

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: V7TW307R

Report Concerns: Original Report	Equipment Type: Wireless-N Broadband Router
Model:	<u>W307R</u>
Report No.:	<u>STR09088014I</u>
Test/Witness Engineer:	<u>Seven Song</u>
Test Date:	<u>2009-08-03 to 2009-08-14</u>
Issue Date:	<u>2009-08-18</u>
Prepared By:	SEM.Test Compliance Service Co., Ltd 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101)
Approved & Authorized By:	 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 DISTRICT, SHENZHEN, China.

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

General Description of E.U.T

Items	Description
EUT Description:	Wireless-N Broadband Router
Trade Name:	Tenda
Model No.:	W307R
Rated Voltage:	AC 9V adapter
Max. Output Power	20 dBm
Antenna Gain:	3dBi
Frequency range:	2412~2462MHz / 2422~2452MHz
Number of channels:	11 / 7
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Size:	17.3x14.0x3.0 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
Tenda	Power Adaptor	ILA41-091200	/
IBM	Notebook	T22	LV14893
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
DC Power Cable	1.8	Unshielded	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

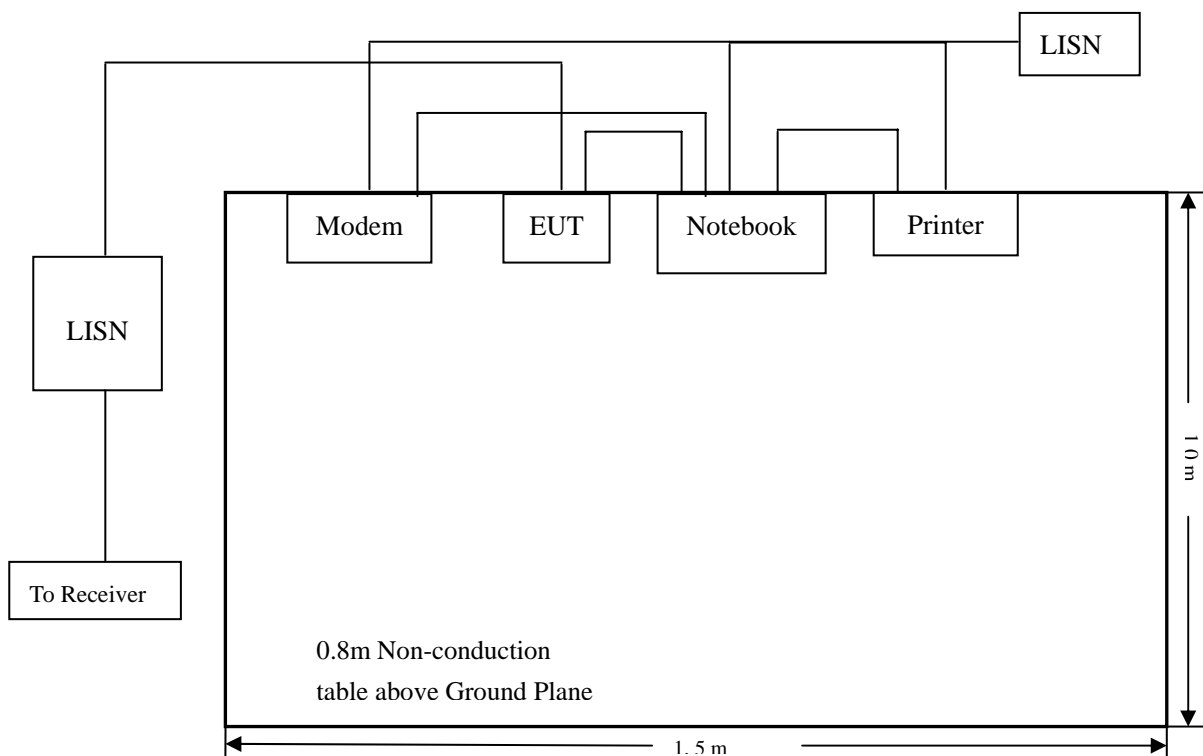
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2009-07-08	2010-07-07
Puls Limiter	Rohde & Schwarz	ESH3-Z2	100911	2009-07-08	2010-07-07
L.I.S.N.	SCHWARZBECK	NSLK8126	8126-224	2009-07-08	2010-07-07
L.I.S.N.	EMCO	3825/2	11967C	2009-07-08	2010-07-07

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

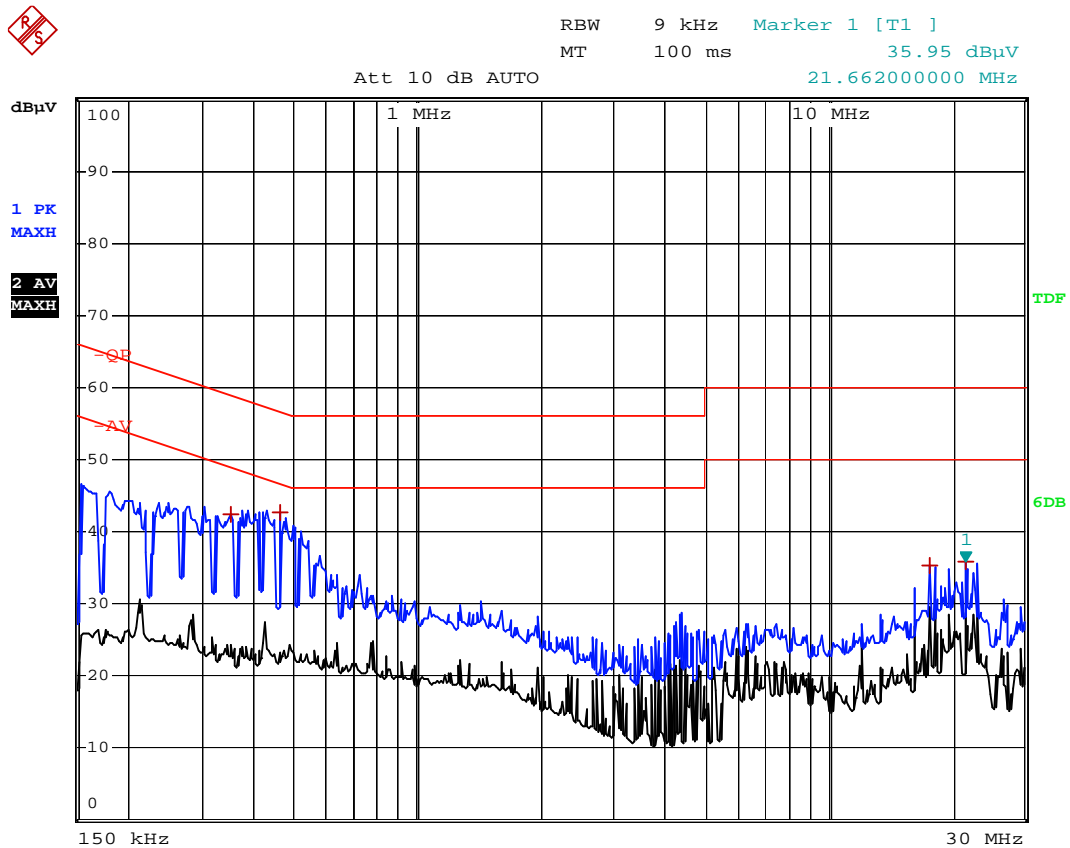
3.6 Summary of Test Results/Plots

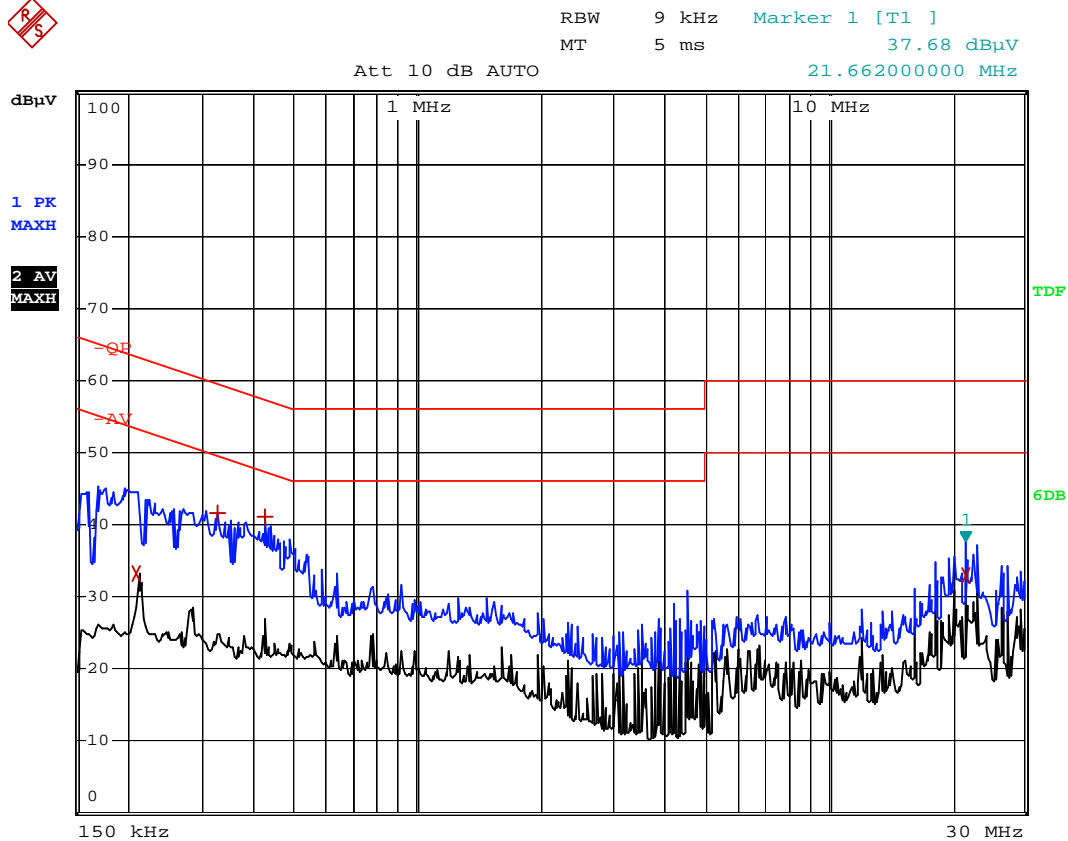
According to the data in section 3.7, the EUT complied with the FCC 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

-14.0 dB μ V at 0.462 MHz in the Neutral Peak 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
0.462	42.64	Pk	Neutral	56.66	-14.0
21.662	35.95	Ave	Neutral	50.00	-14.1
17.694	35.19	Ave	Neutral	50.00	-14.8
0.426	41.04	Pk	Line	57.33	-16.3
0.350	42.43	Pk	Neutral	58.96	-16.5
0.326	41.62	Pk	Line	59.55	-17.9
21.662	32.86	Pk	Line	60.00	-27.1
0.210	33.20	Pk	Line	63.21	-30.0

Plot of Conducted Emissions Test Data*Conducted Disturbance**EUT: Wireless-N Broadband Router**M/N: W307R**Operating Condition: Operating**Test Specification: N**Comment: AC 120V/60Hz Adapter AC 9V*

Plot of Conducted Emissions Test Data*Conducted Disturbance**EUT: Wireless-N Broadband Router**M/N: W307R**Operating Condition: Operating**Test Specification: L**Comment: AC 120V/60Hz Adapter AC 9V*

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 an 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

$$S = (P \cdot G) / (4 \cdot \pi \cdot R^2)$$

S = power density (in appropriate units, e.g., mW/cm²)

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: 19.37 (dBm)

Maximum peak output power at antenna input terminal: 86.49679(mW)

Prediction distance: 20 (cm)

Prediction frequency: 2412 (MHz)

Antenna gain (typical): 3 (dBi)

Antenna gain (numeric): 1.99526 (numeric)

The worst case is power density at prediction frequency at 20cm: 0.0343344 (mw/cm²)

MPE limit for general population exposure at prediction frequency: 1 (mw/cm²)

$0.0343344 \text{ (mw/cm}^2\text{)} < 1 \text{ (mw/cm}^2\text{)}$

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

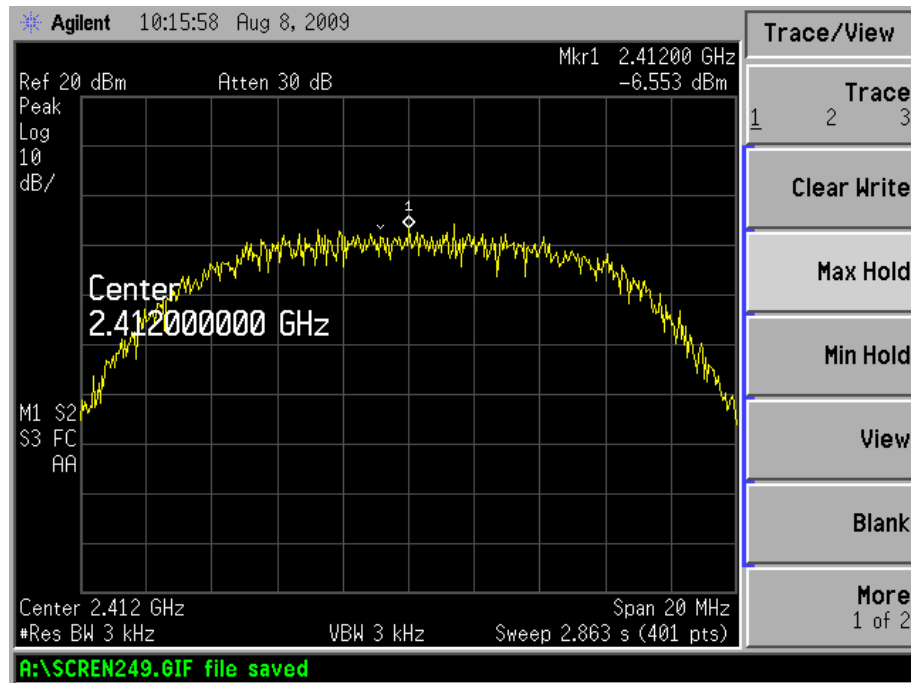
6.5 Summary of Test Results/Plots

Test mode	Test channel	Reading dBm/3kHz (Chain0)	Reading dBm/3kHz (Chain1)	Limit dBm/3kHz
802.11b	Low channel (2412MHz)	-6.553	---	8
	Middle channel (2437MHz)	-5.776	---	8
	High channel (2462MHz)	-5.810	---	8
802.11g	Low channel (2412MHz)	-9.956	-12.030	8
	Middle channel (2437MHz)	-9.349	-12.810	8
	High channel (2462MHz)	-10.020	-13.300	8
802.11n HT-20	Low channel (2412MHz)	-10.540	-10.900	8
	Middle channel (2437MHz)	-9.119	-12.020	8
	High channel (2462MHz)	-10.290	-10.020	8
802.11n HT-40	Low channel (2422MHz)	-9.820	-13.920	8
	Middle channel (2437MHz)	-9.045	-14.830	8
	High channel (2452MHz)	-10.820	-15.280	8

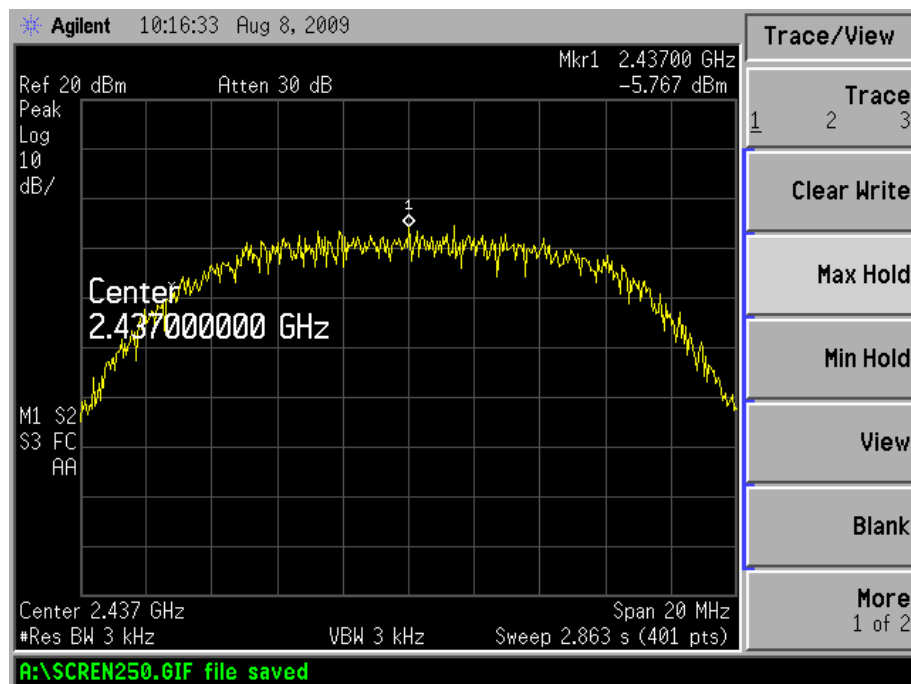
“---“ means that this test mode is no test data in the corresponding operating conditions.

For 802.11b(Chain0)

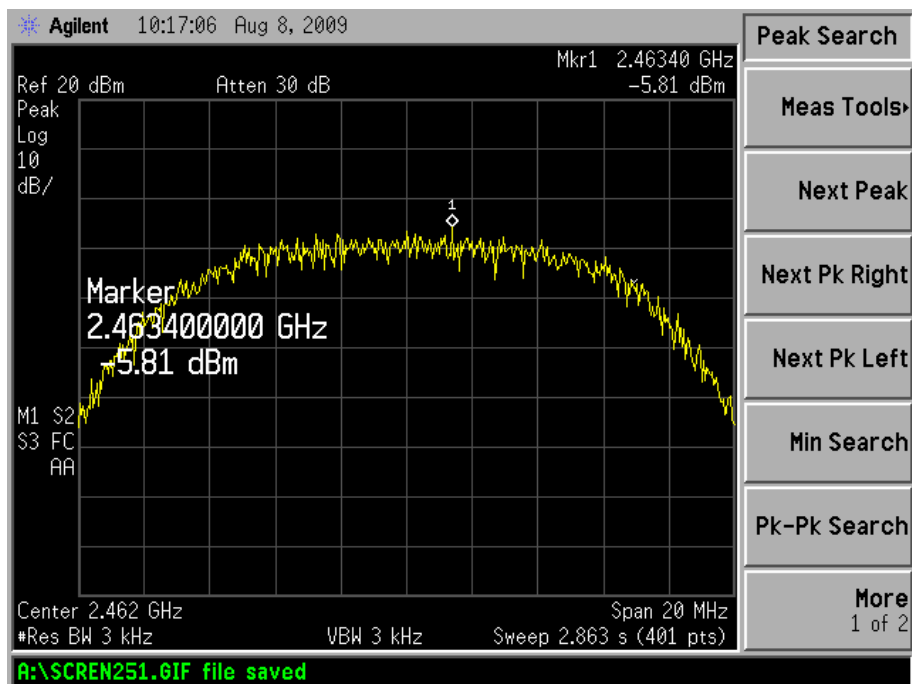
Low Channel:



Middle Channel:

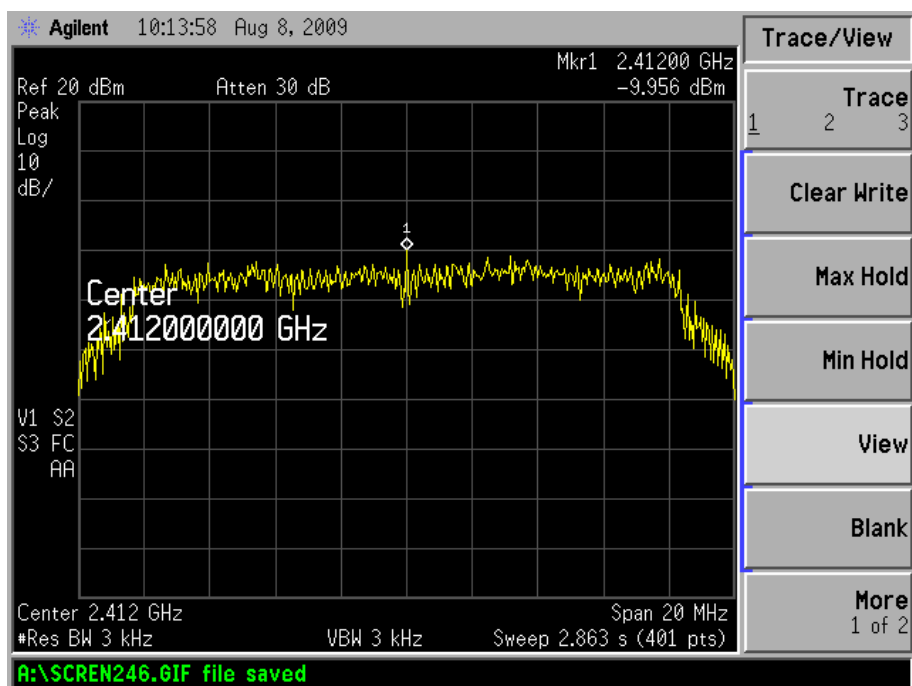


High Channel:

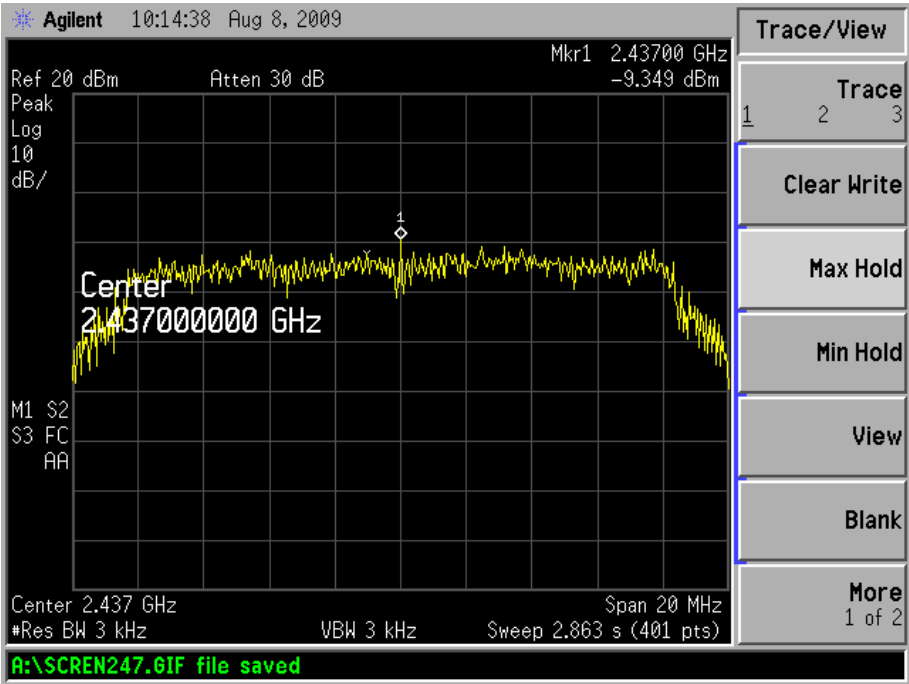


For 802.11g(Chain0)

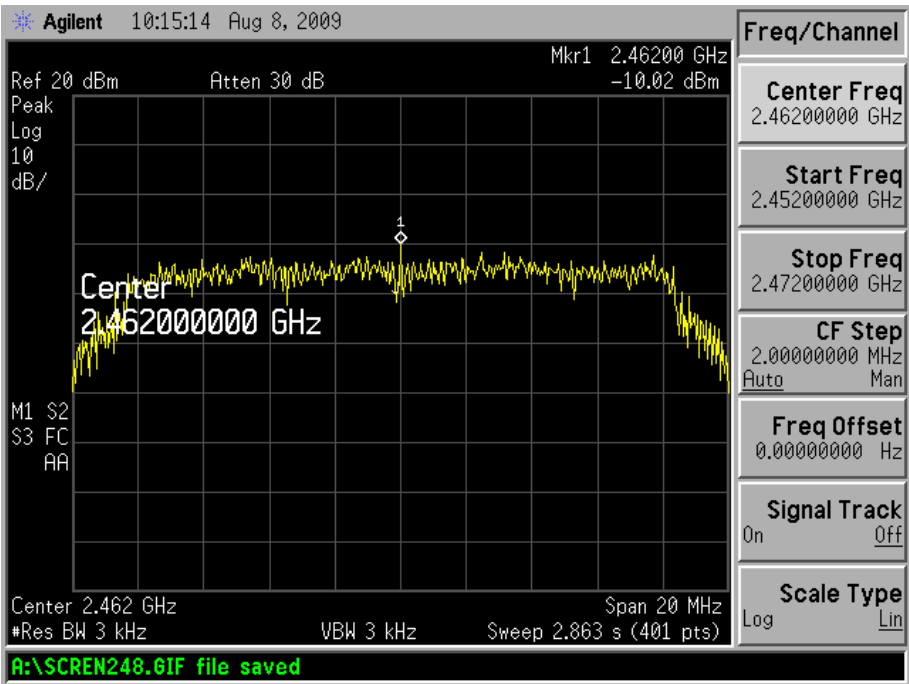
Low Channel:



Middle Channel:

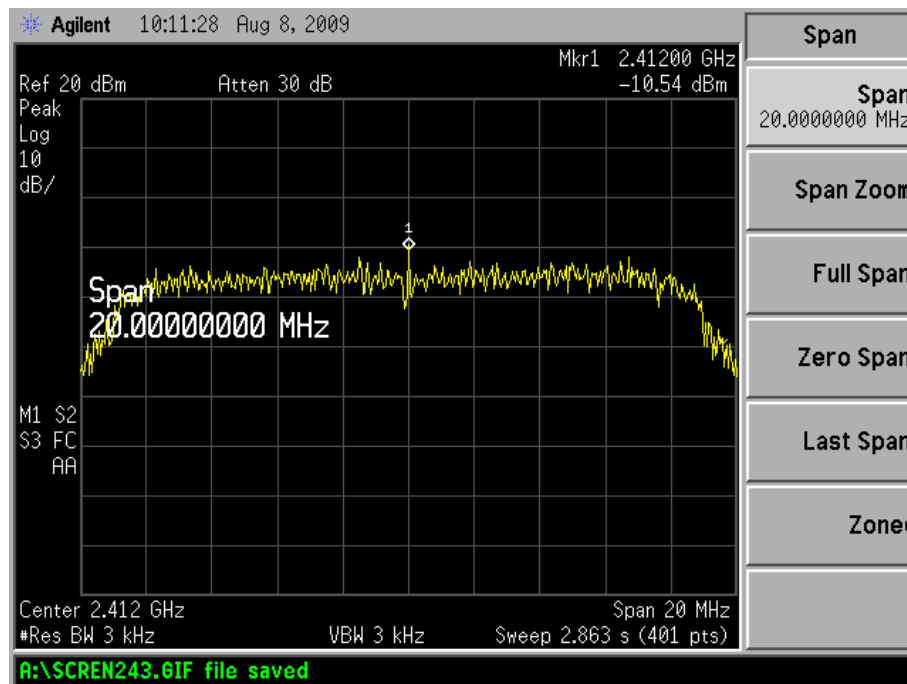


High Channel:

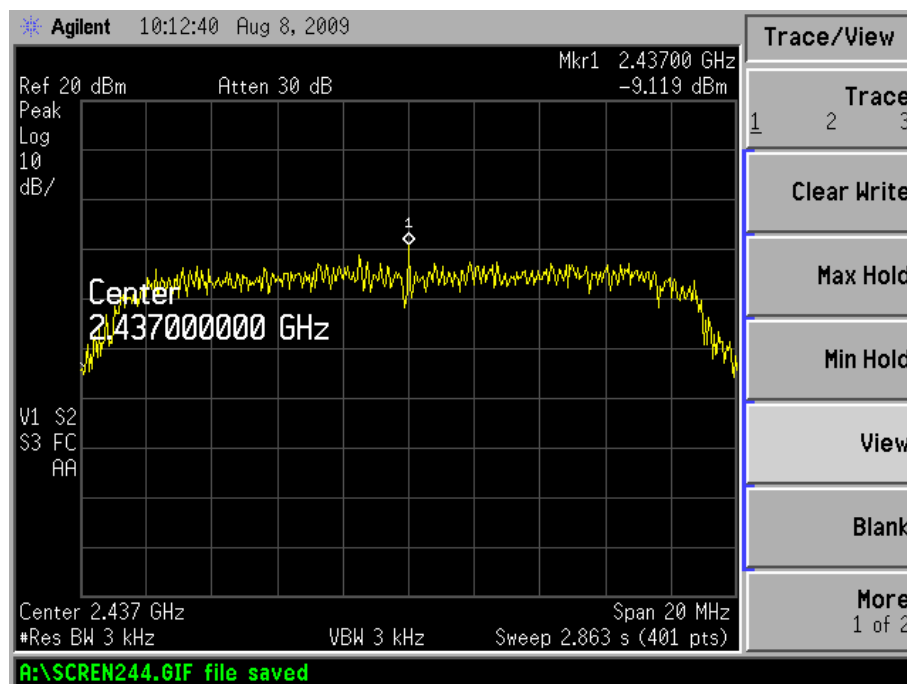


For 802.11n-HT20(Chain0)

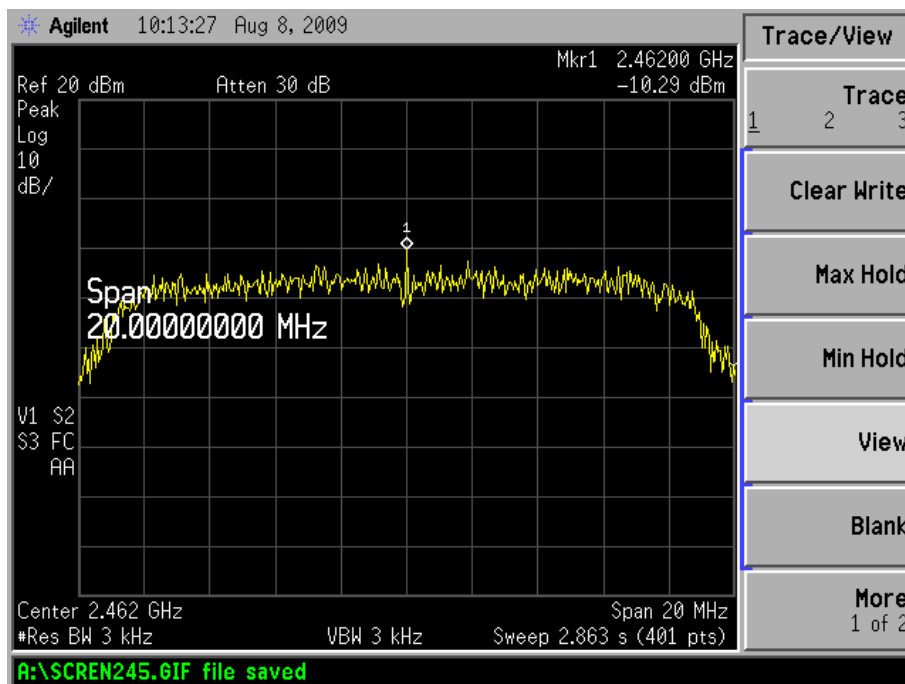
Low Channel:



Middle Channel:

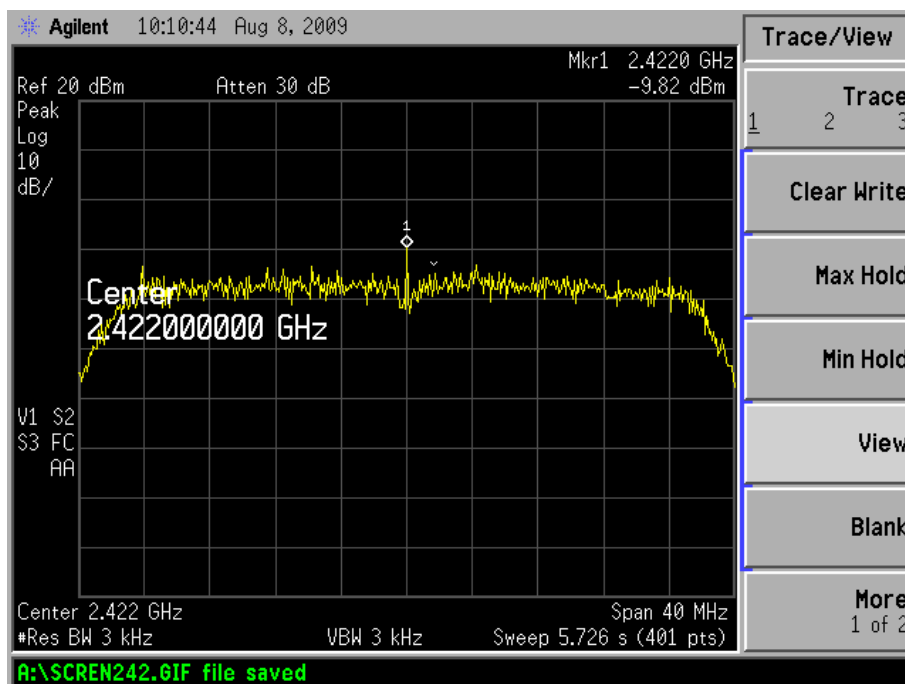


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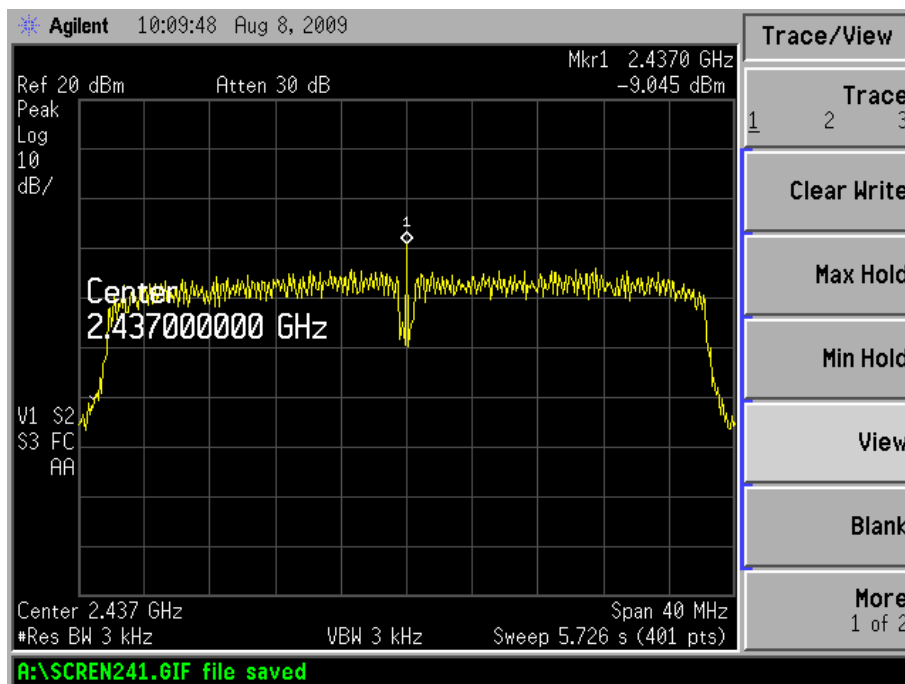


For 802.11n-HT40(Chain0)

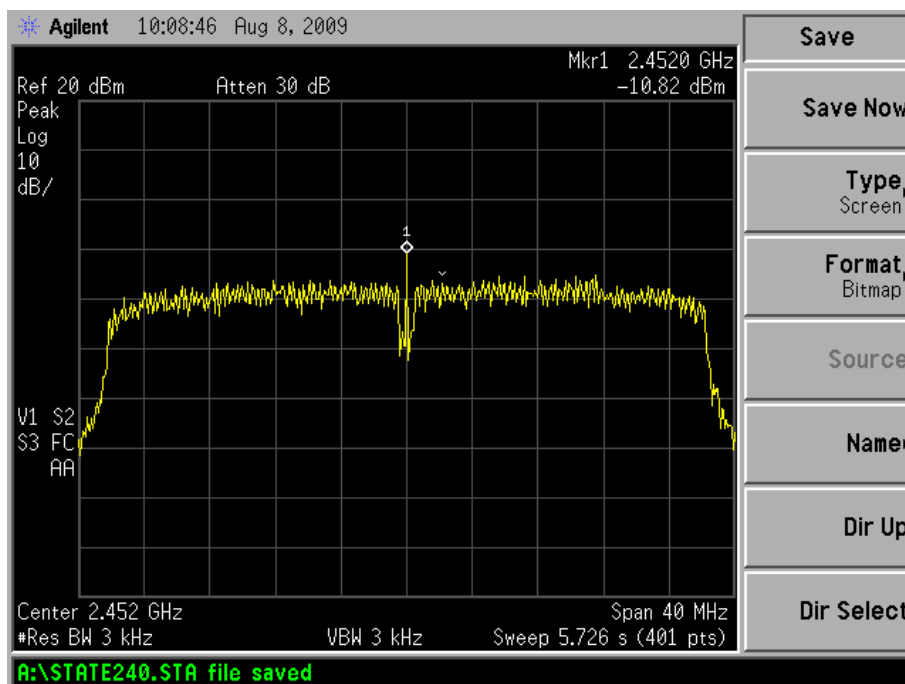
Low Channel:



Middle Channel:

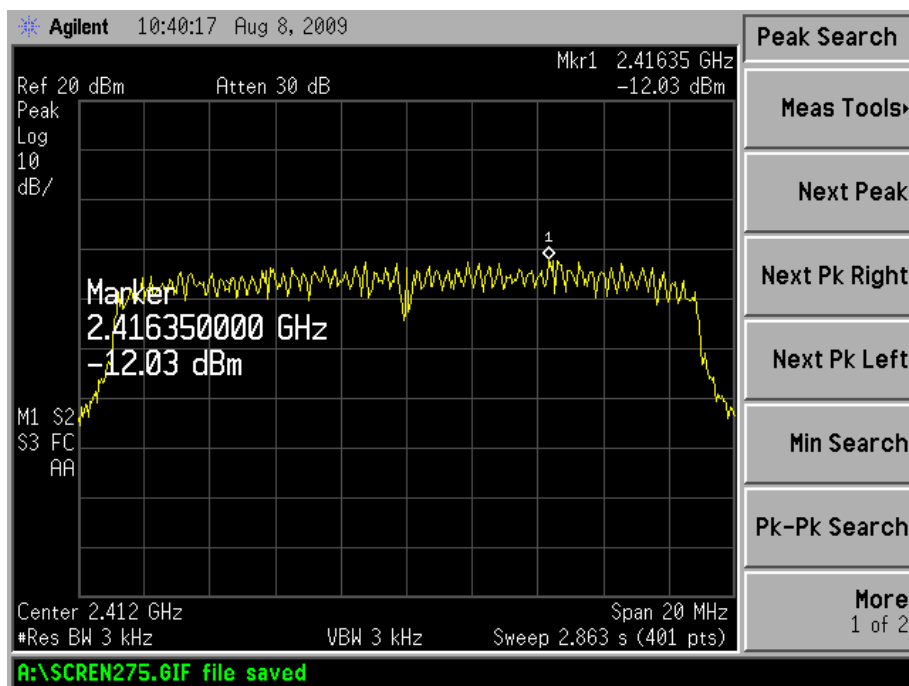


High Channel:

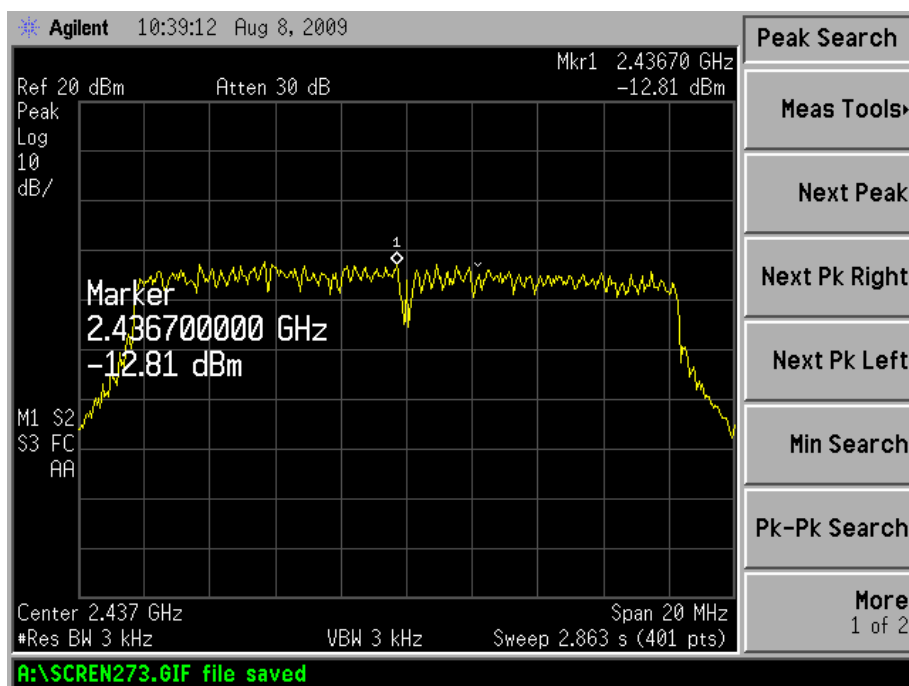


For 802.11g(Chain1)

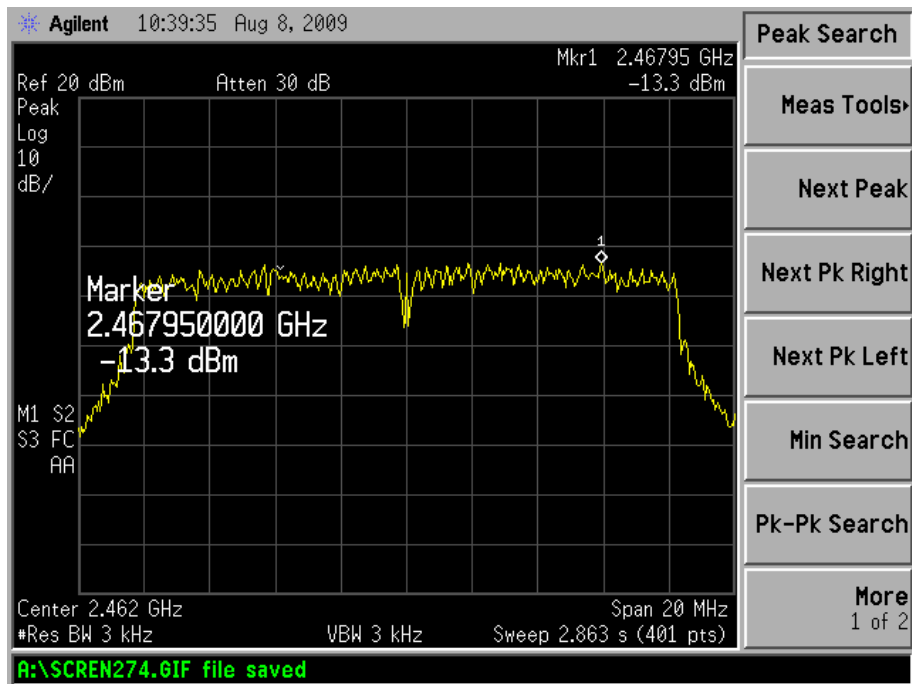
Low Channel:



Middle Channel:

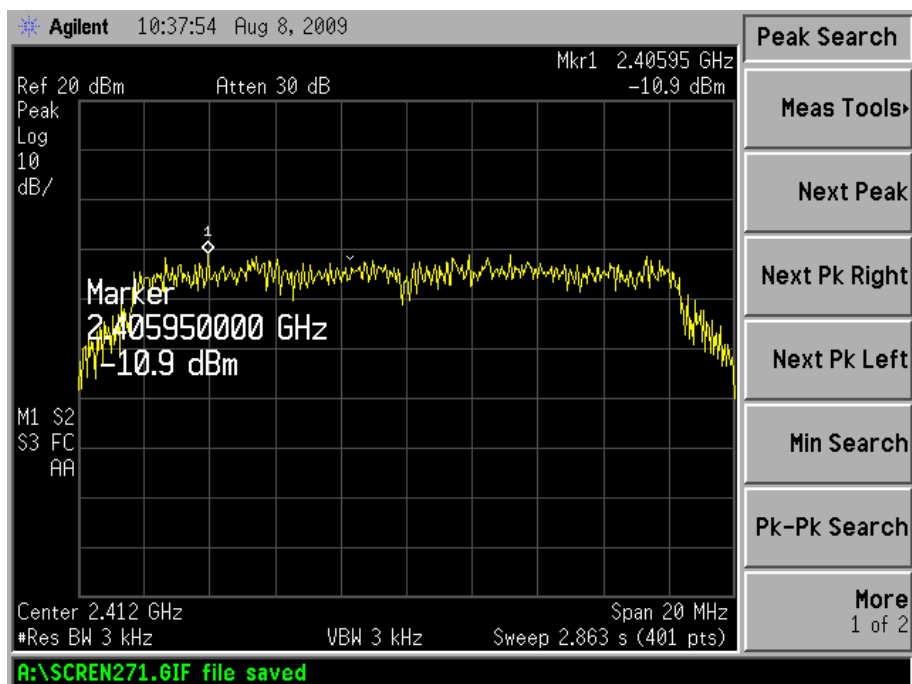


High Channel:

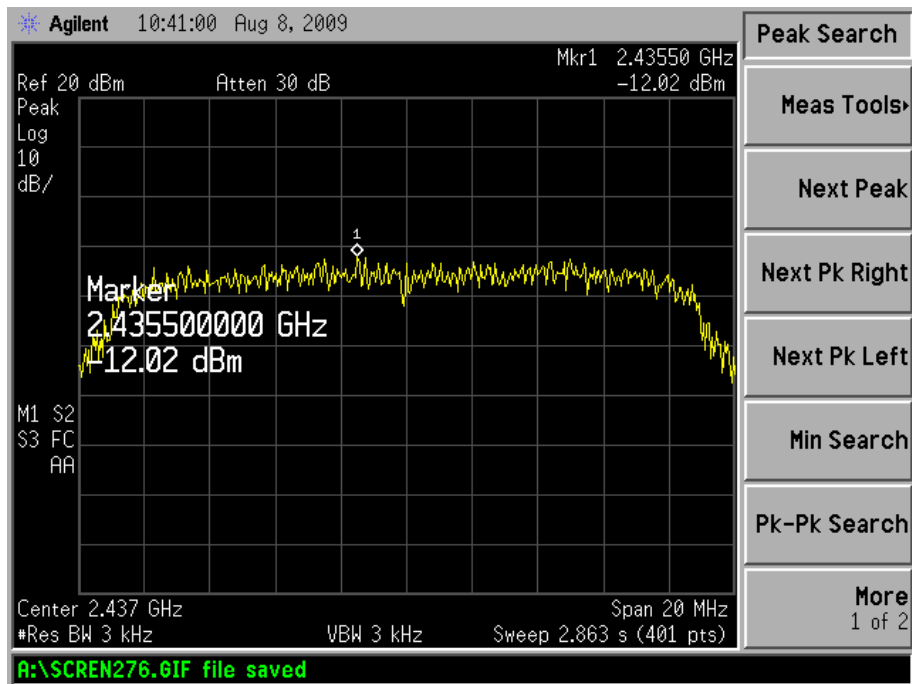


For 802.11n-HT20(Chain1)

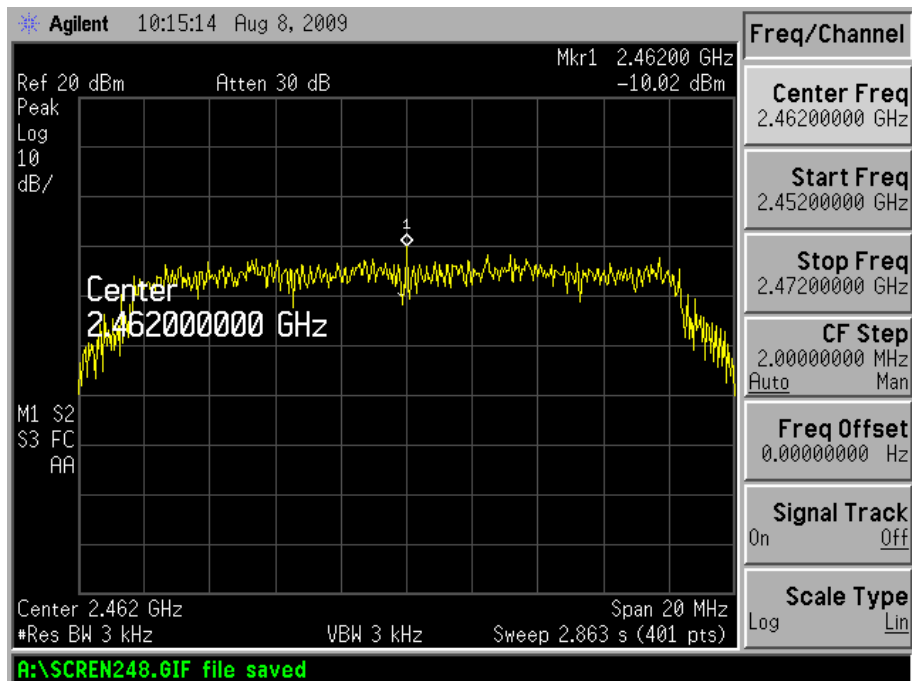
Low Channel:



Middle Channel:

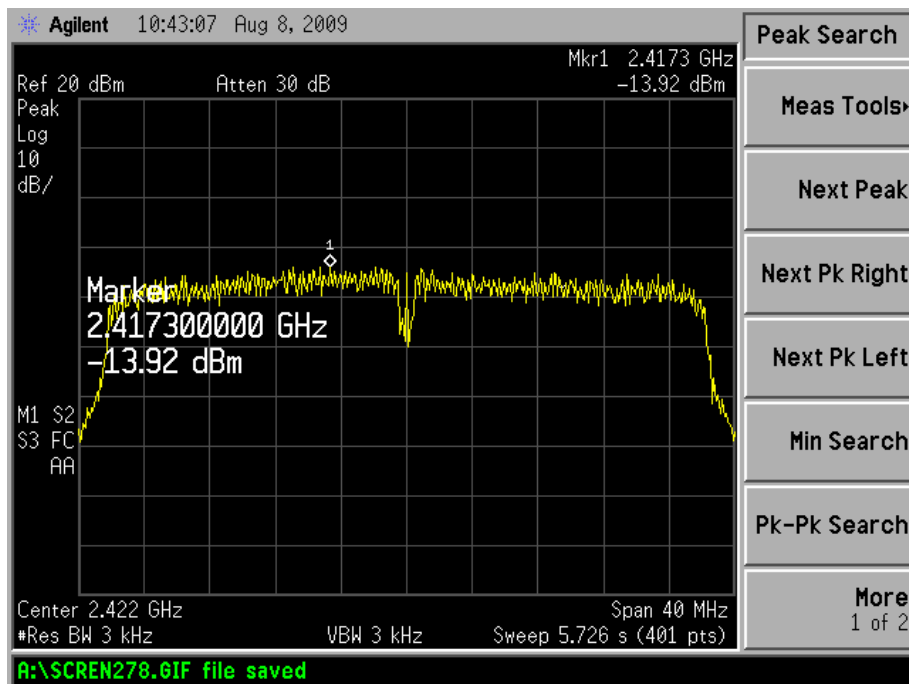


High Channel:

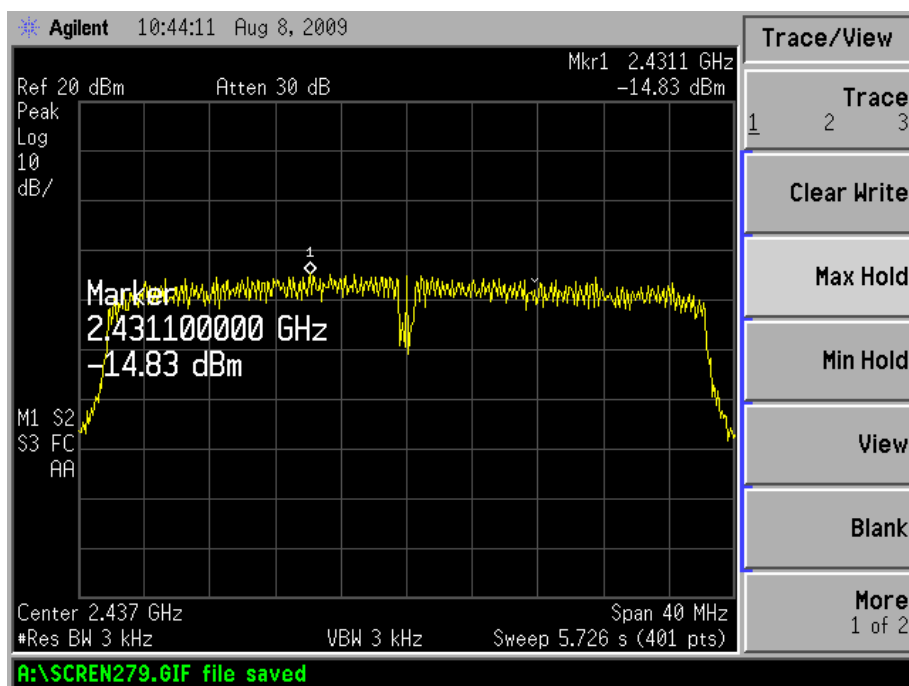


For 802.11n-HT40(Chain1)

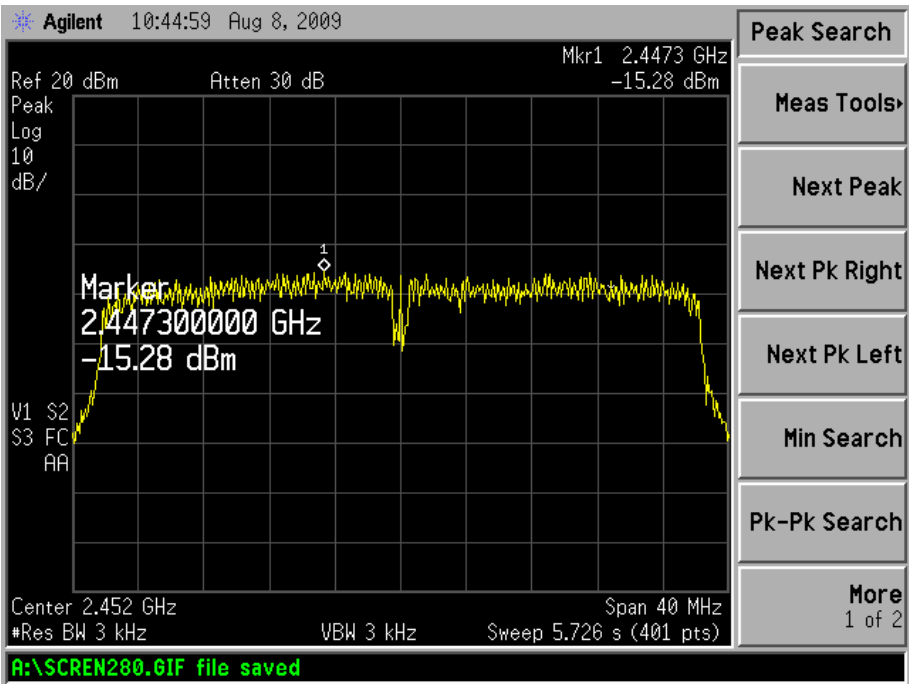
Low Channel:



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

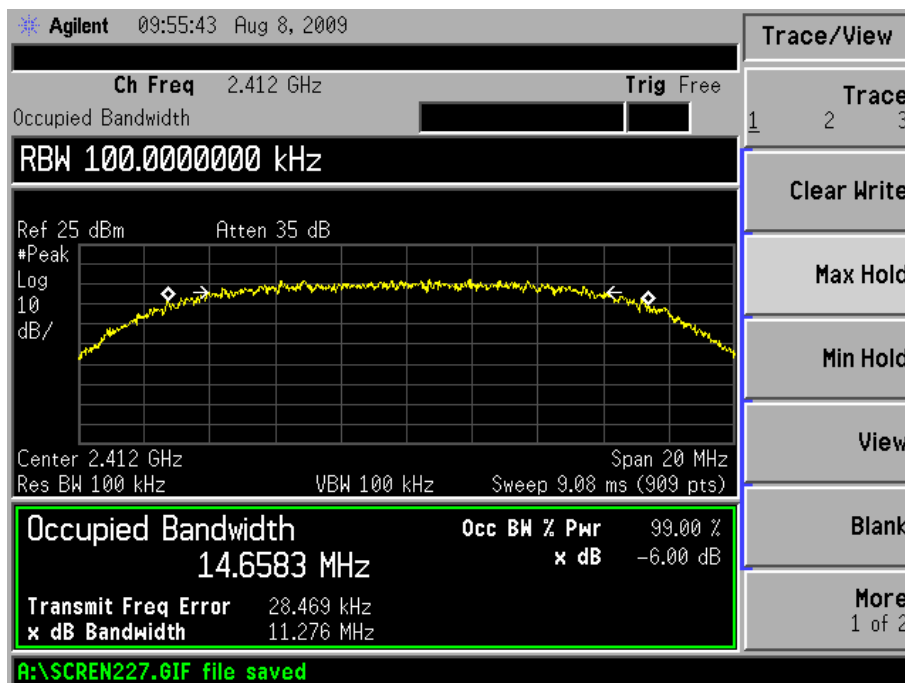
7.5 Summary of Test Results/Plots

Test mode	Frequency MHz	6 dB Bandwidth kHz(Chain 0)	6 dB Bandwidth kHz(China1)	Limit kHz
802.11b	2412	11276	---	500
	2437	11693	---	500
	2462	11538	---	500
802.11 g	2412	16331	17077	500
	2437	16386	17395	500
	2462	16357	17025	500
802.11n HT-20	2412	16684	16469	500
	2437	17291	16385	500
	2462	17212	16527	500
802.11n HT-40	2422	34534	35030	500
	2437	35698	35352	500
	2452	35310	35644	500

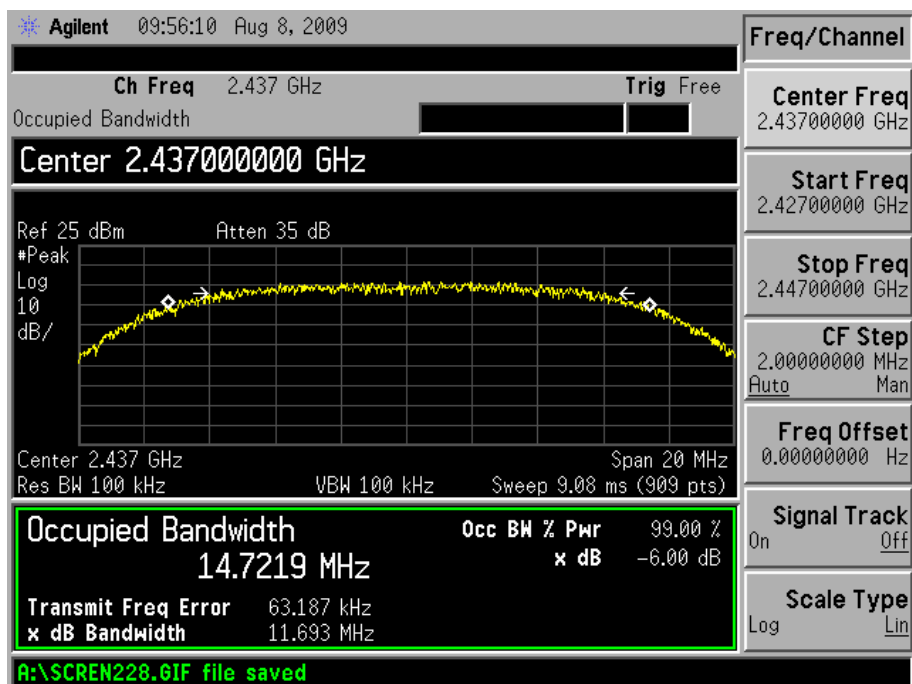
“---“ means that this test mode is no test data in the corresponding operating conditions.

For 802.11b (Chain0)

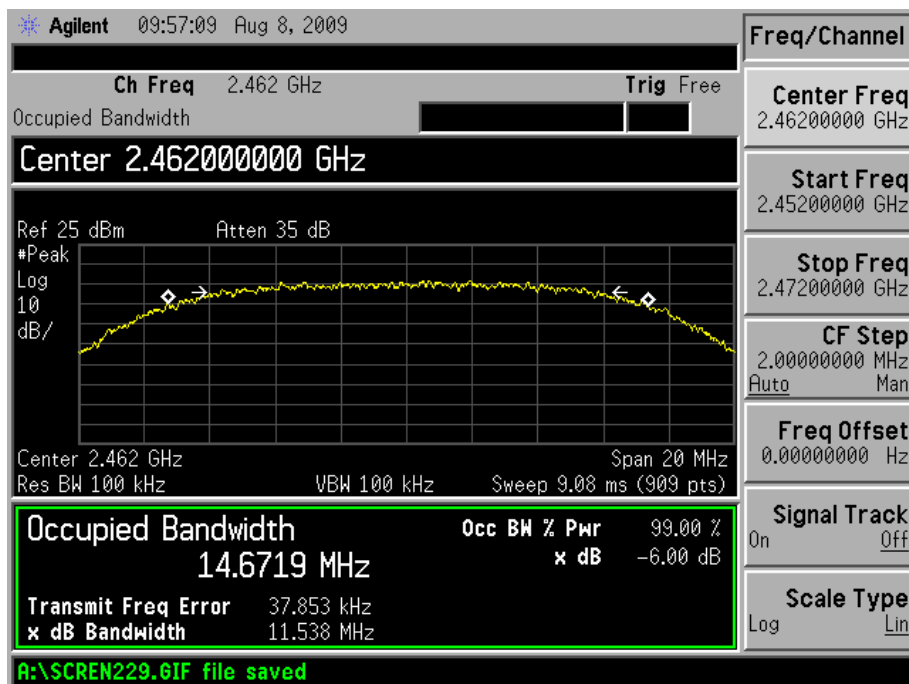
Low Channel:



Mid Channel:

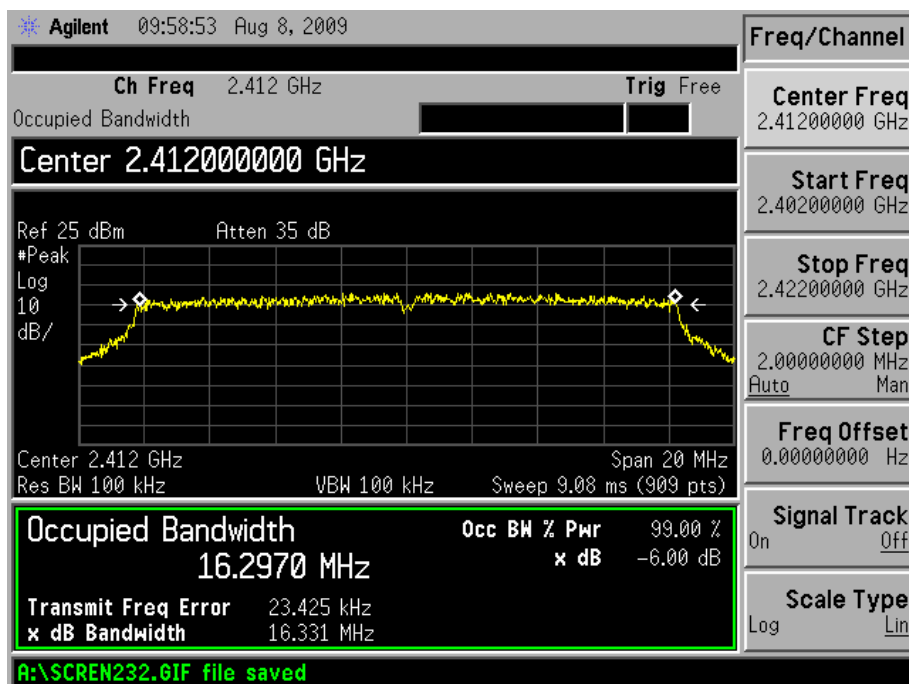


High Channel:

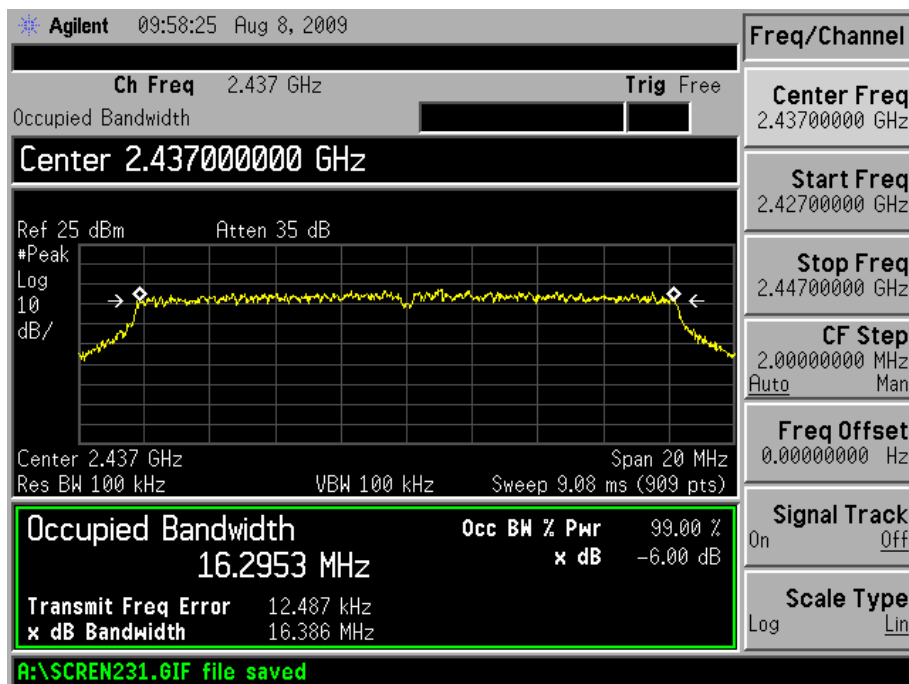


For 802.11g (Chain0)

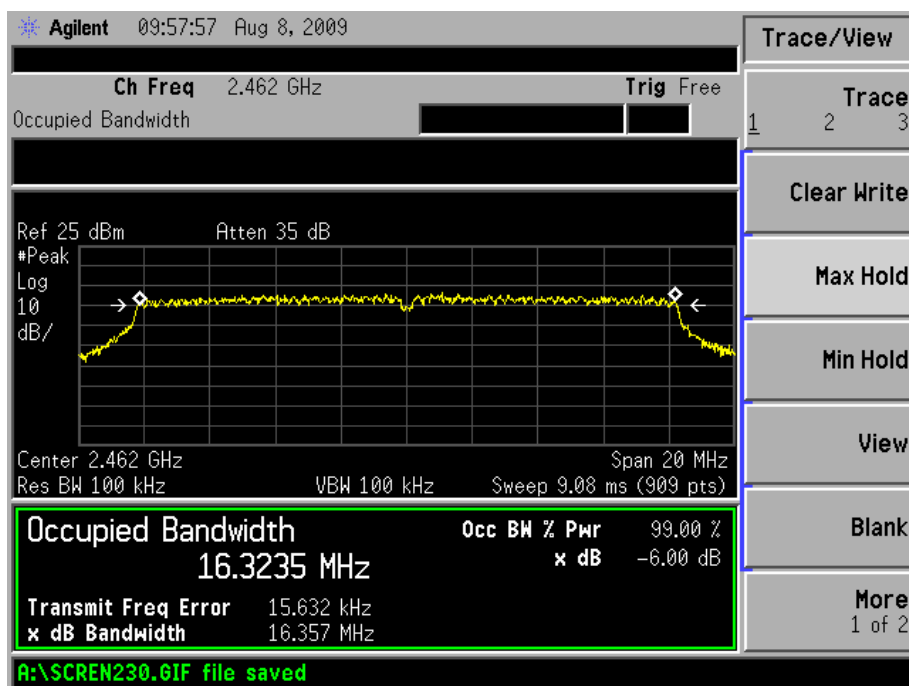
Low Channel:



Mid Channel:

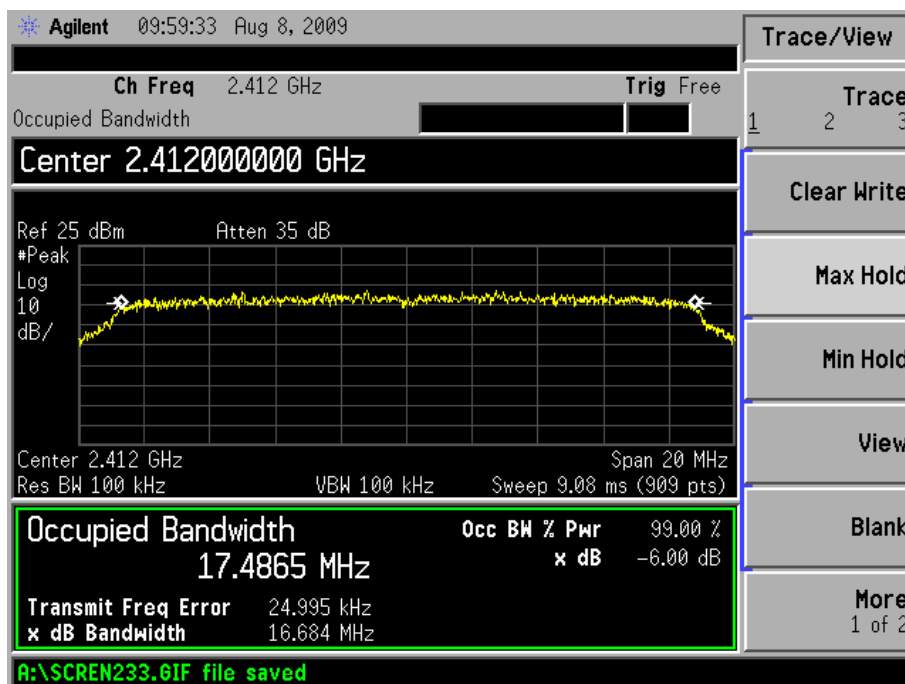


High Channel:

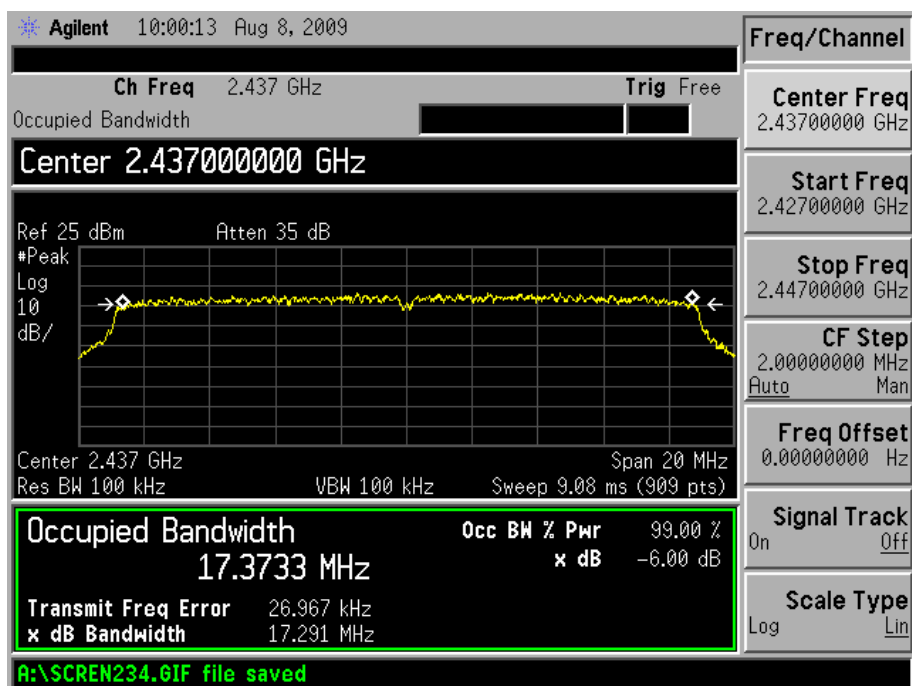


For 802.11n HT-20 (Chain0)

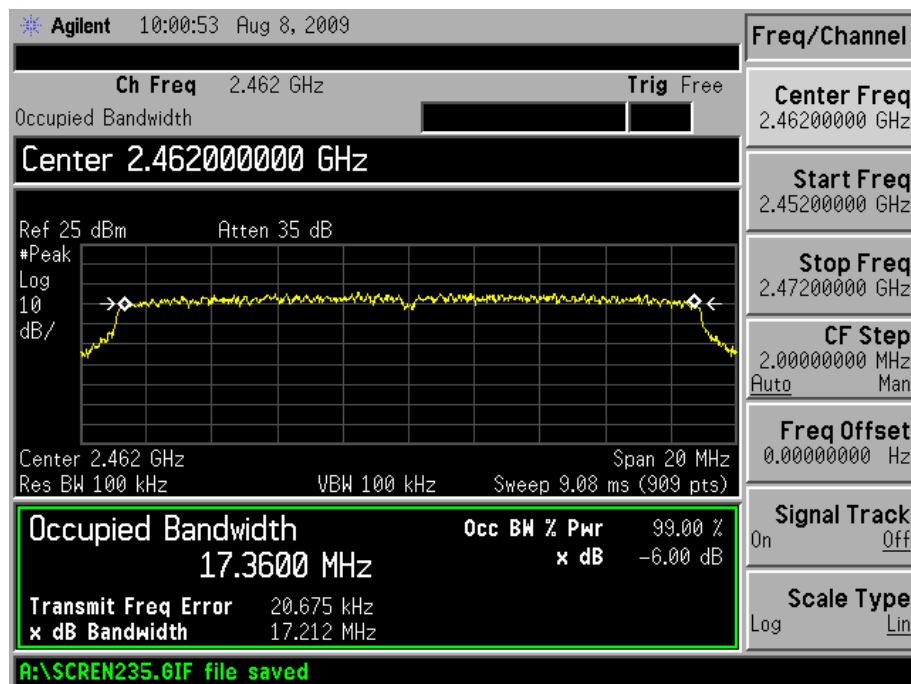
Low Channel:



Middle Channel:

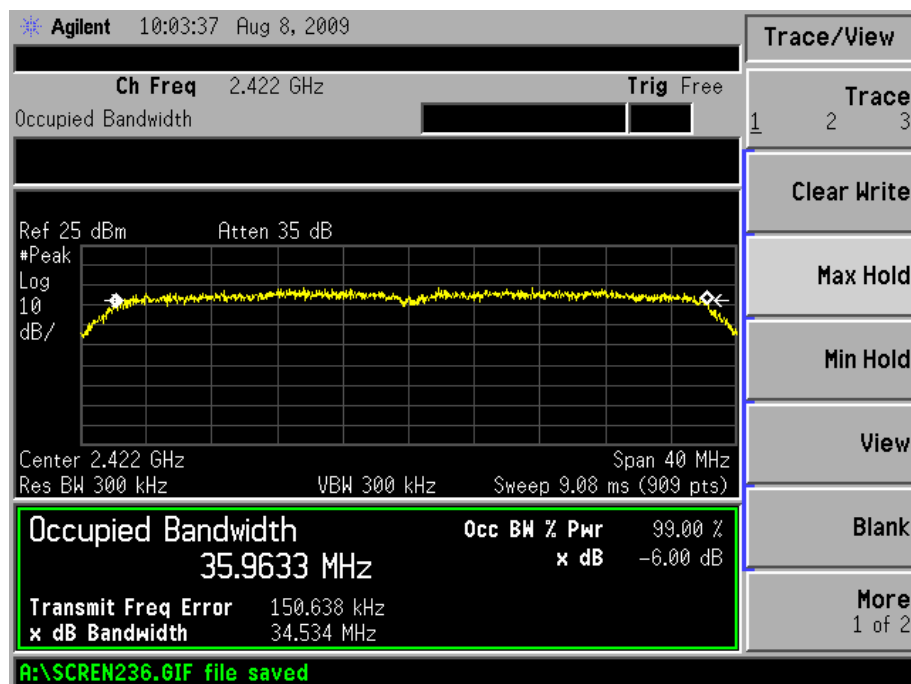


High Channel:

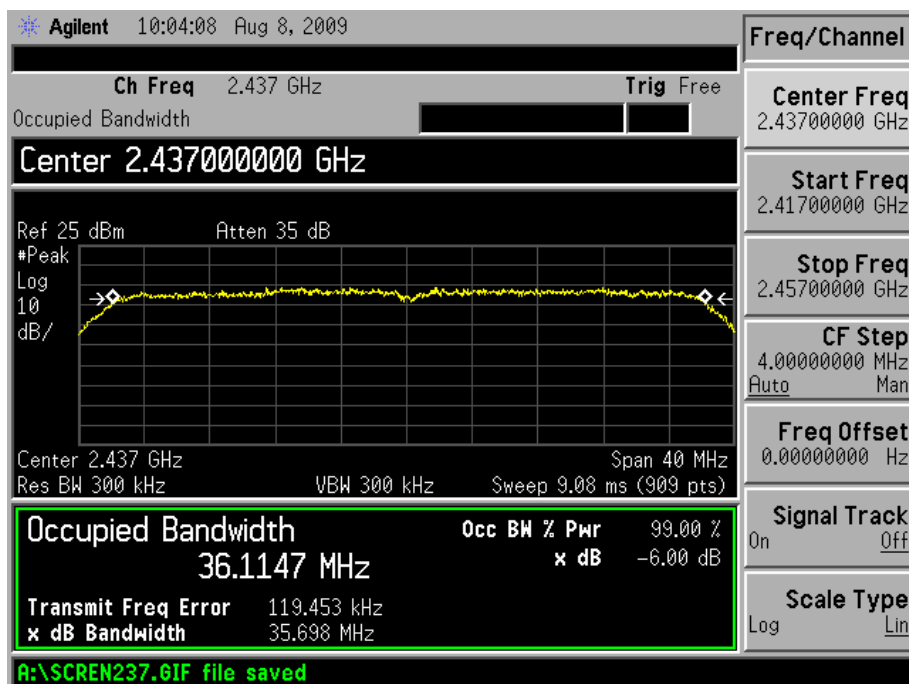


For 802.11n HT-40 (Chain0)

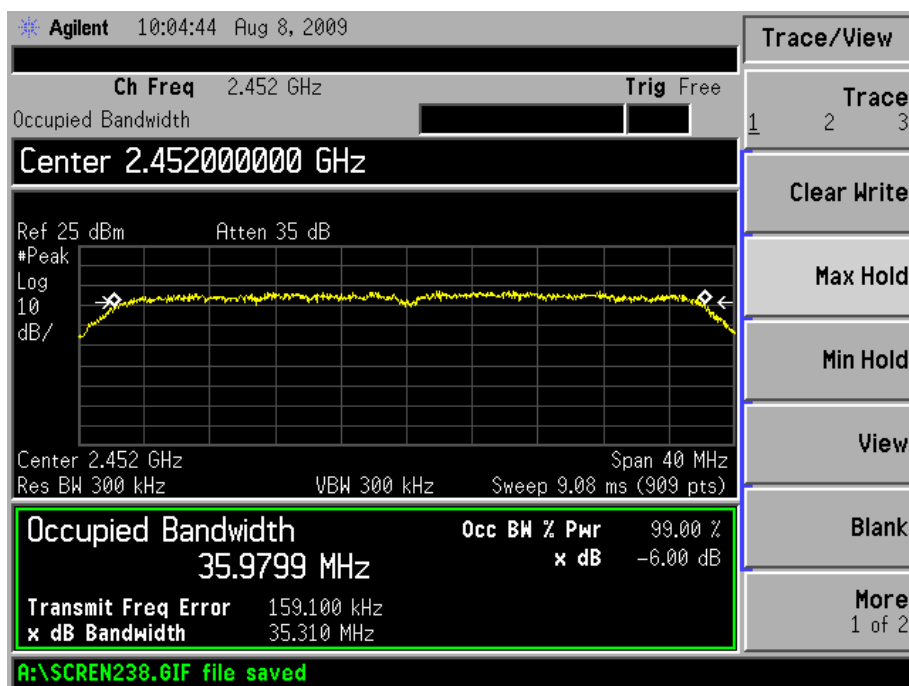
Low Channel:



Middle Channel:

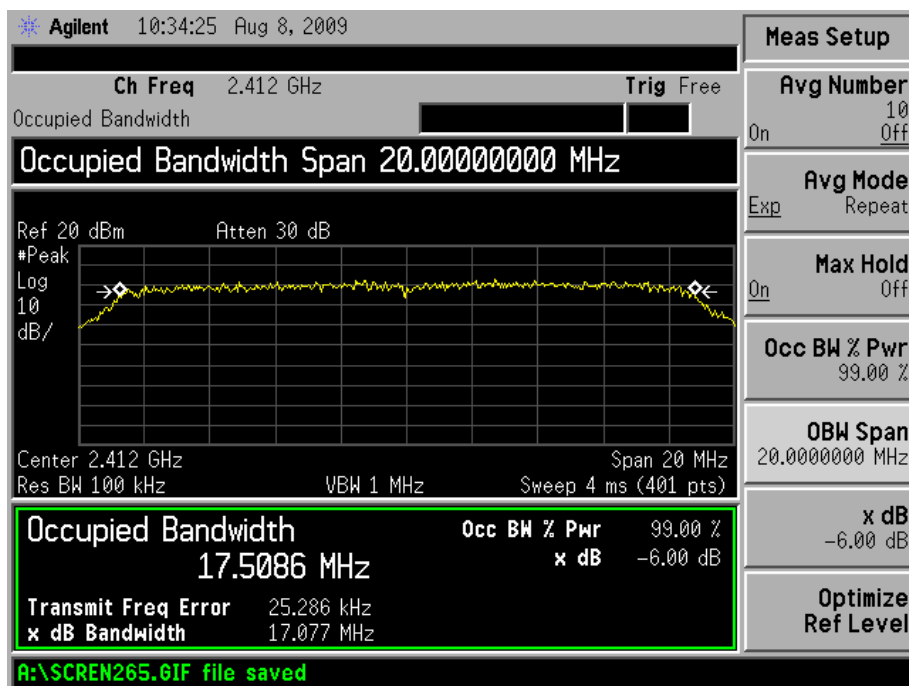


High Channel:

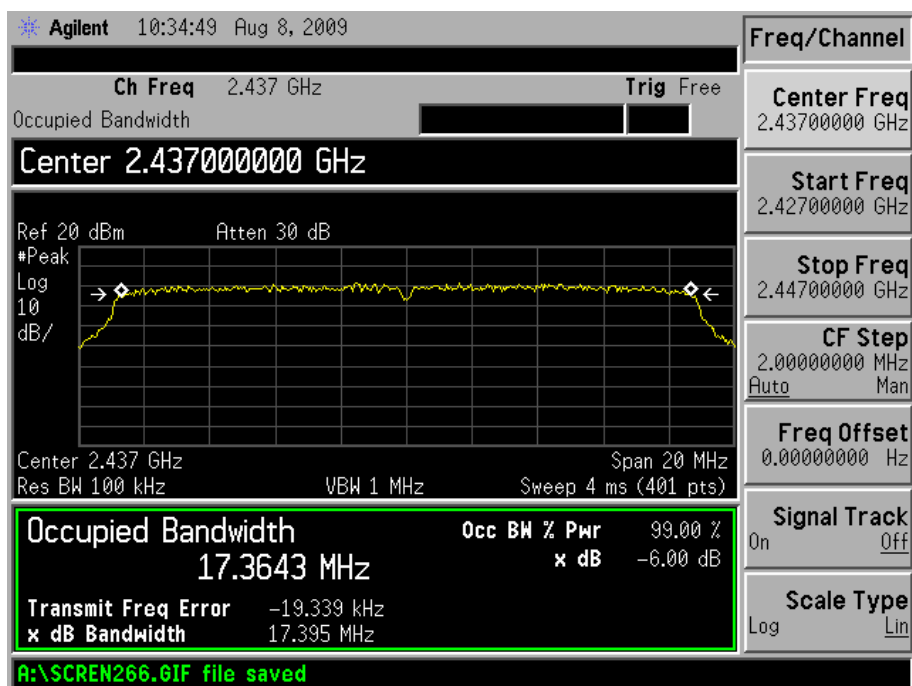


For 802.11g (Chain1)

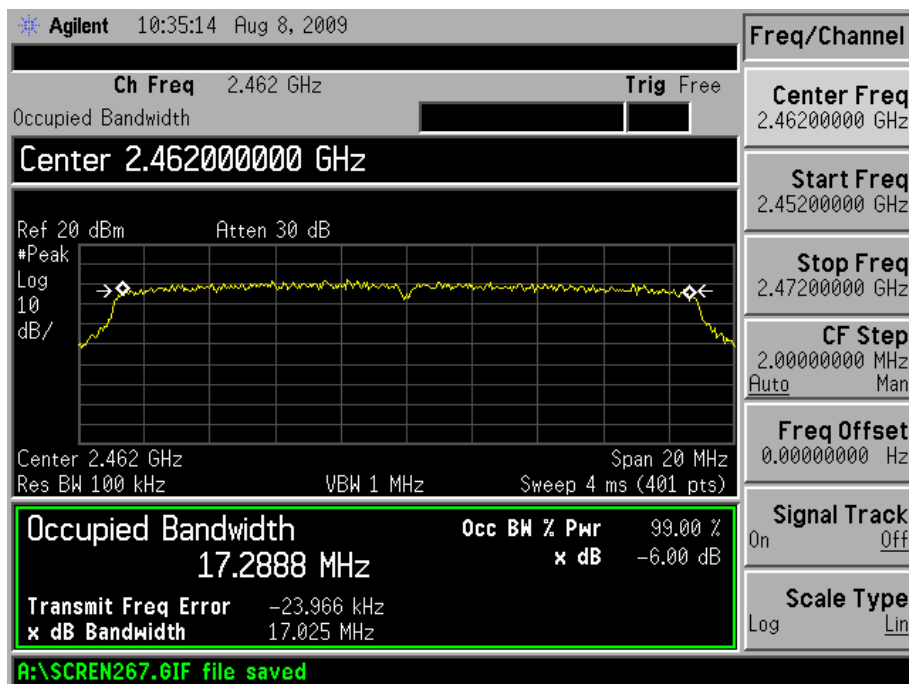
Low Channel:



Mid Channel:

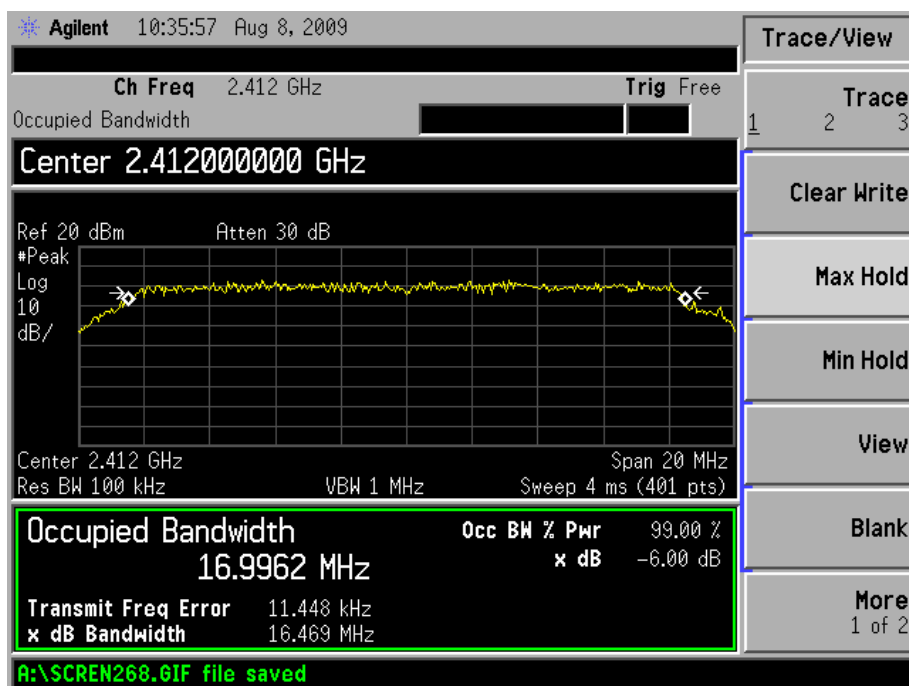


High Channel:

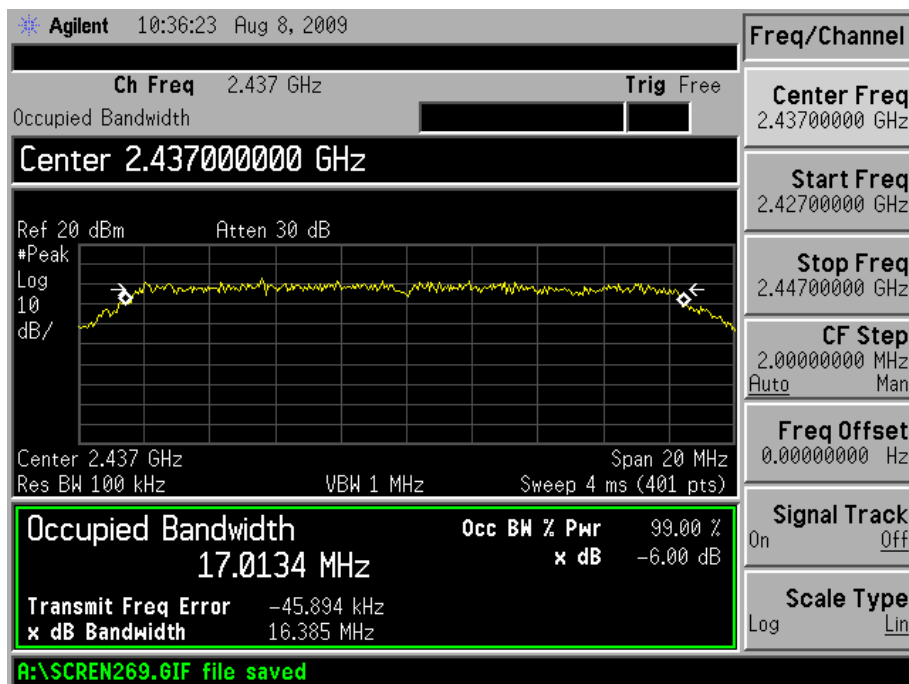


For 802.11n HT-20 (Chain1)

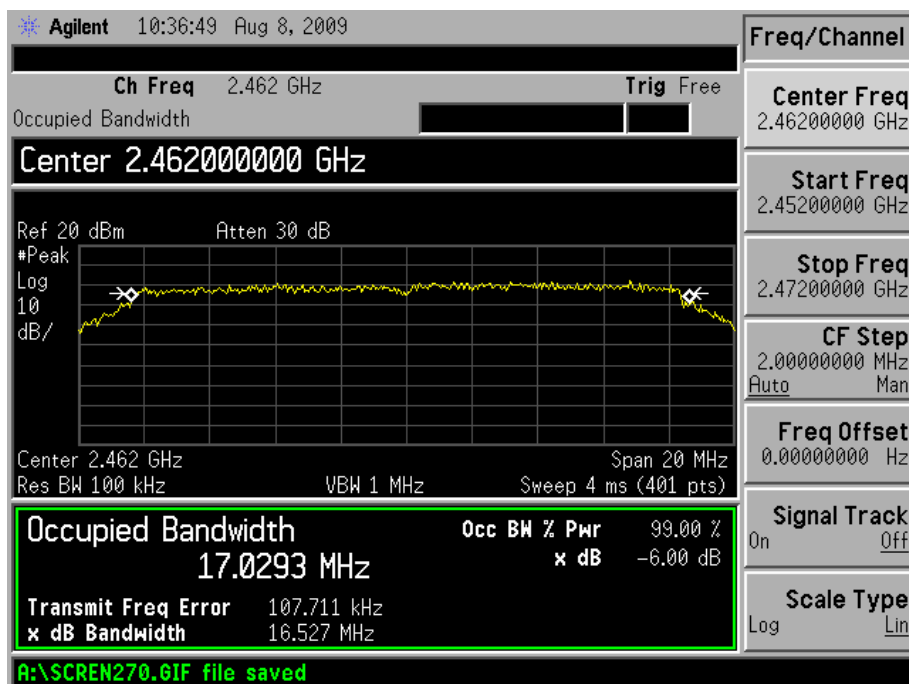
Low Channel:



Middle Channel:

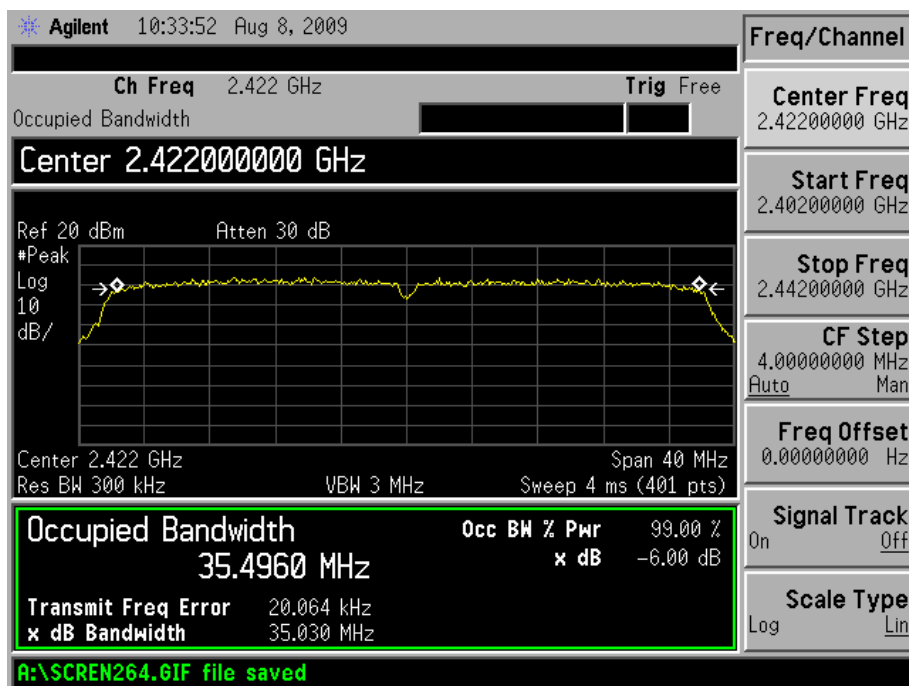


High Channel:

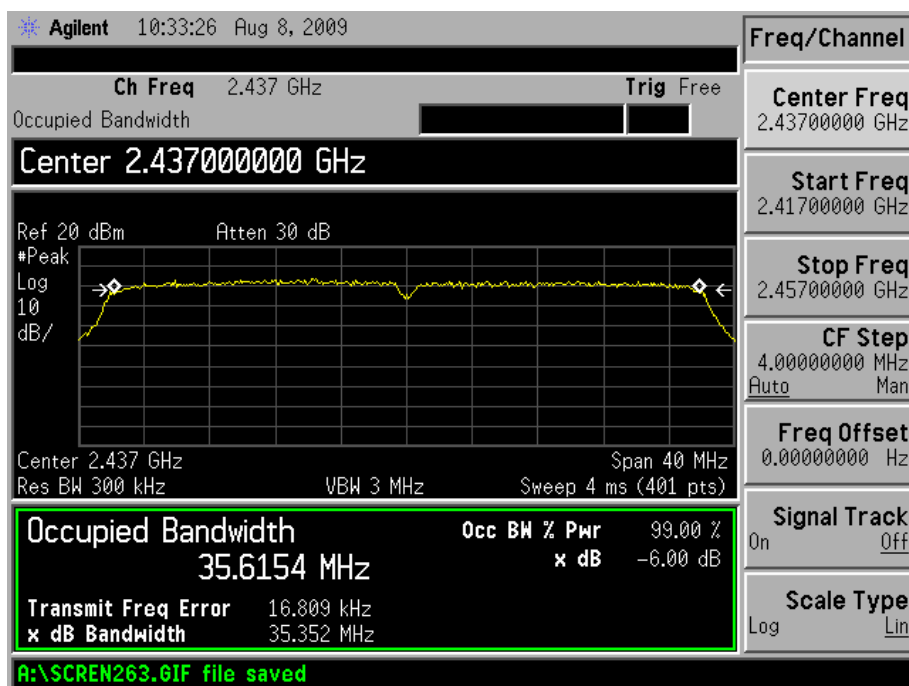


For 802.11n HT-40 (Chain1)

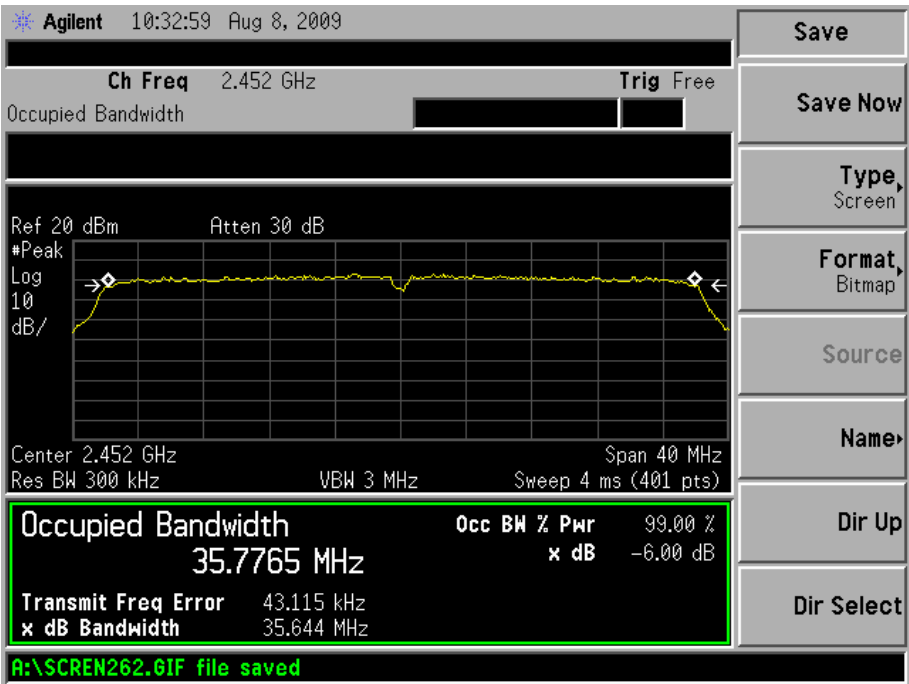
Low Channel:



Middle 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

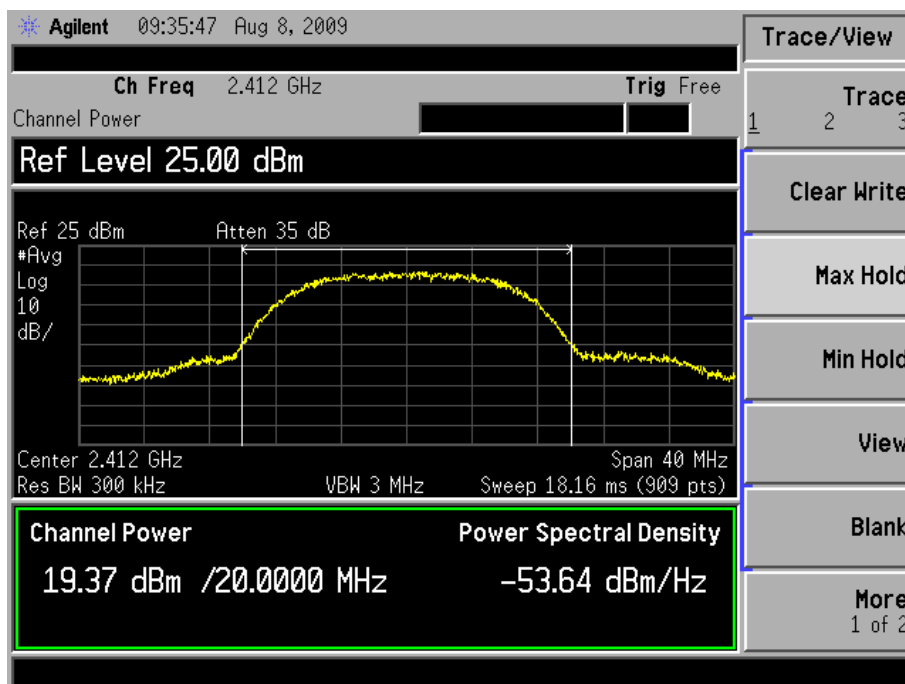
8.5 Summary of Test Results/Plots

Test mode	Frequency MHz	Reading(Chain0) dBm	Output power W	Reading(Chain1) dBm	Output power W	Limit W
802.11b	2412	19.37	0.08650	---	---	1
	2437	18.79	0.07568	---	---	1
	2462	18.91	0.07780	---	---	1
802.11g	2412	14.47	0.02799	15.42	0.03483	1
	2437	14.35	0.02723	14.81	0.03027	1
	2462	14.64	0.02911	14.71	0.02958	1
802.11n HT-20	2412	14.02	0.02523	15.04	0.03192	1
	2437	14.53	0.02838	14.81	0.03027	1
	2462	13.54	0.02259	14.18	0.02618	1
802.11n HT-40	2422	15.47	0.03524	15.47	0.03524	1
	2437	14.86	0.03062	13.79	0.02393	1
	2452	13.51	0.02244	14.02	0.02523	1

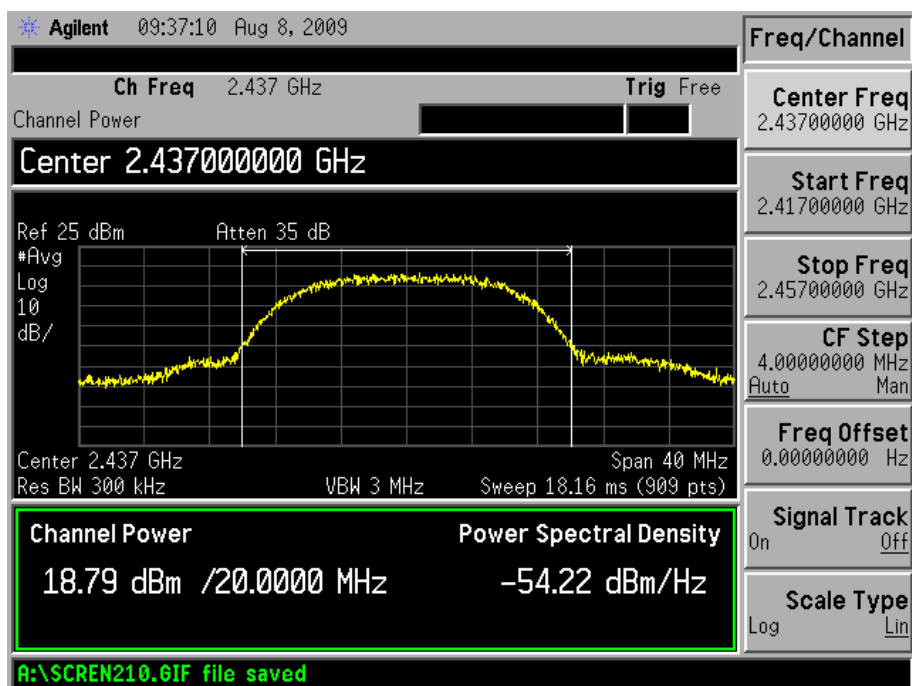
“---“ means that this test mode is no test data in the corresponding operating conditions.

For 802.11b(Chain0)

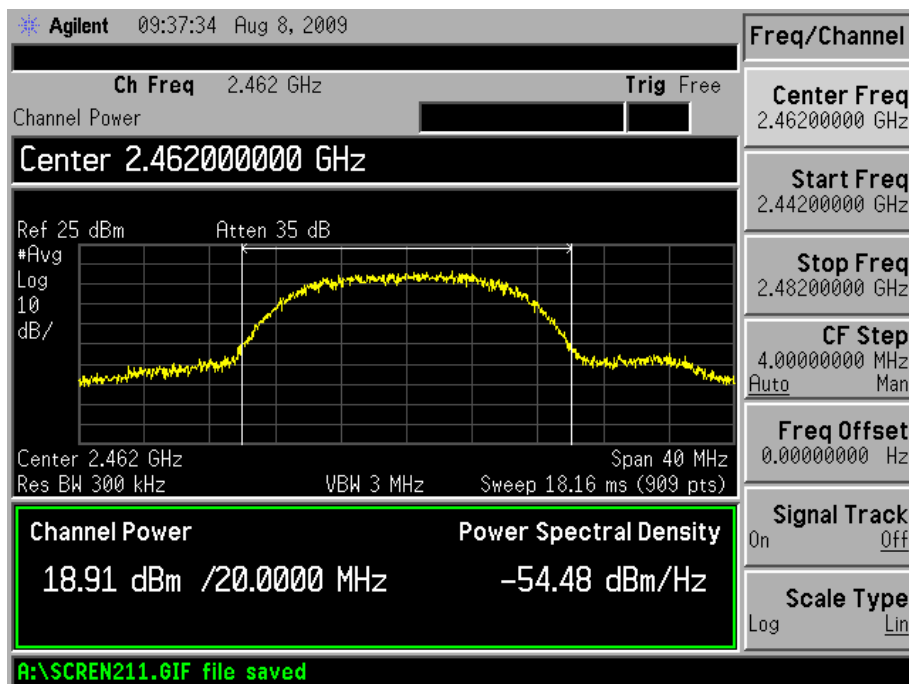
Low Channel:



Middle Channel:

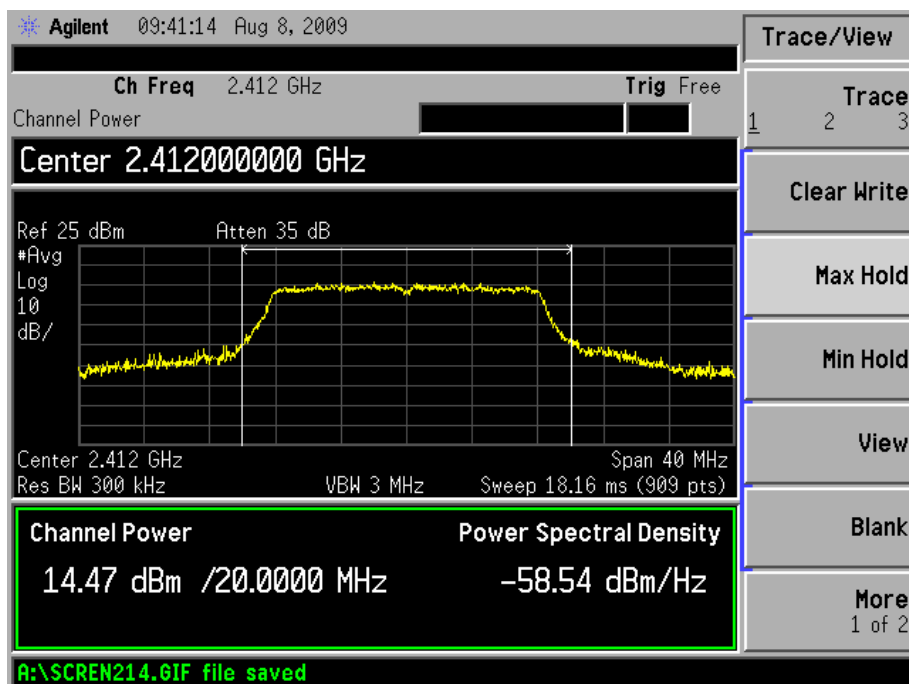


High Channel:

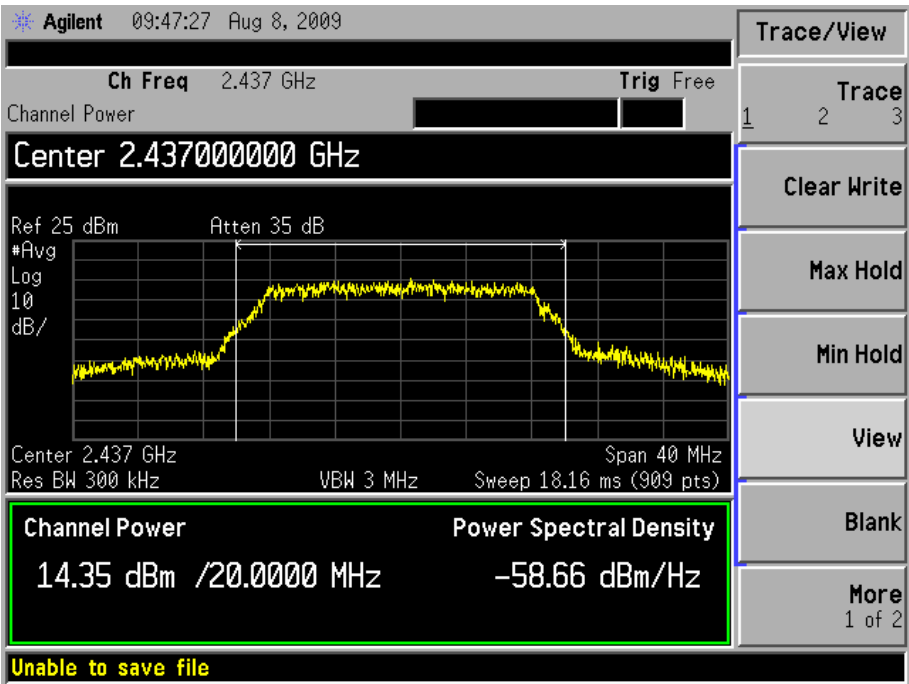


For 802.11g(Chain0)

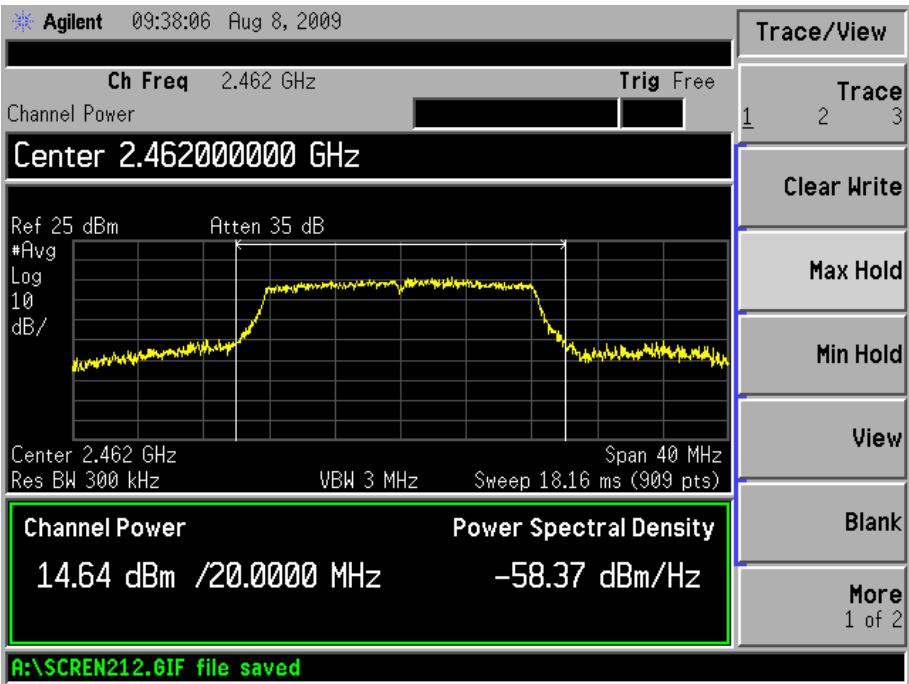
Low Channel:



Middle Channel:

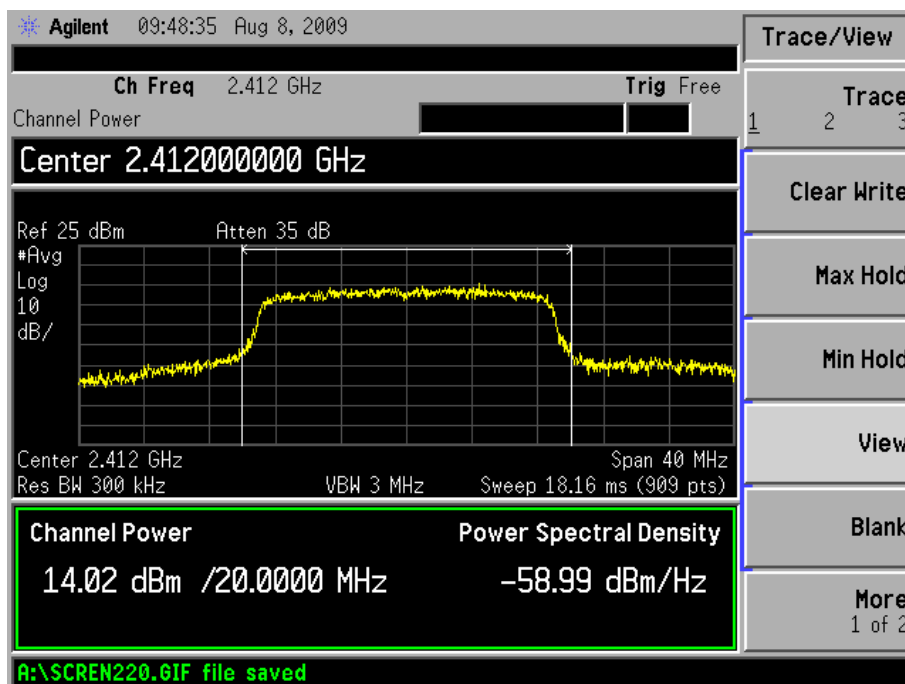


High Channel:

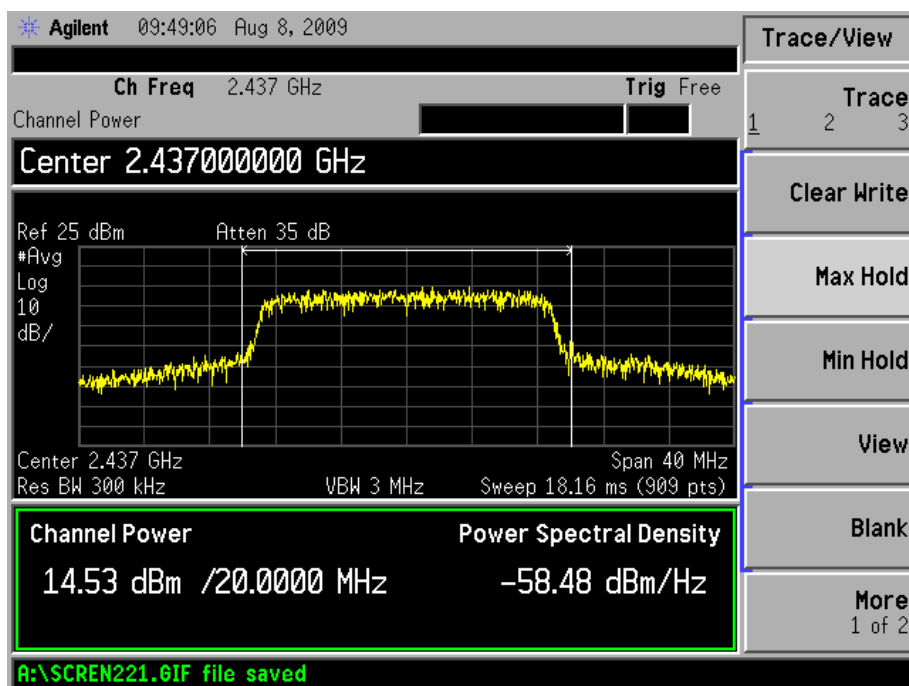


For 802.11n HT-20 (Chain0)

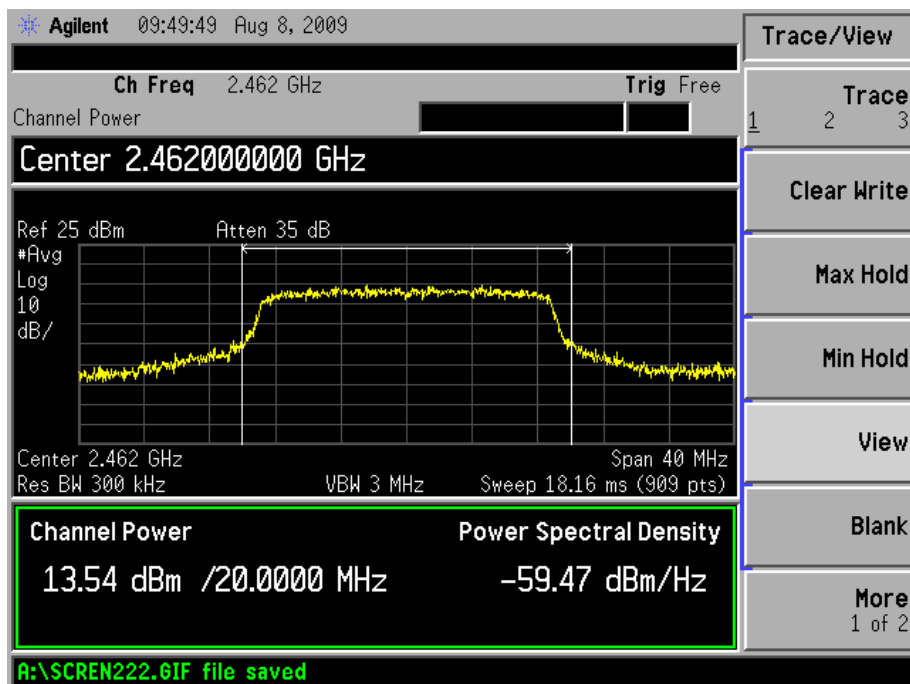
Low Channel:



Middle Channel:

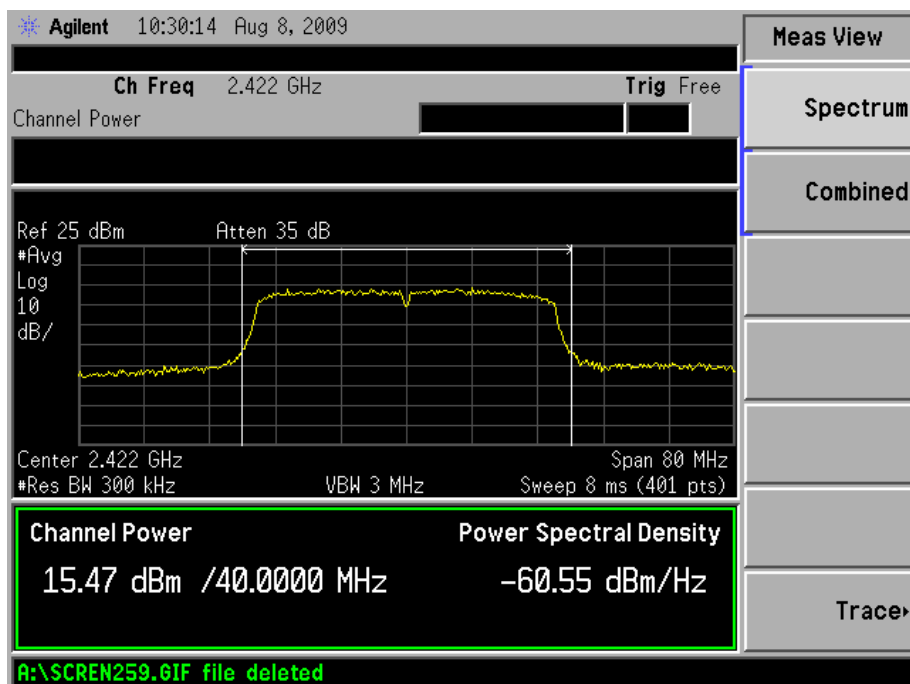


High Channel:

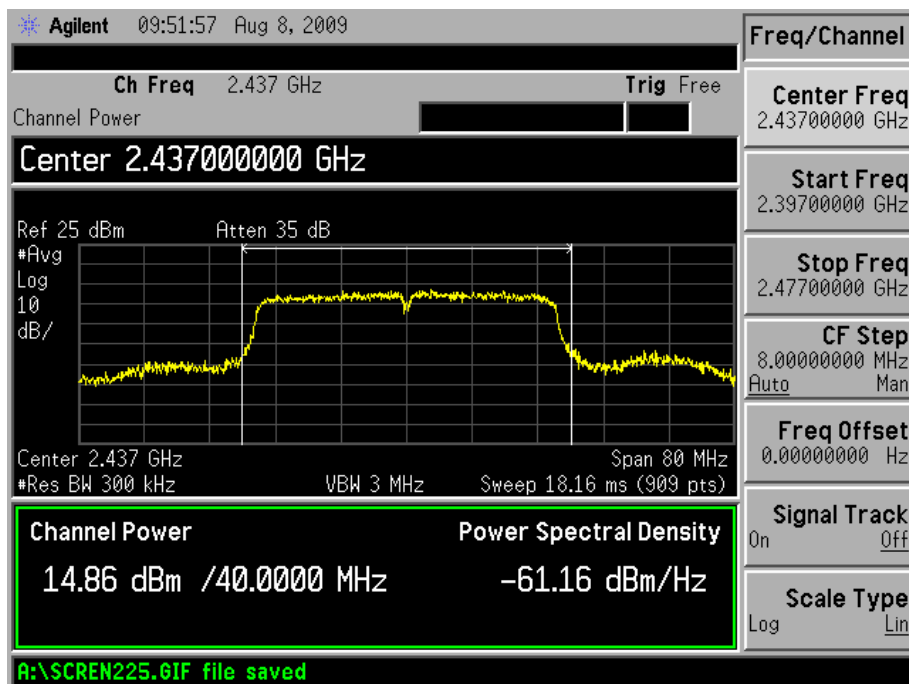


For 802.11n HT-40 (Chain0)

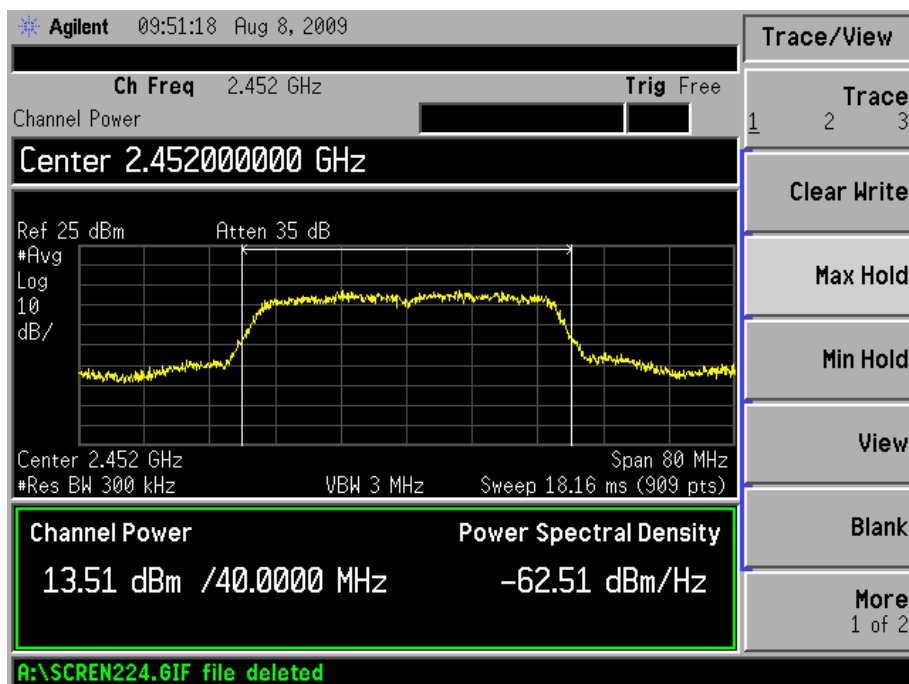
Low Channel:



Middle Channel:

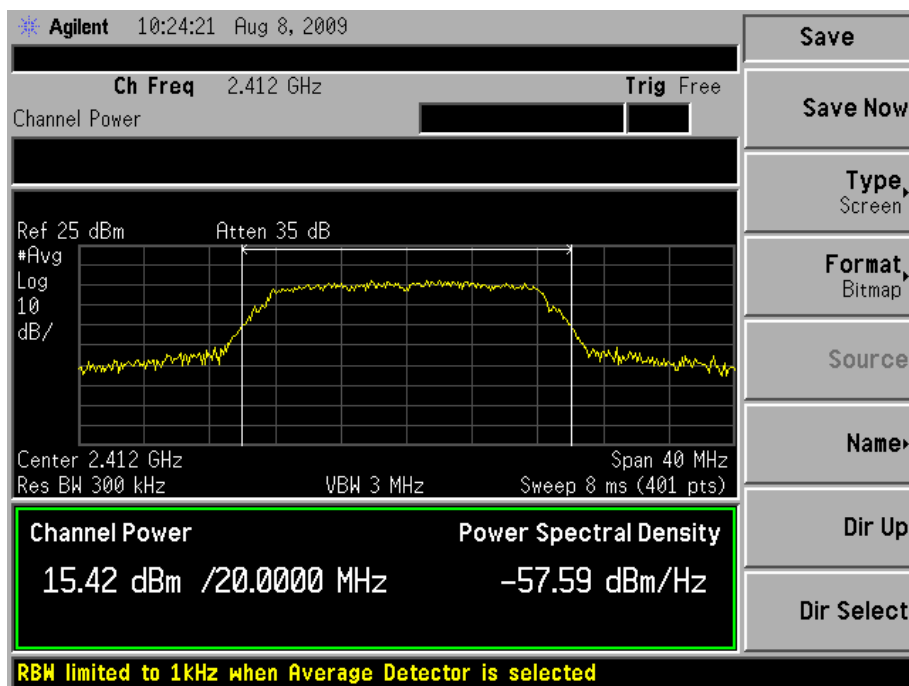


High Channel:

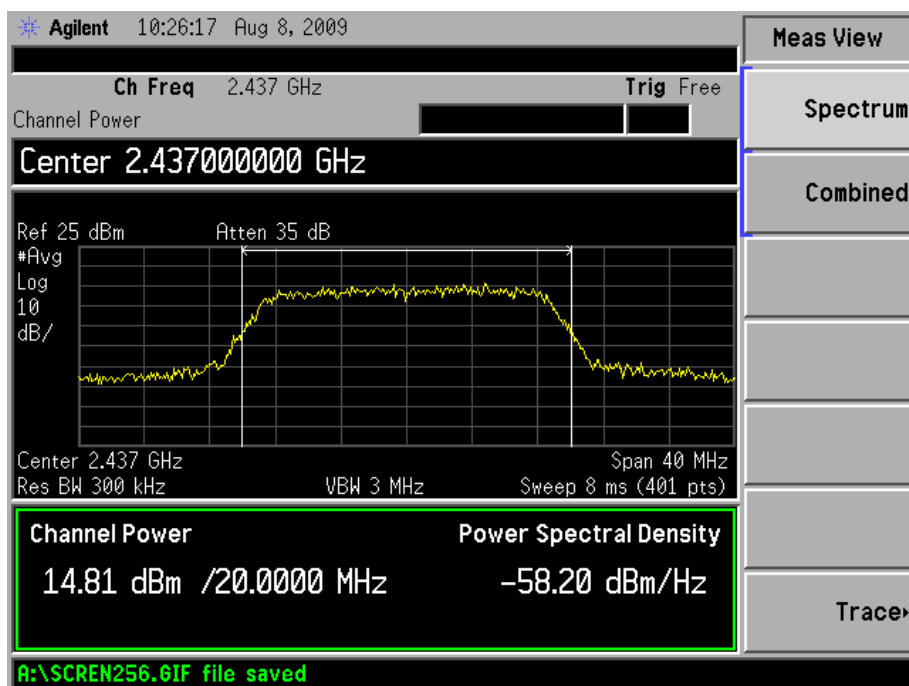


For 802.11g (Chain1)

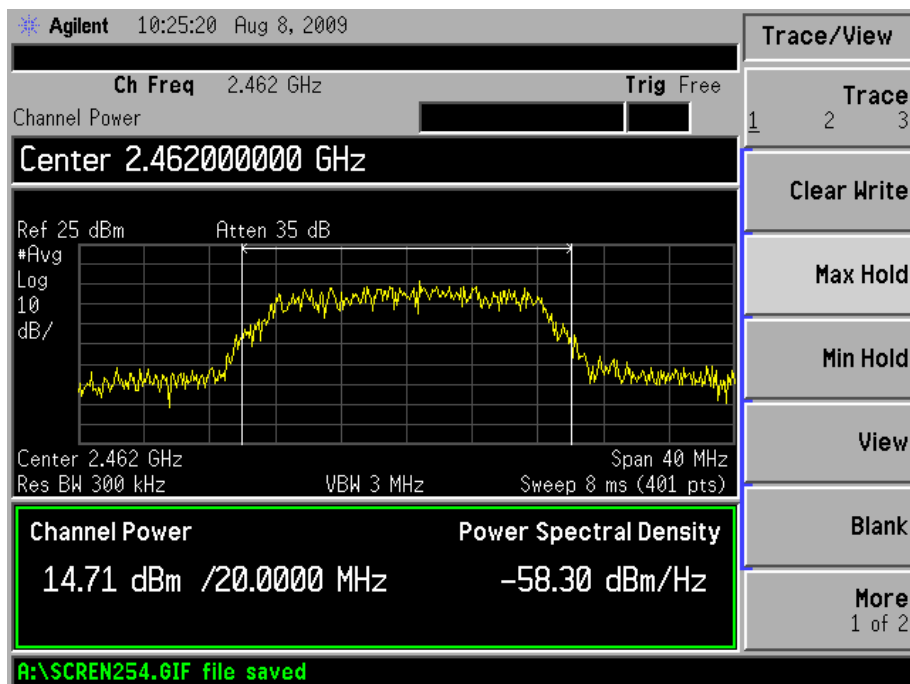
Low Channel:



Mid Channel:

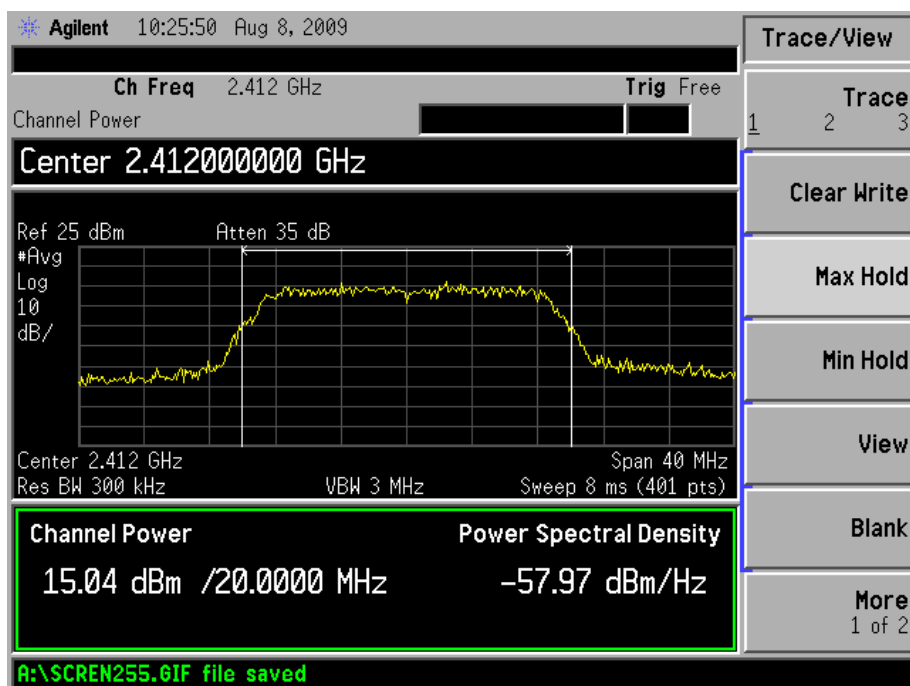


High Channel:

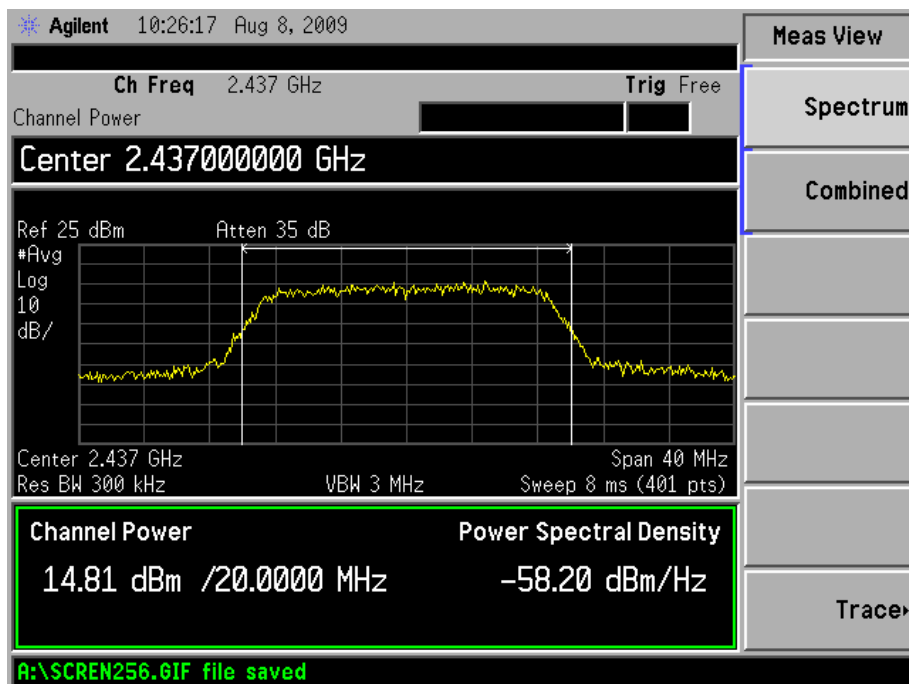


For 802.11n HT-20 (Chain1)

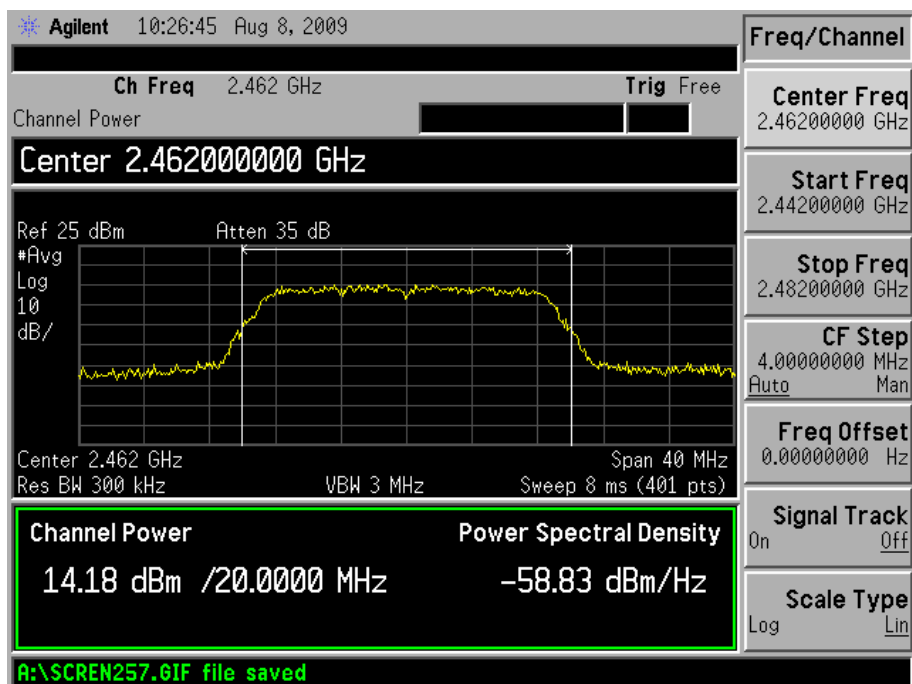
Low Channel:



Middle Channel:

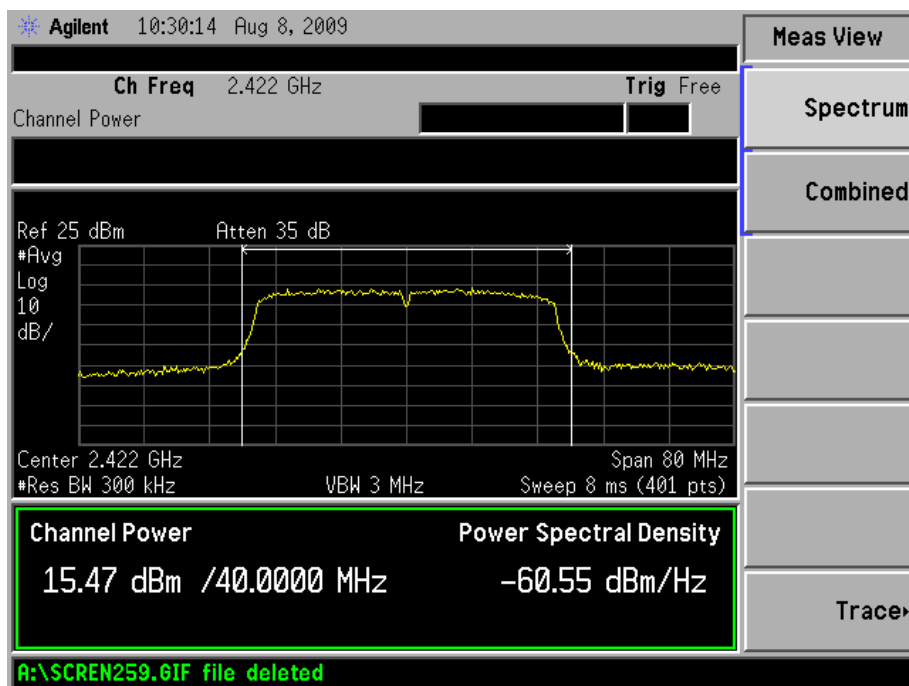


High Channel:

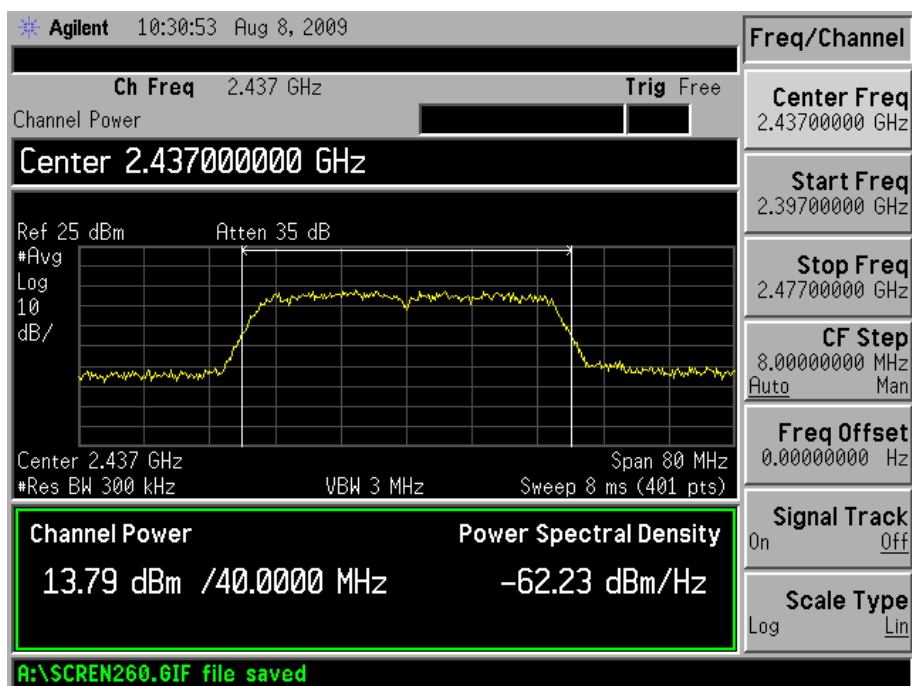


For 802.11n HT-40 (Chain1)

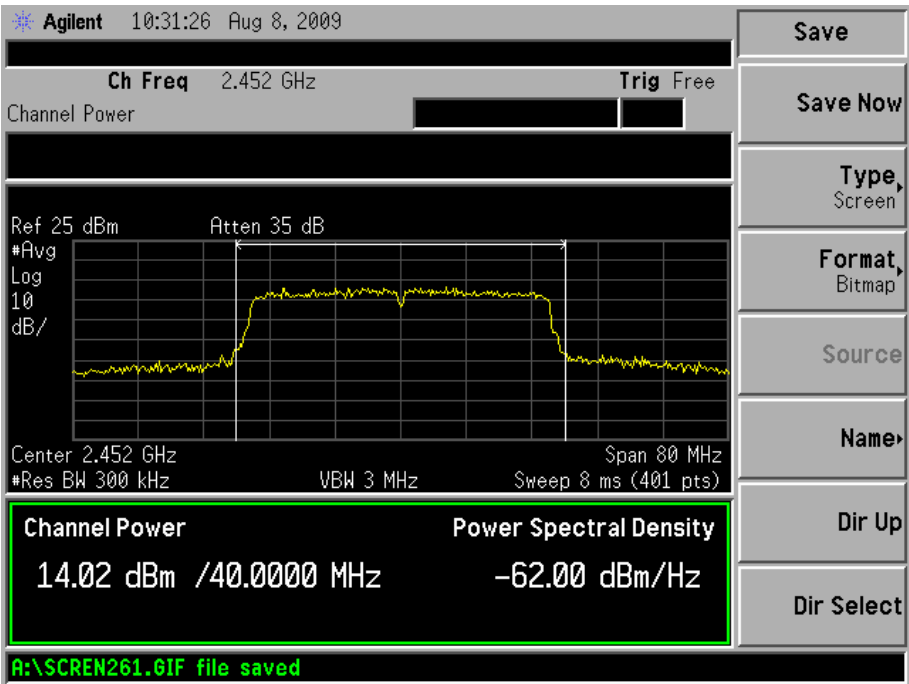
Low Channel:



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

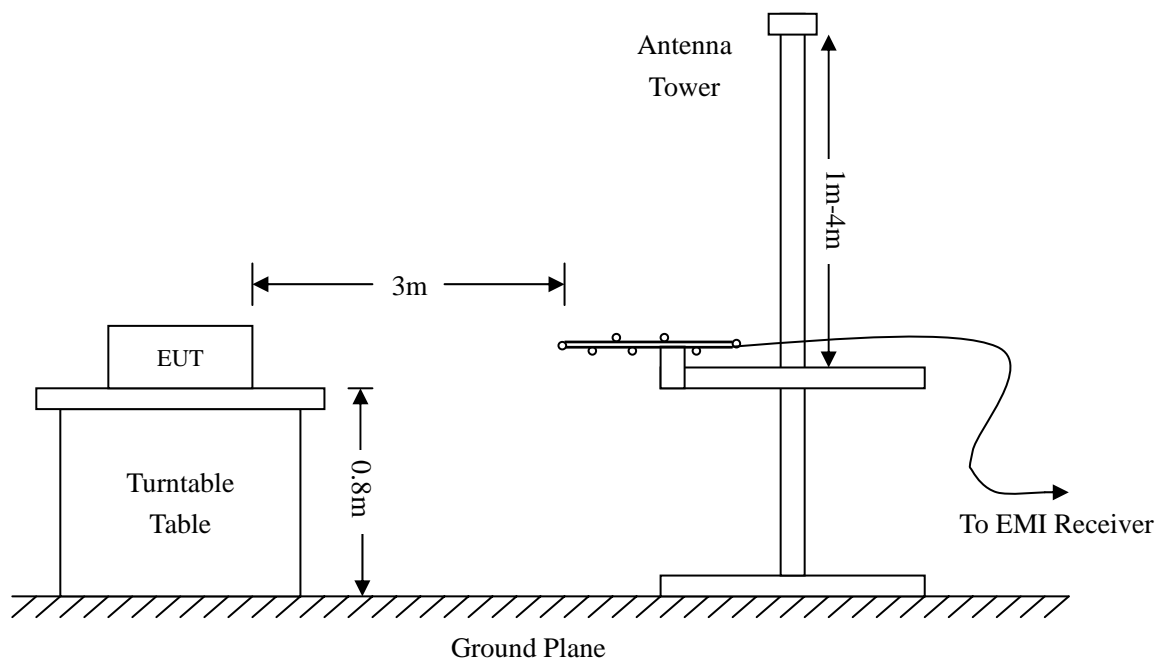
Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2009-07-08	2010-07-07
Positioning Controller	C&C	CC-C-1F	N/A	2009-07-08	2010-07-07
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2009-07-08	2010-07-07
Horn Antenna	SCHWARZBECK	BBHX 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.



9.5 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:

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

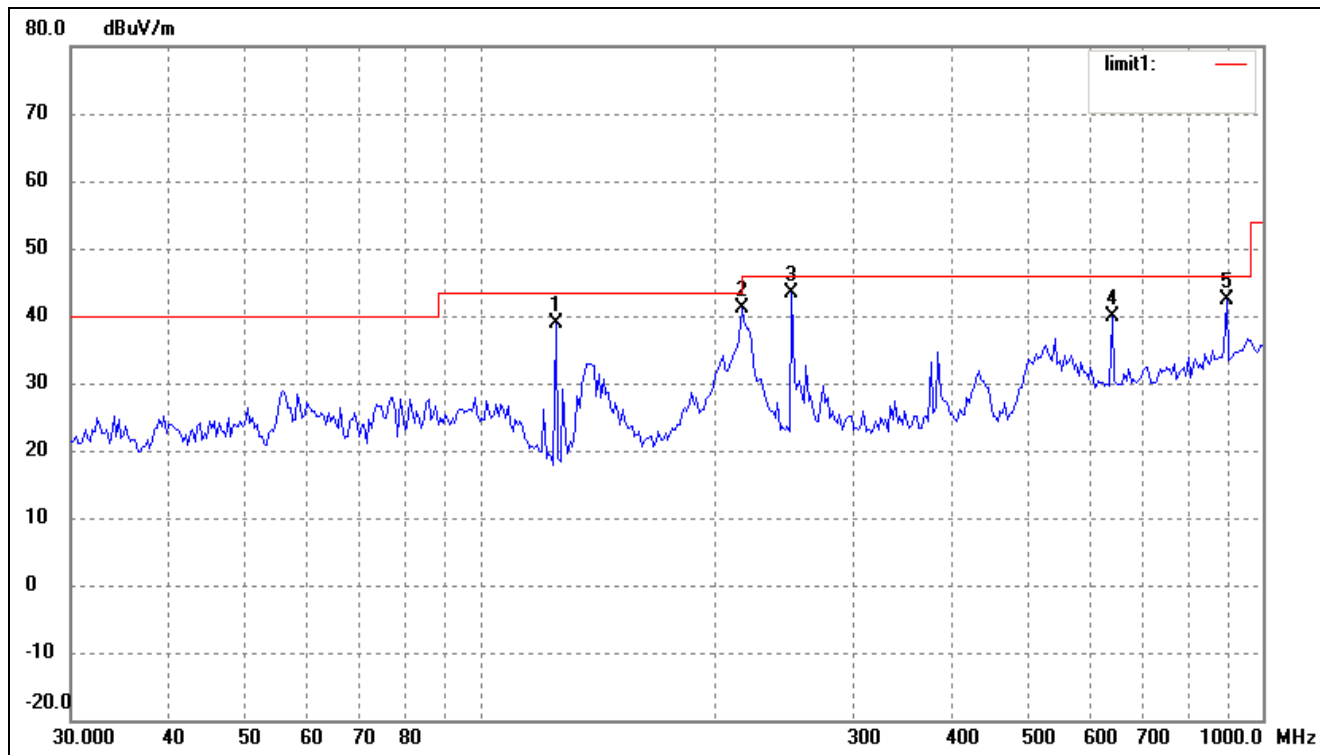
9.6 Environmental Conditions

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

9.7 Summary of Test Results/Plots

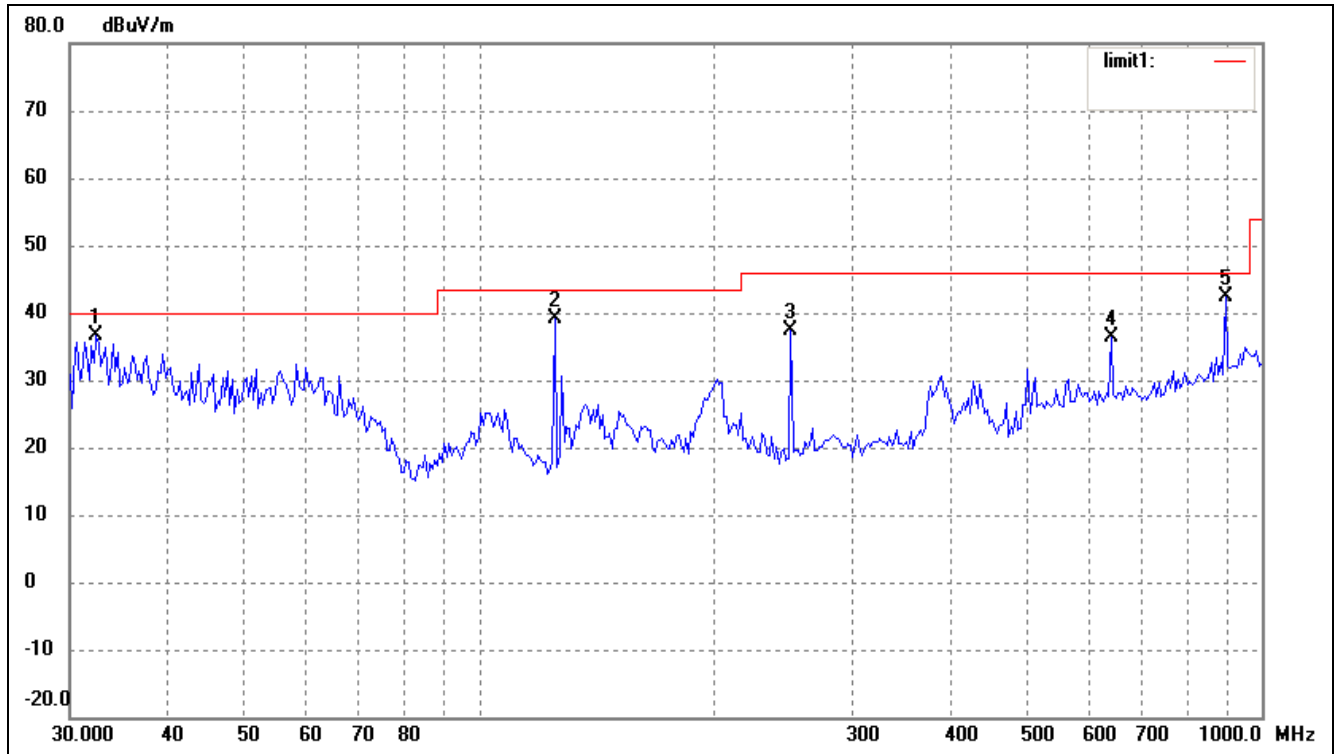
According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst margin of:

**-2.2 dBμV at 7386.0 MHz in the Vertical polarization, Transmitting 802.11b (HighChannel) test mode,
30 MHz to 25 GHz, 3Meters**

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

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	34.19	4.57	38.76	43.50	-4.74	45	103	QP
2	216.1197	34.91	6.21	41.12	46.00	-4.88	113	110	QP
3	250.4859	35.81	7.69	43.50	46.00	-2.50	223	120	QP
4	642.2923	24.64	15.31	39.95	46.00	-6.05	200	100	peak
5	899.9577	23.57	18.80	42.37	46.00	-3.63	103	100	QP

Vertical



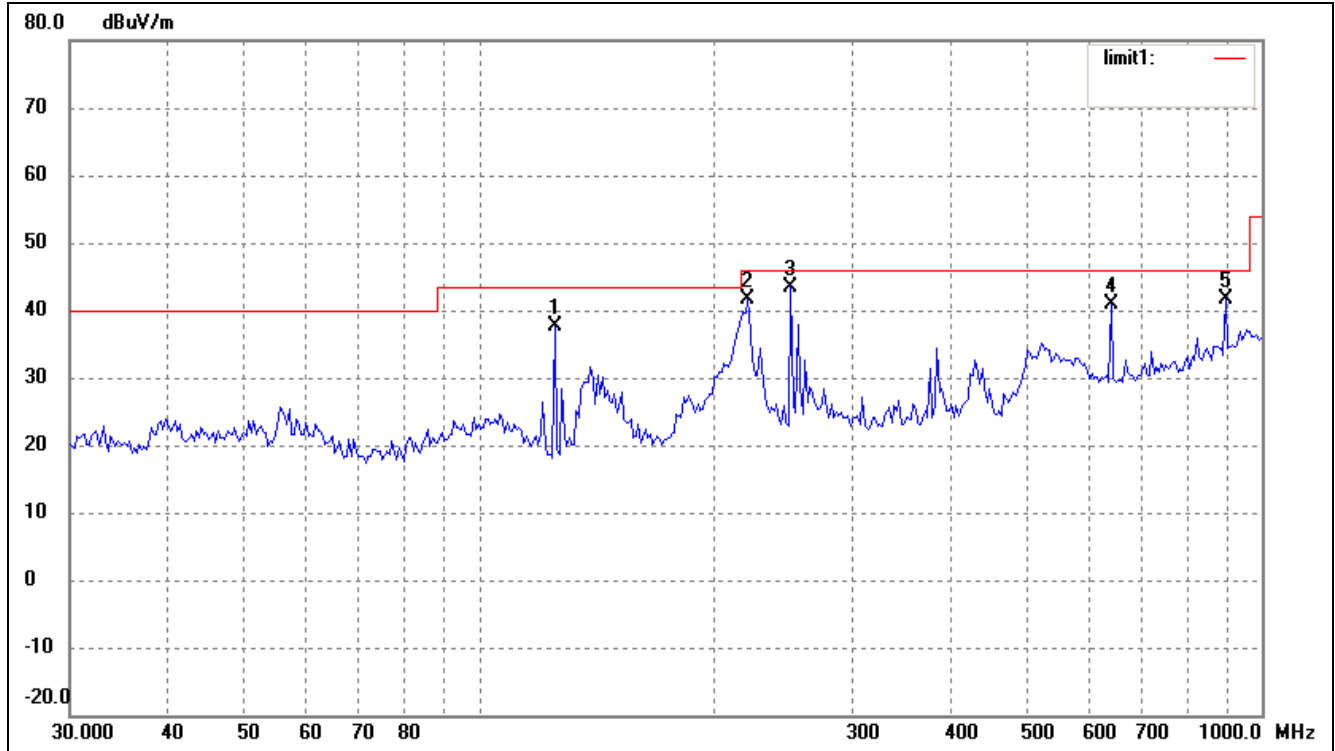
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	32.4109	29.93	6.62	36.55	40.00	-3.45	56	127	QP
2	124.9249	34.66	4.57	39.23	43.50	-4.27	221	100	QP
3	250.4859	29.76	7.69	37.45	46.00	-8.55	287	100	peak
4	642.2923	21.14	15.31	36.45	46.00	-9.55	224	100	peak
5	899.9577	23.60	18.80	42.40	46.00	-3.60	176	100	QP

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11b)

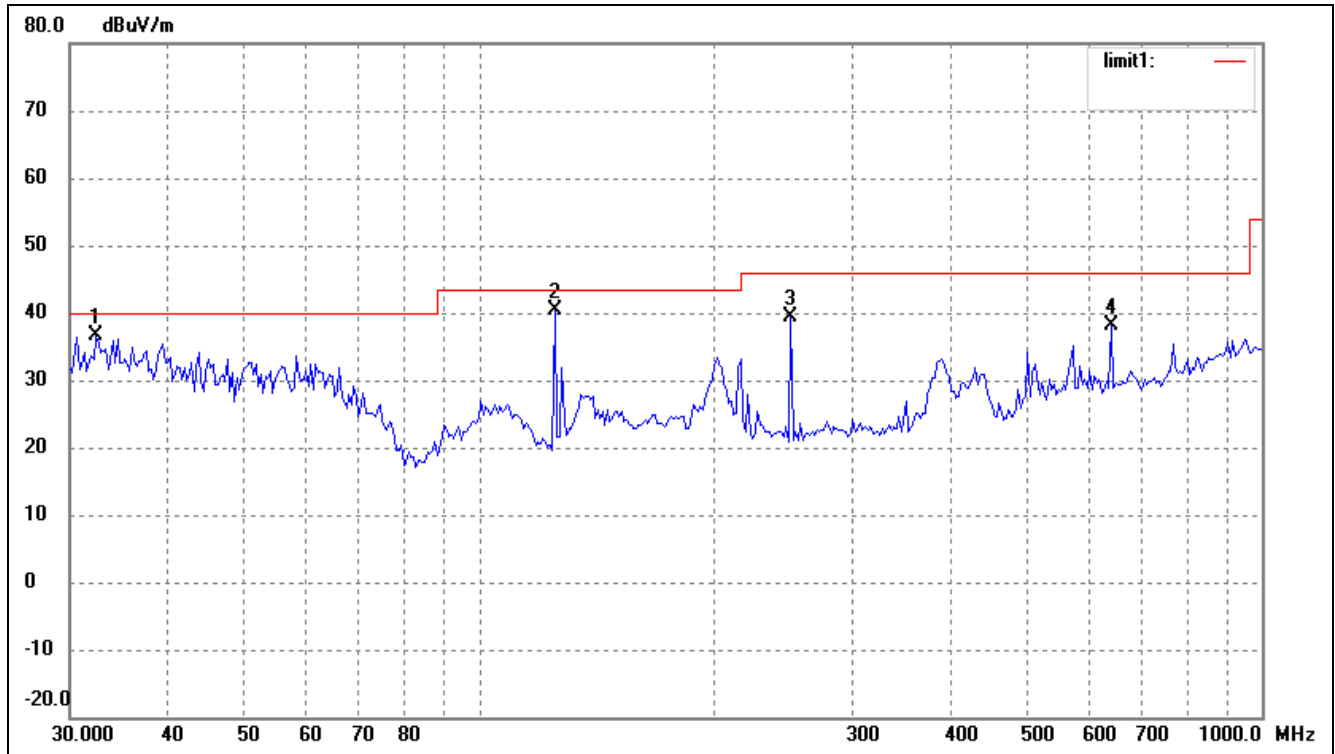
Comment: Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	33.13	4.57	37.70	43.50	-5.80	76	105	QP
2	220.7241	35.31	6.38	41.69	46.00	-4.31	229	100	QP
3	250.4859	35.81	7.69	43.50	46.00	-2.50	192	110	QP
4	642.2923	25.45	15.31	40.76	46.00	-5.24	159	100	QP
5	899.9577	22.89	18.80	41.69	46.00	-4.31	351	125	QP

Vertical



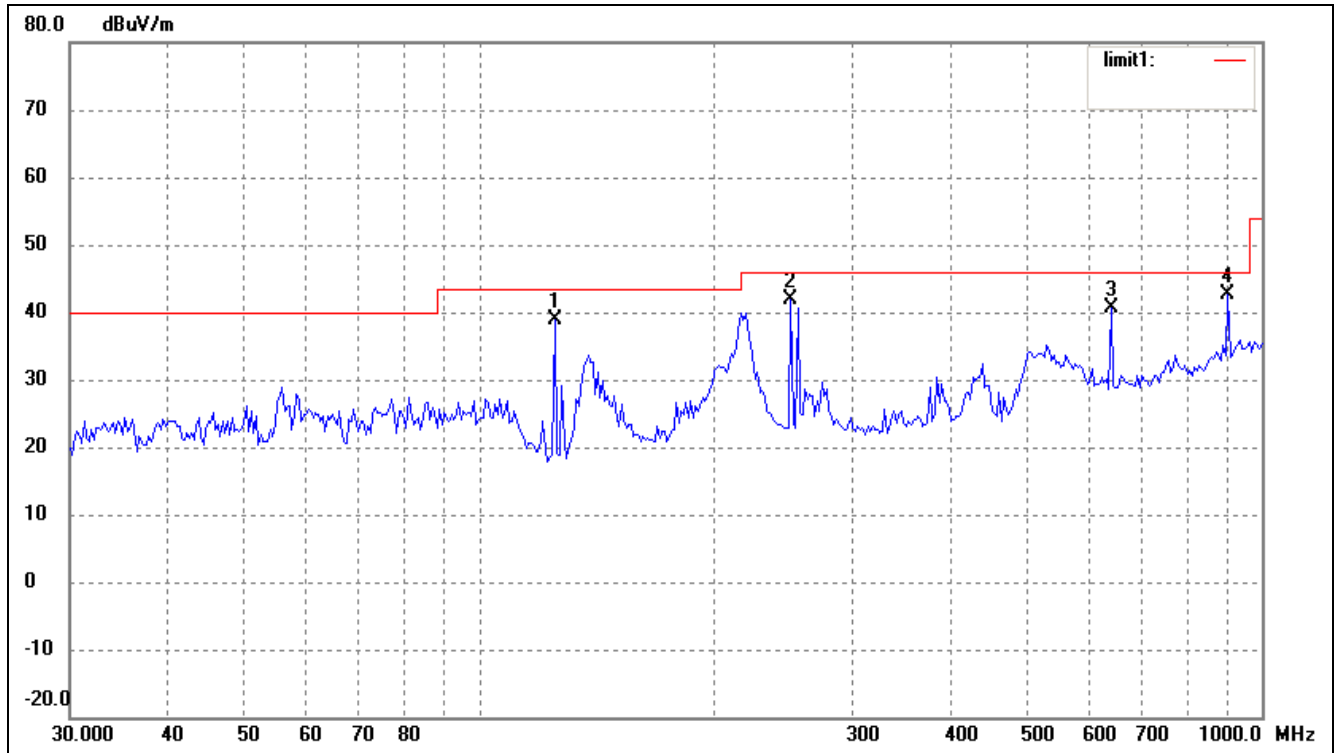
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	32.4109	29.99	6.62	36.61	40.00	-3.39	110	115	QP
2	124.9249	35.70	4.57	40.27	43.50	-3.23	283	100	QP
3	250.4859	31.76	7.69	39.45	46.00	-6.55	10	100	peak
4	642.2923	22.71	15.31	38.02	46.00	-7.98	102	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11b)

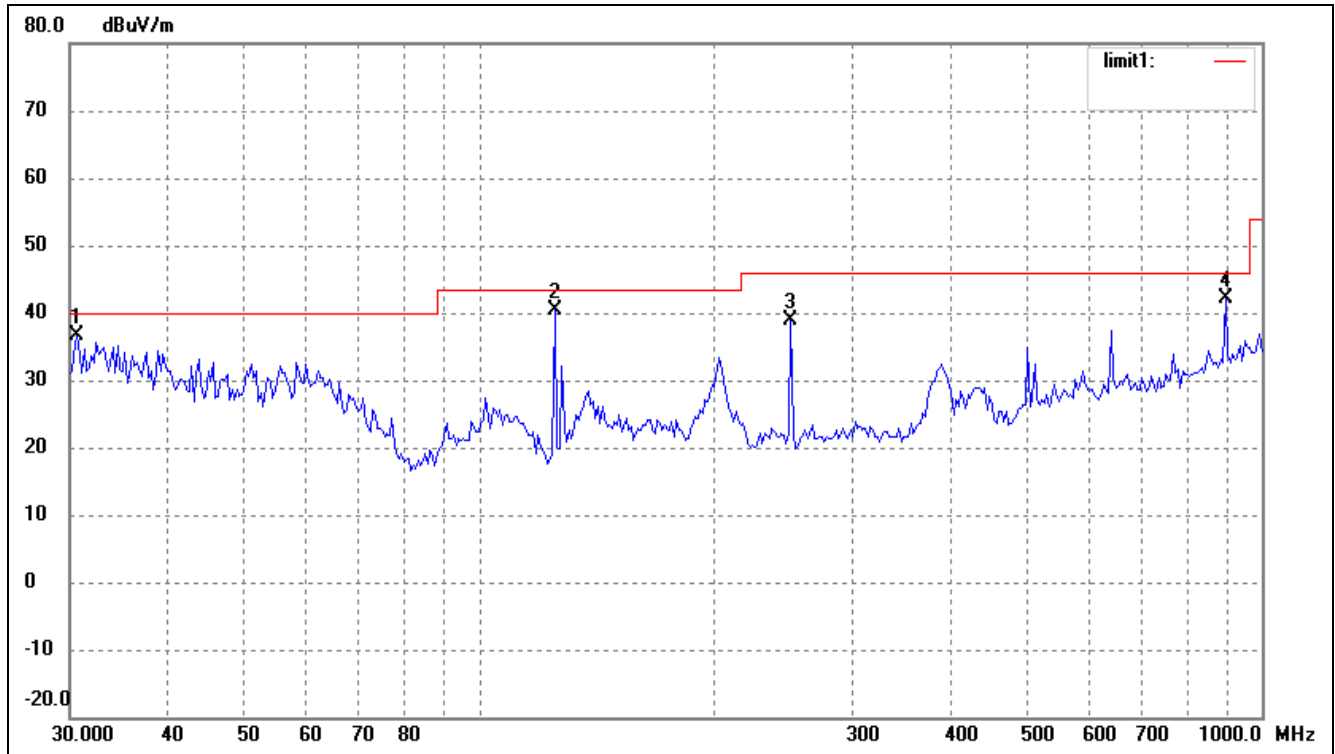
Comment: High Channel

Horizontal

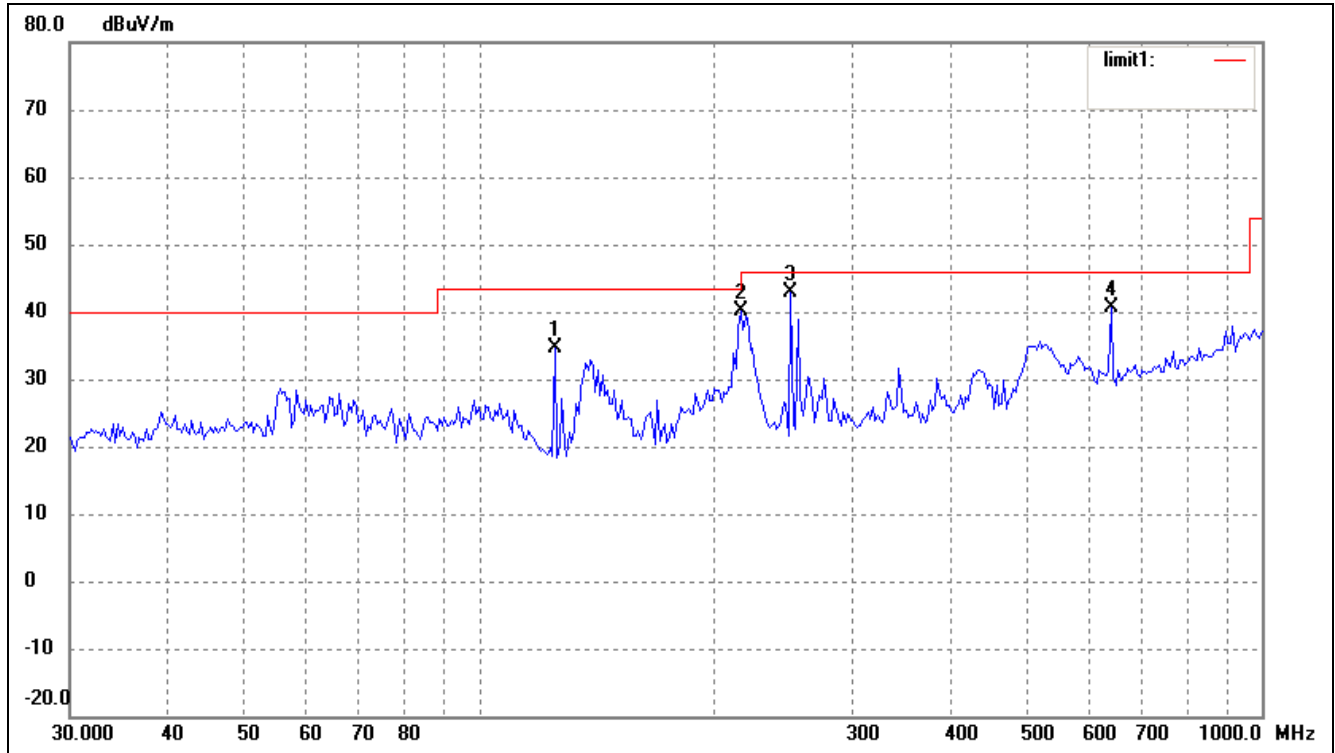


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	34.36	4.57	38.93	43.50	-4.57	46	100	QP
2	250.4859	34.18	7.69	41.87	46.00	-4.13	194	100	QP
3	642.2923	25.27	15.31	40.58	46.00	-5.42	253	108	QP
4	906.3040	23.83	18.90	42.73	46.00	-3.27	90	100	QP

Vertical

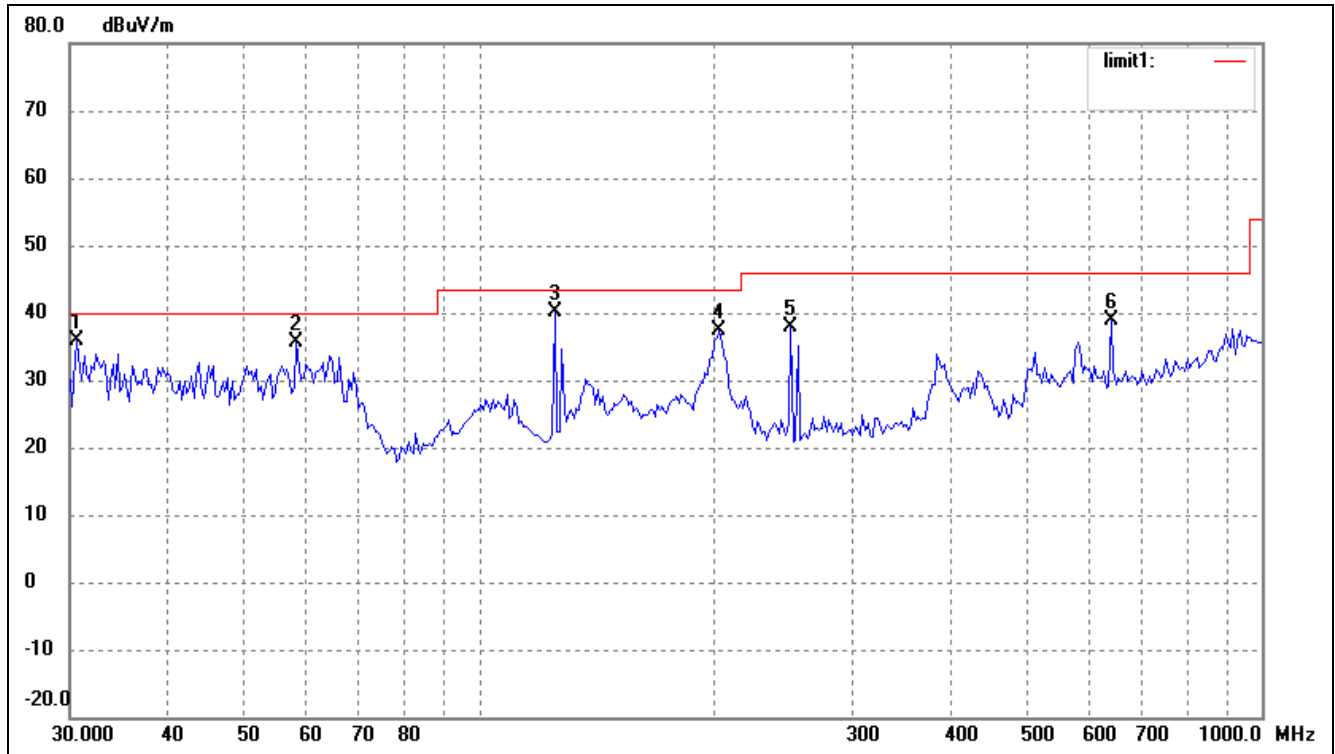


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	30.6392	30.04	6.63	36.67	40.00	-3.33	74	100	QP
2	124.9249	35.70	4.57	40.27	43.50	-3.23	231	105	QP
3	250.4859	31.27	7.69	38.96	46.00	-7.04	146	100	peak
4	899.9577	23.30	18.80	42.10	46.00	-3.90	83	100	QP

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

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	29.94	4.57	34.51	43.50	-8.99	64	100	peak
2	216.1197	33.92	6.21	40.13	46.00	-5.87	240	100	QP
3	250.4859	35.22	7.69	42.91	46.00	-3.09	63	119	QP
4	642.2923	25.26	15.31	40.57	46.00	-5.43	228	106	QP

Vertical



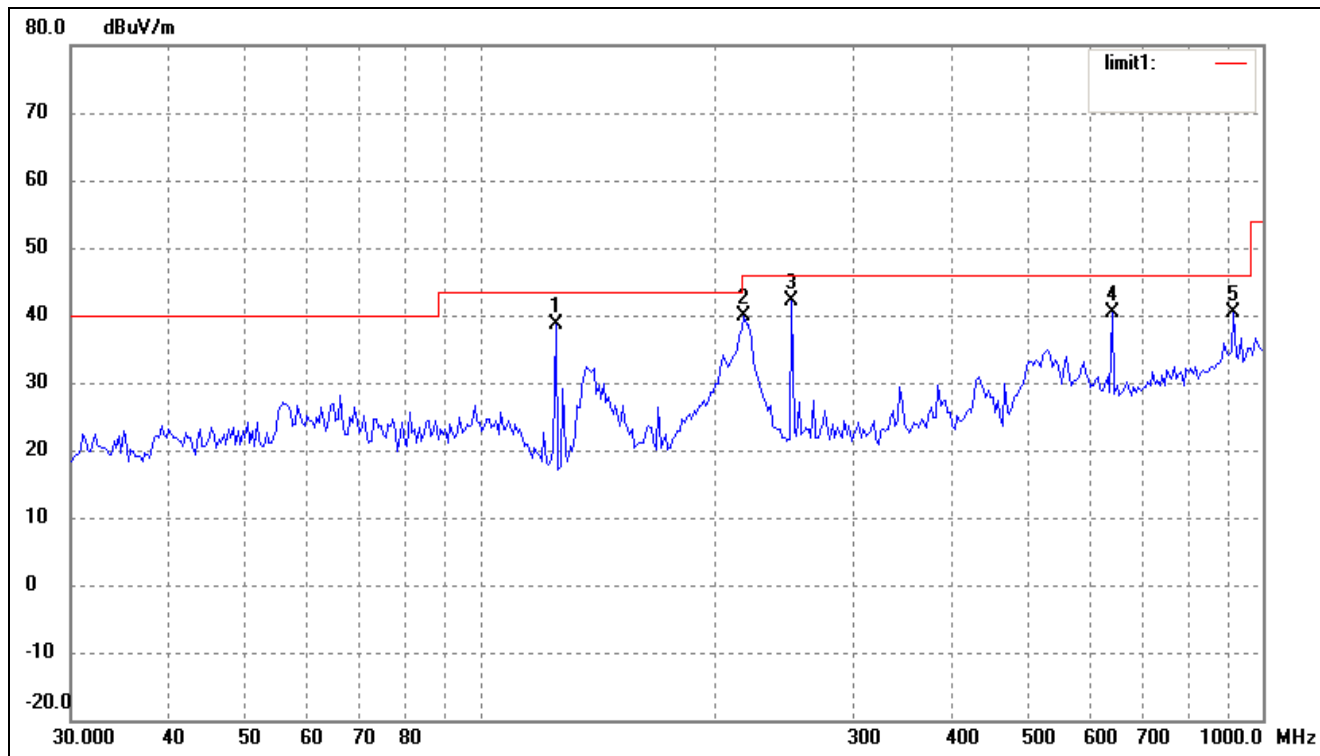
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	30.6392	29.22	6.63	35.85	40.00	-4.15	65	110	QP
2	58.4855	28.44	7.27	35.71	40.00	-4.29	312	104	QP
3	124.9249	35.56	4.57	40.13	43.50	-3.37	94	100	QP
4	202.8745	31.66	5.77	37.43	43.50	-6.07	125	100	peak
5	250.4859	30.21	7.69	37.90	46.00	-8.10	89	100	peak
6	642.2923	23.68	15.31	38.99	46.00	-7.01	226	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11g)

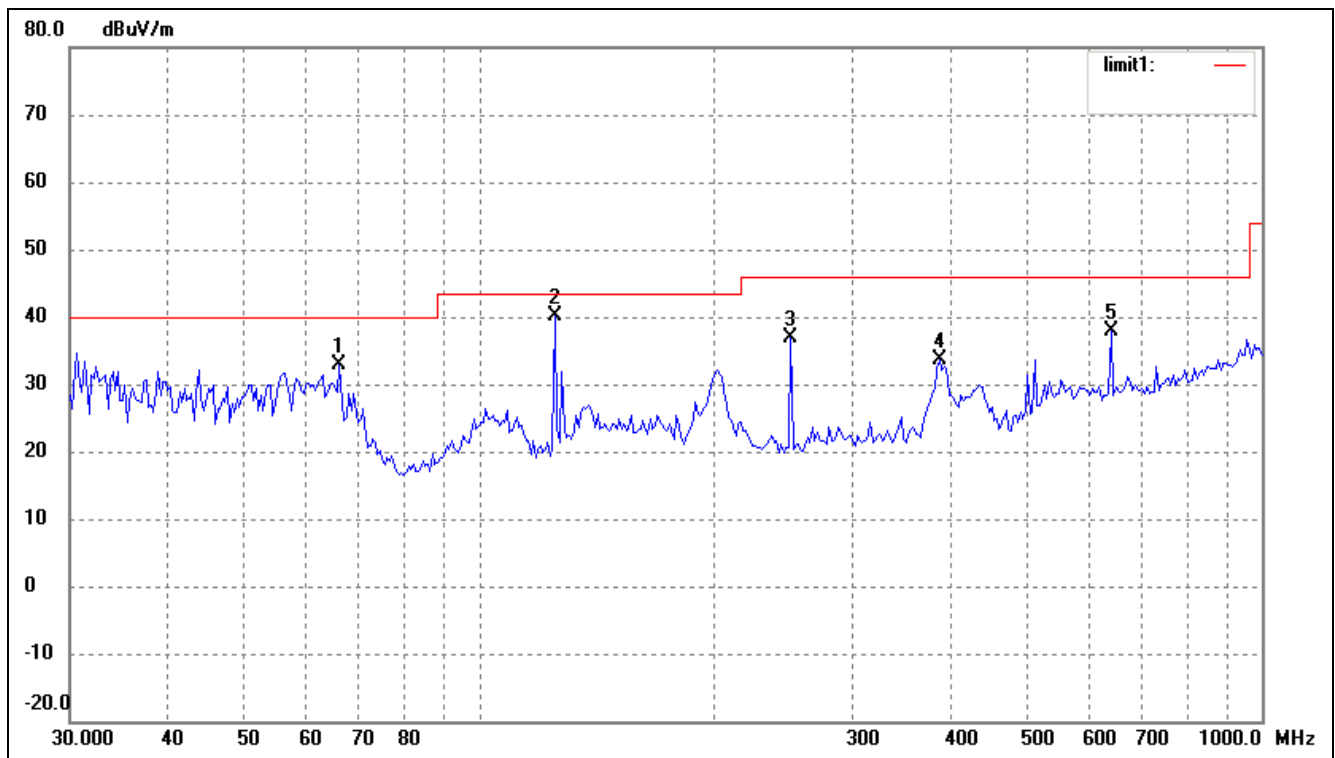
Comment: Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	33.95	4.57	38.52	43.50	-4.98	221	100	QP
2	217.6437	33.57	6.26	39.83	46.00	-6.17	189	100	peak
3	250.4859	34.32	7.69	42.01	46.00	-3.99	209	142	QP
4	642.2923	25.05	15.31	40.36	46.00	-5.64	100	100	QP
5	919.1315	21.26	19.13	40.39	46.00	-5.61	298	130	QP

Vertical



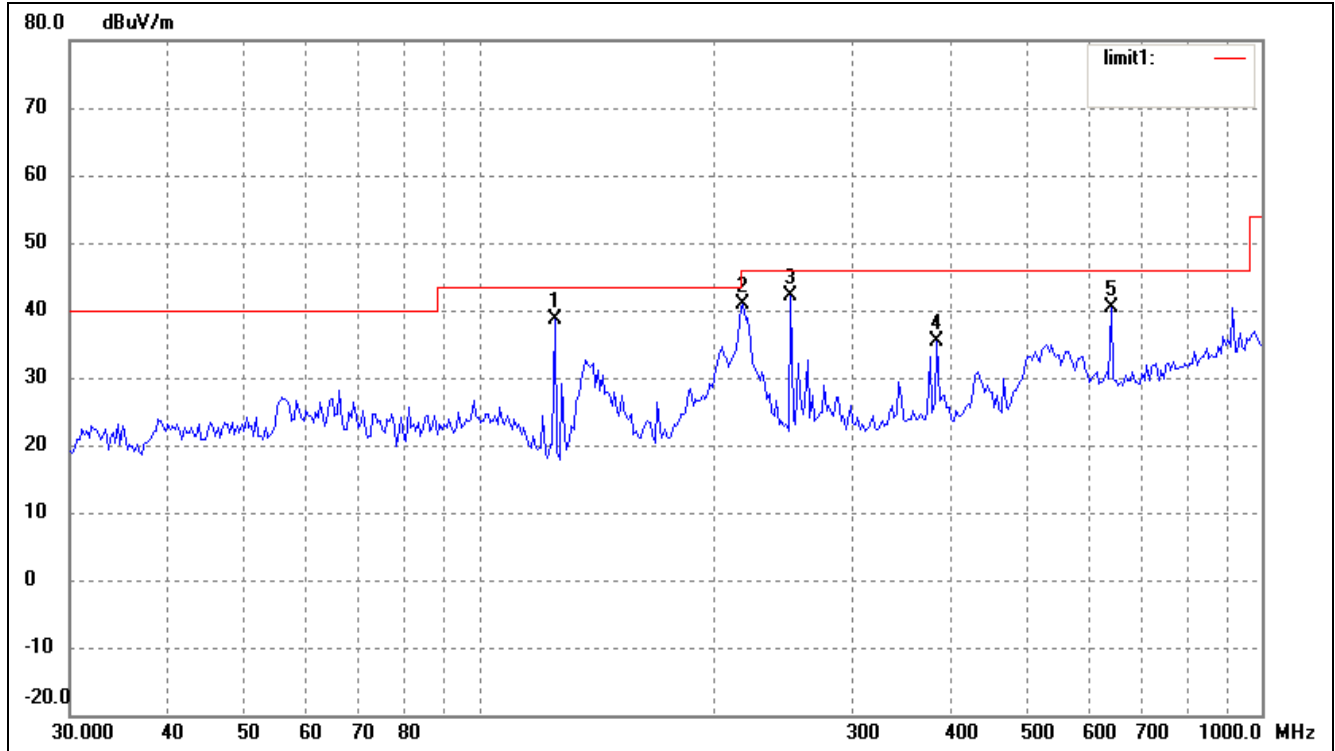
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	66.3715	28.26	4.65	32.91	40.00	-7.09	73	100	peak
2	124.9249	35.47	4.57	40.04	43.50	-3.46	110	109	QP
3	250.4859	29.24	7.69	36.93	46.00	-9.07	293	100	peak
4	387.2565	23.58	9.98	33.56	46.00	-12.44	58	200	peak
5	642.2923	22.58	15.31	37.89	46.00	-8.11	37	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11g)

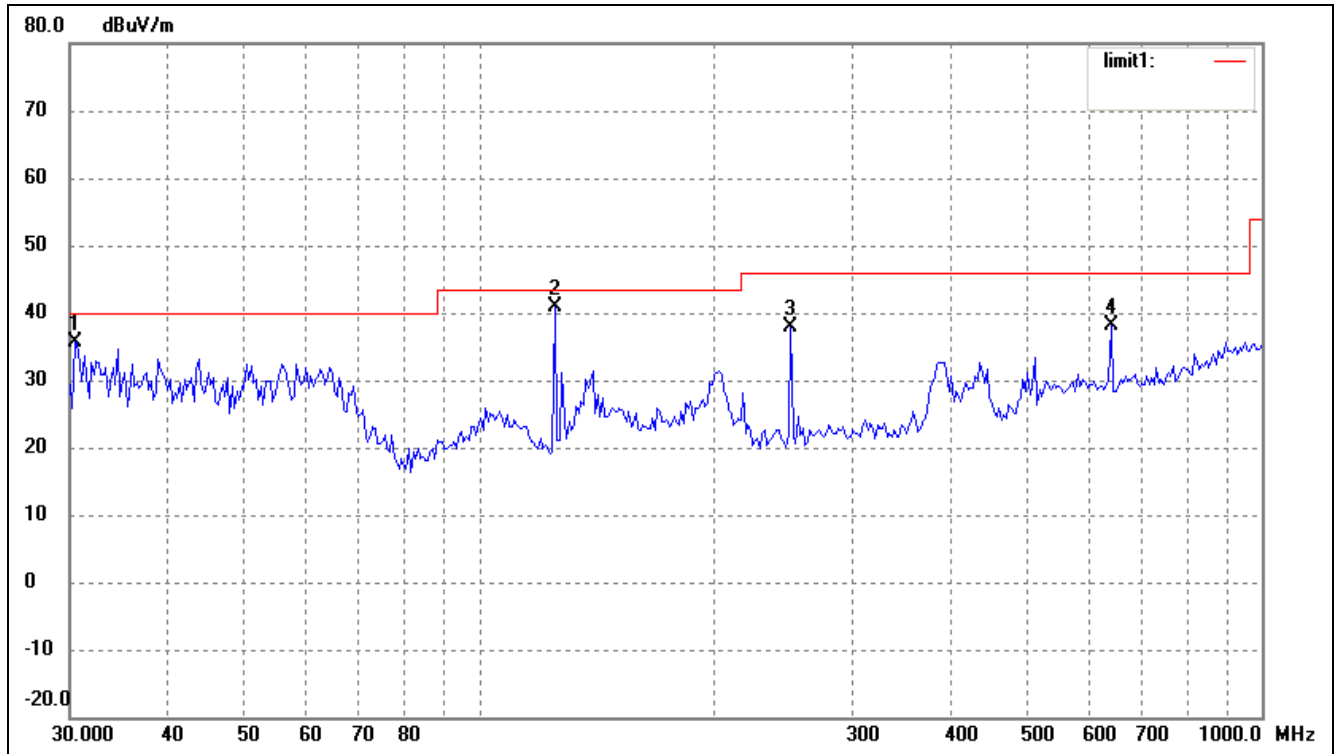
Comment: High Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	33.95	4.57	38.52	43.50	-4.98	21	110	QP
2	217.6437	34.64	6.26	40.90	46.00	-5.10	332	100	QP
3	250.4859	34.32	7.69	42.01	46.00	-3.99	24	100	QP
4	384.5447	25.36	9.96	35.32	46.00	-10.68	75	100	peak
5	642.2923	25.05	15.31	40.36	46.00	-5.64	254	120	QP

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	30.4246	29.00	6.63	35.63	40.00	-4.37	342	120	QP
2	124.9249	36.31	4.57	40.88	43.50	-2.62	55	100	QP
3	250.4859	30.08	7.69	37.77	46.00	-8.23	253	100	peak
4	642.2923	22.72	15.31	38.03	46.00	-7.97	64	200	peak

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

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	28.49	4.57	33.06	43.50	-10.44	1837		peak
2	214.6063	29.88	6.16	36.04	43.50	-7.46			peak
3	250.4859	35.91	7.69	43.60	46.00	-2.40			QP
4	642.2923	25.40	15.31	40.71	46.00	-5.29			QP

Vertical



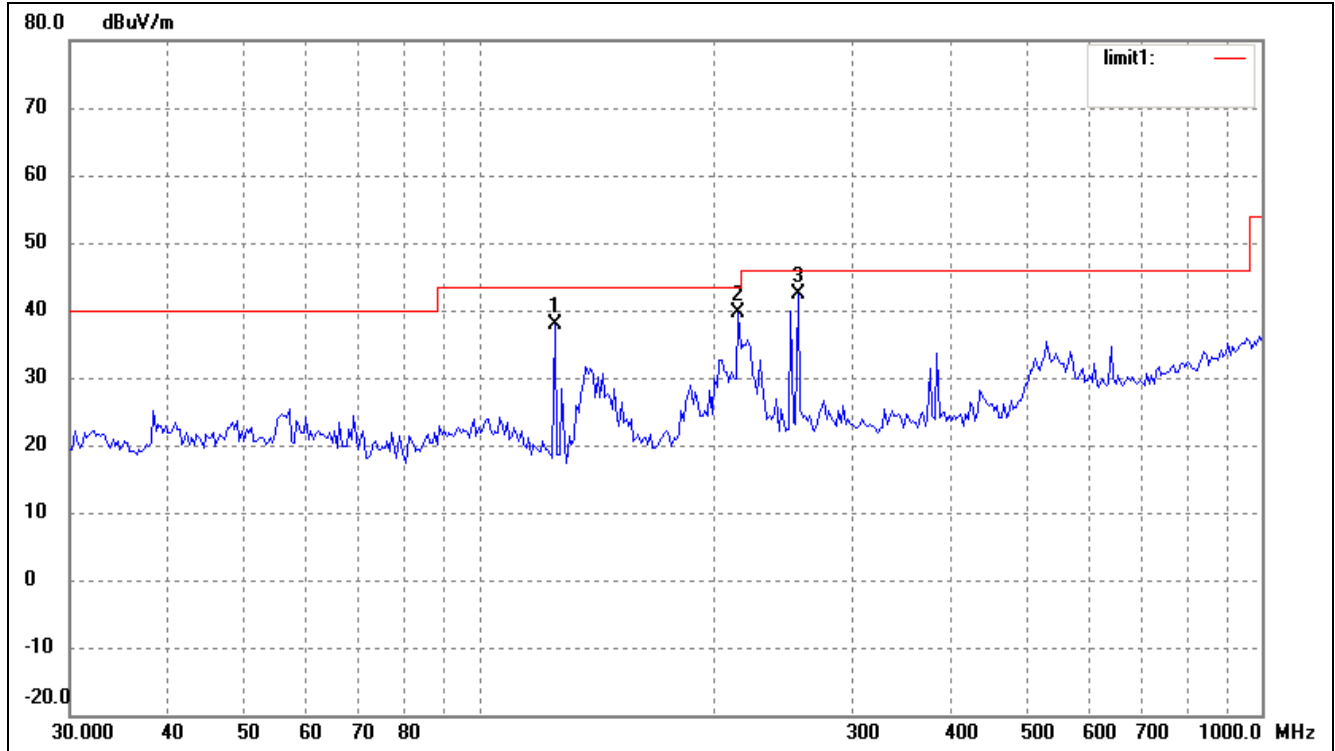
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	30.6392	27.80	6.63	34.43	40.00	-5.57	289	100	QP
2	124.9249	35.98	4.57	40.55	43.50	-2.95	109	104	QP
3	250.4859	28.67	7.69	36.36	46.00	-9.64	100	100	peak
4	642.2923	22.27	15.31	37.58	46.00	-8.42	335	100	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n-HT20)

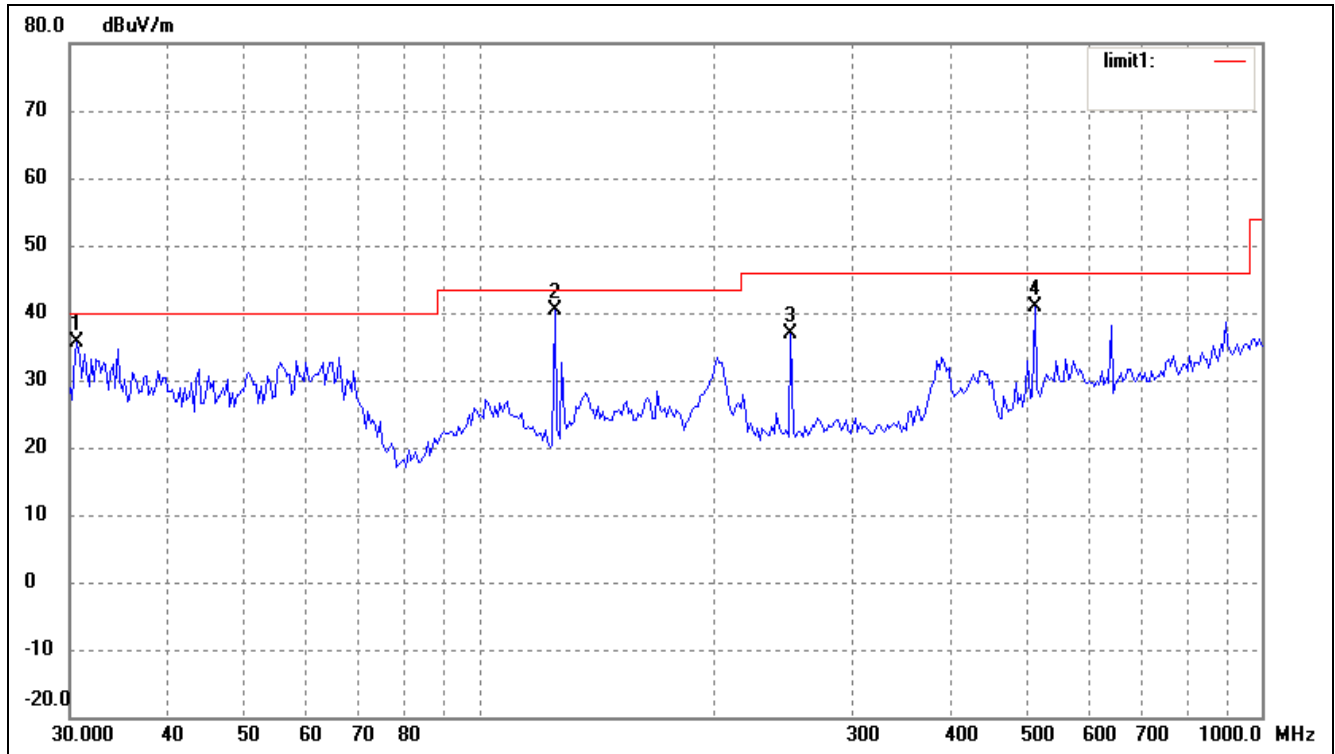
Comment: Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	33.24	4.57	37.81	43.50	-5.69	54	132	QP
2	214.6063	33.48	6.16	39.64	43.50	-3.86	192	107	QP
3	255.8226	34.58	7.82	42.40	46.00	-3.60	223	109	QP

Vertical



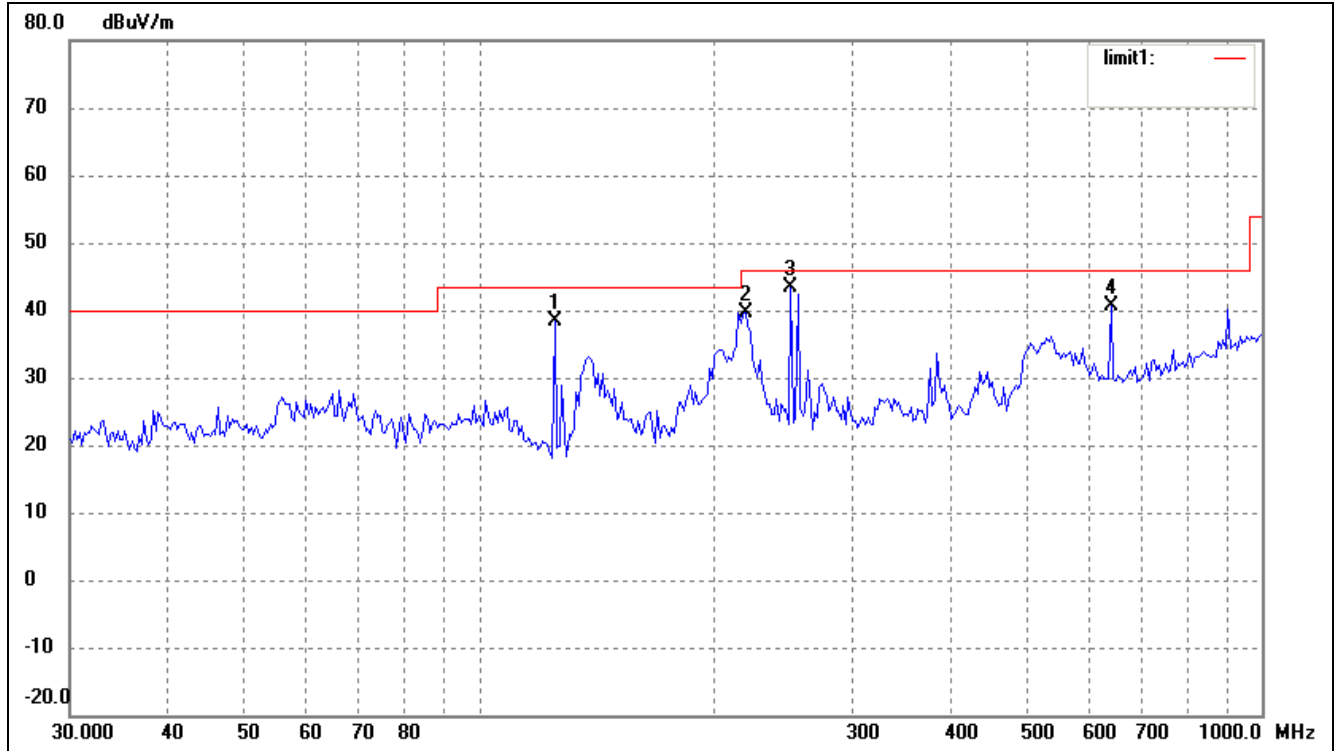
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	30.6392	28.92	6.63	35.55	40.00	-4.45	183	100	QP
2	124.9249	35.74	4.57	40.31	43.50	-3.19	229	107	QP
3	250.4859	29.21	7.69	36.90	46.00	-9.10	108	100	peak
4	512.9478	27.74	13.20	40.94	46.00	-5.06	35	129	QP

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n-HT20)

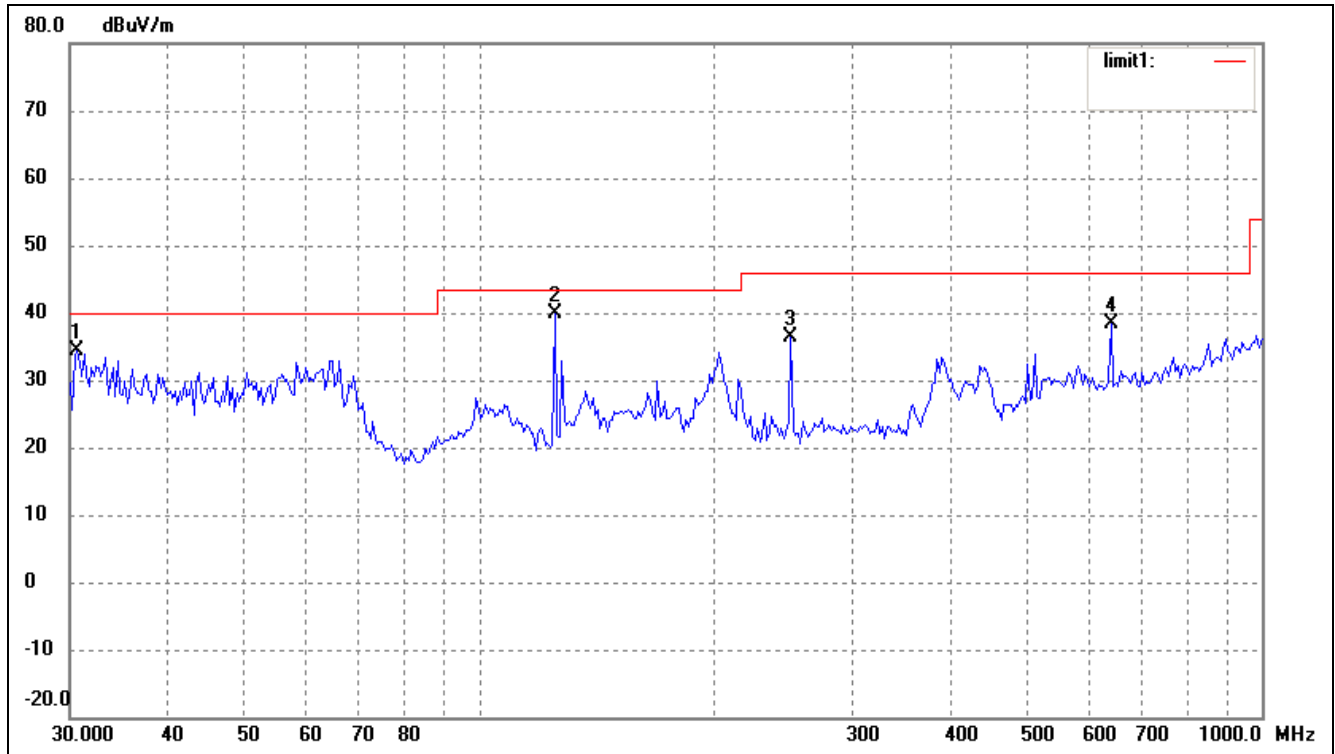
Comment: High Channel

Horizontal

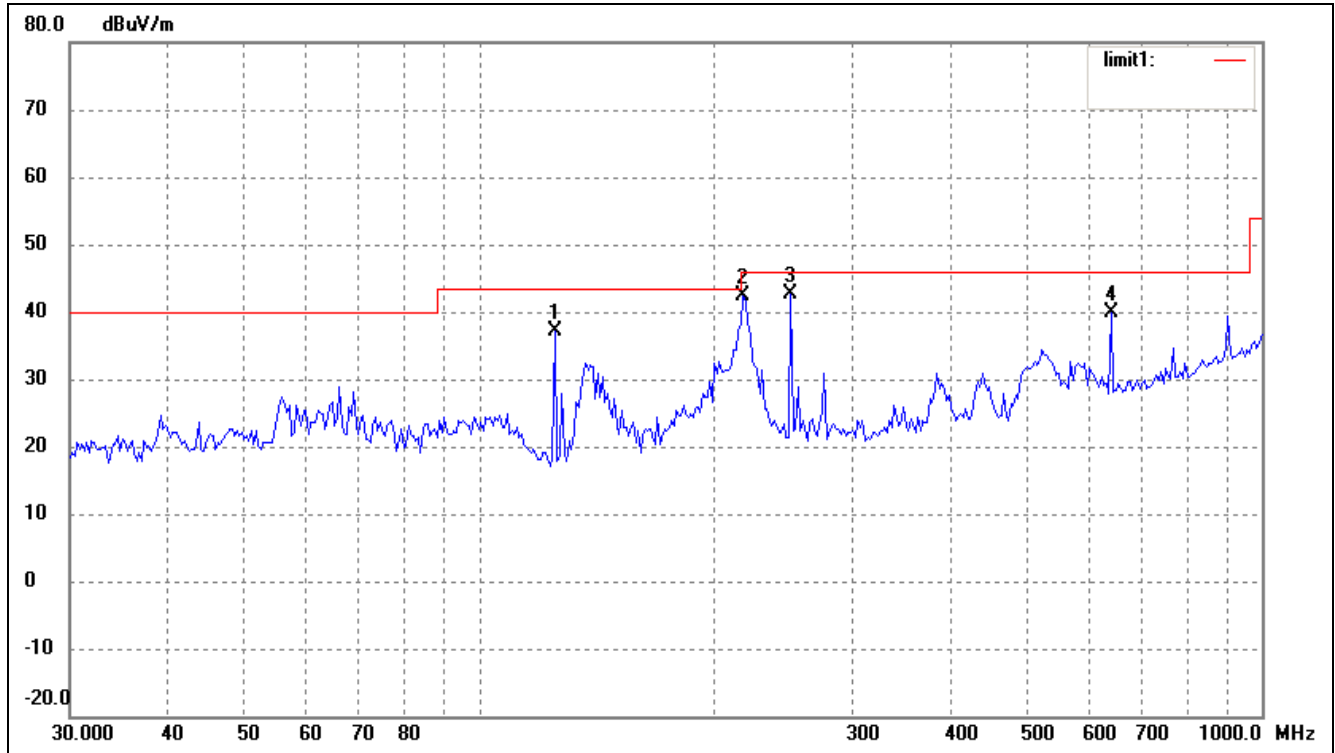


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	33.75	4.57	38.32	43.50	-5.18	134	100	QP
2	219.1785	33.33	6.31	39.64	46.00	-6.36	229	100	peak
3	250.4859	35.79	7.69	43.48	46.00	-2.52	100	123	QP
4	642.2923	25.30	15.31	40.61	46.00	-5.39	95	100	QP

Vertical

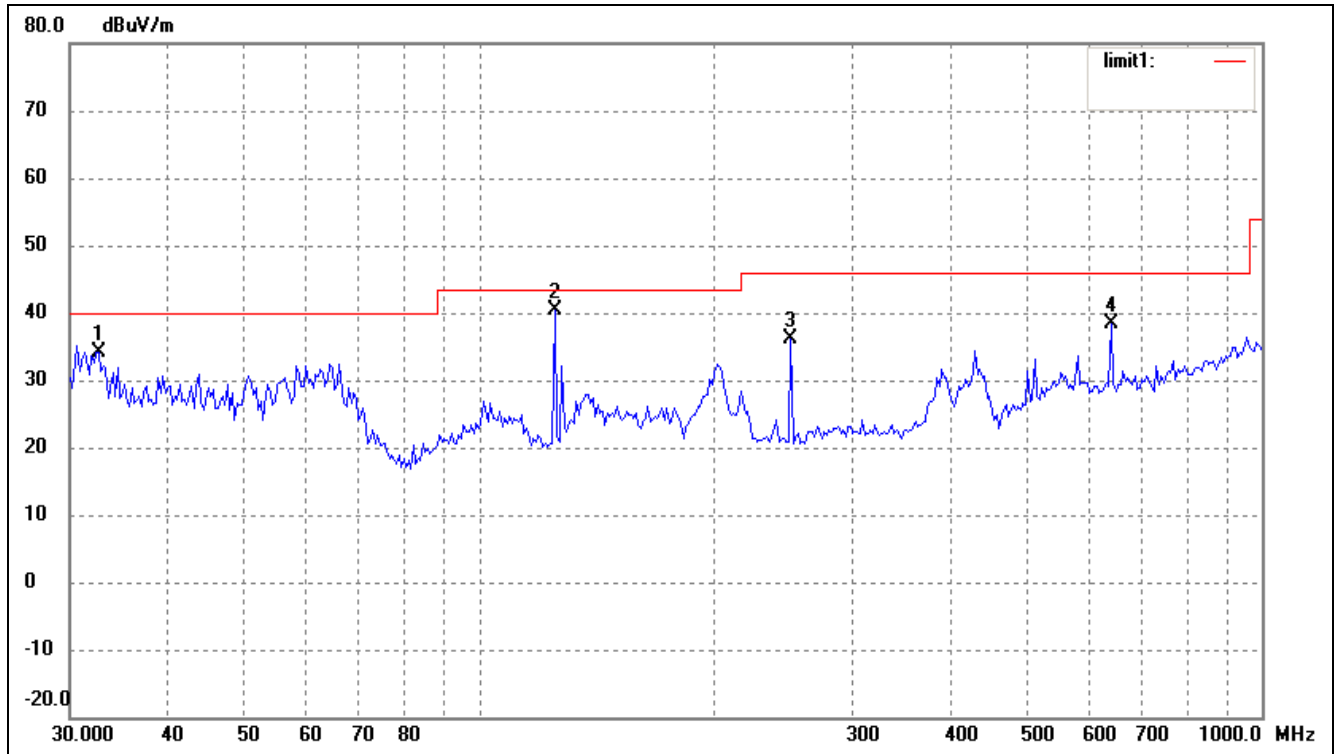


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	30.6392	27.80	6.63	34.43	40.00	-5.57	84	106	QP
2	124.9249	35.23	4.57	39.80	43.50	-3.70	313	125	QP
3	250.4859	28.70	7.69	36.39	46.00	-9.61	39	100	peak
4	642.2923	23.00	15.31	38.31	46.00	-7.69	103	200	peak

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

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	32.44	4.57	37.01	43.50	-6.49	62	100	peak
2	217.6437	36.10	6.26	42.36	46.00	-3.64	36	118	QP
3	250.4859	34.95	7.69	42.64	46.00	-3.36	119	133	QP
4	642.2923	24.49	15.31	39.80	46.00	-6.20	325	200	peak

Vertical



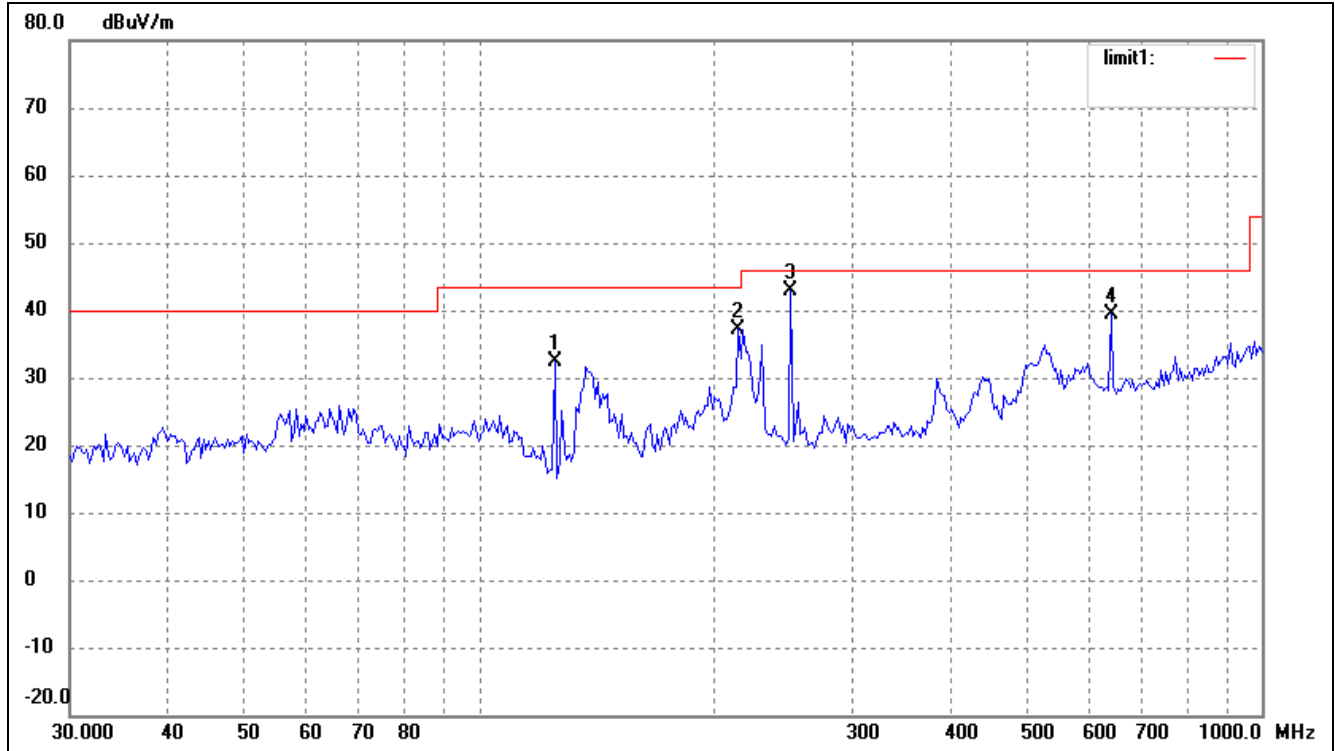
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	32.6395	27.64	6.61	34.25	40.00	-5.75	73	120	QP
2	124.9249	35.92	4.57	40.49	43.50	-3.01	319	107	QP
3	250.4859	28.56	7.69	36.25	46.00	-9.75	100	100	peak
4	642.2923	22.98	15.31	38.29	46.00	-7.71	32	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n-HT40)

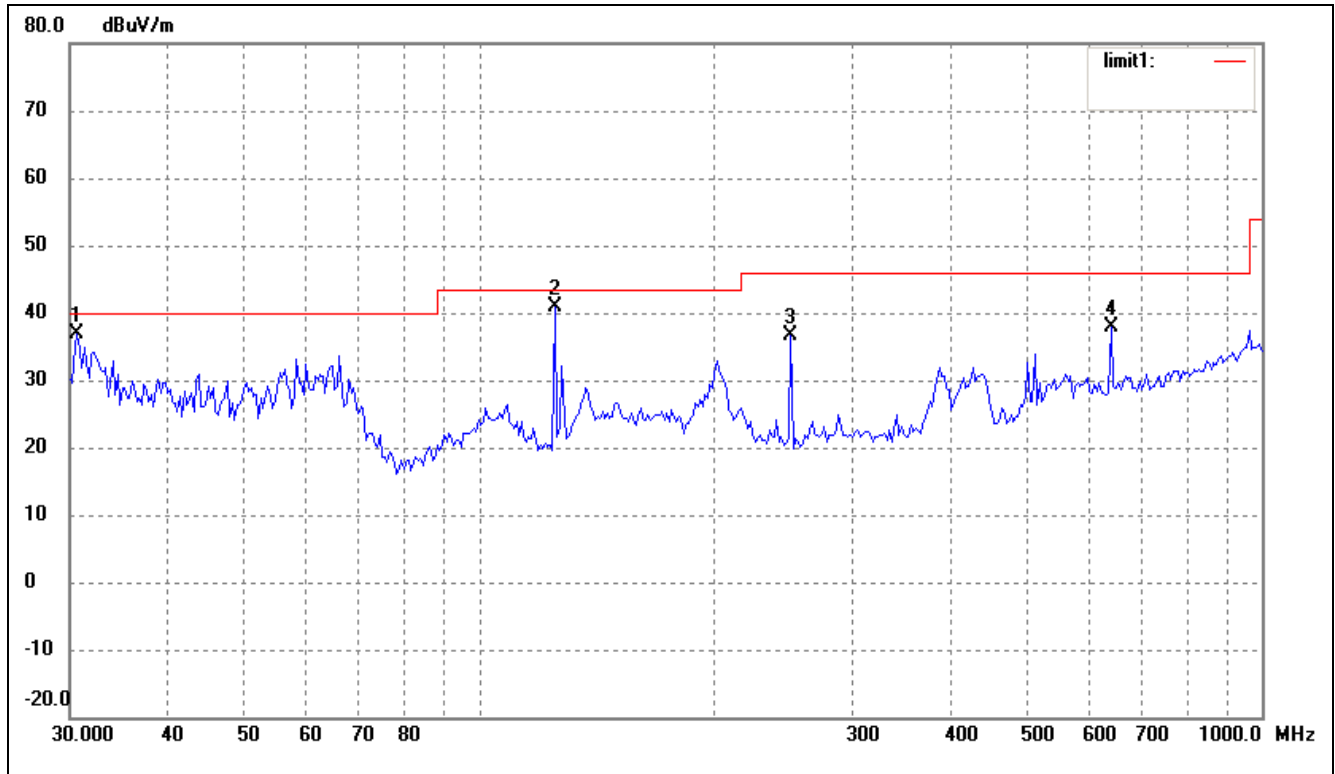
Comment: Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	27.71	4.57	32.28	43.50	-11.22	43	200	peak
2	214.6063	31.09	6.16	37.25	43.50	-6.25	103	100	peak
3	250.4859	35.17	7.69	42.86	46.00	-3.14	223	100	QP
4	642.2923	24.00	15.31	39.31	46.00	-6.69	115	200	peak

Vertical



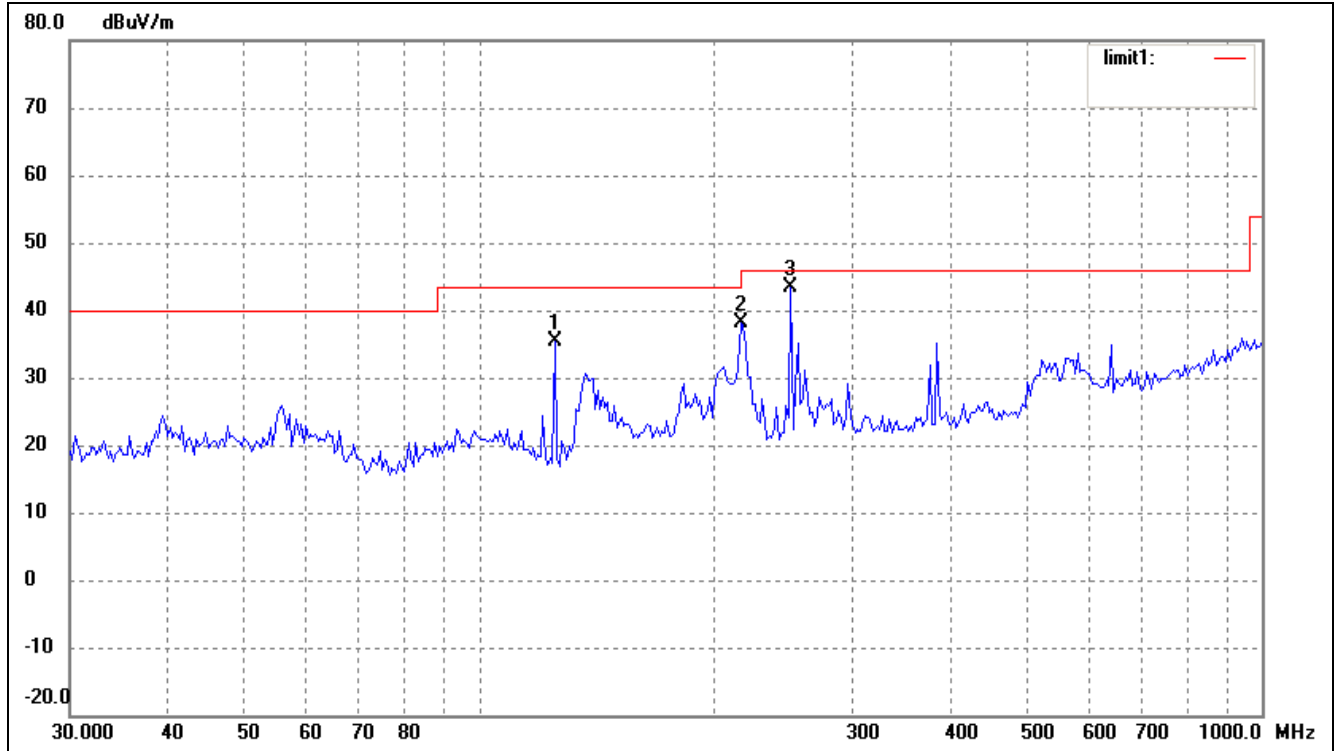
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	30.6392	30.15	6.63	36.78	40.00	-3.22	110	117	QP
2	124.9249	36.20	4.57	40.77	43.50	-2.73	132	132	QP
3	250.4859	28.98	7.69	36.67	46.00	-9.33	226	100	peak
4	642.2923	22.53	15.31	37.84	46.00	-8.16	38	200	peak

Spurious Emission From 30 MHz to 1 GHz

Test mode: Transmitting (802.11n-HT40)

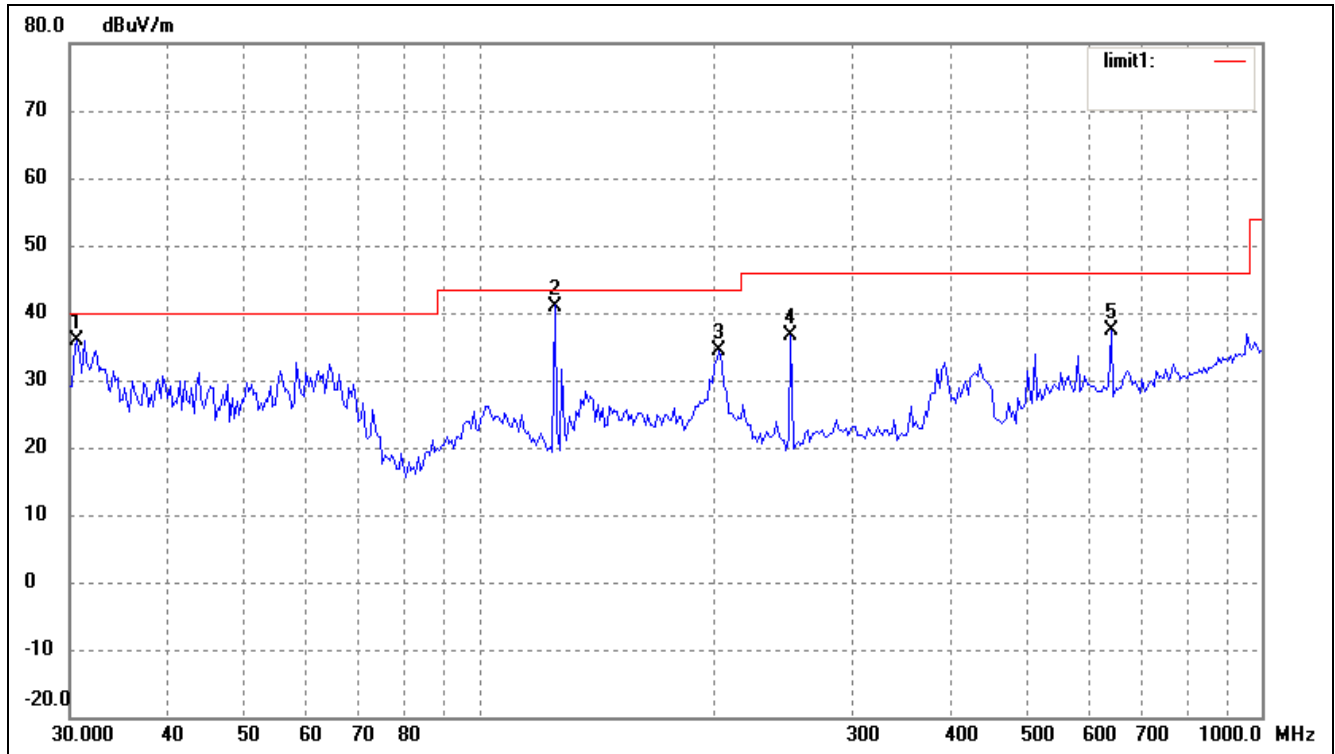
Comment: High Channel

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	124.9249	30.87	4.57	35.44	43.50	-8.06	115	100	peak
2	216.1197	32.02	6.21	38.23	46.00	-7.77	229	200	peak
3	250.4859	35.60	7.69	43.29	46.00	-2.71	78	117	QP

Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	30.6392	29.29	6.63	35.92	40.00	-4.08	172	110	QP
2	124.9249	36.43	4.57	41.00	43.50	-2.50	100	116	QP
3	202.8745	28.62	5.77	34.39	43.50	-9.11	289	100	peak
4	250.4859	28.96	7.69	36.65	46.00	-9.35	104	200	peak
5	642.2923	22.18	15.31	37.49	46.00	-8.51	84	100	peak

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

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (1G to 25GHz)										
4824.0	AV	44.5	90	V	34.1	5.2	33.0	50.8	54	-3.2
4824.0	AV	44.3	45	H	34.1	5.2	33.0	50.6	54	-3.4
7236.0	AV	40.5	45	H	37.4	6.1	33.5	50.5	54	-3.5
7236.0	AV	40.0	90	V	37.4	6.1	33.5	50.0	54	-4.0
7236.0	PK	56.2	45	V	37.4	6.1	33.5	66.2	74	-7.8
4824.0	PK	58.9	90	V	34.1	5.2	33.0	65.2	74	-8.8
7236.0	PK	53.3	45	H	37.4	6.1	33.5	63.3	74	-10.7
4824.0	PK	54.3	180	H	34.1	5.2	33.0	60.6	74	-13.4
Middle Channel (1G to 25GHz)										
4874.0	AV	45.3	45	H	34.1	5.2	33.0	51.6	54	-2.4
4874.0	AV	45.2	45	V	34.1	5.2	33.0	51.5	54	-2.5
7311.0	AV	41.2	270	V	37.4	6.1	33.5	51.2	54	-2.8
7311.0	AV	40.9	60	H	37.4	6.1	33.5	50.9	54	-3.1
4874.0	PK	60.4	90	V	34.1	5.2	33.0	66.7	74	-7.3
7311.0	PK	55.2	45	V	37.4	6.1	33.5	65.2	74	-8.8
7311.0	PK	52.8	45	H	37.4	6.1	33.5	62.8	74	-11.2
4874.0	PK	55.5	60	H	34.1	5.2	33.0	61.8	74	-12.2
High Channel(1G to 25G)										
7386.0	AV	41.8	270	V	37.4	6.1	33.5	51.8	54	-2.2
4924.0	AV	45.4	90	V	34.1	5.2	33.0	51.7	54	-2.3
4924.0	AV	45.0	60	H	34.1	5.2	33.0	51.3	54	-2.7
7386.0	AV	40.6	60	H	37.4	6.1	33.5	50.6	54	-3.4
4924.0	PK	58.4	270	V	34.1	5.2	33.0	64.7	74	-9.3
4924.0	PK	55.8	180	H	34.1	5.2	33.0	62.1	74	-11.9
7386.0	PK	51.5	45	V	37.4	6.1	33.5	61.5	74	-12.5
7386.0	PK	49.7	45	H	37.4	6.1	33.5	59.7	74	-14.3

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 4^h 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	AV	45.1	270	V	34.1	5.2	33.0	51.4	54	-2.6
4824.0	AV	44.6	60	H	34.1	5.2	33.0	50.9	54	-3.1
7236.0	AV	40.5	90	V	37.4	6.1	33.5	50.5	54	-3.5
7236.0	AV	39.8	45	H	37.4	6.1	33.5	49.8	54	-4.2
4824.0	PK	57.9	90	V	34.1	5.2	33.0	64.2	74	-9.8
7236.0	PK	52.6	45	V	37.4	6.1	33.5	62.6	74	-11.4
7236.0	PK	52.6	60	H	37.4	6.1	33.5	62.6	74	-11.4
4824.0	PK	56.0	45	H	34.1	5.2	33.0	62.3	74	-11.7
Middle Channel (1G to 25GHz)										
4874.0	AV	45.2	180	V	34.1	5.2	33.0	51.5	54	-2.5
7311.0	AV	40.5	45	V	37.4	6.1	33.5	50.5	54	-3.5
4874.0	AV	43.8	45	H	34.1	5.2	33.0	50.1	54	-3.9
7311.0	AV	39.6	270	H	37.4	6.1	33.5	49.6	54	-4.4
4874.0	PK	58.1	270	V	34.1	5.2	33.0	64.4	74	-9.6
7311.0	PK	53.7	45	V	37.4	6.1	33.5	63.7	74	-10.3
7311.0	PK	51.5	45	H	37.4	6.1	33.5	61.5	74	-12.5
4874.0	PK	54.9	180	H	34.1	5.2	33.0	61.2	74	-12.8
7386.0	AV	41.4	270	V	37.4	6.1	33.5	51.4	54	-2.6
4924.0	AV	45.1	153	V	34.1	5.2	33.0	51.4	54	-2.6
4924.0	AV	44.6	60	H	34.1	5.2	33.0	50.9	54	-3.1
7386.0	AV	40.3	60	H	37.4	6.1	33.5	50.3	54	-3.7
4924.0	PK	57.6	250	V	34.1	5.2	33.0	63.9	74	-10.1
4924.0	PK	55.5	180	H	34.1	5.2	33.0	61.8	74	-12.2
7386.0	PK	50.7	178	V	37.4	6.1	33.5	60.7	74	-13.3
7386.0	PK	50.2	45	H	37.4	6.1	33.5	60.2	74	-13.8

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 4th 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	AV	44.4	243	V	34.1	5.2	33.0	50.7	54	-3.3
7236.0	AV	40.5	153	V	37.4	6.1	33.5	50.5	54	-3.5
4824.0	AV	43.7	17	H	34.1	5.2	33.0	50.0	54	-4.0
7236.0	AV	39.7	45	H	37.4	6.1	33.5	49.7	54	-4.3
4824.0	PK	56.9	90	V	34.1	5.2	33.0	63.2	74	-10.8
7236.0	PK	52.6	226	V	37.4	6.1	33.5	62.6	74	-11.4
4824.0	PK	55.3	115	H	34.1	5.2	33.0	61.6	74	-12.4
7236.0	PK	50.3	64	H	37.4	6.1	33.5	60.3	74	-13.7
Middle Channel (1G to 25GHz)										
4874.0	AV	45.2	145	V	34.1	5.2	33.0	51.5	54	-2.5
4874.0	AV	44.3	45	H	34.1	5.2	33.0	50.6	54	-3.4
7311.0	AV	40.2	270	V	37.4	6.1	33.5	50.2	54	-3.8
7311.0	AV	40.0	60	H	37.4	6.1	33.5	50.0	54	-4.0
7311.0	PK	55.2	94	V	37.4	6.1	33.5	65.2	74	-8.8
4874.0	PK	57.4	90	V	34.1	5.2	33.0	63.7	74	-10.3
4874.0	PK	55.5	260	H	34.1	5.2	33.0	61.8	74	-12.2
7311.0	PK	50.3	45	H	37.4	6.1	33.5	60.3	74	-13.7
High Channel(1G to 25G)										
7386.0	AV	41.3	234	V	37.4	6.1	33.5	51.3	54	-2.7
4924.0	AV	44.4	90	V	34.1	5.2	33.0	50.7	54	-3.3
7386.0	AV	40.6	68	H	37.4	6.1	33.5	50.6	54	-3.4
4924.0	AV	43.8	160	H	34.1	5.2	33.0	50.1	54	-3.9
4924.0	PK	56.4	270	V	34.1	5.2	33.0	62.7	74	-11.3
4924.0	PK	55.8	180	H	34.1	5.2	33.0	62.1	74	-11.9
7386.0	PK	51.5	245	V	37.4	6.1	33.5	61.5	74	-12.5
7386.0	PK	49.6	45	H	37.4	6.1	33.5	59.6	74	-14.4

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 4th 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	AV	43.9	115	H	34.1	5.2	33.0	50.2	54	-3.8
4844.0	AV	43.7	42	V	34.1	5.2	33.0	50.0	54	-4.0
7266.0	AV	40.0	90	V	37.4	6.1	33.5	50.0	54	-4.0
7266.0	AV	39.9	45	H	37.4	6.1	33.5	49.9	54	-4.1
7236.0	PK	53.2	123	V	37.4	6.1	33.5	63.2	74	-10.8
4844.0	PK	55.9	90	V	34.1	5.2	33.0	62.2	74	-11.8
4844.0	PK	54.3	180	H	34.1	5.2	33.0	60.6	74	-13.4
7266.0	PK	50.3	45	H	37.4	6.1	33.5	60.3	74	-13.7
Middle Channel (1G to 25GHz)										
4874.0	AV	45.1	332	V	34.1	5.2	33.0	51.4	54	-2.6
7311.0	AV	41.2	270	V	37.4	6.1	33.5	51.2	54	-2.8
4874.0	AV	44.6	121	H	34.1	5.2	33.0	50.9	54	-3.1
7311.0	AV	40.9	60	H	37.4	6.1	33.5	50.9	54	-3.1
4874.0	PK	57.4	90	V	34.1	5.2	33.0	63.7	74	-10.3
7311.0	PK	51.7	45	V	37.4	6.1	33.5	61.7	74	-12.3
4874.0	PK	54.8	60	H	34.1	5.2	33.0	61.1	74	-12.9
7311.0	PK	51.0	225	H	37.4	6.1	33.5	61.0	74	-13.0
High Channel(1G to 25G)										
4904.0	AV	44.7	114	V	34.1	5.2	33.0	51.0	54	-3.0
4904.0	AV	44.3	231	H	34.1	5.2	33.0	50.6	54	-3.4
7356.0	AV	39.8	270	V	37.4	6.1	33.5	49.8	54	-4.2
4904.0	PK	56.4	22	V	34.1	5.2	33.0	62.7	74	-11.3
7356.0	AV	56.4	60	H	37.4	6.1	33.5	50.0	54	-11.3
7356.0	PK	52.5	77	V	37.4	6.1	33.5	62.5	74	-11.5
4904.0	PK	55.7	85	H	34.1	5.2	33.0	62.0	74	-12.0
7356.0	PK	49.7	269	H	37.4	6.1	33.5	59.7	74	-14.3

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 4th 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.

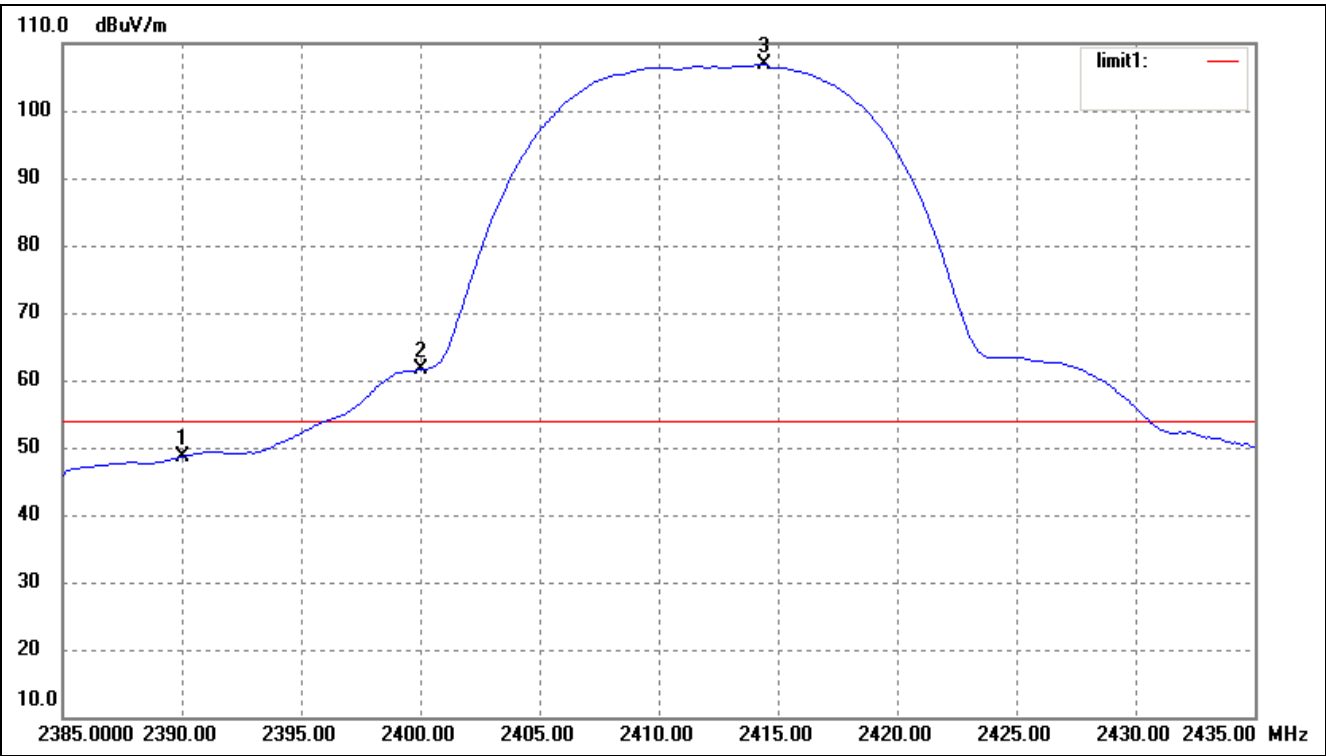
10.4 Environmental Conditions

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

10.5 Summary of Test Results/Plots

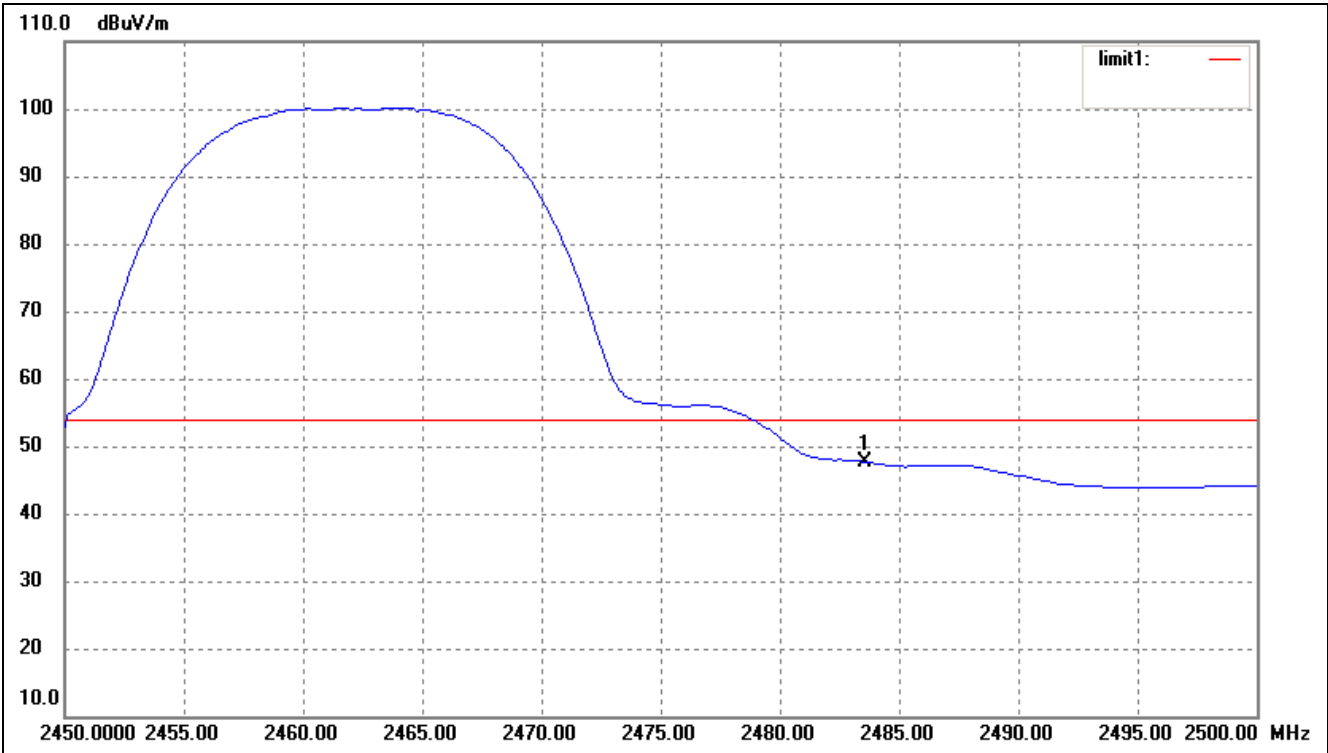
Test mode	Frequency MHz	Limit dBuV /dB	Result
802.11b	2390.00	<54dBuV	Pass
	2400.00	>20dB	Pass
	2483.50	<54dBuV	Pass
802.11g	2390.00	<54dBuV	Pass
	2400.00	>20dB	Pass
	2483.50	<54dBuV	Pass
802.11n-HT20	2390.00	<54dBuV	Pass
	2400.00	>20dB	Pass
	2483.50	<54dBuV	Pass
802.11n-HT40	2390.00	<54dBuV	Pass
	2400.00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

For 802.11b
Lowest Bandedge



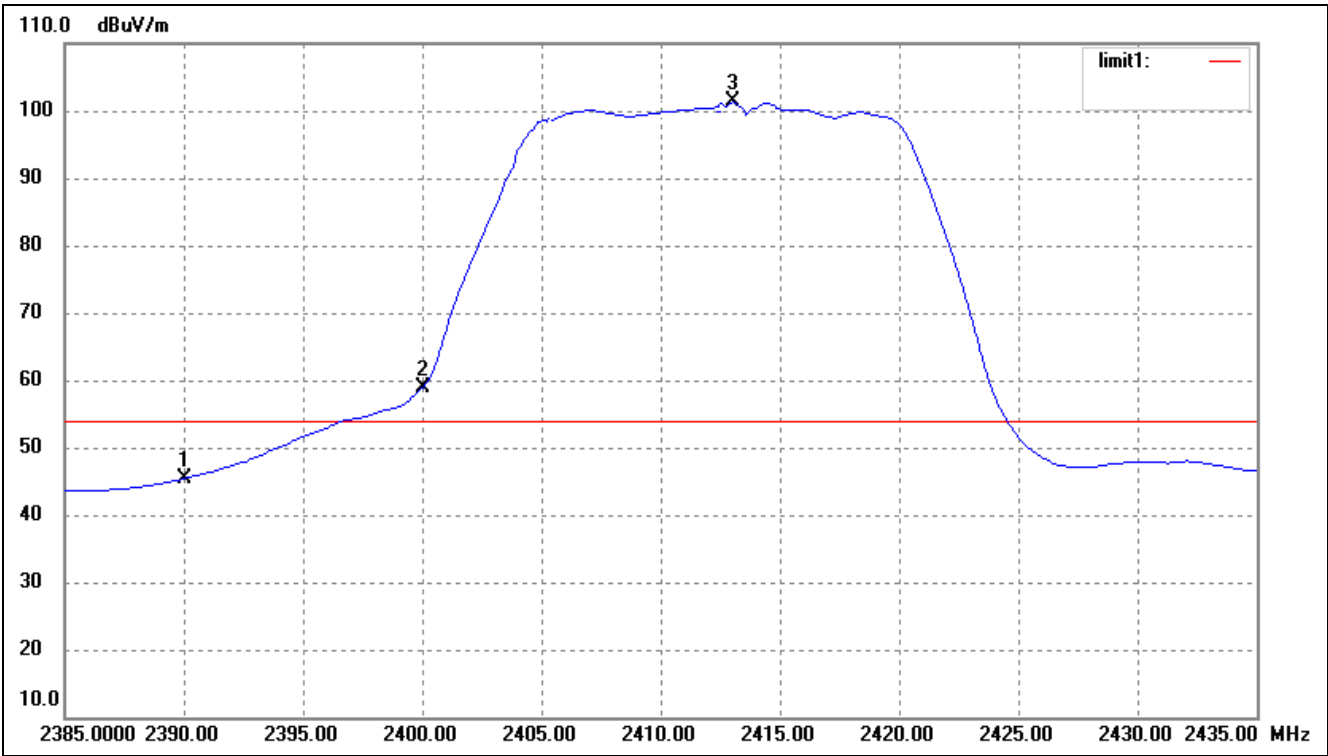
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2390.000	13.03	35.59	48.62	54.00	-5.38	172	100	Ave
	2390.000	25.64	35.59	61.23	74.00	-12.77	172	100	peak
2	2400.000	25.90	35.68	61.58	/	/	/	/	Ave
3	2414.359	71.09	35.73	106.82	/	/	/	/	Ave

Highest Bandedge



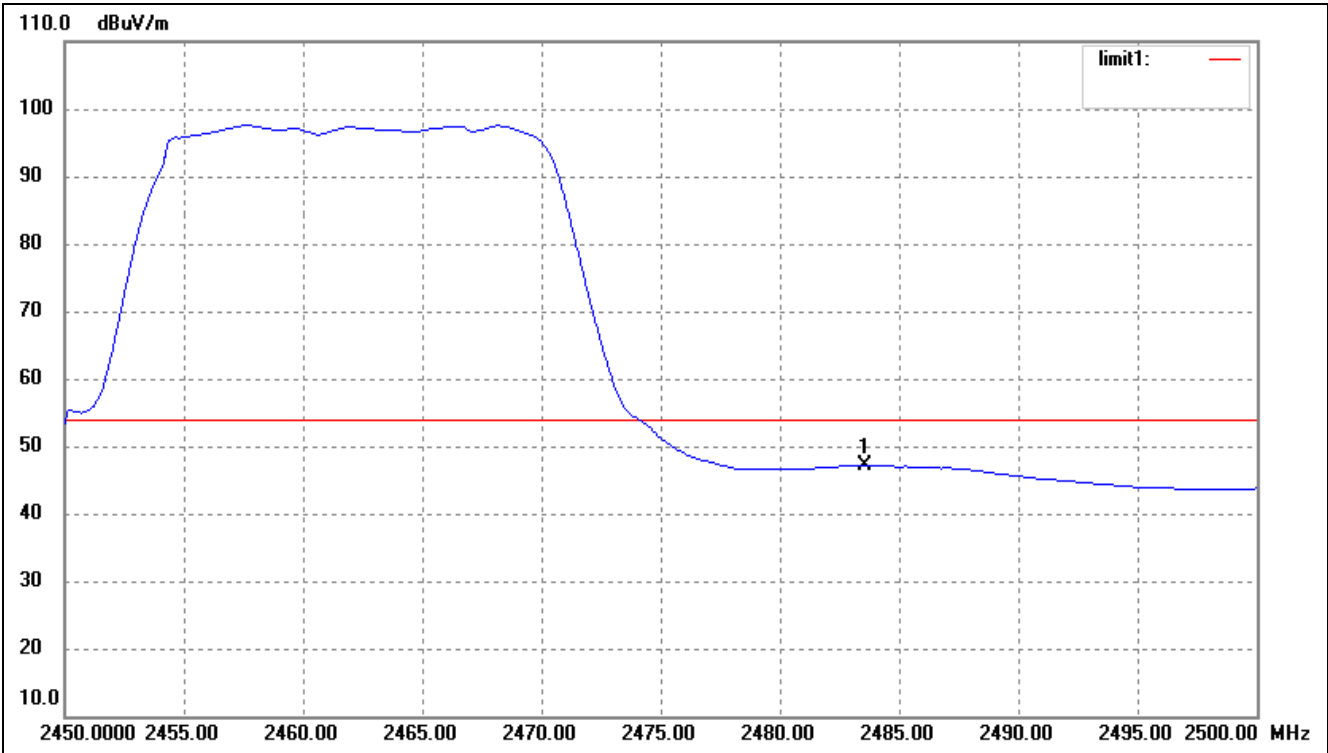
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2483.500	11.69	35.97	47.66	54.00	-6.34	221	100	Ave
	2483.500	24.56	35.97	60.53	74.00	-13.47	221	100	peak

For 802.11g
Lowest Bandedge



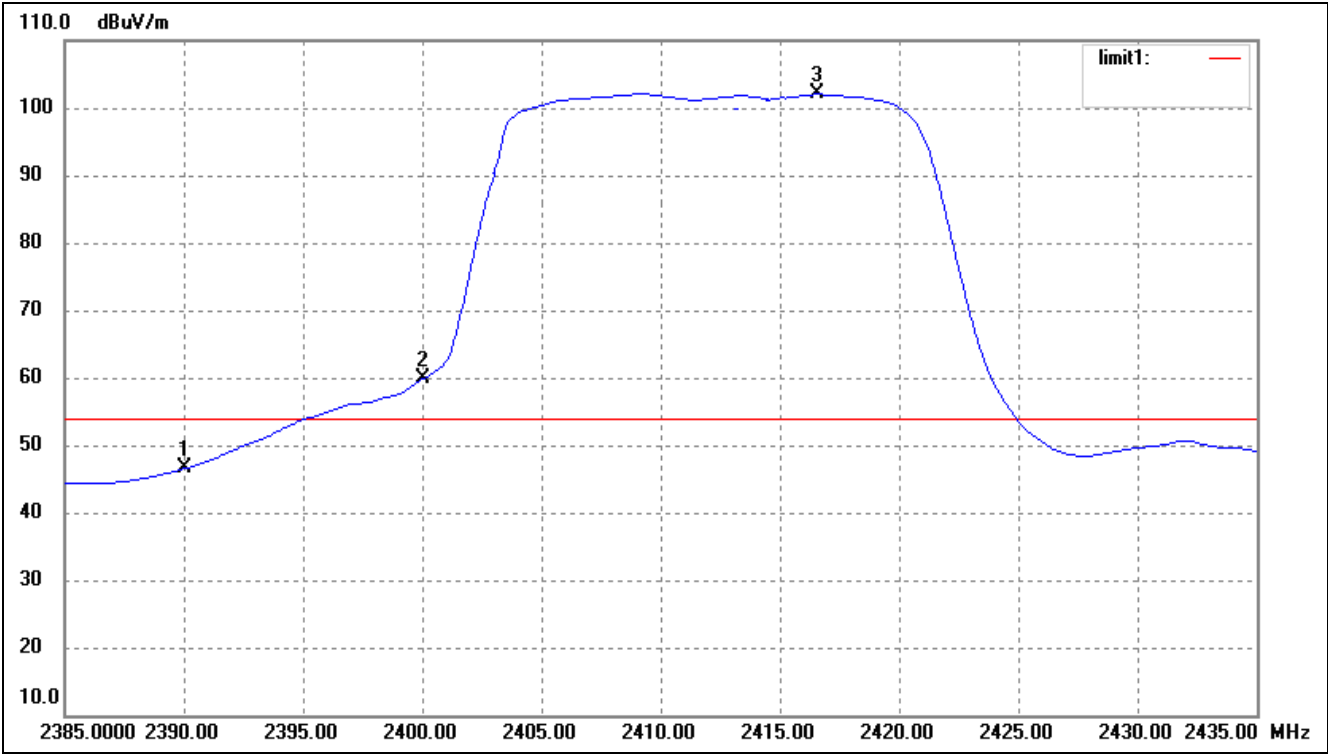
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2390.000	9.85	35.59	45.44	54.00	-8.56	132	100	Ave
	2390.000	24.04	35.59	59.63	74.00	-14.37	132	100	peak
2	2400.000	23.23	35.68	58.91	/	/	/	/	Ave
3	2413.056	65.71	35.73	101.44	/	/	/	/	Ave

Highest Bandedge



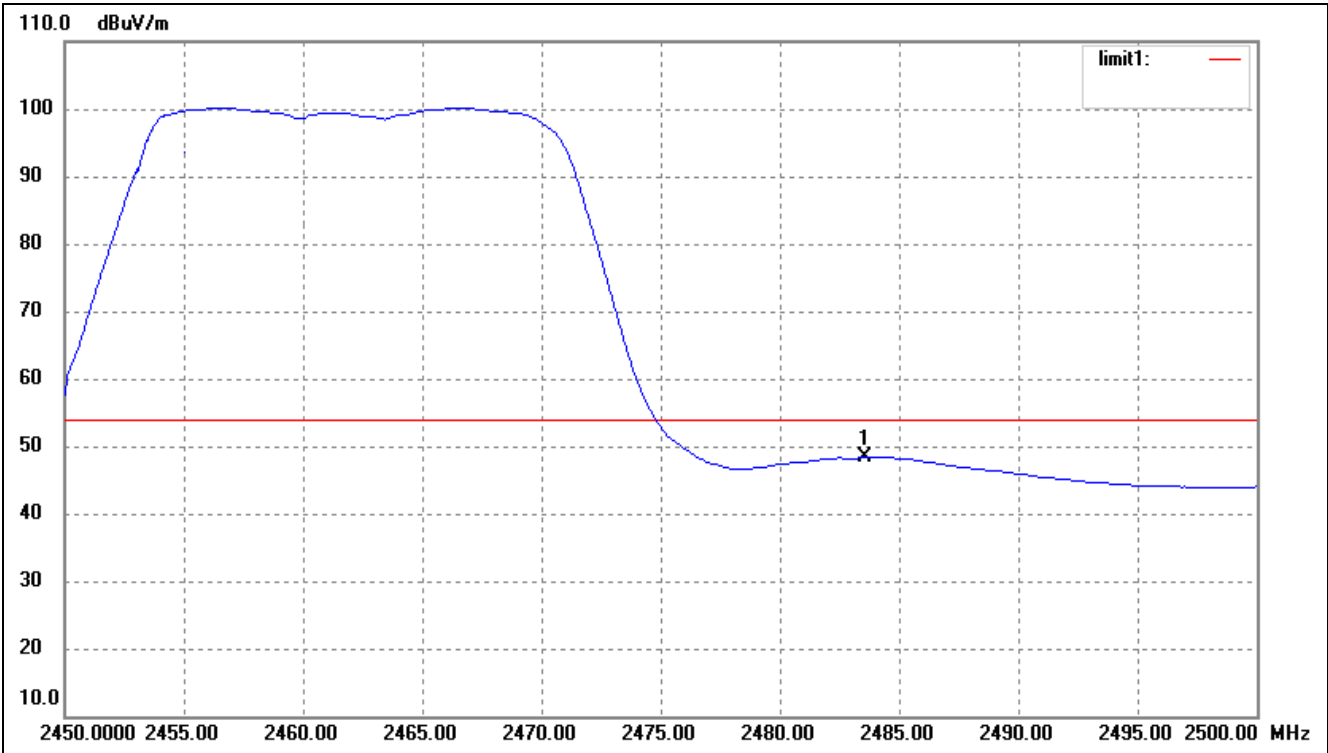
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2483.500	11.12	35.97	47.09	54.00	-6.91	226	100	Ave
	2483.500	24.45	35.97	60.42	74.00	-13.58	226	100	peak

For 802.11 n-HT20
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	10.95	35.59	46.54	54.00	-7.46	223	100	Ave
	2390.000	26.56	35.59	62.15	74.00	-11.85	223	100	peak
2	2400.000	24.11	35.68	59.79	/	/	/	/	Ave
3	2416.563	66.31	35.74	102.05	/	/	/	/	Ave

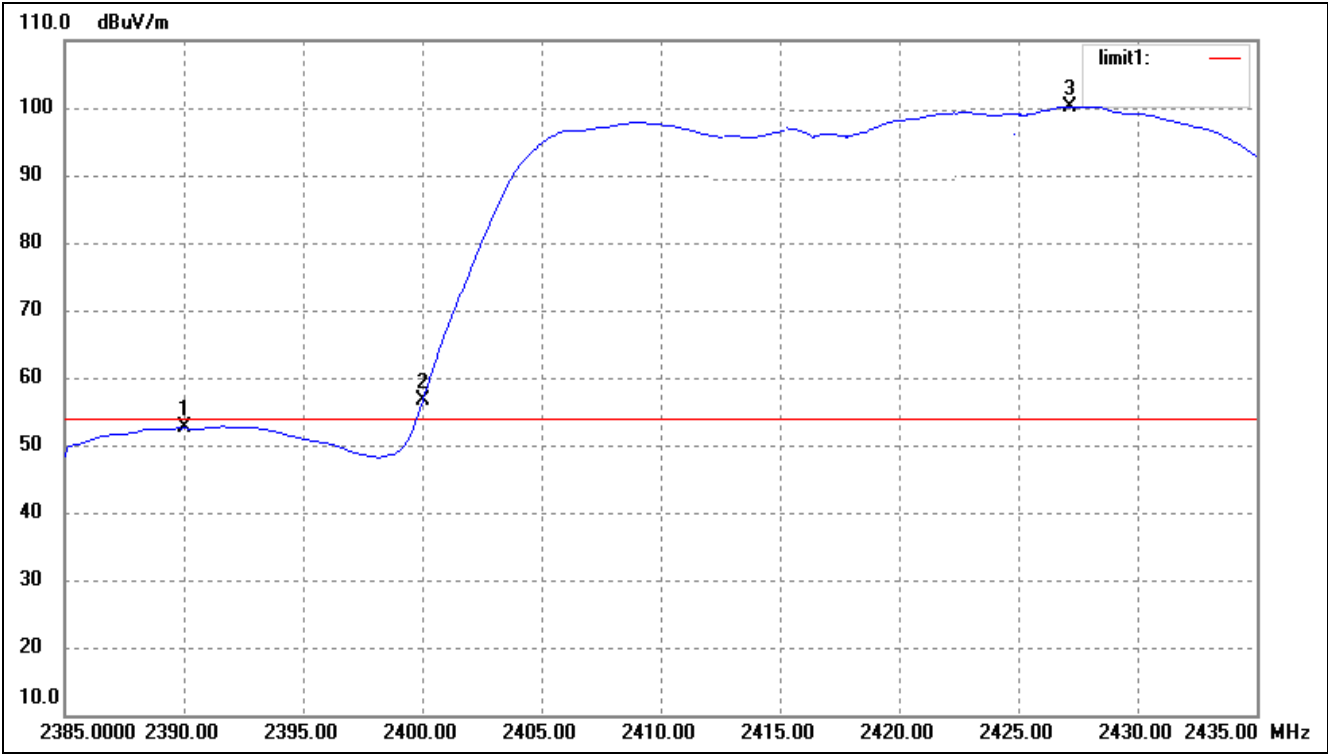
Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	2483.500	12.31	35.97	48.28	54.00	-5.72	63	100	Ave
	2483.500	27.74	35.97	63.71	74.00	-10.29	63	100	peak

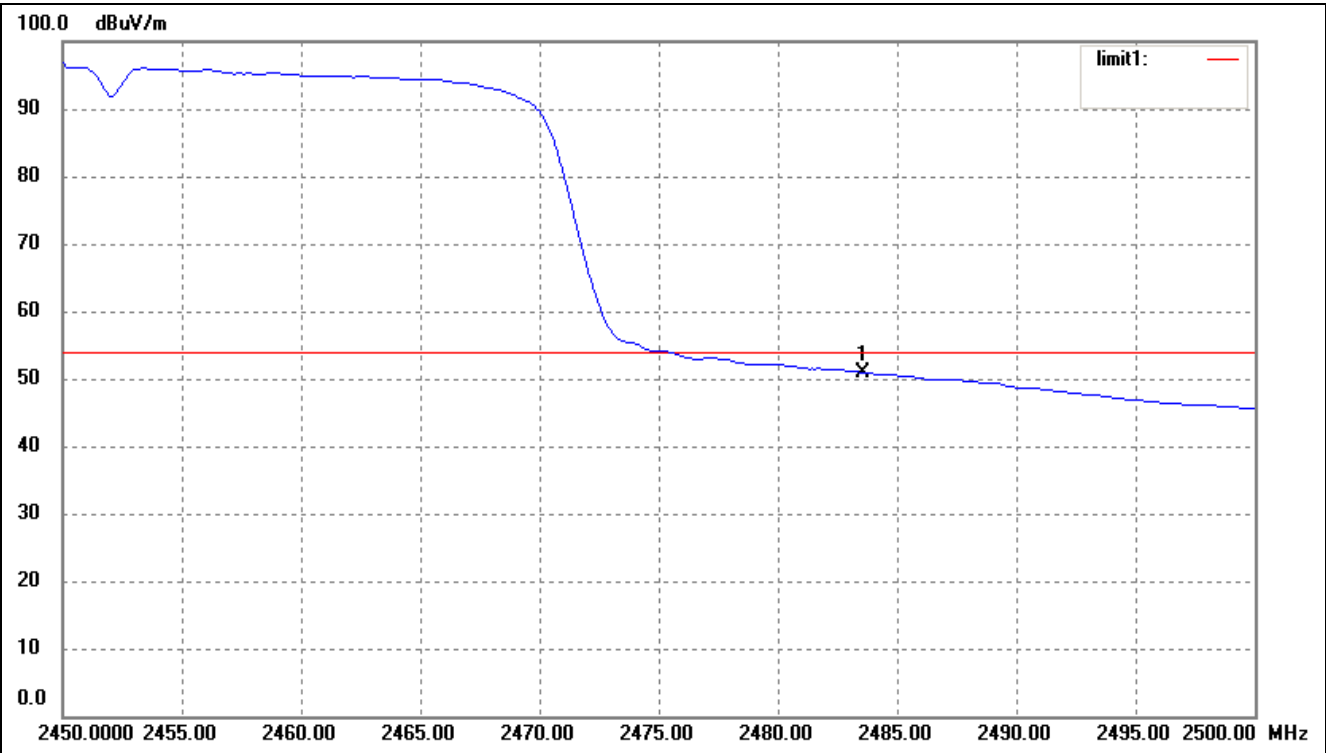
For 802.11n-HT40

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	16.94	35.59	52.53	54.00	-1.47	334	100	Ave
	2390.000	32.06	35.59	67.65	74.00	-6.35	334	100	peak
2	2400.000	21.04	35.68	56.72	/	/	/	/	Ave
3	2427.184	64.39	35.78	100.17	/	/	/	/	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	14.96	35.97	50.93	54.00	-3.07	143	100	Ave
	2483.500	28.95	35.97	64.92	74.00	-9.08	143	100	peak

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