

FCC Part 15C

Measurement and Test Report

For

Shenzhen Zenithink Technologies Co., Ltd

2nd Floor, Building M-3, Maqueling Industrial zone, Nanshan District,

Shenzhen, P.R. China

FCC ID: ZAXZT-18010AR

Report Concerns: Original Report	Equipment Type: MID
Model:	<u>ZT-180 10AR</u>
Report No.:	<u>STR11028080I-1</u>
Test Date:	<u>2010-12-24 to 2011-03-16</u>
Issue Date:	<u>2011-03-16</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.

TABLE OF CONTENTS

1. GENERAL INFORMATION	3
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
1.2 TEST STANDARDS	3
1.3 TEST METHODOLOGY	4
1.4 TEST FACILITY	4
1.5 EUT EXERCISE SOFTWARE	4
1.6 ACCESSORIES EQUIPMENT LIST AND DETAILS	4
1.7 EUT CABLE LIST AND DETAILS	4
2. SUMMARY OF TEST RESULTS	5
3. CONDUCTED EMISSIONS	6
3.1 MEASUREMENT UNCERTAINTY	6
3.2 TEST EQUIPMENT LIST AND DETAILS	6
3.3 TEST PROCEDURE	6
3.4 BASIC TEST SETUP BLOCK DIAGRAM	6
3.5 ENVIRONMENTAL CONDITIONS	7
3.6 SUMMARY OF TEST RESULTS/PLOTS	7
3.7 CONDUCTED EMISSIONS TEST DATA	7
4. §15.203 - ANTENNA REQUIREMENT	10
4.1 STANDARD APPLICABLE	10
4.2 TEST RESULT	10
5. POWER SPECTRAL DENSITY	11
5.1 STANDARD APPLICABLE	11
5.2 TEST EQUIPMENT LIST AND DETAILS	11
5.3 TEST PROCEDURE	11
5.4 ENVIRONMENTAL CONDITIONS	11
5.5 SUMMARY OF TEST RESULTS/PLOTS	12
6. 6-DB BANDWIDTH	19
6.1 STANDARD APPLICABLE	19
6.2 TEST EQUIPMENT LIST AND DETAILS	19
6.3 TEST PROCEDURE	19
6.4 ENVIRONMENTAL CONDITIONS	19
6.5 SUMMARY OF TEST RESULTS/PLOTS	20
7. POWER OUTPUT	27
7.1 STANDARD APPLICABLE	27
7.2 TEST EQUIPMENT LIST AND DETAILS	27
7.3 TEST PROCEDURE	27
7.4 ENVIRONMENTAL CONDITIONS	27
7.5 SUMMARY OF TEST RESULTS/PLOTS	28
8. FIELD STRENGTH OF SPURIOUS EMISSIONS	41
8.1 MEASUREMENT UNCERTAINTY	41
8.2 STANDARD APPLICABLE	41
8.3 TEST EQUIPMENT LIST AND DETAILS	41
8.4 TEST PROCEDURE	41
8.5 CORRECTED AMPLITUDE & MARGIN CALCULATION	42
8.6 ENVIRONMENTAL CONDITIONS	42
8.7 SUMMARY OF TEST RESULTS/PLOTS	42
9. OUT OF BAND EMISSIONS	71
9.1 STANDARD APPLICABLE	71
9.2 TEST EQUIPMENT LIST AND DETAILS	71
9.3 TEST PROCEDURE	71
9.4 ENVIRONMENTAL CONDITIONS	71
9.5 SUMMARY OF TEST RESULTS/PLOTS	72

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Shenzhen Zenithink Technologies Co., Ltd
Address of applicant: 2nd Floor, Building M-3, Maqueling Industrial zone, Nanshan District, Shenzhen, P.R. China

Manufacturer: Shenzhen Zenithink Technologies Co., Ltd
Address of manufacturer: 2nd Floor, Building M-3, Maqueling Industrial zone, Nanshan District, Shenzhen, P.R. China

General Description of E.U.T

Items	Description
EUT Description:	MID
Trade Name:	ZENITHINK
Model No.:	ZT-180 10AR, ZT-180 10AC
Rated Voltage:	DC 7.4V with DC 9V power adaptor
RF Output Power	Max. 12.47dBm
Antenna Gain:	Max. 0 dBi
Frequency range:	2412MHz~2462MHz for 11b/g/n(HT20) 2422MHz-2452MHz for 11n(HT40)
Number of channels:	11 for 11b/g/n(HT20), 7 for 11n(HT40)
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Size:	27x18x1.5cm

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 ZT-180 10AR without circuit and electronic construction changed, declared by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the Shenzhen Zenithink Technologies 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
/	/	/	/
/	/	/	/

1.7 EUT Cable List and Details

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

2. SUMMARY OF TEST RESULTS

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

3. CONDUCTED EMISSIONS

3.1 Measurement Uncertainty

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

3.2 Test Equipment List and Details

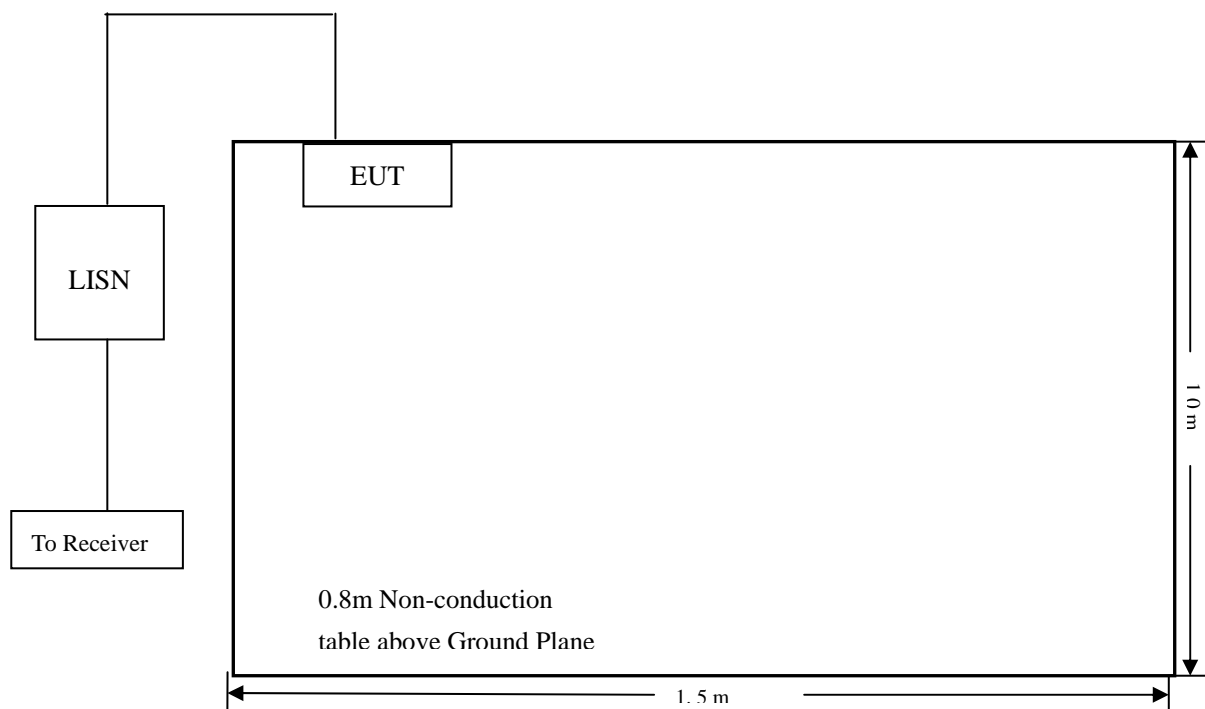
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2010-12-20	2011-12-19
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2010-12-20	2011-12-19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2010-12-20	2011-12-19

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

3.3 Test Procedure

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

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

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

3.6 Summary of Test Results/Plots

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

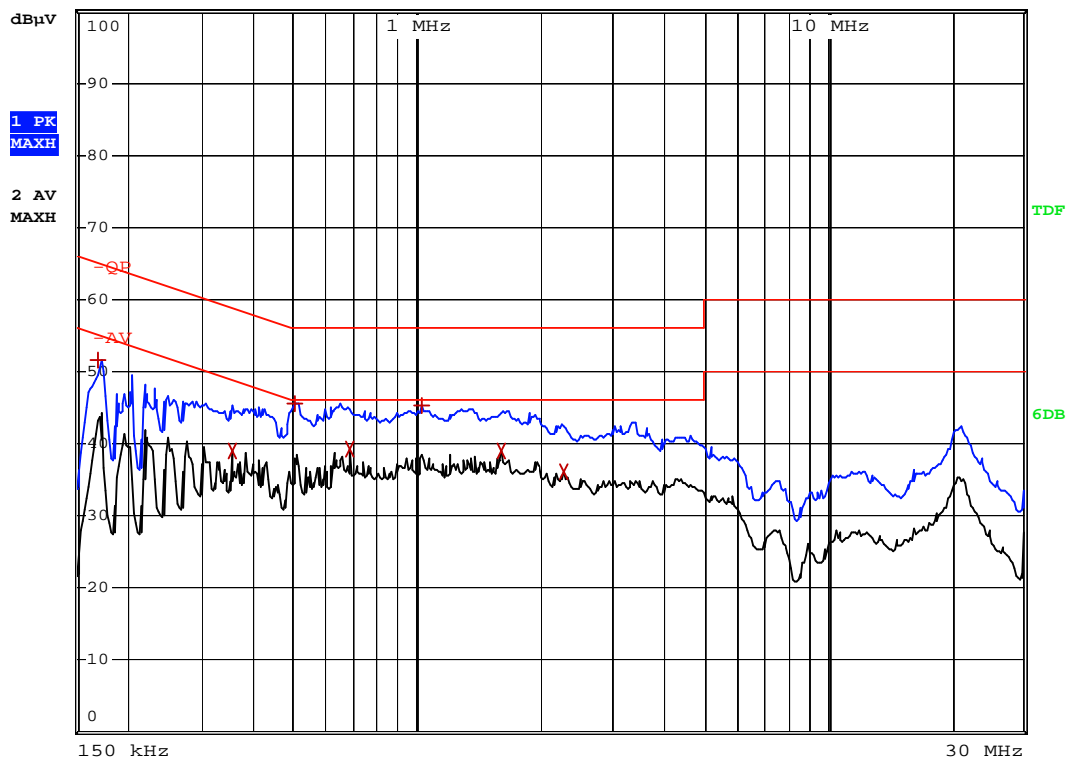
-5.23 dB μ V at 0.482 MHz in the Neutral Ave Detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC 15.207	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dB μ V	QP/Ave/Pk	Line/Neutral	dB μ V	dB
0.482	41.07	Ave	Neutral	46.30	-5.23
0.686	39.22	Ave	Line	46.00	-6.77
1.602	38.93	Ave	Line	46.00	-7.06
1.158	38.92	Ave	Neutral	46.00	-7.07
4.49	38.18	Ave	Neutral	46.00	-7.81
0.482	48.33	Pk	Neutral	56.29	-7.96
0.354	40.20	Ave	Neutral	48.86	-8.66
0.354	38.89	Ave	Line	48.86	-9.97
2.27	36.00	Ave	Line	46.00	-9.99
0.506	45.57	Pk	Line	56.00	-10.42
1.026	45.16	Pk	Line	56.00	-10.83
0.170	51.48	Pk	Line	64.96	-13.48

Plot of Conducted Emissions Test Data*Conducted Disturbance**EUT: MID**M/N: ZT-180 10AR**Operating Condition: Transmitting&Charging**Test Specification: L**Comment: AC 120V/60Hz/Adapter 9V*RBW 9 kHz
MT 5 ms

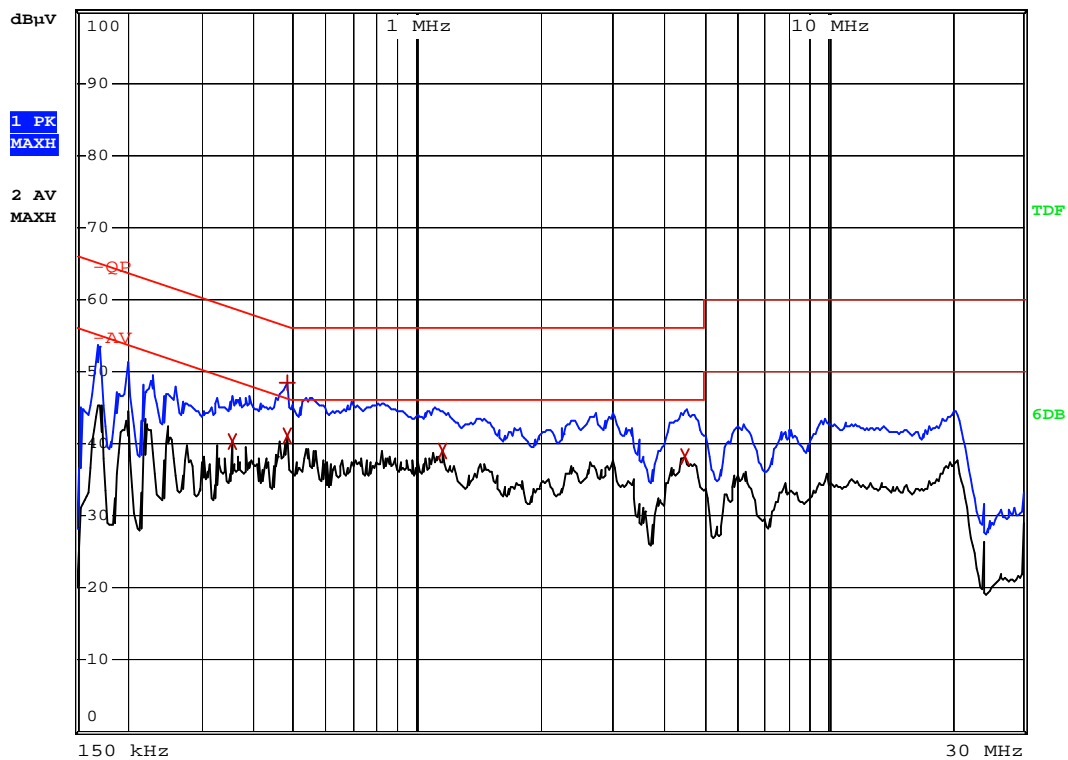
Att 10 dB AUTO



Date: 19.JAN.2011 15:58:45

Plot of Conducted Emissions Test Data*Conducted Disturbance**EUT: MID**M/N: ZT-180 10AR**Operating Condition: Transmitting&Charging**Test Specification: N**Comment: AC 120V/60Hz/Adapter 9V*RBW 9 kHz
MT 5 ms

Att 10 dB AUTO



Date: 19.JAN.2011 16:00:24

4. §15.203 - ANTENNA REQUIREMENT

4.1 Standard Applicable

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

4.2 Test Result

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

5. POWER SPECTRAL DENSITY

5.1 Standard Applicable

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

5.2 Test Equipment List and Details

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

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

5.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set center frequency of spectrum analyzer = operating frequency.
3. Set the spectrum analyzer as RBW, VBW=3KHz, Span = 20MHz.
4. Repeat above procedures until all frequency measured was complete.

5.4 Environmental Conditions

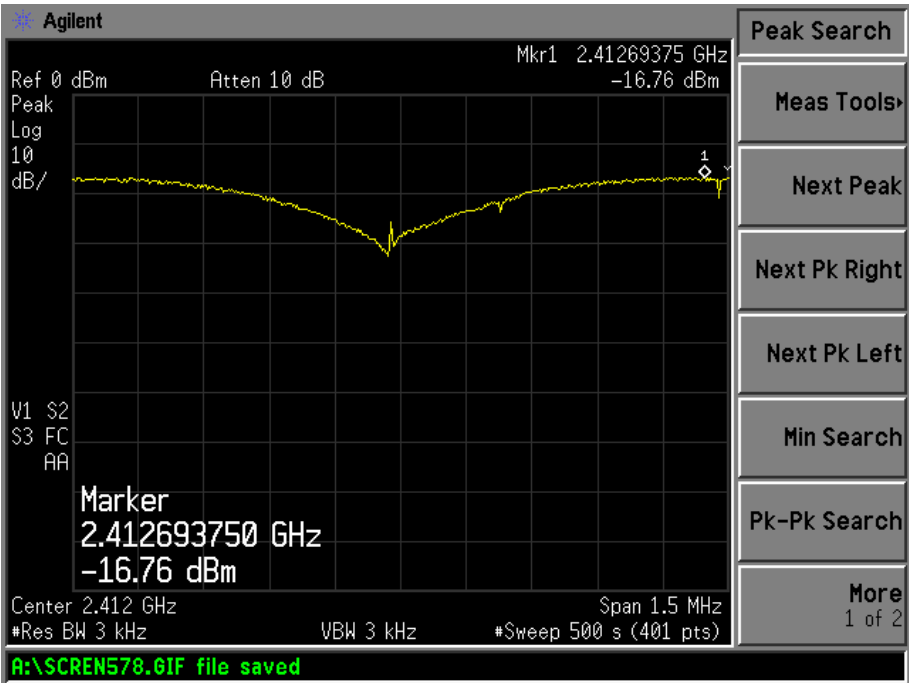
Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.5 Summary of Test Results/Plots

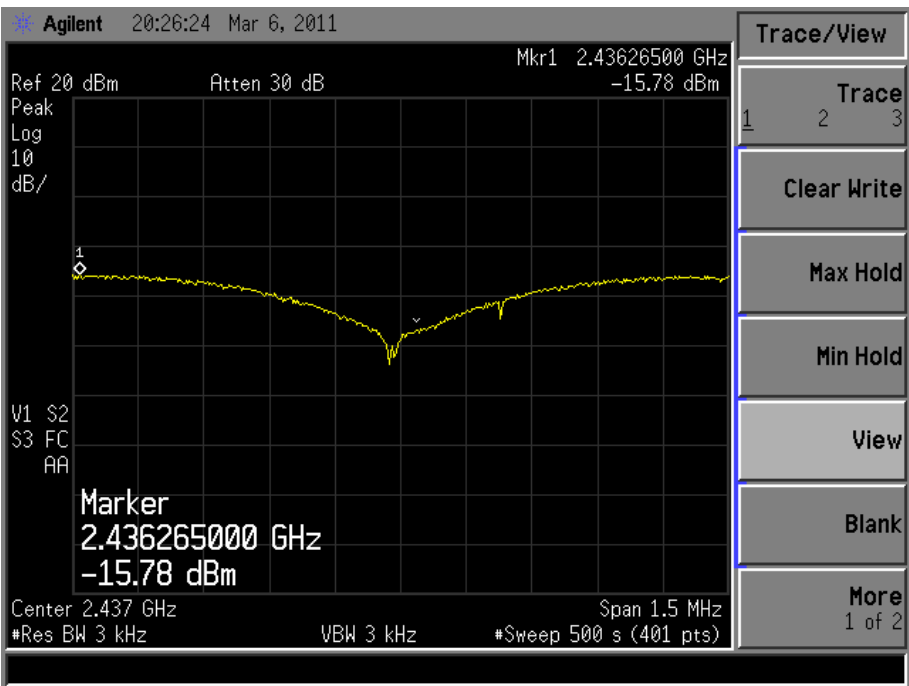
Test mode	Test channel	Reading dBm/3kHz	Limit dBm/3kHz
802.11b	Low channel (2412MHz)	-16.76	8
	Middle channel (2437MHz)	-15.78	8
	High channel (2462MHz)	-14.68	8
802.11g	Low channel (2412MHz)	-12.40	8
	Middle channel (2437MHz)	-11.44	8
	High channel (2462MHz)	-12.72	8
802.11n HT20	Low channel (2412MHz)	-16.69	8
	Middle channel (2437MHz)	-16.03	8
	High channel (2462MHz)	-16.87	8
802.11n Ht40	Low channel (2422MHz)	-22.12	8
	Middle channel (2437MHz)	-21.37	8
	High channel (2452MHz)	-26.26	8

For 802.11b

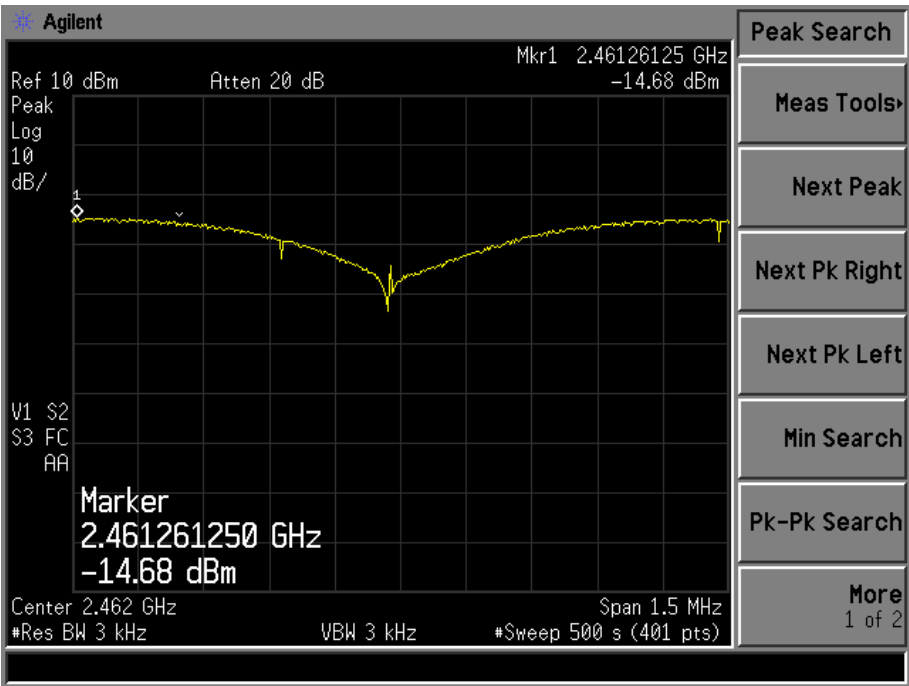
Low Channel:



Middle Channel:

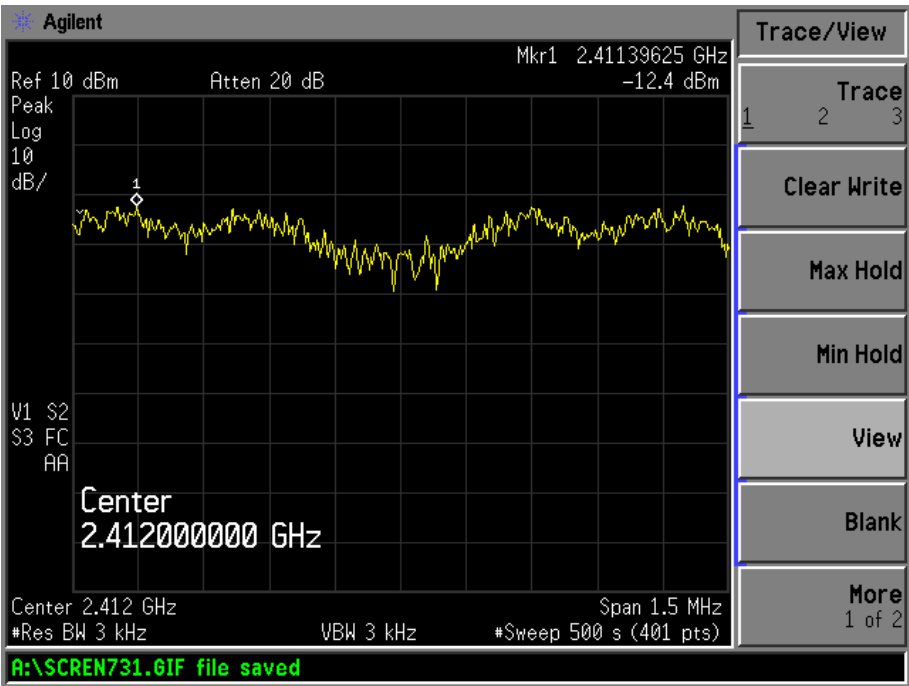


High Channel:

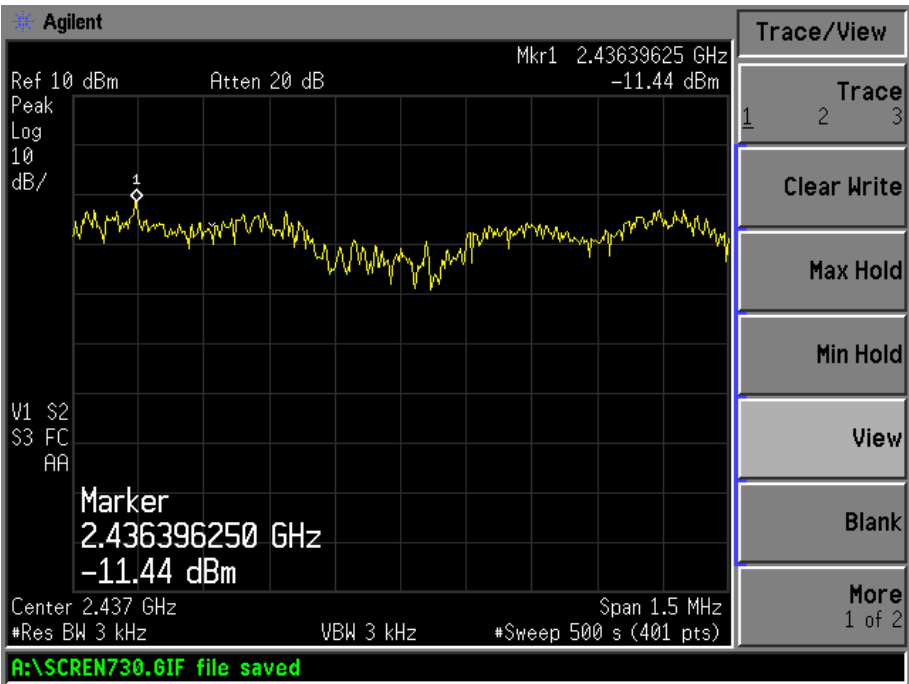


For 802.11g

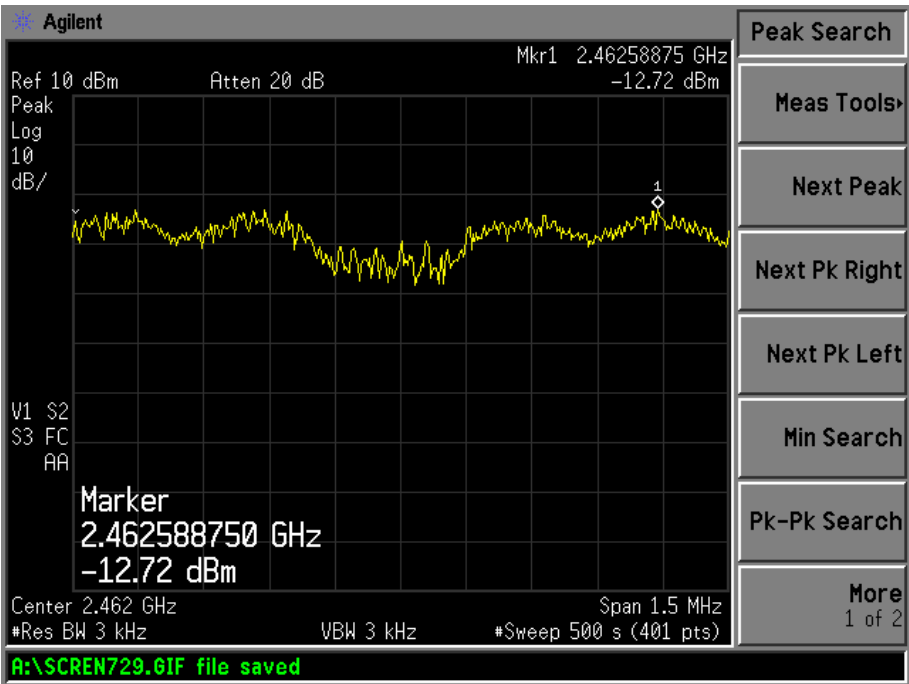
Low Channel:



Middle Channel:

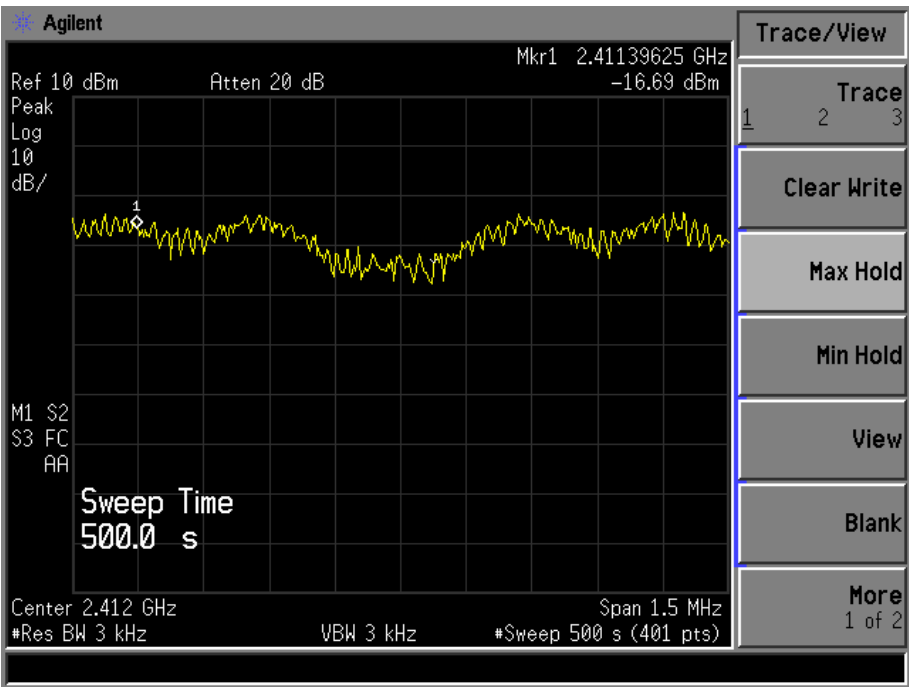


High Channel:

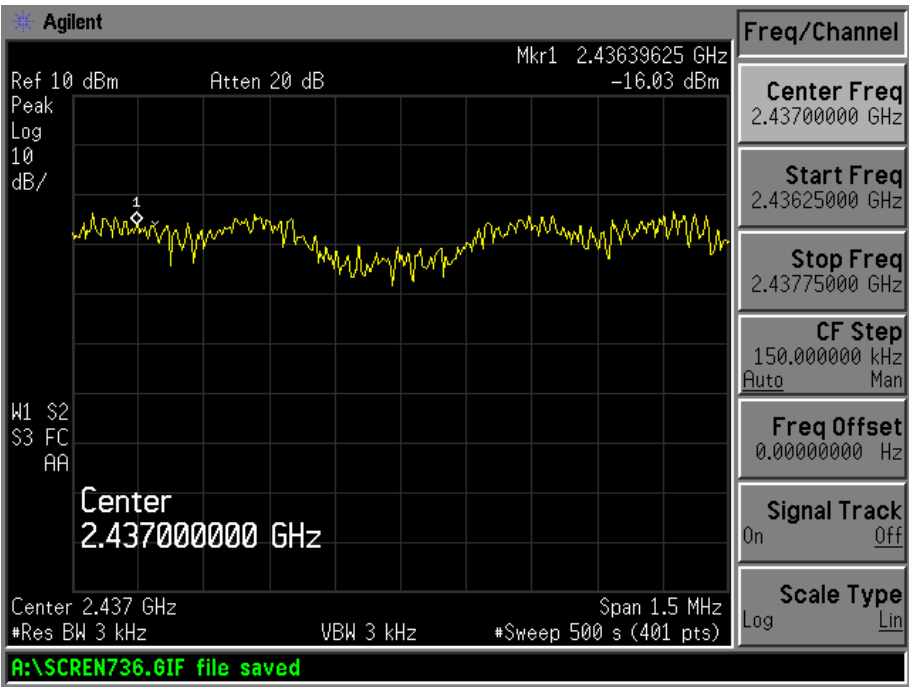


For 802.11n HT20

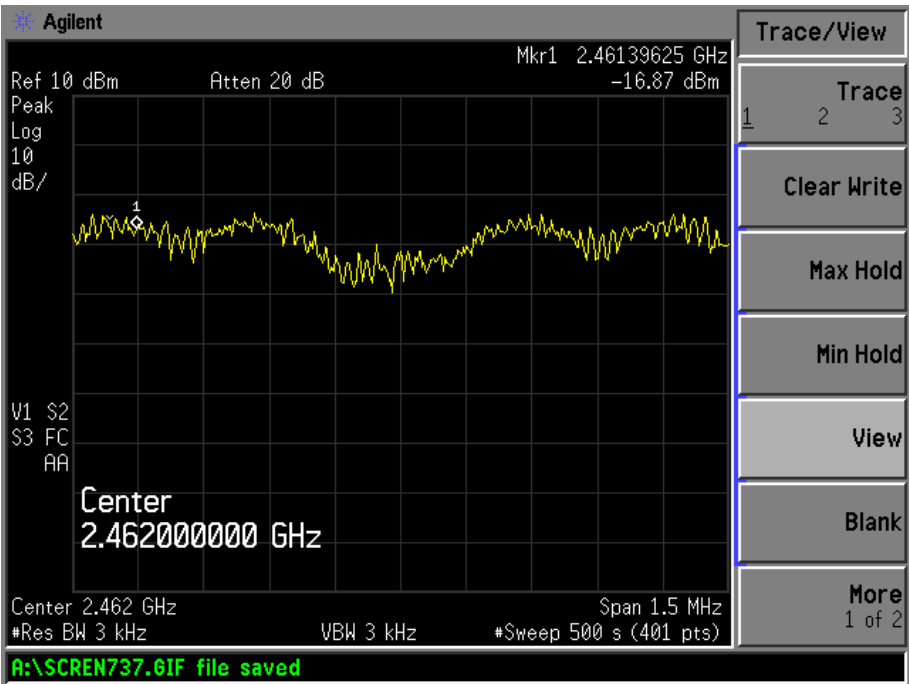
Low Channel:



Middle Channel:

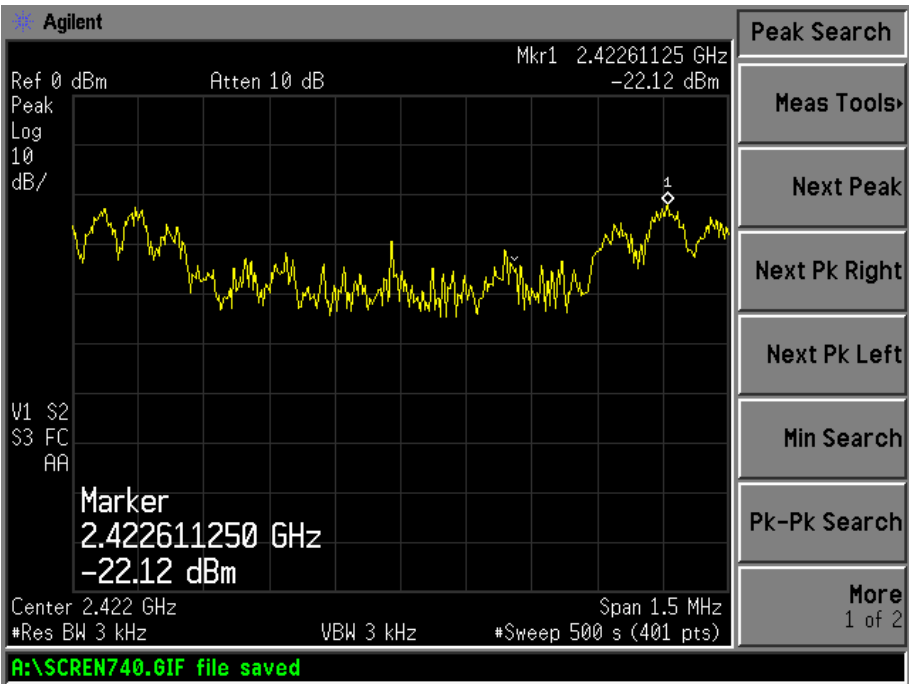


High Channel:

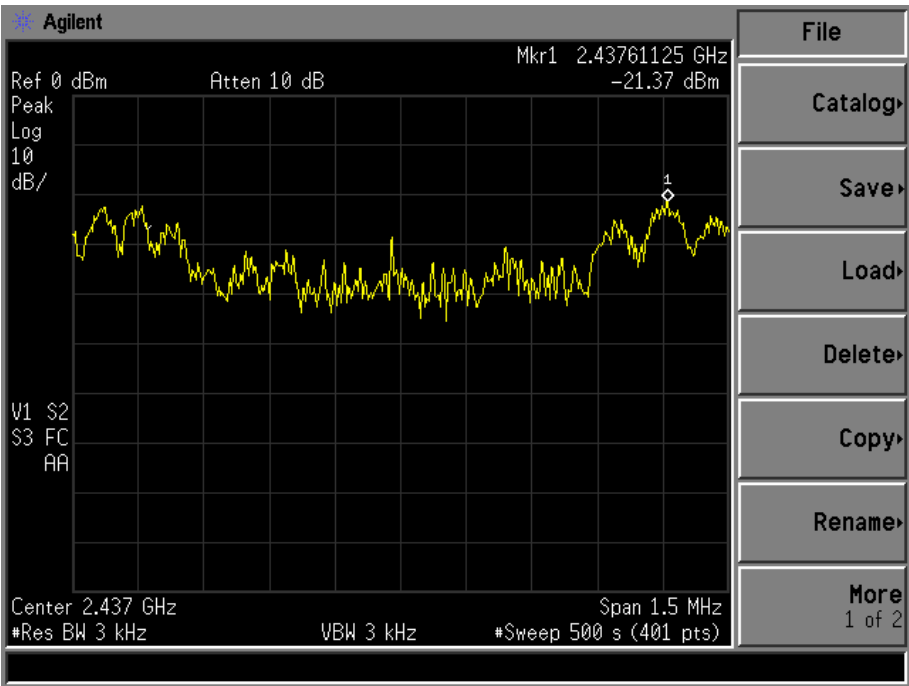


For 802.11n HT40

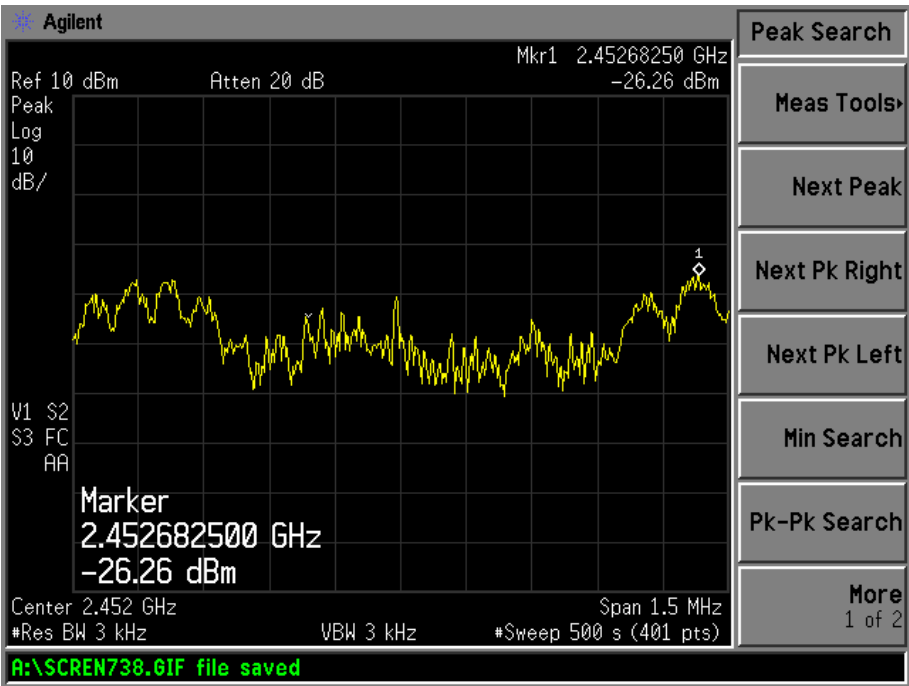
Low Channel:



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	2010-12-20	2011-12-19
Attenuator	ATTEN	ATS100-4-20	/	2010-12-20	2011-12-19

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

6.3 Test Procedure

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

6.4 Environmental Conditions

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

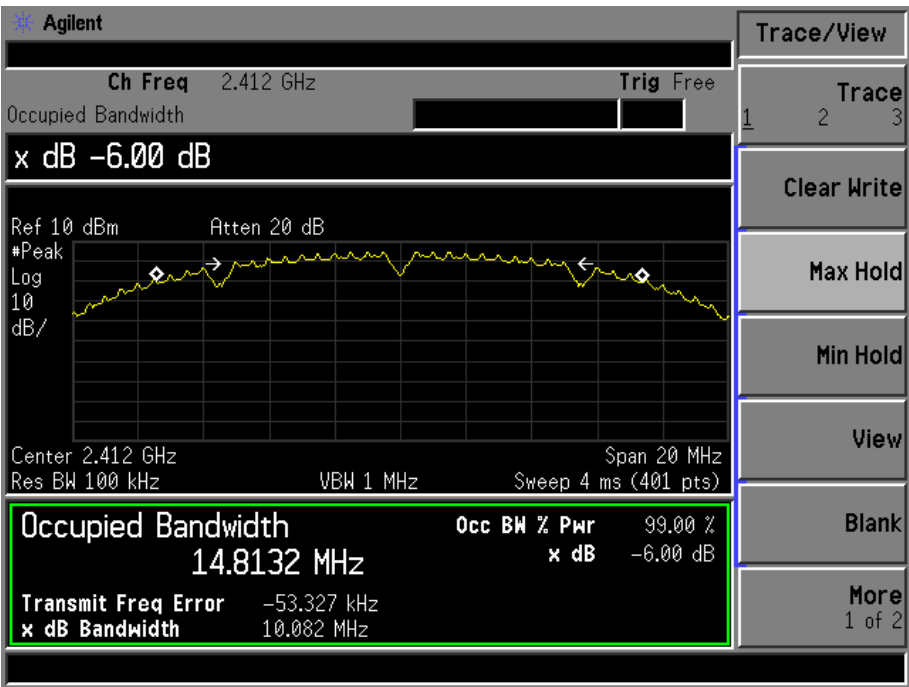
6.5 Summary of Test Results/Plots

Test mode	Frequency MHz	6 dB Bandwidth kHz	Limit kHz
802.11b	2412	10082	500
	2437	10043	500
	2462	10079	500
802.11g	2412	16505	500
	2437	16463	500
	2462	16484	500

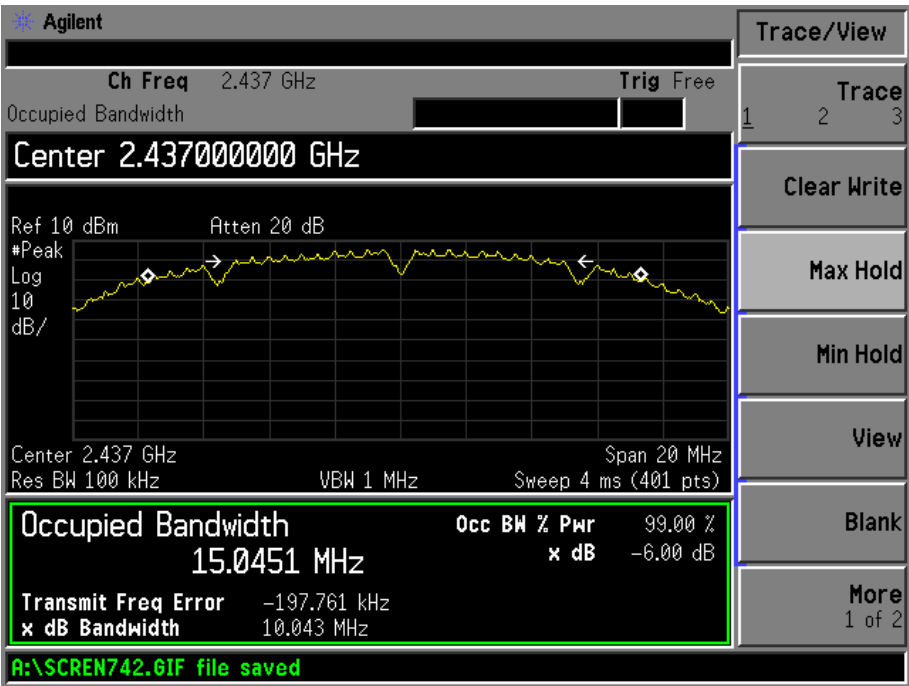
Test mode	Frequency MHz	6 dB Bandwidth kHz	Limit kHz
802.11n HT20	2412	17710	500
	2437	17803	500
	2462	17762	500
802.11n HT40	2422	36289	500
	2437	36334	500
	2452	36380	500

For 802.11b

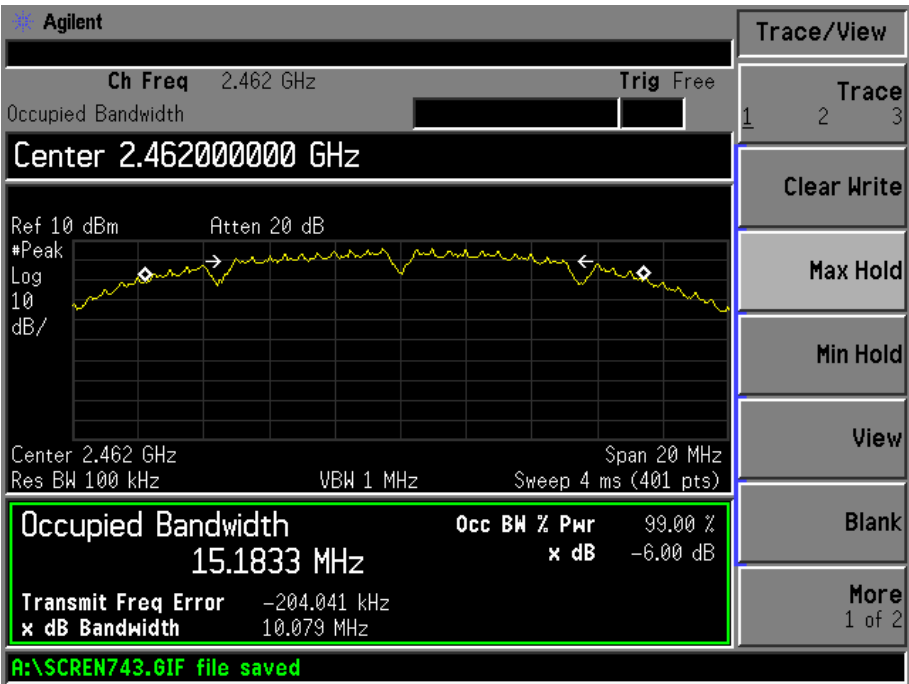
Low Channel:



Mid Channel:

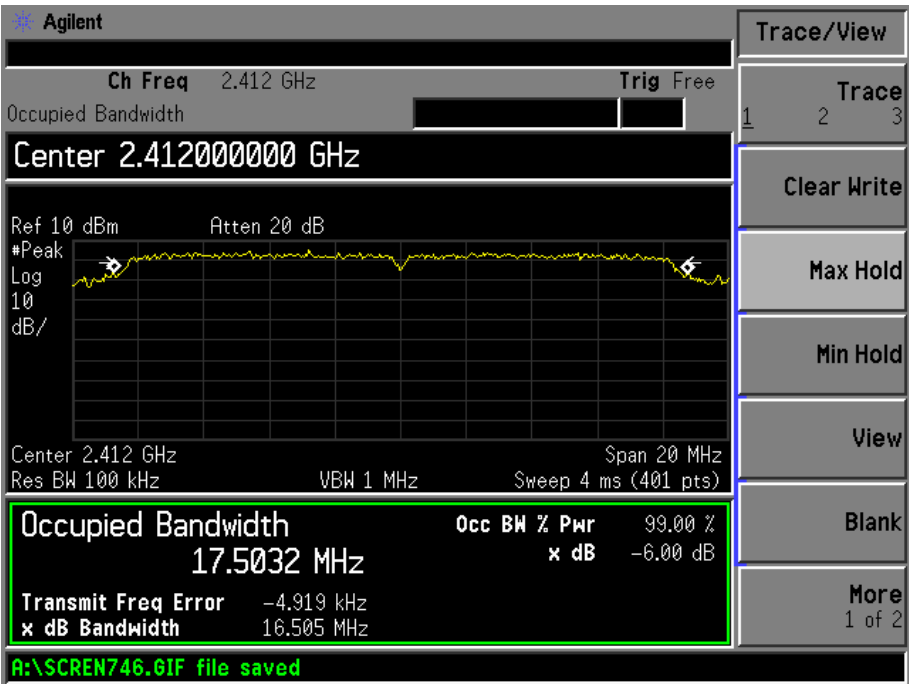


High Channel:

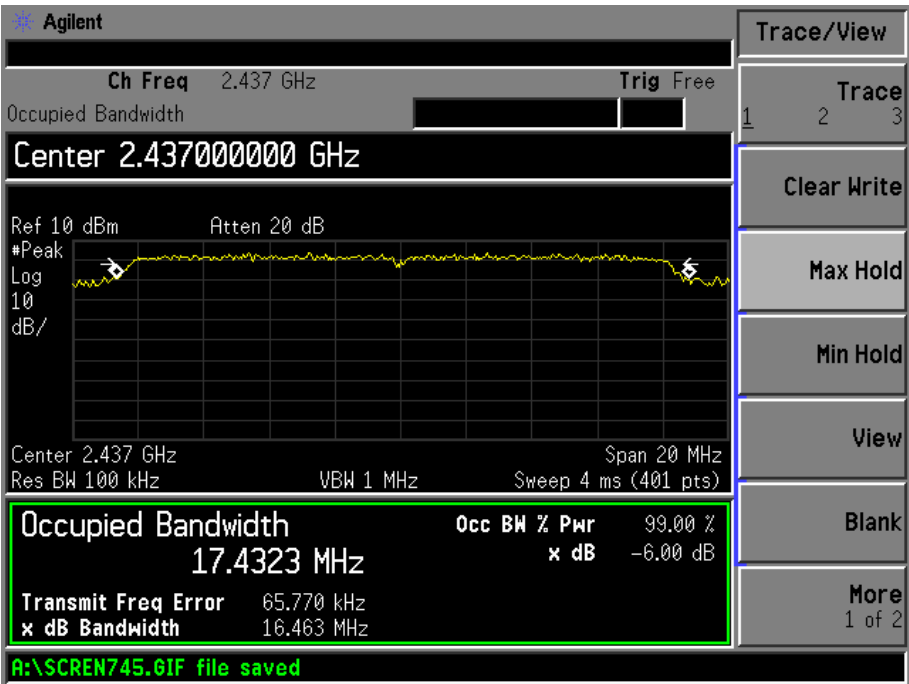


For 802.11g

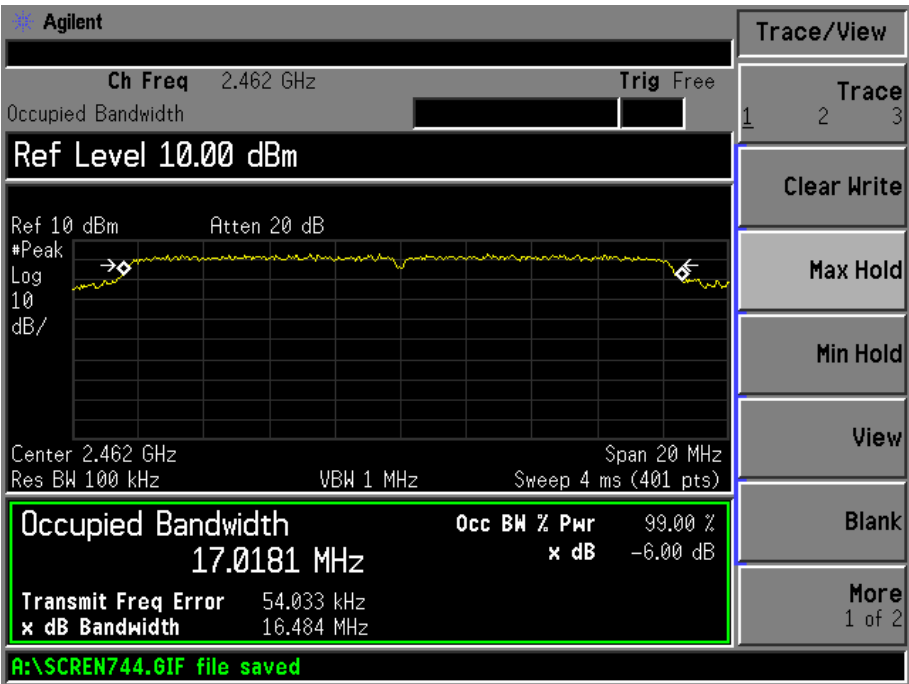
Low Channel:



Mid Channel:

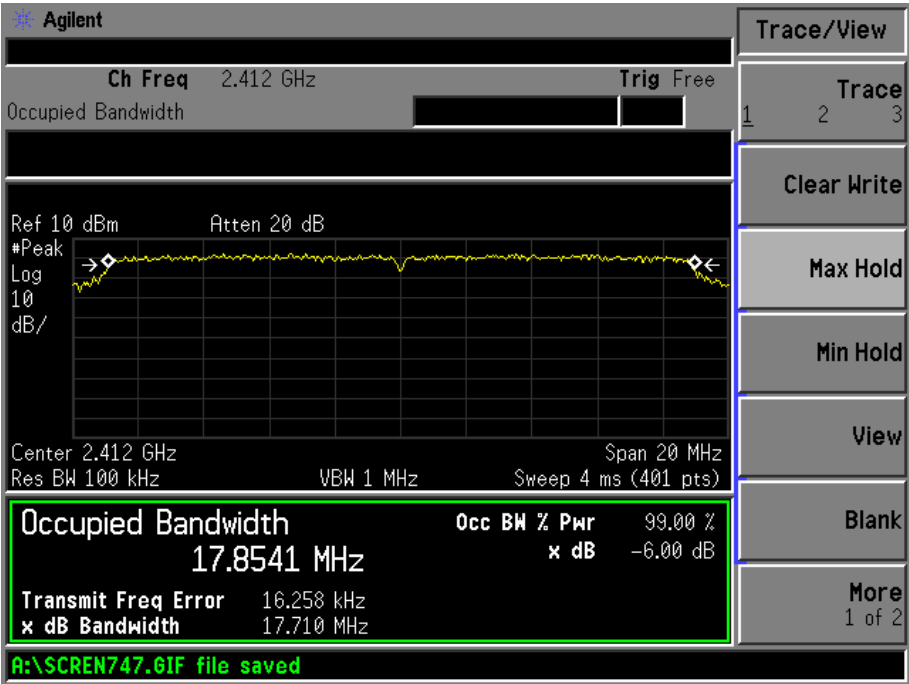


High Channel:

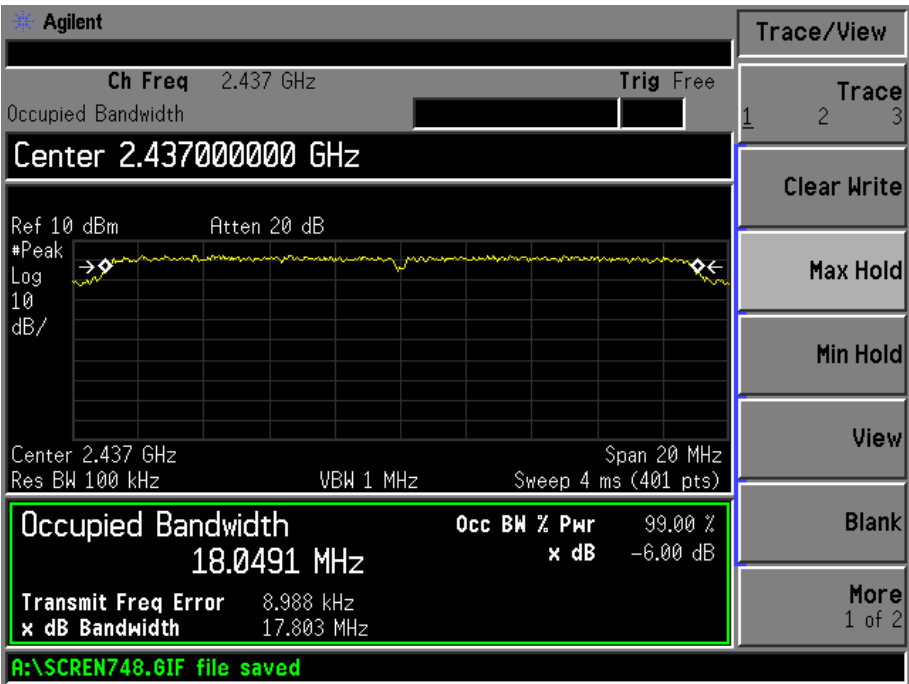


For 802.11n HT20

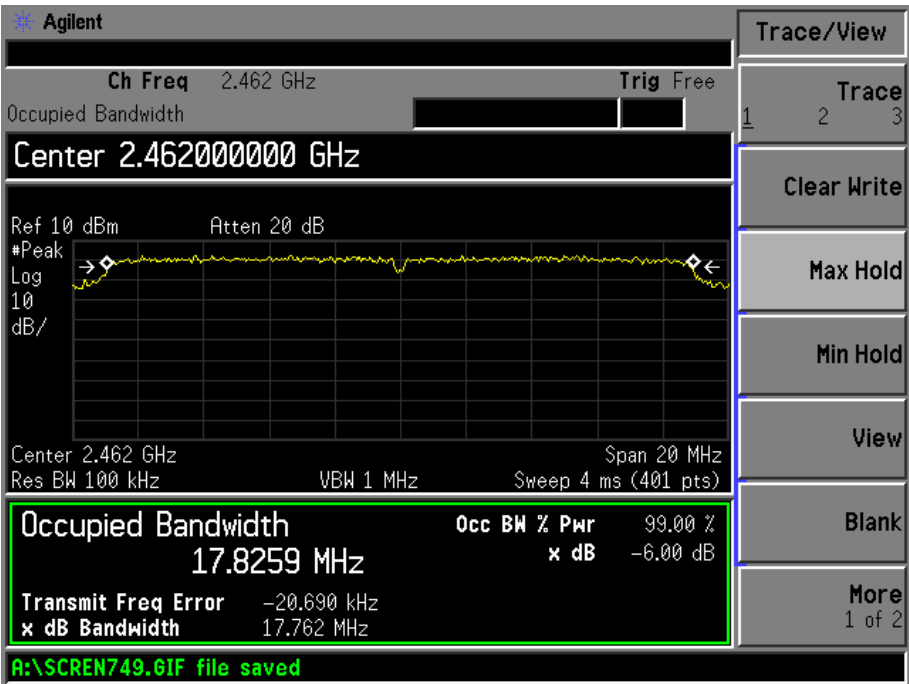
Low Channel:



Middle Channel:

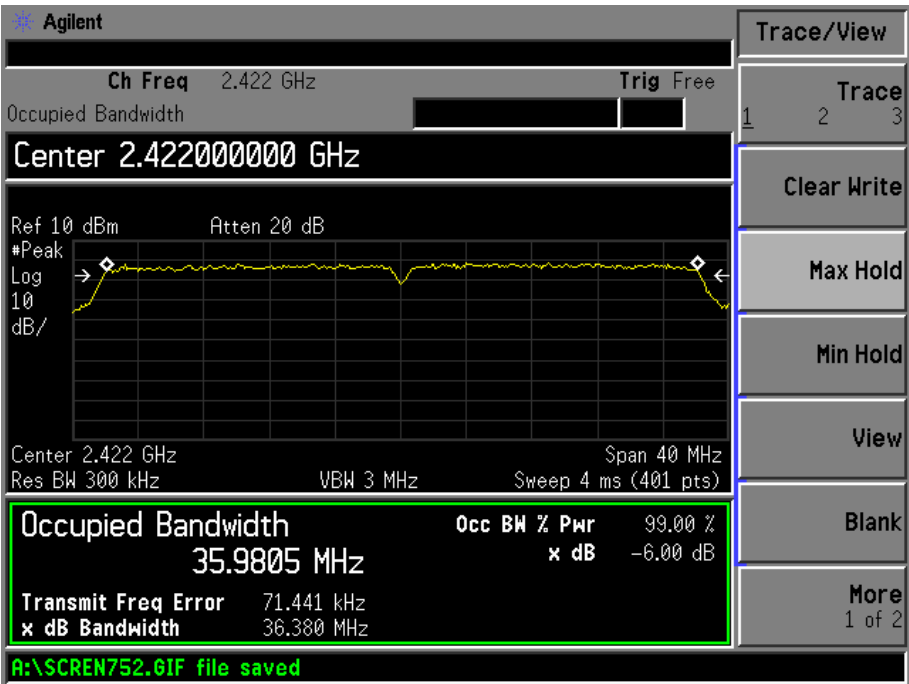


High Channel:

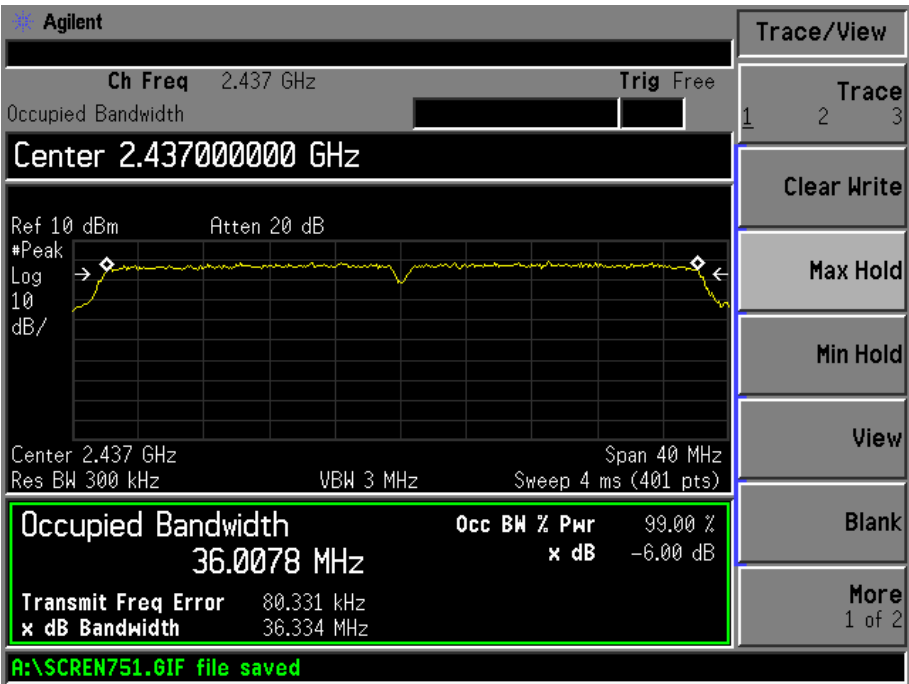


For 802.11n HT40

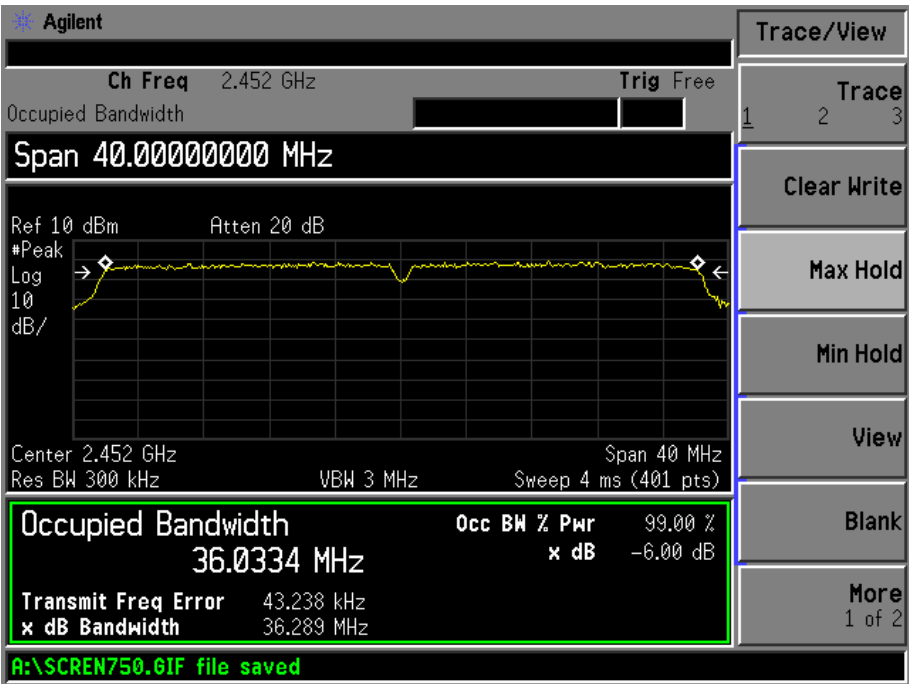
Low Channel:



Middle Channel:



High Channel:



7. POWER OUTPUT

7.1 Standard Applicable

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

7.2 Test Equipment List and Details

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

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

7.3 Test Procedure

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

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW \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

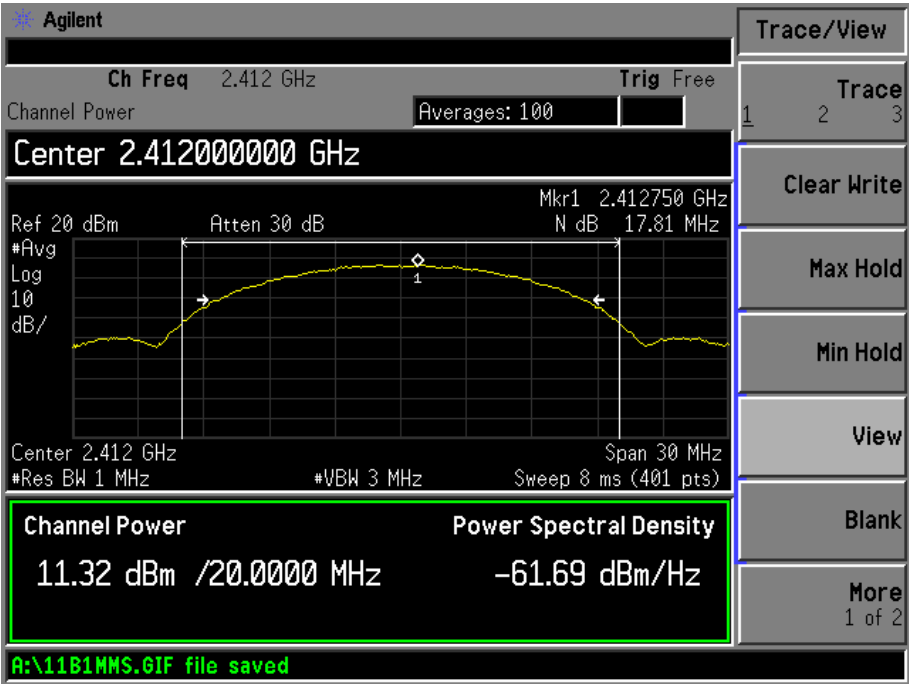
Temperature:	21° C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

7.5 Summary of Test Results/Plots

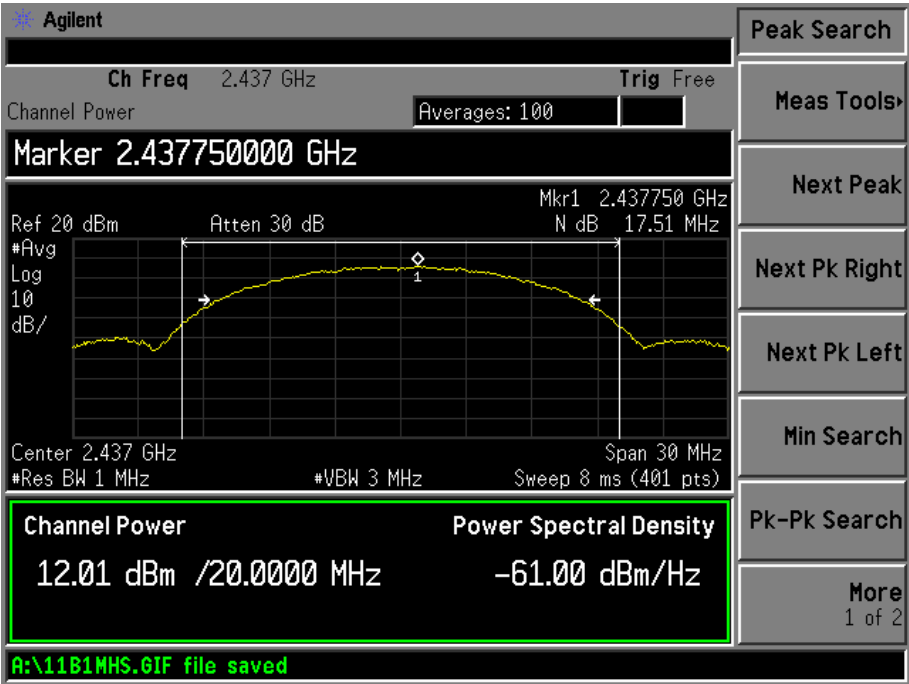
Test mode	Frequency MHz	Reading dBm	Output power W	Limit W
802.11b (1M Short)	2412	11.32	0.013552	1
	2437	12.01	0.015885	1
	2462	12.02	0.015922	1
802.11b (1M Long)	2412	12.19	0.016558	1
	2437	11.90	0.015488	1
	2462	11.98	0.015776	1
802.11b (11M Short)	2412	11.99	0.015812	1
	2437	12.08	0.016144	1
	2462	12.24	0.016749	1
802.11b (11M Long)	2412	11.74	0.014928	1
	2437	11.87	0.015382	1
	2462	11.92	0.01556	1
802.11g (6M)	2412	11.78	0.015066	1
	2437	11.71	0.014825	1
	2462	12.18	0.01652	1
802.11g (54M)	2412	10.91	0.012331	1
	2437	10.51	0.011246	1
	2462	10.57	0.011402	1
802.11n-HT20	2412	12.47	0.01766	1
	2437	11.98	0.015776	1
	2462	11.75	0.014962	1
802.11n-HT40	2422	8.30	0.006761	1
	2437	8.70	0.007413	1
	2452	9.26	0.008433	1

For 802.11b_1M Short rate

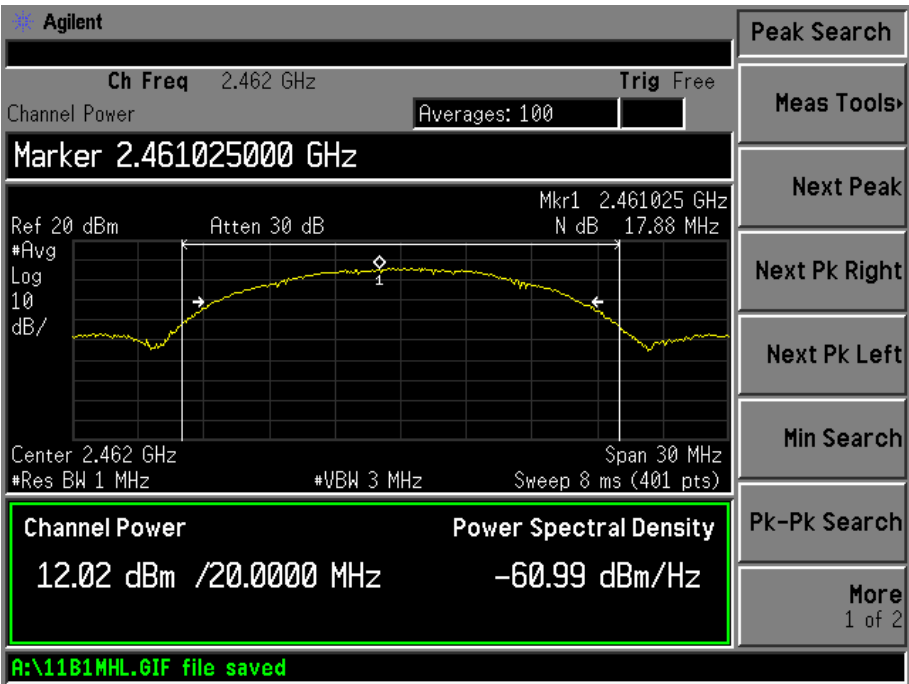
Low Channel:



Middle Channel:

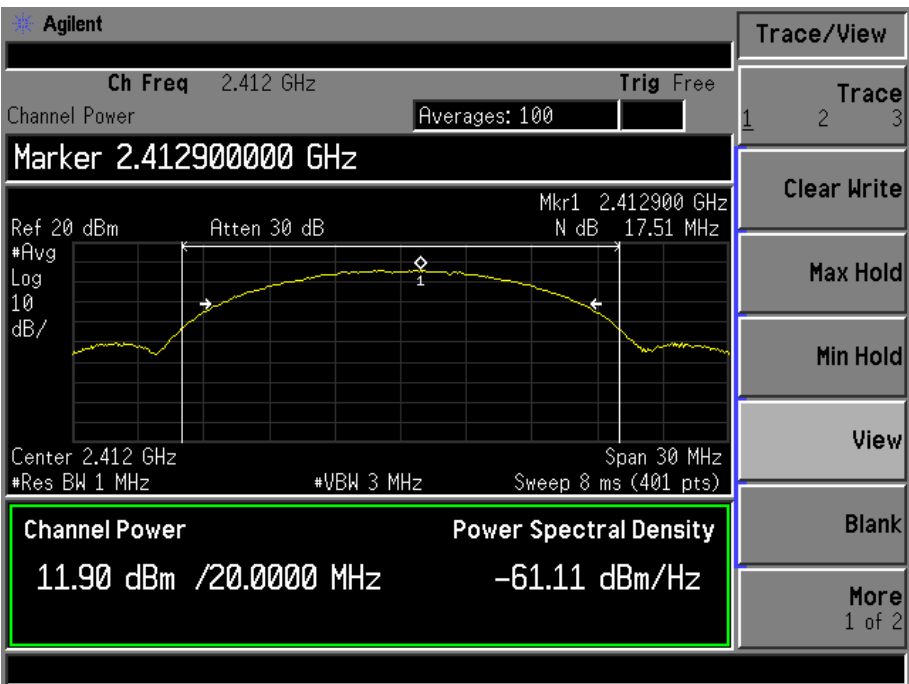


High Channel:

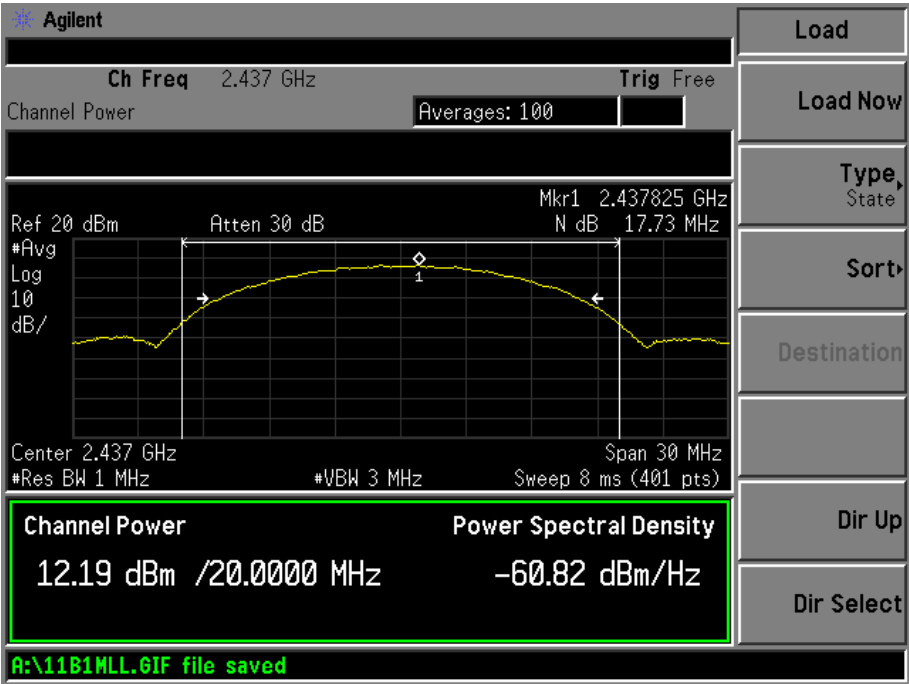


For 802.11b_1M Long rate

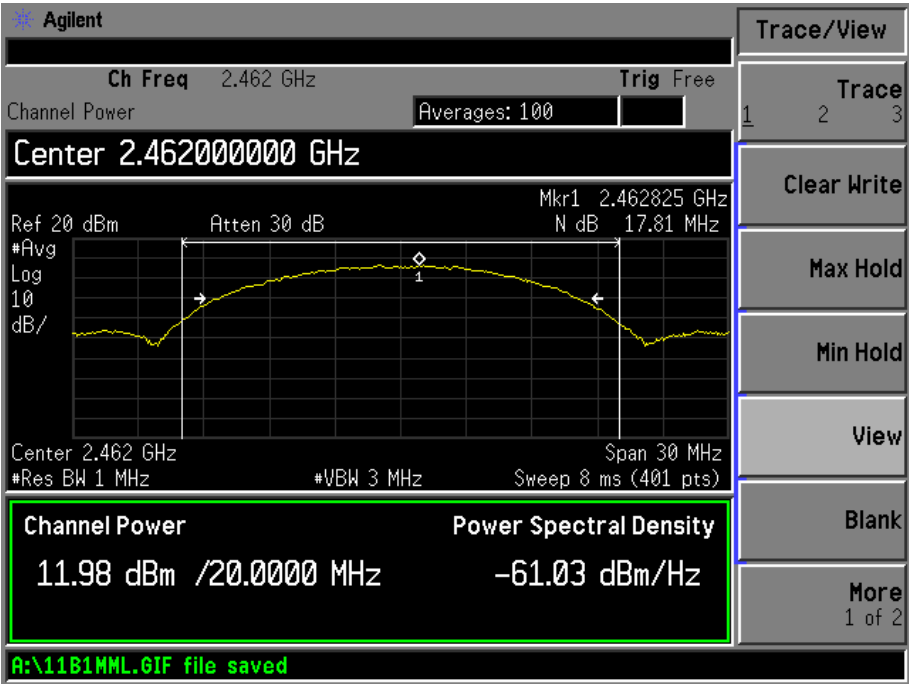
Low Channel:



Middle Channel:

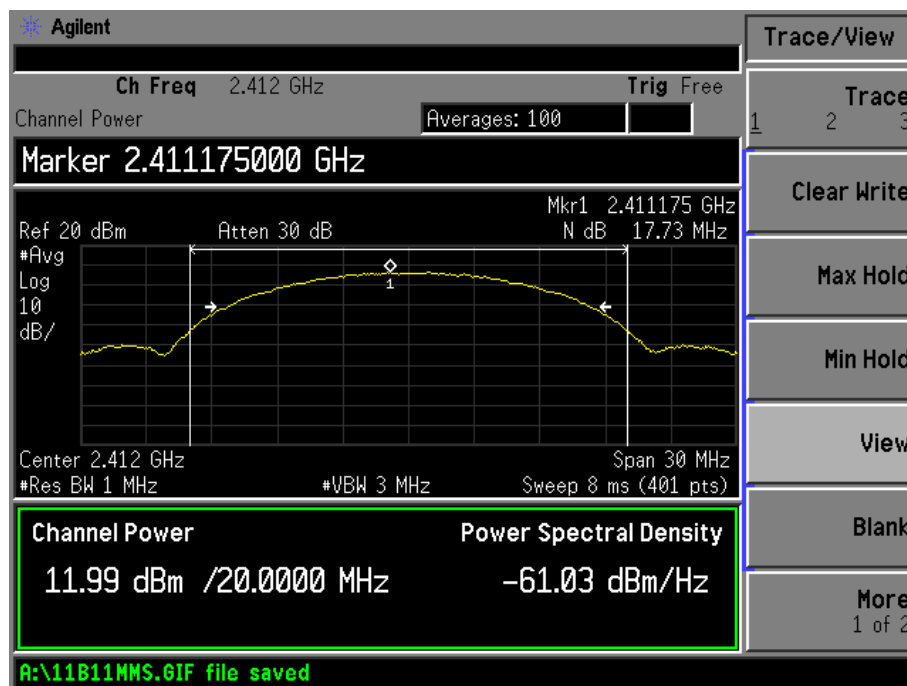


High Channel:

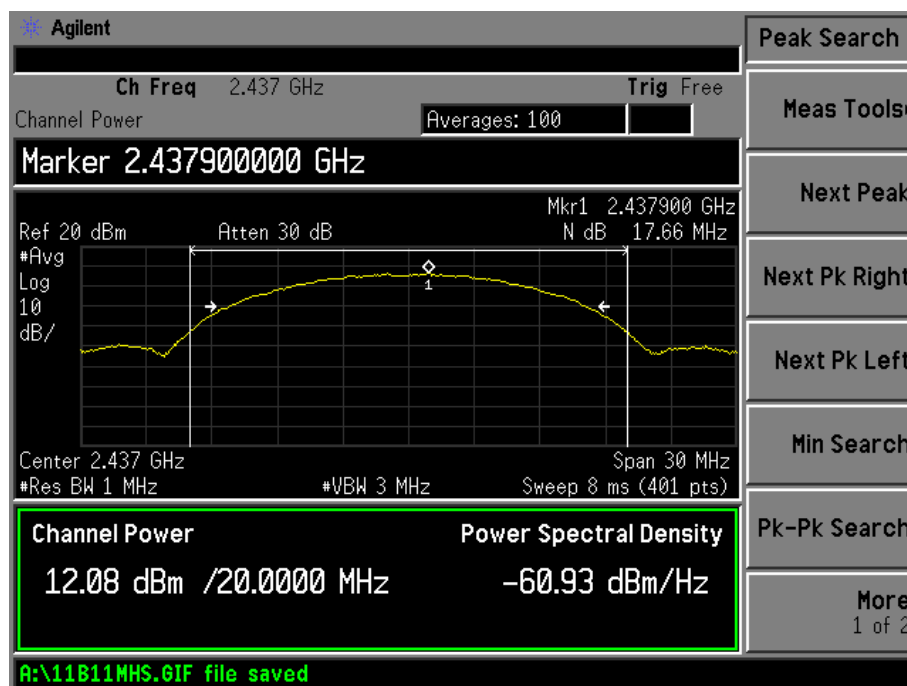


For 802.11b_11M Short rate

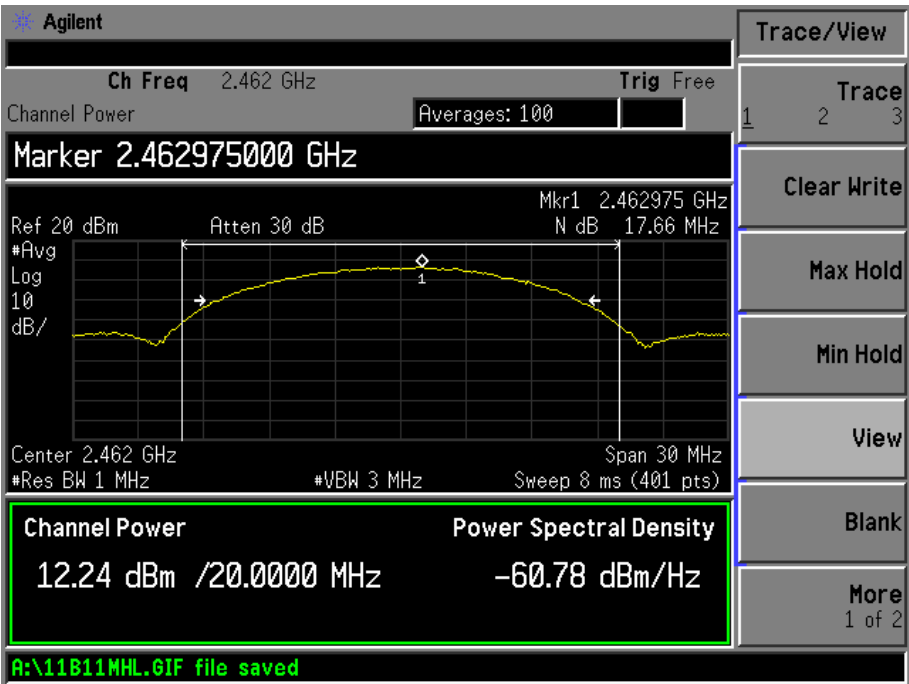
Low Channel:



Middle Channel:

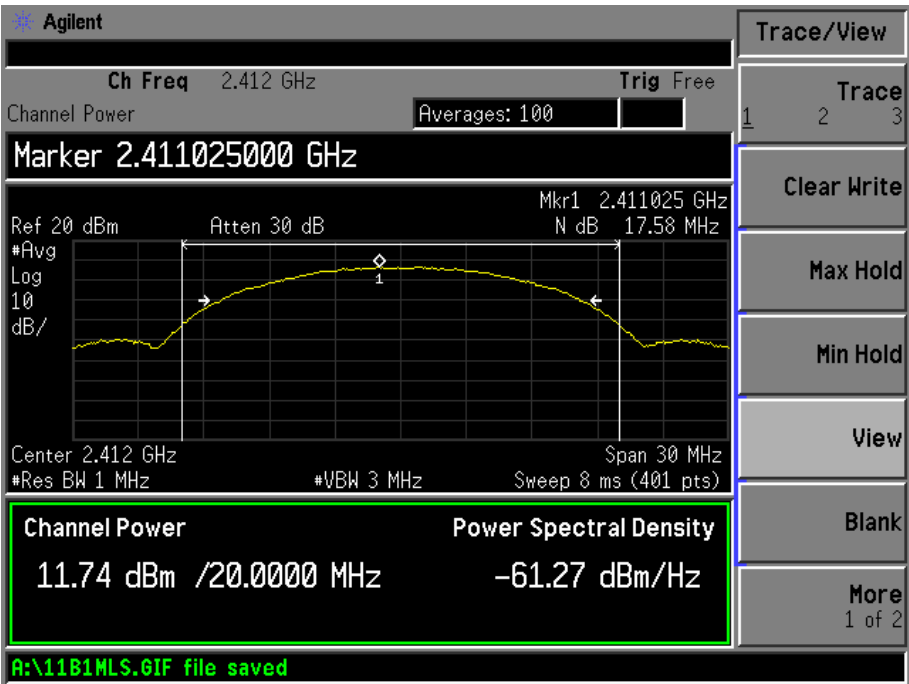


High Channel:

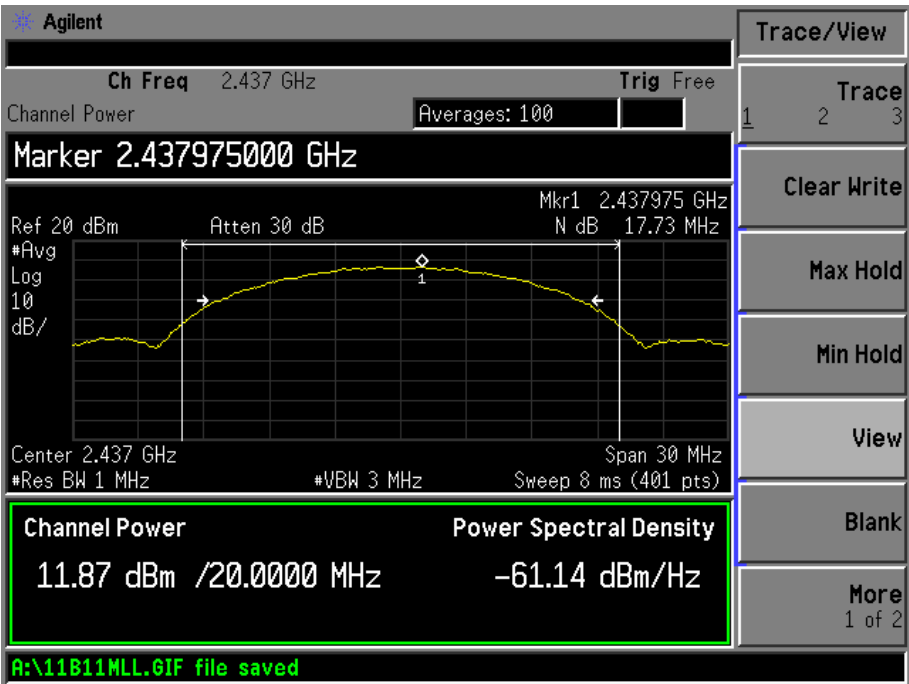


For 802.11b_11M Long rate

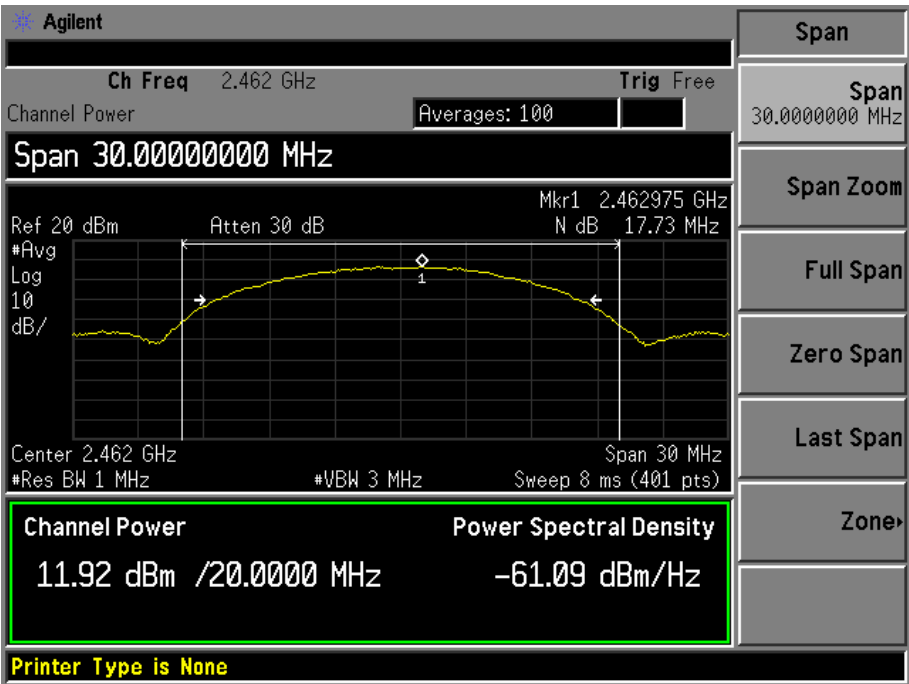
Low Channel:



Middle Channel:

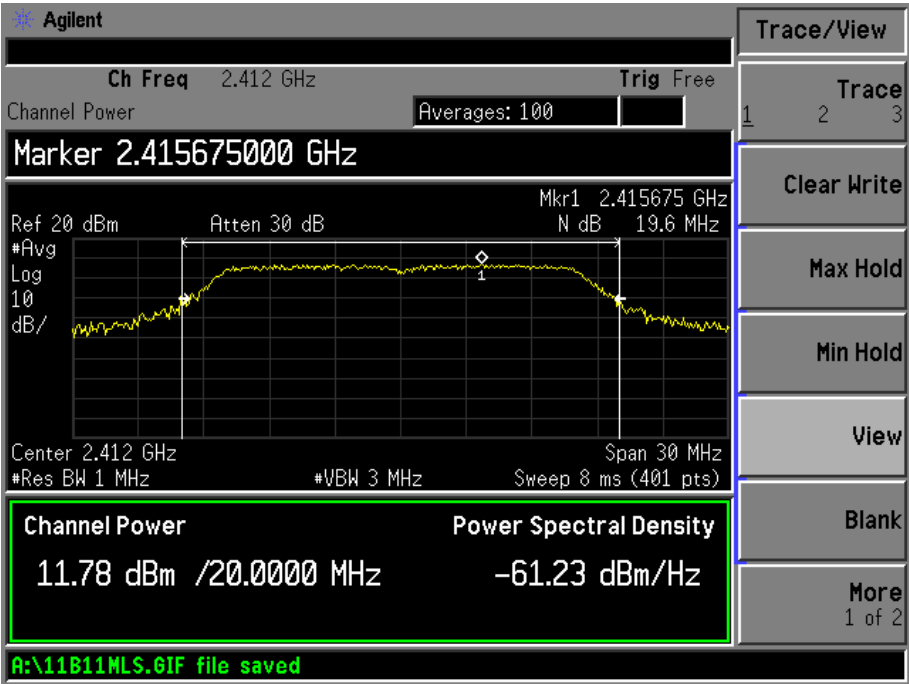


High Channel:

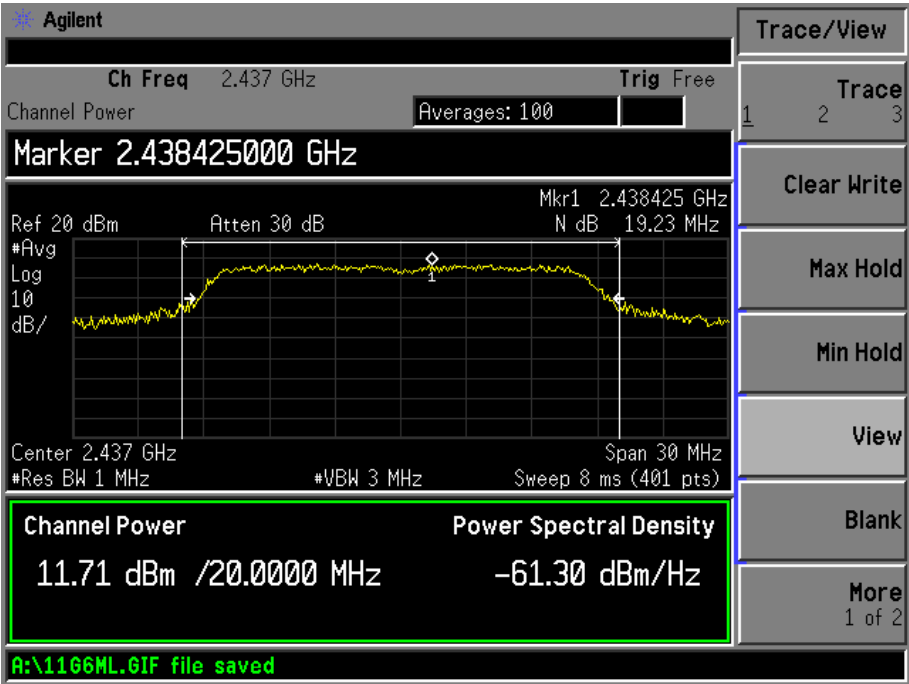


For 802.11g_6M rate

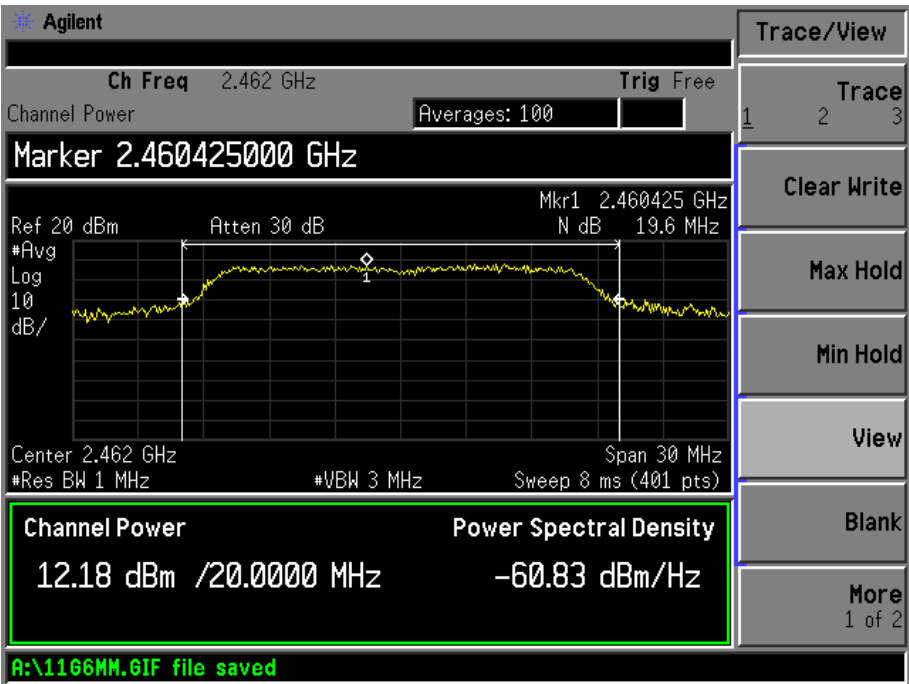
Low Channel:



Middle Channel:

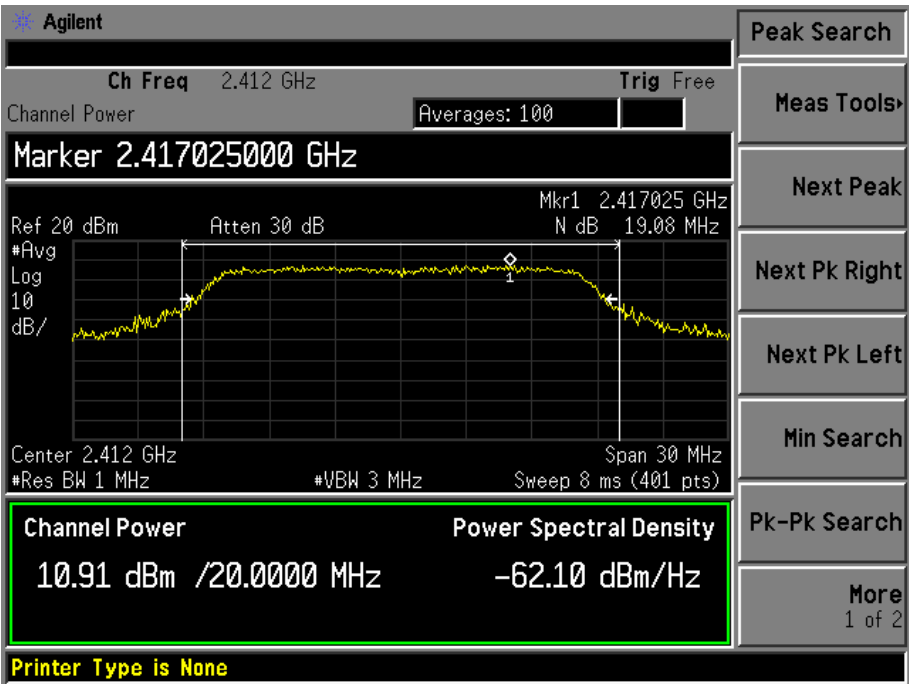


High Channel:

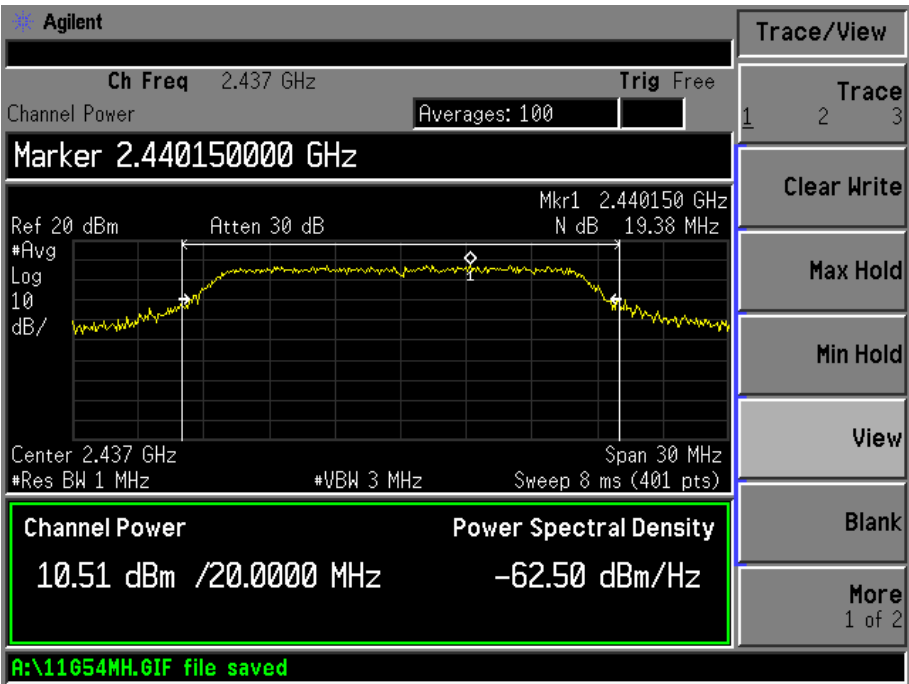


For 802.11g_54M rate

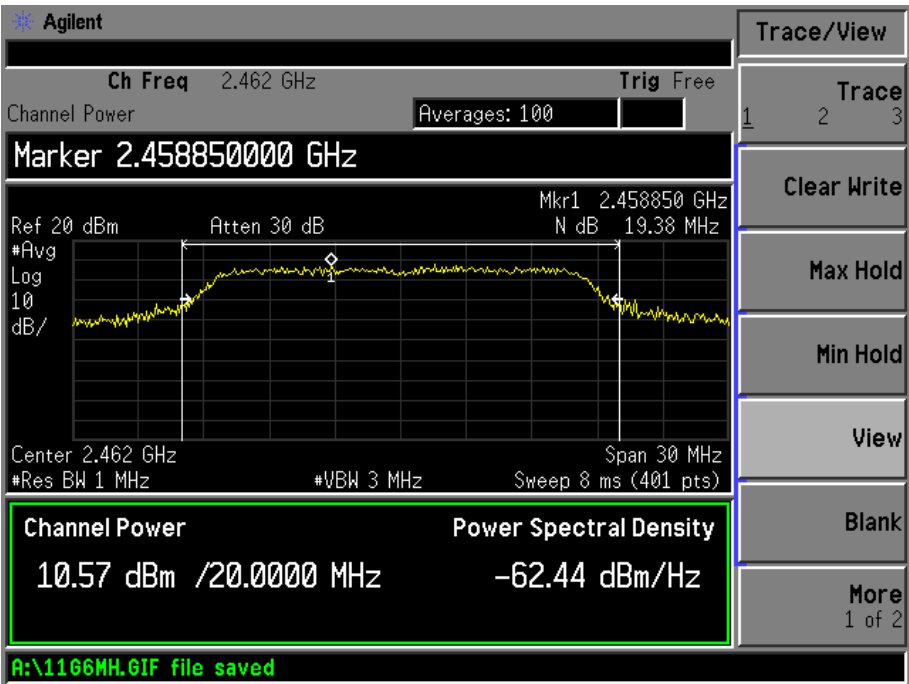
Low Channel:



Middle Channel:

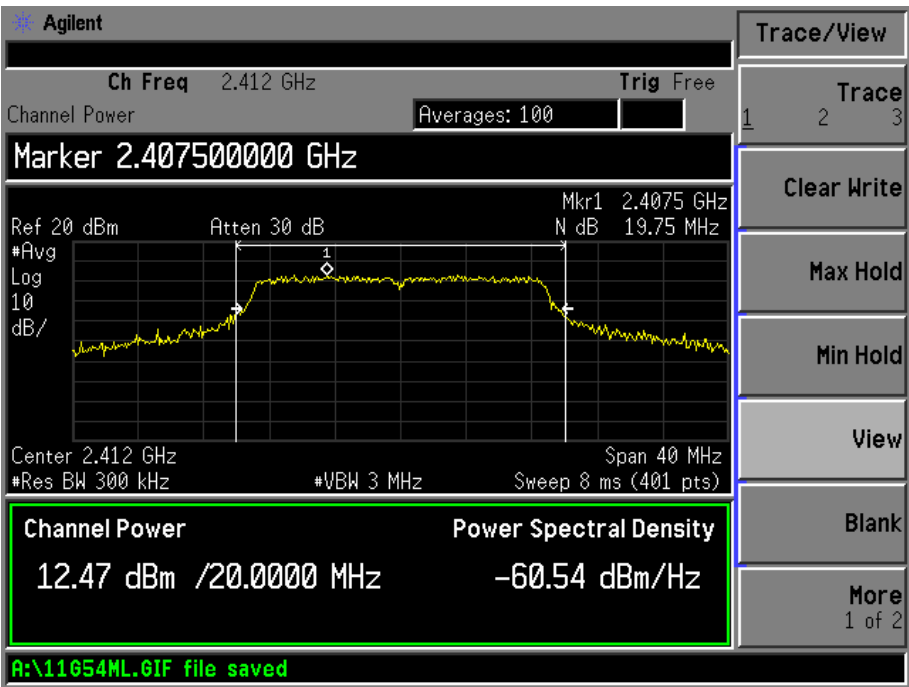


High Channel:

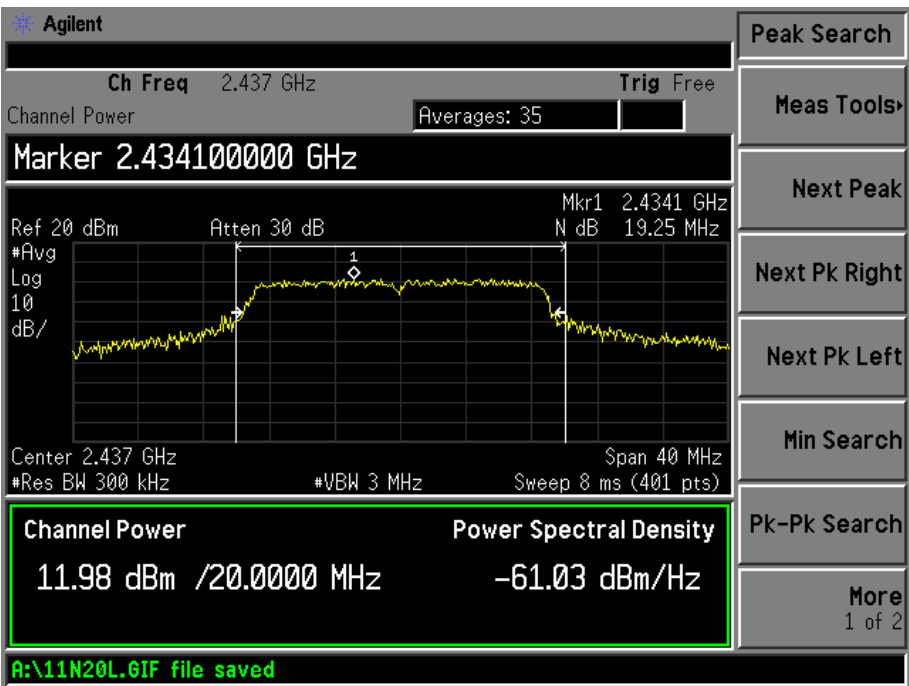


For 802.11n HT20

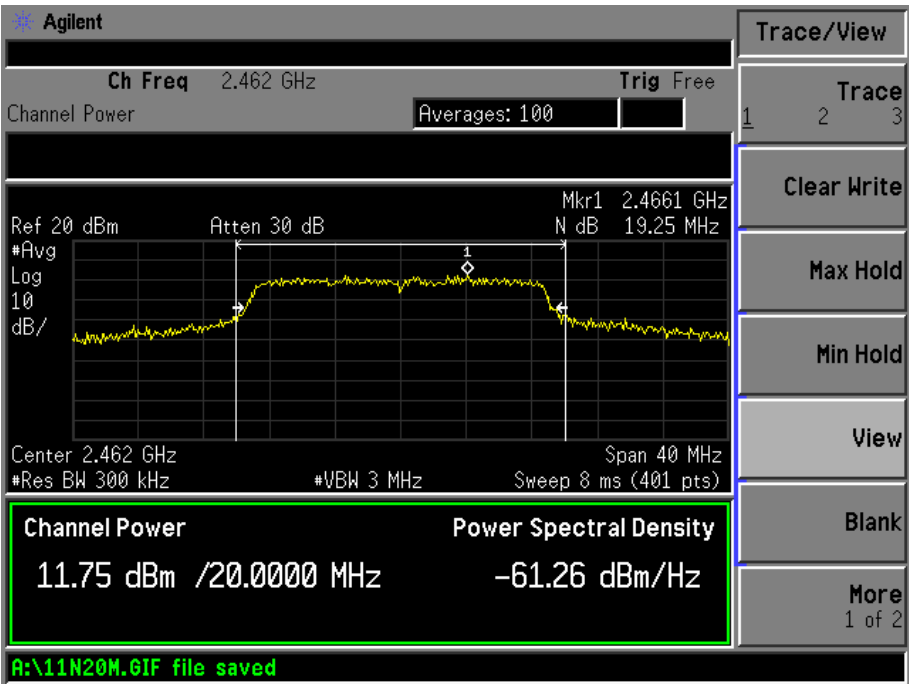
Low Channel:



Middle Channel:

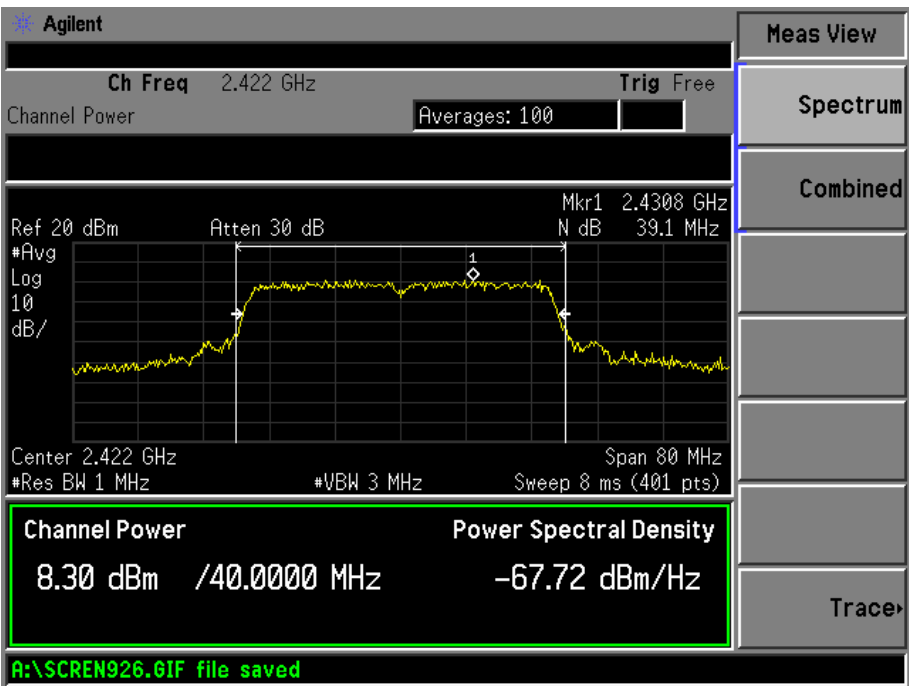


High Channel:

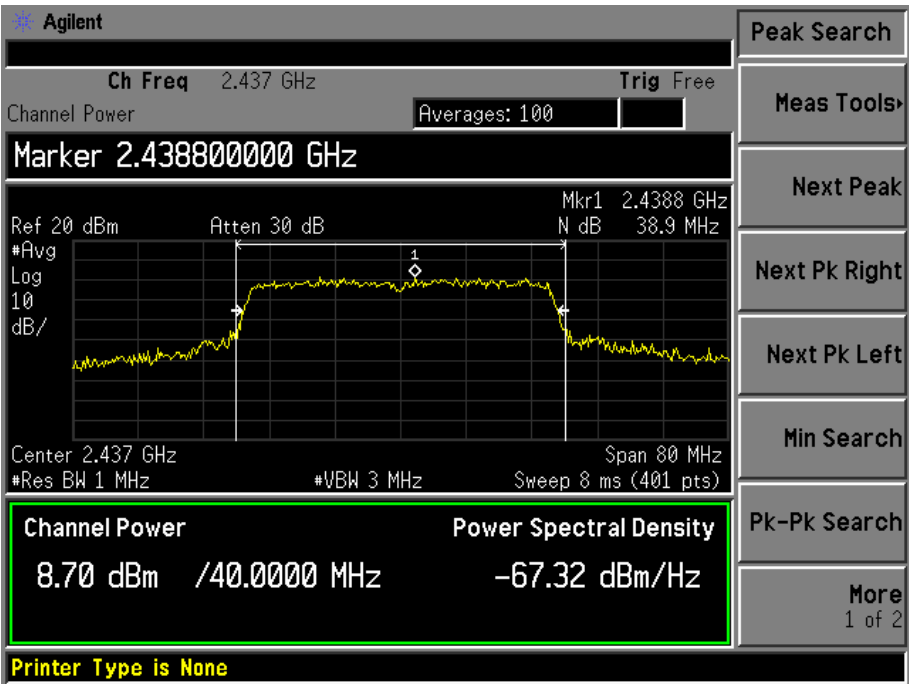


For 802.11n HT40

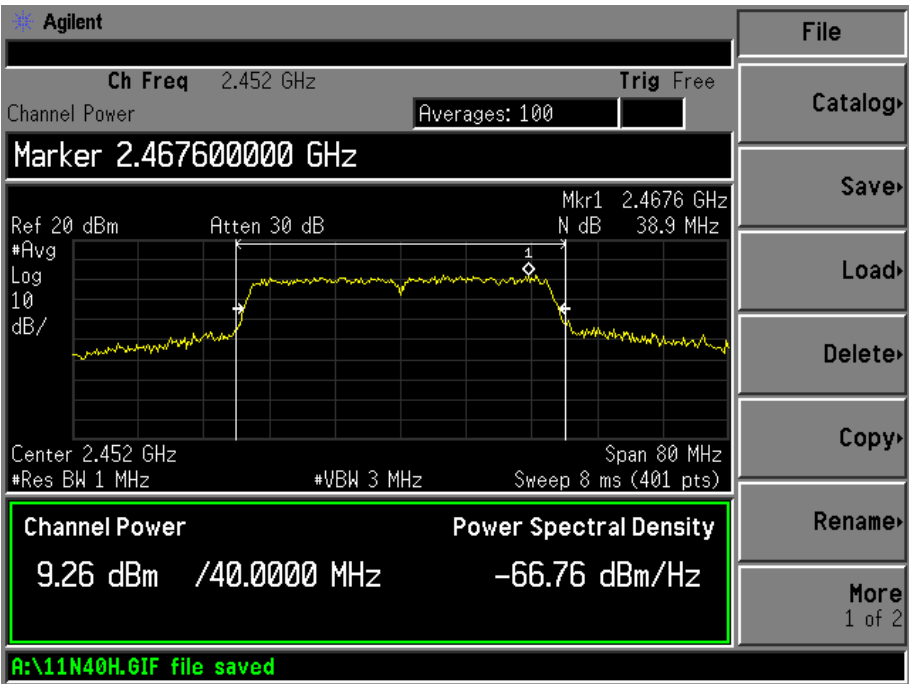
Low Channel:



Middle Channel:



High Channel:



8. FIELD STRENGTH OF SPURIOUS EMISSIONS

8.1 Measurement Uncertainty

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

8.2 Standard Applicable

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

Section 15.209:

30 - 88 MHz 40 dBuV/m @3M

88 -216 MHz 43.5 dBuV/m @3M

216 -960 MHz 46 dBuV/m @3M

Above 960 MHz 54dBuV/m @3M

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

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

8.3 Test Equipment List and Details

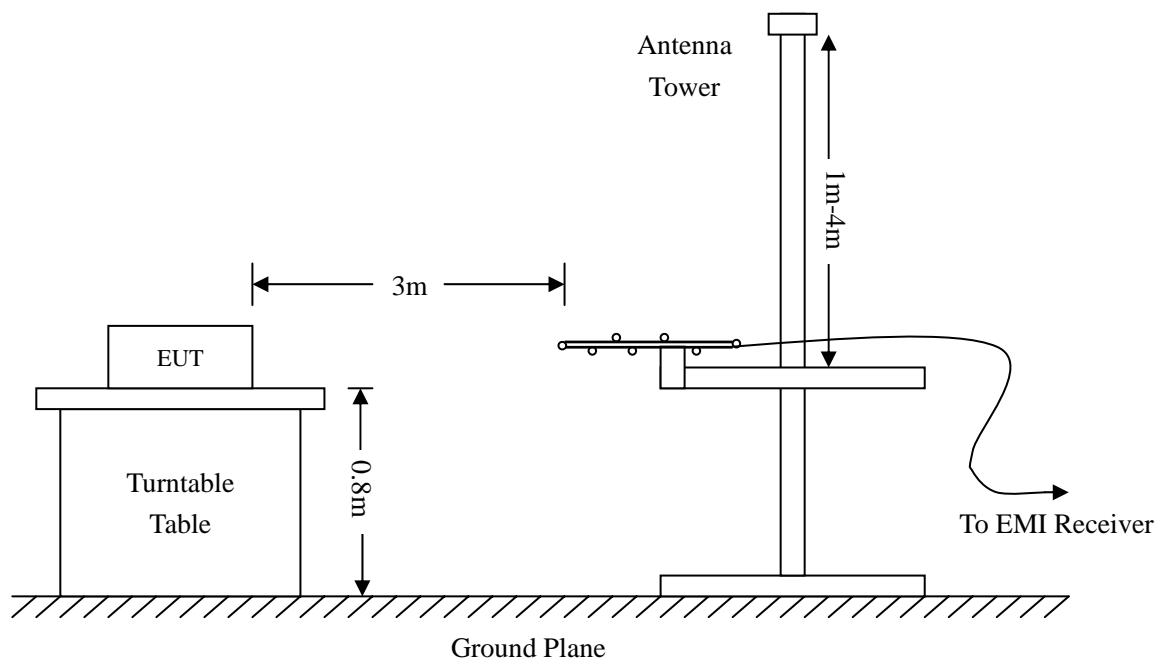
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2010-12-20	2011-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2010-12-20	2011-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2010-12-20	2011-12-19
RF Switch	EM	EMSW18	SW060023	2010-12-20	2011-12-19
Pre-amplifier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

8.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



8.5 Corrected Amplitude & Margin Calculation

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

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

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

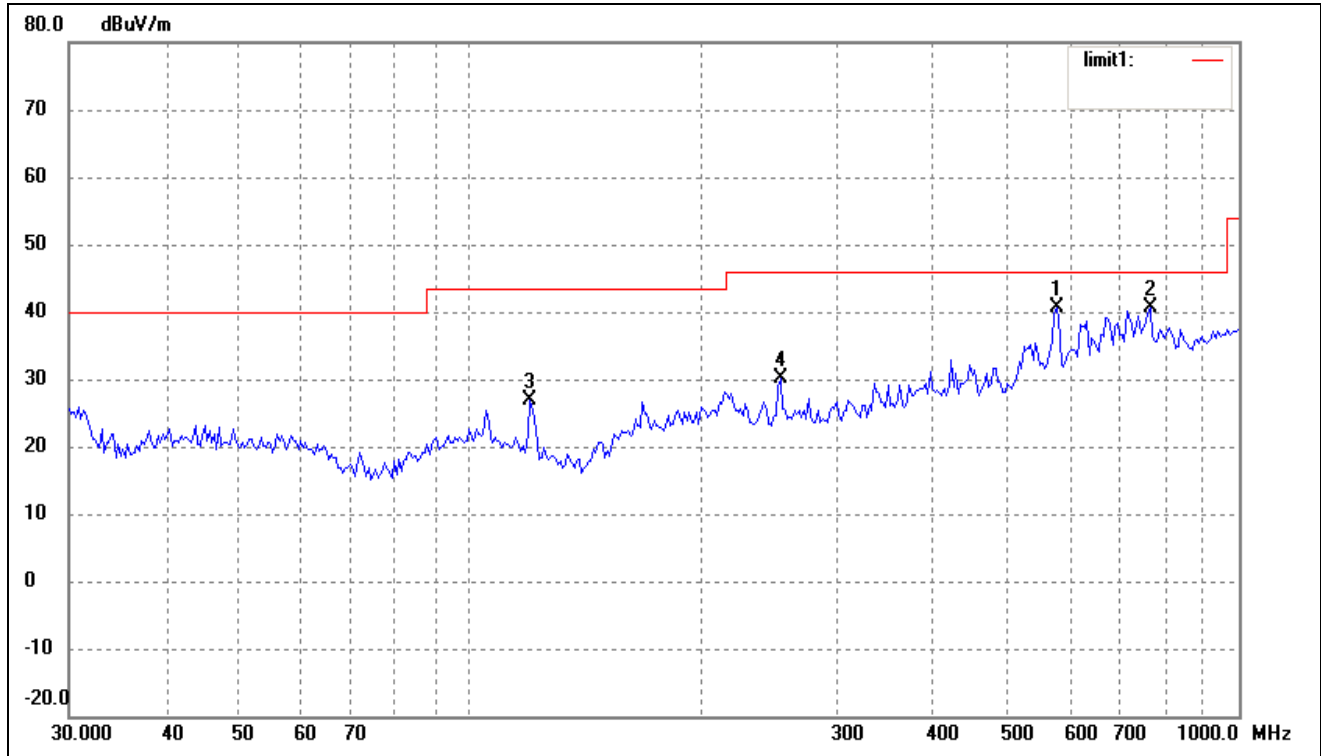
Temperature:	22° C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

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:

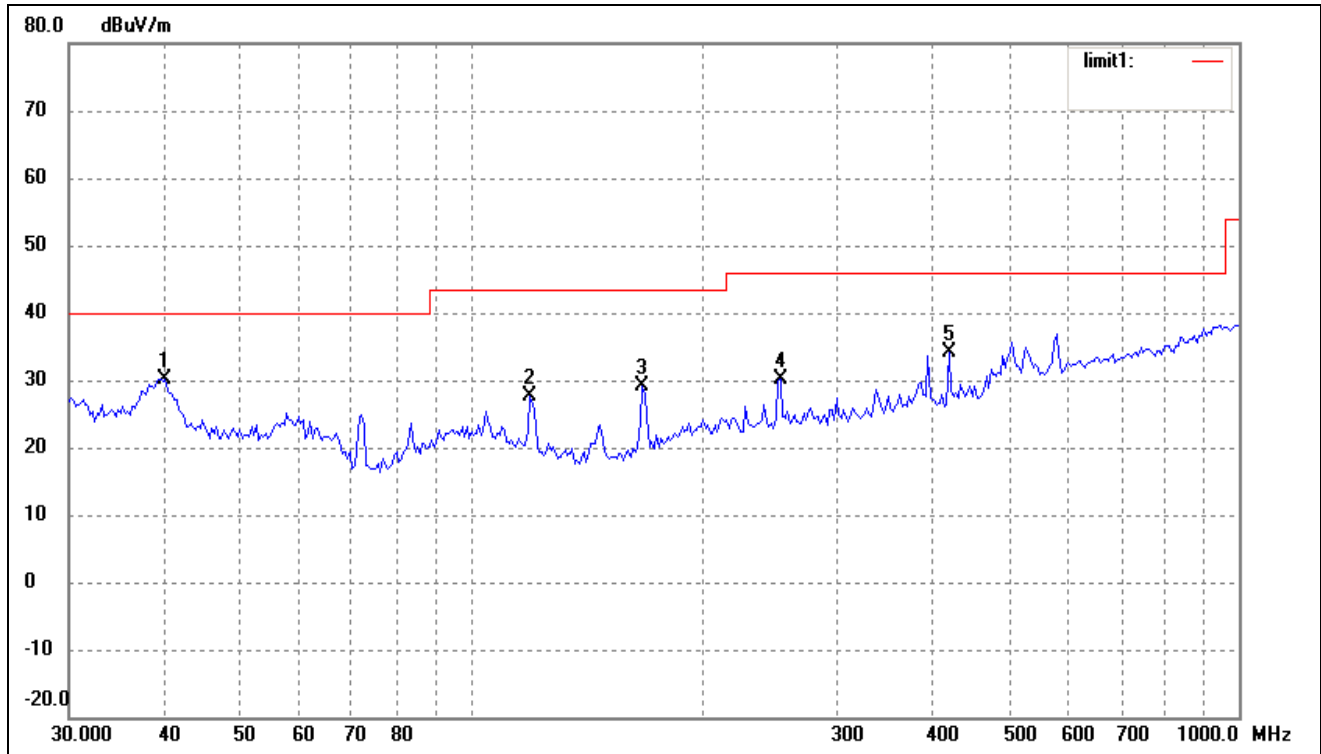
-3.1dBμV at 7311MHz in the Horizontal polarization, Transmitting 802.11b Middle Channel test mode with, 30 MHz to 25 GHz, 3Meters

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*

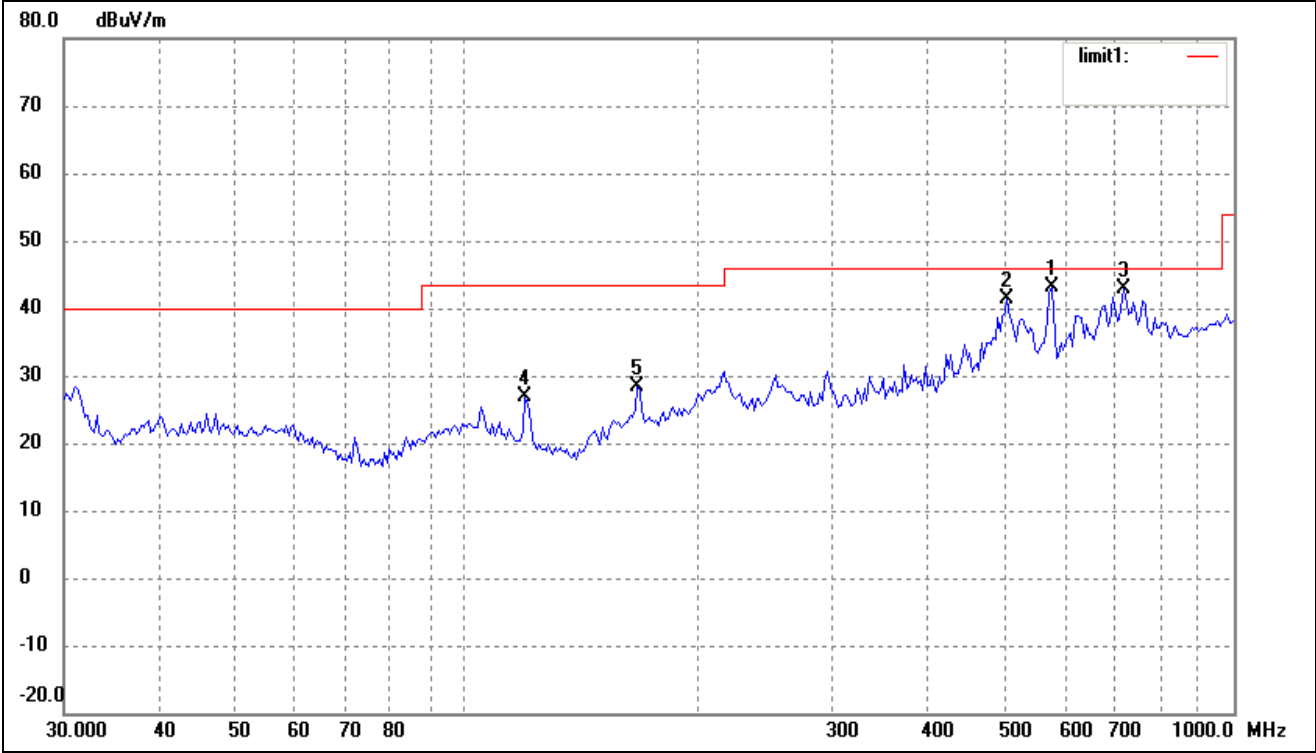
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	578.6699	24.47	16.18	40.65	46.00	-5.35	261	100	QP
2	766.0572	22.02	18.51	40.53	46.00	-5.47	125	100	QP
3	119.4361	20.85	6.04	26.89	43.50	-16.61	0	100	peak
4	252.9482	21.41	8.77	30.18	46.00	-15.82	0	100	peak

Vertical



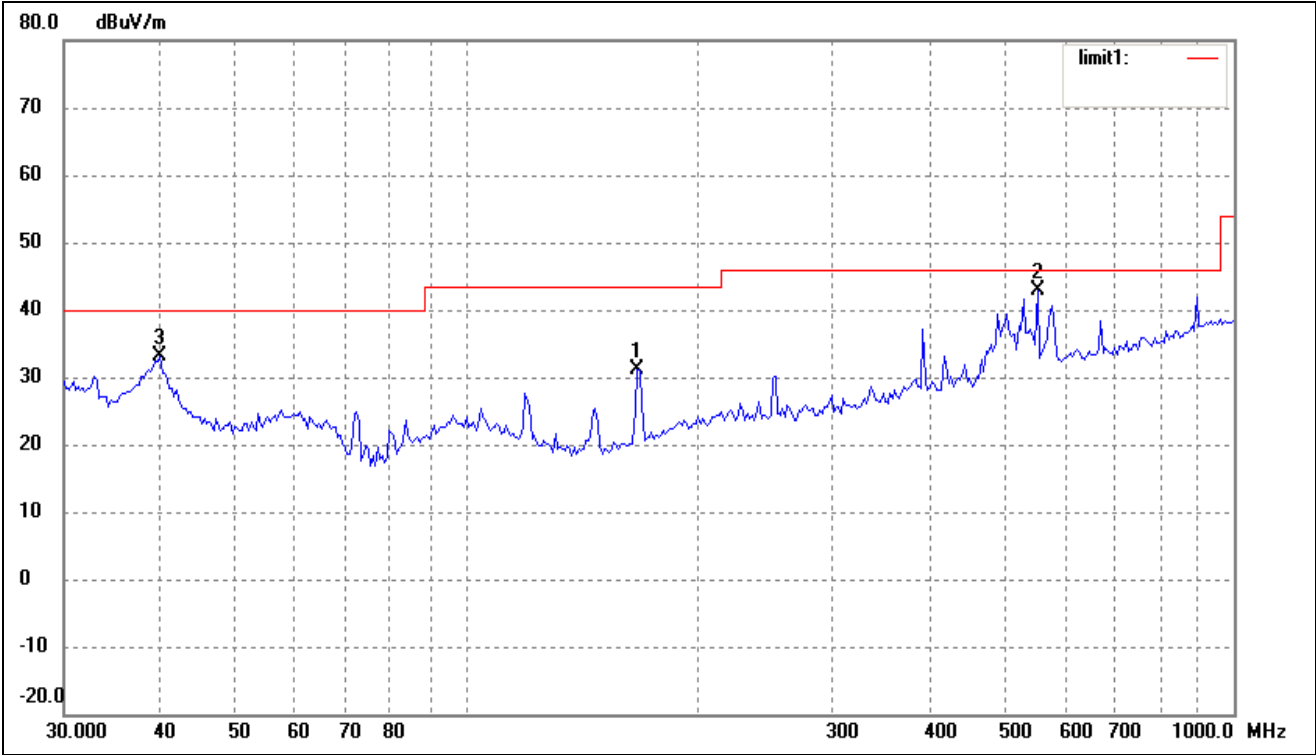
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.9942	22.04	8.14	30.18	40.00	-9.82	0	100	peak
2	119.4361	21.66	6.04	27.70	43.50	-15.80	0	100	peak
3	167.2368	24.30	4.79	29.09	43.50	-14.41	0	100	peak
4	252.9482	21.34	8.77	30.11	46.00	-15.89	0	100	peak
5	419.1081	22.89	11.36	34.25	46.00	-11.75	0	100	peak

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



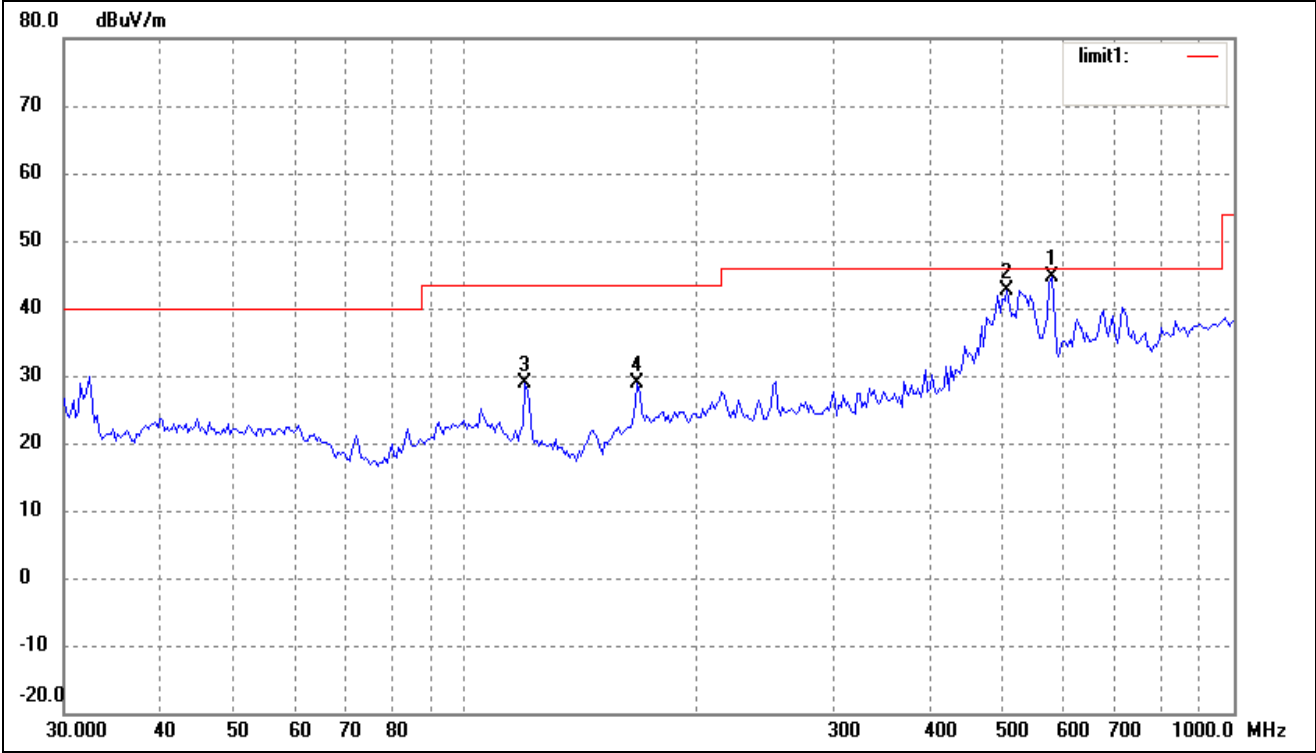
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	578.6699	27.02	16.18	43.20	46.00	-2.80	230	150	QP
2	506.4791	26.74	14.55	41.29	46.00	-4.71	125	206	QP
3	719.1995	25.09	17.79	42.88	46.00	-3.12	114	105	QP
4	119.4361	20.85	6.04	26.89	43.50	-16.61	360	100	peak
5	167.2368	23.57	4.79	28.36	43.50	-15.14	360	100	peak

Vertical



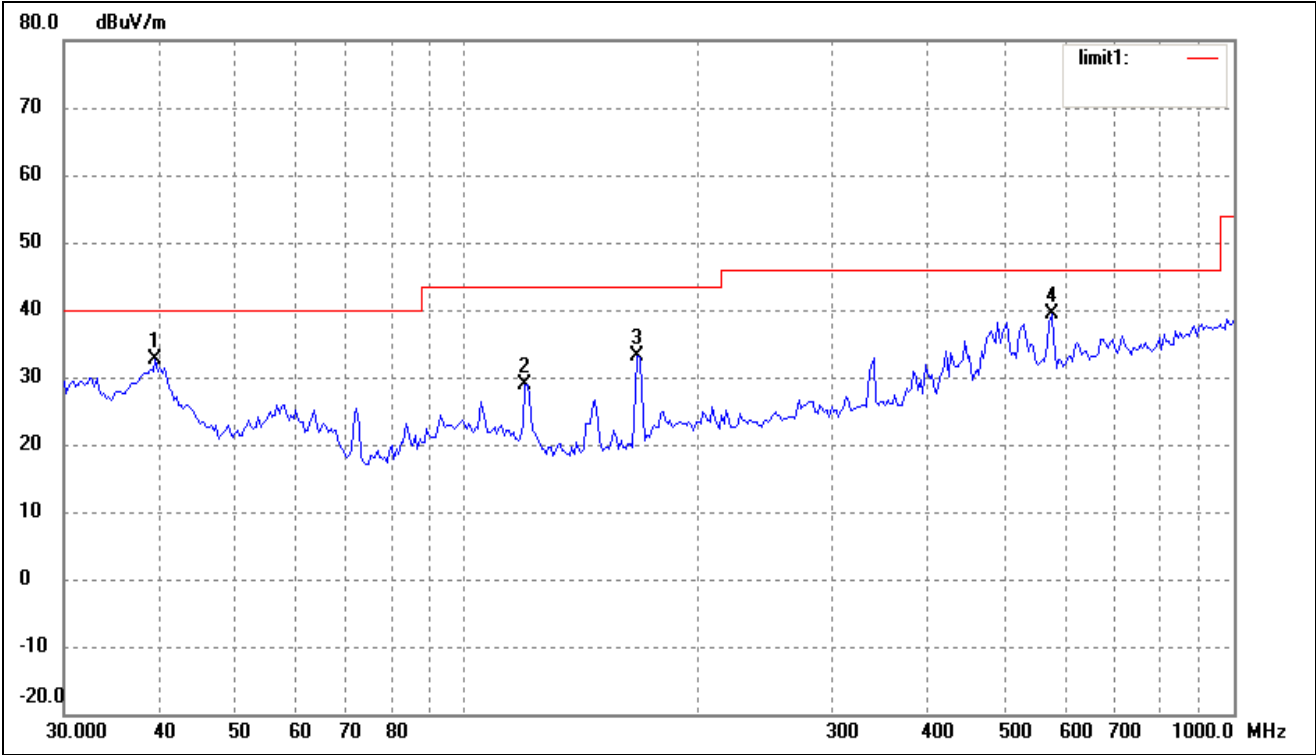
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	167.2368	26.38	4.79	31.17	43.50	-12.33	360	200	peak
2	554.8254	27.32	15.65	42.97	46.00	-3.03	209	120	QP
3	39.9942	25.02	8.14	33.16	40.00	-6.84	0	100	peak

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



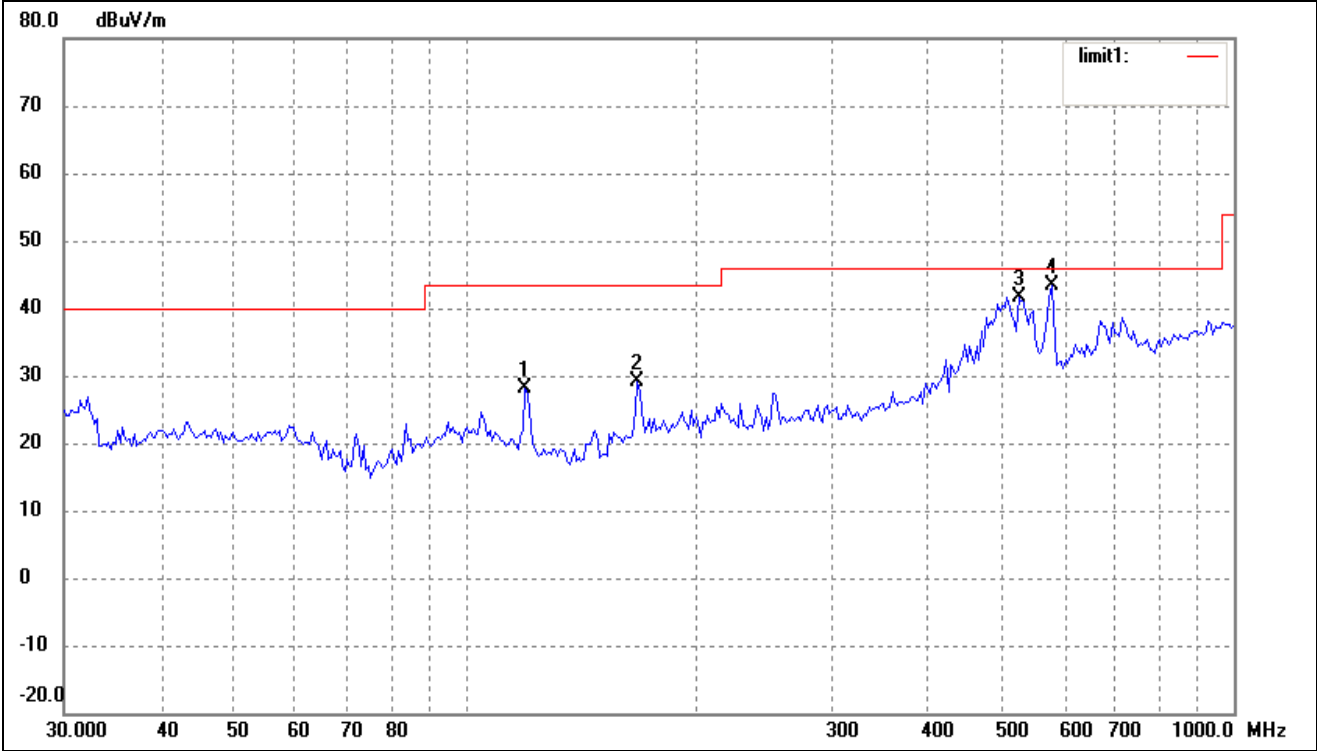
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	578.6699	28.46	16.18	44.64	46.00	-1.36	203	150	QP
2	506.4791	28.05	14.55	42.60	46.00	-3.40	108	200	QP
3	119.4361	22.74	6.04	28.78	43.50	-14.72	360	100	peak
4	167.2368	23.99	4.79	28.78	43.50	-14.72	360	100	peak

Vertical



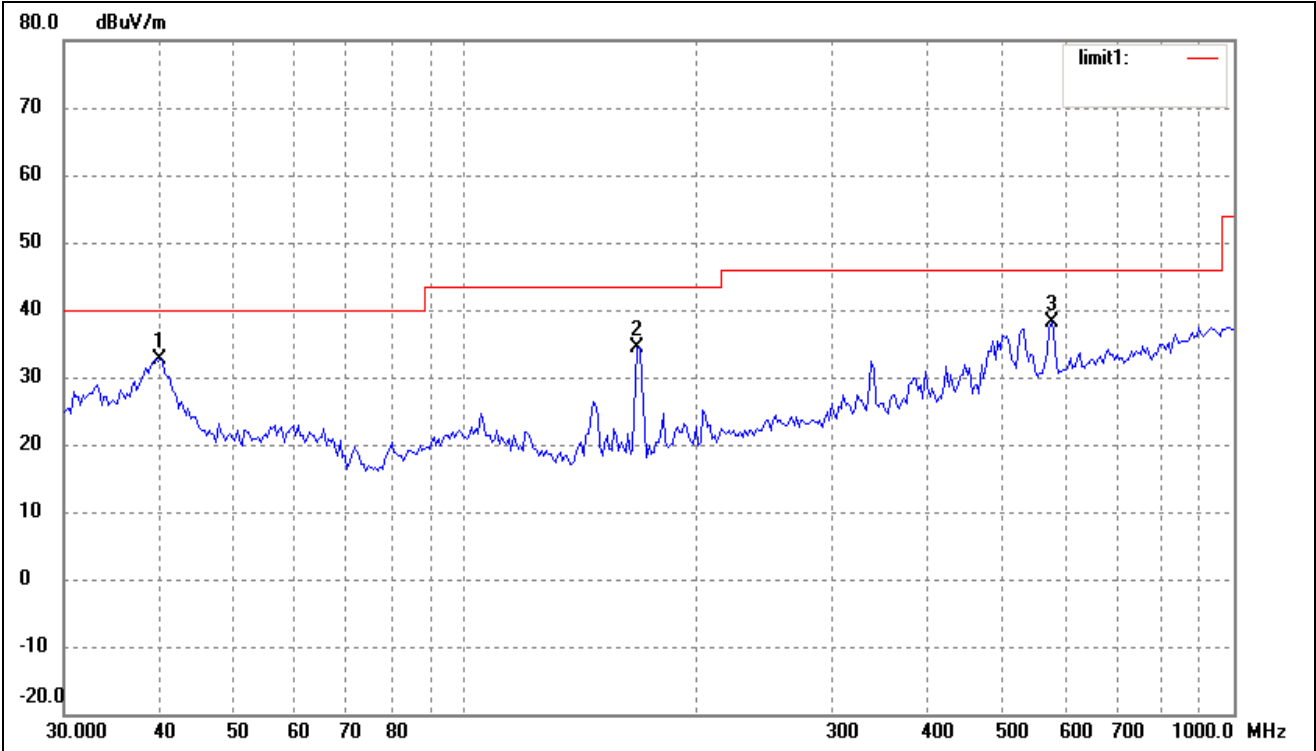
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.4372	24.76	7.99	32.75	40.00	-7.25	360	200	peak
2	119.4361	22.86	6.04	28.90	43.50	-14.60	360	200	peak
3	167.2368	28.28	4.79	33.07	43.50	-10.43	360	200	peak
4	578.6699	23.19	16.18	39.37	46.00	-6.63	360	200	peak

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



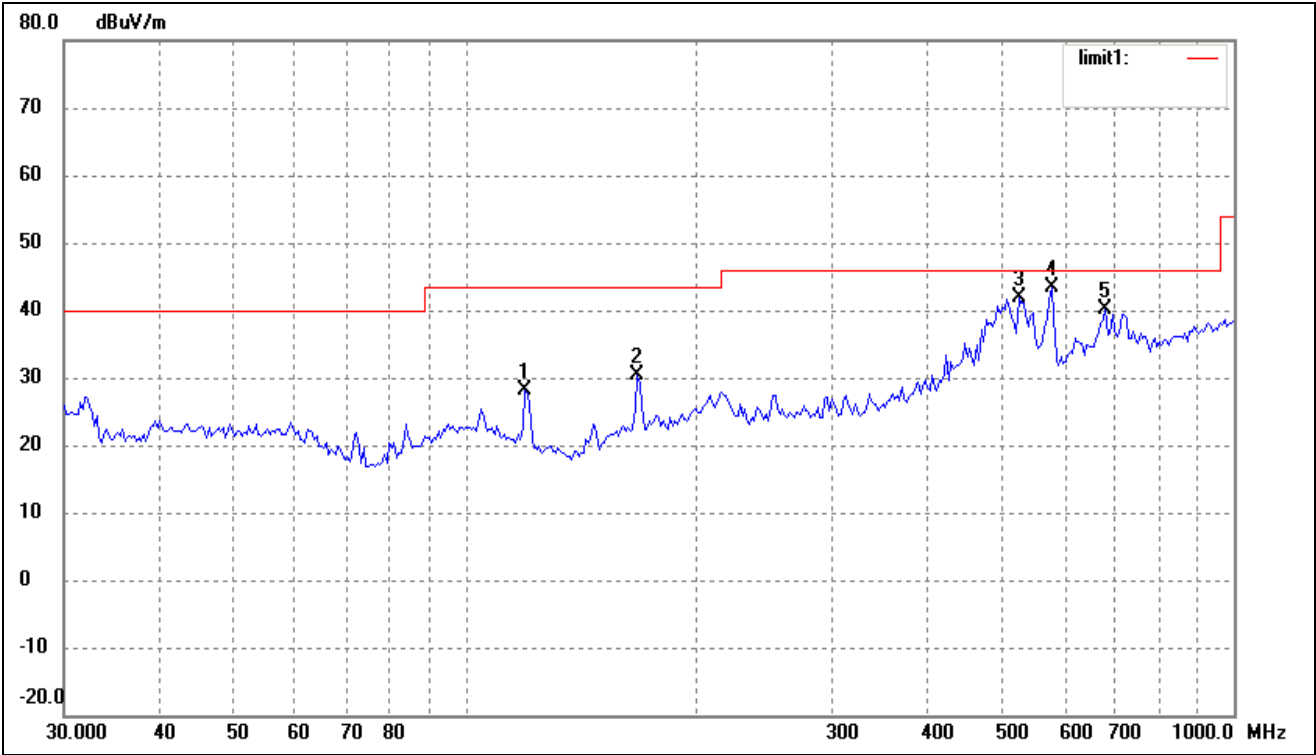
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	119.4361	22.02	6.04	28.06	43.50	-15.44	360	200	peak
2	167.2368	24.28	4.79	29.07	43.50	-14.43	360	200	peak
3	524.5541	26.76	14.97	41.73	46.00	-4.27	206	150	QP
4	578.6699	27.09	16.18	43.27	46.00	-2.73	135	150	QP

Vertical



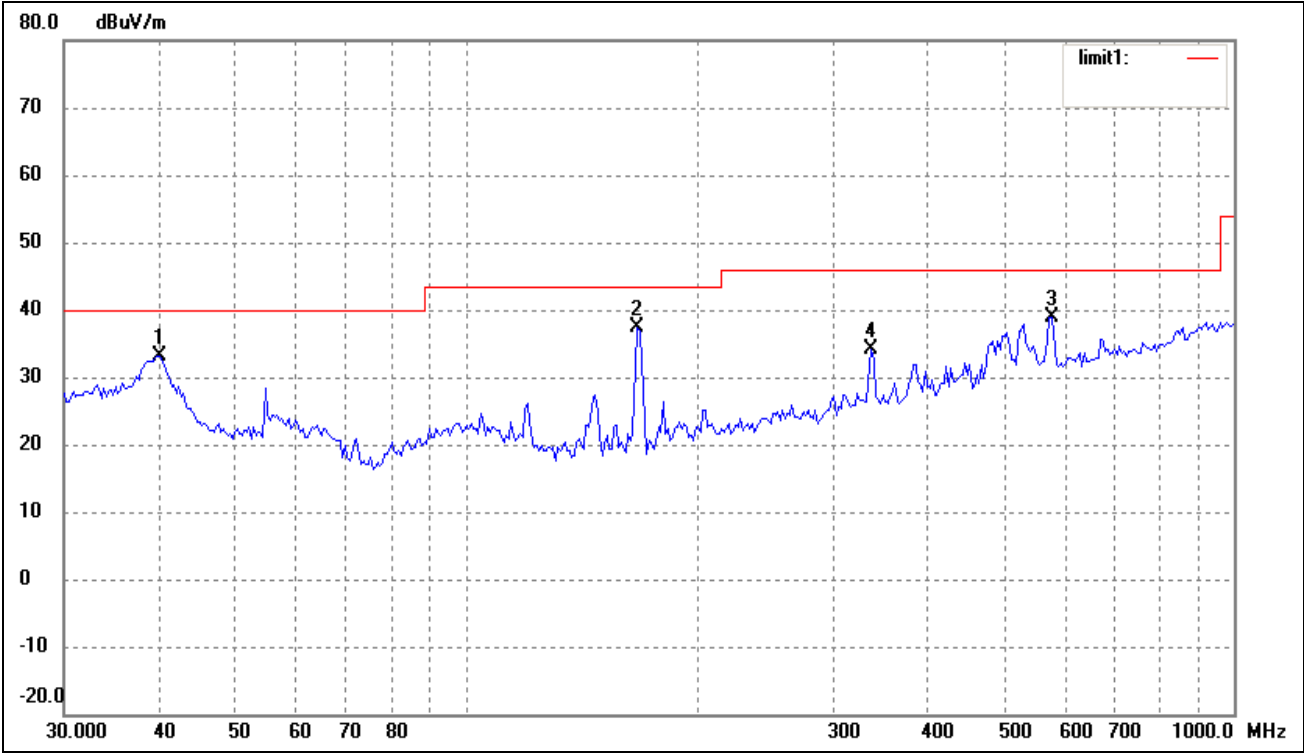
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.9942	24.60	8.14	32.74	40.00	-7.26	360	100	peak
2	167.2368	29.69	4.79	34.48	43.50	-9.02	360	100	peak
3	578.6699	22.07	16.18	38.25	46.00	-7.75	360	100	peak

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



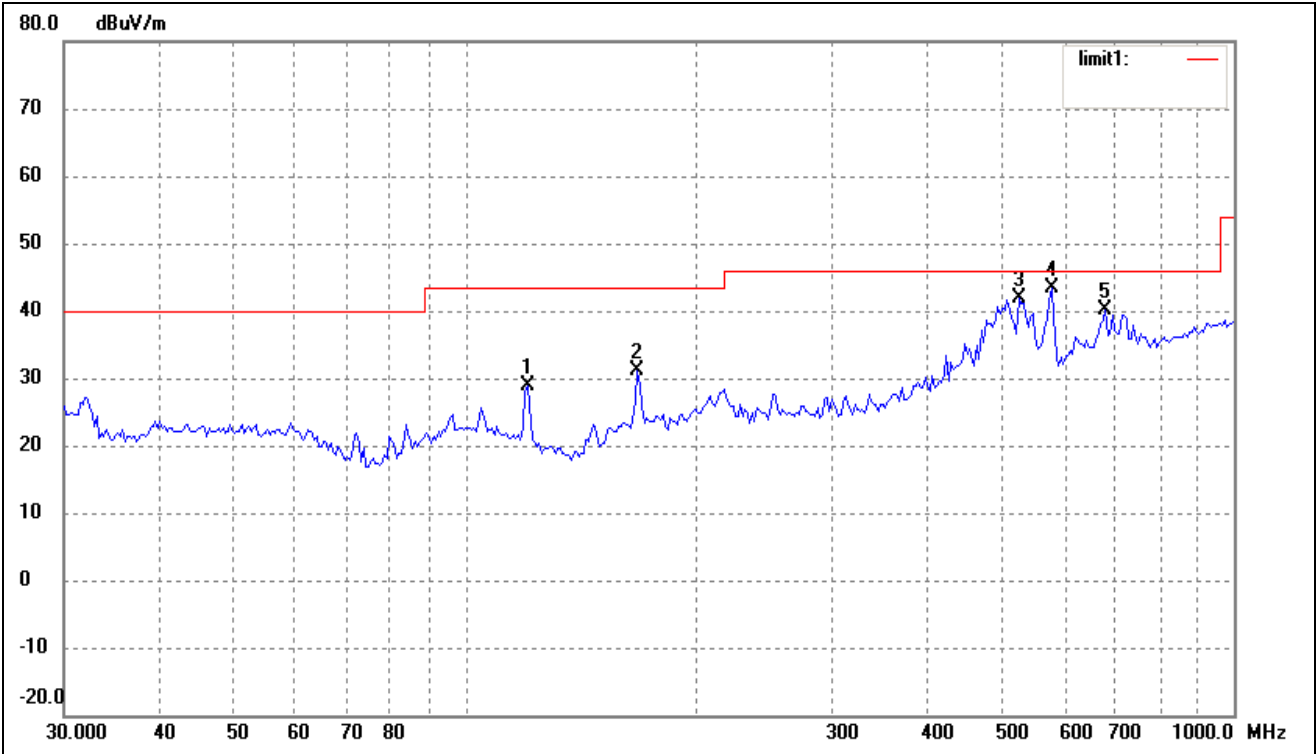
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	119.4361	22.02	6.04	28.06	43.50	-15.44	0	200	peak
2	167.2368	25.48	4.79	30.27	43.50	-13.23	0	200	peak
3	524.5541	26.99	14.97	41.96	46.00	-4.04	206	112	QP
4	578.6699	27.09	16.18	43.27	46.00	-2.73	231	150	QP
5	679.9600	22.69	17.33	40.02	46.00	-5.98	125	150	QP

Vertical



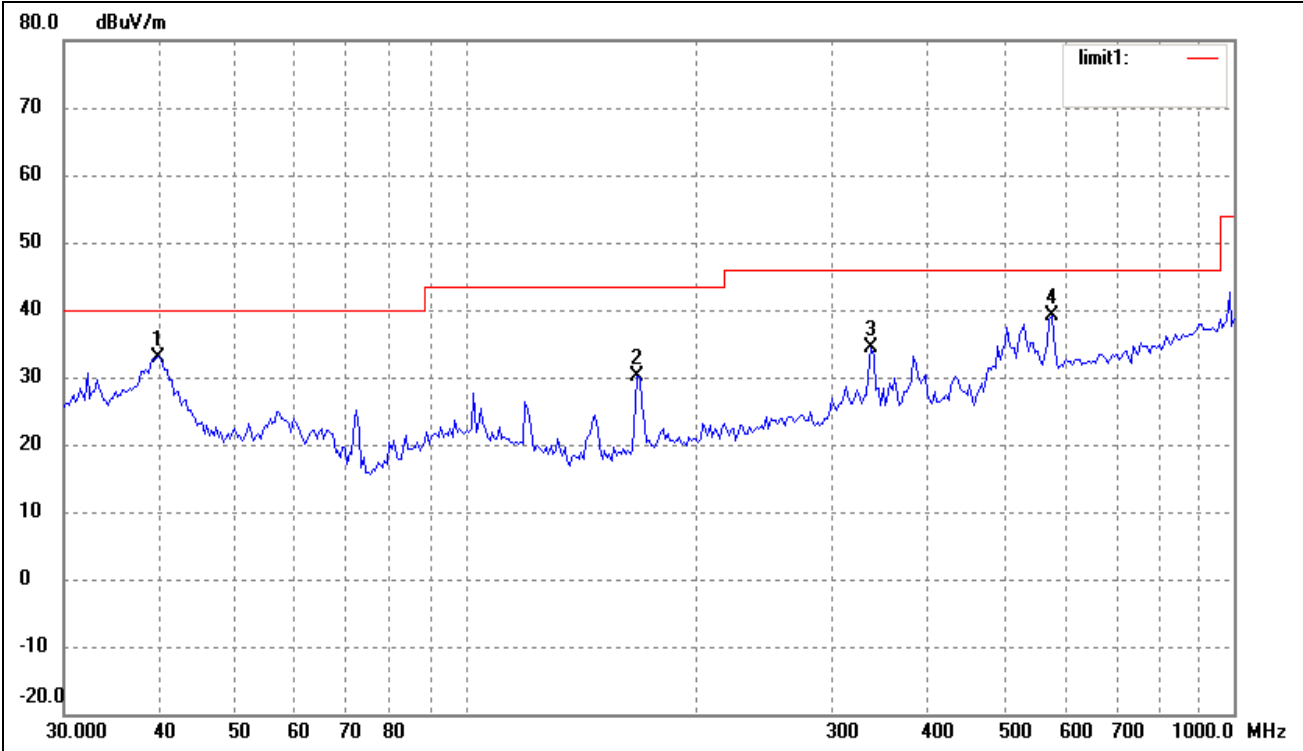
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.9942	25.09	8.14	33.23	40.00	-6.77	360	200	peak
2	167.2368	32.56	4.79	37.35	43.50	-6.15	360	200	peak
3	578.6699	22.79	16.18	38.97	46.00	-7.03	360	200	peak
4	337.2155	23.76	10.37	34.13	46.00	-11.87	360	200	peak

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)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	120.2766	22.91	5.91	28.82	43.50	-14.68	360	100	peak
2	167.2368	26.38	4.79	31.17	43.50	-12.33	360	100	peak
3	524.5541	26.99	14.97	41.96	46.00	-4.04	203	112	QP
4	578.6699	27.09	16.18	43.27	46.00	-2.73	221	124	QP
5	679.9600	22.69	17.33	40.02	46.00	-5.98	125	150	QP

Vertical



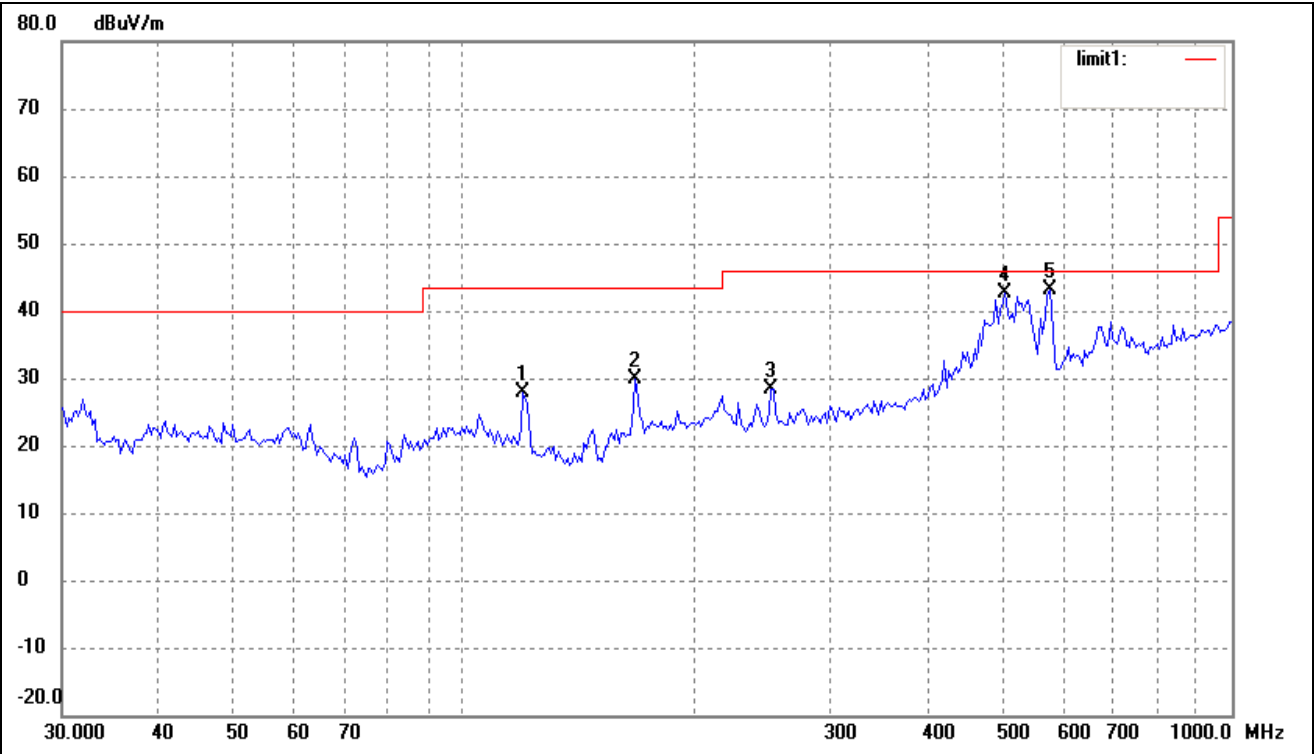
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.7147	24.93	8.07	33.00	40.00	-7.00	360	200	peak
2	167.2368	25.34	4.79	30.13	43.50	-13.37	360	200	peak
3	337.2155	24.07	10.37	34.44	46.00	-11.56	360	200	peak
4	578.6699	23.01	16.18	39.19	46.00	-6.81	360	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT20) Low Channel

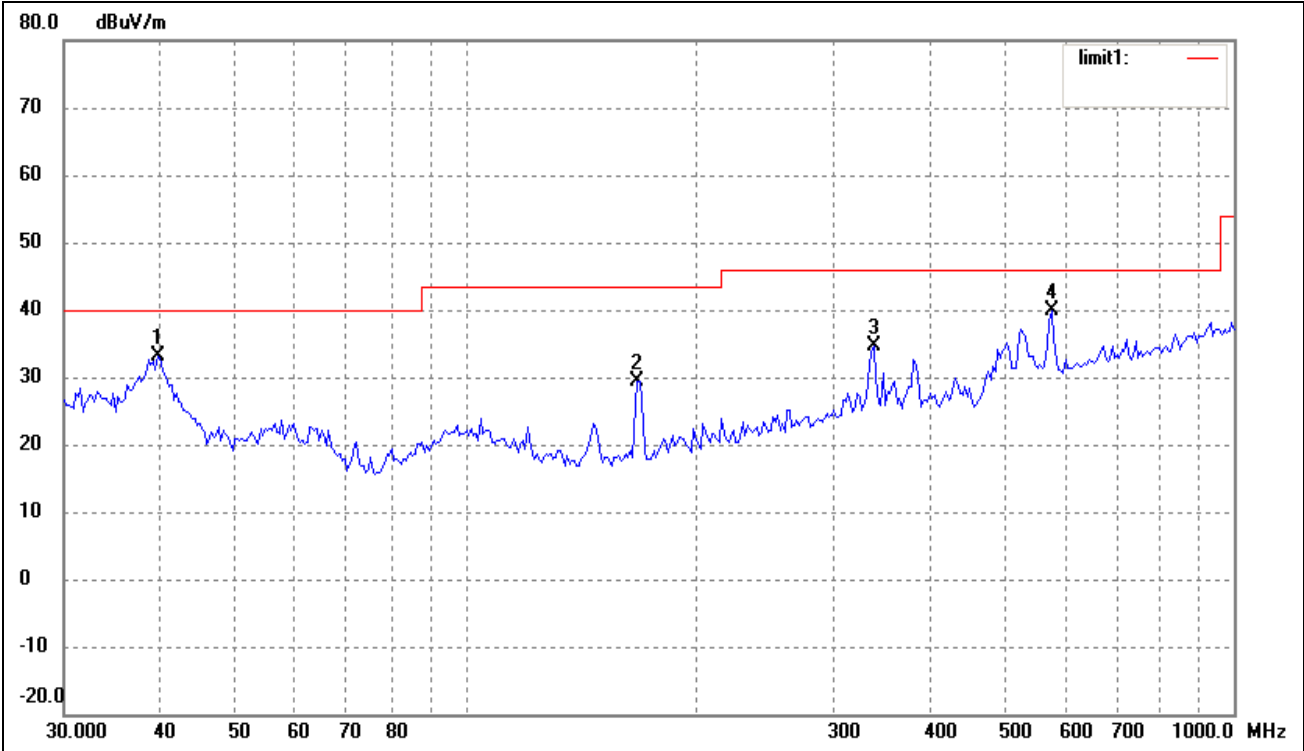
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	119.4361	21.88	6.04	27.92	43.50	-15.58	360	200	peak
2	167.2368	25.03	4.79	29.82	43.50	-13.68	360	200	peak
3	251.1804	19.69	8.72	28.41	46.00	-17.59	360	200	peak
4	506.4791	28.02	14.55	42.57	46.00	-3.43	221	115	QP
5	578.6699	26.86	16.18	43.04	46.00	-2.96	106	204	QP

Vertical



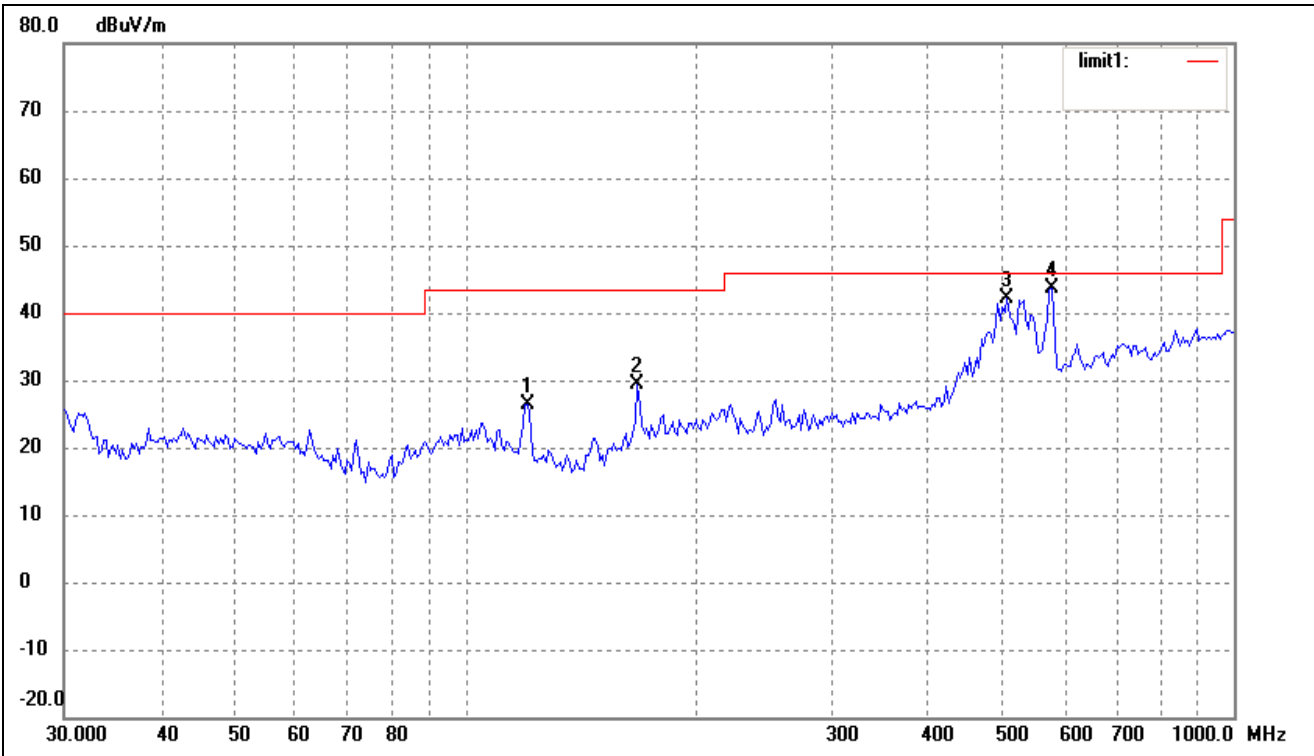
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	39.7147	24.95	8.07	33.02	40.00	-6.98	360	100	peak
2	167.2368	24.57	4.79	29.36	43.50	-14.14	360	100	peak
3	339.5888	24.12	10.42	34.54	46.00	-11.46	360	100	peak
4	578.6699	23.61	16.18	39.79	46.00	-6.21	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT20) Middle Channel

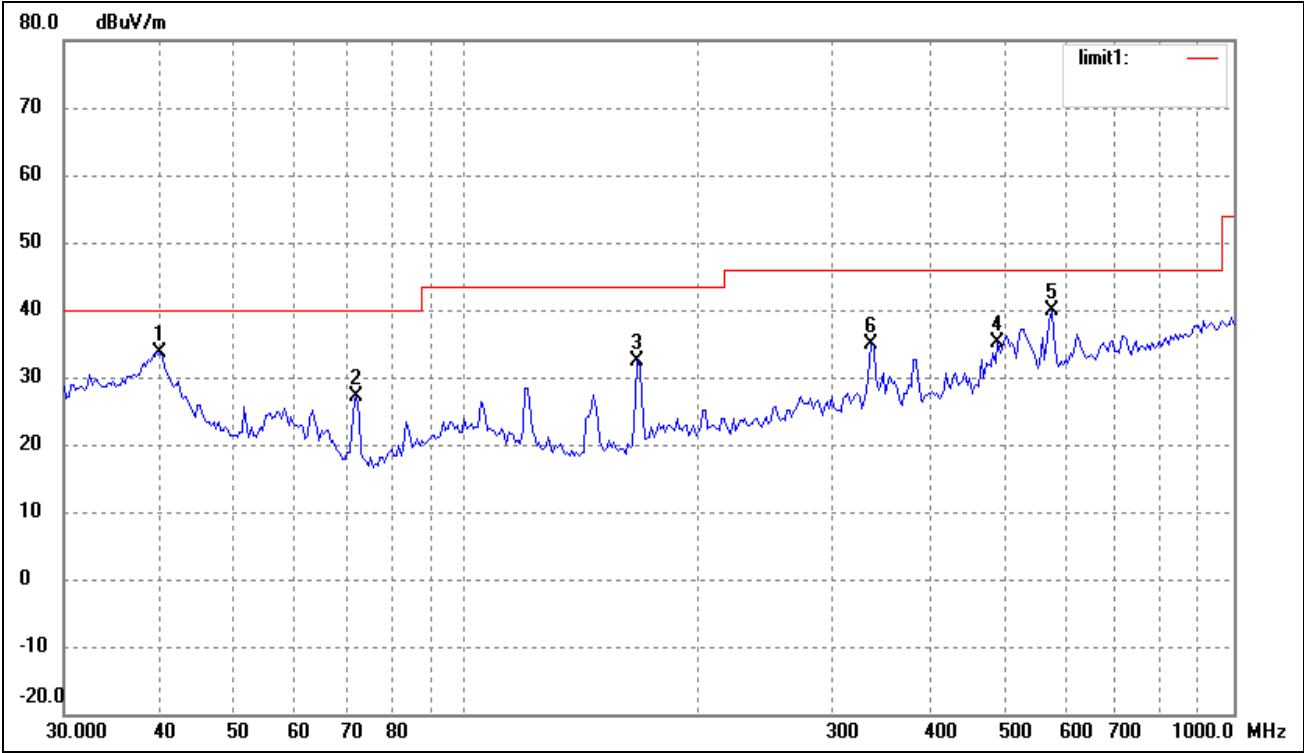
Comment:

Horizontal



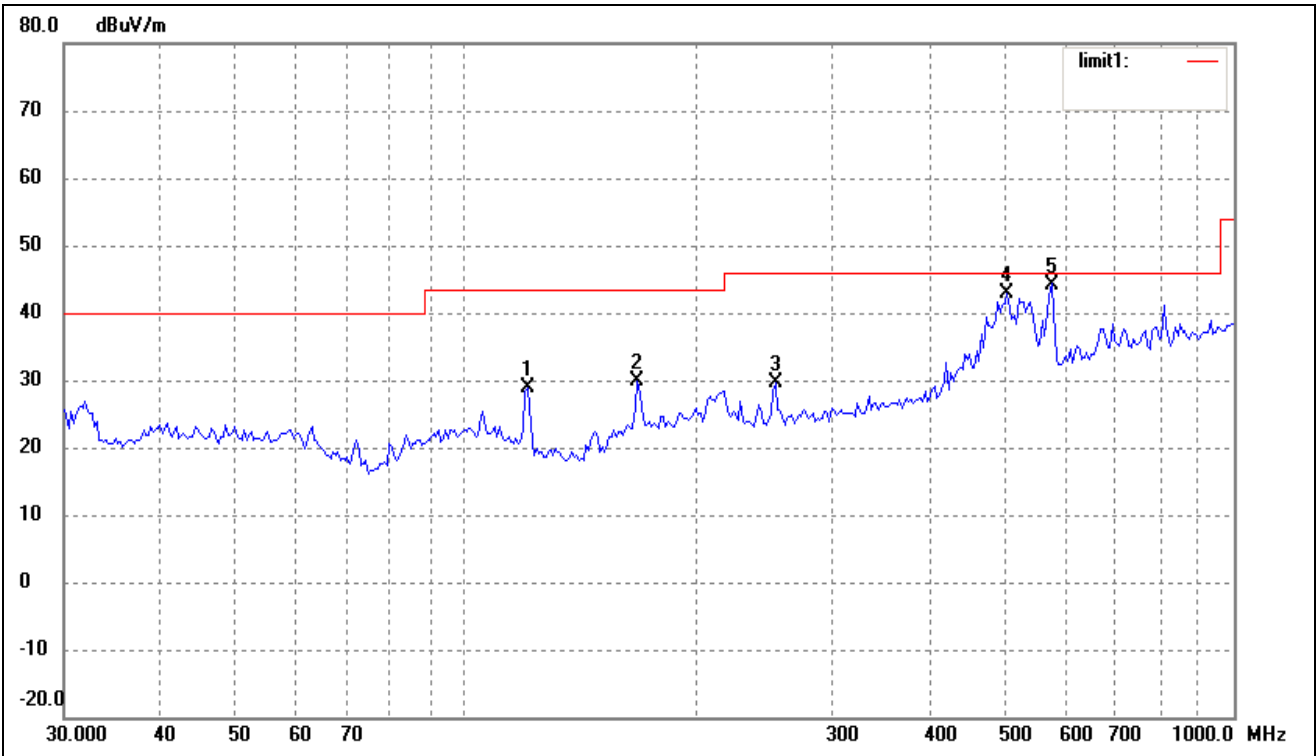
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	120.2766	20.55	5.91	26.46	43.50	-17.04	360	200	peak
2	167.2368	24.60	4.79	29.39	43.50	-14.11	360	200	peak
3	506.4791	27.54	14.55	42.09	46.00	-3.91	206	100	peak
4	578.6699	27.56	16.18	43.74	46.00	-2.26	124	100	peak

Vertical



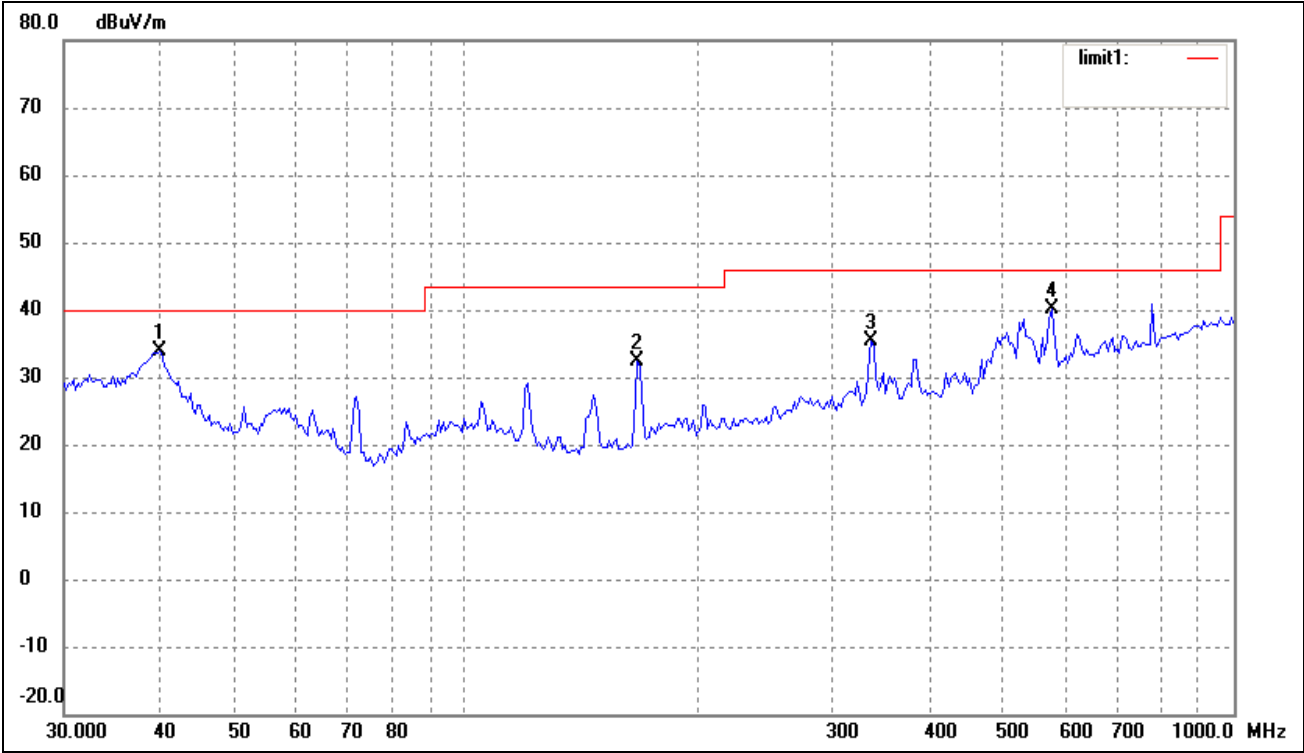
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.9942	25.51	8.14	33.65	40.00	-6.35	360	200	peak
2	72.0843	23.95	3.30	27.25	40.00	-12.75	360	200	peak
3	167.2368	27.54	4.79	32.33	43.50	-11.17	360	200	peak
4	492.4685	21.39	13.67	35.06	46.00	-10.94	360	200	peak
5	578.6699	23.61	16.18	39.79	46.00	-6.21	360	200	peak
6	337.2155	24.56	10.37	34.93	46.00	-11.07	360	200	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	120.2766	23.08	5.91	28.99	43.50	-14.51	360	200	peak
2	167.2368	25.03	4.79	29.82	43.50	-13.68	360	200	peak
3	252.9482	20.98	8.77	29.75	46.00	-16.25	360	200	peak
4	506.4791	28.37	14.55	42.92	46.00	-3.08	206	150	QP
5	578.6699	28.07	16.18	44.25	46.00	-1.75	215	150	QP

Vertical



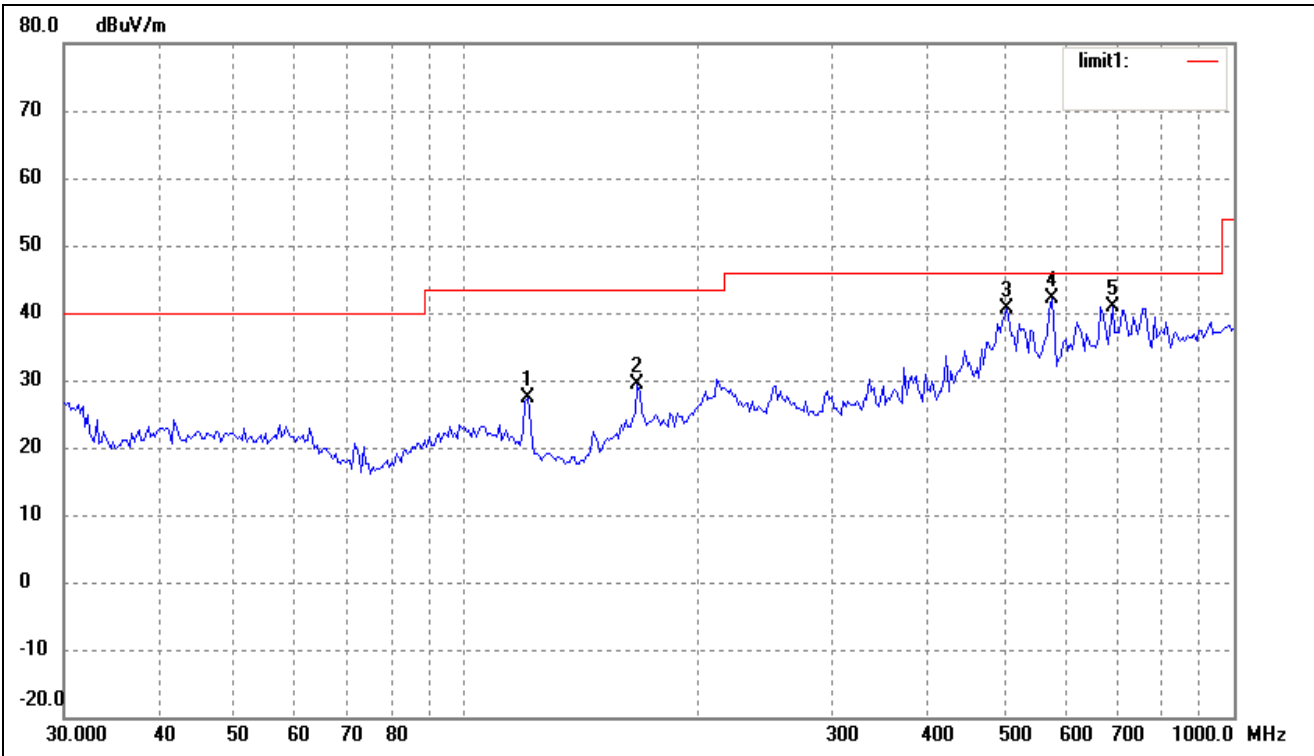
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.9942	25.68	8.14	33.82	40.00	-6.18	360	100	peak
2	167.2368	27.54	4.79	32.33	43.50	-11.17	360	100	peak
3	337.2155	25.02	10.37	35.39	46.00	-10.61	360	100	peak
4	578.6699	23.84	16.18	40.02	46.00	-5.98	205	112	QP

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT40) Low Channel

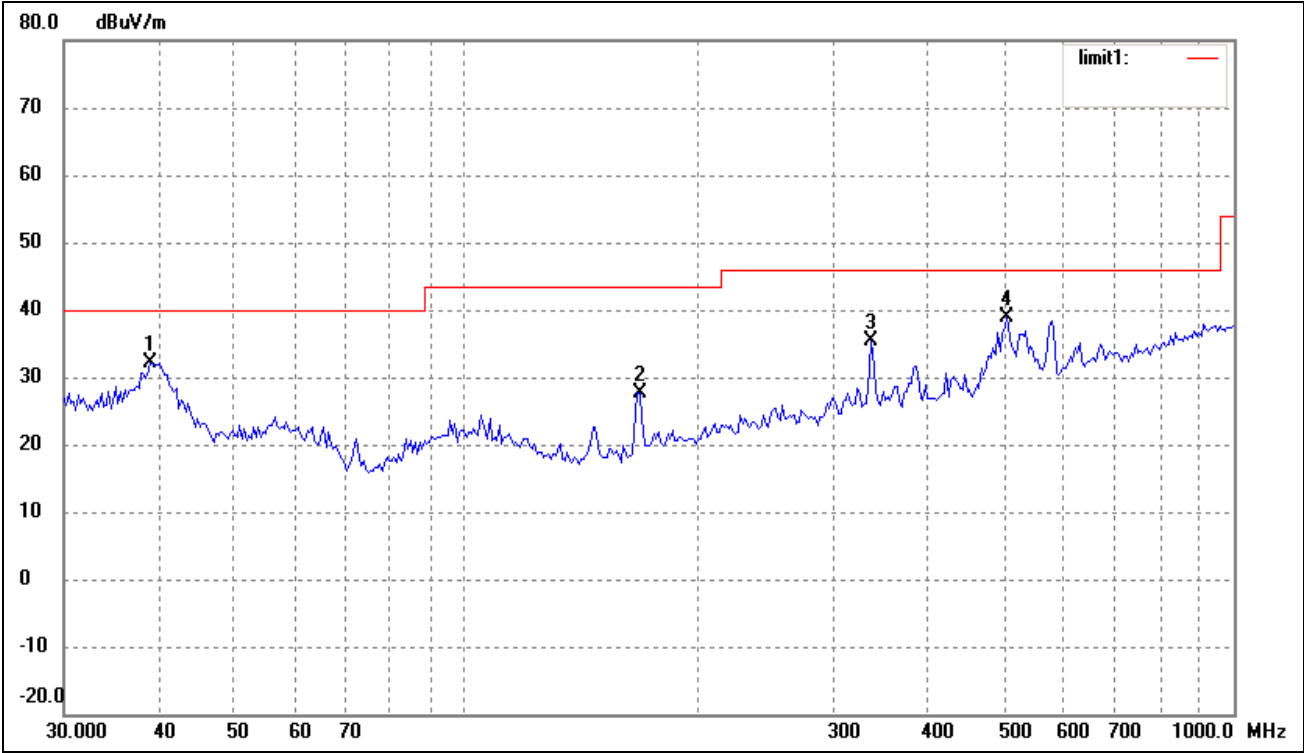
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	120.2766	21.59	5.91	27.50	43.50	-16.00	360	100	peak
2	167.2368	24.49	4.79	29.28	43.50	-14.22	360	100	peak
3	506.4791	26.11	14.55	40.66	46.00	-5.34	206	120	QP
4	578.6699	25.88	16.18	42.06	46.00	-3.94	224	150	QP
5	694.4174	23.44	17.45	40.89	46.00	-5.11	126	100	QP

Vertical



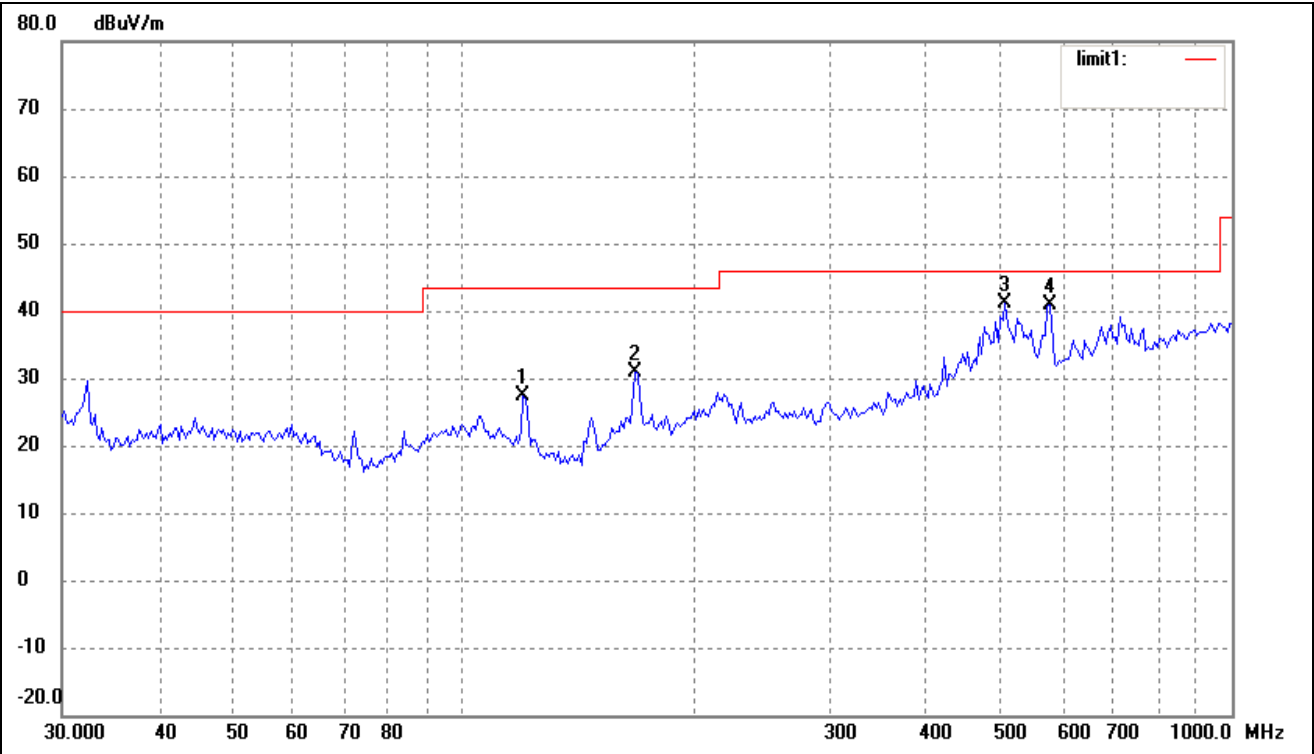
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	38.8879	24.20	7.84	32.04	40.00	-7.96	360	100	peak
2	168.4138	22.85	4.84	27.69	43.50	-15.81	360	100	peak
3	337.2155	24.97	10.37	35.34	46.00	-10.66	360	100	peak
4	506.4791	24.26	14.55	38.81	46.00	-7.19	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT40) Middle Channel

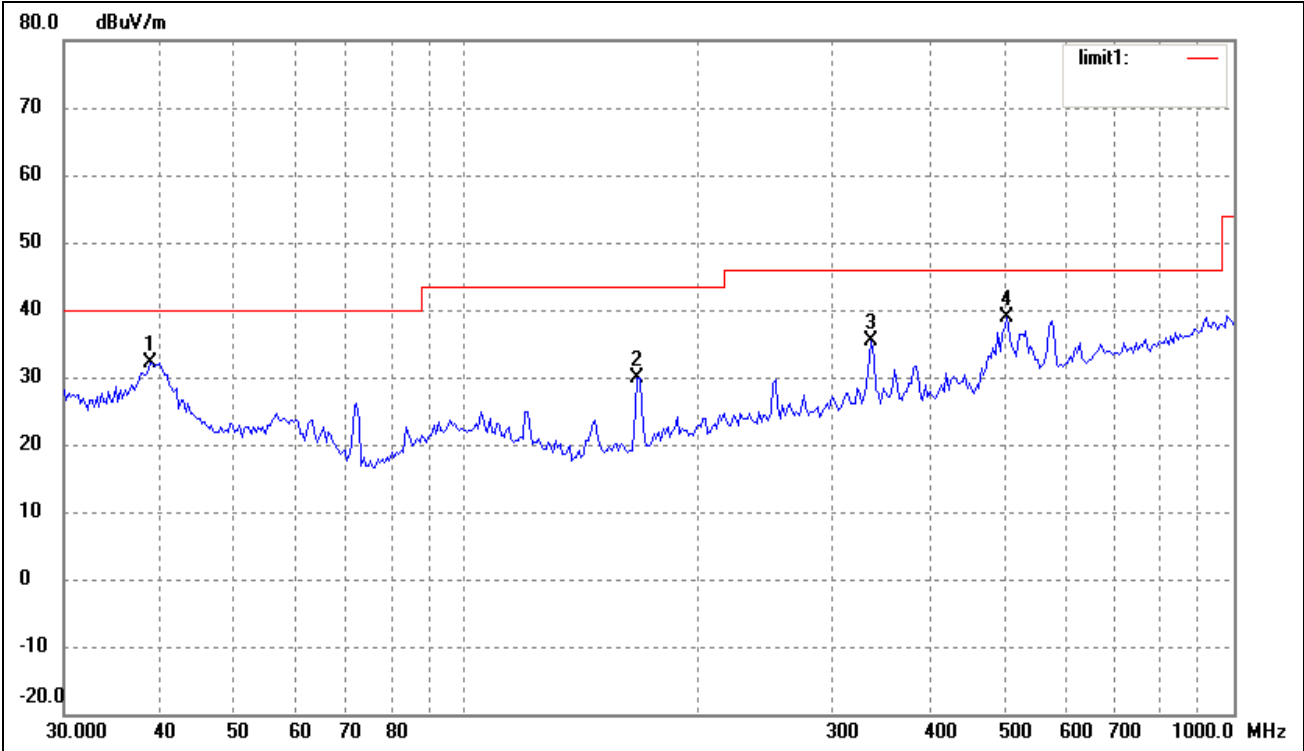
Comment:

Horizontal



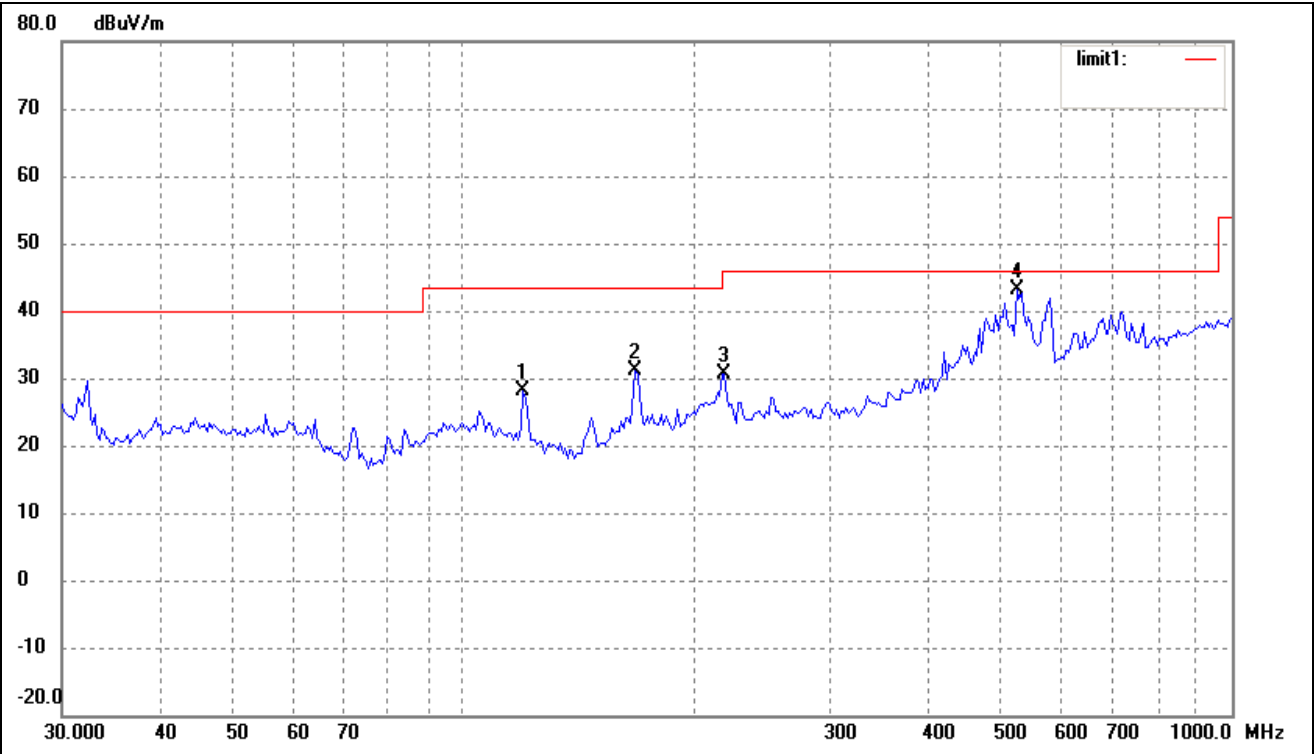
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	119.4361	21.23	6.04	27.27	43.50	-16.23	360	100	peak
2	167.2368	26.09	4.79	30.88	43.50	-12.62	360	100	peak
3	506.4791	26.69	14.55	41.24	46.00	-4.76	203	117	QP
4	578.6699	24.73	16.18	40.91	46.00	-5.09	224	106	QP

Vertical



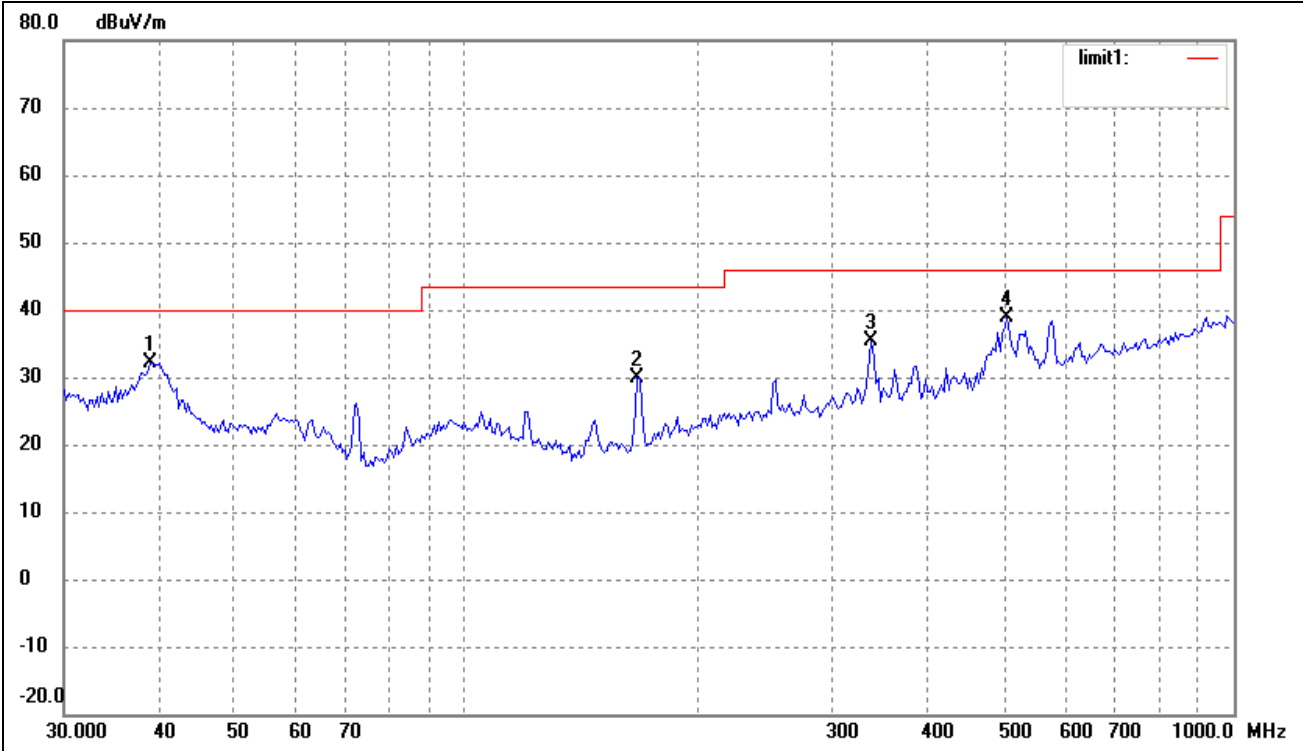
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	38.8879	24.20	7.84	32.04	40.00	-7.96	360	100	peak
2	167.2368	25.01	4.79	29.80	43.50	-13.70	360	100	peak
3	337.2155	24.97	10.37	35.34	46.00	-10.66	360	100	peak
4	506.4791	24.26	14.55	38.81	46.00	-7.19	360	100	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)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	119.4361	22.12	6.04	28.16	43.50	-15.34	360	100	peak
2	167.2368	26.32	4.79	31.11	43.50	-12.39	360	100	peak
3	218.3085	23.48	7.23	30.71	46.00	-15.29	360	100	peak
4	524.5541	28.15	14.97	43.12	46.00	-2.88	251	150	QP

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	38.8879	24.20	7.84	32.04	40.00	-7.96	360	200	peak
2	167.2368	25.01	4.79	29.80	43.50	-13.70	360	200	peak
3	337.2155	24.97	10.37	35.34	46.00	-10.66	360	200	peak
4	506.4791	24.26	14.55	38.81	46.00	-7.19	360	200	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 (1G to 25GHz)										
4824.0	PK	50.6	90	V	34.1	5.2	33.0	56.9	74	-17.1
4824.0	PK	45.2	270	H	34.1	5.2	33.0	51.5	74	-22.5
7236.0	PK	46.2	180	V	37.4	6.1	33.5	56.2	74	-17.8
7236.0	PK	44.1	45	H	37.4	6.1	33.5	54.1	74	-19.9
4824.0	AV	35.2	270	V	34.1	5.2	33.0	41.5	54	-12.5
4824.0	AV	33.9	90	H	34.1	5.2	33.0	40.2	54	-13.8
7236.0	AV	34.8	45	V	37.4	6.1	33.5	44.8	54	-9.2
7236.0	AV	33.8	60	H	37.4	6.1	33.5	43.8	54	-10.2
Middle Channel (1G to 25GHz)										
4874.0	PK	49.2	45	V	34.1	5.2	33.0	55.5	74	-18.5
4874.0	PK	47.1	270	H	34.1	5.2	33.0	53.4	74	-20.6
7311.0	PK	45.8	45	V	37.4	6.1	33.5	55.8	74	-18.2
7311.0	PK	44.2	180	H	37.4	6.1	33.5	54.2	74	-19.8
4874.0	AV	38.5	270	V	34.1	5.2	33.0	44.8	54	-9.2
4874.0	AV	37.2	90	H	34.1	5.2	33.0	43.5	54	-10.5
7311.0	AV	33.6	60	V	37.4	6.1	33.5	43.6	54	-10.4
7311.0	AV	34.1	45	H	37.4	6.1	33.5	44.1	54	-9.9
High Channel (1G to 25GHz)										
4924.0	PK	50.2	270	V	34.1	5.2	33.0	56.5	74	-17.5
4924.0	PK	48.6	45	H	34.1	5.2	33.0	54.9	74	-19.1
7386.0	PK	44.1	180	V	37.4	6.1	33.5	54.1	74	-19.9
7386.0	PK	43.9	45	H	37.4	6.1	33.5	53.9	74	-20.1
4924.0	AV	39.5	90	V	34.1	5.2	33.0	45.8	54	-8.2
4924.0	AV	33.8	270	H	34.1	5.2	33.0	40.1	54	-13.9
7386.0	AV	34.6	60	V	37.4	6.1	33.5	44.6	54	-9.4
7386.0	AV	32.4	60	H	37.4	6.1	33.5	42.4	54	-11.6

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

*Spurious Emission Above 1GHz**Test Mode: Transmitting (802.11g)*

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (1G to 25GHz)										
4824.0	PK	56.8	90	V	34.1	5.2	33.0	63.1	74	-10.9
4824.0	PK	55.7	270	H	34.1	5.2	33.0	62.0	74	-12.0
7236.0	PK	48.2	180	V	37.4	6.1	33.5	58.2	74	-15.8
7236.0	PK	46.7	45	H	37.4	6.1	33.5	56.7	74	-17.3
4824.0	AV	35.2	270	V	34.1	5.2	33.0	41.5	54	-12.5
4824.0	AV	34.1	90	H	34.1	5.2	33.0	40.4	54	-13.6
7236.0	AV	33.8	45	V	37.4	6.1	33.5	43.8	54	-10.2
7236.0	AV	32.6	60	H	37.4	6.1	33.5	42.6	54	-11.4
Middle Channel (1G to 25GHz)										
4874.0	PK	54.8	45	V	34.1	5.2	33.0	61.1	74	-12.9
4874.0	PK	52.7	270	H	34.1	5.2	33.0	59.0	74	-15.0
7311.0	PK	46.7	45	V	37.4	6.1	33.5	56.7	74	-17.3
7311.0	PK	45.1	180	H	37.4	6.1	33.5	55.1	74	-18.9
4874.0	AV	38.4	270	V	34.1	5.2	33.0	44.7	54	-9.3
4874.0	AV	33.7	90	H	34.1	5.2	33.0	40.0	54	-14.0
7311.0	AV	35.6	60	V	37.4	6.1	33.5	45.6	54	-8.4
7311.0	AV	36.1	45	H	37.4	6.1	33.5	46.1	54	-7.9
High Channel (1G to 25GHz)										
4924.0	PK	51.4	270	V	34.1	5.2	33.0	57.7	74	-16.3
4924.0	PK	49.7	45	H	34.1	5.2	33.0	56.0	74	-18.0
7386.0	PK	51.2	180	V	37.4	6.1	33.5	61.2	74	-12.8
7386.0	PK	50.7	45	H	37.4	6.1	33.5	60.7	74	-13.3
4924.0	AV	35.2	90	V	34.1	5.2	33.0	41.5	54	-12.5
4924.0	AV	34.7	270	H	34.1	5.2	33.0	41.0	54	-13.0
7386.0	AV	33.8	60	V	37.4	6.1	33.5	43.8	54	-10.8
7386.0	AV	32.4	60	H	37.4	6.1	33.5	42.4	54	-11.6

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

*Spurious Emission Above 1GHz**Test Mode: Transmitting (802.11n 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 (1G to 25GHz)										
4824.0	PK	53.2	90	V	34.1	5.2	33.0	59.5	74	-14.5
4824.0	PK	49.6	270	H	34.1	5.2	33.0	55.9	74	-18.1
7236.0	PK	48.2	180	V	37.4	6.1	33.5	58.2	74	-15.8
7236.0	PK	46.8	45	H	37.4	6.1	33.5	56.8	74	-17.2
4824.0	AV	38.5	270	V	34.1	5.2	33.0	44.8	54	-9.2
4824.0	AV	36.8	90	H	34.1	5.2	33.0	43.1	54	-10.9
7236.0	AV	35.6	45	V	37.4	6.1	33.5	45.6	54	-8.4
7236.0	AV	34.7	60	H	37.4	6.1	33.5	44.7	54	-9.3
Middle Channel (1G to 25GHz)										
4874.0	PK	49.3	45	V	34.1	5.2	33.0	55.6	74	-18.4
4874.0	PK	48.2	270	H	34.1	5.2	33.0	54.5	74	-19.5
7311.0	PK	45.1	45	V	37.4	6.1	33.5	55.1	74	-18.9
7311.0	PK	44.2	180	H	37.4	6.1	33.5	54.2	74	-19.8
4874.0	AV	39.5	270	V	34.1	5.2	33.0	45.8	54	-8.2
4874.0	AV	37.8	90	H	34.1	5.2	33.0	44.1	54	-9.9
7311.0	AV	35.3	60	V	37.4	6.1	33.5	45.3	54	-8.7
7311.0	AV	36.7	45	H	37.4	6.1	33.5	46.7	54	-7.3
High Channel (1G to 25GHz)										
4924.0	PK	55.2	270	V	34.1	5.2	33.0	61.5	74	-12.5
4924.0	PK	51.8	45	H	34.1	5.2	33.0	58.1	74	-15.9
7386.0	PK	49.6	180	V	37.4	6.1	33.5	59.6	74	-14.4
7386.0	PK	47.8	45	H	37.4	6.1	33.5	57.8	74	-16.2
4924.0	AV	38.2	90	V	34.1	5.2	33.0	44.5	54	-9.5
4924.0	AV	36.5	270	H	34.1	5.2	33.0	42.8	54	-11.2
7386.0	AV	34.8	60	V	37.4	6.1	33.5	44.8	54	-9.2
7386.0	AV	33.6	60	H	37.4	6.1	33.5	43.6	54	-10.4

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

*Spurious Emission Above 1GHz**Test Mode: Transmitting (802.11n 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 (1G to 25GHz)										
4824.0	PK	56.8	90	V	34.1	5.2	33.0	63.1	74	-10.9
4824.0	PK	55.7	270	H	34.1	5.2	33.0	62.0	74	-12.0
7236.0	PK	48.2	180	V	37.4	6.1	33.5	58.2	74	-15.8
7236.0	PK	46.7	45	H	37.4	6.1	33.5	56.7	74	-17.3
4824.0	AV	35.2	270	V	34.1	5.2	33.0	41.5	54	-12.5
4824.0	AV	34.1	90	H	34.1	5.2	33.0	40.4	54	-13.6
7236.0	AV	33.8	45	V	37.4	6.1	33.5	43.8	54	-10.2
7236.0	AV	32.6	60	H	37.4	6.1	33.5	42.6	54	-11.4
Middle Channel (1G to 25GHz)										
4874.0	PK	54.8	45	V	34.1	5.2	33.0	61.1	74	-12.9
4874.0	PK	52.7	270	H	34.1	5.2	33.0	59.0	74	-15.0
7311.0	PK	46.7	45	V	37.4	6.1	33.5	56.7	74	-17.3
7311.0	PK	45.1	180	H	37.4	6.1	33.5	55.1	74	-18.9
4874.0	AV	38.4	270	V	34.1	5.2	33.0	44.7	54	-9.3
4874.0	AV	33.7	90	H	34.1	5.2	33.0	40.0	54	-14.0
7311.0	AV	35.6	60	V	37.4	6.1	33.5	45.6	54	-8.4
7311.0	AV	36.1	45	H	37.4	6.1	33.5	46.1	54	-7.9
High Channel (1G to 25GHz)										
4924.0	PK	51.4	270	V	34.1	5.2	33.0	57.7	74	-16.3
4924.0	PK	49.7	45	H	34.1	5.2	33.0	56.0	74	-18.0
7386.0	PK	51.2	180	V	37.4	6.1	33.5	61.2	74	-12.8
7386.0	PK	50.7	45	H	37.4	6.1	33.5	60.7	74	-13.3
4924.0	AV	35.2	90	V	34.1	5.2	33.0	41.5	54	-12.5
4924.0	AV	34.7	270	H	34.1	5.2	33.0	41.0	54	-13.0
7386.0	AV	33.8	60	V	37.4	6.1	33.5	43.8	54	-10.8
7386.0	AV	32.4	60	H	37.4	6.1	33.5	42.4	54	-11.6

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

9. OUT OF BAND EMISSIONS

9.1 Standard Applicable

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

9.2 Test Equipment List and Details

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

9.3 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW, VBW=100KHz, Span=50MHz, Sweep = auto
3. Set the Lowest and Highest Transmitting Channel, observed the outside band of 2400MHz to 2438.5MHz, then mark the higher-level emission for comparing with the FCC rules.

9.4 Environmental Conditions

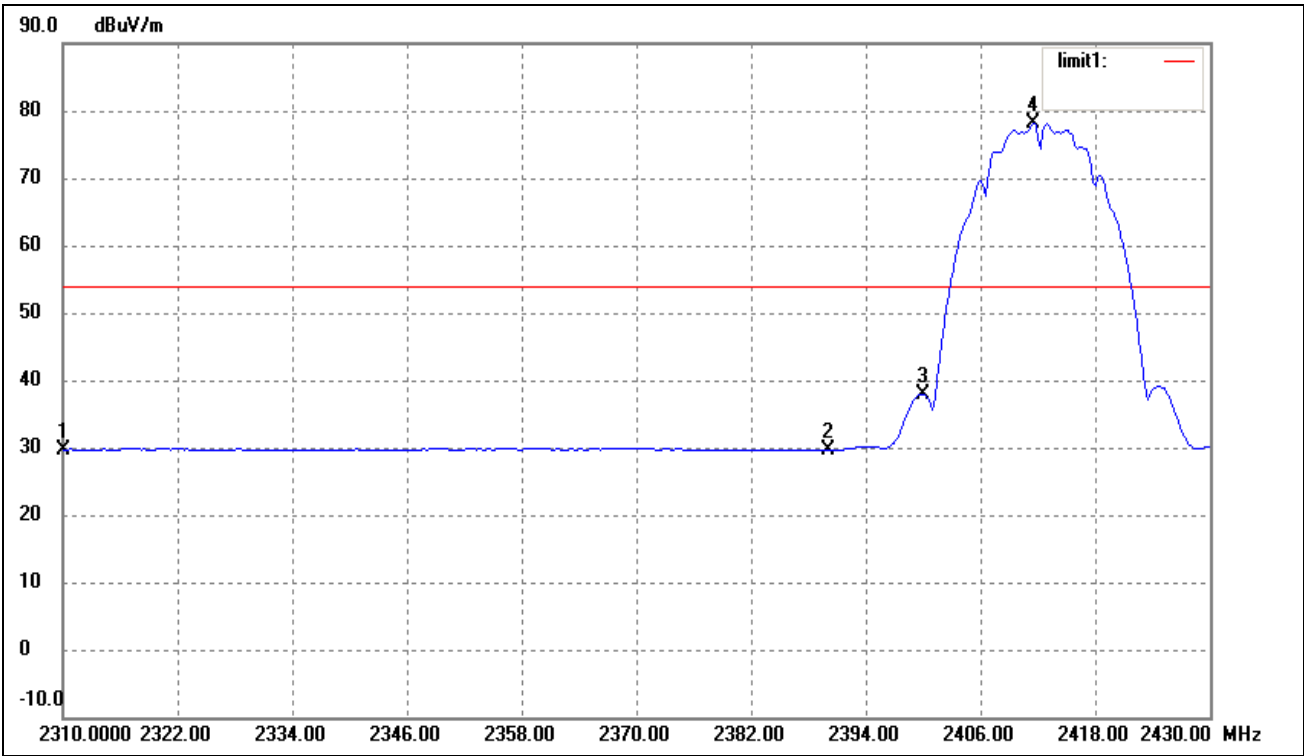
Temperature:	21° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

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

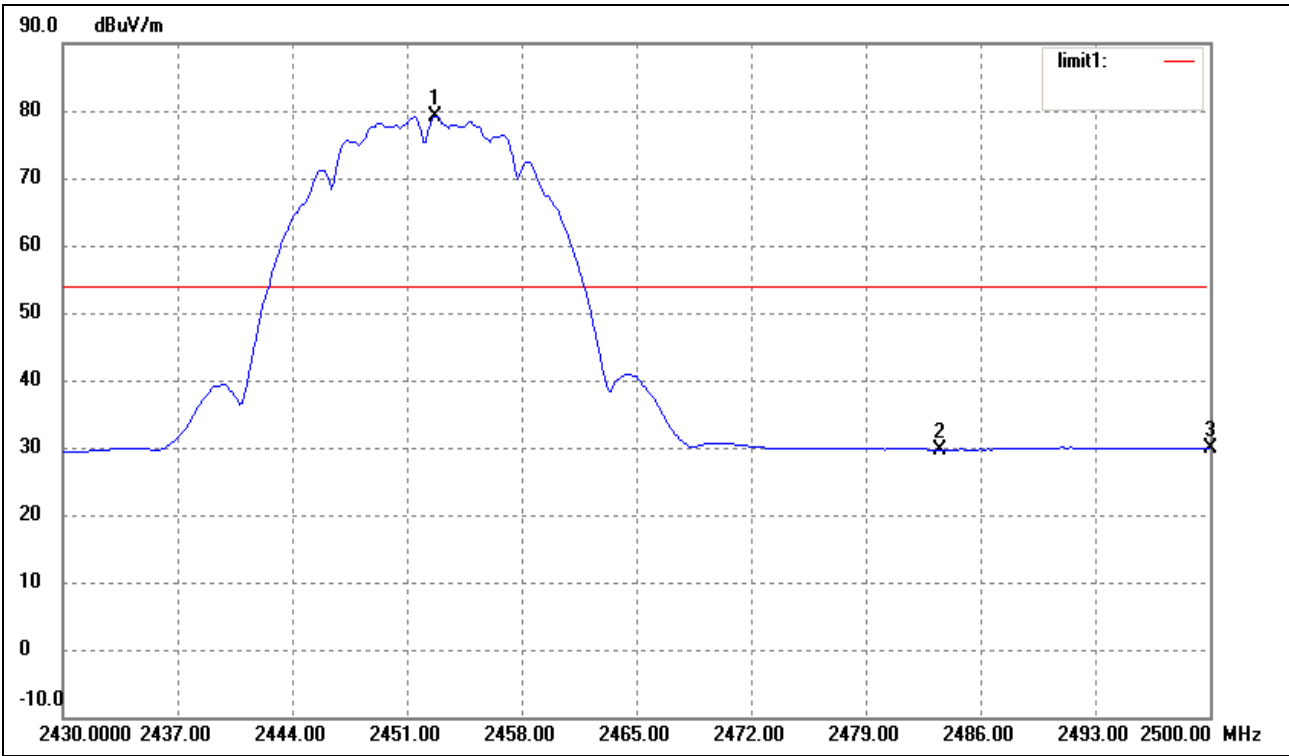
Test mode	Frequency MHz	Limit dBuV /dB	Result
802.11n HT20	2390.00	<54dBuv	Pass
	2400.00	>20dB ATT	Pass
	2483.50	<54dBuv	Pass
802.11n HT40	2390.00	<54dBuv	Pass
	2400.00	>20dB ATT	Pass
	2483.50	<54dBuv	Pass

For 802.11b
Lowest Bandedge



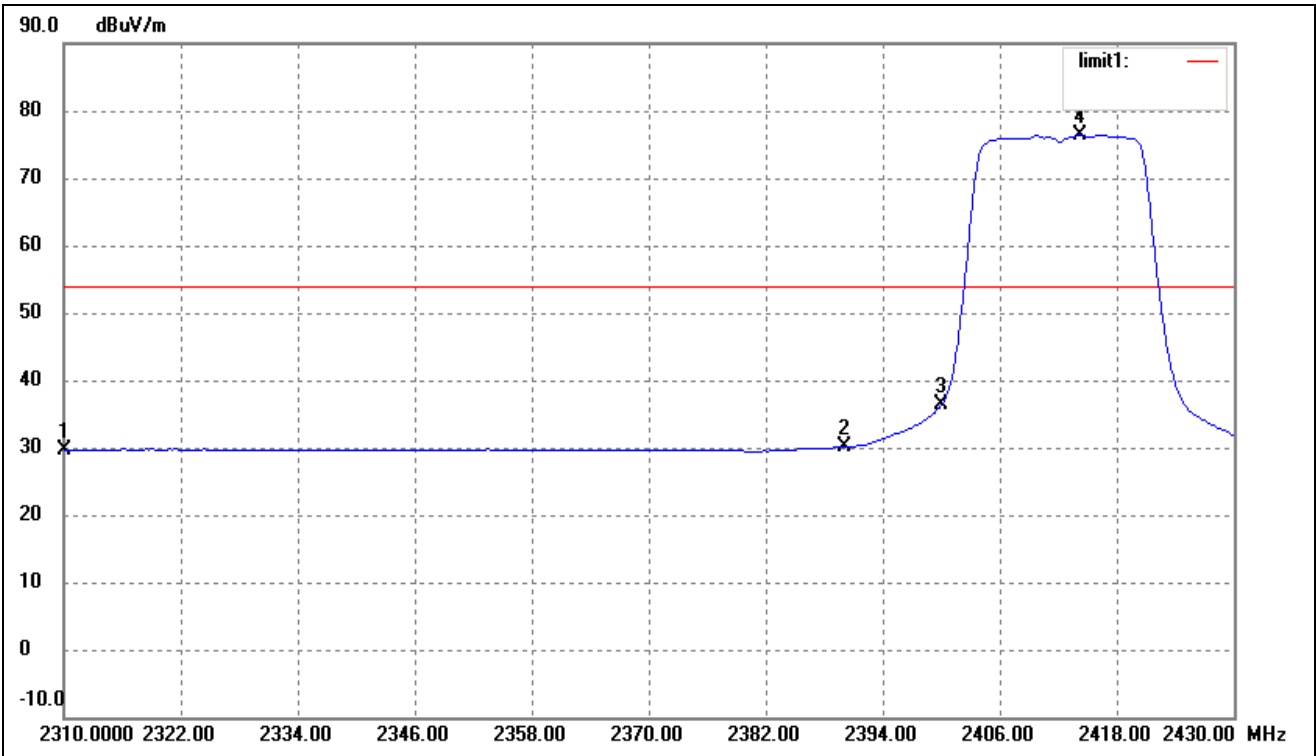
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2310.000	34.38	-4.65	29.73	54.00	-24.27	203	100	Ave
2	2310.000	53.68	-4.65	49.03	74.00	-24.97	215	100	peak
3	2390.000	34.12	-4.46	29.66	54.00	-24.34	224	100	Ave
4	2390.000	57.29	-4.46	52.83	74.00	-21.17	106	100	peak
5	2400.000	42.37	-4.43	37.94	/	/	117	100	Ave
6	2411.520	82.47	-4.40	78.07	/	/	124	100	Ave

For 802.11b
Highest Bandedge



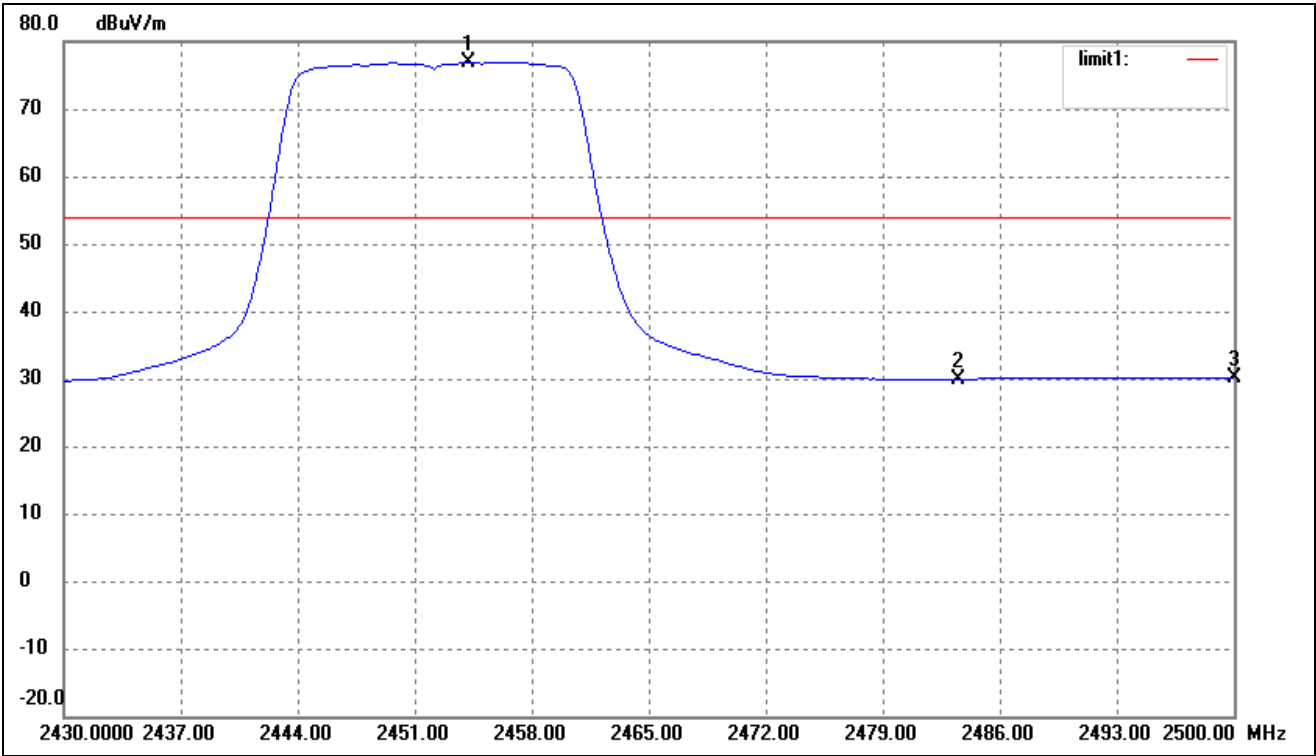
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2452.680	83.37	-4.30	79.07	/	/	236	200	Ave
2	2483.500	33.95	-4.23	29.72	54.00	-24.28	228	200	Ave
	2483.500	62.54	-4.23	58.31	74.00	-15.69	247	200	peak
3	2500.000	34.05	-4.18	29.87	54.00	-24.13	219	200	Ave
	2500.000	60.15	-4.18	55.97	74.00	-18.03	206	200	peak

For 802.11g
Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2310.000	34.37	-4.65	29.72	54.00	-24.28	203	100	Ave
2	2310.000	61.28	-4.65	56.63	74.00	-17.37	221	100	peak
3	2390.000	34.57	-4.46	30.11	54.00	-23.89	251	100	Ave
4	2390.000	60.38	-4.46	55.92	74.00	-18.08	136	100	peak
5	2400.000	40.85	-4.43	36.42	/	/	117	100	Ave
6	2414.160	80.75	-4.40	76.35	/	/	109	100	Ave

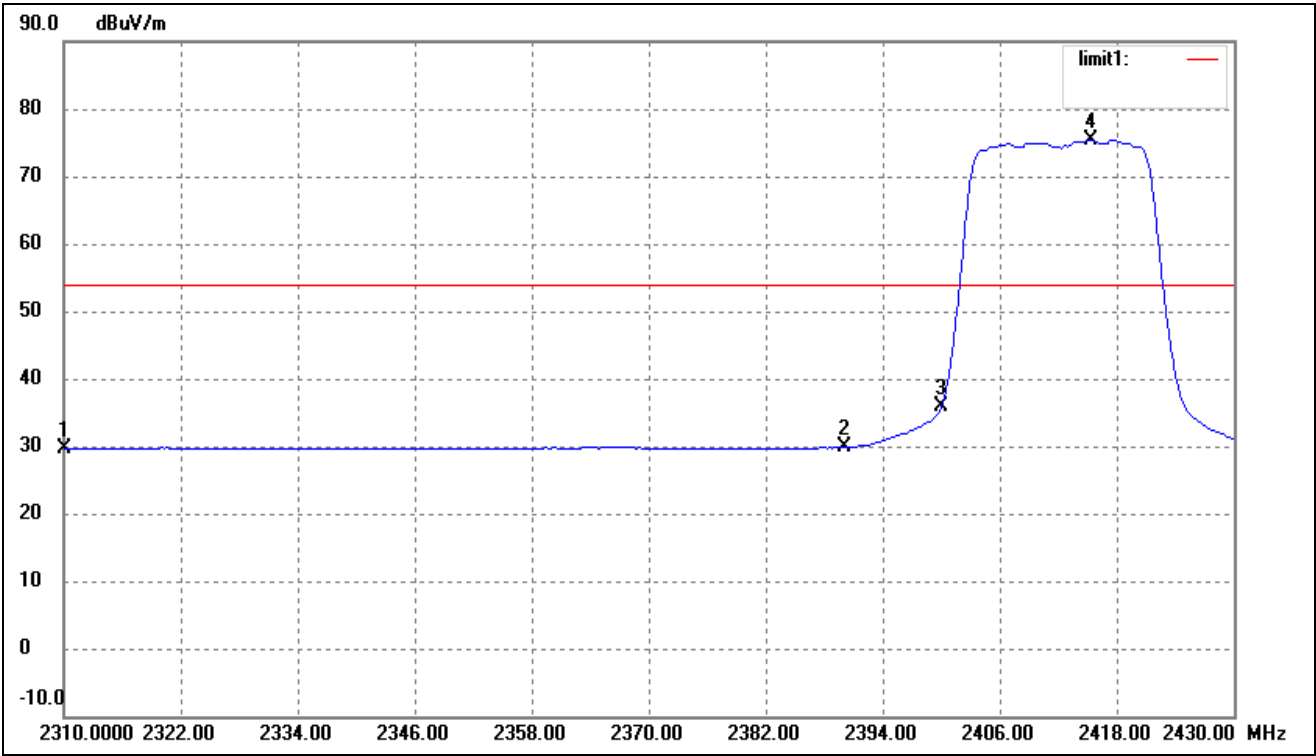
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2454.220	81.29	-4.29	77.00	/	/	203	100	Ave
2	2483.500	34.05	-4.23	29.82	54.00	-24.18	221	100	Ave
3	2483.500	63.29	-4.23	59.06	74.00	-14.94	125	100	peak
4	2500.000	34.26	-4.18	30.08	54.00	-23.92	115	100	Ave
5	2500.000	62.15	-4.18	57.97	74.00	-16.03	109	100	peak

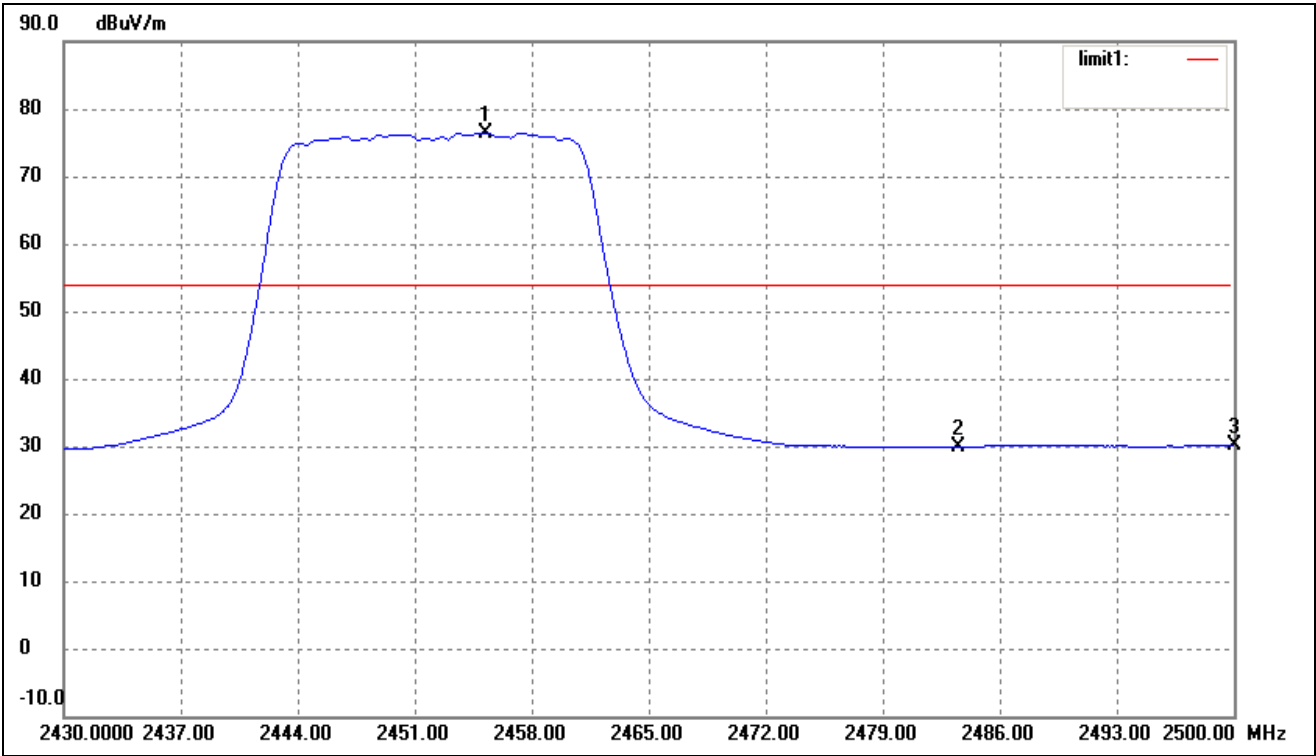
For 802.11n HT20

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2310.000	34.35	-4.65	29.70	54.00	-24.30	215	100	Ave
2	2310.000	62.18	-4.65	57.53	74.00	-16.47	118	100	peak
3	2390.000	34.32	-4.46	29.86	54.00	-24.14	132	100	Ave
4	2390.000	60.28	-4.46	55.82	74.00	-18.18	106	100	peak
5	2400.000	40.35	-4.43	35.92	/	/	117	100	Ave
6	2415.360	79.79	-4.40	75.39	/	/	103	100	Ave

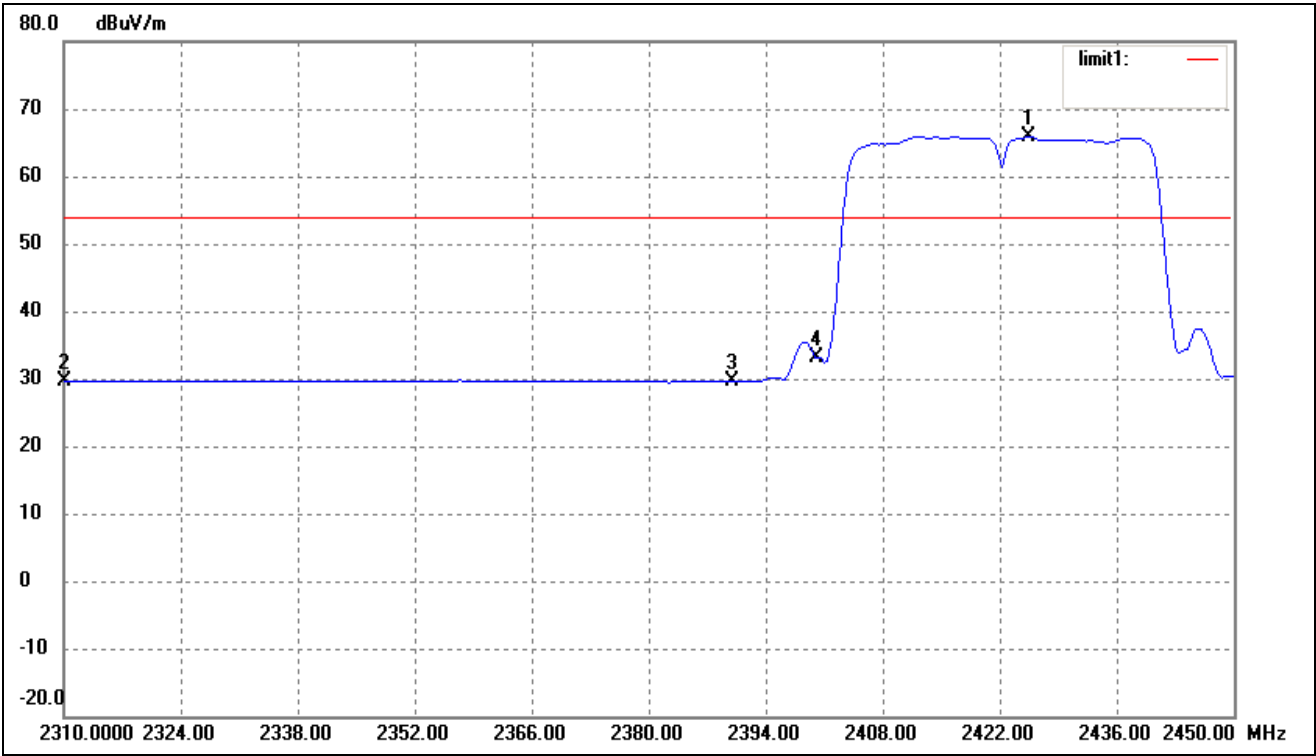
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2455.200	80.74	-4.29	76.45	/	/	228	100	Ave
2	2483.500	34.11	-4.23	29.88	54.00	-24.12	241	100	Ave
3	2483.500	63.18	-4.23	58.95	74.00	-15.05	206	100	peak
4	2500.000	34.24	-4.18	30.06	54.00	-23.94	219	100	Ave
5	2500.000	62.09	-4.18	57.91	74.00	-16.09	128	100	peak

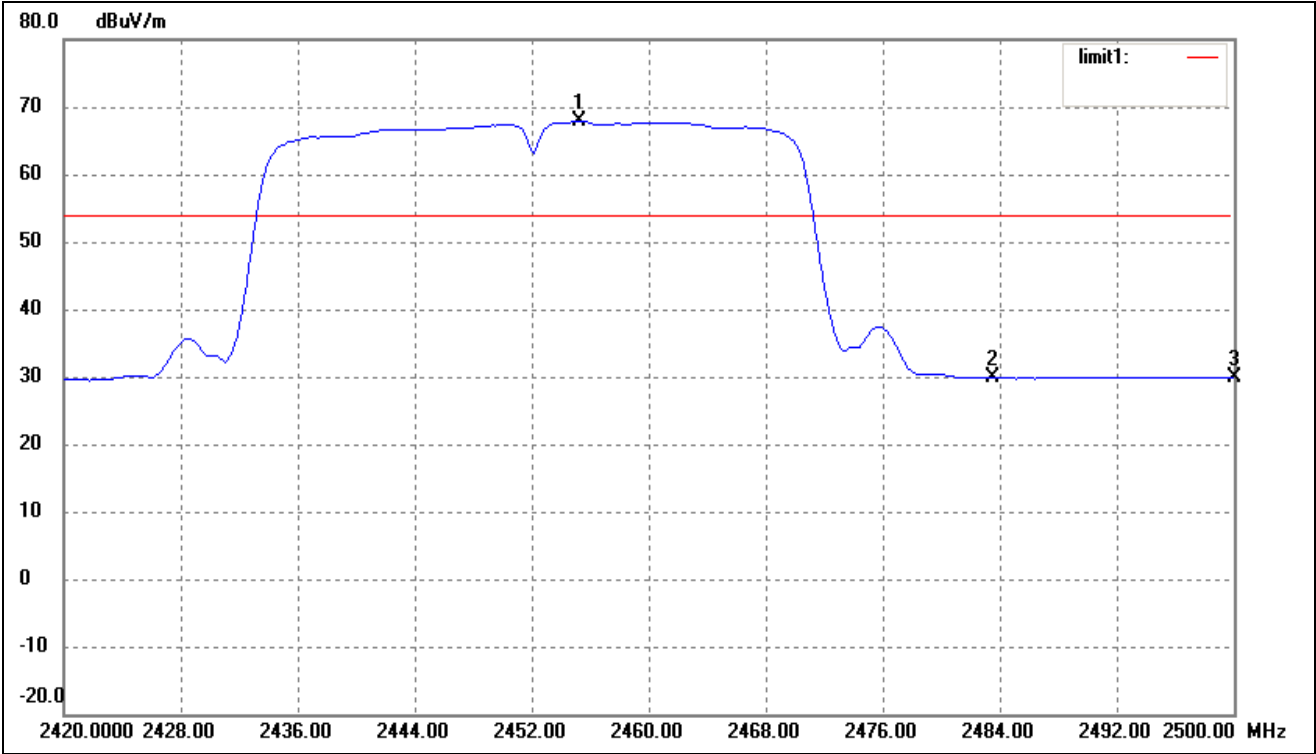
For 802.11n HT40

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2425.360	70.20	-4.37	65.83	/	/	223	100	Ave
2	2310.000	34.31	-4.65	29.66	54.00	-24.34	206	100	Ave
3	2310.000	64.28	-4.65	59.63	74.00	-14.37	214	100	peak
4	2390.000	34.01	-4.46	29.55	54.00	-24.45	115	100	Ave
5	2390.000	62.19	-4.46	57.73	74.00	-16.27	106	100	peak
6	2400.000	37.67	-4.43	33.24	54.00	-20.76	208	100	Ave

Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2455.200	72.11	-4.29	67.82	/	/	263	100	Ave
2	2483.500	34.05	-4.23	29.82	54.00	-24.18	128	100	Ave
3	2483.500	62.45	-4.23	58.22	74.00	-15.78	109	100	peak
4	2500.000	34.09	-4.18	29.91	54.00	-24.09	117	100	Ave
5	2500.000	63.18	-4.18	59.00	74.00	-15.00	125	100	peak

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