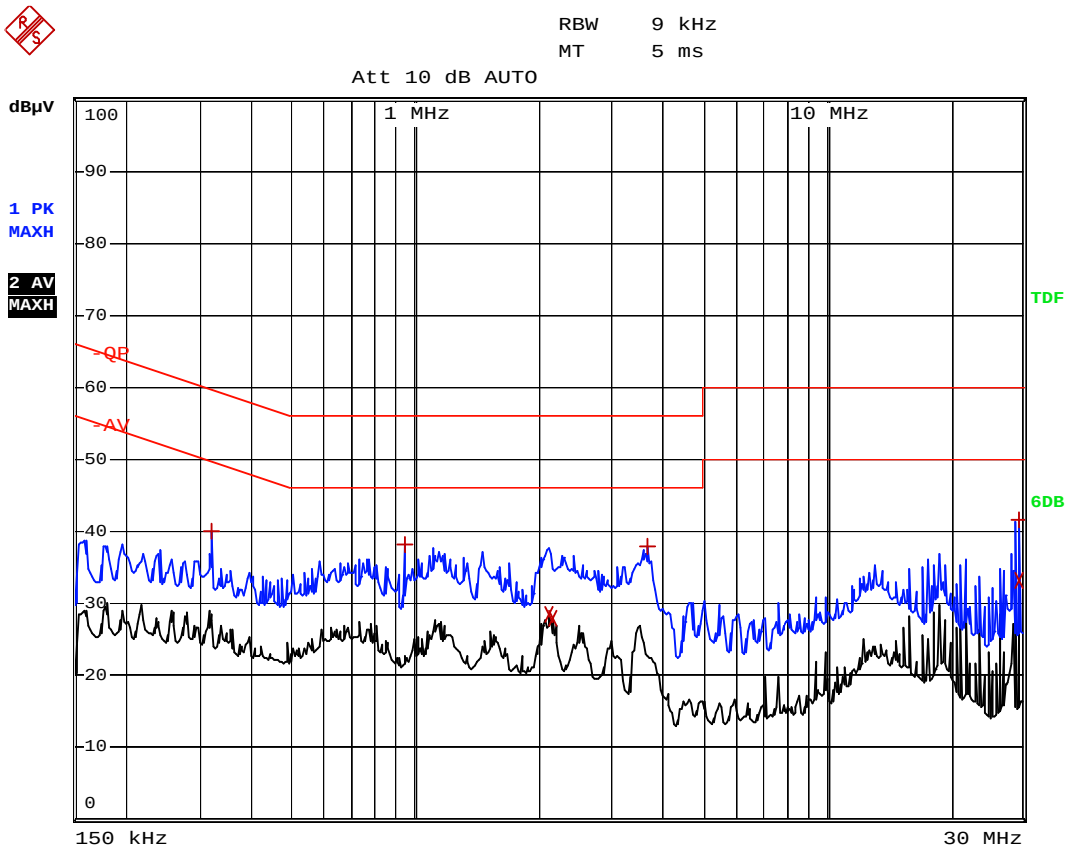
EUT: Wirreless USB Dongle

M/N: AWUN2410

Operating Condition: Transmiting

Test Specification: N

Comment: AC 120V/60Hz connect to PC, USB 5V



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Max Peak	318 kHz	40.04	-19.71
1 Max Peak	946 kHz	38.19	-17.80
2 Average	2.118 MHz	28.48	-17.51
2 Average	2.166 MHz	27.91	-18.08
1 Max Peak	3.662 MHz	37.96	-18.03
1 Max Peak	29.466 MHz	41.47	-18.52
2 Average	29.466 MHz	33.26	-16.73

Plot of Conducted Emissions Test Data

Conducted Disturbance

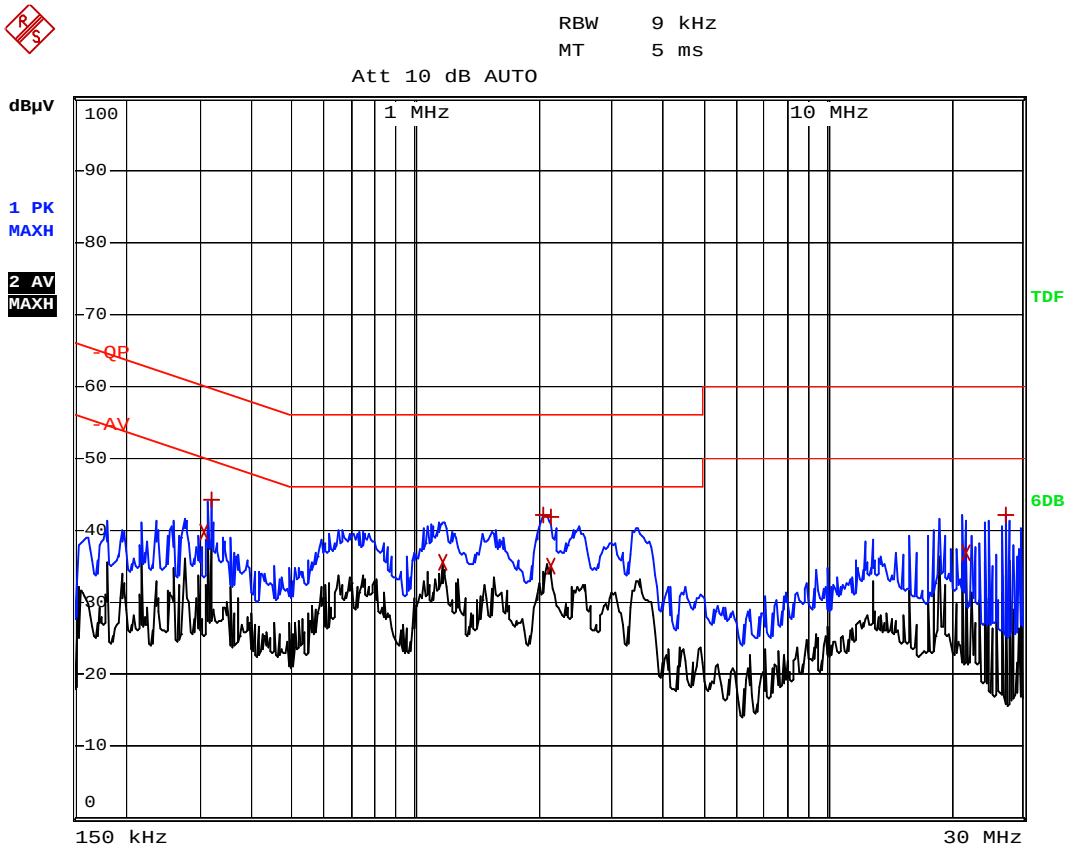
EUT: Wirreless USB Dongle

M/N: AWUN2410

Operating Condition: Transmiting

Test Specification: L

Comment: AC 120V/60Hz connect to PC, USB 5V



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	310 kHz	39.75	-10.21
1 Max Peak	318 kHz	44.12	-15.63
2 Average	1.174 MHz	35.56	-10.43
1 Max Peak	2.058 MHz	42.16	-13.83
1 Max Peak	2.13 MHz	41.98	-14.02
2 Average	2.138 MHz	35.15	-10.84
2 Average	21.862 MHz	36.96	-13.04
1 Max Peak	27.174 MHz	42.07	-17.92

4. §15.203 - ANTENNA REQUIREMENT

4.1 Standard Applicable

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

4.2 Test Result

This product has a integral antenna, fulfill the requirement of this section.

5. POWER SPECTRAL DENSITY

5.1 Standard Applicable

According to 15.247(a)(1)(iii), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

5.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2010-12-20	2011-12-19
Attenuator	ATTEN	ATS100-4-20	/	2010-12-20	2011-12-19

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

5.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set center frequency of spectrum analyzer = operating frequency.
3. Set the spectrum analyzer as RBW, VBW=3KHz.
4. Repeat above procedures until all frequency measured was complete.

5.4 Environmental Conditions

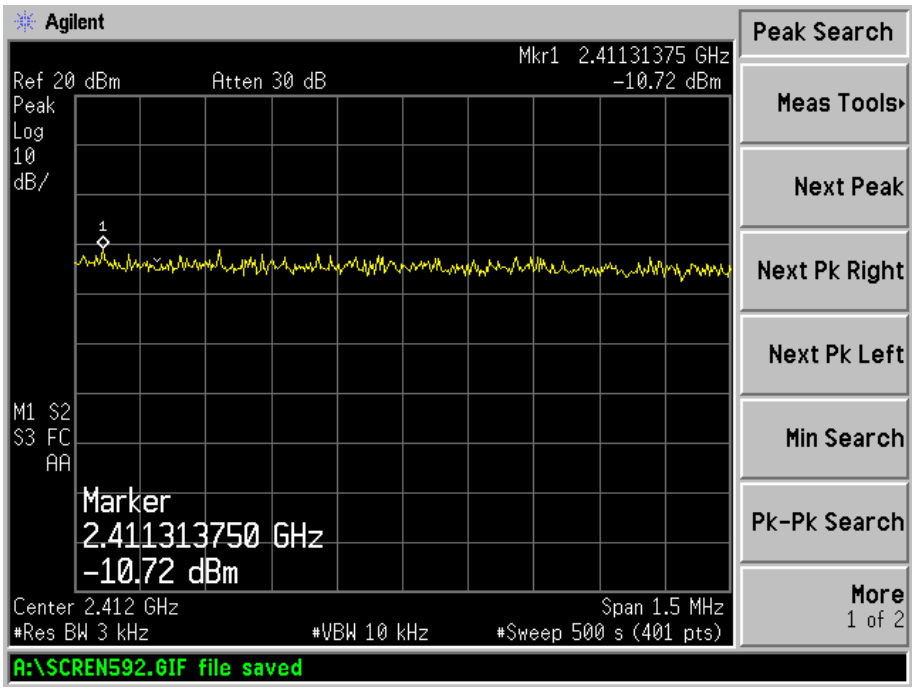
Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.5 Summary of Test Results/Plots

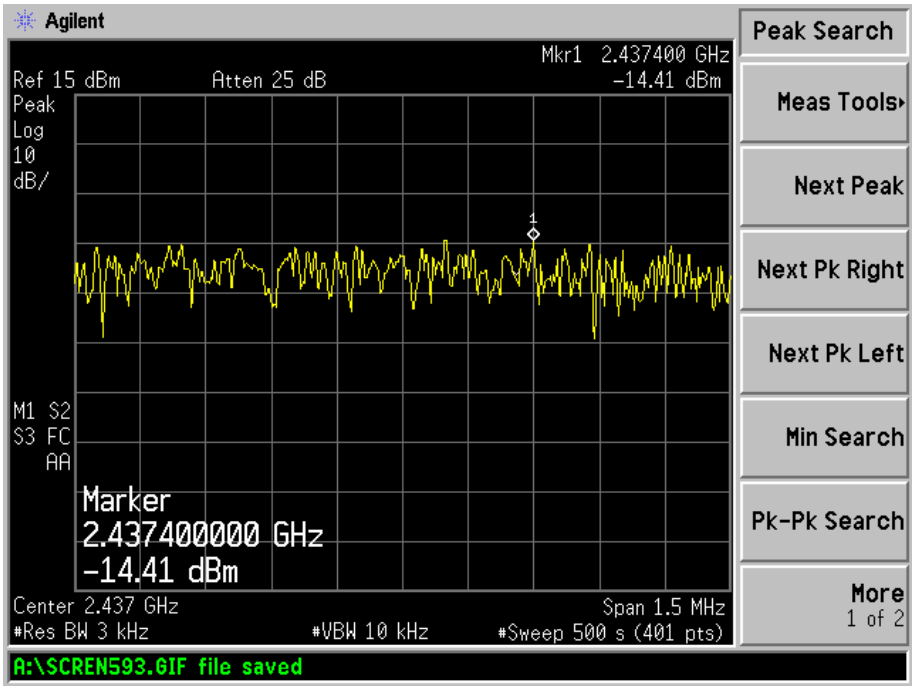
Test mode	Test channel	Reading dBm/3kHz	Limit dBm/3kHz
802.11b	Low channel (2412MHz)	-10.72	8
	Middle channel (2437MHz)	-14.41	8
	High channel (2462MHz)	-13.32	8
802.11g	Low channel (2412MHz)	-15.53	8
	Middle channel (2437MHz)	-17.57	8
	High channel (2462MHz)	-18.81	8
802.11n HT 20M	Low channel (2412MHz)	-10.03	8
	Middle channel (2437MHz)	-10.85	8
	High channel (2462MHz)	-13.97	8
802.11n HT 40M	Low channel (2422MHz)	-13.14	8
	Middle channel (2437MHz)	-12.85	8
	High channel (2452MHz)	-13.40	8

For 802.11b

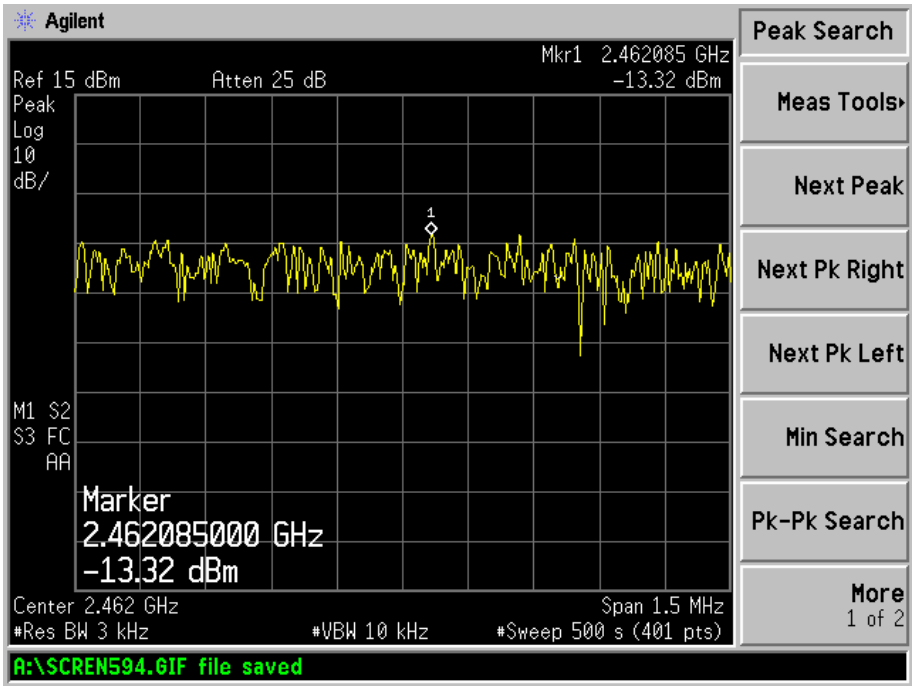
Low Channel:



Middle Channel:

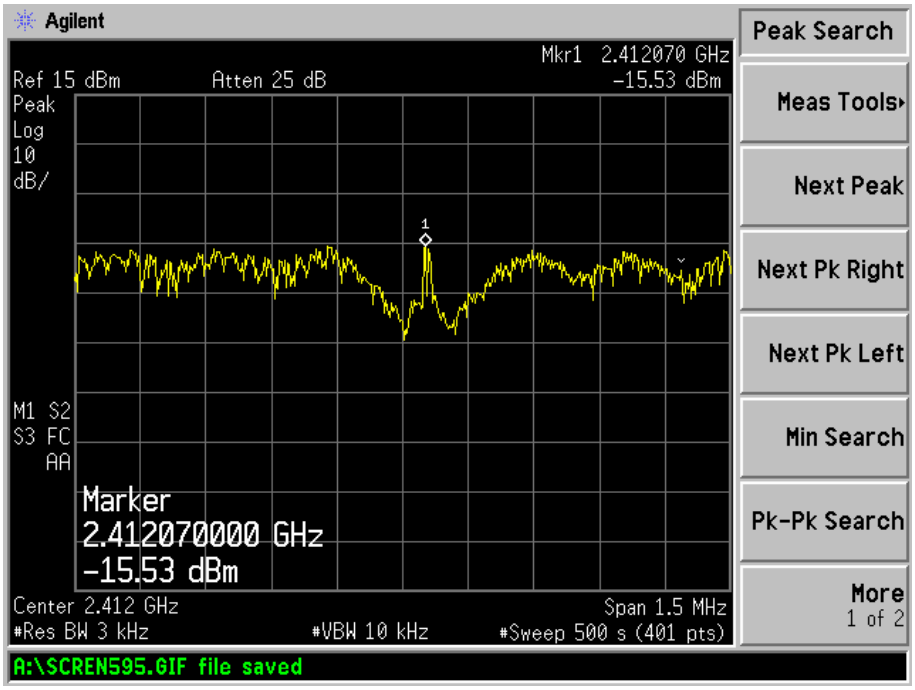


High Channel:

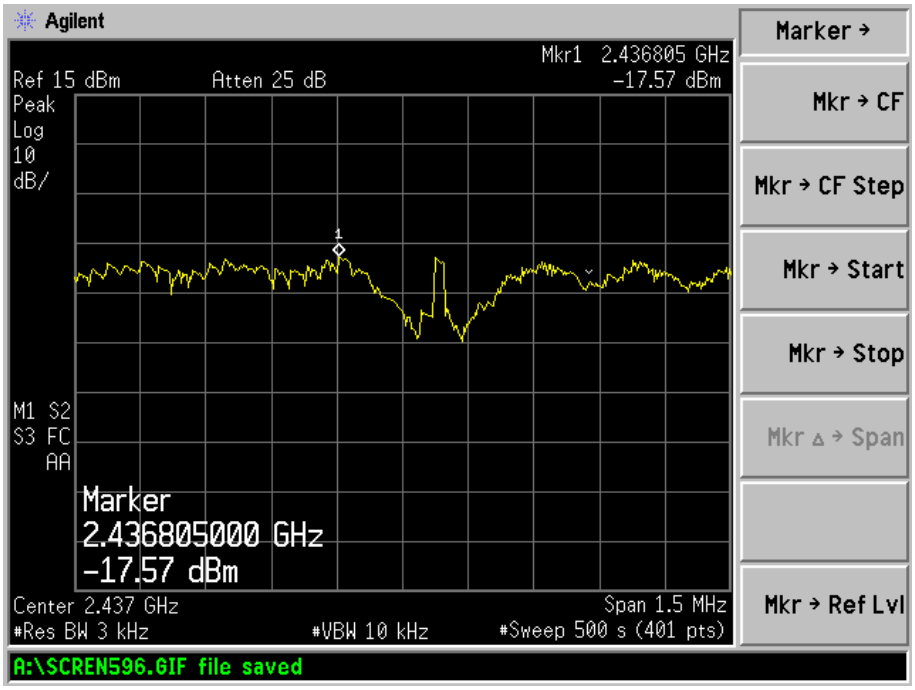


For 802.11g

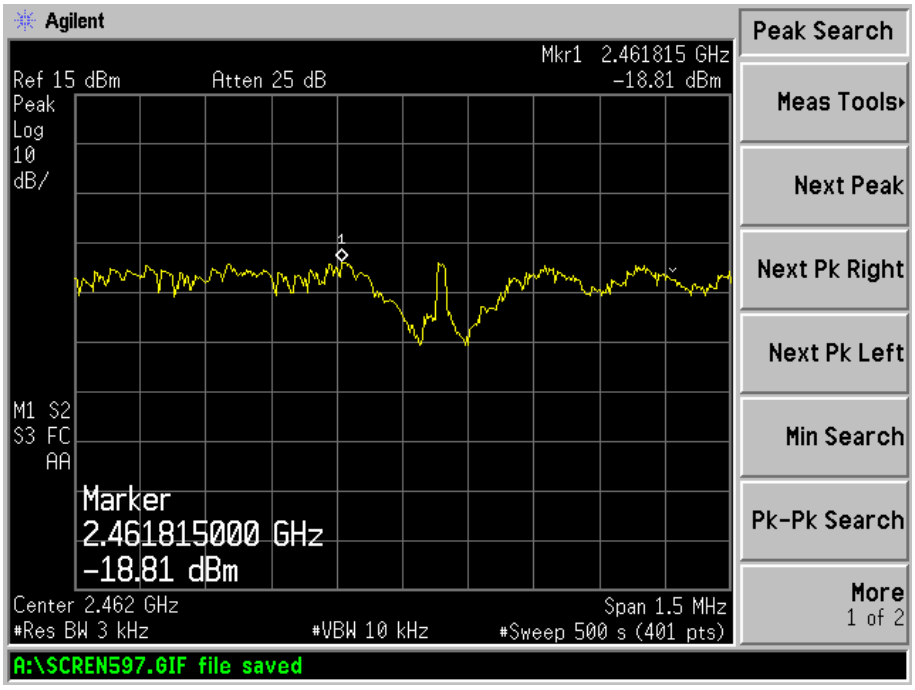
Low Channel:



Middle Channel:

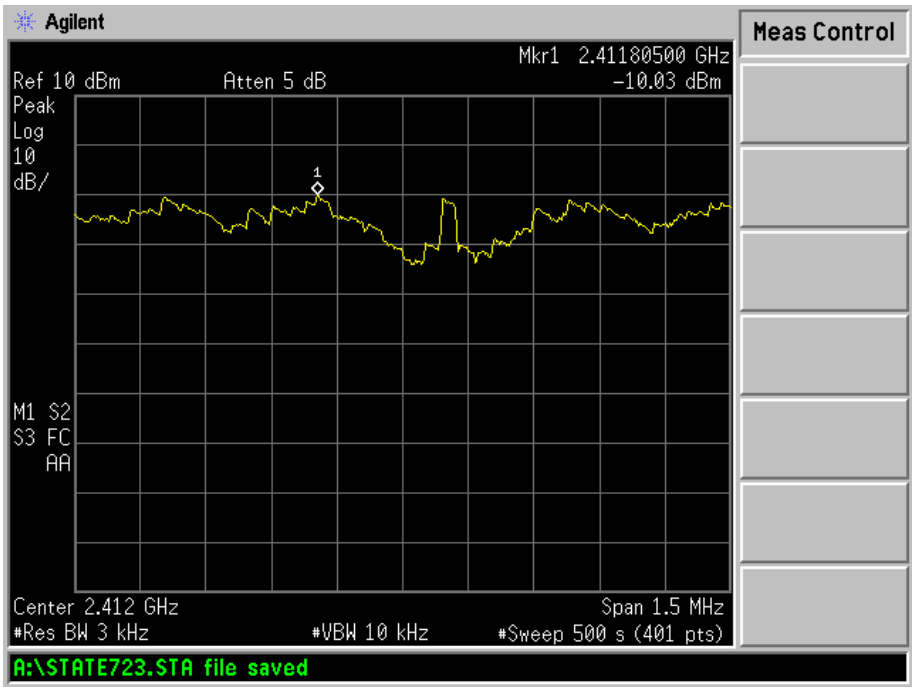


High Channel:

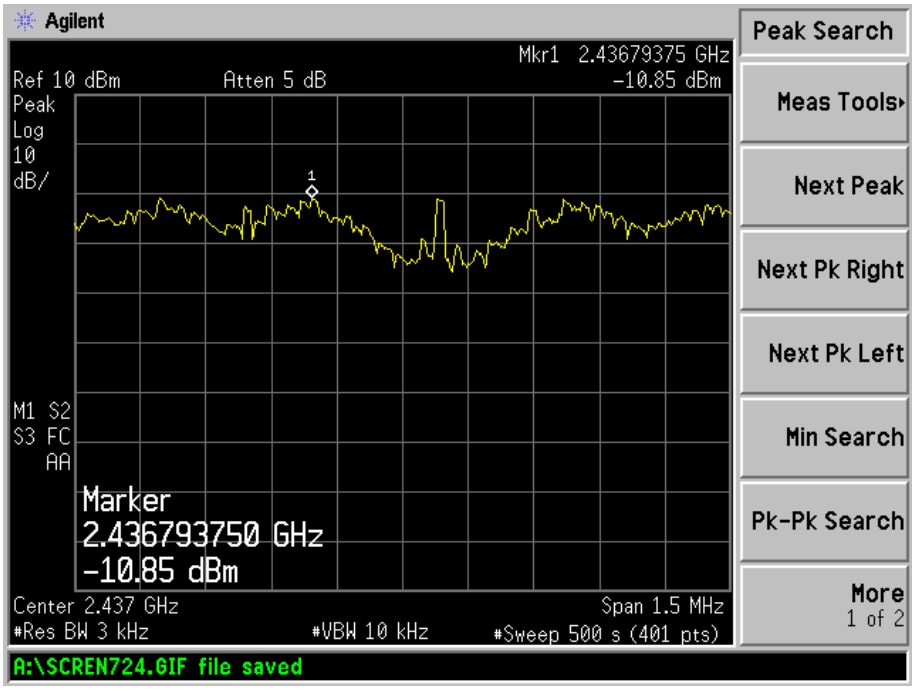


For 802.11n HT 20M

Low Channel:



Middle Channel:



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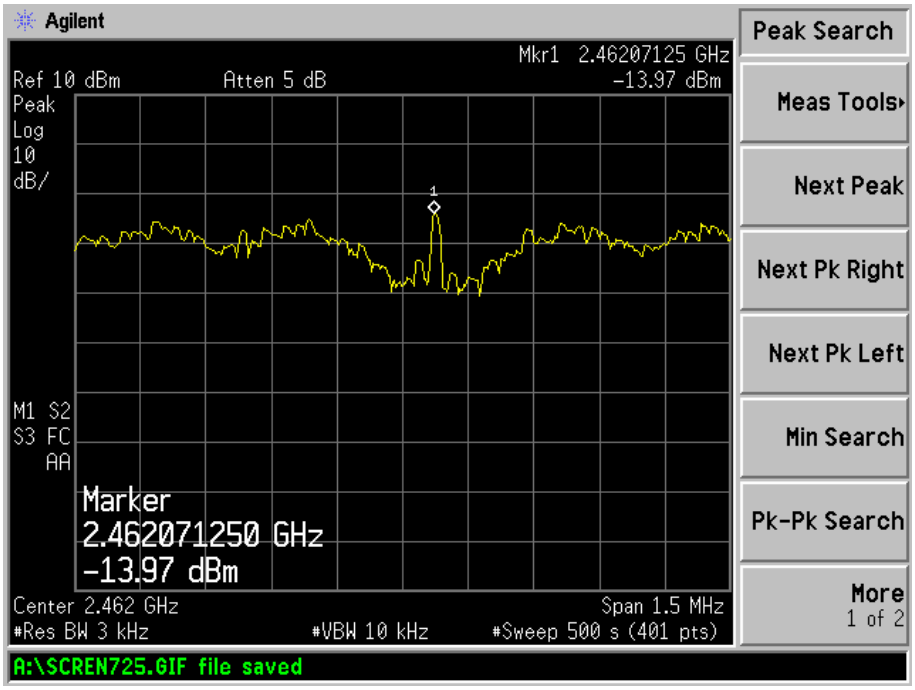
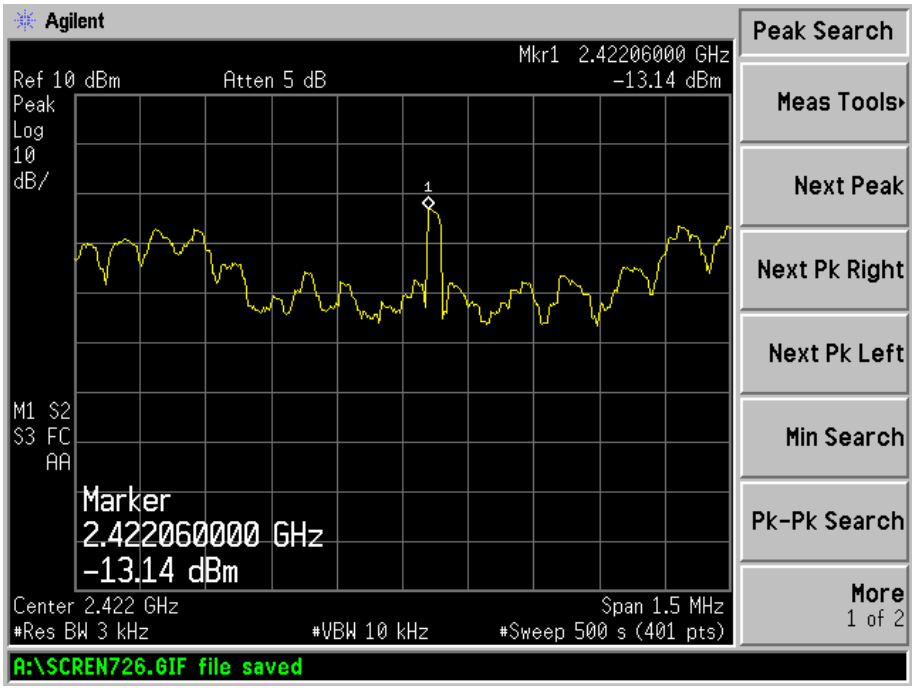
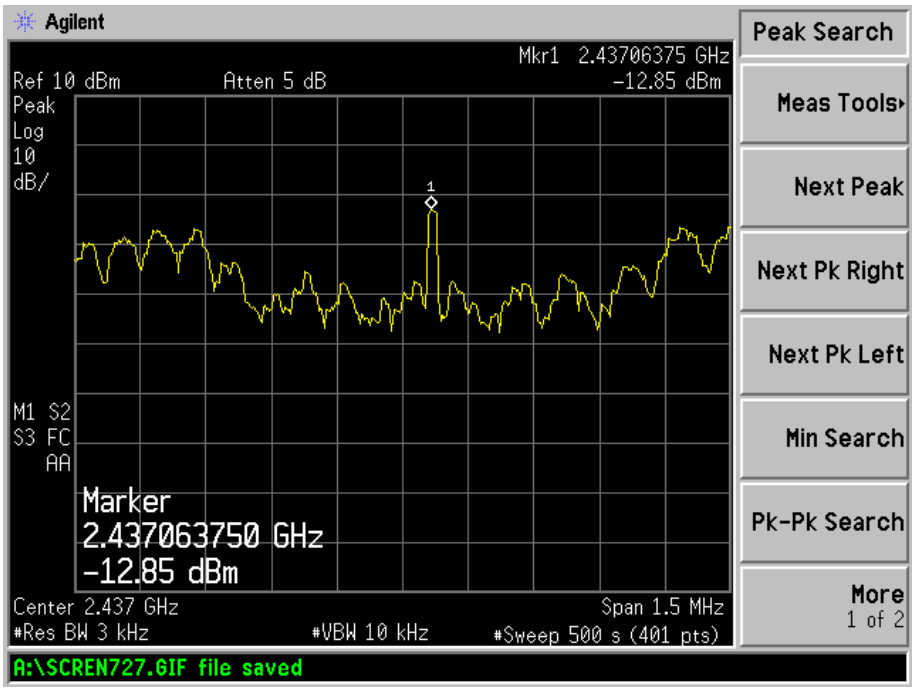


For 802.11n HT 40M

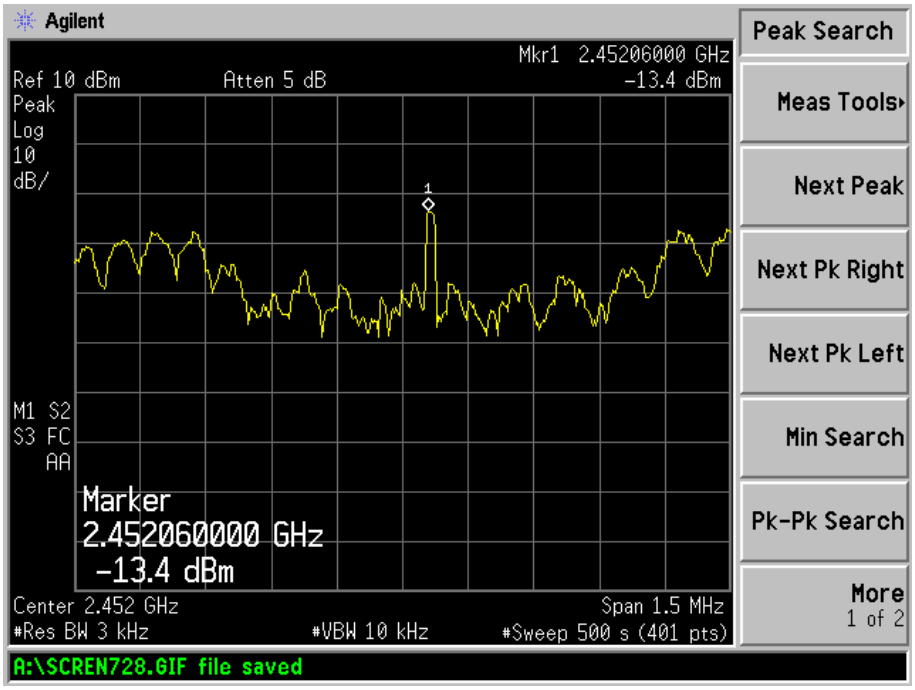
Low Channel:



Middle Channel:



High Channel:



6. 6-dB BANDWIDTH

6.1 Standard Applicable

According to 15.247(a)(2). Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

6.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2010-12-20	2011-12-19
Attenuator	ATTEN	ATS100-4-20	/	2010-12-20	2011-12-19

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

6.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set center frequency of spectrum analyzer = operating frequency.
3. The spectrum analyzer as RBW=100KHz (1 % of Bandwidth.), Sweep=auto
4. Mark the peak frequency and –6dB (upper and lower) frequency.

6.4 Environmental Conditions

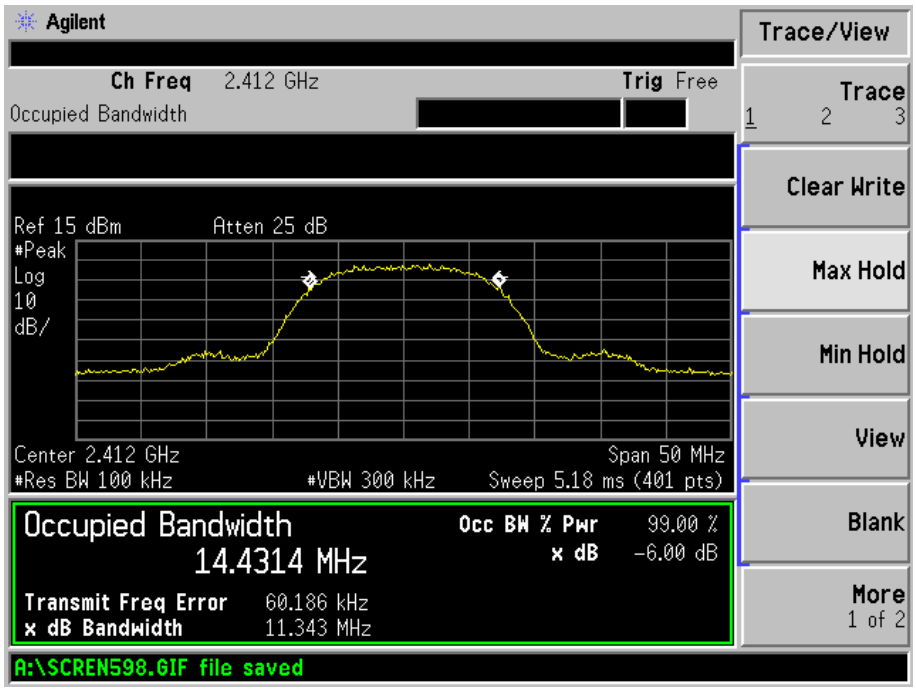
Temperature:	24° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

6.5 Summary of Test Results/Plots

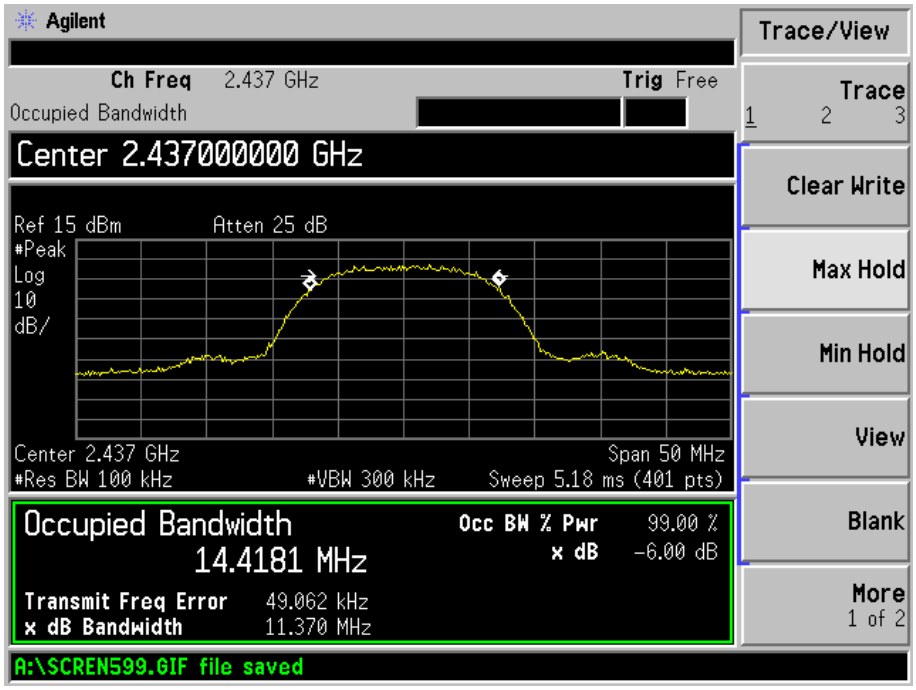
Test mode	Frequency MHz	6 dB Bandwidth kHz	Limit kHz
802.11b	2412	11343	500
	2437	11370	500
	2462	11366	500
802.11g	2412	16486	500
	2437	16529	500
	2462	16524	500
802.11n HT 20M	2412	17500	500
	2437	17492	500
	2462	17634	500
802.11n HT 40M	2422	35599	500
	2437	35482	500
	2452	35707	500

For 802.11b

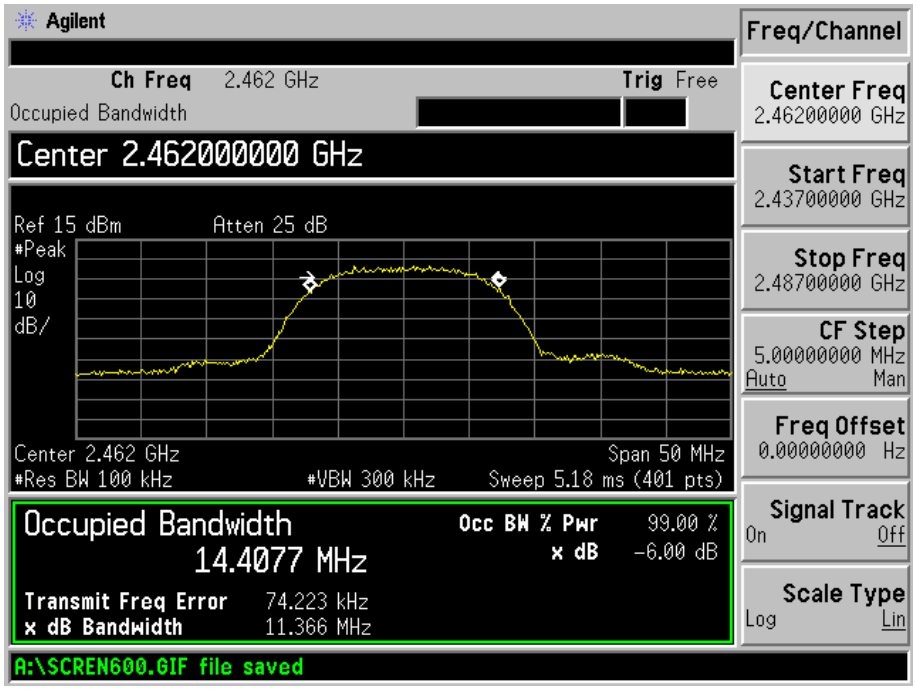
Low Channel:



Mid Channel:

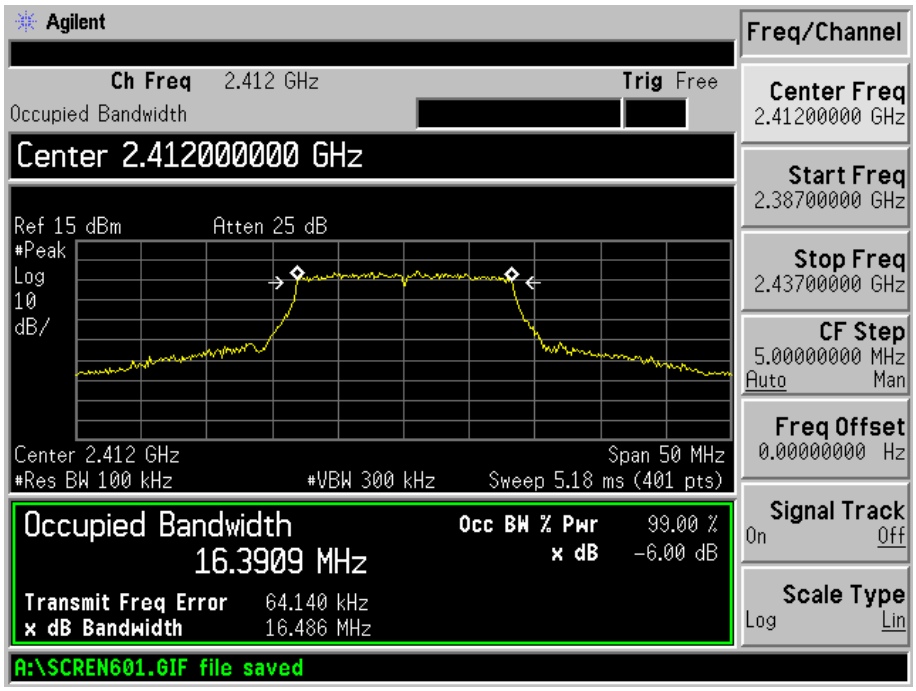


High Channel:

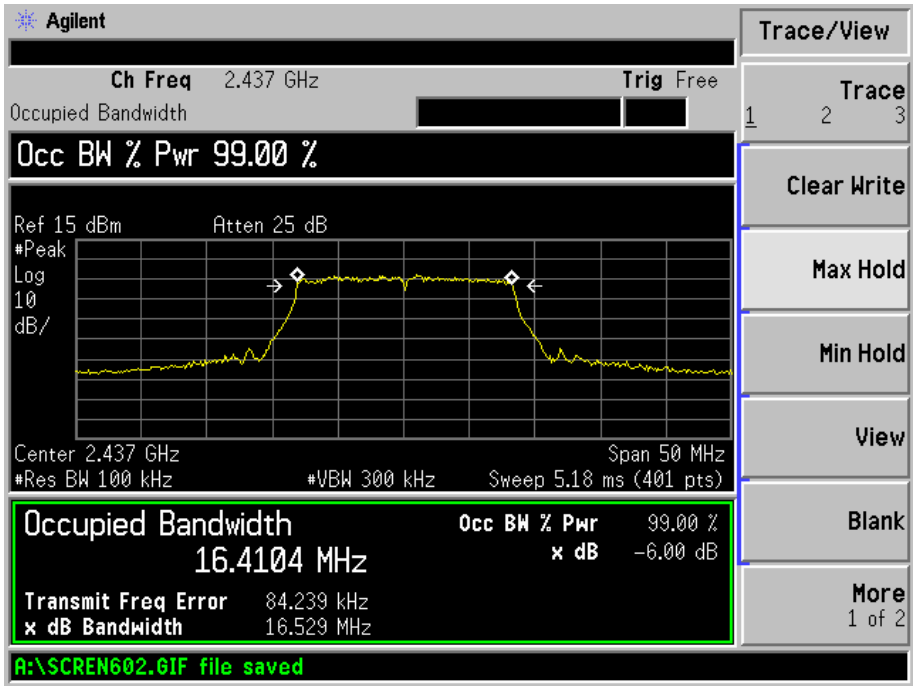


For 802.11g

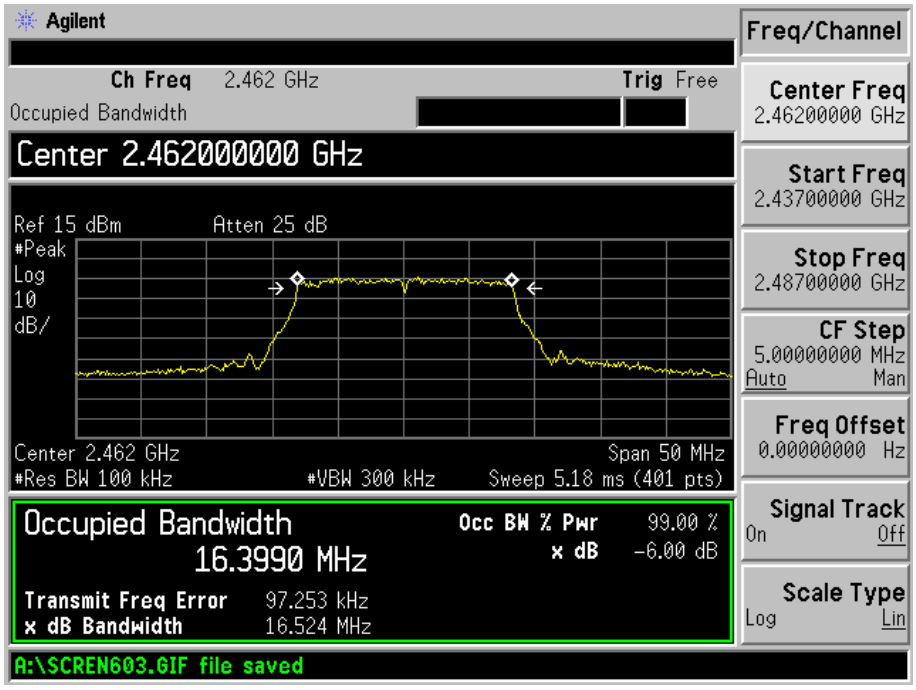
Low Channel:



Mid Channel:

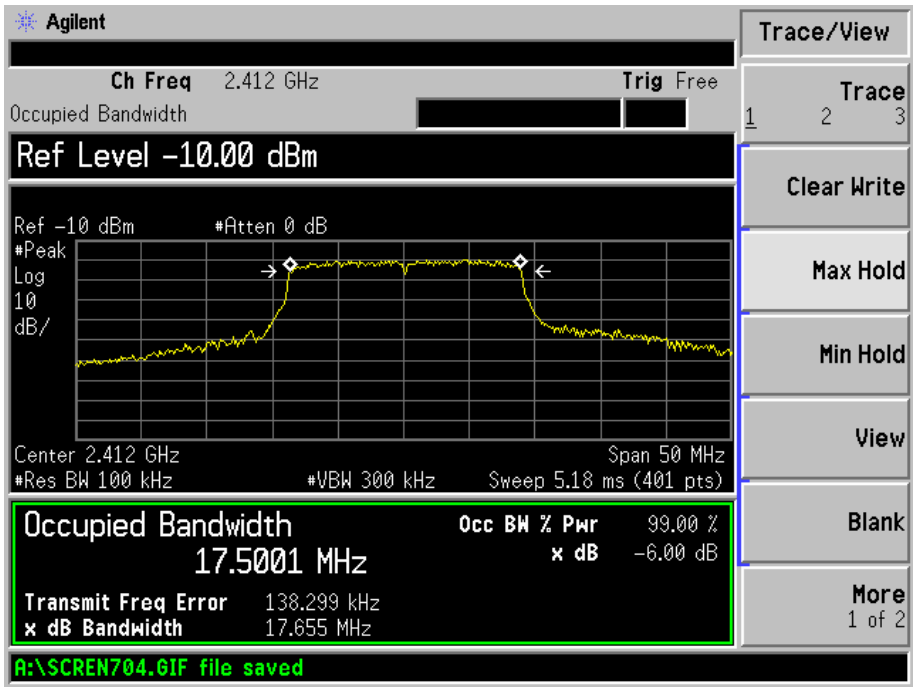


High Channel:

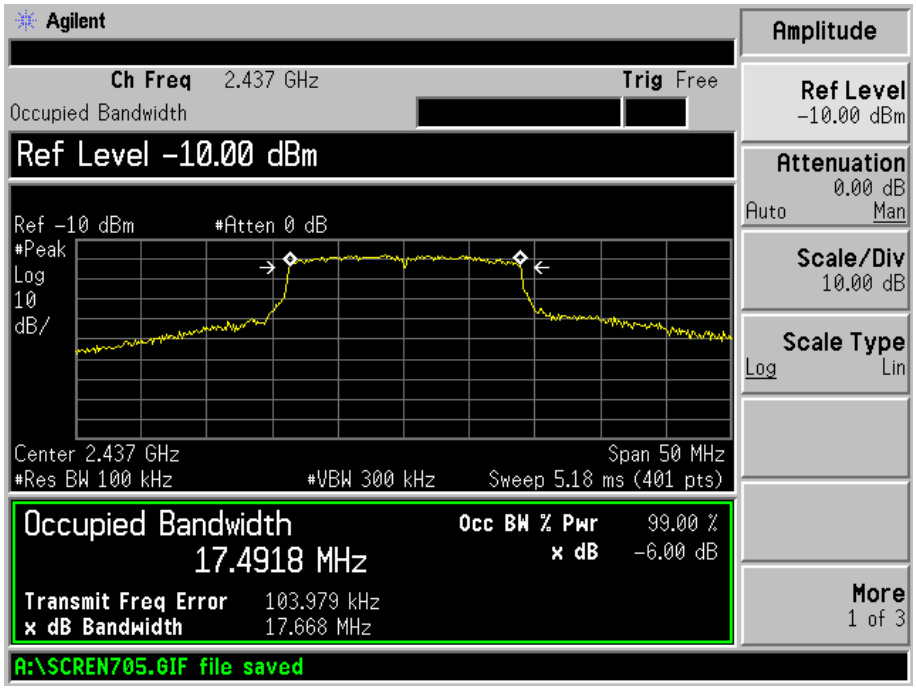


For 802.11n HT 20M

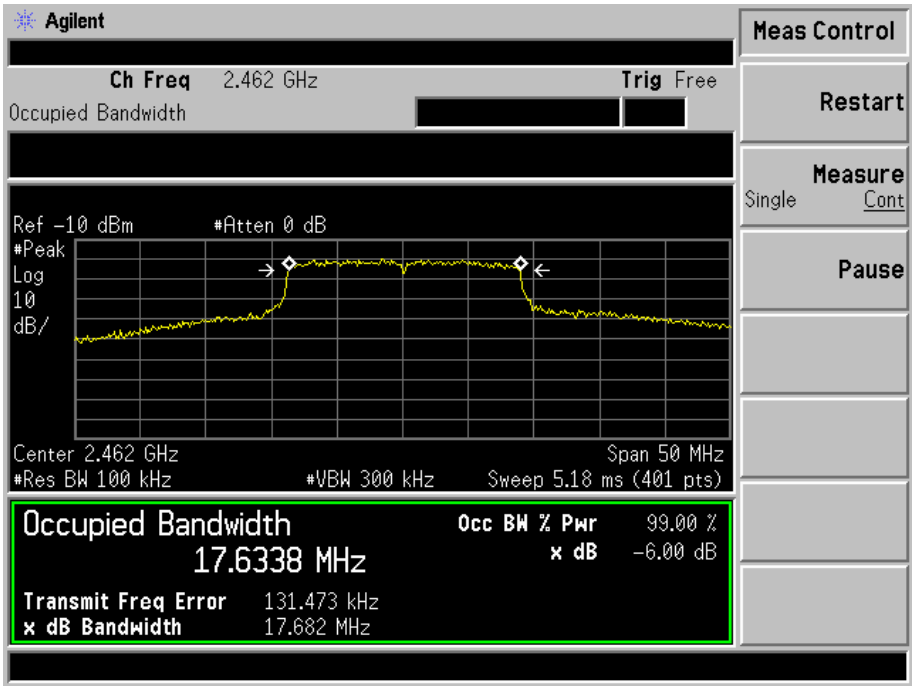
Low Channel:



Mid Channel:

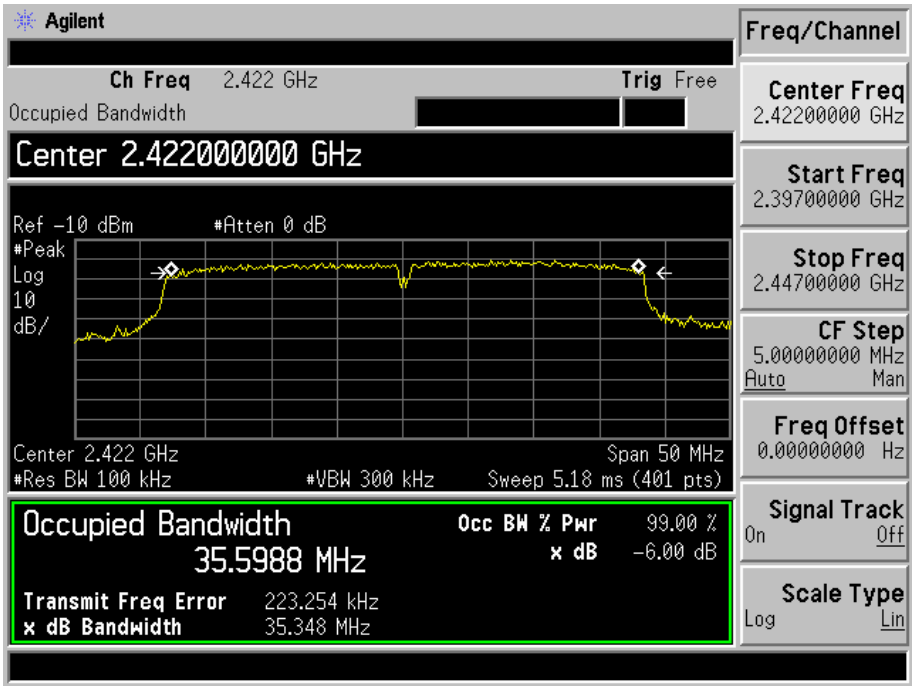


High Channel:

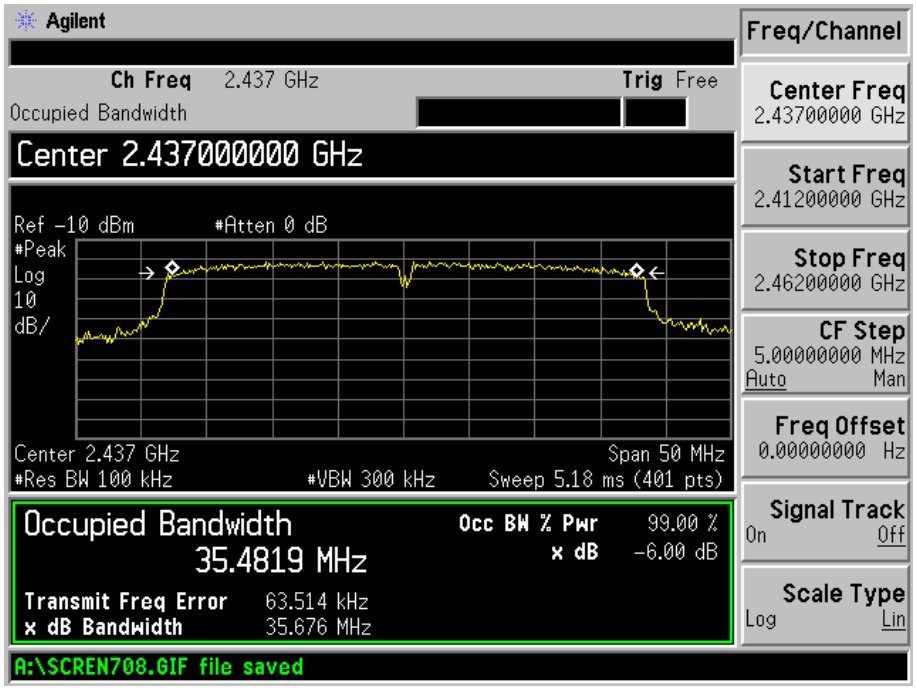


For 802.11n HT 40M

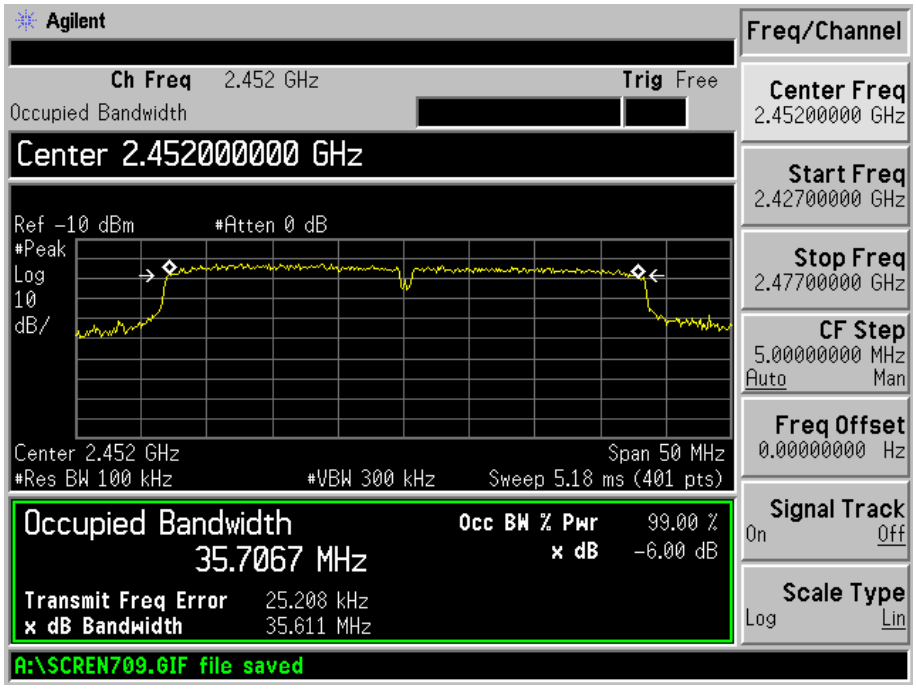
Low Channel:



Mid Channel:



High Channel:



7. POWER OUTPUT

7.1 Standard Applicable

According to 15.247(b)(3). For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

7.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2010-12-20	2011-12-19
Attenuator	ATTEN	ATS100-4-20	/	2010-12-20	2011-12-19

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

7.3 Test Procedure

According to section 15.247(b)-power output of the KDB-558074 (2005), the method #1 of the power output option2 was used, the following is the measurement procedure.

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.

2. Set RBW = 1 MHz, Set VBW $\geqslant$ 3 MHz.

4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.

5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to “free run”.

6. Trace average 100 traces in power averaging mode.

7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer’s band power measurement function with band limits set equal to the EBW band edges.

7.4 Environmental Conditions

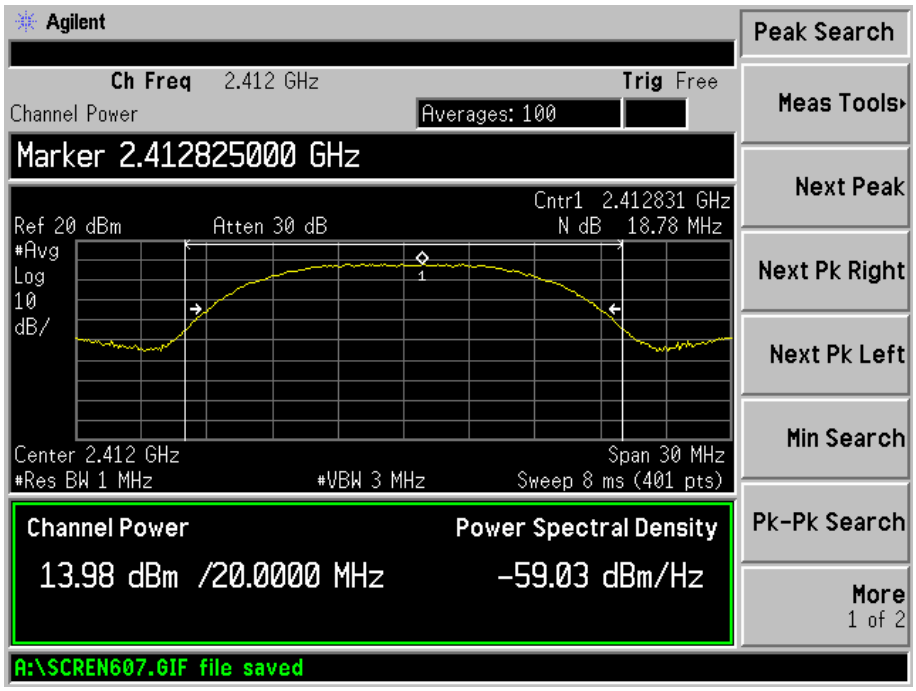
Temperature:	21° C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

7.5 Summary of Test Results/Plots

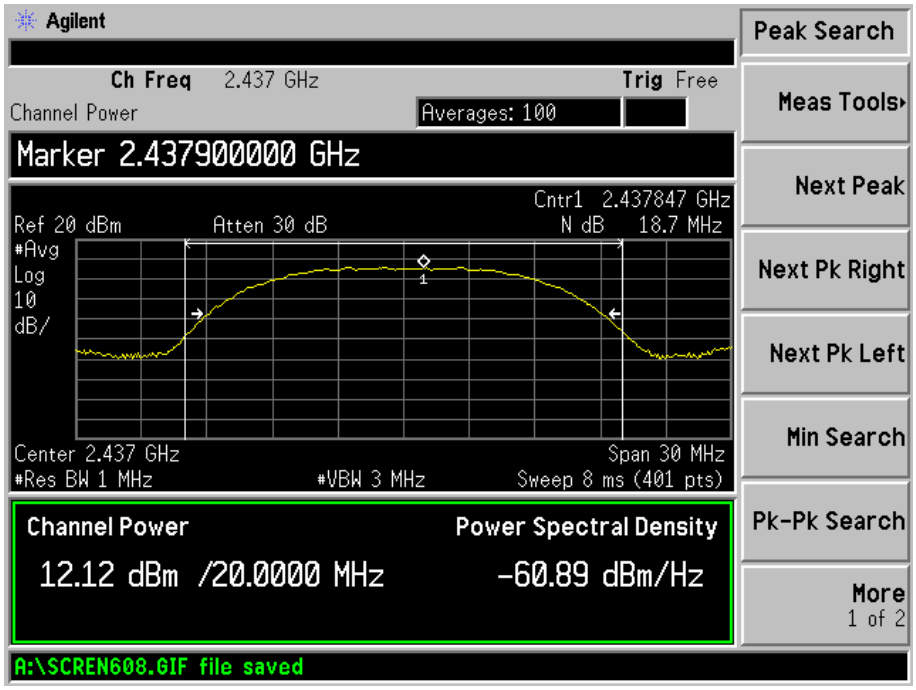
Test mode	Frequency MHz	Reading dBm	Output power W	Limit W
802.11b (1M)	2412	13.98	0.025003	1
	2437	12.12	0.016293	1
	2462	10.31	0.010740	1
802.11b (11M)	2412	11.33	0.013583	1
	2437	12.53	0.017906	1
	2462	9.49	0.008892	1
802.11g (6M)	2412	13.58	0.022803	1
	2437	14.08	0.025586	1
	2462	13.41	0.021928	1
802.11g (54M)	2412	13.27	0.021232	1
	2437	13.38	0.021777	1
	2462	14.27	0.026730	1
802.11n HT 20M	2412	9.84	0.009638	1
	2437	10.31	0.010740	1
	2462	11.02	0.012647	1
802.11n HT 40M	2422	10.36	0.010864	1
	2437	10.30	0.010715	1
	2452	9.51	0.008933	1

For 802.11b_1M rate

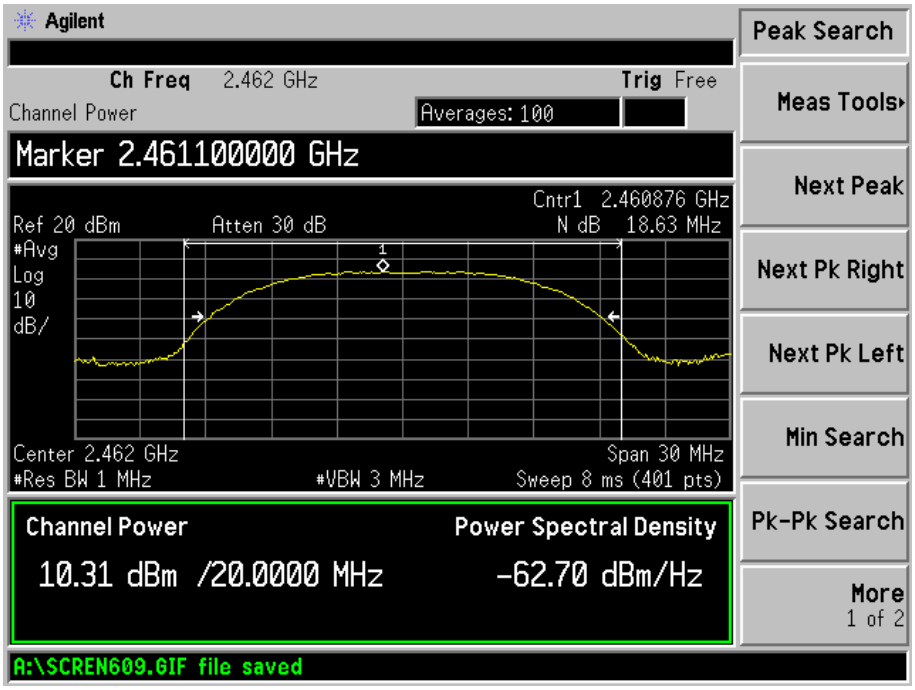
Low Channel:



Middle Channel:

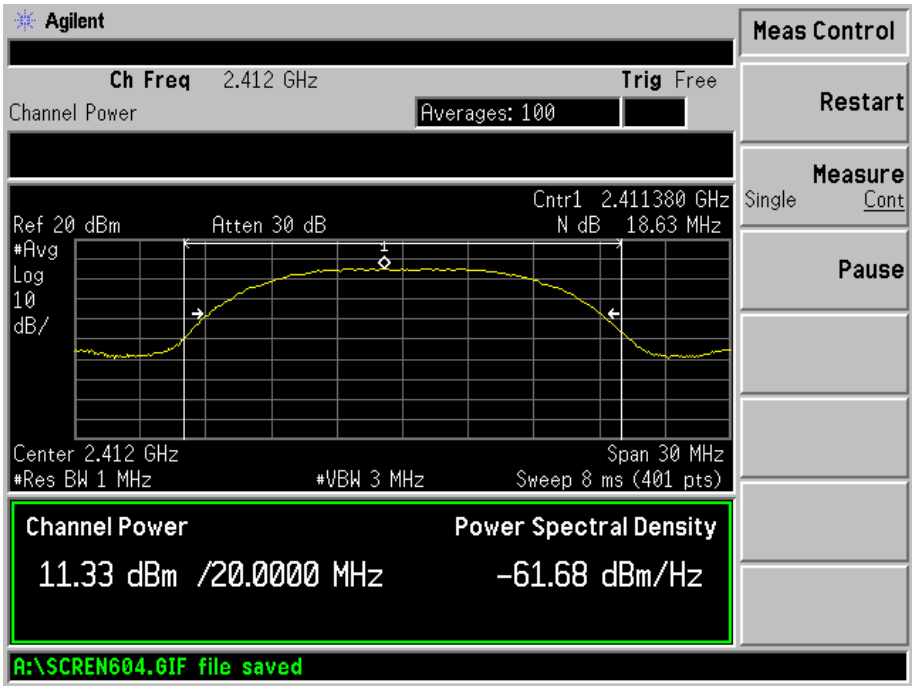


High Channel:

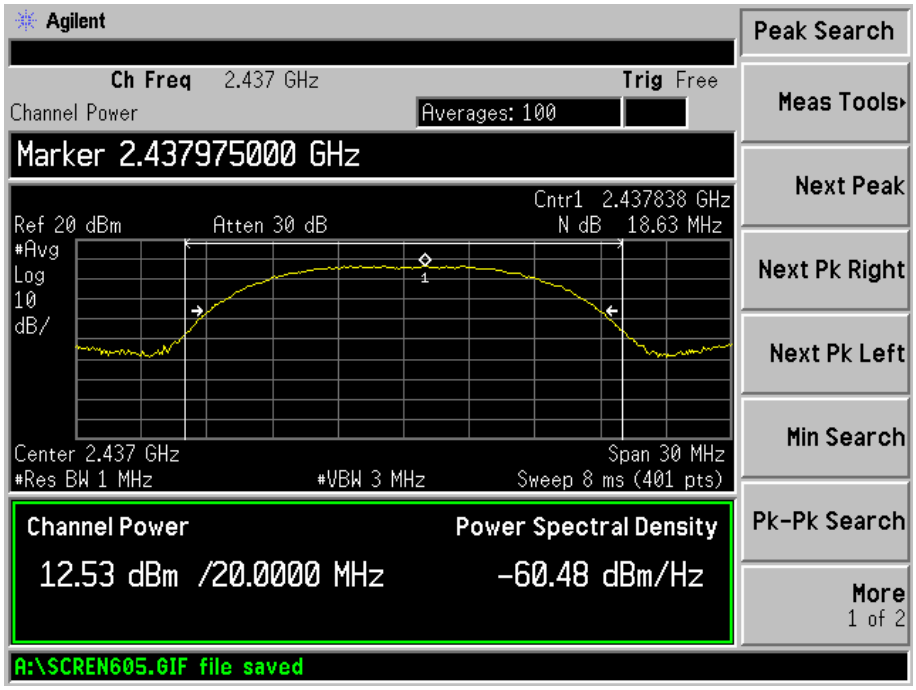


For 802.11b_11M rate

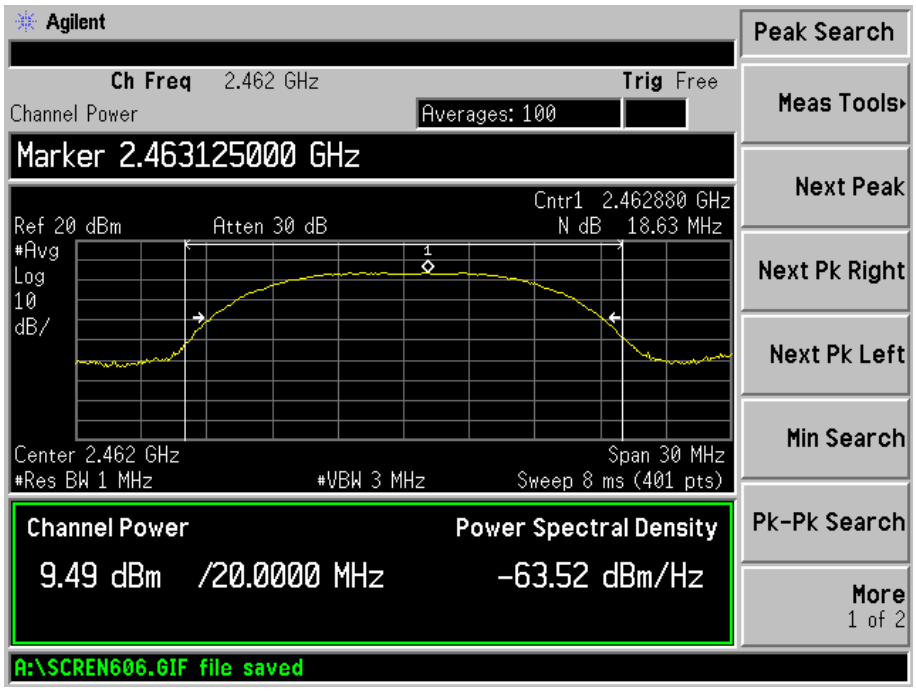
Low Channel:



Middle Channel:

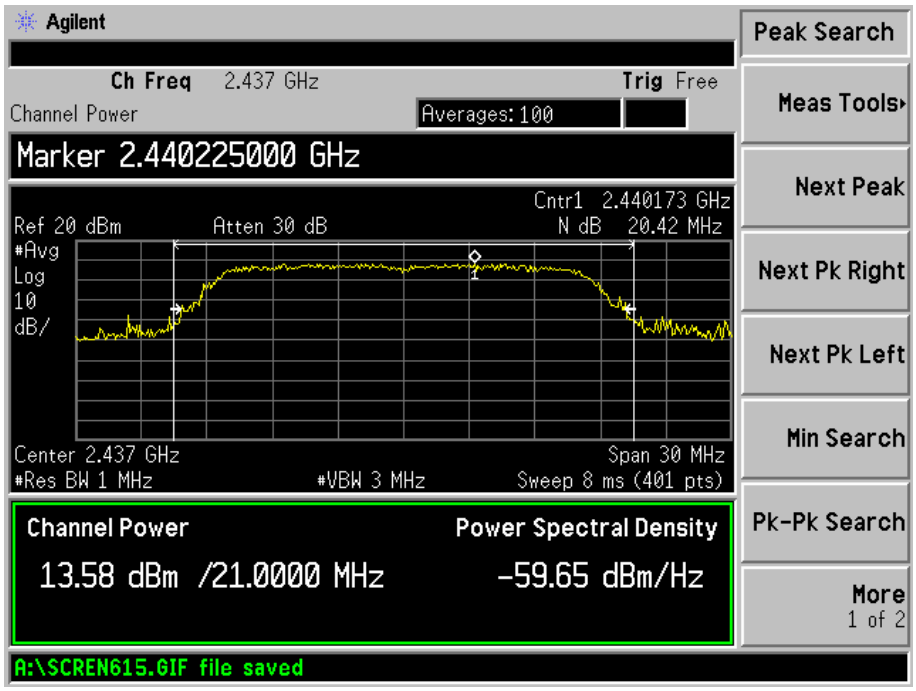


High Channel:

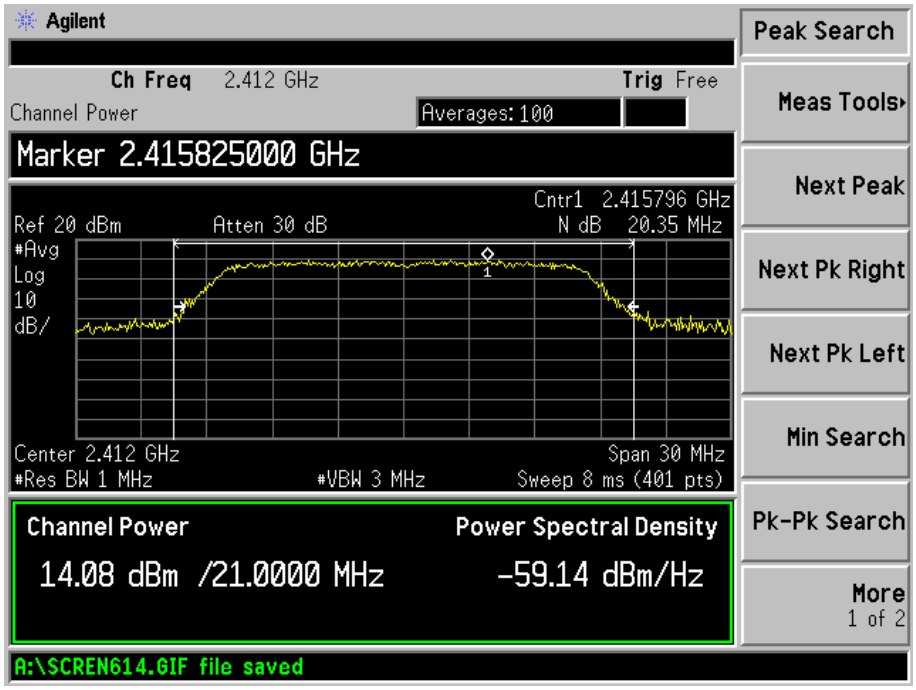


For 802.11g_6M rate

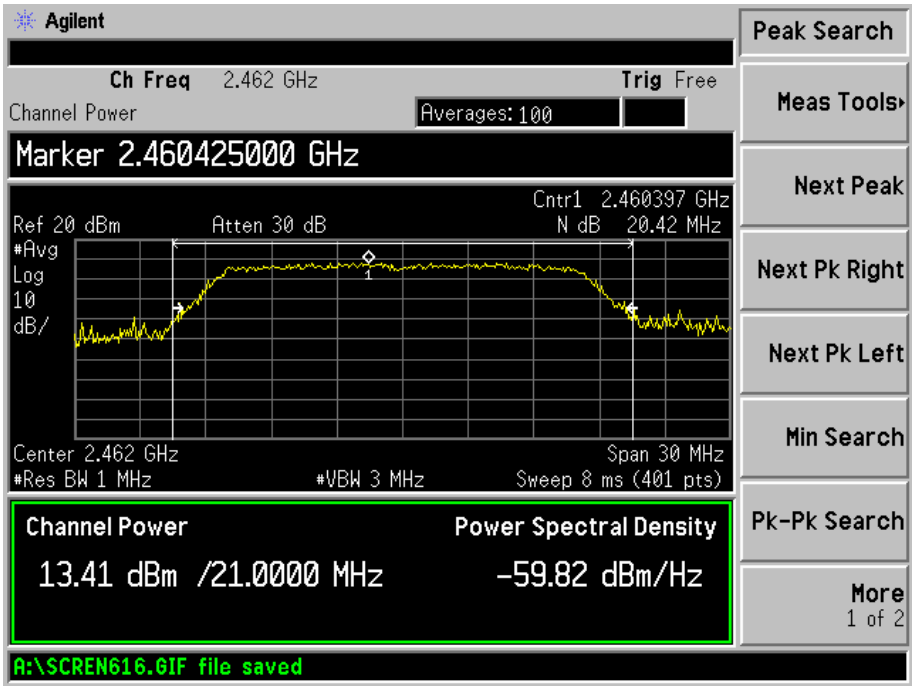
Low Channel:



Middle Channel:

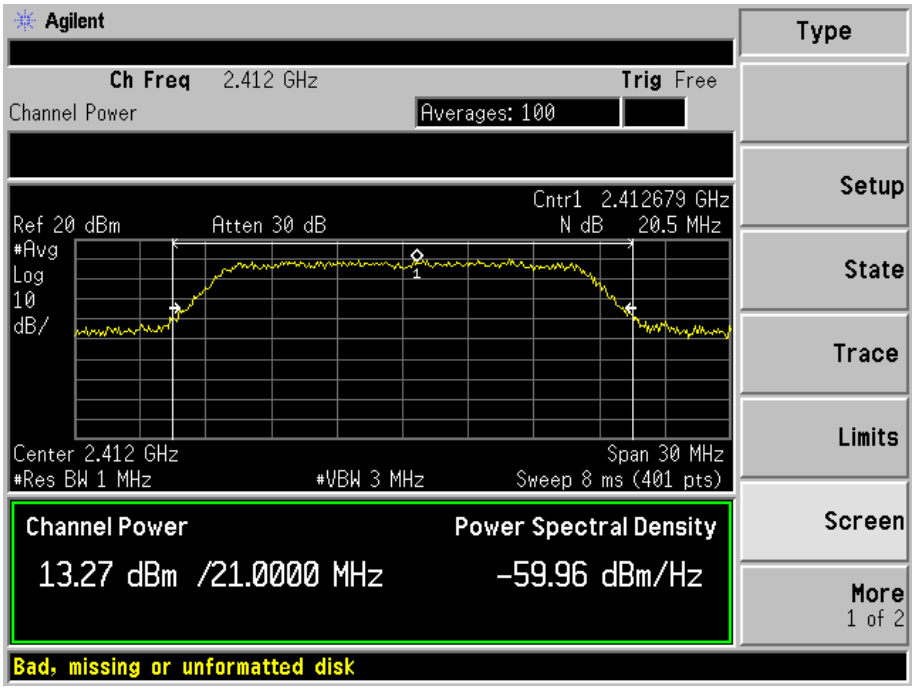


High Channel:

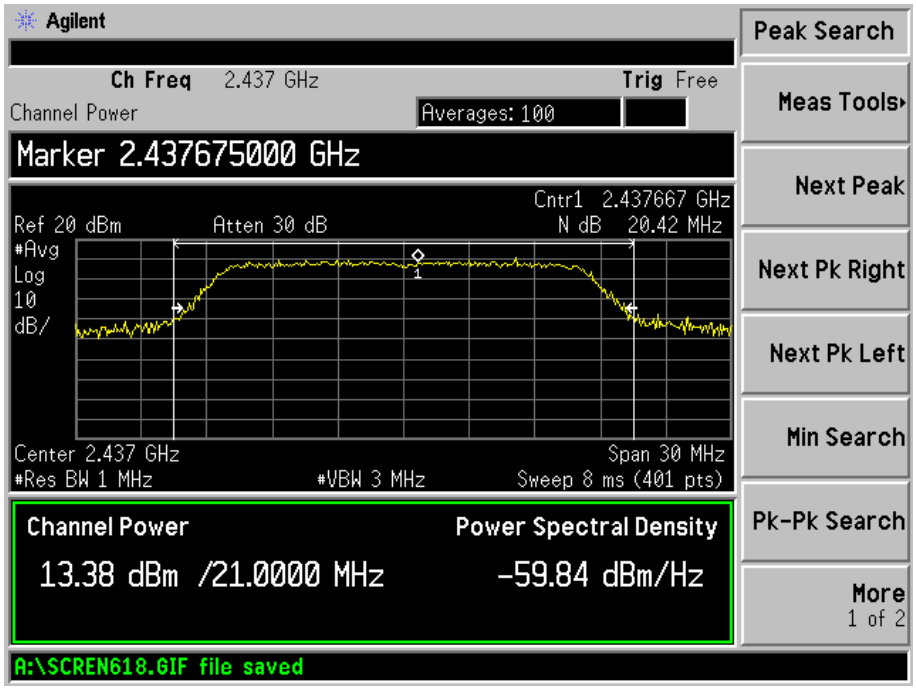


For 802.11g_54M rate

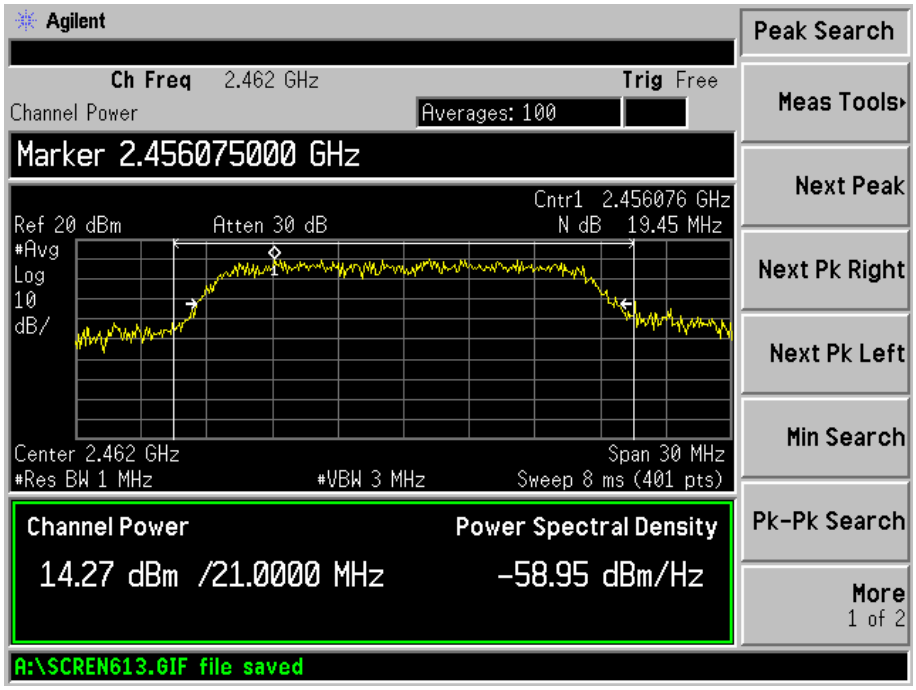
Low Channel:



Middle Channel:

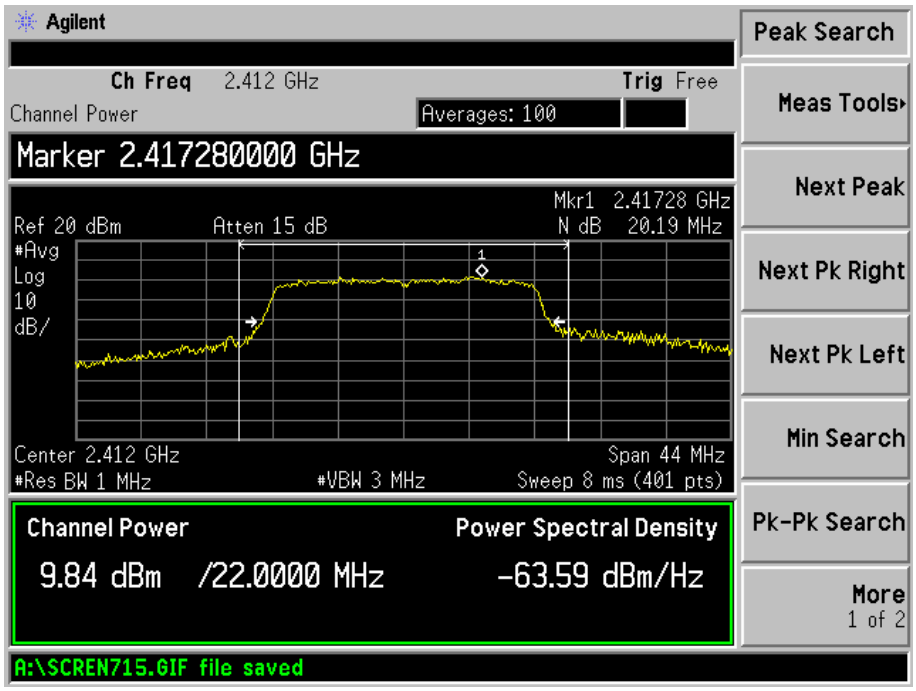


High Channel:

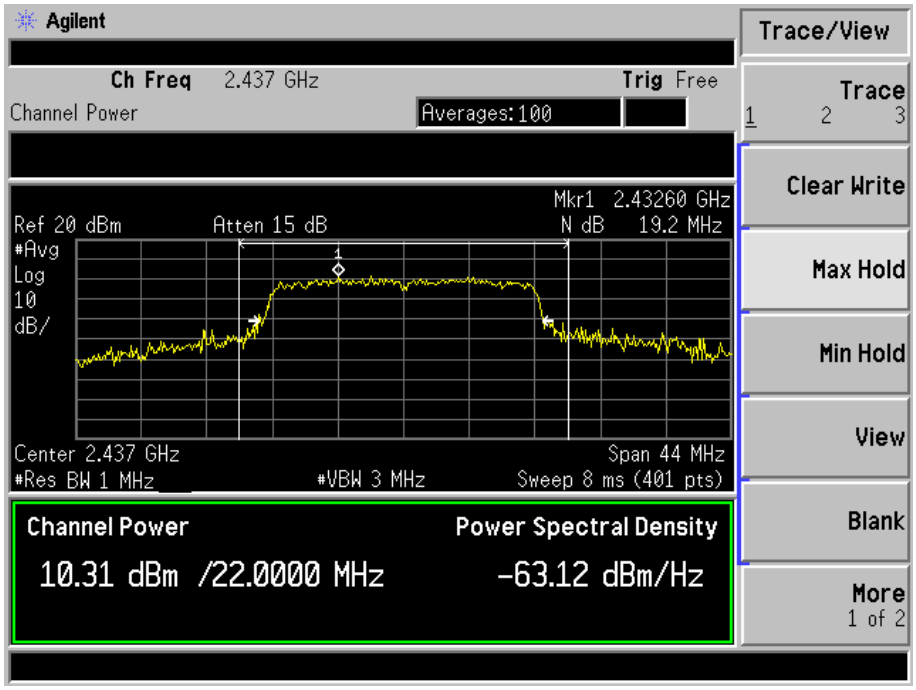


For 802.11n HT 20M rate

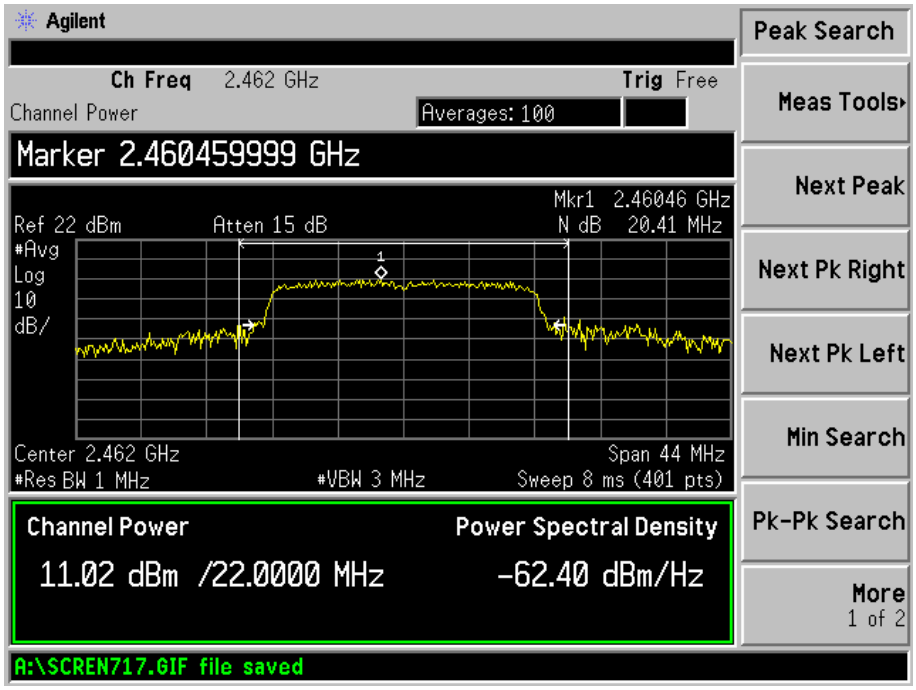
Low Channel:



Middle Channel:

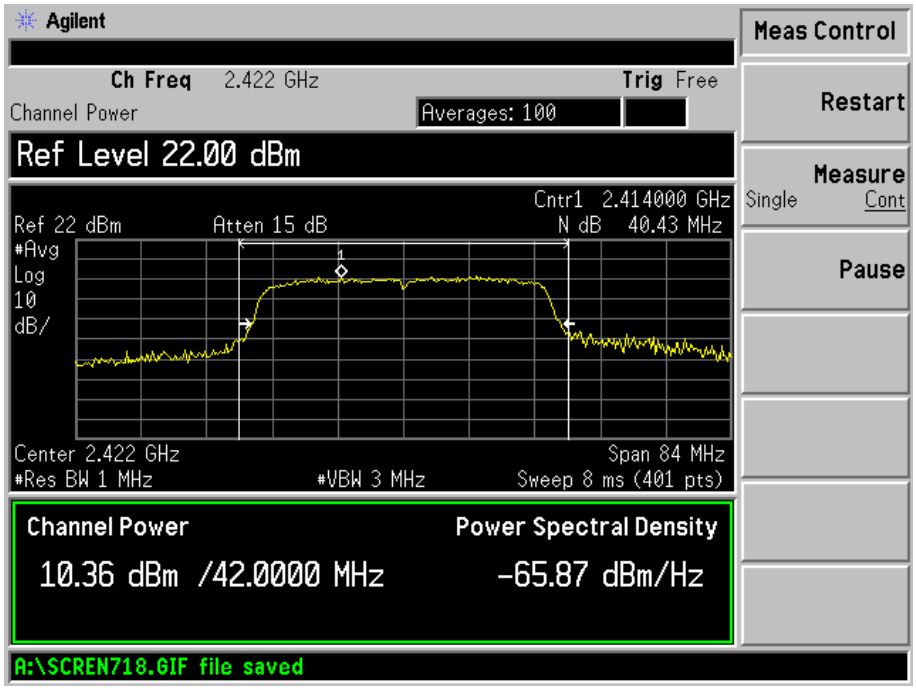


High Channel:

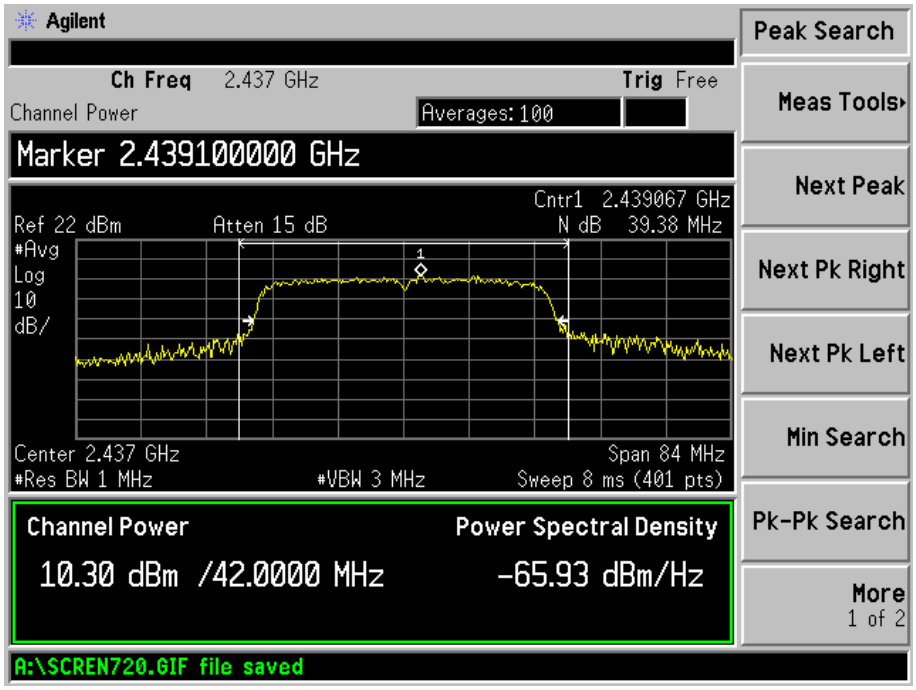


For 802.11n HT 40M rate

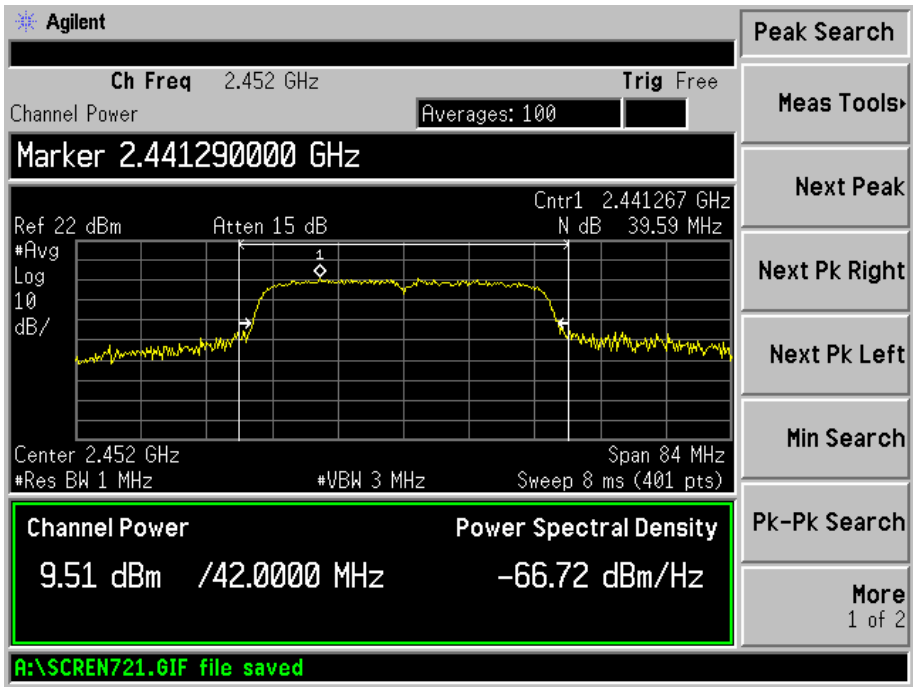
Low Channel:



Middle Channel:



High Channel:



8. FIELD STRENGTH OF SPURIOUS EMISSIONS

8.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ±5.10 dB.

8.2 Standard Applicable

According to §15.247(c), 15.205 15.209(b) &15.35 (b), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Section 15.209:
30 - 88 MHz 40 dBuV/m @3M
88 -216 MHz 43.5 dBuV/m @3M
216 -960 MHz 46 dBuV/m @3M
Above 960 MHz 54dBuV/m @3M

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

Emissions that fall in the restricted bands (15.205) must be less than 54dBuV/m otherwise the spurious and harmonics must be attenuated by at least 20dB.

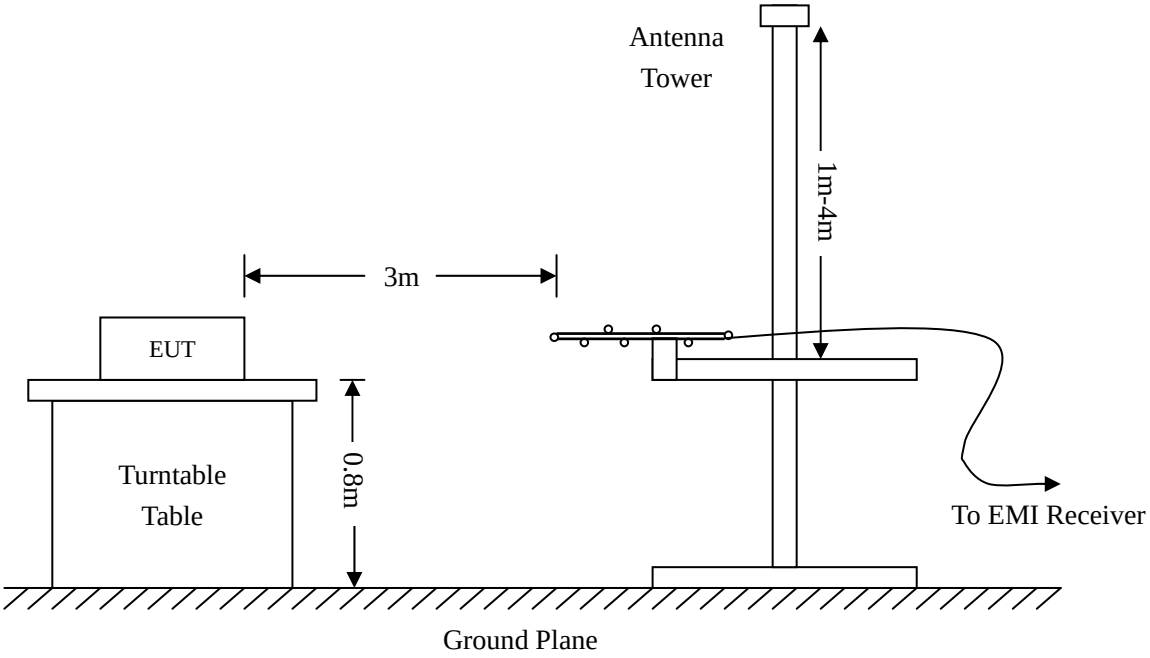
8.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2010-12-20	2011-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2010-12-20	2011-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2010-12-20	2011-12-19
RF Switch	EM	EMSW18	SW060023	2010-12-20	2011-12-19
Pre-amplifier	Agilent	8447F	3113A06717	2010-12-20	2011-12-19
Pre-amplifier	Compliance Direction	PAP-0118	24002	2010-12-20	2011-12-19
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2011-01-09	2012-01-08
Horn Antenna	ETS	3117	00086197	2011-01-09	2012-01-08

8.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



8.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Ant. Factor + Cable Loss – Ampl. Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15 Limit

8.6 Environmental Conditions

Temperature:	22° C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

8.7 Summary of Test Results/Plots

According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst margin of:

-4.37dBμV at **4924.0MHz** in the **Horizontal** polarization, **Transmitting 802.11b High Channel** test mode with **Average**, **30 MHz to 25 GHz, 3Meters**

Note: *this EUT was tested in 3 orthogonal positions and the worst case position data was reported.*

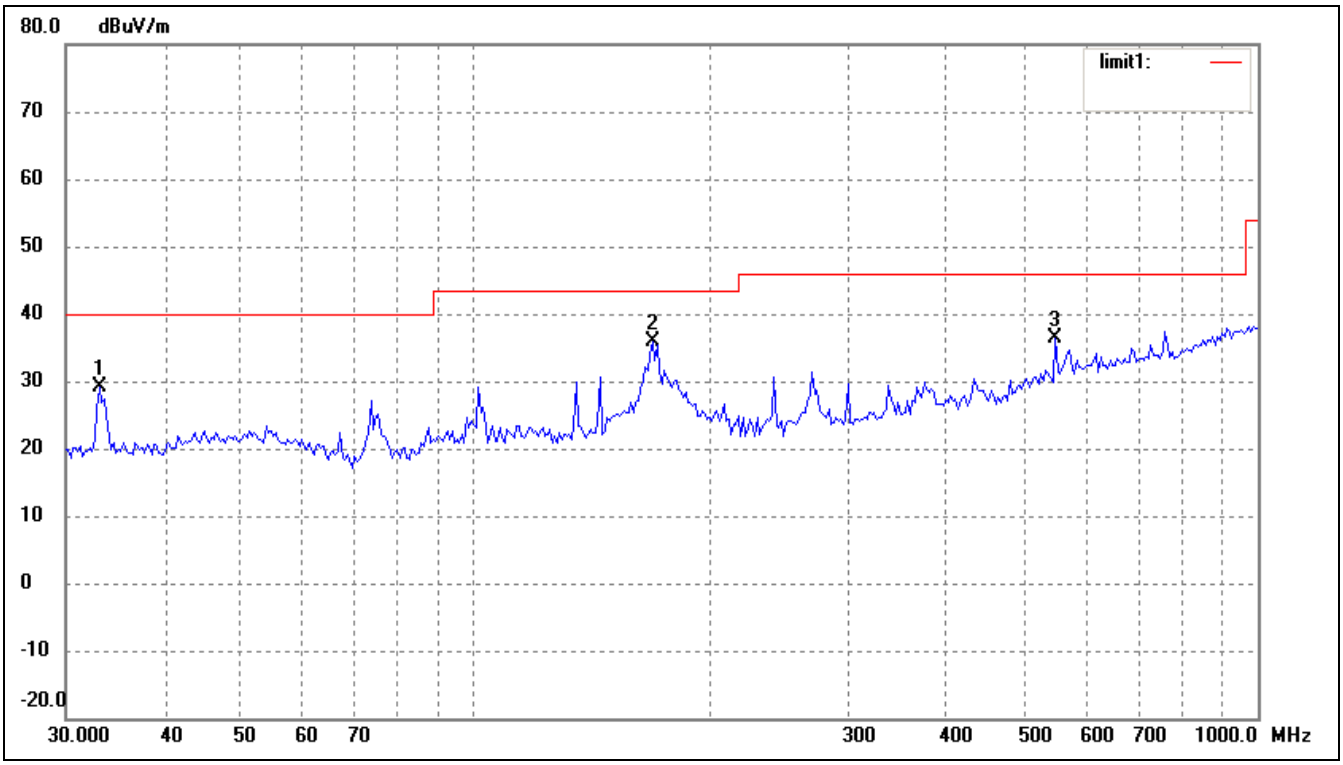
Test Result/Plots:

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11b) Low Channel(2412Mhz)

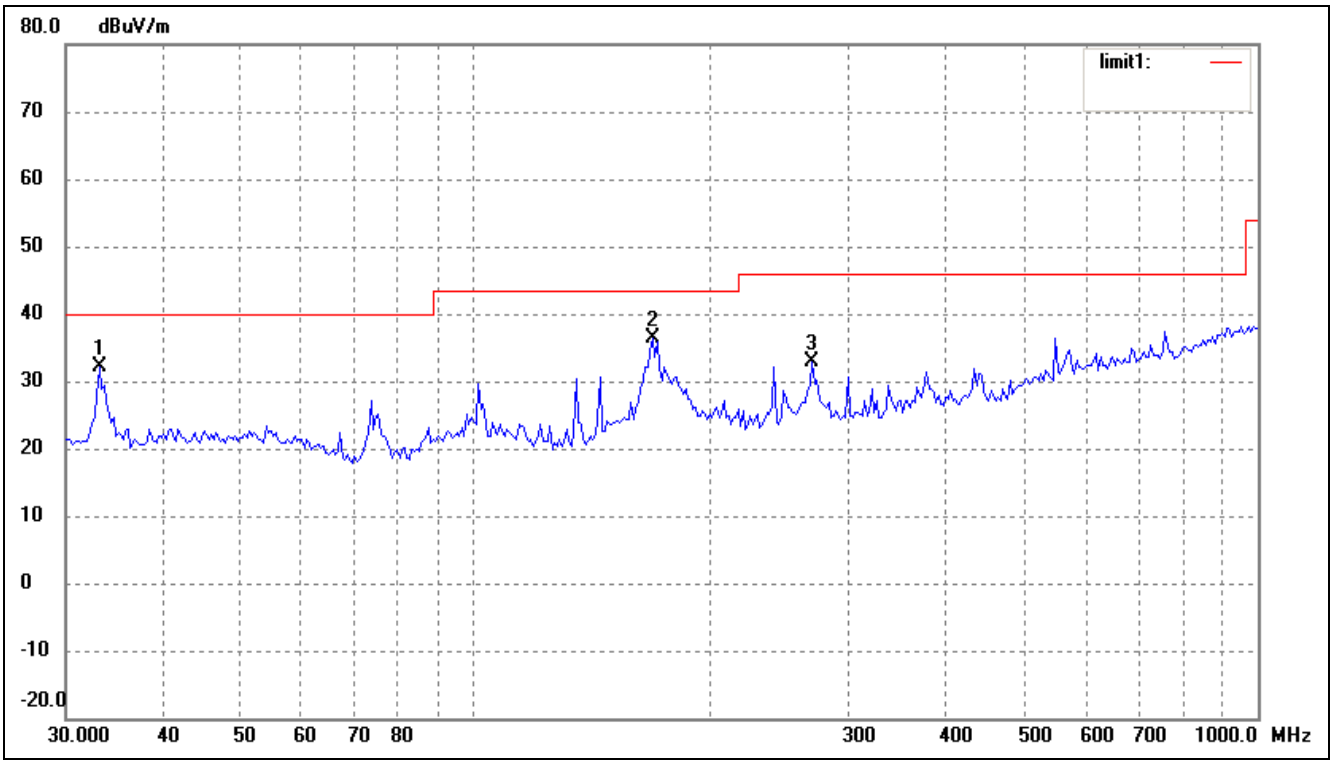
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0949	22.29	6.77	29.06	40.00	-10.94	360	100	peak
2	168.4138	30.96	4.83	35.79	43.50	-7.71	231	110	peak
3	550.9479	20.93	15.57	36.50	46.00	-9.50	0	200	peak

Vertical



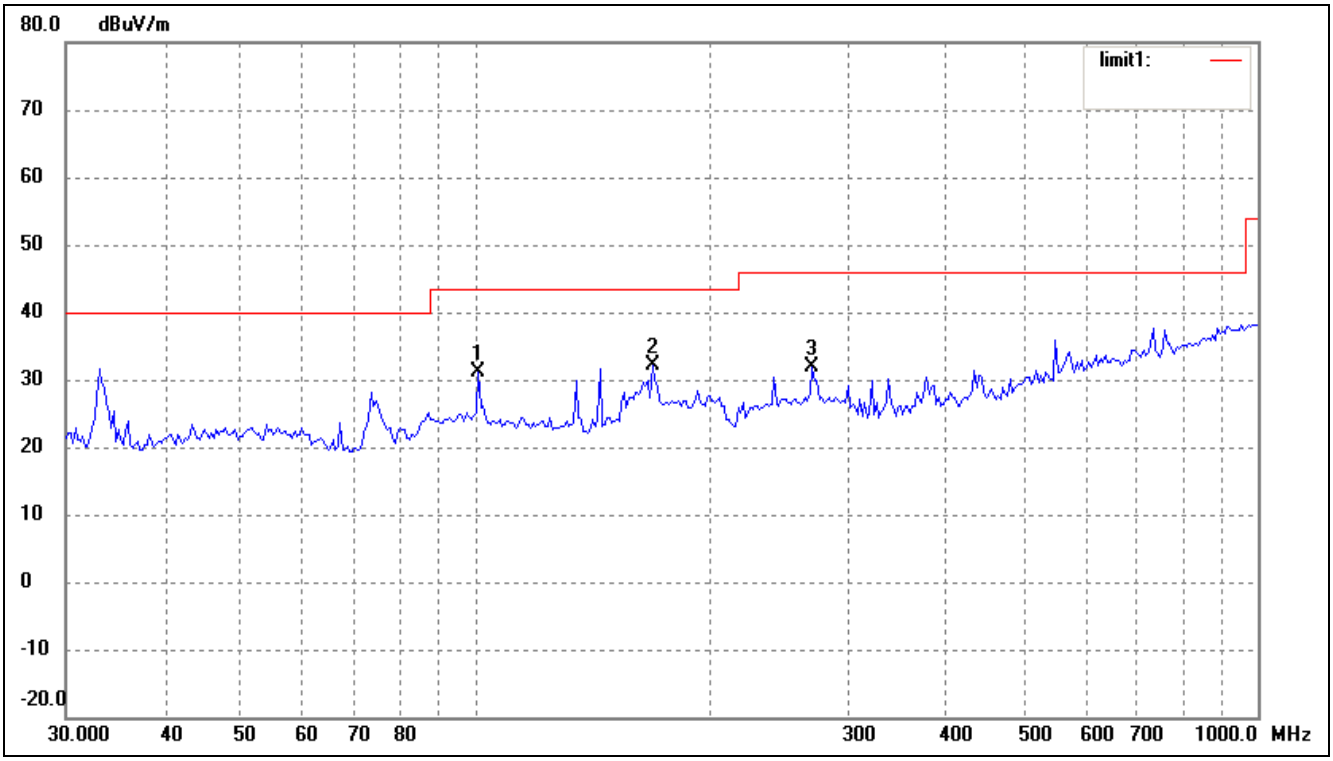
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0949	25.29	6.77	32.06	40.00	-7.94	228	140	peak
2	168.4138	31.46	4.83	36.29	43.50	-7.21	360	200	peak
3	269.4284	23.73	9.22	32.95	46.00	-13.05	125	112	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11b) Middle Channel(2437Mhz)

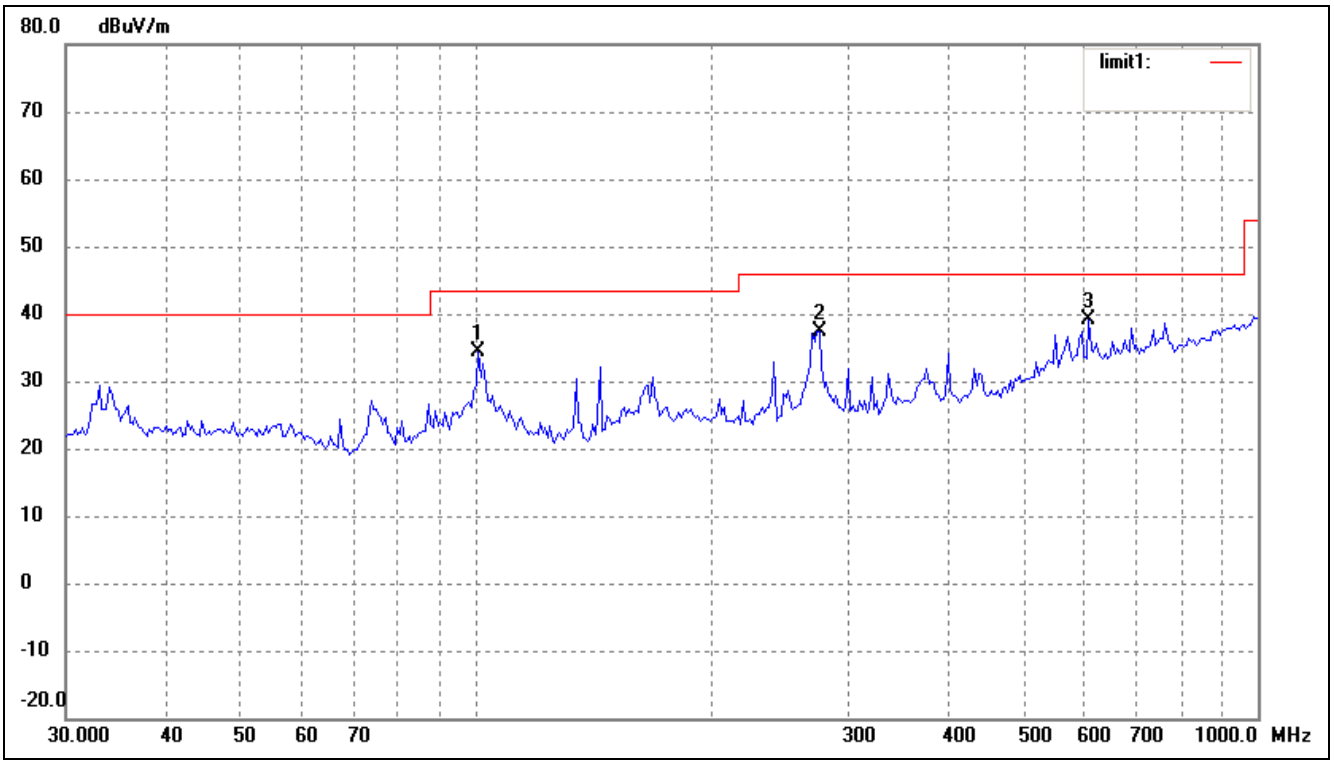
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	100.9338	22.90	8.34	31.24	43.50	-12.26	360	200	peak
2	168.4138	27.28	4.84	32.12	43.50	-11.38	0	100	peak
3	269.4284	22.55	9.22	31.77	46.00	-14.23	223	102	peak

Vertical



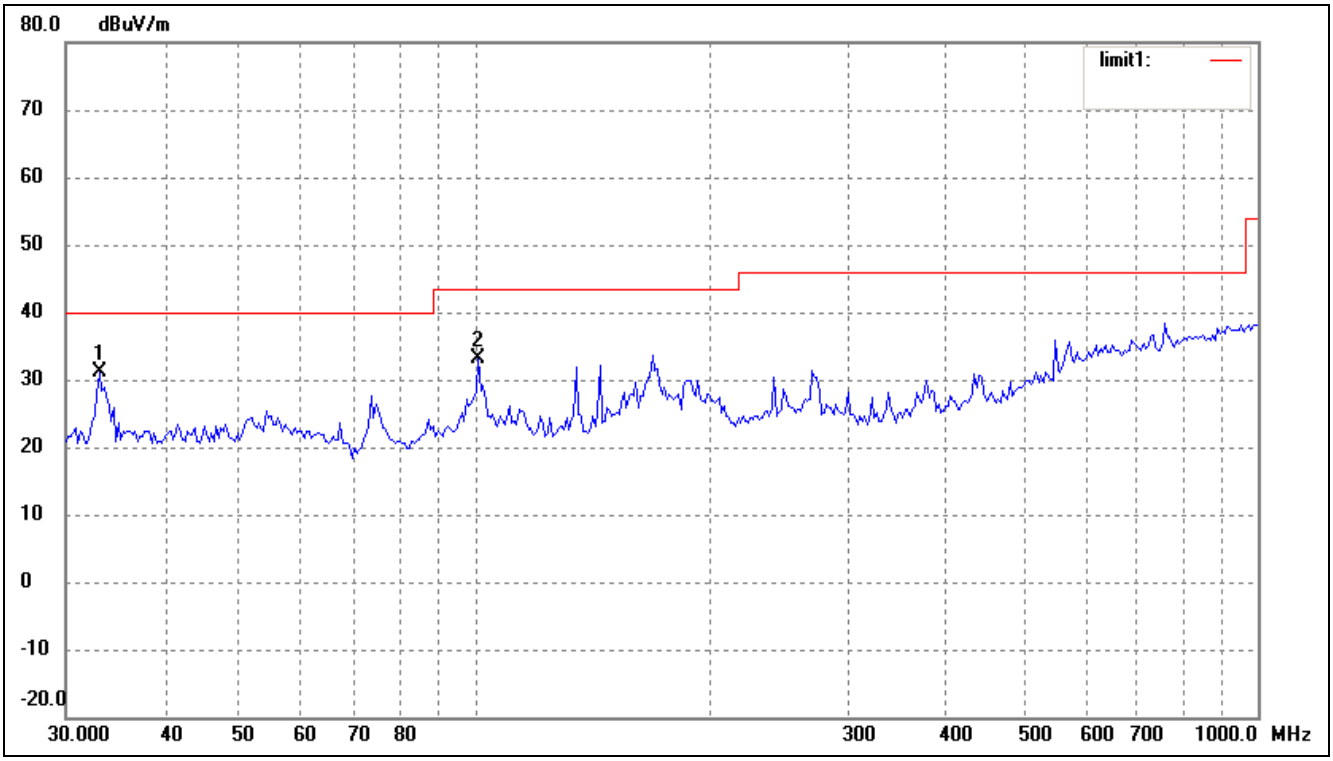
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	100.9338	26.06	8.34	34.40	43.50	-9.10	216	210	peak
2	275.1569	27.93	9.38	37.31	46.00	-8.69	360	100	peak
3	607.7866	22.50	16.73	39.23	46.00	-6.77	261	105	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11b) High Channel(2462Mhz)

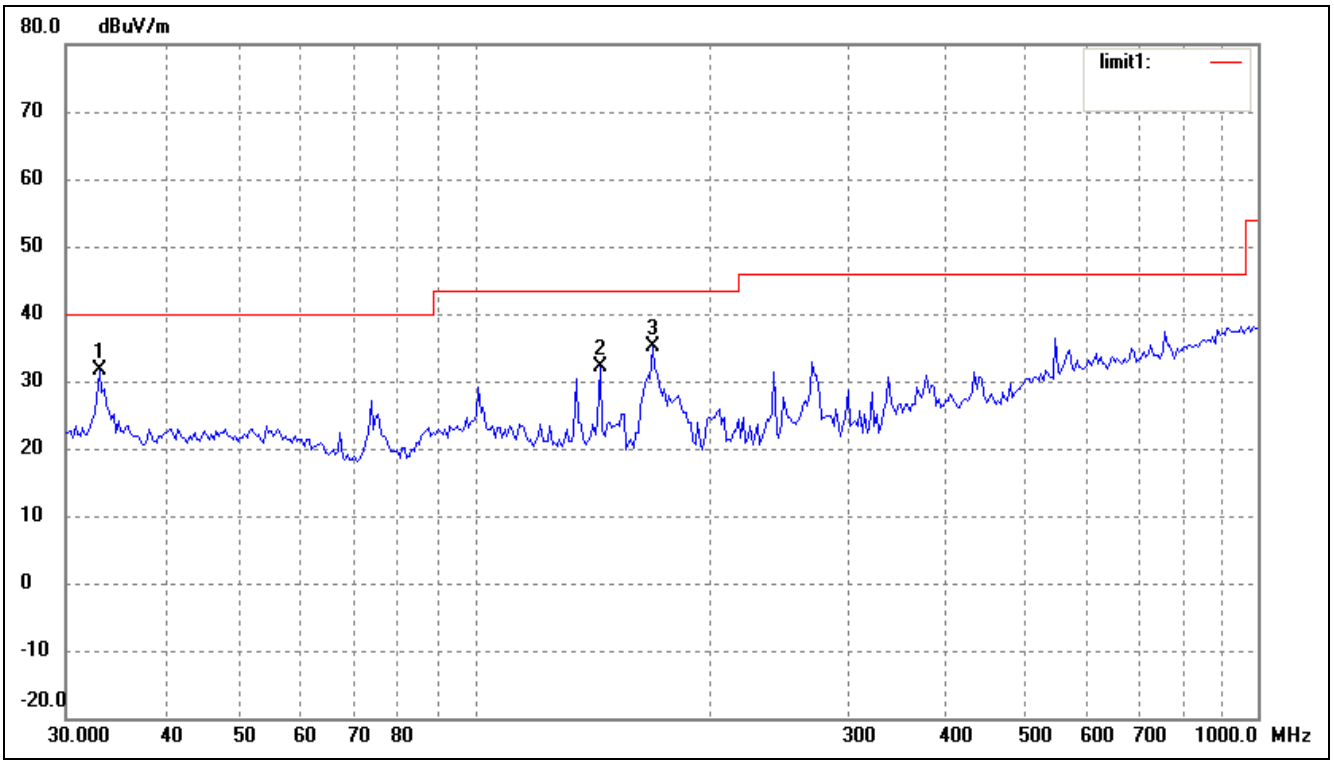
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0949	24.29	6.77	31.06	40.00	-8.94	360	200	peak
2	100.9339	24.90	8.34	33.24	43.50	-10.26	223	210	peak

Vertical



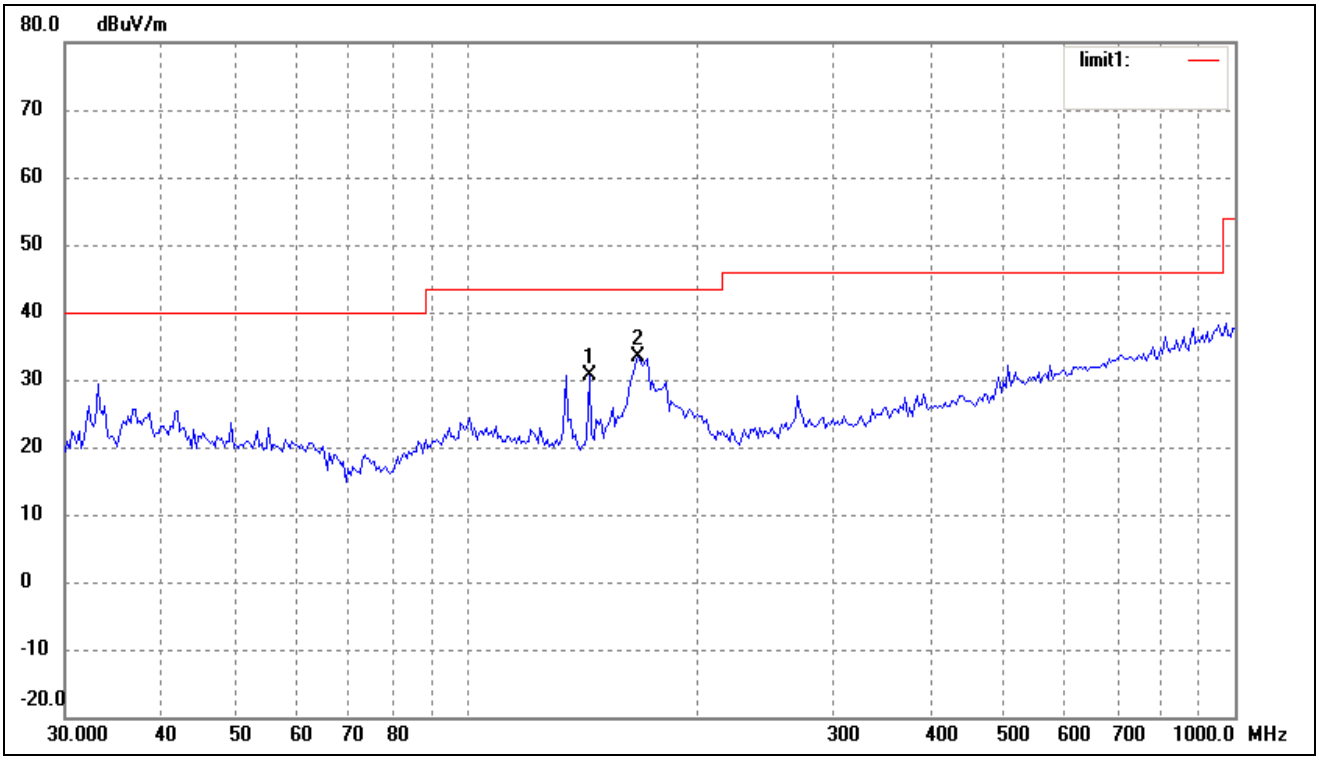
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0949	24.79	6.77	31.56	40.00	-8.44	235	124	peak
2	144.3348	28.13	4.01	32.14	43.50	-11.36	360	200	peak
3	168.4138	30.29	4.83	35.12	43.50	-8.38	223	203	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11g) Low Channel(2412Mhz)

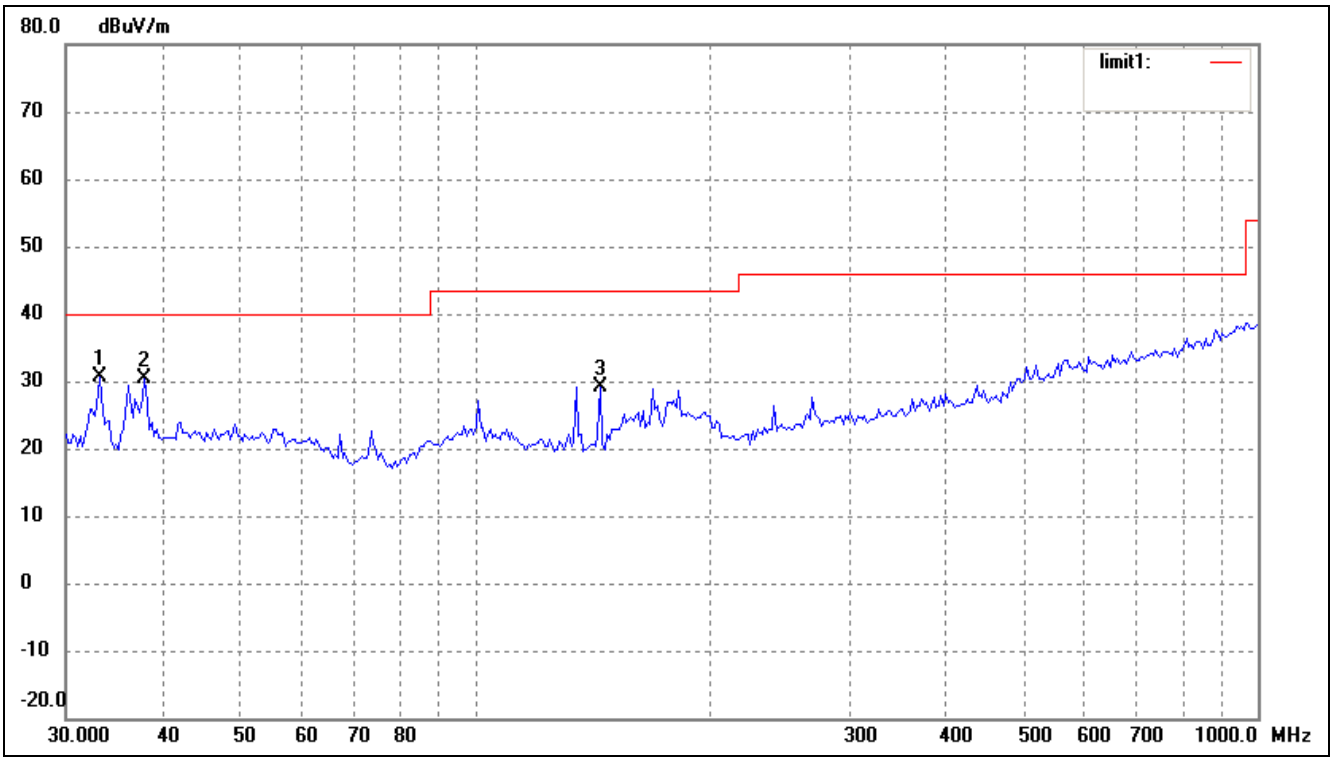
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	144.3348	26.60	4.01	30.61	43.50	-12.89	360	100	peak
2	167.2367	28.52	4.79	33.31	43.50	-10.19	223	120	peak

Vertical



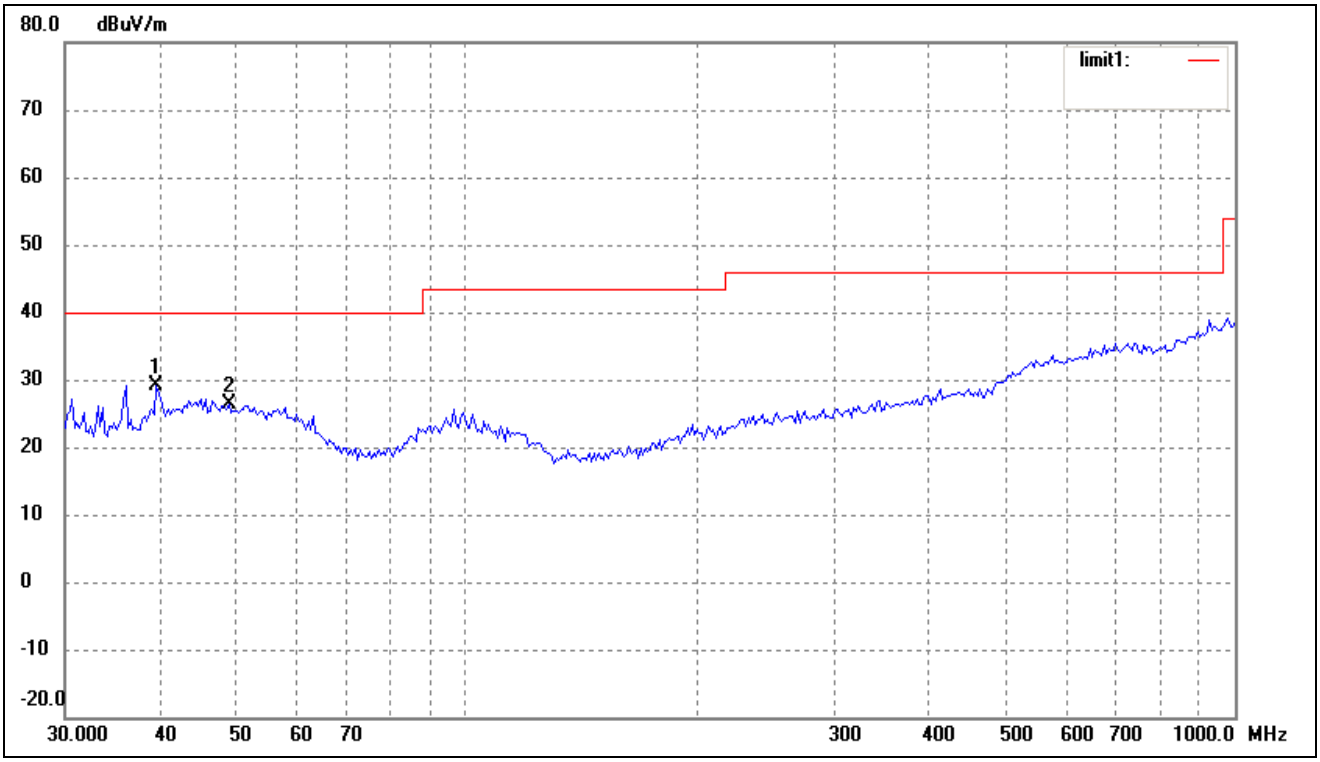
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0949	23.97	6.77	30.74	40.00	-9.26	0	100	peak
2	37.8121	22.95	7.54	30.49	40.00	-9.51	234	118	peak
3	144.3348	25.10	4.01	29.11	43.50	-14.39	226	125	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11g) Middle Channel(2437Mhz)

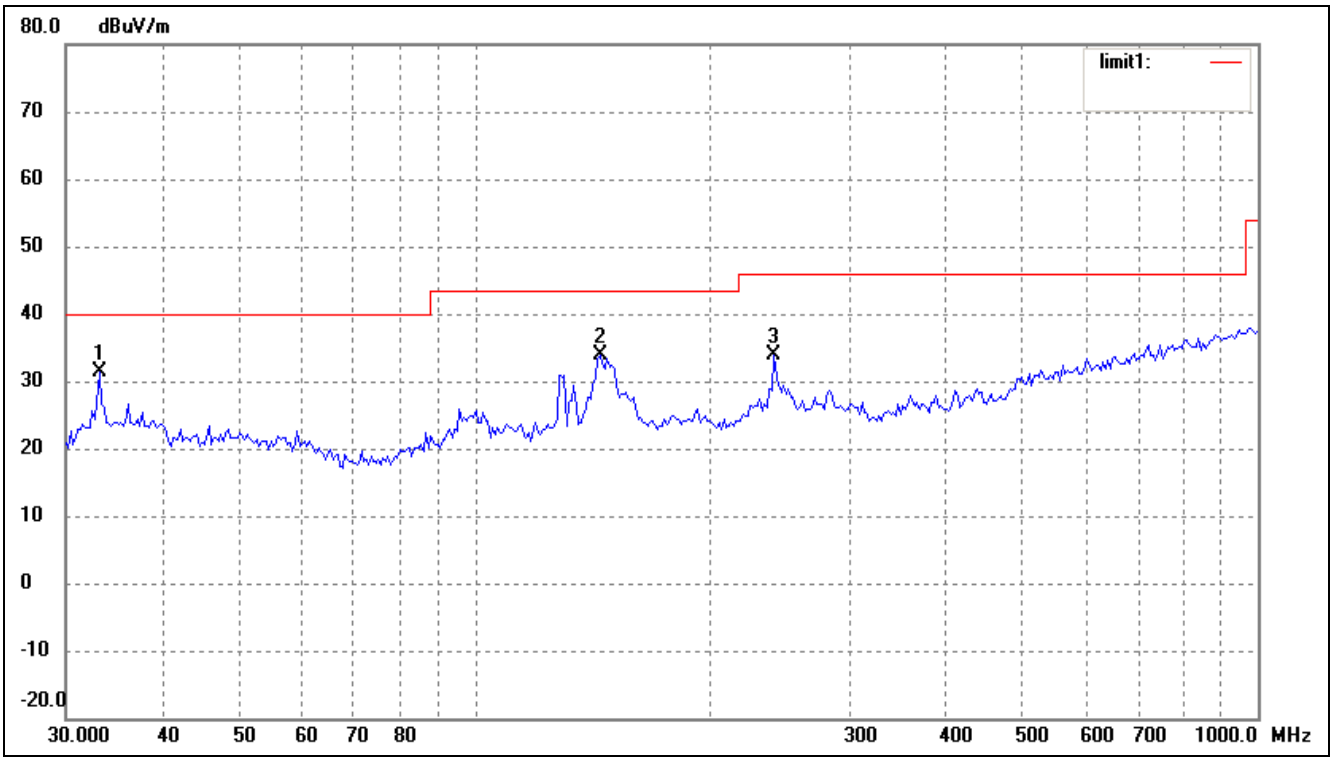
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.4371	21.22	7.99	29.21	40.00	-10.79	0	100	peak
2	49.0144	18.26	8.02	26.28	40.00	-13.72	228	125	peak

Vertical



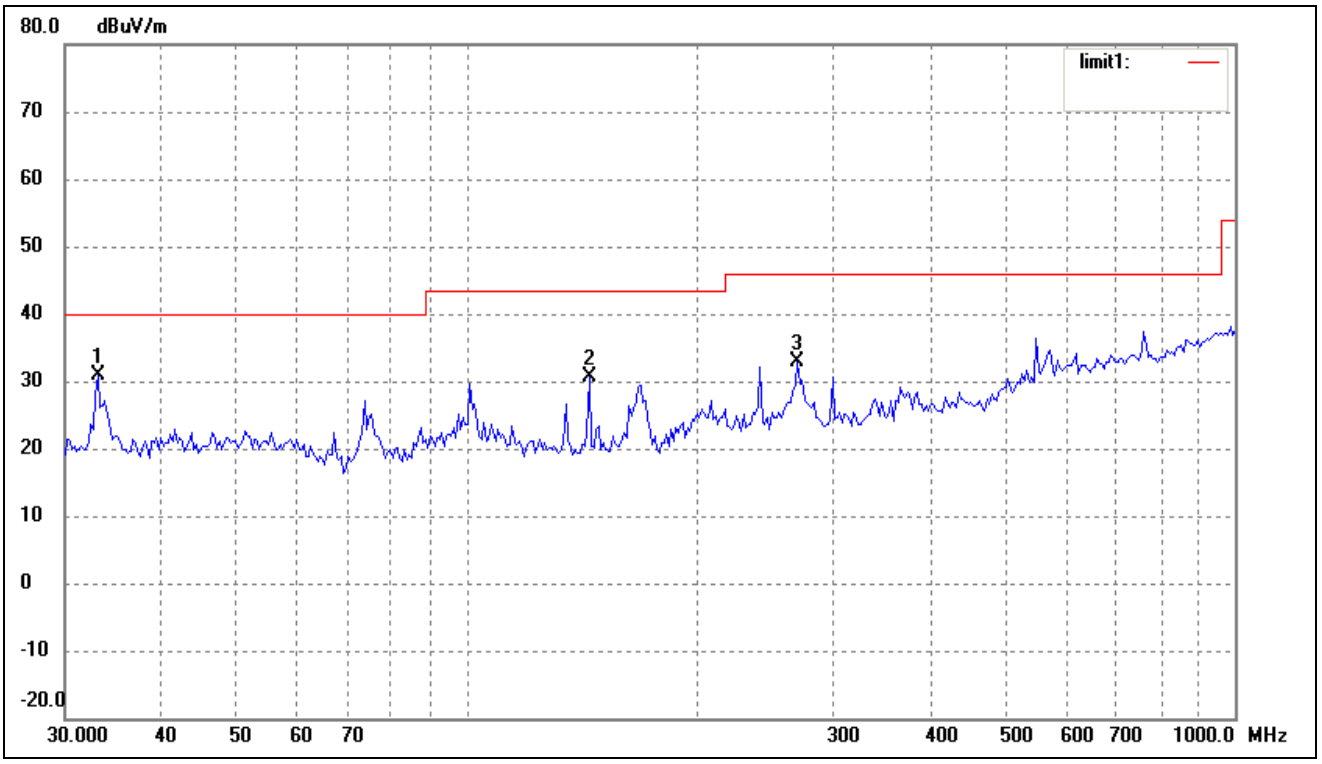
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0949	24.52	6.77	31.29	40.00	-8.71	304	152	peak
2	144.3348	29.96	4.01	33.97	43.50	-9.53	360	200	peak
3	240.8303	25.52	8.45	33.97	46.00	-12.03	0	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11g) High Channel(2462Mhz)

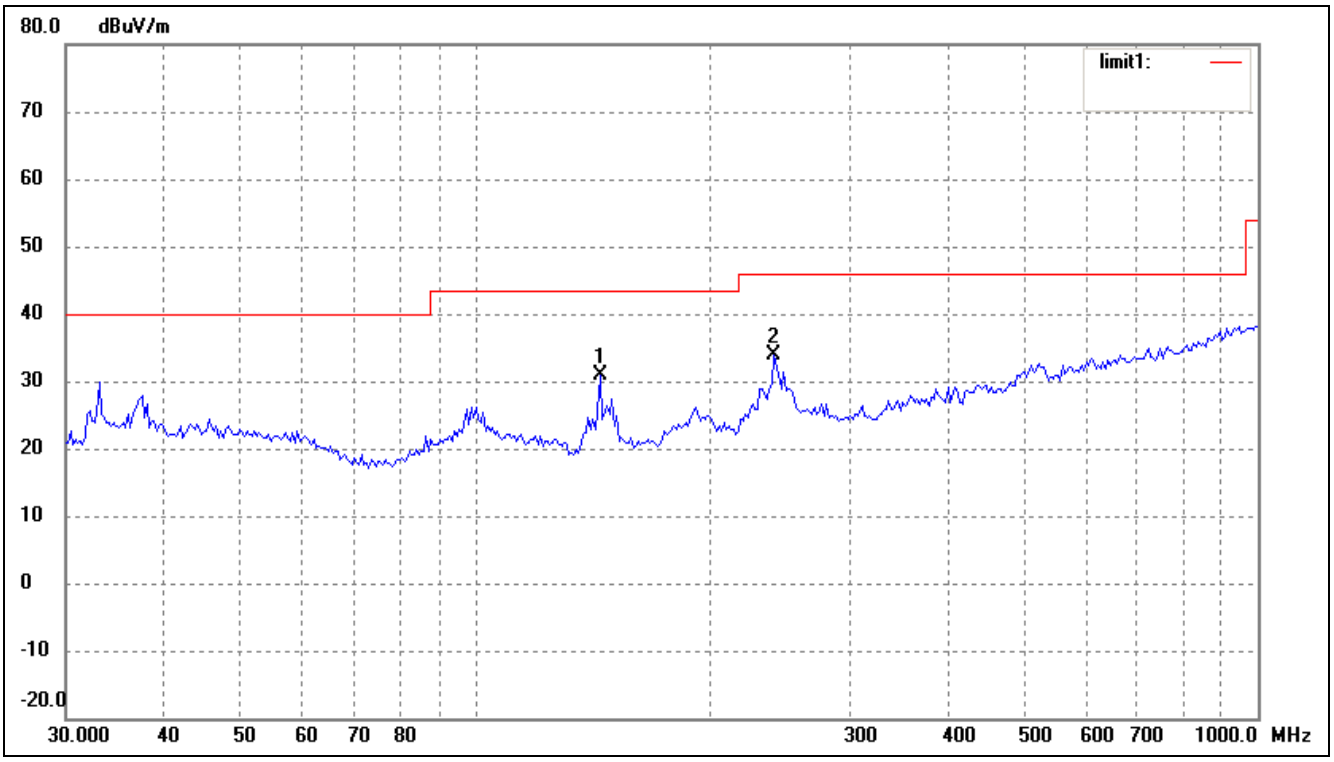
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0949	24.04	6.77	30.81	40.00	-9.19	360	200	peak
2	144.3348	26.64	4.01	30.65	43.50	-12.85	228	112	peak
3	269.4284	23.73	9.22	32.95	46.00	-13.05	0	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	144.3348	26.98	4.01	30.99	43.50	-12.51	323	124	peak
2	240.8302	25.52	8.45	33.97	46.00	-12.03	360	100	peak

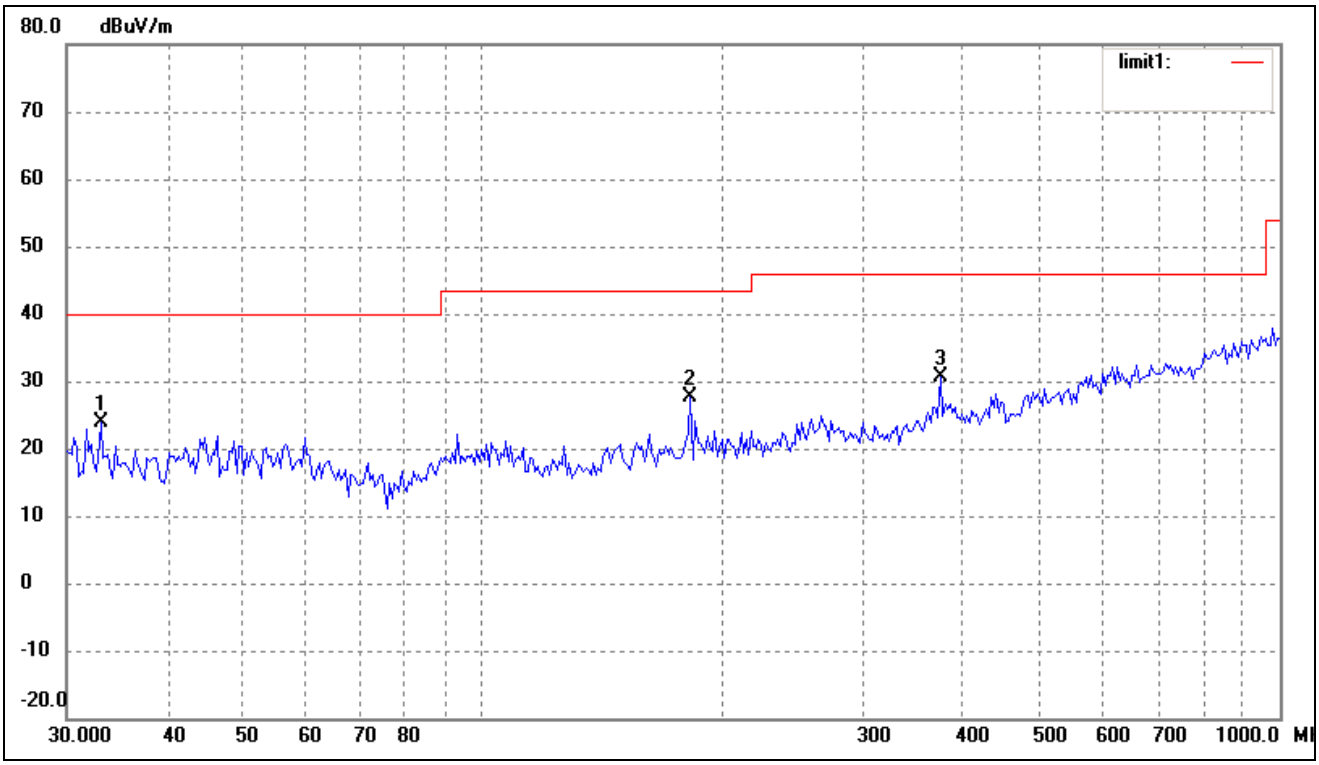
Test Result/Plots:

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT 20M) Low Channel(2412Mhz)

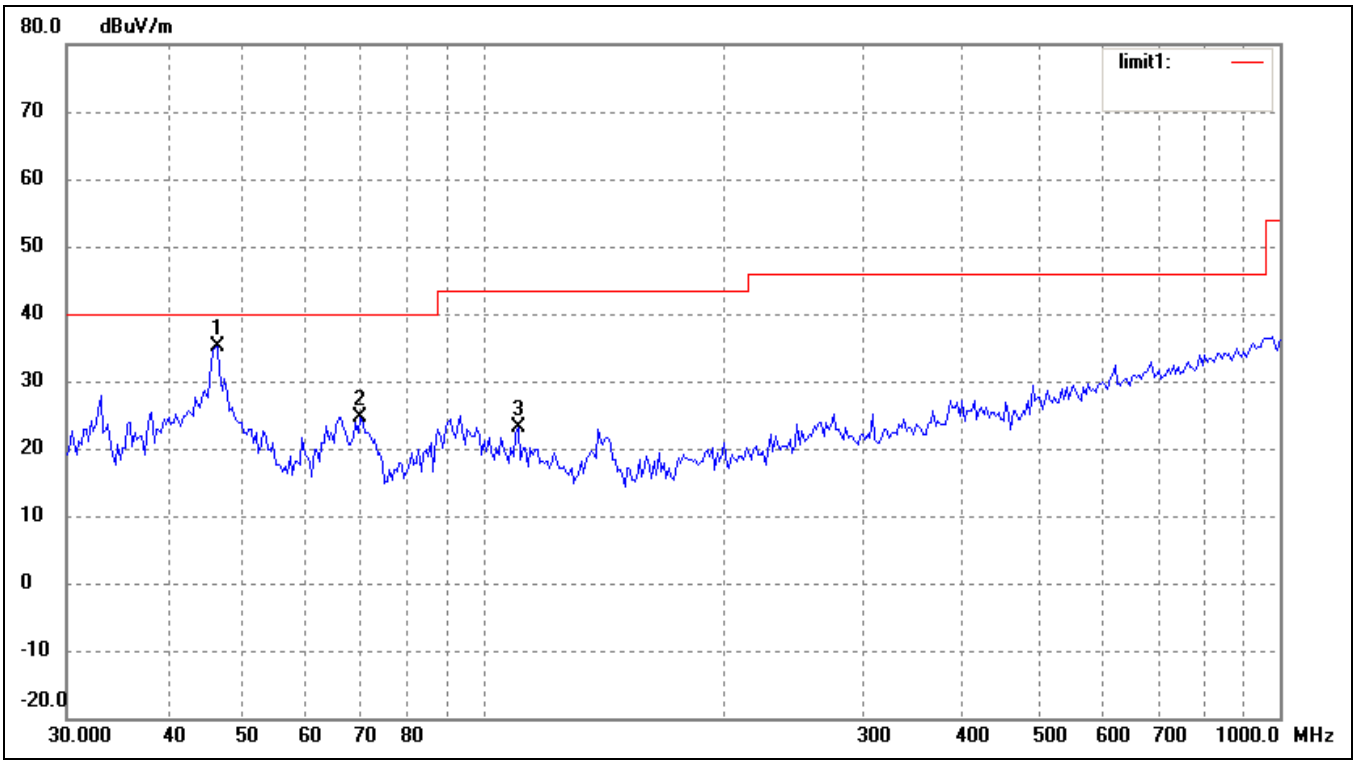
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	17.02	6.77	23.79	40.00	-16.21	360	100	peak
2	181.9202	21.91	5.81	27.72	43.50	-15.78	231	110	peak
3	374.6226	19.40	11.11	30.51	46.00	-15.49	0	200	peak

Vertical



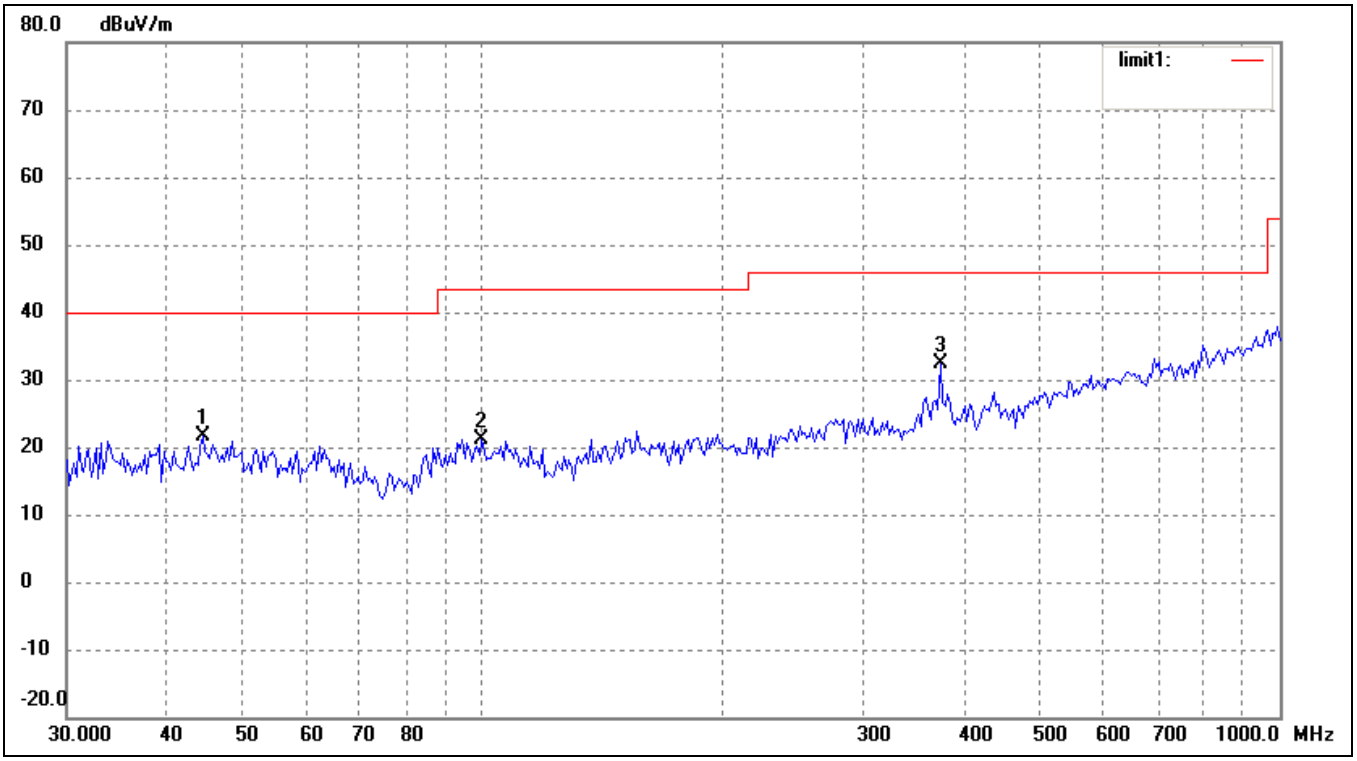
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	46.3402	26.98	8.16	35.14	40.00	-4.86	228	140	peak
2	70.0903	21.05	3.59	24.64	40.00	-15.36	360	200	peak
3	110.5687	15.57	7.50	23.07	43.50	-20.43	125	112	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT 20M) Middle Channel(2437Mhz)

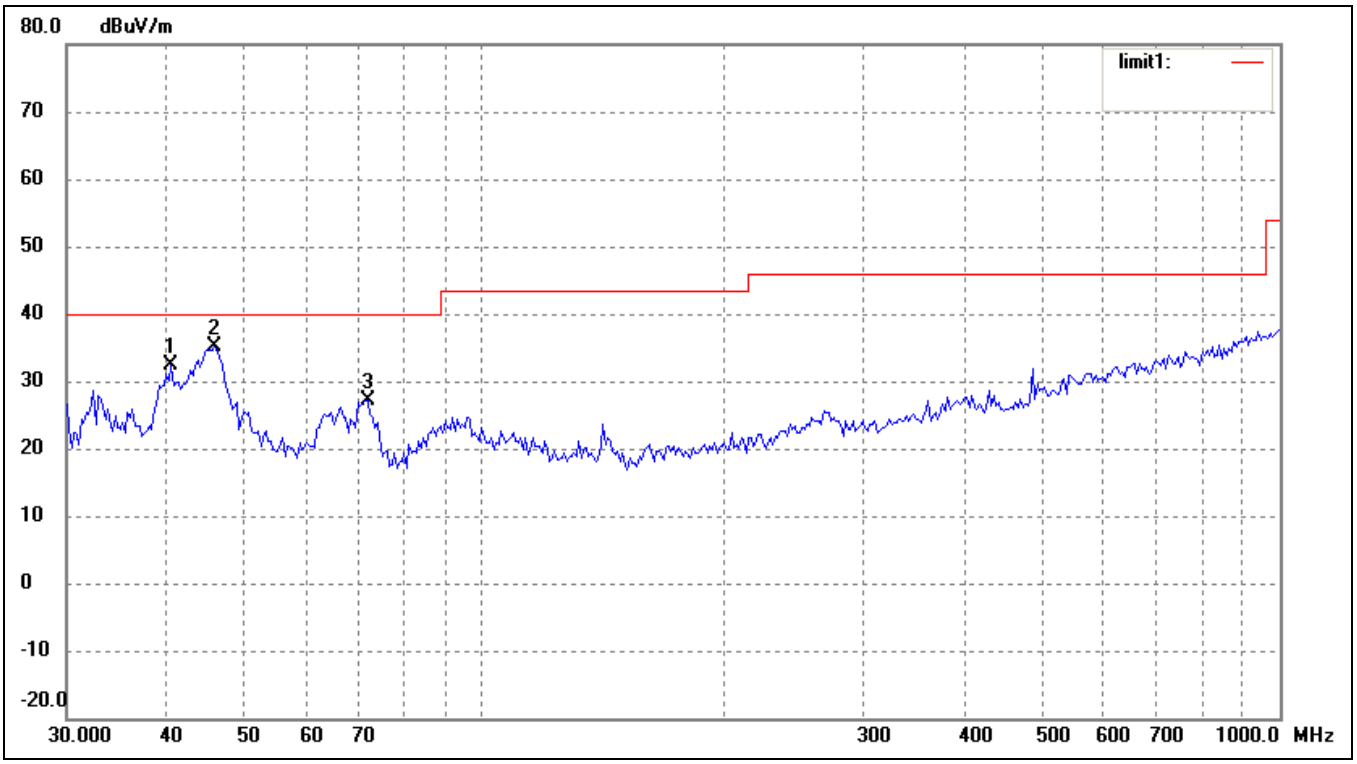
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	44.4308	13.30	8.22	21.52	40.00	-18.48	360	200	peak
2	99.5281	12.78	8.40	21.18	43.50	-22.32	0	100	peak
3	374.6226	21.25	11.11	32.36	46.00	-13.64	223	102	peak

Vertical



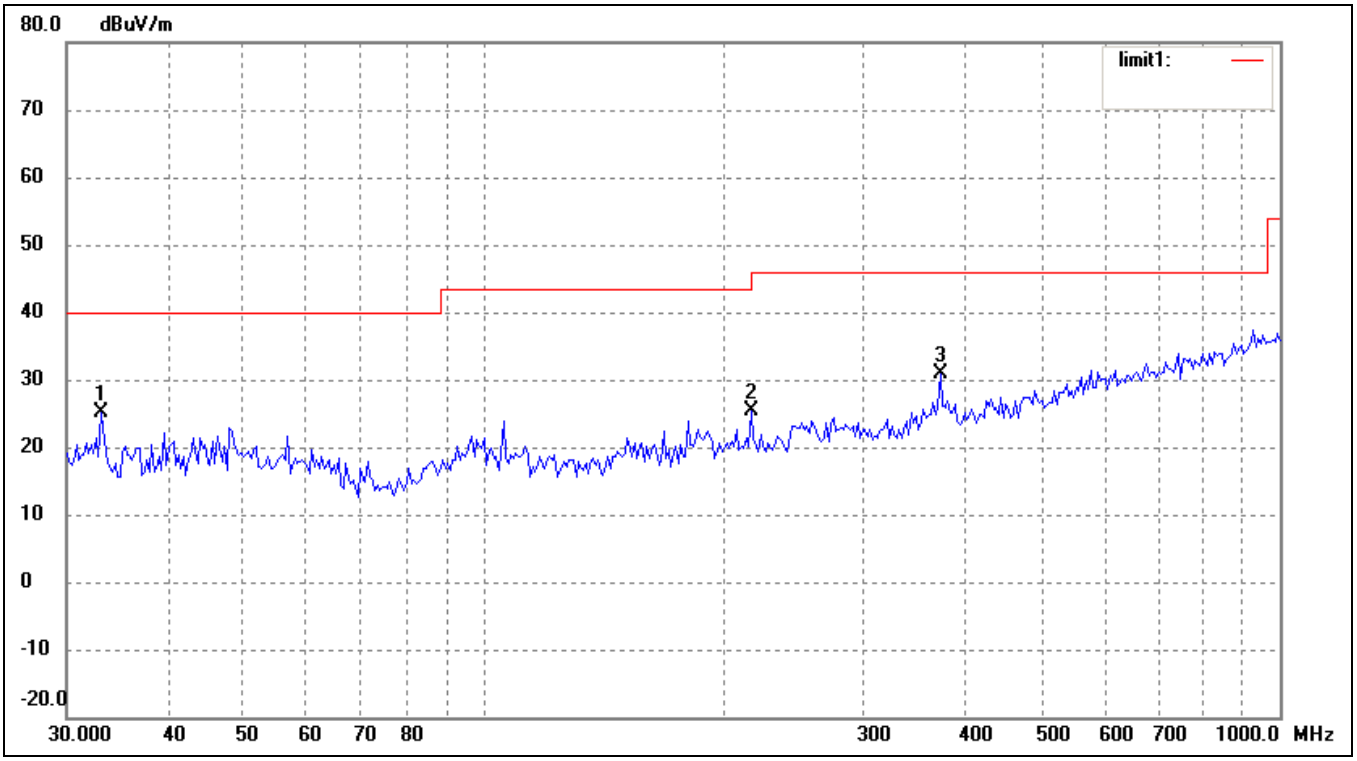
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	40.5591	24.17	8.15	32.32	40.00	-7.68	216	210	peak
2	46.0164	26.89	8.18	35.07	40.00	-4.93	360	100	peak
3	71.5806	23.88	3.37	27.25	40.00	-12.75	261	105	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT 20M) High Channel(2462Mhz)

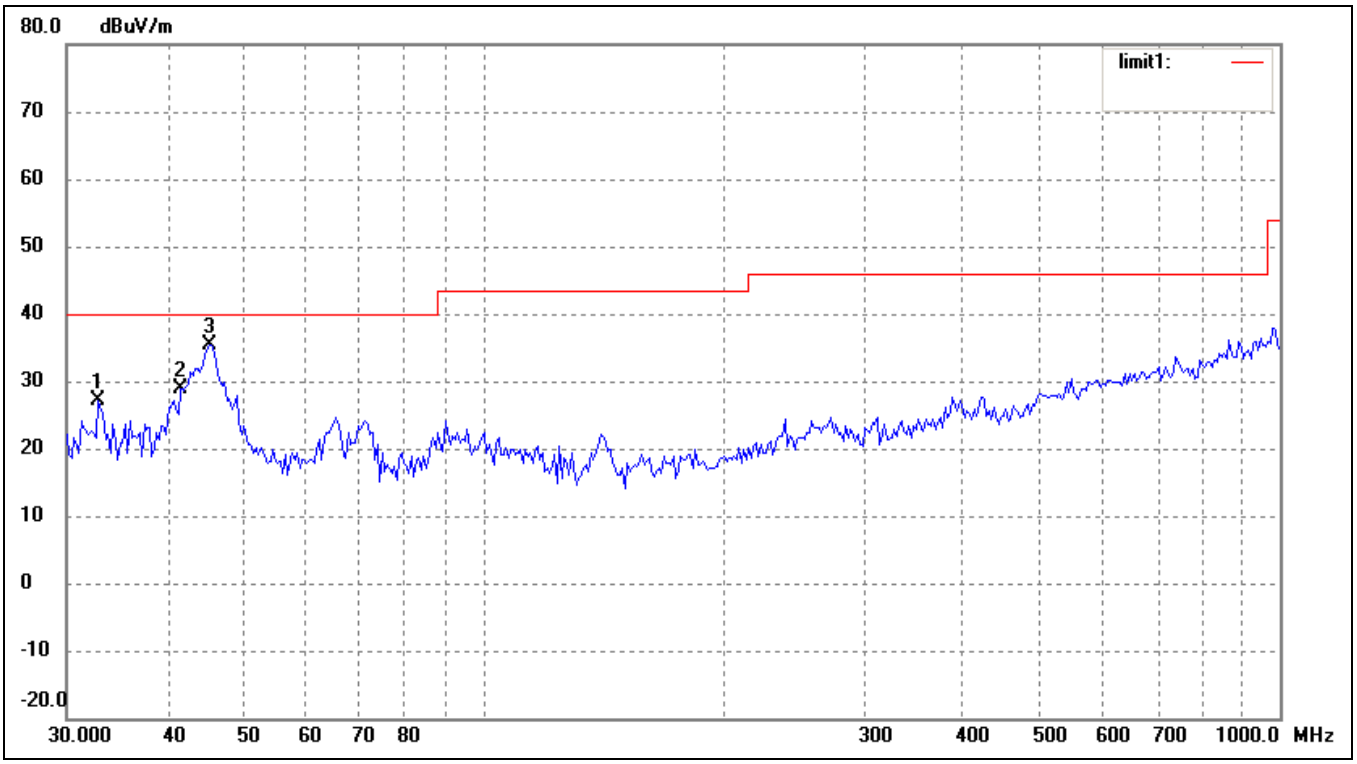
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	18.45	6.77	25.22	40.00	-14.78	360	200	peak
2	216.7828	18.31	7.17	25.48	46.00	-20.52	223	210	peak
3	374.6226	19.71	11.11	30.82	46.00	-15.18	230	120	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.8637	20.41	6.77	27.18	40.00	-12.82	235	124	peak
2	41.7129	20.75	8.17	28.92	40.00	-11.08	360	200	peak
3	45.3755	27.21	8.21	35.42	40.00	-4.58	223	203	peak

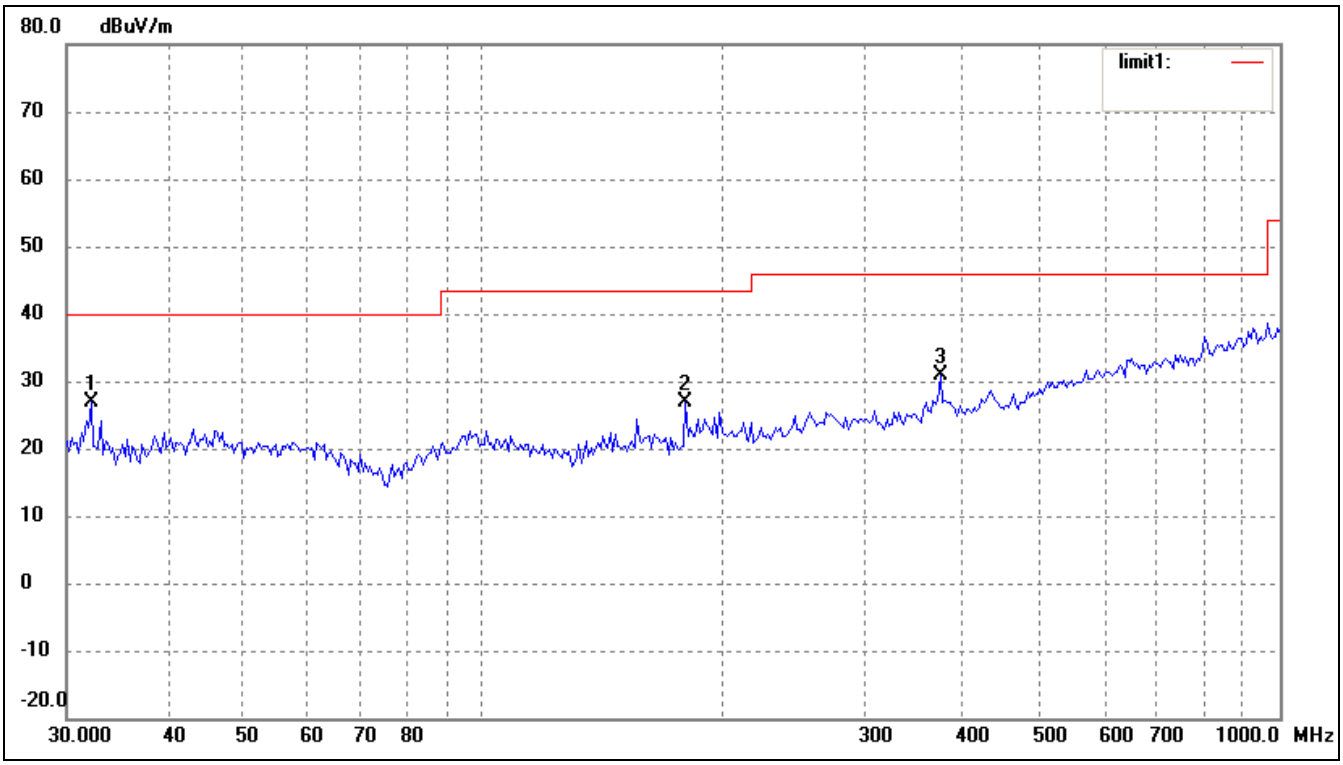
Test Result/Plots:

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT 40M) Low Channel(2422Mhz)

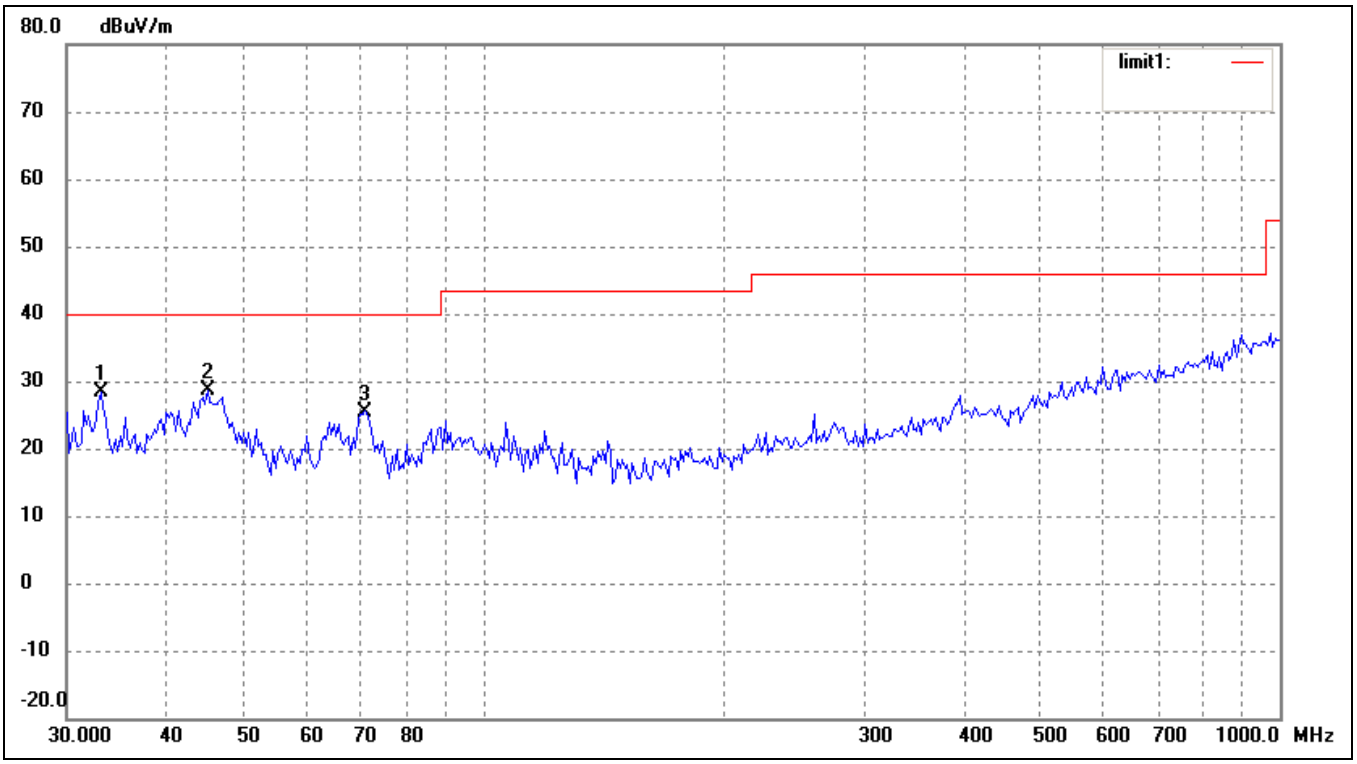
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.1795	20.13	6.77	26.90	40.00	-13.10	360	100	peak
2	179.3864	21.22	5.60	26.82	43.50	-16.68	231	110	peak
3	374.6226	19.75	11.11	30.86	46.00	-15.14	0	200	peak

Vertical



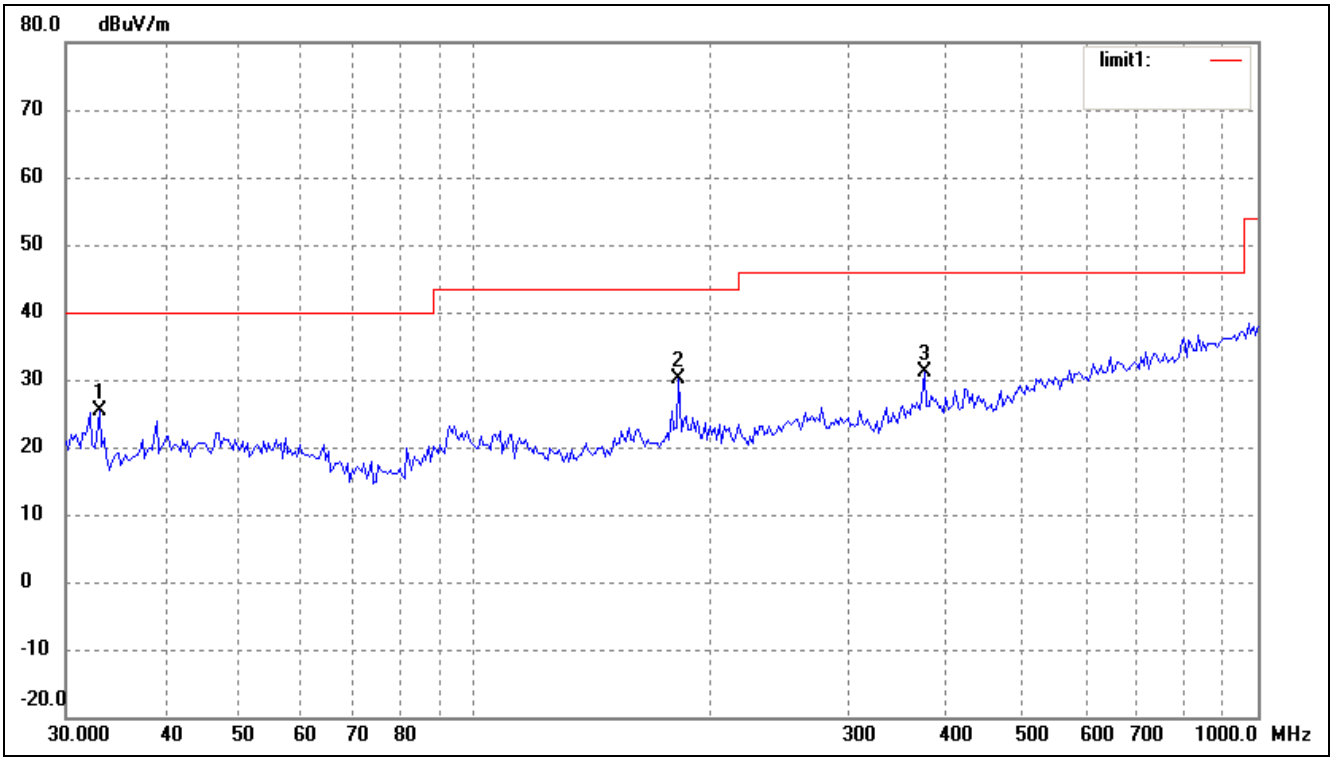
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	21.61	6.77	28.38	40.00	-11.62	228	140	peak
2	45.0583	20.37	8.23	28.60	40.00	-11.40	360	200	peak
3	71.0803	22.05	3.45	25.50	40.00	-14.50	125	112	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT 40M) Middle Channel(2437Mhz)

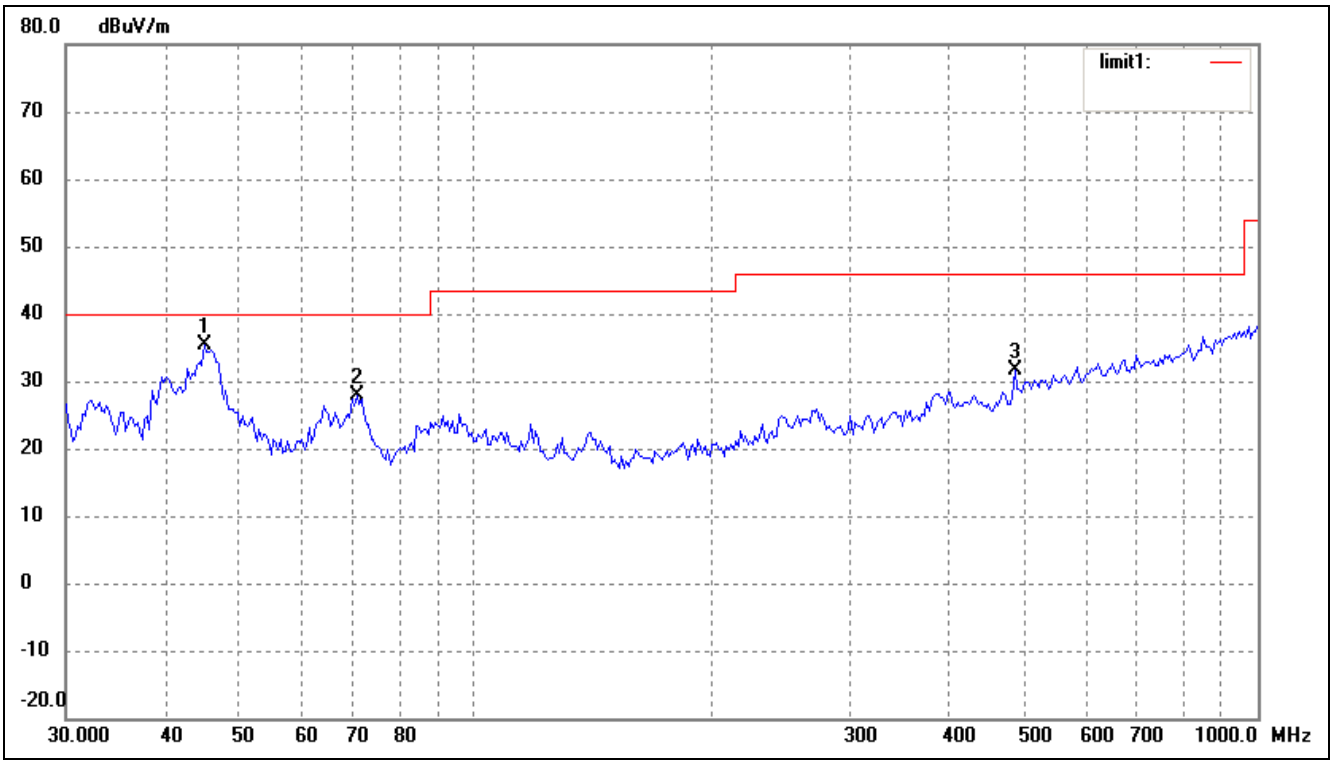
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	18.62	6.77	25.39	40.00	-14.61	360	200	peak
2	181.9202	24.25	5.81	30.06	43.50	-13.44	0	100	peak
3	374.6226	20.08	11.11	31.19	46.00	-14.81	223	102	peak

Vertical



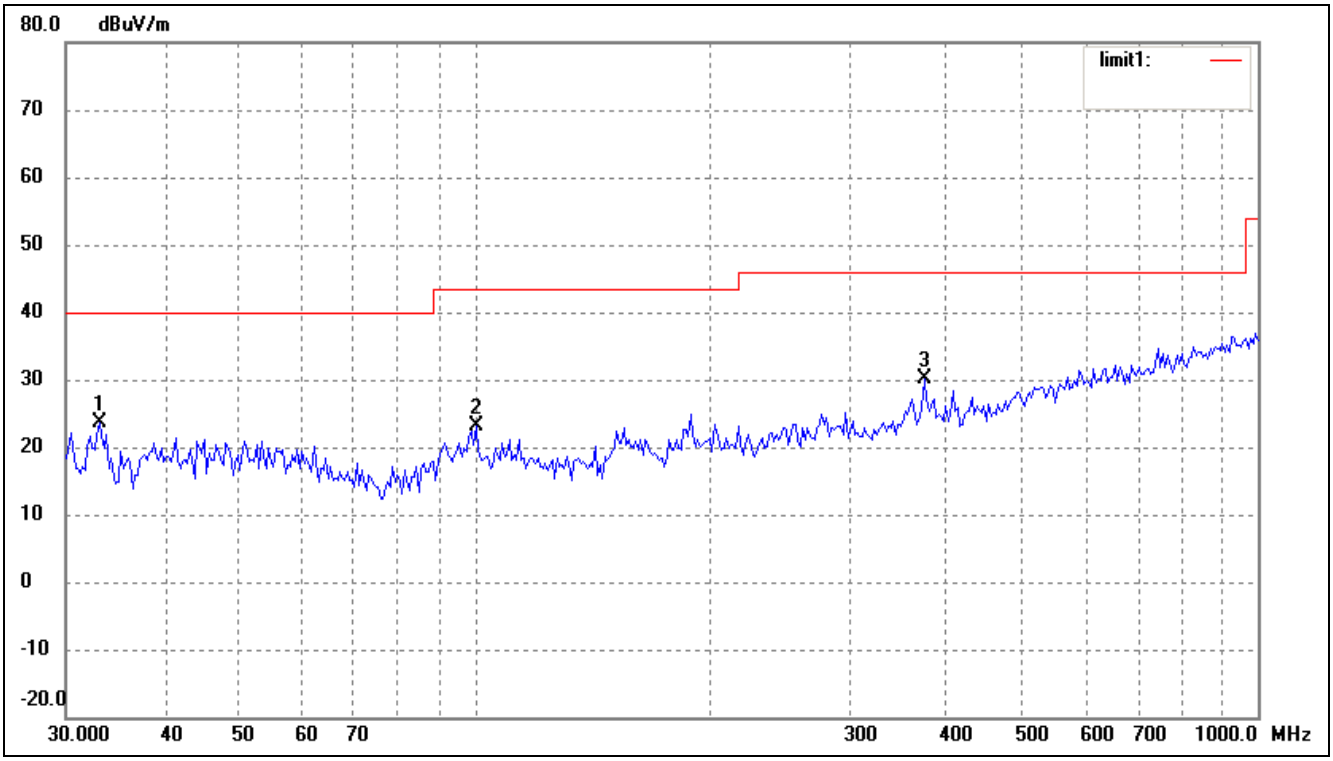
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	45.0583	27.10	8.23	35.33	40.00	-4.67	216	210	peak
2	70.5836	24.37	3.52	27.89	40.00	-12.11	360	100	peak
3	489.0269	18.28	13.34	31.62	46.00	-14.38	261	105	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT 40M) High Channel(2452Mhz)

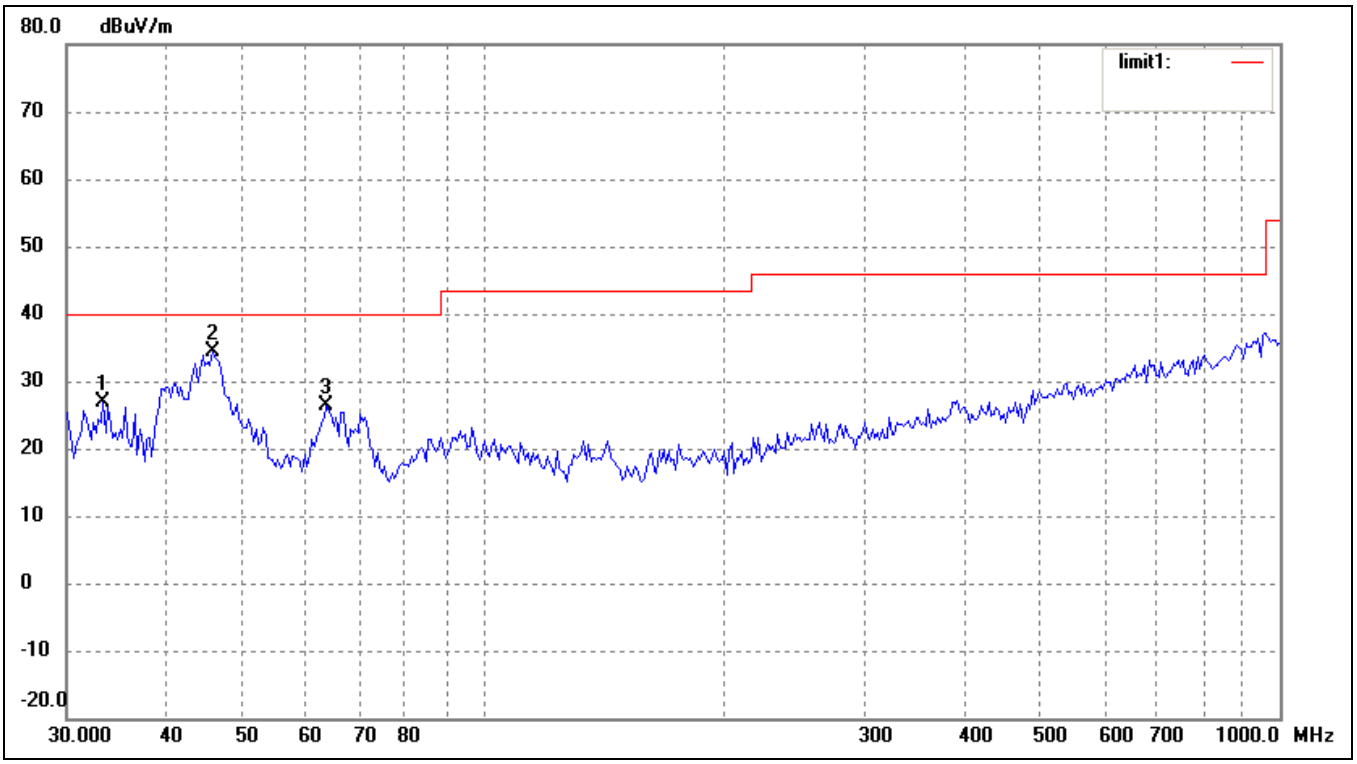
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	16.74	6.77	23.51	40.00	-16.49	360	200	peak
2	100.2286	14.73	8.41	23.14	43.50	-20.36	223	210	peak
3	374.6226	18.92	11.11	30.03	46.00	-15.97	240	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.3279	20.18	6.77	26.95	40.00	-13.05	235	124	peak
2	45.6948	26.06	8.20	34.26	40.00	-5.74	360	200	peak
3	63.5356	20.20	6.15	26.35	40.00	-13.65	223	203	peak

Spurious Emission above 1GHz

Test Mode: Transmitting (802.11b)

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (2412Hz)										
4824.0	PK	53.82	90	V	34.1	5.2	33.0	60.12	74	-13.88
4824.0	PK	55.86	270	H	34.1	5.2	33.0	62.16	74	-11.84
7236.0	PK	37.88	180	V	37.4	6.1	33.5	47.88	74	-26.12
7236.0	PK	39.57	45	H	37.4	6.1	33.5	49.57	74	-24.43
4824.0	AV	40.53	270	V	34.1	5.2	33.0	46.83	54	-7.17
4824.0	AV	40.98	90	H	34.1	5.2	33.0	47.28	54	-6.72
7236.0	AV	25.80	45	V	37.4	6.1	33.5	35.80	54	-18.20
7236.0	AV	26.37	60	H	37.4	6.1	33.5	36.37	54	-17.63
Middle Channel (2437Hz)										
4874.0	PK	50.02	45	V	34.1	5.2	33.0	56.32	74	-17.68
4874.0	PK	55.18	270	H	34.1	5.2	33.0	61.48	74	-12.52
7311.0	PK	37.15	45	V	37.4	6.1	33.5	47.15	74	-26.85
7311.0	PK	38.61	180	H	37.4	6.1	33.5	48.61	74	-25.39
4874.0	AV	37.06	270	V	34.1	5.2	33.0	43.36	54	-10.64
4874.0	AV	41.85	90	H	34.1	5.2	33.0	48.15	54	-5.85
7311.0	AV	25.38	60	V	37.4	6.1	33.5	35.38	54	-18.62
7311.0	AV	27.14	45	H	37.4	6.1	33.5	37.14	54	-16.86
High Channel (2462MHz)										
4924.0	PK	52.39	270	V	34.1	5.2	33.0	58.69	74	-15.31
4924.0	PK	57.25	45	H	34.1	5.2	33.0	63.55	74	-10.45
7386.0	PK	37.79	180	V	37.4	6.1	33.5	47.79	74	-26.21
7386.0	PK	49.02	45	H	37.4	6.1	33.5	59.02	74	-14.98
4924.0	AV	39.12	90	V	34.1	5.2	33.0	45.42	54	-8.58
4924.0	AV	43.33	270	H	34.1	5.2	33.0	49.63	54	-4.37
7386.0	AV	25.26	60	V	37.4	6.1	33.5	35.26	54	-18.74
7386.0	AV	27.40	60	H	37.4	6.1	33.5	37.40	54	-16.60

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5th Harmonics is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.

Spurious Emission Above 1GHz

Test Mode: Transmitting (802.11g)

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (2412MHz)										
4824.0	PK	45.62	90	V	34.1	5.2	33.0	51.92	74	-22.08
4824.0	PK	53.09	270	H	34.1	5.2	33.0	59.39	74	-14.61
7236.0	PK	37.76	180	V	37.4	6.1	33.5	47.76	74	-26.24
7236.0	PK	39.54	45	H	37.4	6.1	33.5	49.54	74	-24.46
4824.0	AV	30.82	270	V	34.1	5.2	33.0	37.12	54	-16.88
4824.0	AV	39.09	90	H	34.1	5.2	33.0	45.39	54	-8.61
7236.0	AV	25.15	45	V	37.4	6.1	33.5	35.15	54	-18.85
7236.0	AV	25.55	60	H	37.4	6.1	33.5	35.55	54	-18.45
Middle Channel (2437MHz)										
4874.0	PK	46.28	45	V	34.1	5.2	33.0	52.58	74	-21.42
4874.0	PK	48.52	270	H	34.1	5.2	33.0	54.82	74	-19.18
7311.0	PK	38.18	45	V	37.4	6.1	33.5	48.18	74	-25.82
7311.0	PK	38.48	180	H	37.4	6.1	33.5	48.48	74	-25.52
4874.0	AV	32.46	270	V	34.1	5.2	33.0	38.76	54	-15.24
4874.0	AV	35.45	90	H	34.1	5.2	33.0	41.75	54	-12.25
7311.0	AV	25.60	60	V	37.4	6.1	33.5	35.60	54	-18.40
7311.0	AV	25.80	45	H	37.4	6.1	33.5	35.80	54	-18.20
High Channel (2462MHz)										
4924.0	PK	50.51	270	V	34.1	5.2	33.0	56.81	74	-17.19
4924.0	PK	52.31	45	H	34.1	5.2	33.0	58.61	74	-15.39
7386.0	PK	36.55	180	V	37.4	6.1	33.5	46.55	74	-27.45
7386.0	PK	41.42	45	H	37.4	6.1	33.5	51.42	74	-22.58
4924.0	AV	35.49	90	V	34.1	5.2	33.0	41.79	54	-12.21
4924.0	AV	39.30	270	H	34.1	5.2	33.0	45.60	54	-8.40
7386.0	AV	25.69	60	V	37.4	6.1	33.5	35.69	54	-18.31
7386.0	AV	26.78	60	H	37.4	6.1	33.5	36.78	54	-17.22

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5th Harmonics is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.

Spurious Emission Above 1GHz

Test Mode: Transmitting (802.11n HT 20M)

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (2412MHz)										
4824.0	PK	43.61	91	V	34.1	5.2	33.0	49.91	74	-24.09
4824.0	PK	43.02	152	H	34.1	5.2	33.0	49.32	74	-24.68
7236.0	PK	41.71	145	V	37.4	6.1	33.5	51.71	74	-22.29
7236.0	PK	42.55	45	H	37.4	6.1	33.5	52.55	74	-21.45
4824.0	AV	32.81	200	V	34.1	5.2	33.0	39.11	54	-14.89
4824.0	AV	41.25	120	H	34.1	5.2	33.0	47.55	54	-6.45
7236.0	AV	22.16	125	V	37.4	6.1	33.5	32.16	54	-21.84
7236.0	AV	28.52	160	H	37.4	6.1	33.5	38.52	54	-15.48
Middle Channel (2437MHz)										
4874.0	PK	42.25	145	V	34.1	5.2	33.0	48.55	74	-25.45
4874.0	PK	43.51	20	H	34.1	5.2	33.0	49.81	74	-24.19
7311.0	PK	32.19	245	V	37.4	6.1	33.5	42.19	74	-31.81
7311.0	PK	33.47	18	H	37.4	6.1	33.5	43.47	74	-30.53
4874.0	AV	32.45	272	V	34.1	5.2	33.0	38.75	54	-15.25
4874.0	AV	35.25	190	H	34.1	5.2	33.0	41.55	54	-12.45
7311.0	AV	25.66	100	V	37.4	6.1	33.5	35.66	54	-18.34
7311.0	AV	24.81	245	H	37.4	6.1	33.5	34.81	54	-19.19
High Channel (2462MHz)										
4924.0	PK	49.55	20	V	34.1	5.2	33.0	55.85	74	-18.15
4924.0	PK	50.34	12	H	34.1	5.2	33.0	56.64	74	-17.36
7386.0	PK	35.57	18	V	37.4	6.1	33.5	45.57	74	-28.43
7386.0	PK	38.47	155	H	37.4	6.1	33.5	48.47	74	-25.53
4924.0	AV	40.48	50	V	34.1	5.2	33.0	46.78	54	-7.22
4924.0	AV	42.31	27	H	34.1	5.2	33.0	48.61	54	-5.39
7386.0	AV	28.80	160	V	37.4	6.1	33.5	38.8	54	-15.2
7386.0	AV	30.72	125	H	37.4	6.1	33.5	40.72	54	-13.28

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5th Harmonics is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.

Spurious Emission Above 1GHz

Test Mode: Transmitting (802.11n HT 40M)

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (2422MHz)										
4844.0	PK	48.63	200	V	34.1	5.2	33.0	54.93	74	-19.07
4844.0	PK	54.02	201	H	34.1	5.2	33.0	60.32	74	-13.68
7266.0	PK	34.74	180	V	37.4	6.1	33.5	44.74	74	-29.26
7266.0	PK	35.50	45	H	37.4	6.1	33.5	45.5	74	-28.5
4844.0	AV	34.82	243	V	34.1	5.2	33.0	41.12	54	-12.88
4844.0	AV	39.58	149	H	34.1	5.2	33.0	45.88	54	-8.12
7266.0	AV	20.13	257	V	37.4	6.1	33.5	30.13	54	-23.87
7266.0	AV	24.52	60	H	37.4	6.1	33.5	34.52	54	-19.48
Middle Channel (2437MHz)										
4874.0	PK	49.20	156	V	34.1	5.2	33.0	55.5	74	-18.5
4874.0	PK	50.47	170	H	34.1	5.2	33.0	56.77	74	-17.23
7311.0	PK	37.28	147	V	37.4	6.1	33.5	47.28	74	-26.72
7311.0	PK	37.44	158	H	37.4	6.1	33.5	47.44	74	-26.56
4874.0	AV	35.46	275	V	34.1	5.2	33.0	41.76	54	-12.24
4874.0	AV	38.45	250	H	34.1	5.2	33.0	44.75	54	-9.25
7311.0	AV	25.68	160	V	37.4	6.1	33.5	35.68	54	-18.32
7311.0	AV	27.25	145	H	37.4	6.1	33.5	37.25	54	-16.75
High Channel (2452MHz)										
4904.0	PK	52.57	27	V	34.1	5.2	33.0	58.87	74	-15.13
4904.0	PK	57.51	126	H	34.1	5.2	33.0	63.81	74	-10.19
7356.0	PK	36.35	125	V	37.4	6.1	33.5	46.35	74	-27.65
7356.0	PK	41.58	241	H	37.4	6.1	33.5	51.58	74	-22.42
4904.0	AV	34.45	190	V	34.1	5.2	33.0	40.75	54	-13.25
4904.0	AV	38.80	20	H	34.1	5.2	33.0	45.1	54	-8.9
7356.0	AV	24.12	250	V	37.4	6.1	33.5	34.12	54	-19.88
7356.0	AV	27.24	123	H	37.4	6.1	33.5	37.24	54	-16.76

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5th Harmonics is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.

9. OUT OF BAND EMISSIONS

9.1 Standard Applicable

According to §15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

9.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2010-12-20	2011-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2010-12-20	2011-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2010-12-20	2011-12-19
RF Switch	EM	EMSW18	SW060023	2010-12-20	2011-12-19
Pre-amplifier	Agilent	8447F	3113A06717	2010-12-20	2011-12-19
Pre-amplifier	Compliance Direction	PAP-0118	24002	2010-12-20	2011-12-19
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2011-01-09	2012-01-08
Horn Antenna	ETS	3117	00086197	2011-01-09	2012-01-08

9.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW, VBW=100KHz, Span=50MHz, Sweep = auto
3. Set the Lowest and Highest Transmitting Channel, observed the outside band of 2400MHz to 2483.5MHz, then mark the higher-level emission for comparing with the FCC rules.

9.4 Environmental Conditions

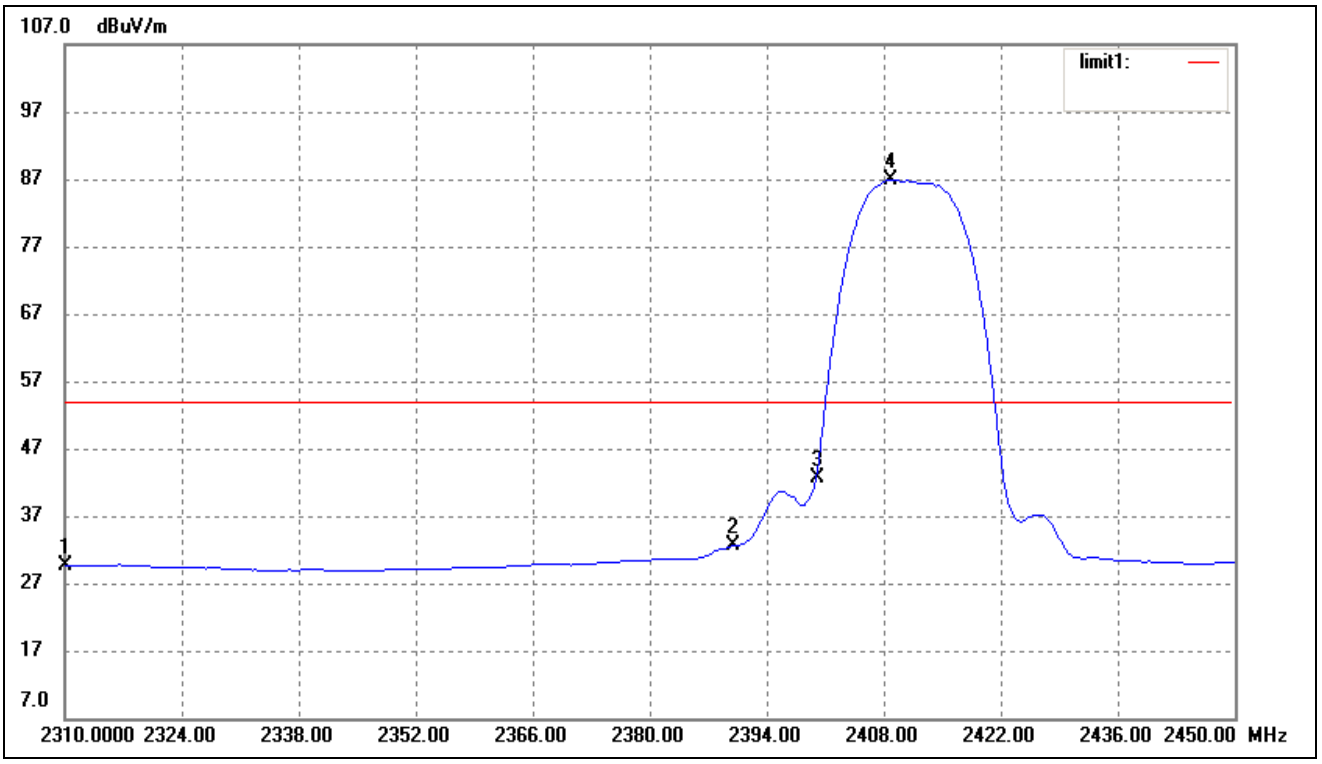
Temperature:	21° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.5 Summary of Test Results/Plots

Test mode	Frequency MHz	Limit dBuV /dB	Result
802.11b	2310.00	<54dBuv	Pass
	2390.00	<54dBuv	Pass
	2400.00	<54dBuv	Pass
	2483.50	<54dBuv	Pass
802.11g	2310.00	<54dBuv	Pass
	2390.00	<54dBuv	Pass
	2400.00	<54dBuv	Pass
	2483.50	<54dBuv	Pass
802.11n HT 20M	2310.00	<54dBuv	Pass
	2390.00	<54dBuv	Pass
	2400.00	<54dBuv	Pass
	2483.50	<54dBuv	Pass
802.11n HT 40M	2310.00	<54dBuv	Pass
	2390.00	<54dBuv	Pass
	2400.00	<54dBuv	Pass
	2483.50	<54dBuv	Pass

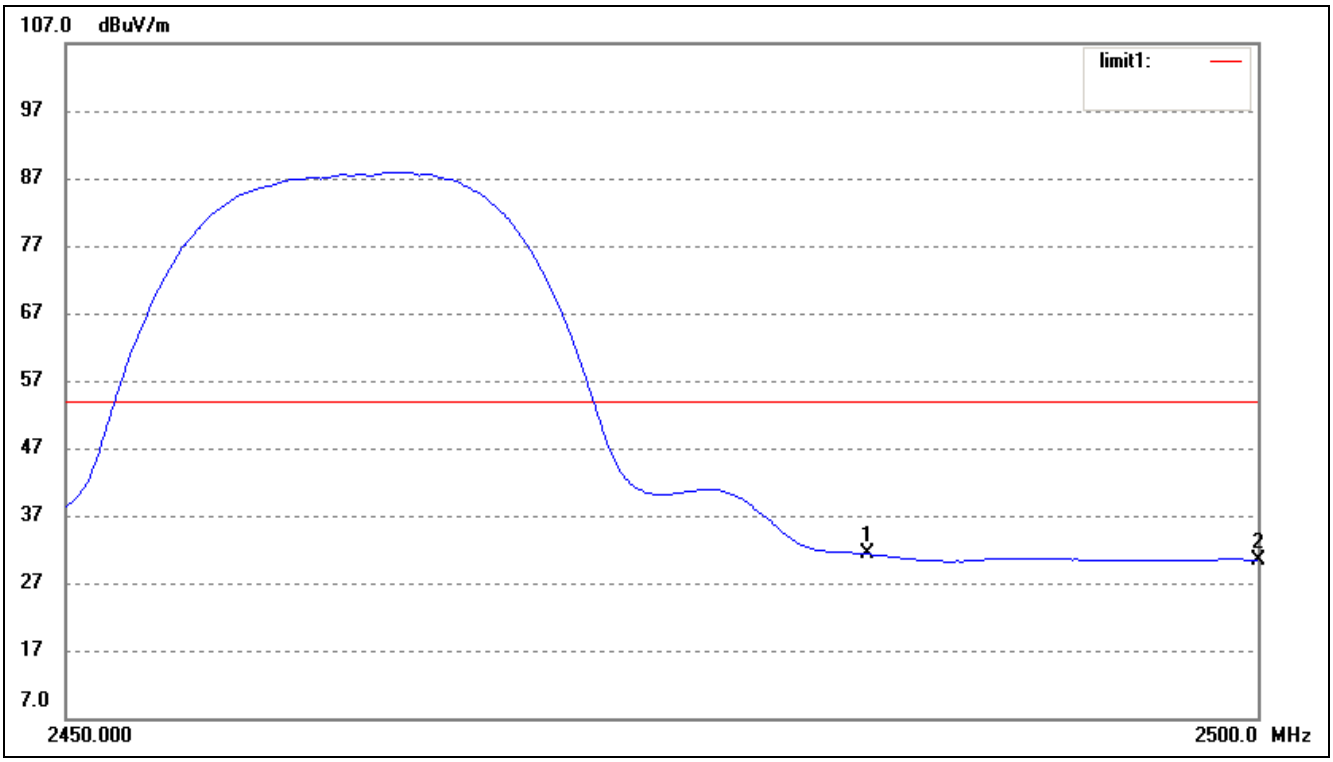
For 802.11b

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2310.000	37.12	-7.51	29.61	54.00	-24.39	226	100	Ave
	2310.000	51.88	-7.51	44.37	74.00	-29.63	226	100	peak
2	2390.000	39.92	-7.34	32.58	54.00	-21.42	154	100	Ave
	2390.000	51.63	-7.34	44.29	74.00	-29.71	221	100	peak
3	2400.000	50.05	-7.31	42.74	54.00	-11.26	120	100	Ave
	2400.000	61.32	-7.31	54.01	74.00	-19.99	120	100	peak
4	2408.832	94.19	-7.29	86.90	/	/	/	/	Ave

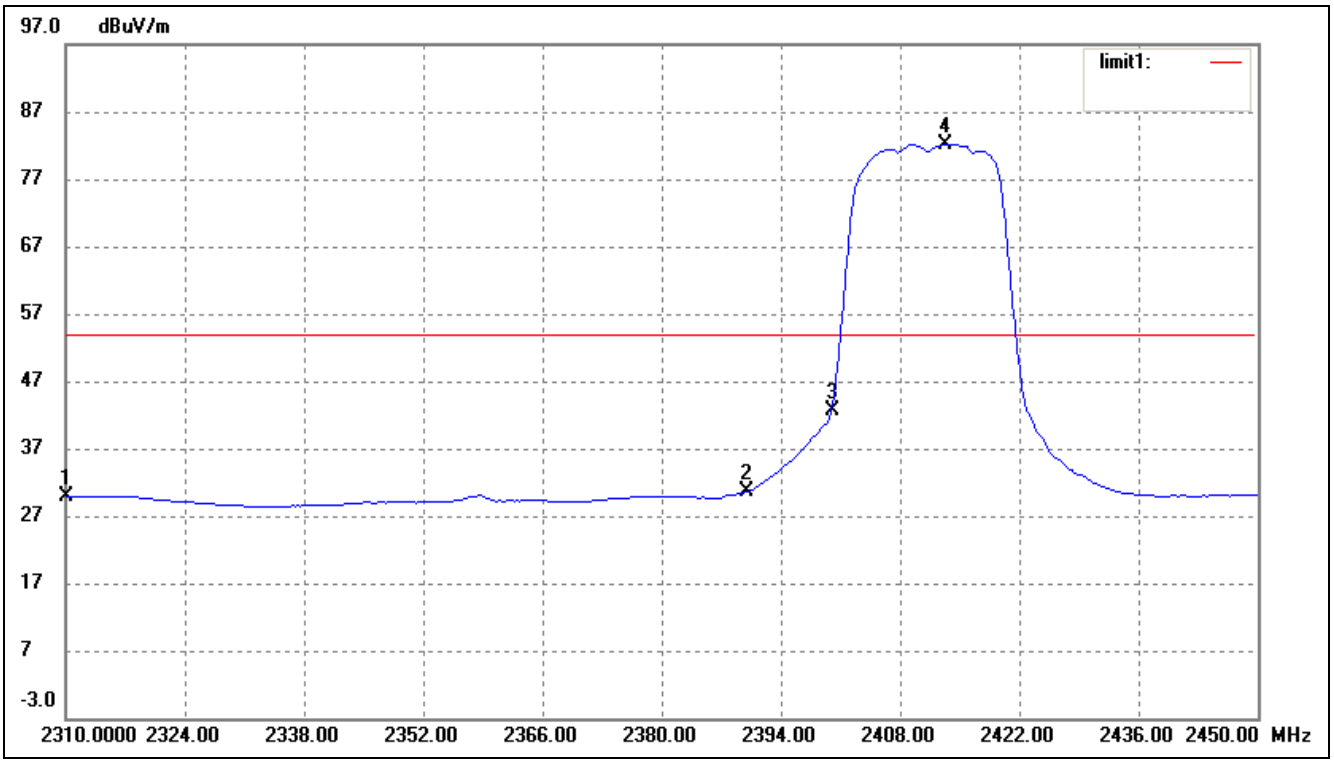
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2483.500	38.41	-7.13	31.28	54.00	-22.72	262	100	Ave
	2483.500	51.86	-7.13	44.73	74.00	-29.27	263	100	peak
2	2500.000	37.42	-7.08	30.34	54.00	-23.66	220	200	Ave
	2500.000	50.14	-7.08	43.06	74.00	-30.94	220	200	peak

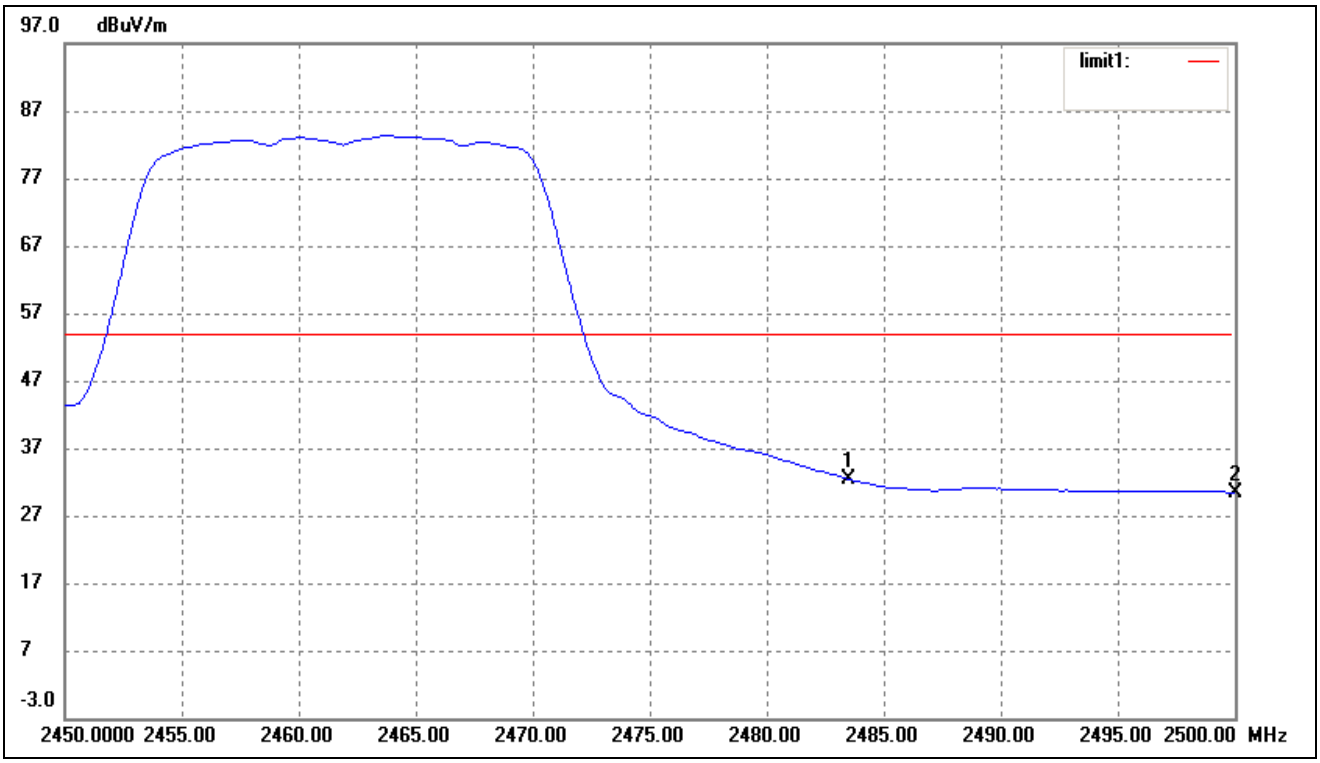
For 802.11g

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2310.000	37.33	-7.51	29.82	54.00	-24.18	114	100	Ave
	2310.000	51.33	-7.51	43.82	74.00	-30.18	120	100	peak
2	2390.000	38.01	-7.34	30.67	54.00	-23.33	133	200	Ave
	2390.000	56.85	-7.34	49.51	74.00	-24.49	152	200	peak
3	2400.000	49.98	-7.31	42.67	54.00	-11.33	143	200	Ave
	2400.000	71.08	-7.31	63.77	74.00	-10.23	125	200	peak
4	2413.372	89.36	-7.28	82.08	/	/	/	/	Ave

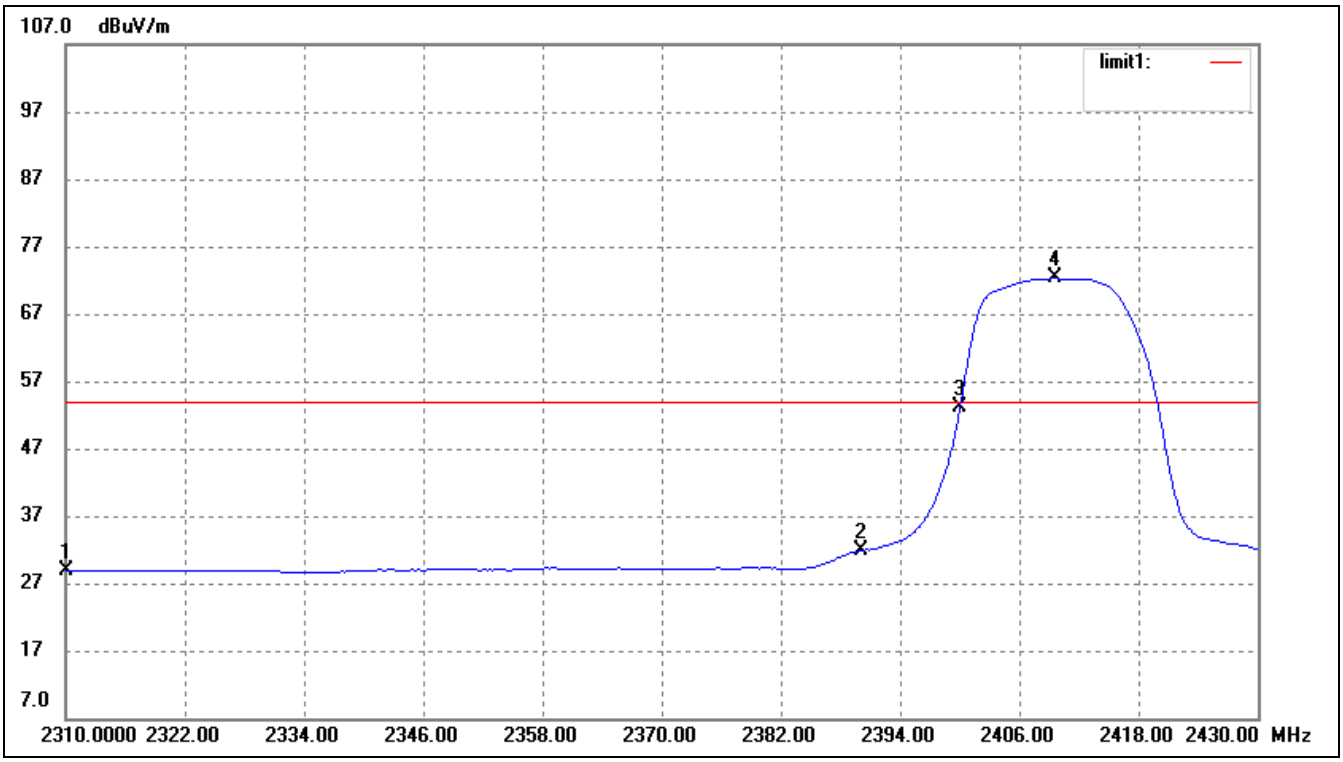
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2483.500	39.53	-7.13	32.40	54.00	-21.60	203	118	Ave
	2483.500	60.57	-7.13	53.44	74.00	-20.56	360	200	peak
2	2500.000	37.50	-7.08	30.42	54.00	-23.58	231	100	Ave
	2500.000	50.25	-7.08	43.17	74.00	-30.83	109	200	peak

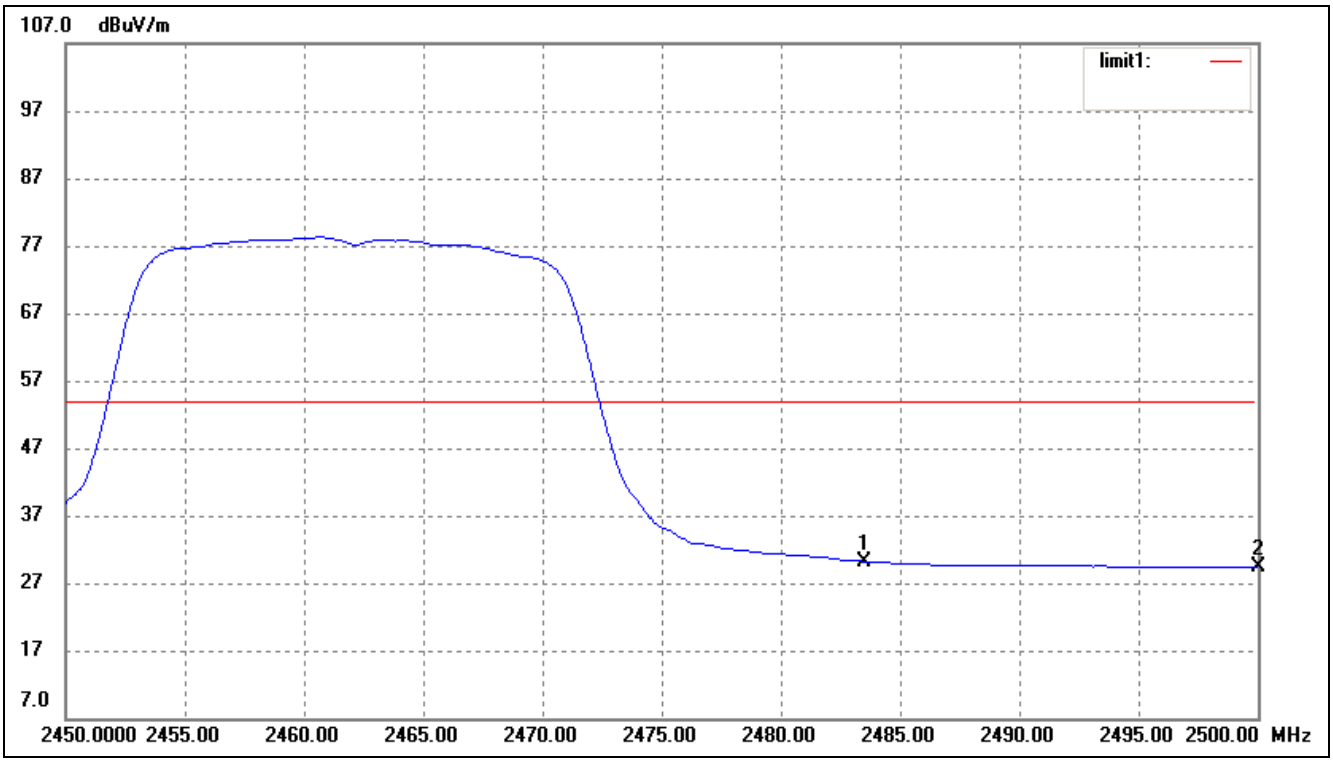
For 802.11n HT 20M

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2310.000	36.30	-7.51	28.79	54.00	-25.21	226	100	Ave
	2310.000	49.97	-7.51	42.46	74.00	-31.54	226	100	peak
2	2390.000	39.16	-7.34	31.82	54.00	-22.18	154	100	Ave
	2390.000	54.10	-7.34	46.76	74.00	-27.24	221	100	peak
3	2400.000	60.33	-7.31	53.02	54.00	-0.98	120	100	Ave
	2400.000	78.55	-7.31	71.24	74.00	-3.76	120	100	peak
4	2409.600	79.54	-7.28	72.26	/	/	/	/	Ave

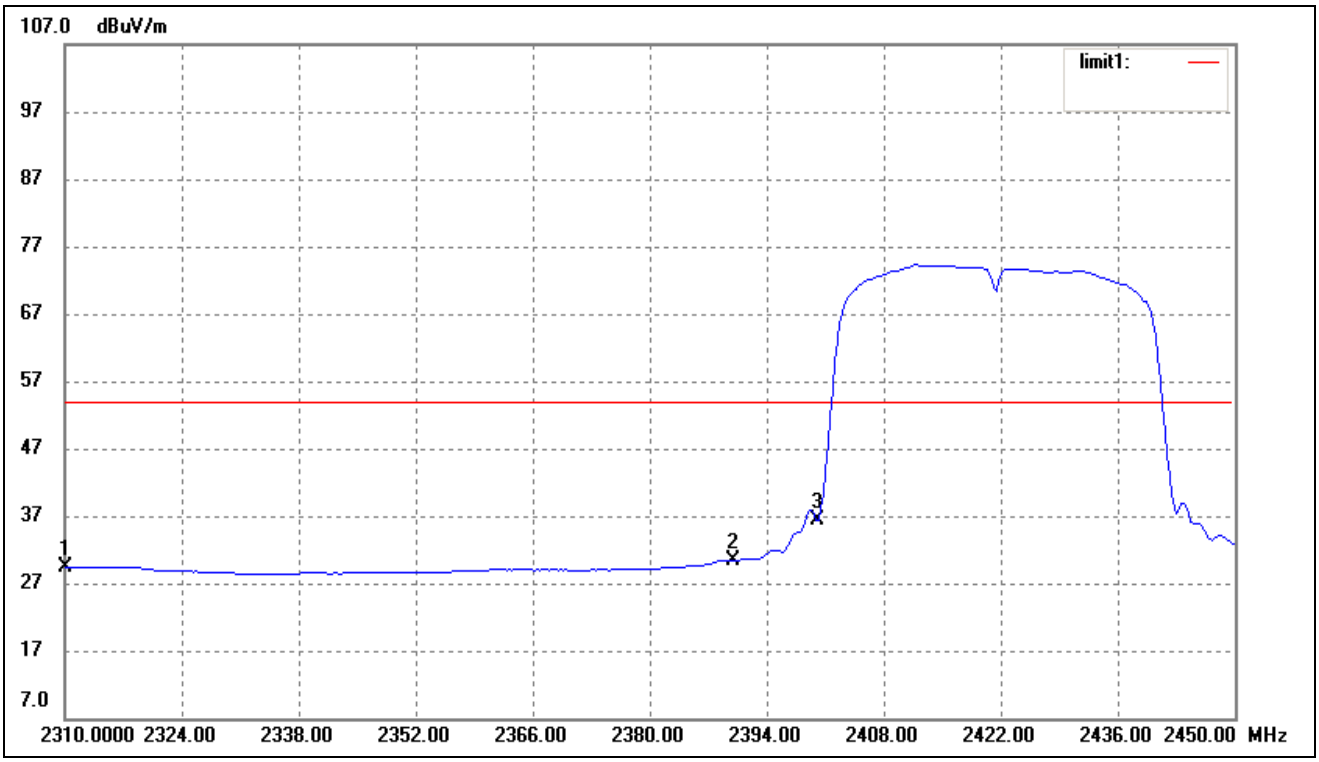
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2483.500	37.29	-7.13	30.16	54.00	-23.84	262	100	Ave
	2483.500	51.17	-7.13	44.04	74.00	-29.96	263	100	peak
2	2500.000	36.53	-7.08	29.45	54.00	-24.55	220	200	Ave
	2500.000	49.62	-7.08	42.54	74.00	-31.46	220	200	peak

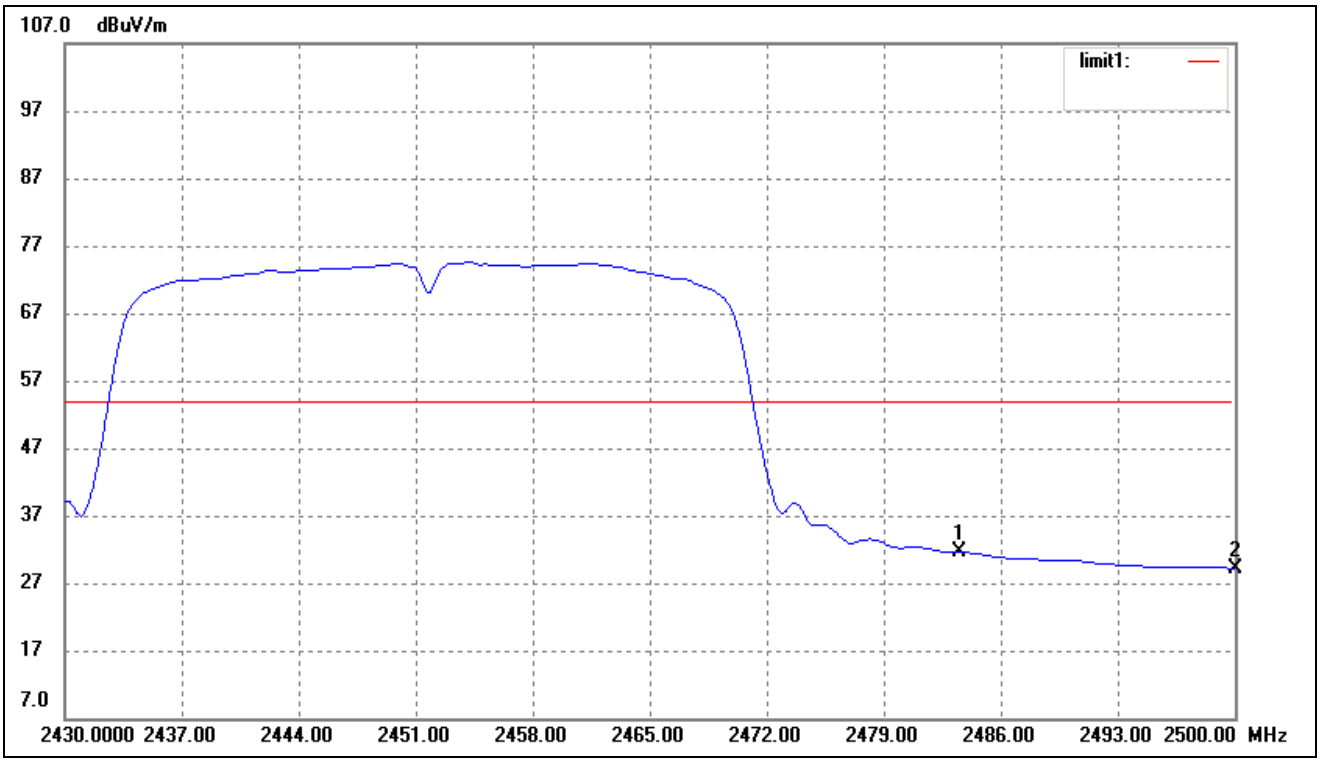
For 802.11n HT 40M

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2310.000	36.98	-7.51	29.47	54.00	-24.53	226	100	Ave
	2310.000	53.84	-7.51	46.33	74.00	-27.67	226	100	peak
2	2390.000	37.61	-7.34	30.27	54.00	-23.73	154	100	Ave
	2390.000	48.63	-7.34	41.29	74.00	-32.71	221	100	peak
3	2400.000	43.65	-7.31	36.34	54.00	-17.66	120	100	Ave
	2400.000	65.85	-7.31	58.54	74.00	-15.46	120	100	peak

Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2483.500	38.71	-7.13	31.58	54.00	-22.42	262	100	Ave
	2483.500	53.63	-7.13	46.50	74.00	-27.50	263	100	peak
2	2500.000	36.33	-7.08	29.25	54.00	-24.75	220	200	Ave
	2500.000	47.76	-7.08	40.68	74.00	-33.32	220	200	peak

******* END OF REPORT *******