

FCC Part 15C

Measurement and Test Report

For

Shenzhen StarWorth Manufacturing Co., Ltd

Building No.27 Chentian Industrial Estate, Xixiang Bao'an, Shenzhen, China

FCC ID: COQSWNTS30I

Report Concerns: Original Report	Equipment Type: Netbook
Model:	<u>SW-I10-03</u>
Report No.:	<u>STR12038087I-1</u>
Test Date:	<u>2012-03-08 to 2012-03-26</u>
Issue Date:	<u>2012-03-26</u>
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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: Shenzhen StarWorth Manufacturing Co., Ltd
Address of applicant: Building No.27 Chentian Industrial Estate, Xixiang Bao'an, Shenzhen, China

Manufacturer: Shenzhen StarWorth Manufacturing Co., Ltd
Address of manufacturer: Building No.27 Chentian Industrial Estate, Xixiang Bao'an, Shenzhen, China

General Description of E.U.T

Items	Description
EUT Description:	Netbook
Trade Name:	/
Model No.:	SW-I10-03
Add Models:	SW-I10-04-1, SW-I10-N03
Power Supply:	Input 100-240V/50/60Hz Output 19V DC Adaptor DC 11.1V Battery
Adaptor Model:	SW-I10-03
Battery Capacity:	4400mAh
RF Output Power	Max.11.40dBm (Conducted)
Antenna Gain:	2 dBi
Frequency range:	2412-2462MHz for 802.11b/g/n-HT20 2412-2452MHz for 802.11n-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. The others models listed in the report have different appearance only of SW-I10-03 without circuit and electronic construction changed, declared by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the Shenzhen StarWorth Manufacturing 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
LCD Display	Lenovo	LXM-L17AB	4M0233274805856
Mouse	DELL	MOC5UO	/
Keyboard	DELL	SK-8115	/
Headphone	DH	DH-805	/

1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
AC Cable	1.2	Unshielded	Without Core
DC Cable	1.2	Unshielded	With Core

2. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 15.203; § 15.247(c)(1)(i)	Antenna Requirement	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
§ 15.207(a)	Conducted Emission	Compliant

3. §15.203 - ANTENNA REQUIREMENT

3.1 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.

3.2 Test Result

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

4. POWER SPECTRAL DENSITY

4.1 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.

4.2 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.

4.3 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 = 30MHz.
4. Repeat above procedures until all frequency measured was complete.

4.4 Environmental Conditions

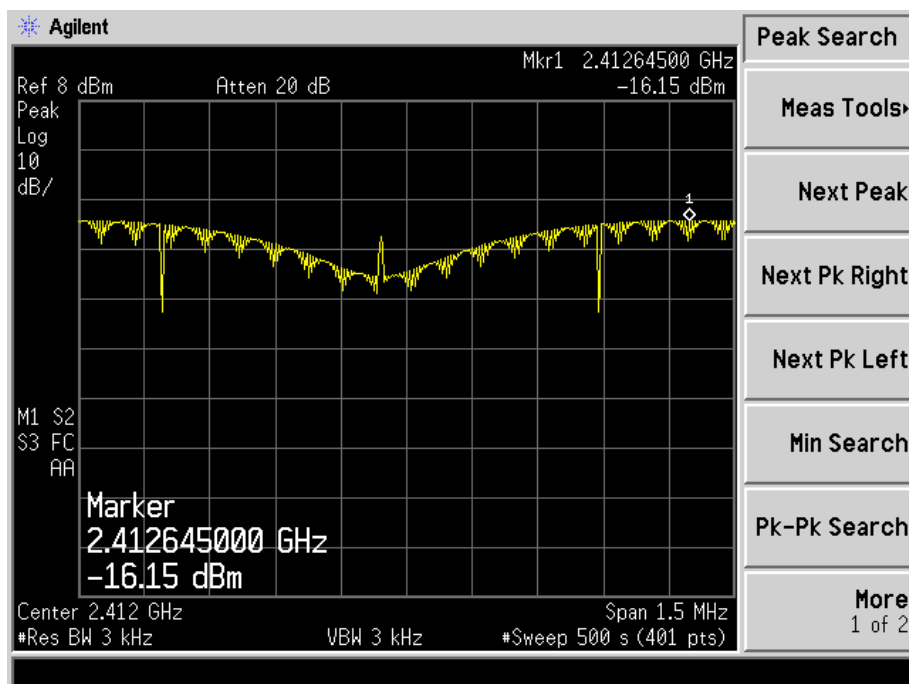
Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

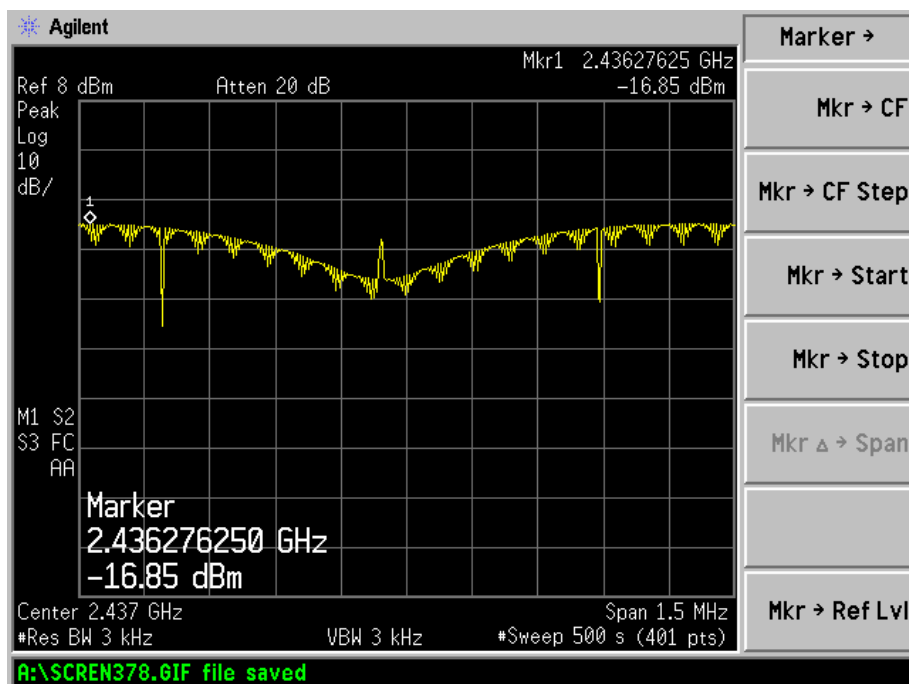
Test mode	Test channel	Reading dBm/3kHz	Limit dBm/3kHz
802.11b	Low channel (2412MHz)	-16.15	8
	Middle channel (2437MHz)	-16.85	8
	High channel (2462MHz)	-18.40	8
802.11g	Low channel (2412MHz)	-20.09	8
	Middle channel (2437MHz)	-20.12	8
	High channel (2462MHz)	-21.02	8
802.11n HT20	Low channel (2412MHz)	-20.04	8
	Middle channel (2437MHz)	-19.91	8
	High channel (2462MHz)	-21.19	8
802.11n HT40	Low channel (2422MHz)	-20.04	8
	Middle channel (2437MHz)	-19.91	8
	High channel (2452MHz)	-21.19	8

For 802.11b

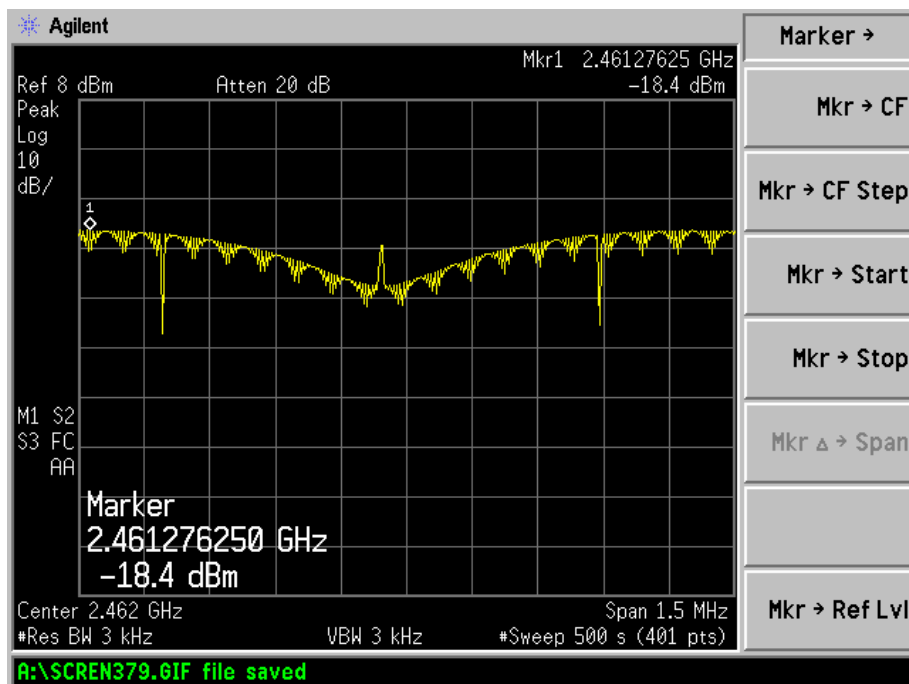
Low Channel:



Middle Channel:

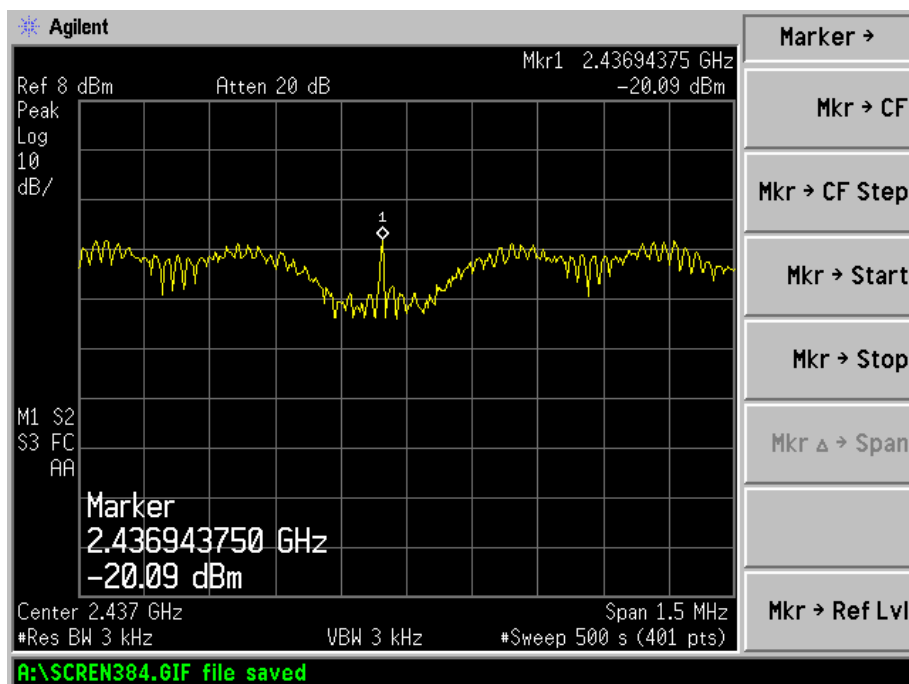


High Channel:

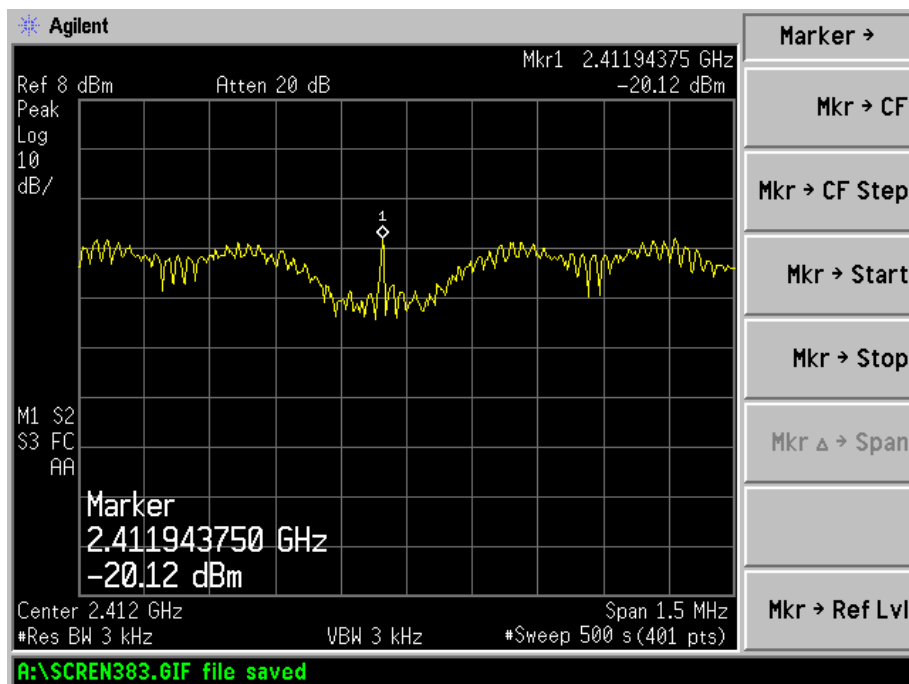


For 802.11g

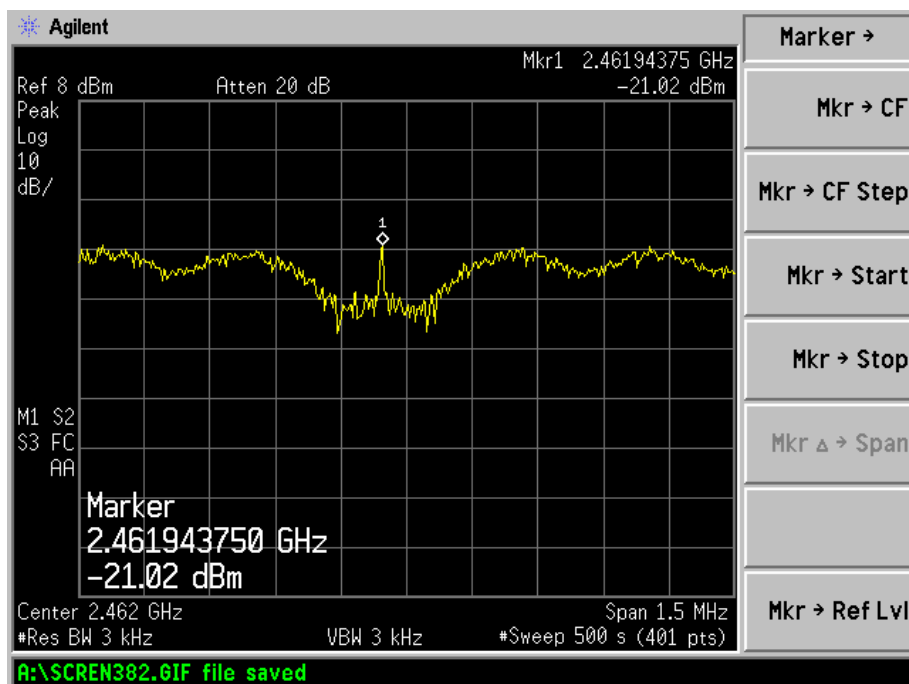
Low Channel:



Middle Channel:

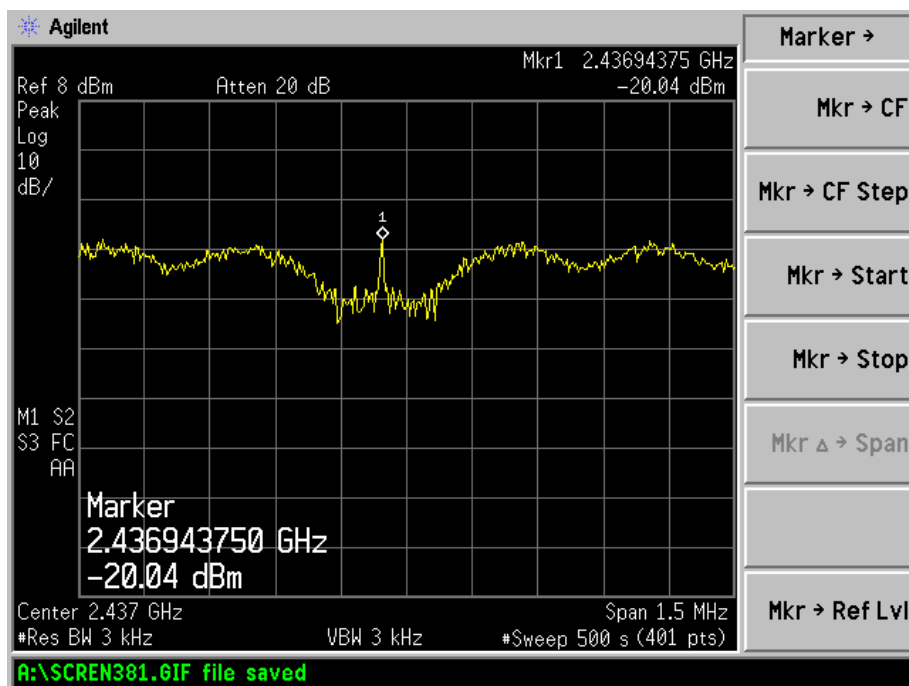


High Channel:

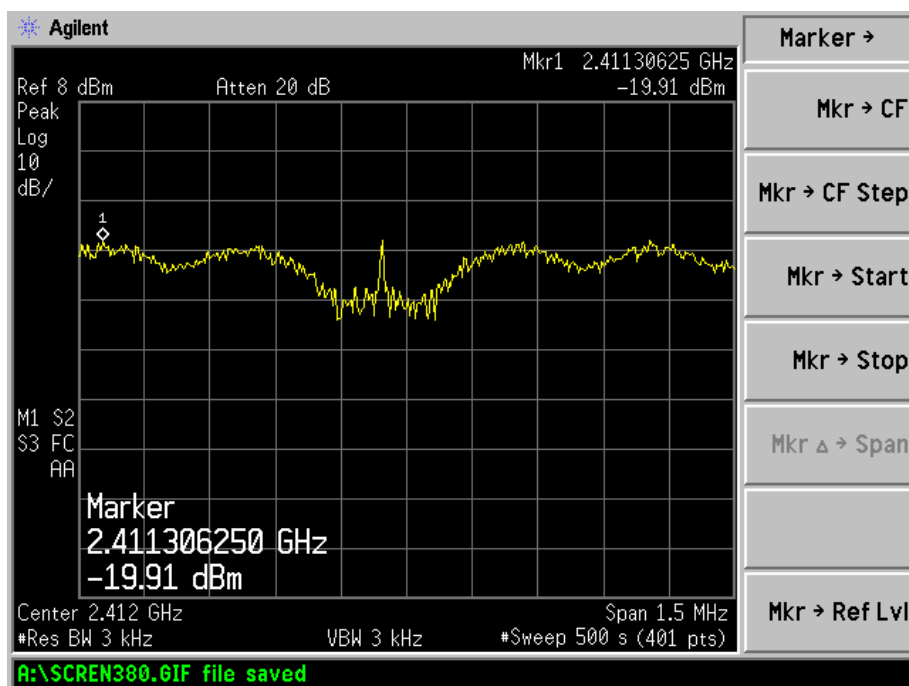


For 802.11n HT20

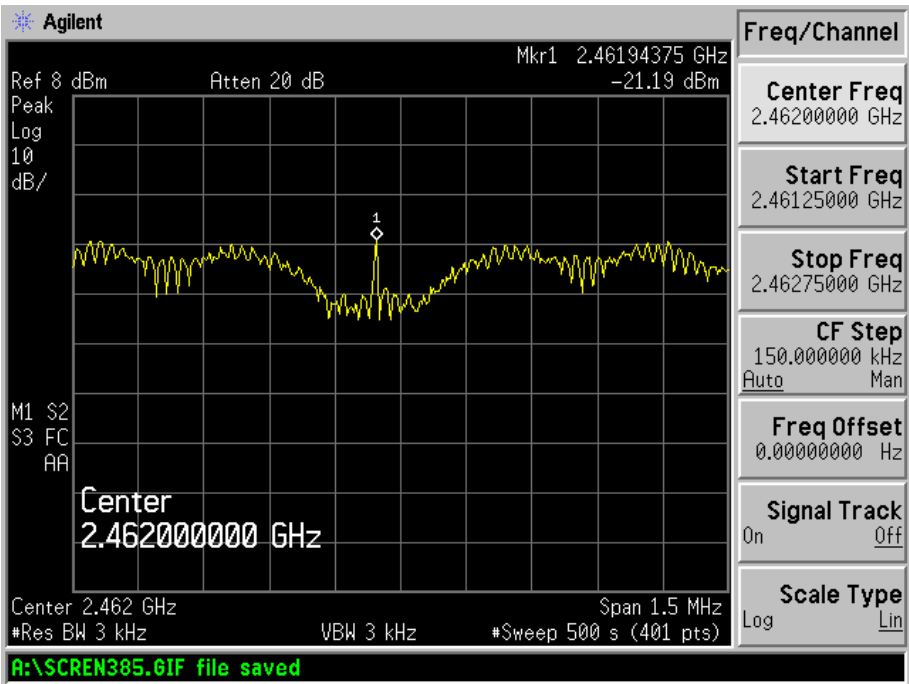
Low Channel:



Middle Channel:

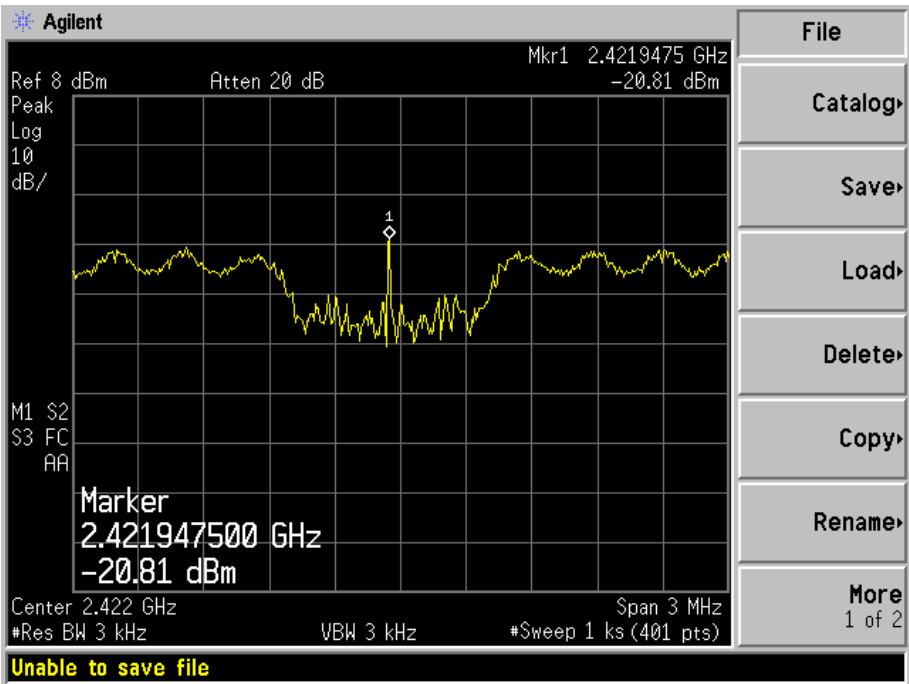


High Channel:

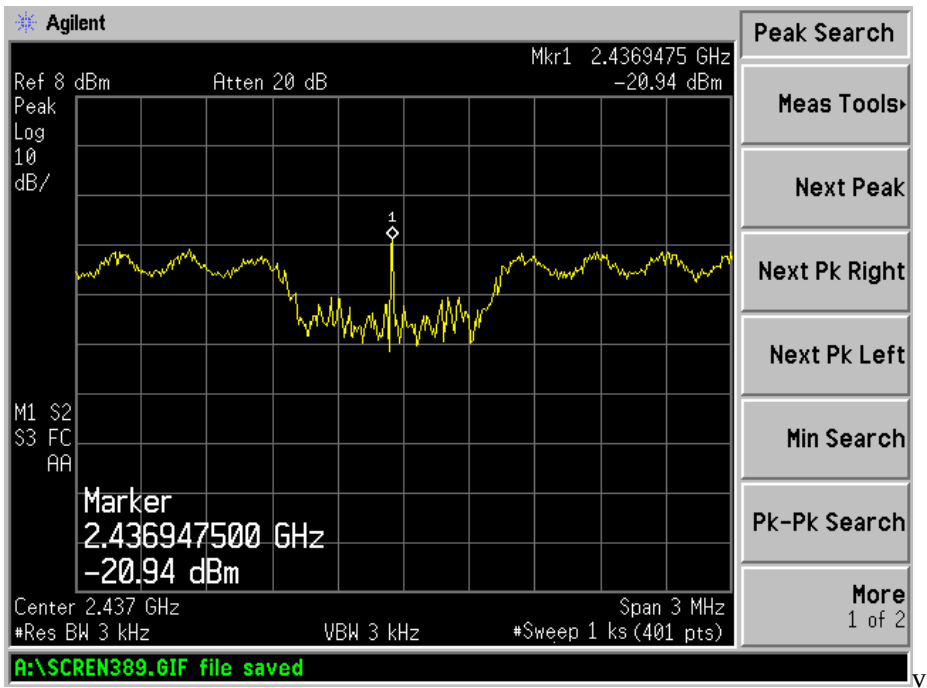


For 802.11n HT40

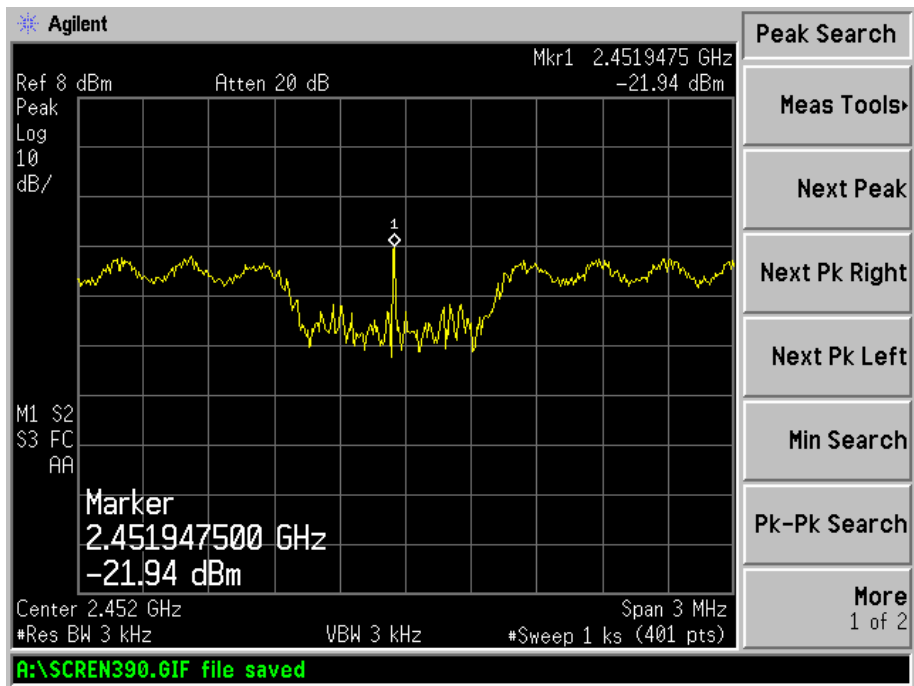
Low Channel:



Middle Channel:



High Channel:



5. 6-dB BANDWIDTH

5.1 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.

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. The spectrum analyzer as RBW=300kHz (1 % of Bandwidth.), Sweep=auto
4. Mark the peak frequency and –6dB (upper and lower) frequency.

5.4 Environmental Conditions

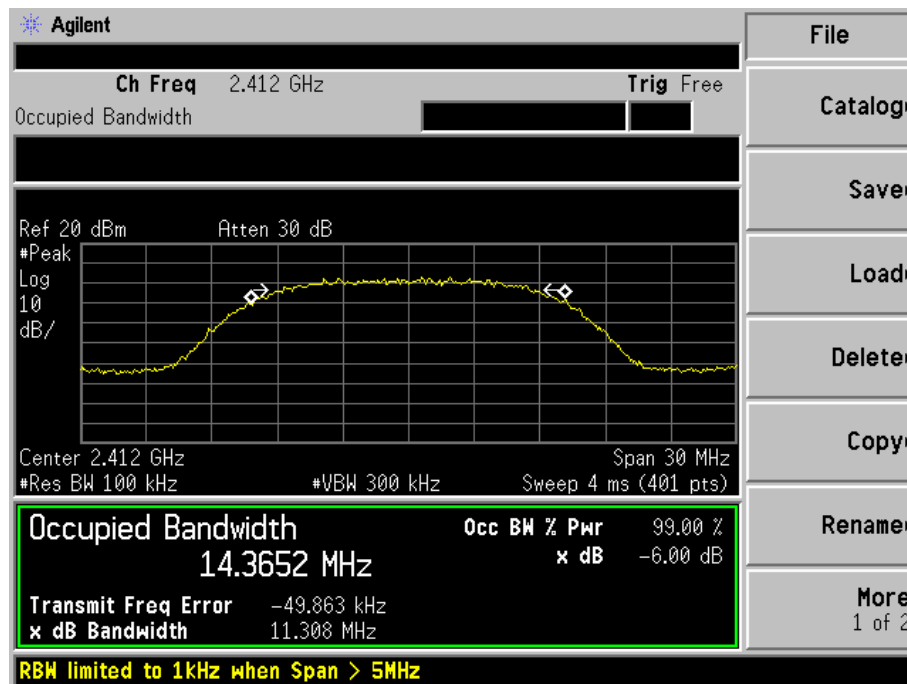
Temperature:	24° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

5.5 Summary of Test Results/Plots

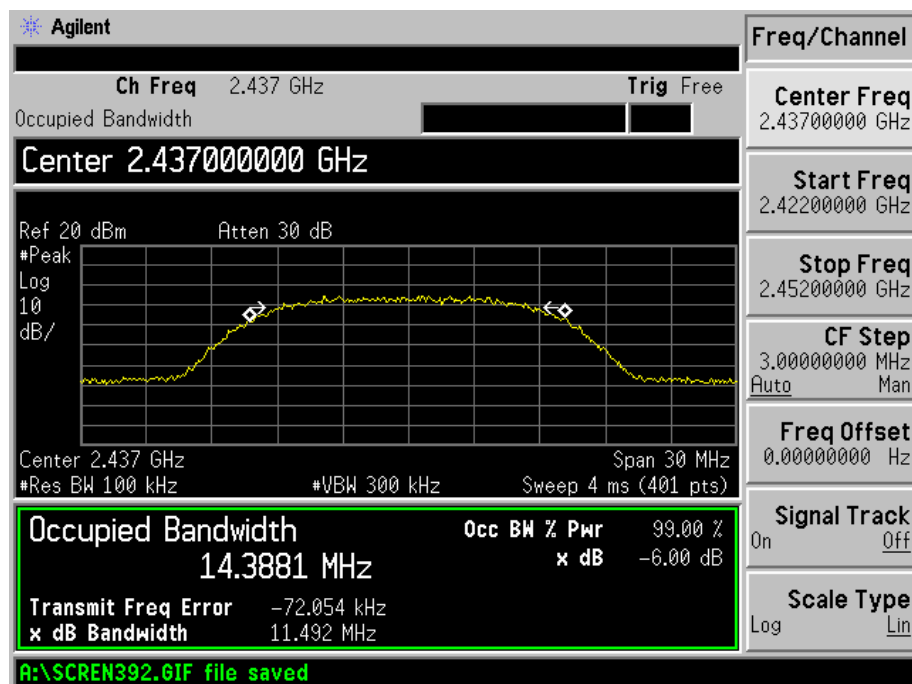
Test mode	Frequency MHz	6 dB Bandwidth kHz	Limit kHz
802.11b	2412	11308	500
	2437	11492	500
	2462	11226	500
802.11g	2412	16476	500
	2437	16486	500
	2462	16457	500
802.11n HT20	2412	17492	500
	2437	17605	500
	2462	17616	500
802.11n HT40	2422	35909	500
	2437	35805	500
	2452	35626	500

For 802.11b

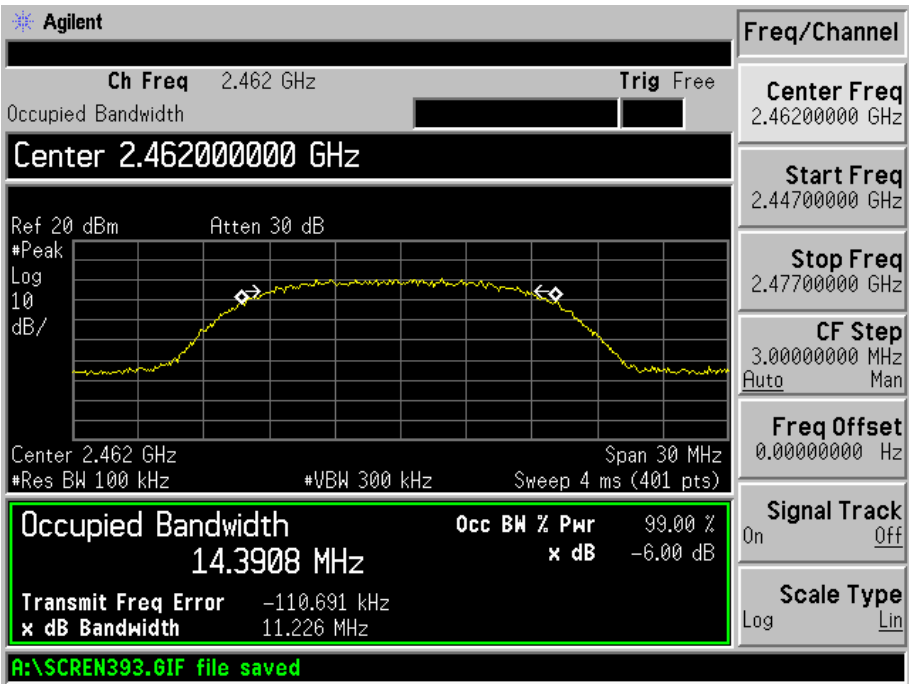
Low Channel:



Middle Channel:

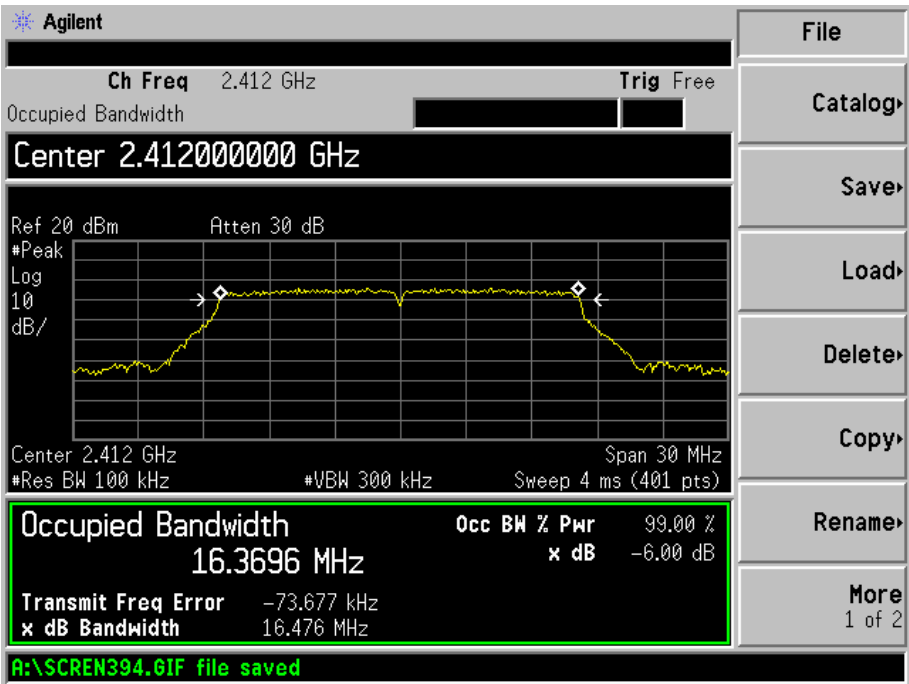


High Channel:

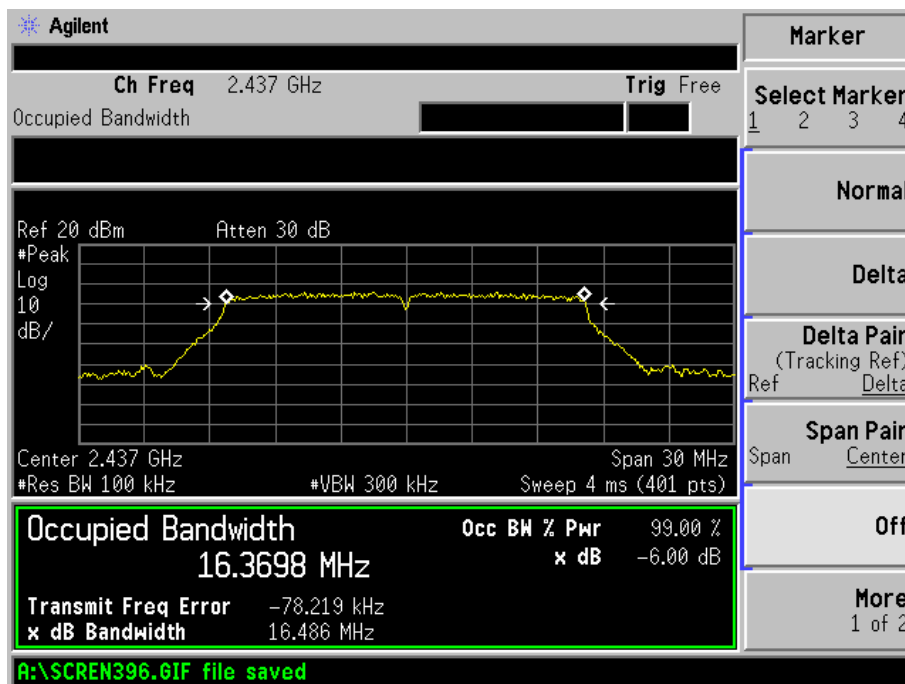


For 802.11g

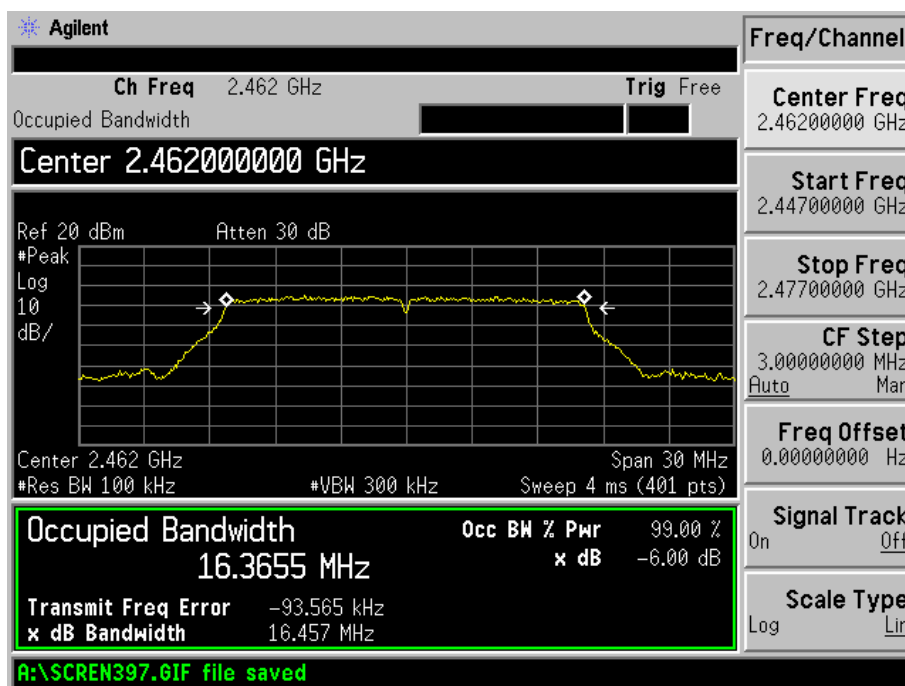
Low Channel:



Middle Channel:

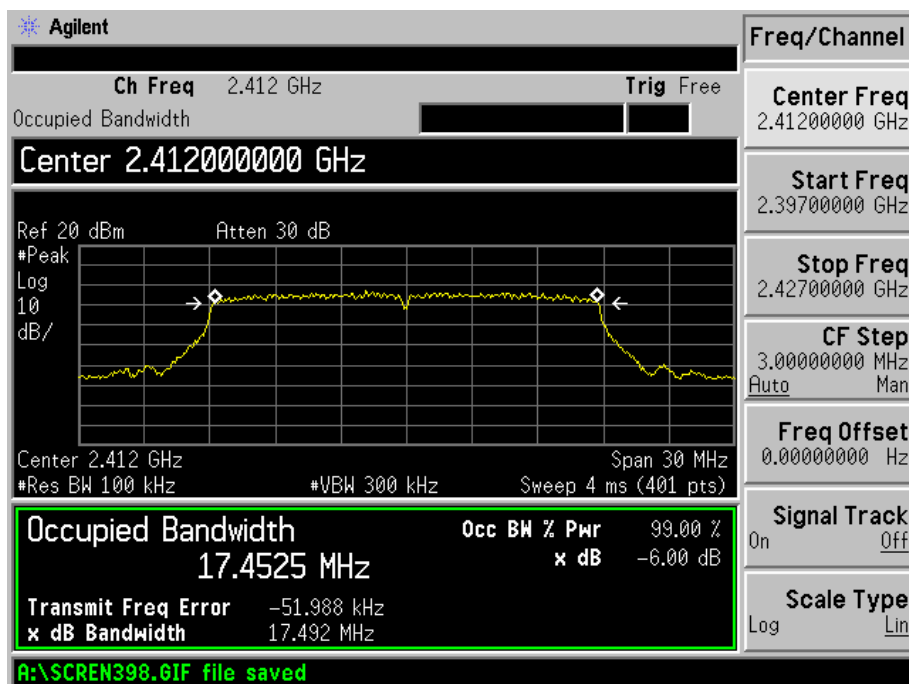


High Channel:

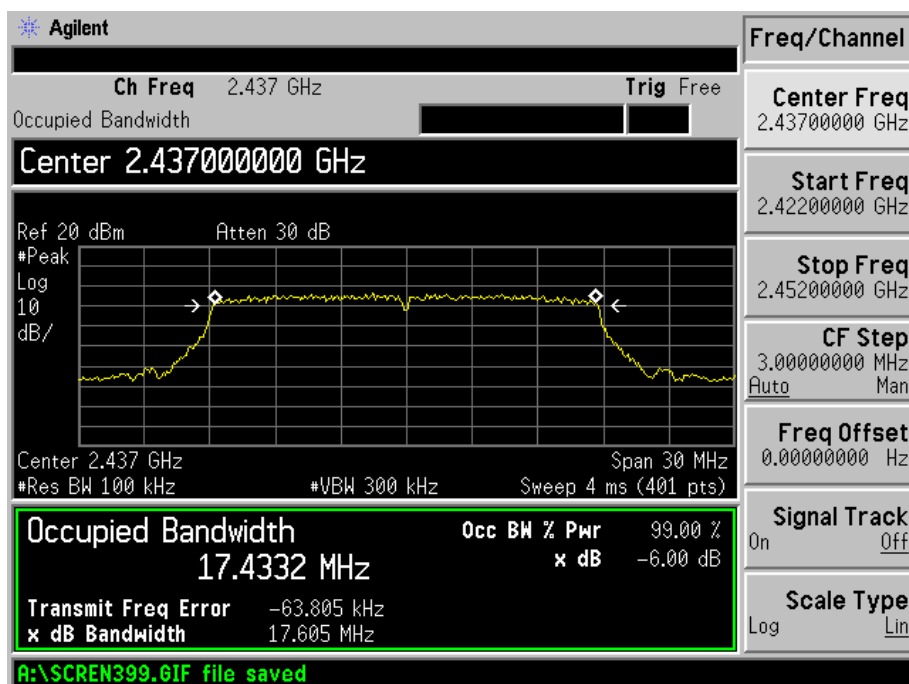


For 802.11n HT20

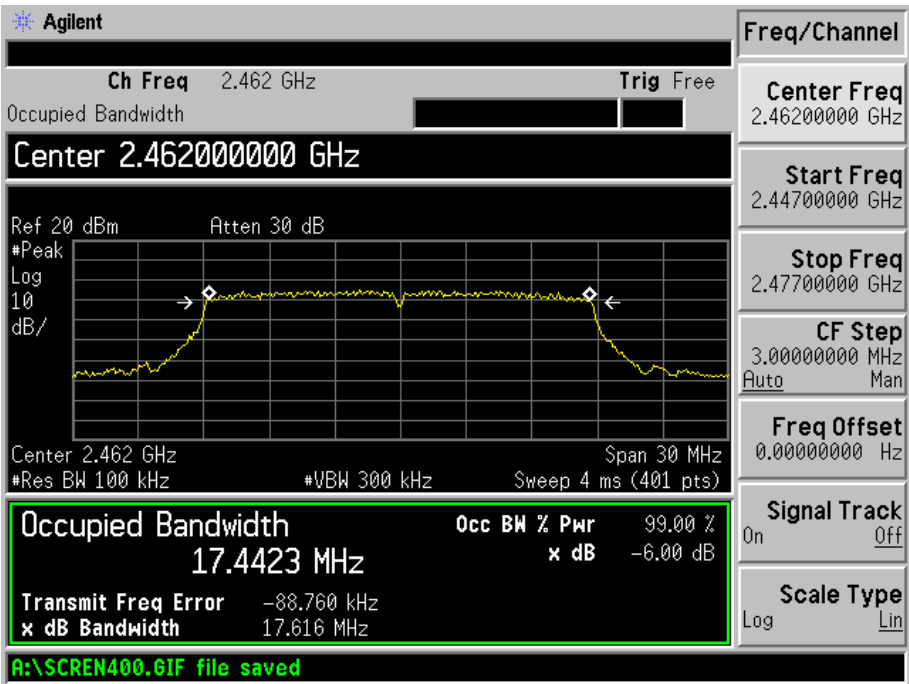
Low Channel:



Middle Channel:

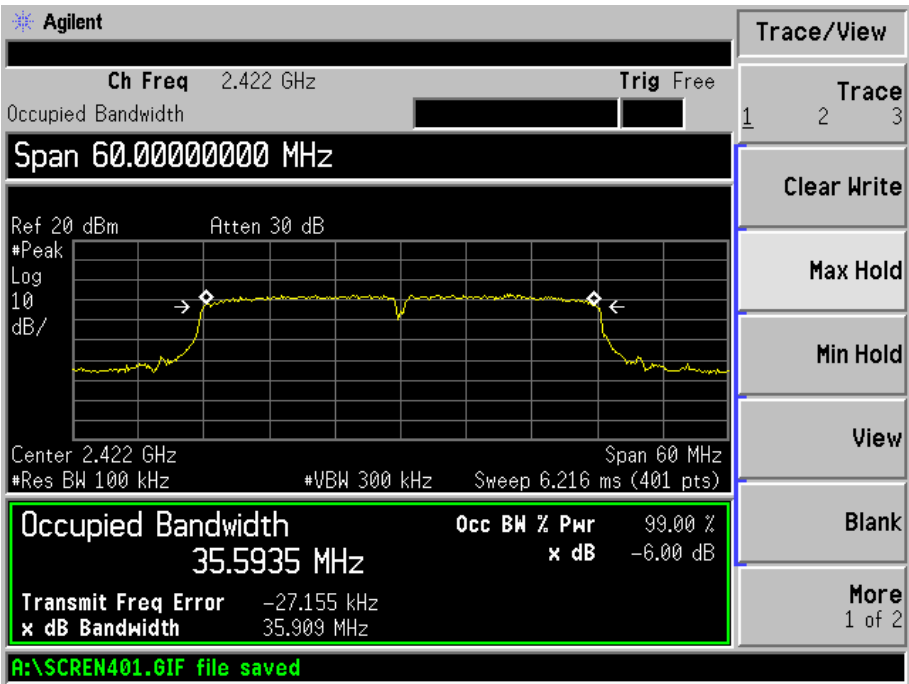


High Channel:

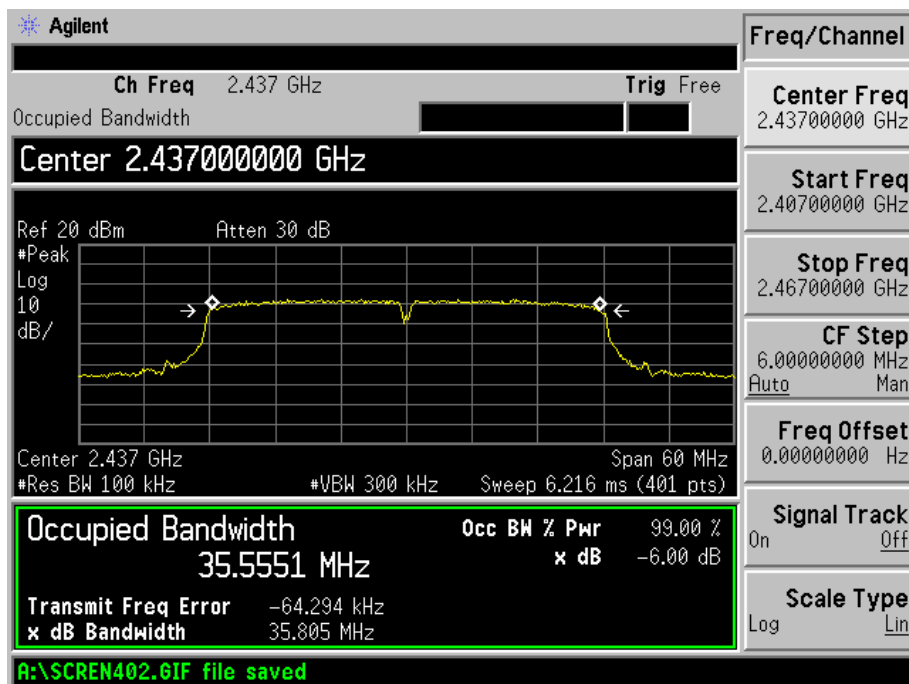


For 802.11n HT40

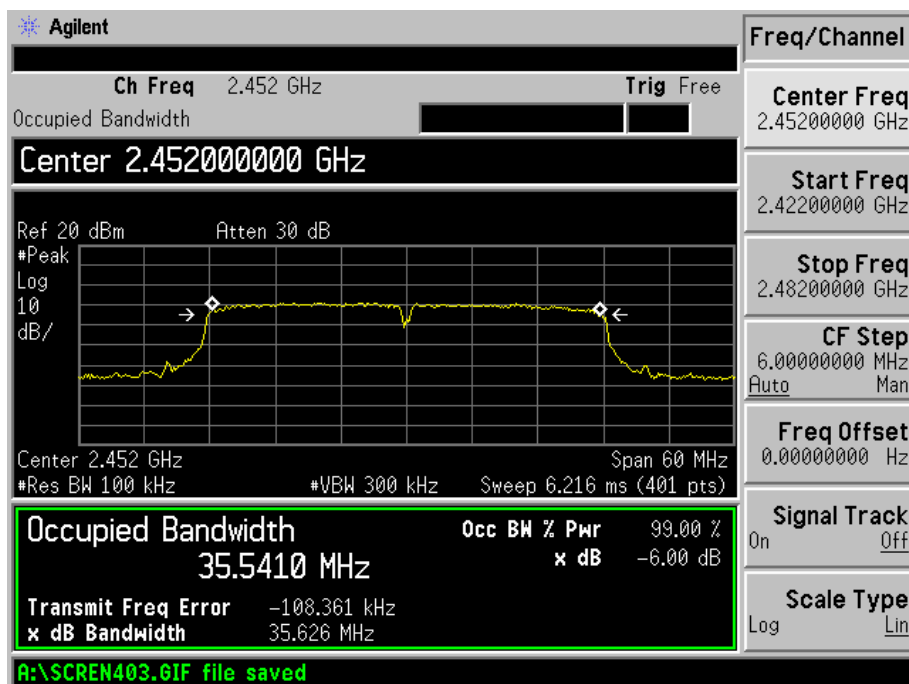
Low Channel:



Middle Channel:



High Channel:



6. POWER OUTPUT

6.1 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.

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

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 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”.
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.

6.4 Environmental Conditions

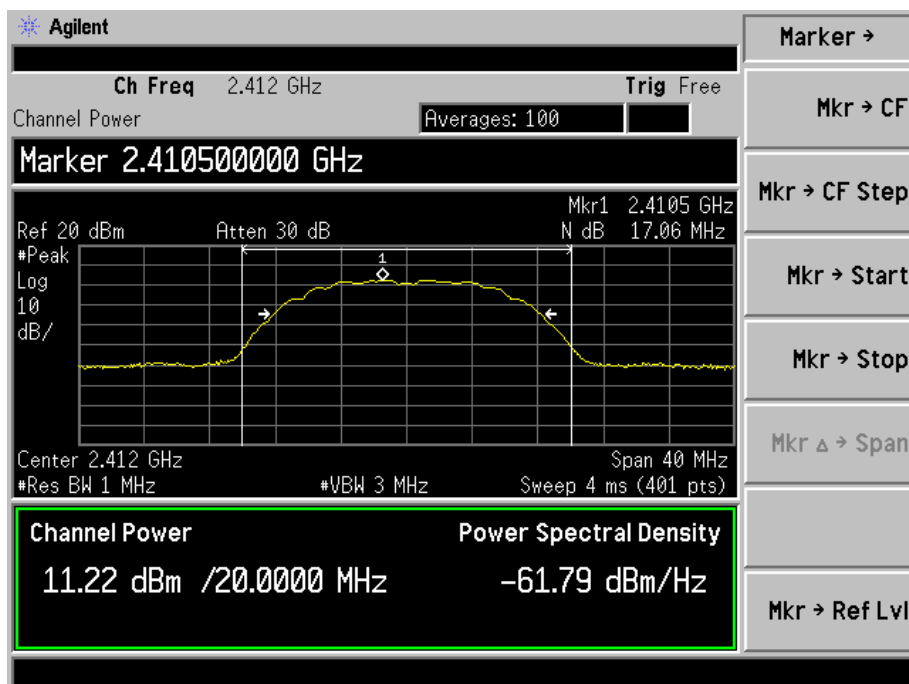
Temperature:	21° C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

6.5 Summary of Test Results/Plots

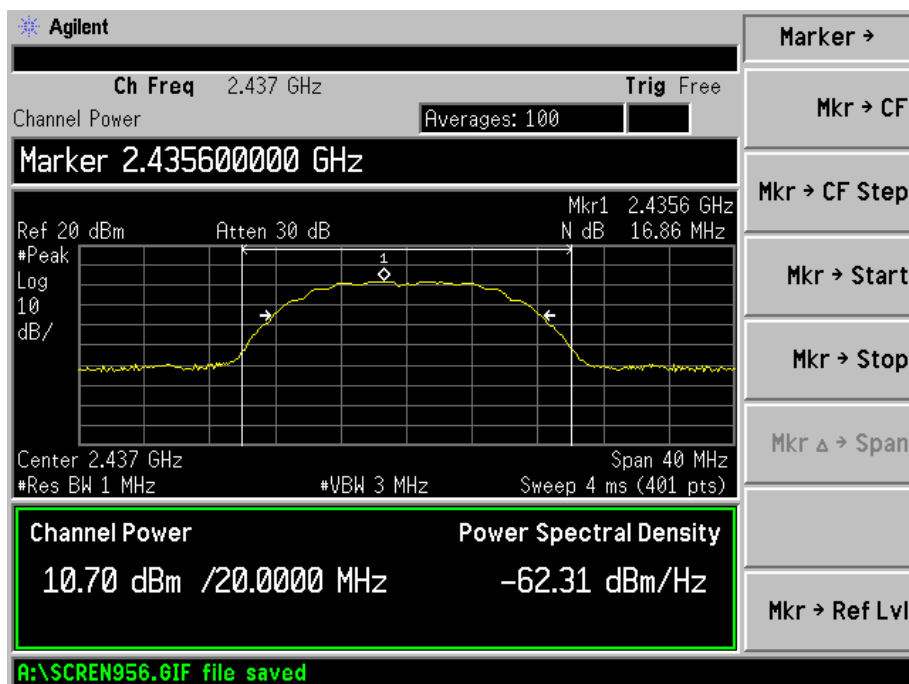
Test mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
11b_long_1Mbps	2412	11.22	13.2434	1000
	2437	10.70	11.7490	1000
	2462	10.66	11.6413	1000
11b_long_11Mbps	2412	11.40	13.8038	1000
	2437	10.83	12.1060	1000
	2462	10.46	11.1173	1000
11b_short_1Mbps	2412	11.19	13.1522	1000
	2437	10.41	10.9901	1000
	2462	10.25	10.5925	1000
11b_short_11Mbps	2412	11.13	12.9718	1000
	2437	10.49	11.1944	1000
	2462	10.36	10.8643	1000
11g_6Mbps	2412	9.31	8.5310	1000
	2437	8.80	7.5858	1000
	2462	8.67	7.3621	1000
11g_54Mbps	2412	9.89	9.7499	1000
	2437	8.81	7.6033	1000
	2462	8.26	6.6988	1000
11n HT20_MCS0	2412	8.66	7.3451	1000
	2437	8.54	7.1450	1000
	2462	7.98	6.2806	1000
11n HT20_MCS7	2412	8.65	7.3282	1000
	2437	8.00	6.3096	1000
	2462	8.00	6.3096	1000
11n HT40_MCS0	2422	8.28	6.7298	1000
	2437	8.32	6.7920	1000
	2452	8.14	6.5163	1000
11n HT40_MCS7	2422	8.08	6.4269	1000
	2437	8.04	6.3680	1000
	2452	7.80	6.0256	1000

For 802.11b_long_1Mbps

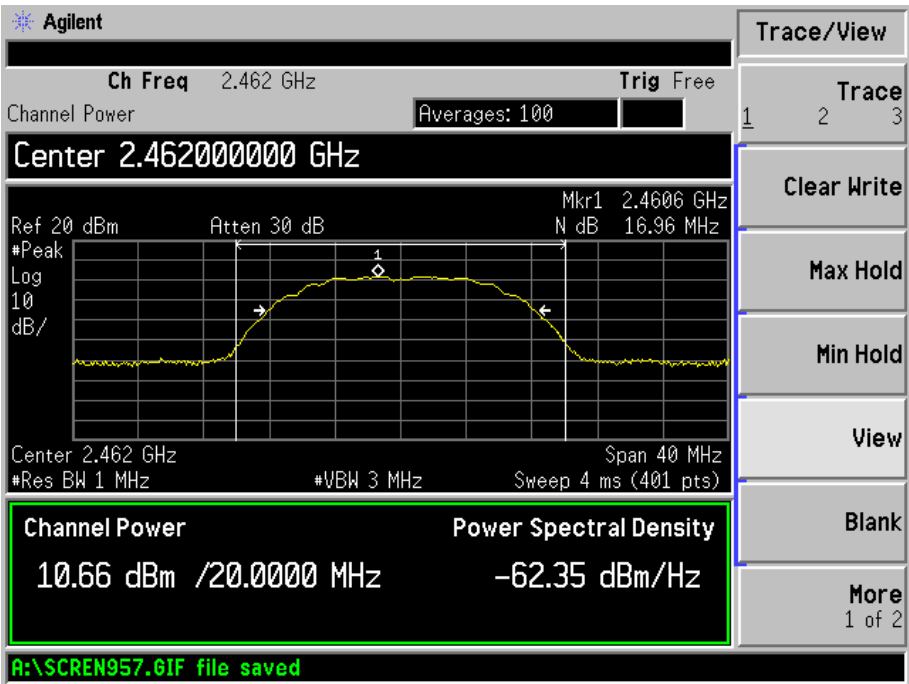
Low Channel:



Middle Channel:

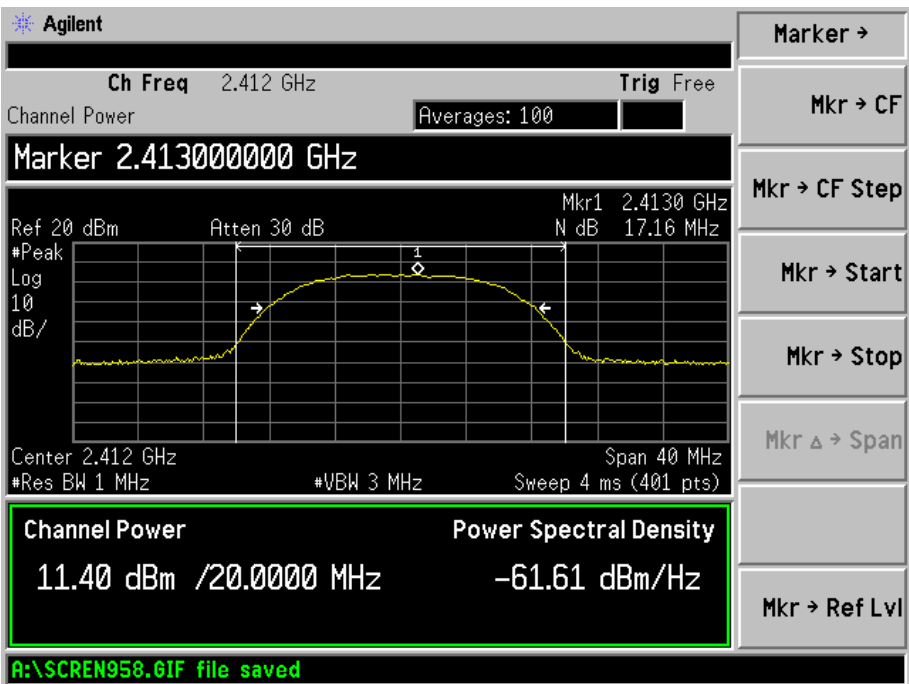


High Channel:

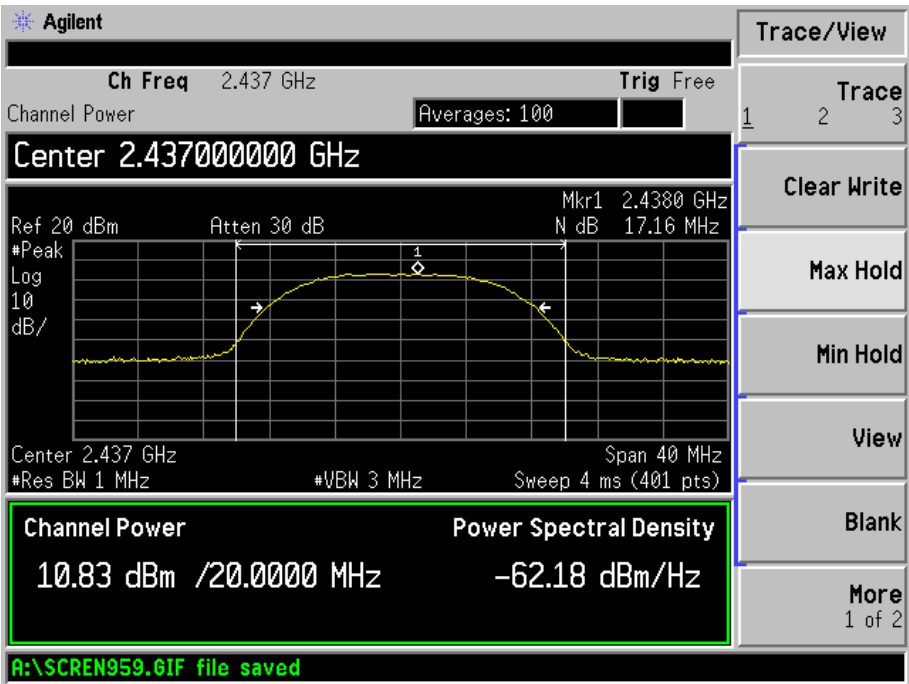


For 802.11b_long_11Mbps

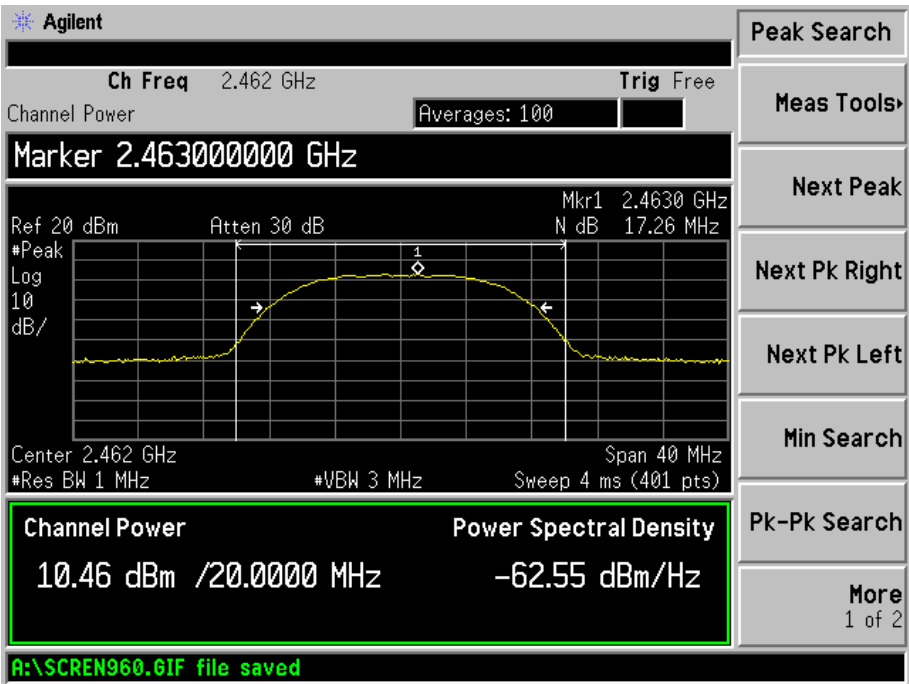
Low Channel:



Middle Channel:

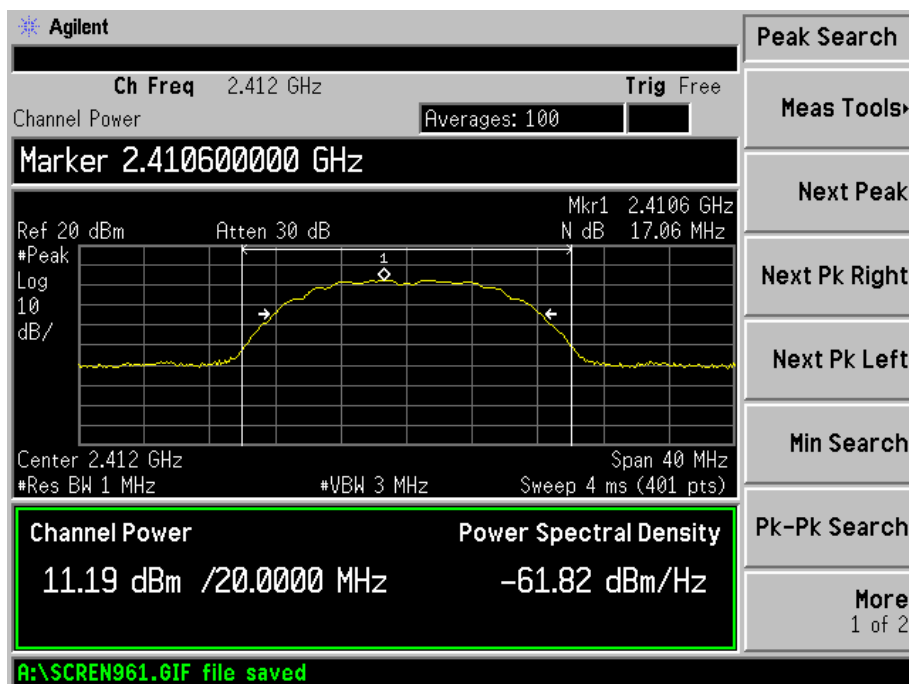


High Channel:

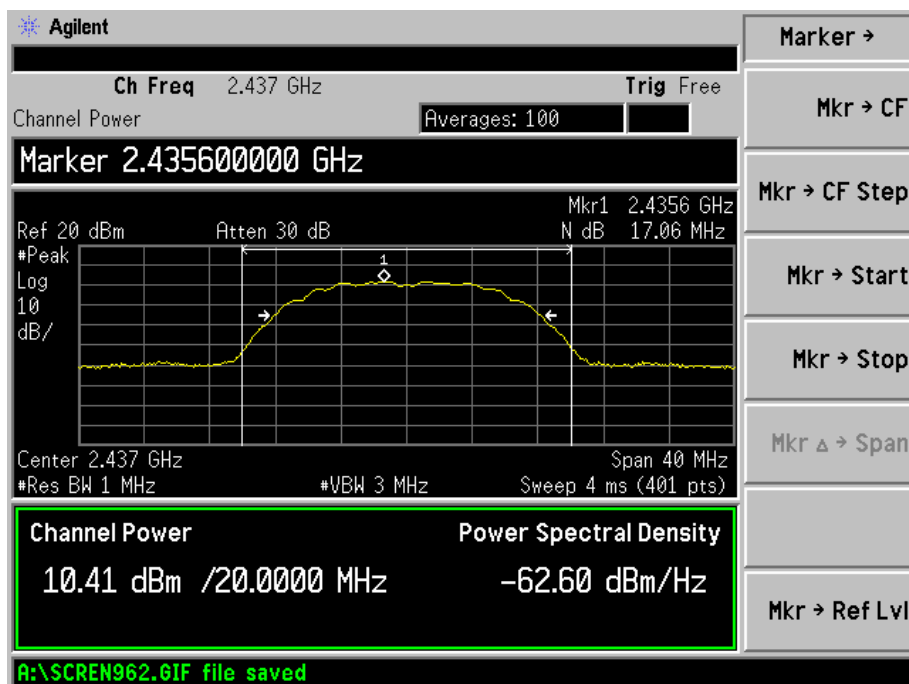


For 802.11b_Short_1Mbps

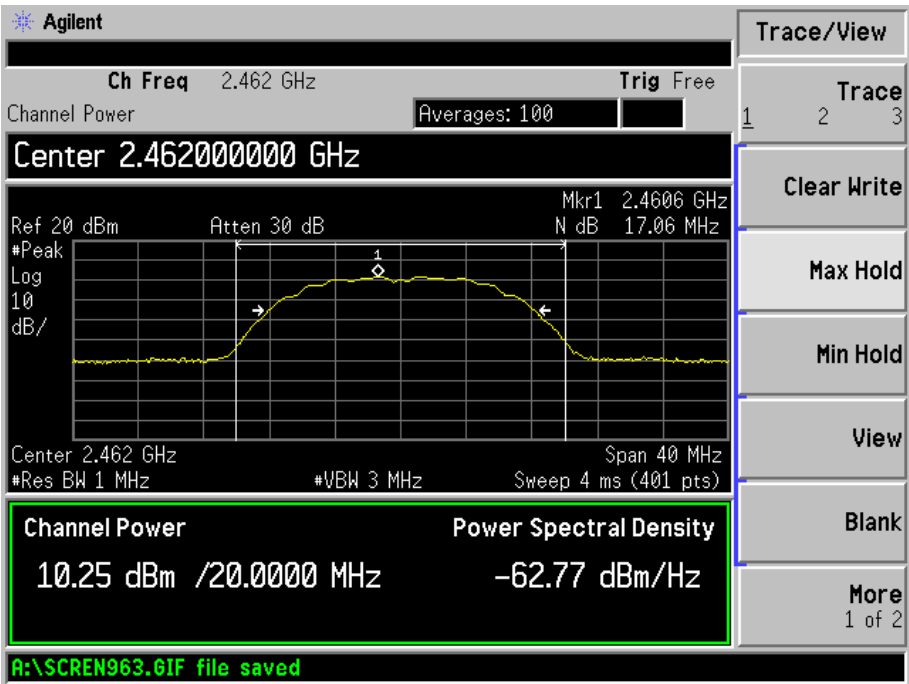
Low Channel:



Middle Channel:

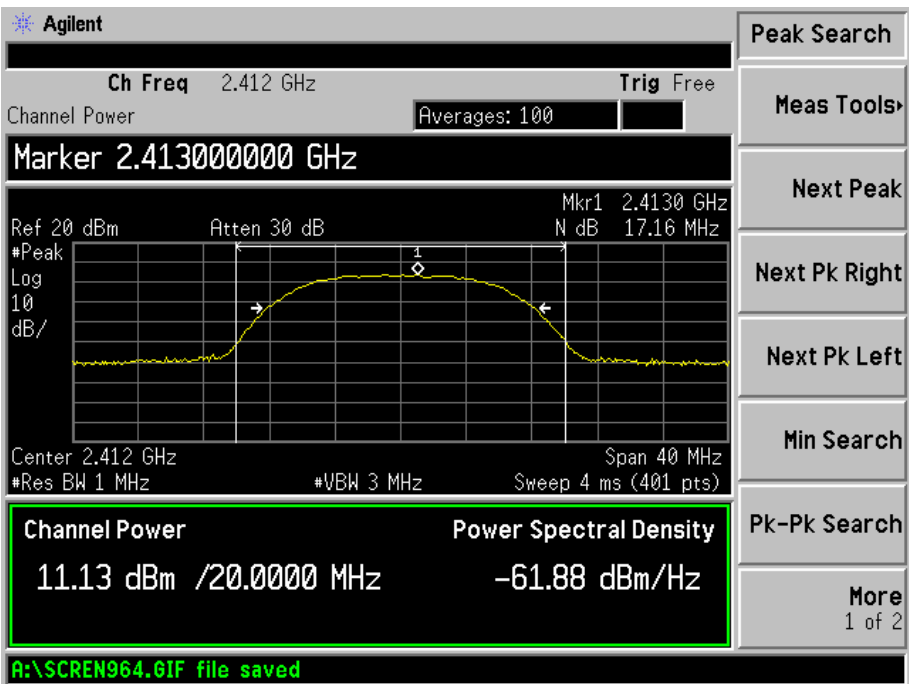


High Channel:

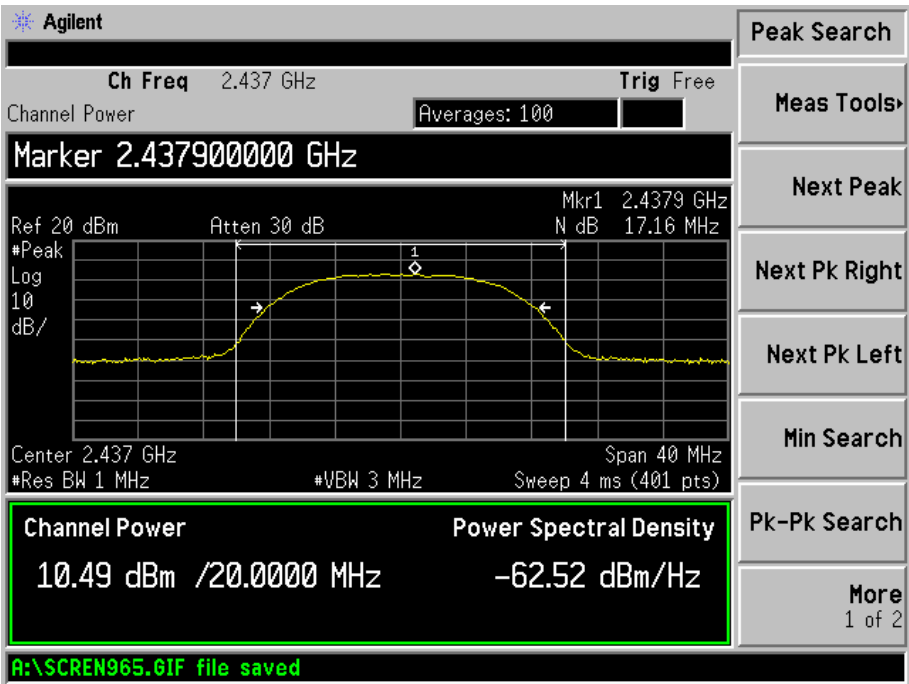


For 802.11b_Short_11Mbps

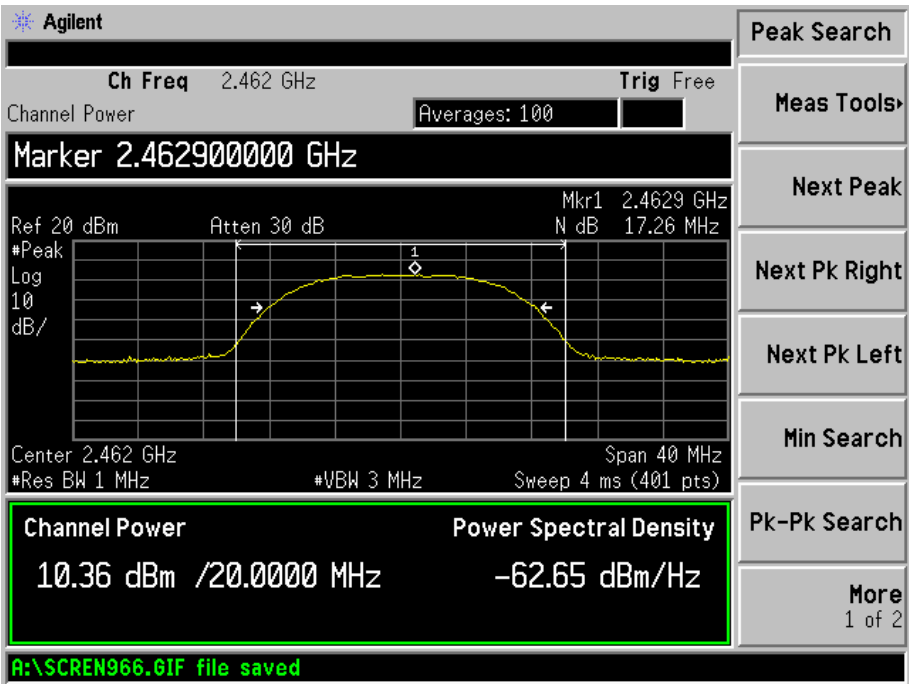
Low Channel:



Middle Channel:

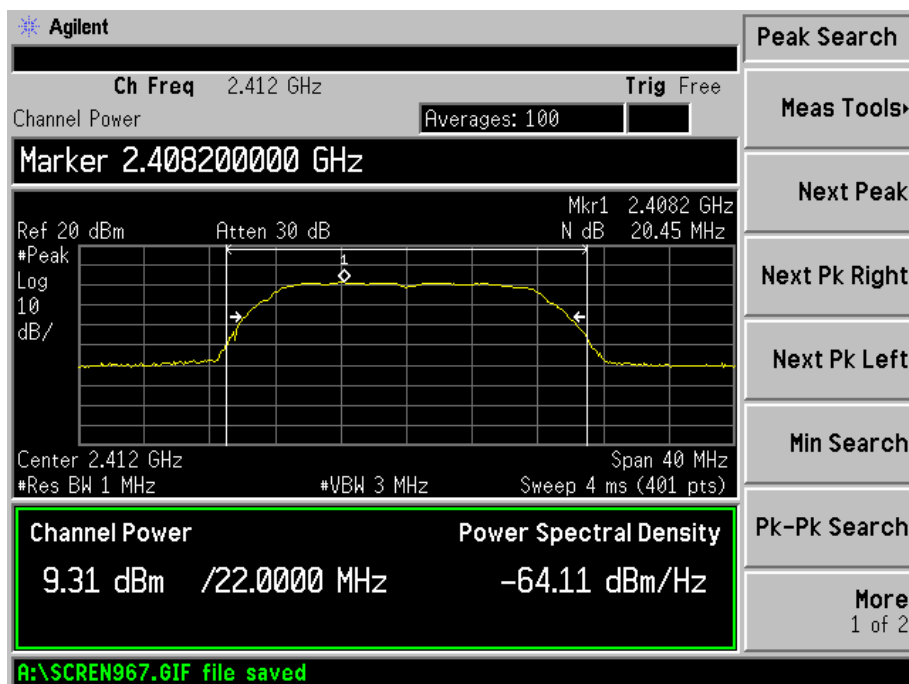


High Channel:

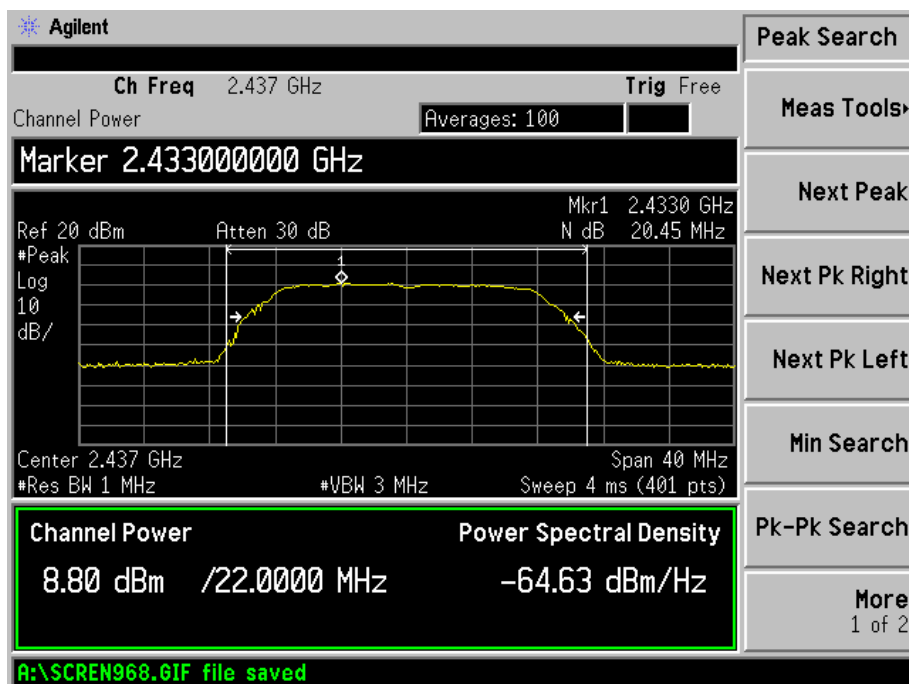


For 802.11g_6Mbps

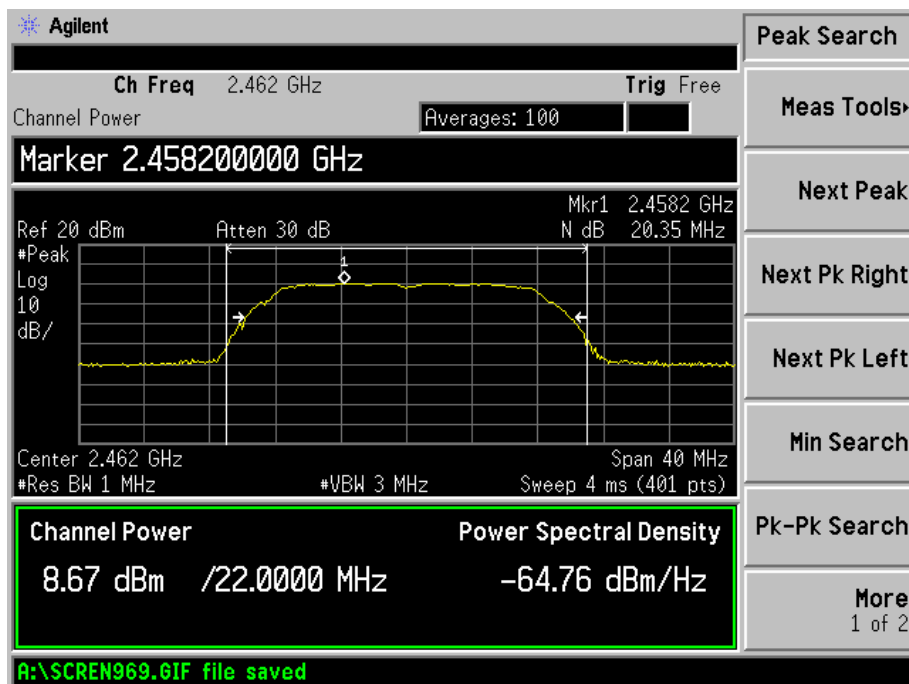
Low Channel:



Middle Channel:

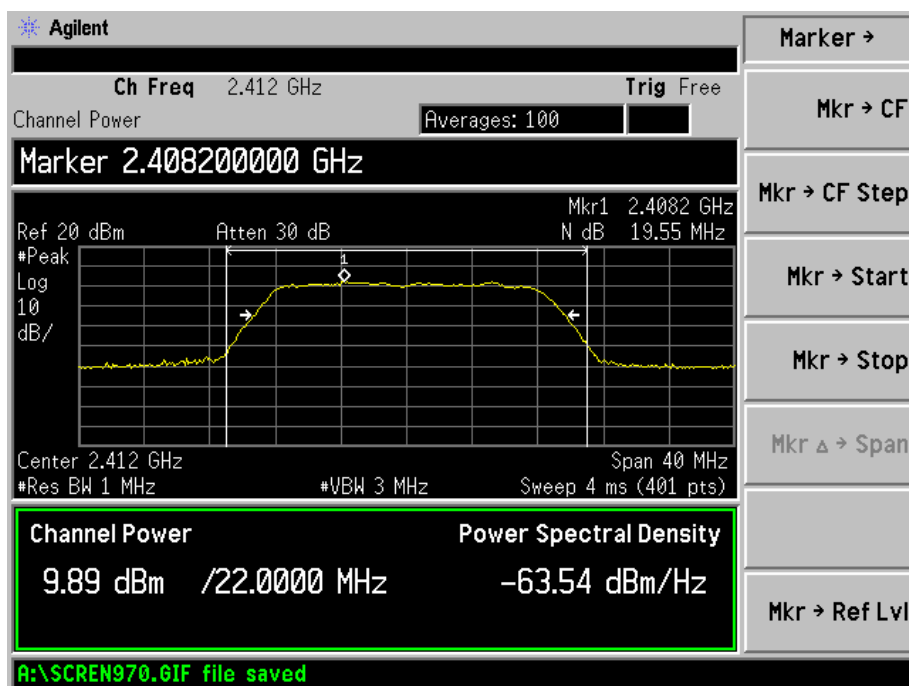


High Channel:

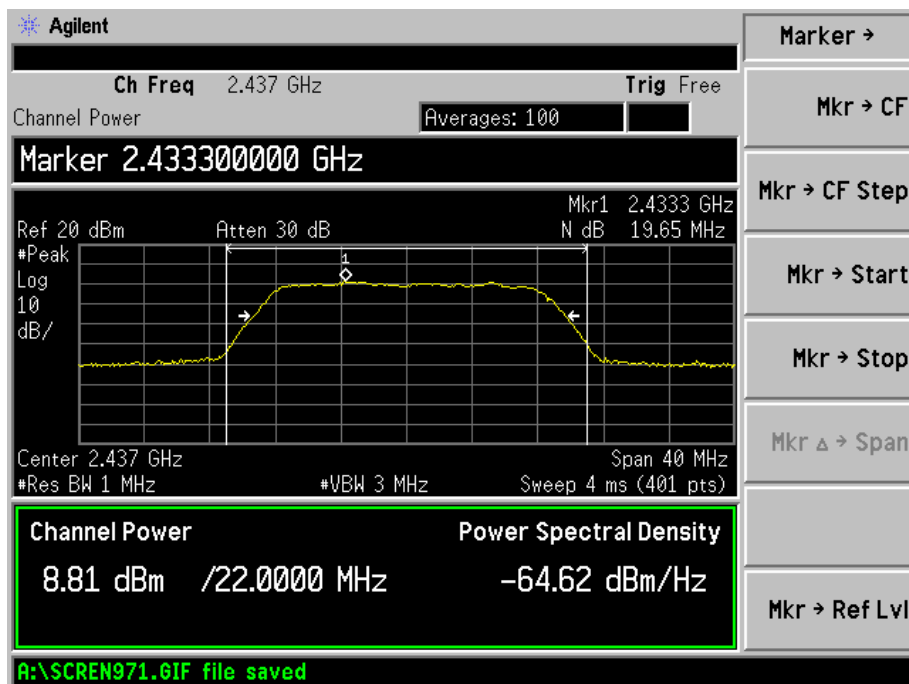


For 802.11g_54Mbps

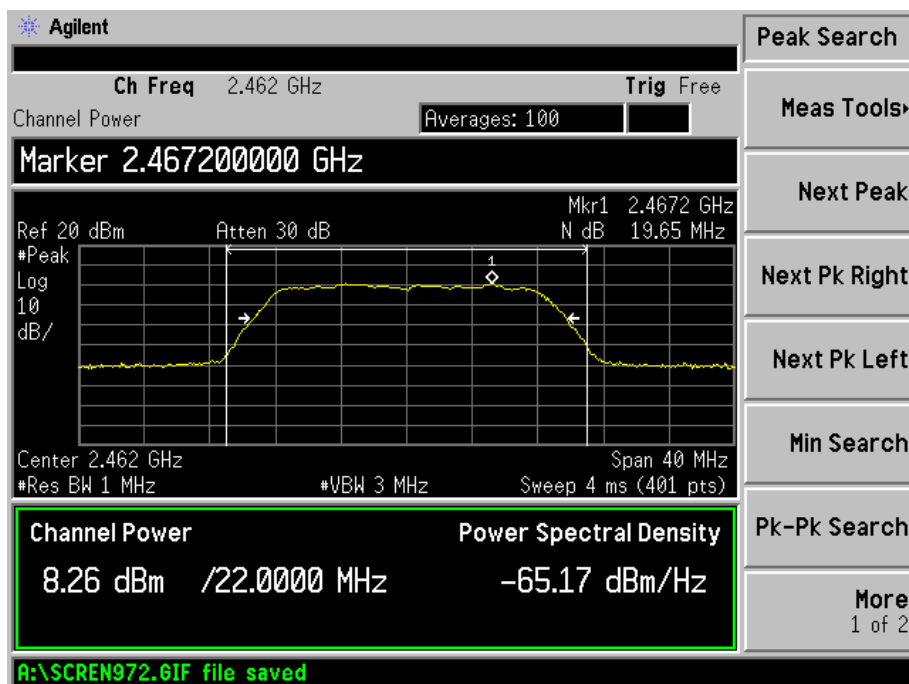
Low Channel:



Middle Channel:

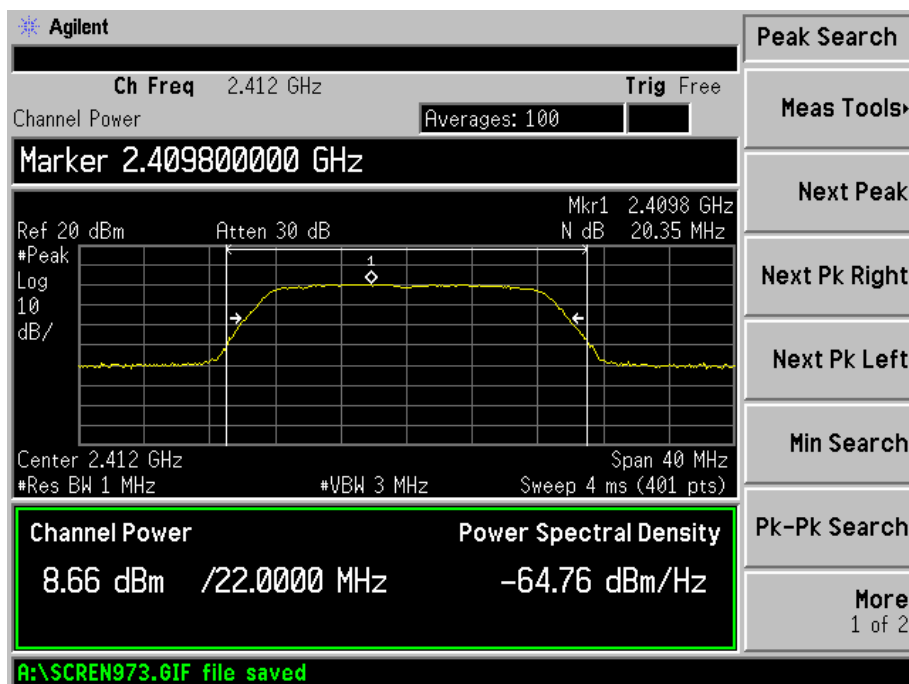


High Channel:

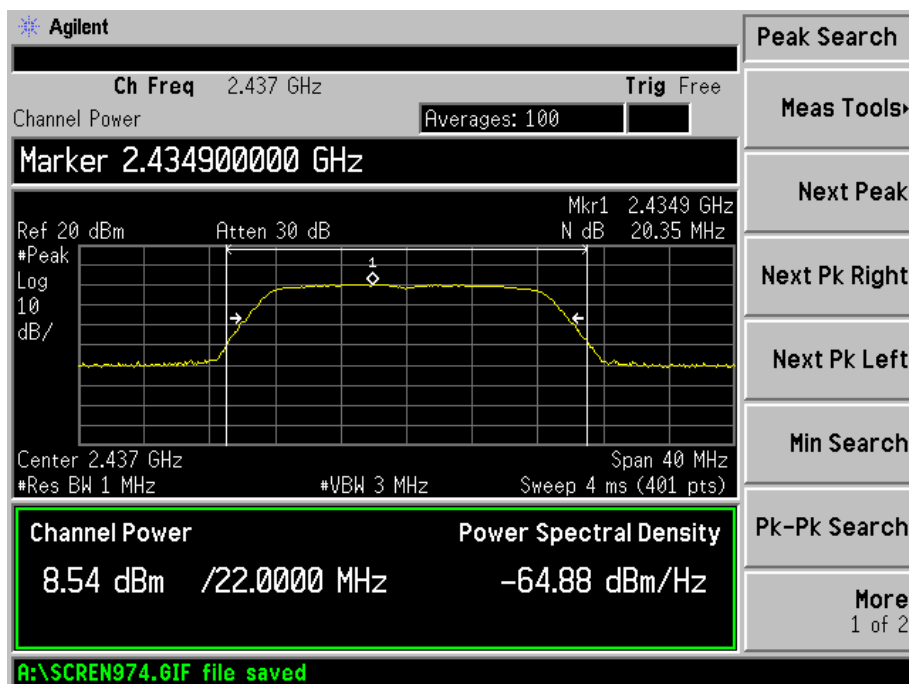


For 802.11n_HT20_MCS 0

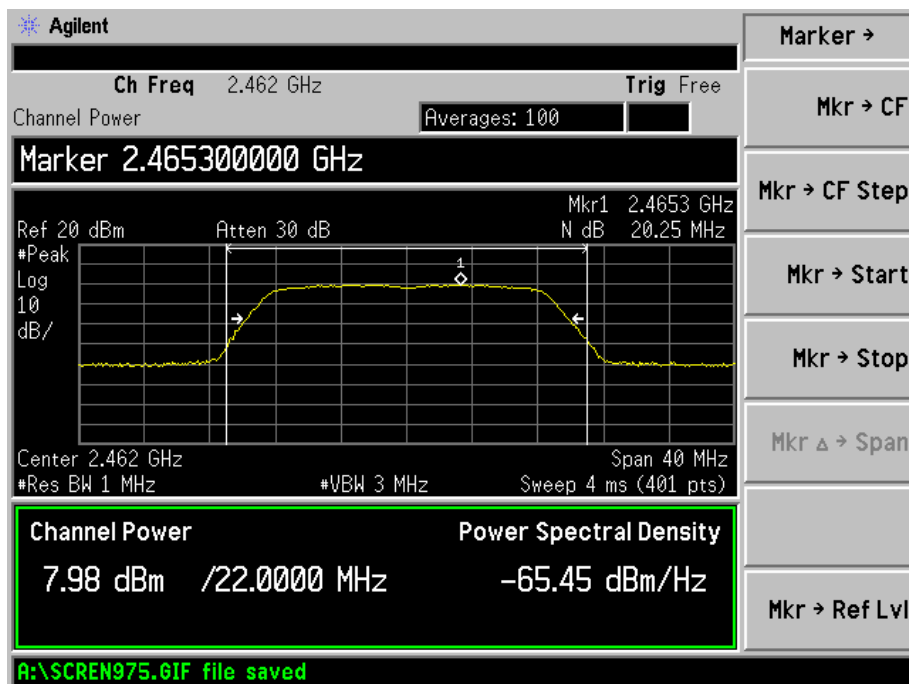
Low Channel:



Middle Channel:

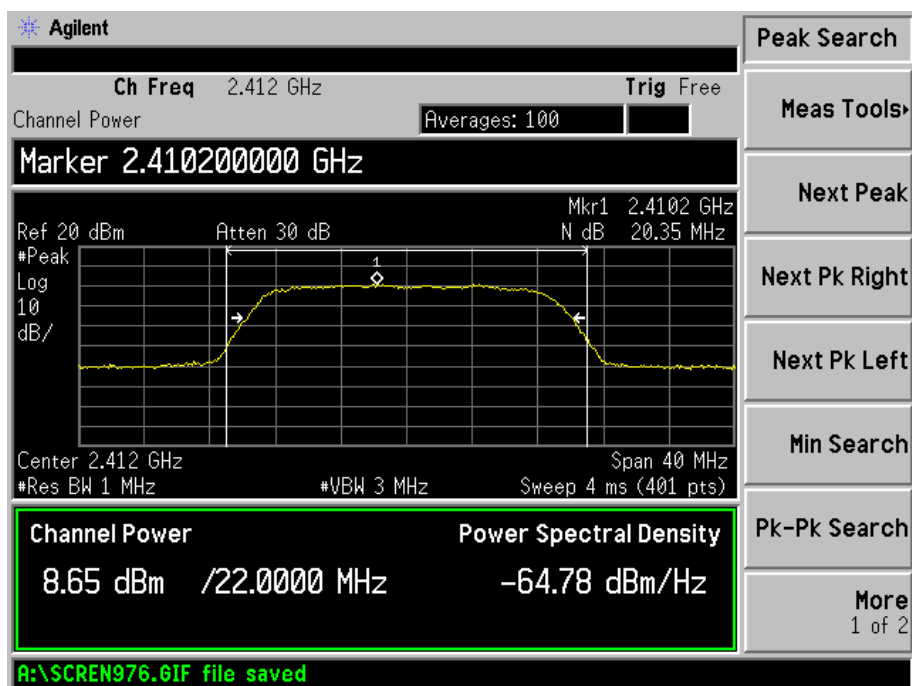


High Channel:

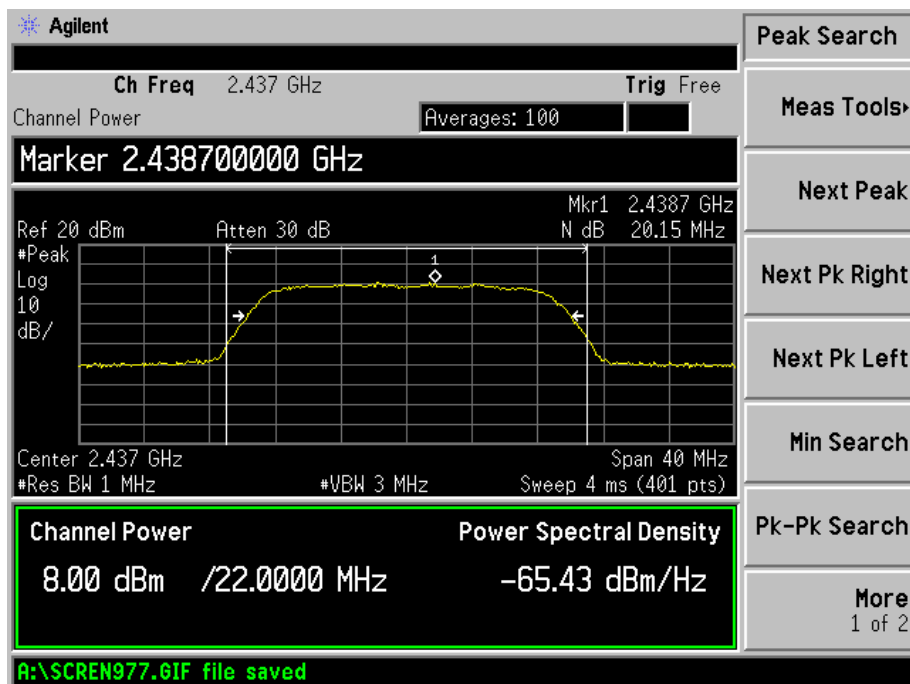


For 802.11n_HT20_MCS 7

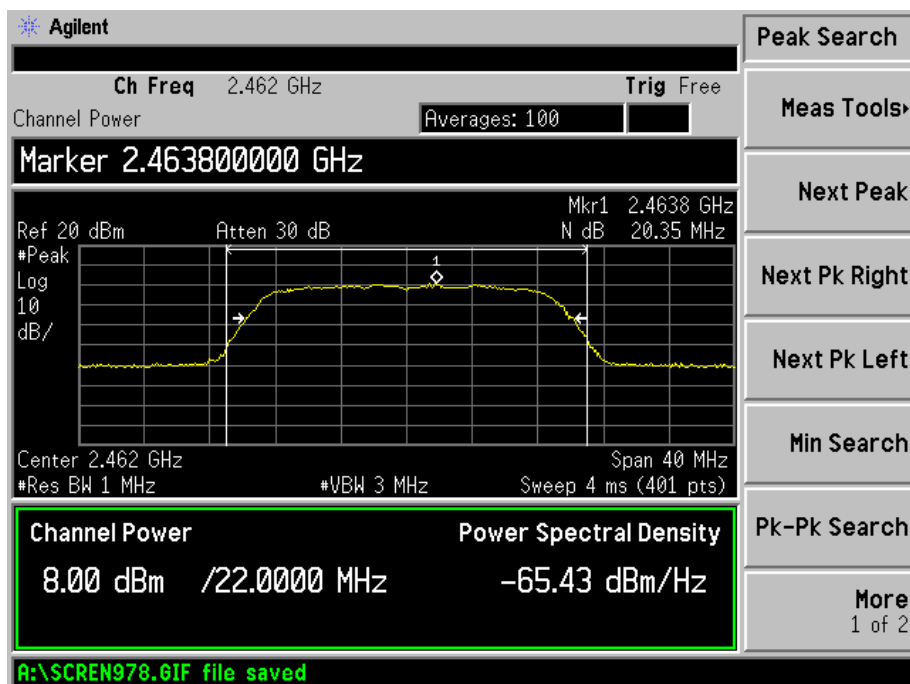
Low Channel:



Middle Channel:

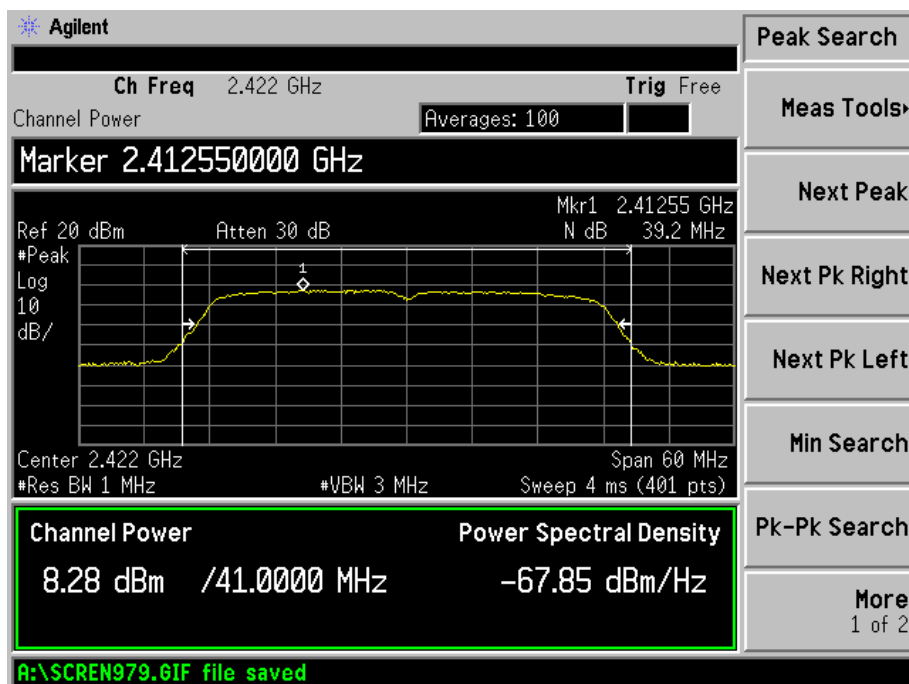


High Channel:

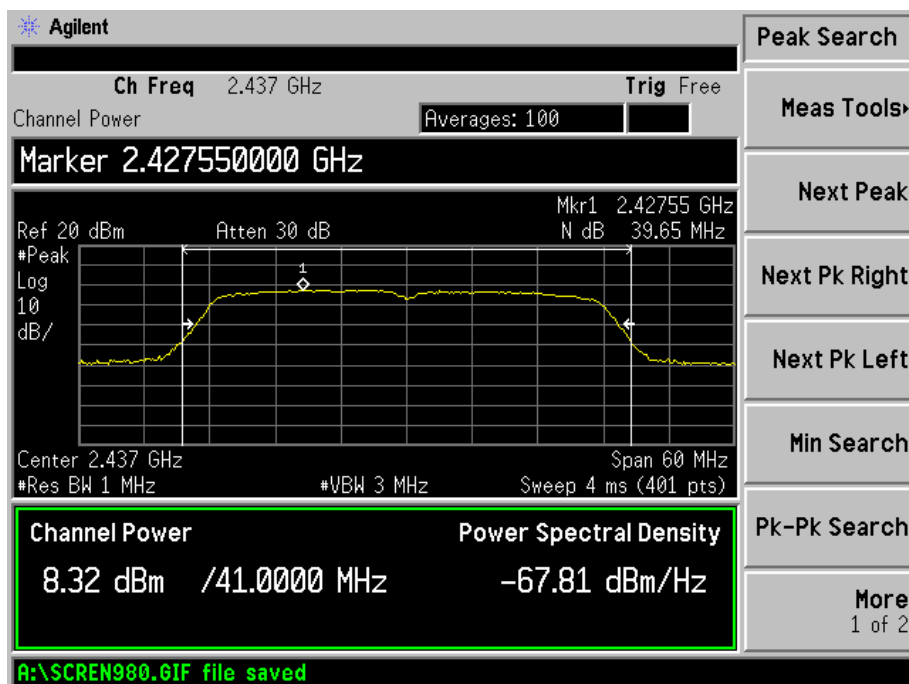


For 802.11n_HT40_MCS 0

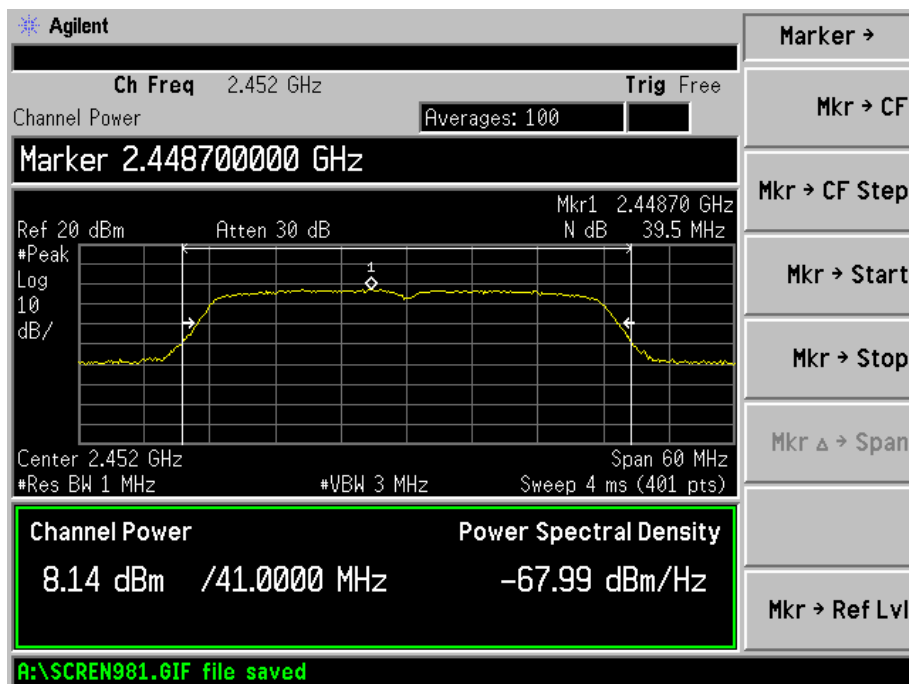
Low Channel:



Middle Channel:

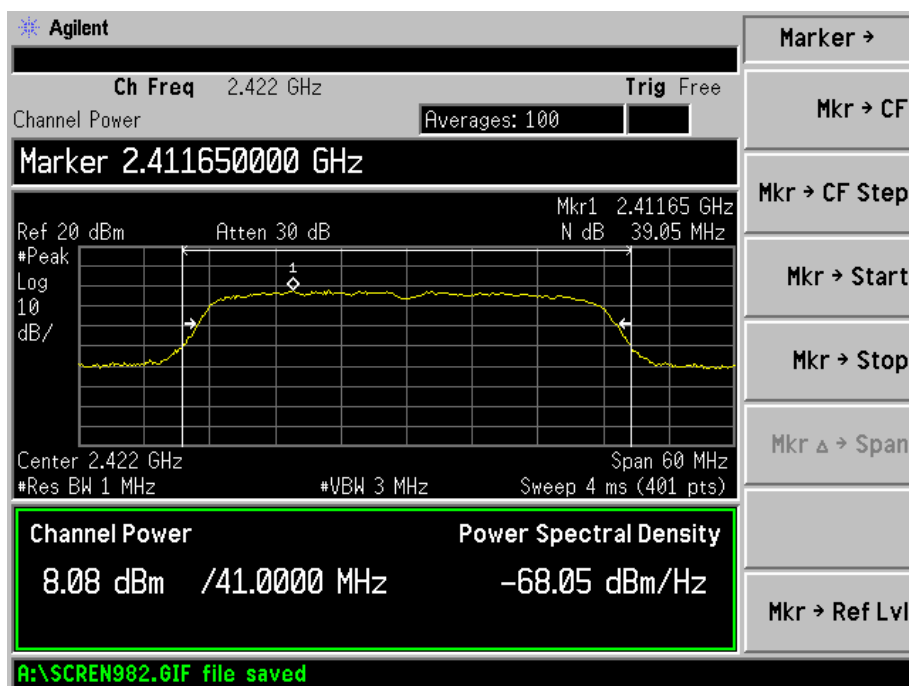


High Channel:

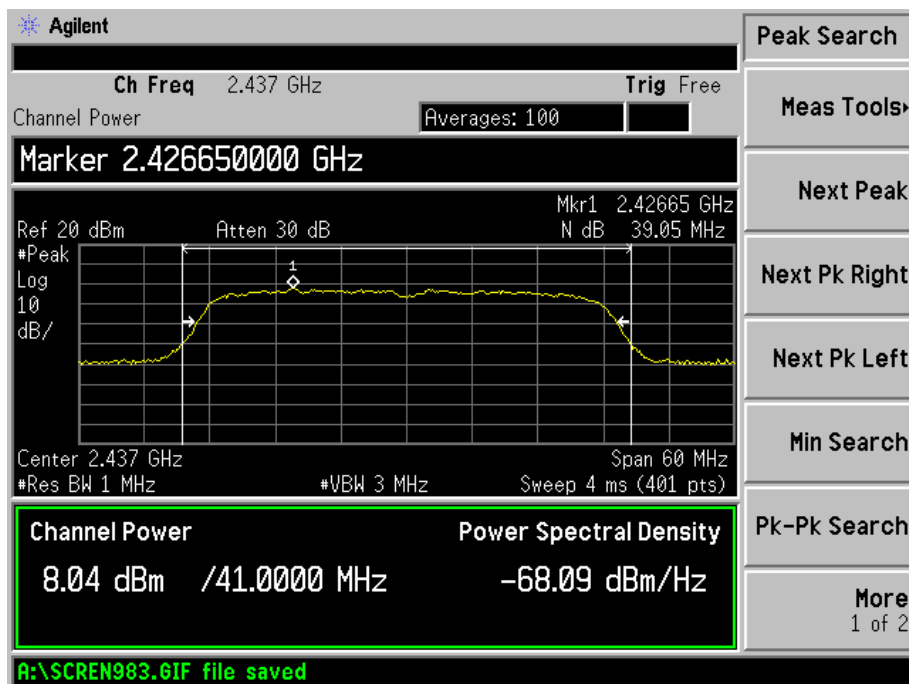


For 802.11n_HT40_MCS 7

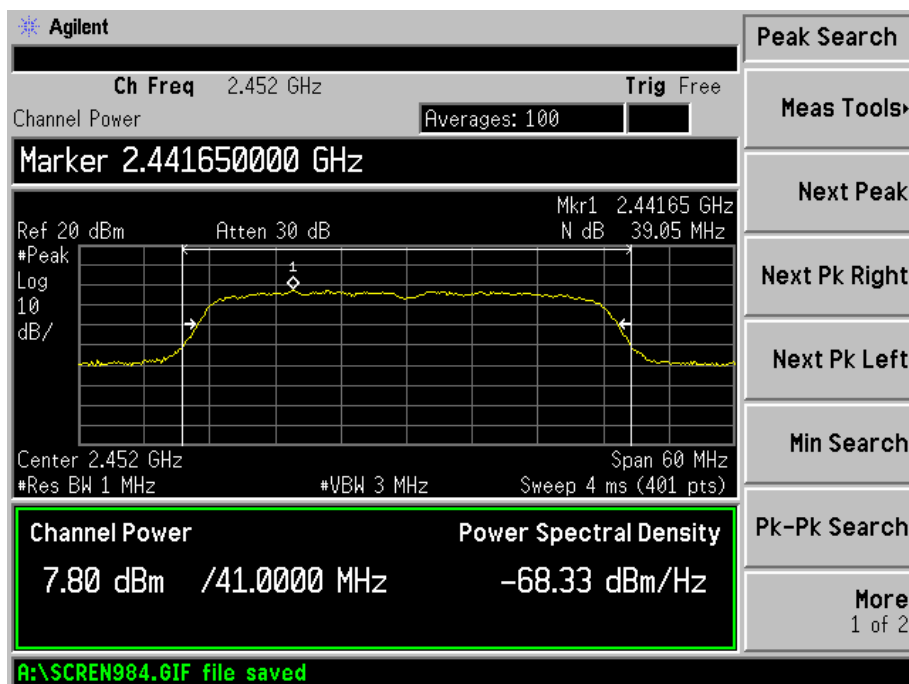
Low Channel:



Middle Channel:



High Channel:



7. FIELD STRENGTH OF SPURIOUS EMISSIONS

7.1 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.

7.2 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

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.

7.3 Test Equipment List and Details

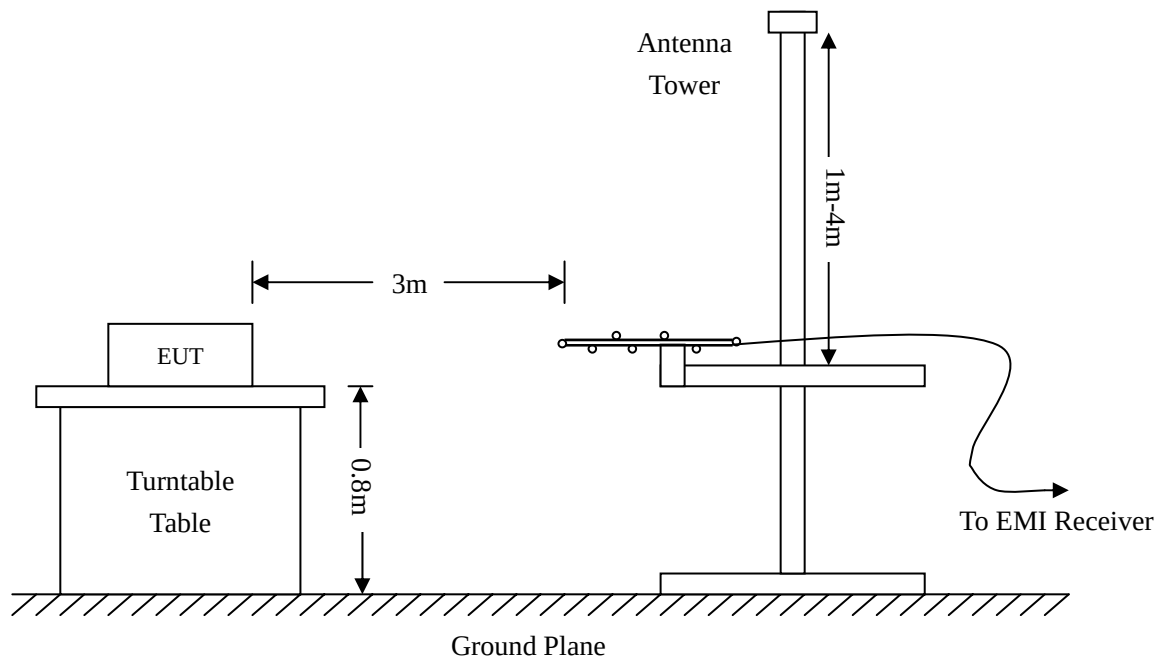
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2011-12-20	2012-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2011-12-20	2012-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2011-12-20	2012-12-19
RF Switch	EM	EMSW18	SW060023	2011-12-20	2012-12-19
Pre-amplifier	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	2012-02-25	2013-02-24
Horn Antenna	ETS	3117	00086197	2012-02-25	2013-02-24
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2012-02-25	2013-02-24

7.4 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.



7.5 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:

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

7.6 Environmental Conditions

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

7.7 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:

-2.64 dB μ V at 912.8620 MHz in the Horizontal polarization, Transmitting 802.11g High Channel test mode with, 9 kHz to 25 GHz, 3Meters

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

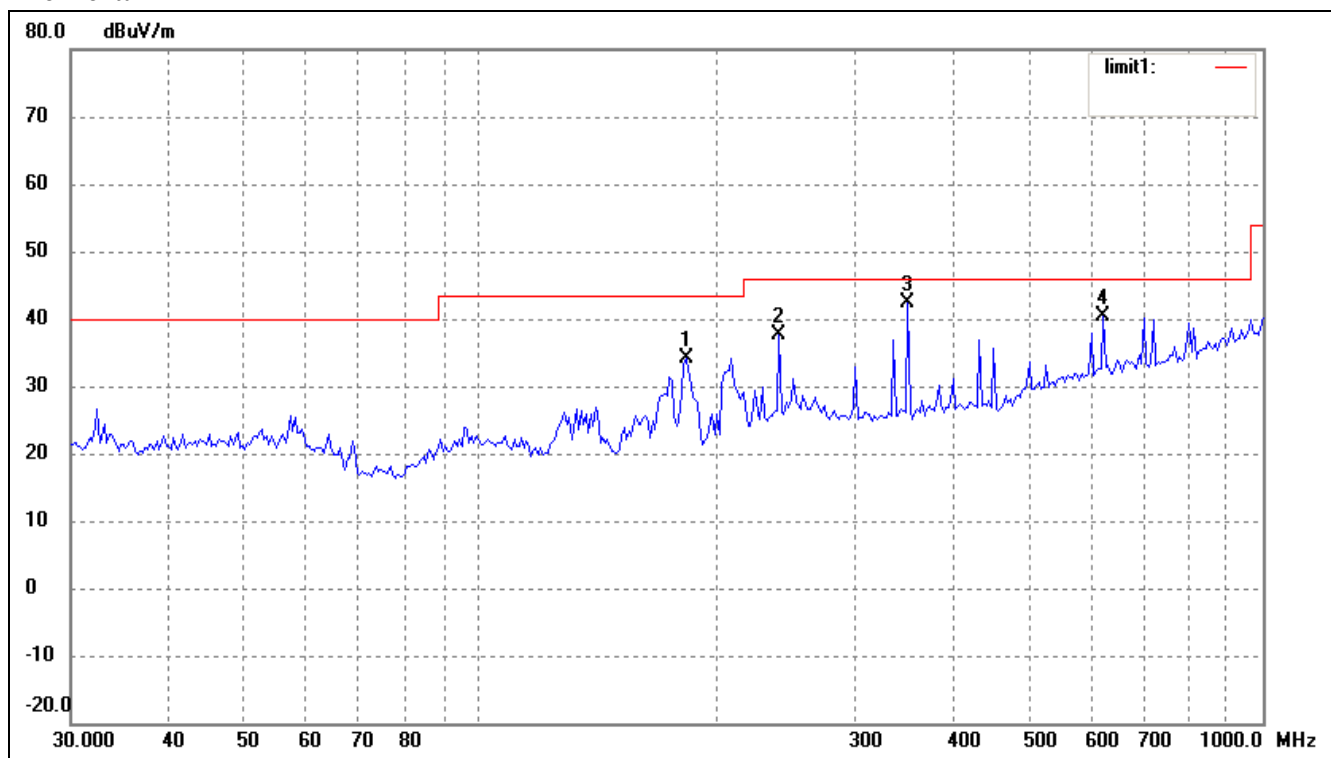
Test Result/Plots:

Spurious Emission From 30 MHz to 1 GHz

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

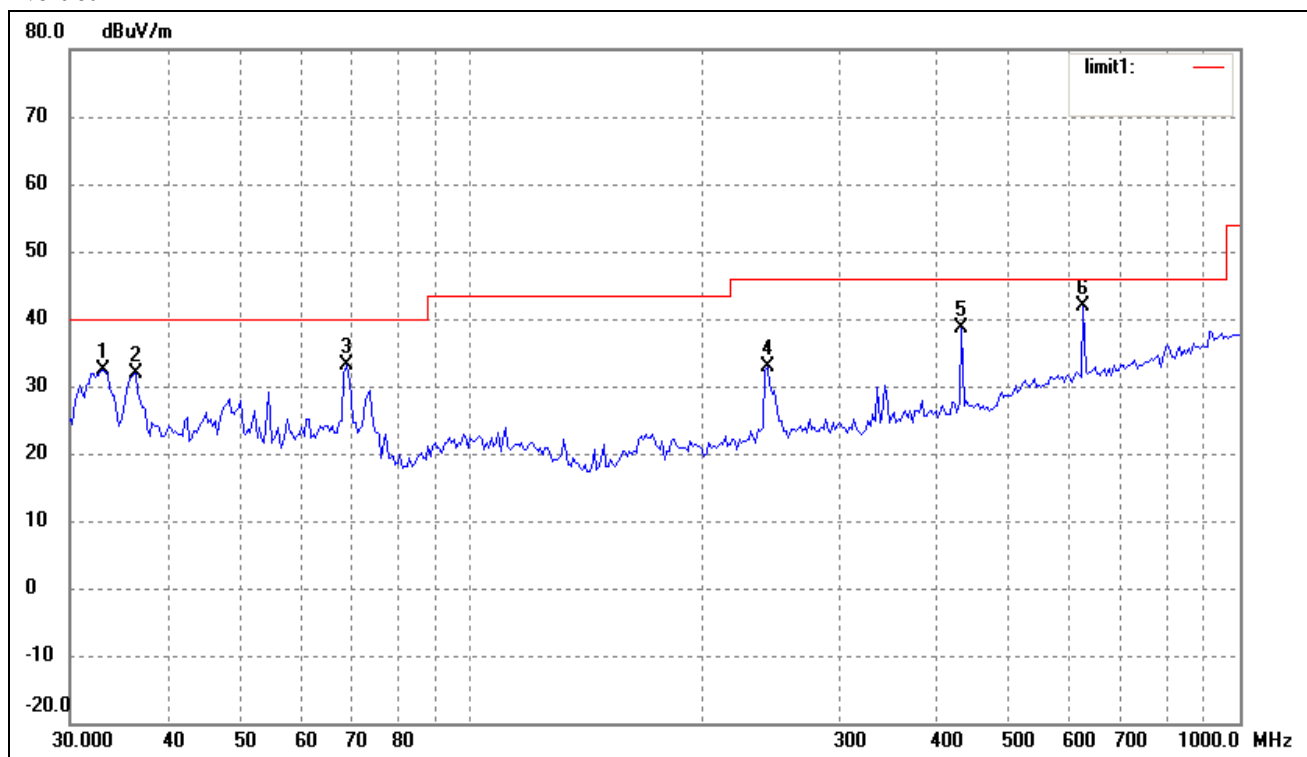
Comment:

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	183.2005	28.17	5.93	34.10	43.50	-9.40	360	100	peak
2	240.8304	29.25	8.45	37.70	46.00	-8.30	360	100	peak
3	351.7079	31.72	10.70	42.42	46.00	-3.58	360	100	peak
4	625.0780	23.54	16.88	40.42	46.00	-5.58	360	100	peak

Vertical



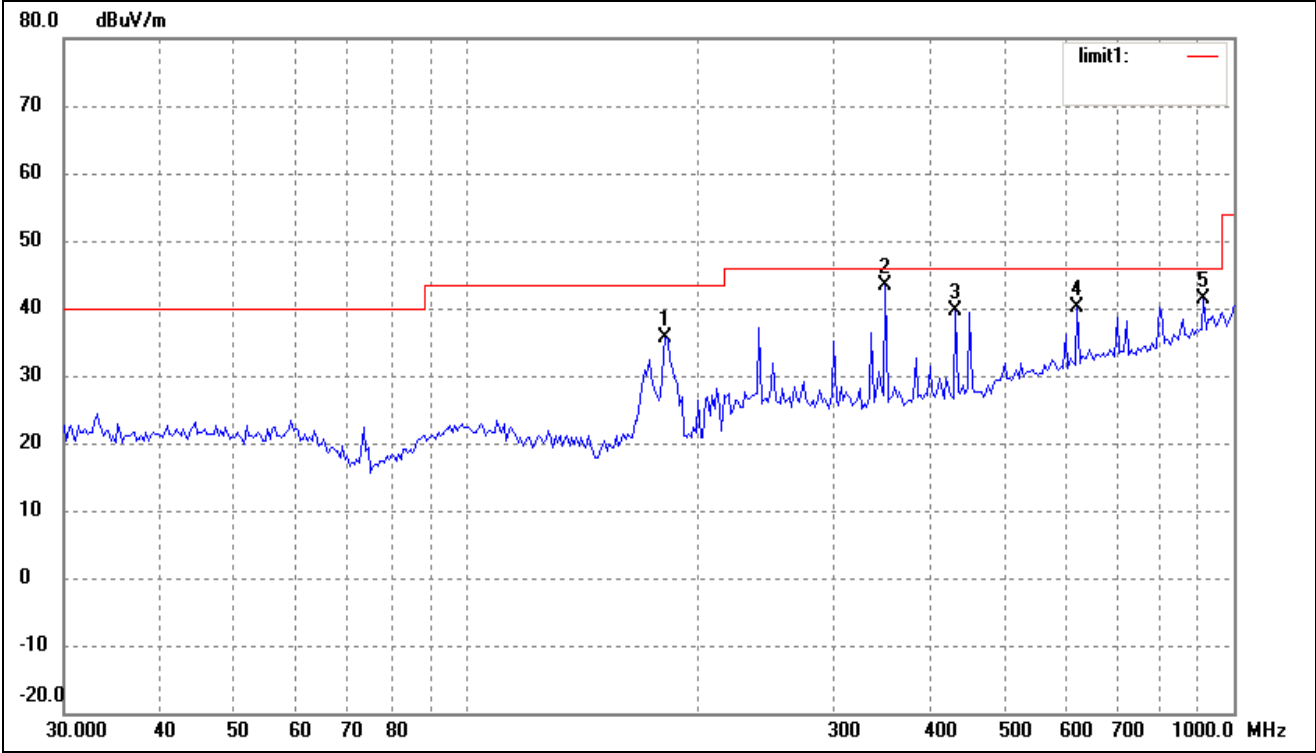
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	33.0950	25.53	6.77	32.30	40.00	-7.70	360	100	peak
2	36.5092	24.69	7.19	31.88	40.00	-8.12	360	100	peak
3	68.6310	28.89	4.15	33.04	40.00	-6.96	360	100	peak
4	242.5253	24.27	8.50	32.77	46.00	-13.23	360	100	peak
5	434.0651	26.80	11.93	38.73	46.00	-7.27	360	100	peak
6	625.0780	24.95	16.88	41.83	46.00	-4.17	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

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

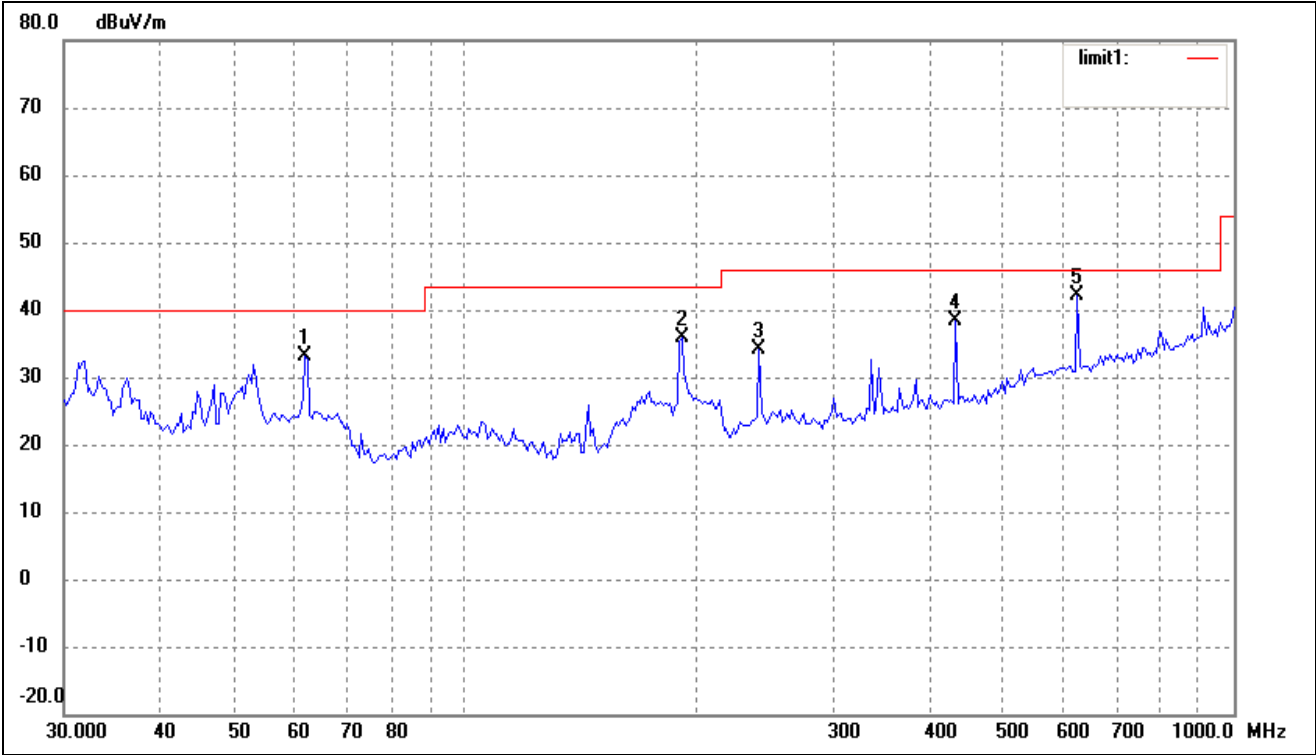
Comment:

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	181.9202	29.81	5.81	35.62	43.50	-7.88	360	100	peak
2	351.7079	32.56	10.70	43.26	46.00	-2.74	360	100	peak
3	434.0651	27.59	11.93	39.52	46.00	-6.48	360	100	peak
4	625.0780	23.21	16.88	40.09	46.00	-5.91	360	100	peak
5	912.8620	20.36	21.14	41.50	46.00	-4.50	360	100	peak

Vertical



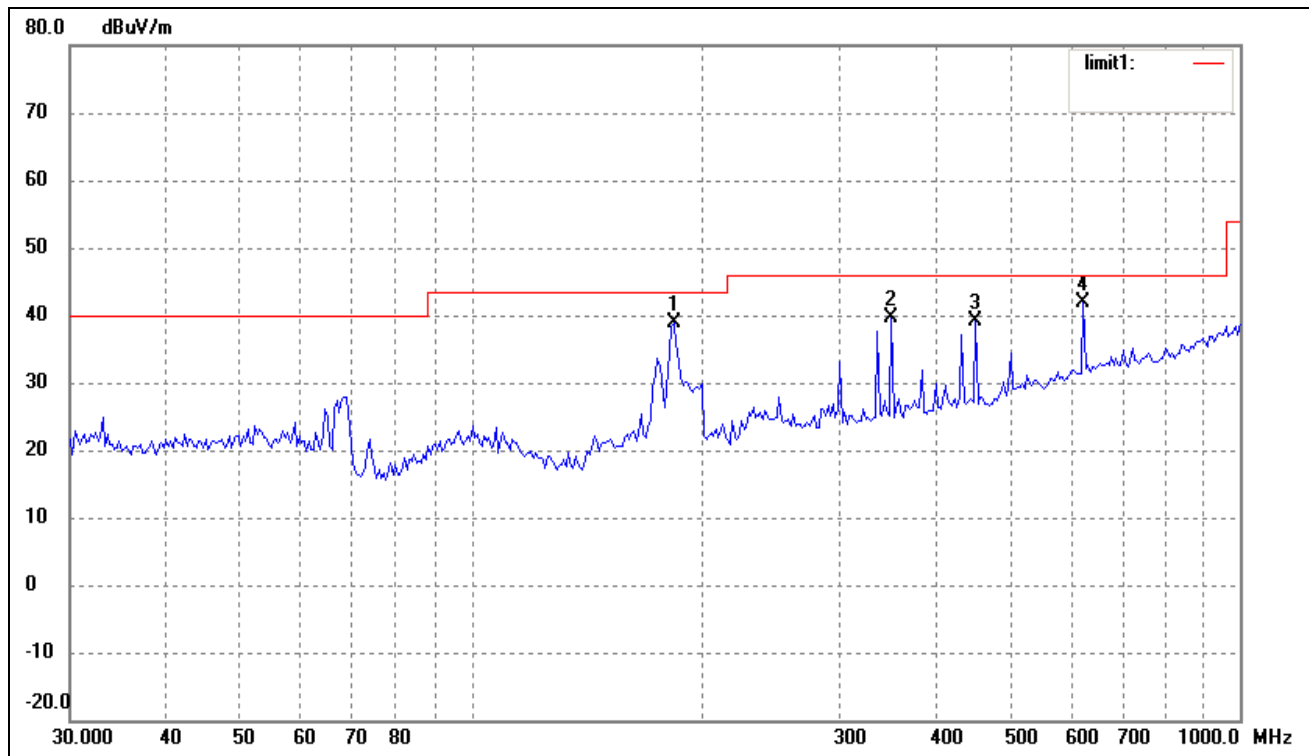
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	61.7781	26.18	6.83	33.01	40.00	-6.99	360	100	peak
2	191.0738	29.27	6.54	35.81	43.50	-7.69	360	100	peak
3	240.8304	25.80	8.45	34.25	46.00	-11.75	360	100	peak
4	434.0651	26.43	11.93	38.36	46.00	-7.64	360	100	peak
5	625.0780	25.36	16.88	42.24	46.00	-3.76	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

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

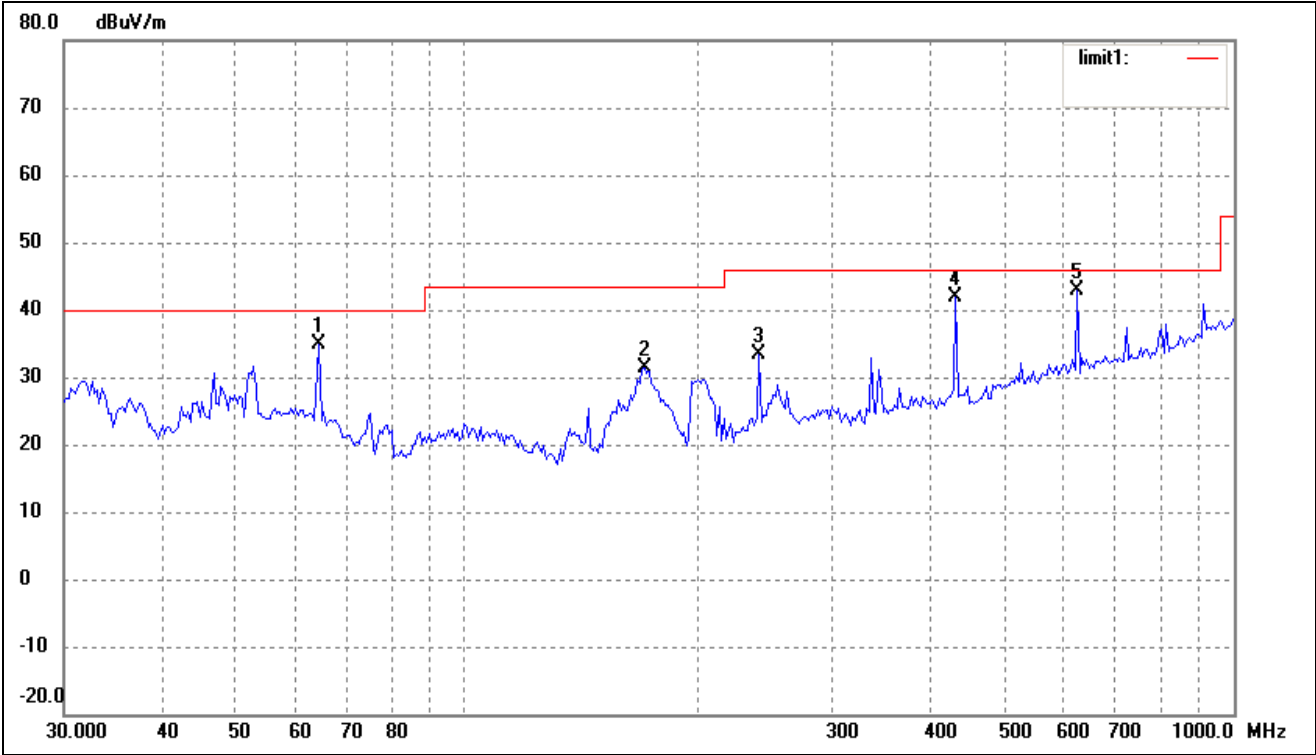
Comment:

Horizontal



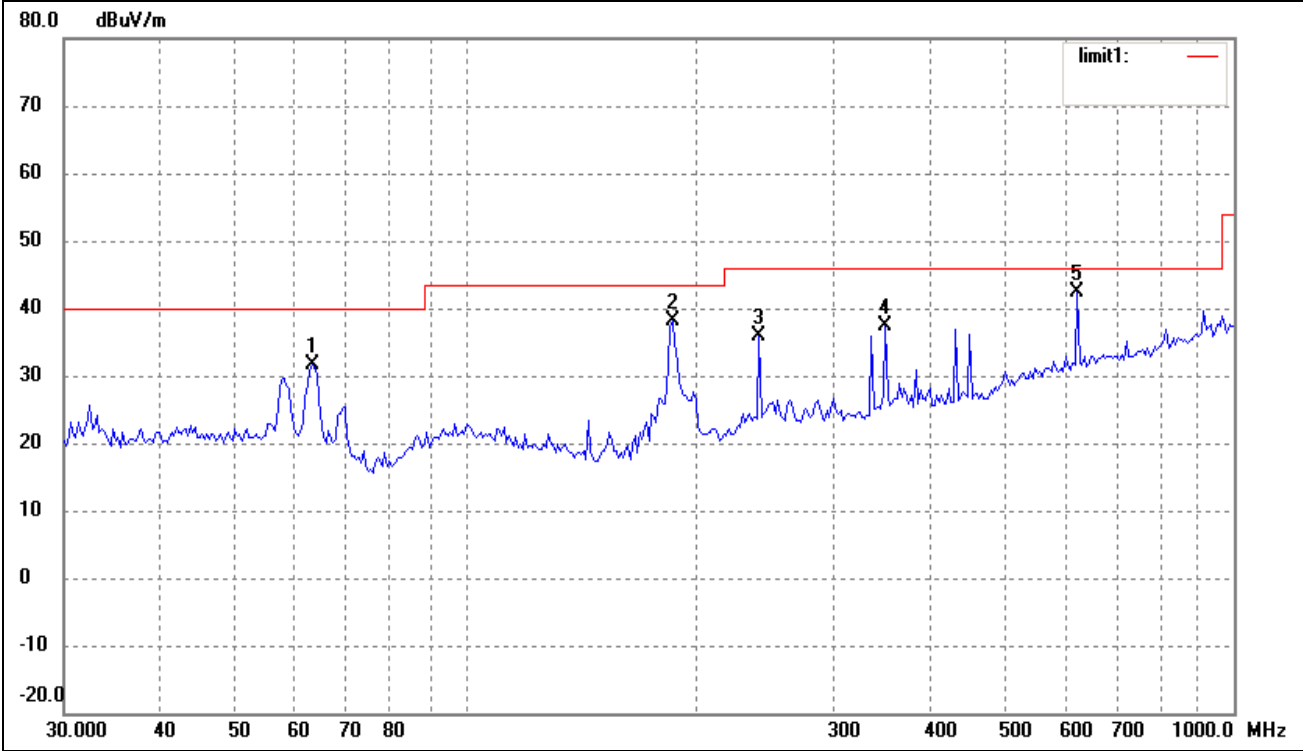
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	183.2005	33.02	5.93	38.95	43.50	-4.55	360	100	peak
2	351.7079	28.98	10.70	39.68	46.00	-6.32	360	100	peak
3	452.7197	27.32	11.91	39.23	46.00	-6.77	360	100	peak
4	625.0780	25.07	16.88	41.95	46.00	-4.05	360	100	peak

Vertical



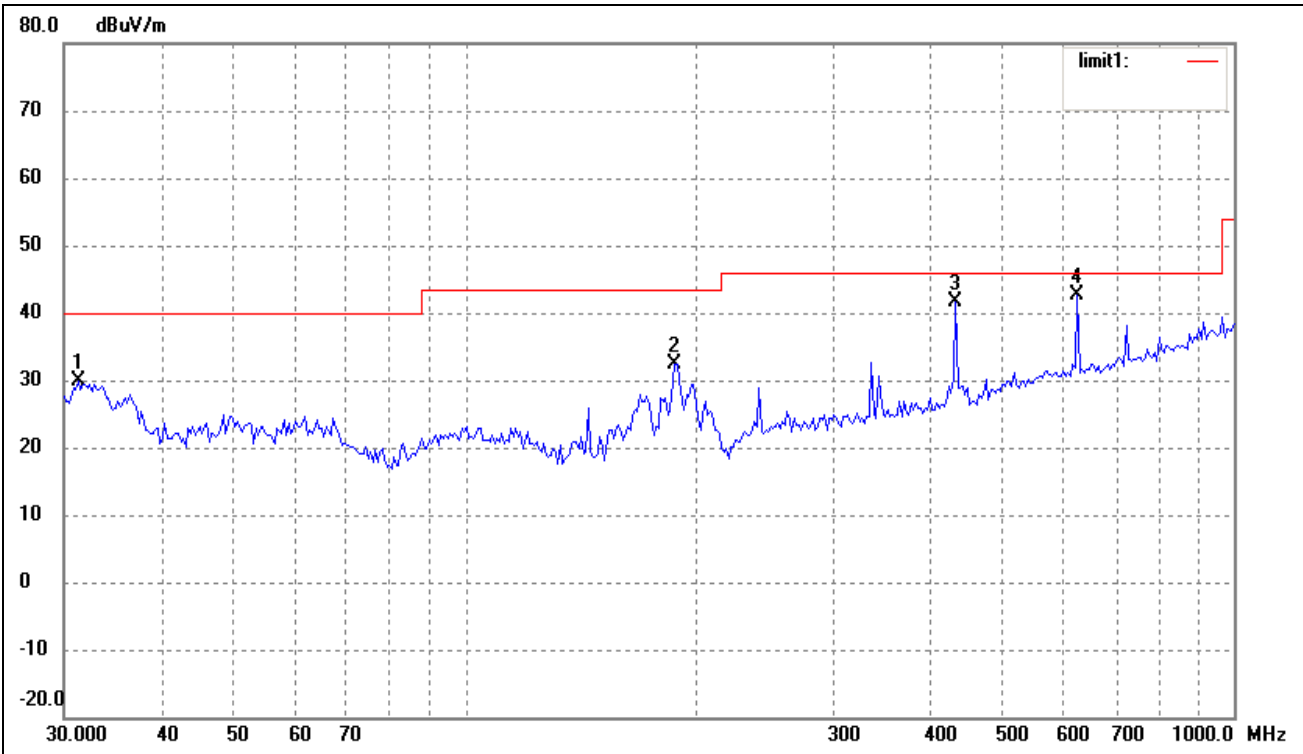
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	64.4331	29.07	5.81	34.88	40.00	-5.12	360	100	peak
2	170.7926	26.46	4.95	31.41	43.50	-12.09	360	100	peak
3	240.8304	24.88	8.45	33.33	46.00	-12.67	360	100	peak
4	434.0651	29.91	11.93	41.84	46.00	-4.16	360	100	peak
5	625.0780	25.92	16.88	42.80	46.00	-3.20	360	100	peak

Spurious Emission From 30 MHz to 1 GHz
Test mode: Transmitting (802.11g) Low Channel (2412MHz)
Comment:
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	63.0916	25.38	6.32	31.70	40.00	-8.30	360	100	peak
2	185.7882	31.92	6.16	38.08	43.50	-5.42	360	100	peak
3	240.8304	27.54	8.45	35.99	46.00	-10.01	360	100	peak
4	351.7079	26.63	10.70	37.33	46.00	-8.67	360	100	peak
5	625.0780	25.51	16.88	42.39	46.00	-3.61	360	100	peak

Vertical



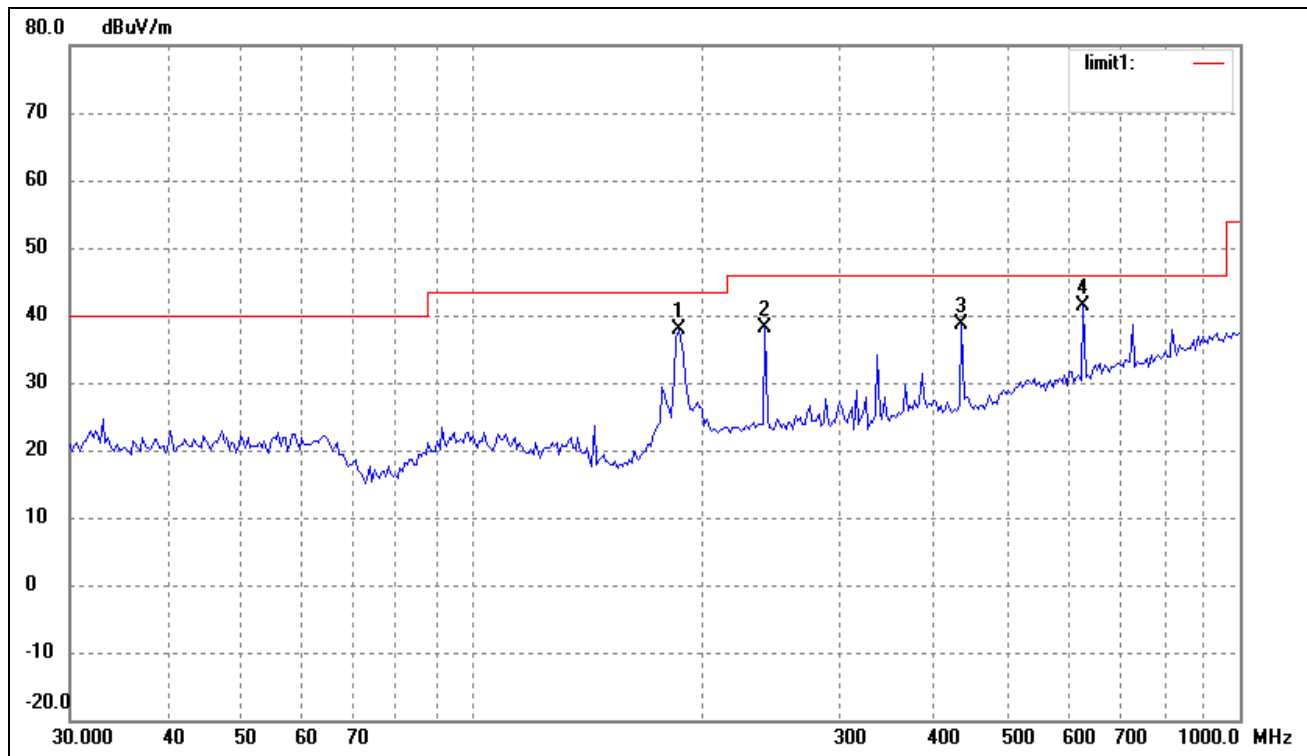
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	31.2893	23.00	6.77	29.77	40.00	-10.23	360	100	peak
2	187.0958	26.22	6.27	32.49	43.50	-11.01	360	100	peak
3	434.0651	29.65	11.93	41.58	46.00	-4.42	360	100	peak
4	625.0780	25.69	16.88	42.57	46.00	-3.43	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

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

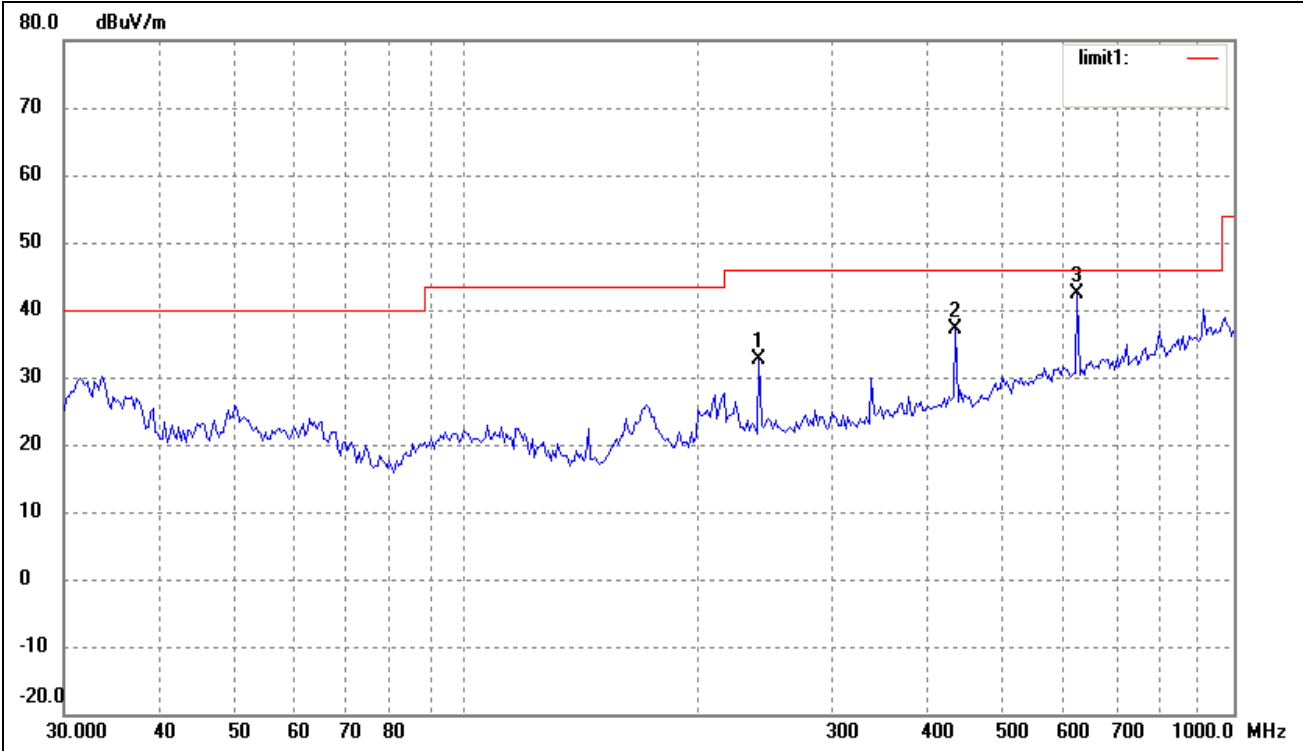
Comment:

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	185.7882	31.80	6.16	37.96	43.50	-5.54	360	100	peak
2	240.8304	29.57	8.45	38.02	46.00	-7.98	360	100	peak
3	434.0651	26.63	11.93	38.56	46.00	-7.44	360	100	peak
4	625.0780	24.56	16.88	41.44	46.00	-4.56	360	100	peak

Vertical



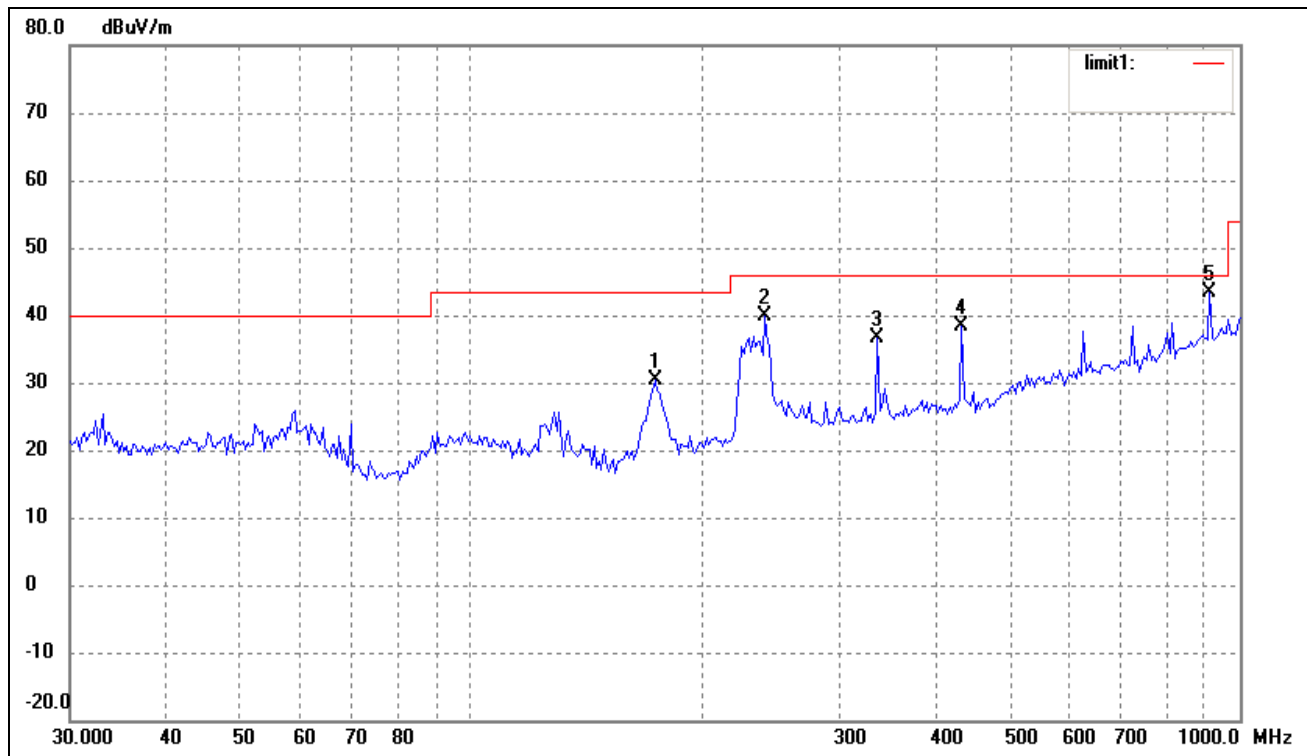
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	240.8304	24.21	8.45	32.66	46.00	-13.34	360	100	peak
2	434.0651	25.17	11.93	37.10	46.00	-8.90	360	100	peak
3	625.0780	25.38	16.88	42.26	46.00	-3.74	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

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

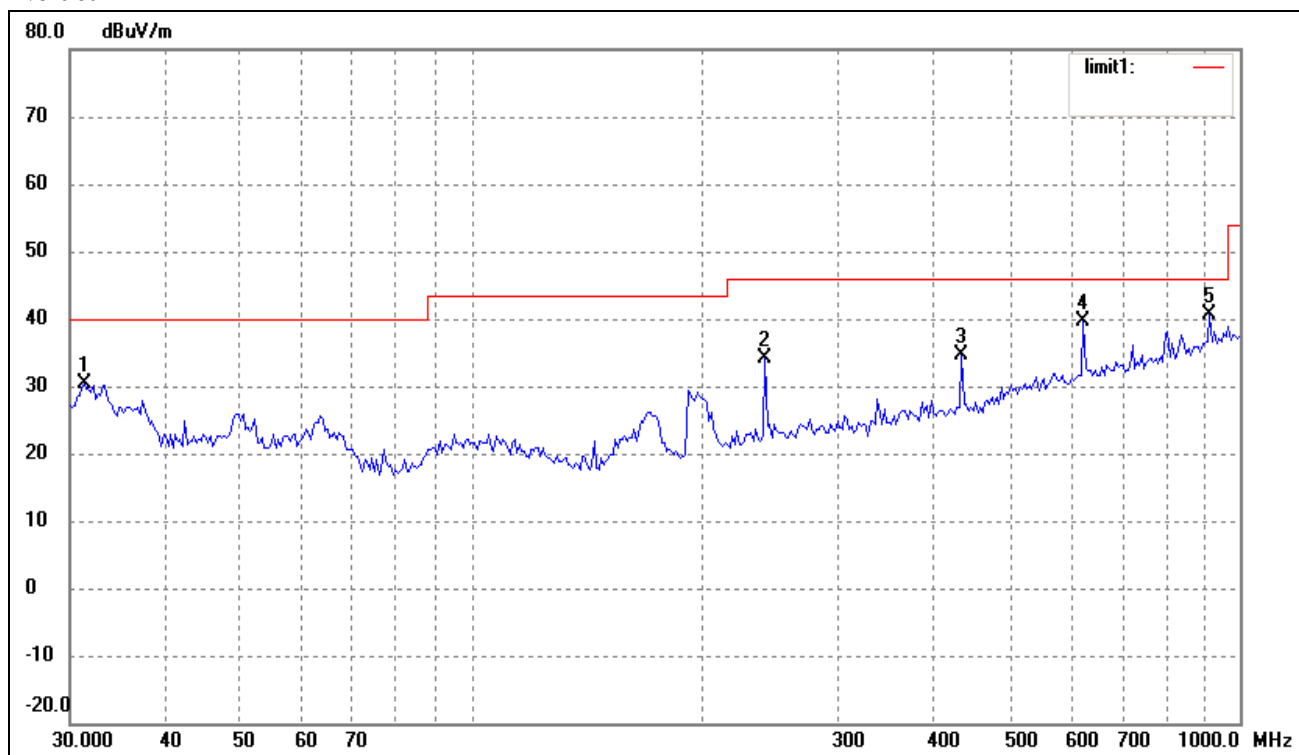
Comment:

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	173.2051	25.16	5.13	30.29	43.50	-13.21	360	100	peak
2	240.8304	31.43	8.45	39.88	46.00	-6.12	360	100	peak
3	337.2155	26.24	10.37	36.61	46.00	-9.39	360	100	peak
4	434.0651	26.50	11.93	38.43	46.00	-7.57	360	100	peak
5	912.8620	22.22	21.14	43.36	46.00	-2.64	360	100	peak

Vertical



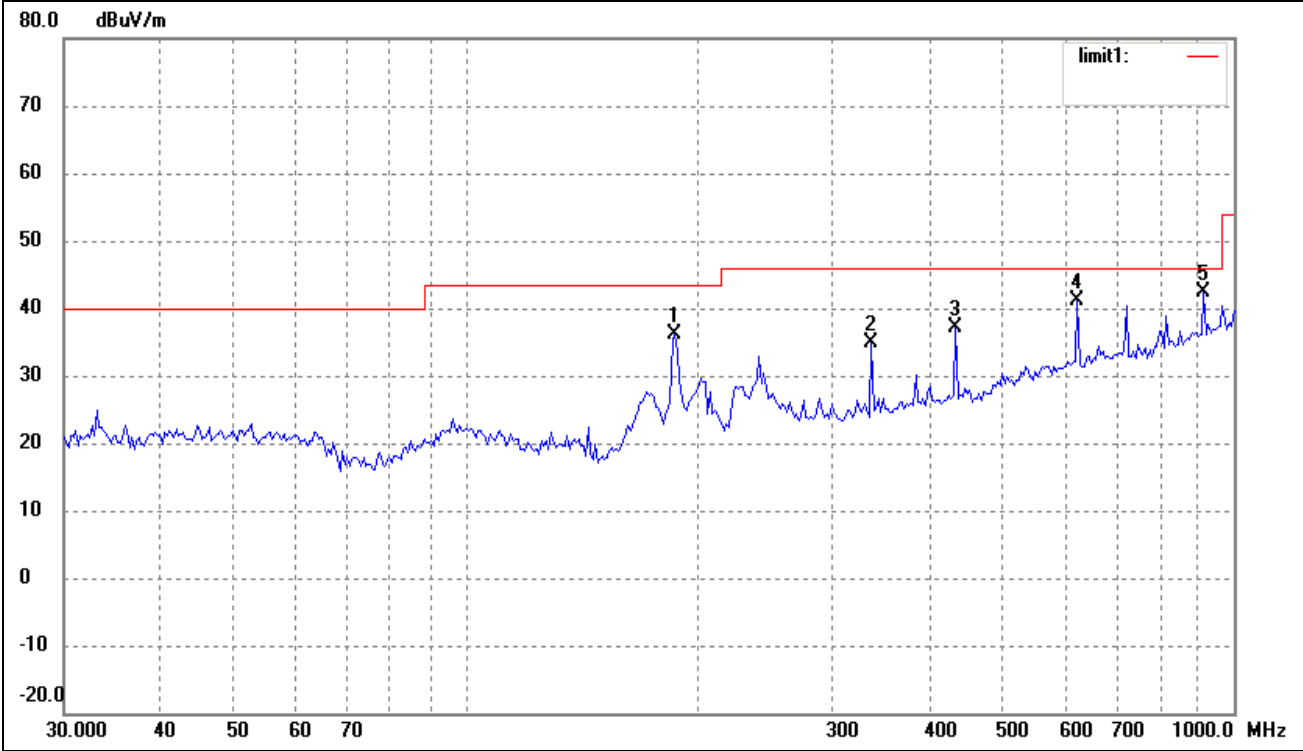
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	31.2893	23.63	6.77	30.40	40.00	-9.60	360	100	peak
2	240.8304	25.59	8.45	34.04	46.00	-11.96	360	100	peak
3	434.0651	22.79	11.93	34.72	46.00	-11.28	360	100	peak
4	625.0780	22.73	16.88	39.61	46.00	-6.39	360	100	peak
5	912.8620	19.43	21.14	40.57	46.00	-5.43	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n_HT20) Low Channel (2412MHz)

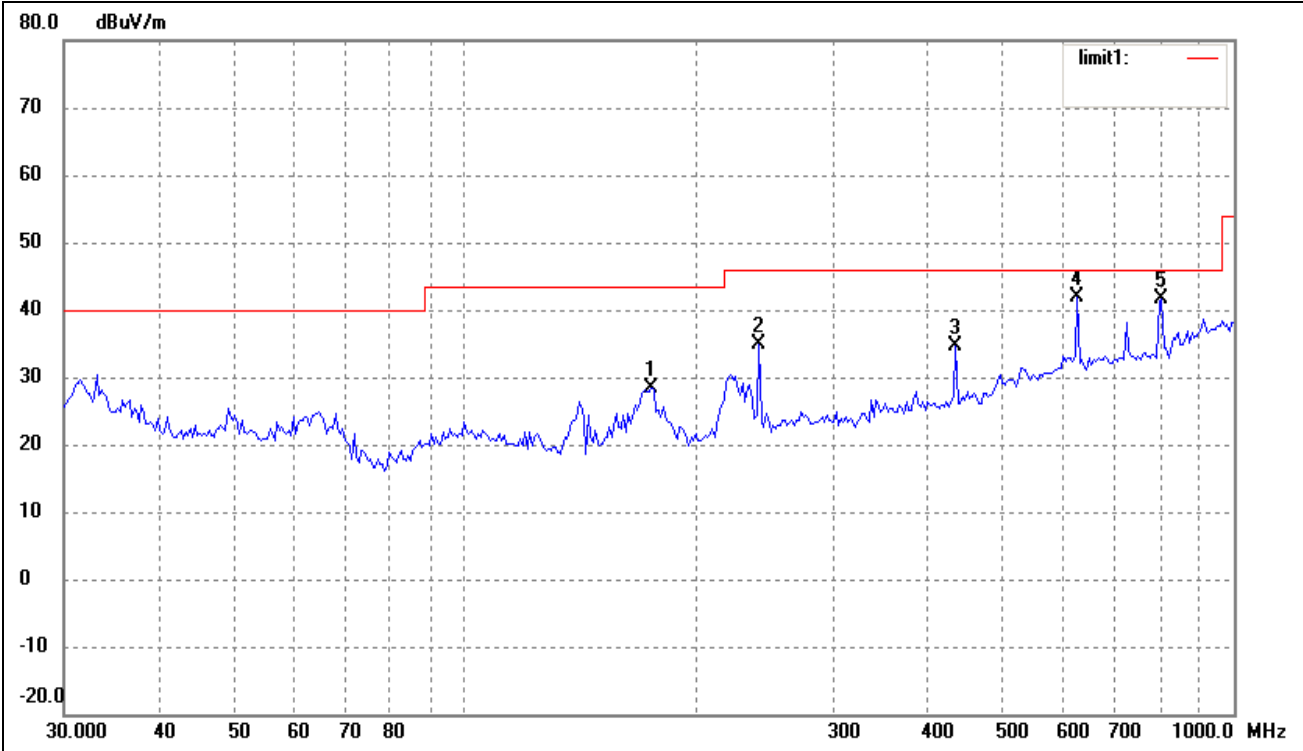
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	187.0958	29.85	6.27	36.12	43.50	-7.38	360	100	peak
2	337.2155	24.39	10.37	34.76	46.00	-11.24	360	100	peak
3	434.0651	25.15	11.93	37.08	46.00	-8.92	360	100	peak
4	625.0780	24.16	16.88	41.04	46.00	-4.96	360	100	peak
5	912.8620	21.32	21.14	42.46	46.00	-3.54	360	100	peak

Vertical



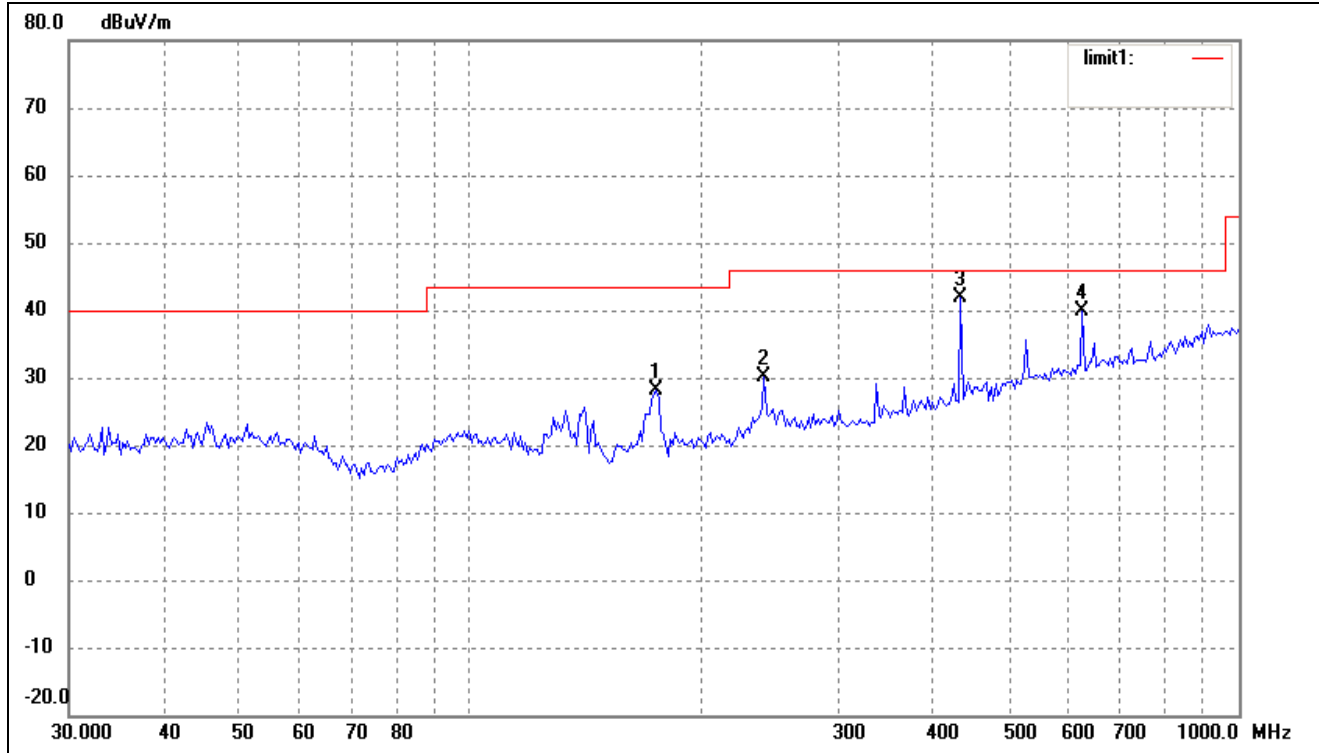
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	174.4241	23.18	5.22	28.40	43.50	-15.10	360	100	peak
2	240.8304	26.44	8.45	34.89	46.00	-11.11	360	100	peak
3	434.0651	22.69	11.93	34.62	46.00	-11.38	360	100	peak
4	625.0780	25.08	16.88	41.96	46.00	-4.04	360	100	peak
5	804.6028	22.56	19.10	41.66	46.00	-4.34	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n_HT20) Middle Channel (2437MHz)

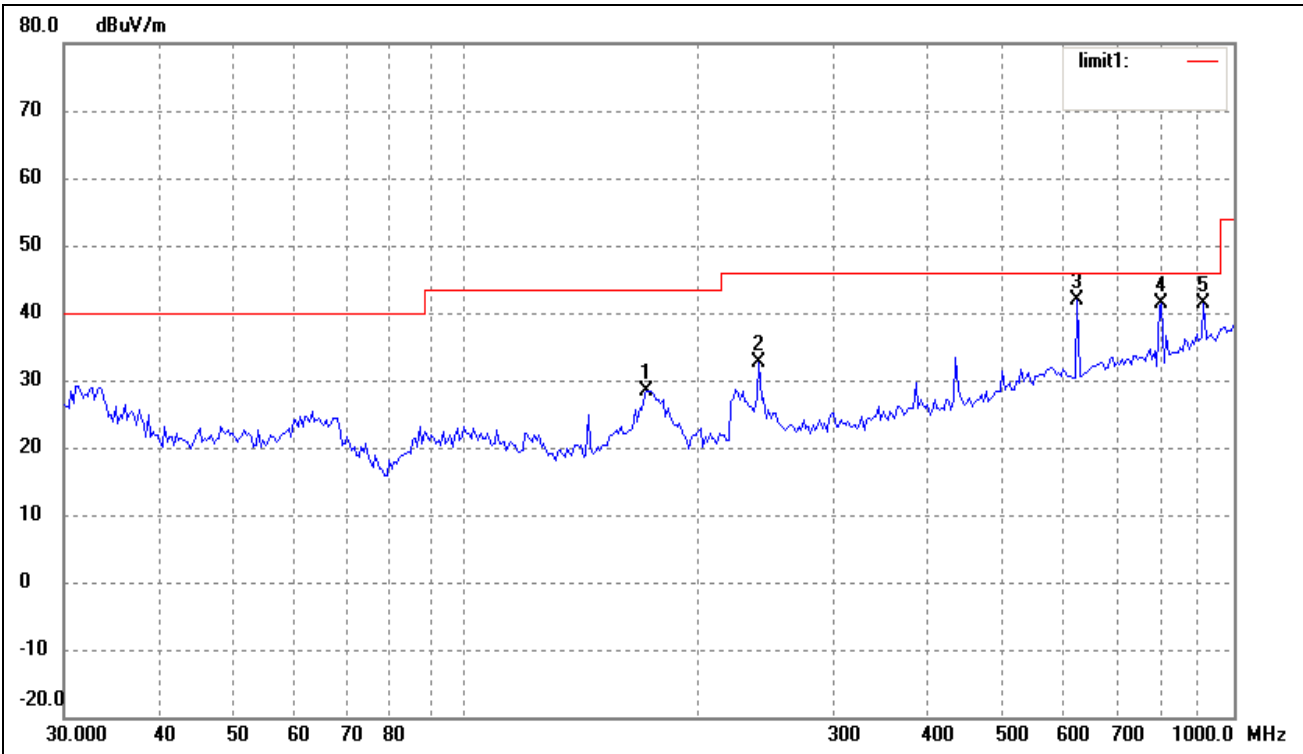
Comment:

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	174.4241	22.93	5.22	28.15	43.50	-15.35	360	100	peak
2	240.8304	21.78	8.45	30.23	46.00	-15.77	360	100	peak
3	434.0651	30.02	11.93	41.95	46.00	-4.05	360	100	peak
4	625.0780	22.96	16.88	39.84	46.00	-6.16	360	100	peak

Vertical



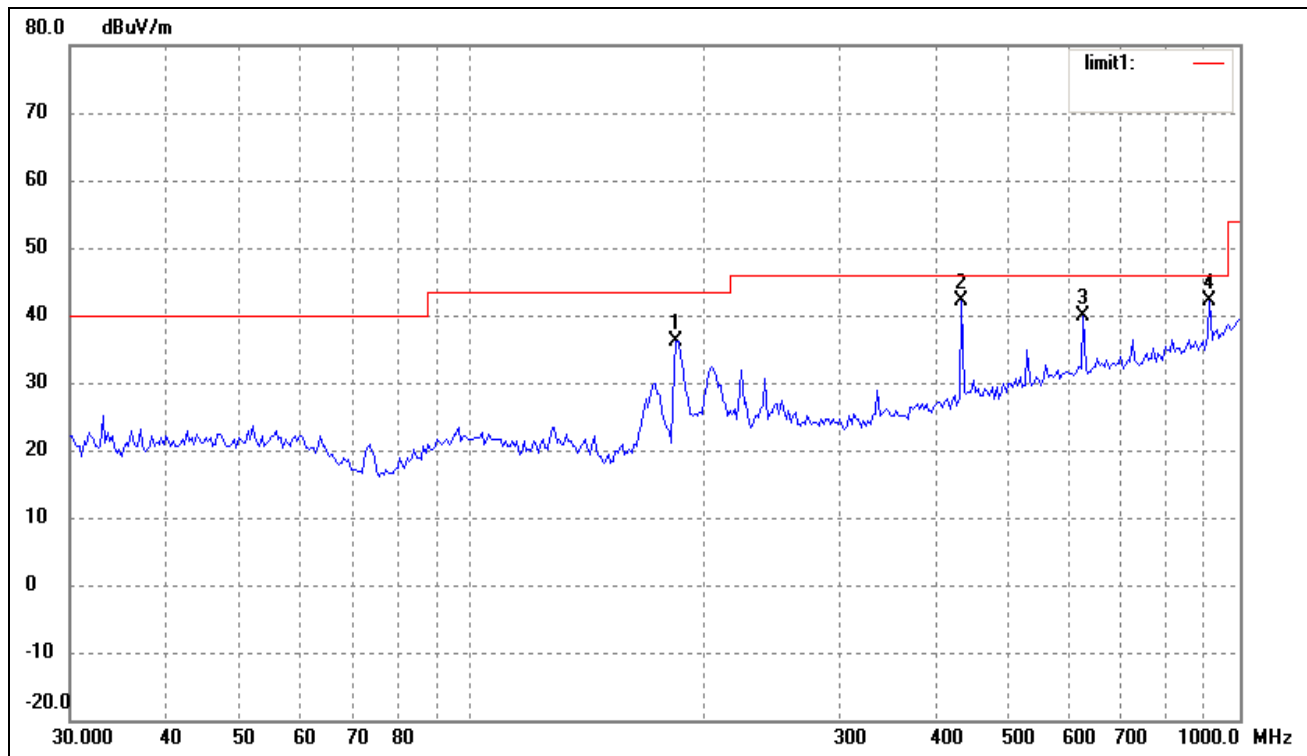
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	171.9946	23.45	5.04	28.49	43.50	-15.01	360	100	peak
2	240.8304	24.13	8.45	32.58	46.00	-13.42	360	100	peak
3	625.0780	25.10	16.88	41.98	46.00	-4.02	360	100	peak
4	804.6028	22.27	19.10	41.37	46.00	-4.63	360	100	peak
5	912.8620	20.31	21.14	41.45	46.00	-4.55	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n_HT20) High Channel (2462MHz)

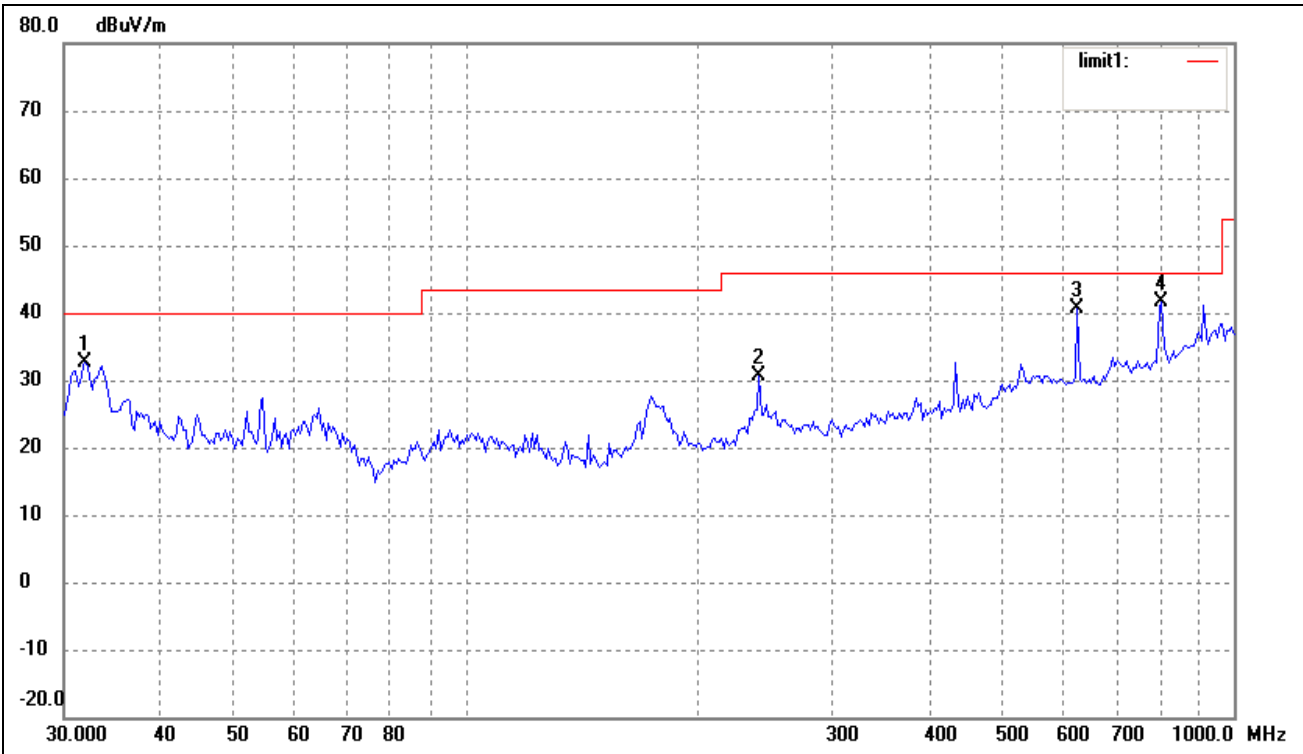
Comment:

Horizontal



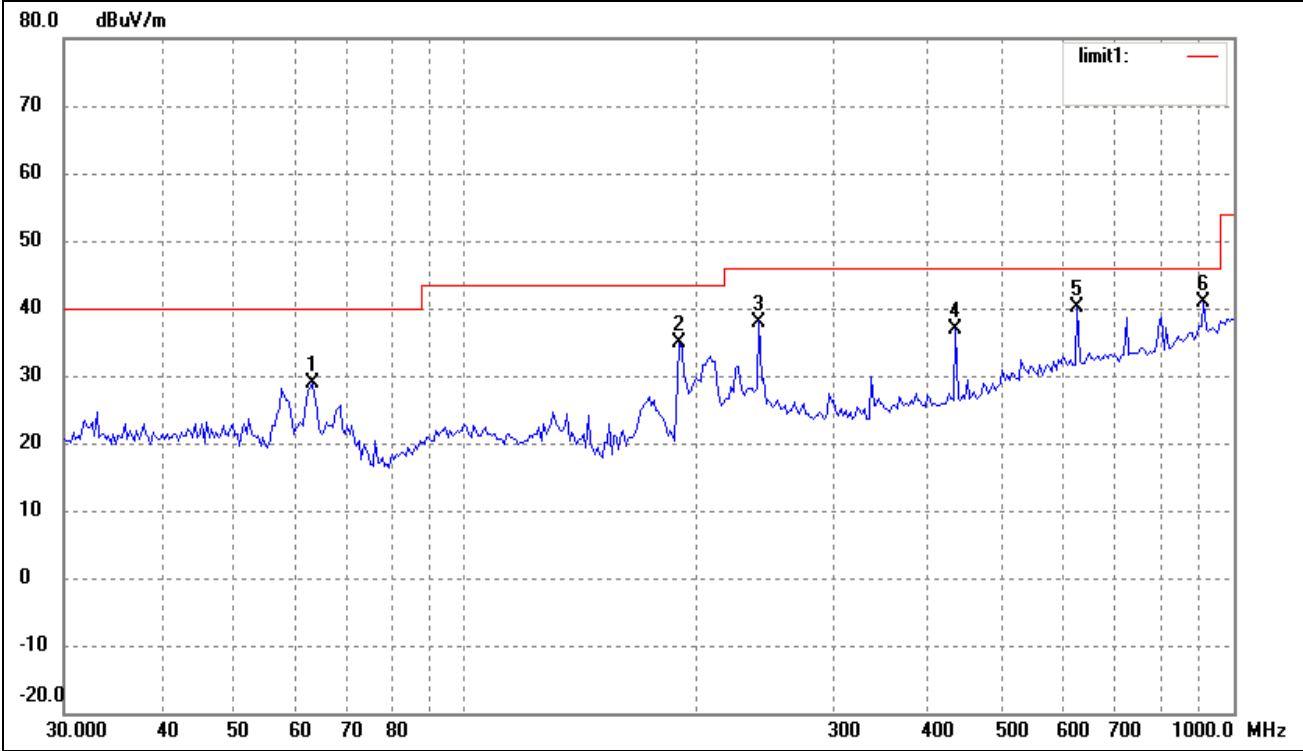
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	184.4898	30.19	6.05	36.24	43.50	-7.26	360	100	peak
2	434.0651	30.28	11.93	42.21	46.00	-3.79	360	100	peak
3	625.0780	23.06	16.88	39.94	46.00	-6.06	360	100	peak
4	912.8620	20.87	21.14	42.01	46.00	-3.99	360	100	peak

Vertical



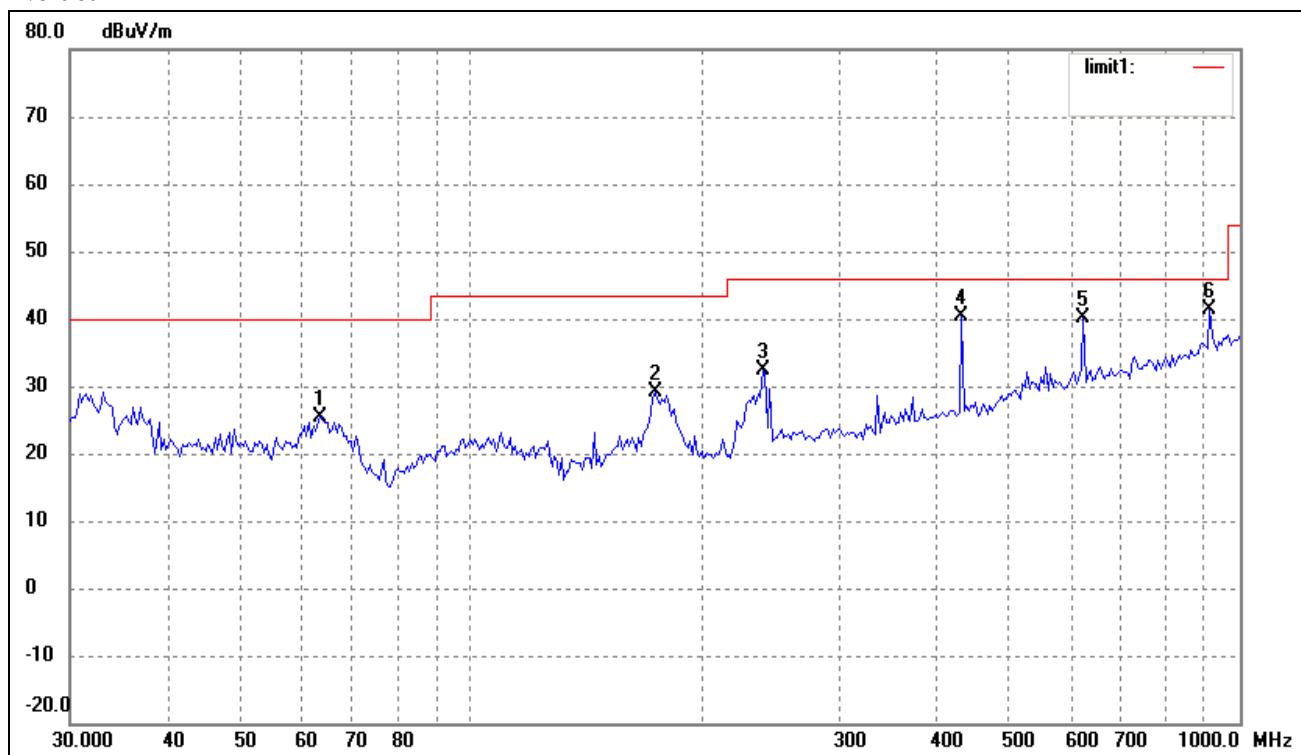
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	31.9546	25.78	6.77	32.55	40.00	-7.45	360	100	peak
2	240.8304	22.12	8.45	30.57	46.00	-15.43	360	100	peak
3	625.0780	23.78	16.88	40.66	46.00	-5.34	360	100	peak
4	804.6028	22.58	19.10	41.68	46.00	-4.32	360	100	peak

Spurious Emission From 30 MHz to 1 GHz
Test mode: Transmitting (802.11n_HT40) Low Channel (2412MHz)
Comment:
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	63.0916	22.63	6.32	28.95	40.00	-11.05	360	100	peak
2	189.7385	28.31	6.52	34.83	43.50	-8.67	360	100	peak
3	240.8304	29.55	8.45	38.00	46.00	-8.00	360	100	peak
4	434.0651	25.01	11.93	36.94	46.00	-9.06	360	100	peak
5	625.0780	23.18	16.88	40.06	46.00	-5.94	360	100	peak
6	912.8620	19.73	21.14	40.87	46.00	-5.13	360	100	peak

Vertical



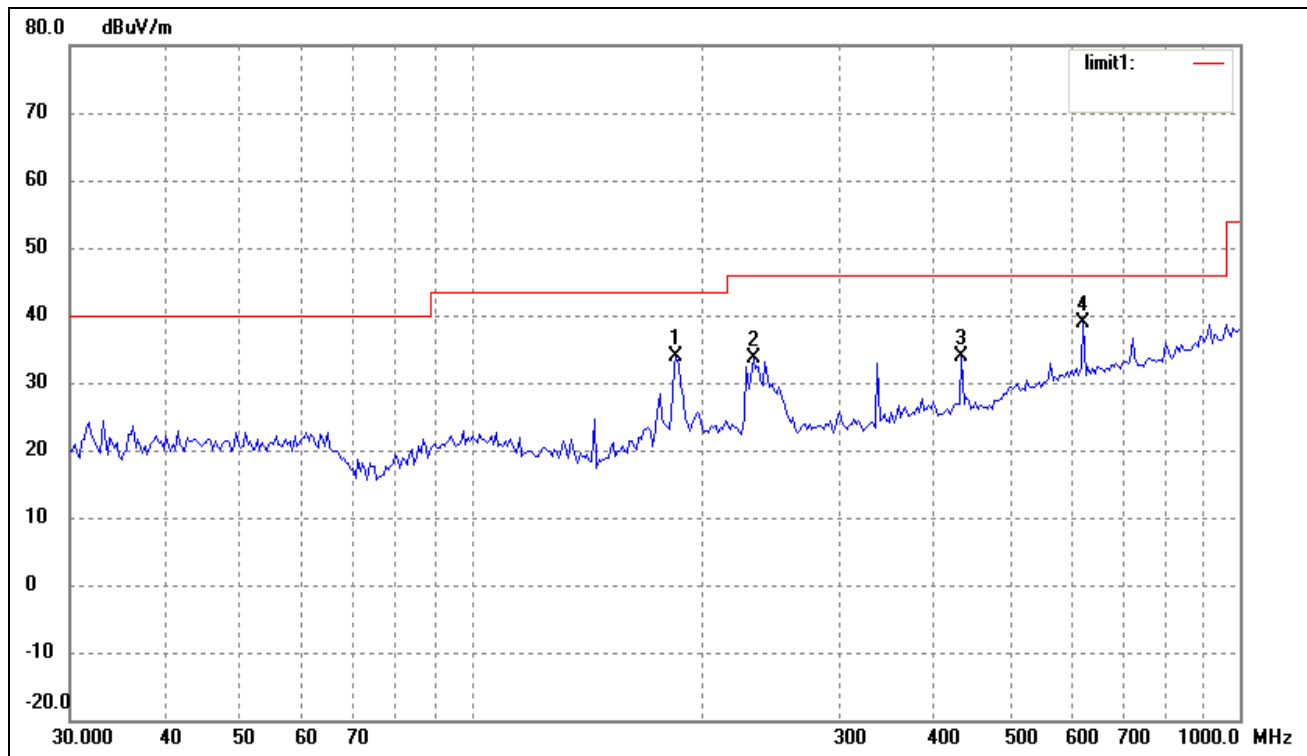
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	63.5356	19.35	6.15	25.50	40.00	-14.50	360	100	peak
2	173.2051	24.10	5.13	29.23	43.50	-14.27	360	100	peak
3	239.1473	23.97	8.38	32.35	46.00	-13.65	360	100	peak
4	434.0651	28.41	11.93	40.34	46.00	-5.66	360	100	peak
5	625.0780	23.15	16.88	40.03	46.00	-5.97	360	100	peak
6	912.8620	20.27	21.14	41.41	46.00	-4.59	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n_HT40) Middle Channel (2437MHz)

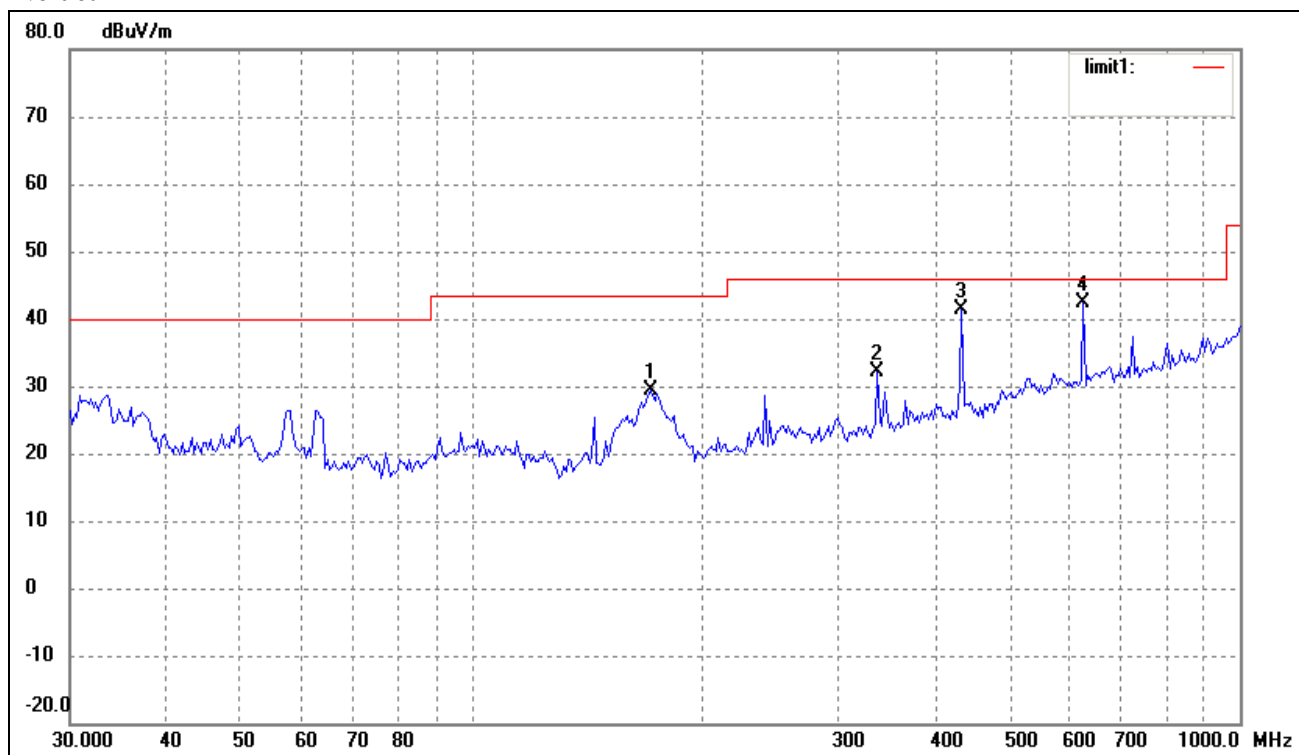
Comment:

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	184.4898	27.90	6.05	33.95	43.50	-9.55	360	100	peak
2	232.5318	25.58	8.01	33.59	46.00	-12.41	360	100	peak
3	434.0651	21.90	11.93	33.83	46.00	-12.17	360	100	peak
4	625.0780	22.10	16.88	38.98	46.00	-7.02	360	100	peak

Vertical



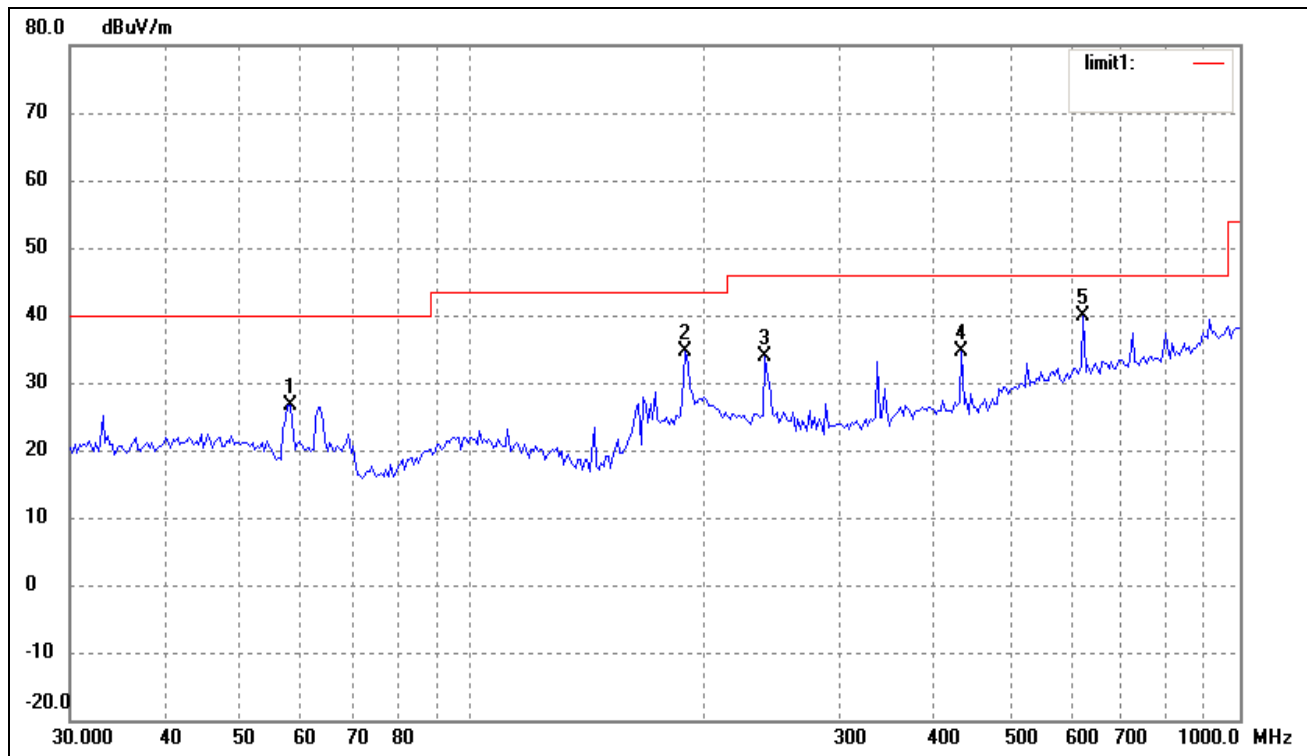
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	170.7926	24.46	4.95	29.41	43.50	-14.09	360	100	peak
2	337.2155	21.84	10.37	32.21	46.00	-13.79	360	100	peak
3	434.0651	29.48	11.93	41.41	46.00	-4.59	360	100	peak
4	625.0780	25.55	16.88	42.43	46.00	-3.57	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n_HT40) High Channel (2462MHz)

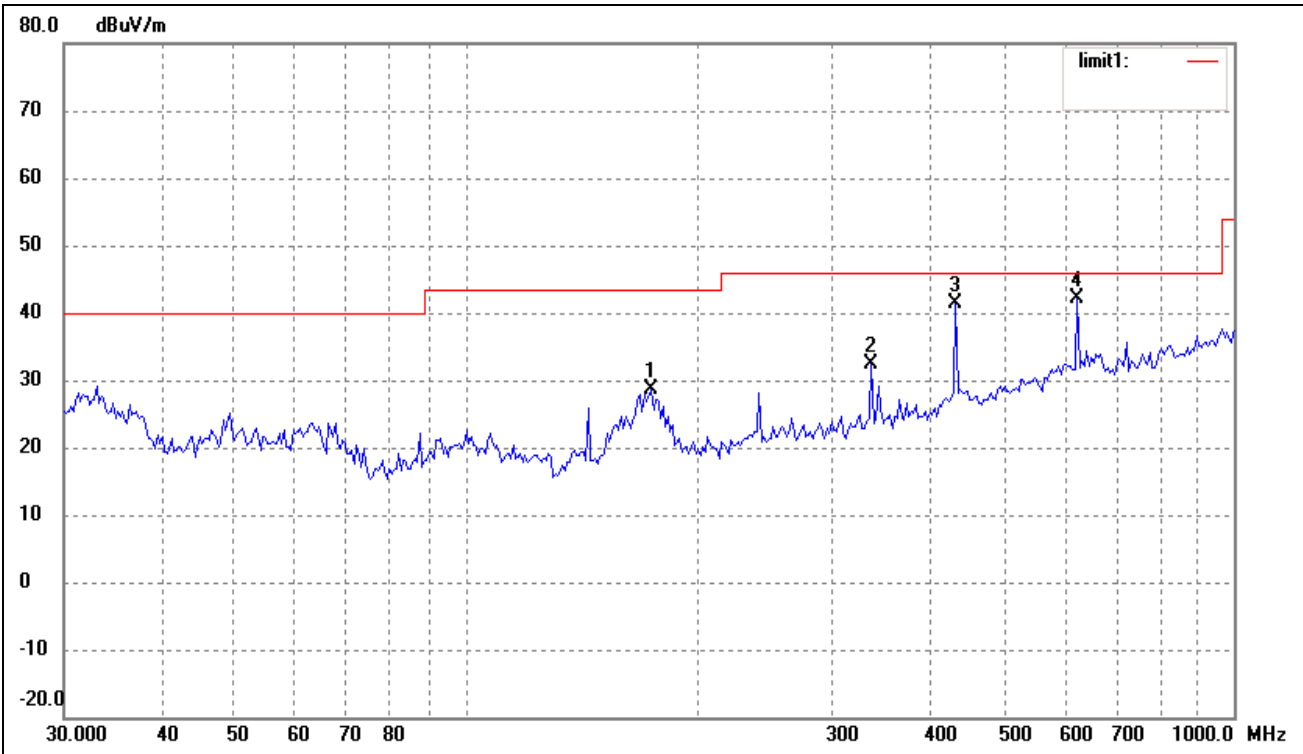
Comment:

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	57.9993	19.09	7.63	26.72	40.00	-13.28	360	100	peak
2	189.7385	28.05	6.52	34.57	43.50	-8.93	360	100	peak
3	240.8304	25.45	8.45	33.90	46.00	-12.10	360	100	peak
4	434.0651	22.67	11.93	34.60	46.00	-11.40	360	100	peak
5	625.0780	22.91	16.88	39.79	46.00	-6.21	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	174.4241	23.32	5.22	28.54	43.50	-14.96	360	100	peak
2	337.2155	22.11	10.37	32.48	46.00	-13.52	360	100	peak
3	434.0651	29.49	11.93	41.42	46.00	-4.58	360	100	peak
4	625.0780	25.31	16.88	42.19	46.00	-3.81	360	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	49.90	90	v	34.1	5.2	33.0	56.2	74	-17.80
4824.0	PK	49.70	270	h	34.1	5.2	33.0	56.0	74	-18.00
7236.0	PK	48.30	180	v	37.4	6.1	33.5	58.3	74	-15.70
7236.0	PK	47.40	45	h	37.4	6.1	33.5	57.4	74	-16.60
4824.0	AV	32.90	270	v	34.1	5.2	33.0	39.2	54	-14.80
4824.0	AV	34.10	90	h	34.1	5.2	33.0	40.4	54	-13.60
7236.0	AV	29.20	50	v	37.4	6.1	33.5	39.2	54	-14.80
7236.0	AV	30.00	60	h	37.4	6.1	33.5	40.0	54	-14.00
Middle Channel (2437MHz)										
4874.0	PK	50.30	45	v	34.1	5.2	33.0	56.6	74	-17.40
4874.0	PK	49.30	270	h	34.1	5.2	33.0	55.6	74	-18.40
7311.0	PK	47.00	45	v	37.4	6.1	33.5	57.0	74	-17.00
7311.0	PK	46.90	180	h	37.4	6.1	33.5	56.9	74	-17.10
4874.0	AV	33.90	270	v	34.1	5.2	33.0	40.2	54	-13.80
4874.0	AV	33.20	90	h	34.1	5.2	33.0	39.5	54	-14.50
7311.0	AV	28.80	60	v	37.4	6.1	33.5	38.8	54	-15.20
7311.0	AV	29.10	45	h	37.4	6.1	33.5	39.1	54	-14.90
High Channel (2462MHz)										
4924.0	PK	50.30	270	v	34.1	5.2	33.0	56.6	74	-17.40
4924.0	PK	50.90	45	h	34.1	5.2	33.0	57.2	74	-16.80
7386.0	PK	46.40	180	v	37.4	6.1	33.5	56.4	74	-17.60
7386.0	PK	45.40	45	h	37.4	6.1	33.5	55.4	74	-18.60
4924.0	AV	29.90	90	v	34.1	5.2	33.0	36.2	54	-17.80
4924.0	AV	31.80	270	h	34.1	5.2	33.0	38.1	54	-15.90
7386.0	AV	29.90	60	v	37.4	6.1	33.5	39.9	54	-14.10
7386.0	AV	29.20	60	h	37.4	6.1	33.5	39.2	54	-14.80

*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	50.70	90	V	34.1	5.2	33.0	57.0	74	-17.00
4824.0	PK	50.90	270	H	34.1	5.2	33.0	57.2	74	-16.80
7236.0	PK	46.30	180	V	37.4	6.1	33.5	56.3	74	-17.70
7236.0	PK	47.40	45	H	37.4	6.1	33.5	57.4	74	-16.60
4824.0	AV	34.00	270	V	34.1	5.2	33.0	40.3	54	-13.70
4824.0	AV	35.10	90	H	34.1	5.2	33.0	41.4	54	-12.60
7236.0	AV	28.60	45	V	37.4	6.1	33.5	38.6	54	-15.40
7236.0	AV	29.70	60	H	37.4	6.1	33.5	39.7	54	-14.30
Middle Channel (2437MHz)										
4874.0	PK	50.10	45	V	34.1	5.2	33.0	56.4	74	-17.60
4874.0	PK	48.70	270	H	34.1	5.2	33.0	55.0	74	-19.00
7311.0	PK	46.30	45	V	37.4	6.1	33.5	56.3	74	-17.70
7311.0	PK	46.40	180	H	37.4	6.1	33.5	56.4	74	-17.60
4874.0	AV	33.90	270	V	34.1	5.2	33.0	40.2	54	-13.80
4874.0	AV	32.40	90	H	34.1	5.2	33.0	38.7	54	-15.30
7311.0	AV	28.90	60	V	37.4	6.1	33.5	38.9	54	-15.10
7311.0	AV	30.60	45	H	37.4	6.1	33.5	40.6	54	-13.40
High Channel (2462MHz)										
4924.0	PK	49.60	270	V	34.1	5.2	33.0	55.9	74	-18.10
4924.0	PK	50.70	45	H	34.1	5.2	33.0	57.0	74	-17.00
7386.0	PK	46.30	180	V	37.4	6.1	33.5	56.3	74	-17.70
7386.0	PK	46.20	45	H	37.4	6.1	33.5	56.2	74	-17.80
4924.0	AV	34.30	90	V	34.1	5.2	33.0	40.6	54	-13.40
4924.0	AV	34.90	270	H	34.1	5.2	33.0	41.2	54	-12.80
7386.0	AV	29.50	60	V	37.4	6.1	33.5	39.5	54	-14.50
7386.0	AV	29.50	60	H	37.4	6.1	33.5	39.5	54	-14.50

*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	50.00	90	V	34.1	5.2	33.0	56.3	74	-17.70
4824.0	PK	51.10	270	H	34.1	5.2	33.0	57.4	74	-16.60
7236.0	PK	47.30	180	V	37.4	6.1	33.5	57.3	74	-16.70
7236.0	PK	47.40	45	H	37.4	6.1	33.5	57.4	74	-16.60
4824.0	AV	34.10	270	V	34.1	5.2	33.0	40.4	54	-13.60
4824.0	AV	33.70	90	H	34.1	5.2	33.0	40.0	54	-14.00
7236.0	AV	29.90	45	V	37.4	6.1	33.5	39.9	54	-14.10
7236.0	AV	31.10	60	H	37.4	6.1	33.5	41.1	54	-12.90
Middle Channel (2437MHz)										
4874.0	PK	49.90	45	V	34.1	5.2	33.0	56.2	74	-17.80
4874.0	PK	51.20	270	H	34.1	5.2	33.0	57.5	74	-16.50
7311.0	PK	48.00	45	V	37.4	6.1	33.5	58.0	74	-16.00
7311.0	PK	48.10	180	H	37.4	6.1	33.5	58.1	74	-15.90
4874.0	AV	33.50	270	V	34.1	5.2	33.0	39.8	54	-14.20
4874.0	AV	35.00	90	H	34.1	5.2	33.0	41.3	54	-12.70
7311.0	AV	28.50	60	V	37.4	6.1	33.5	38.5	54	-15.50
7311.0	AV	30.10	45	H	37.4	6.1	33.5	40.1	54	-13.90
High Channel (2462MHz)										
4924.0	PK	51.00	270	V	34.1	5.2	33.0	57.3	74	-16.70
4924.0	PK	50.30	45	H	34.1	5.2	33.0	56.6	74	-17.40
7386.0	PK	47.20	180	V	37.4	6.1	33.5	57.2	74	-16.80
7386.0	PK	46.20	45	H	37.4	6.1	33.5	56.2	74	-17.80
4924.0	AV	33.30	90	V	34.1	5.2	33.0	39.6	54	-14.40
4924.0	AV	34.90	270	H	34.1	5.2	33.0	41.2	54	-12.80
7386.0	AV	29.60	60	V	37.4	6.1	33.5	39.6	54	-14.40
7386.0	AV	29.90	60	H	37.4	6.1	33.5	39.9	54	-14.10

*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	51.10	90	V	34.1	5.2	33.0	57.4	74	-16.60
4844.0	PK	49.80	270	H	34.1	5.2	33.0	56.1	74	-17.90
7266.0	PK	48.20	180	V	37.4	6.1	33.5	58.2	74	-15.80
7266.0	PK	48.40	45	H	37.4	6.1	33.5	58.4	74	-15.60
4844.0	AV	34.00	270	V	34.1	5.2	33.0	40.3	54	-13.70
4844.0	AV	33.70	90	H	34.1	5.2	33.0	40.0	54	-14.00
7266.0	AV	31.30	45	V	37.4	6.1	33.5	41.3	54	-12.70
7266.0	AV	32.00	60	H	37.4	6.1	33.5	42.0	54	-12.00
Middle Channel (2437MHz)										
4874.0	PK	48.90	45	V	34.1	5.2	33.0	55.2	74	-18.80
4874.0	PK	47.70	270	H	34.1	5.2	33.0	54.0	74	-20.00
7311.0	PK	48.10	45	V	37.4	6.1	33.5	58.1	74	-15.90
7311.0	PK	48.30	180	H	37.4	6.1	33.5	58.3	74	-15.70
4874.0	AV	35.90	270	V	34.1	5.2	33.0	42.2	54	-11.80
4874.0	AV	34.90	90	H	34.1	5.2	33.0	41.2	54	-12.80
7311.0	AV	30.20	60	V	37.4	6.1	33.5	40.2	54	-13.80
7311.0	AV	30.10	45	H	37.4	6.1	33.5	40.1	54	-13.90
High Channel (2452MHz)										
4904.0	PK	50.30	270	V	34.1	5.2	33.0	56.6	74	-17.40
4904.0	PK	52.70	45	H	34.1	5.2	33.0	59.0	74	-15.00
7356.0	PK	47.30	180	V	37.4	6.1	33.5	57.3	74	-16.70
7356.0	PK	48.80	45	H	37.4	6.1	33.5	58.8	74	-15.20
4904.0	AV	33.00	90	V	34.1	5.2	33.0	39.3	54	-14.70
4904.0	AV	35.10	270	H	34.1	5.2	33.0	41.4	54	-12.60
7356.0	AV	29.30	60	V	37.4	6.1	33.5	39.3	54	-14.70
7356.0	AV	31.20	60	H	37.4	6.1	33.5	41.2	54	-12.80

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 5th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

The measurements greater than 20dB below the limit from 9kHz to 30MHz..

8. OUT OF BAND EMISSIONS

8.1 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.

8.2 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	2012-02-25	2013-02-24
Horn Antenna	ETS	3117	00086197	2012-02-25	2013-02-24

8.3 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.

8.4 Environmental Conditions

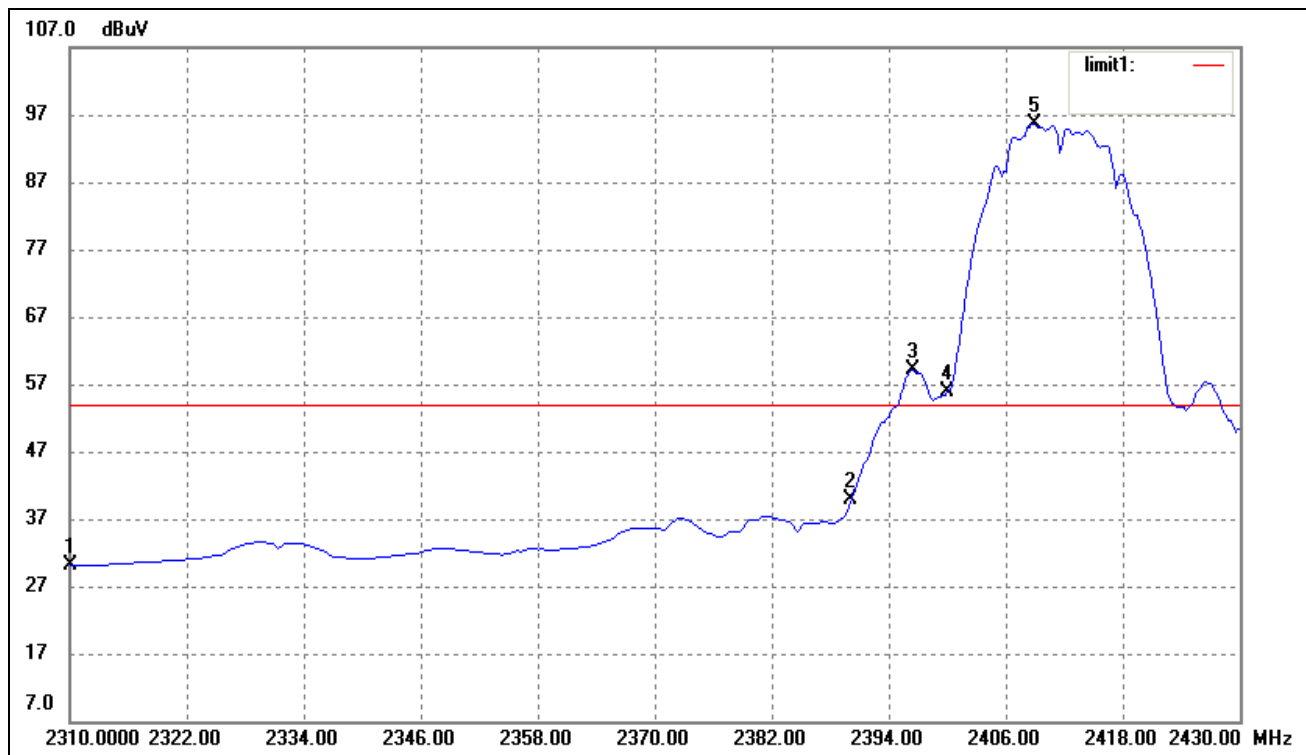
Temperature:	21° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

8.5 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
	2400.00	>20dB ATT	Pass
	2483.50	<54dBuV	Pass

For 802.11b

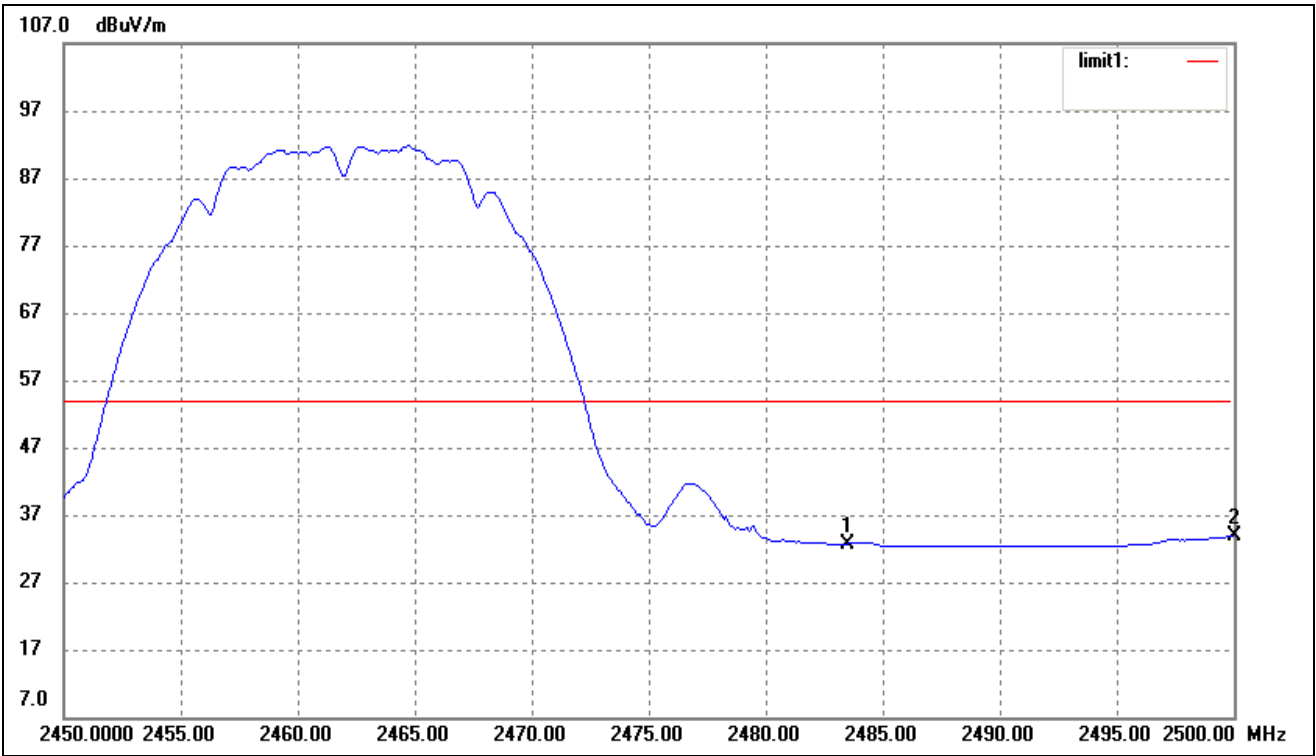
Lowest Bandedge



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	2310.000	37.60	-7.51	30.09	54.00	-23.91	256	100	Ave
	2310.000	52.17	-7.51	44.66	74.00	-29.34	256	100	peak
2	2390.000	47.14	-7.34	39.80	54.00	-14.20	256	100	Ave
	2390.000	57.87	-7.34	50.53	74.00	-23.47	256	100	peak
3	2396.513	66.34	-7.32	59.02	/	/	/	/	Ave
4	2400.000	63.11	-7.31	55.80	/	/	/	/	Ave
5	2408.925	102.89	-7.29	95.60	/	/	/	/	Ave

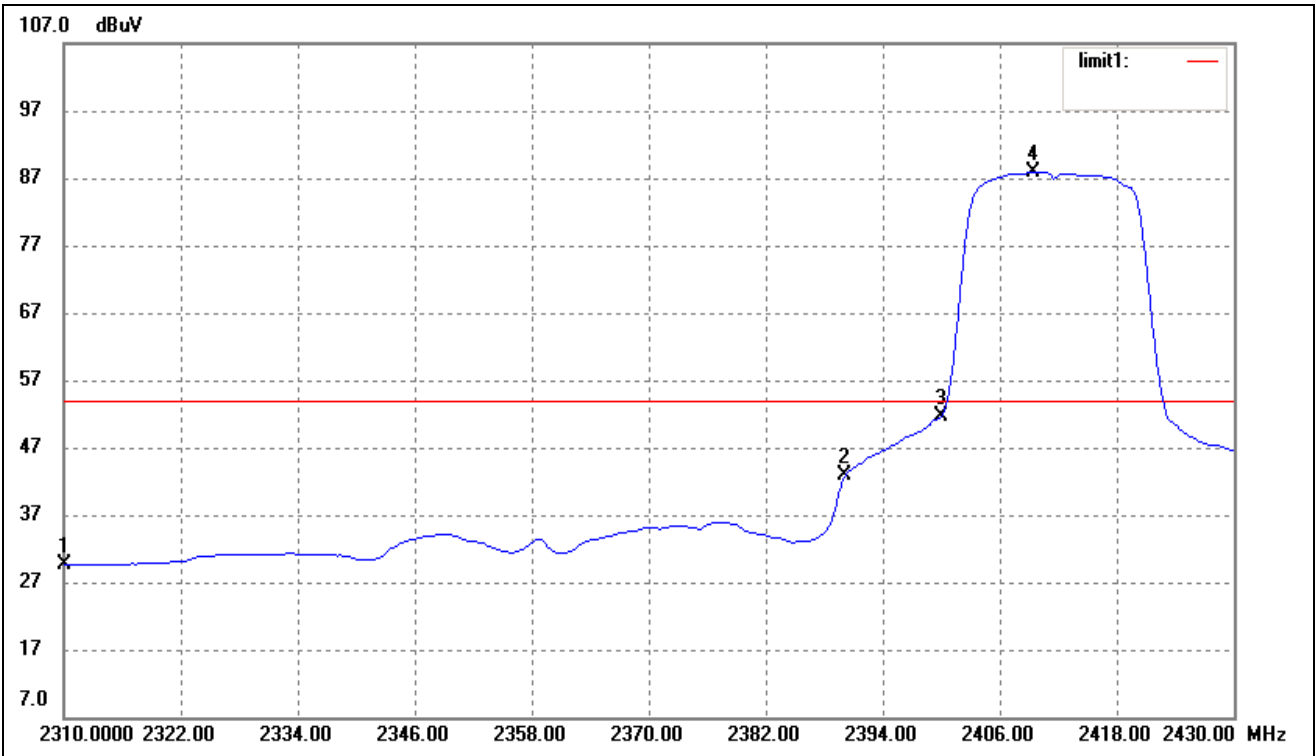
For 802.11b

Highest Bandedge

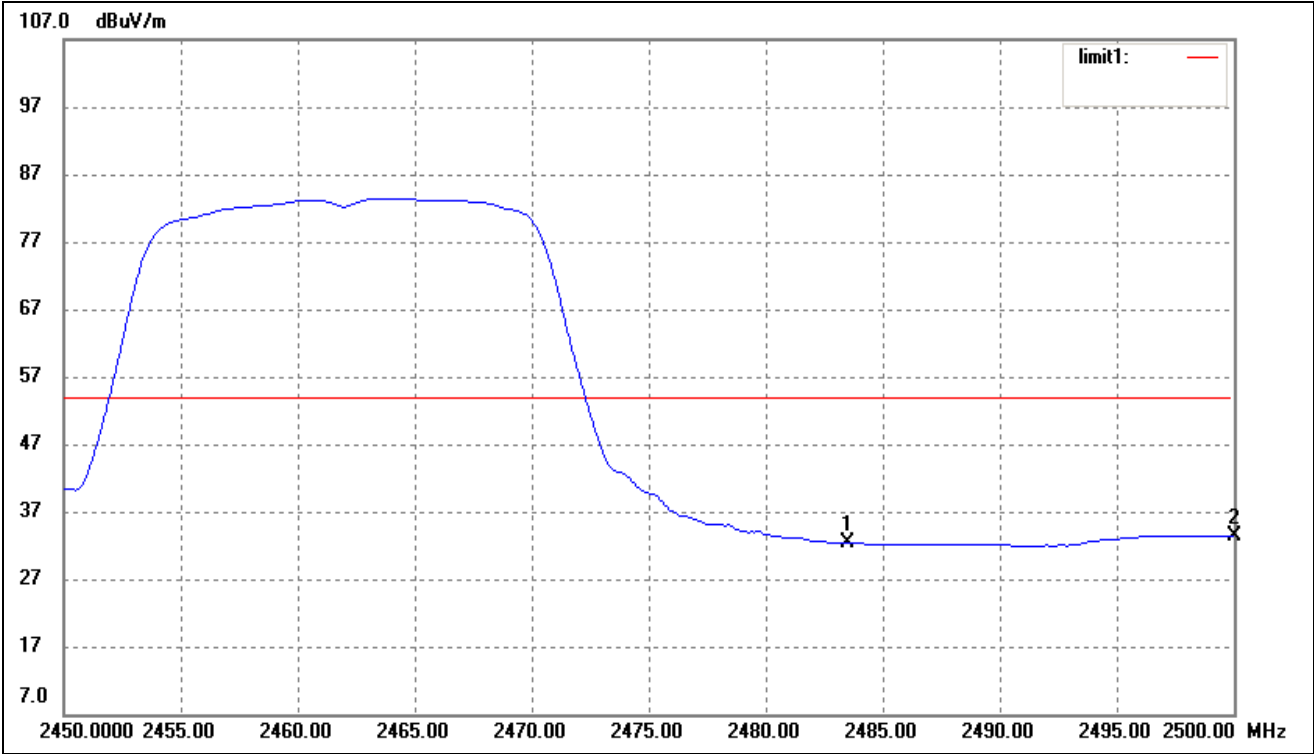


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2483.500	39.86	-7.13	32.73	54.00	-21.27	256	100	Ave
	2483.500	51.99	-7.13	44.86	74.00	-29.14	256	100	Peak
2	2500.000	40.85	-7.08	33.77	54.00	-20.23	256	100	Ave
	2500.000	52.17	-7.08	45.09	74.00	-28.91	256	100	Peak

For 802.11g
Lowest Bandedge



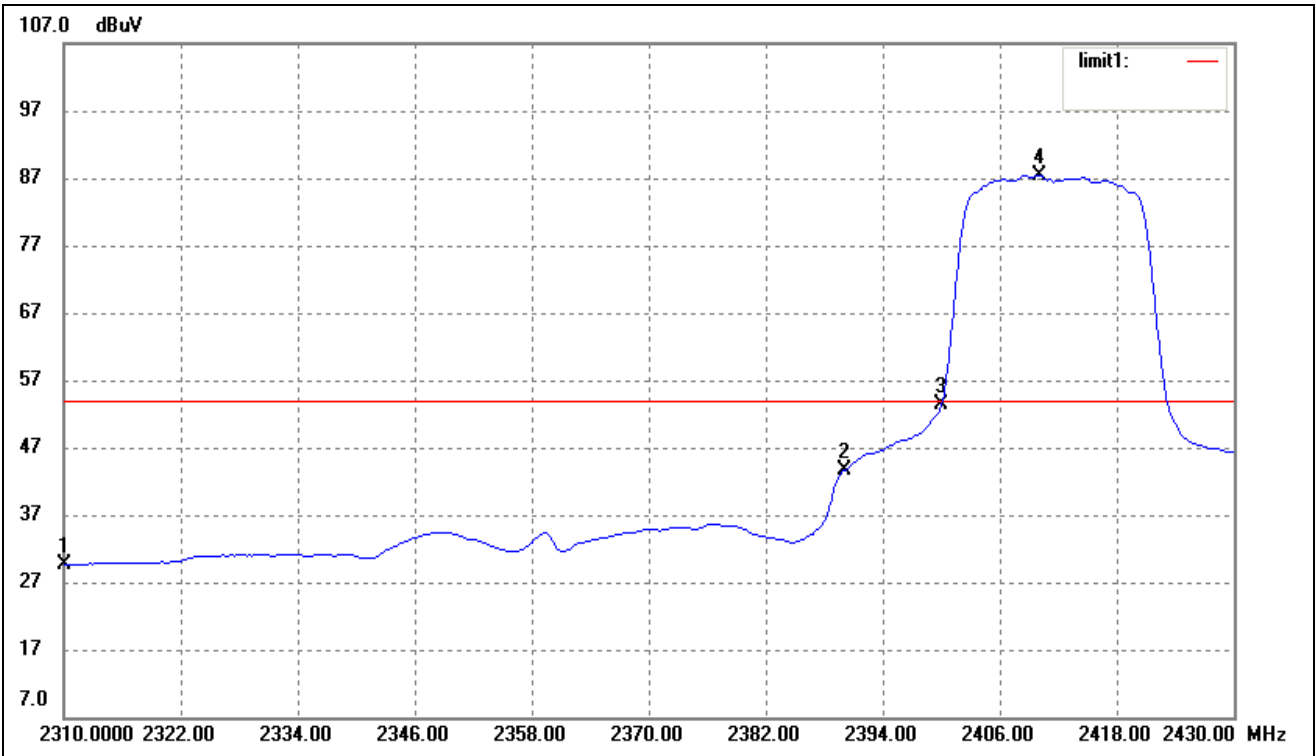
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2483.500	39.43	-7.13	32.30	54.00	-21.70	256	100	Ave
	2483.500	52.09	-7.13	44.96	74.00	-29.04	256	100	peak
2	2500.000	40.48	-7.08	33.40	54.00	-20.60	256	100	Ave
	2500.000	52.11	-7.08	45.03	74.00	-28.97	256	100	peak

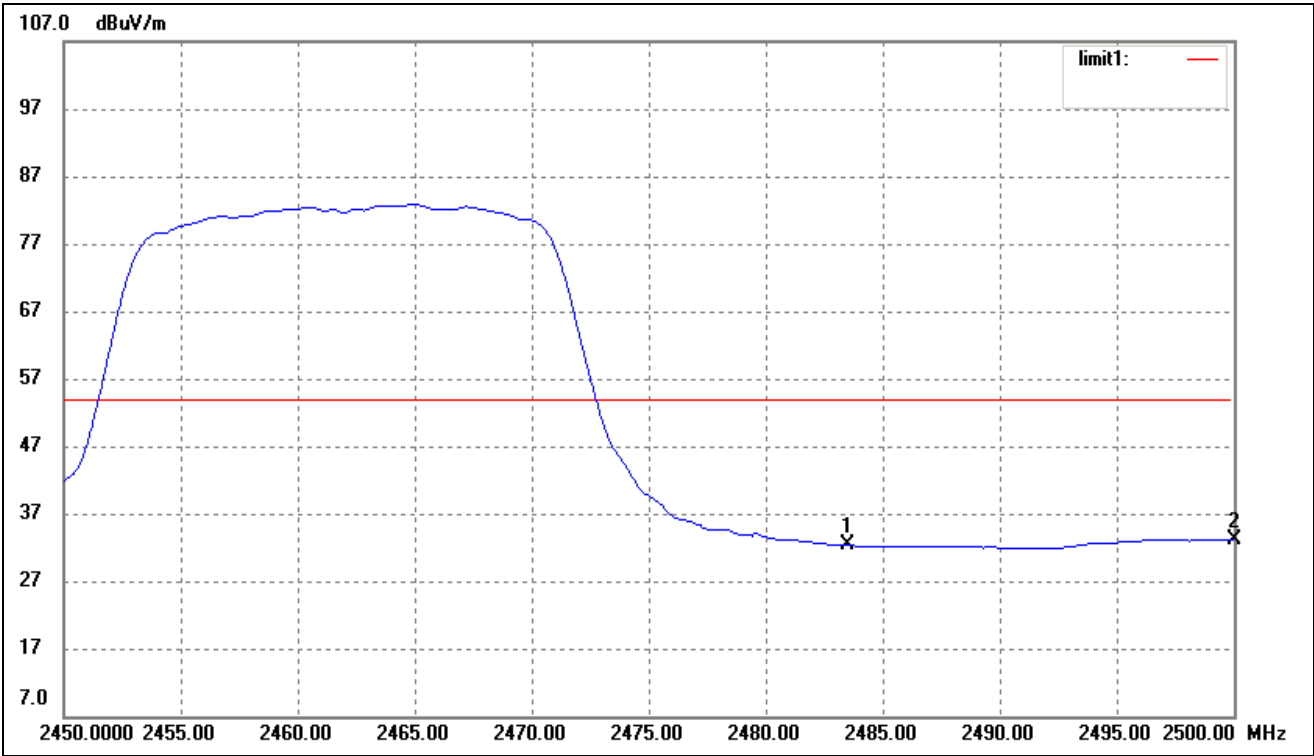
For 802.11n_HT20

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2310.000	37.21	-7.51	29.70	54.00	-24.30	256	100	Ave
	2310.000	52.74	-7.51	34.23	74.00	-39.77	256	100	peak
2	2390.000	51.05	-7.34	43.71	54.00	-10.29	256	100	Ave
	2390.000	60.96	-7.34	53.62	74.00	-20.38	256	100	peak
3	2400.000	60.65	-7.31	53.34	54.00	-0.66	256	100	Ave
	2400.000	67.67	-7.31	60.36	74.00	-13.64	256	100	peak
4	2410.145	94.60	-7.28	87.32	/	/	/	/	Ave

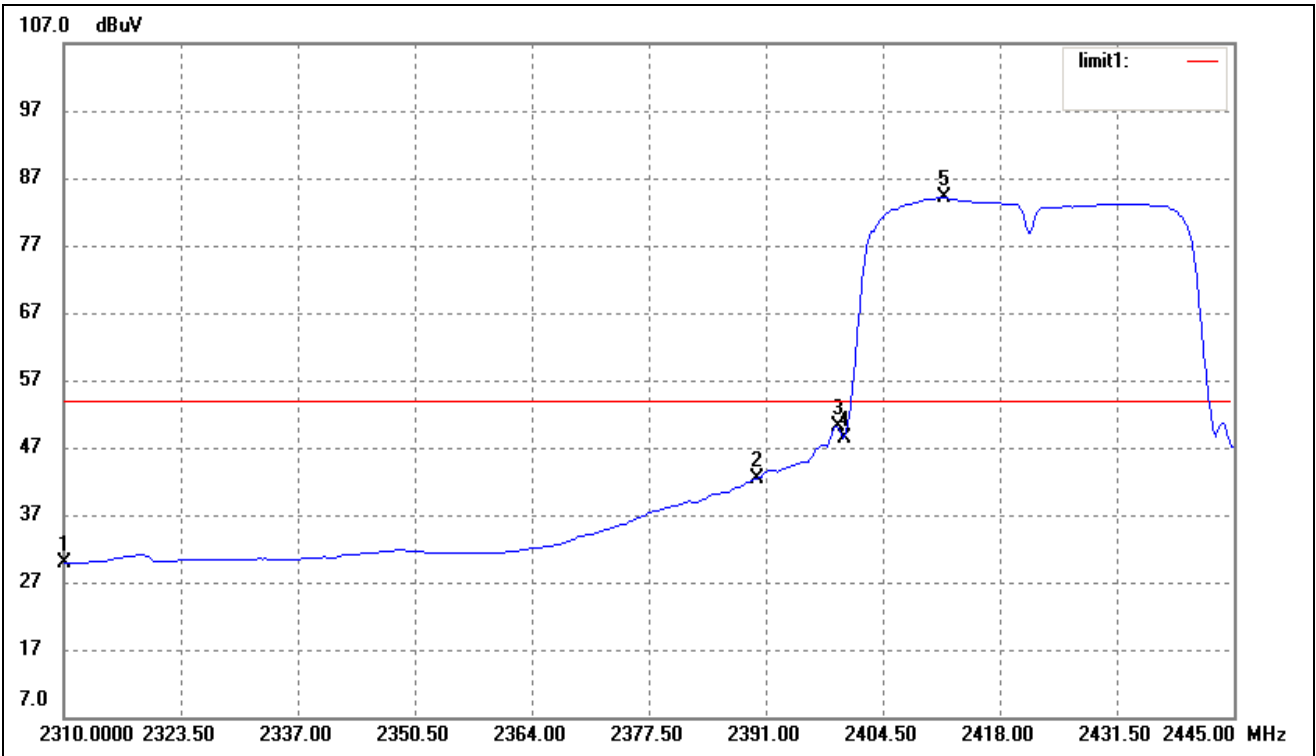
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2483.500	39.42	-7.13	32.29	54.00	-21.71	256	100	Ave
	2483.500	51.49	-7.13	44.39	74.00	-29.61	256	100	peak
2	2500.000	40.17	-7.08	33.09	54.00	-20.91	256	100	Ave
	2500.000	52.47	-7.08	45.39	74.00	-28.61	256	100	peak

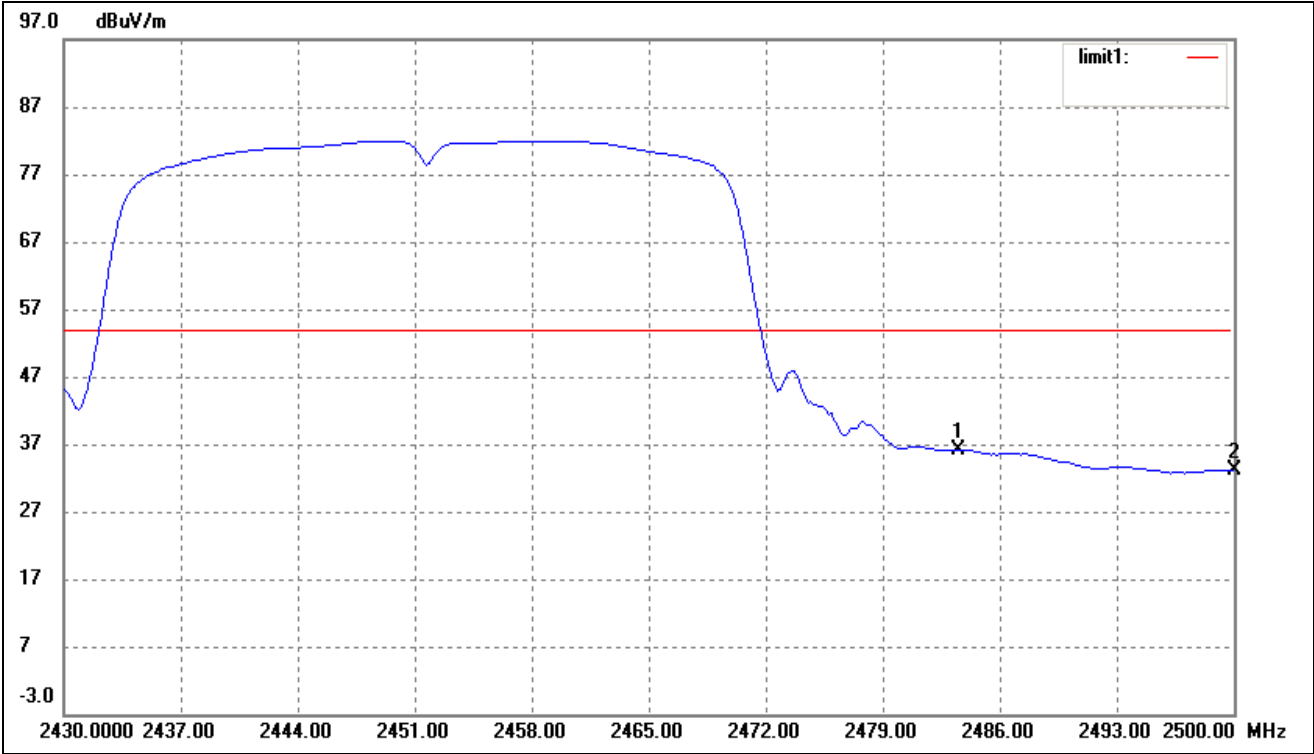
For 802.11n_HT40

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2310.000	37.28	-7.51	29.77	54.00	-24.23	256	100	Ave
	2310.000	51.71	-7.51	34.20	74.00	-39.87	256	100	peak
2	2390.000	49.69	-7.34	42.35	54.00	-11.65	256	100	Ave
	2390.000	59.94	-7.34	52.60	74.00	-21.40	256	100	peak
3	2399.327	57.34	-7.31	50.03	54.00	-3.97	256	100	Ave
	2399.327	63.31	-7.31	56.00	74.00	-18.00	256	100	peak
4	2400.000	55.73	-7.31	48.42	54.00	-5.58	256	100	Ave
	2400.000	63.62	-7.31	55.31	74.00	-18.69	256	100	peak
5	2411.623	91.32	-7.28	84.04	/	/	/	/	Ave

Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2483.500	43.36	-7.13	36.23	54.00	-17.77	256	100	Ave
	2483.500	55.91	-7.13	48.78	74.00	-25.22	256	100	peak
2	2500.000	40.15	-7.08	33.07	54.00	-20.93	256	100	Ave
	2500.000	52.83	-7.08	45.75	74.00	-28.25	256	100	peak

9. §15.207 (a)- CONDUCTED EMISSION

9.1 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.

9.2 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

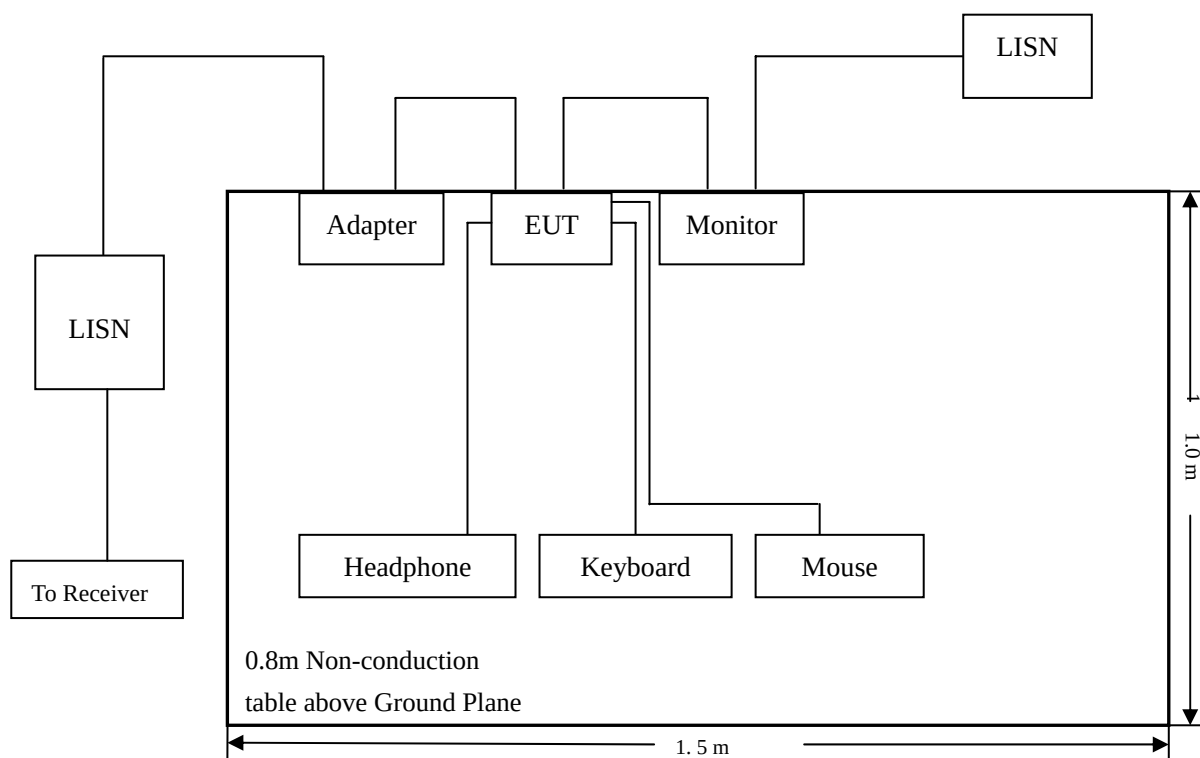
9.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 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.

9.4 Basic Test Setup Block Diagram



9.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

9.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth 9 kHz
Quasi-Peak Adapter Mode Normal

9.7 Summary of Test Results/Plots

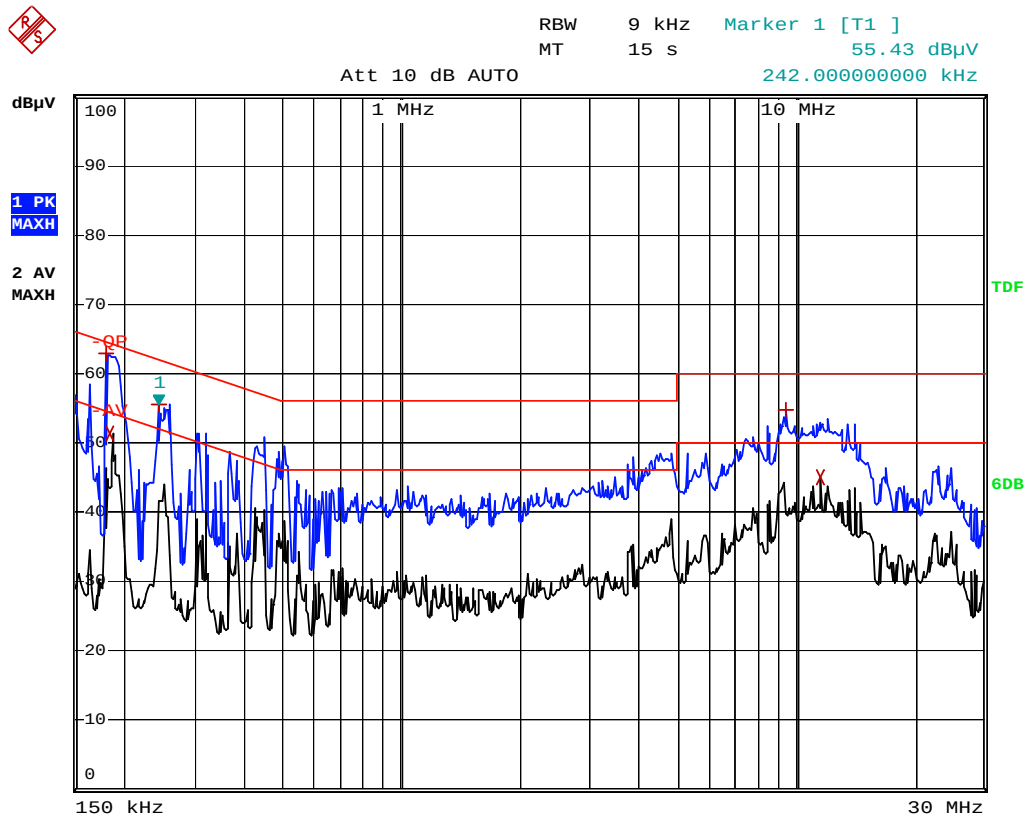
According to the data in section 3.8, the EUT complied with the FCC 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

-0.94 dB μ V at 0.182 MHz in the Neutral, QP Detector, 0.15-30MHz

9.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

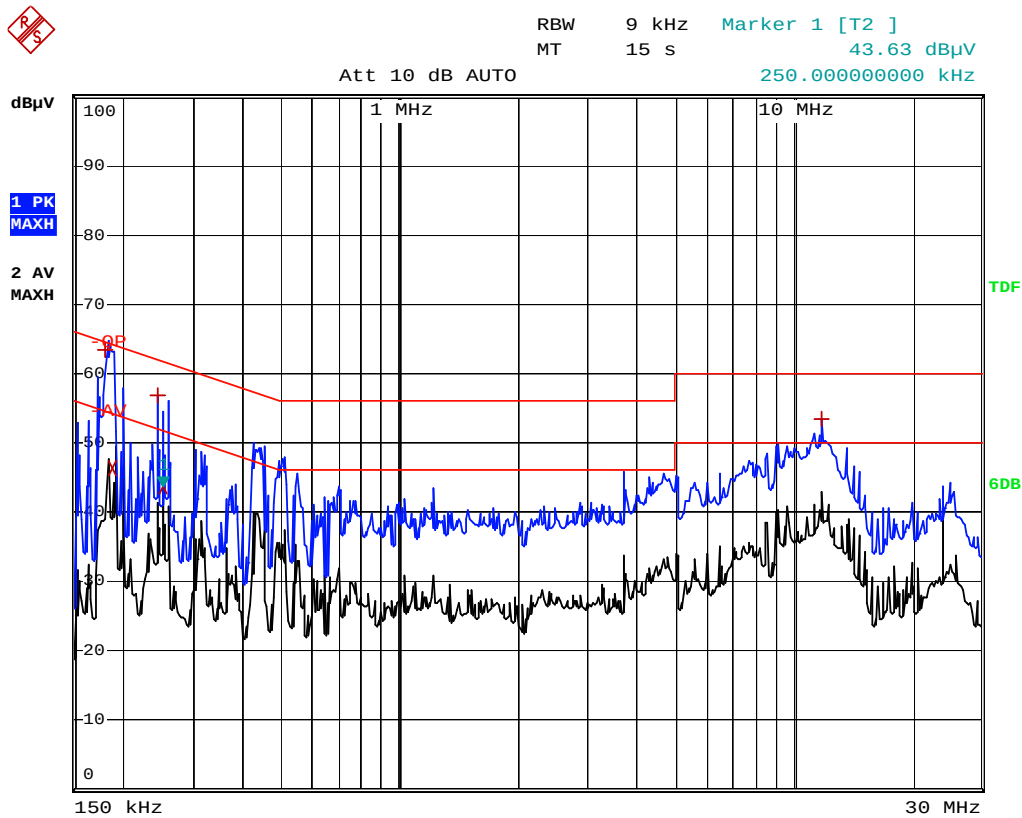
Conducted Disturbance
EUT: Netbook
M/N: SW-I10-03
Operating Condition: Operating
Test Specification: Line
Comment: AC 120V/60Hz/AdaptorDC 19V



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	182 kHz	62.73	-1.65
2 Average	186 kHz	51.37	-2.83
1 Max Peak	242 kHz	55.43	-6.59
1 Max Peak	9.43 MHz	54.72	-5.27
2 Average	11.538 MHz	45.10	-4.89

Plot of Conducted Emissions Test Data

Conducted Disturbance
EUT: Netbook
M/N: SW-I10-03
Operating Condition: Operating
Test Specification: Neutral
Comment: AC 120V/60Hz/AdaptorDC 19V



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	182 kHz	63.45	-0.94
2 Average	190 kHz	46.45	-7.58
1 Max Peak	242 kHz	56.86	-5.16
2 Average	250 kHz	43.62	-8.12
1 Max Peak	11.802 MHz	53.52	-6.47

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