FCC Part 15C

Measurement and Test Report

For

SHENZHEN TENDA TECHNOLOGY CO., LTD.

3F, MOSO INDUSTRIAL BUILDING, NO.1031, LIMING ROAD XILI TOWN, NANSHAN DISTRICT, SHENZHEN, China.

FCC ID: V7TW322P

Report Concerns: Original Report	**Equipment Type:** Wireless-N PCI Adapter

Model:	W322P
Report No.:	STR09088030I
Test/Witness Engineer:	Jason
Test Date:	2009-08-06 to 2009-08-13
Issue Date:	2009-08-15

Prepared By:

SEM.Test Compliance Service Co., Ltd
3/F, Jinbao Commerce Building, Xin'an Fanshen Road,
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Approved & Authorized By: Jandy So

Jandy So / PSQ Manager

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 TENDA TECHNOLOGY CO., LTD.
Address of applicant:	3F, MOSO INDUSTRIAL BUILDING, NO.1031, LIMING ROAD XILI TOWN, NANSHAN DISTRCT, SHENZHEN, China.
Manufacturer:	SHENZHEN TENDA TECHNOLOGY CO., LTD.
Address of manufacturer:	3F, MOSO INDUSTRIAL BUILDING, NO.1031, LIMING ROAD XILI TOWN, NANSHAN DISTRCT, SHENZHEN, China.

General Description of E.U.T

Items	Description
EUT Description:	Wireless-N PCI Adapter
Trade Name:	Tenda
Model No.:	W322P
Rated Voltage:	DC 5V PCI
Max. Output Power	16dBm
Antenna Gain:	2.2dBi
Frequency range:	2412~2462MHz / 2422~2452MHz
Number of channels:	11 / 7
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Size:	21.2x12.2x2.0 cm

Note: The test data gathered are from a production sample provided by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the SHENZHEN TENDA TECHNOLOGY 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 Related Submittal(s)/Grant(s)

No Related Submittal(s).

1.4 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.

1.5 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.

1.6 EUT Exercise Software

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

1.7 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
Lenovo	Computer	M2620V	SS01901622
TP-LINK	Modem	TM-EC5658V	KT99CTQC-508
Lenovo	Printer	3110	OD65133711480

1.8 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
§ 1.1307(b)	Maximum Permissible Exposure	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 ± 0.5 dB.

3.2 Test Equipment List and Details

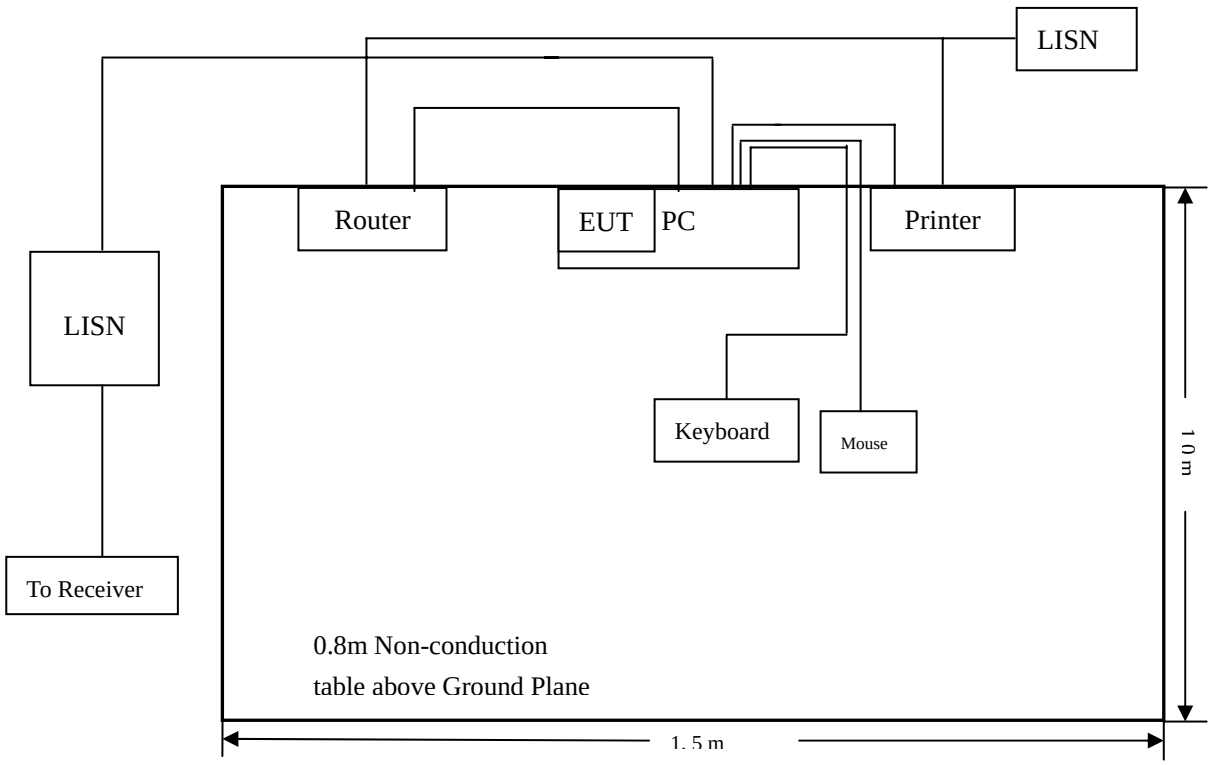
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2009-07-08	2010-07-07
Puls Limiter	Rohde & Schwarz	ESH3-Z2	100911	2009-07-08	2010-07-07
L.I.S.N.	SCHWARZBECK	NSLK8126	8126-224	2009-07-08	2010-07-07
L.I.S.N.	EMCO	3825/2	11967C	2009-07-08	2010-07-07

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:

-3.54 dBμV at **11.994 MHz** in the **Line Ave** Detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC 15.207	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	QP/Ave/Pk	Line/Neutral	dBμV	dB
11.994	46.45	Ave	Line	50.00	-3.54
0.210	48.08	Ave	Line	53.20	-5.12
0.338	42.86	Ave	Neutral	49.45	-6.39
0.206	54.54	QP	Line	63.36	-8.82
11.994	40.25	Ave	Neutral	50.00	-9.74
0.434	37.18	Ave	Neutral	47.17	-9.99
0.434	37.13	Ave	Line	47.17	-10.04
0.210	52.44	QP	Neutral	63.20	-10.76
6.258	48.75	QP	Line	60.00	-11.24
4.886	44.36	QP	Neutral	56.00	-11.63
5.378	48.06	QP	Neutral	60.00	-11.93
0.386	46.19	QP	Neutral	58.04	-11.95
4.380	44.46	QP	Line	57.09	-12.63
4.066	33.03	Ave	Line	46.00	-12.96

Plot of Conducted Emissions Test Data

Conducted Disturbance

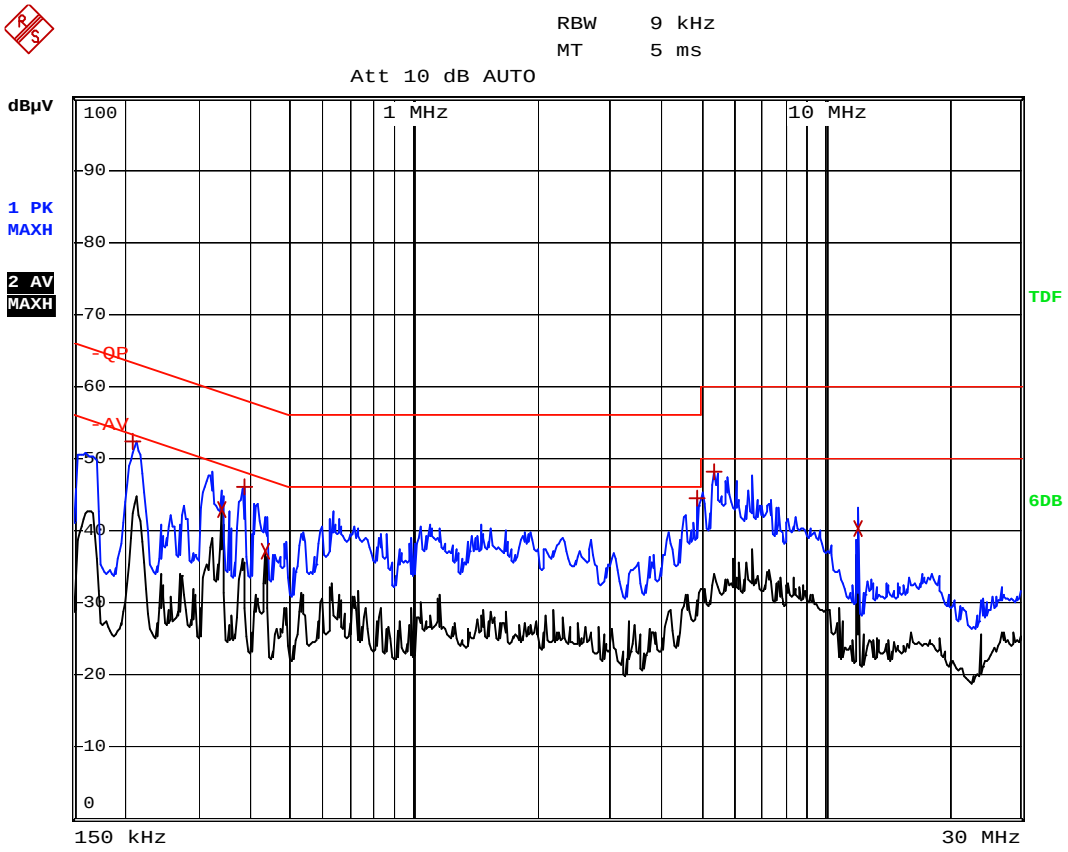
EUT: Wireless-N PCI Adapter

M/N: W322P

Operating Condition: Running

Test Specification: N

Comment: AC 120V/60Hz



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Plot of Conducted Emissions Test Data

Conducted Disturbance

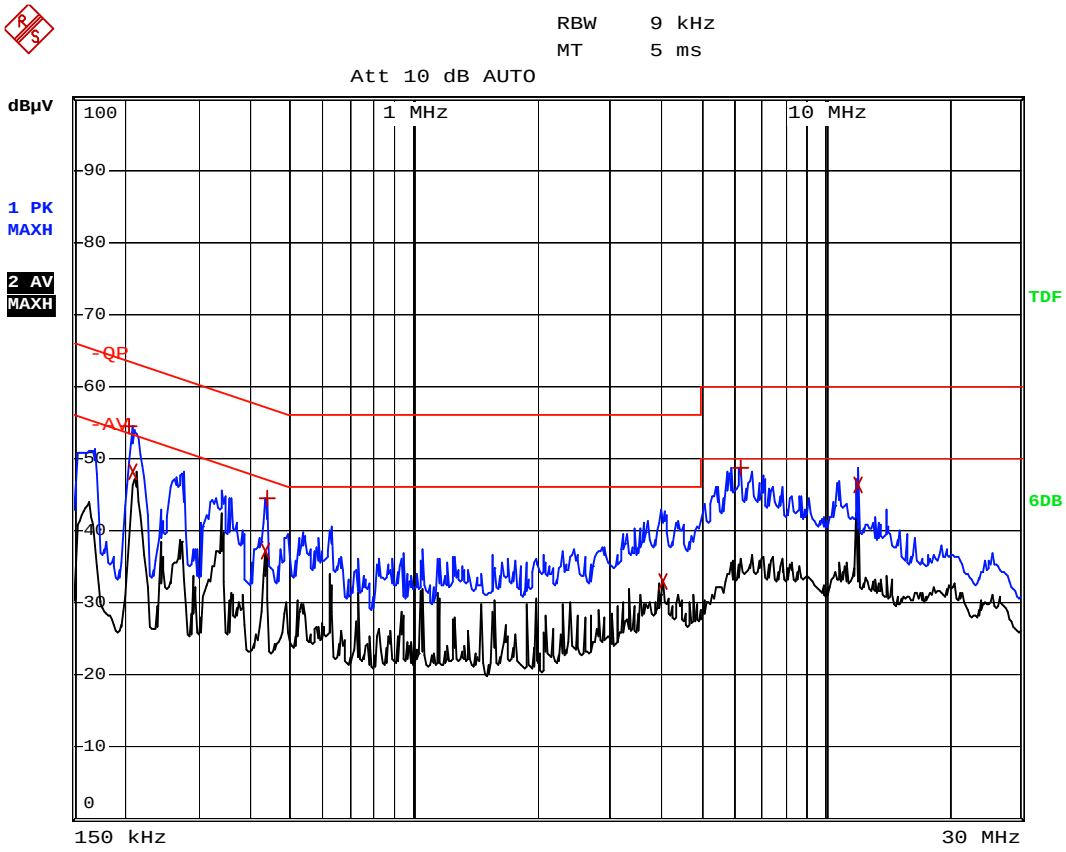
EUT: Wireless-N PCI Adapter

M/N: W322P

Operating Condition: Running

Test Specification: L

Comment: AC 120V/60Hz



Date: 13.AUG.2009 10:12:36

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 unique and integral antenna, fulfill the requirement of this section.

5. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

5.1 Standard Applicable

According to § 1.1307(b)(1), system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

(a) Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100000			5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100000			1	30

Note: f = frequency in MHz: * = Plane-wave equivalents power density

5.2 MPE Calculation Method

$S = (P*G) / (4*\Pi*R^2)$

S = power density (in appropriate units, e.g., mw/cm^2)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

5.3 MPE Calculation Result

Maximum peak output power at antenna input terminal: 15.92(dBm)
Maximum peak output power at antenna input terminal: 39.084089(mW)
Prediction distance: 20 (cm)
Prediction frequency: 2462(MHz)
Antenna gain (typical): 2.2 (dBi)
Antenna gain (numeric): 1.6595869 (numeric)
The worst case is power density at prediction frequency at 20cm: 0.012904 (mw/cm^2)
MPE limit for general population exposure at prediction frequency: 1 (mw/cm^2)

0.0.12904 (mw/cm^2) < 1 (mw/cm^2)

Result: Pass

6. POWER SPECTRAL DENSITY

6.1 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.

6.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2009-07-08	2010-07-07
RF Limiter	Agilent	11867A	MY42241685	2009-07-08	2010-07-07
RMS/PEAK Voltmeter	Rohde & Schwarz	URE3	826135/008	2009-07-08	2010-07-07

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. Set the spectrum analyzer as RBW, VBW=3KHz, Span = 20MHz.
4. Repeat above procedures until all frequency measured was complete.

6.4 Environmental Conditions

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

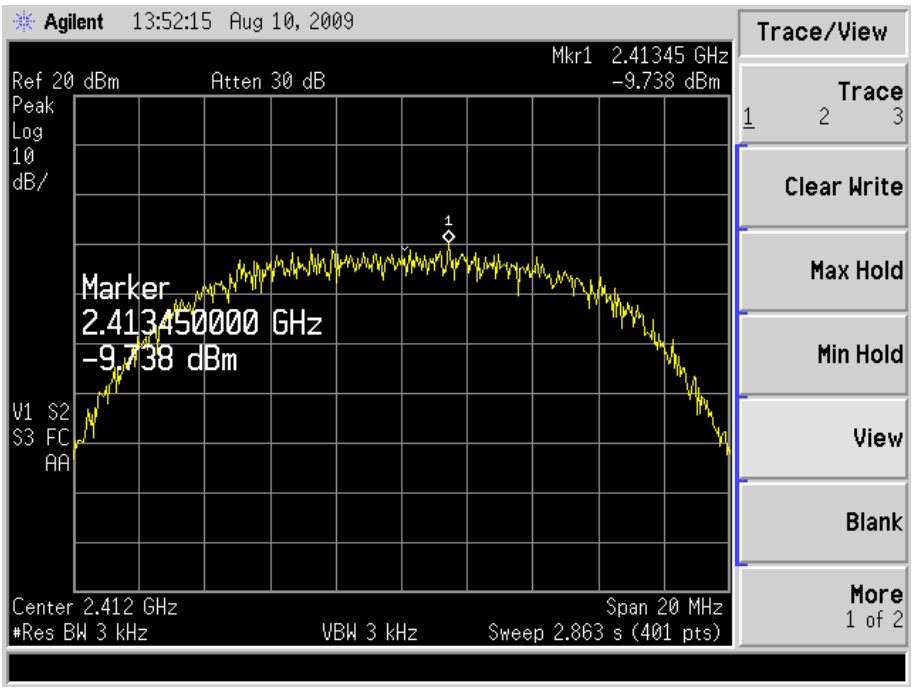
6.5 Summary of Test Results/Plots

Test mode	Test channel	Reading dBm/3kHz (Chain0)	Reading dBm/3kHz (China1)	Limit dBm/3kHz
802.11b	Low channel (2412MHz)	-9.738	---	8
	Middle channel (2437MHz)	-9.984	---	8
	High channel (2462MHz)	-9.352	---	8
802.11g	Low channel (2412MHz)	-12.18	---	8
	Middle channel (2437MHz)	-11.57	-15.26	8
	High channel (2462MHz)	-11.71	-14.51	8
802.11n HT20	Low channel (2412MHz)	-12.06	-14.93	8
	Middle channel (2437MHz)	-11.89	-15.38	8
	High channel (2462MHz)	-11.46	-14.69	8
802.11n HT40	Low channel (2422MHz)	-16.46	-17.93	8
	Middle channel (2437MHz)	-11.99	-18.13	8
	High channel (2452MHz)	-17.14	-17.47	8

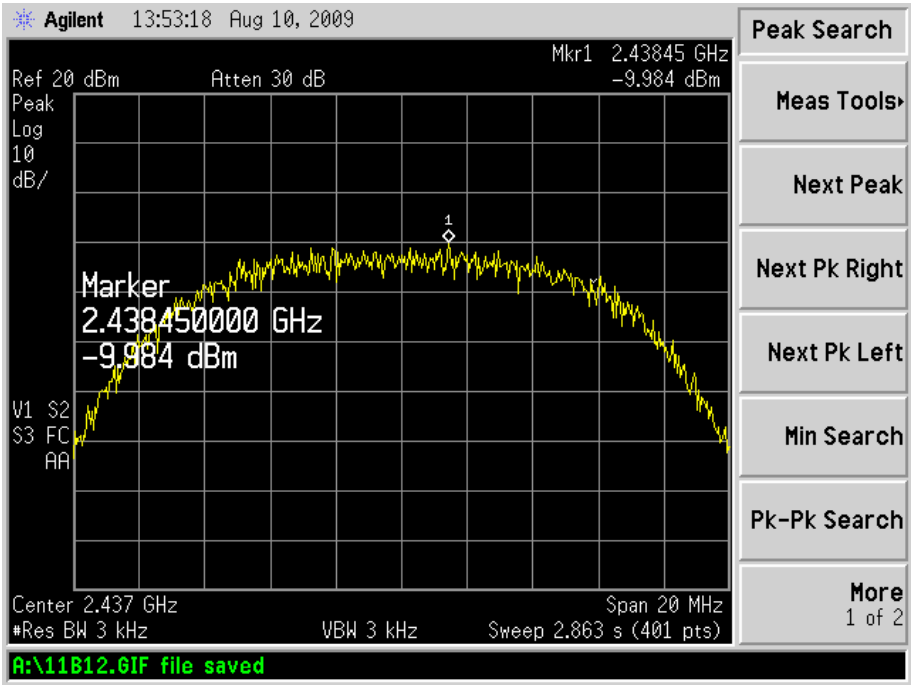
"----" means that this test mode is no test data in the corresponding operating conditions.

For 802.11b (Chain0)

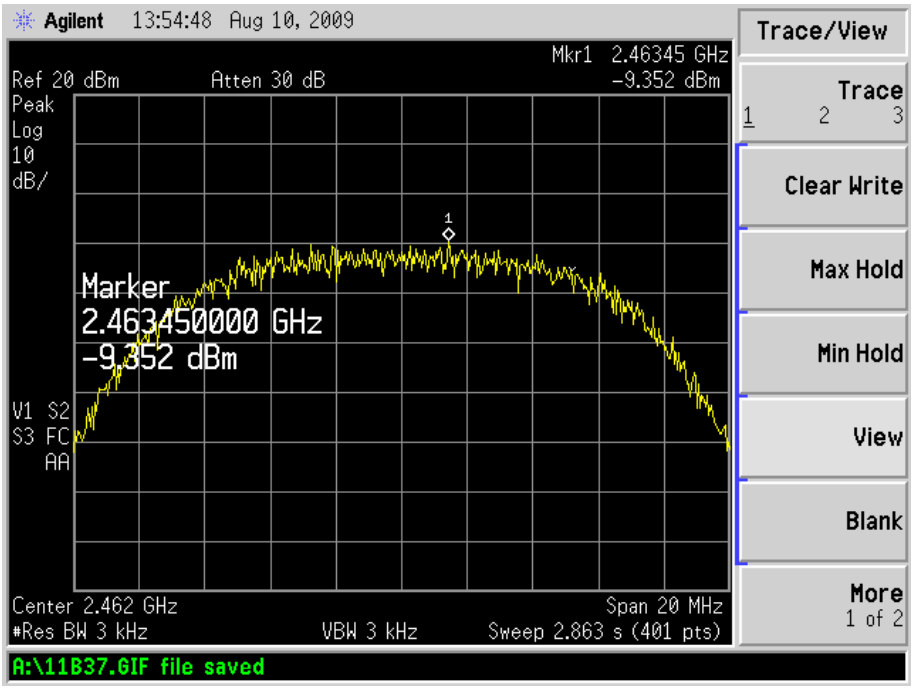
Low Channel:



Middle Channel:

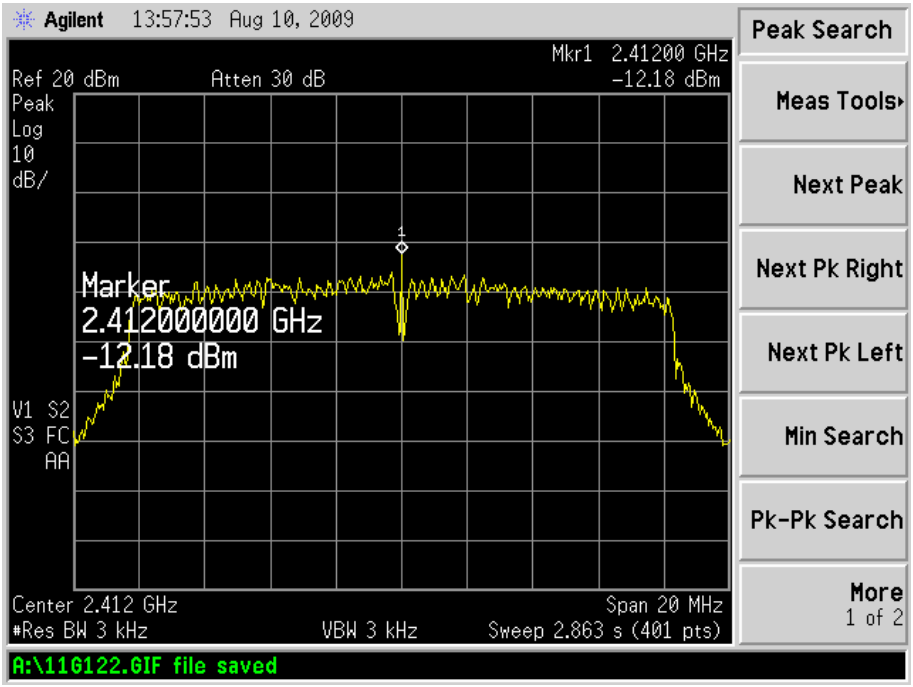


High Channel:

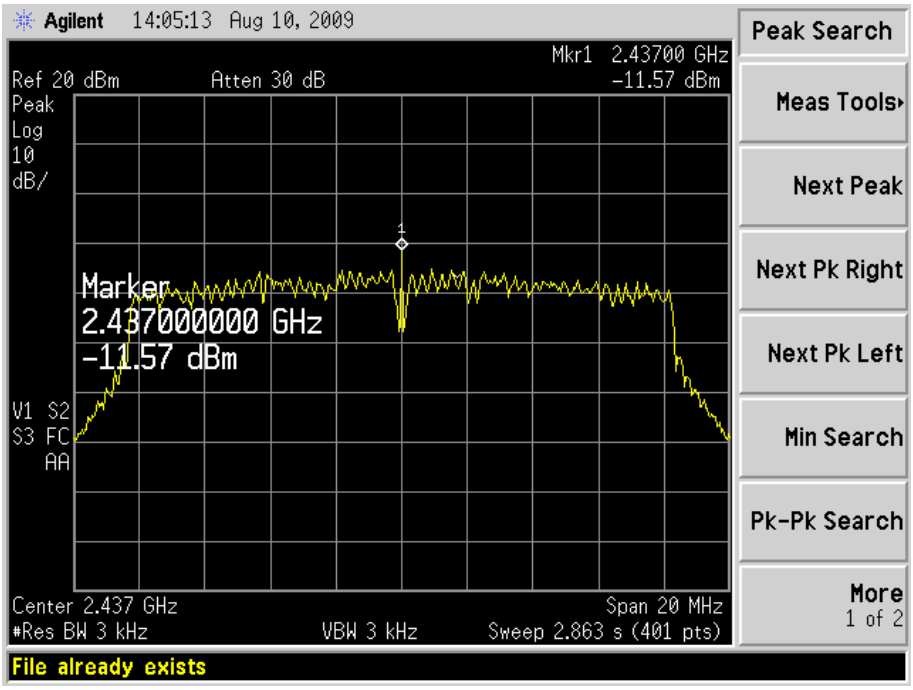


For 802.11g (Chain0)

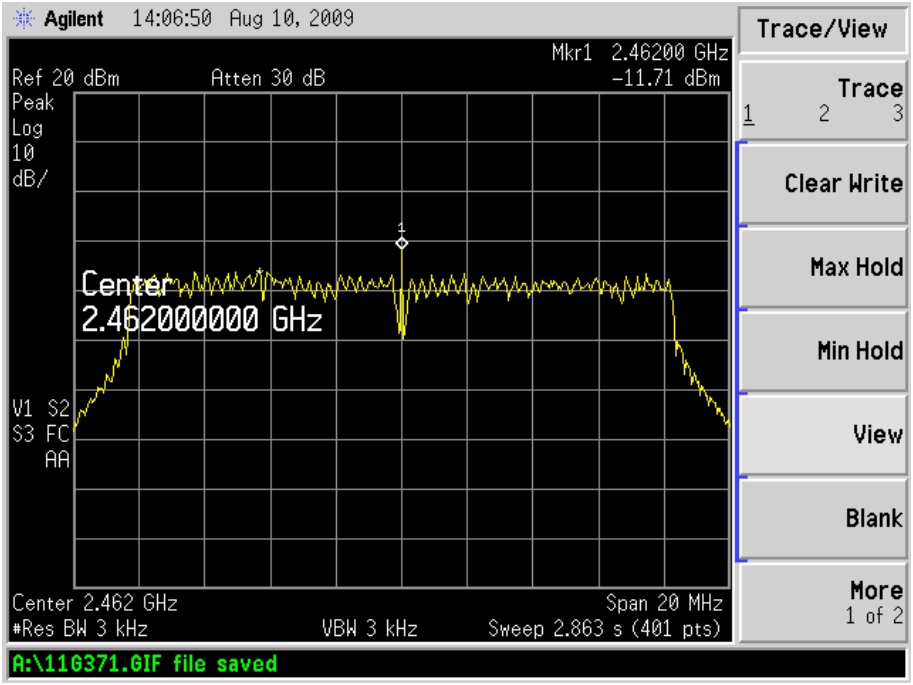
Low Channel:



Middle Channel:

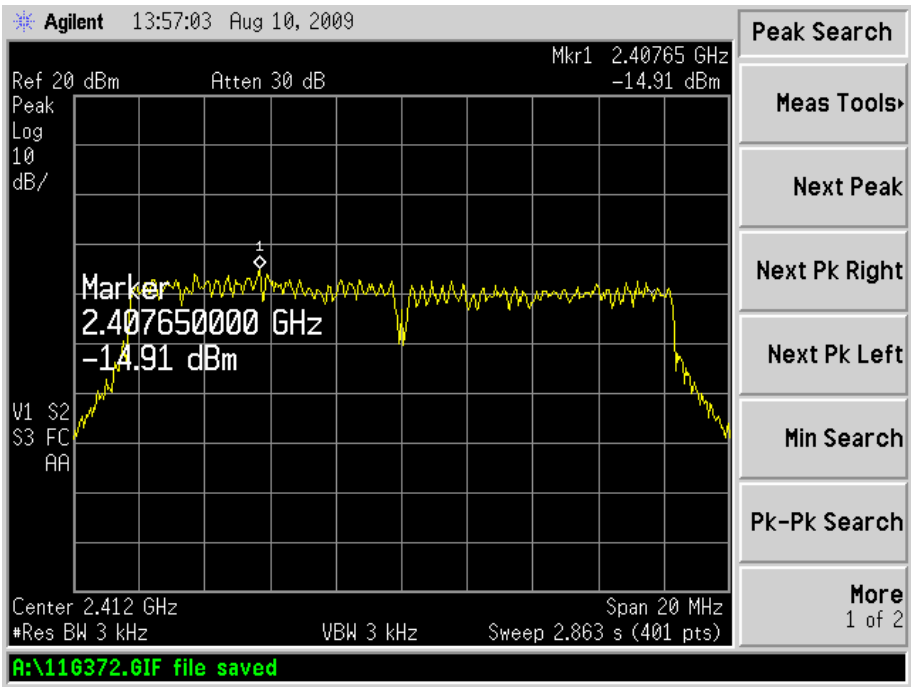


High Channel:

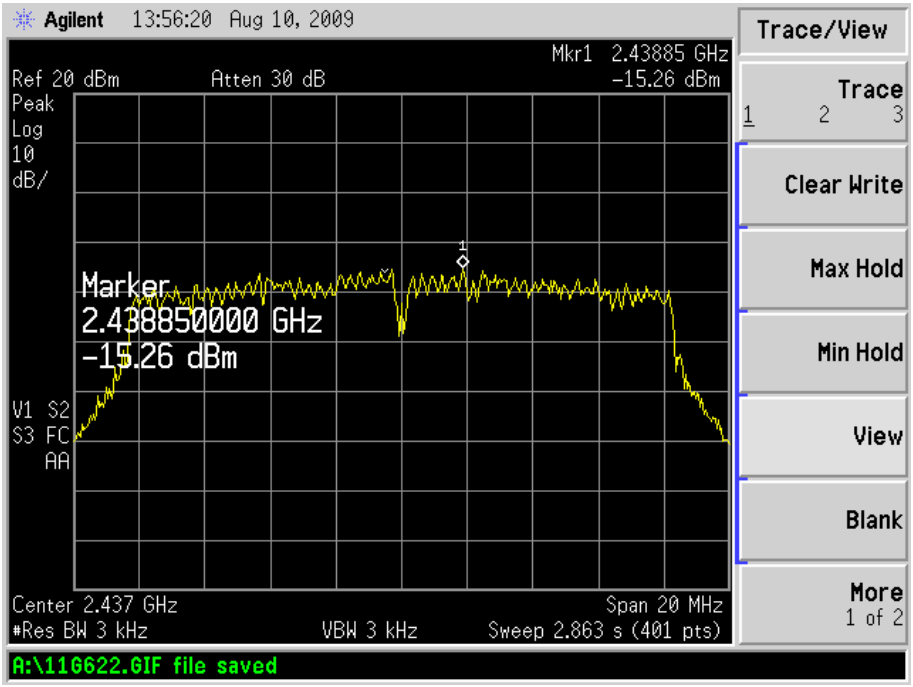


For 802.11g (Chain1)

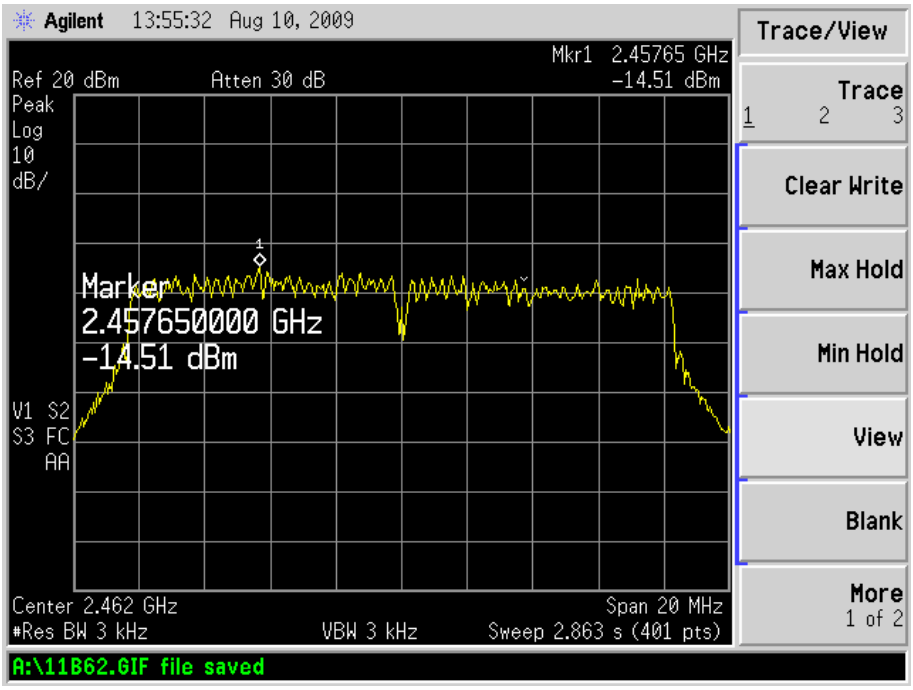
Low Channel:



Middle Channel:

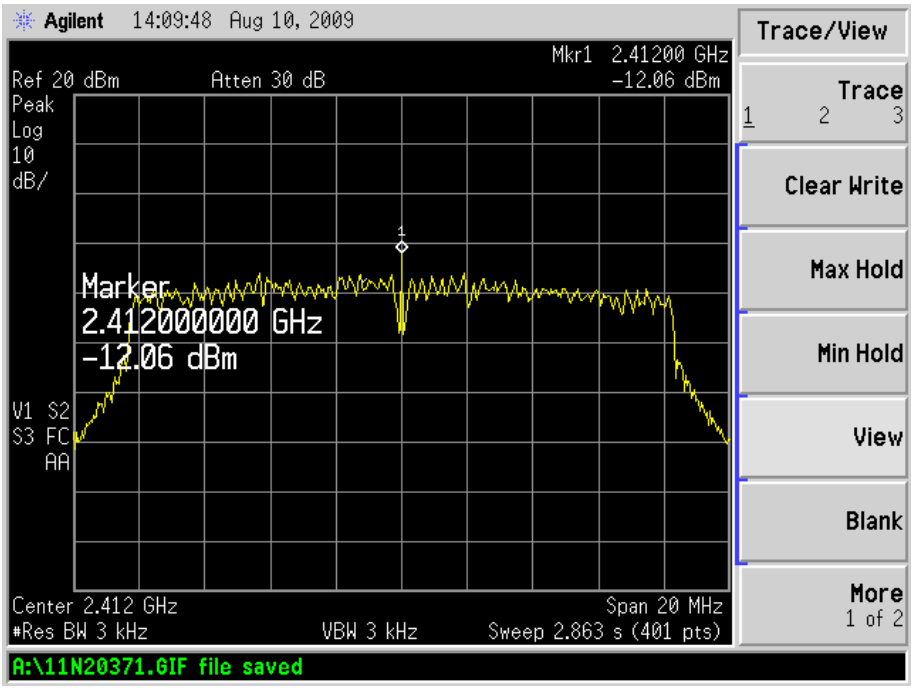


High Channel:

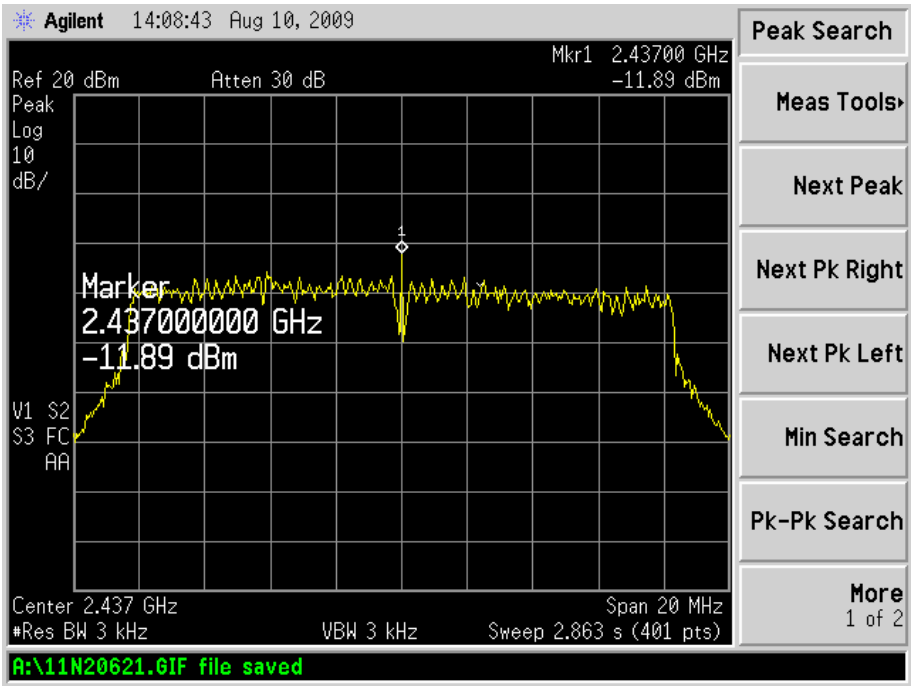


For 802.11n HT20 (Chain0)

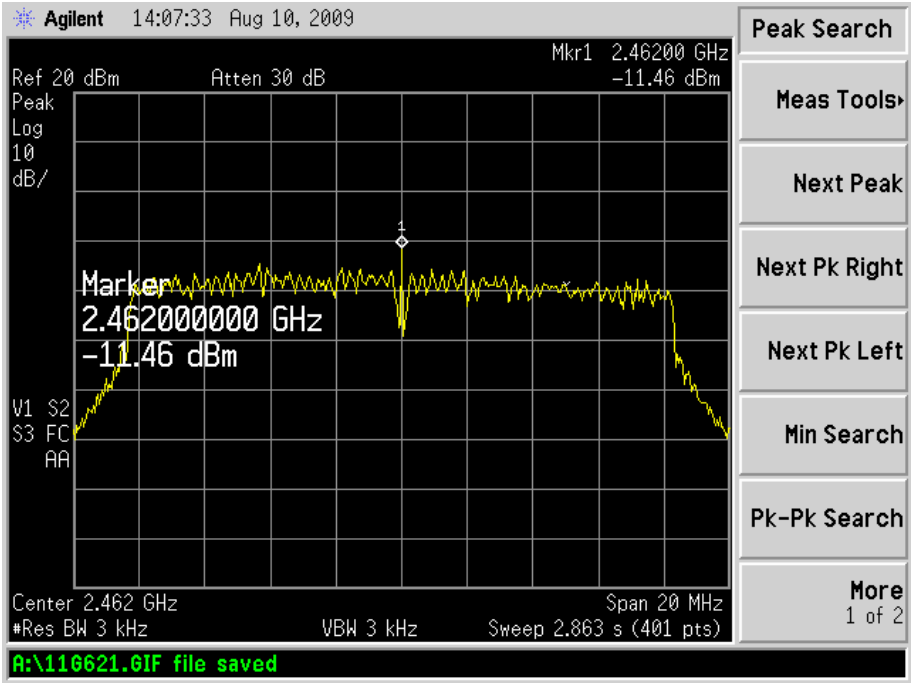
Low Channel:



Middle Channel:

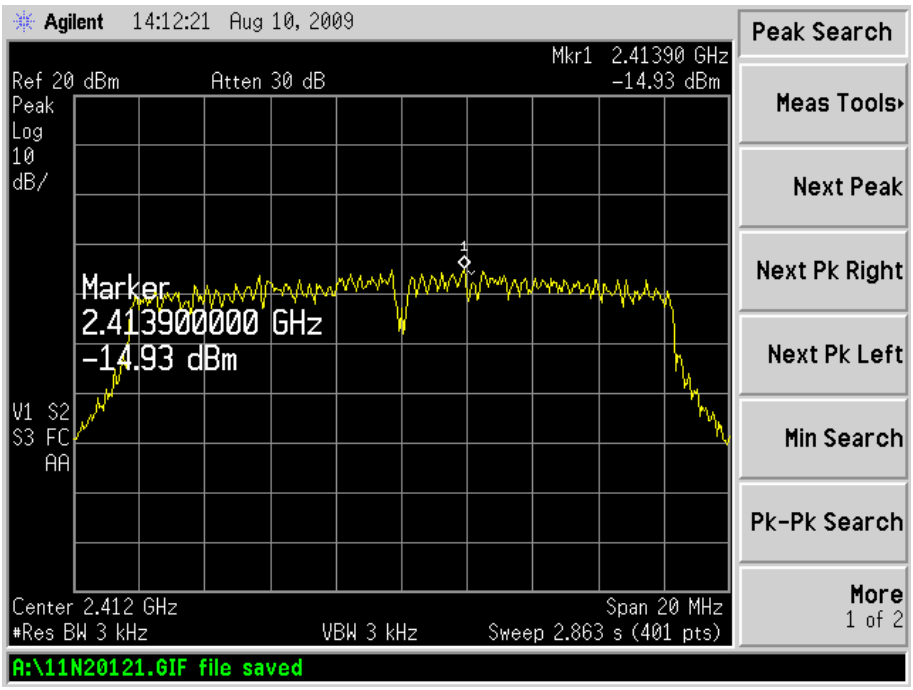


High Channel:

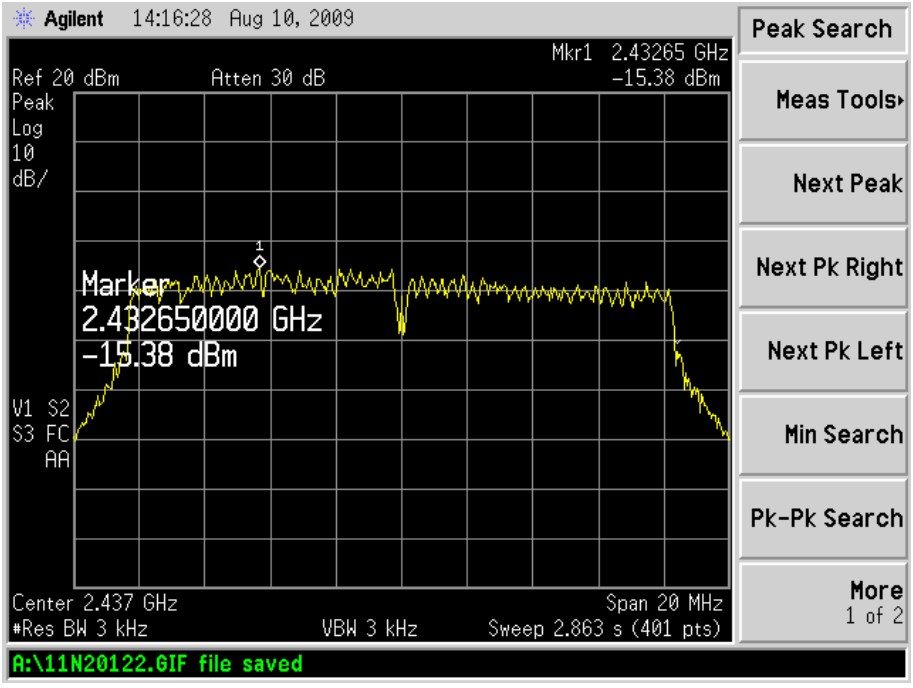


For 802.11n HT20 (Chain1)

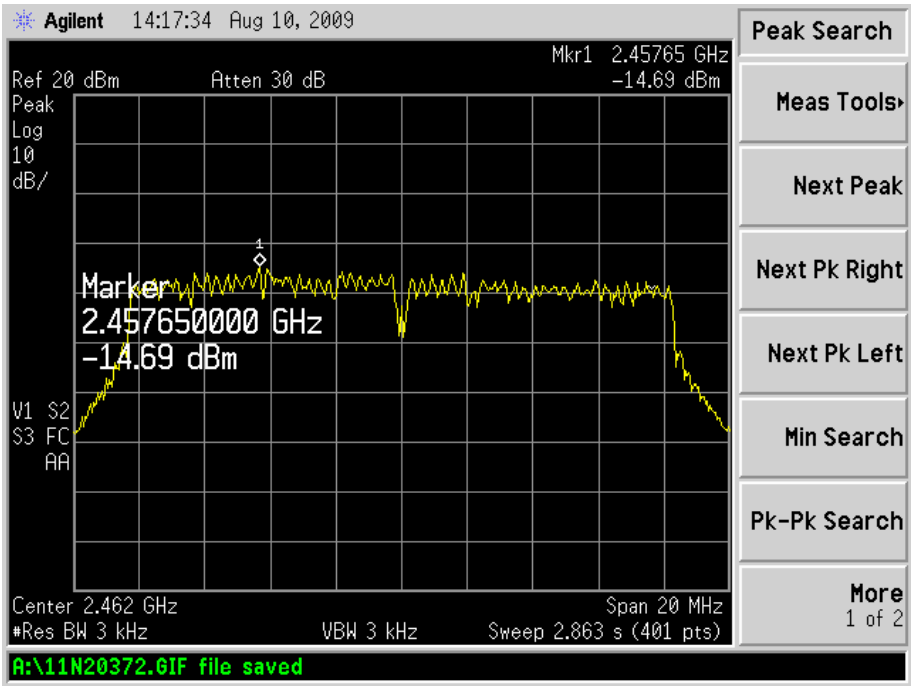
Low Channel:



Middle Channel:

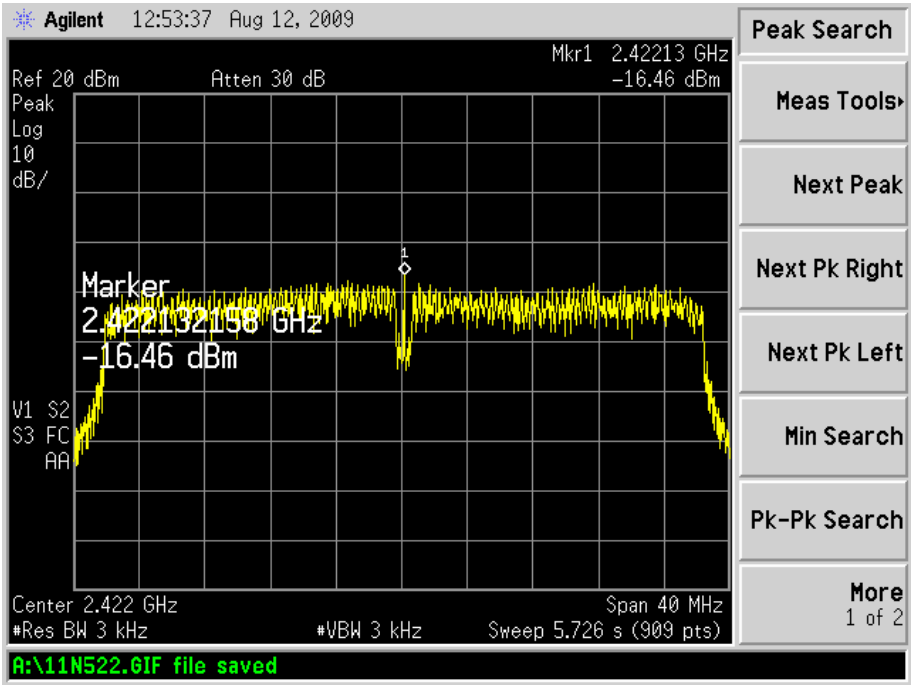


High Channel:

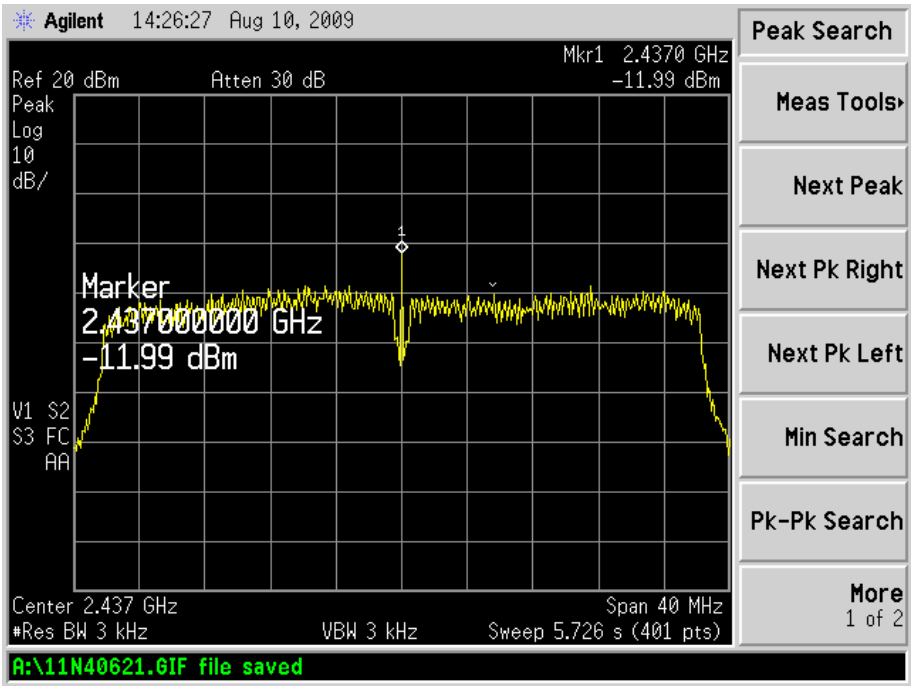


For 802.11n HT40 (Chain0)

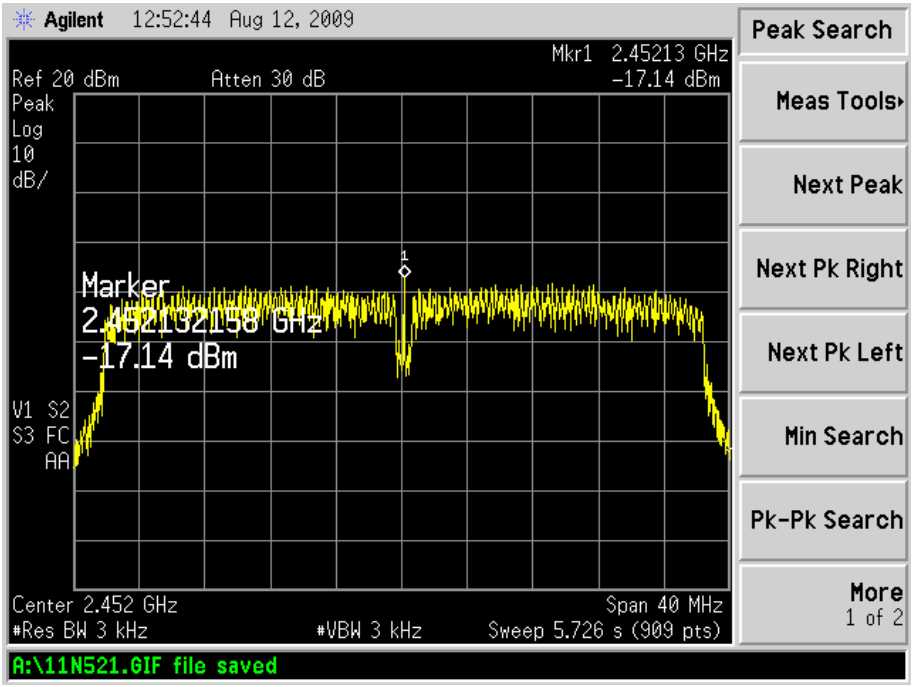
Low Channel:



Middle Channel:

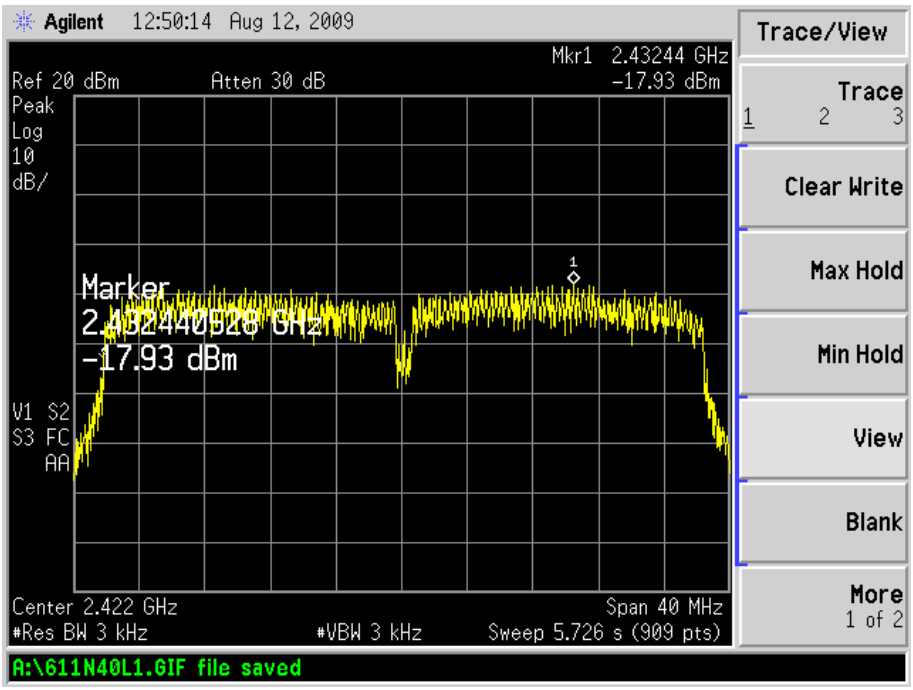


High Channel:

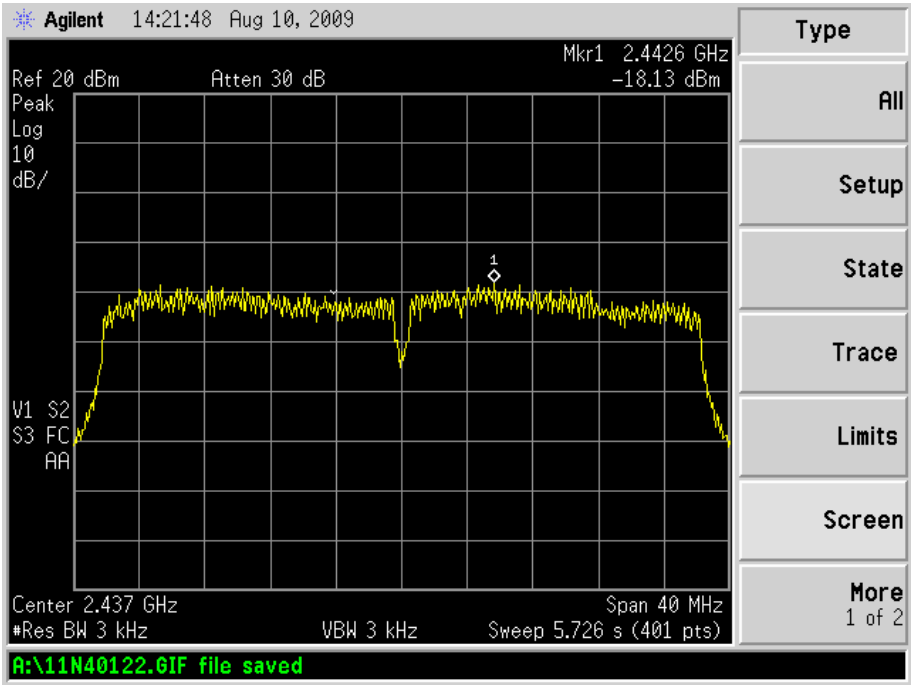


For 802.11n HT40 (Chain1)

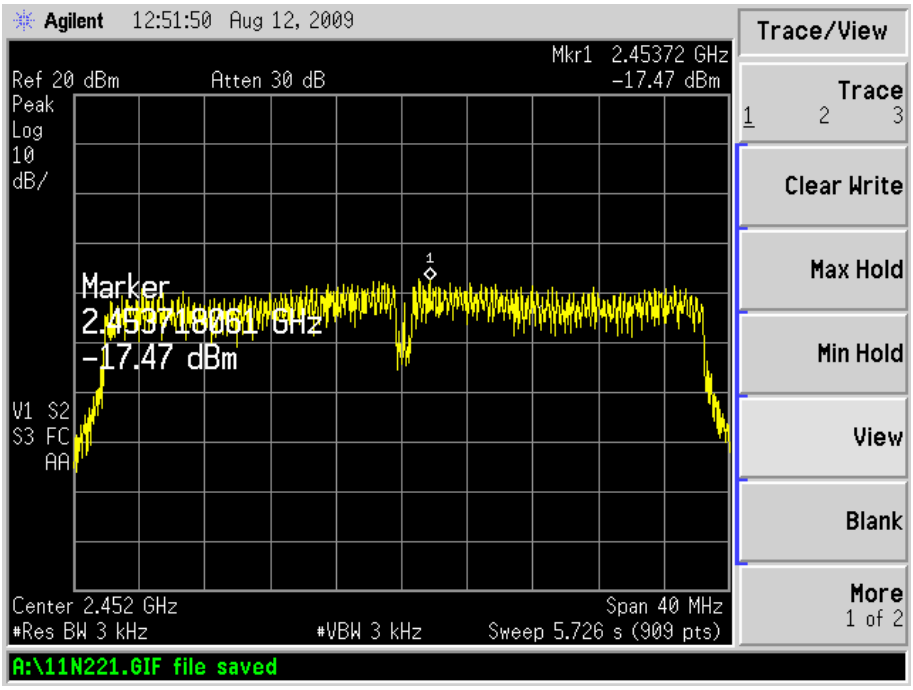
Low Channel:



Middle Channel:



High Channel:



7. 6-dB BANDWIDTH

7.1 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.

7.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2009-07-08	2010-07-07
RF Limiter	Agilent	11867A	MY42241685	2009-07-08	2010-07-07

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

7.3 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.

7.4 Environmental Conditions

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

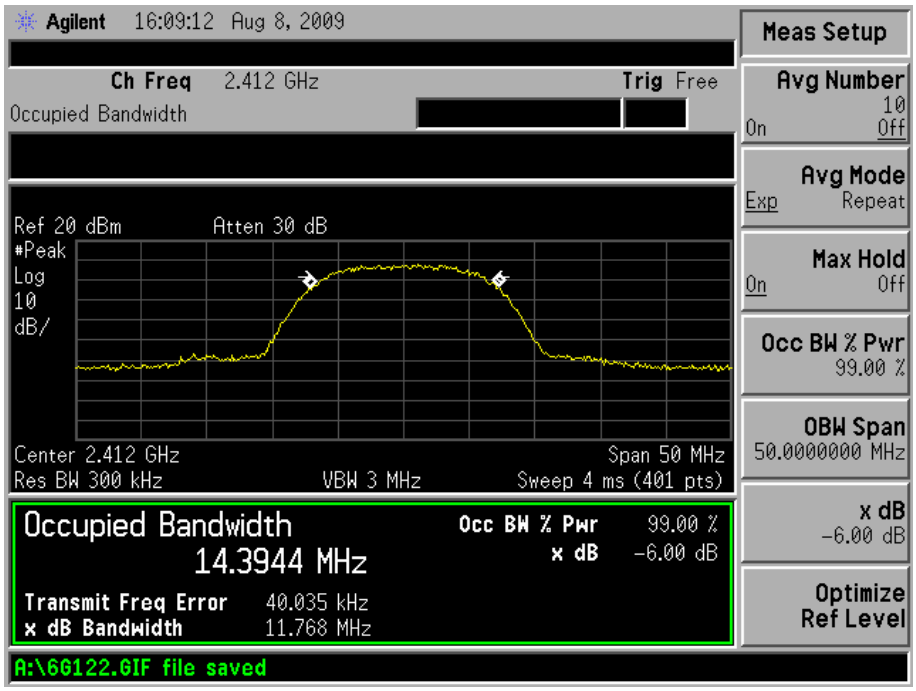
7.5 Summary of Test Results/Plots

Test mode	Frequency MHz	6 dB Bandwidth (Chain0) kHz	6 dB Bandwidth (Chain1) kHz	Limit kHz
802.11b	2412	11768	---	500
	2437	11516	---	500
	2462	11688	---	500
802.11g	2412	16284	16626	500
	2437	16667	15966	500
	2462	16431	16593	500
802.11n HT20	2412	16836	17537	500
	2437	17147	17609	500
	2462	17100	16966	500
802.11n HT40	2422	35687	35707	500
	2437	35643	36010	500
	2452	36050	35697	500

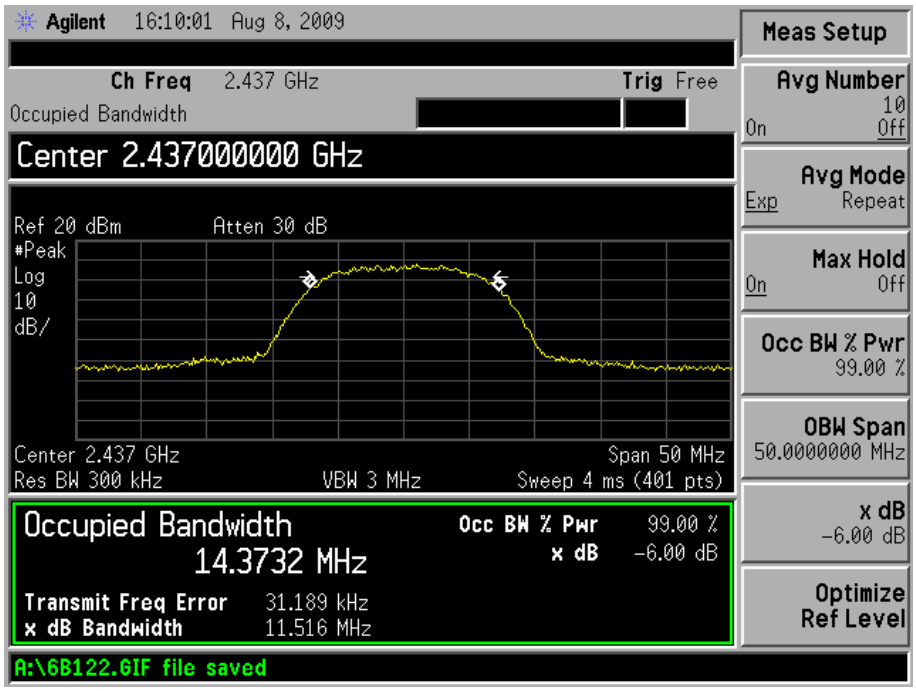
"----" means that this test mode is no test data in the corresponding operating conditions.

For 802.11b (Chain0)

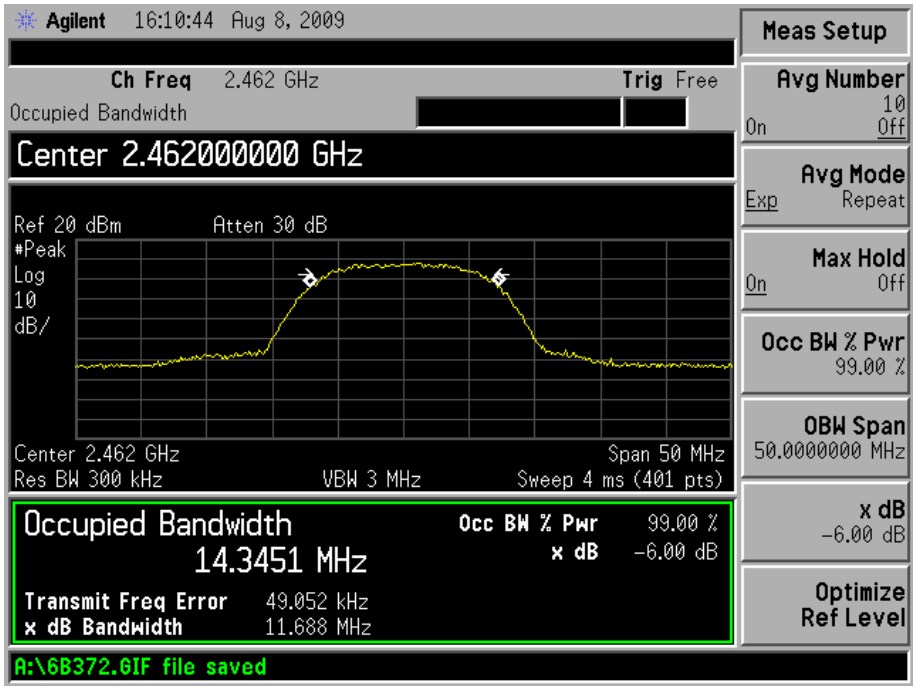
Low Channel:



Mid Channel:

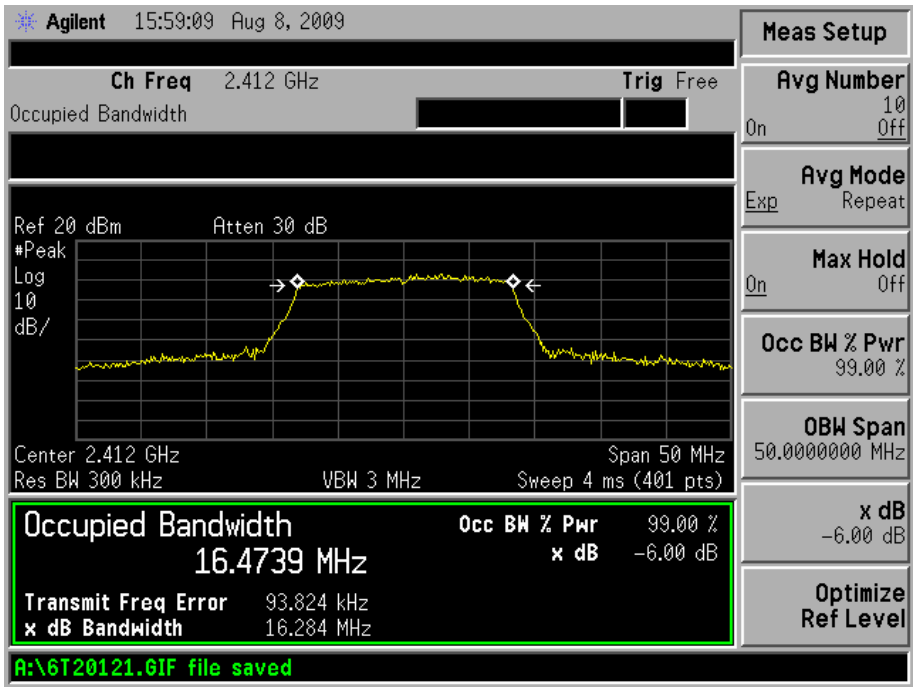


High Channel:

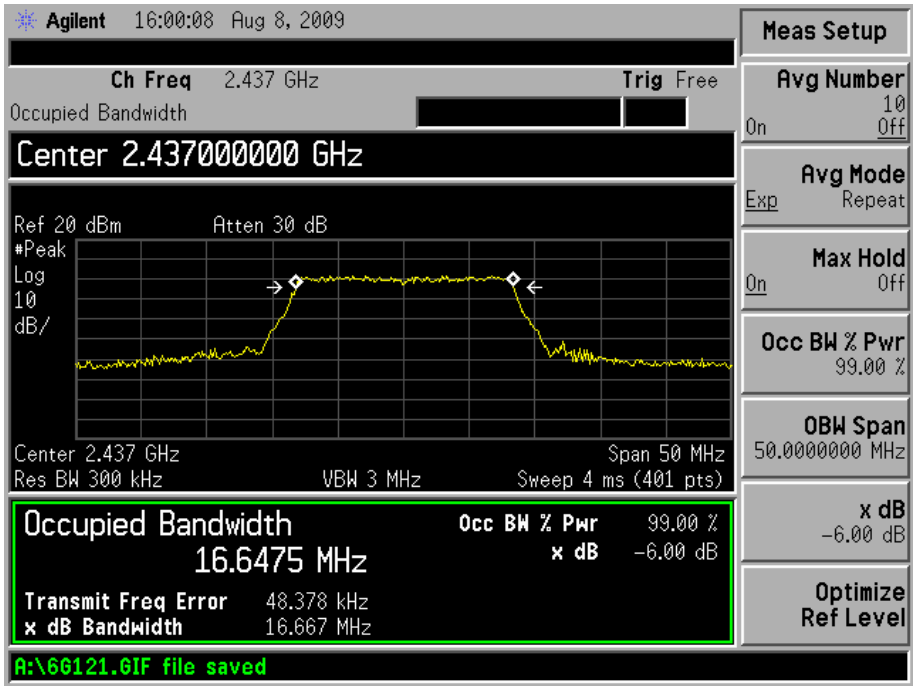


For 802.11g (Chain0)

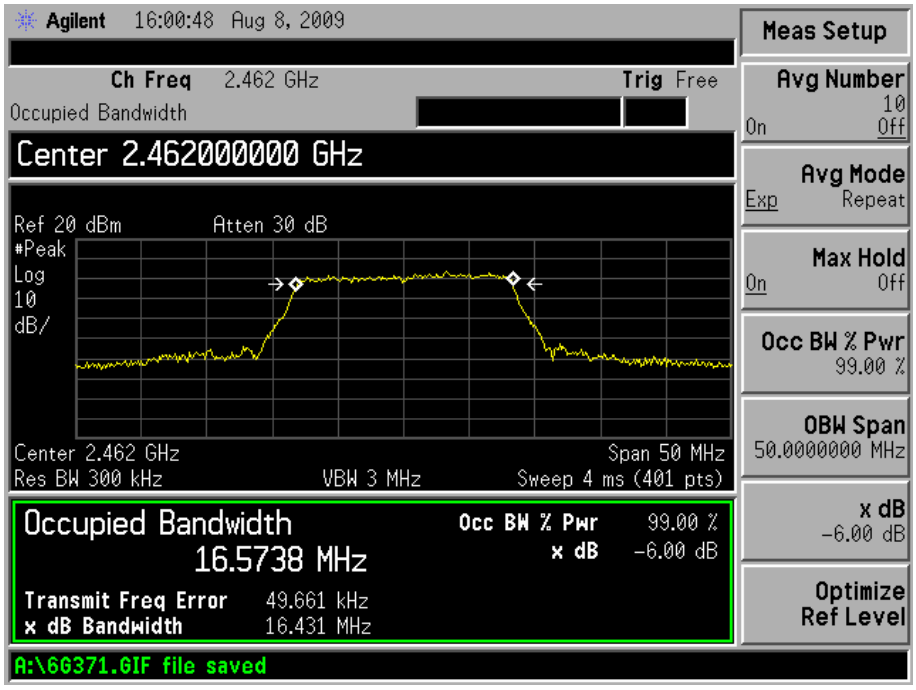
Low Channel:



Mid Channel:

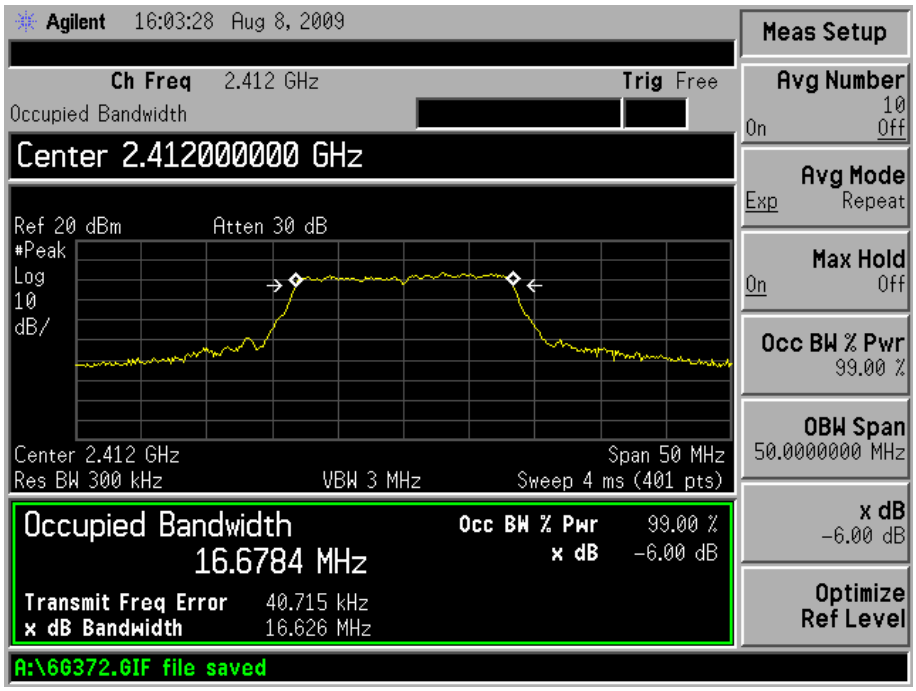


High Channel:

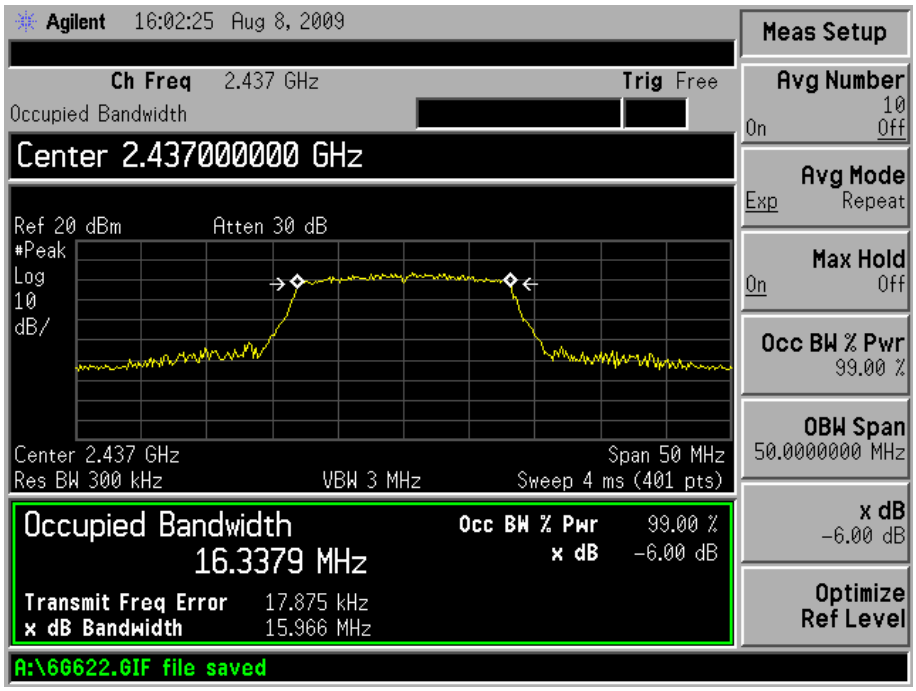


For 802.11g (Chain1)

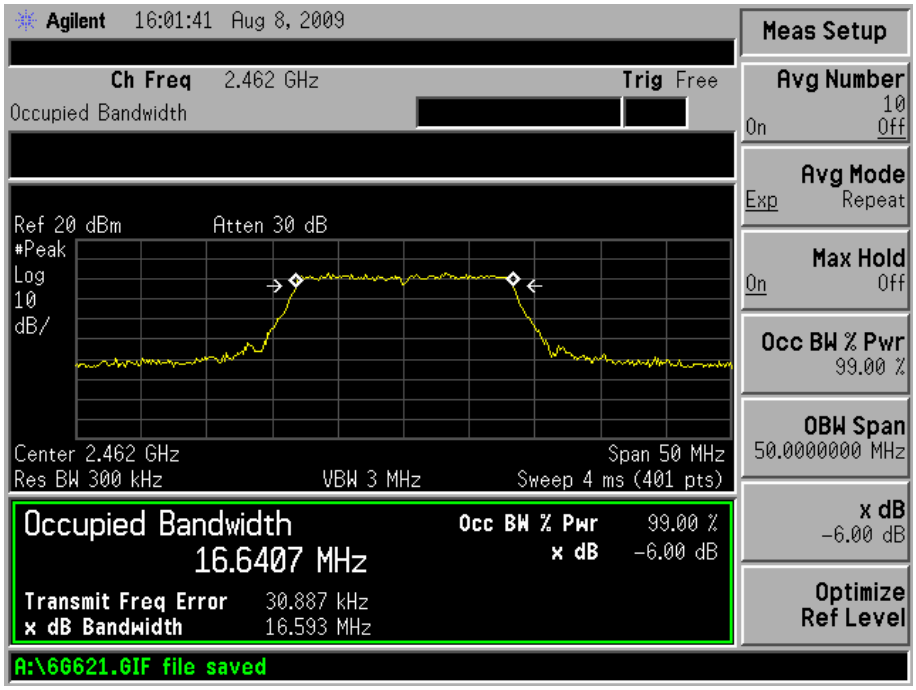
Low Channel:



Mid Channel:

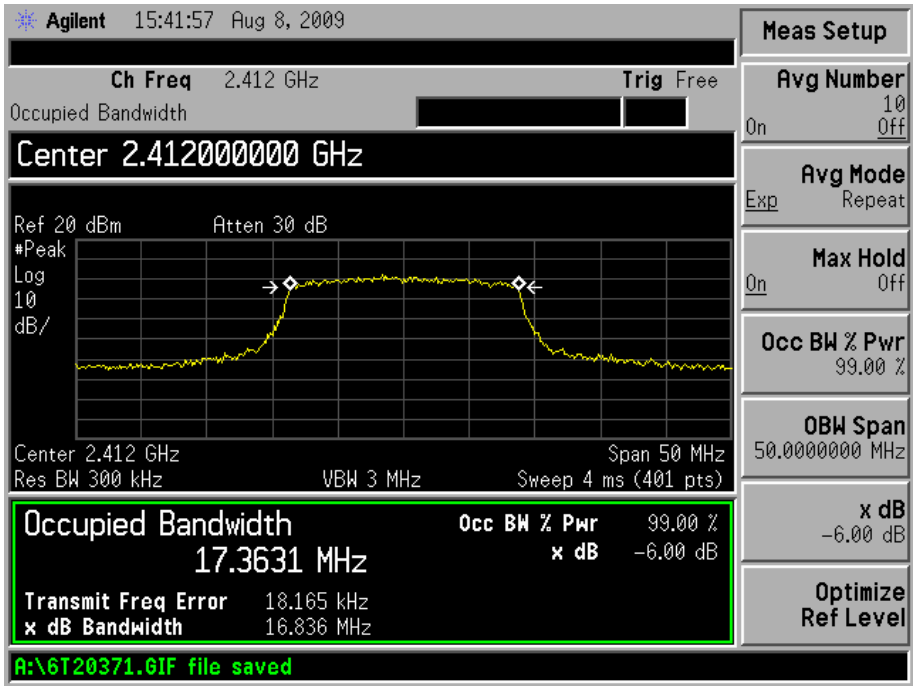


High Channel:

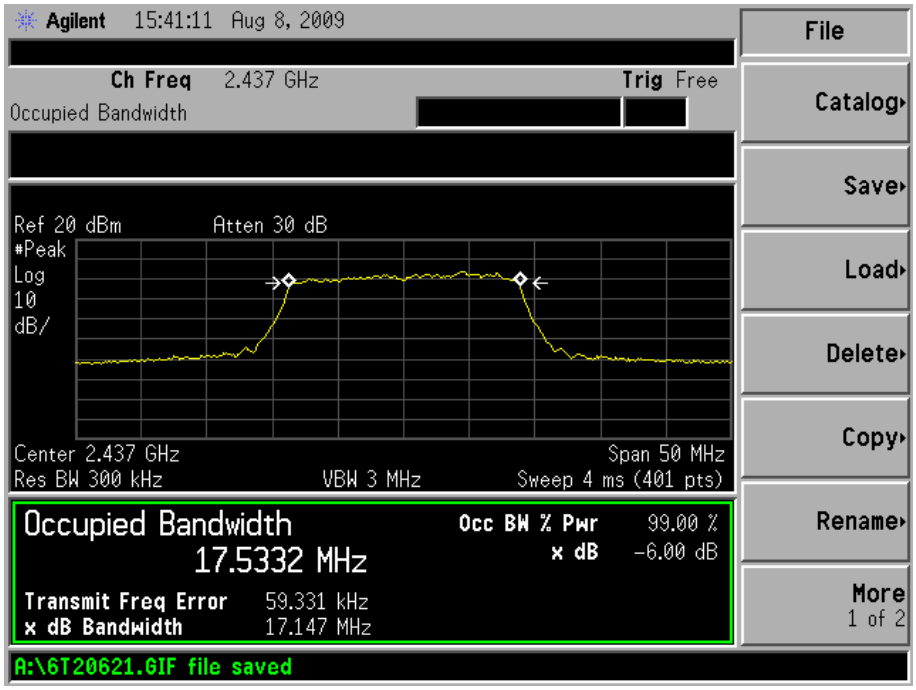


For 802.11n HT20 (Chain0)

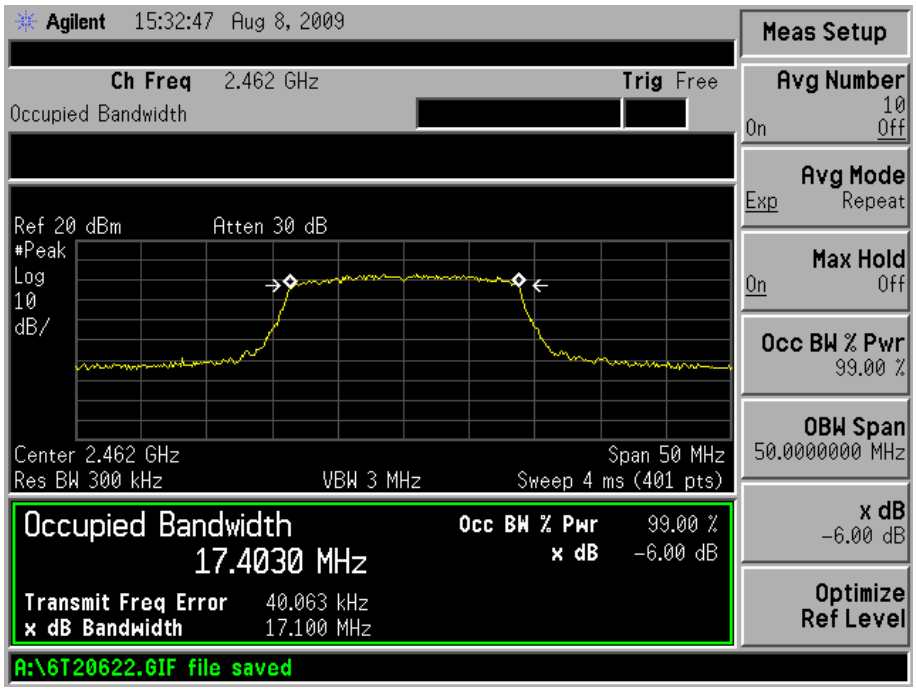
Low Channel:



Mid Channel:

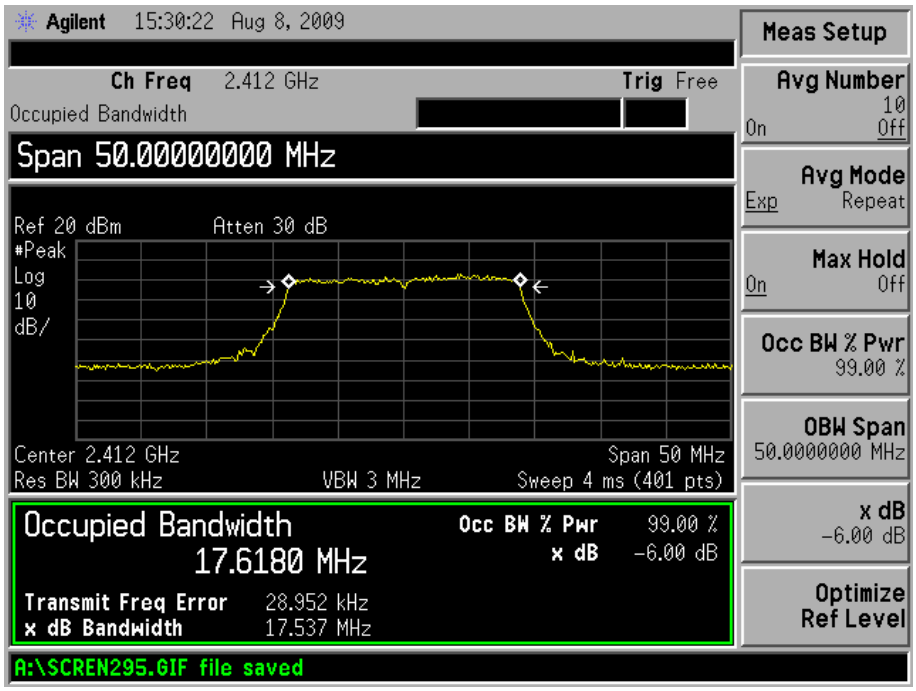


High Channel:

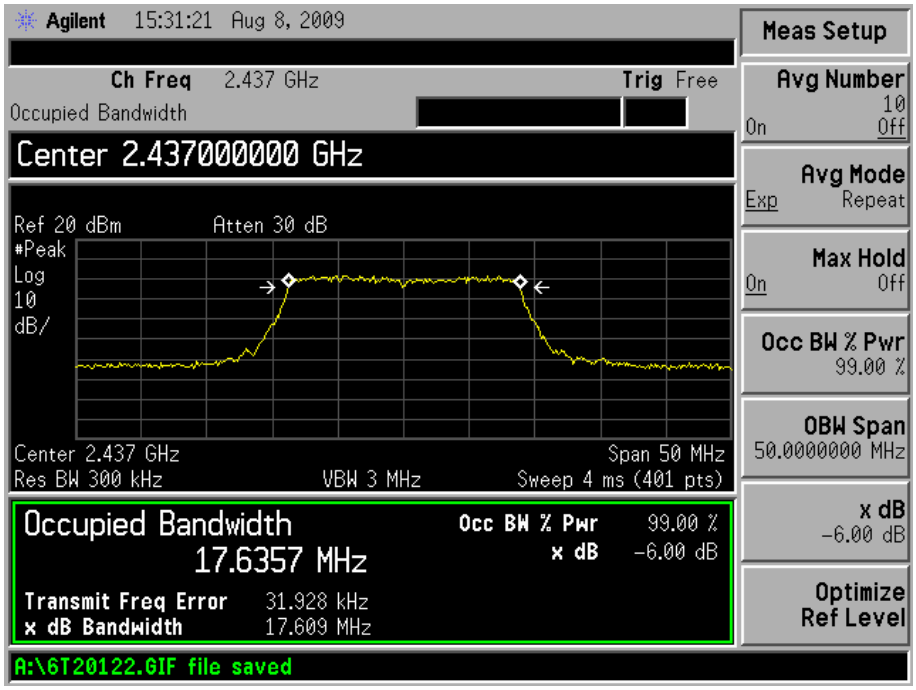


For 802.11n HT20 (Chain1)

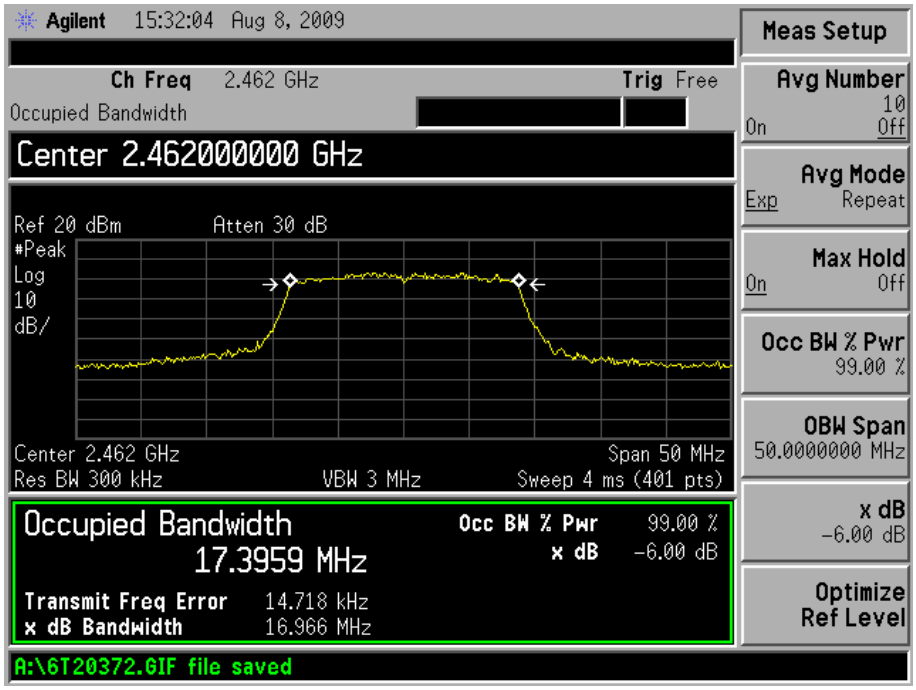
Low Channel:



Mid Channel:

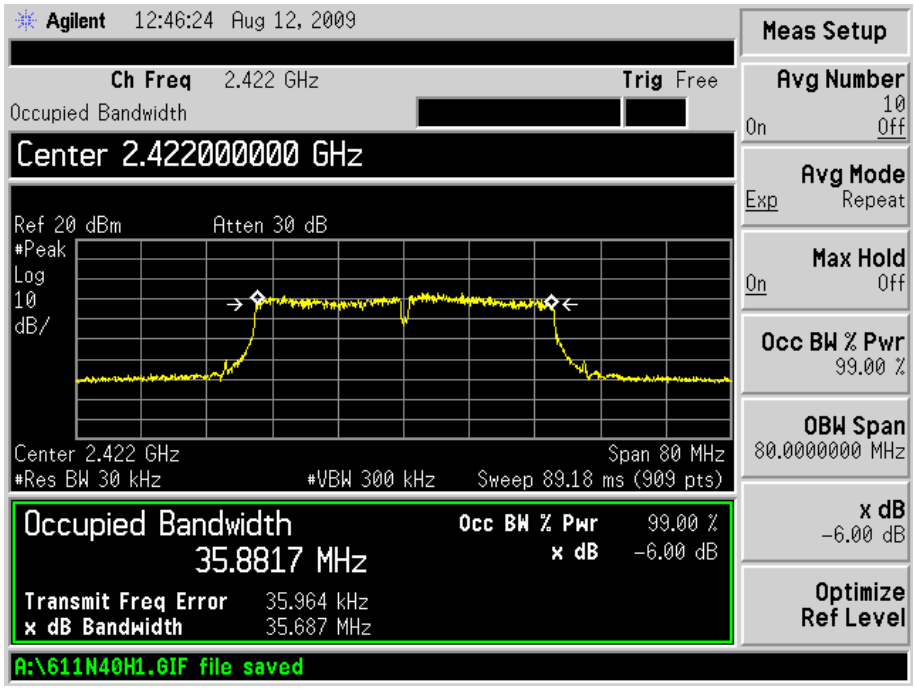


High Channel:

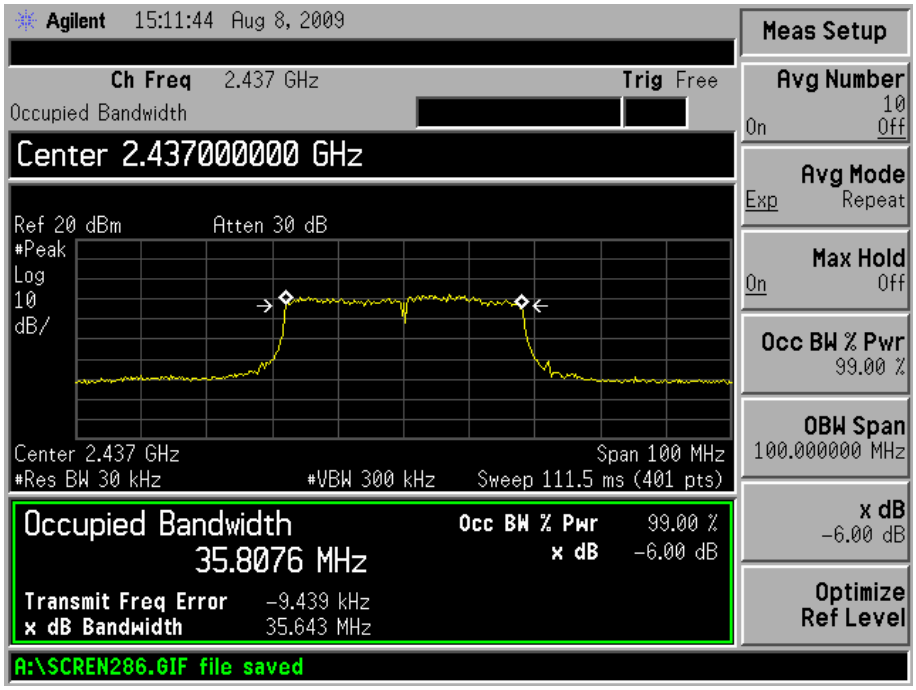


For 802.11n HT40 (Chain0)

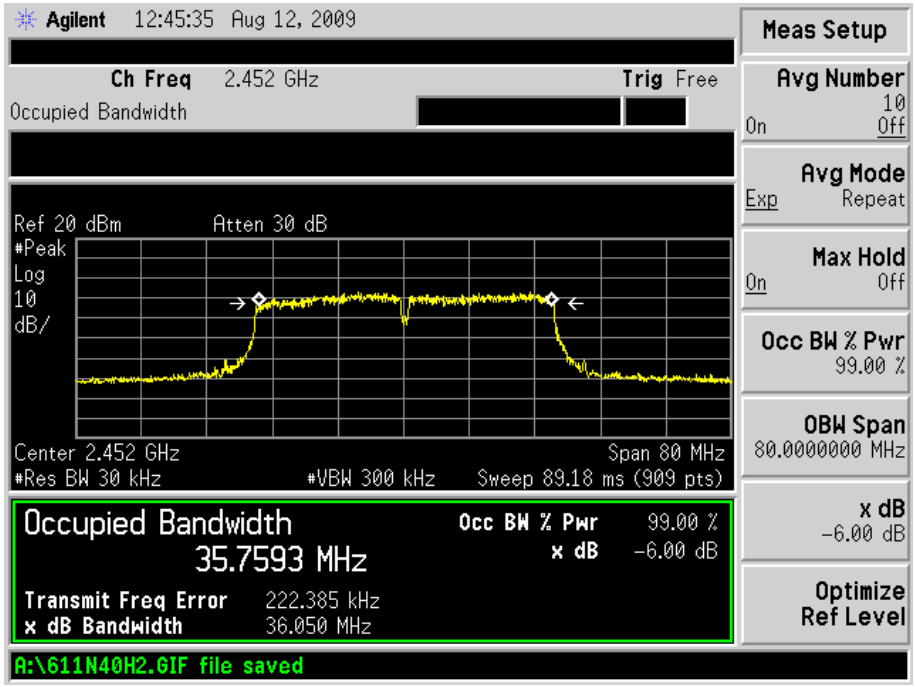
Low Channel:



Mid Channel:

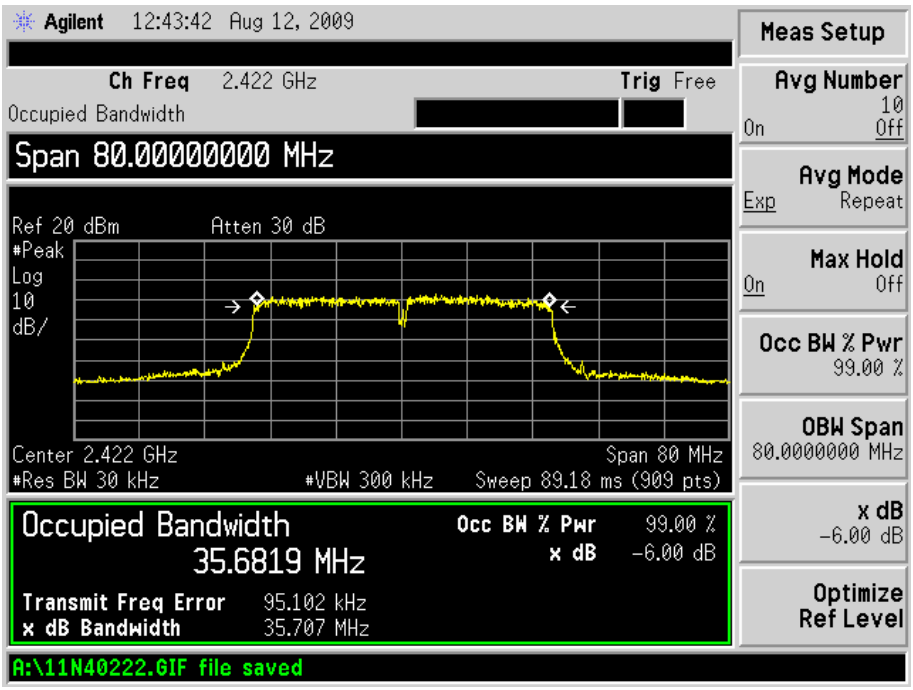


High Channel:

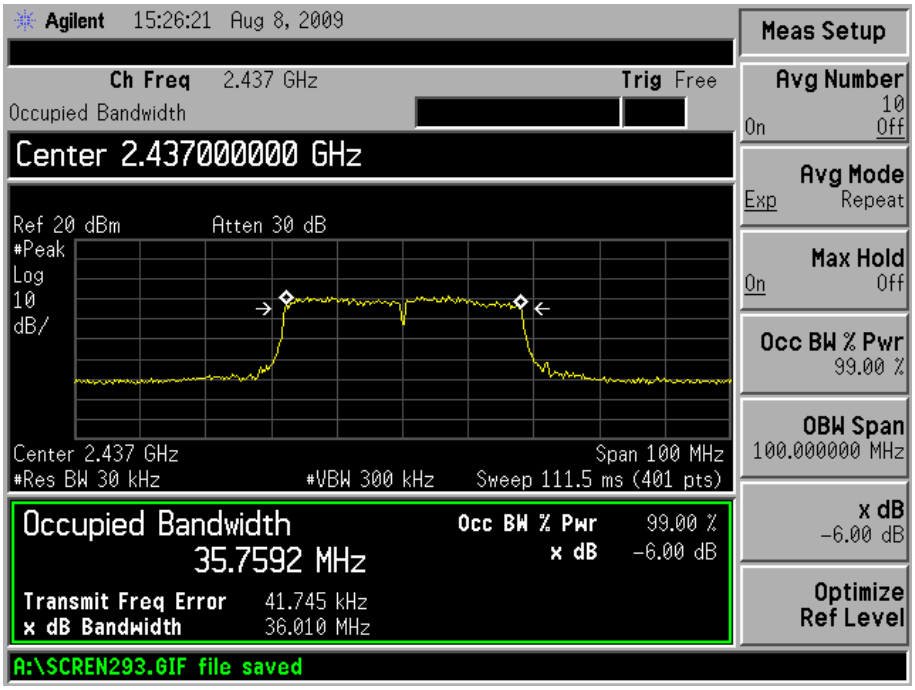


For 802.11n HT40 (Chain1)

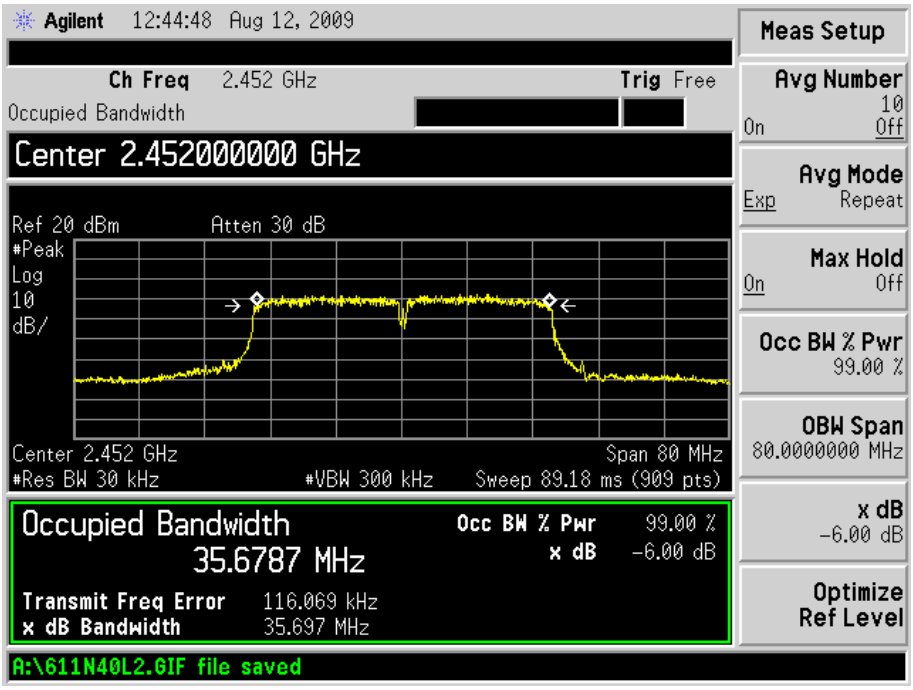
Low Channel:



Mid Channel:



High Channel:



8. POWER OUTPUT

8.1 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.

8.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2009-07-08	2010-07-07
RF Limiter	Agilent	11867A	MY42241685	2009-07-08	2010-07-07

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

8.3 Test Procedure

The device under test has an integral antenna and the power was measured on a radiated basis.

8.4 Environmental Conditions

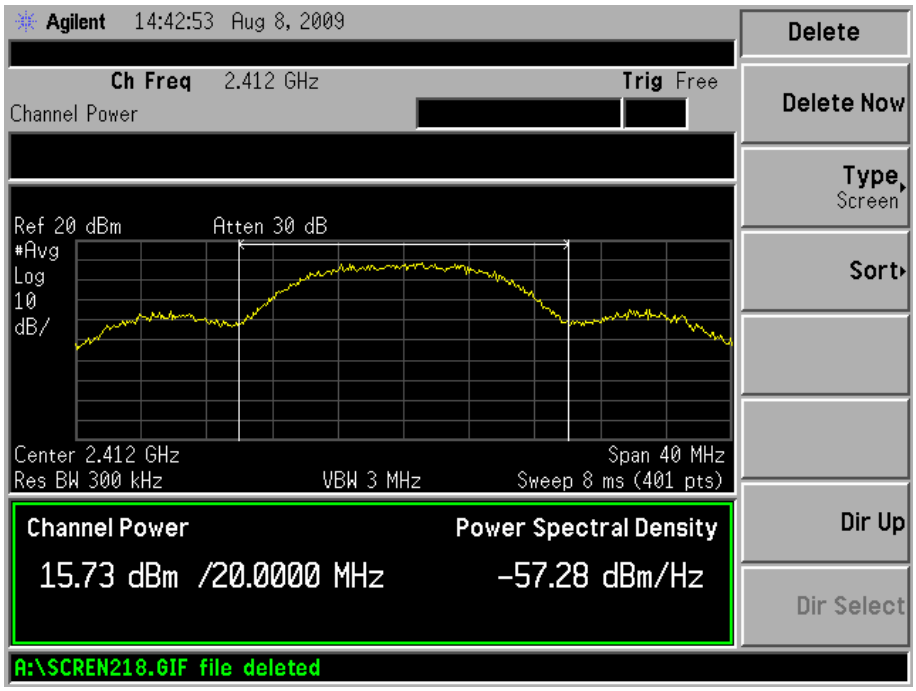
Temperature:	21° C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

8.5 Summary of Test Results/Plots

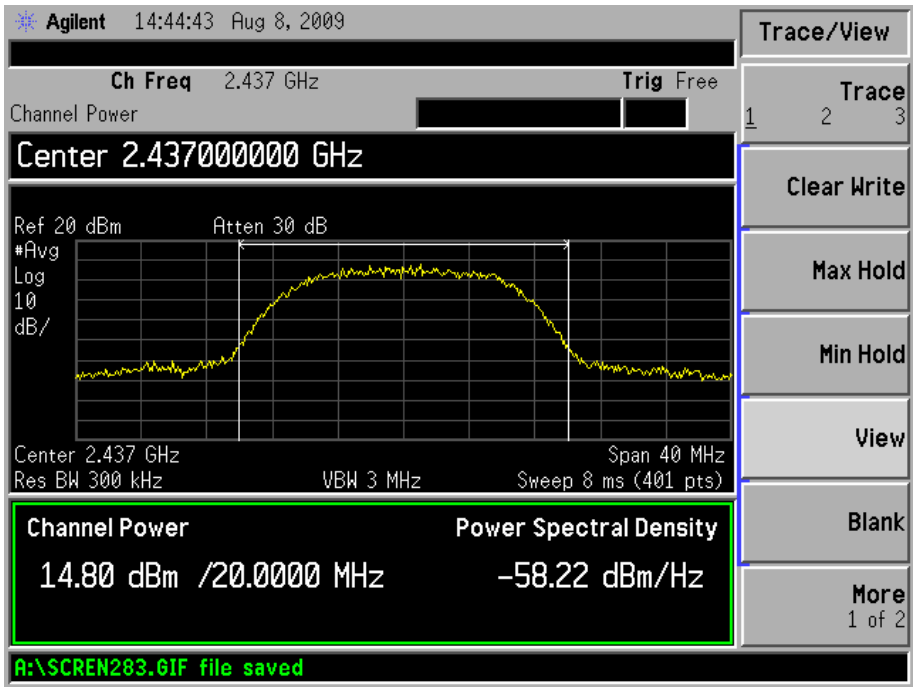
Test mode	Frequency MHz	Reading dBm	Output power W	Limit W
802.11b (Chain0)	2412	15.73	0.0374	1
	2437	14.80	0.0302	1
	2462	15.92	0.0391	1
802.11g (Chain0)	2412	10.01	0.0100	1
	2437	11.43	0.0139	1
	2462	11.97	0.0157	1
802.11g (Chain1)	2412	11.21	0.0132	1
	2437	11.23	0.0133	1
	2462	11.95	0.0157	1
802.11n HT20 (Chain0)	2412	10.36	0.0109	1
	2437	10.92	0.0124	1
	2462	11.75	0.0150	1
802.11n HT20 (Chain1)	2412	11.68	0.0147	1
	2437	11.56	0.0143	1
	2462	12.05	0.0160	1
802.11n HT40 (Chain0)	2422	11.30	0.0135	1
	2437	10.64	0.0116	1
	2452	11.57	0.0144	1
802.11n HT40 (Chain1)	2422	11.40	0.0148	1
	2437	11.50	0.0141	1
	2452	11.20	0.0132	1

For 802.11b(Chain0)

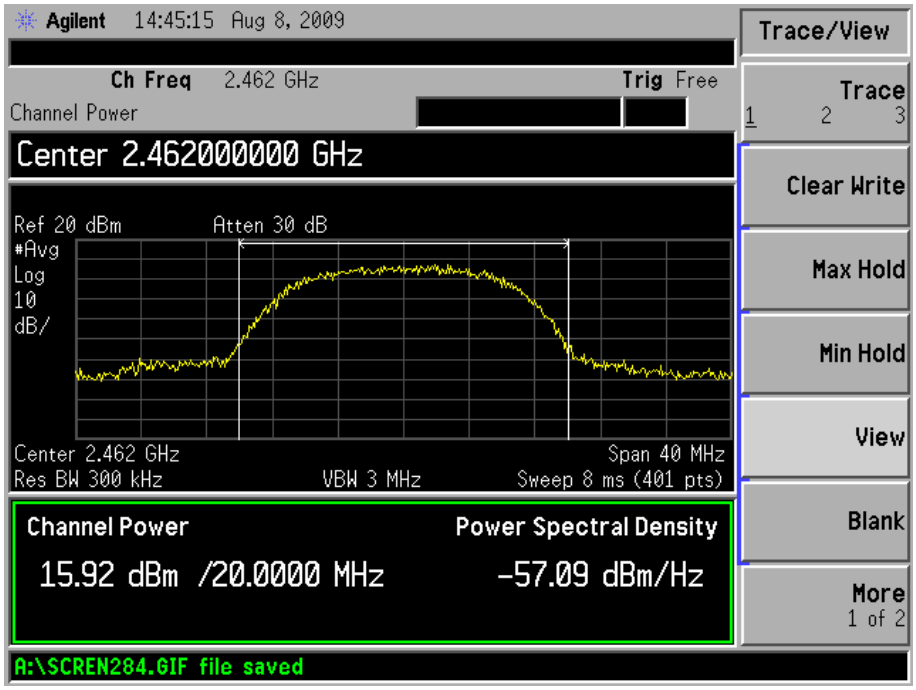
Low Channel:



Middle Channel:

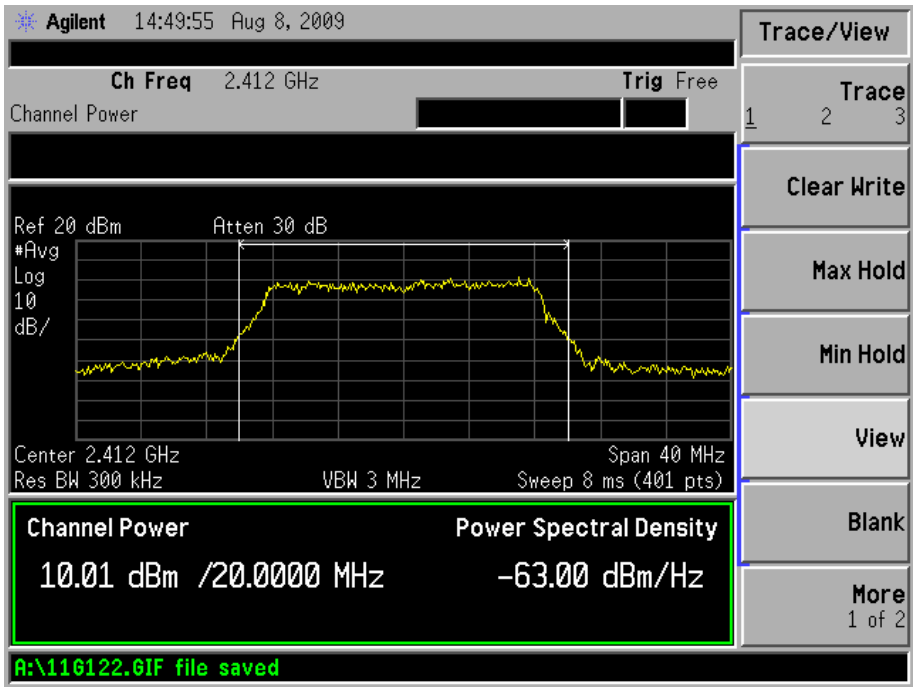


High Channel:

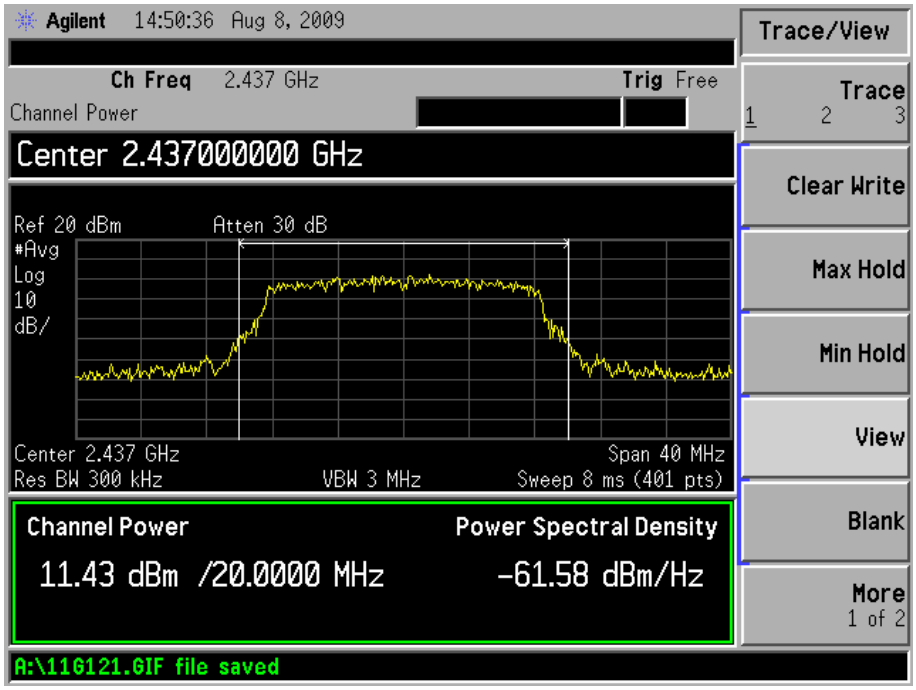


For 802.11g (Chain0)

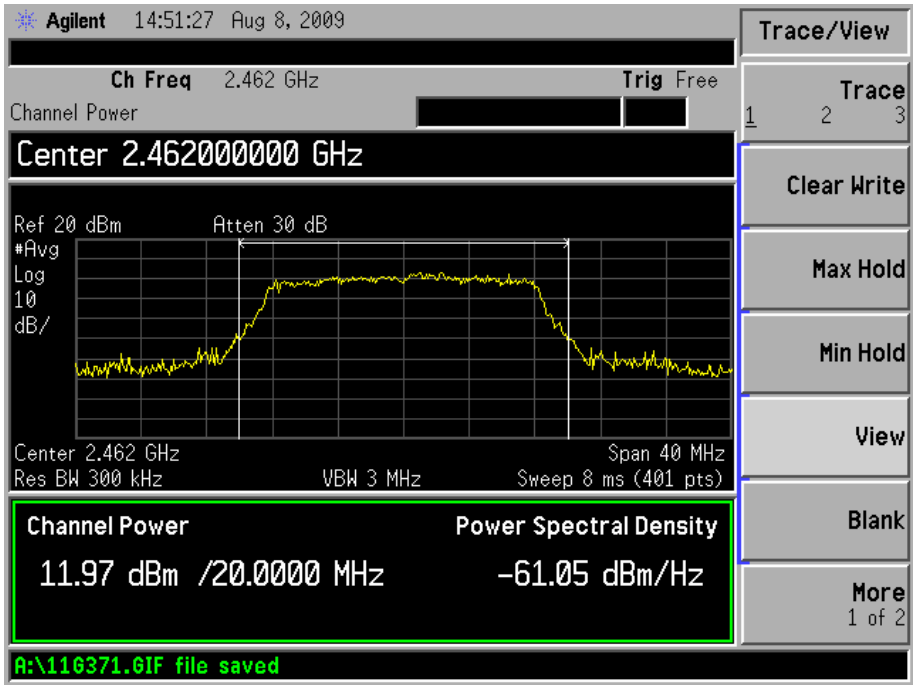
Low Channel:



Middle Channel:

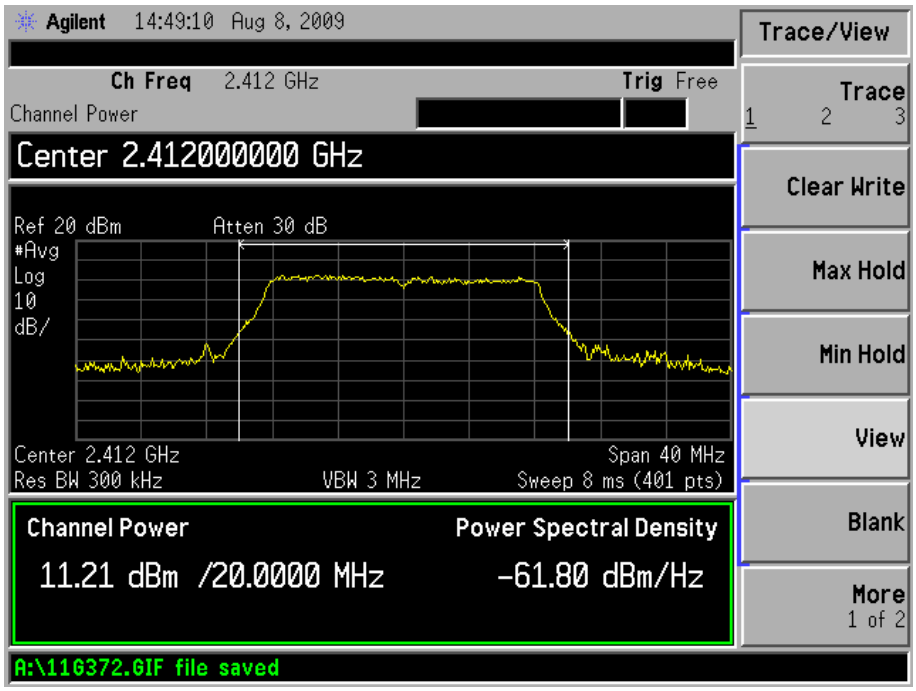


High Channel:

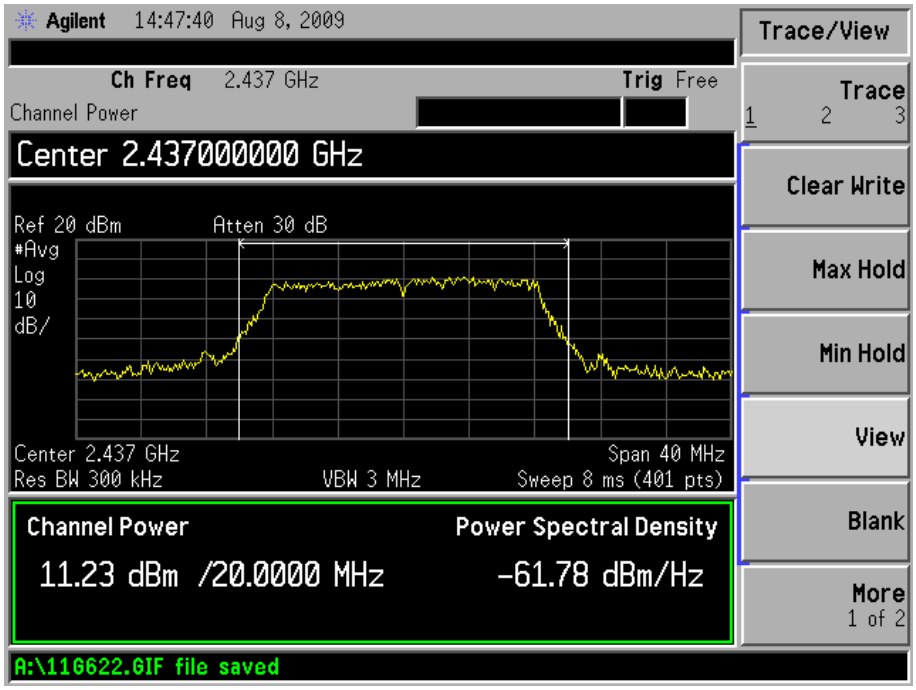


For 802.11g (Chain1)

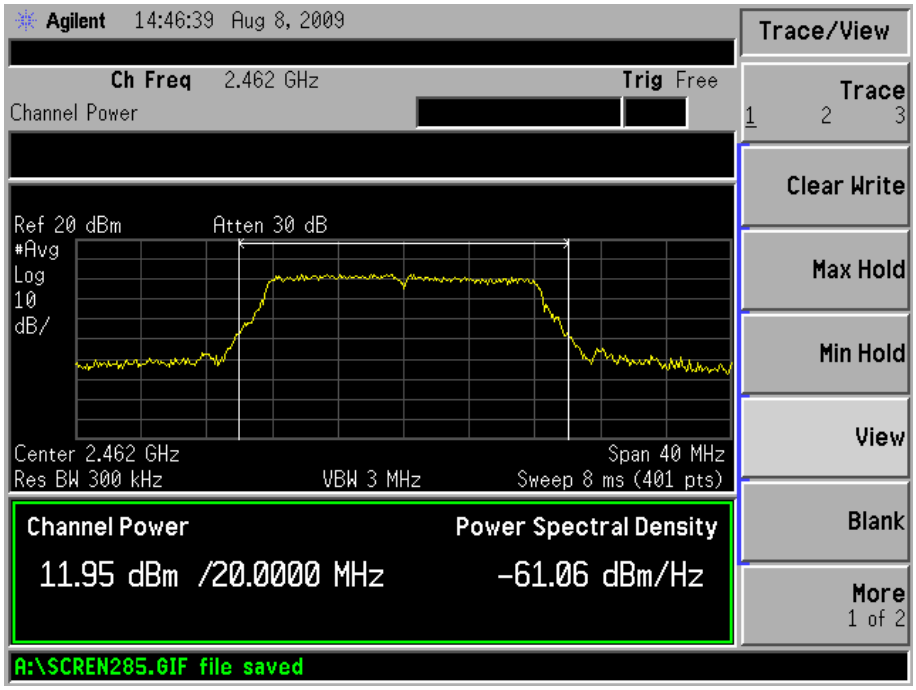
Low Channel:



Middle Channel:

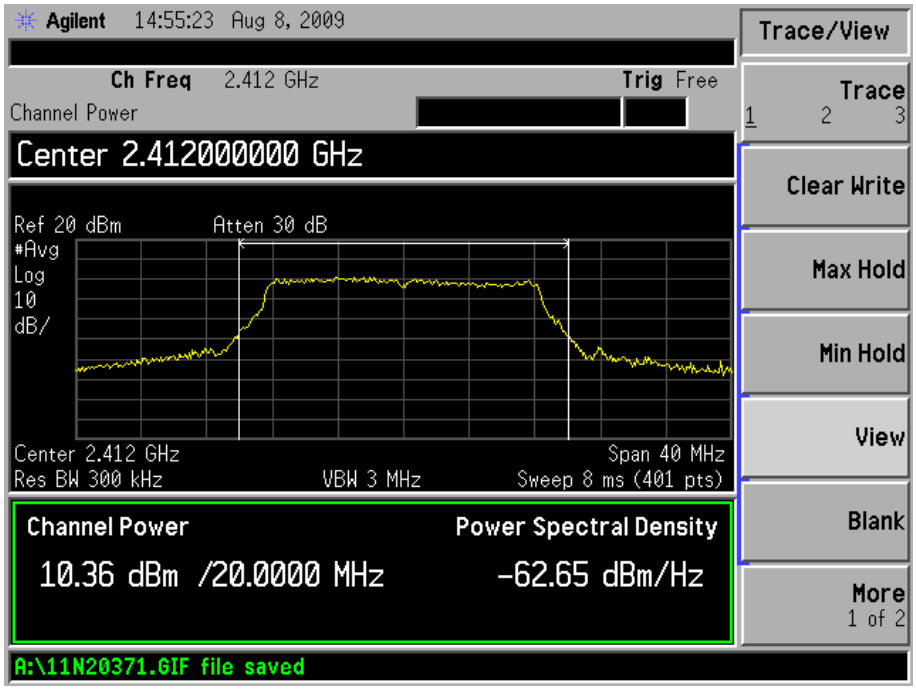


High Channel:

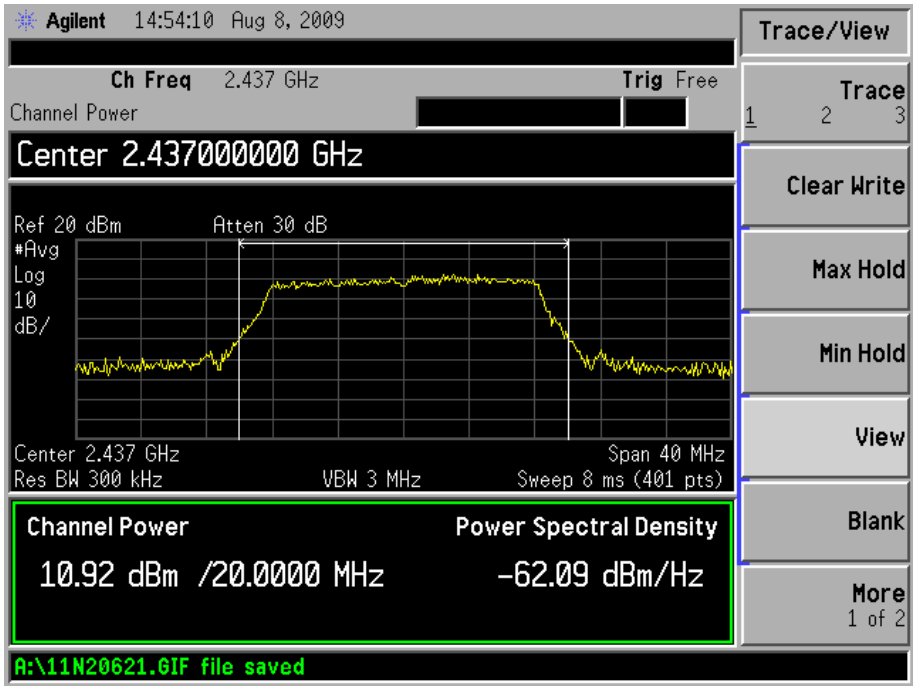


For 802.11n HT20 (Chain0)

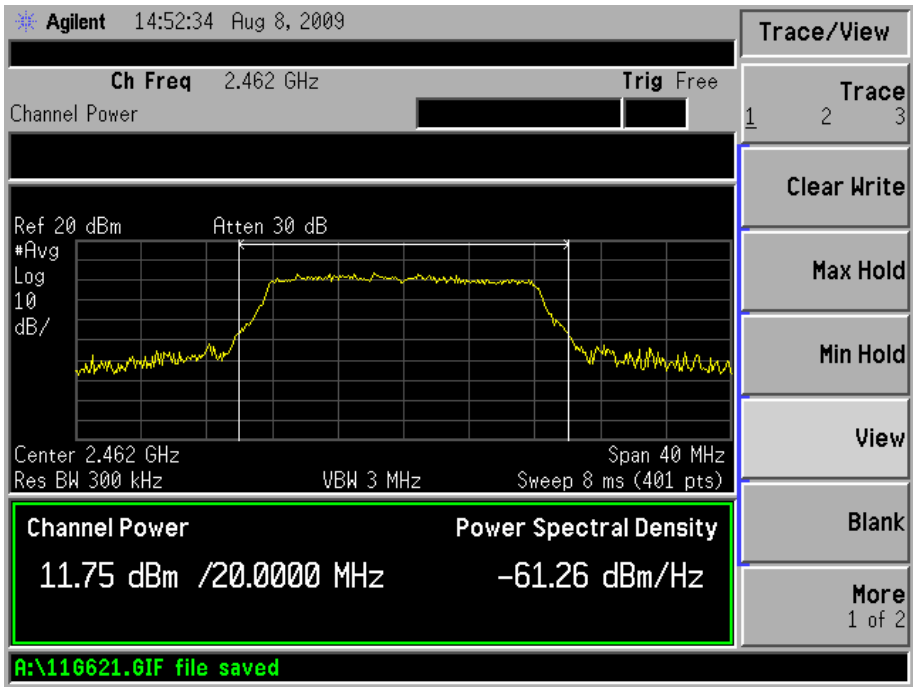
Low Channel:



Middle Channel:

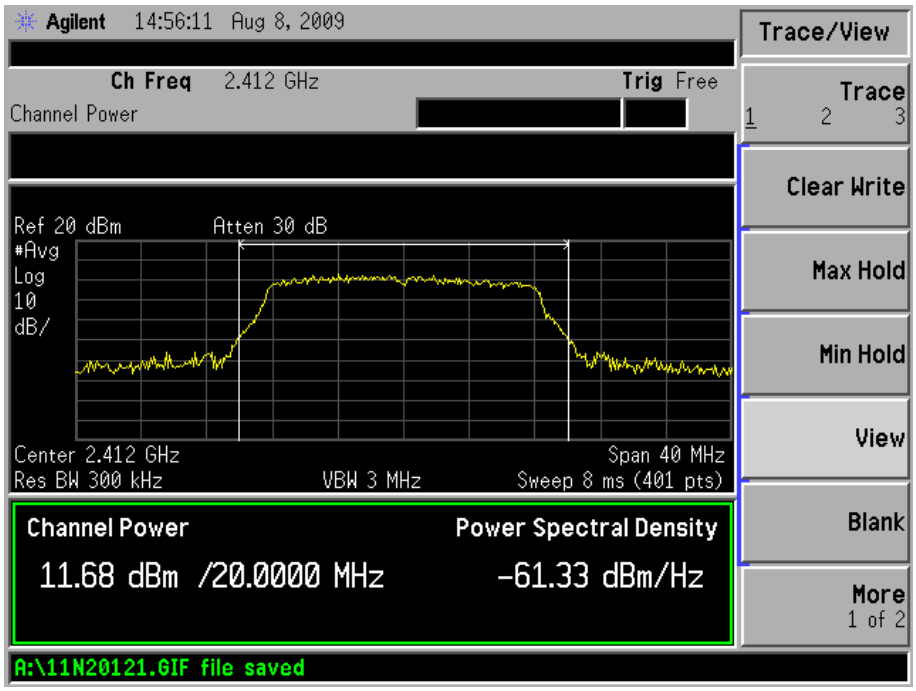


High Channel:

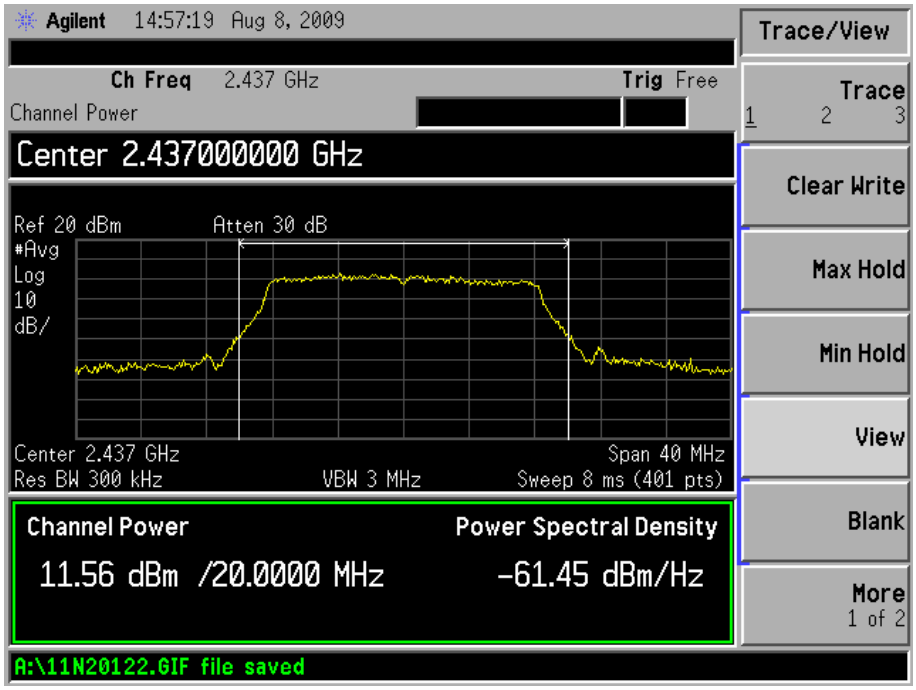


For 802.11n HT20 (Chain1)

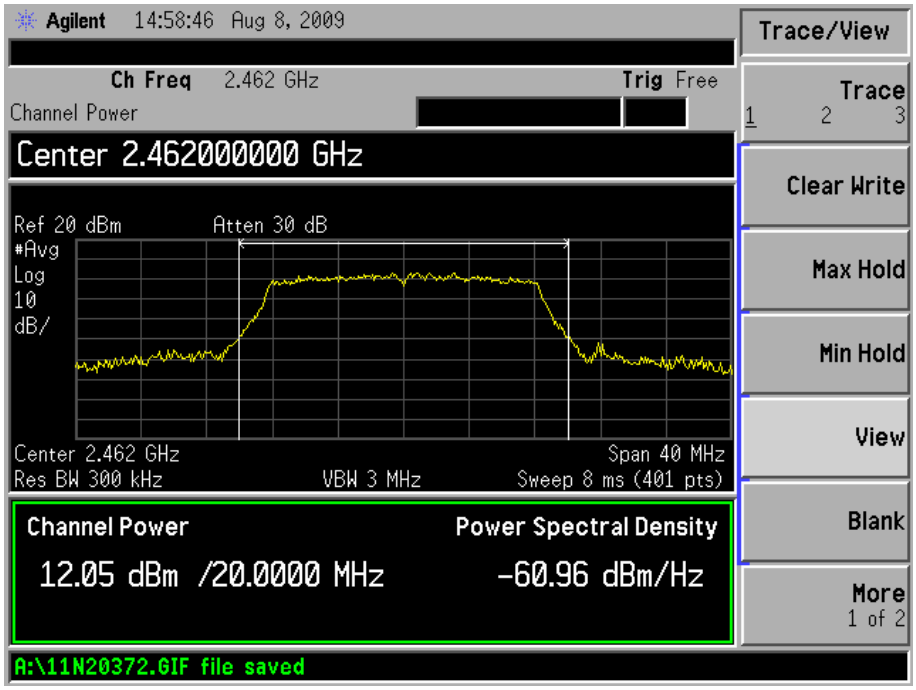
Low Channel:



Middle Channel:

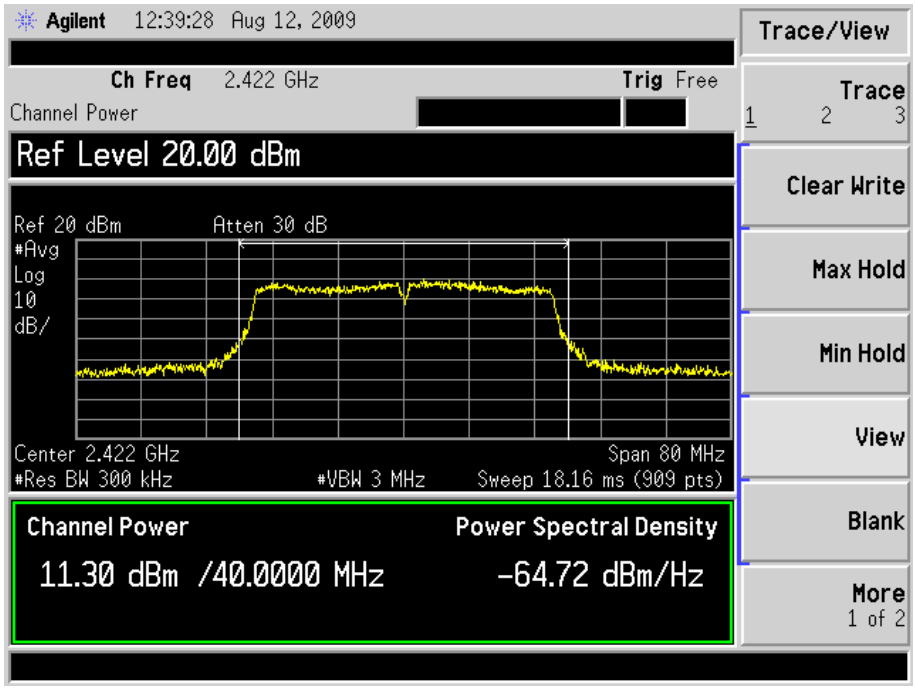


High Channel:

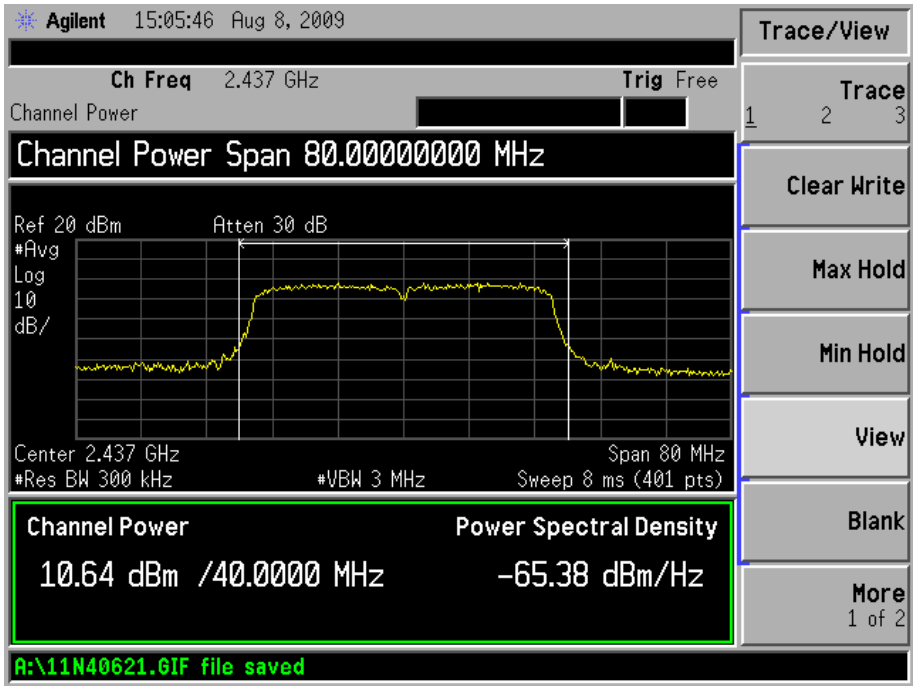


For 802.11n HT40 (Chain0)

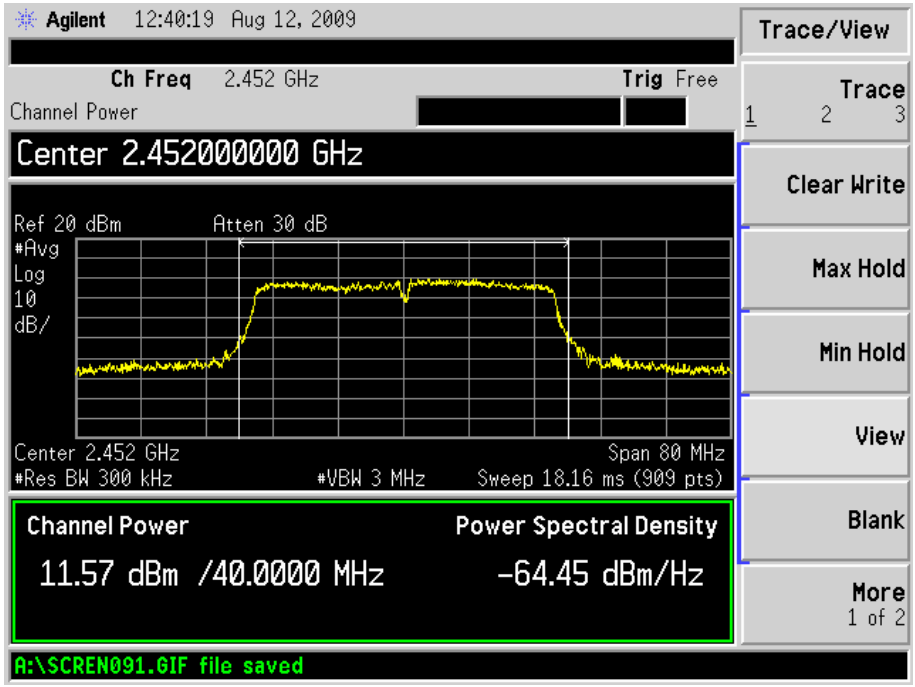
Low Channel:



Middle Channel:

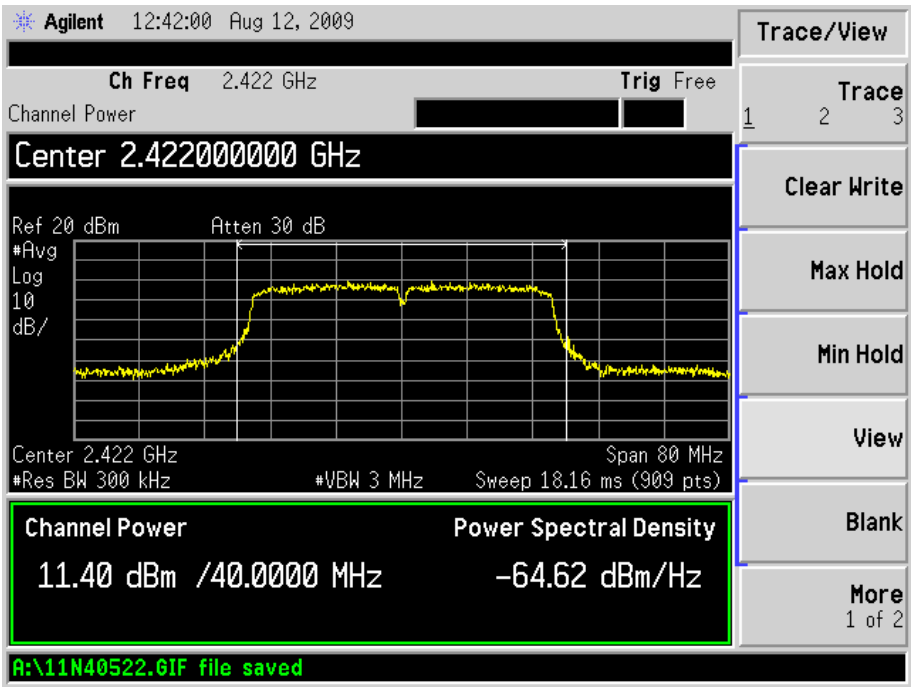


High Channel:

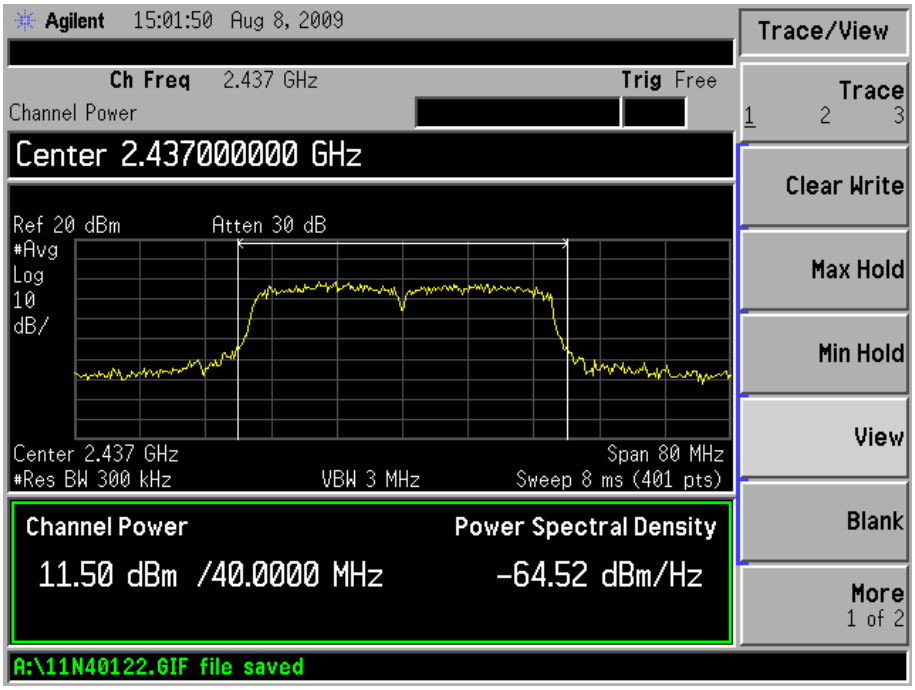


For 802.11n HT40 (Chain1)

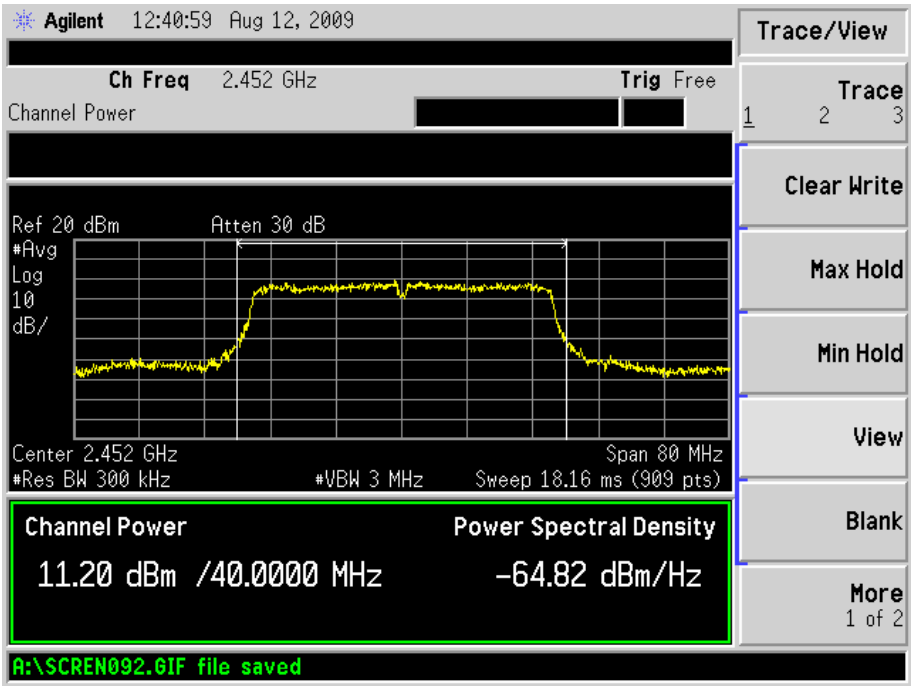
Low Channel:



Middle Channel:



High Channel:



9. FIELD STRENGTH OF SPURIOUS EMISSIONS

9.1 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 ±3.0 dB.

9.2 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.

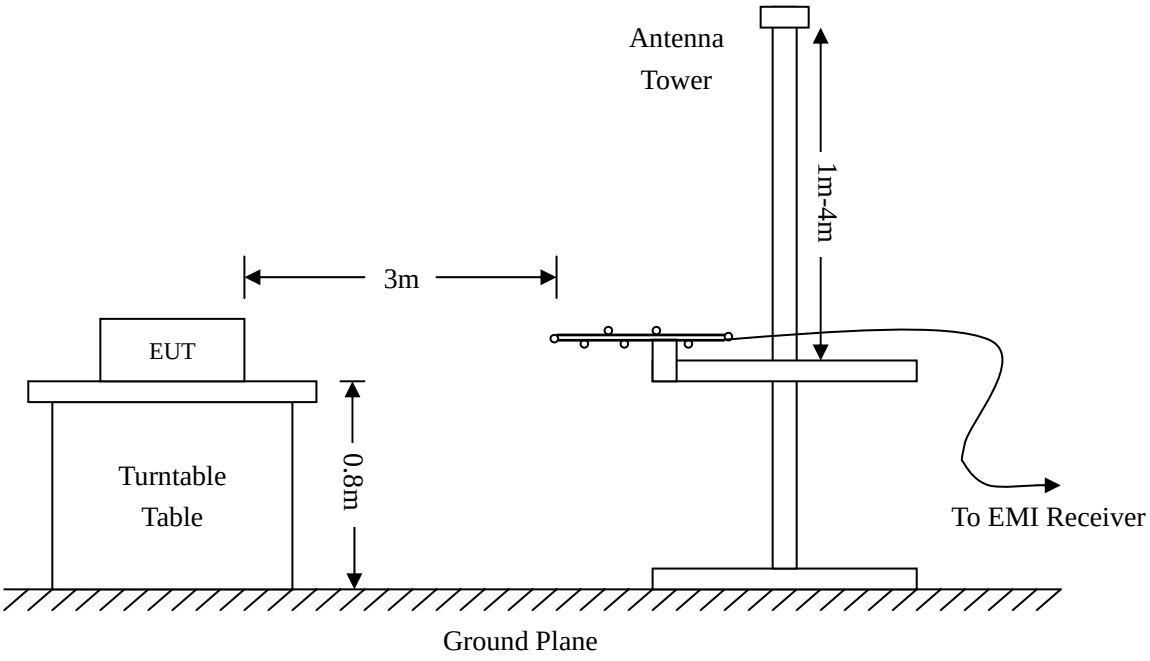
Emissions that fall in the restricted bands (15.205) must be less than 54dBuV/m otherwise the spurious and harmonics must be attenuated by at least 20dB.

9.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2009-07-08	2010-07-07
Positioning Controller	C&C	CC-C-1F	N/A	2009-07-08	2010-07-07
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2009-07-08	2010-07-07
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2009-07-08	2010-07-07
RF Switch	EM	EMSW18	SW060023	2009-07-08	2010-07-07
Amplifier	Agilent	8447F	3113A06717	2009-07-08	2010-07-07
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2009-07-08	2010-07-07
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2009-07-08	2010-07-07

9.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.



8.5 Corrected Amplitude & Margin Calculation

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

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

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

Margin = Corr. Ampl. – FCC Part 15 Limit

9.6 Environmental Conditions

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

9.7 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:

-3.81 dBμV at **925.6132 MHz** in the **Horizontal** polarization, **Transmitting 802.11n HT20 Low Channel** test mode with, **30 MHz to 25 GHz, 3Meters**

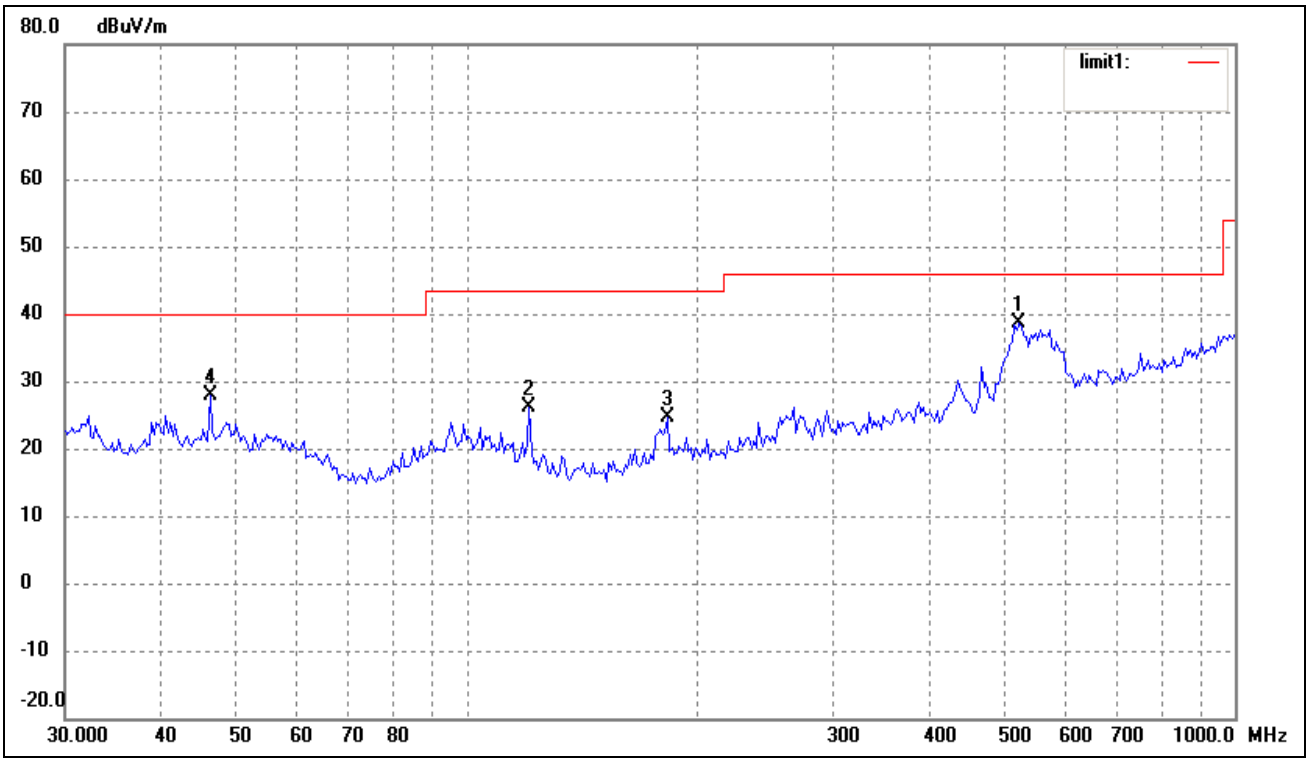
Test Result/Plots:

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11b) Low Channel

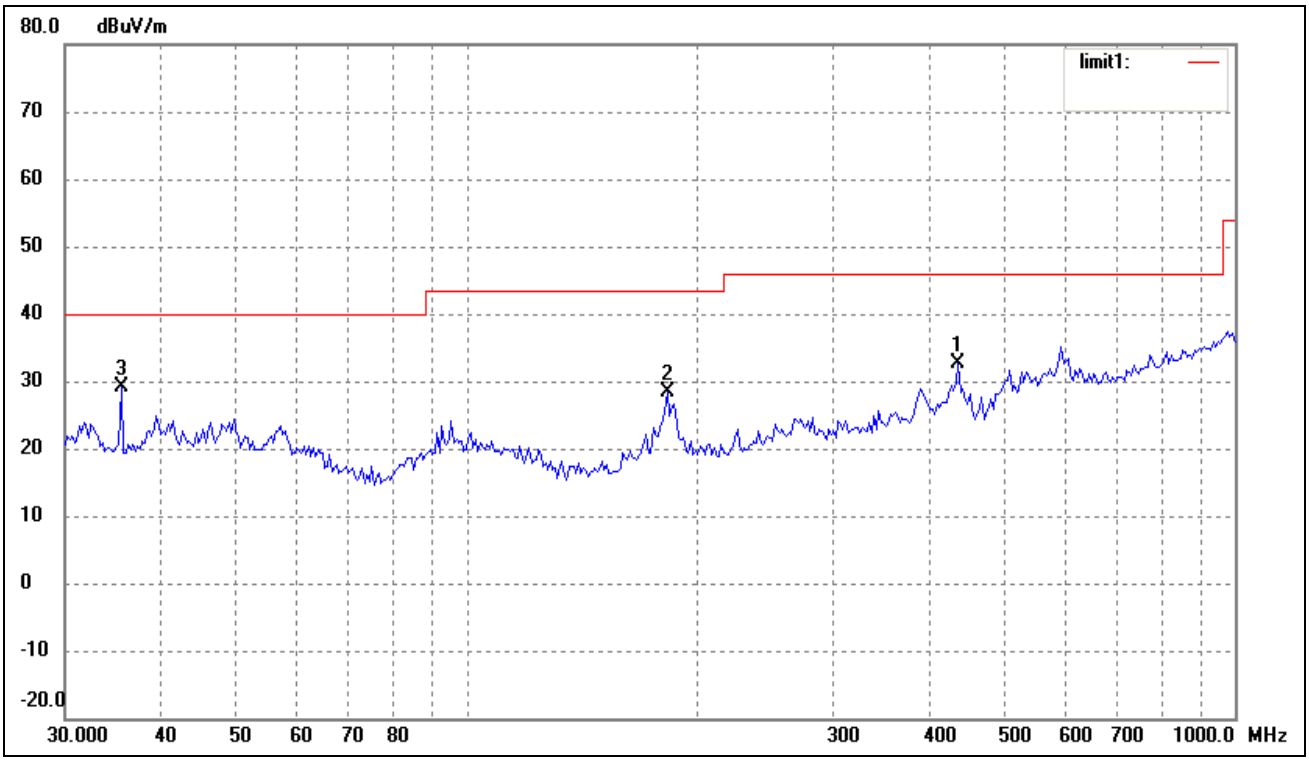
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	523.8763	25.15	13.43	38.58	46.00	-7.42	360	100	peak
2	120.6118	20.82	5.19	26.01	43.50	-17.49	0	200	peak
3	182.5785	19.51	5.01	24.52	43.50	-18.98	0	200	peak
4	46.3806	19.86	7.91	27.77	40.00	-12.23	0	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	436.3956	21.90	10.65	32.55	46.00	-13.45	360	100	peak
2	182.5785	23.41	5.01	28.42	43.50	-15.08	0	100	peak
3	35.5112	22.34	6.74	29.08	40.00	-10.92	0	200	peak

Spurious Emission From 30 MHz to 1 GHz

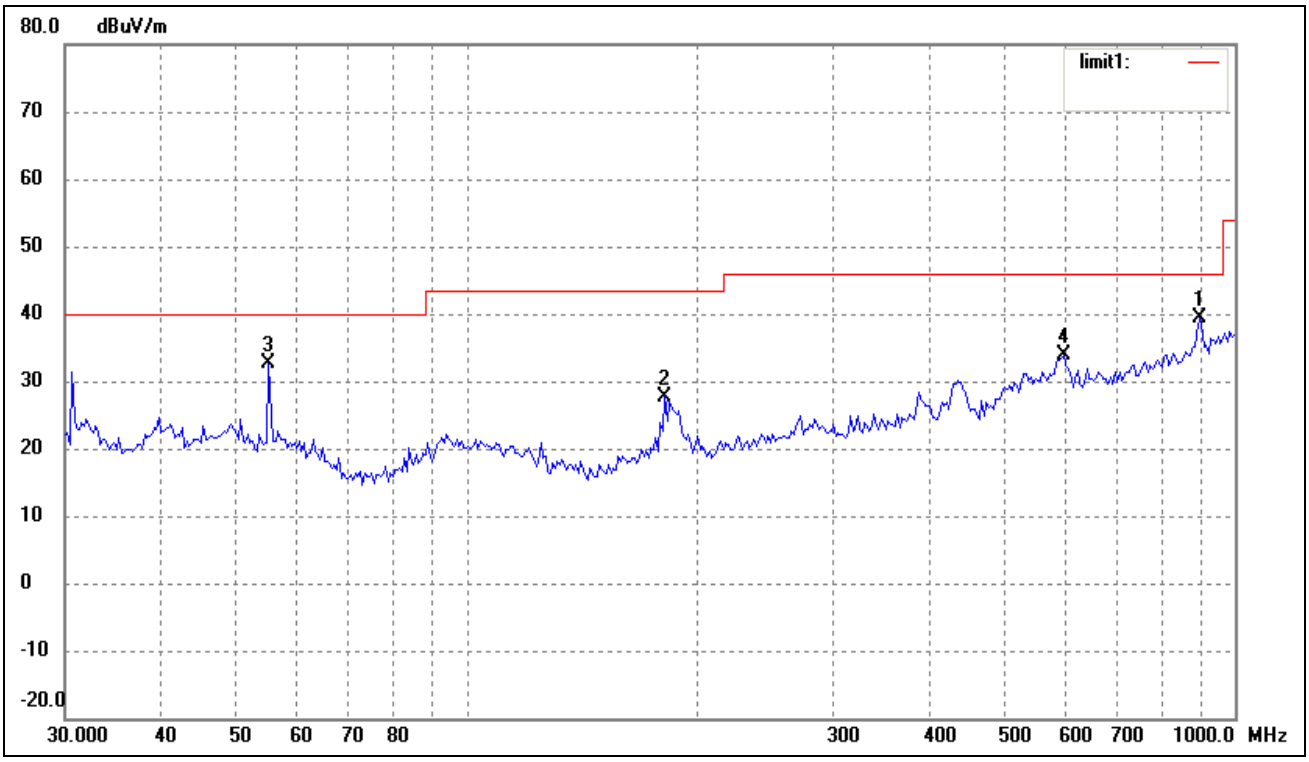
Test mode: Transmitting (802.11b) Middle Channel

Comment:

Horizontal

No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	245.2606	25.80	7.56	33.36	46.00	-12.64	360	200	peak
2	523.8763	25.95	13.43	39.38	46.00	-6.62	360	200	peak

Vertical



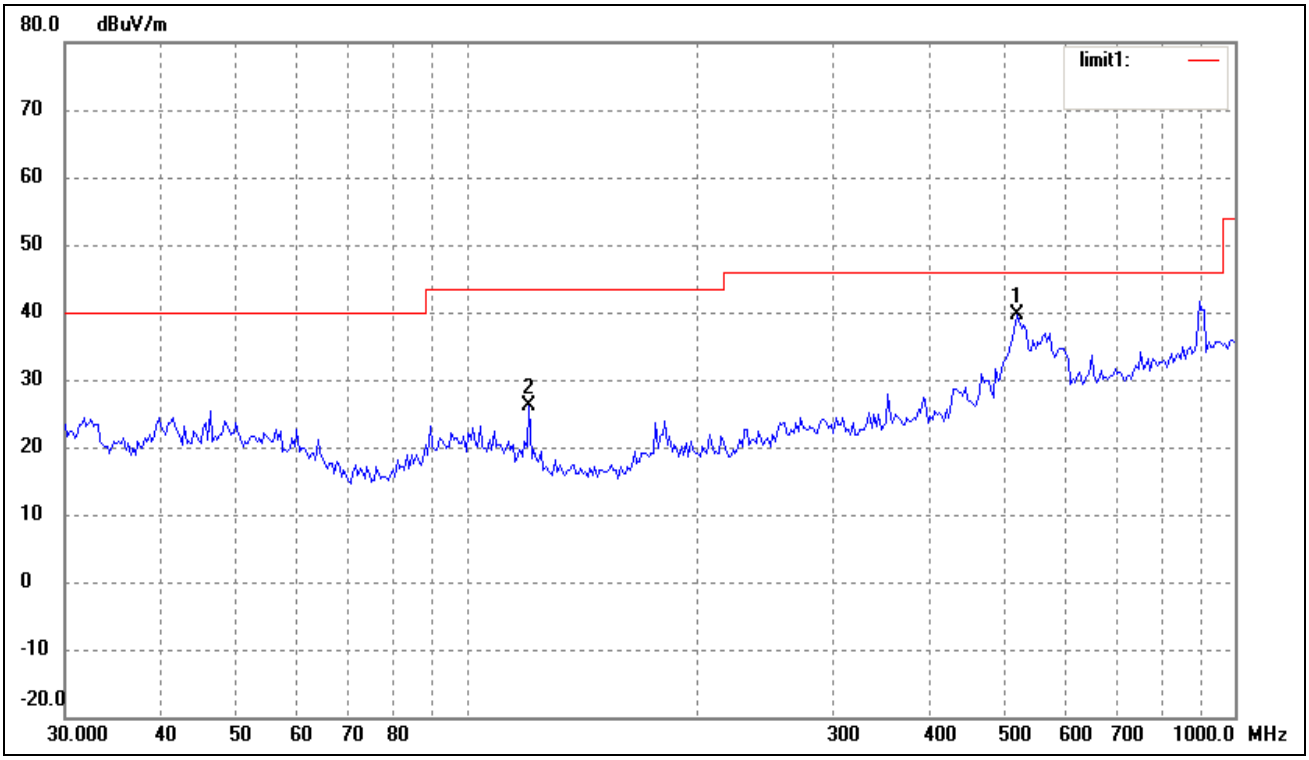
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	899.9577	20.58	18.80	39.38	46.00	-6.62	0	200	peak
2	181.3000	22.86	4.89	27.75	43.50	-15.75	0	200	peak
3	55.2883	25.12	7.44	32.56	40.00	-7.44	0	200	peak
4	598.7067	18.97	14.99	33.96	46.00	-12.04	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11b) High Channel

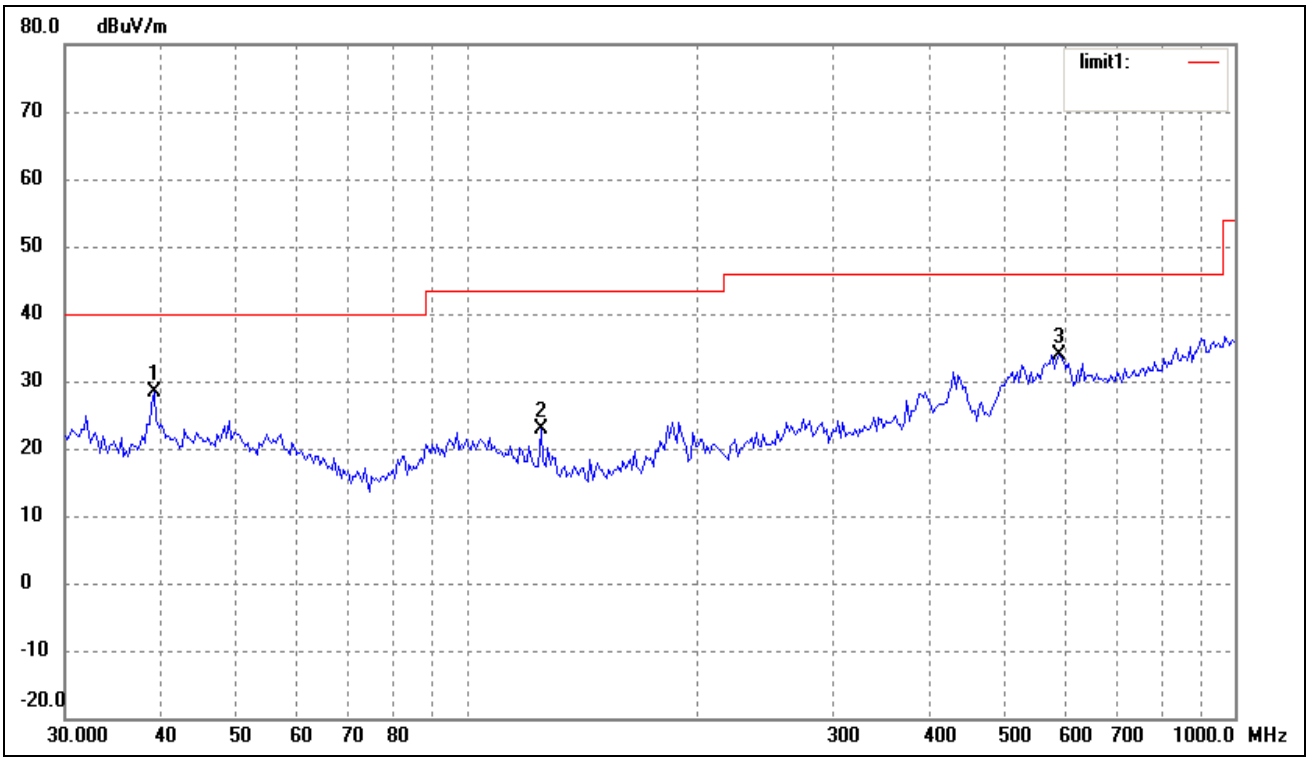
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	520.2079	26.30	13.35	39.65	46.00	-6.35	360	200	peak
2	120.6118	21.00	5.19	26.19	43.50	-17.31	0	100	peak

Vertical



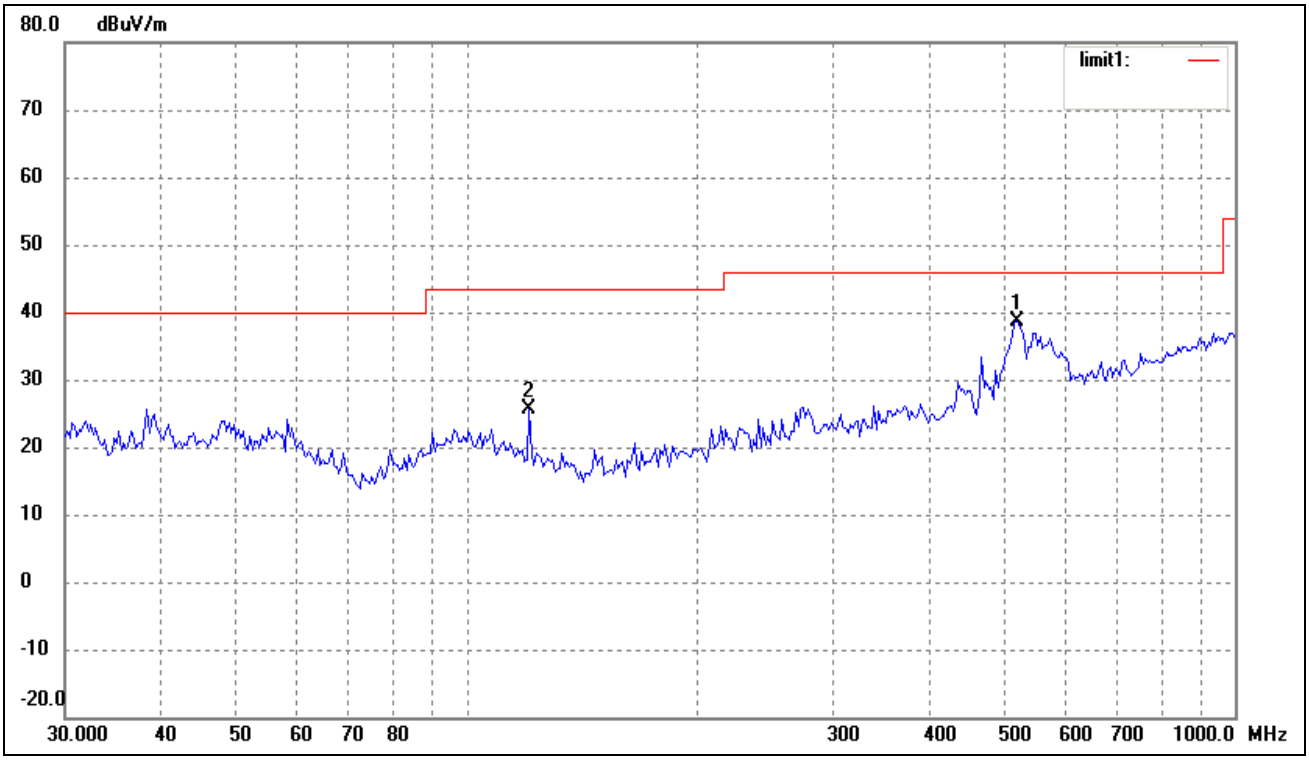
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	39.1825	20.58	7.71	28.29	40.00	-11.71	360	100	peak
2	124.9249	18.42	4.57	22.99	43.50	-20.51	360	200	peak
3	590.3511	19.10	14.82	33.92	46.00	-12.08	360	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11g) Low Channel

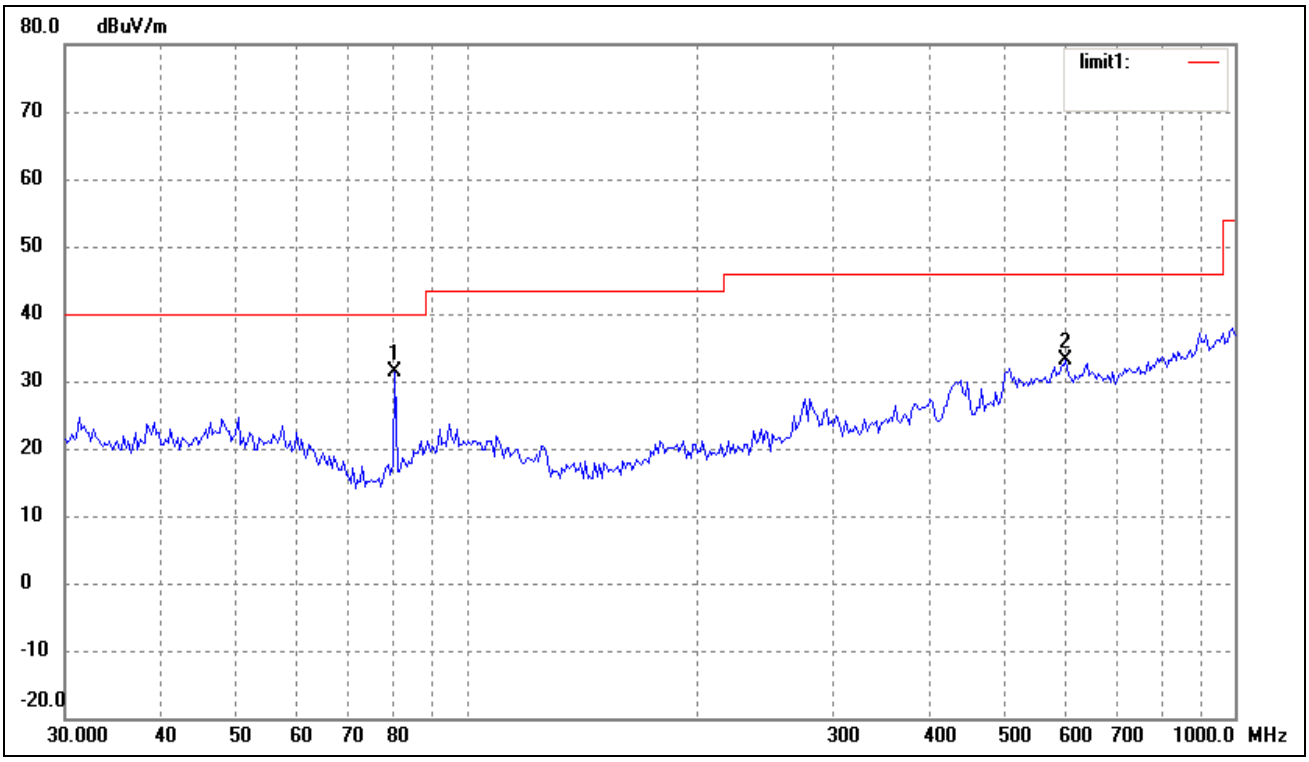
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	520.2079	25.31	13.35	38.66	46.00	-7.34	360	200	peak
2	120.6118	20.40	5.19	25.59	43.50	-17.91	0	200	peak

Vertical



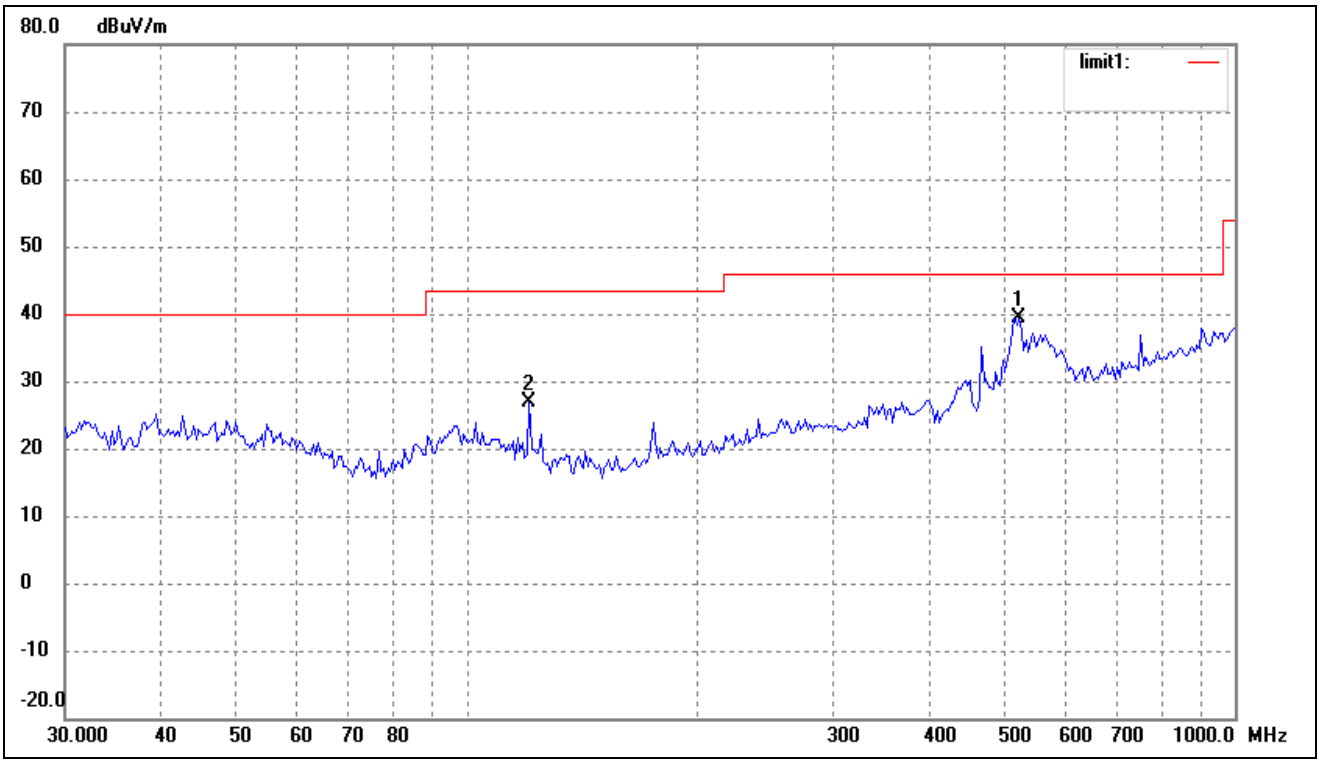
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	80.8042	27.96	3.43	31.39	40.00	-8.61	360	100	peak
2	602.9287	18.12	15.04	33.16	46.00	-12.84	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11g) Middle Channel

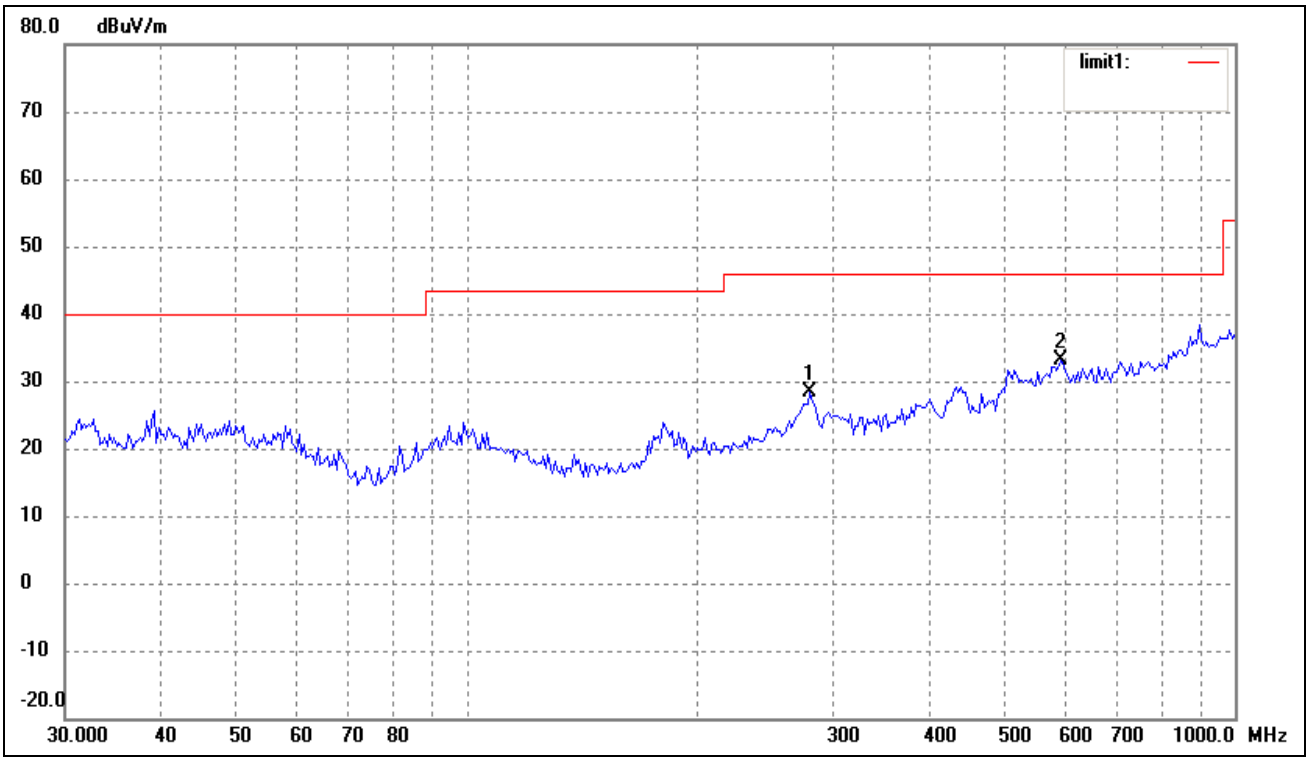
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	523.8763	26.00	13.43	39.43	46.00	-6.57	0	200	peak
2	120.6118	21.70	5.19	26.89	43.50	-16.61	360	100	peak

Vertical



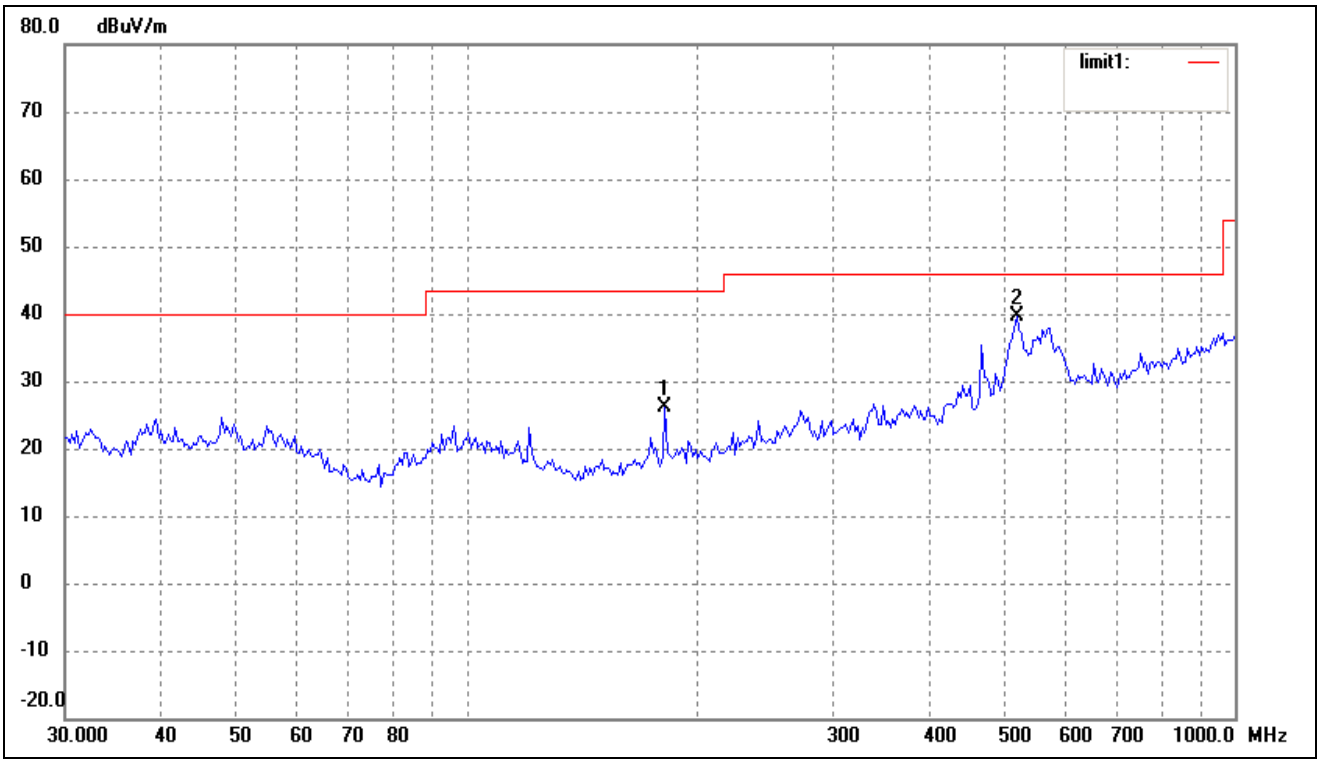
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	280.2936	19.96	8.46	28.42	46.00	-17.58	360	200	peak
2	594.5143	18.13	14.91	33.04	46.00	-12.96	0	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11g) High Channel

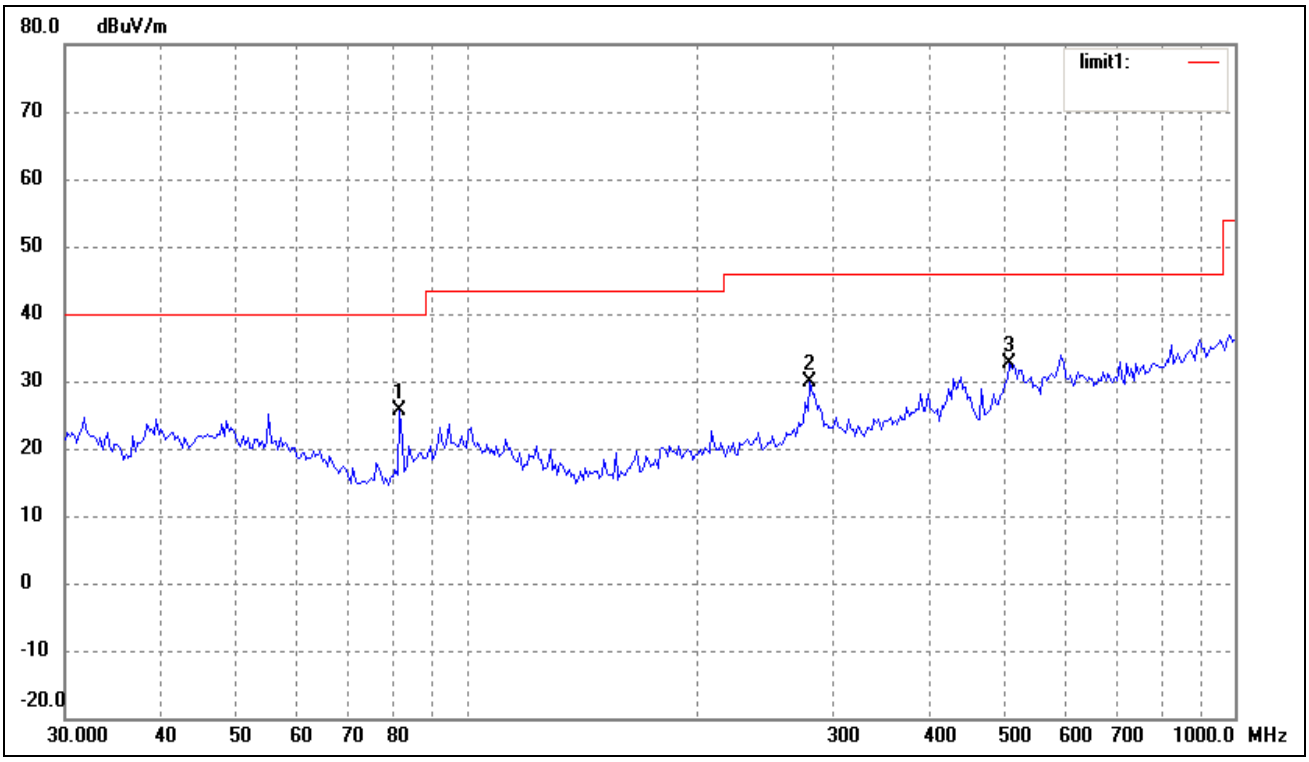
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	181.3000	21.17	4.89	26.06	43.50	-17.44	0	100	peak
2	520.2079	26.27	13.35	39.62	46.00	-6.38	360	100	peak

Vertical



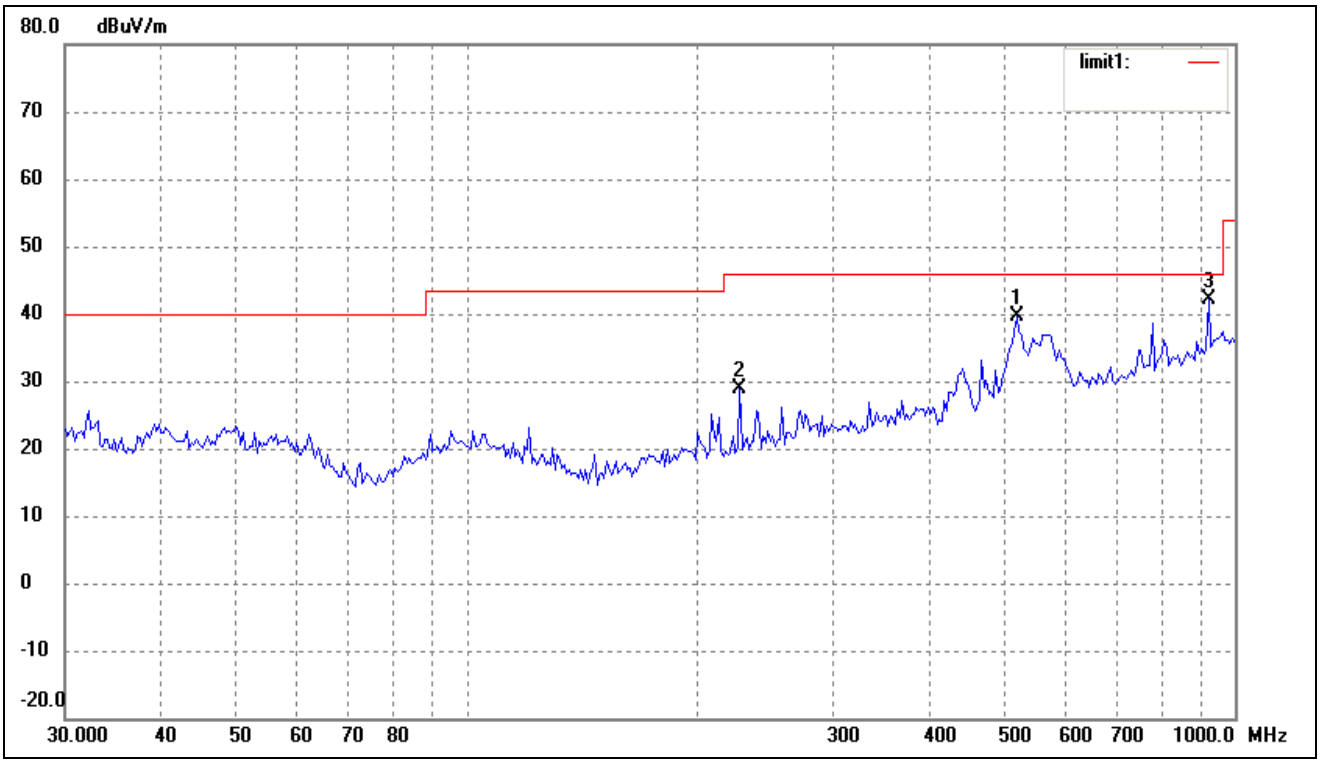
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	81.9478	21.86	3.85	25.71	40.00	-14.29	360	200	peak
2	280.2936	21.33	8.46	29.79	46.00	-16.21	0	100	peak
3	509.3559	19.50	13.12	32.62	46.00	-13.38	360	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT20) Low Channel

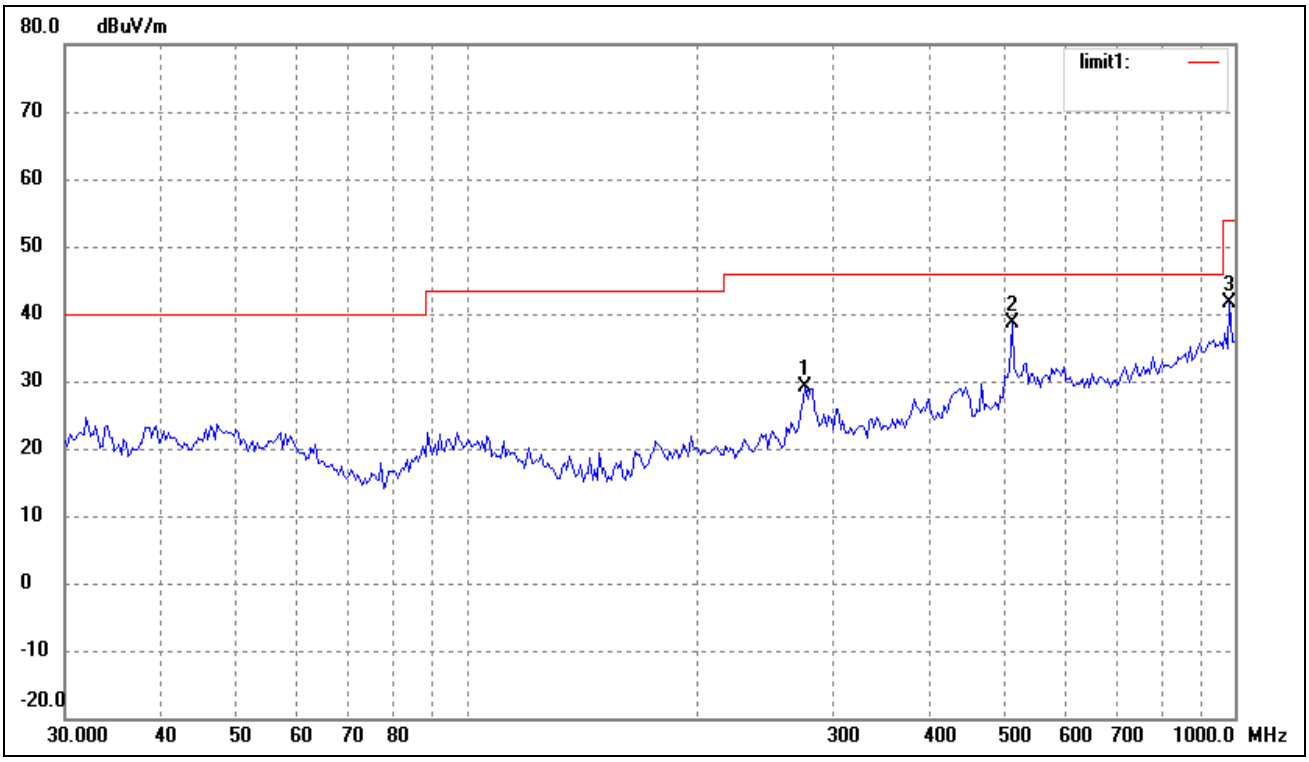
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	520.2079	26.22	13.35	39.57	46.00	-6.43	360	100	peak
2	227.0164	22.12	6.73	28.85	46.00	-17.15	0	100	peak
3	925.6132	22.96	19.23	42.19	46.00	-3.81	205	102	QP

Vertical



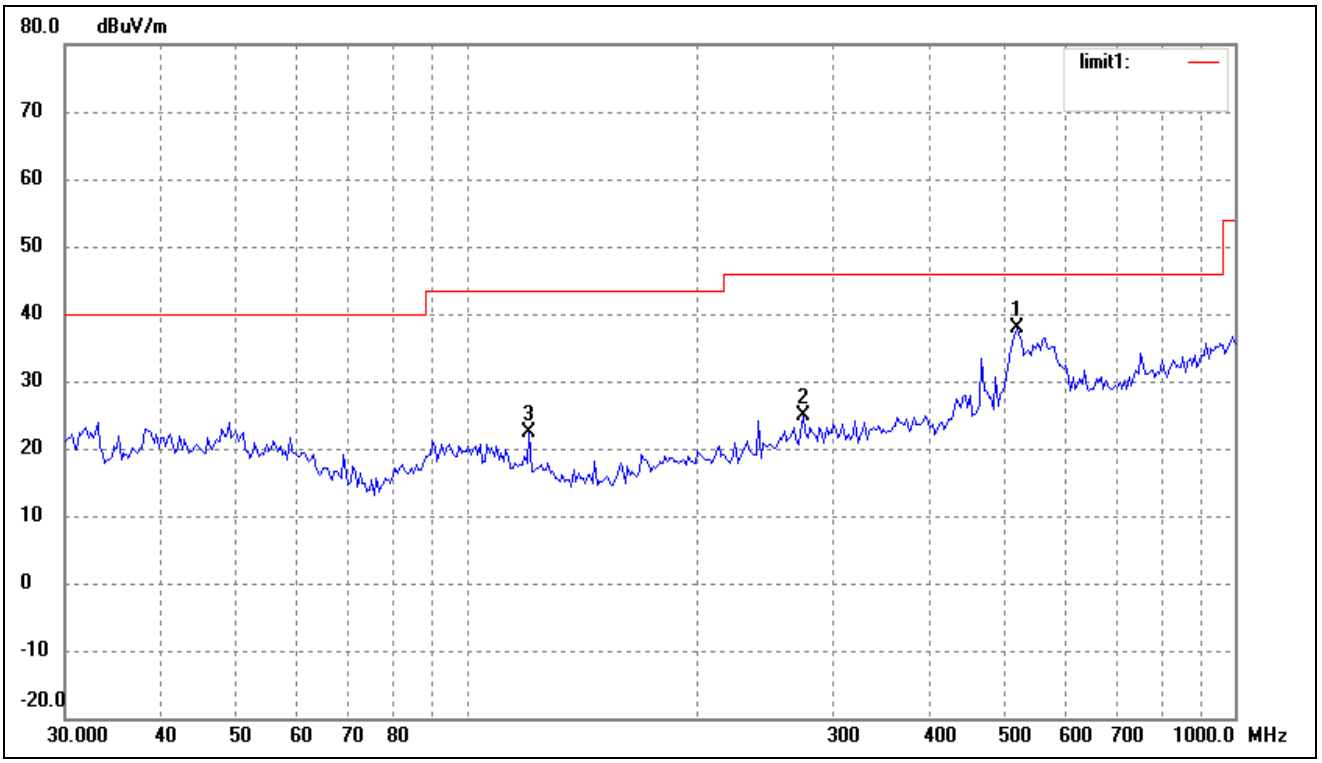
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	276.3818	20.85	8.36	29.21	46.00	-16.79	360	100	peak
2	512.9478	25.48	13.20	38.68	46.00	-7.32	360	100	peak
3	986.0440	21.47	20.26	41.73	54.00	-12.27	0	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT20) Middle Channel

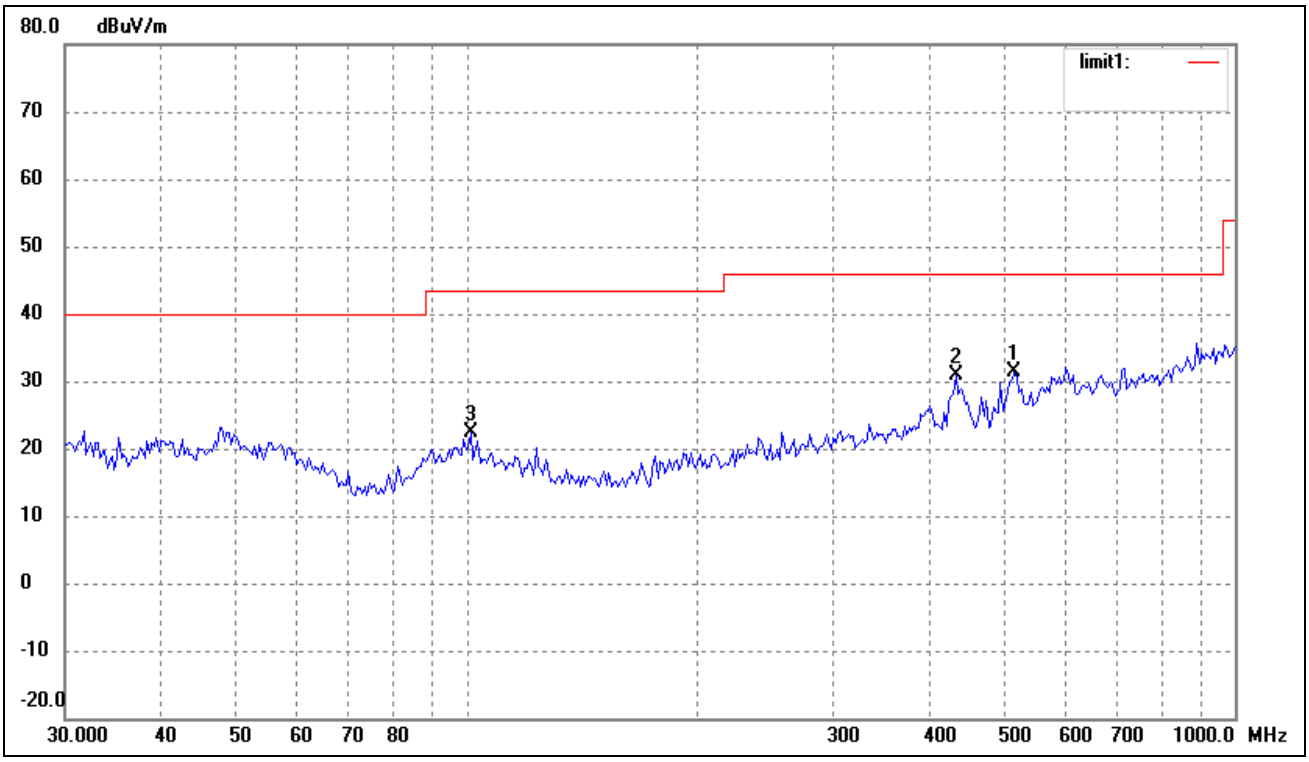
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	520.2079	24.57	13.35	37.92	46.00	-8.08	360	100	peak
2	274.4464	16.61	8.31	24.92	46.00	-21.08	0	100	peak
3	120.6118	17.27	5.19	22.46	43.50	-21.04	360	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	516.5651	18.18	13.28	31.46	46.00	-14.54	360	100	peak
2	433.3397	20.24	10.54	30.78	46.00	-15.22	360	100	peak
3	101.1797	14.63	7.71	22.34	43.50	-21.16	0	200	peak

Spurious Emission From 30 MHz to 1 GHz

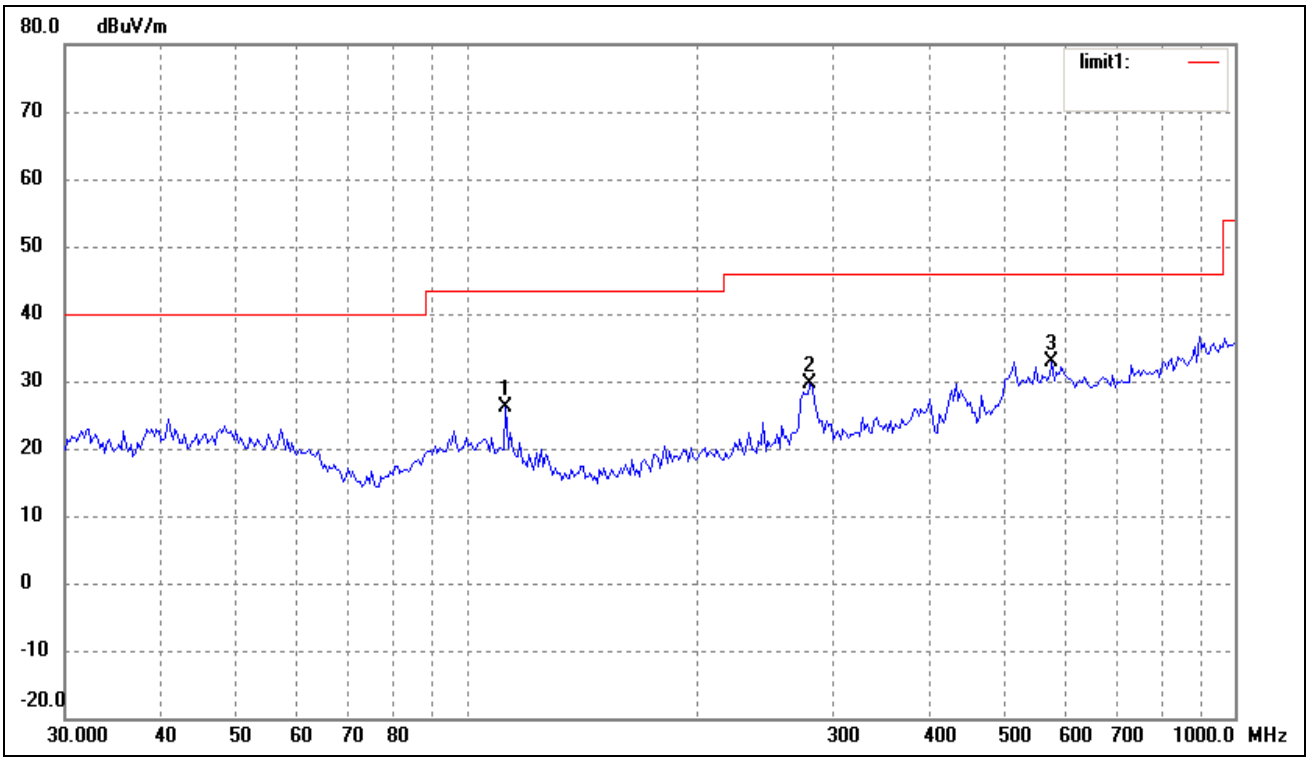
Test mode: Transmitting (802.11n HT20) High Channel

Comment:

Horizontal

No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	527.5707	23.71	13.51	37.22	46.00	-8.78	360	100	peak
2	468.1650	22.48	10.62	33.10	46.00	-12.90	360	100	peak
3	120.6118	19.59	5.19	24.78	43.50	-18.72	360	200	peak

Vertical



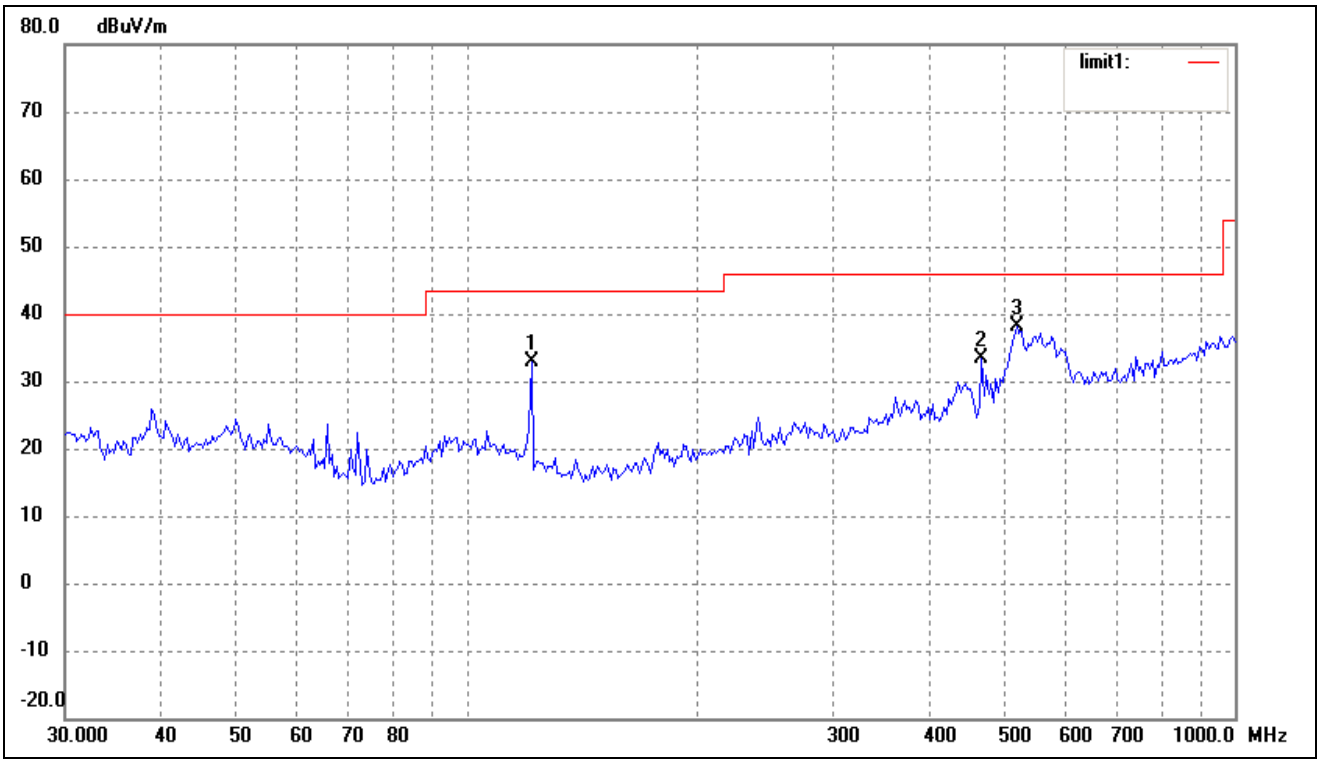
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	112.4271	19.54	6.53	26.07	43.50	-17.43	0	100	peak
2	280.2936	21.20	8.46	29.66	46.00	-16.34	0	100	peak
3	578.0359	18.42	14.57	32.99	46.00	-13.01	360	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT40) Low Channel

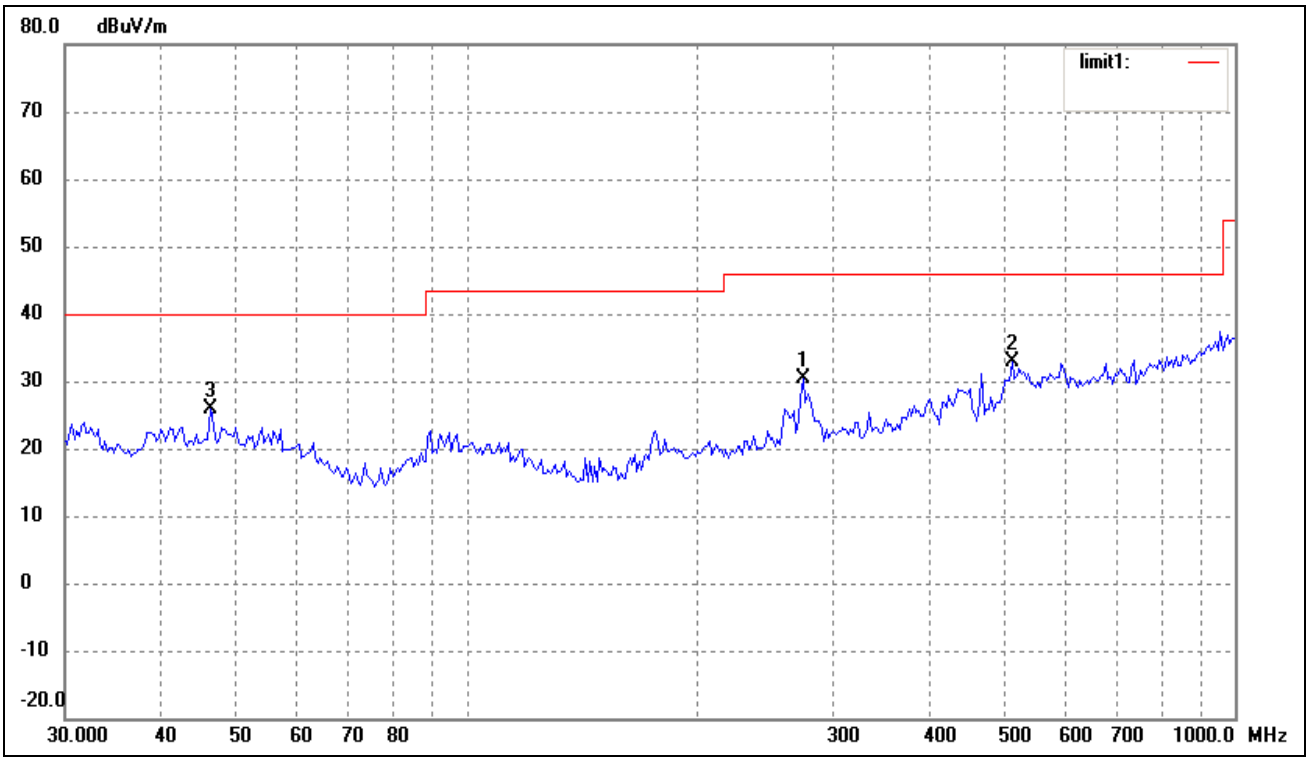
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	121.4623	27.82	5.06	32.88	43.50	-10.62	360	100	peak
2	468.1650	22.83	10.62	33.45	46.00	-12.55	360	100	peak
3	520.2079	24.72	13.35	38.07	46.00	-7.93	0	200	peak

Vertical



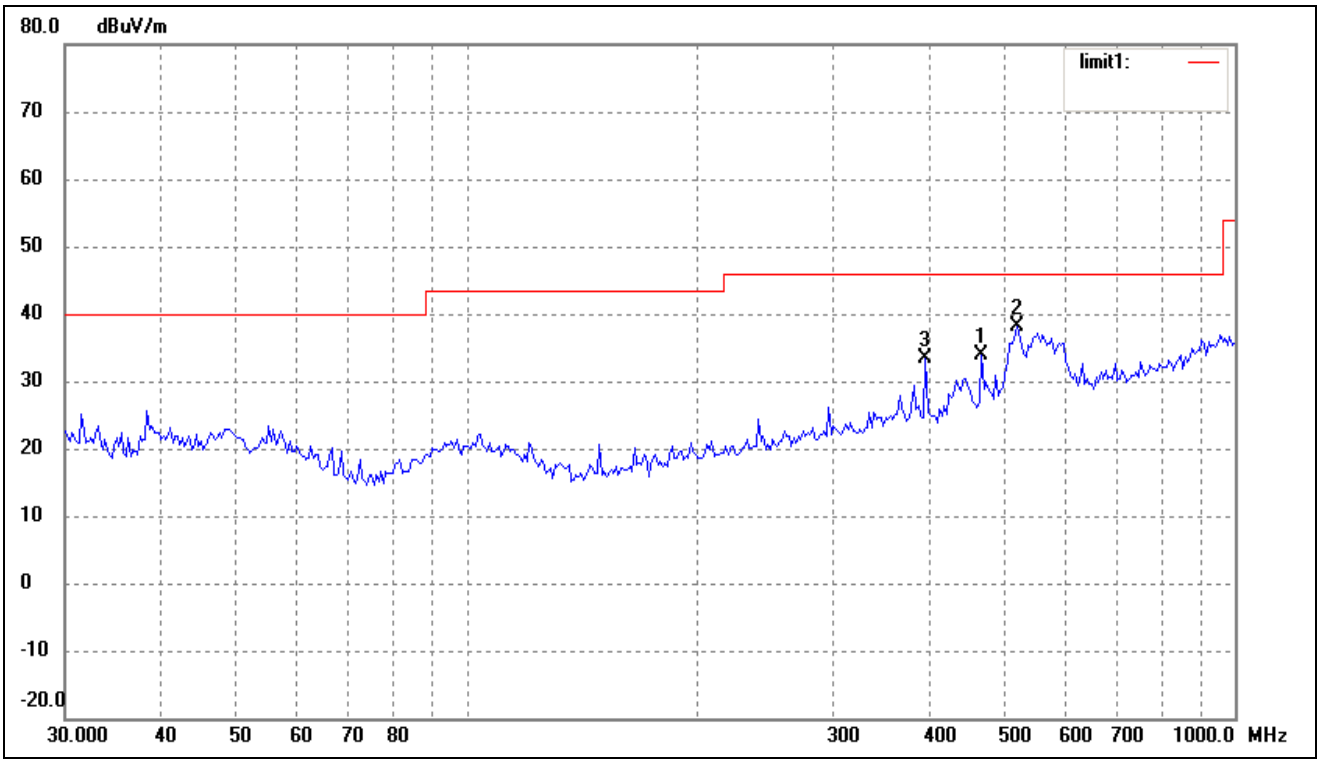
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	274.4464	21.98	8.31	30.29	46.00	-15.71	0	200	peak
2	512.9478	19.78	13.20	32.98	46.00	-13.02	360	200	peak
3	46.3806	17.86	7.91	25.77	40.00	-14.23	360	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT40) Middle Channel

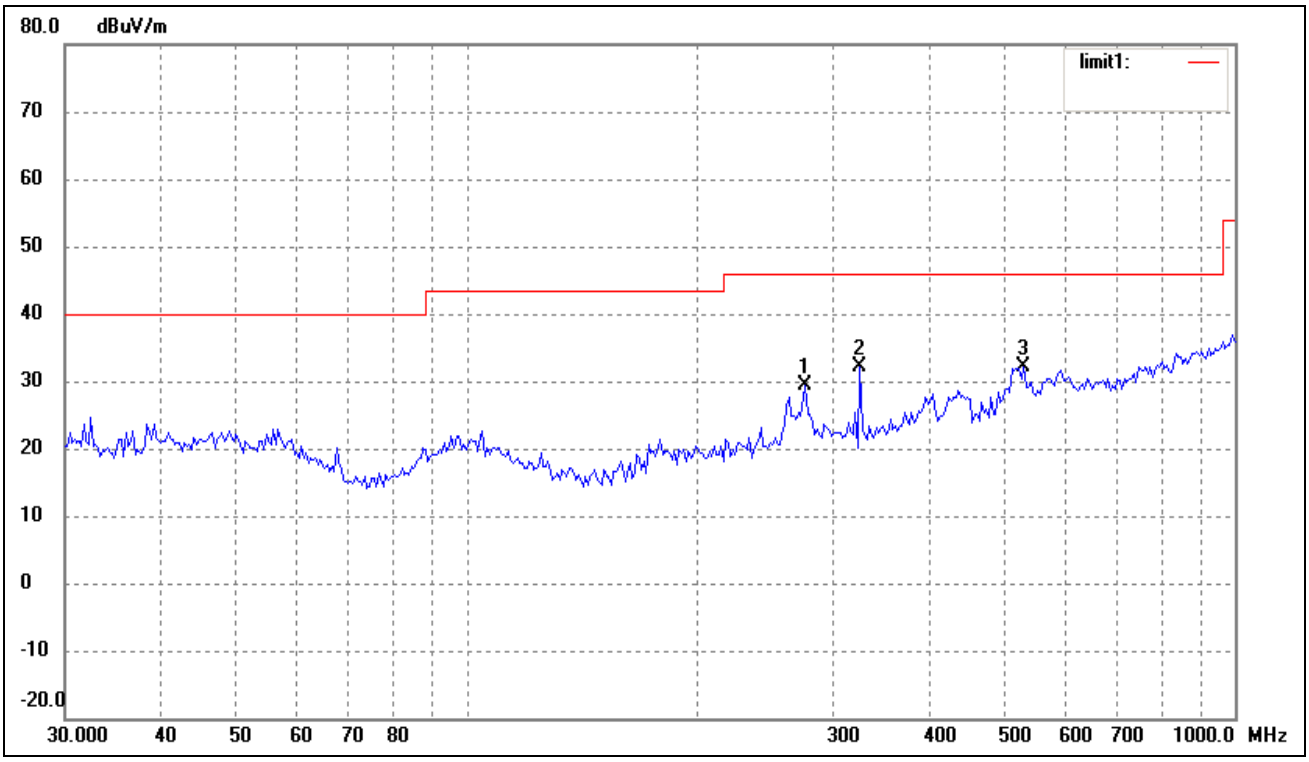
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	468.1650	23.35	10.62	33.97	46.00	-12.03	360	100	peak
2	520.2079	24.78	13.35	38.13	46.00	-7.87	360	200	peak
3	395.5071	23.23	10.05	33.28	46.00	-12.72	0	200	peak

Vertical



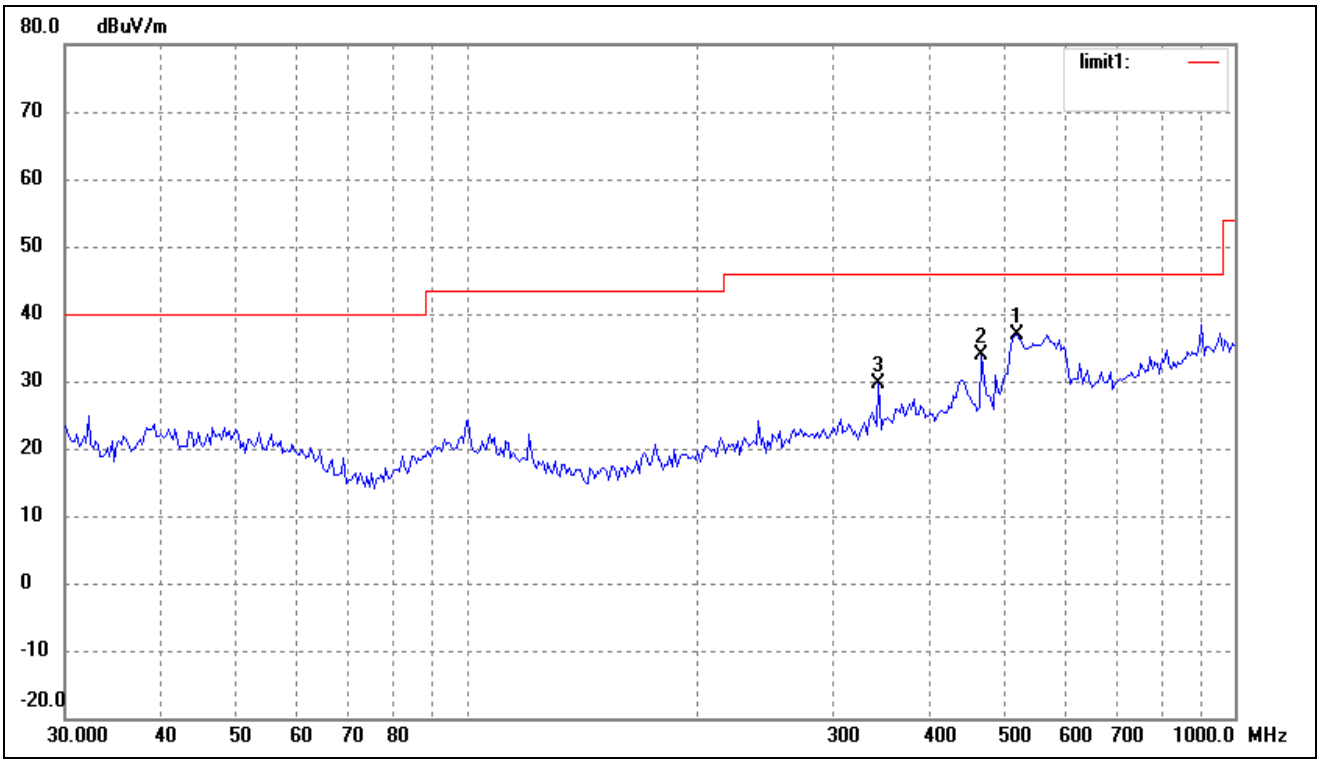
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	276.3818	20.99	8.36	29.35	46.00	-16.65	360	100	peak
2	324.8645	23.27	8.92	32.19	46.00	-13.81	0	200	peak
3	531.2910	18.47	13.59	32.06	46.00	-13.94	0	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n HT40) High Channel

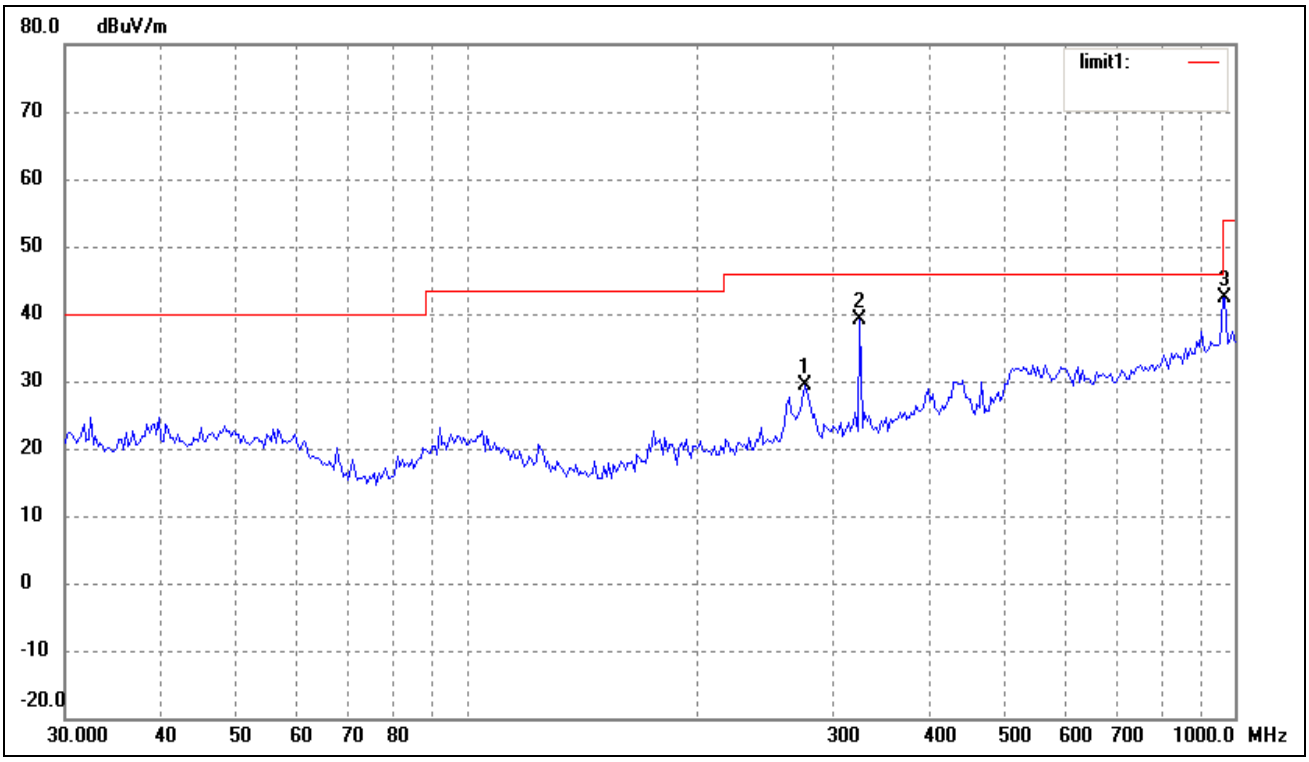
Comment:

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	520.2079	23.41	13.35	36.76	46.00	-9.24	360	100	peak
2	468.1650	23.25	10.62	33.87	46.00	-12.13	0	200	peak
3	343.6506	20.20	9.31	29.51	46.00	-16.49	360	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	276.3818	20.99	8.36	29.35	46.00	-16.65	360	200	peak
2	324.8645	30.27	8.92	39.19	46.00	-6.81	0	100	peak
3	972.2827	22.35	20.03	42.38	54.00	-11.62	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	54.8	90	V	34.1	5.2	33.0	61.1	74	-12.9
7236.0	PK	52.4	270	V	37.4	6.1	33.5	62.4	74	-11.6
7236.0	PK	51.2	180	H	37.4	6.1	33.5	61.2	74	-12.8
4824.0	PK	54.1	45	H	34.1	5.2	33.0	60.4	74	-13.6
4824.0	AV	43.8	270	V	34.1	5.2	33.0	50.1	54	-3.9
7236.0	AV	41.7	90	V	37.4	6.1	33.5	51.7	54	-2.3
7236.0	AV	40.5	45	H	37.4	6.1	33.5	50.5	54	-3.5
4824.0	AV	43.6	60	H	34.1	5.2	33.0	49.9	54	-4.1
Middle Channel (1G to 25GHz)										
7311.0	PK	52.4	45	V	37.4	6.1	33.5	62.4	74	-11.6
4874.0	PK	51.3	270	V	34.1	5.2	33.0	57.6	74	-16.4
7311.0	PK	50.4	45	H	37.4	6.1	33.5	60.4	74	-13.6
4874.0	PK	53.1	180	H	34.1	5.2	33.0	59.4	74	-14.6
7311.0	AV	42.6	270	V	37.4	6.1	33.5	52.6	54	-1.4
4874.0	AV	45.1	90	V	34.1	5.2	33.0	51.4	54	-2.6
7311.0	AV	40.3	60	H	37.4	6.1	33.5	50.3	54	-3.7
4874.0	AV	41.4	45	H	34.1	5.2	33.0	47.7	54	-6.3
High Channel (1G to 25GHz)										
4924.0	PK	56.1	270	V	34.1	5.2	33.0	62.4	74	-11.6
7386.0	PK	51.4	45	V	37.4	6.1	33.5	61.4	74	-12.6
4924.0	PK	54.7	180	H	34.1	5.2	33.0	61.0	74	-13
7386.0	PK	50.1	45	H	37.4	6.1	33.5	60.1	74	-13.9
4924.0	AV	43.2	90	V	34.1	5.2	33.0	49.5	54	-4.5
7386.0	AV	41.5	270	V	37.4	6.1	33.5	51.5	54	-2.5
4924.0	AV	44.6	60	H	34.1	5.2	33.0	50.9	54	-3.9
7386.0	AV	41.4	60	H	37.4	6.1	33.5	51.4	54	-2.6

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	56.4	90	V	34.1	5.2	33.0	62.7	74	-11.3
7236.0	PK	52.7	270	V	37.4	6.1	33.5	62.7	74	-11.3
7236.0	PK	51.2	180	H	37.4	6.1	33.5	61.2	74	-12.8
4824.0	PK	57.4	45	H	34.1	5.2	33.0	63.7	74	-10.3
4824.0	AV	45.1	270	V	34.1	5.2	33.0	51.4	54	-2.6
7236.0	AV	40.8	90	V	37.4	6.1	33.5	50.8	54	-3.2
7236.0	AV	41.4	45	H	37.4	6.1	33.5	51.4	54	-2.6
4824.0	AV	44.2	60	H	34.1	5.2	33.0	50.5	54	-3.5
Middle Channel (1G to 25GHz)										
7311.0	PK	51.5	45	V	37.4	6.1	33.5	61.5	74	-12.5
4874.0	PK	54.6	270	V	34.1	5.2	33.0	60.9	74	-13.1
7311.0	PK	51.7	45	H	37.4	6.1	33.5	61.7	74	-12.3
4874.0	PK	55.2	180	H	34.1	5.2	33.0	61.5	74	-12.5
7311.0	AV	41.5	270	V	37.4	6.1	33.5	51.5	54	-2.5
4874.0	AV	43.4	90	V	34.1	5.2	33.0	49.7	54	-4.3
7311.0	AV	40.6	60	H	37.4	6.1	33.5	50.6	54	-3.4
4874.0	AV	42.5	45	H	34.1	5.2	33.0	48.8	54	-5.2
High Channel (1G to 25GHz)										
4924.0	PK	54.2	270	V	34.1	5.2	33.0	60.5	74	-13.5
7386.0	PK	52.4	45	V	37.4	6.1	33.5	62.4	74	-11.6
4924.0	PK	54.5	180	H	34.1	5.2	33.0	60.8	74	-13.2
7386.0	PK	50.5	45	H	37.4	6.1	33.5	60.5	74	-13.5
4924.0	AV	45.1	90	V	34.1	5.2	33.0	51.4	54	-2.6
7386.0	AV	42.1	270	V	37.4	6.1	33.5	52.1	54	-1.9
4924.0	AV	43.5	60	H	34.1	5.2	33.0	49.8	54	-4.2
7386.0	AV	40.5	60	H	37.4	6.1	33.5	50.5	54	-3.5

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	54.2	90	V	34.1	5.2	33.0	60.5	74	-13.5
7236.0	PK	50.4	270	V	37.4	6.1	33.5	60.4	74	-13.6
7236.0	PK	51.2	180	H	37.4	6.1	33.5	61.2	74	-12.8
4824.0	PK	53.1	45	H	34.1	5.2	33.0	59.4	74	-14.6
4824.0	AV	44.8	270	V	34.1	5.2	33.0	51.1	54	-2.9
7236.0	AV	41.7	90	V	37.4	6.1	33.5	51.7	54	-2.3
7236.0	AV	40.3	45	H	37.4	6.1	33.5	50.3	54	-3.7
4824.0	AV	42.5	60	H	34.1	5.2	33.0	48.8	54	-5.2
Middle Channel (1G to 25GHz)										
7311.0	PK	52.4	45	V	37.4	6.1	33.5	62.4	74	-11.6
4874.0	PK	53.8	270	V	34.1	5.2	33.0	60.1	74	-13.9
7311.0	PK	50.7	45	H	37.4	6.1	33.5	60.7	74	-13.3
4874.0	PK	52.6	180	H	34.1	5.2	33.0	58.9	74	-15.1
7311.0	AV	42.6	270	V	37.4	6.1	33.5	52.6	54	-1.4
4874.0	AV	44.6	90	V	34.1	5.2	33.0	50.9	54	-3.1
7311.0	AV	41.4	60	H	37.4	6.1	33.5	51.4	54	-2.6
4874.0	AV	40.7	45	H	34.1	5.2	33.0	47	54	-7
4924.0	PK	54.6	270	V	34.1	5.2	33.0	60.9	74	-13.1
7386.0	PK	52.4	45	V	37.4	6.1	33.5	62.4	74	-11.6
4924.0	PK	51.7	180	H	34.1	5.2	33.0	58	74	-16
7386.0	PK	50.4	45	H	37.4	6.1	33.5	60.4	74	-13.6
4924.0	AV	45.2	90	V	34.1	5.2	33.0	51.5	54	-2.5
7386.0	AV	40.7	270	V	37.4	6.1	33.5	50.7	54	-3.3
4924.0	AV	43.6	60	H	34.1	5.2	33.0	49.9	54	-4.1
7386.0	AV	40.6	60	H	37.4	6.1	33.5	50.6	54	-3.4

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 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 (1G to 25GHz)										
4844.0	PK	54.8	90	V	34.1	5.2	33.0	61.1	74	-12.9
7266.0	PK	54.6	270	V	37.4	6.1	33.5	64.6	74	-9.4
7266.0	PK	51.7	180	H	37.4	6.1	33.5	61.7	74	-12.3
4844.0	PK	53.8	45	H	34.1	5.2	33.0	60.1	74	-13.9
4844.0	AV	44.2	270	V	34.1	5.2	33.0	50.5	54	-3.5
7266.0	AV	40.4	90	V	37.4	6.1	33.5	50.4	54	-3.6
7266.0	AV	41.1	45	H	37.4	6.1	33.5	51.1	54	-2.9
4844.0	AV	42.8	60	H	34.1	5.2	33.0	49.1	54	-4.9
Middle Channel (1G to 25GHz)										
7311.0	PK	53.6	45	V	37.4	6.1	33.5	63.6	74	-10.4
4874.0	PK	55.7	270	V	34.1	5.2	33.0	62	74	-12
7311.0	PK	51.2	45	H	37.4	6.1	33.5	61.2	74	-12.8
4874.0	PK	53.9	180	H	34.1	5.2	33.0	60.2	74	-13.8
7311.0	AV	42.6	270	V	37.4	6.1	33.5	52.6	54	-1.4
4874.0	AV	41.7	90	V	34.1	5.2	33.0	48	54	-6
7311.0	AV	42.6	60	H	37.4	6.1	33.5	52.6	54	-1.4
4874.0	AV	43.8	45	H	34.1	5.2	33.0	50.1	54	-3.9
4904.0	PK	54.8	270	V	34.1	5.2	33.0	61.1	74	-12.9
7356.0	PK	52.1	45	V	37.4	6.1	33.5	62.1	74	-11.9
4904.0	PK	52.8	180	H	34.1	5.2	33.0	59.1	74	-14.9
7356.0	PK	46.8	45	H	37.4	6.1	33.5	56.8	74	-17.2
4904.0	AV	45.9	90	V	34.1	5.2	33.0	52.2	54	-1.8
7356.0	AV	40.5	270	V	37.4	6.1	33.5	50.5	54	-3.5
4904.0	AV	44.6	60	H	34.1	5.2	33.0	50.9	54	-3.1
7356.0	AV	41.7	60	H	37.4	6.1	33.5	51.7	54	-2.3

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.

10. OUT OF BAND EMISSIONS

10.1 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.

10.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Agilent	Spectrum Analyzer	E4402B	US41192821	2009-07-08	2010-07-07
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2009-07-08	2010-07-07
Positioning Controller	C&C	CC-C-1F	N/A	2009-07-08	2010-07-07
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2009-07-08	2010-07-07
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2009-07-08	2010-07-07
RF Switch	EM	EMSW18	SW060023	2009-07-08	2010-07-07
Amplifier	Agilent	8447F	3113A06717	2009-07-08	2010-07-07
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2009-07-08	2010-07-07
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2009-07-08	2010-07-07

10.3 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.

10.4 Environmental Conditions

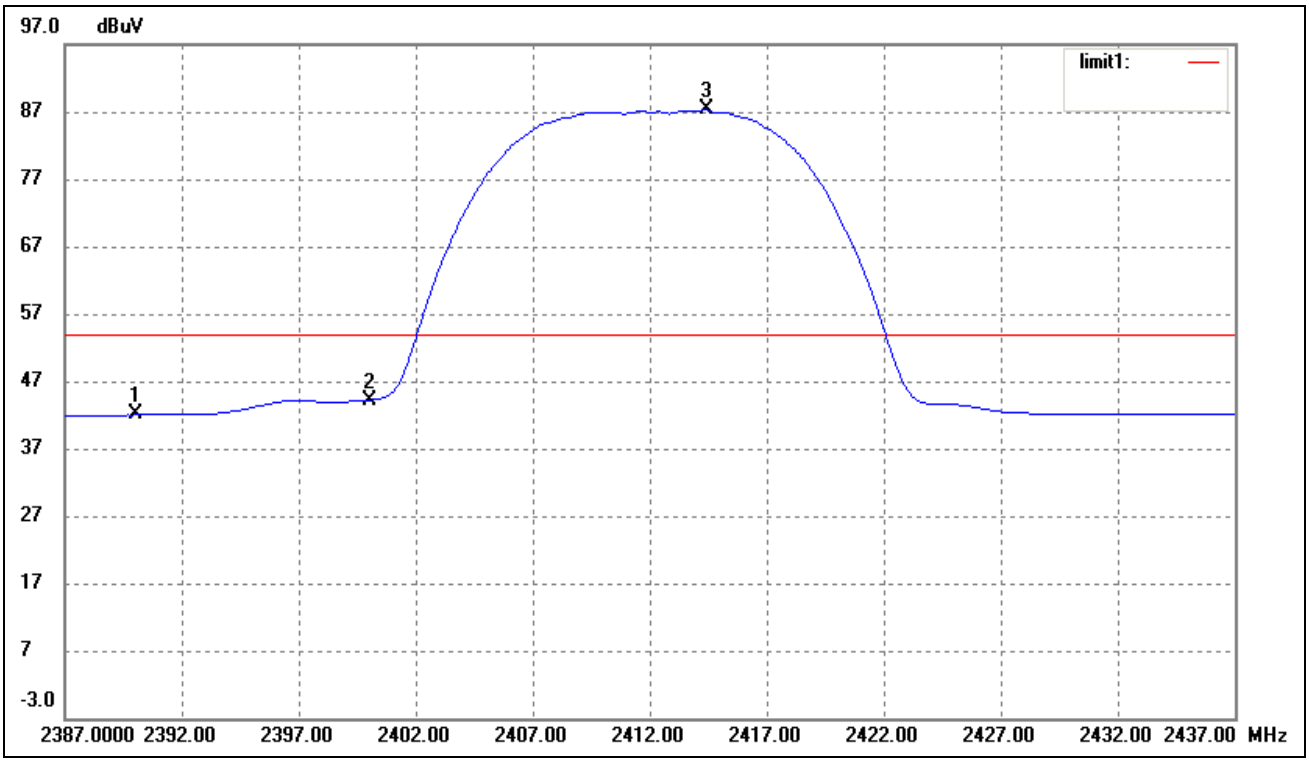
Temperature:	21° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

10.5 Summary of Test Results/Plots

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

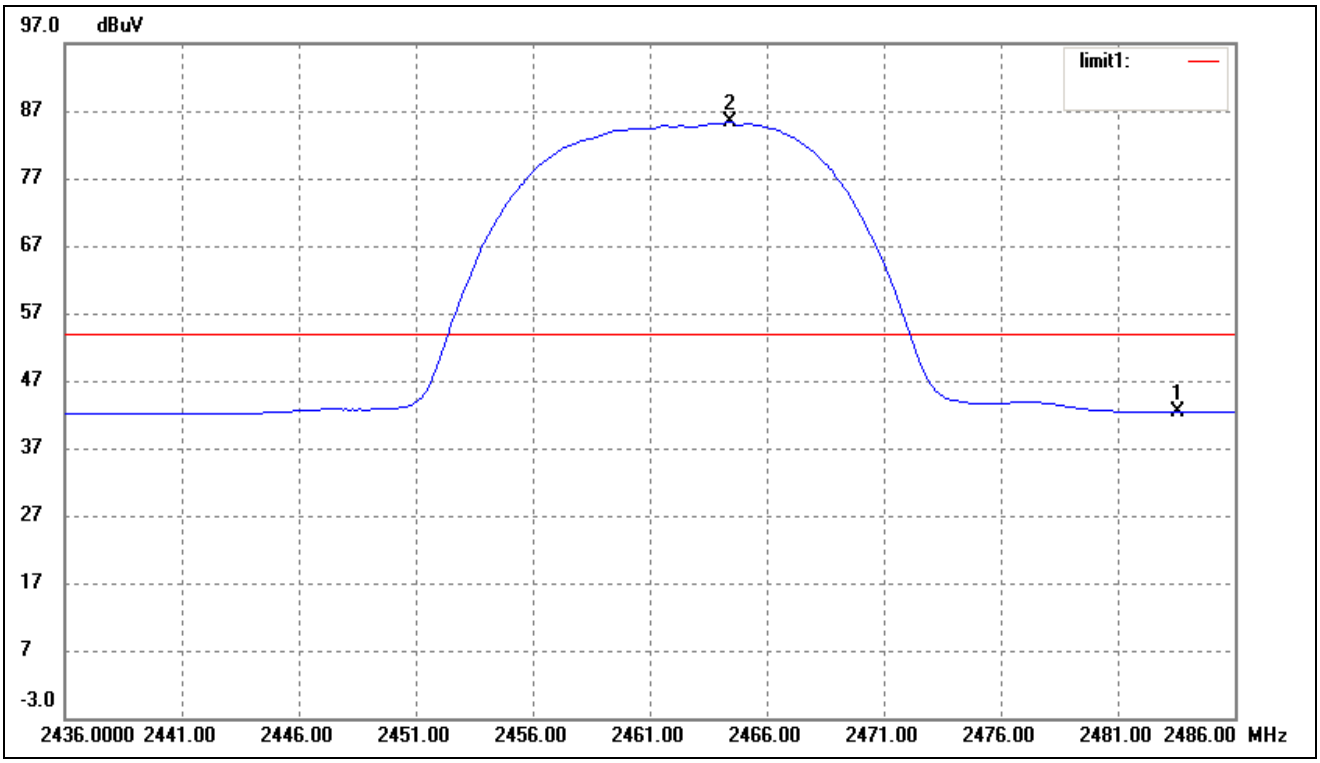
For 802.11b

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2390.000	7.42	34.59	42.01	54.00	-11.99	122	120	Ave
	2390.000	27.78	35.76	63.54	74.00	-10.46	265	112	peak
2	2400.000	9.55	34.68	44.23	54.00	-9.77	301	105	Ave
3	2414.455	52.54	34.73	87.27	/	/	/	/	Ave

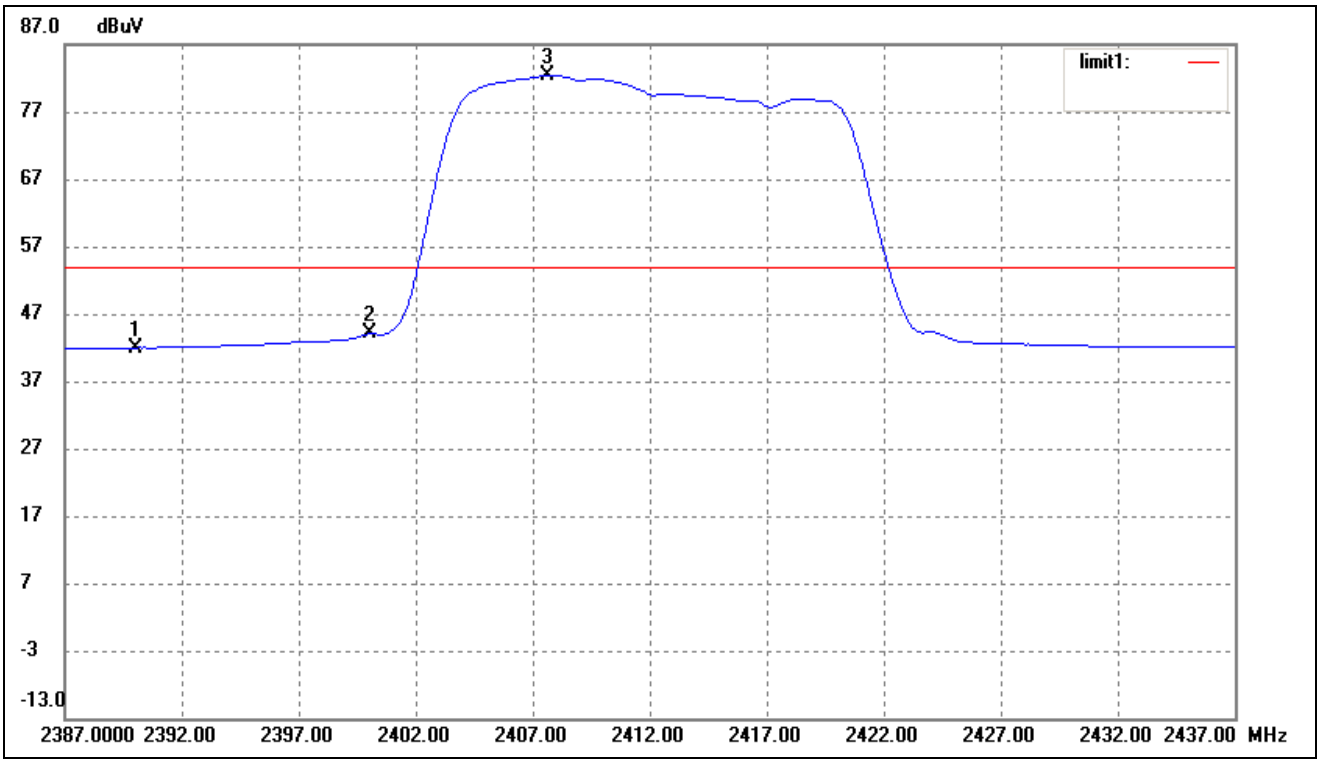
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2483.500	7.41	34.97	42.38	54.00	-11.62	204	105	Ave
	2483.500	28.16	36.69	64.85	74.00	-9.15	135	112	peak
2	2464.457	50.39	34.91	85.30	/	/	/	/	Ave

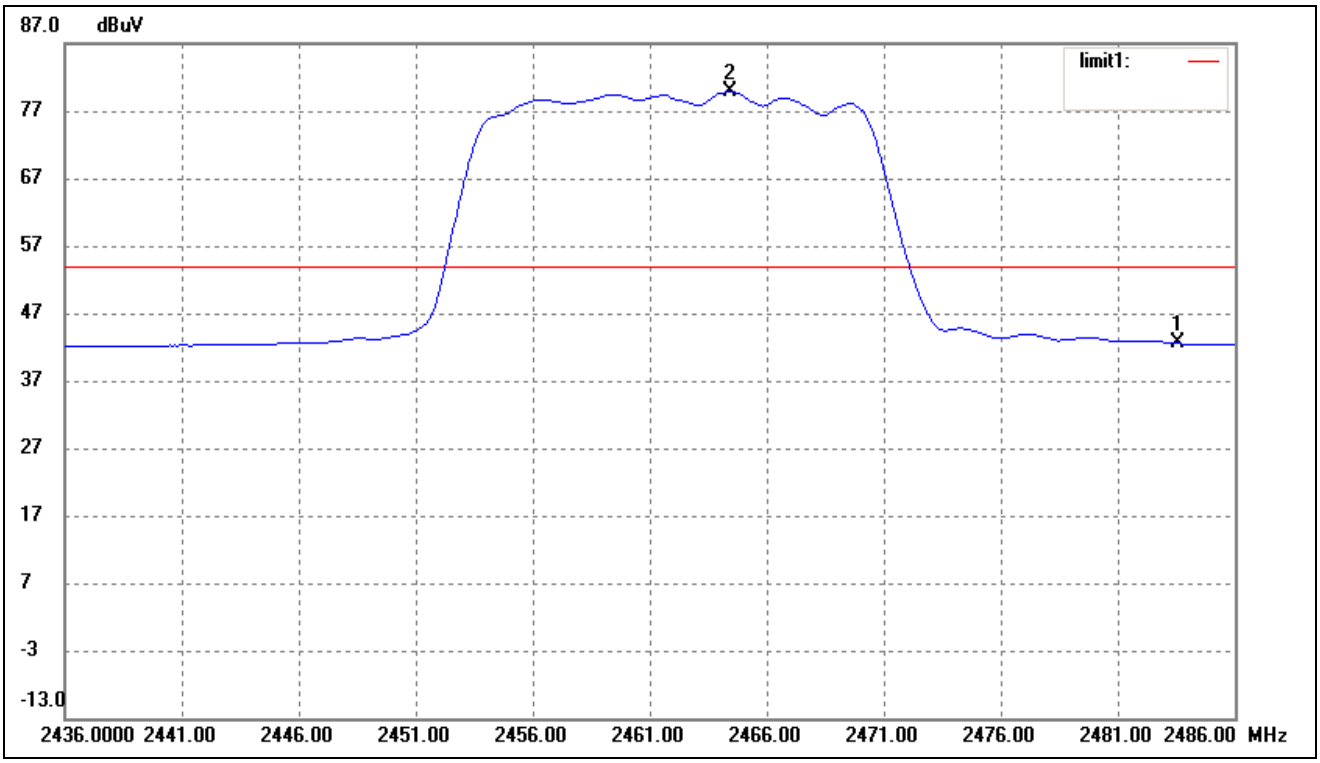
For 802.11g

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2390.000	7.39	34.59	41.98	54.00	-12.02	125	114	Ave
	2390.000	28.19	34.67	62.86	74.00	-11.14	360	200	peak
2	2400.000	9.35	34.68	44.03	54.00	-9.97	360	100	Ave
3	2407.641	47.70	34.71	82.41	/	/	/	/	Ave

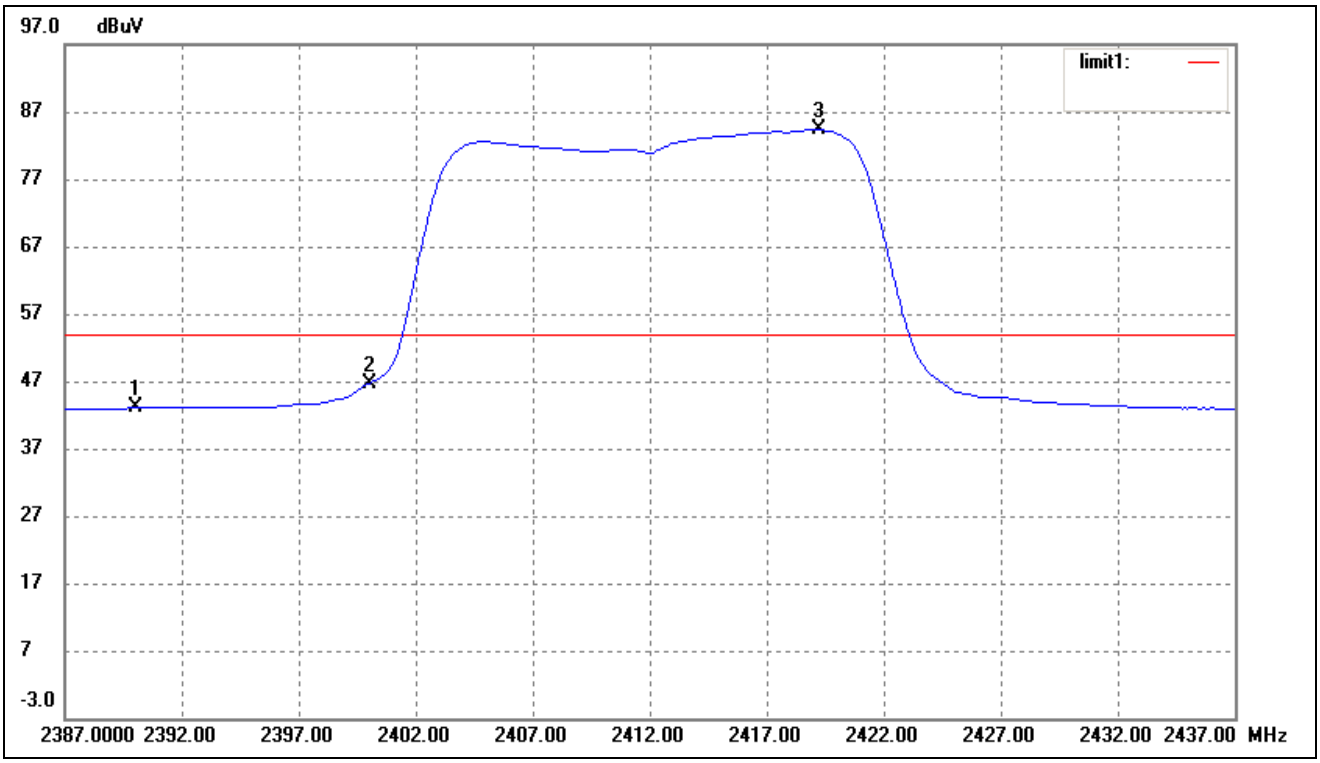
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2483.500	7.57	34.97	42.54	54.00	-11.46	203	118	Ave
	2483.500	28.61	34.97	63.58	74.00	-10.42	360	200	peak
2	2464.457	44.93	34.91	79.84	/	/	/	/	Ave

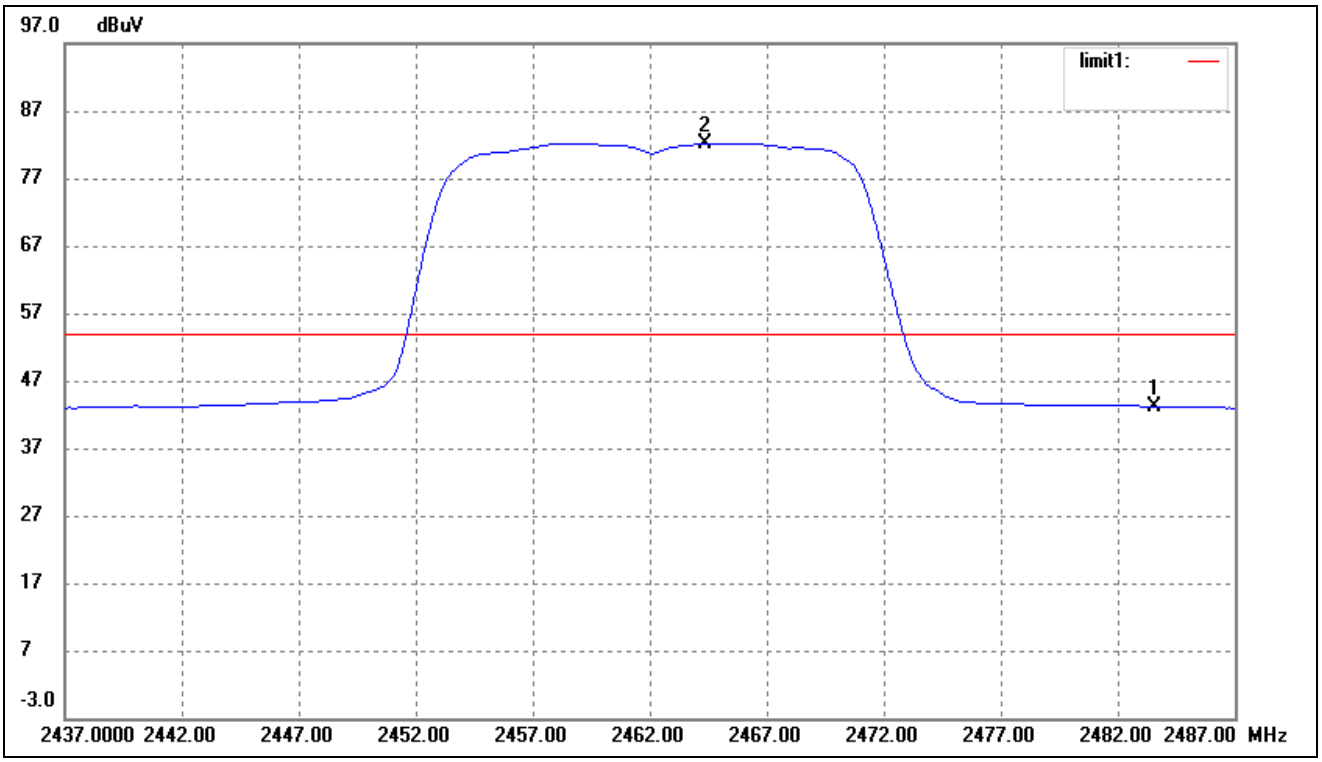
For 802.11n HT20

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2390.000	7.47	35.59	43.06	54.00	-10.94	225	112	Ave
	2390.000	27.89	35.59	63.48	74.00	-10.52	0	200	peak
2	2400.000	11.01	35.68	46.69	54.00	-7.31	360	100	Ave
3	2419.265	48.54	35.75	84.29	/	/	/	/	Ave

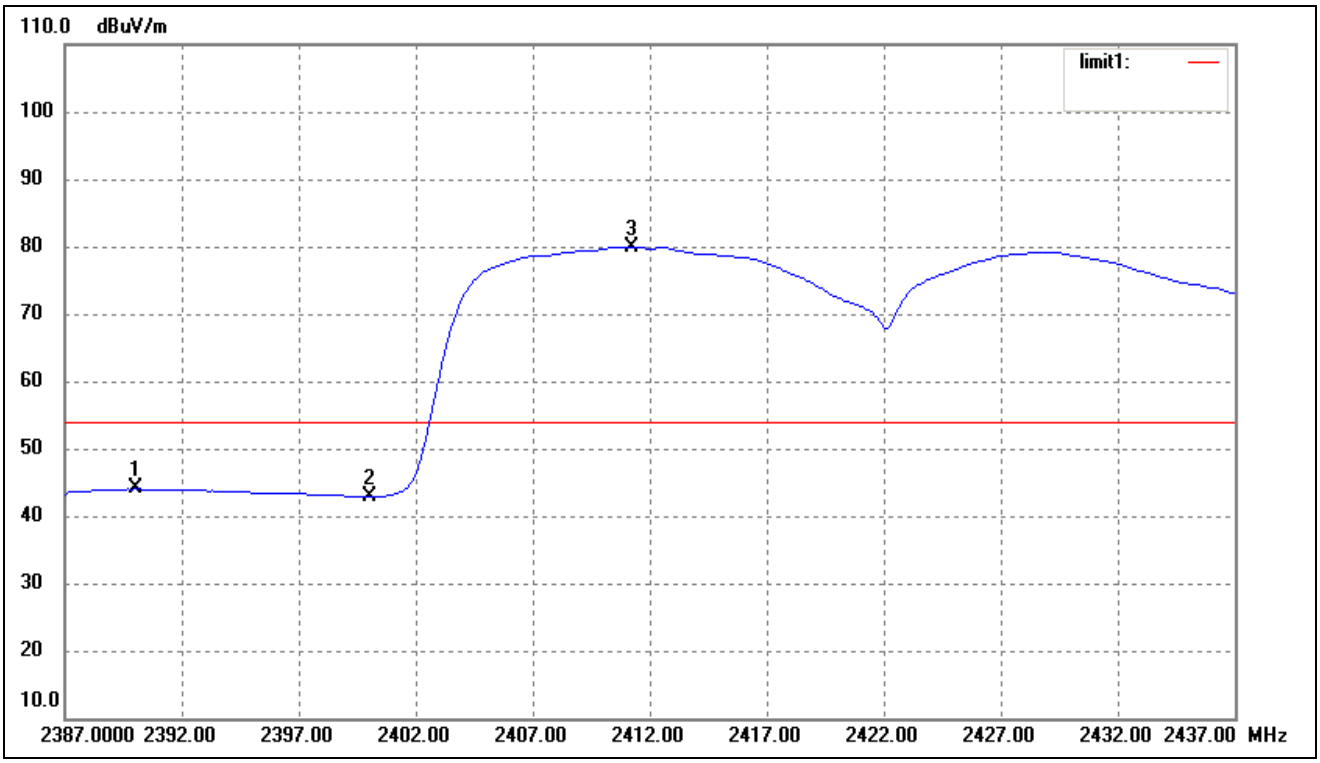
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	(°)	(cm)	
1	2483.500	7.26	35.97	43.23	54.00	-10.77	231	105	Ave
	2483.500	29.37	35.97	65.34	74.00	-8.66	360	200	peak
2	2464.355	46.23	35.91	82.14	/	/	/	/	Ave

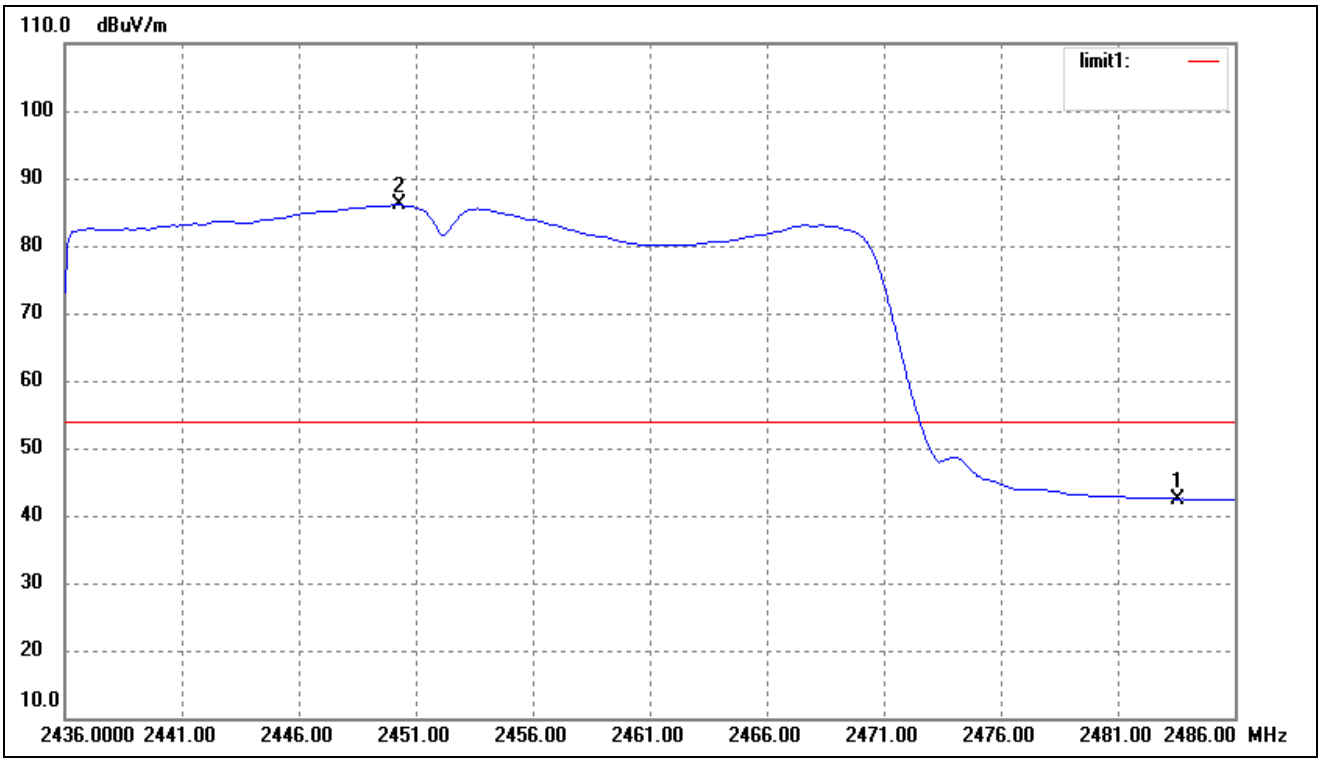
For 802.11n HT40

Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2390.000	8.42	35.59	44.01	54.00	-9.99	221	105	Ave
	2390.000	27.38	35.59	62.97	74.00	-11.03	360	200	peak
2	2400.000	7.22	35.68	42.90	54.00	-11.10	360	200	Ave
3	2411.249	44.14	35.72	79.86	/	/	/	/	Ave

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	6.52	35.97	42.49	54.00	-11.51	121	105	Ave
	2483.500	27.54	35.97	63.51	74.00	-10.49	360	200	peak
2	2450.329	50.22	35.86	86.08	/	/	/	/	Ave