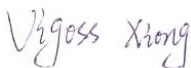
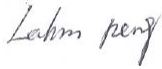



**FCC Part 15C**  
**Measurement and Test Report**  
**For**  
**ENCORE ELECTRONICS INC**  
**16483 Old Valley Blvd., La Puente, CA 91744, USA**

**FCC ID: YZ500000008**

<b>Report Concerns:</b> Original Report	<b>Equipment Type:</b> Wireless N150 PCI Adapter
<b>Model:</b>	<u>ENLWI-1XN42</u>
<b>Report No.:</b>	<u>STR11128387I</u>
<b>Test Date:</b>	<u>2011-12-27 to 2012-01-08</u>
<b>Issue Date:</b>	<u>2012-02-03</u>
<b>Tested By:</b>	<u>Vigoss Xiong / Engineer</u> 
<b>Reviewed By:</b>	<u>Lahm Peng / EMC Manager</u> 
<b>Approved &amp; Authorized By:</b>	<u>Jandy so / PSQ Manager</u> 
<b>Prepared By:</b>	<b>SEM.Test Compliance Service Co., Ltd</b> 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101) Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: <a href="http://www.semtest.com.cn">www.semtest.com.cn</a>

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted 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: ENCORE ELECTRONICS INC  
Address of applicant: 16483 Old Valley Blvd., La Puente, CA 91744, USA

Manufacturer: Sun Rise Electronic Factory  
Address of manufacturer: LanYuan Road, ZengTian Industrial District, XinAn Community, ChangAn Town, DongGuan City, GuangDong Province, China

#### General Description of E.U.T

Items	Description
EUT Description:	Wireless N150 PCI Adapter
Trade Name:	ENCORE
Model No.:	ENLWI-1XN42
Rated Voltage:	DC 3.3V By PC
RF Output Power	Max. 13.30dBm (Conducted)
Antenna Gain:	2.0 dBi
Frequency range:	2412-2472MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40)
Number of channels:	13 for 11b/g/n(HT20), 7 for 11n(HT40)
Channel Separation:	5MHz
Type of Antenna:	External 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 ENCORE ELECTRONICS INC 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
DELL	PC	DCSM1F	JX5HW2X
DELL	Monitor	170SC	CN-00V538-64180-065- OX95

## 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  $\pm 2.88$  dB.

#### 3.2 Test Equipment List and Details

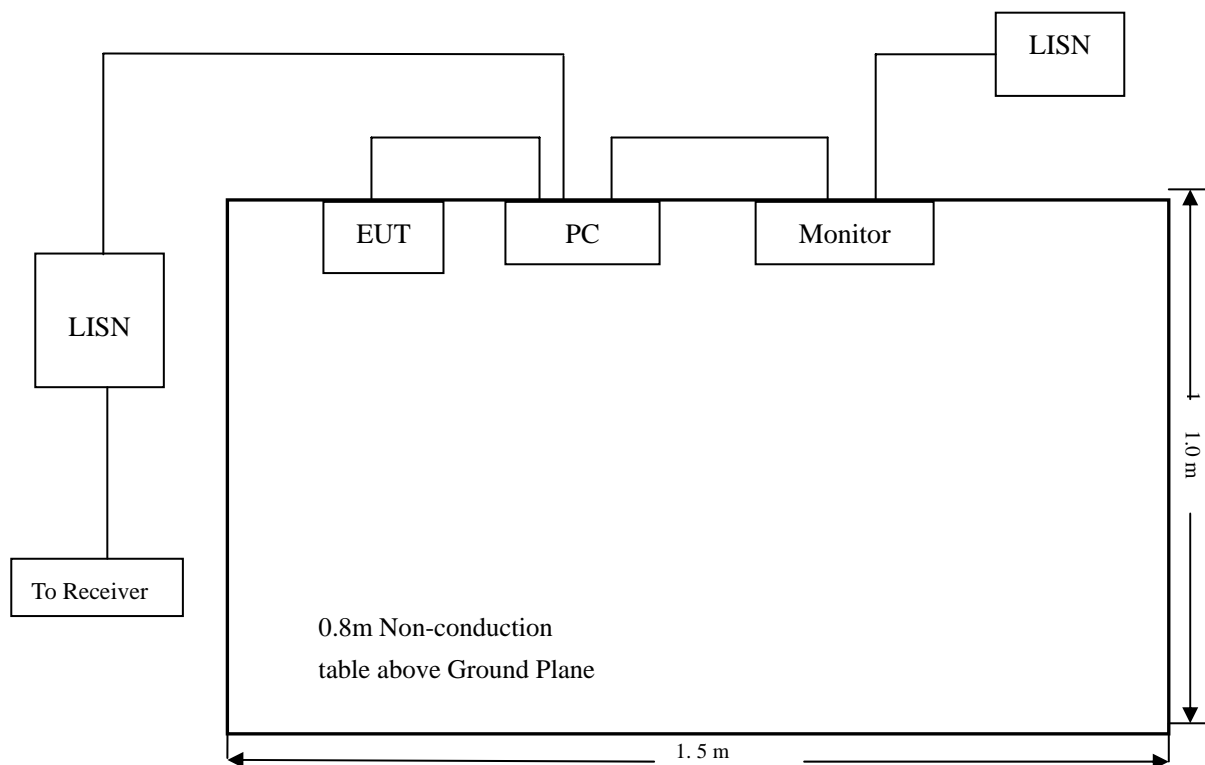
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2011-12-20	2012-12-19
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2011-12-20	2012-12-19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2011-12-20	2012-12-19

**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

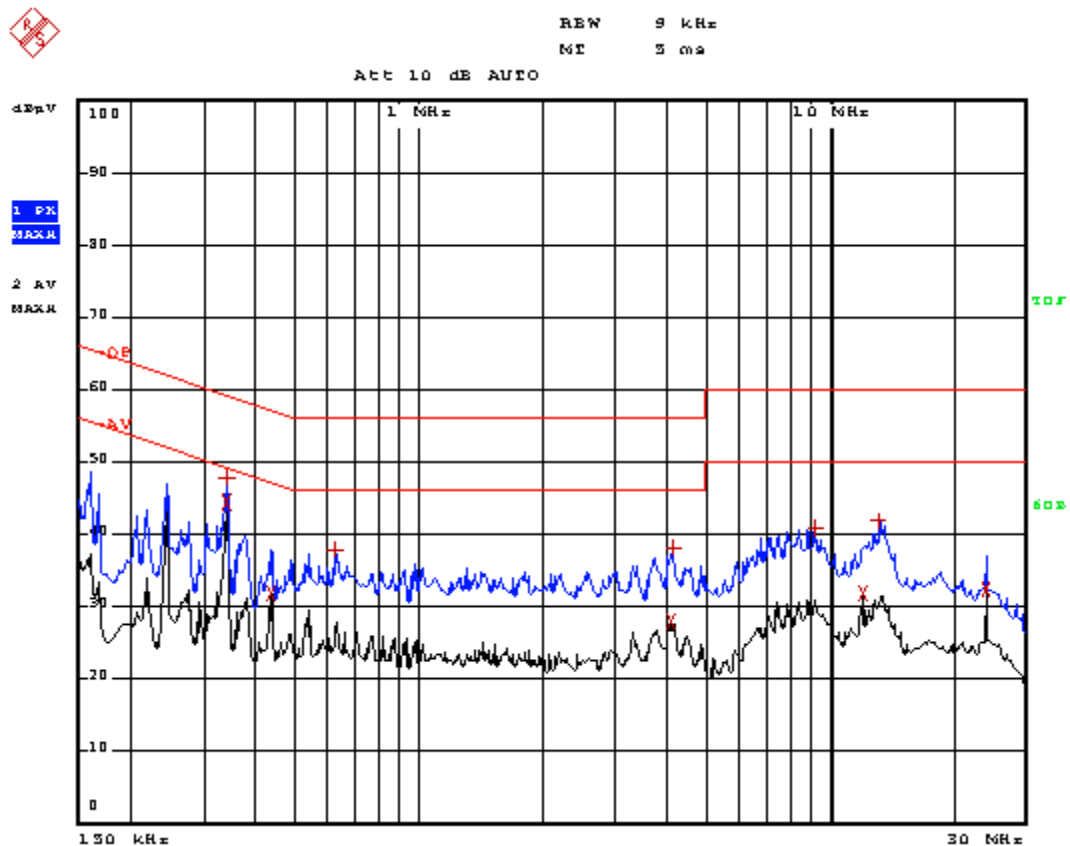
According to the data in section 3.7, the EUT complied with the FCC 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

**-4.64 dB $\mu$ V** at **0.338 MHz** in the **Neutral, Ave** Detector, 0.15-30MHz

### 3.7 Conducted Emissions Test Data

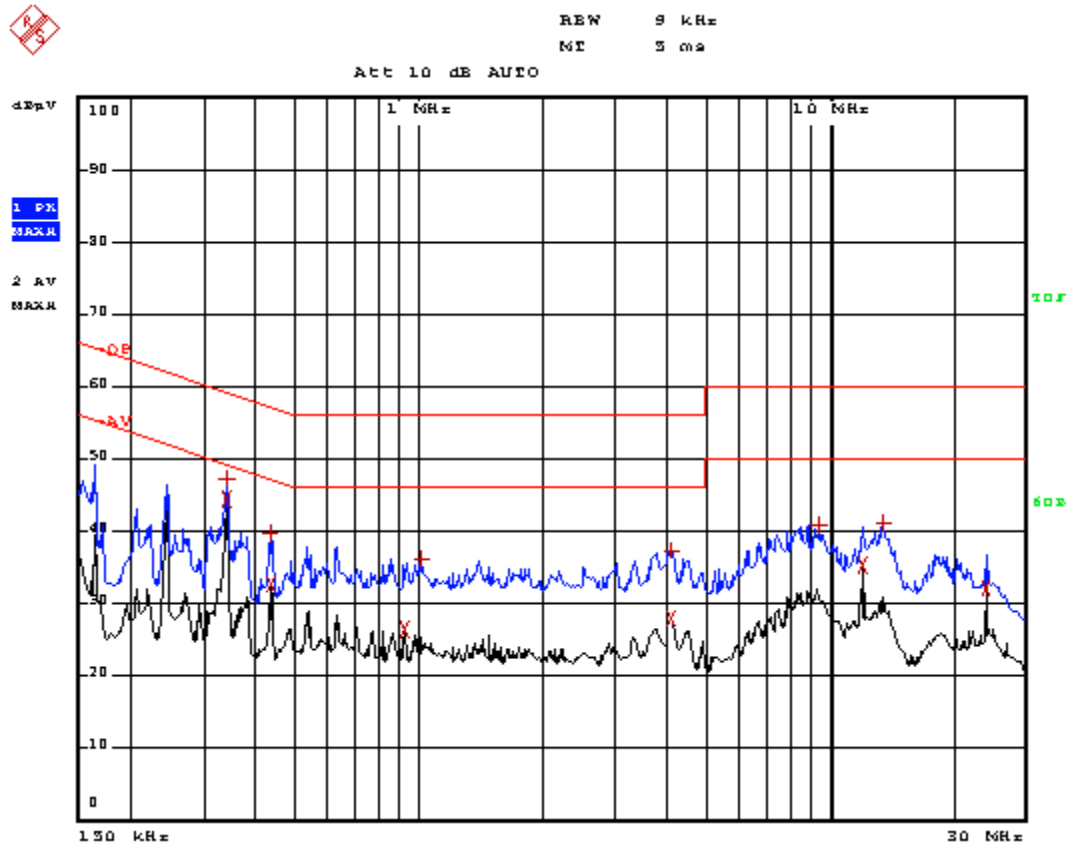
Plot of Conducted Emissions Test Data

Conducted Disturbance  
EUT: Wireless N150 PCI Adapter  
M/N: ENLWI-1XN42  
Operating Condition: Transmitting  
Test Specification: N  
Comment: AC 120V/60Hz; USB 5V



EDIT PEAK LIST (Previous Results)			
Trace1:	-QF		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Max Peak	338 kHz	47.83	-11.41
2 Average	338 kHz	44.60	-4.64
2 Average	434 kHz	31.83	-13.31
1 Max Peak	626 kHz	37.82	-13.17
2 Average	4.126 MHz	28.00	-18.00
1 Max Peak	4.17 MHz	38.11	-17.88
1 Max Peak	9.23 MHz	40.90	-19.09
2 Average	11.994 MHz	31.88	-18.12
1 Max Peak	13.186 MHz	41.77	-18.22
2 Average	23.986 MHz	32.33	-17.46



**Plot of Conducted Emissions Test Data***Conducted Disturbance**EUT: Wireless N150 PCI Adapter**M/N: ENLWI-1XN42**Operating Condition: Transmitting**Test Specification: N**Comment: AC 120V/60Hz; USB 5V*

EDIT PEAK LIST (Previous Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dEpV	DELTA LIMIT dB
1 Max Peak	338 kHz	47.42	-11.82
2 Average	338 kHz	44.32	-4.73
1 Max Peak	434 kHz	39.74	-17.42
2 Average	434 kHz	32.69	-14.48
2 Average	922 kHz	26.30	-19.69
1 Max Peak	1.022 MHz	36.18	-19.81
1 Max Peak	4.114 MHz	37.28	-18.71
2 Average	4.134 MHz	27.94	-18.03
1 Max Peak	9.438 MHz	40.94	-19.03
2 Average	11.994 MHz	33.39	-14.60
1 Max Peak	13.61 MHz	41.04	-18.93
2 Average	23.986 MHz	32.16	-17.84

## **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 detachable and unique 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	2011-12-20	2012-12-19
Attenuator	ATTEN	ATS100-4-20	/	2011-12-20	2012-12-19

**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, Span = 20MHz.
4. Repeat above procedures until all frequency measured was complete.

### 5.4 Environmental Conditions

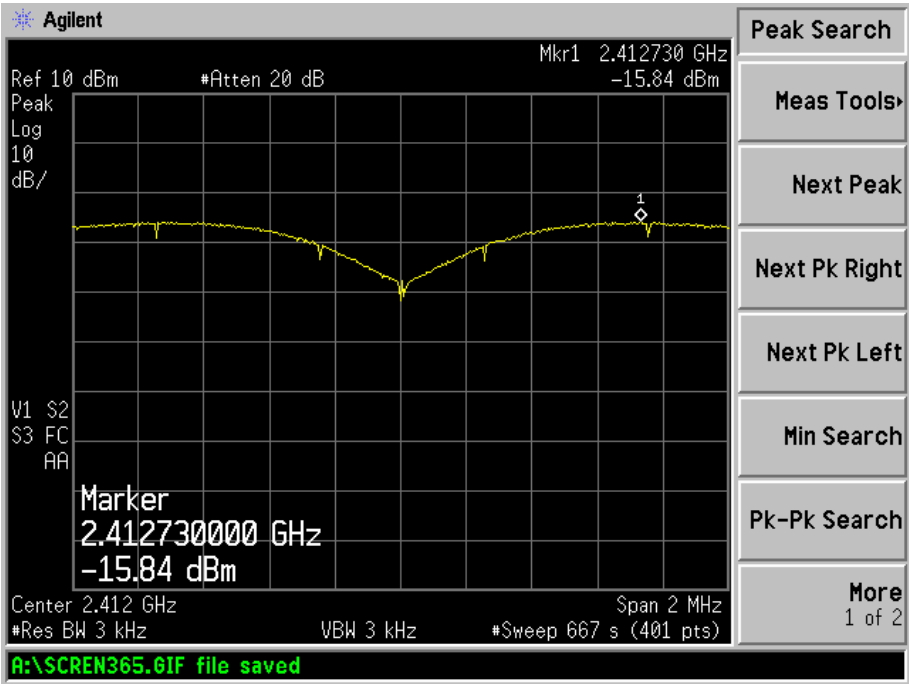
Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

## 5.5 Summary of Test Results/Plots

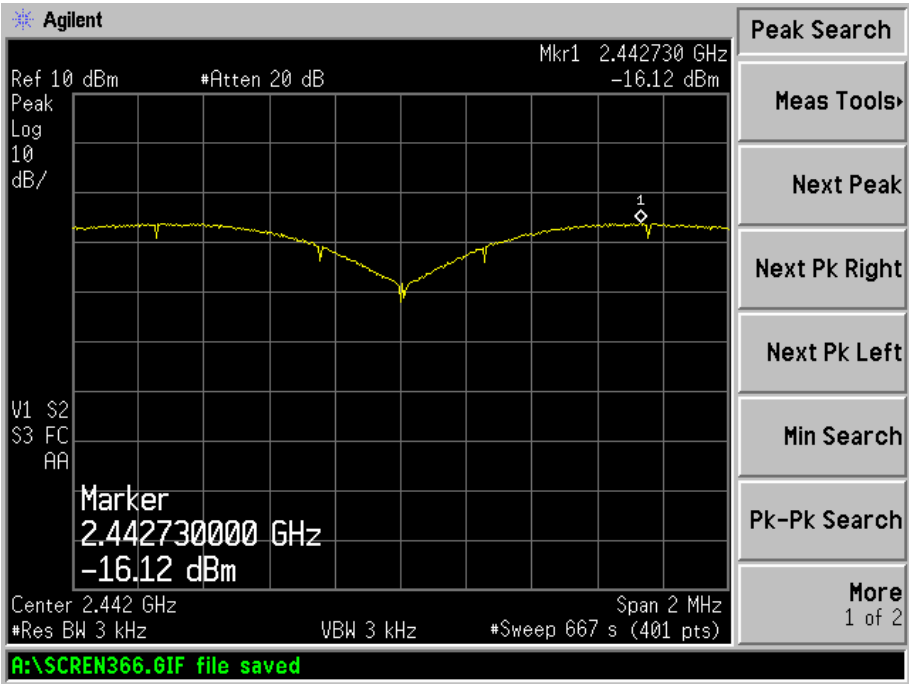
Test mode	Test channel	Reading dBm/3kHz	Limit dBm/3kHz
802.11b	Low channel (2412MHz)	-15.84	8
	Middle channel (2437MHz)	-16.12	8
	High channel (2462MHz)	-15.94	8
802.11g	Low channel (2412MHz)	-15.47	8
	Middle channel (2437MHz)	-16.03	8
	High channel (2462MHz)	-14.56	8
802.11n HT20	Low channel (2412MHz)	-18.74	8
	Middle channel (2437MHz)	-19.08	8
	High channel (2462MHz)	-18.05	8
802.11n HT40	Low channel (2412MHz)	-20.72	8
	Middle channel (2437MHz)	-20.98	8
	High channel (2452MHz)	-20.40	8

For 802.11b

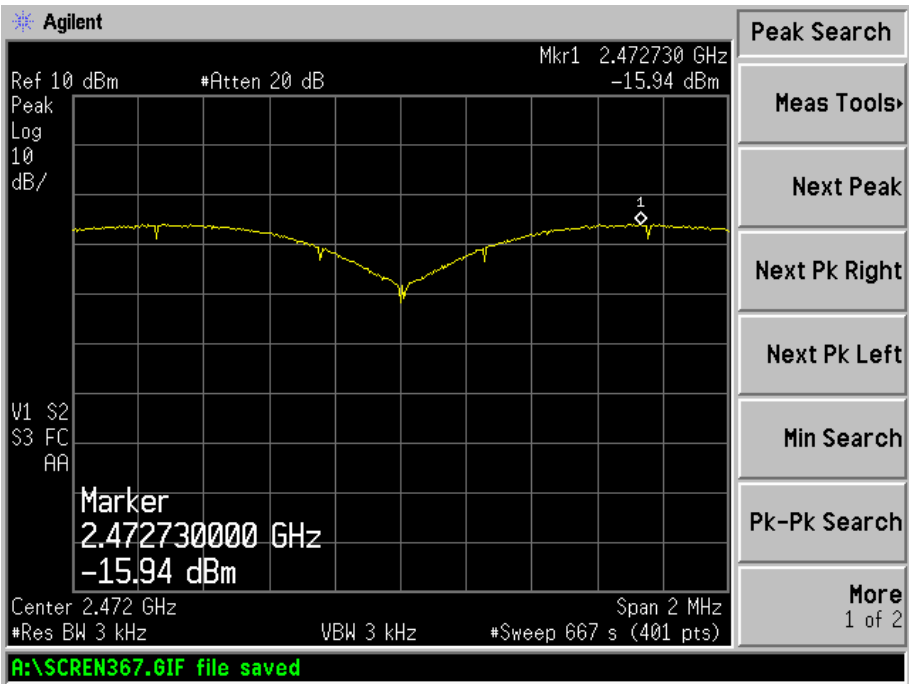
Low Channel:



Middle Channel:

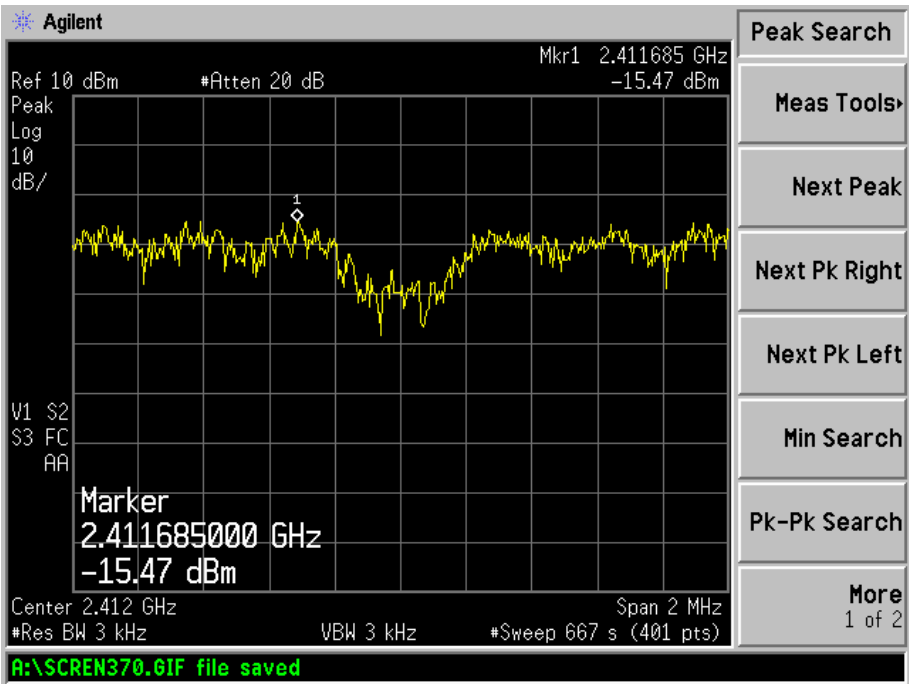


High Channel:

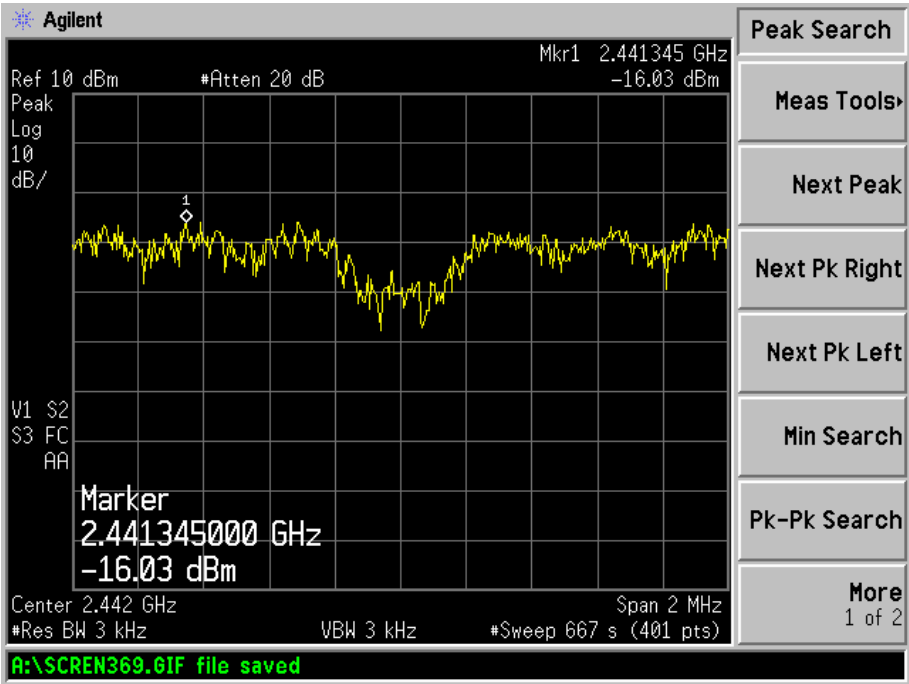


For 802.11g

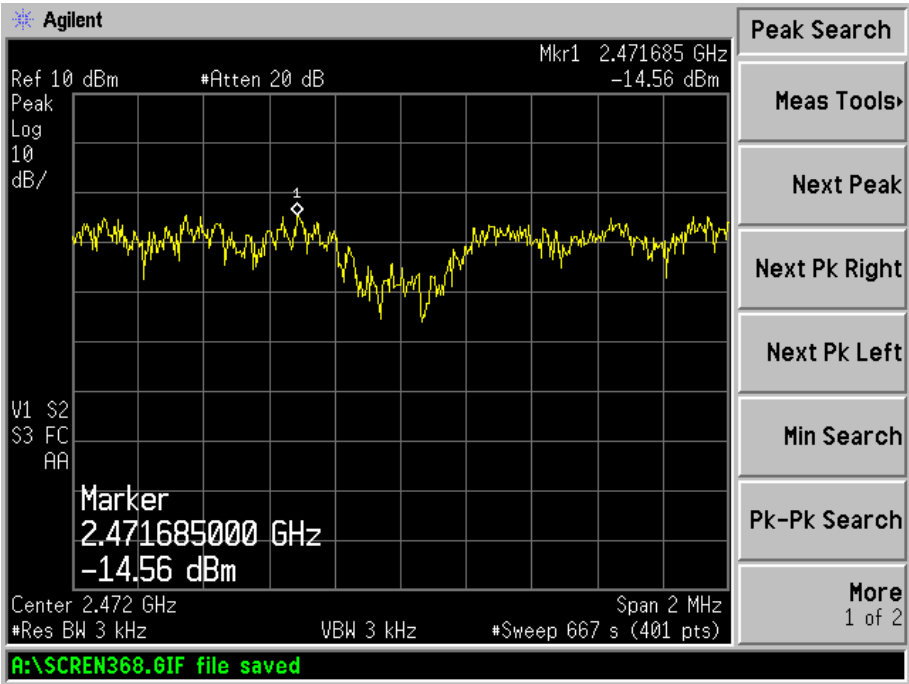
Low Channel:



Middle Channel:

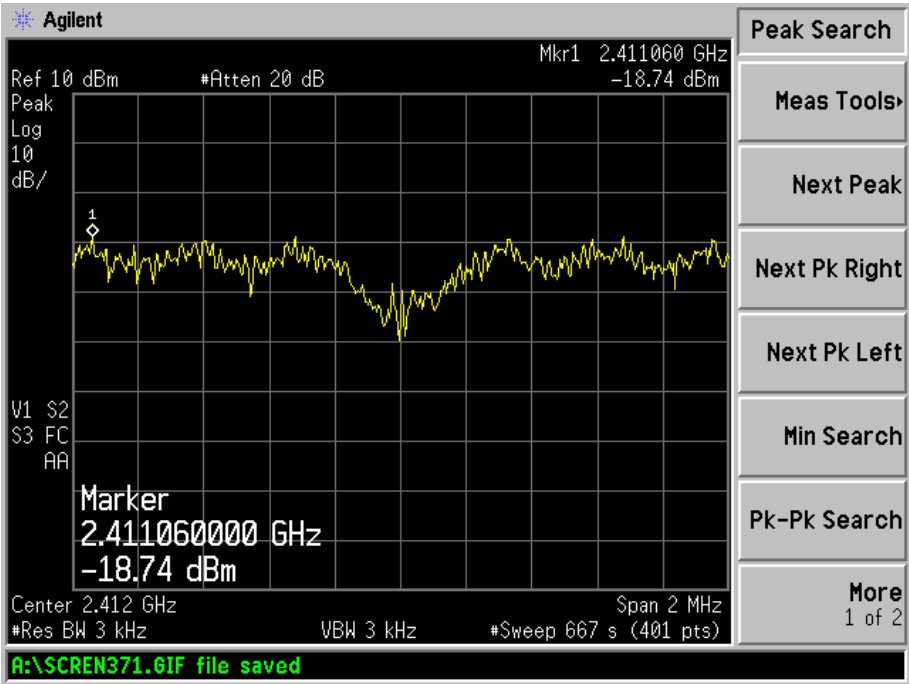


High Channel:

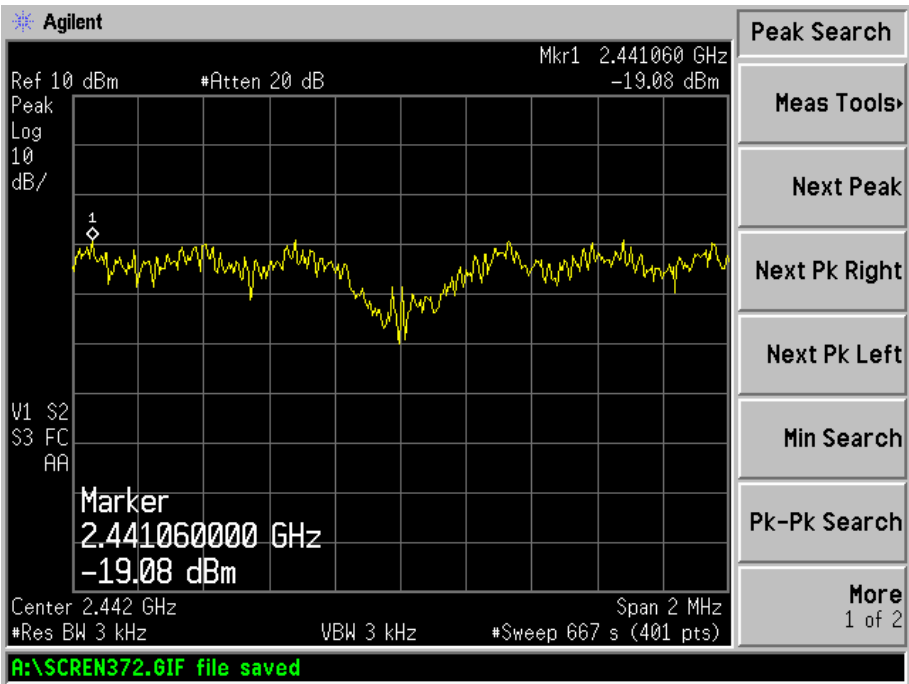


For 802.11n HT20

Low Channel:

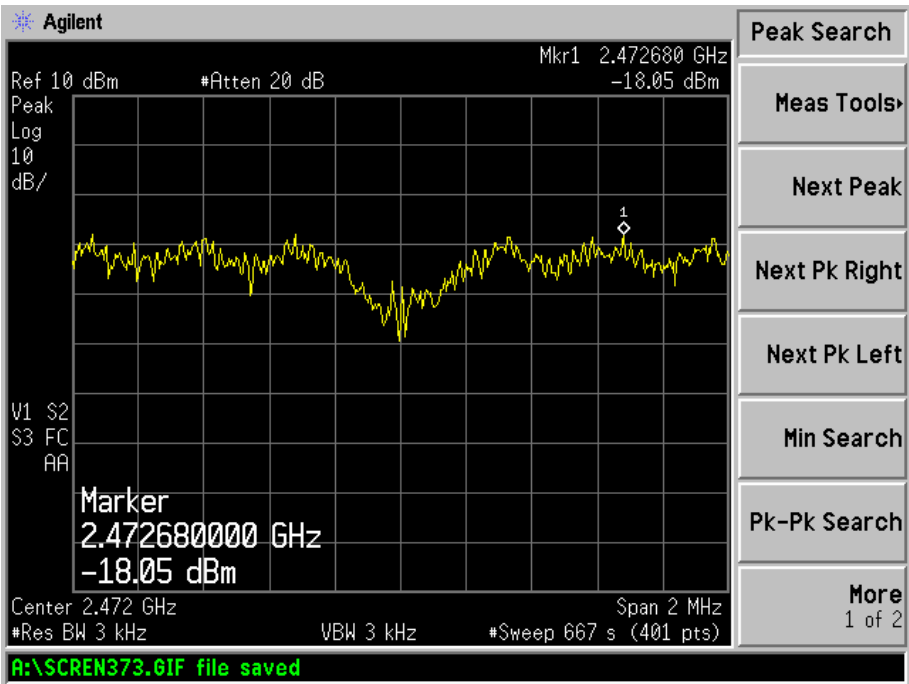


Middle Channel:



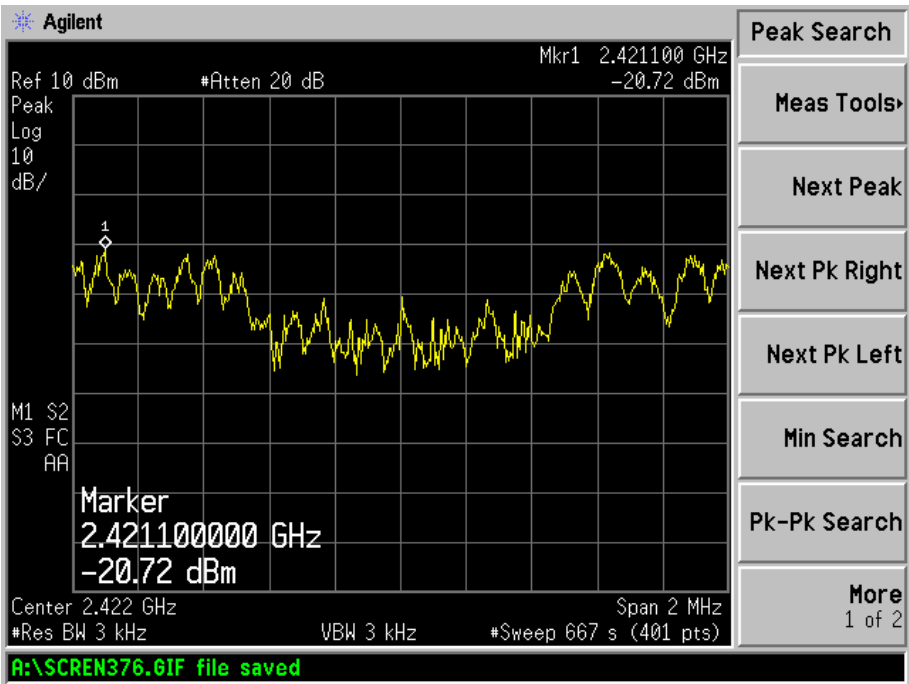


High Channel:

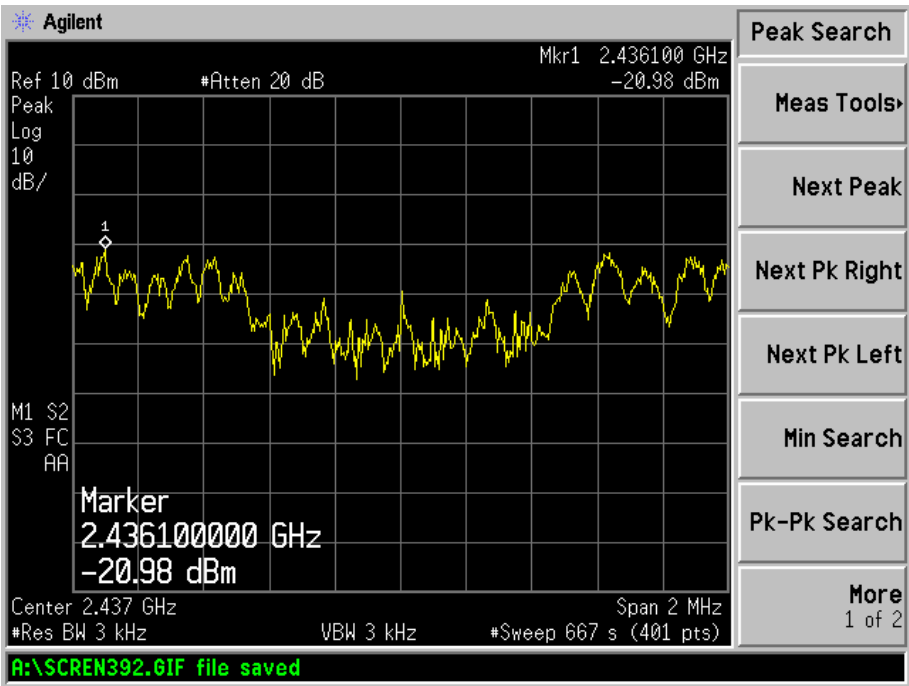


For 802.11n HT40

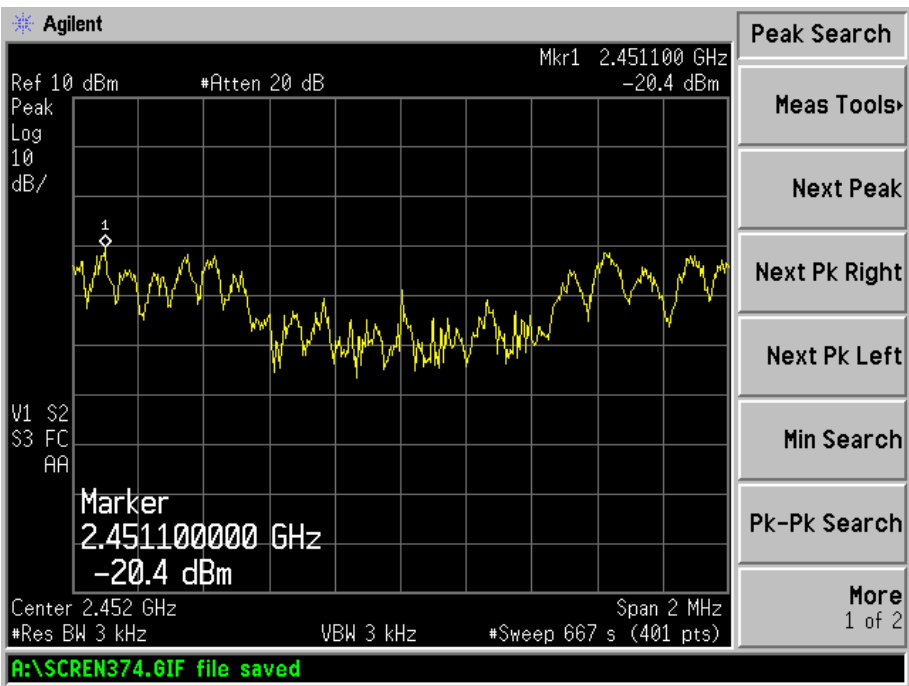
Low Channel:



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	2011-12-20	2012-12-19
Attenuator	ATTEN	ATS100-4-20	/	2011-12-20	2012-12-19

**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

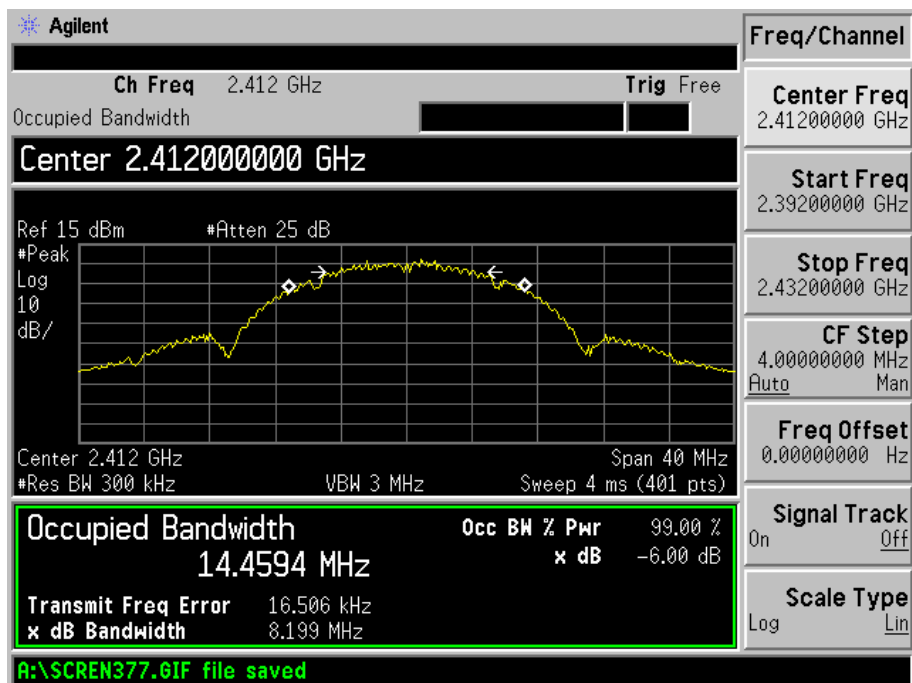
Temperature:	24° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

## 6.5 Summary of Test Results/Plots

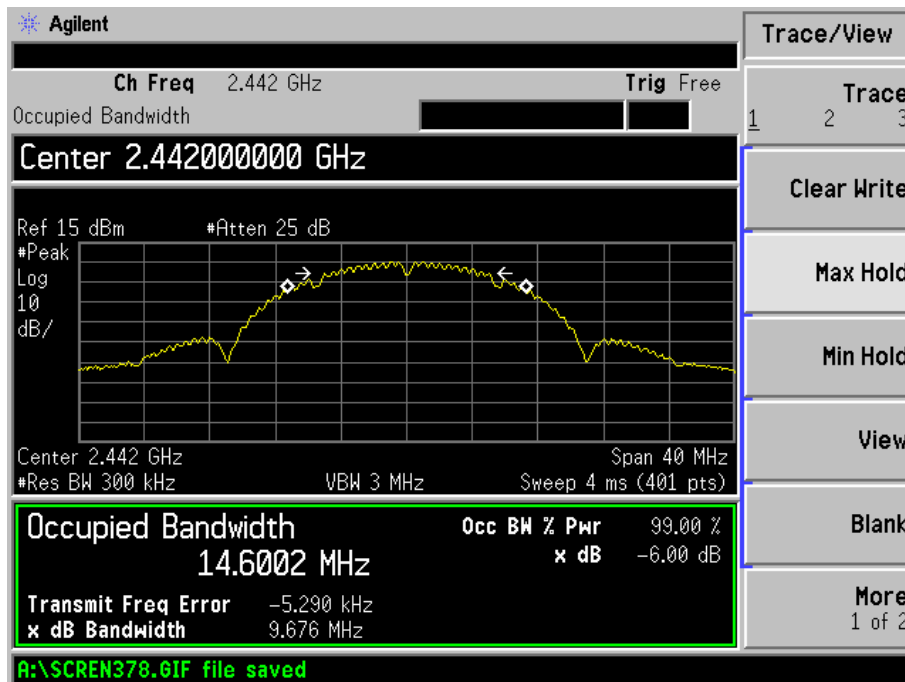
Test mode	Frequency MHz	6 dB Bandwidth kHz	Limit kHz
802.11b	2412	8199	500
	2437	9676	500
	2462	9671	500
802.11g	2412	16466	500
	2437	16503	500
	2462	16506	500
802.11n-HT20	2412	17559	500
	2437	17456	500
	2462	17533	500
802.11n-HT40	2422	36445	500
	2437	36458	500
	2452	36486	500

### For 802.11b

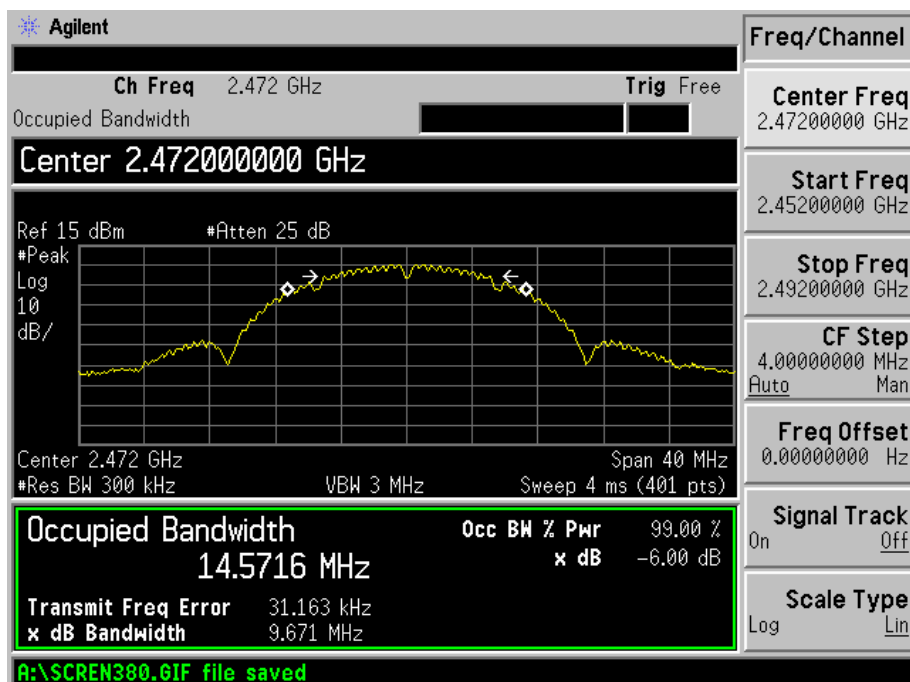
Low Channel:



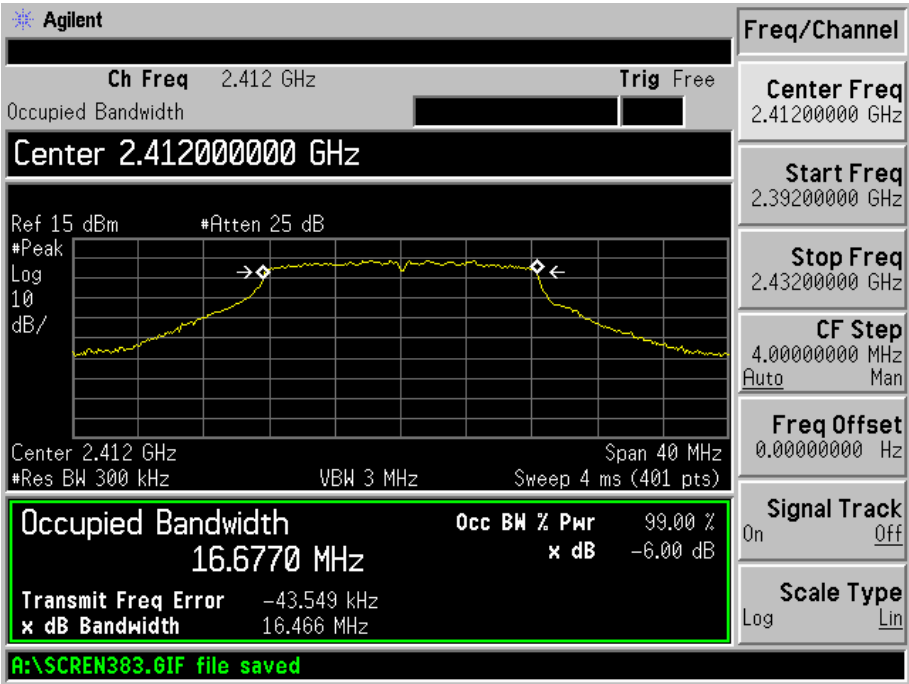
Mid Channel:



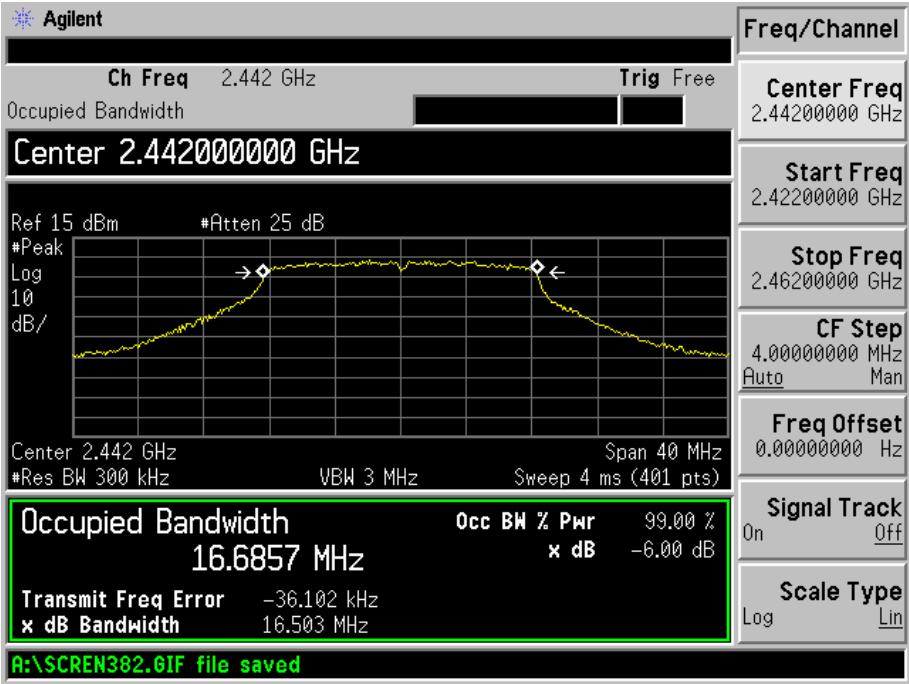
High Channel:



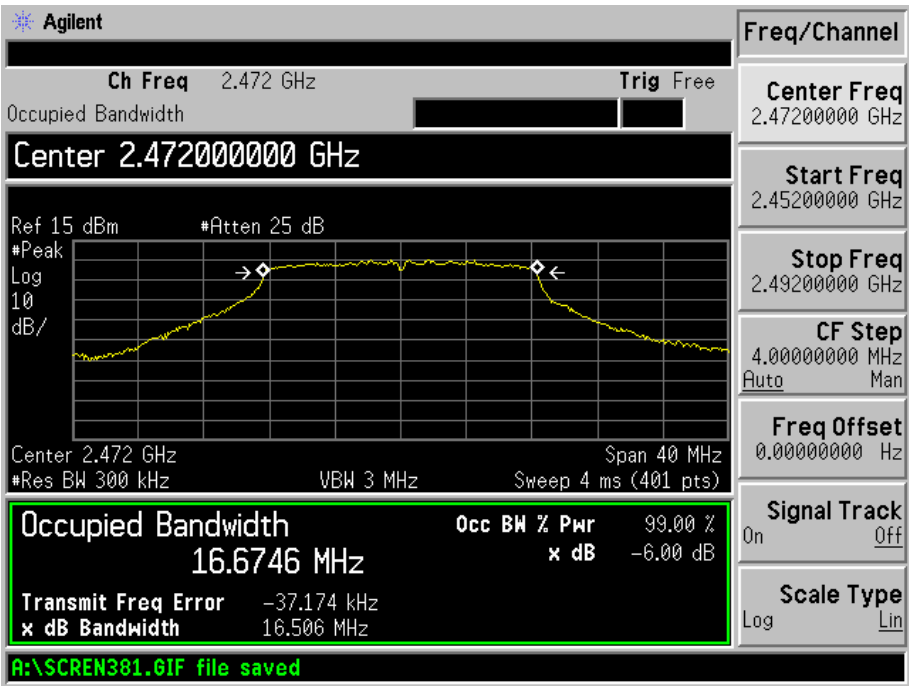
For 802.11g  
Low Channel:



Mid Channel:

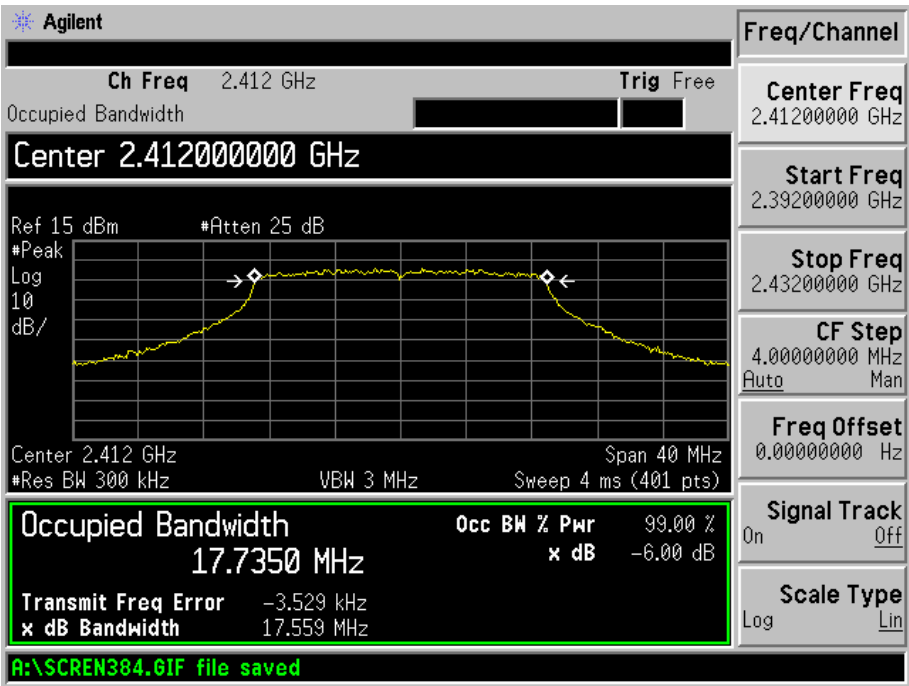


High Channel:

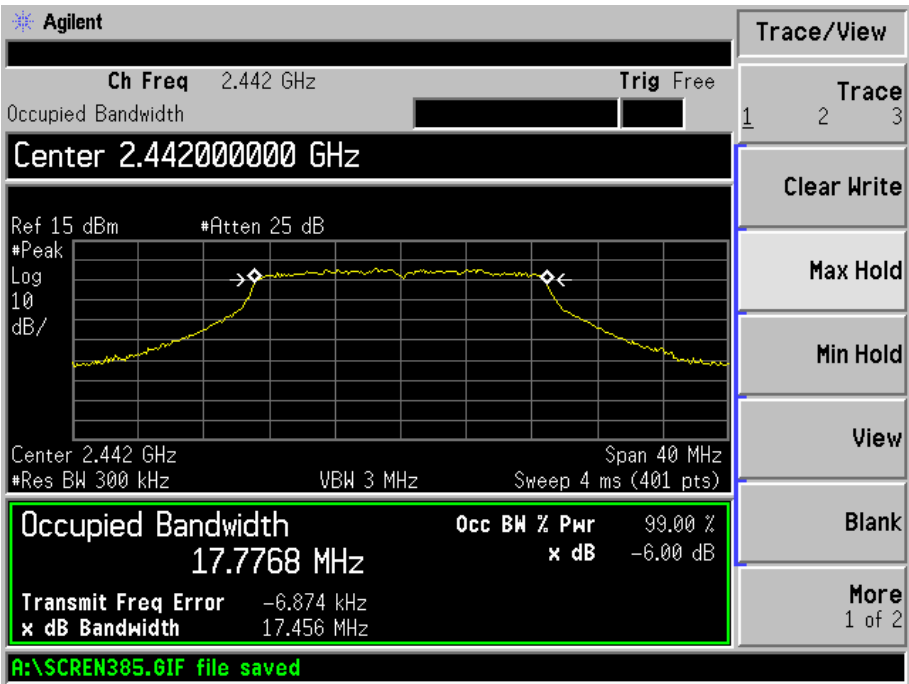


For 802.11n HT20

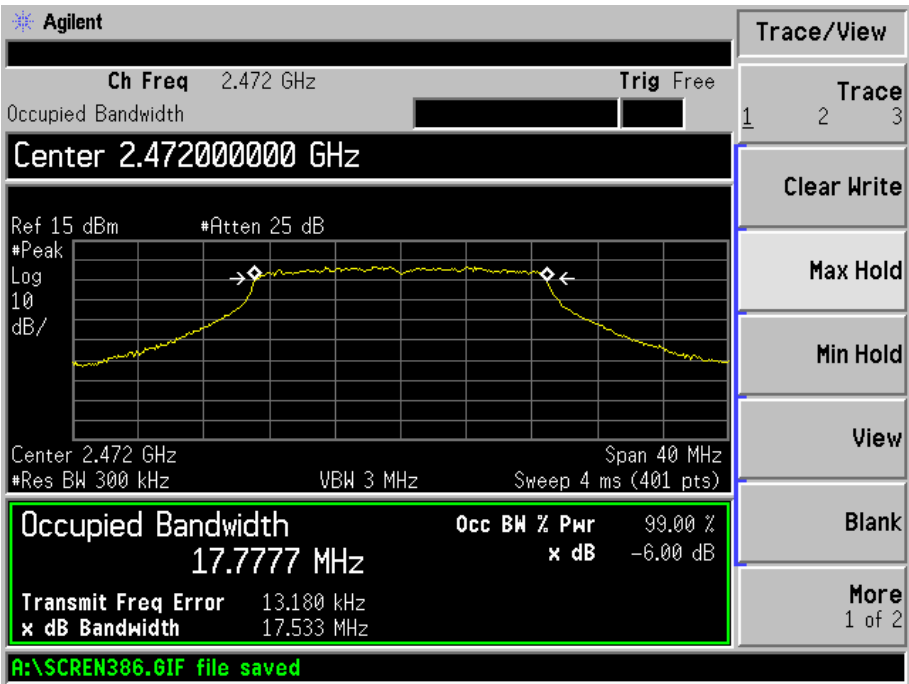
Low Channel:



Mid Channel:



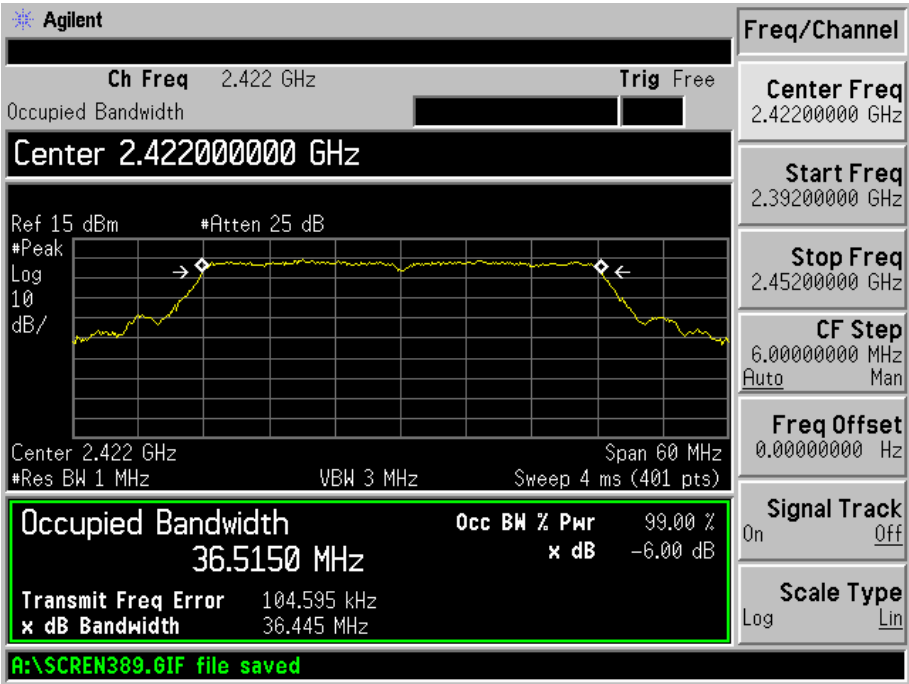
High Channel:



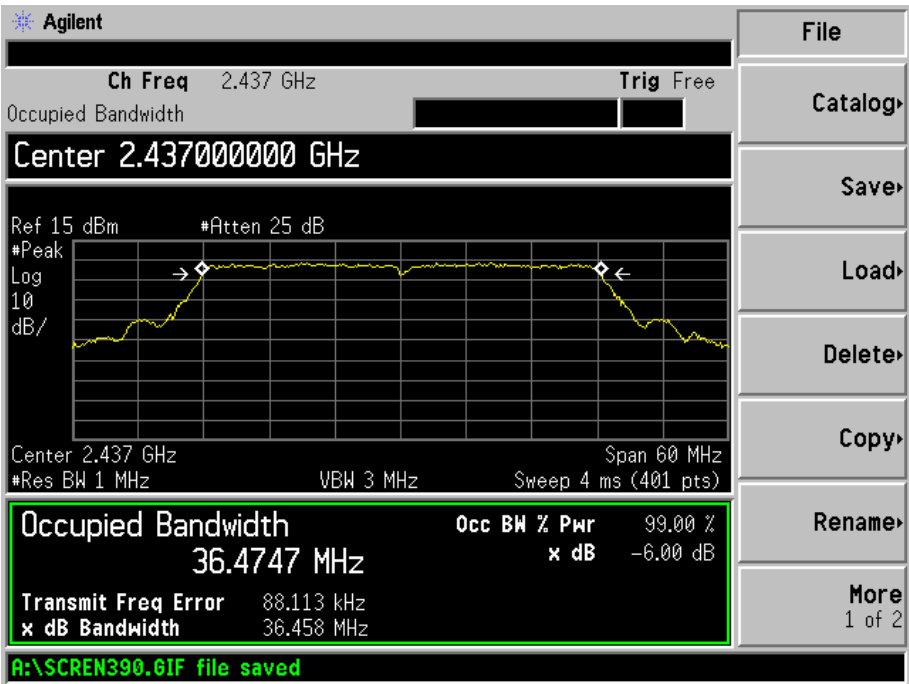


For 802.11n HT40

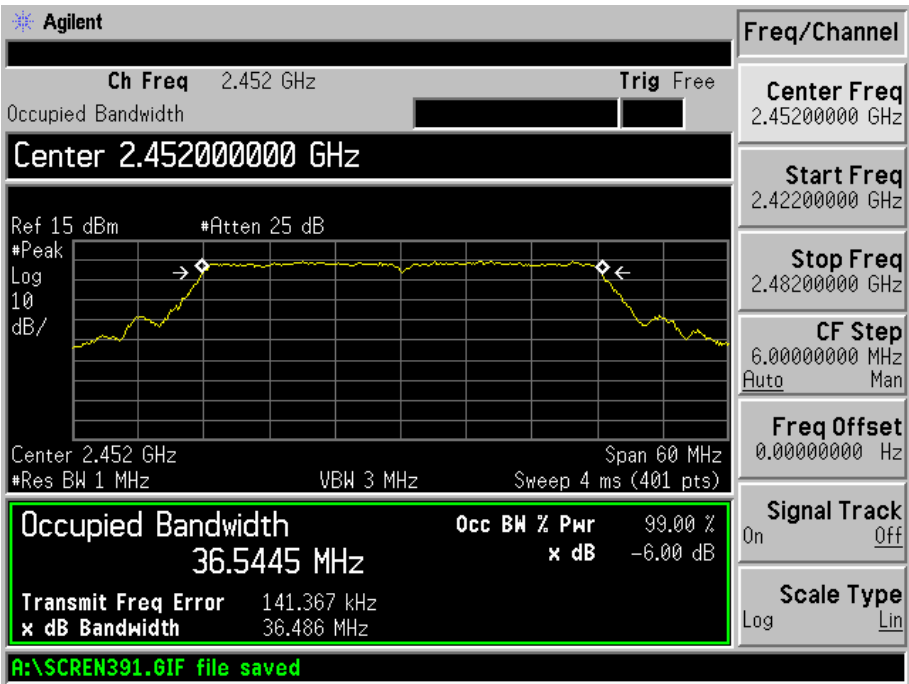
Low Channel:



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	2011-12-20	2012-12-19
Attenuator	ATTEN	ATS100-4-20	/	2011-12-20	2012-12-19

**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  $\geq$  3 MHz.
3. Use a video filter with a bandwidth of 3 MHz or greater.
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

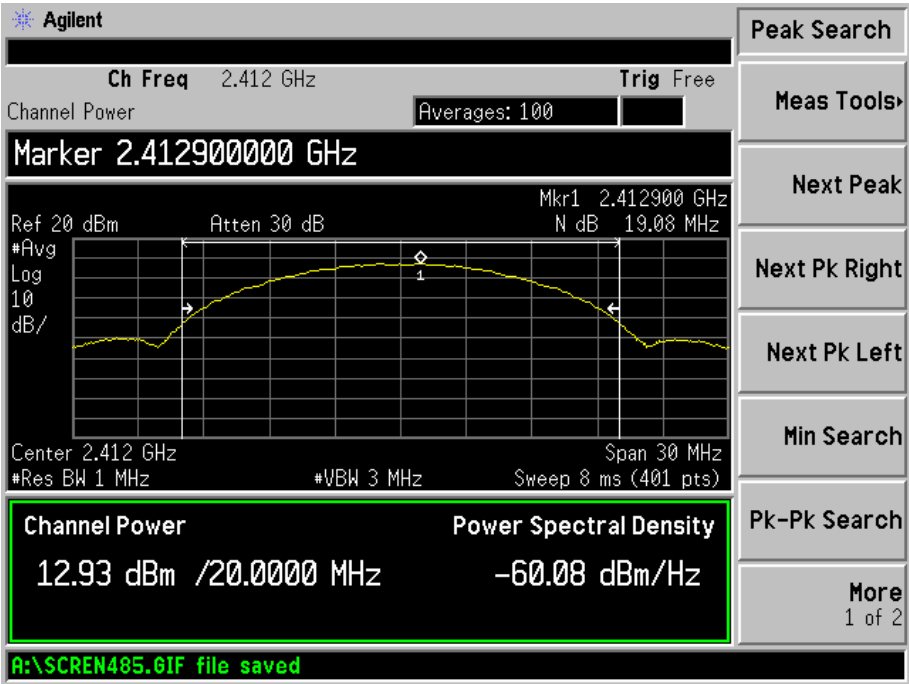
Temperature:	21° C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

**7.5 Summary of Test Results/Plots**

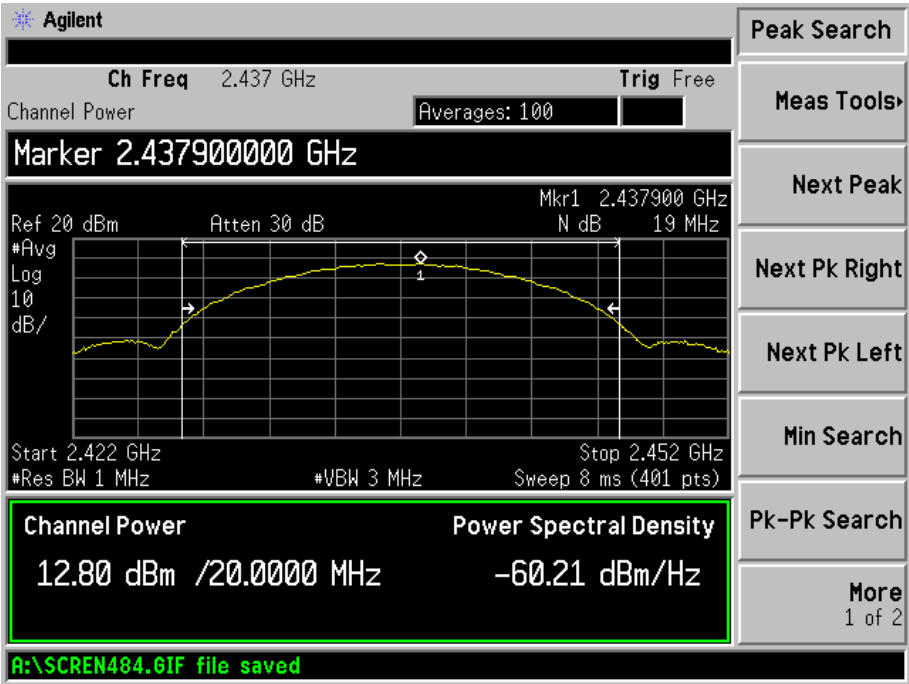
Test mode	Frequency MHz	Reading dBm	Output power W	Limit W
802.11b short (1M)	2412	12.83	0.01919	1
	2437	12.80	0.01905	1
	2462	12.89	0.01945	1
802.11b short (11M)	2412	12.92	0.01959	1
	2437	12.80	0.01905	1
	2462	12.92	0.01959	1
802.11b long (1M)	2412	12.86	0.01932	1
	2437	12.76	0.01888	1
	2462	13.30	0.02138	1
802.11b long (11M)	2412	13.03	0.02009	1
	2437	13.05	0.02018	1
	2462	12.74	0.01879	1
802.11g (6M)	2412	10.90	0.01230	1
	2437	10.70	0.01175	1
	2462	11.82	0.01521	1
802.11g (54M)	2412	10.75	0.01189	1
	2437	10.53	0.01130	1
	2462	11.66	0.01466	1
802.11n-HT20(0M)	2412	8.26	0.00670	1
	2437	8.13	0.00650	1
	2462	7.24	0.00530	1
802.11n-HT20(7M)	2412	8.19	0.00659	1
	2437	8.04	0.00637	1
	2462	7.26	0.00532	1
802.11n-HT40(0M)	2422	8.75	0.00750	1
	2437	8.72	0.00745	1
	2452	4.44	0.00278	1
802.11n-HT40(7M)	2422	8.80	0.00759	1
	2437	8.68	0.00738	1
	2452	4.50	0.00282	1

For 802.11b\_1M short rate

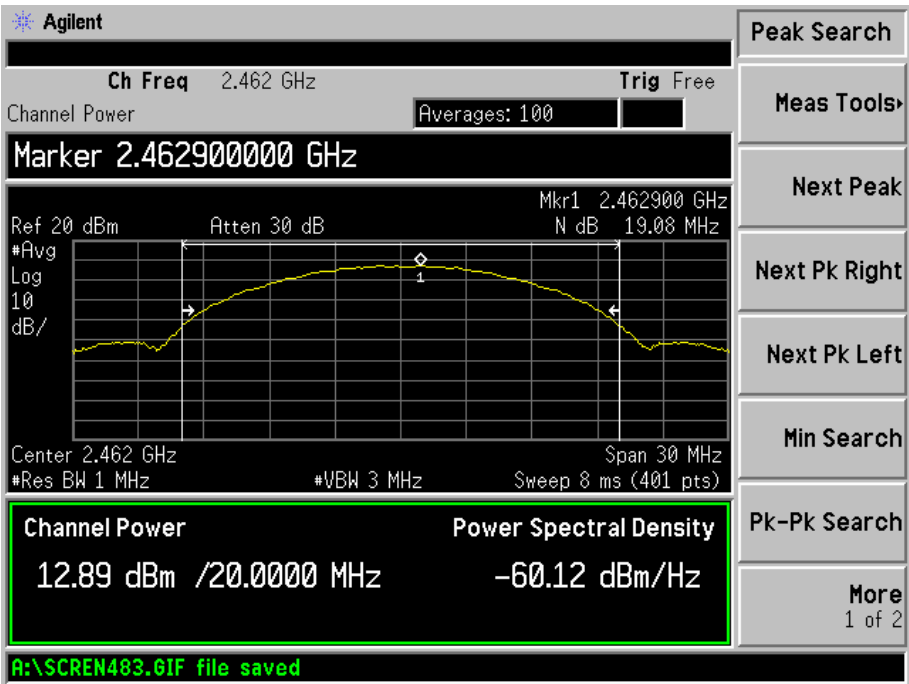
Low Channel:



Middle Channel:

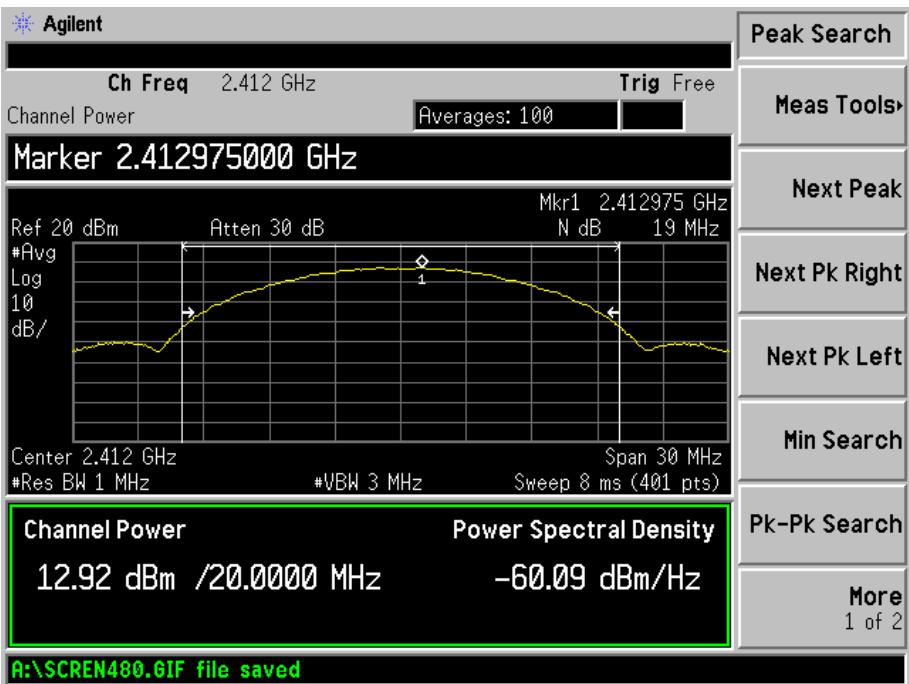


High Channel:

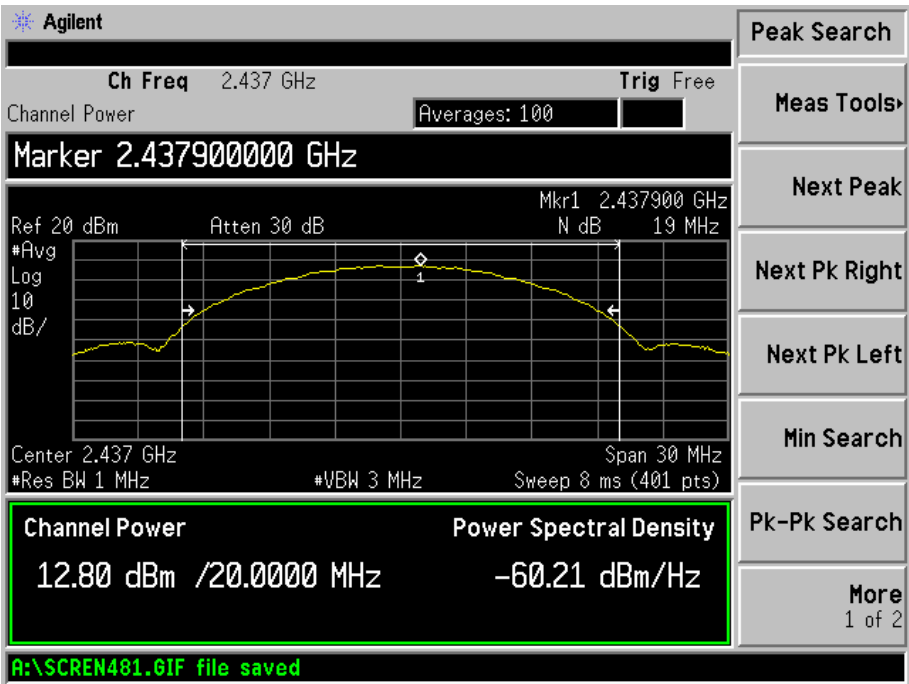


For 802.11b\_11M short rate

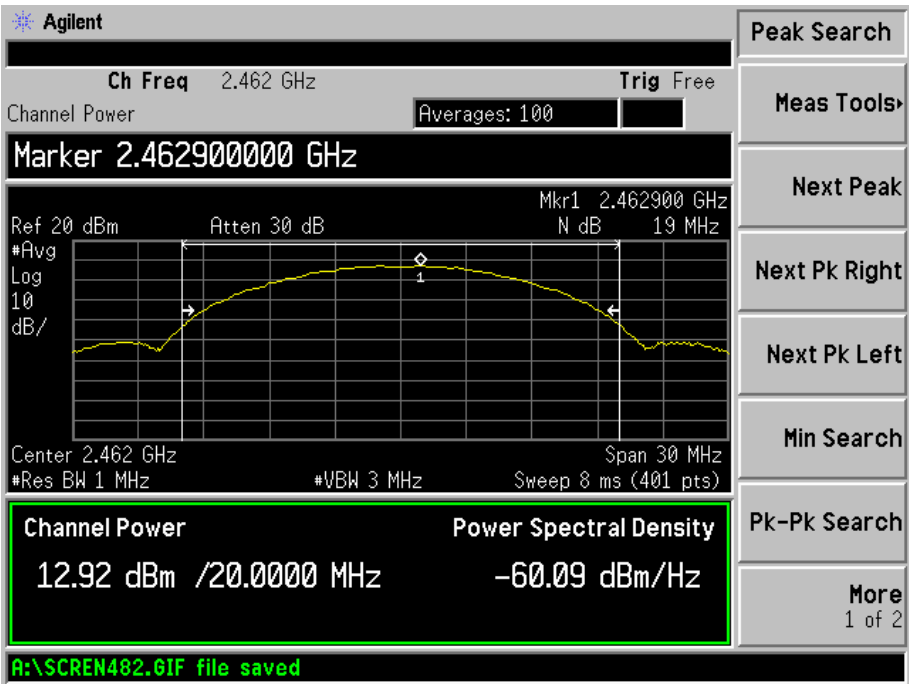
Low Channel:



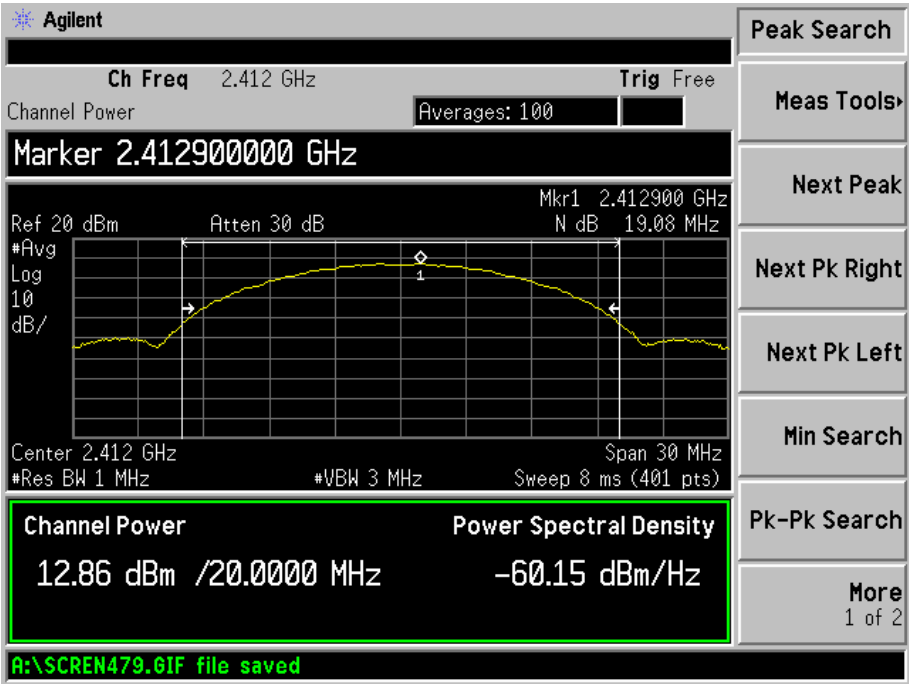
Middle Channel:



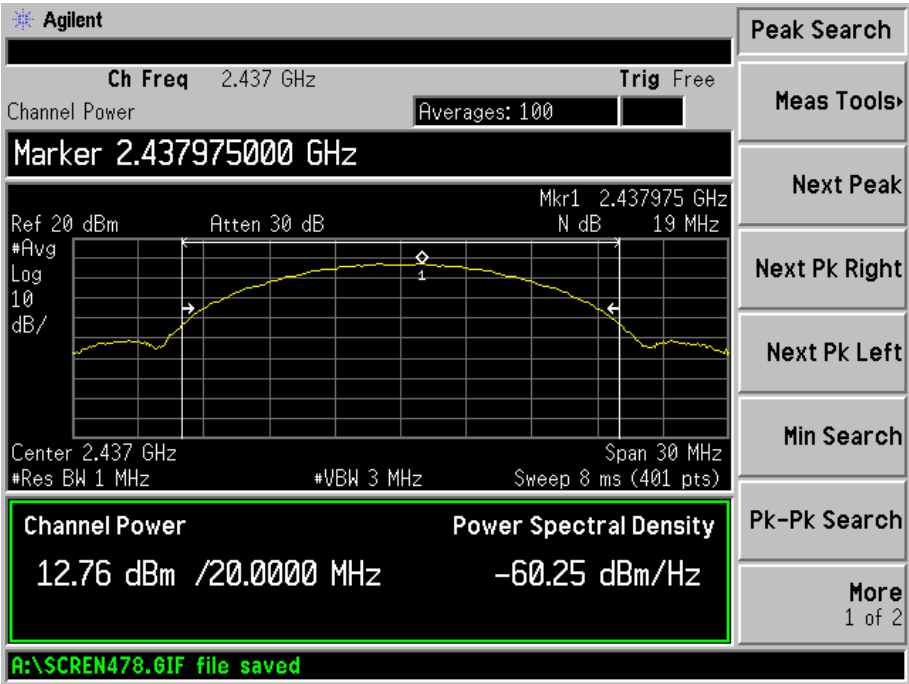
High Channel:



For 802.11b\_1M Long rate  
Low Channel:

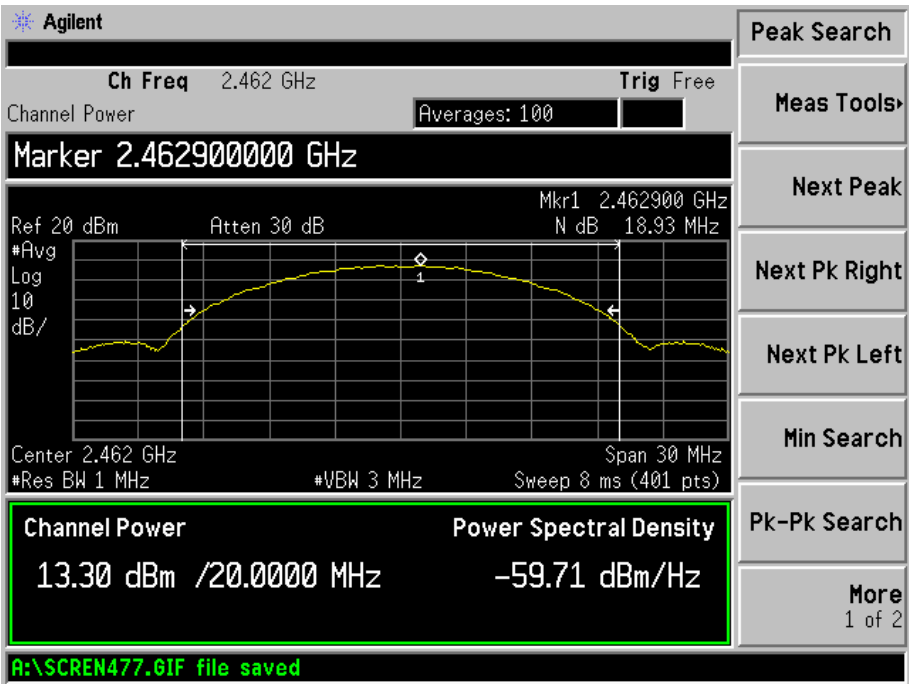


Middle Channel:





High Channel:

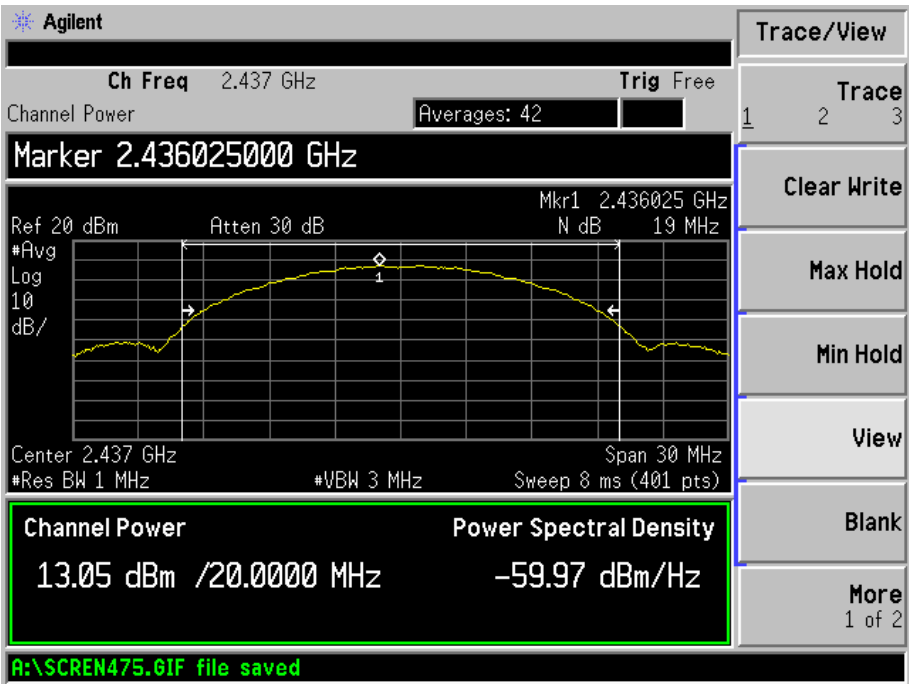


For 802.11b\_11M Long rate

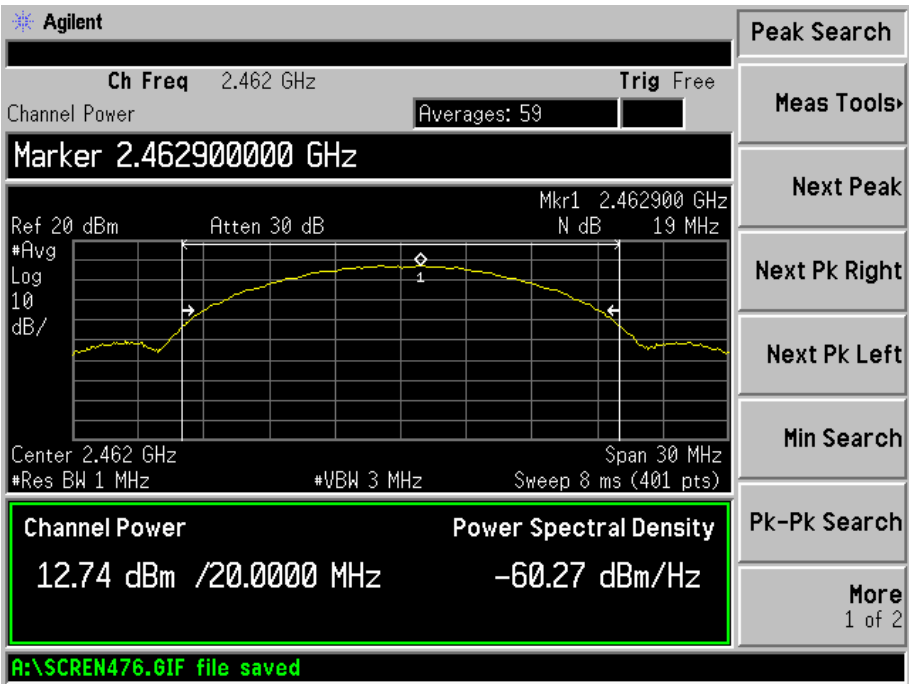
Low Channel:



Middle Channel:

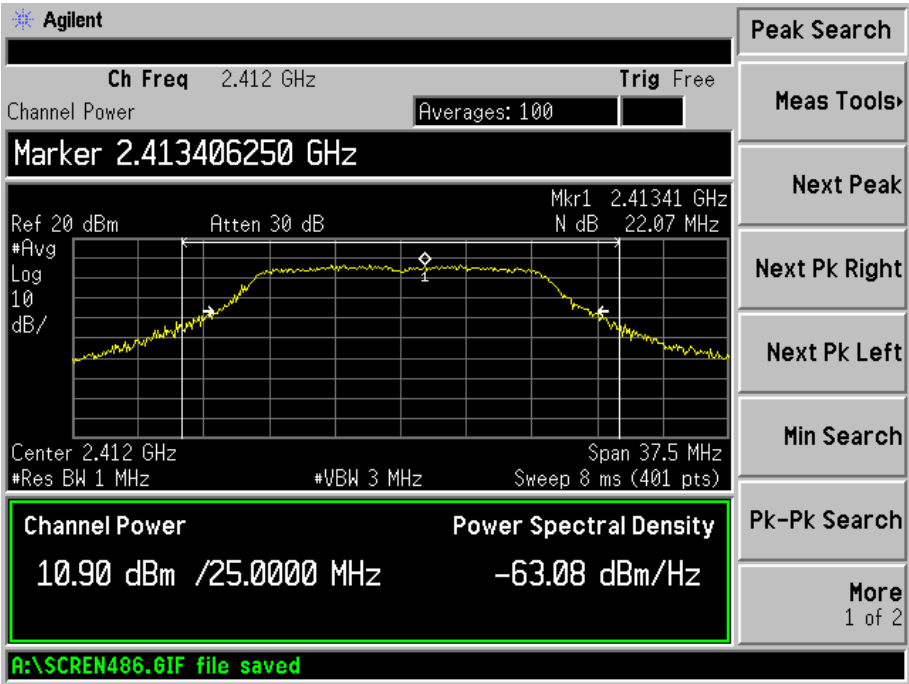


High Channel:

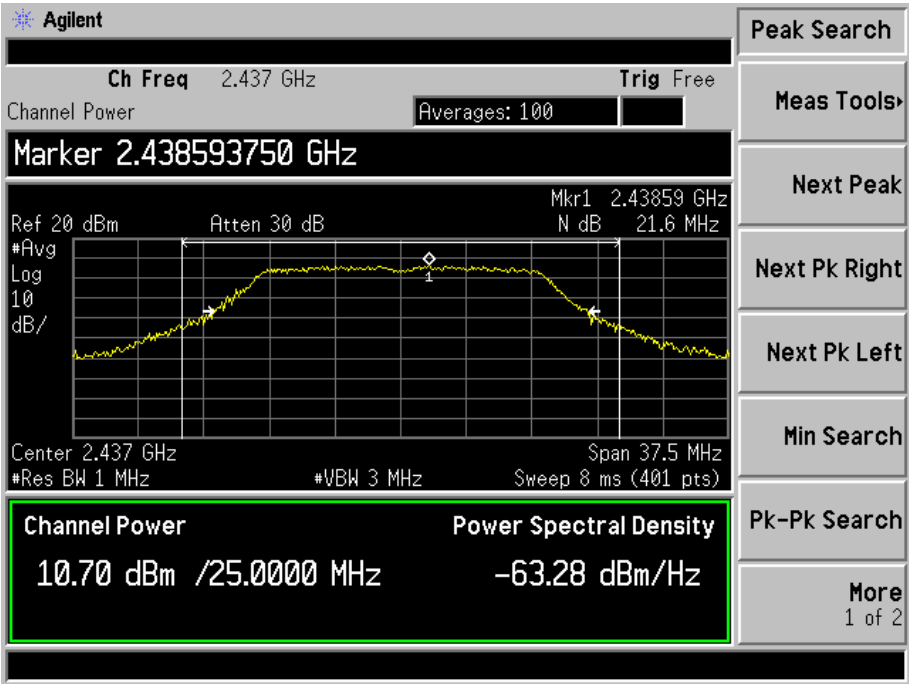


For 802.11g\_6M rate

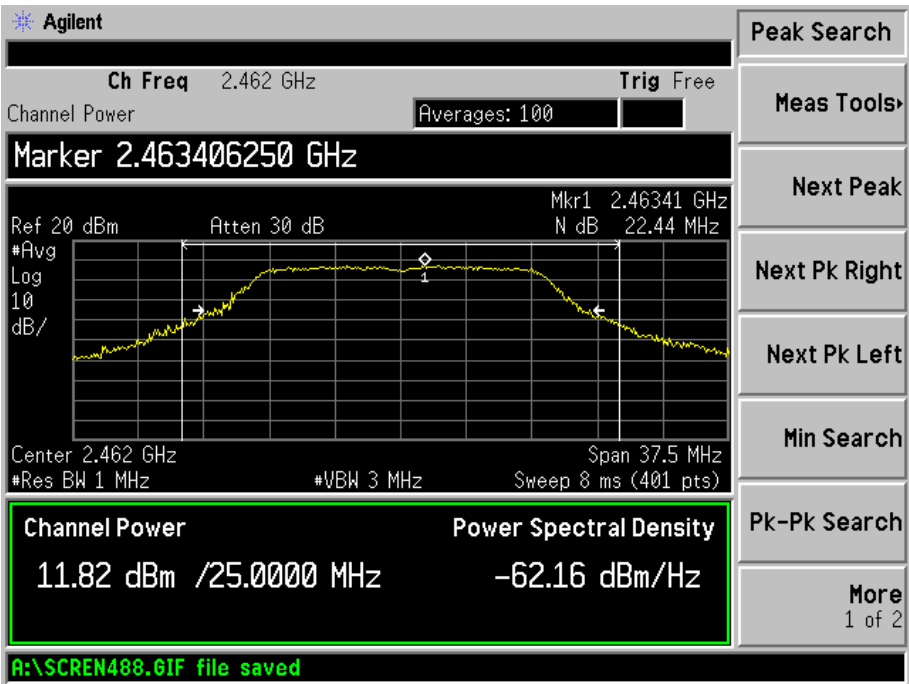
Low Channel:



Middle Channel:

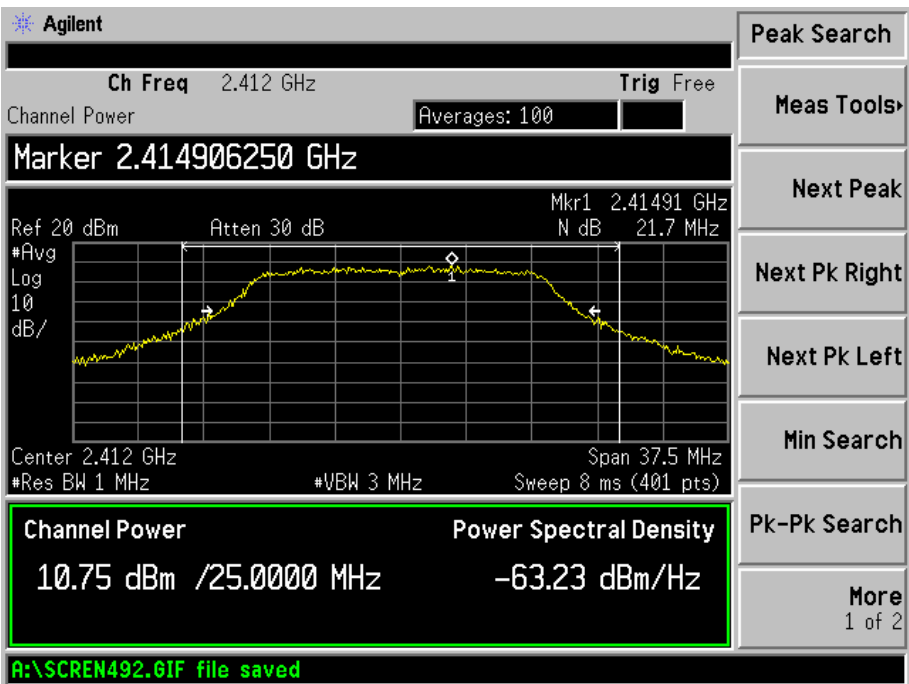


High Channel:

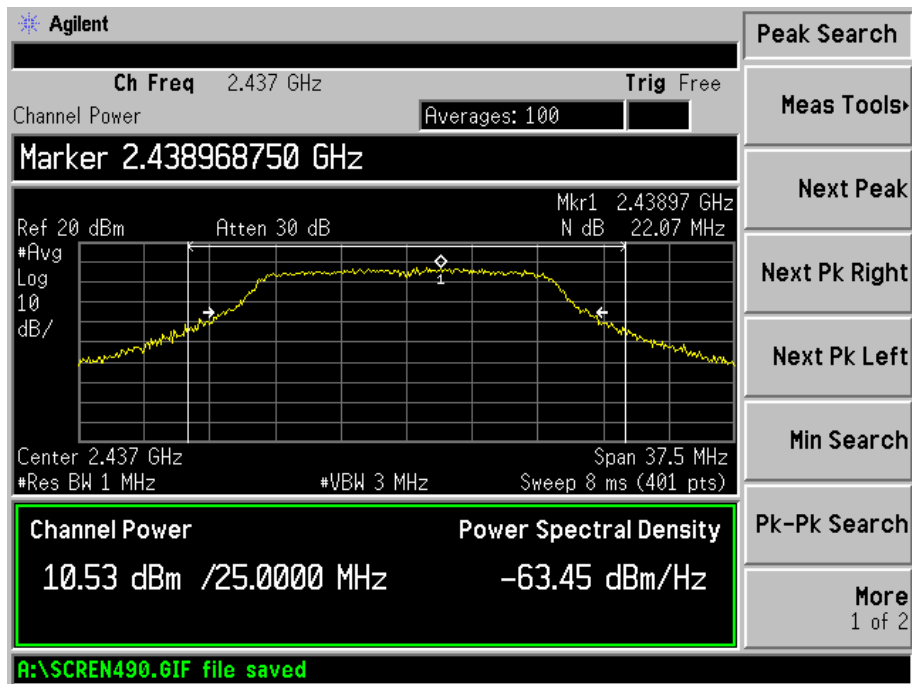


For 802.11g\_54M rate

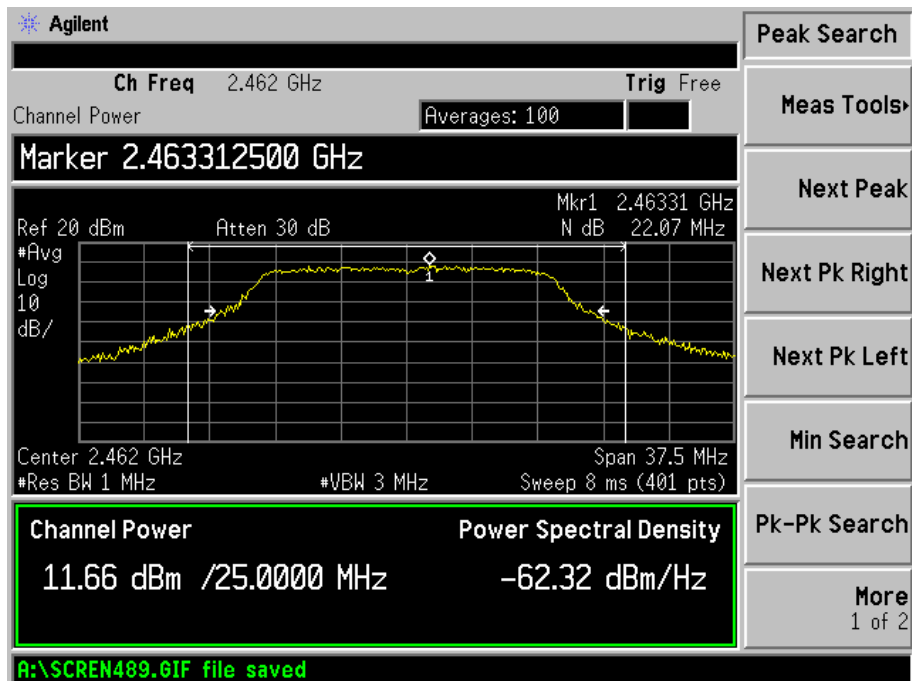
Low Channel:



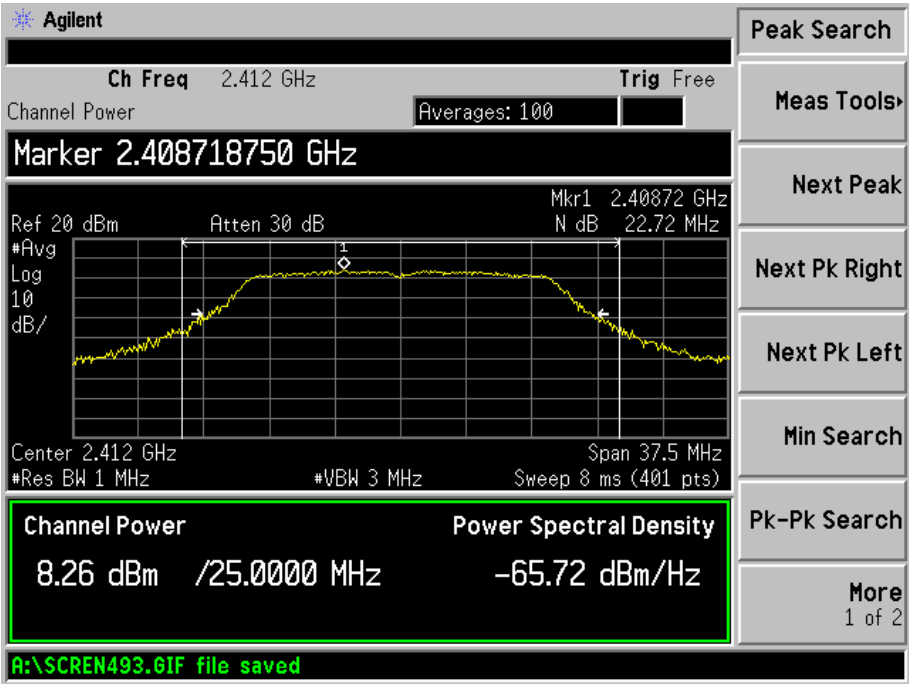
Middle Channel:



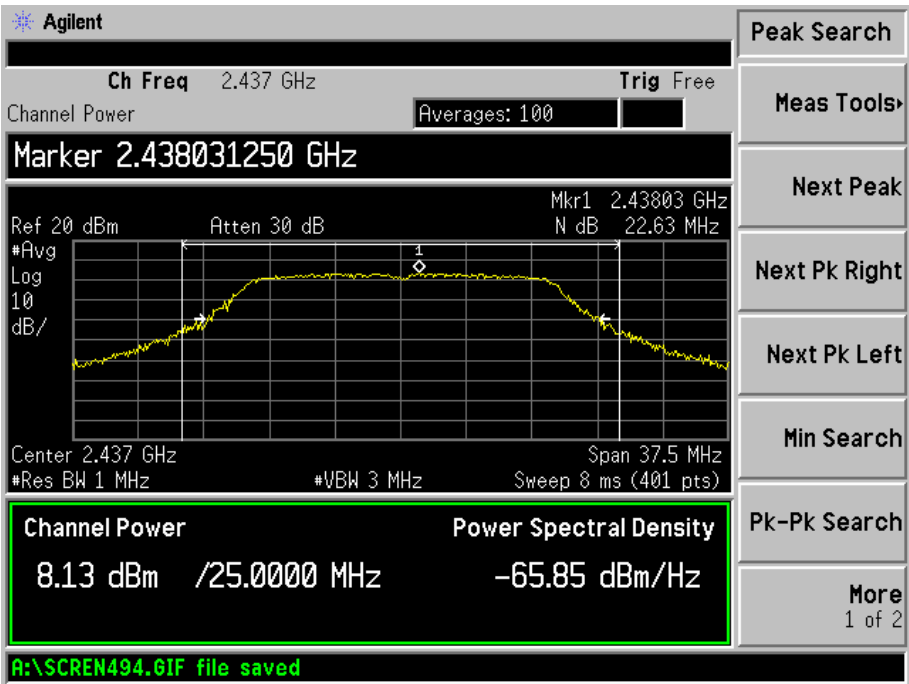
High Channel:



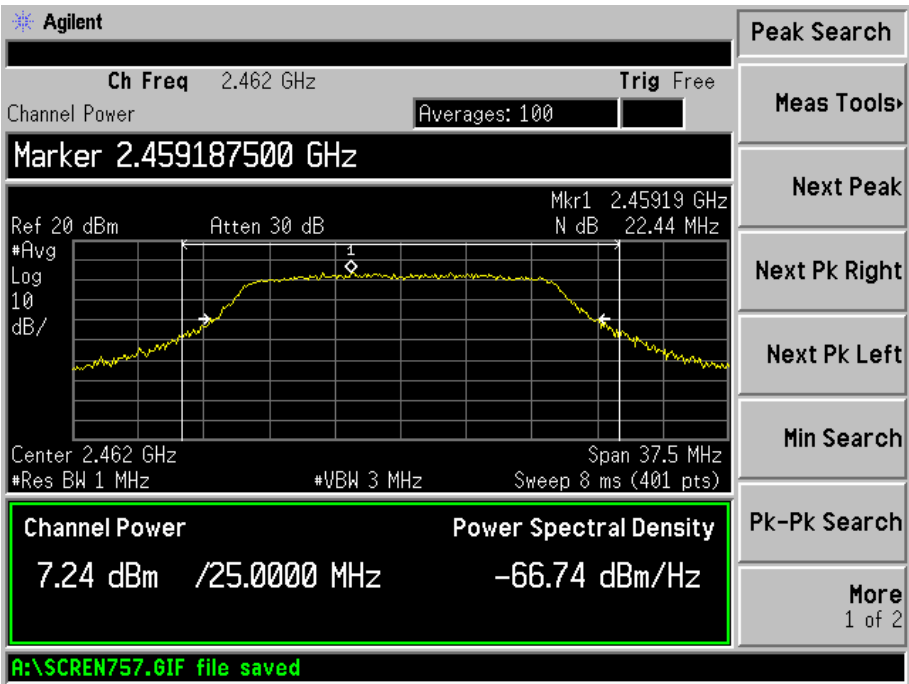
For 802.11n HT20\_M rate  
Low Channel:



Middle Channel:

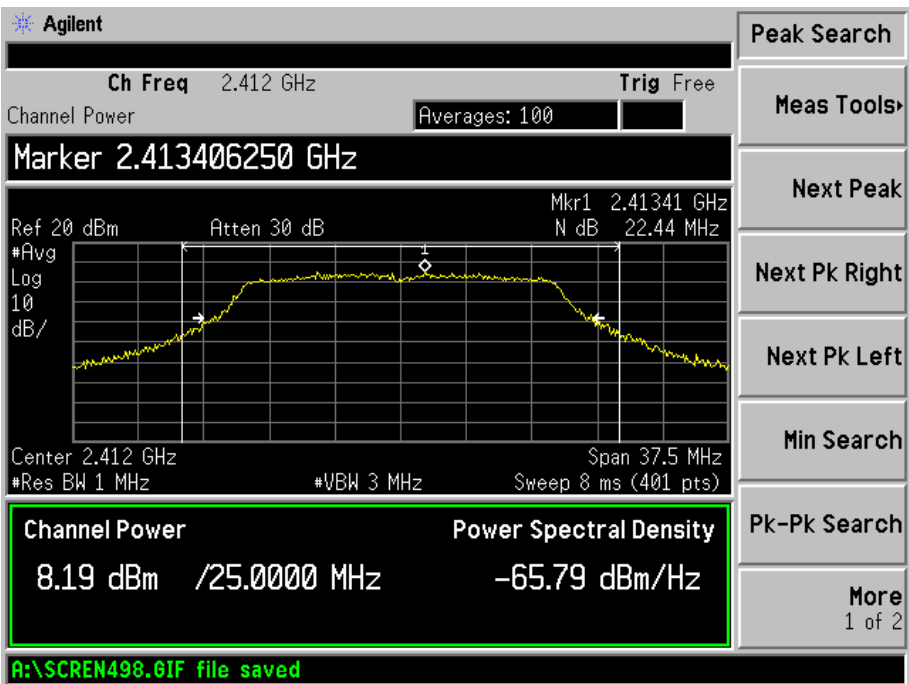


High Channel:

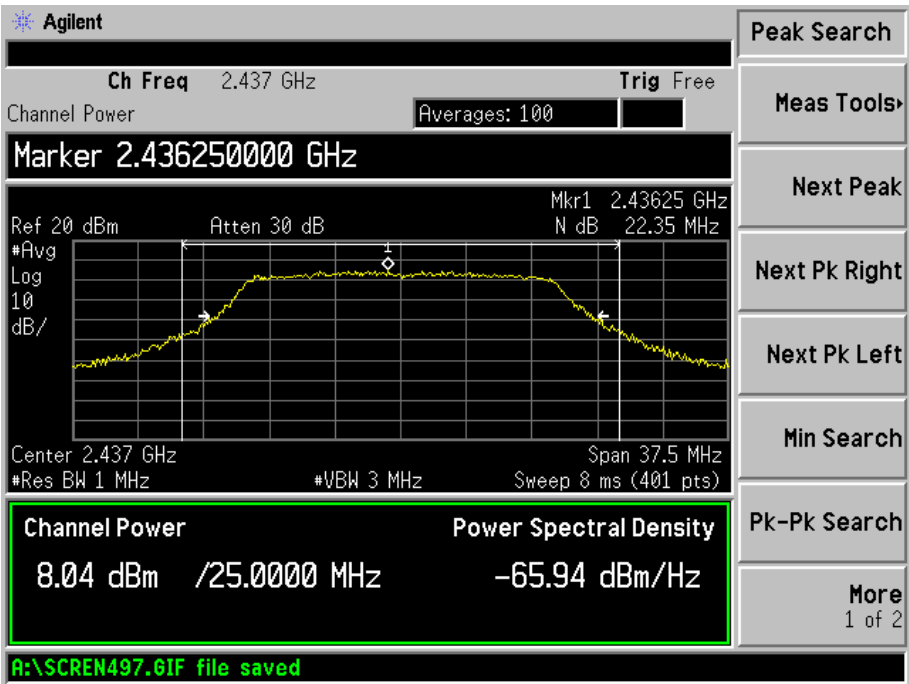


For 802.11n HT20\_7M rate

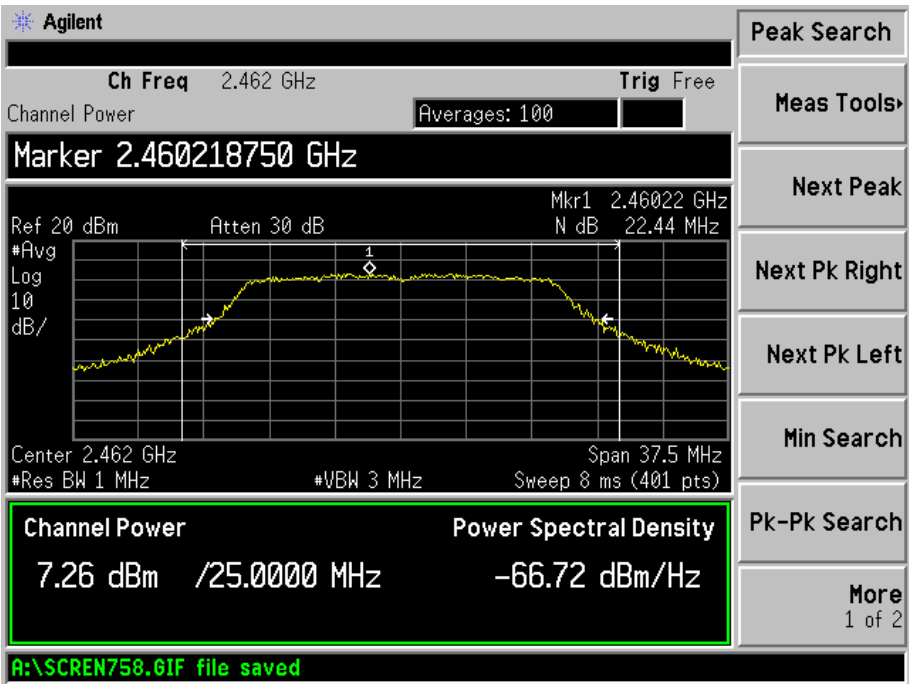
Low Channel:



Middle Channel:



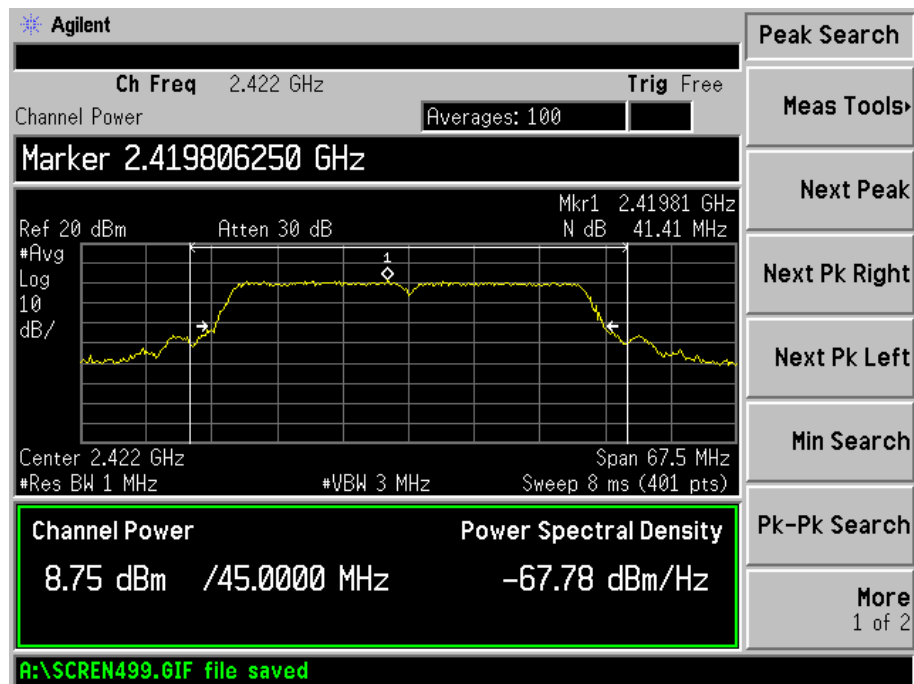
High Channel:



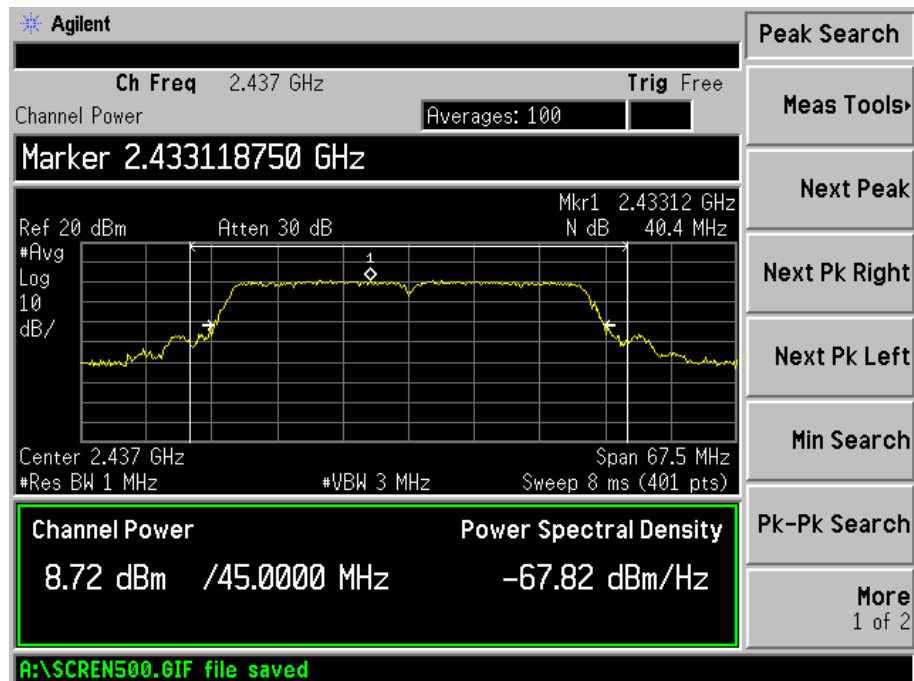


**For 802.11n HT40\_0M rate**

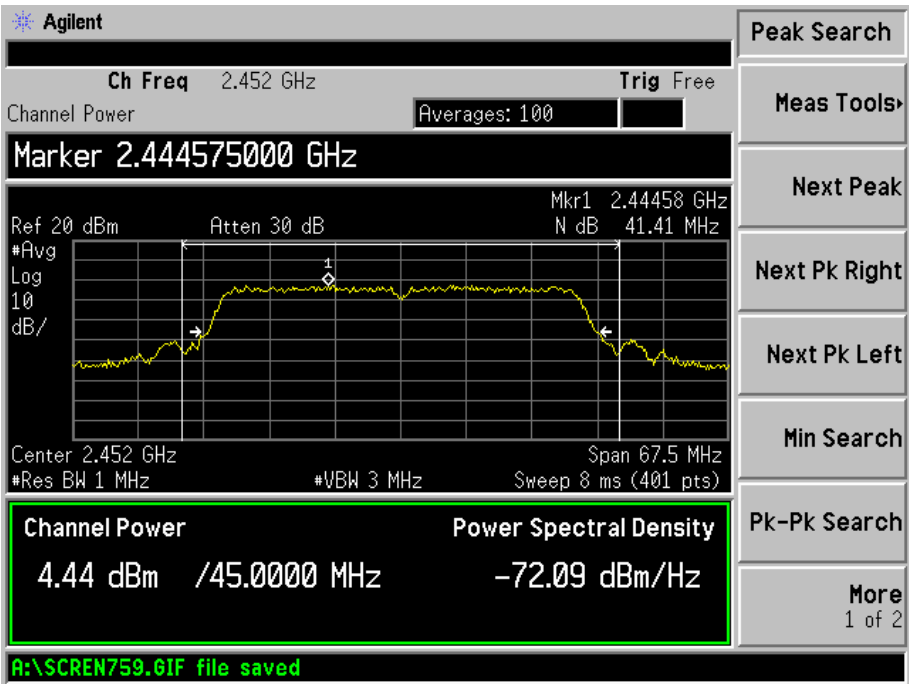
Low Channel:



Middle Channel:

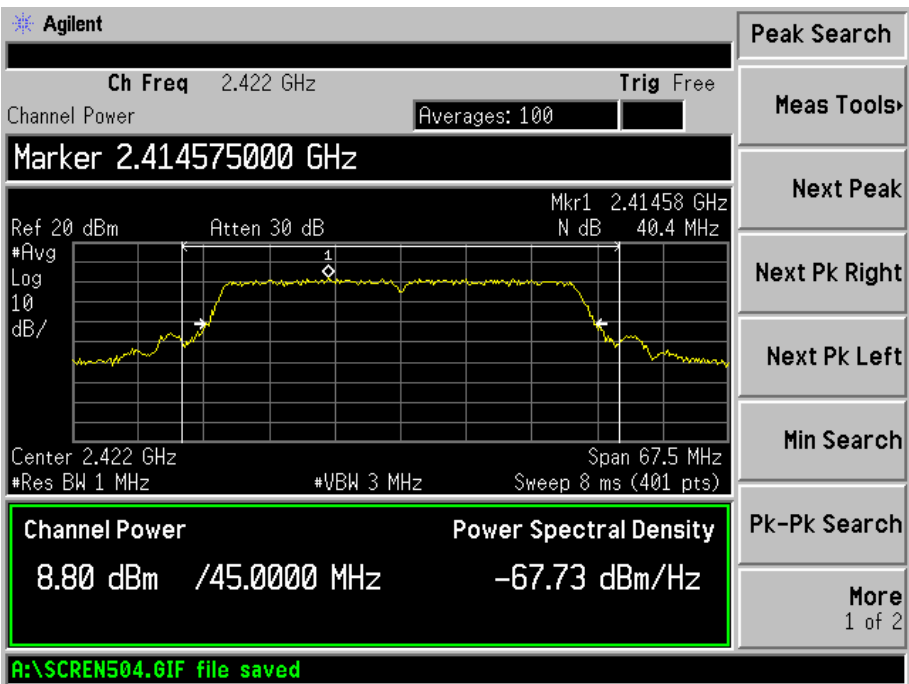


High Channel:

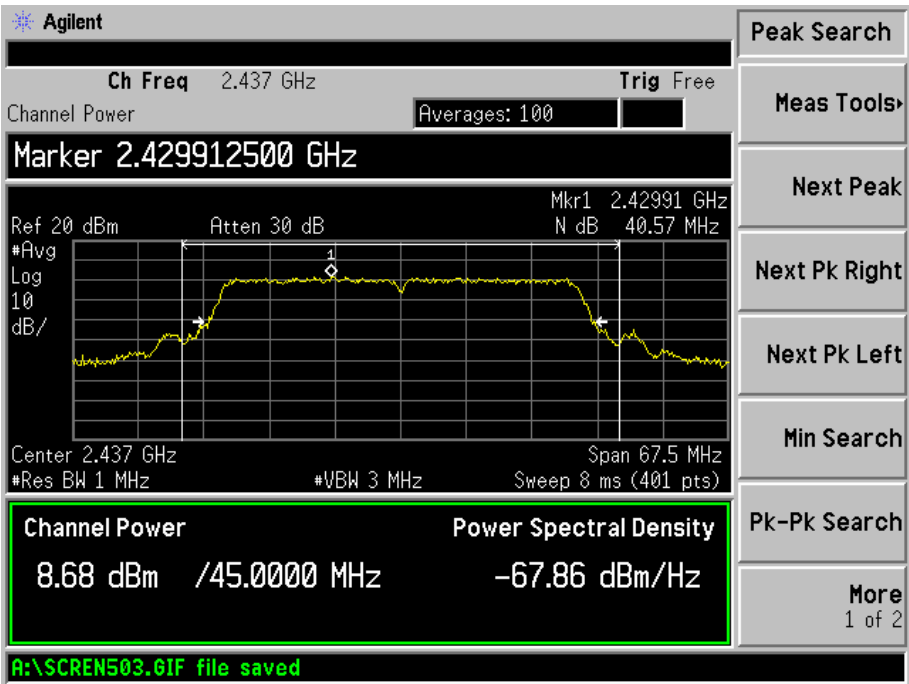


For 802.11n HT40\_7M rate

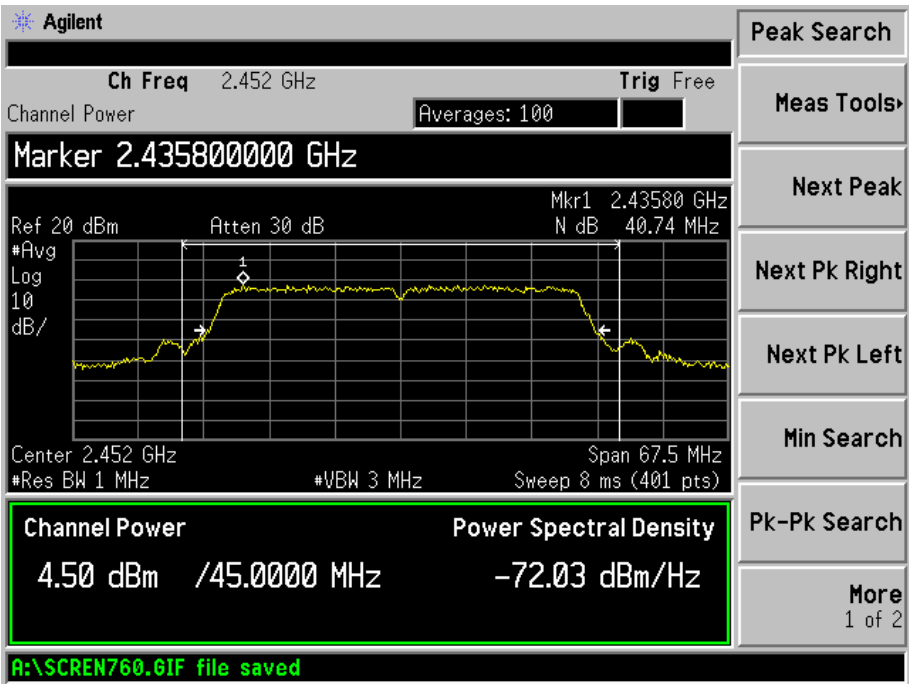
Low Channel:



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  $\pm 5.10$  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

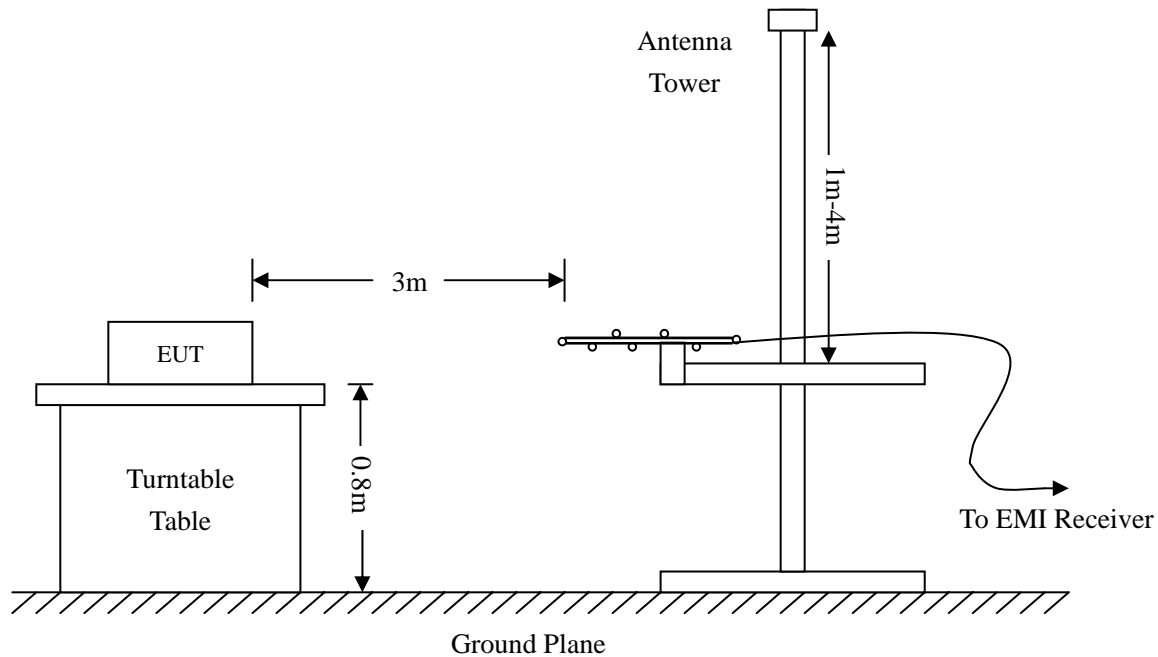
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2011-12-20	2012-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2011-12-20	2012-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2011-12-20	2012-12-19
RF Switch	EM	EMSW18	SW060023	2011-12-20	2012-12-19
Pre-amplifier	Agilent	8447F	3113A06717	2011-12-20	2012-12-19
Pre-amplifier	Compliance Direction	PAP-0118	24002	2011-12-20	2012-12-19
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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

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:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

## 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:

**-4.42dB $\mu$ V at 851.0353MHz in the Vertical polarization, Transmitting 802.11n-HT40 Low Channel test mode with, 30 MHz to 25 GHz, 3Meters**

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

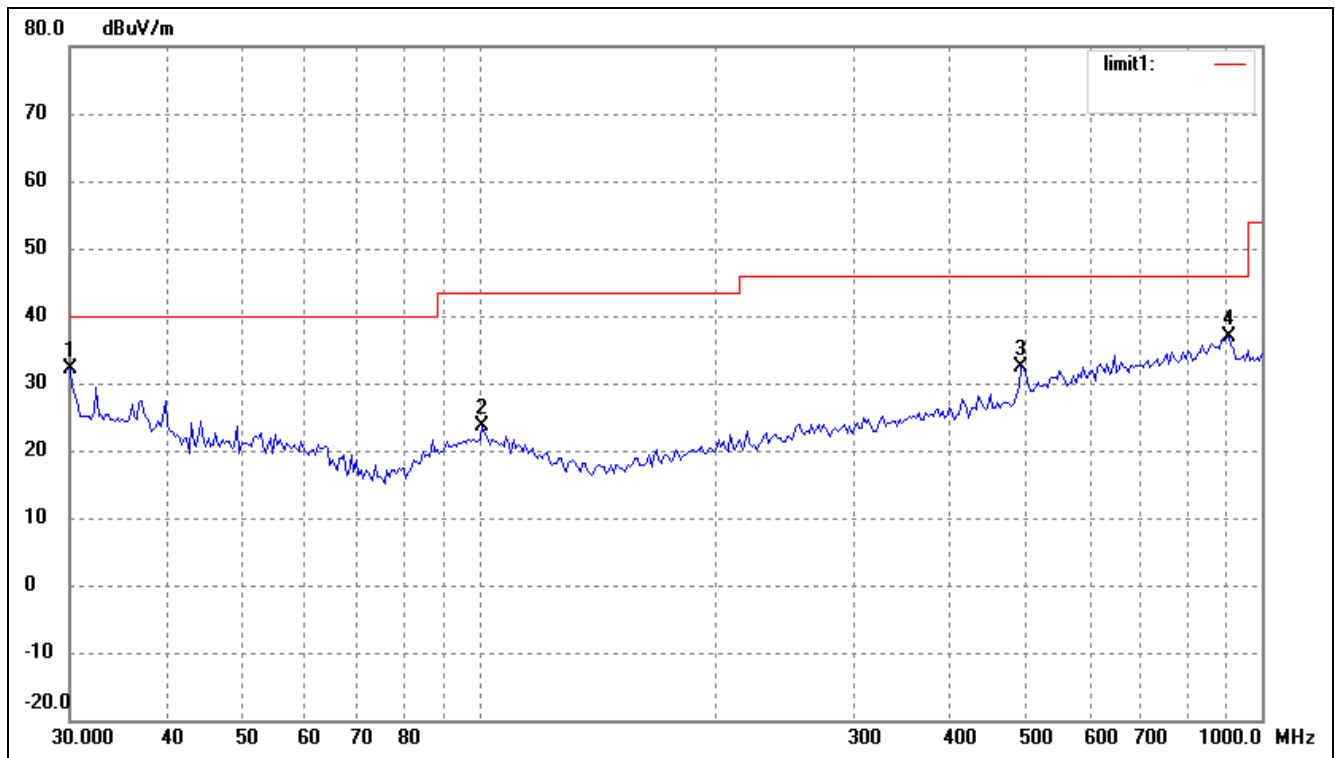
Test Result/Plots:

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11b) Low Channel

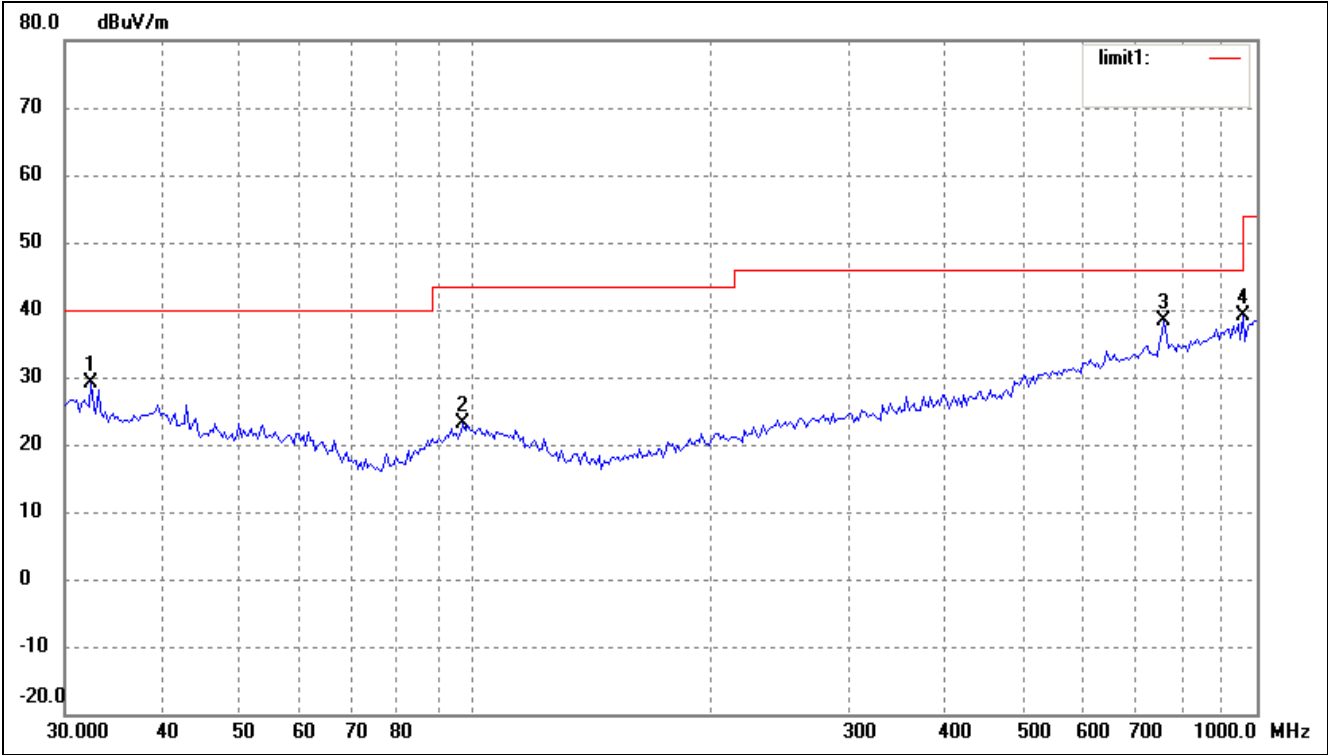
Comment:

Horizontal



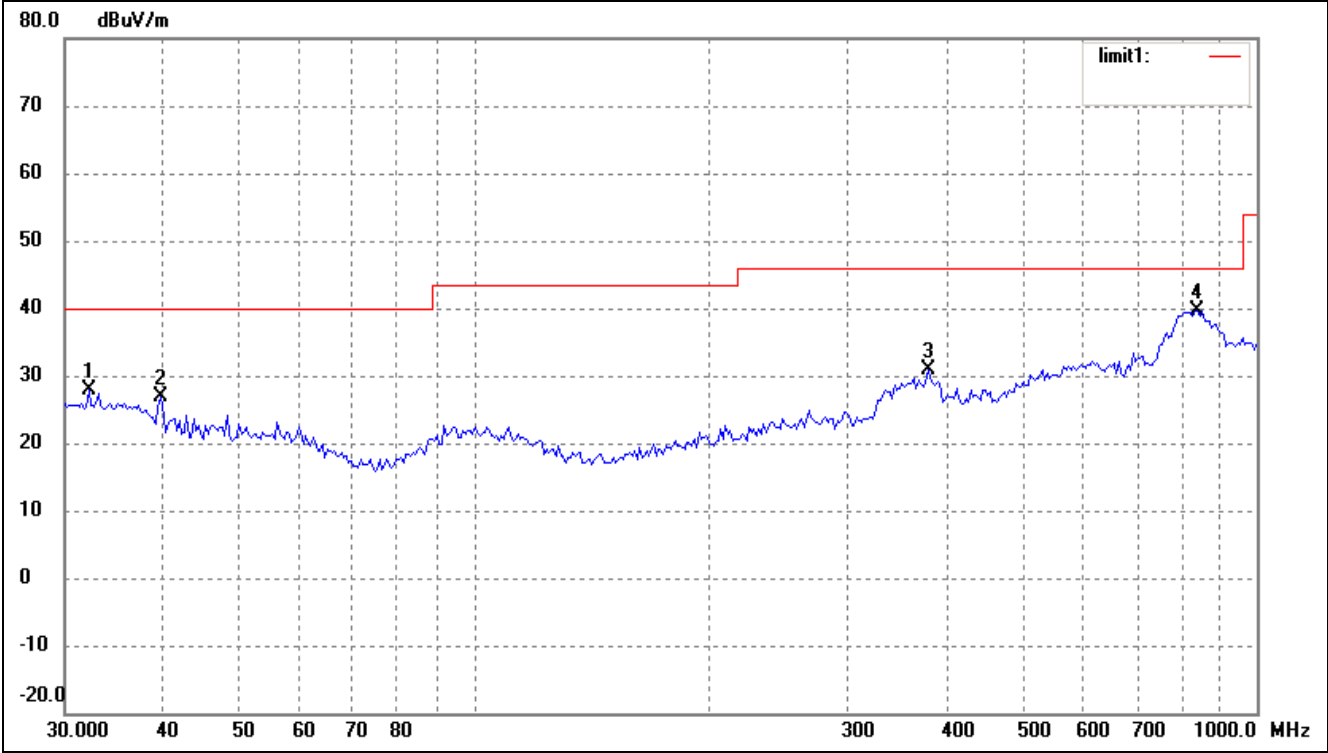
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (° )	Height (cm)	Remark
1	30.0000	25.24	6.77	32.01	40.00	-7.99	360	100	peak
2	100.9340	15.19	8.34	23.53	43.50	-19.97	360	100	peak
3	492.4685	18.77	13.67	32.44	46.00	-13.56	360	100	peak
4	906.4824	15.96	21.02	36.98	46.00	-9.02	360	100	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	32.4059	22.46	6.77	29.23	40.00	-10.77	360	100	peak
2	96.7749	14.88	8.19	23.07	43.50	-20.43	360	100	peak
3	760.7036	20.01	18.42	38.43	46.00	-7.57	360	100	peak
4	958.7943	17.15	21.98	39.13	46.00	-6.87	360	100	peak

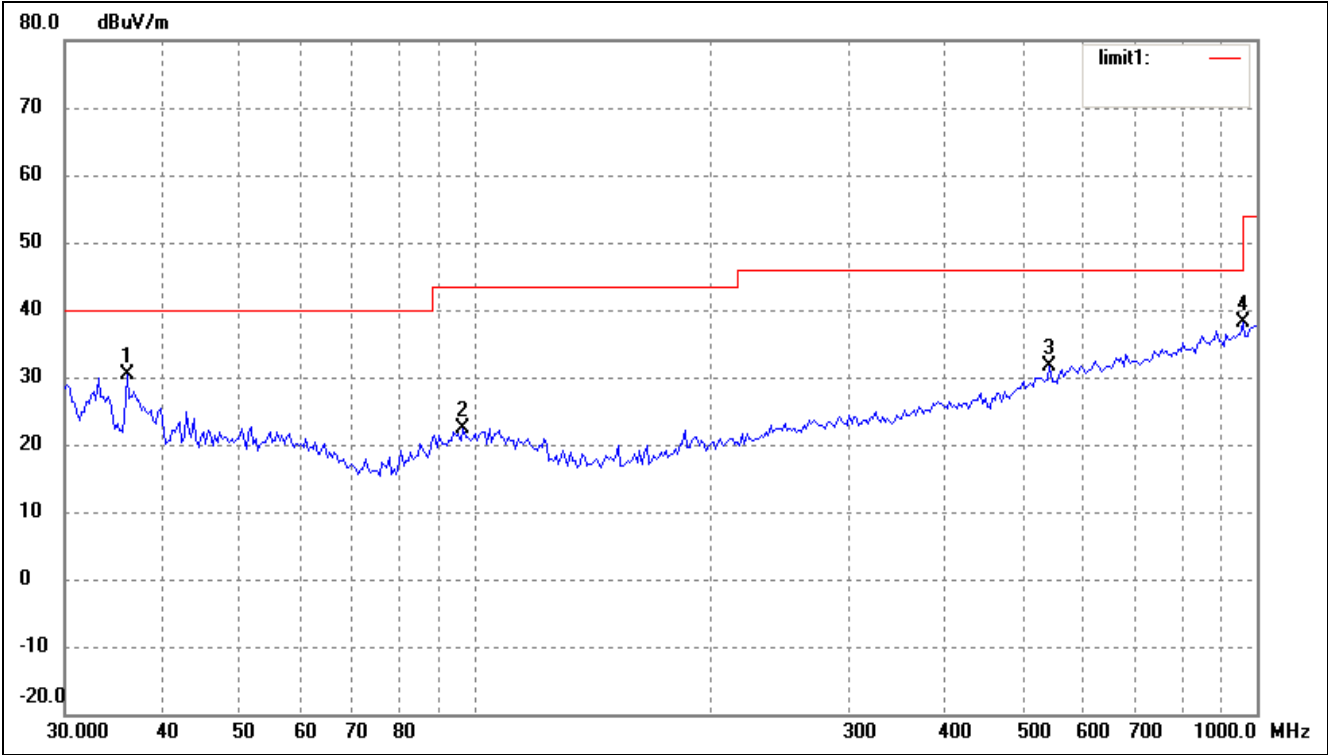
Spurious Emission From 30 MHz to 1 GHz  
Test mode: Transmitting (802.11b) Middle Channel  
Comment:  
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (° )	Height (cm)	Remark
1	32.1795	21.06	6.77	27.83	40.00	-12.17	360	100	peak
2	39.7147	18.80	8.07	26.87	40.00	-13.13	360	100	peak
3	379.9141	19.63	11.20	30.83	46.00	-15.17	360	100	peak
4	839.1818	19.98	19.75	39.73	46.00	-6.27	360	100	peak

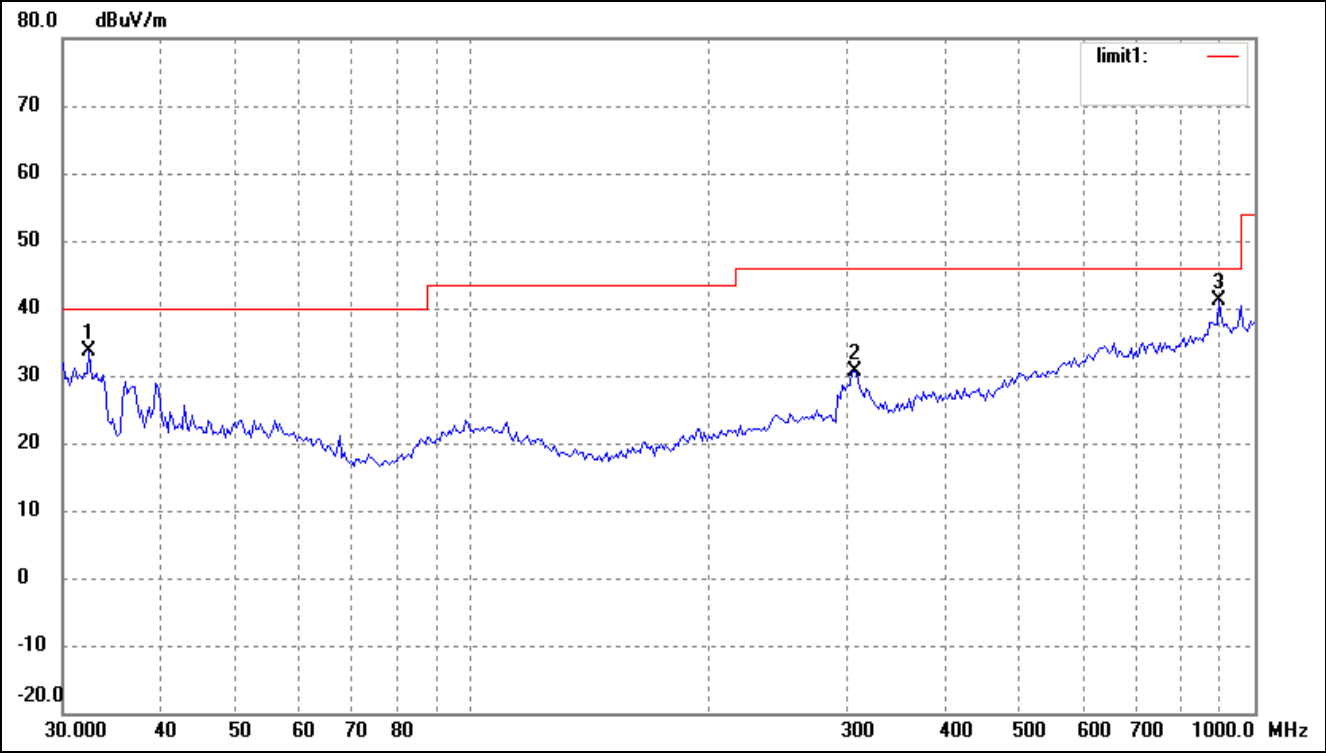


Vertical



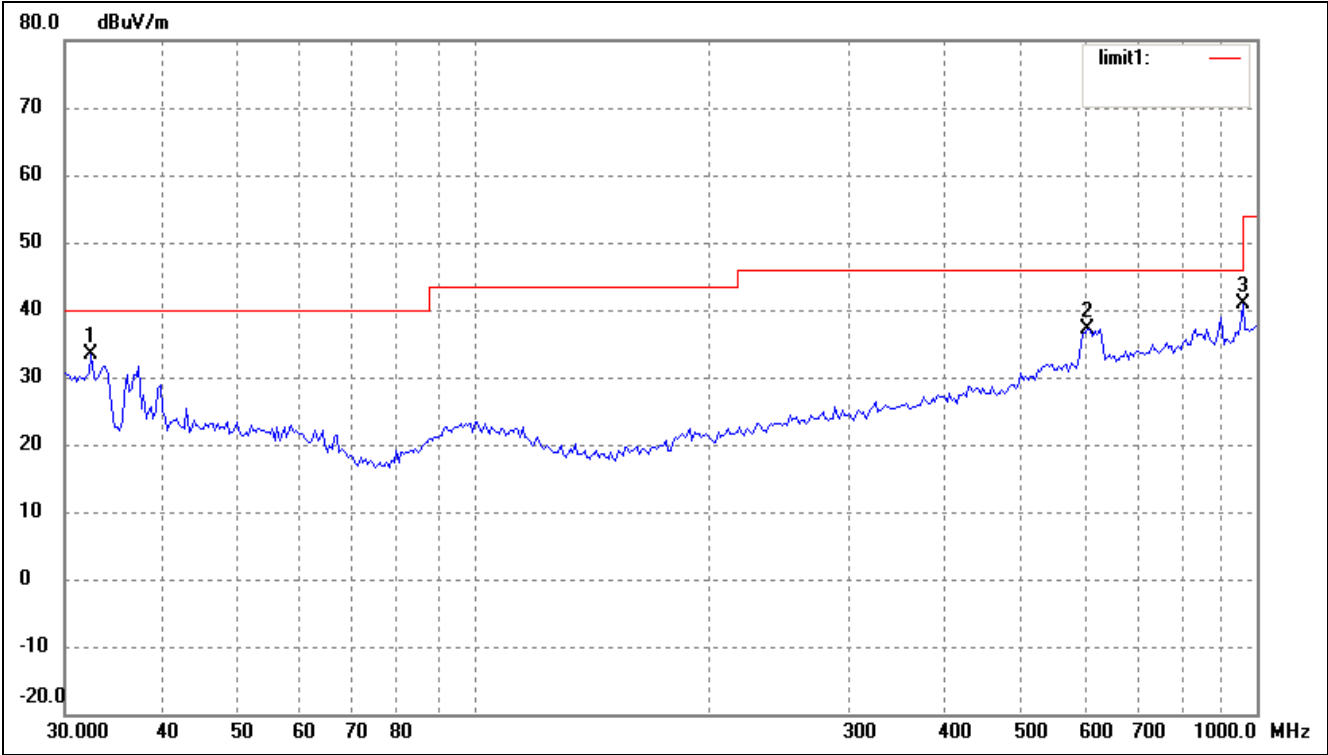
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	36.0007	23.34	7.05	30.39	40.00	-9.61	360	100	peak
2	96.7749	14.23	8.19	22.42	43.50	-21.08	360	100	peak
3	543.2742	16.30	15.38	31.68	46.00	-14.32	360	100	peak
4	958.7943	16.16	21.98	38.14	46.00	-7.86	360	100	peak

Spurious Emission From 30 MHz to 1 GHz  
Test mode: Transmitting (802.11b) High Channel  
Comment:  
Horizontal



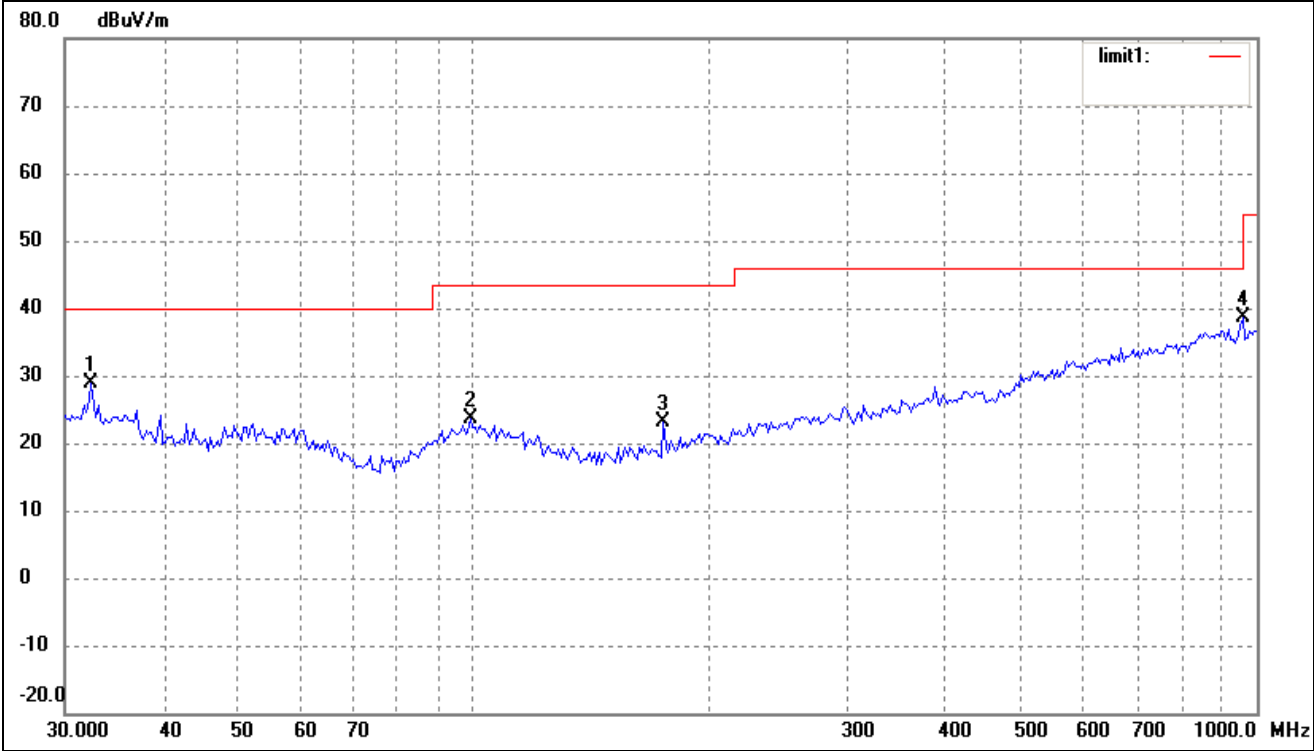
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	32.4059	26.86	6.77	33.63	40.00	-6.37	360	100	peak
2	307.8313	20.69	9.86	30.55	46.00	-15.45	360	100	peak
3	900.1474	20.18	20.90	41.08	46.00	-4.92	360	100	peak

Vertical



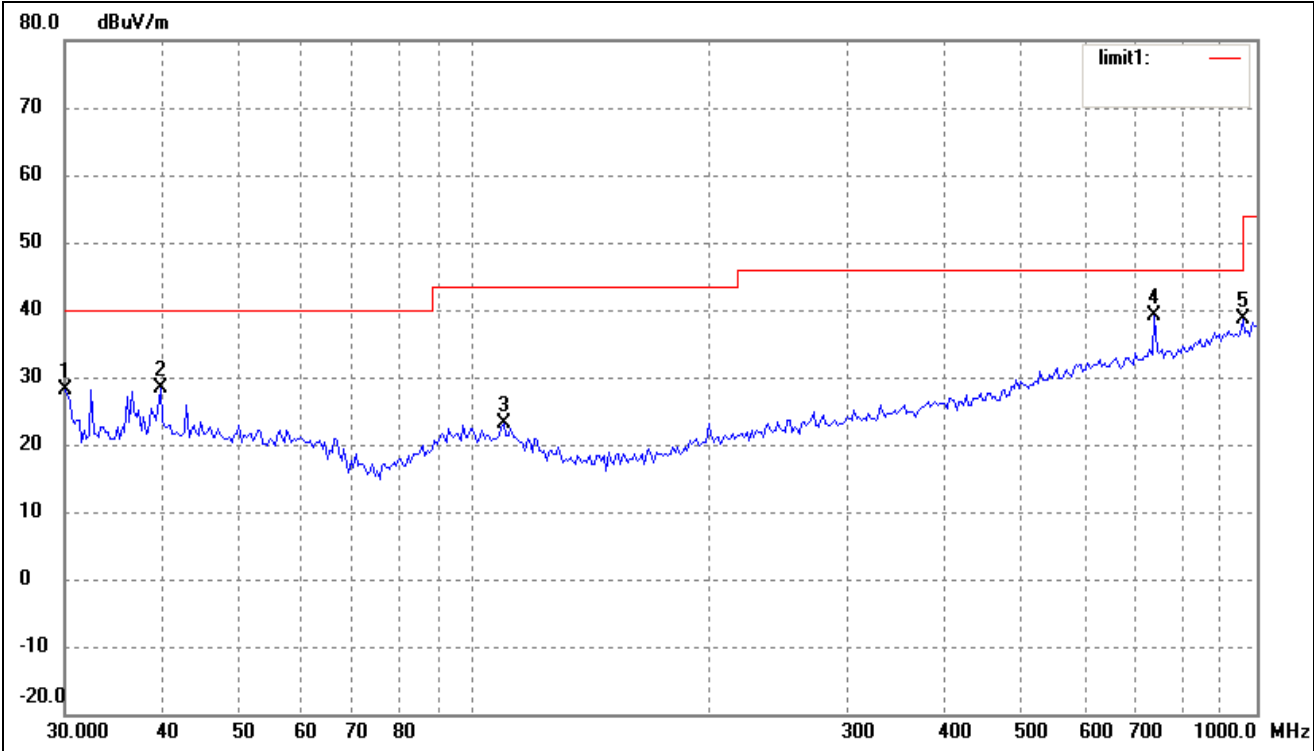
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	32.4059	26.50	6.77	33.27	40.00	-6.73	360	100	peak
2	607.7867	20.48	16.73	37.21	46.00	-8.79	360	100	peak
3	958.7943	18.84	21.98	40.82	46.00	-5.18	360	100	peak

Spurious Emission From 30 MHz to 1 GHz  
Test mode: Transmitting (802.11g) Low Channel  
Comment:  
Horizontal



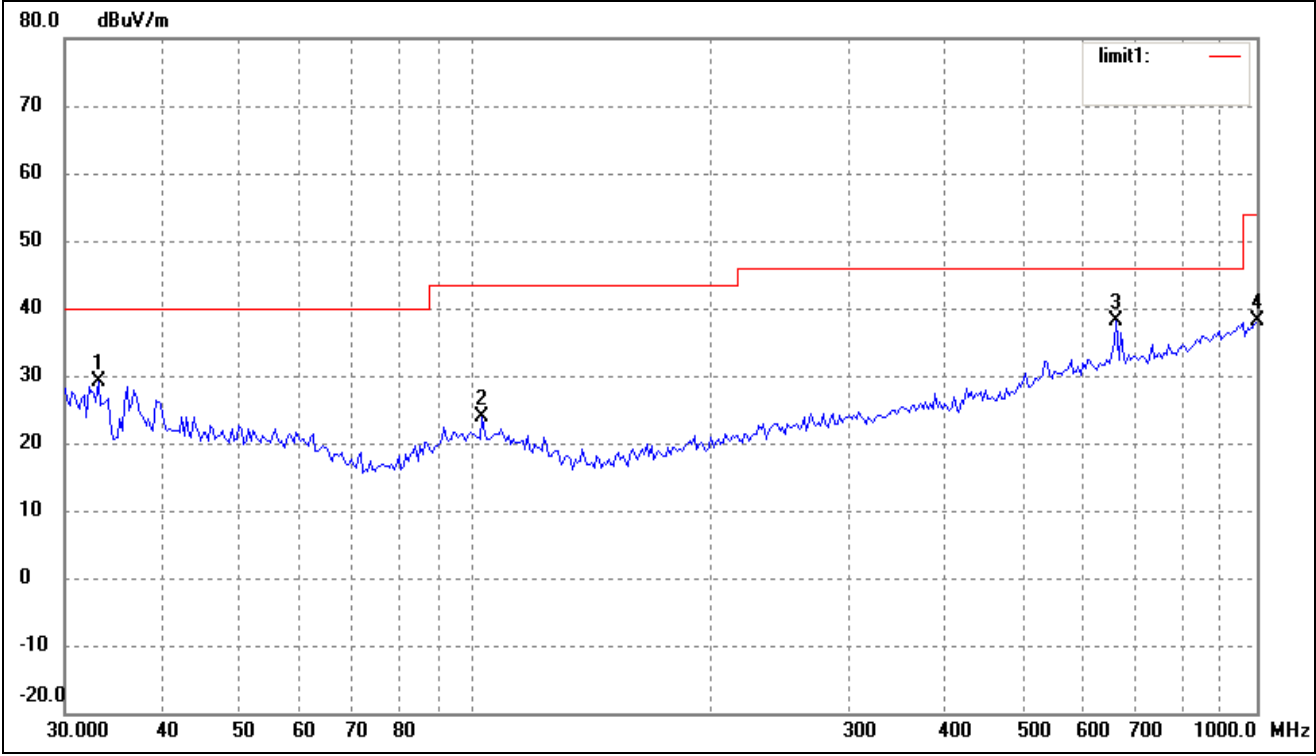
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	32.4059	22.07	6.77	28.84	40.00	-11.16	360	100	peak
2	98.8326	15.37	8.34	23.71	43.50	-19.79	110	124	QP
3	174.4241	17.92	5.22	23.14	43.50	-20.36	208	104	QP
4	958.7943	16.68	21.98	38.66	46.00	-7.34	359	100	peak

Vertical



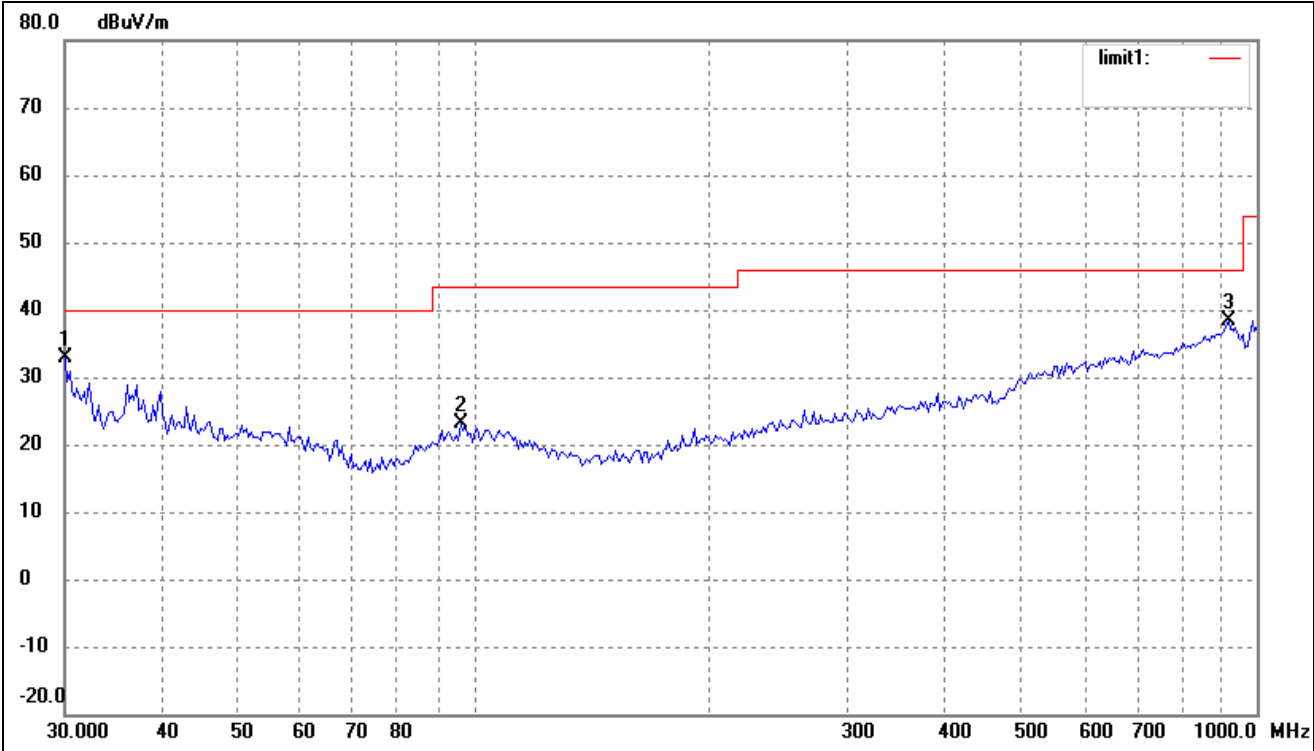
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	30.0000	21.38	6.77	28.15	40.00	-11.85	201	204	QP
2	39.7147	20.41	8.07	28.48	40.00	-11.52	360	100	peak
3	109.0286	15.41	7.68	23.09	43.50	-20.41	118	100	QP
4	739.6605	21.07	18.09	39.16	46.00	-6.84	359	100	peak
5	958.7943	16.59	21.98	38.57	46.00	-7.43	359	100	peak

Spurious Emission From 30 MHz to 1 GHz  
Test mode: Transmitting (802.11g) Middle Channel  
Comment:  
Horizontal



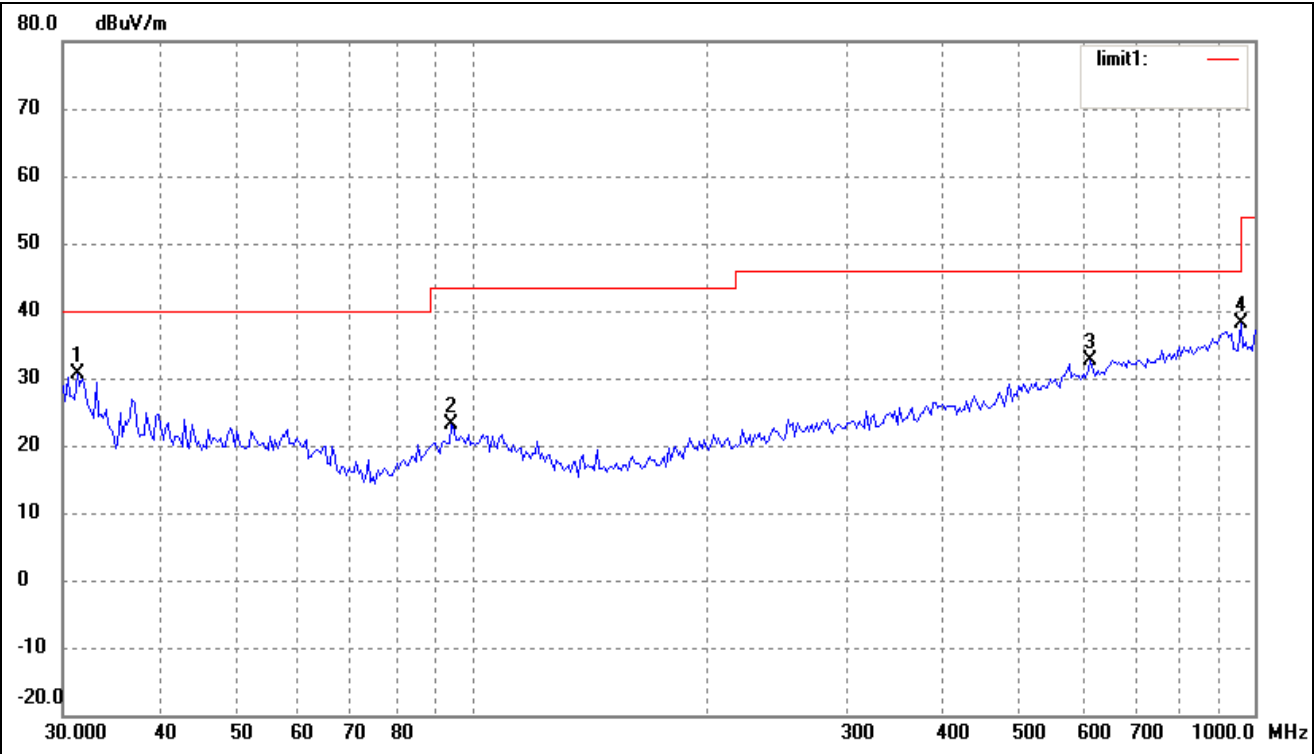
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	33.0950	22.41	6.77	29.18	40.00	-10.82	360	100	peak
2	102.3597	15.76	8.23	23.99	43.50	-19.51	0	100	peak
3	661.1505	20.85	17.18	38.03	46.00	-7.97	203	105	QP
4	1000.0000	15.39	22.74	38.13	54.00	-15.87	221	114	QP

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	30.0000	26.07	6.77	32.84	40.00	-7.16	204	164	QP
2	96.0986	14.94	8.14	23.08	43.50	-20.42	360	200	peak
3	919.2866	17.20	21.26	38.46	46.00	-7.54	221	107	QP

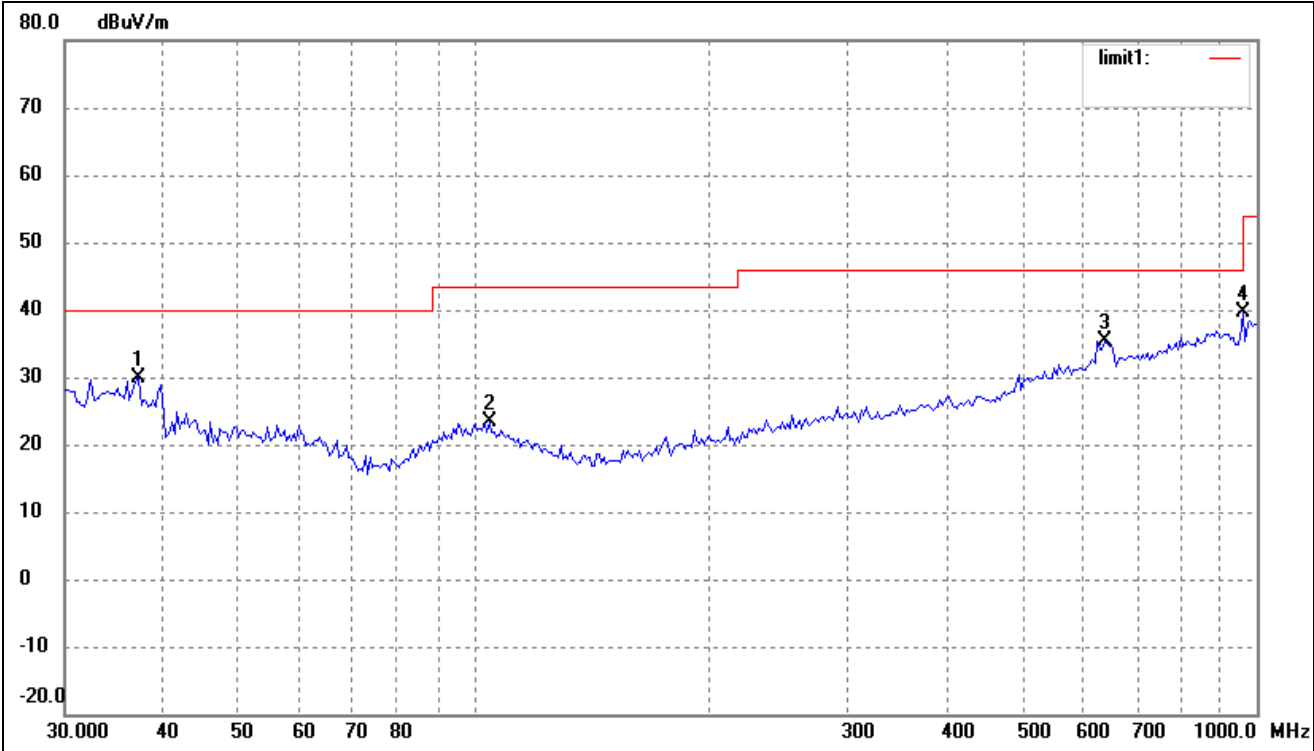
Spurious Emission From 30 MHz to 1 GHz  
Test mode: Transmitting (802.11g) High Channel  
Comment:  
Horizontal



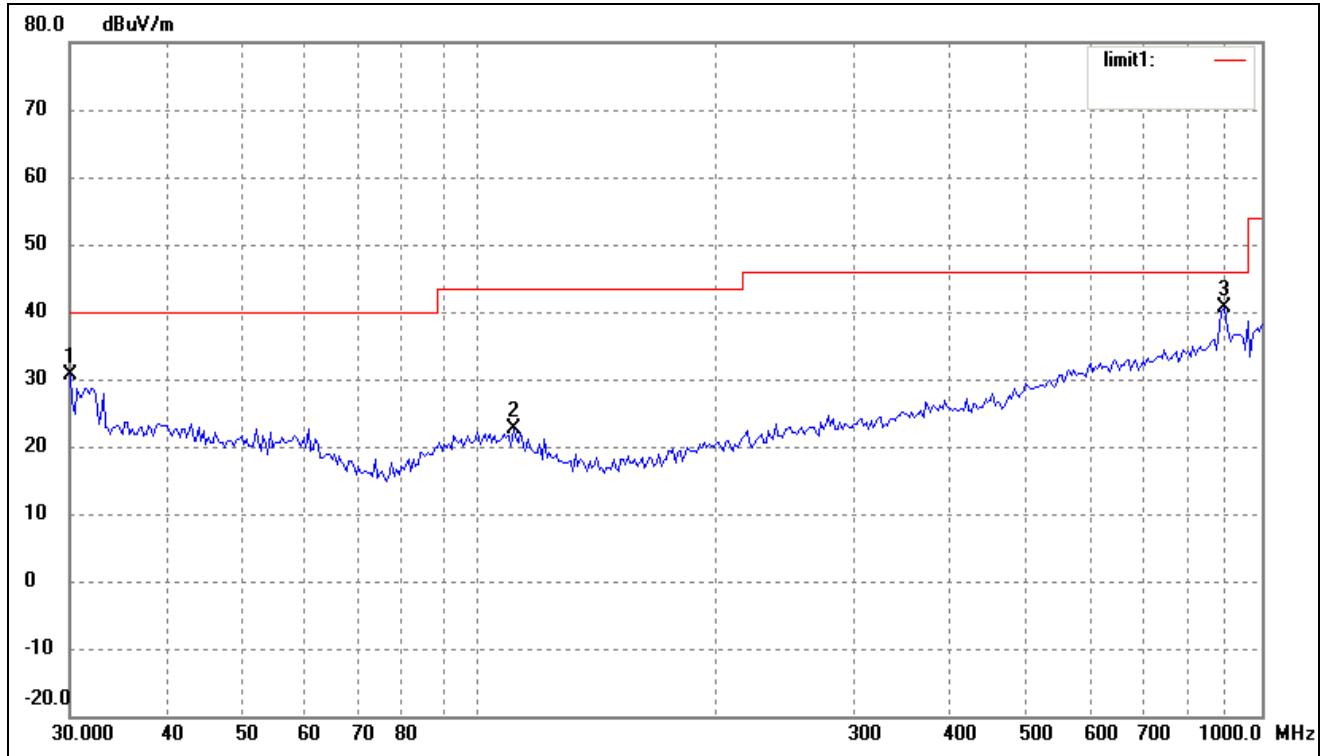
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	31.2893	23.76	6.77	30.53	40.00	-9.47	216	206	QP
2	94.0979	15.34	7.88	23.22	43.50	-20.28	360	100	peak
3	616.3718	15.75	16.80	32.55	46.00	-13.45	208	106	QP
4	958.7943	16.19	21.98	38.17	46.00	-7.83	127	119	QP



Vertical

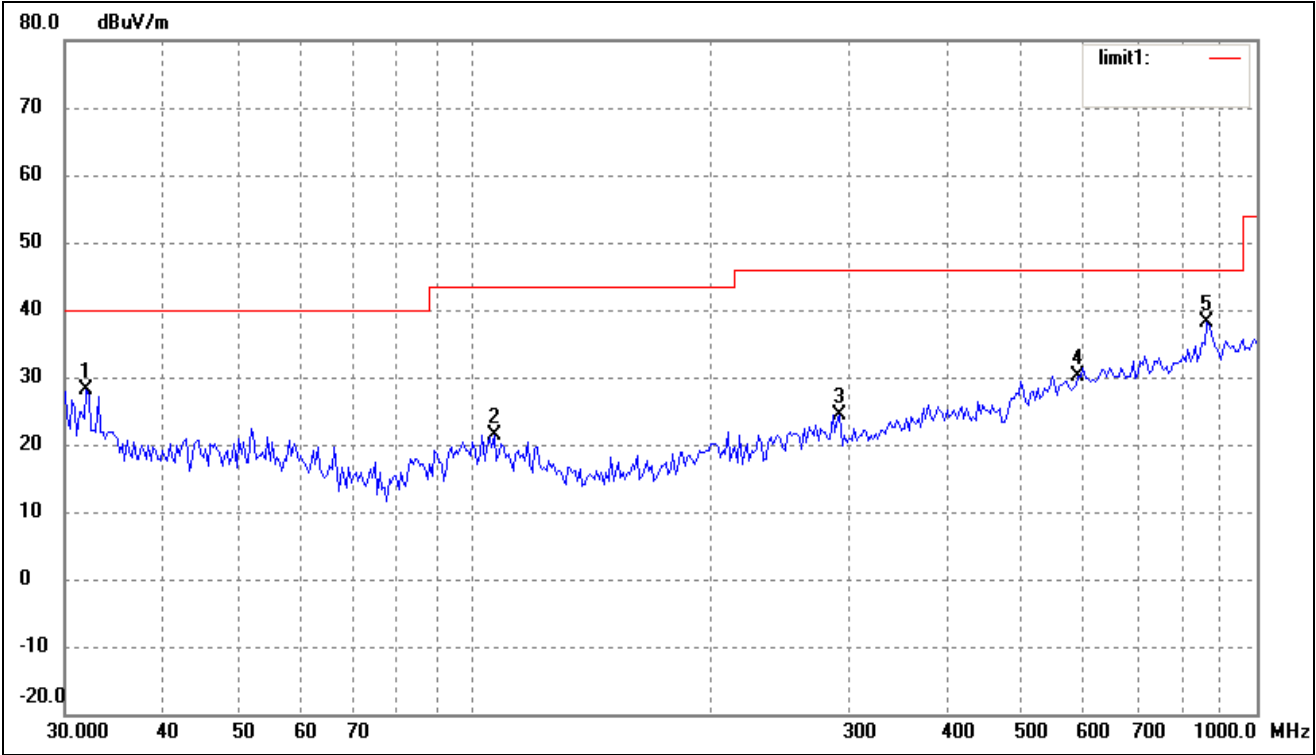


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	37.2855	22.54	7.40	29.94	40.00	-10.06	204	124	QP
2	104.5361	15.29	8.04	23.33	43.50	-20.17	360	100	peak
3	638.3686	18.42	16.99	35.41	46.00	-10.59	225	106	QP
4	958.7943	17.55	21.98	39.53	46.00	-6.47	359	100	peak

*Test Result/Plots:**Spurious Emission From 30 MHz to 1 GHz**Test mode: Transmitting (802.11n-HT20) Low Channel**Comment:**Horizontal*

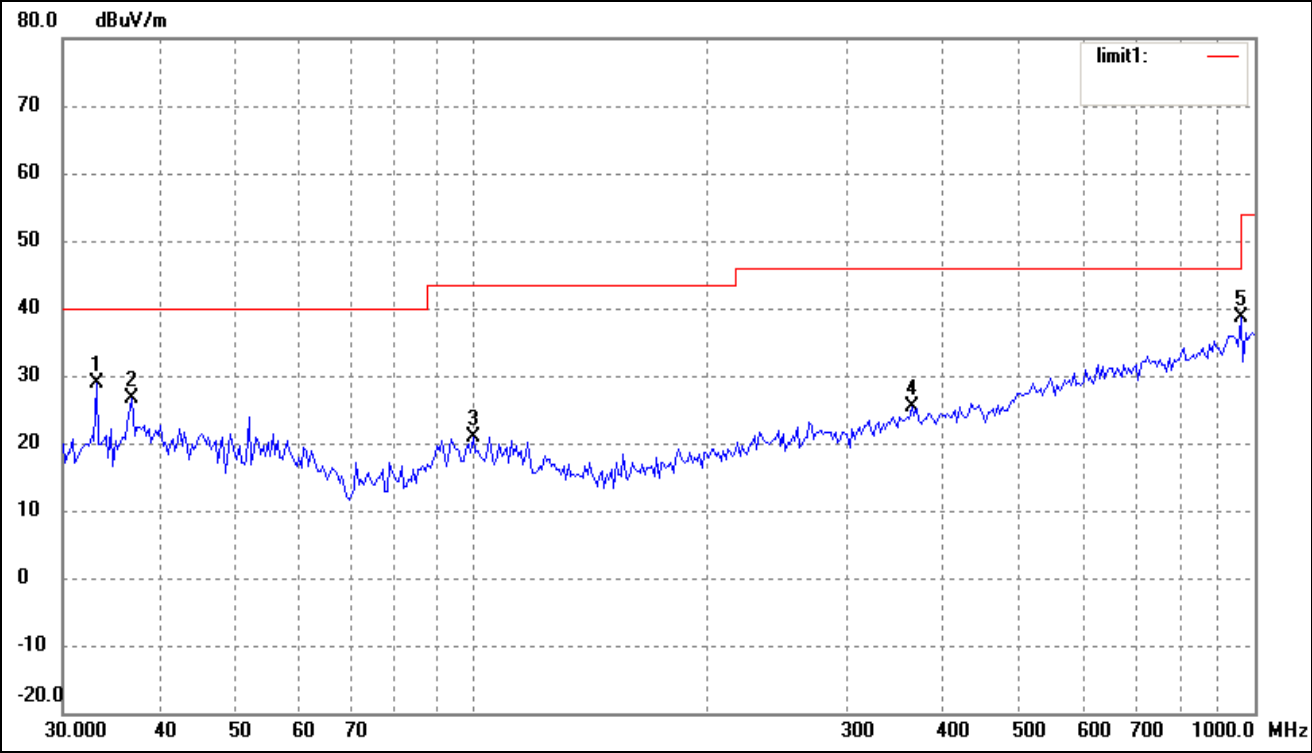
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	30.0000	23.77	6.77	30.54	40.00	-9.46	360	100	peak
2	110.5687	15.23	7.50	22.73	43.50	-20.77	360	100	peak
3	893.8567	19.96	20.78	40.74	46.00	-5.26	360	100	peak

Vertical



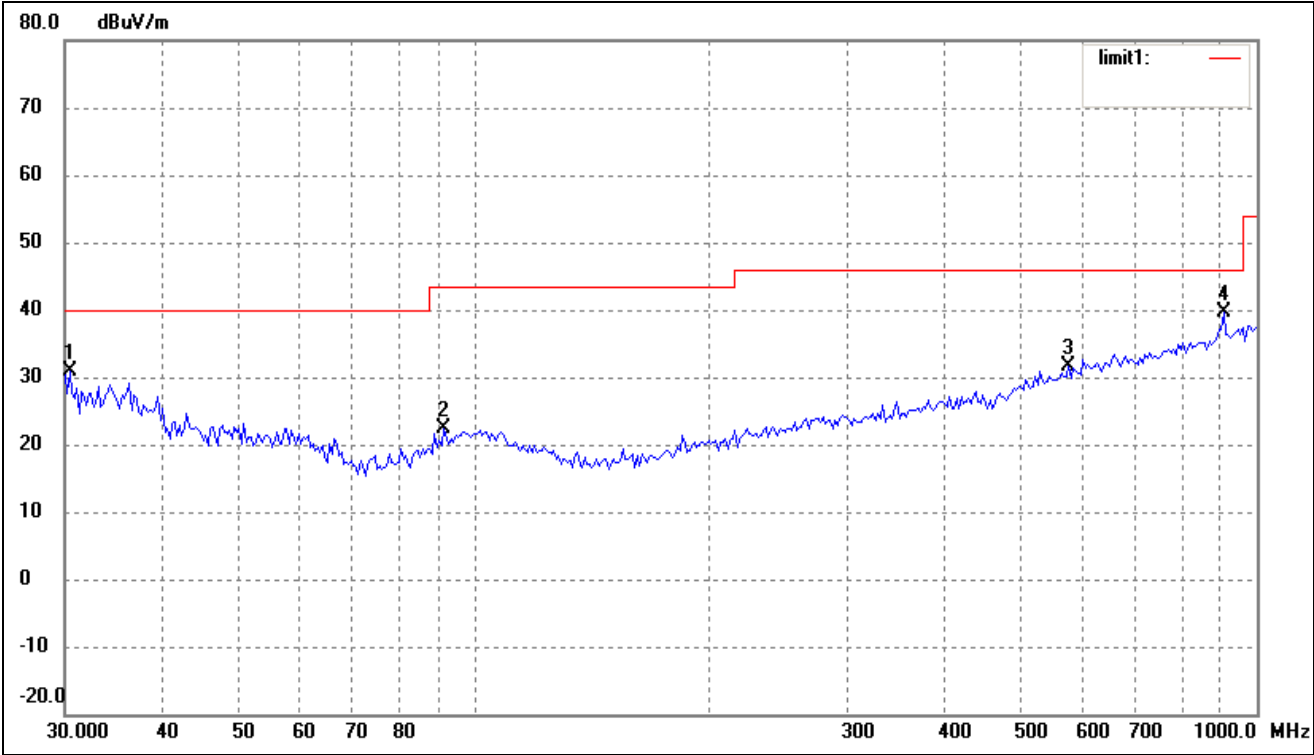
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	31.9546	21.27	6.77	28.04	40.00	-11.96	360	100	peak
2	106.0126	13.50	7.93	21.43	43.50	-22.07	360	100	peak
3	293.0842	14.75	9.68	24.43	46.00	-21.57	360	100	peak
4	590.9737	13.59	16.46	30.05	46.00	-15.95	360	100	peak
5	863.0562	17.98	20.21	38.19	46.00	-7.81	360	100	peak

Spurious Emission From 30 MHz to 1 GHz  
Test mode: Transmitting (802.11n-HT20) Middle Channel  
Comment:  
Horizontal



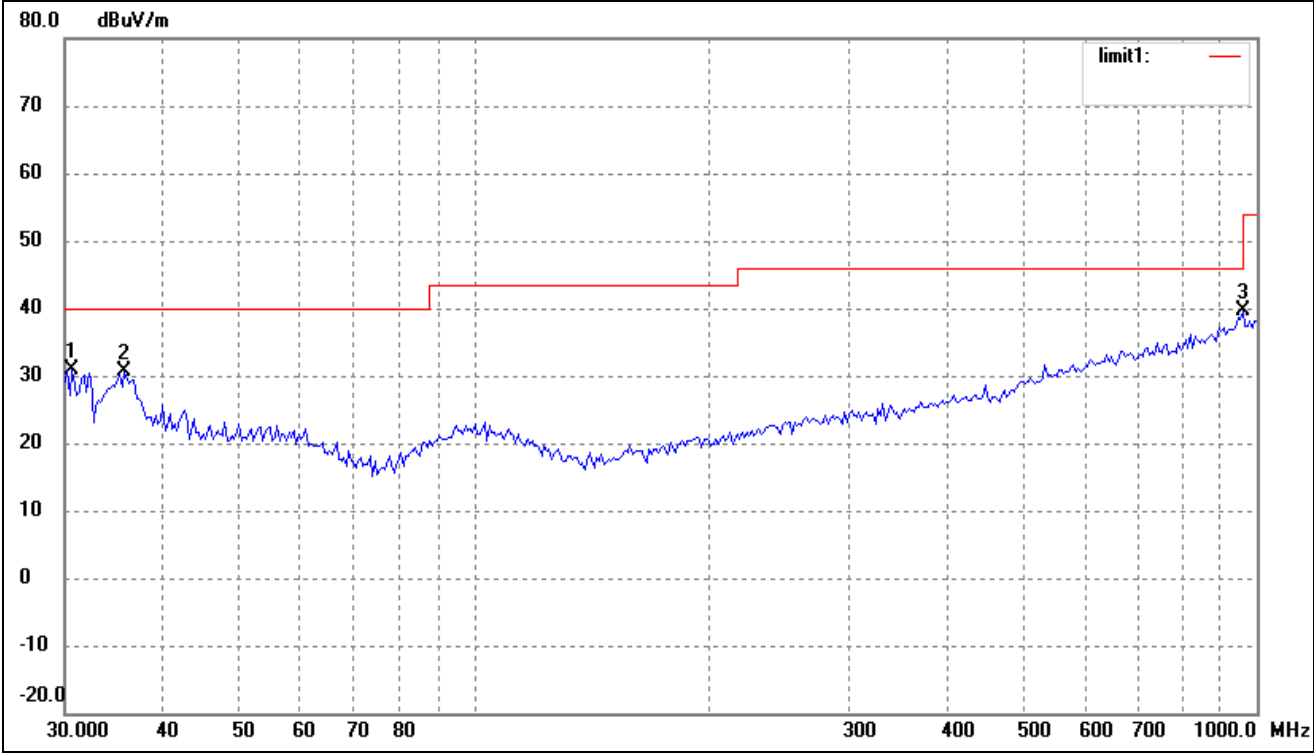
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	33.0950	22.13	6.77	28.90	40.00	-11.10	360	100	peak
2	36.7662	19.41	7.25	26.66	40.00	-13.34	360	100	peak
3	100.2286	12.59	8.41	21.00	43.50	-22.50	360	100	peak
4	364.2595	14.43	10.96	25.39	46.00	-20.61	360	100	peak
5	958.7943	16.74	21.98	38.72	46.00	-7.28	360	100	peak

Vertical



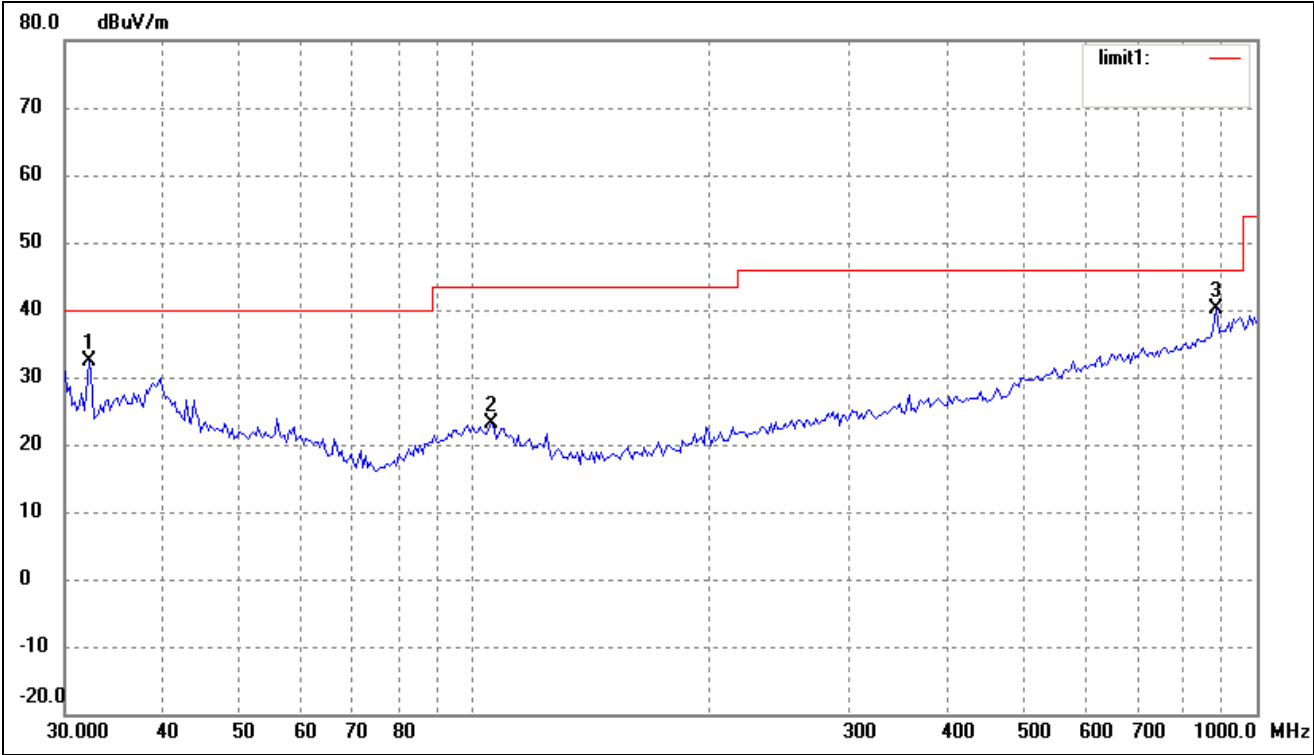
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	30.4238	24.20	6.77	30.97	40.00	-9.03	360	100	peak
2	91.4949	15.10	7.37	22.47	43.50	-21.03	360	100	peak
3	574.6258	15.52	16.10	31.62	46.00	-14.38	360	100	peak
4	906.4824	18.61	21.02	39.63	46.00	-6.37	360	100	peak

Spurious Emission From 30 MHz to 1 GHz  
Test mode: Transmitting (802.11n-HT20) High Channel  
Comment:  
Horizontal



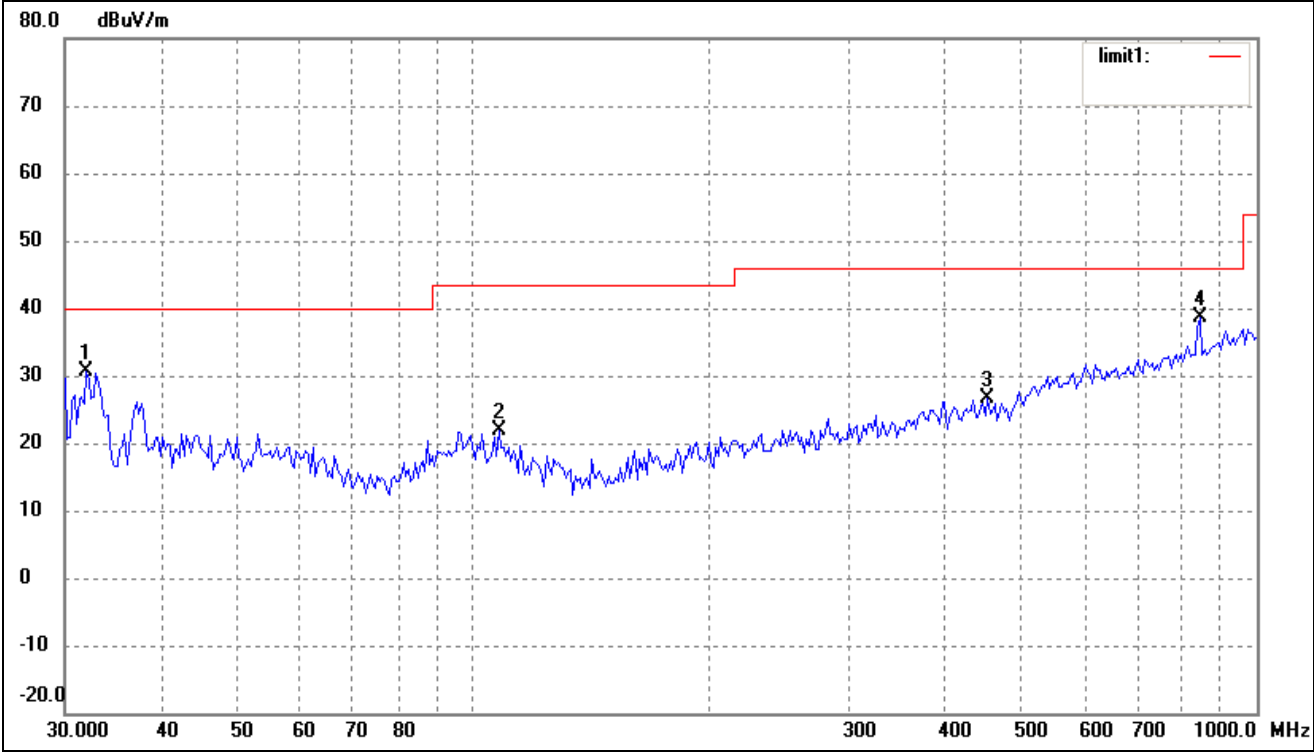
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	30.6379	24.07	6.77	30.84	40.00	-9.16	360	100	peak
2	35.7491	23.58	6.98	30.56	40.00	-9.44	360	100	peak
3	958.7943	17.56	21.98	39.54	46.00	-6.46	360	100	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(° )	(cm)	
1	32.1795	25.54	6.77	32.31	40.00	-7.69	360	100	peak
2	105.2718	15.05	7.99	23.04	43.50	-20.46	360	100	peak
3	887.6099	19.52	20.67	40.19	46.00	-5.81	360	100	peak

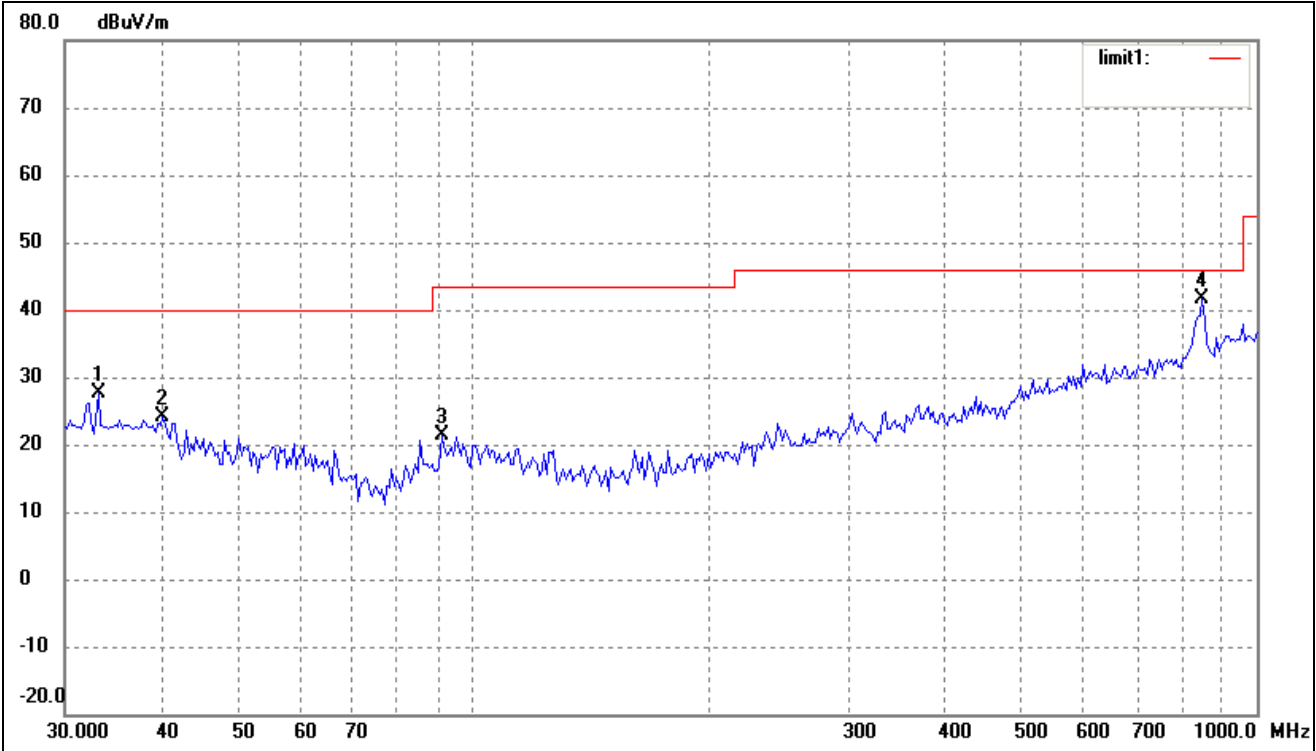
Spurious Emission From 30 MHz to 1 GHz  
Test mode: Transmitting (802.11n-HT40) Low Channel  
Comment:  
Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	31.9546	23.95	6.77	30.72	40.00	-9.28	360	100	peak
2	107.5101	14.14	7.80	21.94	43.50	-21.56	110	124	QP
3	452.7197	14.61	11.91	26.52	46.00	-19.48	208	104	QP
4	845.0878	18.65	19.86	38.51	46.00	-7.49	359	100	peak



Vertical



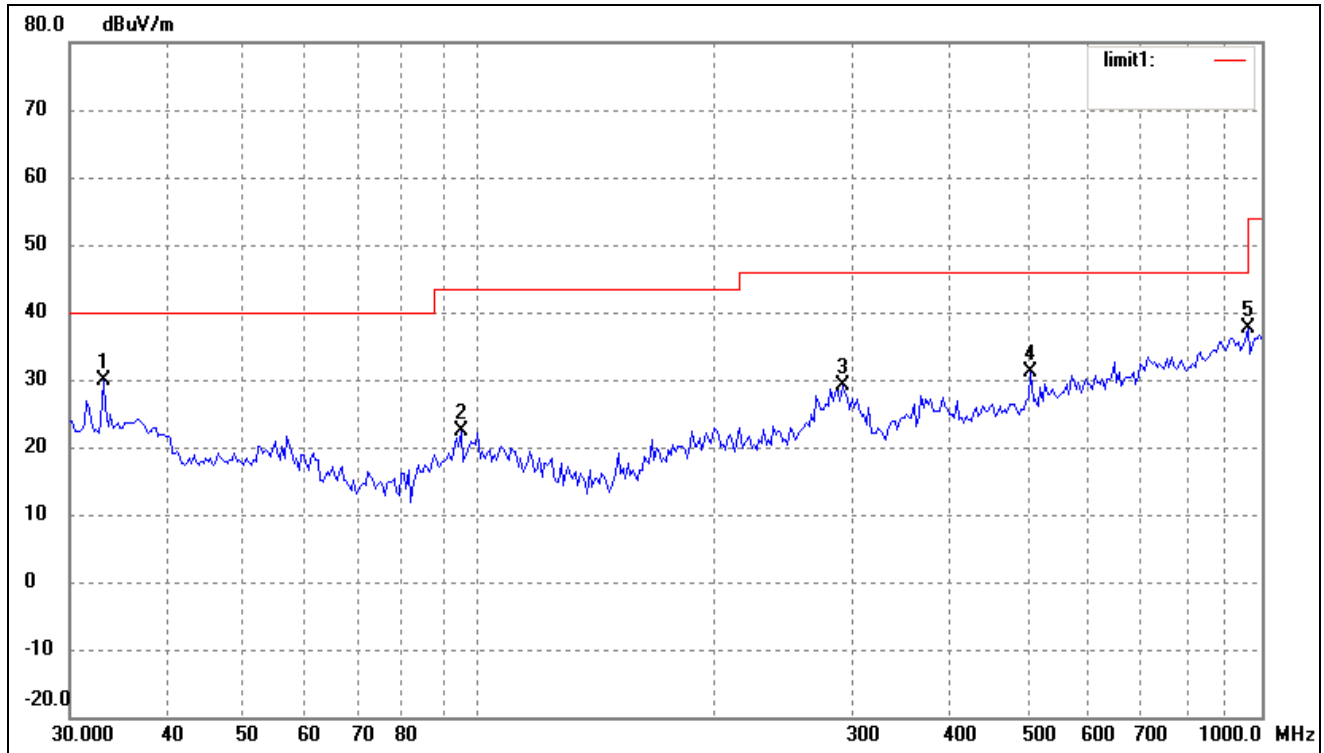
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	33.0950	20.80	6.77	27.57	40.00	-12.43	201	204	QP
2	39.9942	15.99	8.14	24.13	40.00	-15.87	360	100	peak
3	90.8554	14.02	7.25	21.27	43.50	-22.23	118	100	QP
4	851.0353	21.61	19.97	41.58	46.00	-4.42	359	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n-HT40) Middle Channel

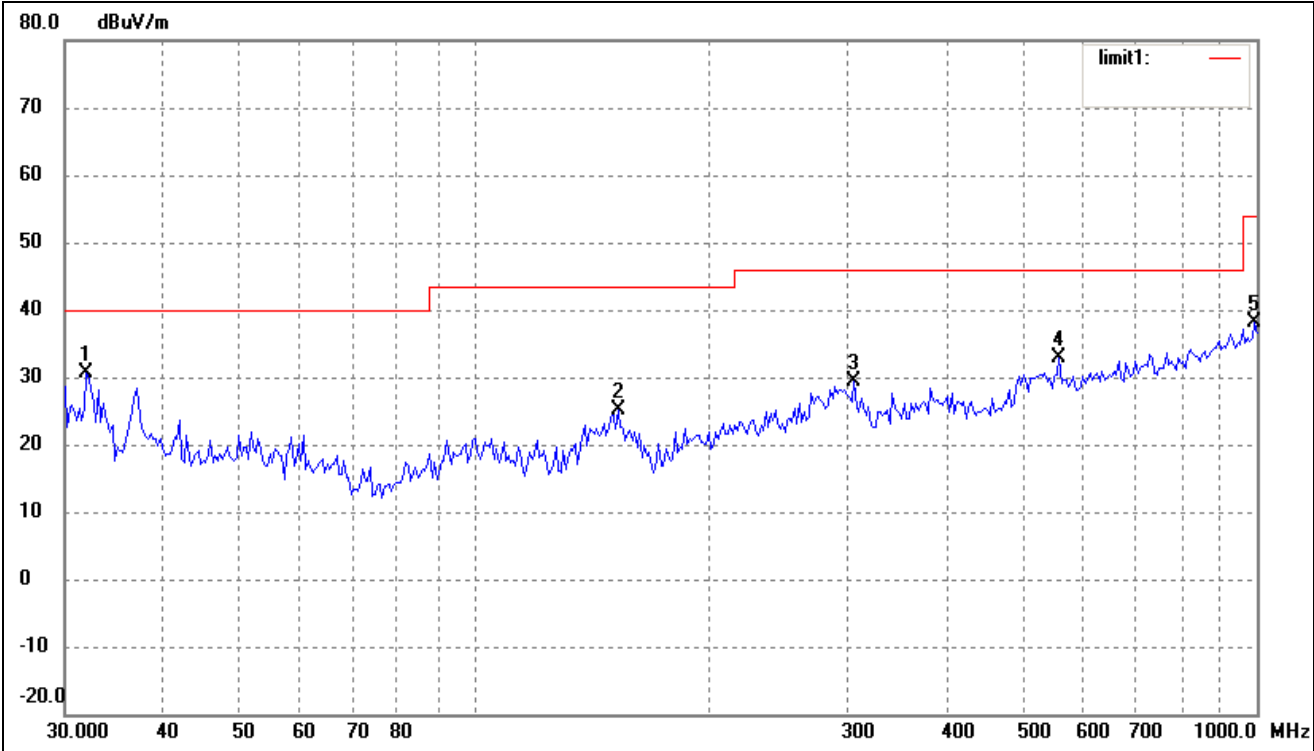
Comment:

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	33.0950	23.11	6.77	29.88	40.00	-10.12	360	100	peak
2	94.7601	14.34	8.01	22.35	43.50	-21.15	0	100	peak
3	291.0360	19.43	9.66	29.09	46.00	-16.91	203	105	QP
4	506.4791	16.48	14.55	31.03	46.00	-14.97	221	114	QP
5	958.7943	15.75	21.98	37.73	46.00	-8.27	360	100	peak

Vertical



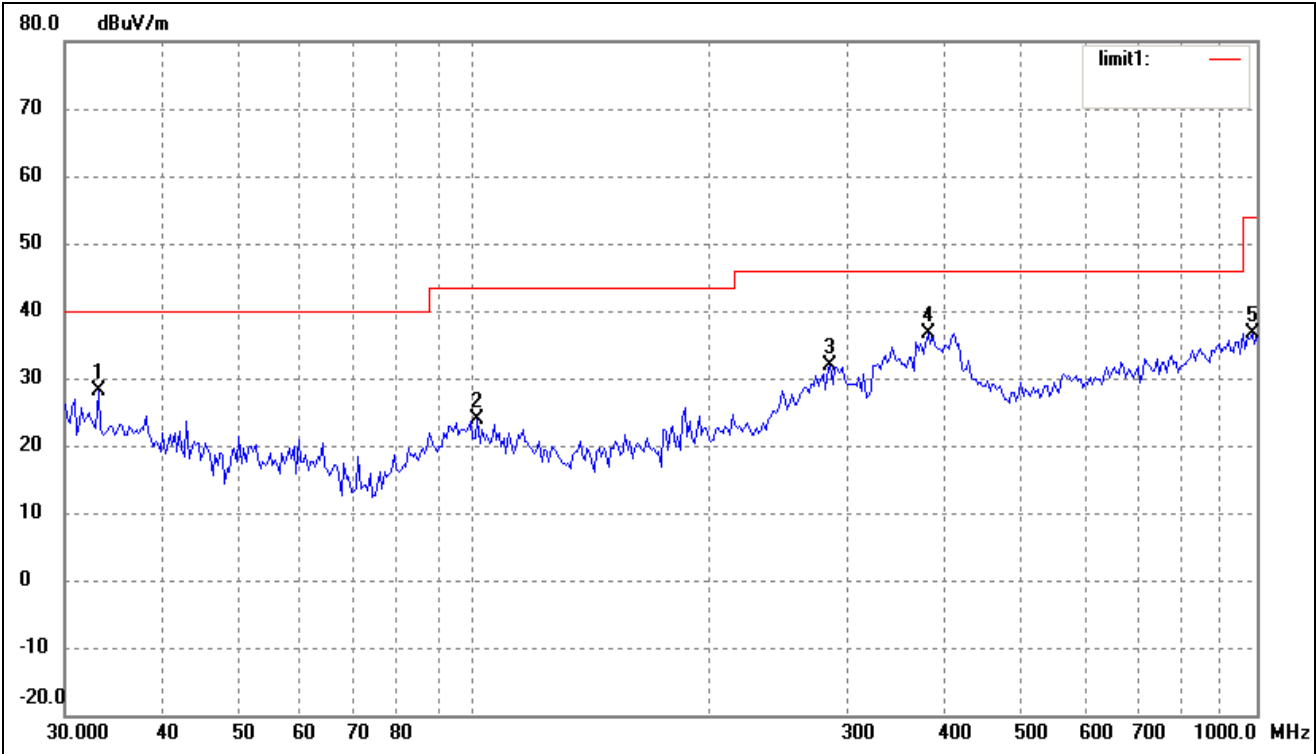
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	31.9546	23.97	6.77	30.74	40.00	-9.26	204	164	QP
2	152.6641	20.88	4.20	25.08	43.50	-18.42	360	200	peak
3	305.6800	19.45	9.83	29.28	46.00	-16.72	221	107	QP
4	558.7302	17.10	15.73	32.83	46.00	-13.17	360	200	peak
5	993.0114	15.57	22.61	38.18	54.00	-15.82	360	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n-HT40) High Channel

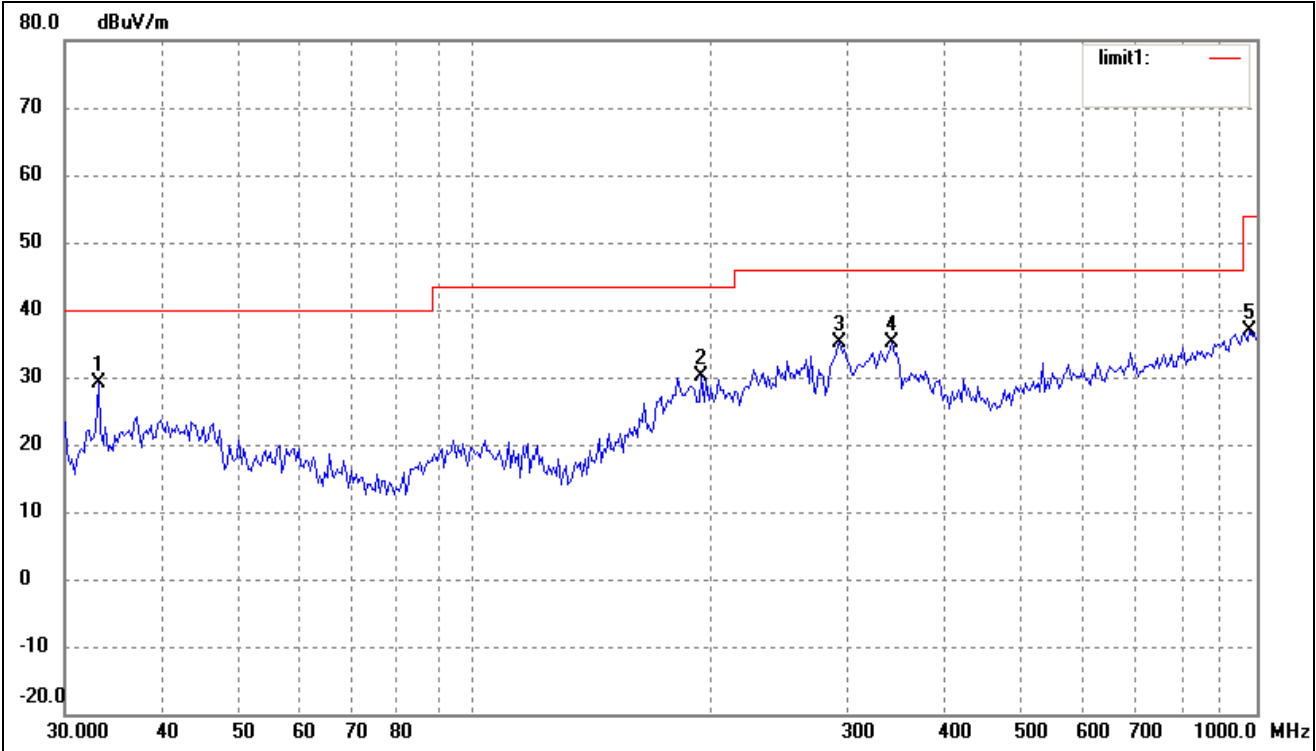
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	33.0950	21.31	6.77	28.08	40.00	-11.92	216	206	QP
2	100.9340	15.48	8.34	23.82	43.50	-19.68	360	100	peak
3	284.9767	22.34	9.58	31.92	46.00	-14.08	208	106	QP
4	379.9141	25.50	11.20	36.70	46.00	-9.30	360	100	peak
5	986.0717	14.14	22.48	36.62	54.00	-17.38	127	119	QP

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	33.0950	22.39	6.77	29.16	40.00	-10.84	204	124	QP
2	195.1365	23.68	6.56	30.24	43.50	-13.26	360	100	peak
3	293.0842	25.44	9.68	35.12	46.00	-10.88	225	106	QP
4	341.9787	24.57	10.47	35.04	46.00	-10.96	359	100	peak
5	979.1804	14.48	22.36	36.84	54.00	-17.16	359	100	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 (2412MHz)										
4824.0	PK	42.27	90	V	34.1	5.2	33.0	48.57	74	-25.43
4824.0	PK	40.94	270	H	34.1	5.2	33.0	47.24	74	-26.76
7236.0	PK	41.27	180	V	37.4	6.1	33.5	51.27	74	-22.73
7236.0	PK	39.12	45	H	37.4	6.1	33.5	49.12	74	-24.88
4824.0	AV	29.97	270	V	34.1	5.2	33.0	36.27	54	-17.73
4824.0	AV	30.84	90	H	34.1	5.2	33.0	37.14	54	-16.86
7236.0	AV	28.01	45	V	37.4	6.1	33.5	38.01	54	-15.99
7236.0	AV	28.29	60	H	37.4	6.1	33.5	38.29	54	-15.71
Middle Channel (2437MHz)										
4874.0	PK	42.94	45	V	34.1	5.2	33.0	49.24	74	-24.76
4874.0	PK	39.88	270	H	34.1	5.2	33.0	46.18	74	-27.82
7311.0	PK	40.89	45	V	37.4	6.1	33.5	50.89	74	-23.11
7311.0	PK	41.27	180	H	37.4	6.1	33.5	51.27	74	-22.73
4874.0	AV	30.85	270	V	34.1	5.2	33.0	37.15	54	-16.85
4874.0	AV	32.24	90	H	34.1	5.2	33.0	38.54	54	-15.46
7311.0	AV	29.17	60	V	37.4	6.1	33.5	39.17	54	-14.83
7311.0	AV	28.57	45	H	37.4	6.1	33.5	38.57	54	-15.43
High Channel (2462MHz)										
4924.0	PK	44.94	270	V	34.1	5.2	33.0	51.24	74	-22.76
4924.0	PK	43.89	45	H	34.1	5.2	33.0	50.19	74	-23.81
7386.0	PK	39.65	180	V	37.4	6.1	33.5	49.65	74	-24.35
7386.0	PK	40.17	45	H	37.4	6.1	33.5	50.17	74	-23.83
4924.0	AV	32.85	90	V	34.1	5.2	33.0	39.15	54	-14.85
4924.0	AV	32.29	270	H	34.1	5.2	33.0	38.59	54	-15.41
7386.0	AV	29.48	60	V	37.4	6.1	33.5	39.48	54	-14.52
7386.0	AV	31.24	60	H	37.4	6.1	33.5	41.24	54	-12.76

*Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5<sup>th</sup> 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	43.94	90	V	34.1	5.2	33.0	50.24	74	-23.76
4824.0	PK	43.37	270	H	34.1	5.2	33.0	49.67	74	-24.33
7236.0	PK	38.56	180	V	37.4	6.1	33.5	48.56	74	-25.44
7236.0	PK	40.34	45	H	37.4	6.1	33.5	50.34	74	-23.66
4824.0	AV	31.84	270	V	34.1	5.2	33.0	38.14	54	-15.86
4824.0	AV	33.34	90	H	34.1	5.2	33.0	39.64	54	-14.36
7236.0	AV	30.24	45	V	37.4	6.1	33.5	40.24	54	-13.76
7236.0	AV	31.36	60	H	37.4	6.1	33.5	41.36	54	-12.64
Middle Channel (2437MHz)										
4874.0	PK	44.98	45	V	34.1	5.2	33.0	51.28	74	-22.72
4874.0	PK	44.37	270	H	34.1	5.2	33.0	50.67	74	-23.33
7311.0	PK	38.91	45	V	37.4	6.1	33.5	48.91	74	-25.09
7311.0	PK	39.61	180	H	37.4	6.1	33.5	49.61	74	-24.39
4874.0	AV	32.16	270	V	34.1	5.2	33.0	38.46	54	-15.54
4874.0	AV	33.11	90	H	34.1	5.2	33.0	39.41	54	-14.59
7311.0	AV	31.45	60	V	37.4	6.1	33.5	41.45	54	-12.55
7311.0	AV	32.67	45	H	37.4	6.1	33.5	42.67	54	-11.33
High Channel (2462MHz)										
4924.0	PK	44.38	270	V	34.1	5.2	33.0	50.68	74	-23.32
4924.0	PK	45.17	45	H	34.1	5.2	33.0	51.47	74	-22.53
7386.0	PK	39.62	180	V	37.4	6.1	33.5	49.62	74	-24.38
7386.0	PK	41.96	45	H	37.4	6.1	33.5	51.96	74	-22.04
4924.0	AV	33.11	90	V	34.1	5.2	33.0	39.41	54	-14.59
4924.0	AV	35.32	270	H	34.1	5.2	33.0	41.62	54	-12.38
7386.0	AV	30.64	60	V	37.4	6.1	33.5	40.64	54	-13.36
7386.0	AV	29.51	60	H	37.4	6.1	33.5	39.51	54	-14.49

*Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5<sup>th</sup> 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-HT20)*

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	45.05	90	V	34.1	5.2	33.0	51.35	74	-22.65
4824.0	PK	42.06	270	H	34.1	5.2	33.0	48.36	74	-25.64
7236.0	PK	39.62	180	V	37.4	6.1	33.5	49.62	74	-24.38
7236.0	PK	40.63	45	H	37.4	6.1	33.5	50.63	74	-23.37
4824.0	AV	34.26	270	V	34.1	5.2	33.0	40.56	54	-13.44
4824.0	AV	33.16	90	H	34.1	5.2	33.0	39.46	54	-14.54
7236.0	AV	29.41	45	V	37.4	6.1	33.5	39.41	54	-14.59
7236.0	AV	30.19	60	H	37.4	6.1	33.5	40.19	54	-13.81
Middle Channel (2437MHz)										
4874.0	PK	43.32	45	V	34.1	5.2	33.0	49.62	74	-24.38
4874.0	PK	42.19	270	H	34.1	5.2	33.0	48.49	74	-25.51
7311.0	PK	41.36	45	V	37.4	6.1	33.5	51.36	74	-22.64
7311.0	PK	40.14	180	H	37.4	6.1	33.5	50.14	74	-23.86
4874.0	AV	32.85	270	V	34.1	5.2	33.0	39.15	54	-14.85
4874.0	AV	35.05	90	H	34.1	5.2	33.0	41.35	54	-12.65
7311.0	AV	30.64	60	V	37.4	6.1	33.5	40.64	54	-13.36
7311.0	AV	31.98	45	H	37.4	6.1	33.5	41.98	54	-12.02
High Channel (2462MHz)										
4924.0	PK	43.32	270	V	34.1	5.2	33.0	49.62	74	-24.38
4924.0	PK	45.85	45	H	34.1	5.2	33.0	52.15	74	-21.85
7386.0	PK	41.63	180	V	37.4	6.1	33.5	51.63	74	-22.37
7386.0	PK	40.94	45	H	37.4	6.1	33.5	50.94	74	-23.06
4924.0	AV	33.16	90	V	34.1	5.2	33.0	39.46	54	-14.54
4924.0	AV	35.39	270	H	34.1	5.2	33.0	41.69	54	-12.31
7386.0	AV	30.48	60	V	37.4	6.1	33.5	40.48	54	-13.52
7386.0	AV	32.61	60	H	37.4	6.1	33.5	42.61	54	-11.39

*Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5<sup>th</sup> 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-HT40)*

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	45.37	90	V	34.1	5.2	33.0	51.67	74	-22.33
4844.0	PK	43.83	270	H	34.1	5.2	33.0	50.13	74	-23.87
7266.0	PK	41.64	180	V	37.4	6.1	33.5	51.64	74	-22.36
7266.0	PK	39.73	45	H	37.4	6.1	33.5	49.73	74	-24.27
4844.0	AV	33.11	270	V	34.1	5.2	33.0	39.41	54	-14.59
4844.0	AV	31.87	90	H	34.1	5.2	33.0	38.17	54	-15.83
7266.0	AV	32.16	45	V	37.4	6.1	33.5	42.16	54	-11.84
7266.0	AV	31.39	60	H	37.4	6.1	33.5	41.39	54	-12.61
Middle Channel (2437MHz)										
4874.0	PK	43.32	45	V	34.1	5.2	33.0	49.62	74	-24.38
4874.0	PK	44.94	270	H	34.1	5.2	33.0	51.24	74	-22.76
7311.0	PK	42.67	45	V	37.4	6.1	33.5	52.67	74	-21.33
7311.0	PK	40.15	180	H	37.4	6.1	33.5	50.15	74	-23.85
4874.0	AV	33.39	270	V	34.1	5.2	33.0	39.69	54	-14.31
4874.0	AV	34.75	90	H	34.1	5.2	33.0	41.05	54	-12.95
7311.0	AV	30.92	60	V	37.4	6.1	33.5	40.92	54	-13.08
7311.0	AV	31.56	45	H	37.4	6.1	33.5	41.56	54	-12.44
High Channel (2452MHz)										
4904.0	PK	45.36	270	V	34.1	5.2	33.0	51.66	74	-22.34
4904.0	PK	44.07	45	H	34.1	5.2	33.0	50.37	74	-23.63
7356.0	PK	42.71	180	V	37.4	6.1	33.5	52.71	74	-21.29
7356.0	PK	40.97	45	H	37.4	6.1	33.5	50.97	74	-23.03
4904.0	AV	32.97	90	V	34.1	5.2	33.0	39.27	54	-14.73
4904.0	AV	35.09	270	H	34.1	5.2	33.0	41.39	54	-12.61
7356.0	AV	30.19	60	V	37.4	6.1	33.5	40.19	54	-13.81
7356.0	AV	30.01	60	H	37.4	6.1	33.5	40.01	54	-13.99

*Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5<sup>th</sup> 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	2011-12-20	2012-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2011-12-20	2012-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2011-12-20	2012-12-19
RF Switch	EM	EMSW18	SW060023	2011-12-20	2012-12-19
Pre-amplifier	Agilent	8447F	3113A06717	2011-12-20	2012-12-19
Pre-amplifier	Compliance Direction	PAP-0118	24002	2011-12-20	2012-12-19
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 2438.5MHz, then mark the higher-level emission for comparing with the FCC rules.

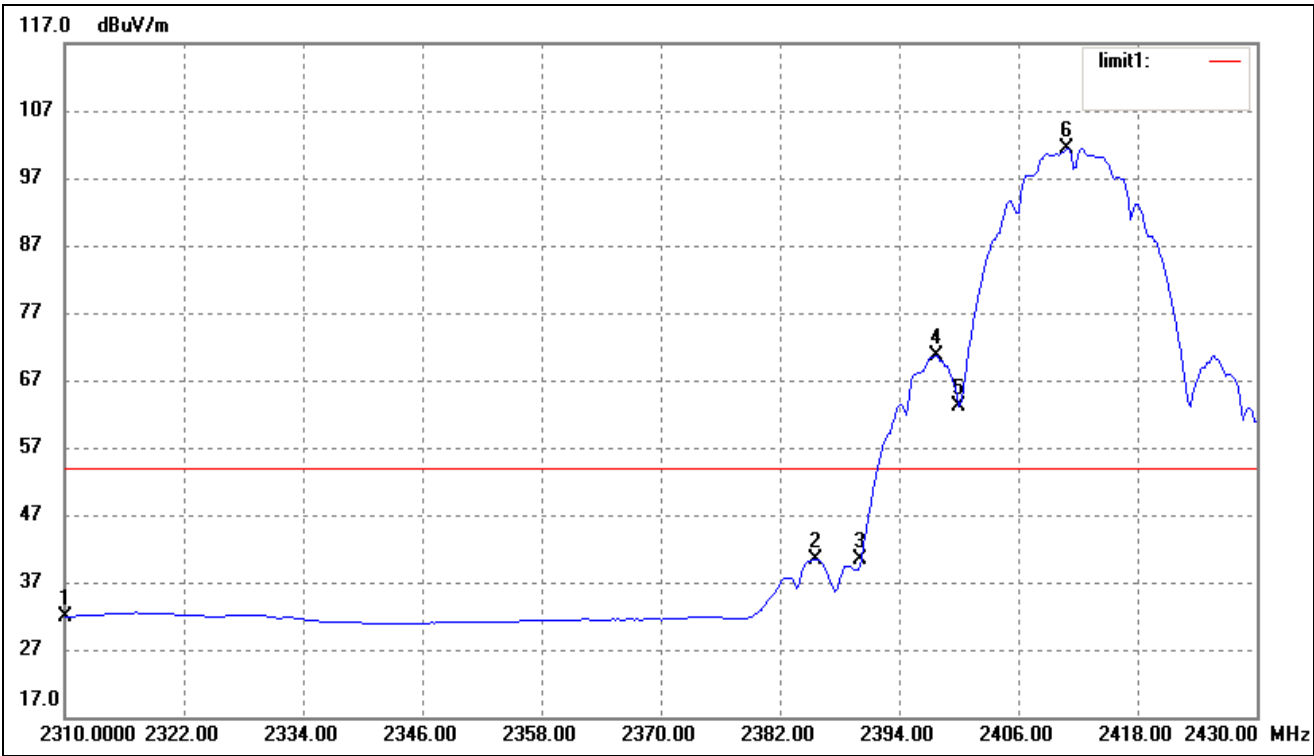
### 9.4 Environmental Conditions

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

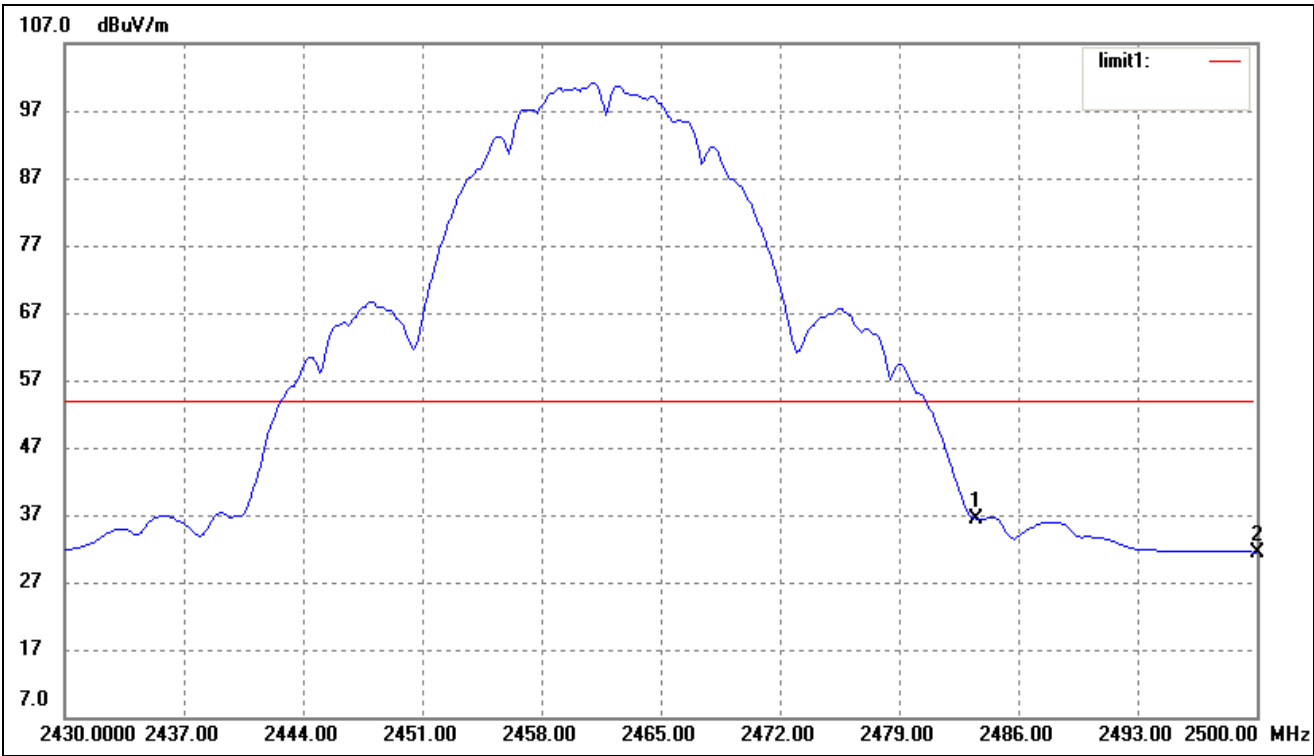
**9.5 Summary of Test Results/Plots**

Test mode	Frequency MHz	Limit dBuV /dB	Result
802.11b	2390.00	<54dBuV	Pass
	2400.00	>20dB ATT	Pass
	2483.50	<54dBuV	Pass
802.11g	2390.00	<54dBuV	Pass
	2400.00	>20dB ATT	Pass
	2483.50	<54dBuV	Pass
802.11n-HT20	2390.00	<54dBuV	Pass
	2400.00	>20dB ATT	Pass
	2483.50	<54dBuV	Pass
802.11n-HT40	2390.00	<54dBuV	Pass
	2398.56	>20dB ATT	Pass
	2400.00	>20dB ATT	Pass
	2483.50	<54dBuV	Pass

For 802.11b  
Lowest Bandedge

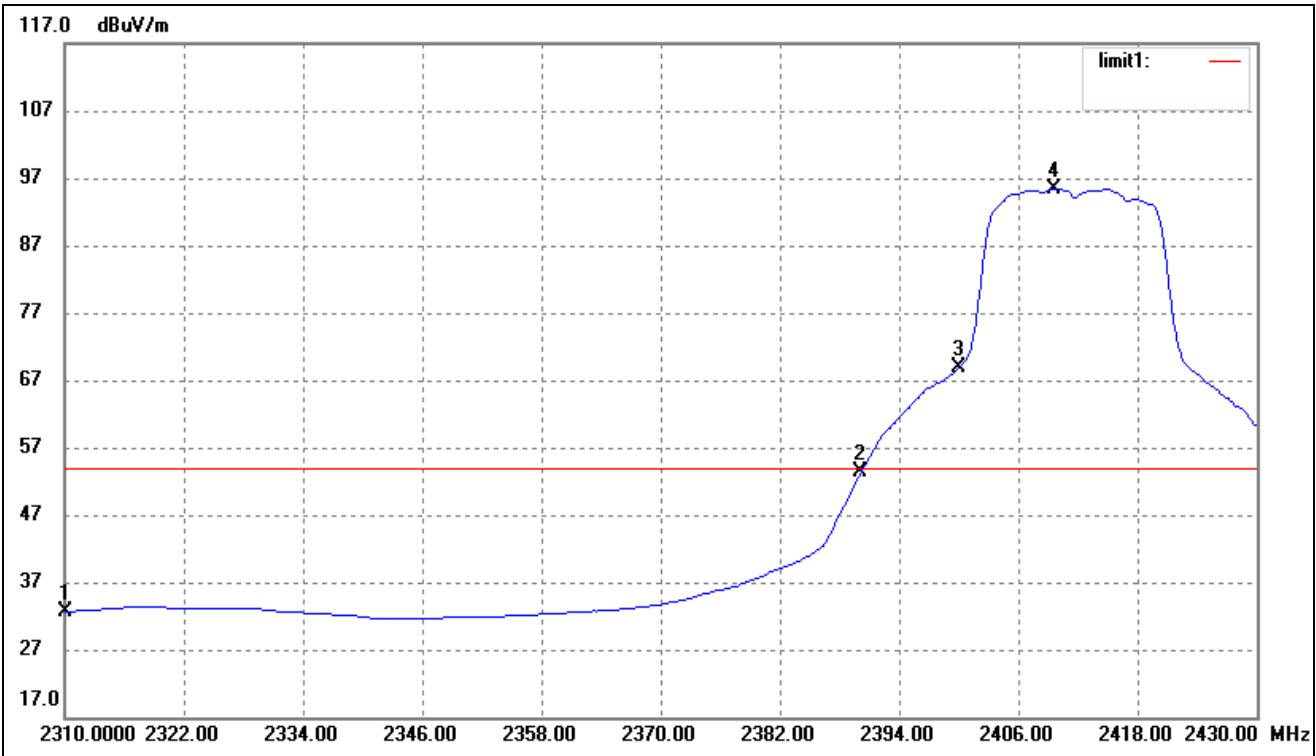


For 802.11b  
Highest Bandedge



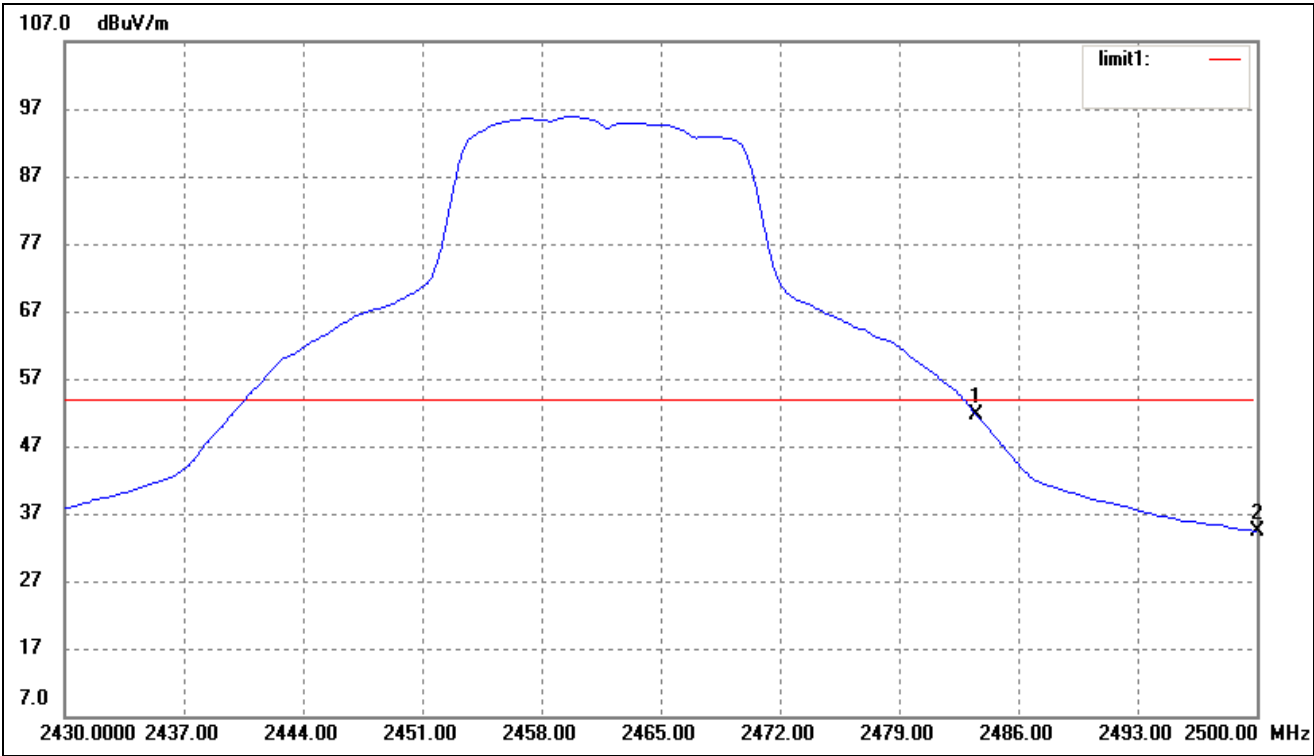
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	( ° )	(cm)	
1	2483.500	43.58	-7.13	36.45	54.00	-17.55	226	100	Ave
	2483.500	58.80	-7.13	51.67	74.00	-22.33	226	100	peak
2	2500.000	38.54	-7.08	31.46	54.00	-22.54	226	100	Ave
	2500.000	55.92	-7.08	48.84	74.00	-25.16	226	100	peak

For 802.11g  
Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	( ° )	(cm)	
1	2310.000	40.06	-7.51	32.55	54.00	-21.45	226	100	Ave
	2310.000	52.59	-7.51	45.08	74.00	-28.92	226	100	peak
2	2390.000	60.75	-7.34	53.41	54.00	-0.59	226	100	Ave
	2390.000	75.79	-7.34	68.45	74.00	-5.55	226	100	peak
3	2400.000	76.21	-7.31	68.90	/	/	/	/	Ave
4	2409.657	102.72	-7.28	95.44	/	/	/	/	Ave

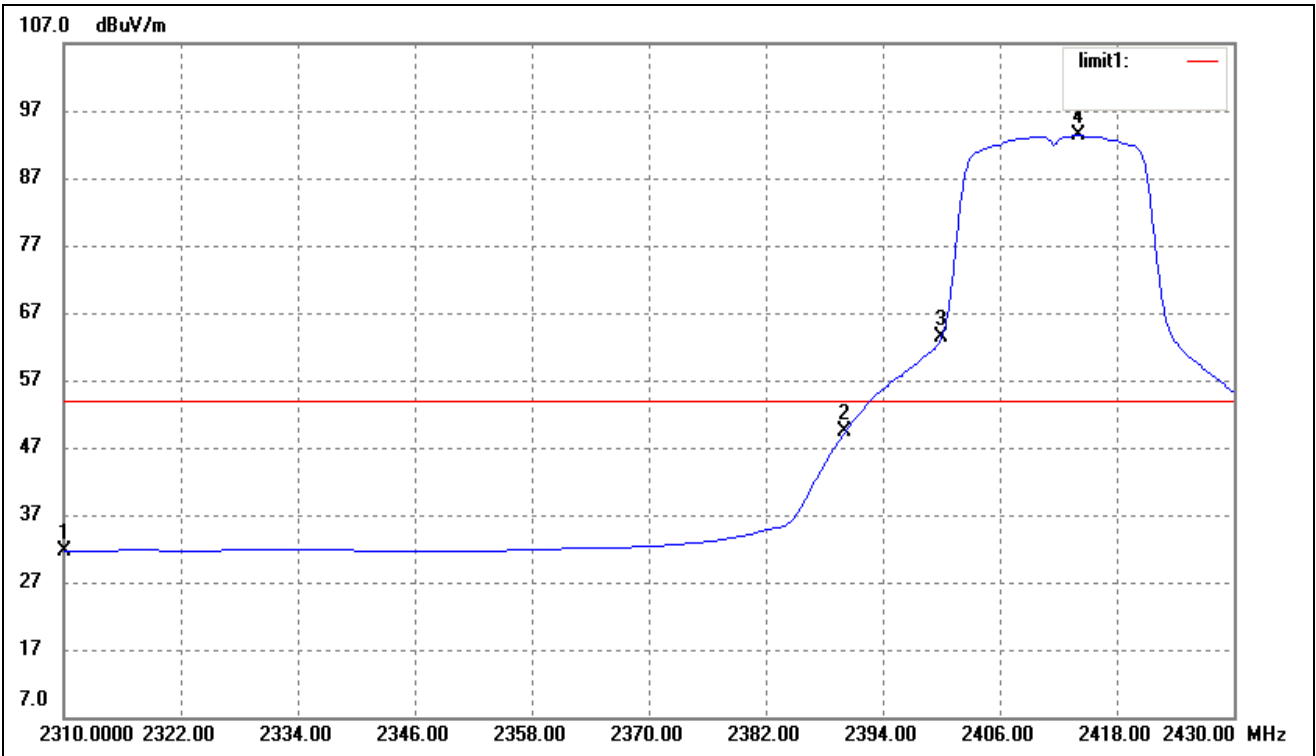
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	( ° )	(cm)	
1	2483.500	58.81	-7.13	51.68	54.00	-2.32	226	100	Ave
	2483.500	78.97	-7.13	71.84	74.00	-2.16	226	100	peak
2	2500.000	41.47	-7.08	34.39	54.00	-19.61	226	100	Ave
	2500.000	60.86	-7.08	53.78	74.00	-20.22	226	100	peak

For 802.11n-HT20

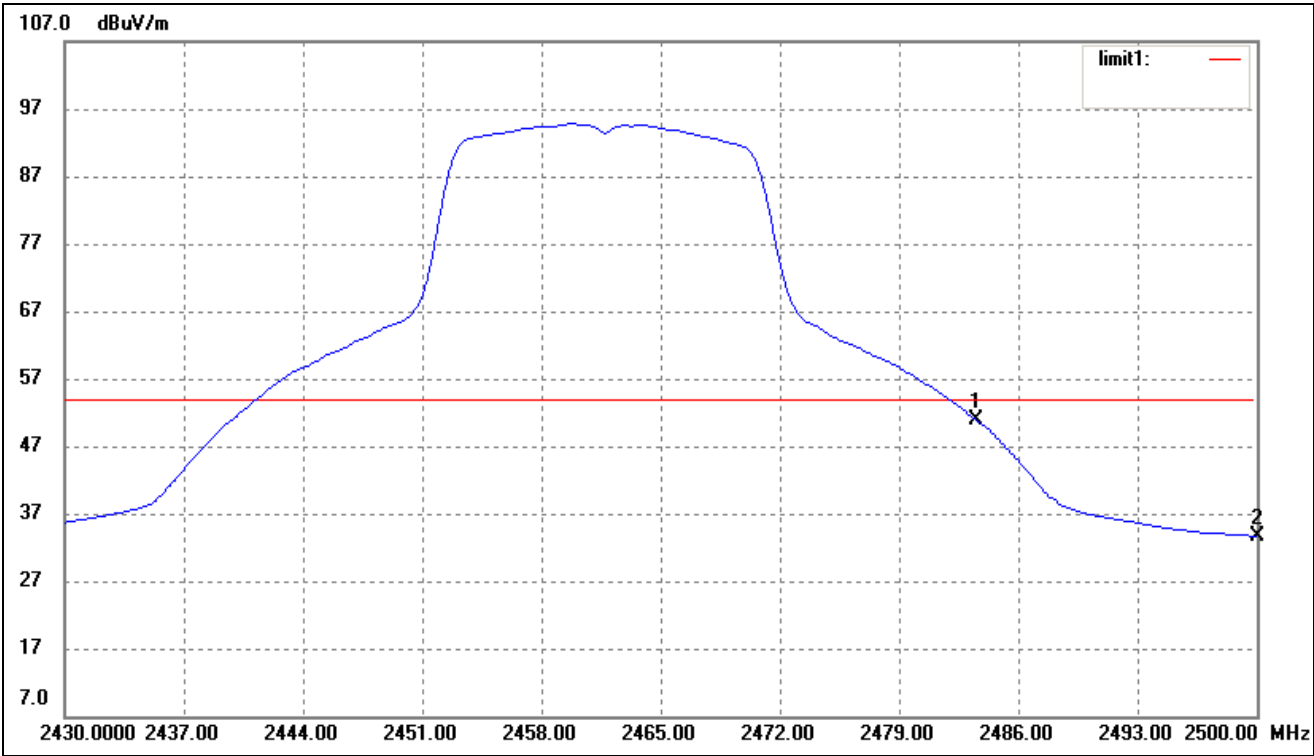
Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	( ° )	(cm)	
1	2310.000	39.06	-7.51	31.55	54.00	-22.45	226	100	Ave
	2310.000	52.38	-7.51	44.87	74.00	-29.13	226	100	peak
2	2390.000	56.80	-7.34	49.46	54.00	-4.54	226	100	Ave
	2390.000	78.71	-7.34	71.37	74.00	-2.63	226	100	peak
3	2400.000	77.56	-7.31	70.25	/	/	/	/	Ave
4	2414.054	103.23	-7.28	95.95	/	/	/	/	Ave



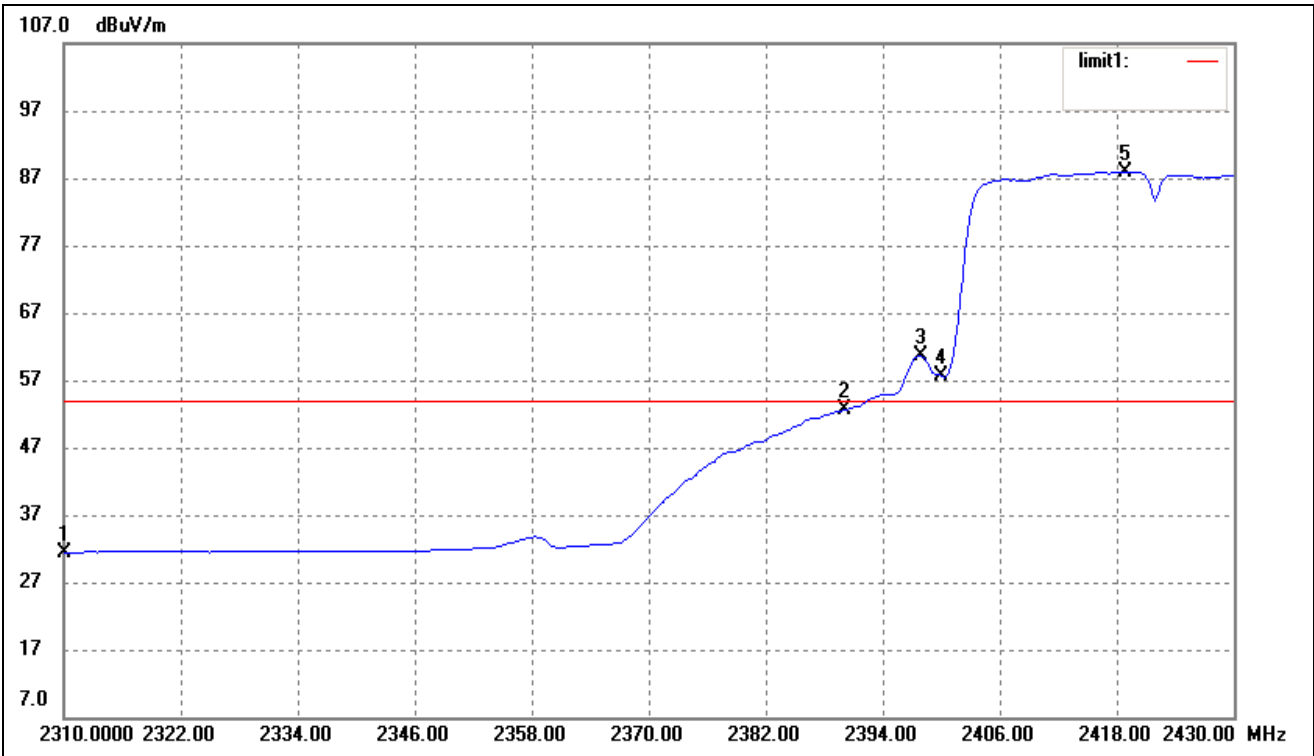
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	( ° )	(cm)	
1	2483.500	58.11	-7.13	50.98	54.00	-3.02	226	100	Ave
	2483.500	77.18	-7.13	70.05	74.00	-3.95	226	100	peak
2	2500.000	40.79	-7.08	33.71	54.00	-20.29	226	100	Ave
	2500.000	57.47	-7.08	50.39	74.00	-23.61	226	100	peak

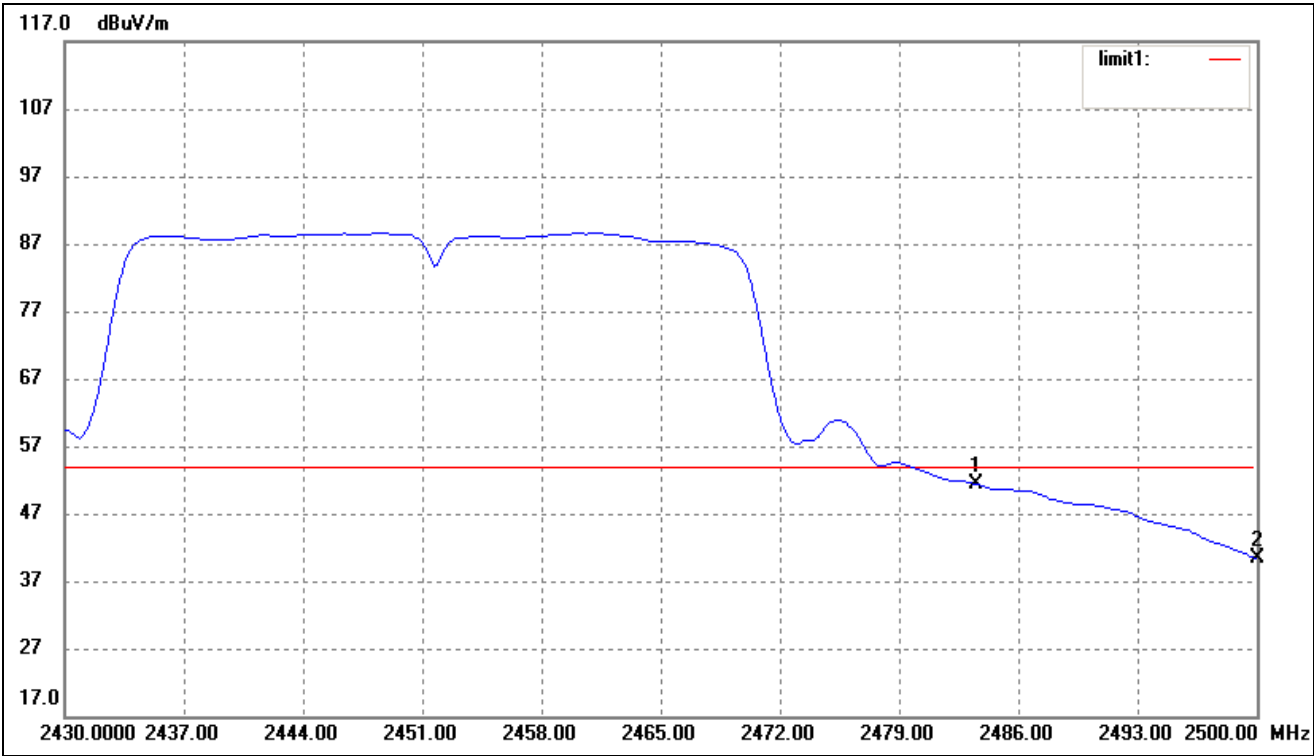
For 802.11n-HT40

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	( ° )	(cm)	
1	2310.000	38.97	-7.51	31.46	54.00	-22.54	226	100	Ave
	2310.000	52.74	-7.51	45.23	74.00	-28.77	226	100	peak
2	2390.000	60.01	-7.34	52.67	54.00	-1.33	226	100	Ave
	2390.000	75.17	-7.34	67.83	74.00	-6.17	226	100	peak
3	2397.970	76.29	-7.31	68.98	/	/	/	/	Ave
4	2400.000	75.77	-7.31	68.46	/	/	/	/	Ave
5	2425.328	99.81	-7.26	92.55	/	/	/	/	Ave

Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	( ° )	(cm)	
1	2483.500	58.49	-7.13	51.36	54.00	-2.64	226	100	Ave
	2483.500	76.97	-7.13	69.84	74.00	-4.16	226	100	peak
2	2500.000	47.58	-7.08	40.50	54.00	-13.50	226	100	Ave
	2500.000	65.74	-7.08	58.66	74.00	-15.34	226	100	peak

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