

FCC PART 15.247  
**EMI MEASUREMENT AND TEST REPORT**  
For

**Tensun tek Electronic Co., Ltd.**  
Room 1106 Lankun Building, Minkang Road, Minzhi, Baoan District, Shenzhen, China

**FCC ID: ZT6TS-PHR300**

August 25, 2011

This Report Concerns: Original Report	Equipment Type: POE Wireless Router
Test Engineer:	Jack Liu
Report No.:	BST11070189Y-1ER-3
Receive EUT Date/Test Date:	August 11, 2011/ August 12-24, 2011
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## **1. GENERAL INFORMATION**

### **1.1. Report information**

1.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BST approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BST in any way guarantees the later performance of the product/equipment.

1.1.2.The sample/s mentioned in this report is/are supplied by Applicant, BST therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BST, unless the applicant has authorized BST in writing to do so.

Test Facility -

The test site used to collect the radiated data is located on the address of  
SinTek Laboratory Co.,Ltd.

(FCC Registered Test Site Number: 963441) on

No.7, Xinshidai Industrial, Guantian Village, Shiyan Town, Baoan District, Shenzhen,  
Guangdong 518108, China

The Test Site is constructed and calibrated to meet the FCC requirements.

### **1.2. Measurement Uncertainty**

Available upon request.

## 2. PRODUCT DESCRIPTION

### 2.1. EUT Description

Applicant	:	Tensun tek Electronic Co., Ltd.
Address	:	Room 1106 Lankun Building, Minkang Road, Minzhi, Baoan District, Shenzhen, China
Manufacturer	:	Tensun tek Electronic Co., Ltd.
Address	:	Room 1106 Lankun Building, Minkang Road, Minzhi, Baoan District, Shenzhen, China
EUT Description	:	POE Wireless Router
Trade Name	:	N/A
Modulation	:	802.11b: DSSS 802.11g, n: OFDM
Model Number	:	TS-PHR300
Power Supply	:	DC 9V (Powered by Adapter)
Adapter	:	Model: HB12-O9010SPA Input: AC 100-240V, 50/60Hz, 0.4A Output: DC 9V, 1.0A
Antenna Type	:	Integral Antenna
Antenna gain	:	2dBi(2.4GHz)

### 2.2. Block Diagram of EUT Configuration

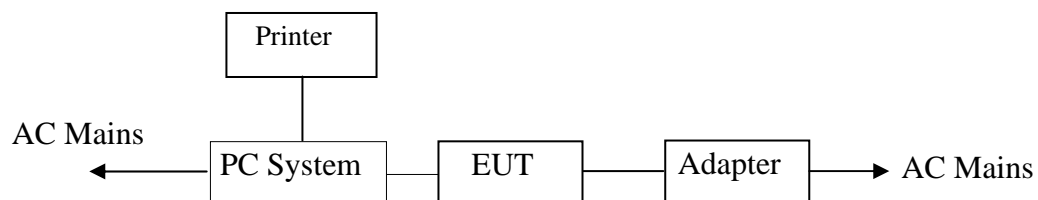


Figure 1 EUT SETUP

### 2.3. Support Equipment List

Table 2 Ancillary Equipment

Name	Model No	S/N	Manufacturer	Used “ ”
PC system	ST-PC-002	569787506	DeLUX	
Printer	HP930C	N/A	HP	

### 3. TEST CONDITIONS

Temperature: 20~25

Relative Humidity: 50~63 %

#### 4. FCC ID LABEL

**FCC ID: ZT6TS-PHR300**

**This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1. This device may not cause harmful interference, and 2. This device must accept any interference received, including interference that may cause undesired operation.**

##### **Label Location on EUT**

##### **EUT Bottom View/ FCC ID Label Location**



## 5. TEST RESULTS SUMMARY

### FCC 15 Subpart C, Paragraph 15.247

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247 (i) , §1.1307 (b) (1), §2.1093	RF Exposure	PASS
§15.203	Antenna Requirement	PASS
§15.207 (a)	Conducted Emissions	PASS
§15.247(d)	Spurious Emissions at Antenna Port	PASS
§15.205	Restricted Bands	PASS
§15.209, §15.205, §15.247(d)	Spurious Emissions	PASS
§15.247 (a)(2)	6 dB Bandwidth	PASS
§15.247(b)(3)	Maximum Peak Output Power	PASS
§15.247(d)	100kHz Bandwidth of Frequency Band Edge	PASS
§15.247(e)	Power Spectral Density	PASS

Statement: All testing was performed using the test procedures found in ANSI C63.4 20003.

#### Modifications

No modification was made.



## 6. TEST EQUIPMENT USED

Equipment/Facilities	Manufacturer	Model #	Serial no.	Date of Cal.	Cal. Interval
Cable	Resenberger	N/A	NO.1	Mar 10 , 2011	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar 10 , 2011	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar 10 , 2011	1 Year
LISN	Rohde & Schwarz	ESH3-Z5	100305	Mar 10 , 2011	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10 , 2011	1 Year
EMI Test Receiver	Rohde & Schwarz	ESP13	100180	Oct.11,2010	1 Year
Spectrum Analyzer	Rohde & Schwarz	FSP40	100273	Sep.10,2010	1 Year
Spectrum Analyzer	Agilent	E4446A	US44300459	Sep.10,2010	1 Year
3m Semi-Anechoic Chamber	Albatross Projects	9m×6m×6m	N/A	Feb.20,2011	1 Year
Signal Generator	FLUKE	PM5418 + Y/C	LO747012	Feb.20,2011	1 Year
Signal Generator	FLUKE	PM5418TX	LO738007	Feb.20,2011	1 Year
Loop Antenna	SCHWARZBECK	FMZB1516	113	Jan.30,2011	1 Year
Trilog-Super Broadband Antenna	SCHWARZBECK	VULB9161	9161-4079	Sep.22,2010	1 Year
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-564	Sep.22,2010	1 Year
Ultra Broadband Antenna	Rohde & Schwarz	HL-562	100110	June.15,2011	1 Year
AMN	Rohde & Schwarz	ESH3-Z5	100196	Oct.11,2010	1 Year
AMN	Rohde & Schwarz	ESH3-Z5	100197	Oct.11,2010	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	N/A	N/A	N/A
Power Meter	Rohde & Schwarz	NRVD	100041	Feb.20,2011	1 Year
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	Feb.20,2011	1 Year
Coaxial Cable with N-connectors	SCHWARZBECK	AK9515H	95549	Sep.22,2010	1 Year
Radio Communication Test Set	Rohde & Schwarz	CMS 54	846621/024	Feb.20,2011	1 Year
Modulation Analyzer	Hewlett-Packard	8901B	2303A00362	Feb.20,2011	1 Year
Absorbing clamp	Rohde & Schwarz	MDS-21	N/A	Oct.11,2010	1 Year

## 7. §15.247 (I) AND §1.1307 (B) (1), §2.1093 – RF EXPOSURE

### 7.1. Standard Applicable

According to §15.247 (i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
<b>Limits for General Population/Uncontrolled Exposure</b>				
0.3–3.0	614	1.63	*(100)	30
3.0–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz

\* = Plane-wave equivalent power density

### 7.2. Test Data

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

S: Power density, in mW/cm<sup>2</sup>

P: Power input to the antenna, in mW

G: numeric gain of the antenna

R: distance to the center of the antenna, in cm

Maximum peak output power at antenna input terminal (dBm):	<u>25.98</u>
Maximum peak output power at antenna input terminal (mW):	<u>396.28</u>
Prediction distance (cm):	<u>20</u>
Prediction frequency (MHz):	<u>2437</u>
Antenna Gain, typical (dBi):	<u>2.0</u>
Maximum Antenna Gain (numeric):	<u>1.58</u>
Power density at predication frequency and distance (mW/cm <sup>2</sup> ):	<u>0.125</u>
MPE limit for Occupational exposure at predication frequency (mW/cm <sup>2</sup> ):	<u>1.0</u>

### 7.3. Test Result

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, Human proximity to the antenna shall not be less than 20cm(8 inches) during normal operation.

## **8. §15.203 - ANTENNA REQUIREMENT**

### **8.1. Standard Applicable**

According to § 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### **8.2. Antenna Connector Construction**

The antenna type used in this product is an integral antenna and it is considered to meet antenna requirement of FCC. Refer to the product photo.

## 9. §15.207 - CONDUCTED EMISSIONS

### 9.1. Applicable Standard

The specification used was with the FCC Part 15.207 limits.

### 9.2. Test Procedure

During the conducted emission test, the EUT was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

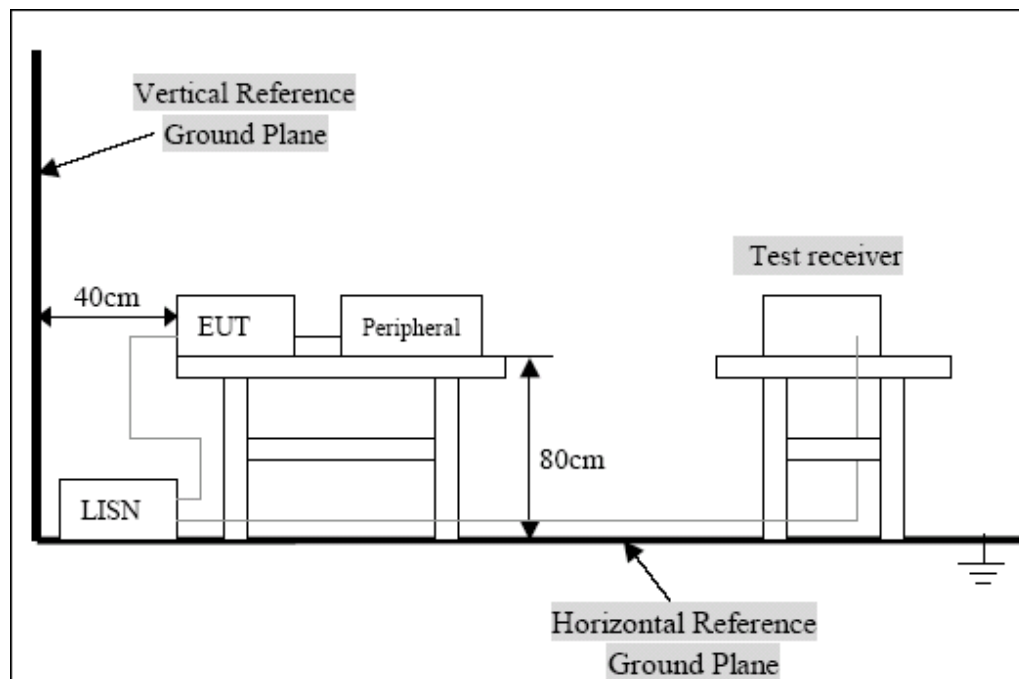
All data was recorded in the Quasi-peak and average detection mode.

### 9.3. Conducted Power line Emission Limits

FCC Part 15 Paragraph 15.207 (dBuV)		
Frequency Range (MHz)	Class A QP/AV	Class B QP/AV
0.15-0.5	79/66	65-56/56-46
0.5-5.0	73/60	56-46
5.0-3.0	73/60	60-50

Note: In the above table, the tighter limit applies at the band edges.

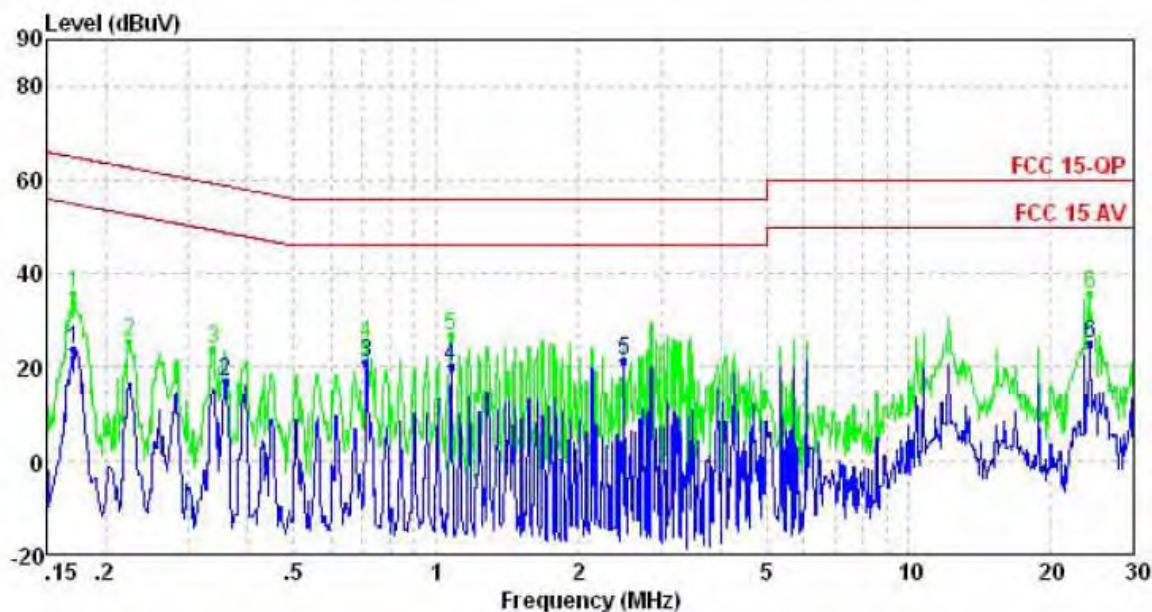
### 9.4. Block Diagram of Test Setup



## 9.5. Conducted Power Line Test Result

Pass.

Wireless mode: The worst test mode: 802.11g TX 2437MHz



Condition:

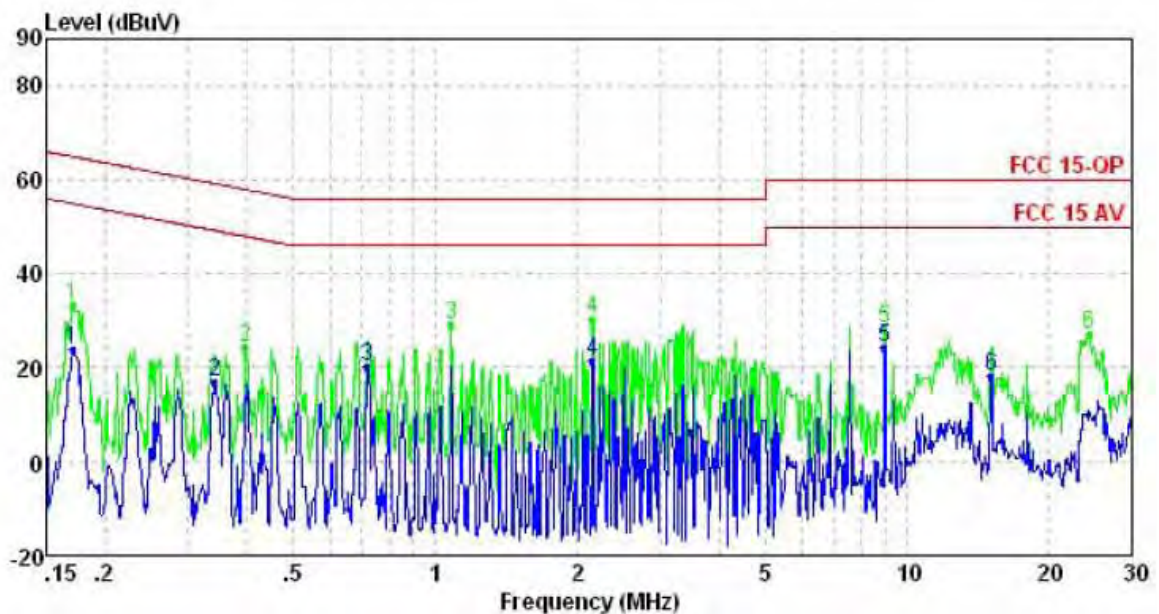
: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1	0.17	23.90	54.90	-31.00	Average	LINE
2	0.36	16.92	48.74	-31.82	Average	LINE
3	0.71	21.11	46.00	-24.89	Average	LINE
4	1.08	20.31	46.00	-25.69	Average	LINE
5	2.50	21.59	46.00	-24.41	Average	LINE
6 Max	24.27	25.11	50.00	-24.89	Average	LINE

Condition:

: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1	0.17	35.48	64.90	-29.42	Peak	LINE
2	0.22	25.34	62.66	-37.32	Peak	LINE
3	0.34	23.88	59.27	-35.39	Peak	LINE
4	0.71	24.92	56.00	-31.08	Peak	LINE
5	1.08	26.71	56.00	-29.29	Peak	LINE
6 Max	24.27	35.62	60.00	-24.38	Peak	LINE



Condition:

: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1	0.17	24.02	54.94	-30.92	Average	NEUTRAL
2	0.34	16.76	49.18	-32.42	Average	NEUTRAL
3	0.72	20.25	46.00	-25.75	Average	NEUTRAL
4 Max	2.16	21.51	46.00	-24.49	Average	NEUTRAL
5	8.96	24.17	50.00	-25.83	Average	NEUTRAL
6	15.07	17.98	50.00	-32.02	Average	NEUTRAL

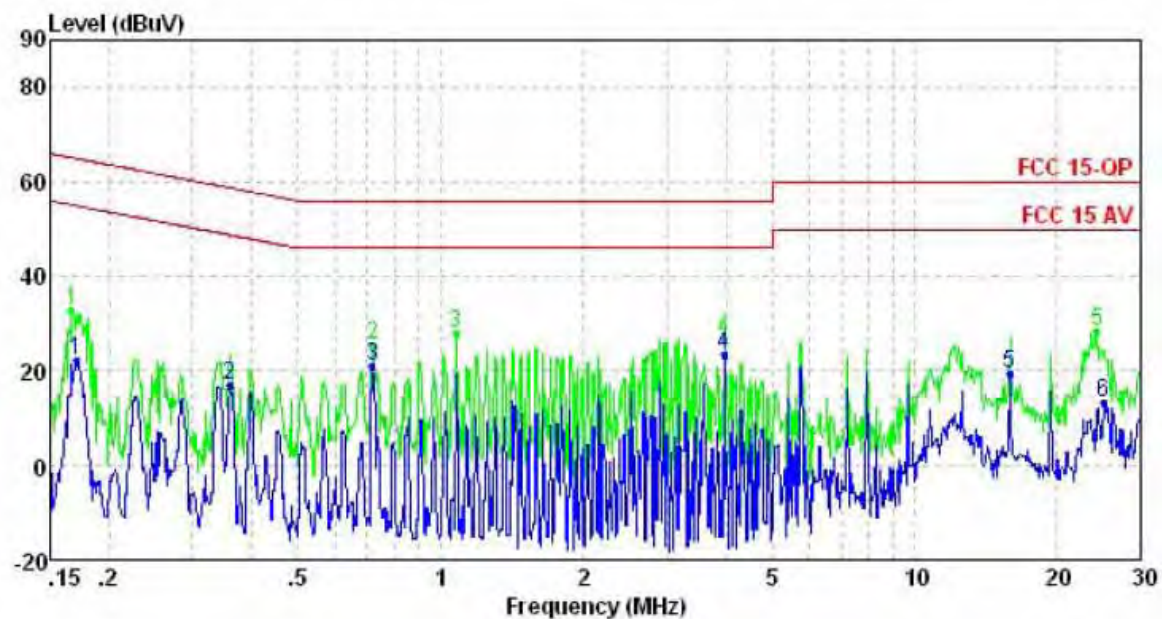
Condition:

: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	dBuV	dB		
1	0.17	33.11	64.94	-31.83	Peak	NEUTRAL
2	0.40	24.28	57.95	-33.67	Peak	NEUTRAL
3	1.08	29.10	56.00	-26.90	Peak	NEUTRAL
4 Max	2.16	30.15	56.00	-25.85	Peak	NEUTRAL
5	8.96	28.30	60.00	-31.70	Peak	NEUTRAL
6	24.40	27.28	60.00	-32.72	Peak	NEUTRAL



Wire mode: Connect to PC



Condition:

: RBW:9.000KHz VBW:30.000KHz

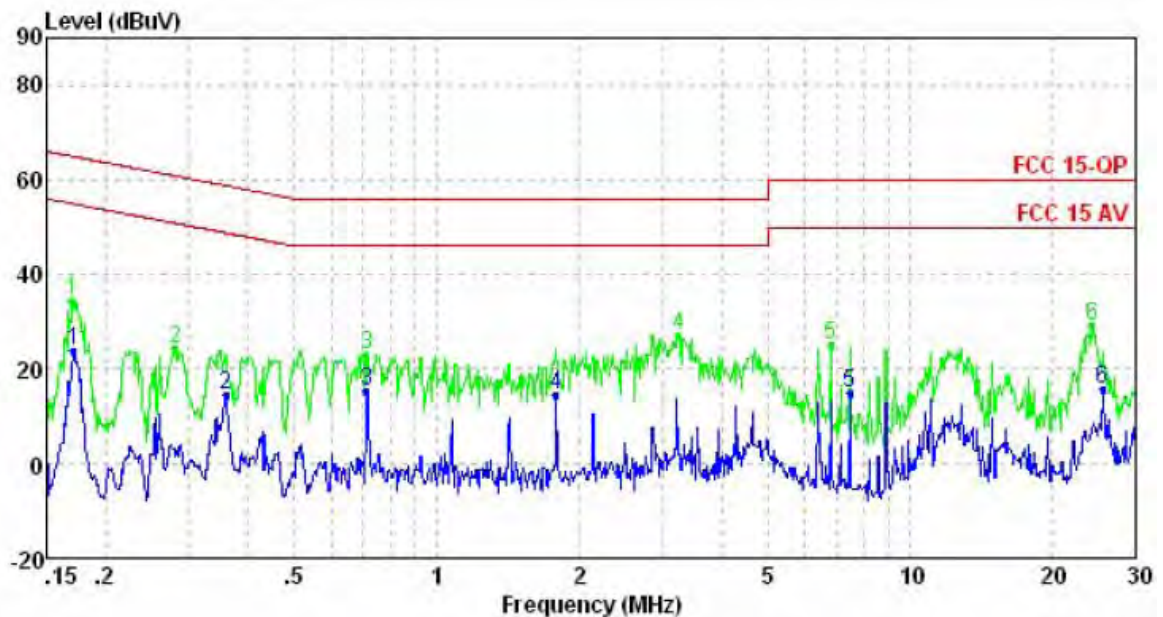
	Freq	Level	Limit	Over		
	MHz	dBuV	Line	Limit	Remark	Pol/Phase
1	0.17	22.37	54.94	-32.57	Average	LINE
2	0.36	16.83	48.74	-31.91	Average	LINE
3 Max	0.72	21.05	46.00	-24.95	Average	LINE
4	3.96	23.26	46.00	-22.74	Average	LINE
5	15.89	19.55	50.00	-30.45	Average	LINE
6	25.05	13.17	50.00	-36.83	Average	LINE

Condition:

: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over		
	MHz	dBuV	Line	Limit	Remark	Pol/Phase
1	0.17	32.82	65.12	-32.30	Peak	LINE
2	0.72	25.33	56.00	-30.67	Peak	LINE
3 Max	1.08	27.97	56.00	-28.03	Peak	LINE
4	3.96	26.74	56.00	-29.26	Peak	LINE
5	24.27	28.30	60.00	-31.70	Peak	LINE





Condition:

: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	Line	Limit	dB	
1	0.17	24.03	54.90	-30.87	Average	NEUTRAL
2	0.36	14.50	48.74	-34.24	Average	NEUTRAL
3	0.71	15.28	46.00	-30.72	Average	NEUTRAL
4 Max	1.79	14.53	46.00	-31.47	Average	NEUTRAL
5	7.49	15.05	50.00	-34.95	Average	NEUTRAL
6	25.59	15.74	50.00	-34.26	Average	NEUTRAL

Condition:

: RBW:9.000KHz VBW:30.000KHz

	Freq	Level	Limit	Over	Remark	Pol/Phase
	MHz	dBuV	Line	Limit	dB	
1	0.17	34.45	64.99	-30.54	Peak	NEUTRAL
2	0.28	24.05	60.81	-36.76	Peak	NEUTRAL
3	0.71	23.18	56.00	-32.82	Peak	NEUTRAL
4 Max	3.24	27.19	56.00	-28.81	Peak	NEUTRAL
5	6.81	25.24	60.00	-34.76	Peak	NEUTRAL
6	24.27	29.17	60.00	-30.83	Peak	NEUTRAL

## 10. §15.209, §15.205, §15.247(D) - Spurious Emissions

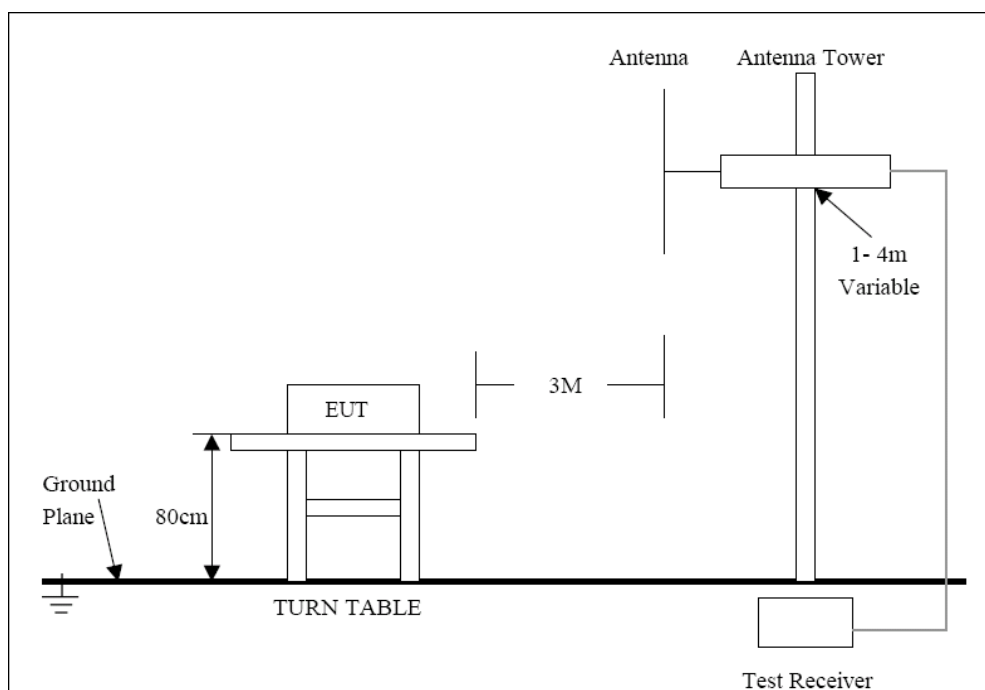
### 10.1. Test Equipment

Please refer to section 6 this report.

### 10.2. Test Procedure

The out of band emission tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part Subpart C limits. The EUT was tested in 3 orthogonal planes.

### 10.3. Radiated Test Setup



For the accrual test configuration,pleas refer to the related items-photos of Testing.

### 10.4. Radiated Emission Limit

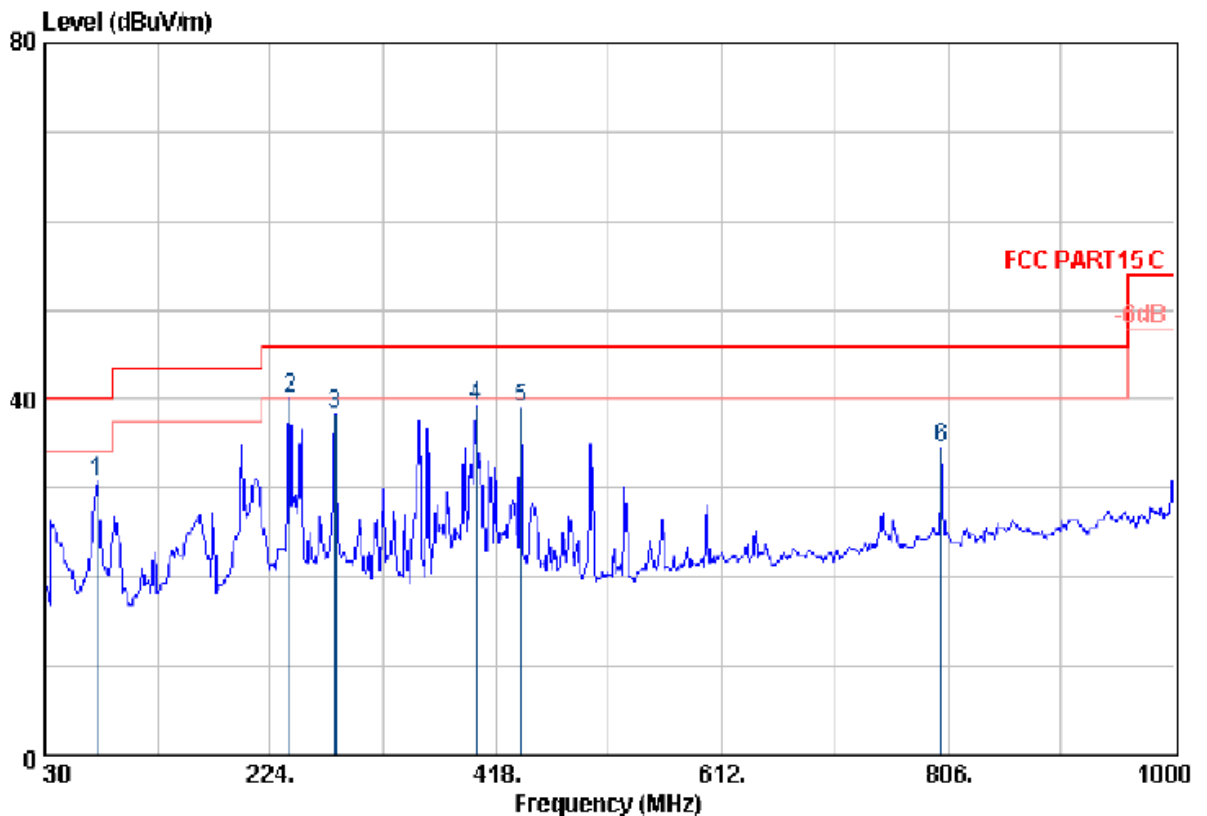
Frequency (MHz)	Distance (m)	Field Strength (dBuV/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
ABOVE 960	3	54.0

## 10.5.Radiated Emission Test Result

Pass.

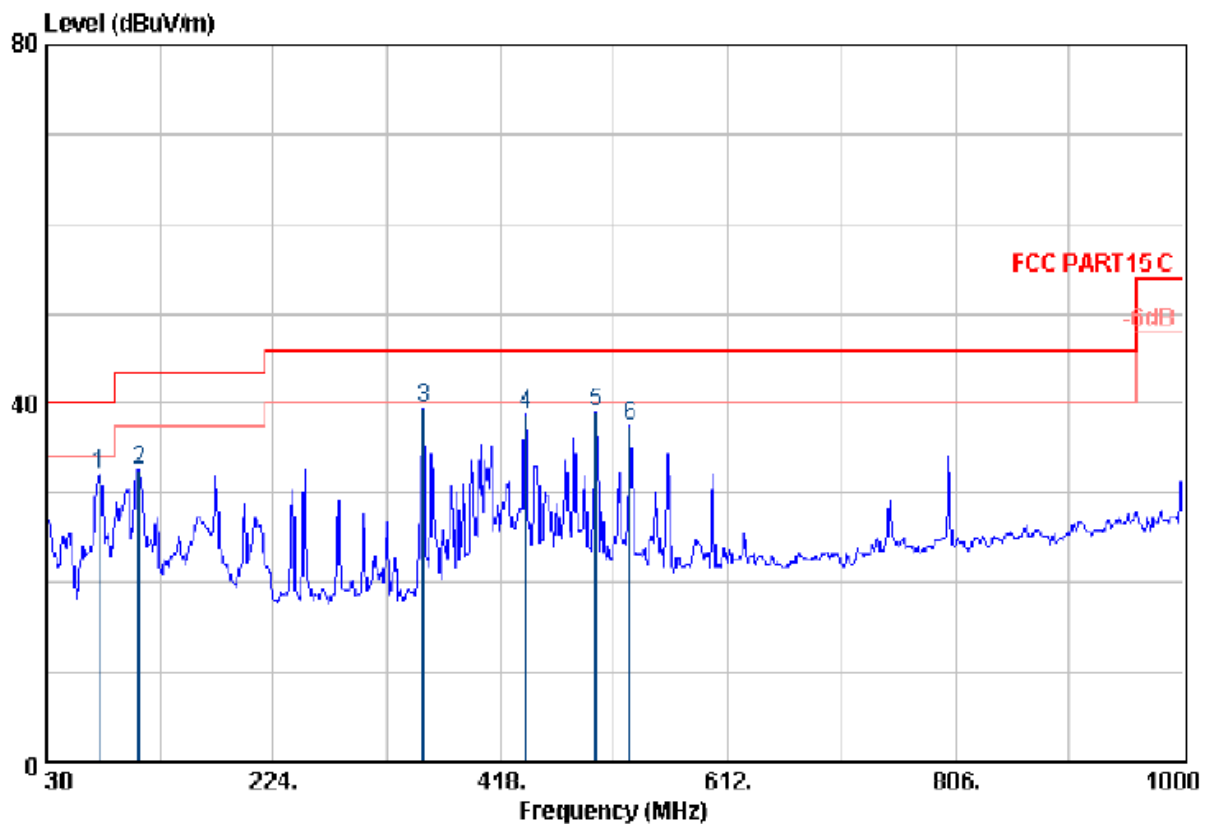
Wire mode: Connect to PC

Horizontal



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	75.59	7.32	0.94	22.48	30.74	40.00	9.26	QP
2	240.49	11.88	1.46	26.68	40.02	46.00	5.98	QP
3	279.29	13.30	1.57	23.37	38.24	46.00	7.76	QP
4	400.54	16.53	1.83	20.76	39.12	46.00	6.88	QP
5	439.34	17.08	2.04	19.88	39.00	46.00	7.00	QP
6	800.18	21.80	2.61	10.24	34.65	46.00	11.35	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

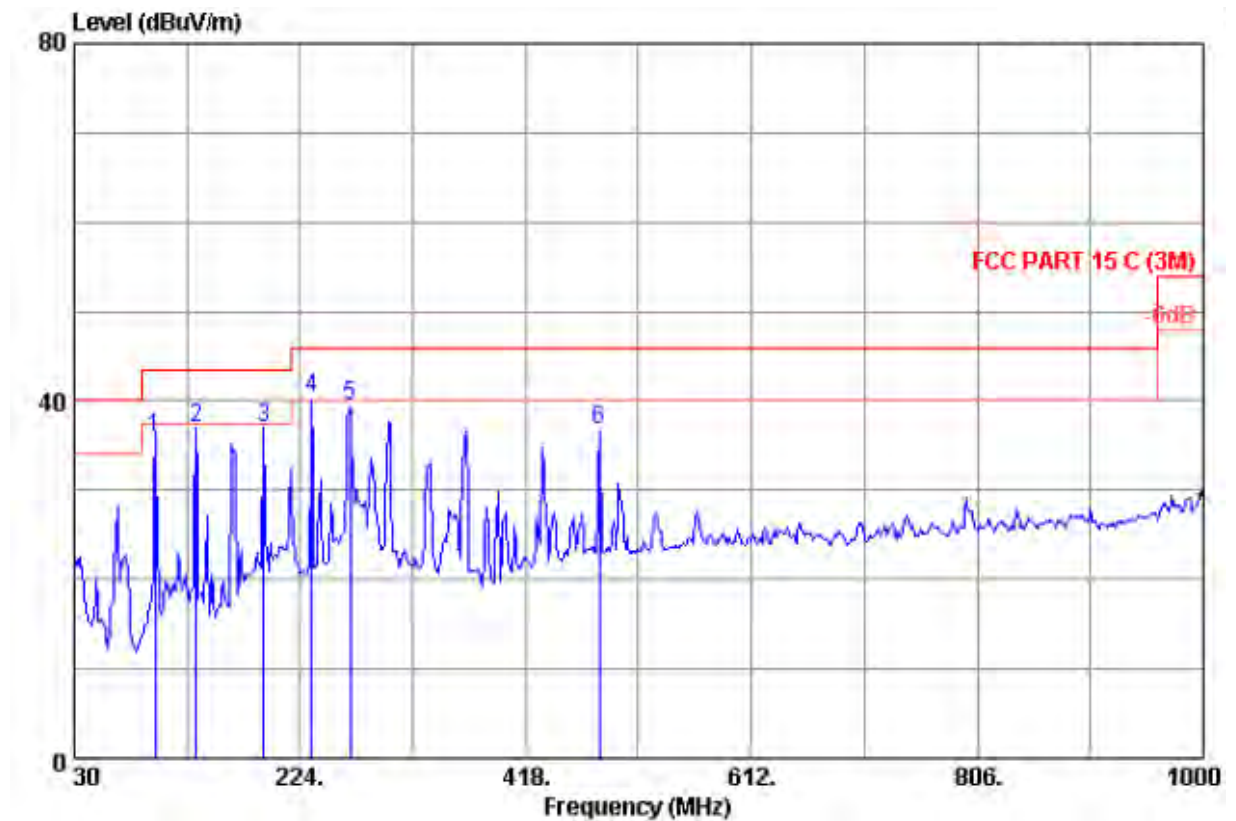
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	75.59	7.32	0.94	23.80	32.06	40.00	7.94	QP
2	109.54	11.30	1.04	20.28	32.62	43.50	10.88	QP
3	352.04	15.28	1.79	22.37	39.44	46.00	6.56	QP
4	439.34	17.08	2.04	19.56	38.68	46.00	7.32	QP
5	499.48	18.10	2.02	18.84	38.96	46.00	7.04	QP
6	528.58	18.40	2.09	17.01	37.50	46.00	8.50	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

Wireless mode: TX

Frequency: 30MHz~1GHz (the worst test mode: 802.11g TX 2437MHz)

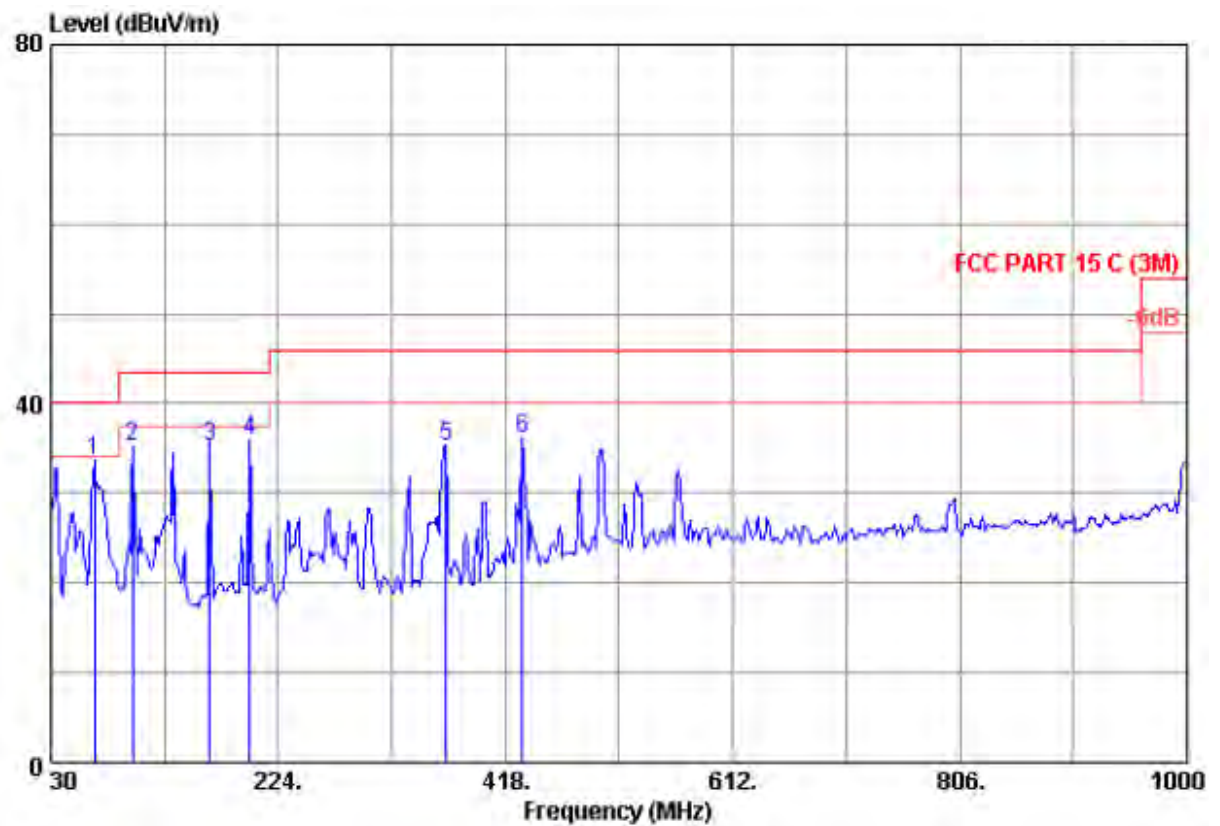
Horizontal



No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	99.840	10.91	0.90	24.09	35.90	43.50	7.60	QP
2	134.760	11.99	1.03	23.88	36.90	43.50	6.60	QP
3	192.960	9.01	1.28	26.81	37.10	43.50	6.40	QP
4	233.700	10.49	1.53	28.27	40.29	46.00	5.71	QP
5	267.650	13.00	1.67	24.69	39.36	46.00	6.64	QP
6	481.050	17.61	2.19	16.98	36.78	46.00	9.22	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

## Vertical



No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	66.860	6.34	0.75	53.29	33.57	40.00	6.43	QP
2	99.840	10.91	0.90	50.14	35.25	43.50	8.25	QP
3	165.800	9.90	1.16	51.02	35.28	43.50	8.22	QP
4	199.750	9.53	1.30	51.80	35.78	43.50	7.72	QP
5	367.560	14.56	1.87	45.86	35.27	46.00	10.73	QP
6	432.550	16.78	2.03	44.27	36.04	46.00	9.96	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

**Frequency: 1GHz~25GHz**

802.11b Channel Low 2412MHz Tx

**Horizontal**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1594.000	26.96	6.92	36.43	42.92	40.37	74.00	33.63	Peak
2	1984.000	29.11	7.87	36.06	45.56	46.48	74.00	27.52	Peak
3	2412.000	29.45	8.72	35.95	91.80	94.02	74.00	-20.02	Peak

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.38	35.25	41.02	52.47	74.00	21.53	Peak
2	4824.000	34.32	12.38	35.25	34.58	46.03	54.00	7.97	Average

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1066.000	25.54	5.60	37.26	44.82	38.70	74.00	35.30	Peak
2	1600.000	26.96	6.98	36.43	43.44	40.95	74.00	33.05	Peak
3	1984.000	29.11	7.87	36.06	45.78	46.70	74.00	27.30	Peak
4	2412.000	29.45	8.72	35.95	102.20	104.42	74.00	-30.42	Peak
5	2641.000	30.25	9.17	35.77	44.92	48.57	74.00	25.43	Peak

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.38	35.25	42.96	54.41	74.00	19.59	Peak
2	4824.000	34.32	12.38	35.25	35.89	47.34	54.00	6.66	Average

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



## 802.11b Channel Middle 2437MHz Tx

**Horizontal**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2026.000	29.21	7.97	36.12	44.01	45.07	74.00	28.93	Peak
2	2437.000	29.47	8.77	36.06	92.03	94.21	74.00	-20.21	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	41.51	53.00	74.00	21.00	Peak
2	4874.000	34.41	12.44	35.36	35.20	46.69	54.00	7.31	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1600.000	26.96	6.98	36.43	43.35	40.86	74.00	33.14	Peak
2	2026.000	29.21	7.97	36.12	43.32	44.38	74.00	29.62	Peak
3	2290.000	29.38	8.47	35.92	43.07	45.00	74.00	29.00	Peak
4	2437.000	29.47	8.77	36.06	102.55	104.73	74.00	-30.73	Peak
5	2641.000	30.25	9.17	35.77	46.29	49.94	74.00	24.06	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	42.64	54.13	74.00	19.87	Peak
2	4874.000	34.41	12.44	35.36	36.17	47.66	54.00	6.34	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



## 802.11b Channel High 2462MHz Tx

**Horizontal**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2026.000	29.21	7.97	36.12	43.56	44.62	74.00	29.38	Peak
2	2462.000	29.48	8.82	36.02	96.48	98.76	74.00	-24.76	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.000	34.49	12.50	35.34	41.58	53.23	74.00	20.77	Peak
2	4924.000	34.49	12.50	35.34	35.62	47.27	54.00	6.73	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1594.000	26.96	6.92	36.43	46.14	43.59	74.00	30.41	Peak
2	2026.000	29.21	7.97	36.12	44.21	45.27	74.00	28.73	Peak
3	2462.000	29.48	8.82	36.02	105.32	107.60	74.00	-33.60	Peak
4	2638.000	30.17	9.17	35.91	43.32	46.75	74.00	27.25	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.000	34.49	12.50	35.34	43.15	54.80	74.00	19.20	Peak
2	4924.000	34.49	12.50	35.34	36.27	47.92	54.00	6.08	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 802.11g Channel Low 2412MHz Tx

**Horizontal**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1987.000	29.11	7.87	36.06	44.89	45.81	74.00	28.19	Peak
2	2412.000	29.45	8.72	35.95	94.34	96.56	74.00	-22.56	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4824.000	34.32	12.38	35.25	42.35	53.80	74.00	20.20	Peak
2	4824.000	34.32	12.38	35.25	35.98	47.43	54.00	6.57	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1600.000	26.96	6.98	36.43	45.40	42.91	74.00	31.09	Peak
2	2026.000	29.21	7.97	36.12	43.05	44.11	74.00	29.89	Peak
3	2412.000	29.45	8.72	35.95	103.27	105.49	74.00	-31.49	Peak
4	2560.000	29.83	9.02	35.88	43.39	46.36	74.00	27.64	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4824.000	34.32	12.38	35.25	42.87	54.32	74.00	19.68	Peak
2	4824.000	34.32	12.38	35.25	36.45	47.90	54.00	6.10	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 802.11g Channel Middle 2437MHz Tx

**Horizontal**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2023.000	29.21	7.97	36.12	43.81	44.87	74.00	29.13	Peak
2	2437.000	29.47	8.77	36.06	94.93	97.11	74.00	-23.11	Peak
3	2641.000	30.25	9.17	35.77	44.79	48.44	74.00	25.56	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	41.24	52.73	74.00	21.27	Peak
2	4874.000	34.41	12.44	35.36	35.97	47.46	54.00	6.54	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1846.000	28.36	7.51	36.23	44.21	43.85	74.00	30.15	Peak
2	2290.000	29.38	8.47	35.92	49.69	51.62	74.00	22.38	Peak
3	2437.000	29.47	8.77	36.06	104.00	106.18	74.00	-32.18	Peak
4	2560.000	29.83	9.02	35.88	46.31	49.28	74.00	24.72	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	42.62	54.11	74.00	19.89	Peak
2	4874.000	34.41	12.44	35.36	36.84	48.33	54.00	5.67	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 802.11g Channel High 2462MHz Tx

**Horizontal**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1846.000	28.36	7.51	36.23	45.06	44.70	74.00	29.30	Peak
2	2462.000	29.48	8.82	36.02	97.54	99.82	74.00	-25.82	Peak
3	2641.000	30.25	9.17	35.77	45.30	48.95	74.00	25.05	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.000	34.49	12.50	35.34	41.96	53.61	74.00	20.39	Peak
2	4924.000	34.49	12.50	35.34	35.87	47.52	54.00	6.48	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1600.000	26.96	6.98	36.43	44.21	41.72	74.00	32.28	Peak
2	2290.000	29.38	8.47	35.92	49.16	51.09	74.00	22.91	Peak
3	2462.000	29.48	8.82	36.02	106.24	108.52	74.00	-34.52	Peak
4	2509.000	29.58	8.92	35.99	48.48	50.99	74.00	23.01	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.000	34.49	12.50	35.34	42.39	54.04	74.00	19.96	Peak
2	4924.000	34.49	12.50	35.34	36.48	48.13	54.00	5.87	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 802.11n HT20 Channel Low 2412MHz Tx

**Horizontal**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1846.000	28.36	7.51	36.23	46.75	46.39	74.00	27.61	Peak
2	2412.000	29.45	8.72	35.95	92.62	94.84	74.00	-20.84	Peak
3	2560.000	29.83	9.02	35.88	44.01	46.98	74.00	27.02	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.38	35.25	41.96	53.41	74.00	20.59	Peak
2	4824.000	34.32	12.38	35.25	35.86	47.31	54.00	6.69	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1846.000	28.36	7.51	36.23	47.08	46.72	74.00	27.28	Peak
2	2412.000	29.45	8.72	35.95	102.89	105.11	74.00	-31.11	Peak
3	2641.000	30.25	9.17	35.77	45.77	49.42	74.00	24.58	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.38	35.25	42.59	54.04	74.00	19.96	Peak
2	4824.000	34.32	12.38	35.25	36.48	47.93	54.00	6.07	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 802.11n HT20 Channel Middle 2437MHz Tx

**Horizontal**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1846.000	28.36	7.51	36.23	45.27	44.91	74.00	29.09	Peak
2	2437.000	29.47	8.77	36.06	93.73	95.91	74.00	-21.91	Peak
3	2641.000	30.25	9.17	35.77	44.77	48.42	74.00	25.58	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4874.000	34.41	12.44	35.36	41.89	53.38	74.00	20.62	Peak
2	4874.000	34.41	12.44	35.36	36.01	47.50	54.00	6.50	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1846.000	28.36	7.51	36.23	45.95	45.59	74.00	28.41	Peak
2	2026.000	29.21	7.97	36.12	45.28	46.34	74.00	27.66	Peak
3	2290.000	29.38	8.47	35.92	49.86	51.79	74.00	22.21	Peak
4	2437.000	29.47	8.77	36.06	104.15	106.33	74.00	-32.33	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4874.000	34.41	12.44	35.36	42.38	53.87	74.00	20.13	Peak
2	4874.000	34.41	12.44	35.36	36.23	47.72	54.00	6.28	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 802.11n HT20 Channel High 2462MHz Tx

**Horizontal**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1846.000	28.36	7.51	36.23	44.74	44.38	74.00	29.62	Peak
2	2462.000	29.48	8.82	36.02	95.17	97.45	74.00	-23.45	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.000	34.49	12.50	35.34	42.05	53.70	74.00	20.30	Peak
2	4924.000	34.49	12.50	35.34	35.89	47.54	54.00	6.46	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1846.000	28.36	7.51	36.23	45.67	45.31	74.00	28.69	Peak
2	2023.000	29.21	7.97	36.12	43.49	44.55	74.00	29.45	Peak
3	2290.000	29.38	8.47	35.92	47.09	49.02	74.00	24.98	Peak
4	2462.000	29.48	8.82	36.02	104.74	107.02	74.00	-33.02	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.000	34.49	12.50	35.34	42.69	54.34	74.00	19.66	Peak
2	4924.000	34.49	12.50	35.34	36.87	48.52	54.00	5.48	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 802.11n HT40 Channel Low 2422MHz Tx

**Horizontal**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1984.000	29.11	7.87	36.06	47.12	48.04	74.00	25.96	Peak
2	2422.000	29.46	8.77	36.01	92.97	95.19	74.00	-21.19	Peak
3	2641.000	30.25	9.17	35.77	43.78	47.43	74.00	26.57	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4844.000	34.35	12.38	35.25	41.99	53.47	74.00	20.53	Peak
2	4844.000	34.35	12.38	35.25	36.03	47.51	54.00	6.49	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1984.000	29.11	7.87	36.06	47.27	48.19	74.00	25.81	Peak
2	2026.000	29.21	7.97	36.12	44.41	45.47	74.00	28.53	Peak
3	2422.000	29.46	8.77	36.01	97.53	99.75	74.00	-25.75	Peak
4	2641.000	30.25	9.17	35.77	45.58	49.23	74.00	24.77	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4844.000	34.35	12.38	35.25	42.96	54.44	74.00	19.56	Peak
2	4844.000	34.35	12.38	35.25	36.57	48.05	54.00	5.95	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



## 802.11n HT40 Channel Middle 2437MHz Tx

**Horizontal**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1846.000	28.36	7.51	36.23	44.30	43.94	74.00	30.06	Peak
2	2437.000	29.47	8.77	36.06	92.80	94.98	74.00	-20.98	Peak
3	2641.000	30.25	9.17	35.77	43.80	47.45	74.00	26.55	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	42.34	53.83	74.00	20.17	Peak
2	4874.000	34.41	12.44	35.36	36.06	47.55	54.00	6.45	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1846.000	28.36	7.51	36.23	44.65	44.29	74.00	29.71	Peak
2	1984.000	29.11	7.87	36.06	48.30	49.22	74.00	24.78	Peak
3	2437.000	29.47	8.77	36.06	101.83	104.01	74.00	-30.01	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	42.68	54.17	74.00	19.83	Peak
2	4874.000	34.41	12.44	35.36	36.58	48.07	54.00	5.93	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 802.11n HT40 Channel High 2452MHz Tx

**Horizontal**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1846.000	28.36	7.51	36.23	45.52	45.16	74.00	28.84	Peak
2	2452.000	29.47	8.82	36.06	89.58	91.81	74.00	-17.81	Peak
3	2641.000	30.25	9.17	35.77	41.20	44.85	74.00	29.15	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4904.000	34.46	12.47	35.27	41.09	52.75	74.00	21.25	Peak
2	4904.000	34.46	12.47	35.27	35.28	46.94	54.00	7.06	Average

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**Vertical**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2026.000	29.21	7.97	36.12	45.73	46.79	74.00	27.21	Peak
2	2452.000	29.47	8.82	36.06	100.64	102.87	74.00	-28.87	Peak
3	2641.000	30.25	9.17	35.77	44.24	47.89	74.00	26.11	Peak

## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4904.000	34.46	12.47	35.27	42.52	54.18	74.00	19.82	Peak
2	4904.000	34.46	12.47	35.27	36.17	47.83	54.00	6.17	Average

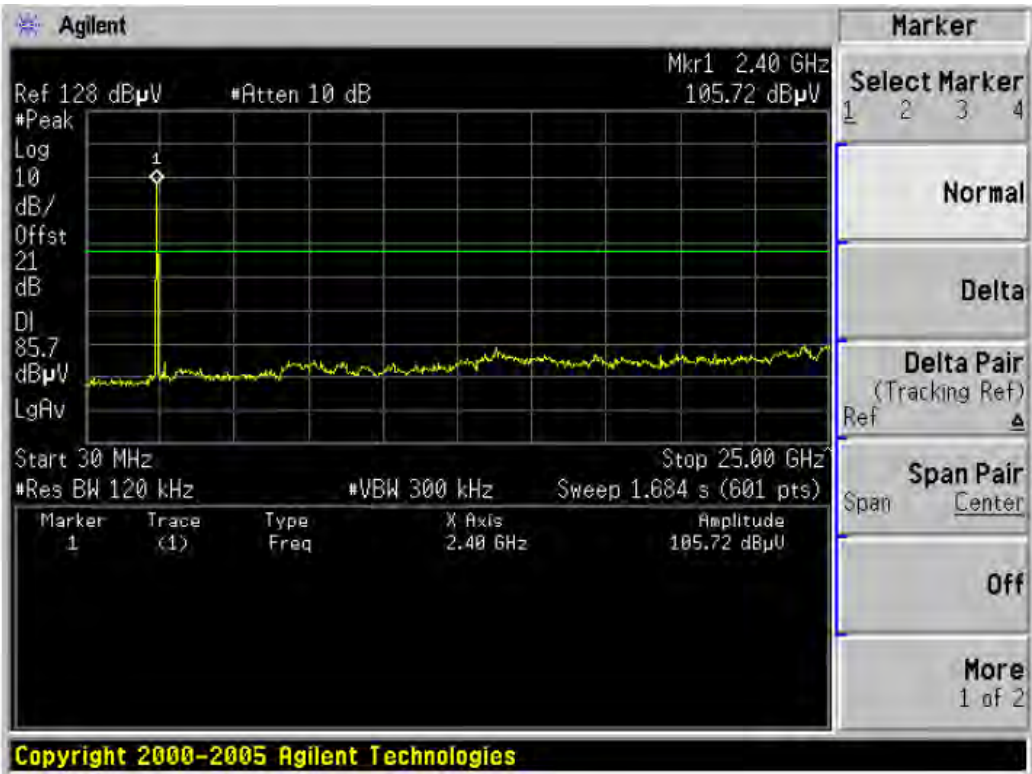
## Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

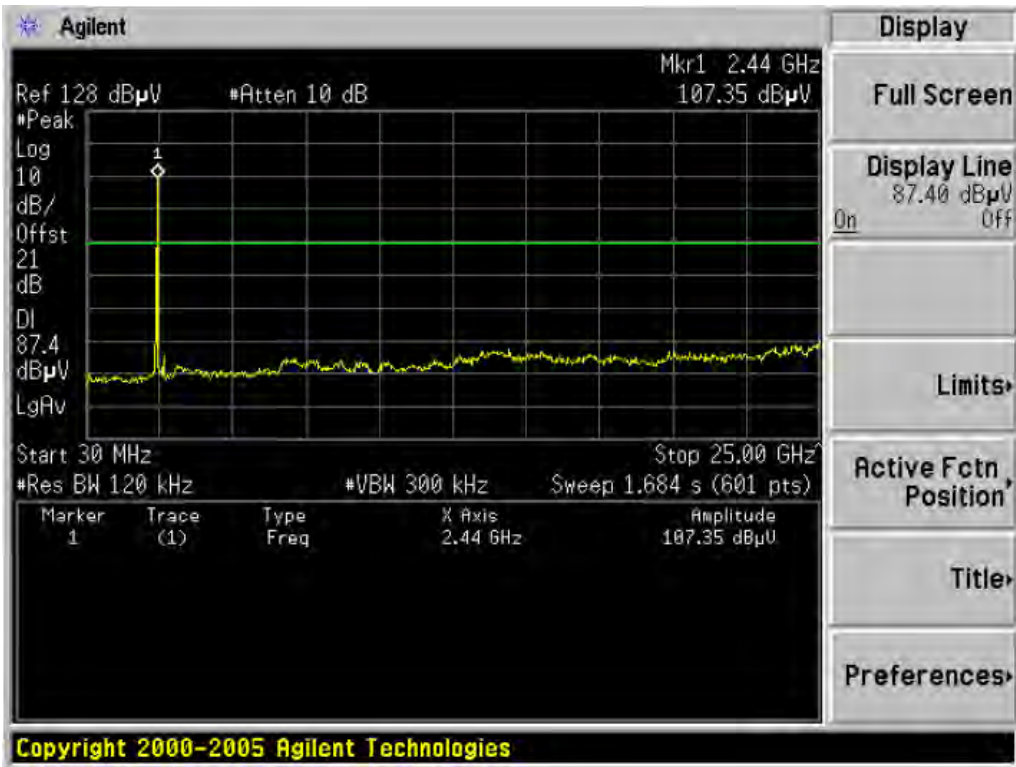
Antenna port conducted spurious emissions

Chain 1: 802.11b mode:

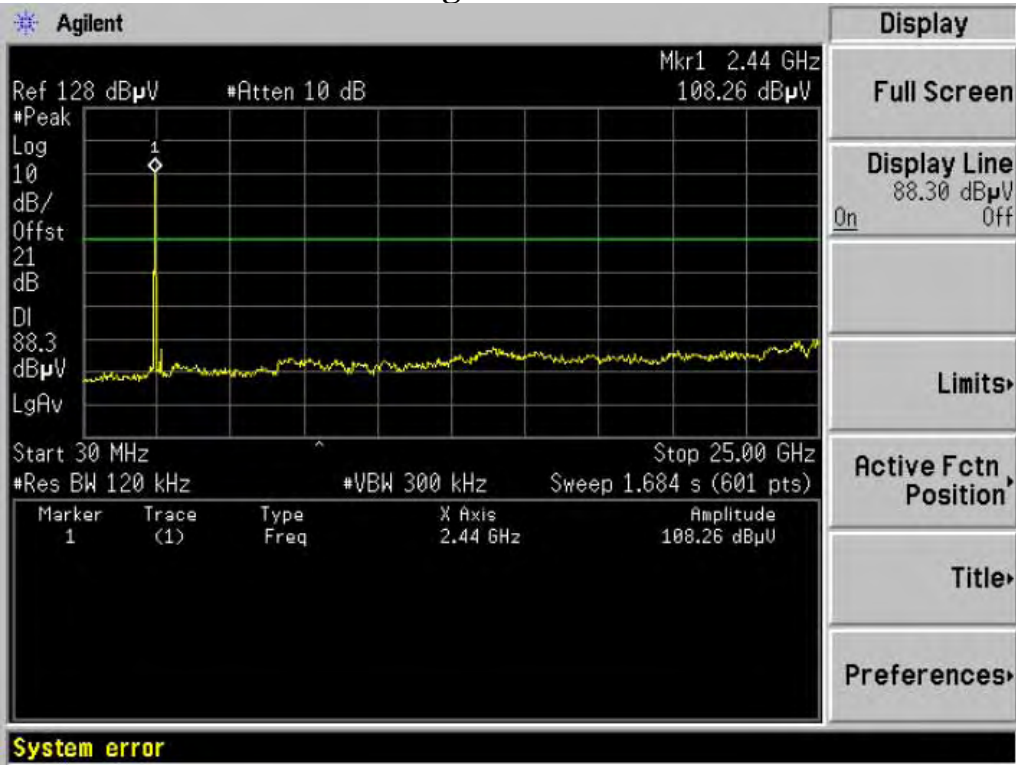
Low channel



Middle channel

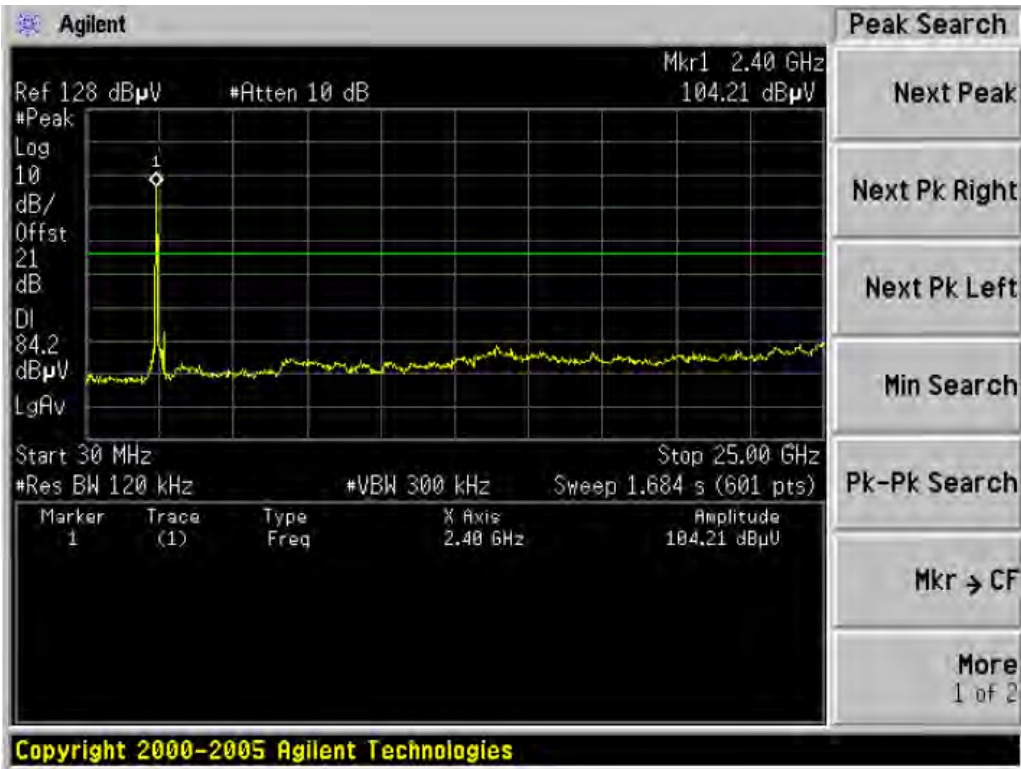


High channel

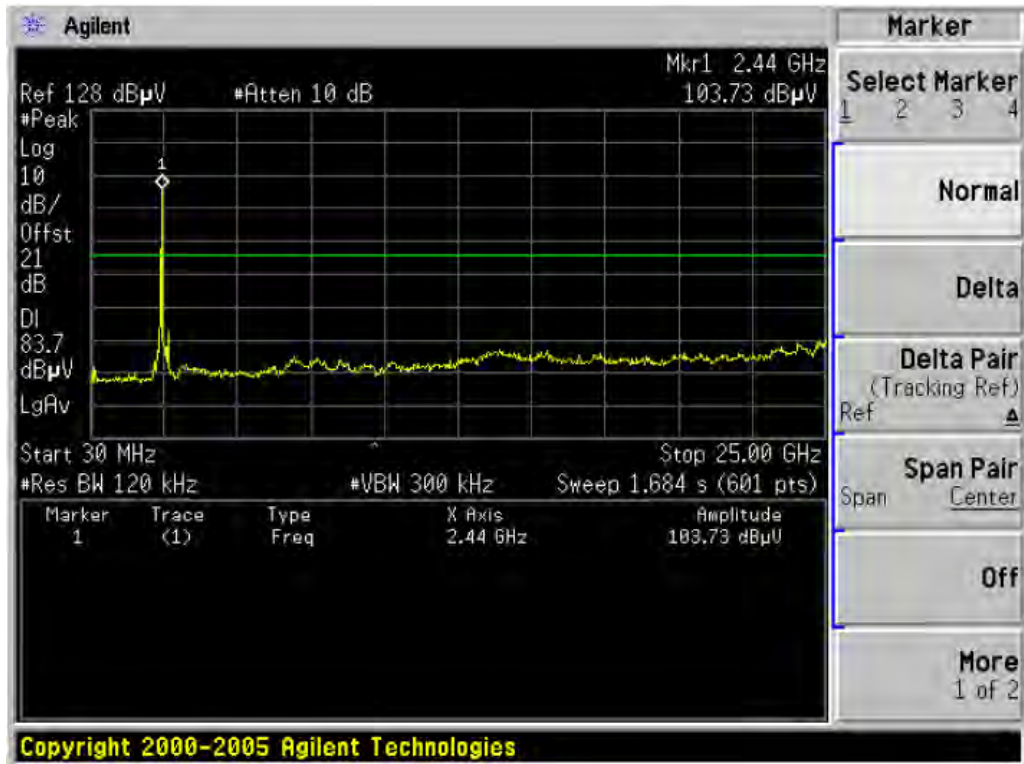


Chain 1: 802.11g mode:

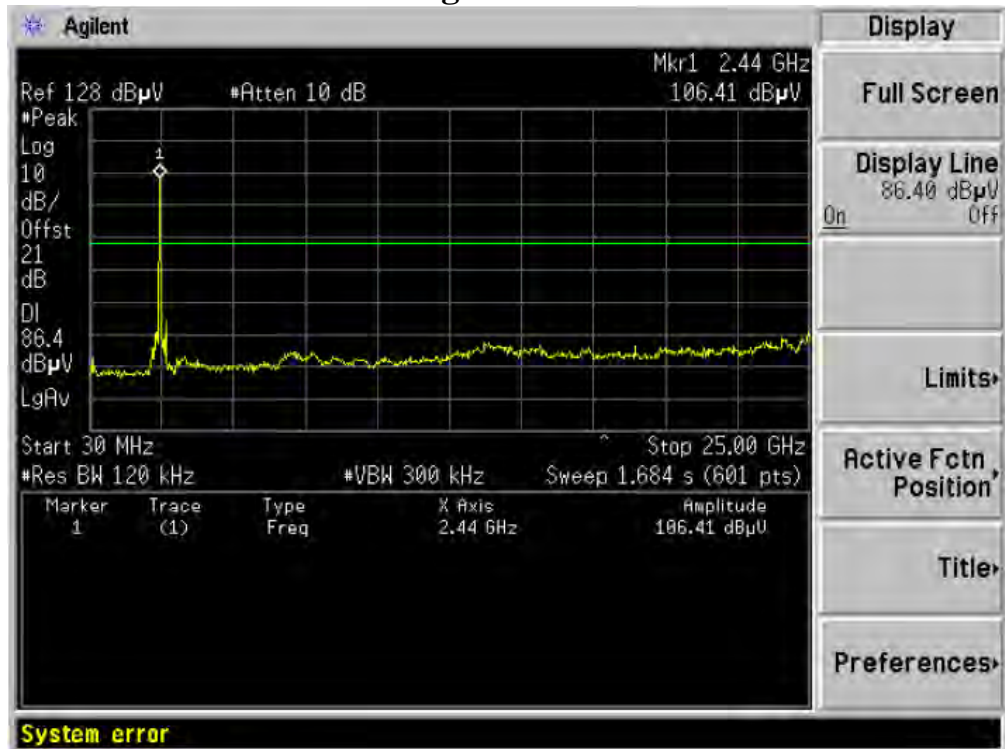
Low channel



Middle channel



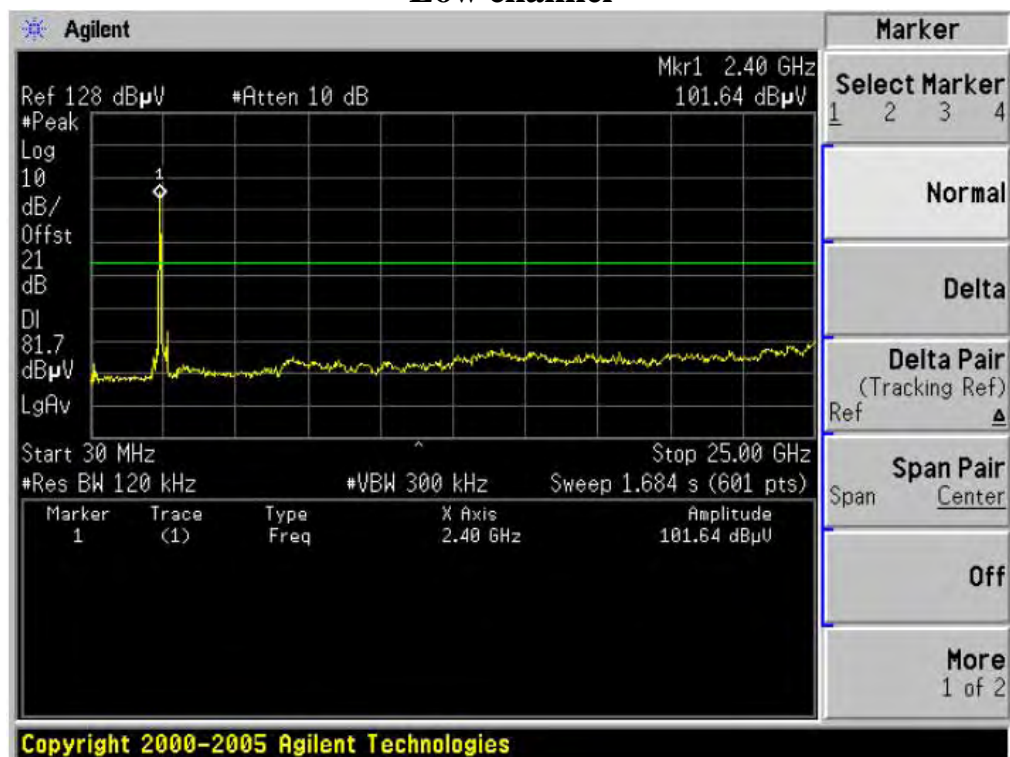
High channel



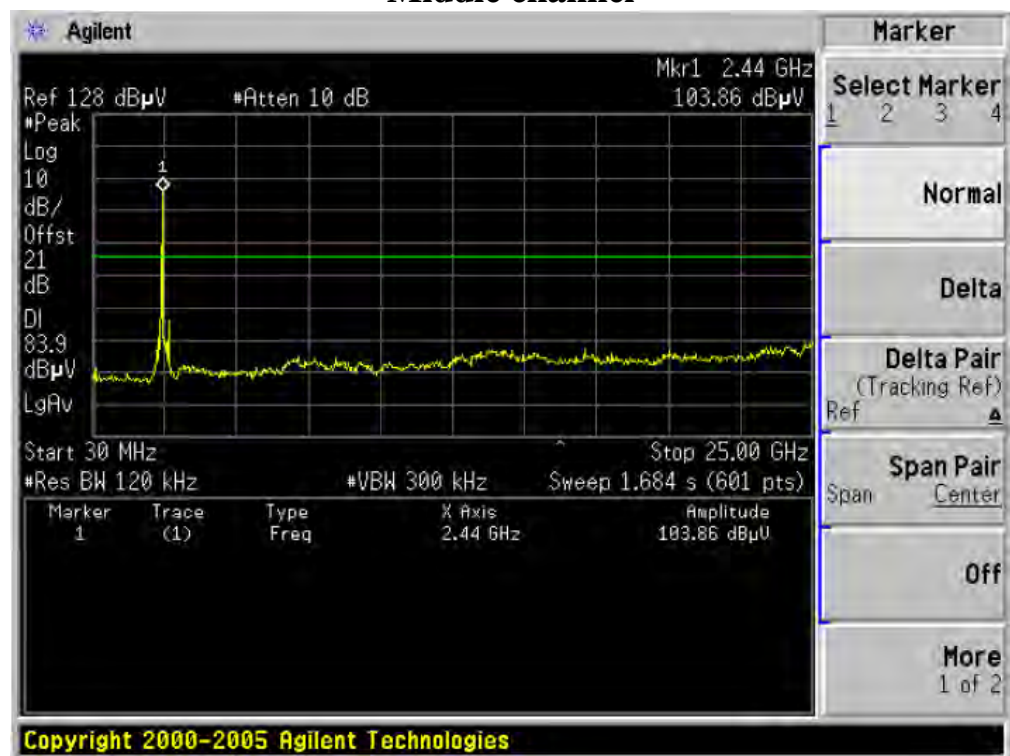


Chain 1: 802.11n HT20 mode:

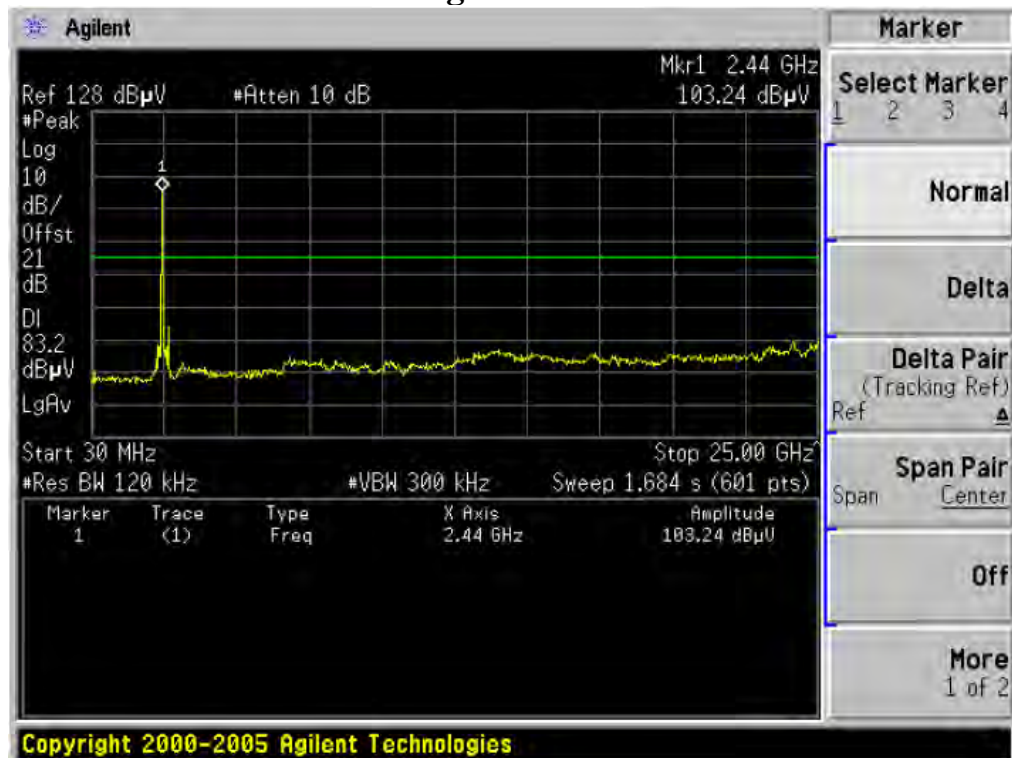
### Low channel



### Middle channel

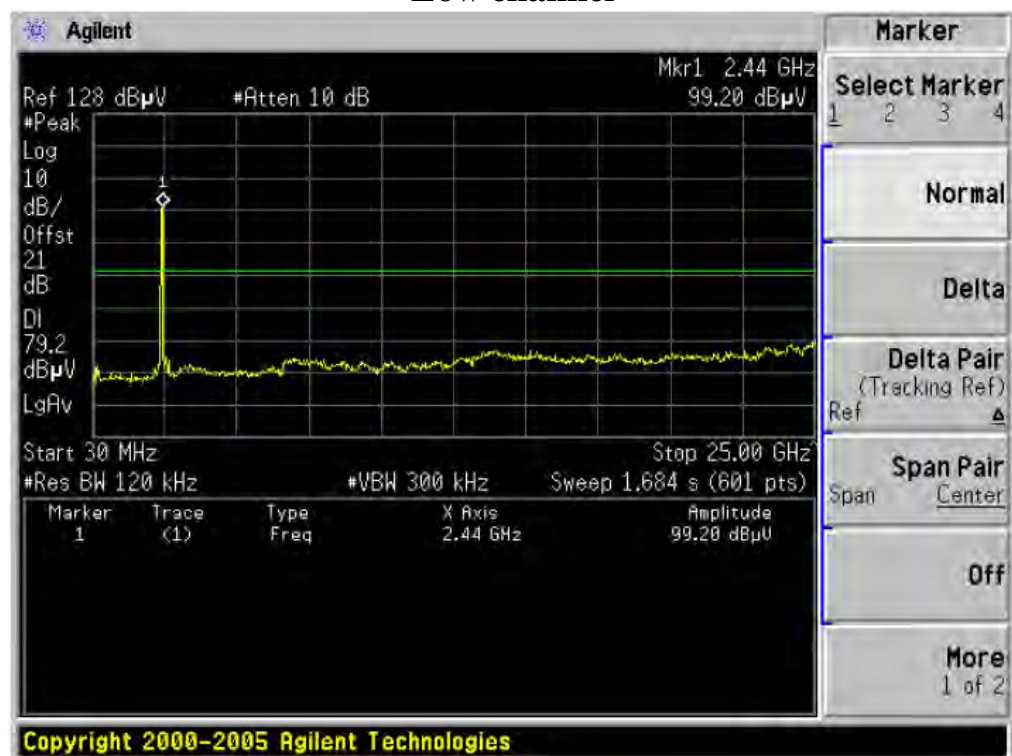


### High channel

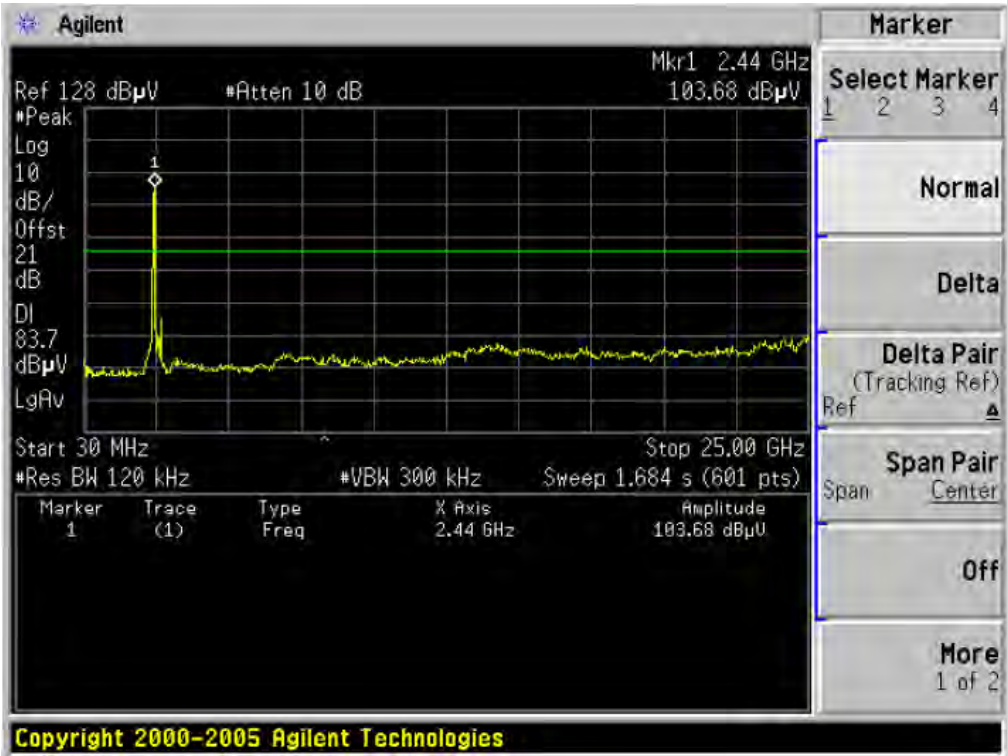


Chain 1: 802.11n HT40 mode:

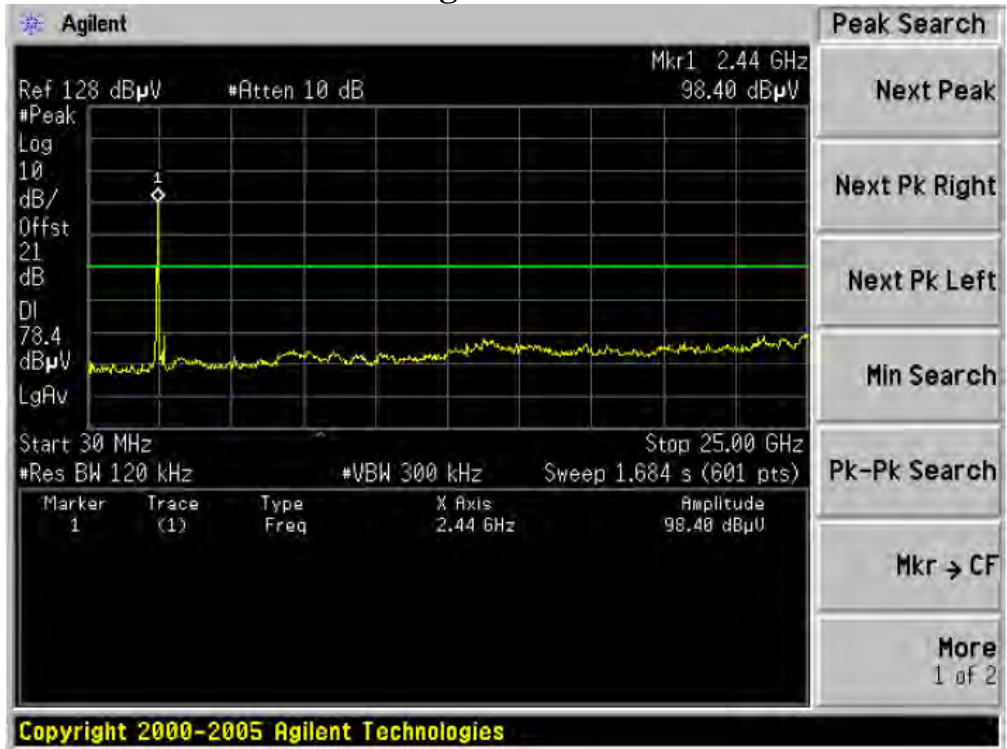
### Low channel



Middle channel



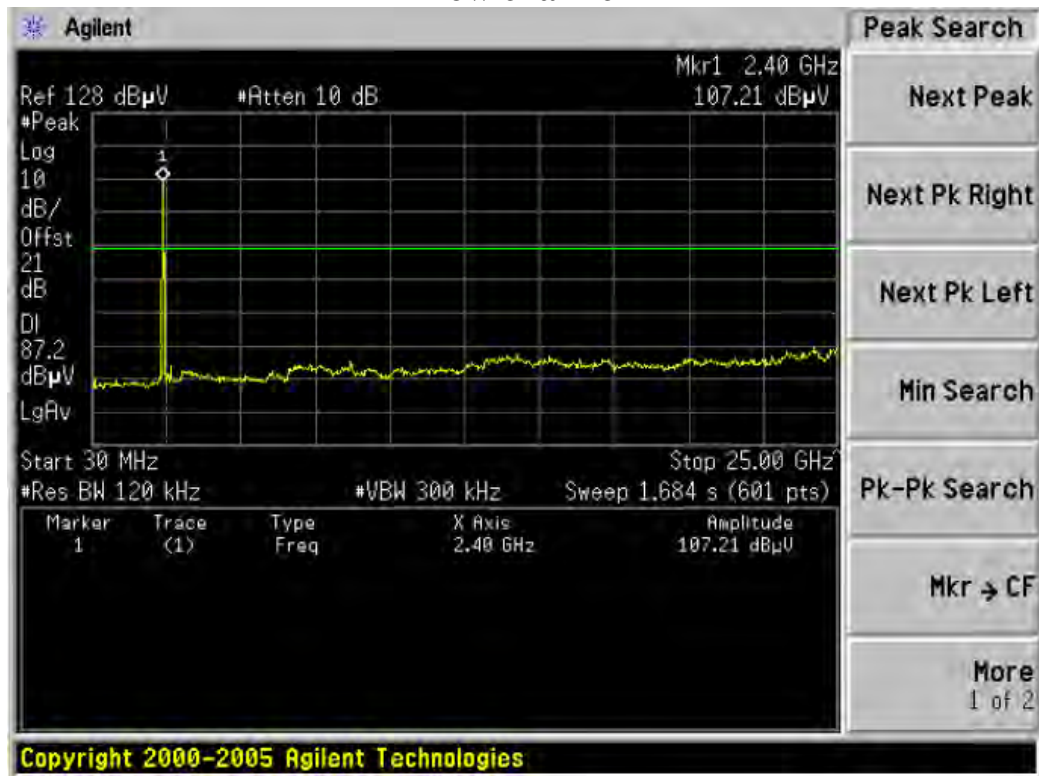
High channel



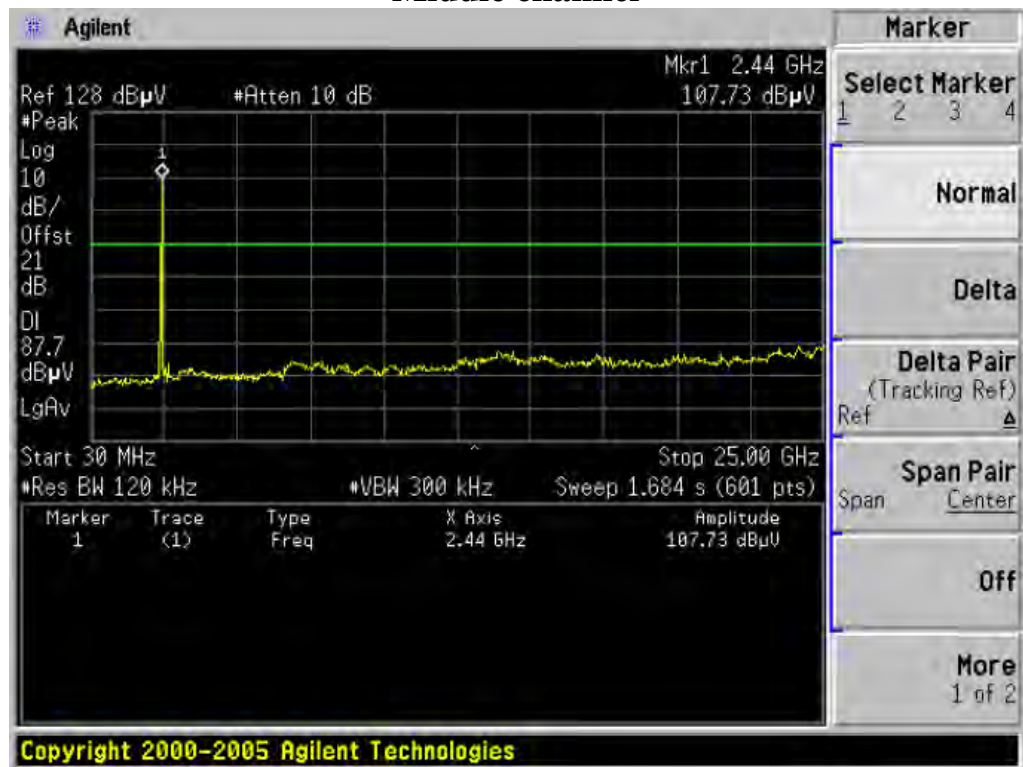


Chain 2: 802.11b mode:

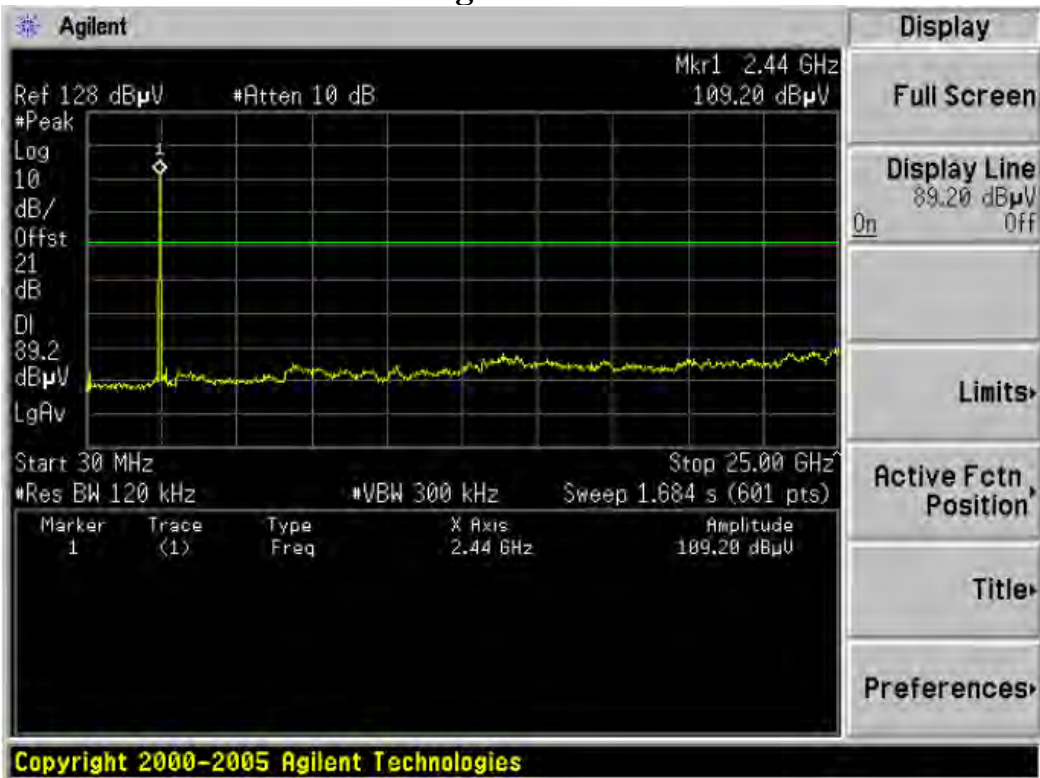
Low channel



Middle channel

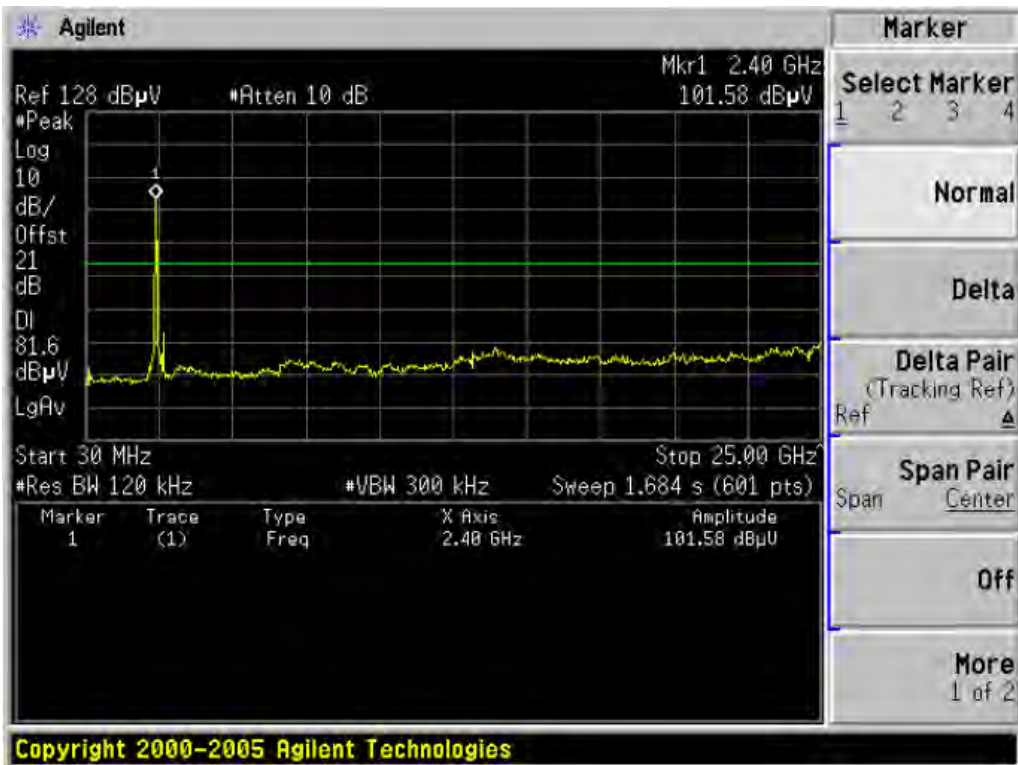


High channel

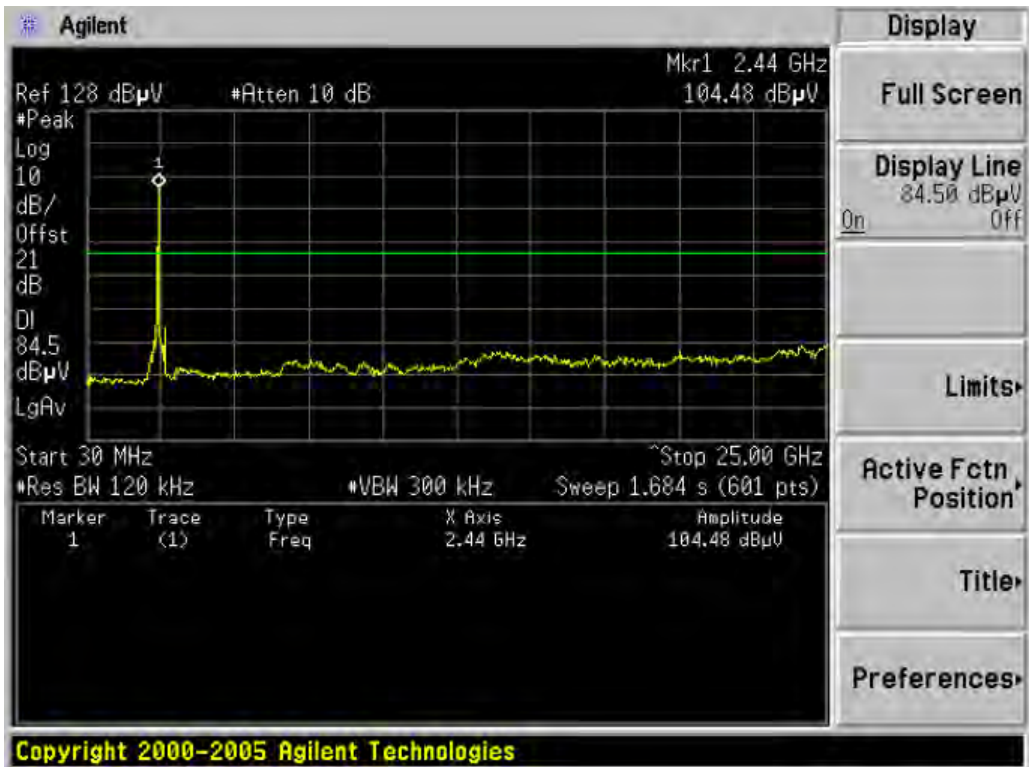


Chain 2: 802.11g mode:

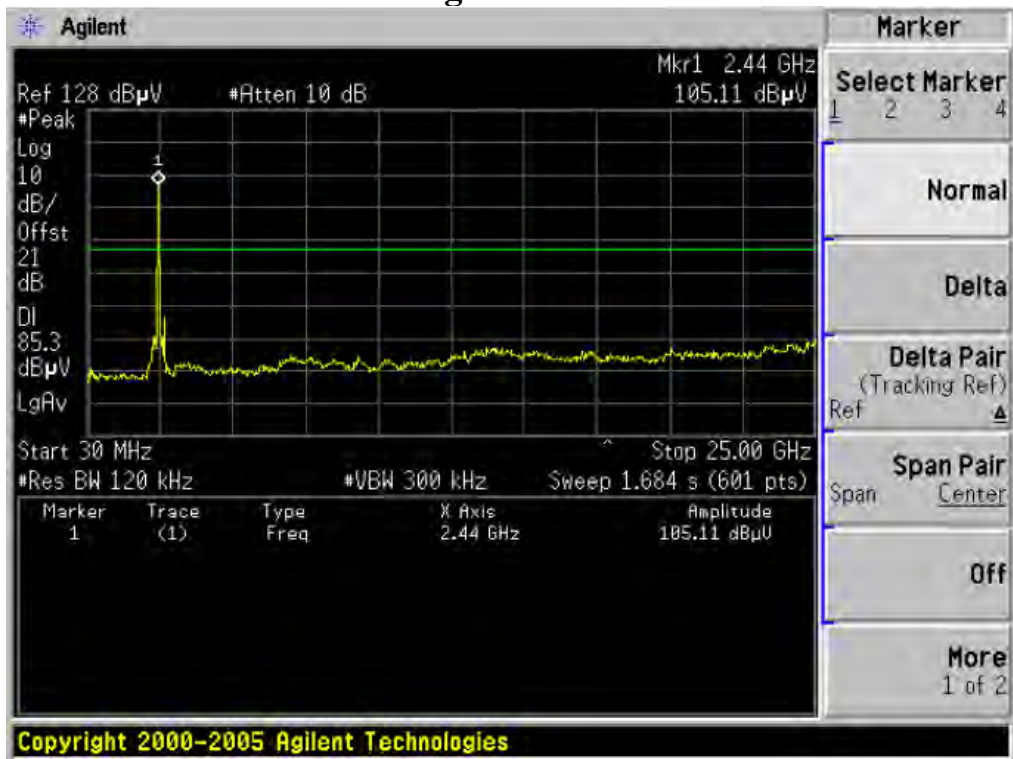
Low channel



Middle channel

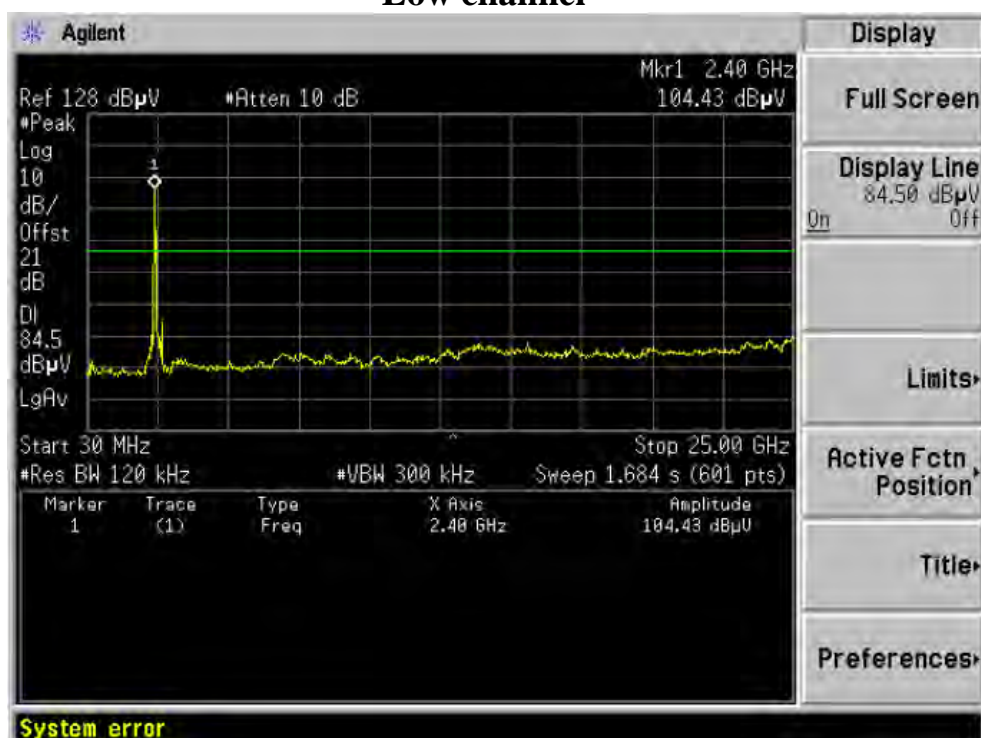


High channel

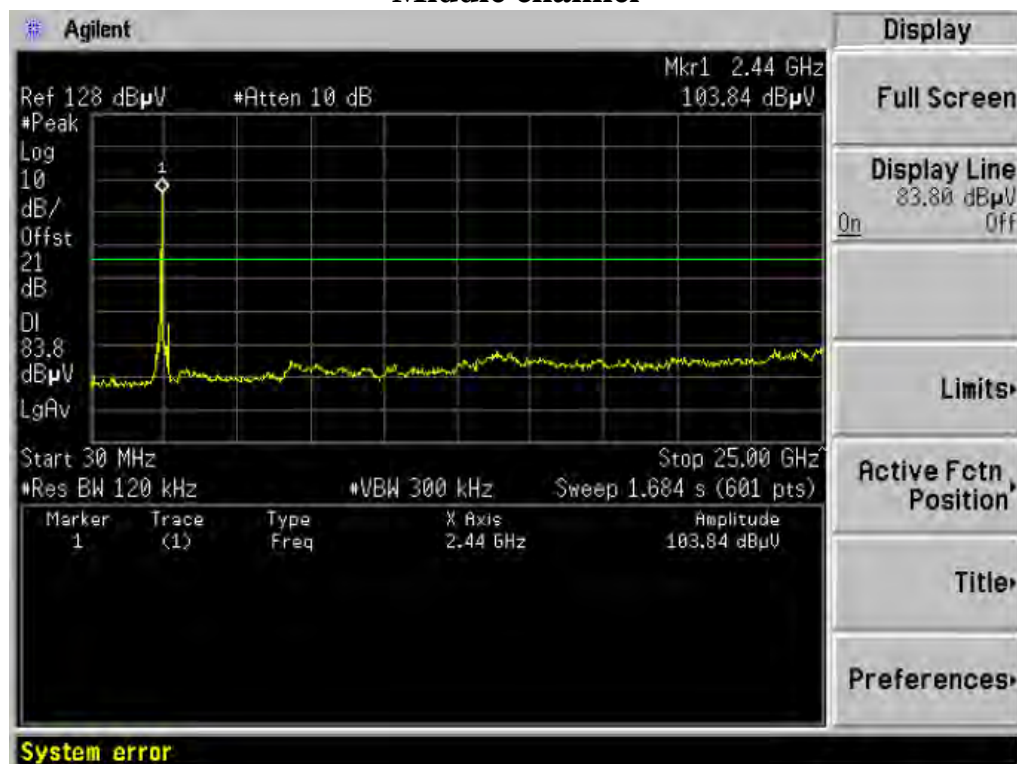


**Chain 2:802.11n HT20 mode:**

## Low channel

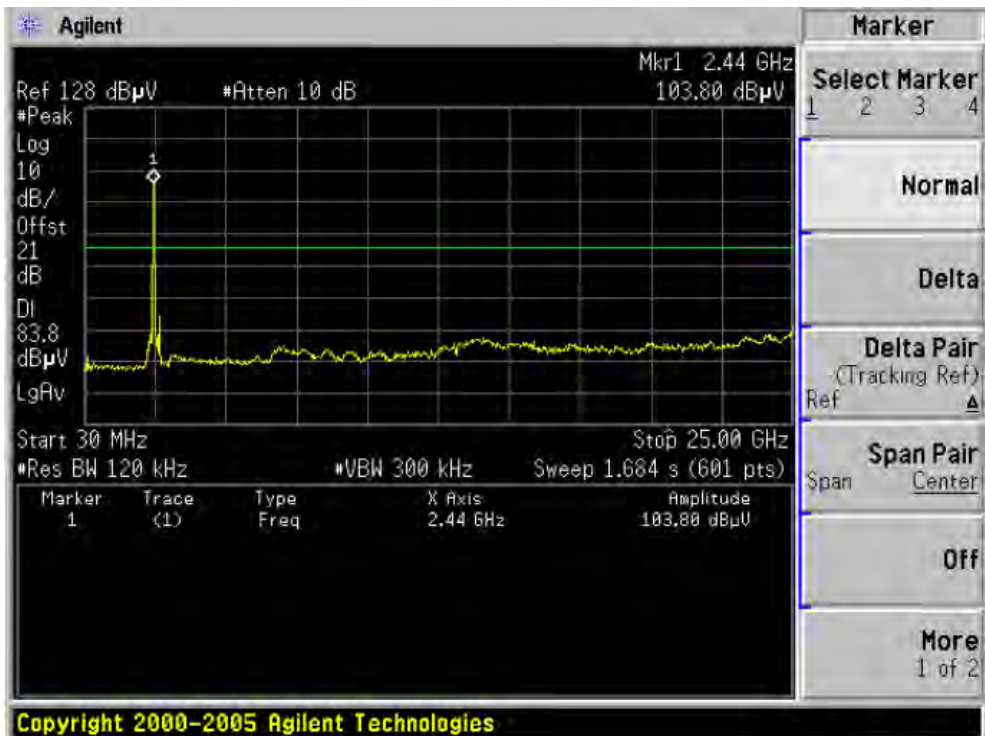


## Middle channel



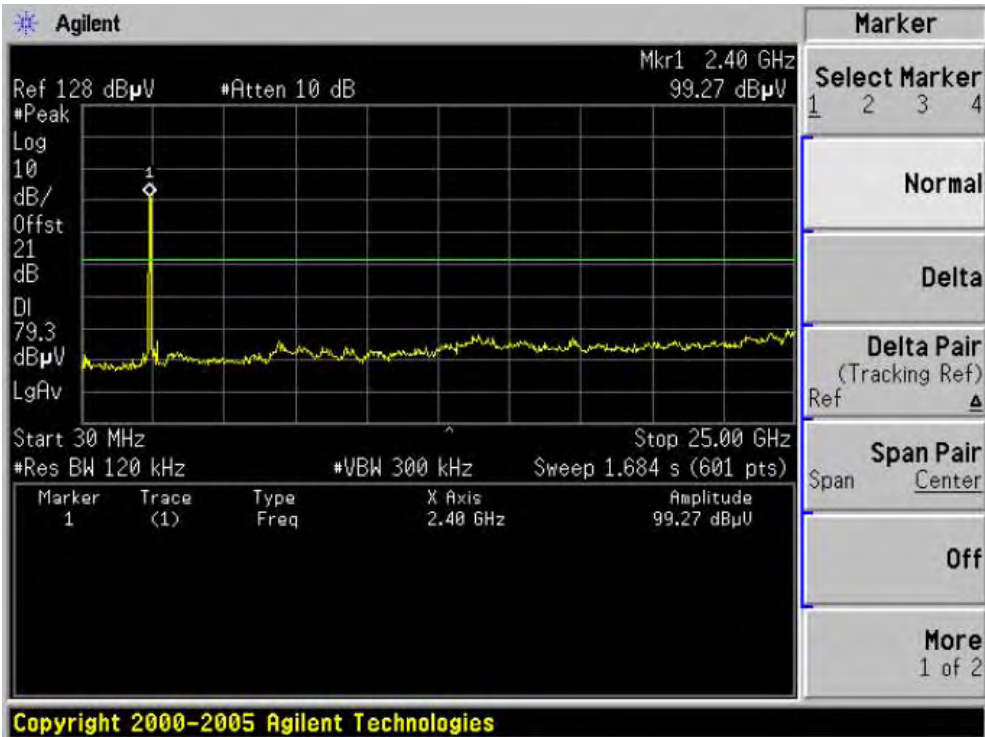


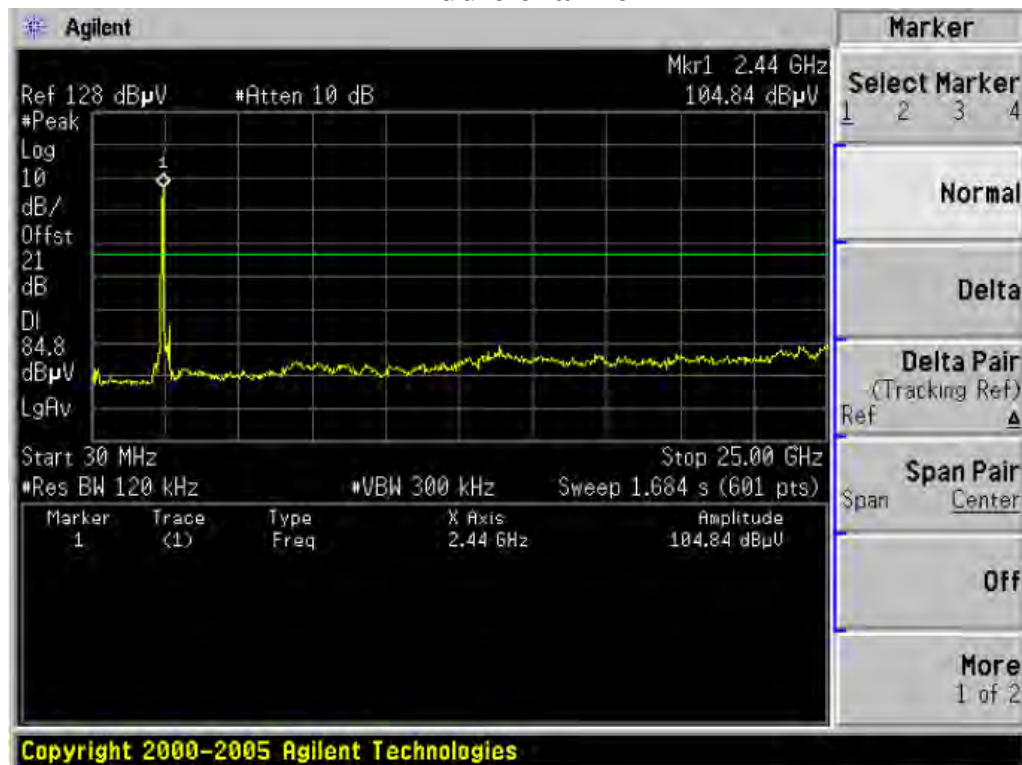
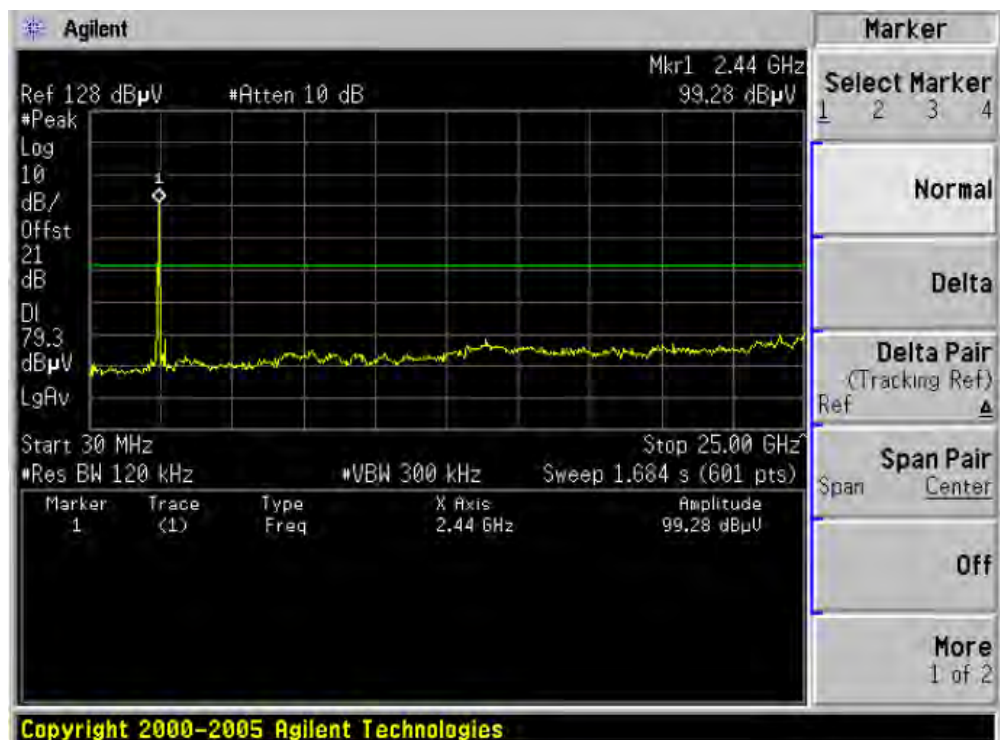
High channel



Chain 2:802.11n HT40 mode:

Low channel



**Middle channel****High channel**

## 11. §15.247(A) (2) – 6DB BANDWIDTH TESTING

### 11.1. Test Equipment

Please refer to Section 6 this report.

### 11.2. Test Procedure

1. Set EUT in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=100kHz, VBW RBW, Span=50MHz, Sweep=auto.
4. Mark the peak frequency and -6dB(upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

### 11.3. Applicable Standard

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.

### 11.4. Test Result: Pass.

Please refer to the following tables

#### Chain 1

Channel Frequency (MHz)	Data Rate (Mbps)	6dB Bandwidth (MHz)	Limit (kHz)	Result
<b>802.11b Mode</b>				
2412	1	12.147	> 500	Pass
2437	1	12.196	> 500	Pass
2462	1	12.552	> 500	Pass
<b>802.11g Mode</b>				
2412	6	16.542	> 500	Pass
2437	6	16.502	> 500	Pass
2462	6	16.471	> 500	Pass
<b>802.11n HT20 Mode</b>				
2412	6.5	17.698	> 500	Pass
2437	6.5	17.707	> 500	Pass
2462	6.5	17.700	> 500	Pass
<b>802.11n HT40 Mode</b>				
2412	13.5	36.437	> 500	Pass
2437	13.5	36.321	> 500	Pass
2462	13.5	36.385	> 500	Pass

**Chain 2**

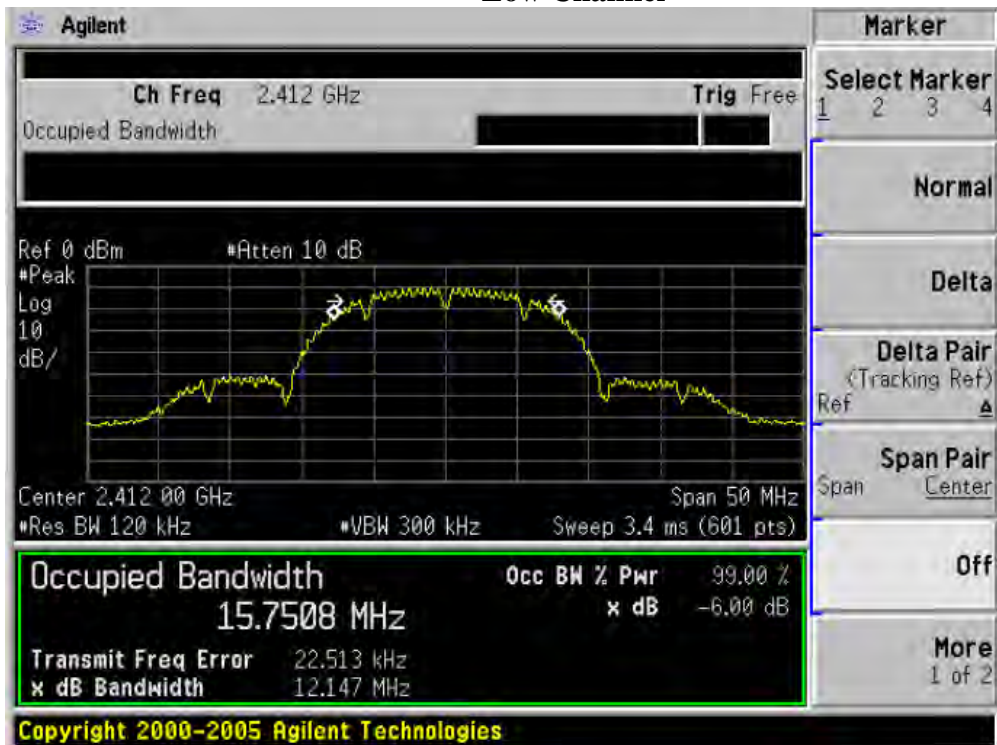
<b>Channel Frequency (MHz)</b>	<b>Data Rate (Mbps)</b>	<b>6dB Bandwidth (MHz)</b>	<b>Limit (kHz)</b>	<b>Result</b>
<b>802.11b Mode</b>				
2412	1	12.106	> 500	Pass
2437	1	12.562	> 500	Pass
2462	1	12.588	> 500	Pass
<b>802.11g Mode</b>				
2412	6	16.463	> 500	Pass
2437	6	16.500	> 500	Pass
2462	6	16.482	> 500	Pass
<b>802.11n HT20 Mode</b>				
2412	6.5	17.692	> 500	Pass
2437	6.5	17.688	> 500	Pass
2462	6.5	17.743	> 500	Pass
<b>802.11n HT40 Mode</b>				
2412	13.5	36.359	> 500	Pass
2437	13.5	36.361	> 500	Pass
2462	13.5	36.396	> 500	Pass



Chain 1

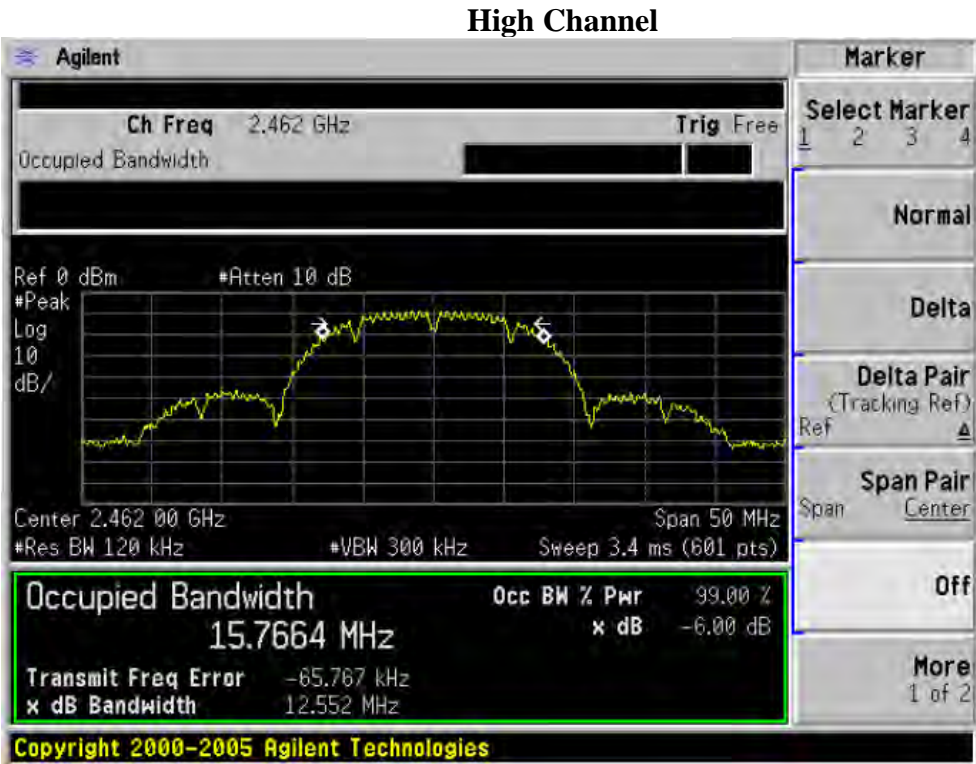
802.11b Mode:

Low Channel

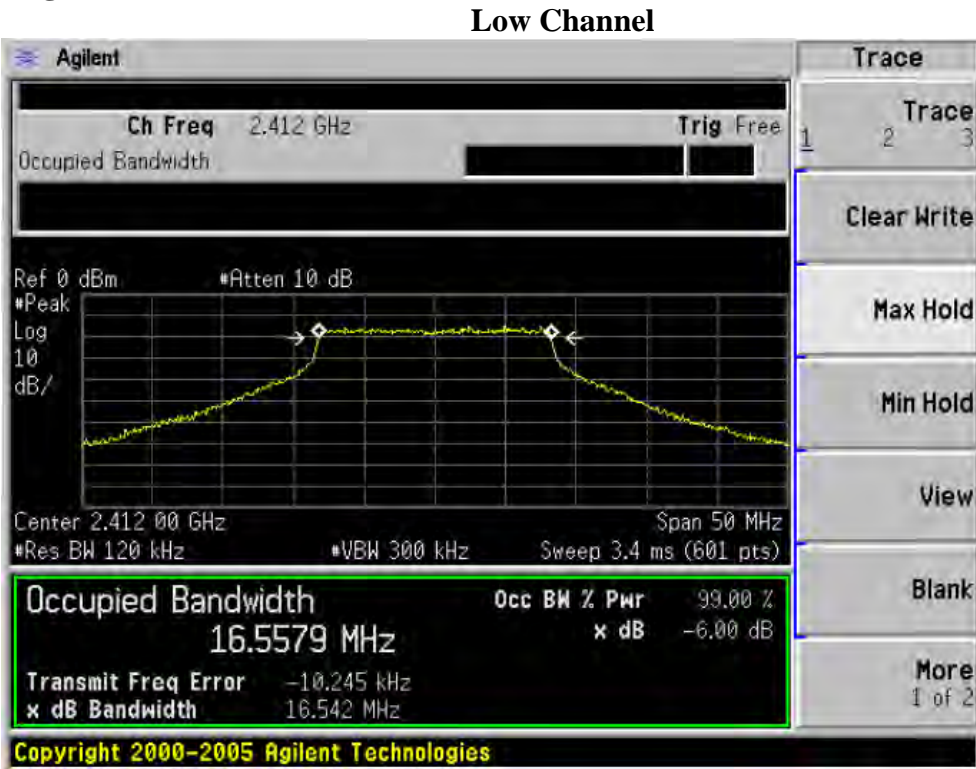


Middle Channel

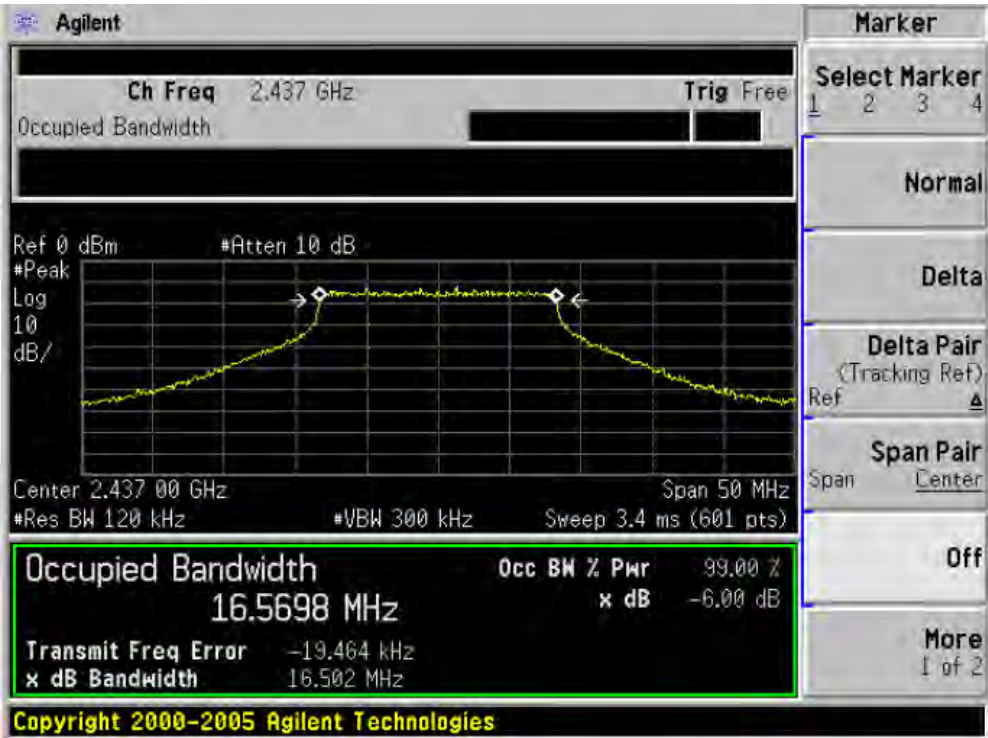




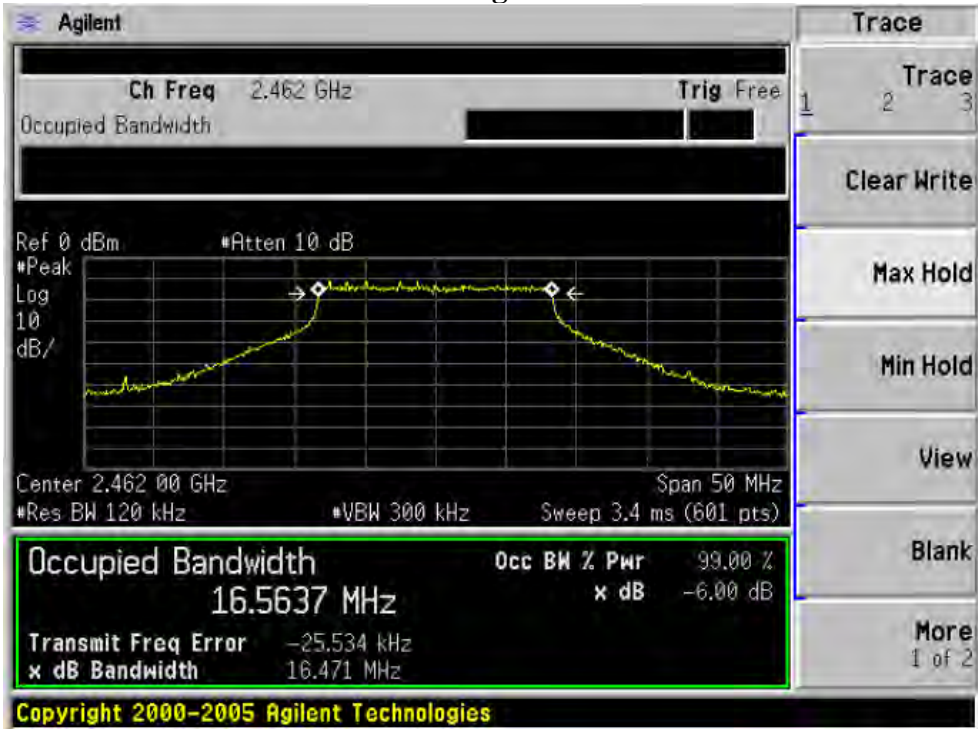
802.11g Mode:



Middle Channel



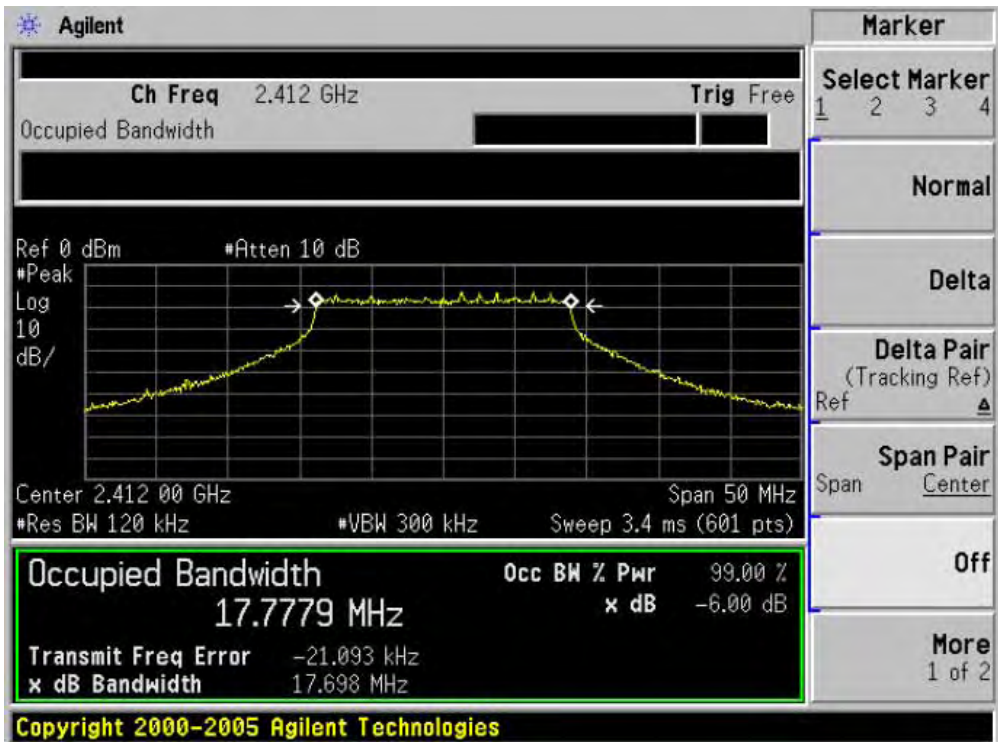
High Channel



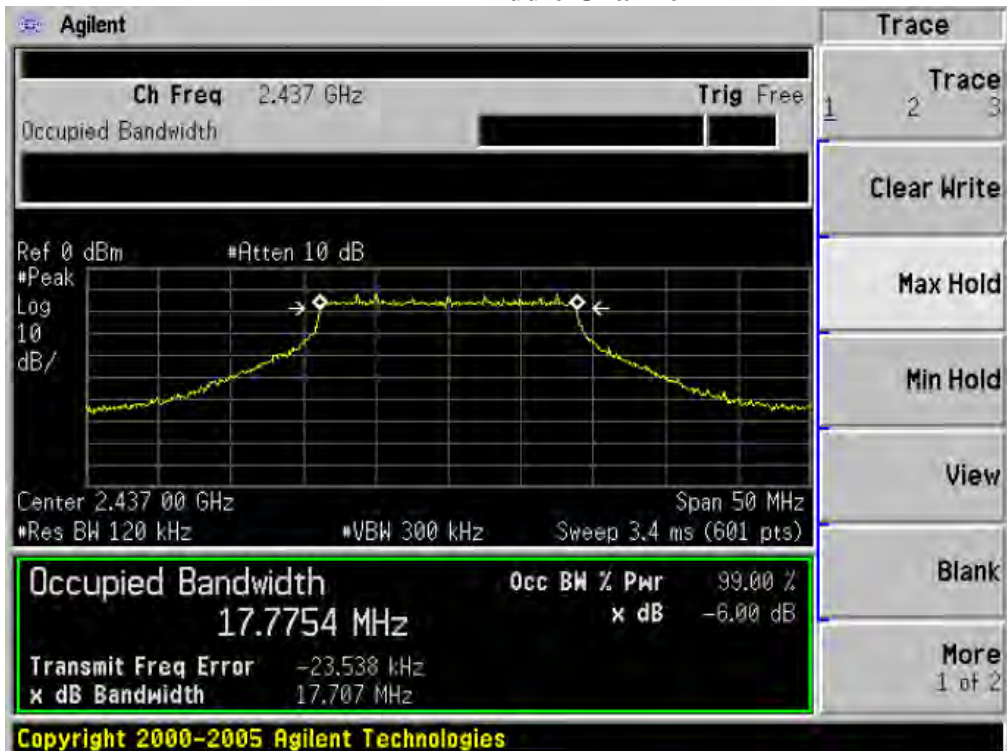


802.11n HT20 Mode:

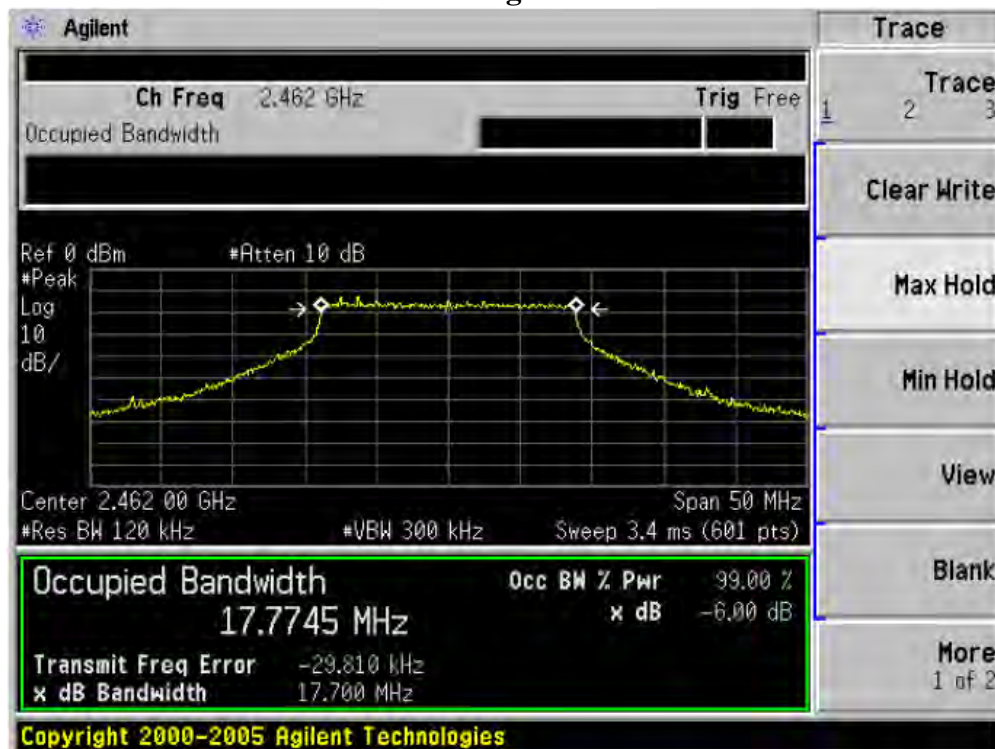
Low Channel



Middle Channel

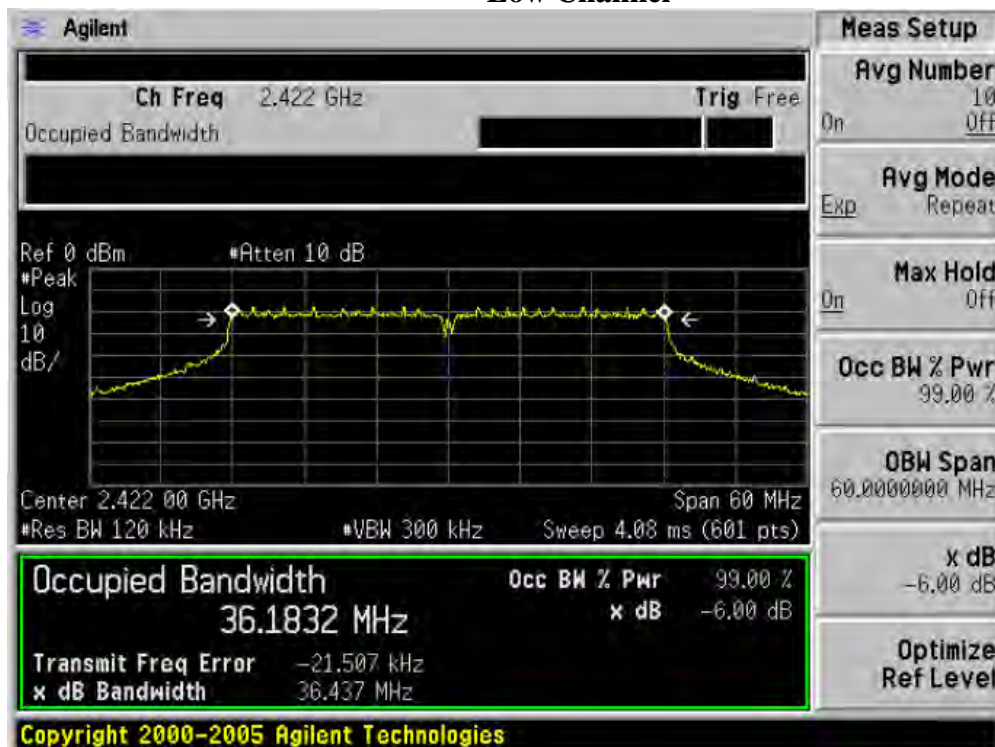


## High Channel

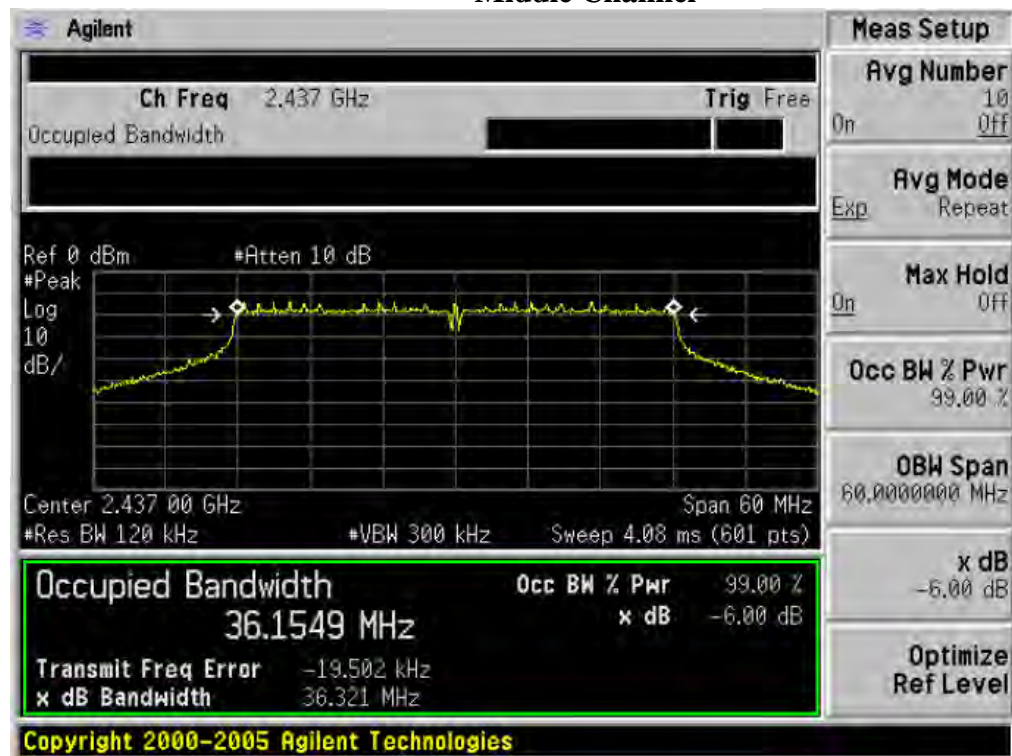


## 802.11n HT40 Mode:

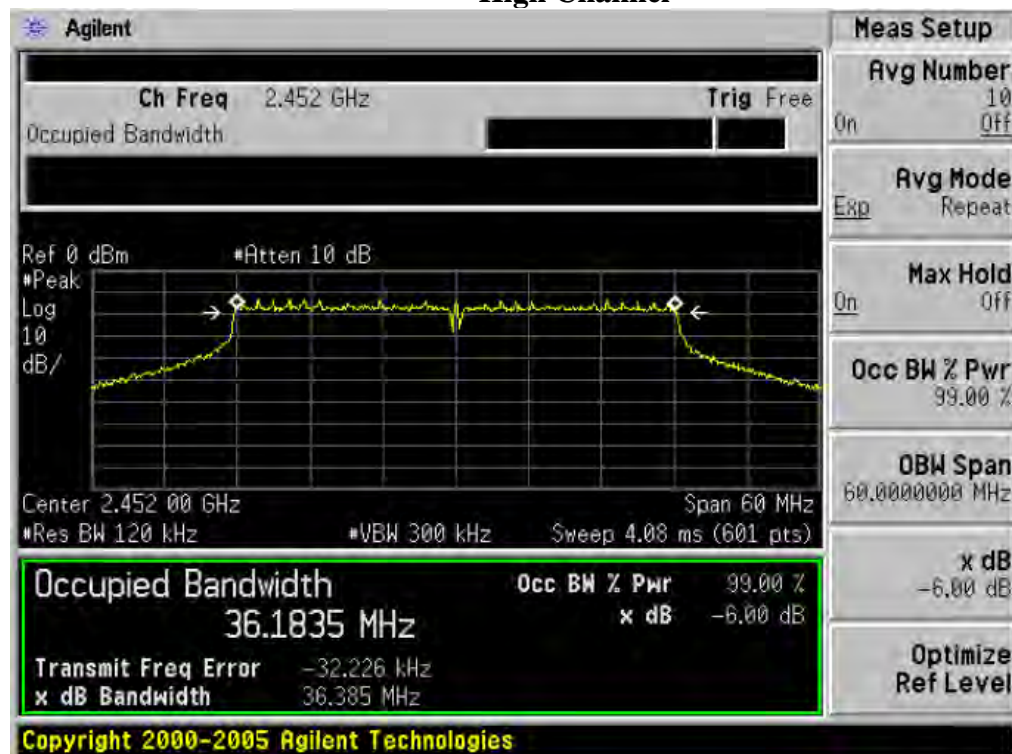
## Low Channel



## Middle Channel



## High Channel

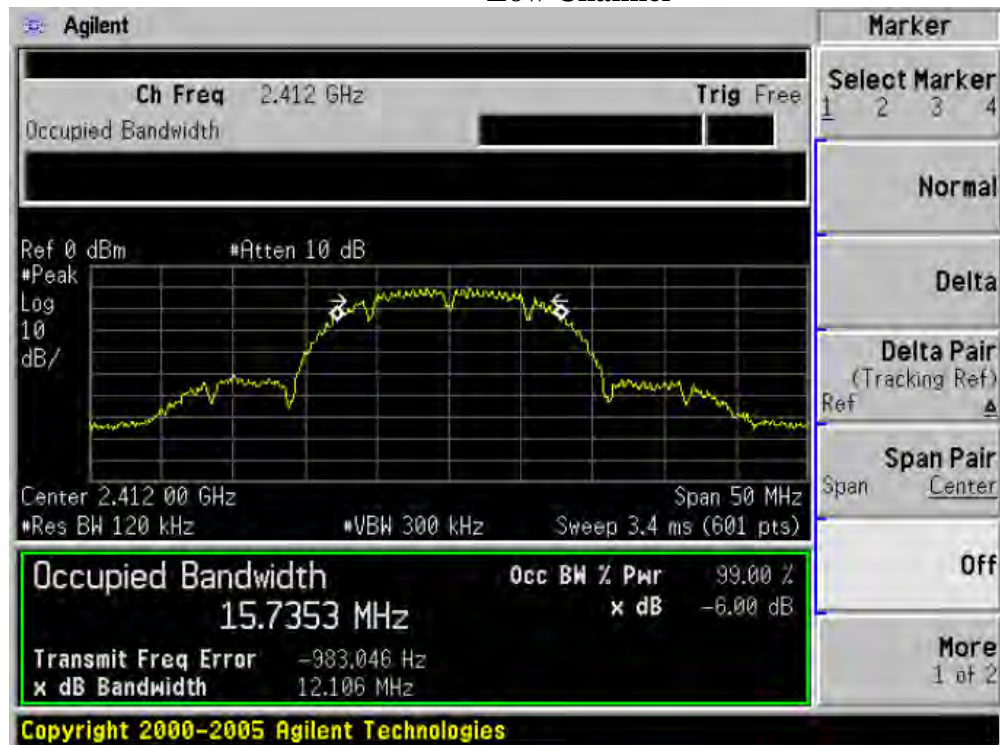




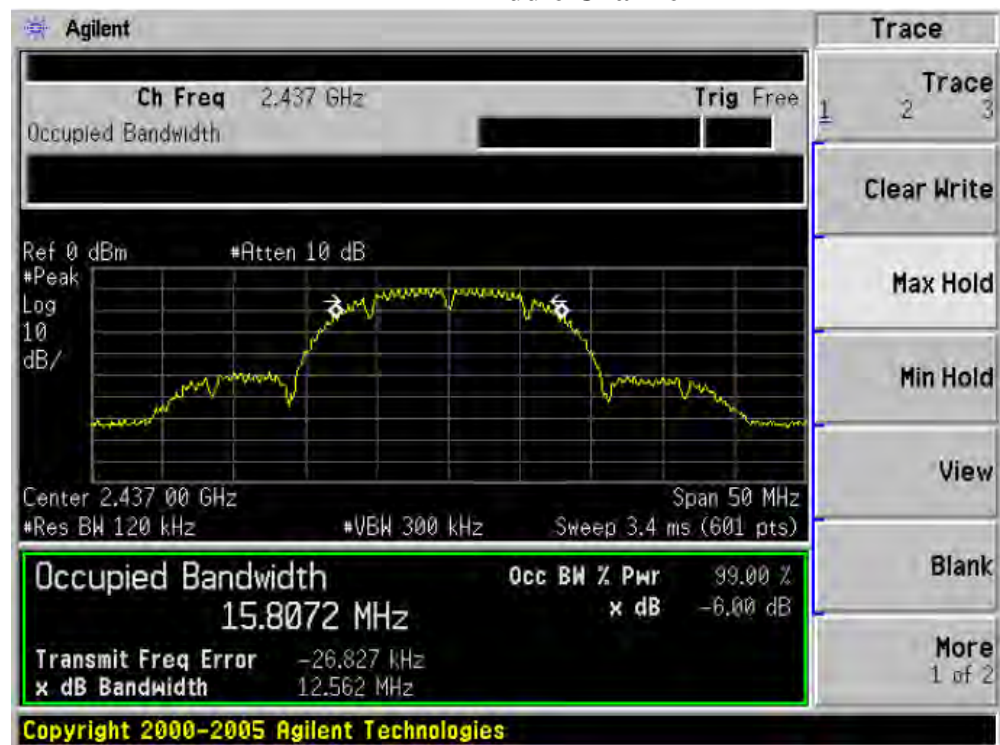
Chain 2

802.11b Mode:

Low Channel



Middle Channel

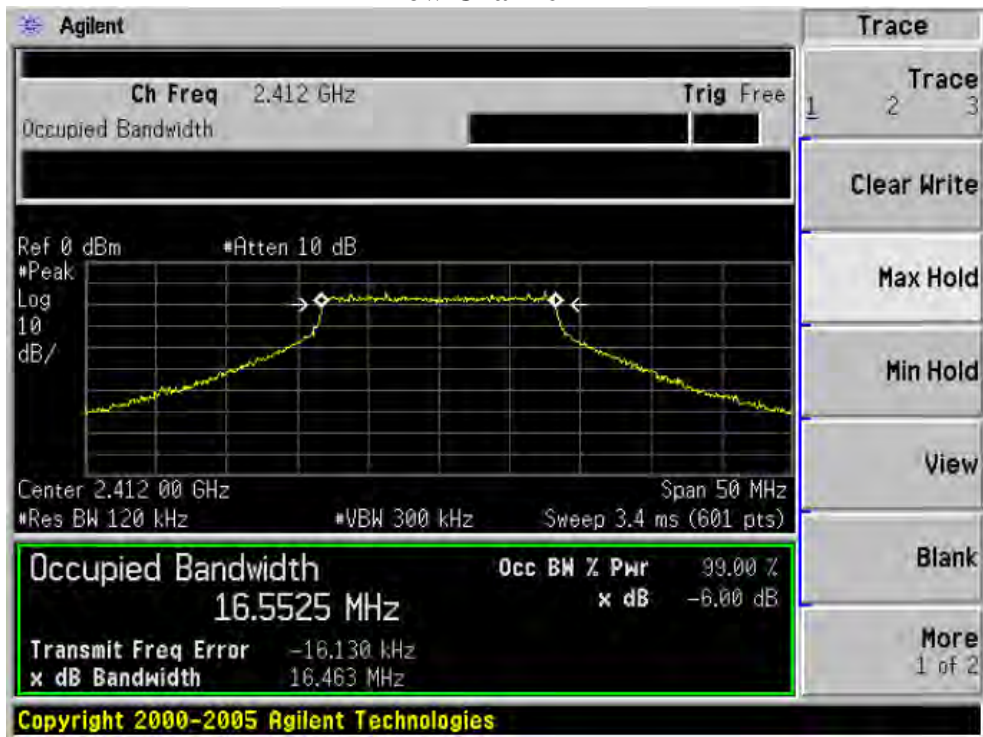


High Channel



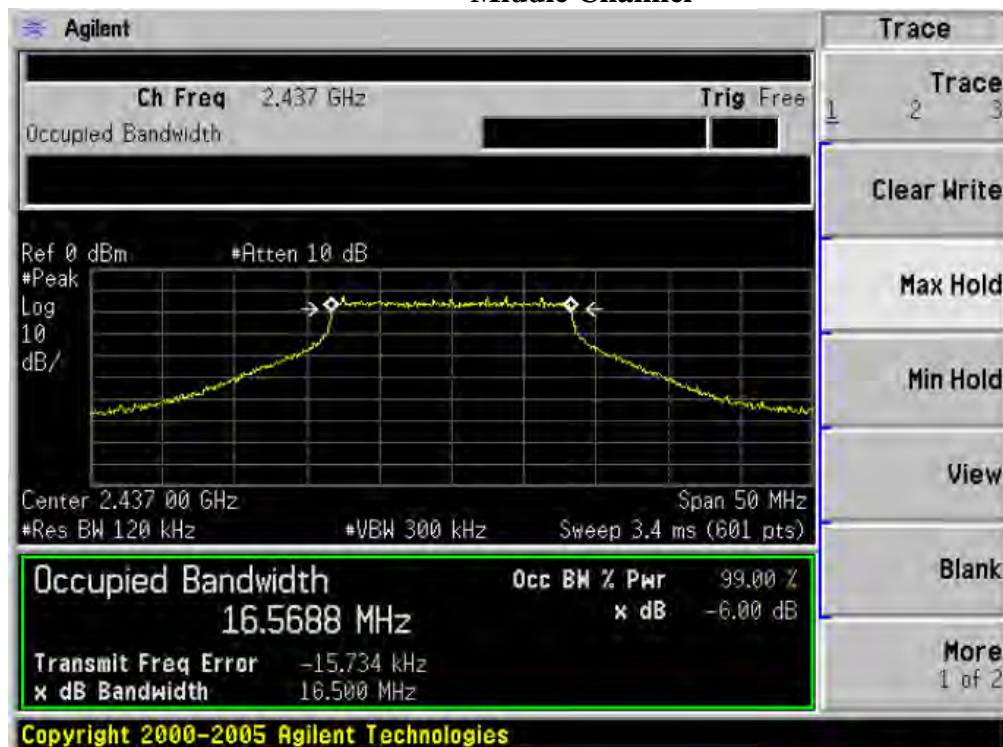
802.11g Mode:

Low Channel

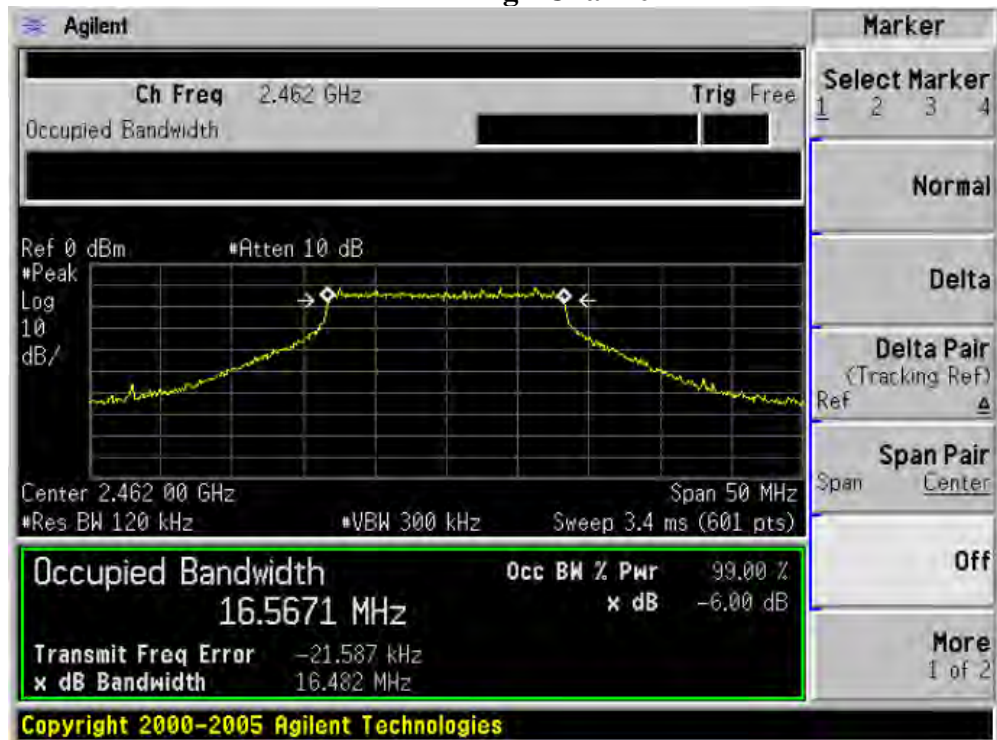




## Middle Channel

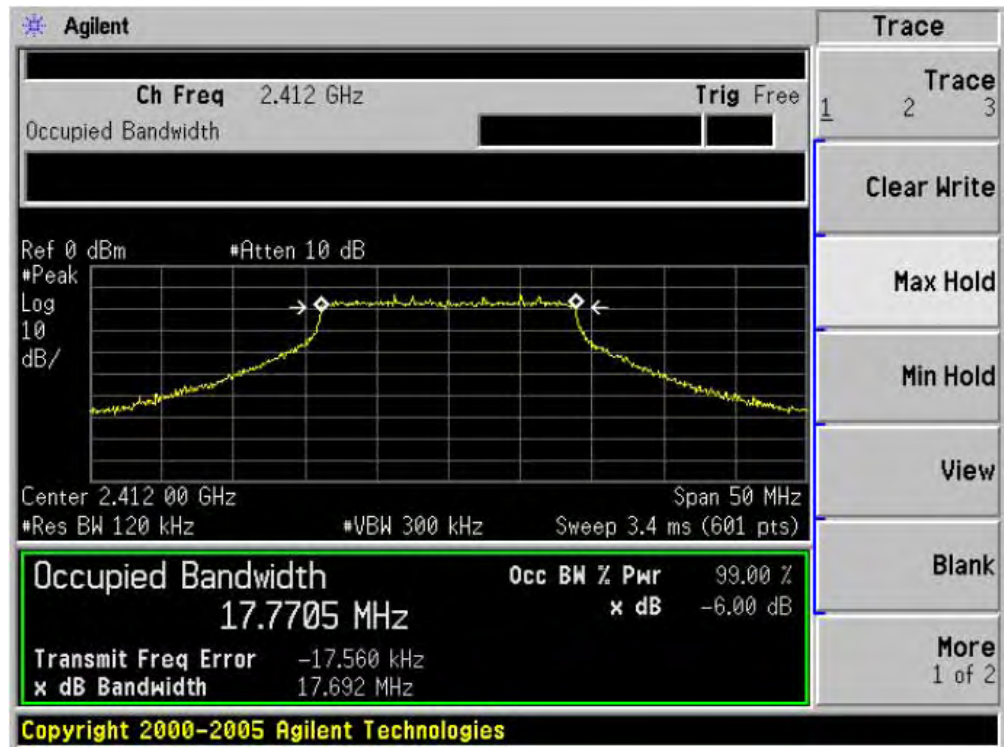


## High Channel

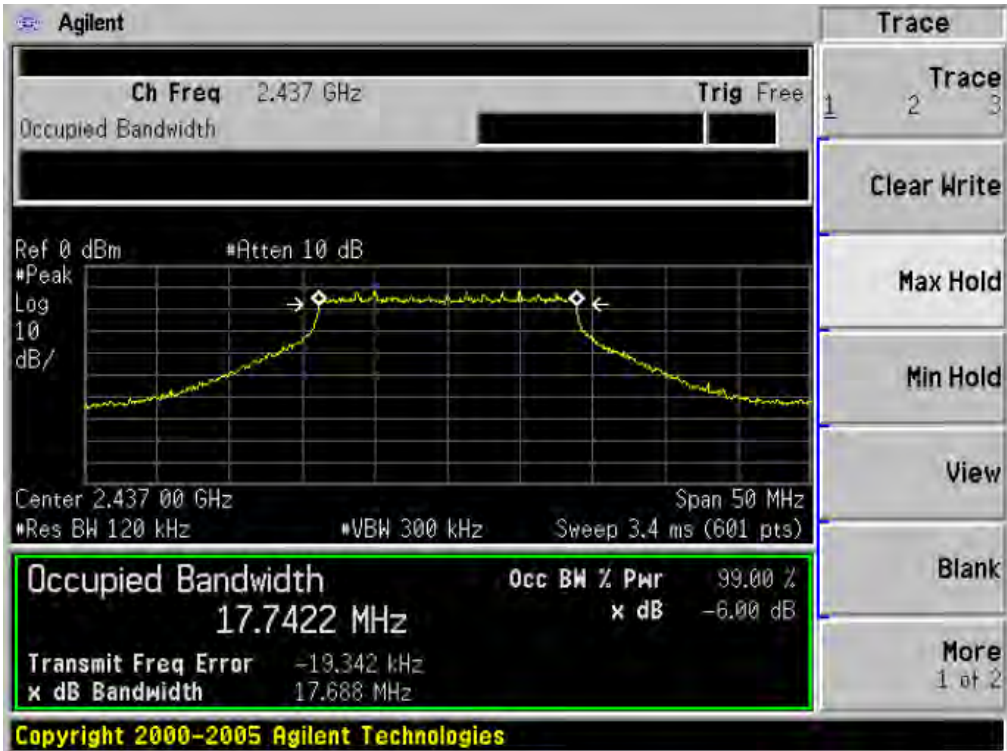


802.11n HT20 Mode:

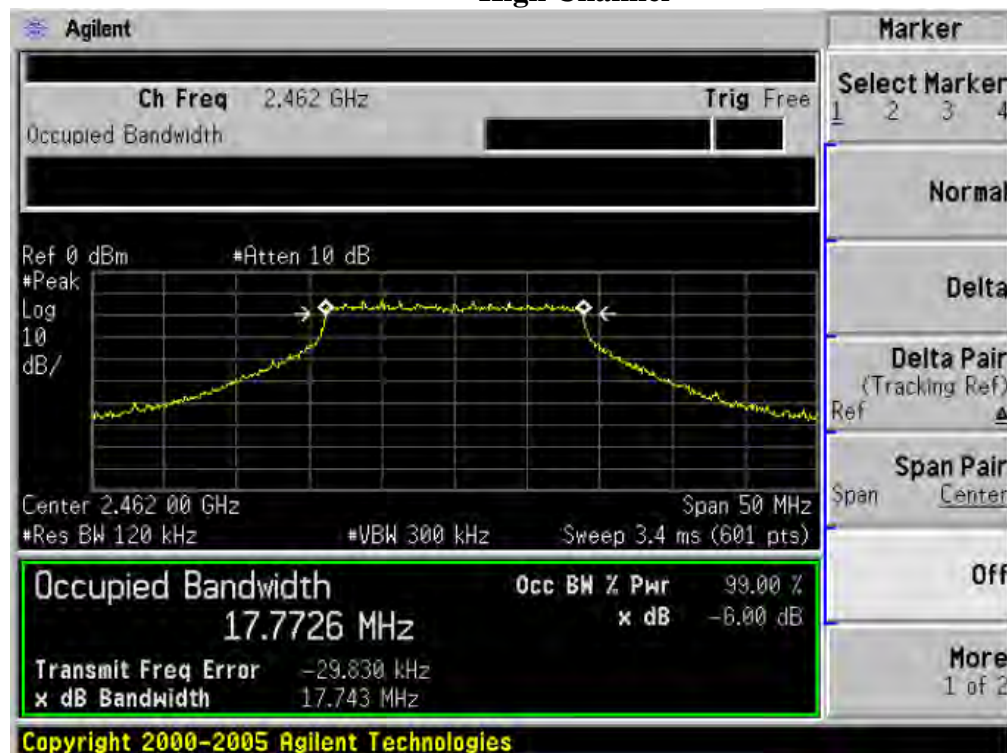
Low Channel



Middle Channel

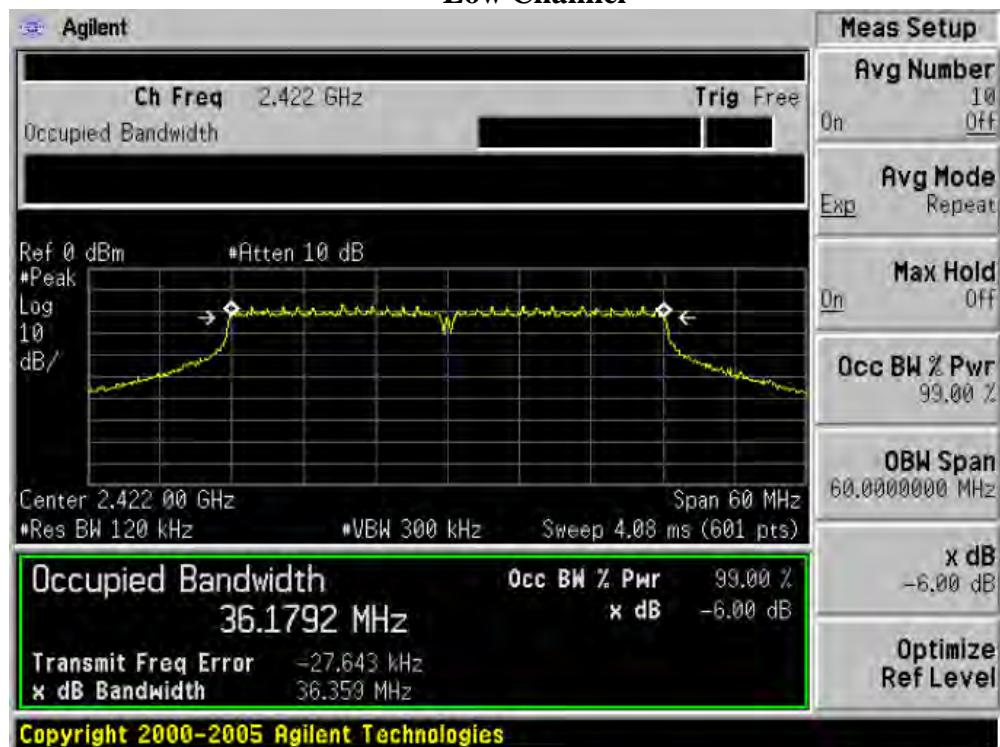


## High Channel



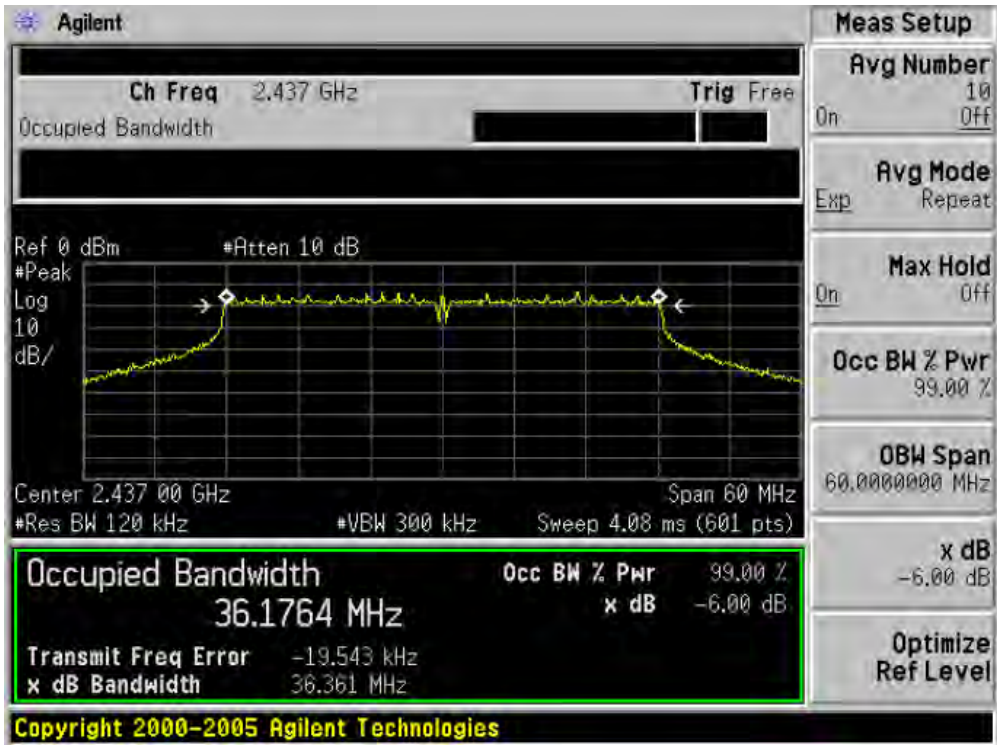
## 802.11n HT40 Mode:

## Low Channel

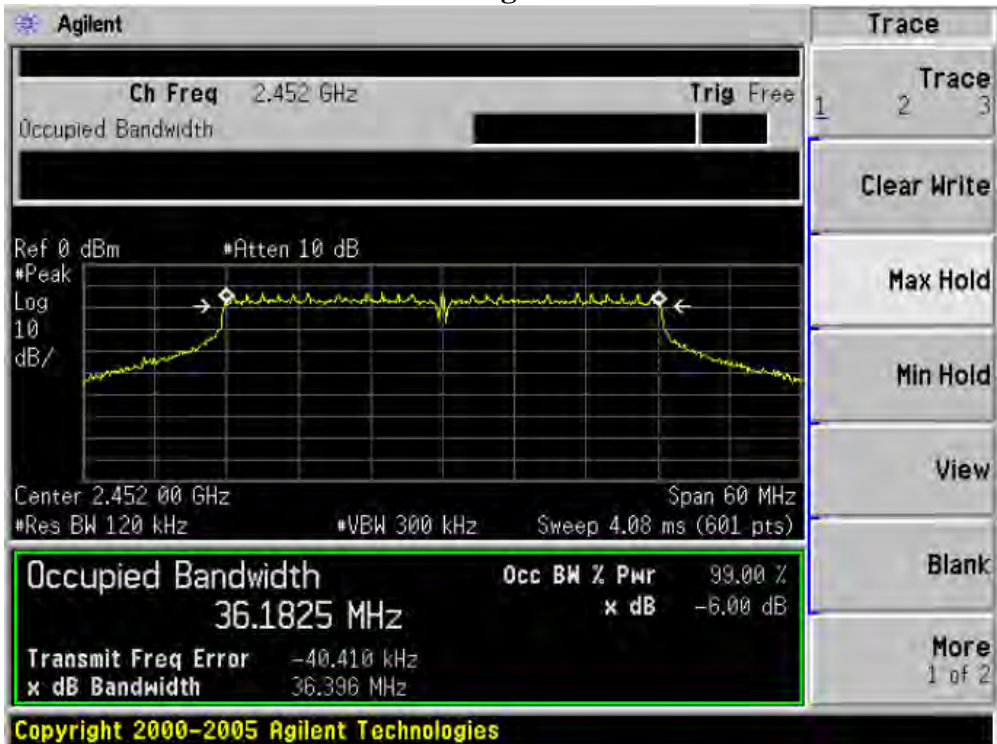




Middle Channel



High Channel



## **12. §15.247(B) (3) - Maximum Peak Output Power**

### **12.1. Test Equipment**

Please refer to Section 6 this report.

### **12.2. Test Procedure**

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz.
3. Set VBW = 3 MHz.
4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.
5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to “free run”.
6. Trace average 100 traces in power averaging mode.
7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer’s band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

### **12.3. Applicable Standard**

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. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

**12.4. Test Result****Pass****802.11b Mode:**

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)		Power Total (dBm)	Limit (dBm)
			Chain 1	Chain 2		
Low	2412	1	16.73	17.08	N/A	30
Mid	2437	1	17.56	18.23	N/A	30
High	2462	1	17.68	17.11	N/A	30

**802.11g Mode:**

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)		Power Total (dBm)	Limit (dBm)
			Chain 1	Chain 2		
Low	2412	6	19.89	20.78	N/A	30
Mid	2437	6	21.60	22.12	N/A	30
High	2462	6	21.05	22.05	N/A	30

**802.11n (20M) Mode:**

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)		Power Total (dBm)	Limit (dBm)
			Chain 1	Chain 2		
Low	2412	6.5	19.05	20.23	22.69	30
Mid	2437	6.5	21.98	22.07	25.04	30
High	2462	6.5	20.32	20.21	23.28	30

**802.11n (40M) Mode:**

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)		Power Total (dBm)	Limit (dBm)
			Chain 1	Chain 2		
Low	2412	13.5	16.02	15.78	18.91	30
Mid	2437	13.5	22.89	23.05	25.98	30
High	2462	13.5	15.23	15.21	18.28	30

### **13. §15.247(D) – Bandwidth of Frequency Band Edge**

#### **13.1.Test Equipment**

Please refer to Section 6 this report.

#### **13.2.Test Procedure**

- 1, Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2, Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- 3,Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.  
Note: For Rdstricted Band  
RBW=1MHz  
VBW=1 MHz
- 4, Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- 5,Repeat above procedures until all measured frequencies were complete.

#### **13.3.Applicable Standard**

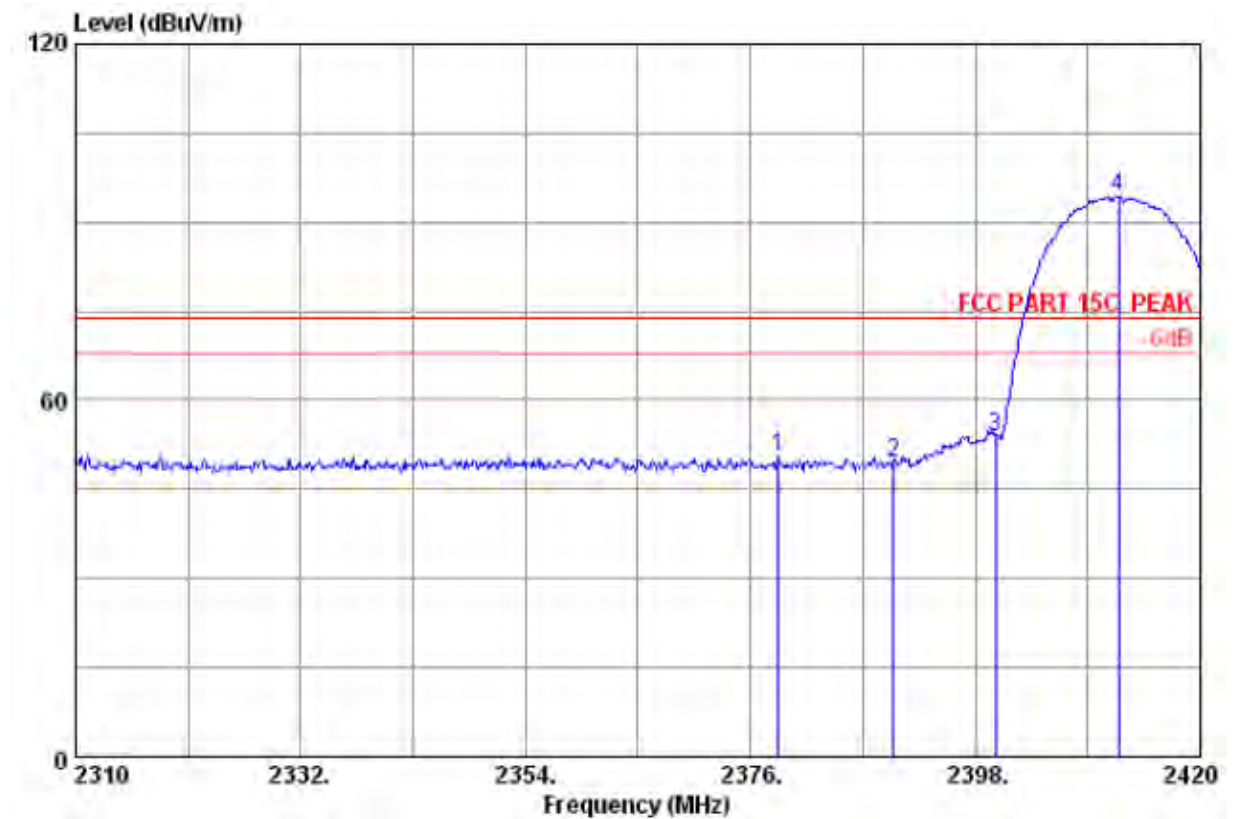
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### 13.4.Test Result

Pass

802.11b Channel Low 2412MHz Tx

Horizontal (Peak)



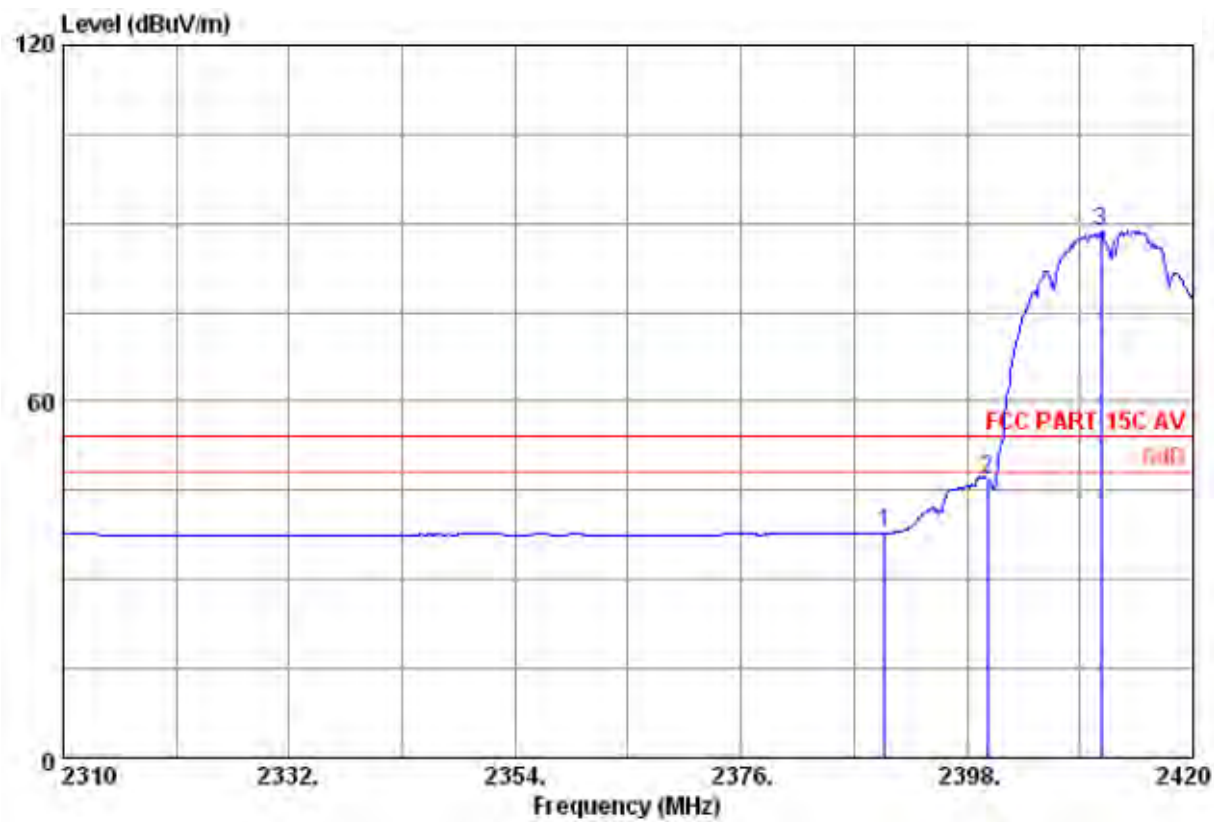
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2378.750	29.43	8.67	36.00	48.53	50.63	74.00	23.37	Peak
2	2390.000	29.44	8.67	36.09	47.34	49.36	74.00	24.64	Peak
3	2400.000	29.44	8.72	36.09	51.80	53.87	74.00	20.13	Peak
4	2411.970	29.45	8.72	35.95	92.19	94.41	74.00	-20.41	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Horizontal (Average)

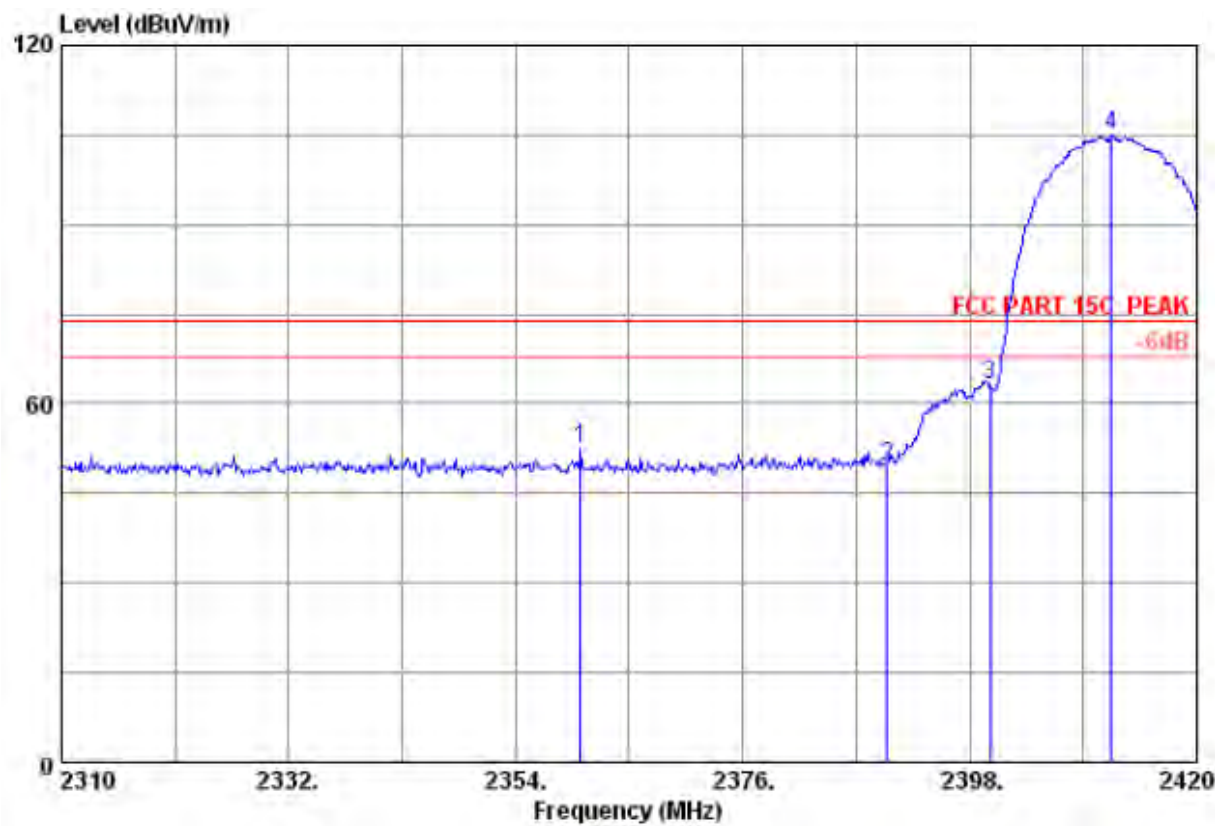


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	29.44	8.67	36.09	35.84	37.86	54.00	16.14	Average
2	2400.000	29.44	8.72	36.09	44.89	46.96	54.00	7.04	Average
3	2410.980	29.45	8.72	35.95	86.43	88.65	54.00	-34.65	Average

Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Peak)



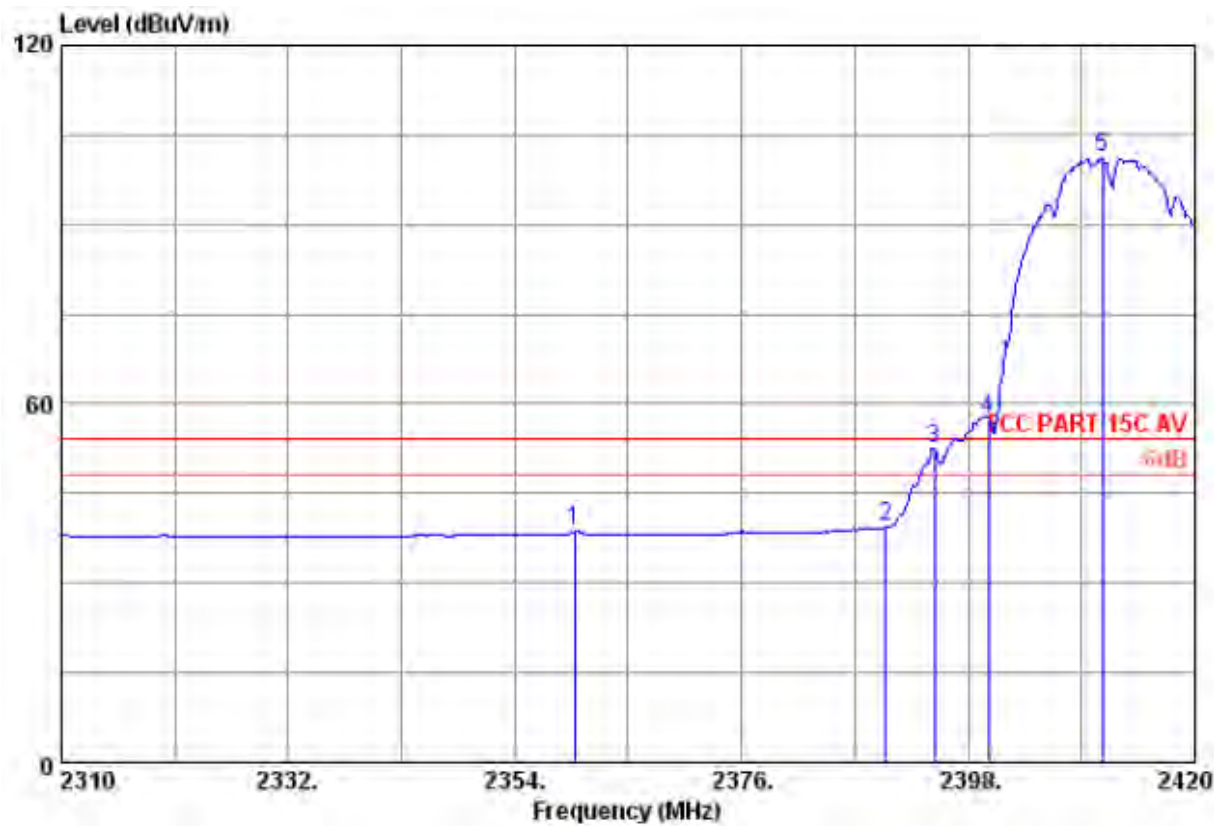
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2360.270	29.42	8.62	35.91	50.40	52.53	74.00	21.47	Peak
2	2390.000	29.44	8.67	36.09	47.61	49.63	74.00	24.37	Peak
3	2400.000	29.44	8.72	36.09	61.26	63.33	74.00	10.67	Peak
4	2411.750	29.45	8.72	35.95	102.76	104.98	74.00	-30.98	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Average)



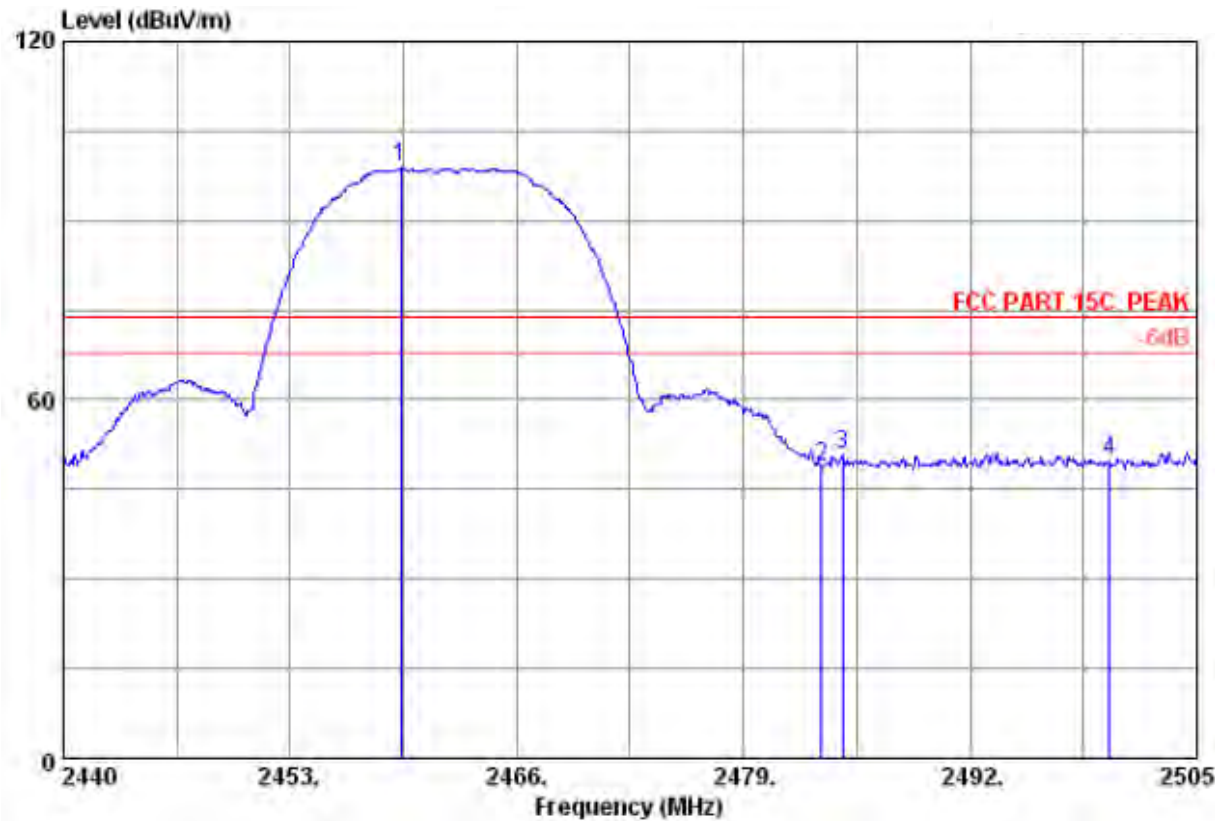
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2359.830	29.42	8.62	35.91	36.57	38.70	54.00	15.30	Average
2	2390.000	29.44	8.67	36.09	37.30	39.32	54.00	14.68	Average
3	2394.700	29.44	8.67	36.09	50.37	52.39	54.00	1.61	Average
4	2400.000	29.44	8.72	36.09	55.35	57.42	54.00	-3.42	Average
5	2410.980	29.45	8.72	35.95	99.19	101.41	54.00	-47.41	Average

Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

802.11b Channel High 2462MHz Tx

Horizontal (Peak)

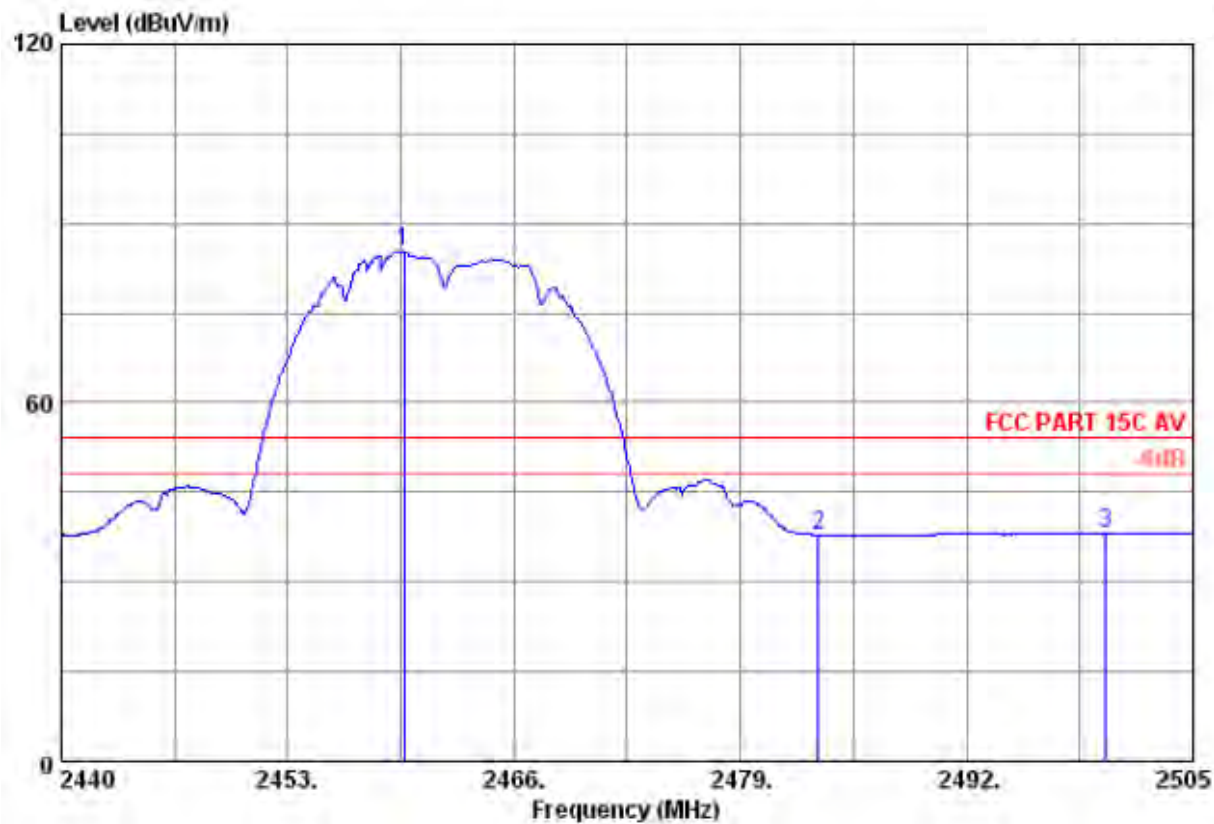


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2459.370	29.48	8.82	36.02	96.54	98.82	74.00	-24.82	Peak
2	2483.500	29.49	8.87	35.97	46.34	48.73	74.00	25.27	Peak
3	2484.655	29.49	8.87	35.97	48.56	50.95	74.00	23.05	Peak
4	2500.000	29.50	8.92	36.00	47.29	49.71	74.00	24.29	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

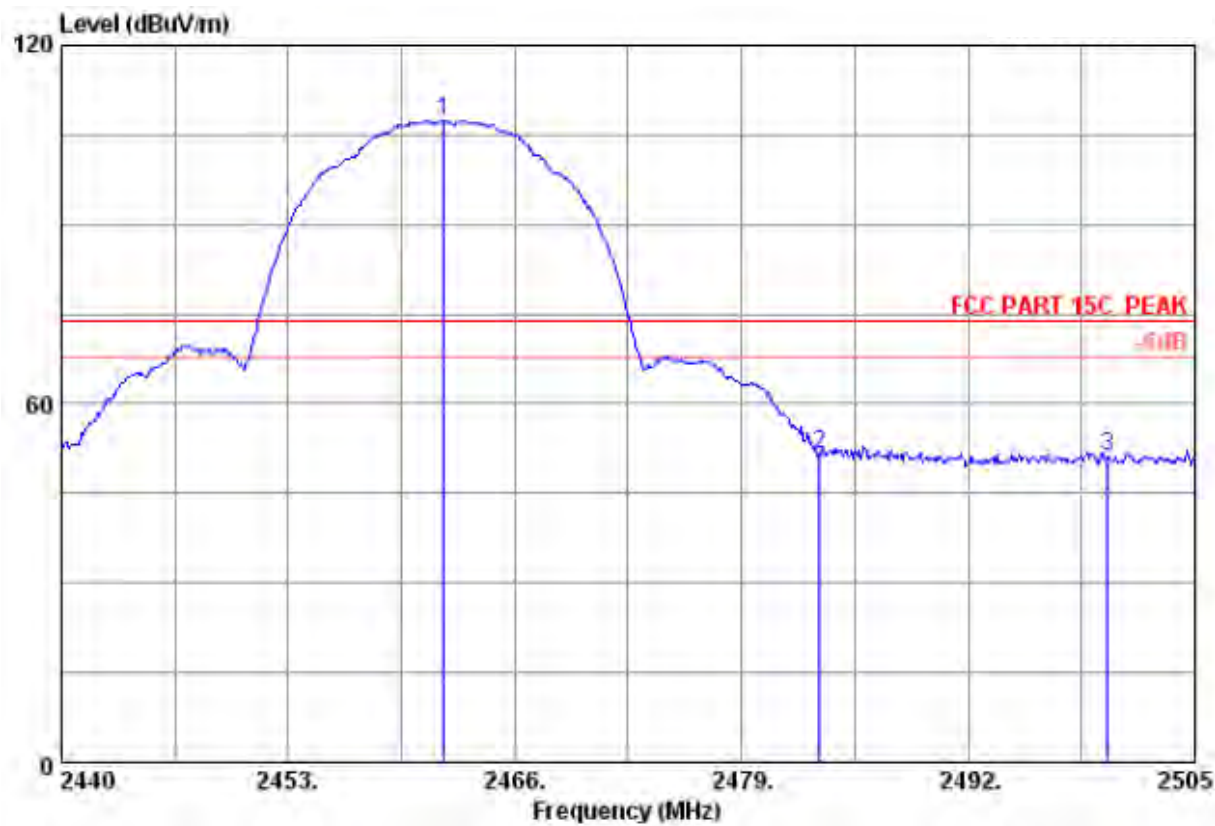
Horizontal (Average)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2459.695	29.48	8.82	36.02	82.88	85.16	54.00	-31.16	Average
2	2483.500	29.49	8.87	35.97	35.47	37.86	54.00	16.14	Average
3	2500.000	29.50	8.92	36.00	35.56	37.98	54.00	16.02	Average

- Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
  2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Peak)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2461.905	29.48	8.82	36.02	105.16	107.44	74.00	-33.44	Peak
2	2483.500	29.49	8.87	35.97	49.02	51.41	74.00	22.59	Peak
3	2500.000	29.50	8.92	36.00	48.86	51.28	74.00	22.72	Peak

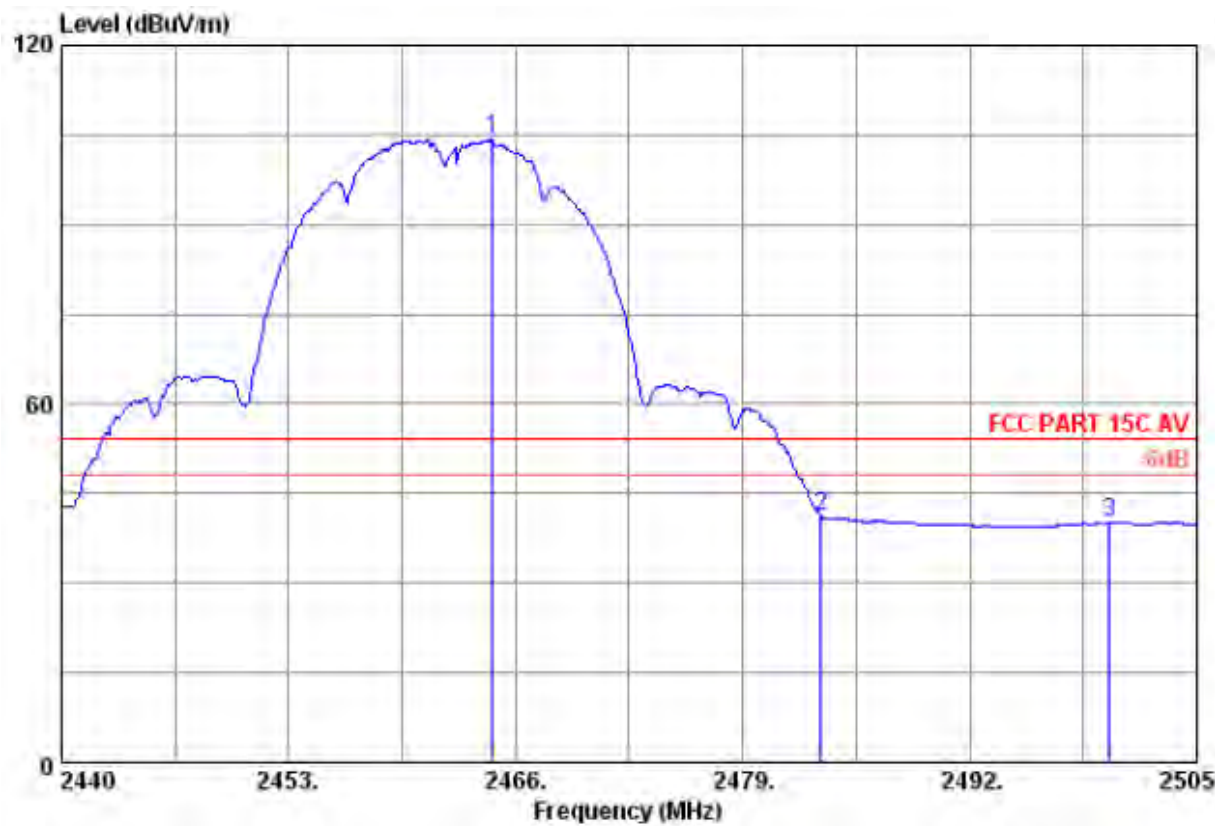
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



Vertical (Average)



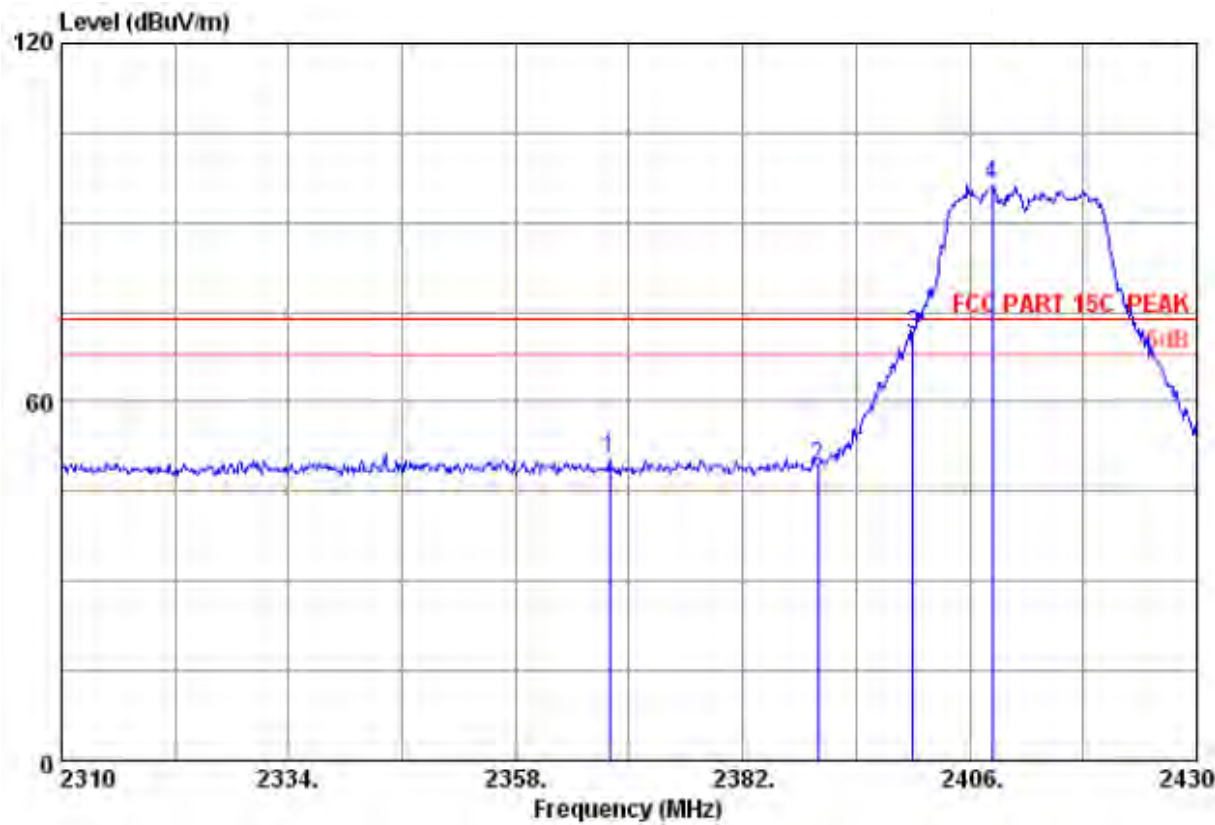
		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2464.700	29.48	8.82	36.02	101.88	104.16	54.00	-50.16	Average
2	2483.500	29.49	8.87	35.97	38.81	41.20	54.00	12.80	Average
3	2500.000	29.50	8.92	36.00	37.58	40.00	54.00	14.00	Average

Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

802.11g Channel Low 2412MHz Tx

Horizontal (Peak)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2367.960	29.42	8.62	35.91	48.43	50.56	74.00	23.44	Peak
2	2390.000	29.44	8.67	36.09	47.14	49.16	74.00	24.84	Peak
3	2400.000	29.44	8.72	36.09	69.05	71.12	74.00	2.88	Peak
4	2408.400	29.45	8.72	35.95	93.92	96.14	74.00	-22.14	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



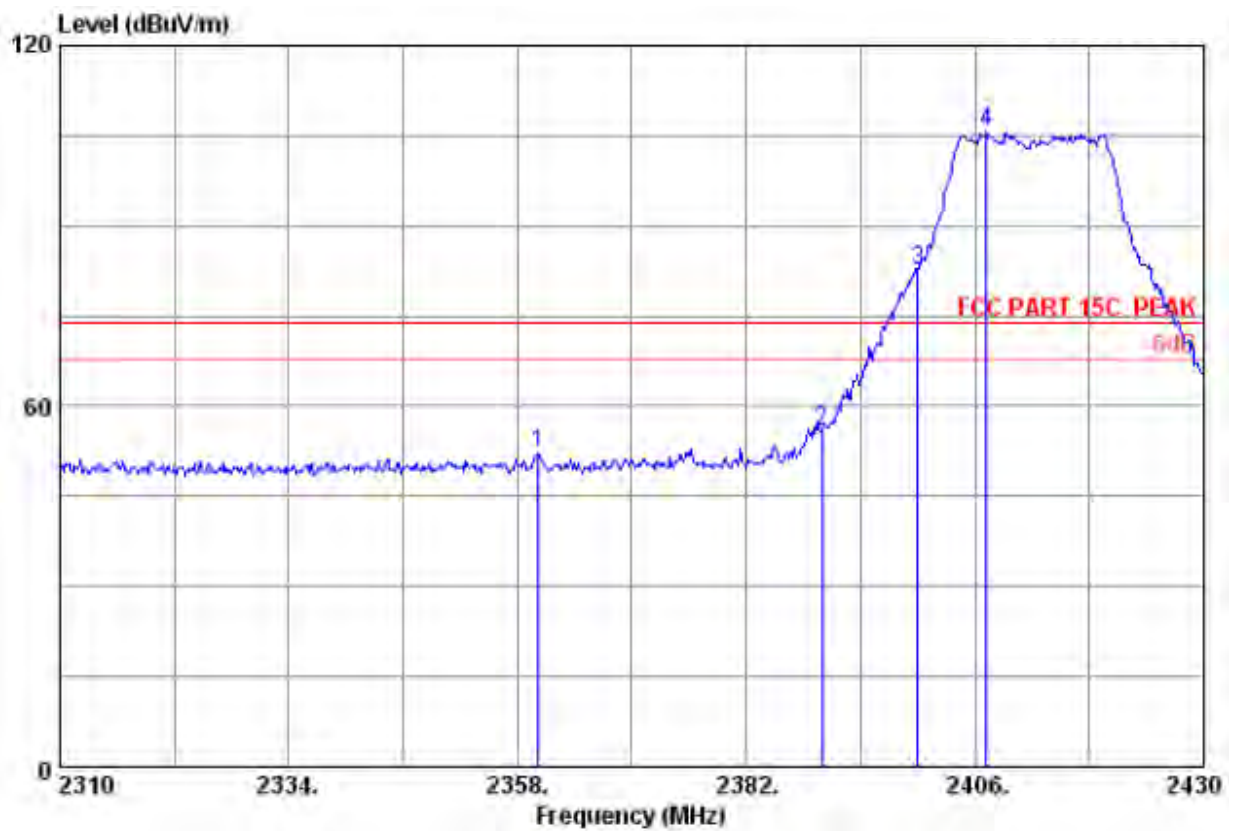
Horizontal (Average)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	29.44	8.67	36.09	36.44	38.46	54.00	15.54	Average
2	2400.000	29.44	8.72	36.09	44.55	46.62	54.00	7.38	Average
3	2412.360	29.45	8.72	35.95	82.00	84.22	54.00	-30.22	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

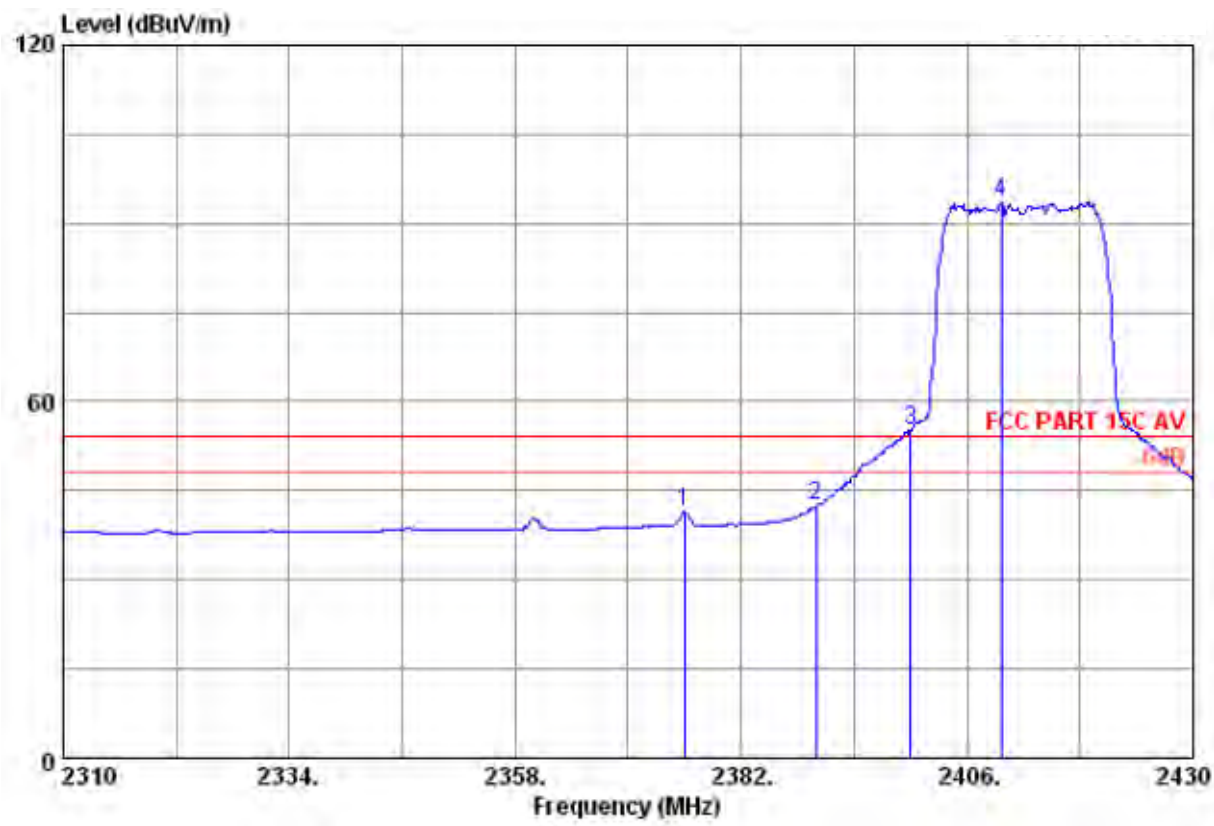
**Vertical (Peak)**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2360.160	29.42	8.62	35.91	50.13	52.26	74.00	21.74	Peak
2	2390.000	29.44	8.67	36.09	53.73	55.75	74.00	18.25	Peak
3	2400.000	29.44	8.72	36.09	80.58	82.65	74.00	-8.65	Peak
4	2407.200	29.45	8.72	35.95	103.27	105.49	74.00	-31.49	Peak

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Average)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2376.000	29.43	8.67	36.00	39.24	41.34	54.00	12.66	Average
2	2390.000	29.44	8.67	36.09	40.55	42.57	54.00	11.43	Average
3	2400.000	29.44	8.72	36.09	52.95	55.02	54.00	-1.02	Average
4	2409.600	29.45	8.72	35.95	91.40	93.62	54.00	-39.62	Average

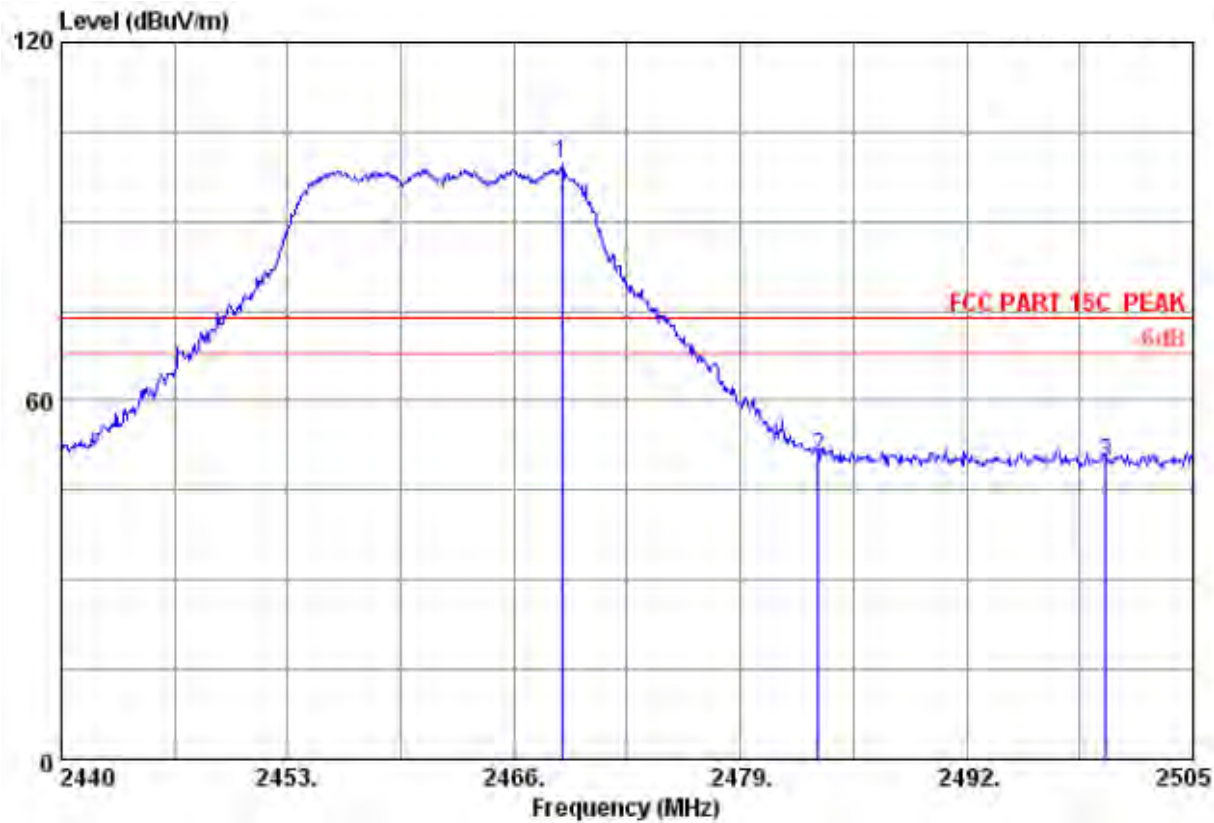
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

802.11g Channel High 2462MHz Tx

Horizontal (Peak)



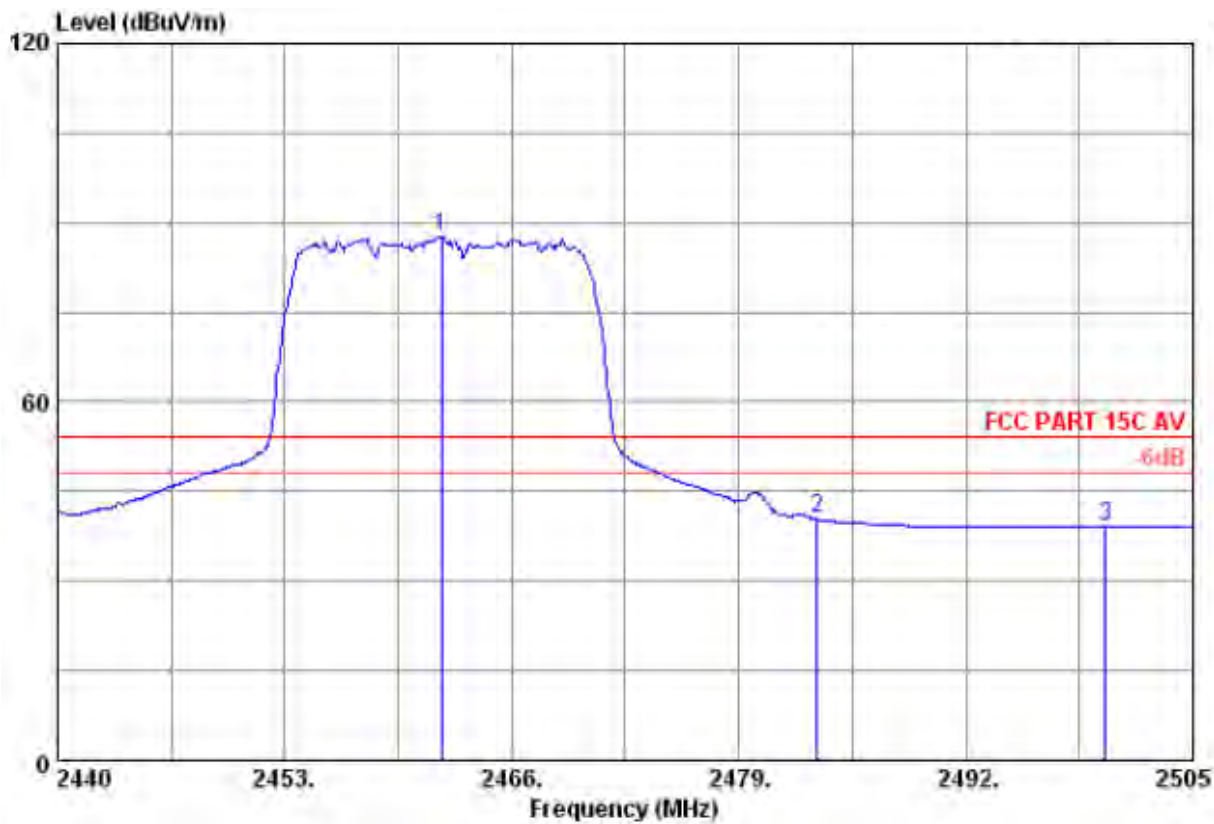
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2468.730	29.48	8.82	36.02	97.25	99.53	74.00	-25.53	Peak
2	2483.500	29.49	8.87	35.97	48.25	50.64	74.00	23.36	Peak
3	2500.000	29.50	8.92	36.00	46.97	49.39	74.00	24.61	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

Horizontal (Average)

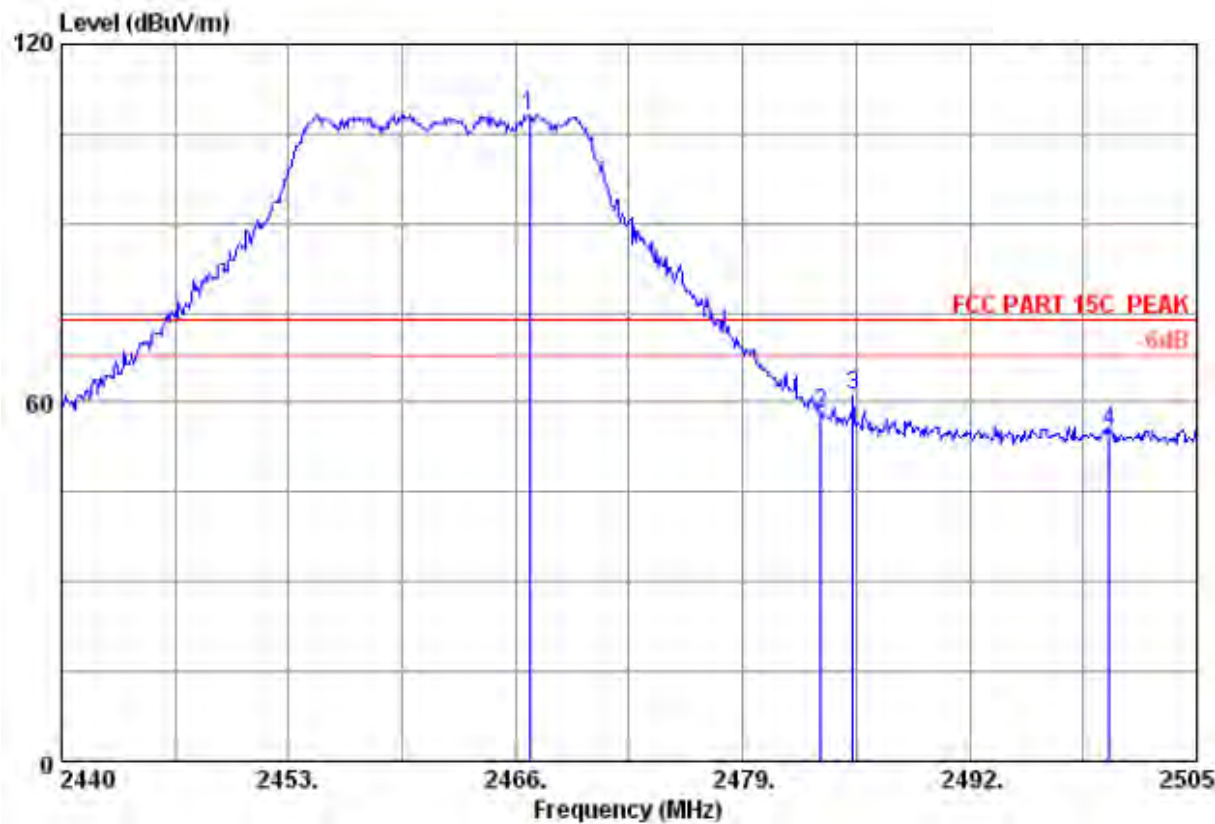


	Freq.	Ant.	Cable	Amp.		Emission			
	(MHz)	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2461.970	29.48	8.82	36.02	85.45	87.73	54.00	-33.73	Average
2	2483.500	29.49	8.87	35.97	37.89	40.28	54.00	13.72	Average
3	2500.000	29.50	8.92	36.00	36.81	39.23	54.00	14.77	Average

Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Peak)



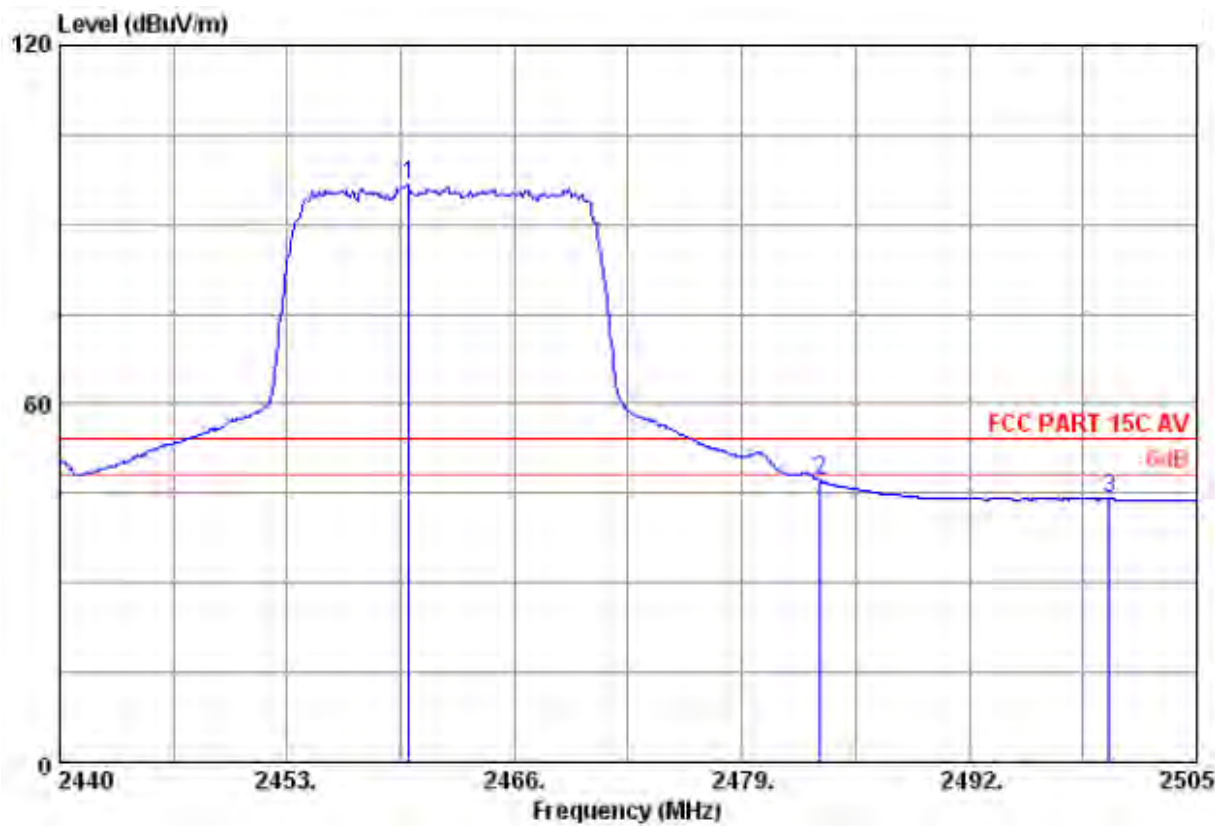
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2466.780	29.48	8.82	36.02	105.83	108.11	74.00	-34.11	Peak
2	2483.500	29.49	8.87	35.97	55.84	58.23	74.00	15.77	Peak
3	2485.305	29.49	8.87	35.97	58.84	61.23	74.00	12.77	Peak
4	2500.000	29.50	8.92	36.00	52.57	54.99	74.00	19.01	Peak

Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.



Vertical (Average)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2459.955	29.48	8.82	36.02	94.41	96.69	54.00	-42.69	Average
2	2483.500	29.49	8.87	35.97	44.65	47.04	54.00	6.96	Average
3	2500.000	29.50	8.92	36.00	41.63	44.05	54.00	9.95	Average

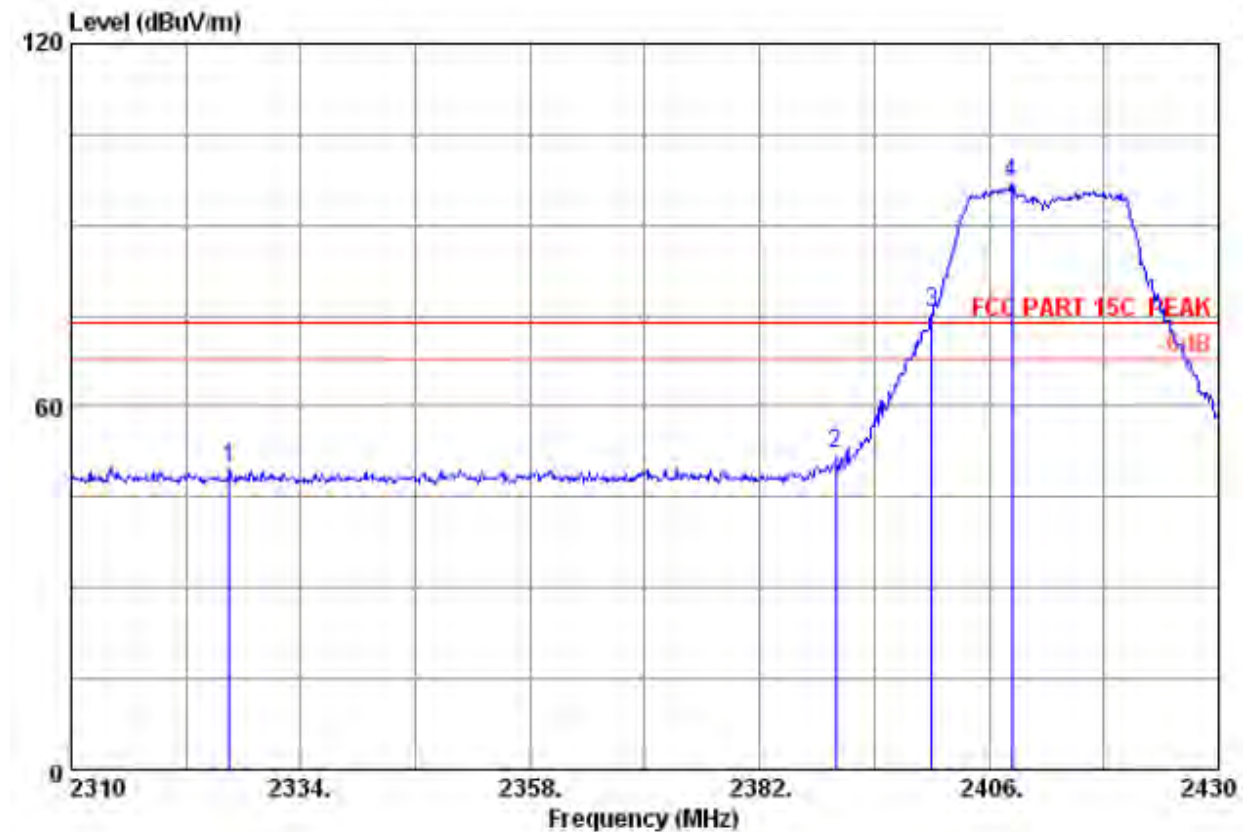
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



802.11n HT20 Channel Low 2412MHz Tx

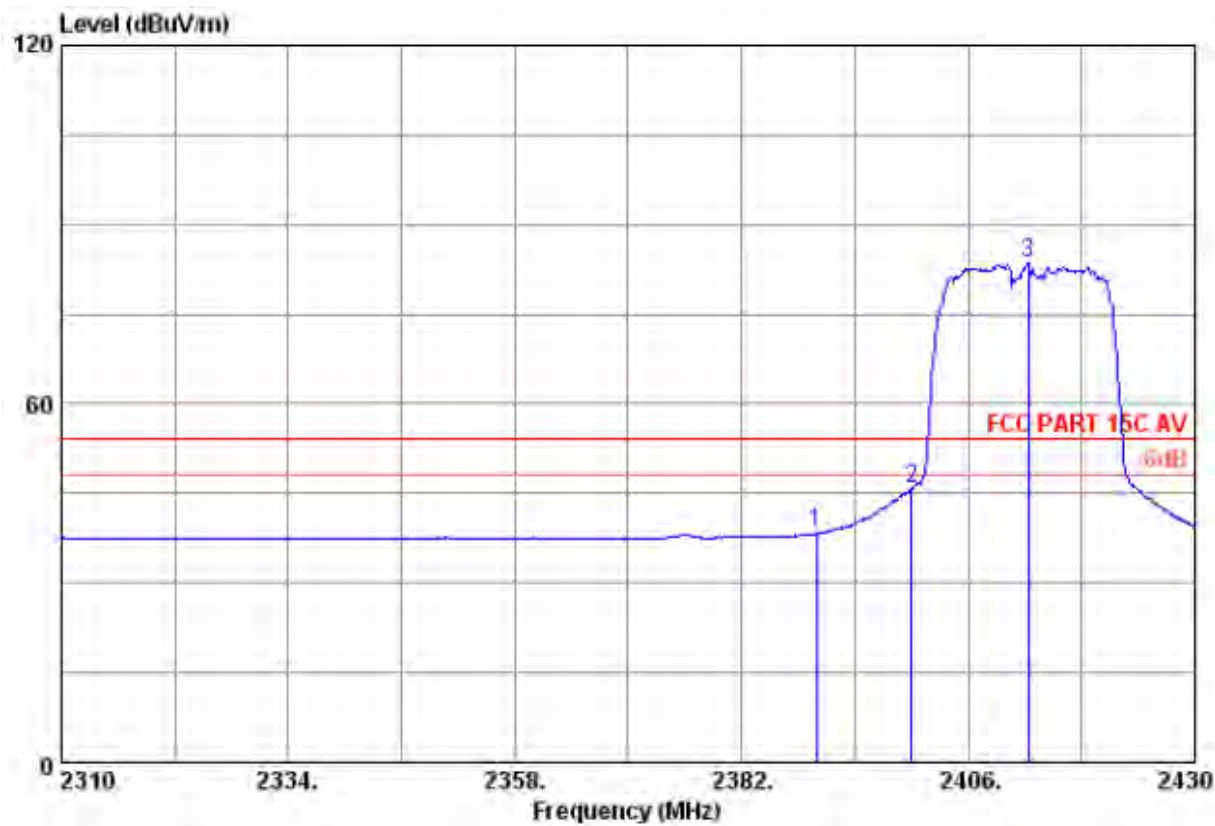
**Horizontal (Peak)**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2326.560	29.40	8.57	36.06	47.89	49.80	74.00	24.20	Peak
2	2390.000	29.44	8.67	36.09	50.27	52.29	74.00	21.71	Peak
3	2400.000	29.44	8.72	36.09	73.47	75.54	74.00	-1.54	Peak
4	2408.400	29.45	8.72	35.95	94.64	96.86	74.00	-22.86	Peak

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Horizontal (Average)

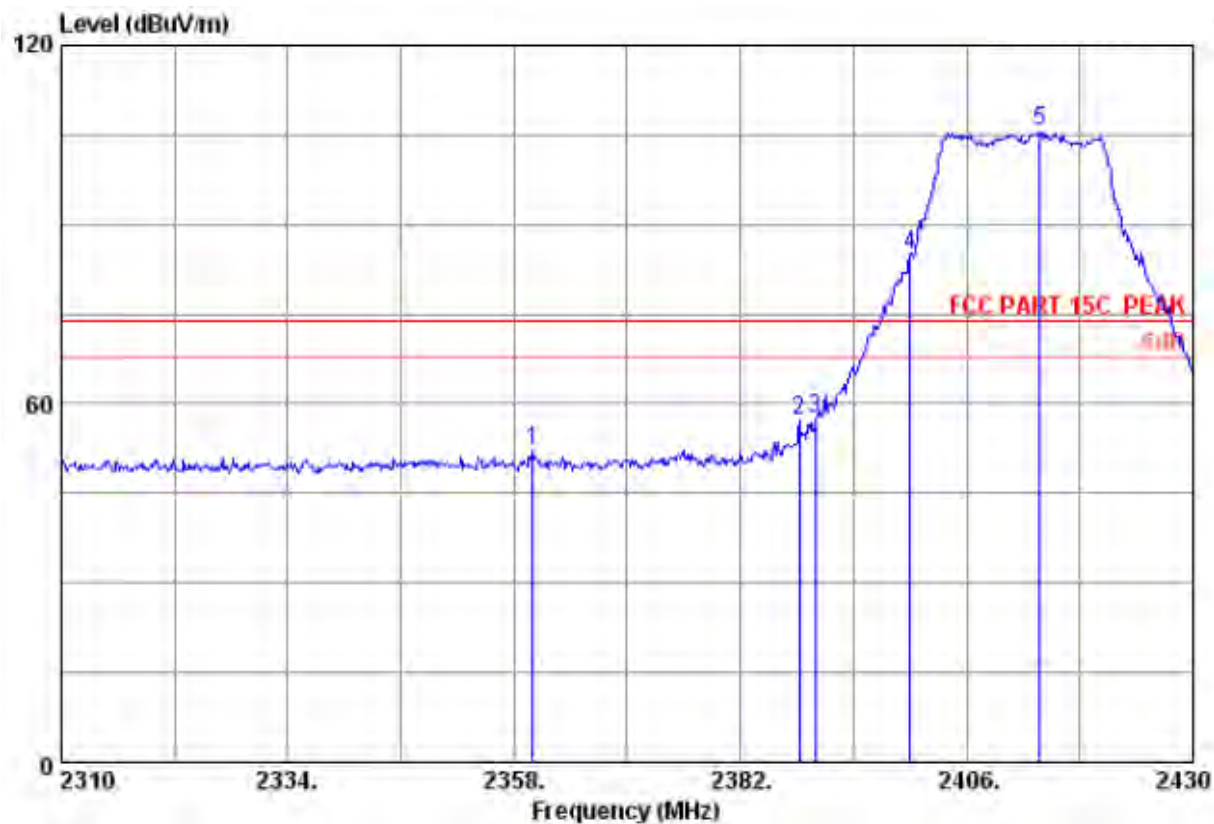


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2390.000	29.44	8.67	36.09	36.32	38.34	54.00	15.66	Average
2	2400.000	29.44	8.72	36.09	43.61	45.68	54.00	8.32	Average
3	2412.360	29.45	8.72	35.95	81.30	83.52	54.00	-29.52	Average

Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Peak)

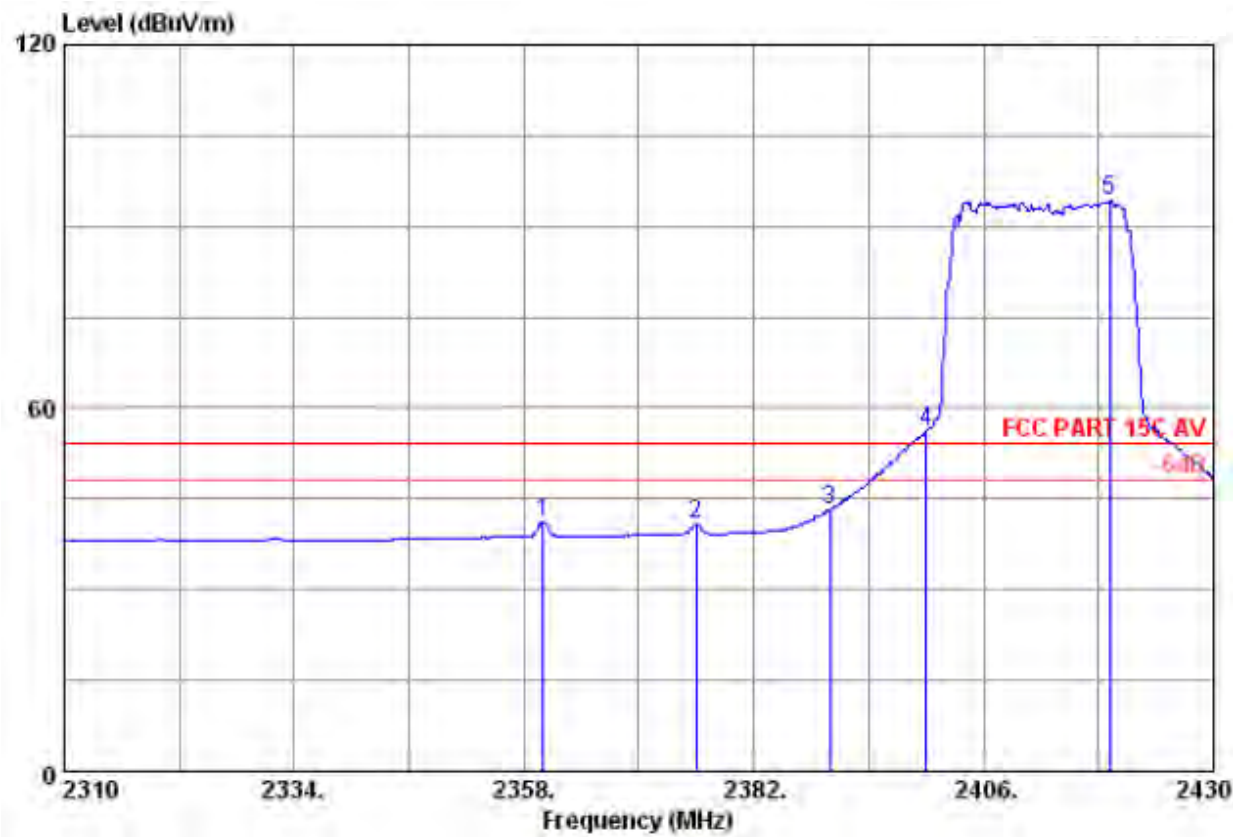


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2360.040	29.42	8.62	35.91	50.06	52.19	74.00	21.81	Peak
2	2388.240	29.44	8.67	36.09	55.03	57.05	74.00	16.95	Peak
3	2390.000	29.44	8.67	36.09	55.33	57.35	74.00	16.65	Peak
4	2400.000	29.44	8.72	36.09	82.95	85.02	74.00	-11.02	Peak
5	2413.800	29.45	8.72	35.95	103.30	105.52	74.00	-31.52	Peak

Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Average)

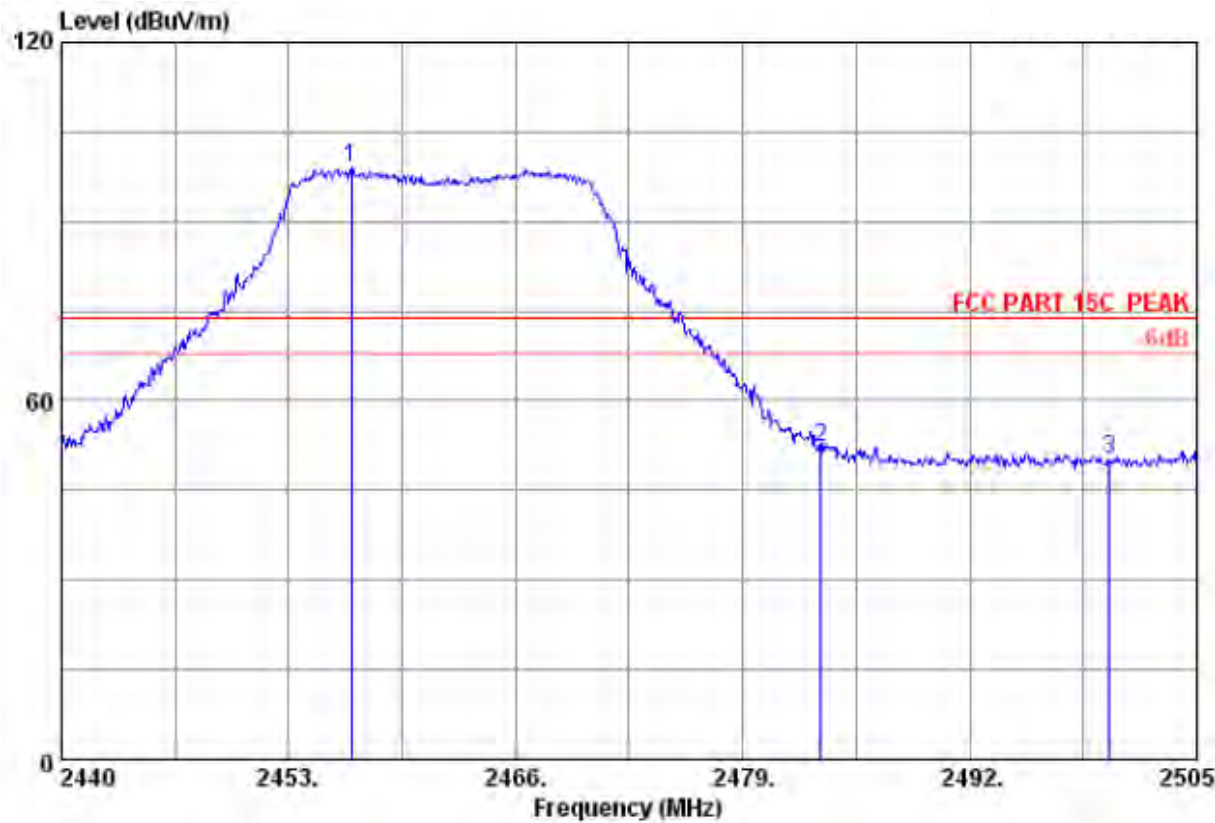


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2360.040	29.42	8.62	35.91	38.97	41.10	54.00	12.90	Average
2	2376.000	29.43	8.67	36.00	38.71	40.81	54.00	13.19	Average
3	2390.000	29.44	8.67	36.09	41.23	43.25	54.00	10.75	Average
4	2400.000	29.44	8.72	36.09	54.15	56.22	54.00	-2.22	Average
5	2419.200	29.45	8.72	35.95	91.97	94.19	54.00	-40.19	Average

- Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
  2. The emission levels that are 20dB below the official limit are not reported.

802.11n HT20 Channel High 2462MHz Tx

Horizontal (Peak)

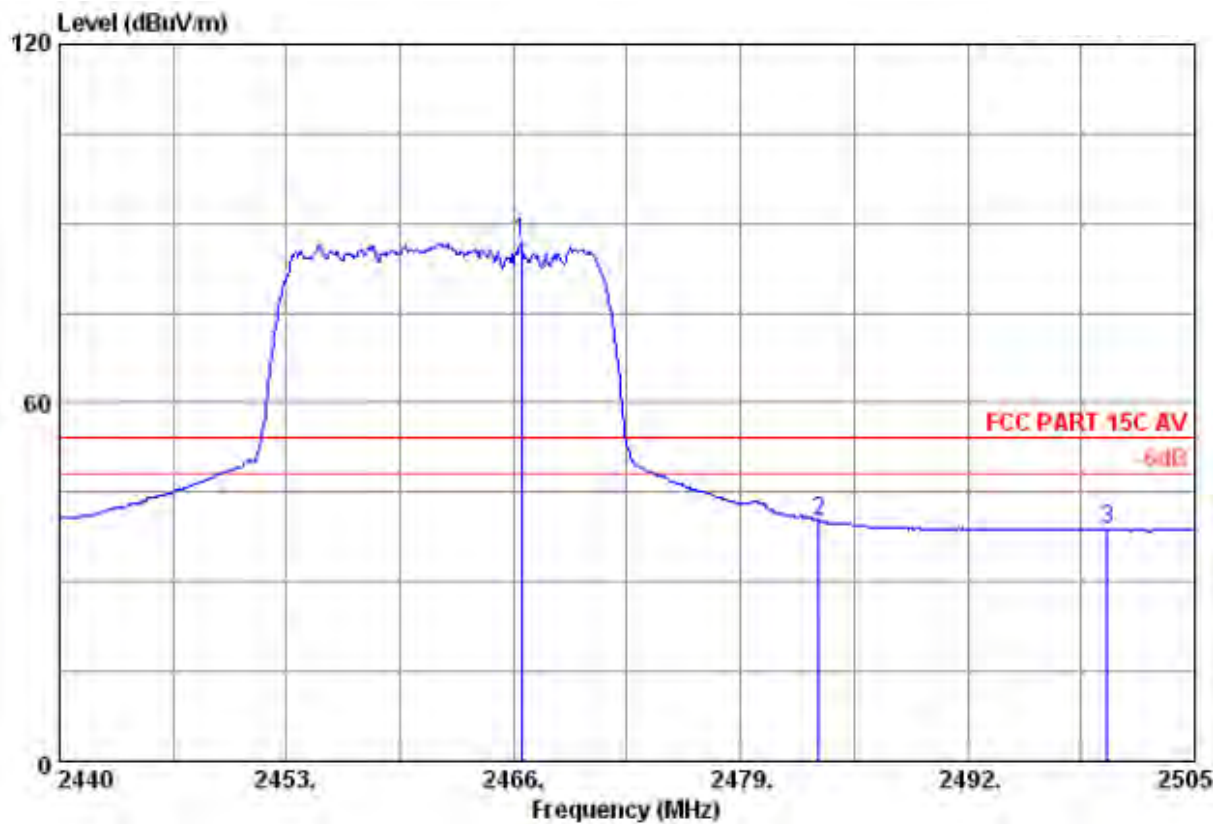


	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2456.575	29.48	8.82	36.02	96.54	98.82	74.00	-24.82	Peak
2	2483.500	29.49	8.87	35.97	49.75	52.14	74.00	21.86	Peak
3	2500.000	29.50	8.92	36.00	47.65	50.07	74.00	23.93	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

**Horizontal (Average)**

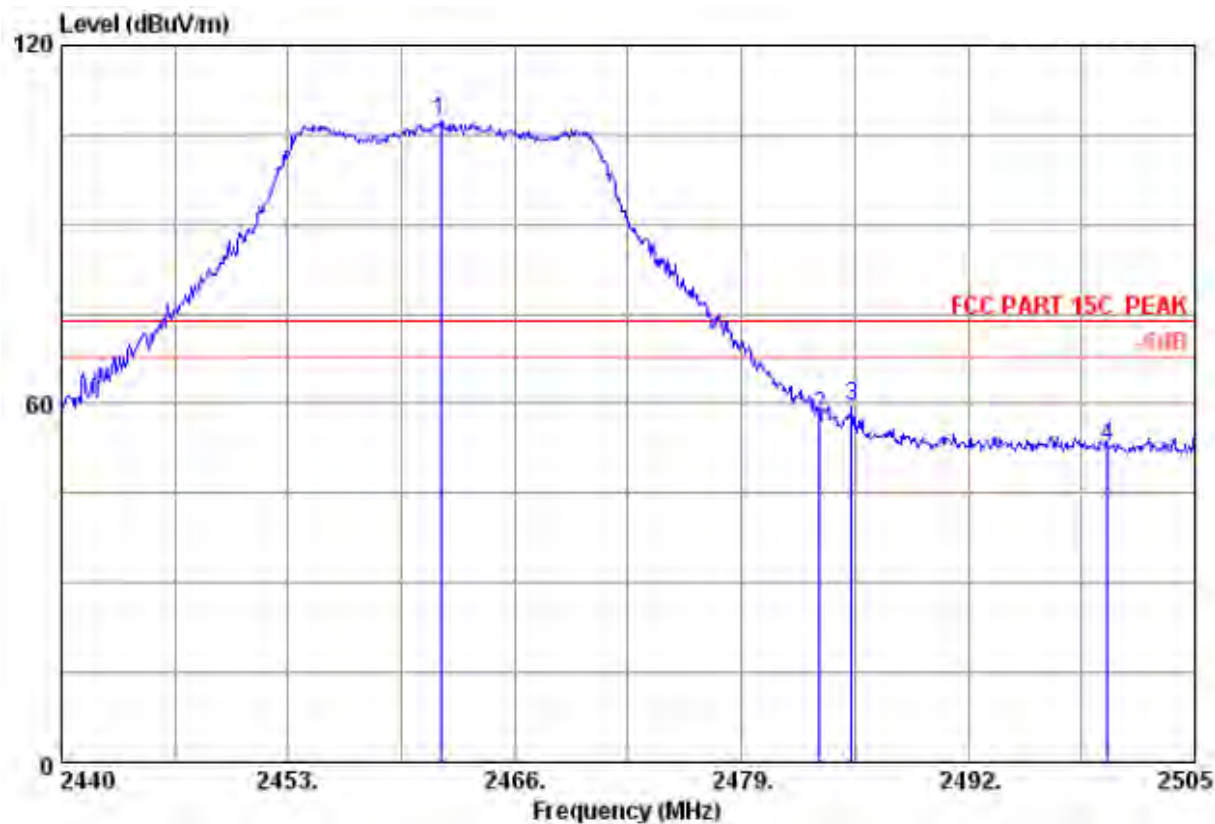
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2466.455	29.48	8.82	36.02	84.52	86.80	54.00	-32.80	Average
2	2483.500	29.49	8.87	35.97	37.86	40.25	54.00	13.75	Average
3	2500.000	29.50	8.92	36.00	36.45	38.87	54.00	15.13	Average

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Vertical (Peak)

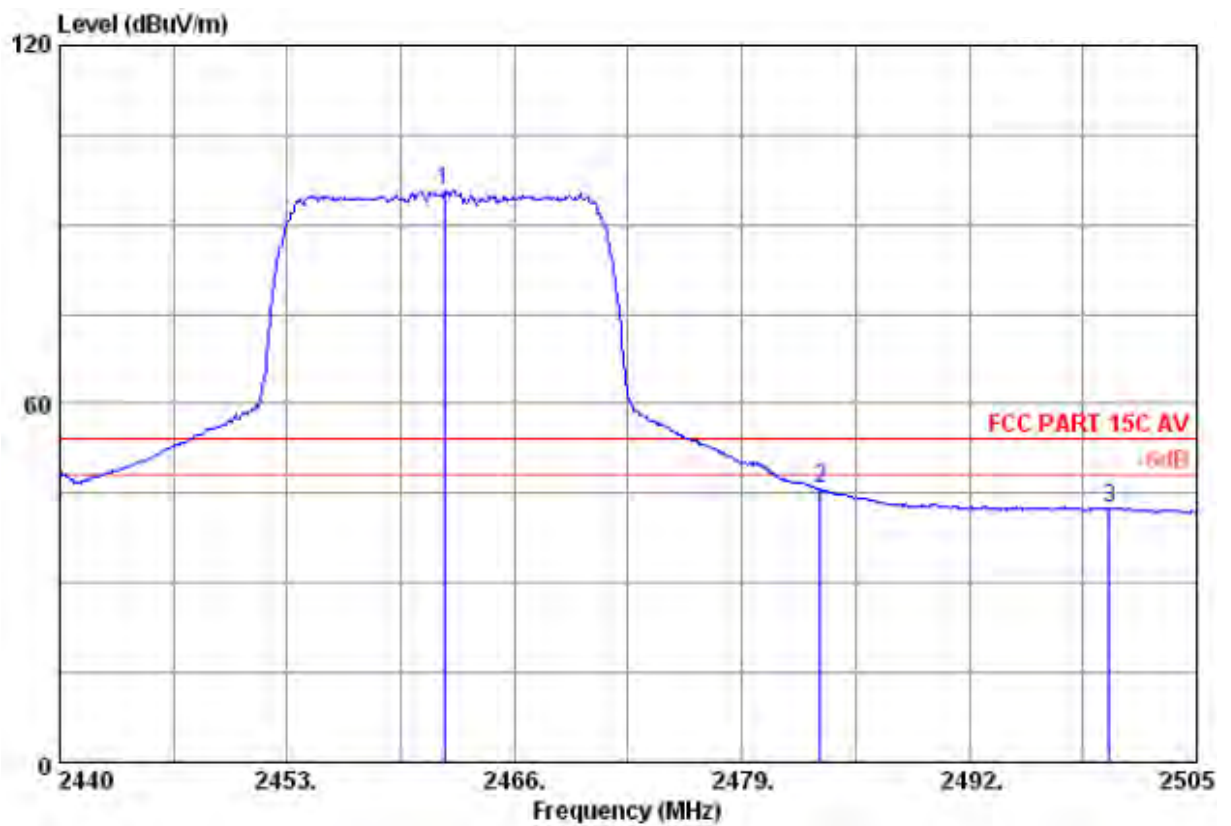


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2461.775	29.48	8.82	36.02	104.95	107.23	74.00	-33.23	Peak
2	2483.500	29.49	8.87	35.97	55.58	57.97	74.00	16.03	Peak
3	2485.305	29.49	8.87	35.97	57.12	59.51	74.00	14.49	Peak
4	2500.000	29.50	8.92	36.00	50.40	52.82	74.00	21.18	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

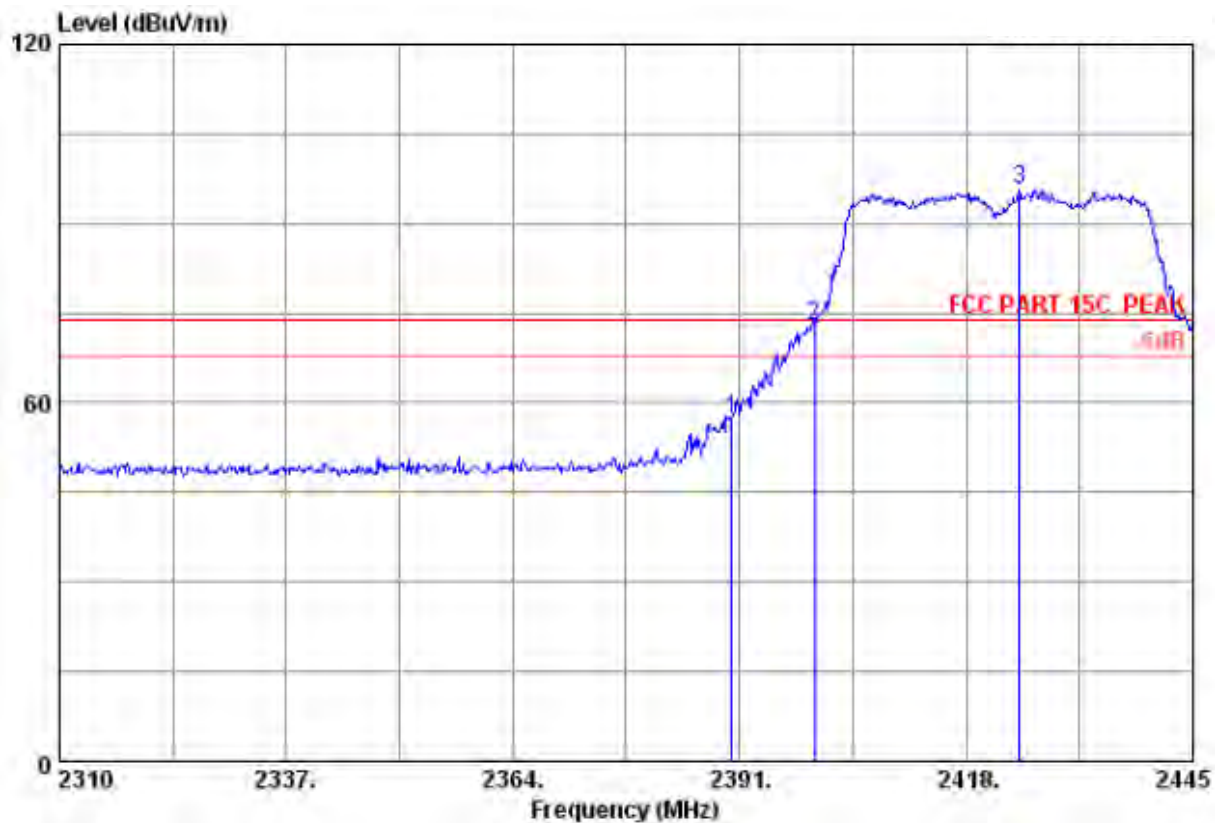
**Vertical (Average)**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2461.970	29.48	8.82	36.02	93.45	95.73	54.00	-41.73	Average
2	2483.500	29.49	8.87	35.97	43.26	45.65	54.00	8.35	Average
3	2500.000	29.50	8.92	36.00	40.19	42.61	54.00	11.39	Average

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

802.11n HT40 Channel Low 2422MHz Tx

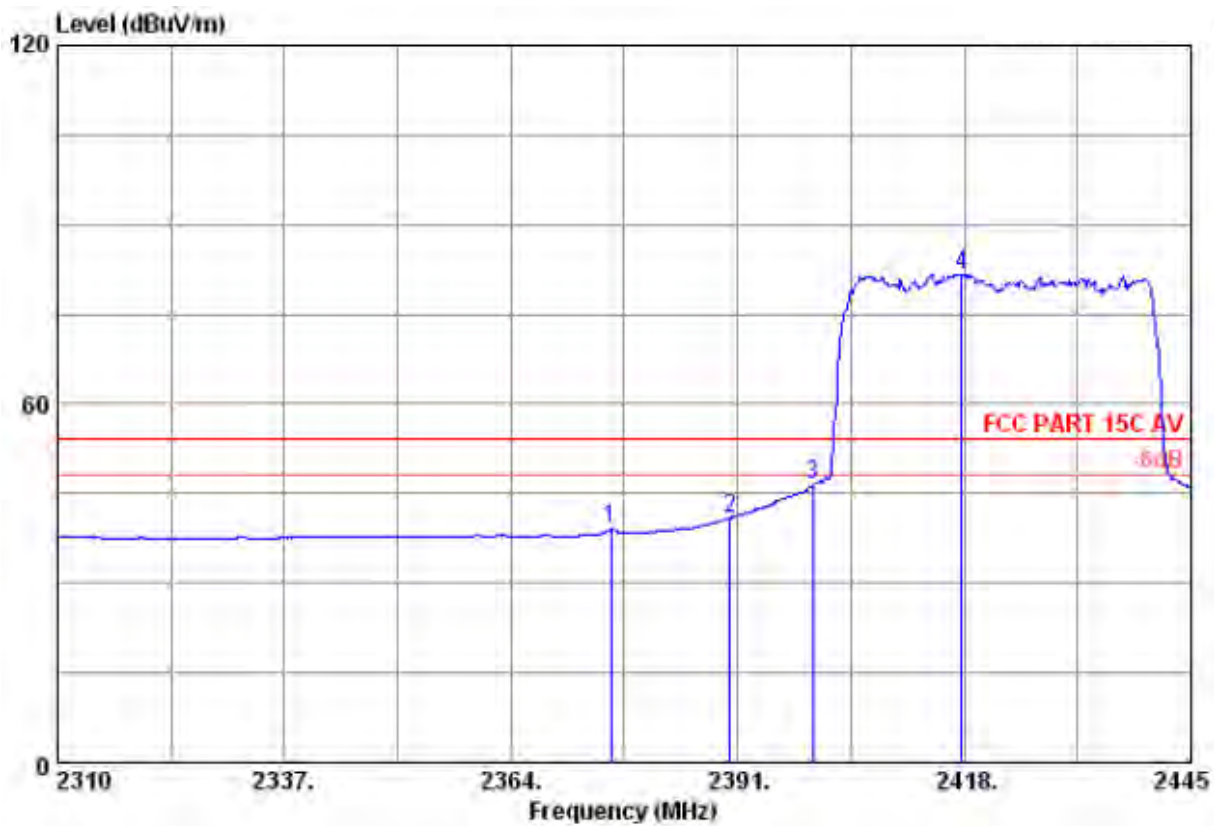
**Horizontal (Peak)**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2390.000	29.44	8.67	36.09	55.28	57.30	74.00	16.70	Peak
2	2400.000	29.44	8.72	36.09	70.74	72.81	74.00	1.19	Peak
3	2424.345	29.46	8.77	36.01	93.55	95.77	74.00	-21.77	Peak

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

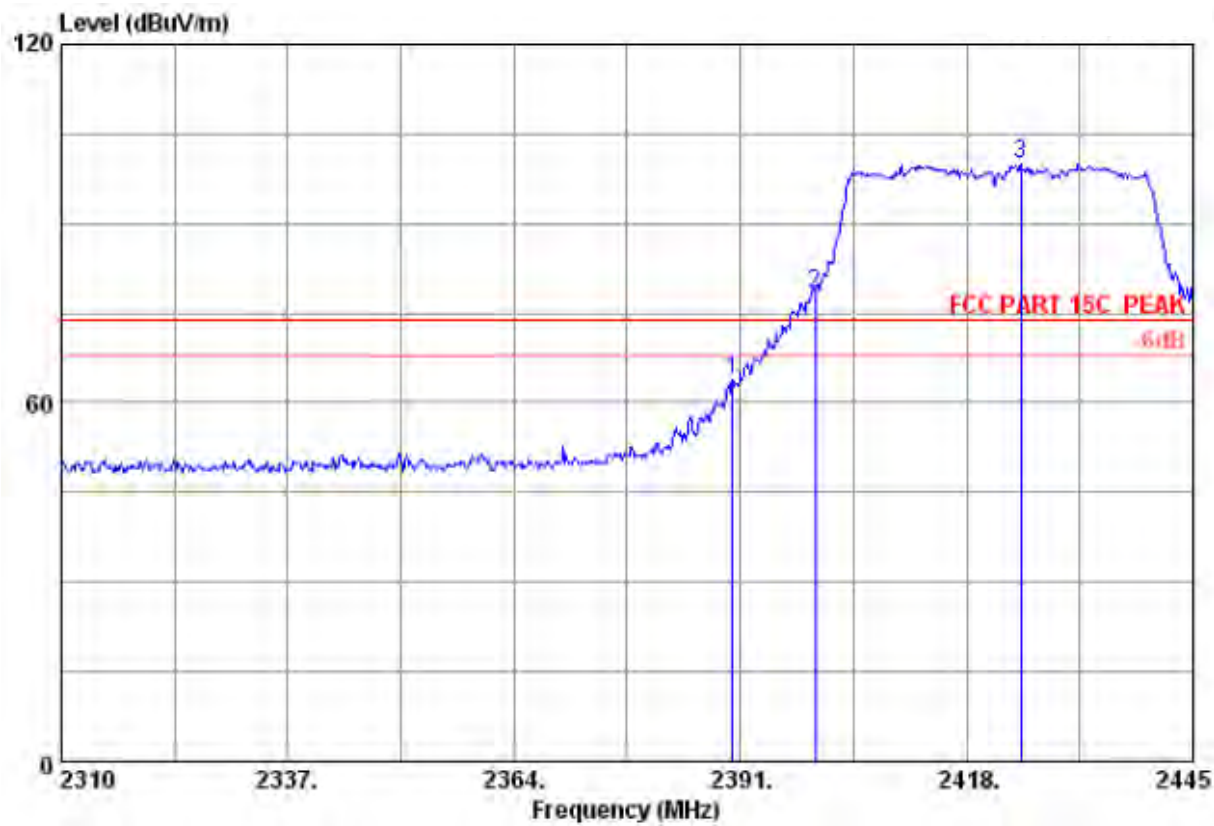
Horizontal (Average)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2375.880	29.43	8.67	36.00	36.90	39.00	54.00	15.00	Average
2	2390.000	29.44	8.67	36.09	38.87	40.89	54.00	13.11	Average
3	2400.000	29.44	8.72	36.09	44.47	46.54	54.00	7.46	Average
4	2417.730	29.45	8.72	35.95	79.44	81.66	54.00	-27.66	Average

- Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
  2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Peak)

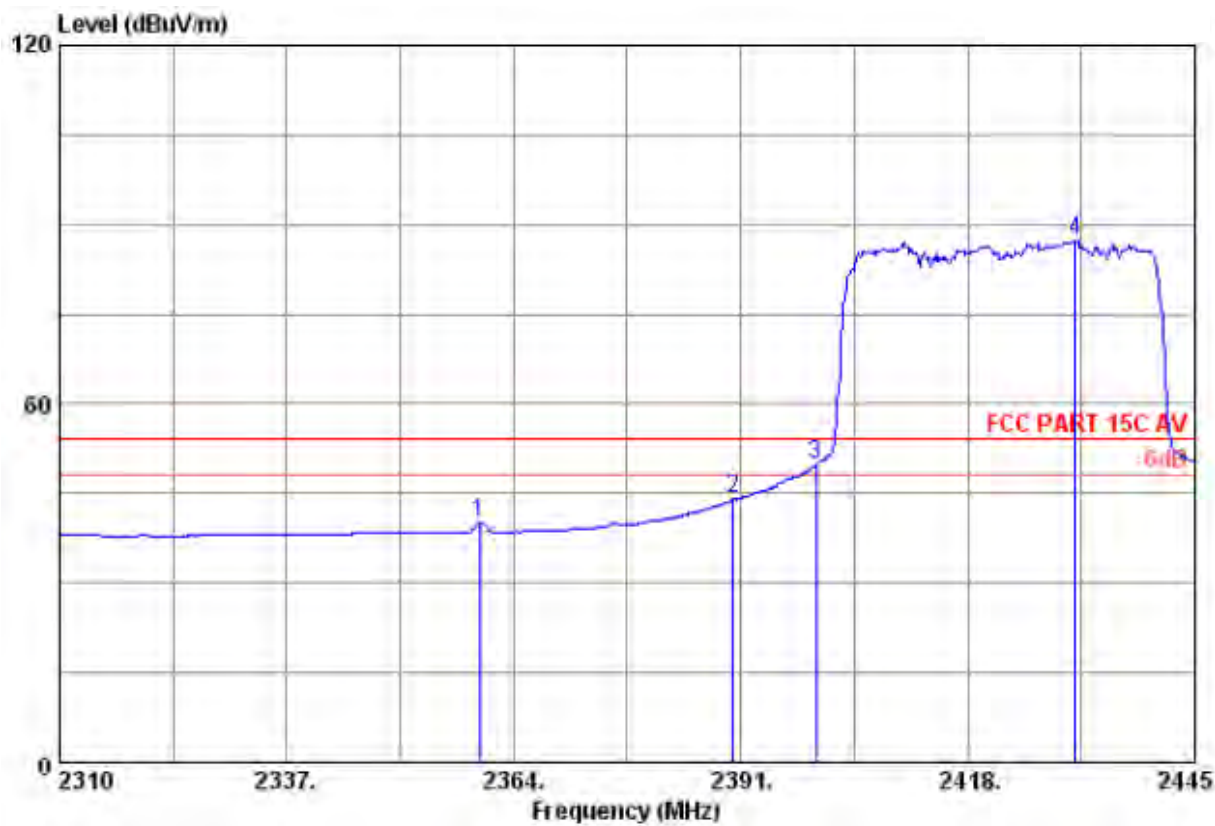


	Ant.	Cable	Amp.		Emission				
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	29.44	8.67	36.09	61.70	63.72	74.00	10.28	Peak
2	2400.000	29.44	8.72	36.09	75.98	78.05	74.00	-4.05	Peak
3	2424.480	29.46	8.77	36.01	97.62	99.84	74.00	-25.84	Peak

Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Average)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2359.950	29.42	8.62	35.91	38.13	40.26	54.00	13.74	Average
2	2390.000	29.44	8.67	36.09	42.07	44.09	54.00	9.91	Average
3	2400.000	29.44	8.72	36.09	47.73	49.80	54.00	4.20	Average
4	2430.825	29.46	8.77	36.01	85.09	87.31	54.00	-33.31	Average

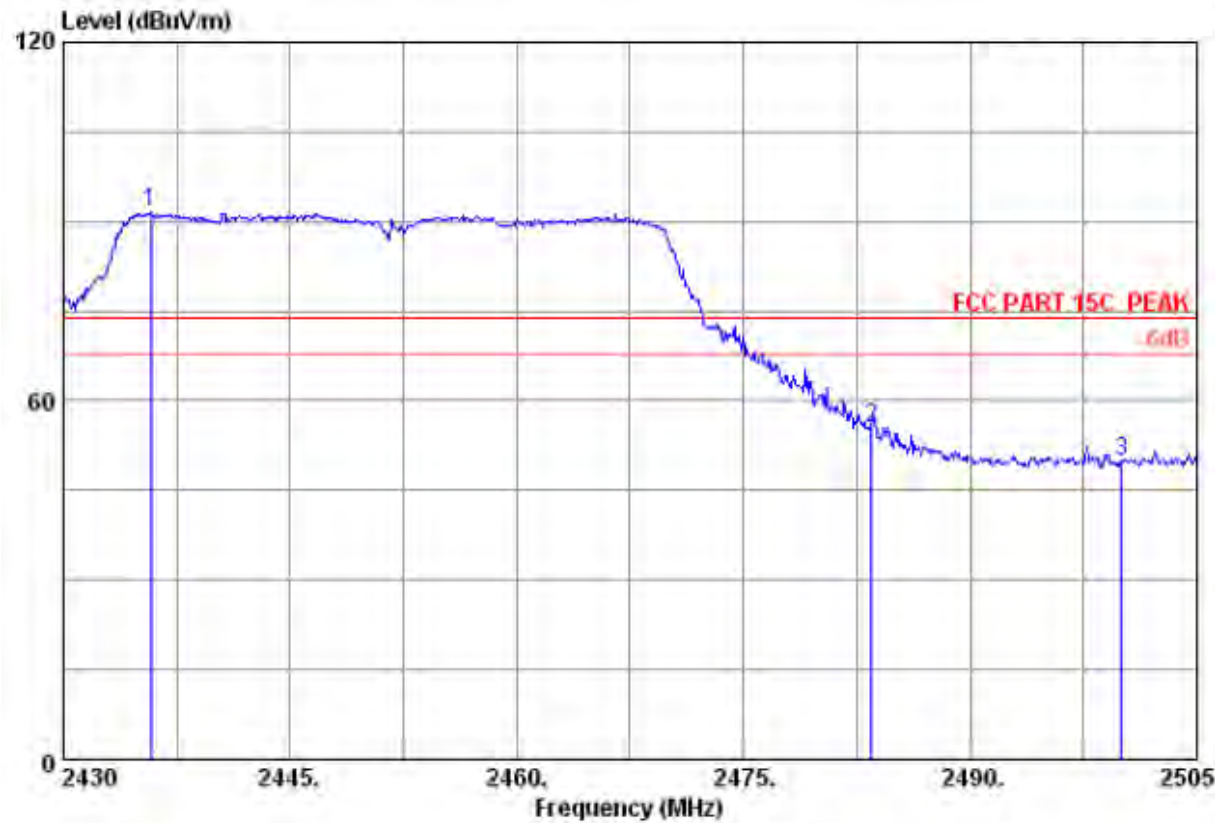
Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.



802.11n HT40 Channel High 2452MHz Tx

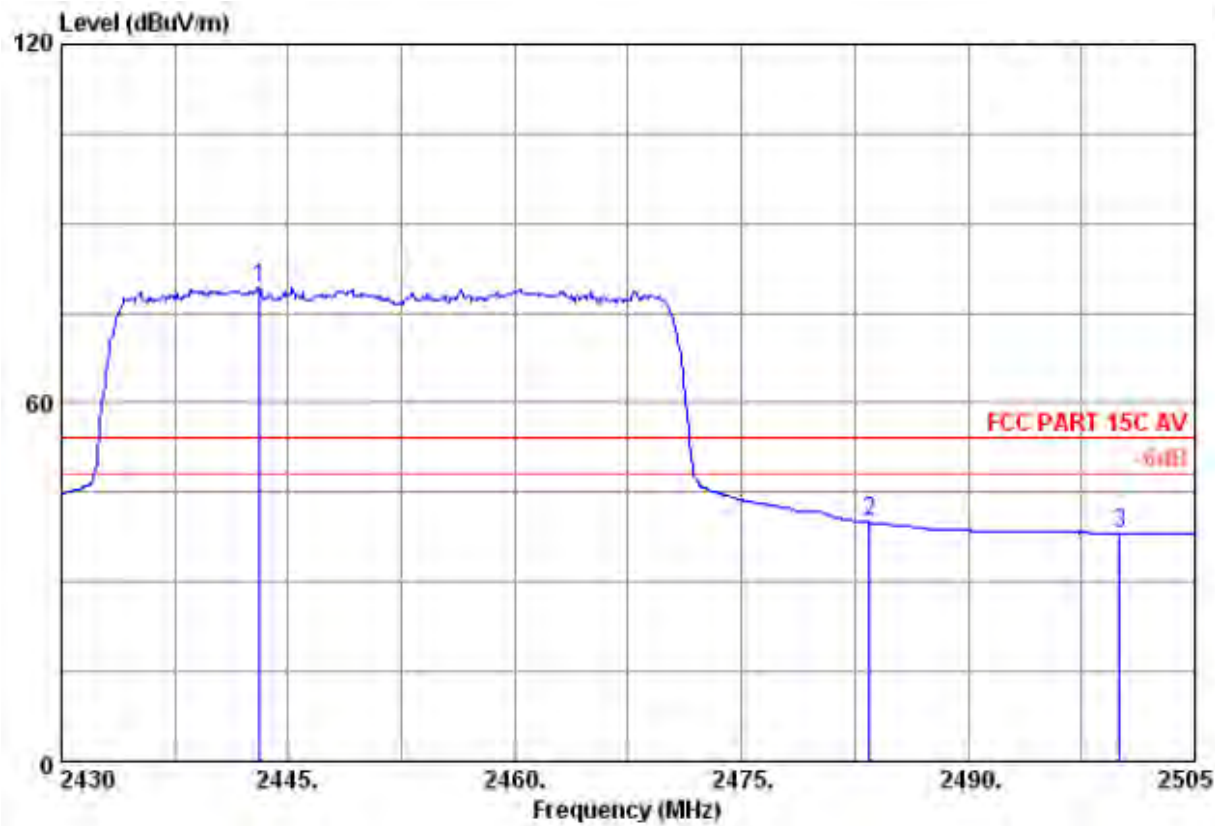
Horizontal (Peak)



	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2435.775	29.46	8.77	36.01	89.25	91.47	74.00	-17.47	Peak
2	2483.500	29.49	8.87	35.97	53.11	55.50	74.00	18.50	Peak
3	2500.000	29.50	8.92	36.00	47.30	49.72	74.00	24.28	Peak

Remarks:  
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.

Horizontal (Average)

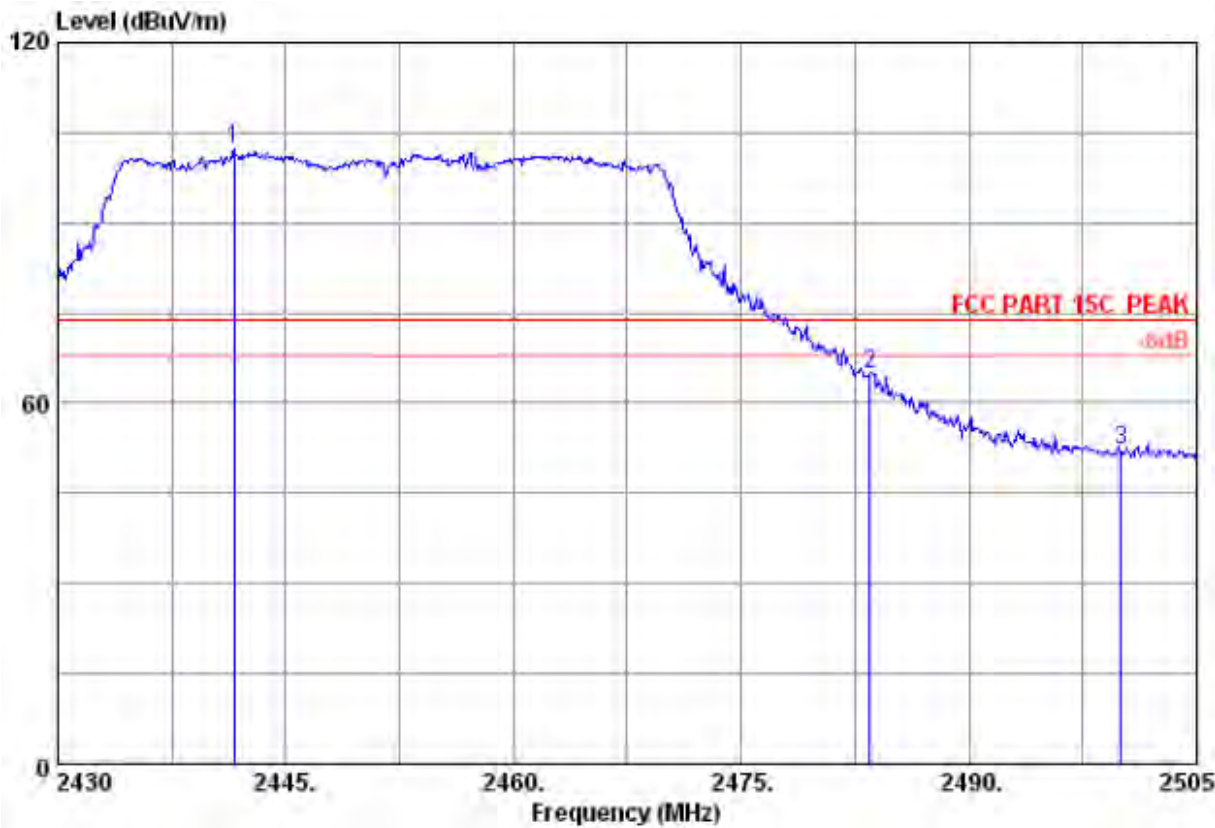


	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2466.455	29.48	8.82	36.02	84.52	86.80	54.00	-32.80	Average
2	2483.500	29.49	8.87	35.97	37.86	40.25	54.00	13.75	Average
3	2500.000	29.50	8.92	36.00	36.45	38.87	54.00	15.13	Average

Remarks:

- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

Vertical (Peak)

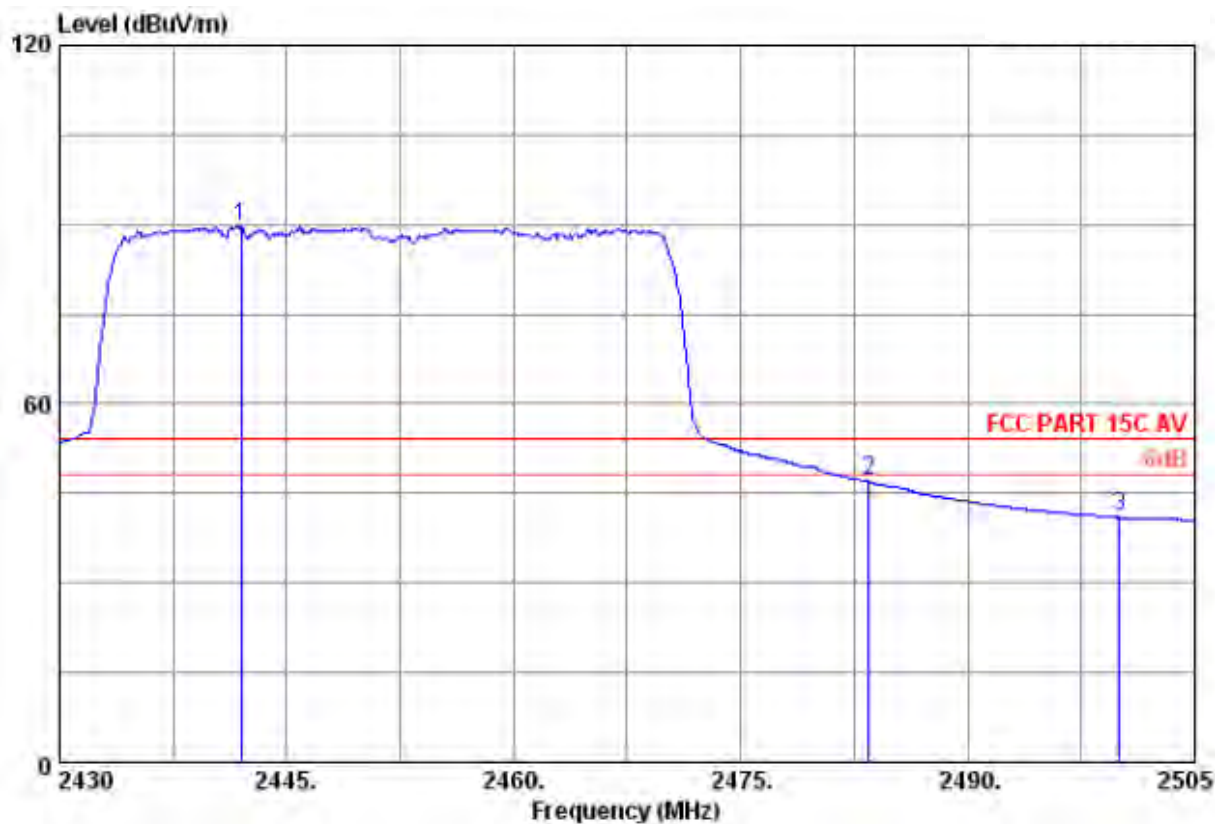


	Freq. (MHz)	Ant.	Cable	Amp.	Reading (dBuV)	Emission			
		Factor (dB/m)	loss (dB)	Factor (dB)		Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.625	29.47	8.77	36.06	99.99	102.17	74.00	-28.17	Peak
2	2483.500	29.49	8.87	35.97	62.52	64.91	74.00	9.09	Peak
3	2500.000	29.50	8.92	36.00	49.84	52.26	74.00	21.74	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

**Vertical (Average)**

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2442.000	29.47	8.77	36.06	87.51	89.69	54.00	-35.69	Average
2	2483.500	29.49	8.87	35.97	44.59	46.98	54.00	7.02	Average
3	2500.000	29.50	8.92	36.00	38.53	40.95	54.00	13.05	Average

**Remarks:**

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 14. §15.247(E) - Power Spectral Density

### 14.1. Test Equipment

Please refer to Section 6 this report.

### 14.2. Test Procedure

- 1, Set EUT in the transmitting mode.
- 2, Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3, Set the spectrum analyzer as RBW=3kHz, VBW=10kHz, Span=300kHz, Sweep=100s.
- 4, Record the max. reading
- 5, Repeat the above procedure until the measurements for all frequencies are completed.

### 14.3. Applicable Standard

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. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

### 14.4. Test Result

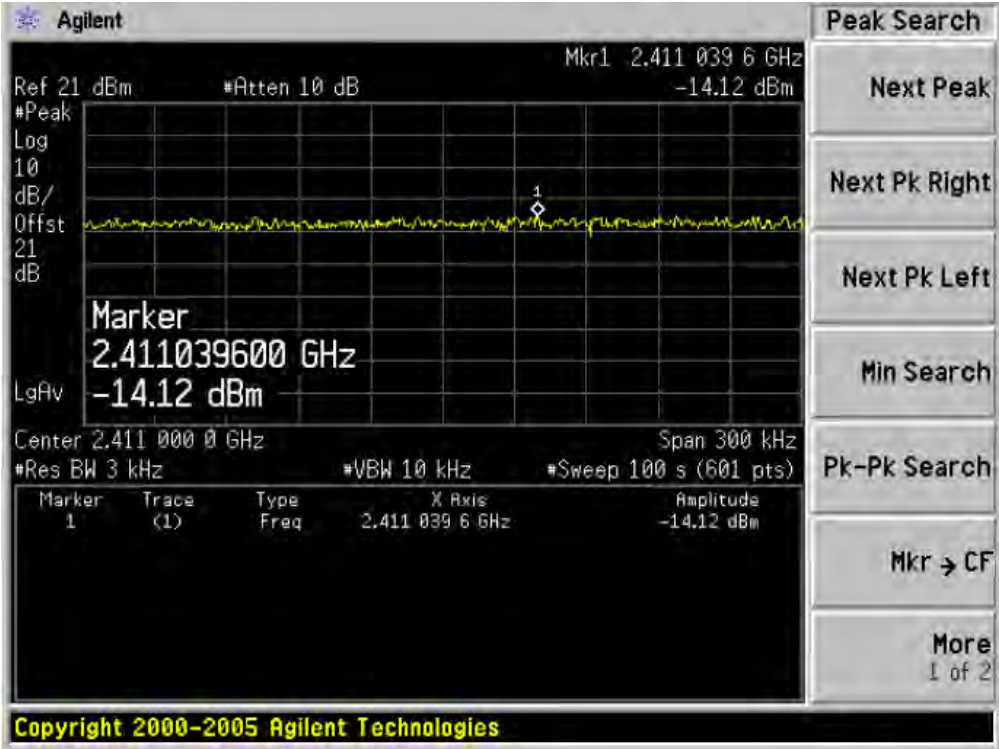
**PASS**

Channel Frequency (MHz)	Data Rate (Mbps)	PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	Limit (dBm/3kHz)
		Chain 1	Chain 2		
802.11b Mode					
2412	1	-14.12	-13.23	N/A	8
2437	1	-12.97	-12.16	N/A	8
2462	1	-12.46	-10.89	N/A	8
802.11g Mode					
2412	6	-15.23	-15.56	N/A	8
2437	6	-13.52	-13.82	N/A	8
2462	6	-14.51	-14.69	N/A	8
802.11n (20M) Mode					
2412	6	-16.48	-15.99	-13.22	8
2437	6	-10.45	-10.89	-7.65	8
2462	6	-14.60	-14.69	-11.63	8
802.11n (40M) Mode					
2412	6	-20.93	-17.06	-15.57	8
2437	6	-25.30	-25.53	-22.40	8
2462	6	-20.82	-17.25	-15.67	8

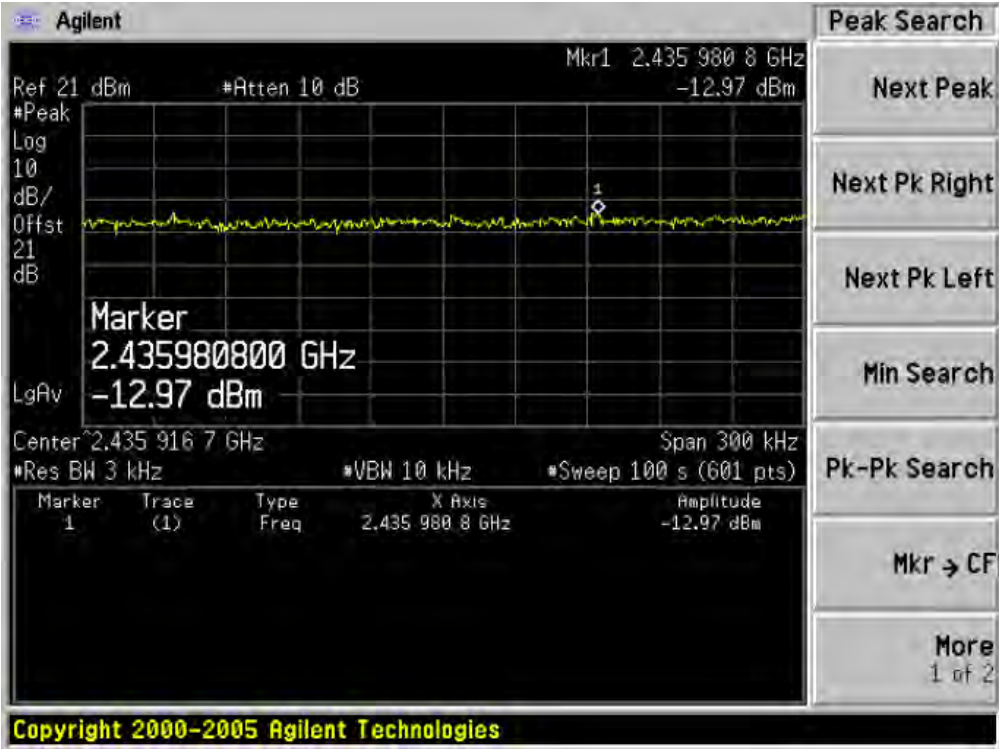
Chain 1

802.11b Mode:

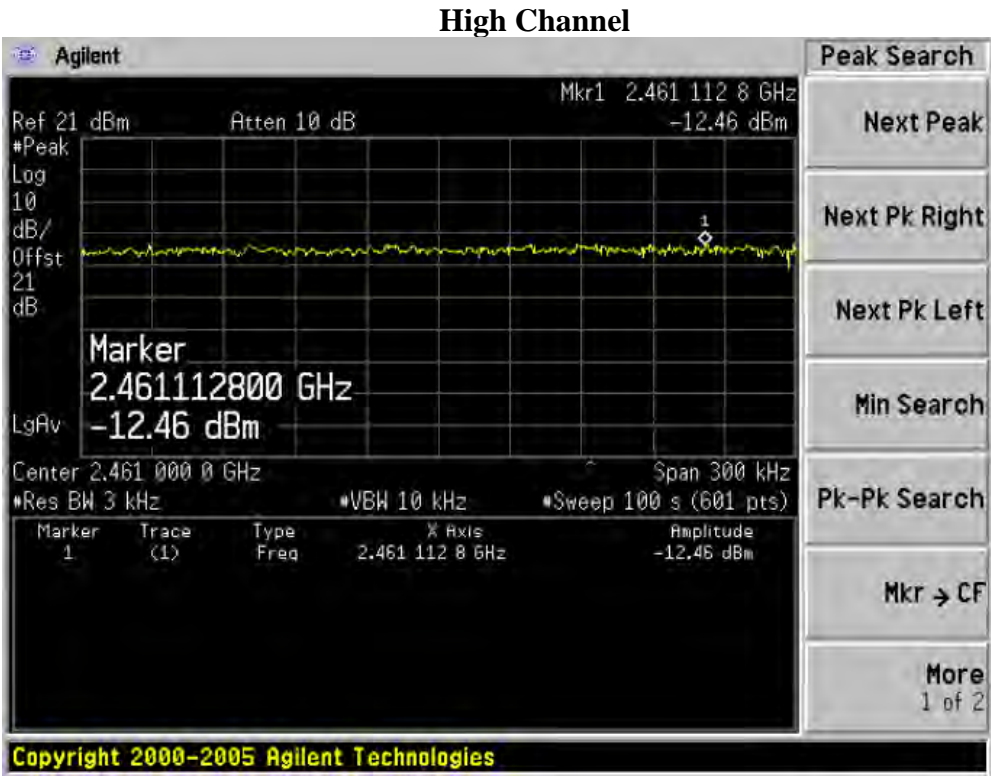
Low Channel



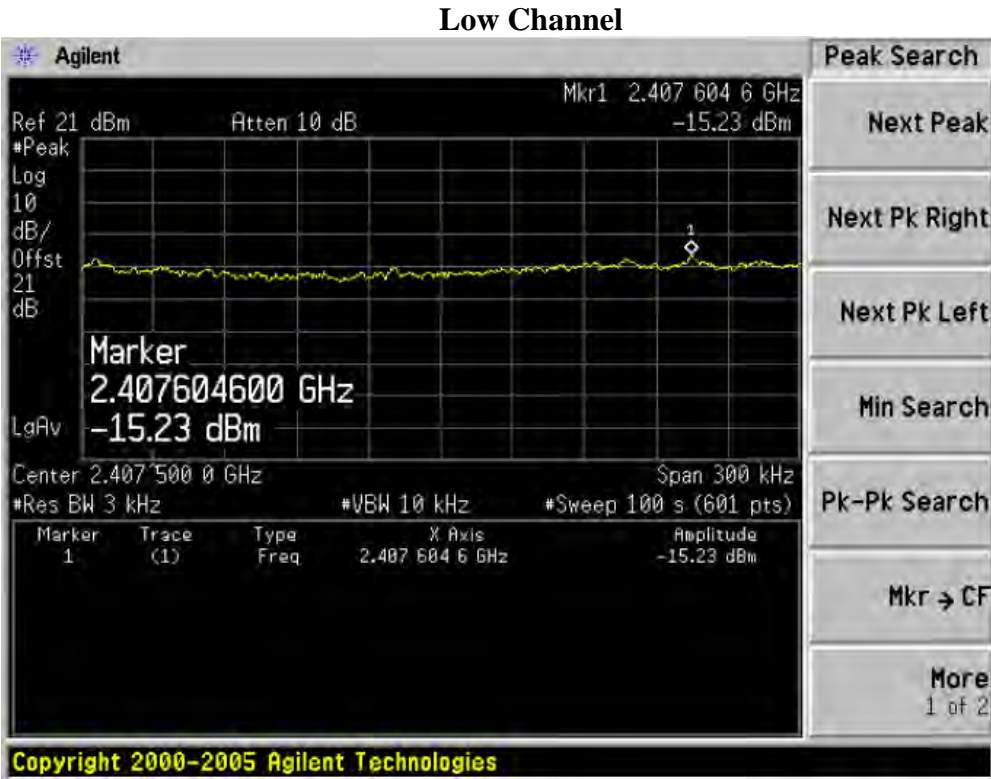
Middle Channel



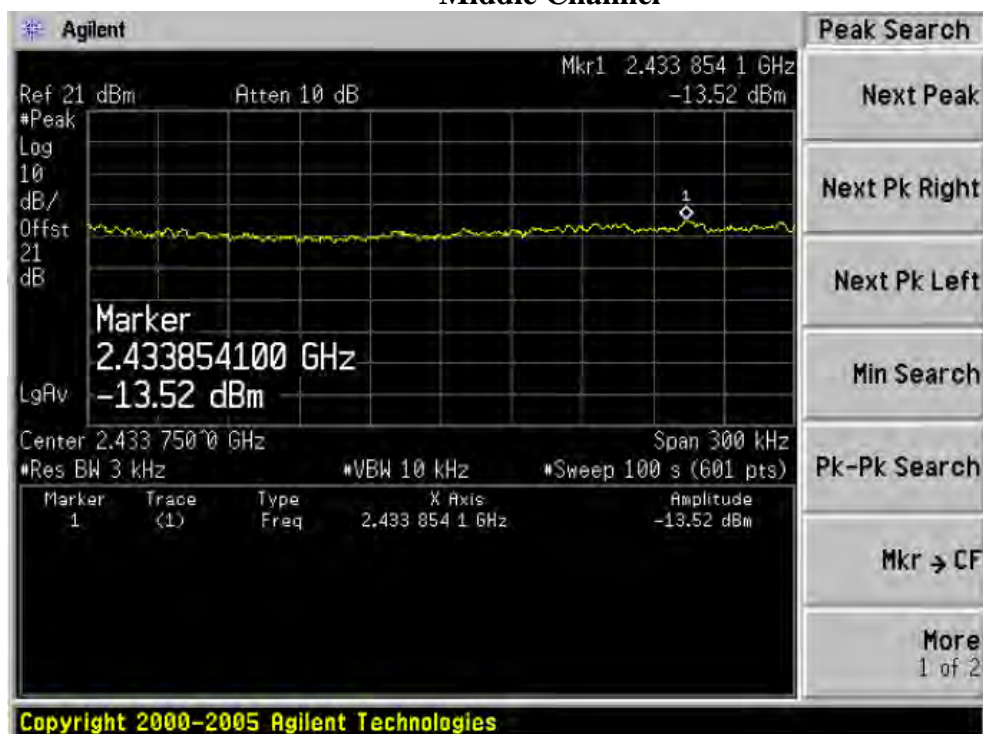




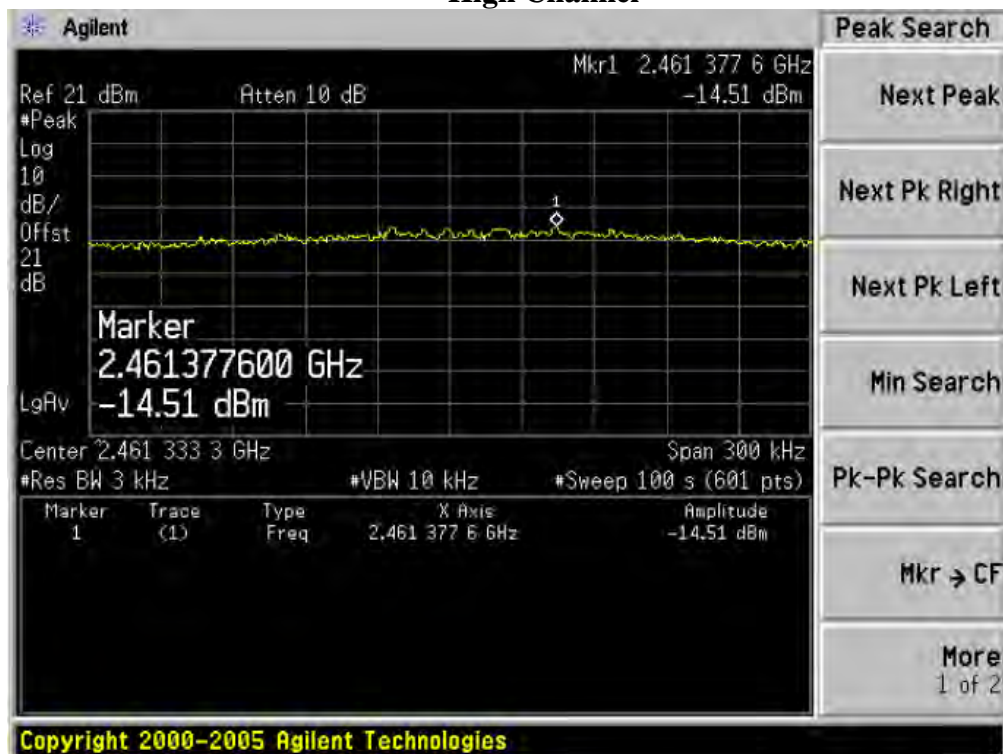
802.11g Mode:



## Middle Channel

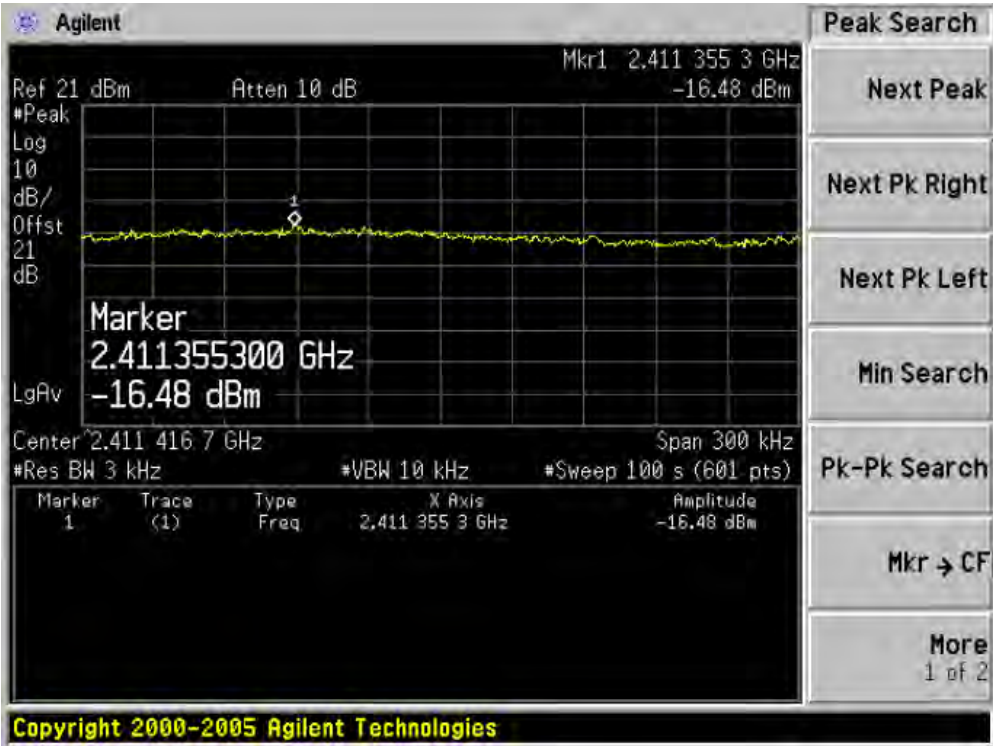


## High Channel

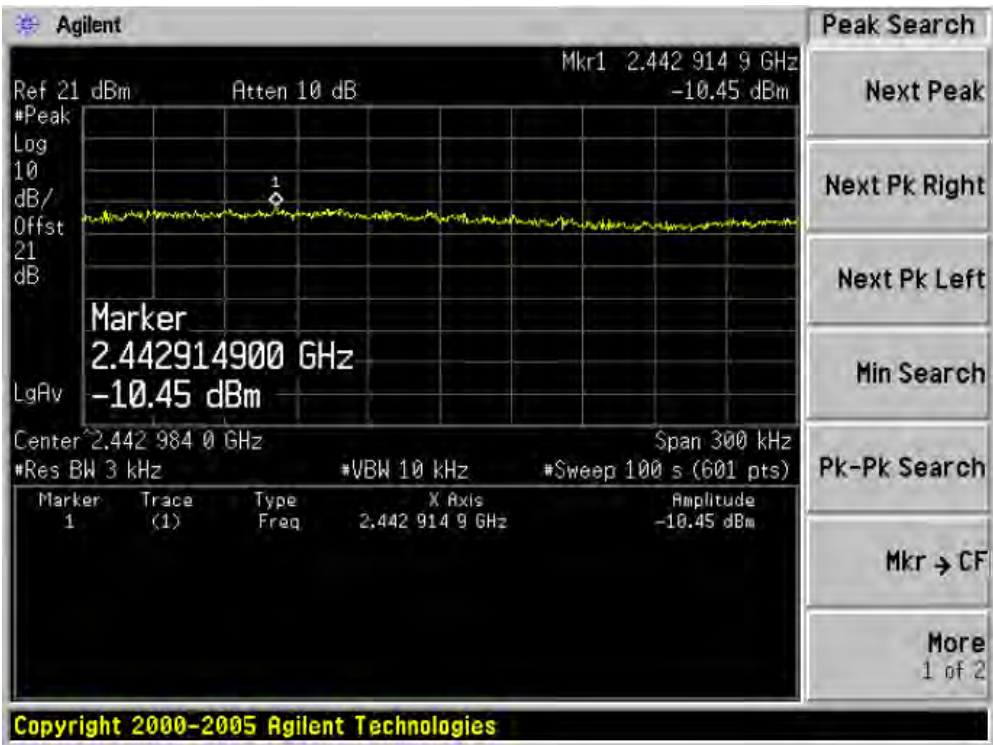


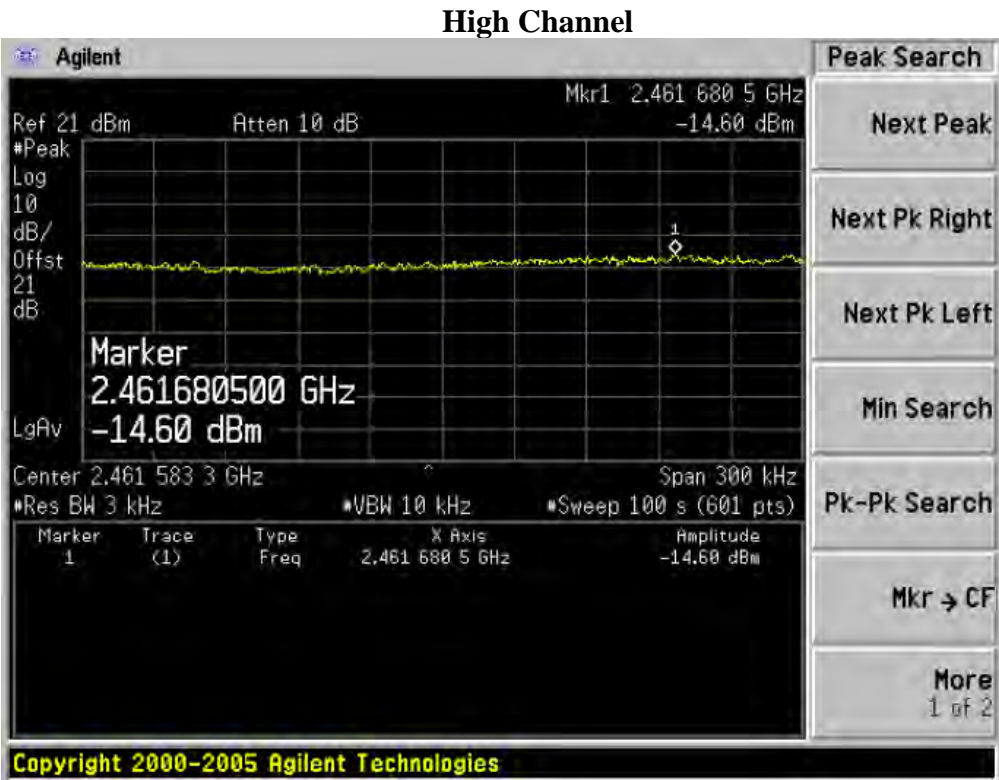
802.11n HT20 Mode:

Low Channel

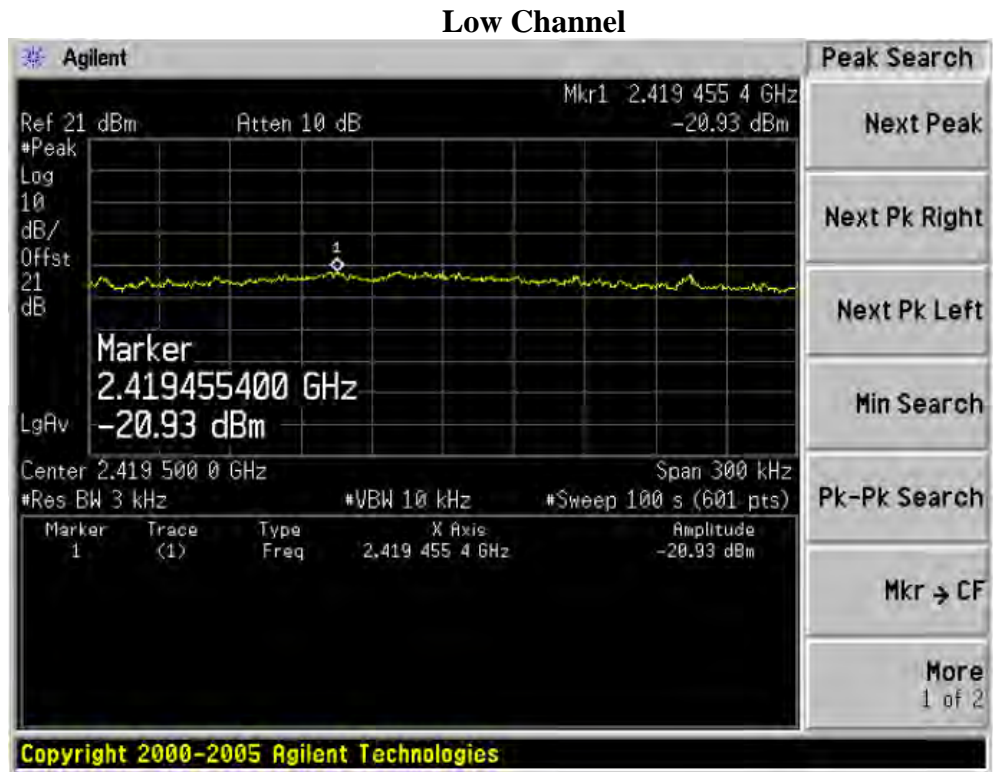


Middle Channel



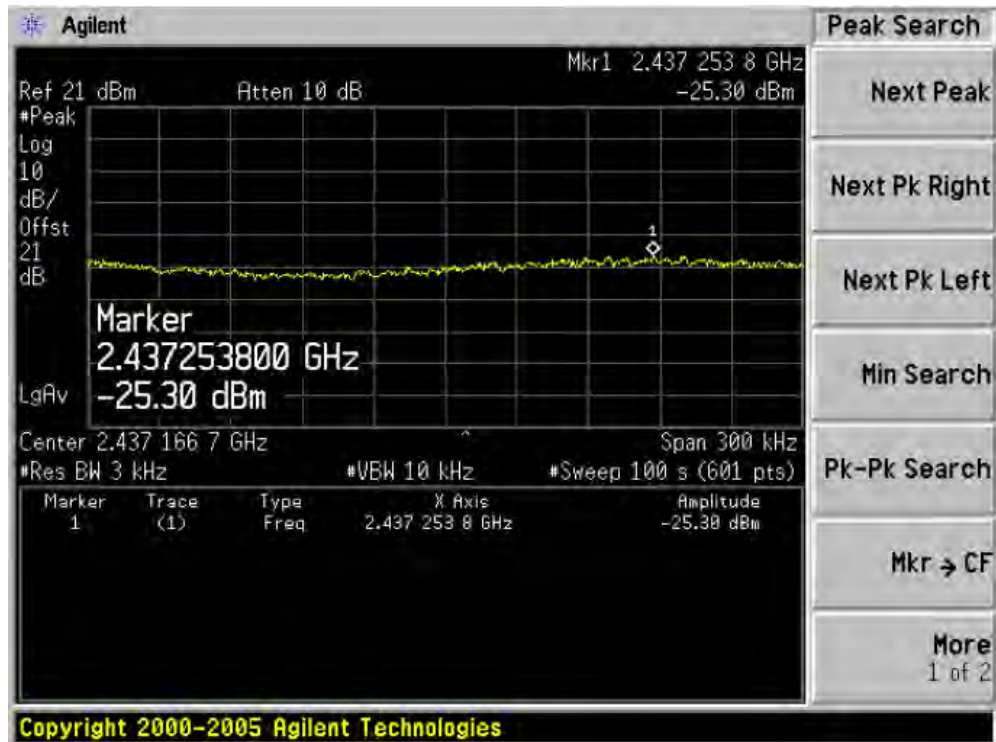


802.11n HT40 Mode:

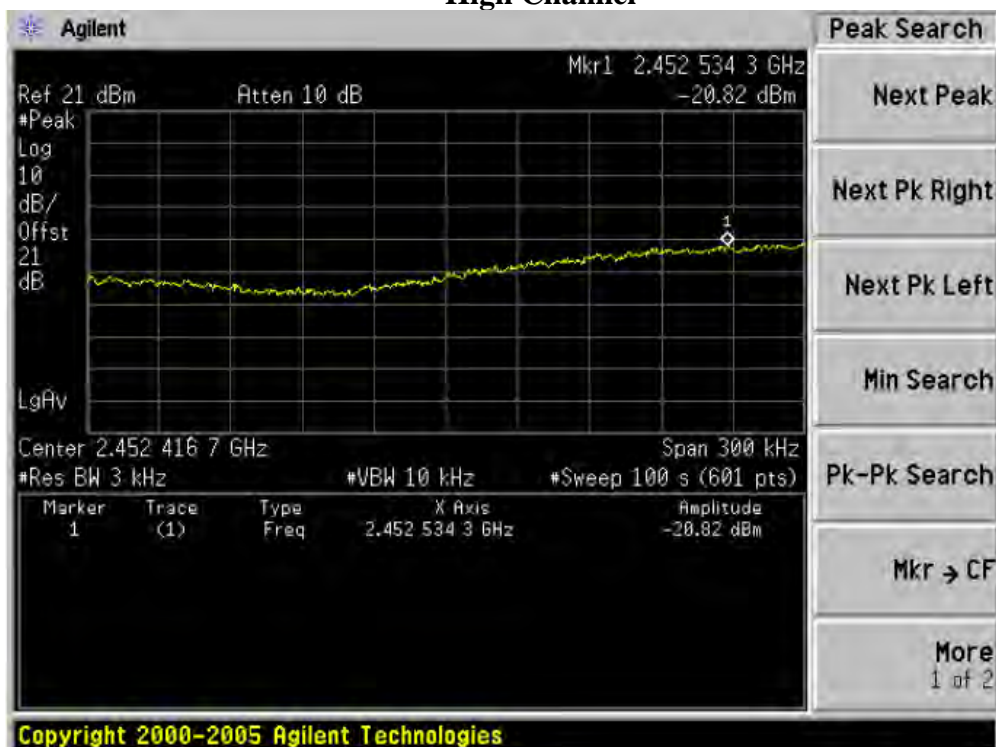


Middle Channel





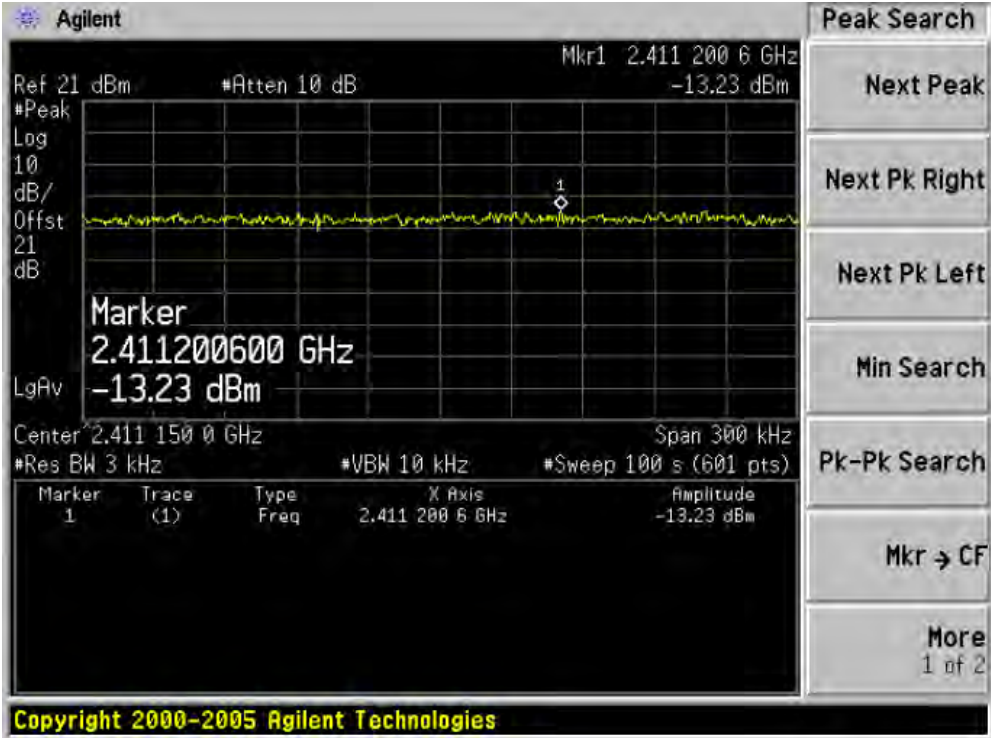
### High Channel



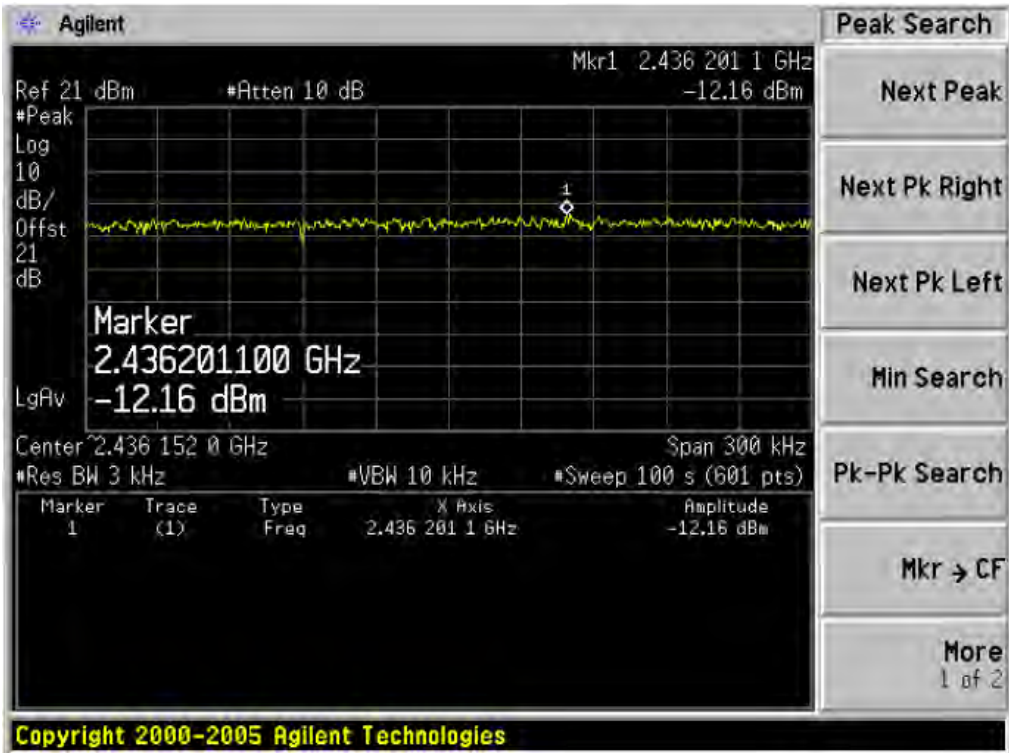
Chain 2

802.11b Mode:

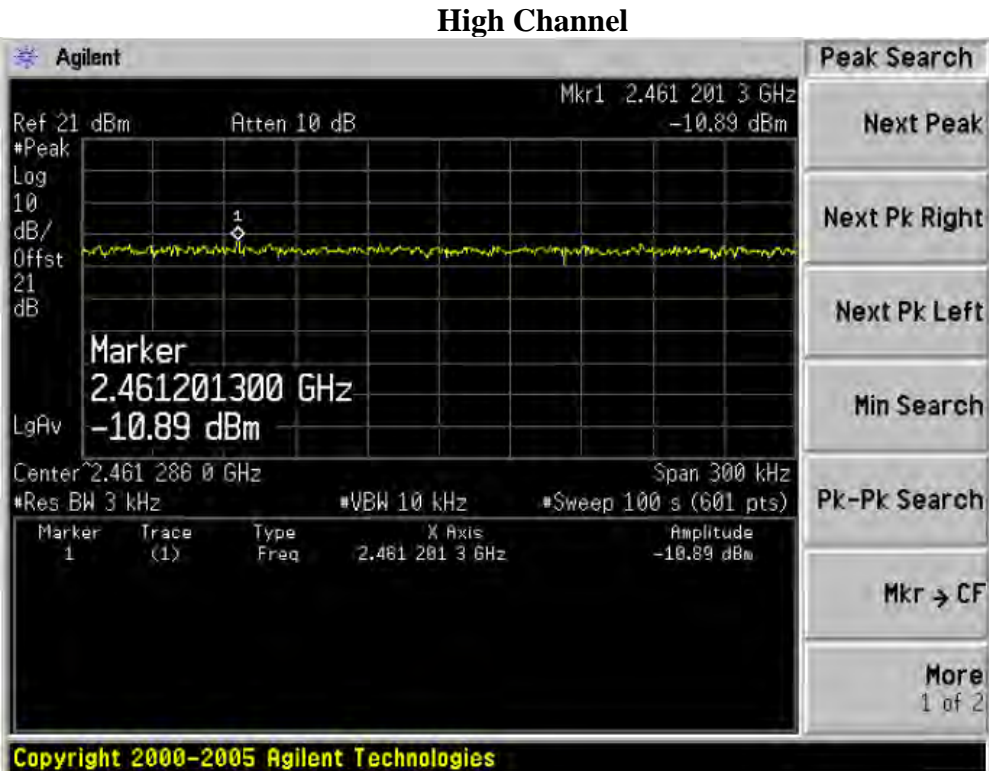
Low Channel



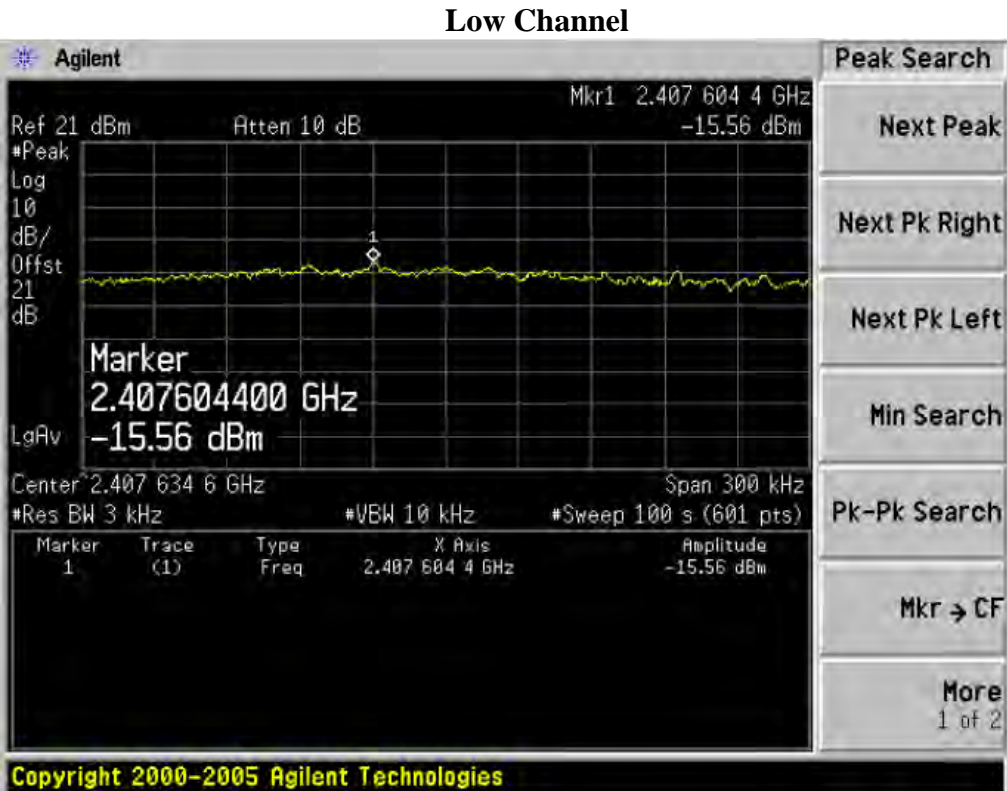
Middle Channel



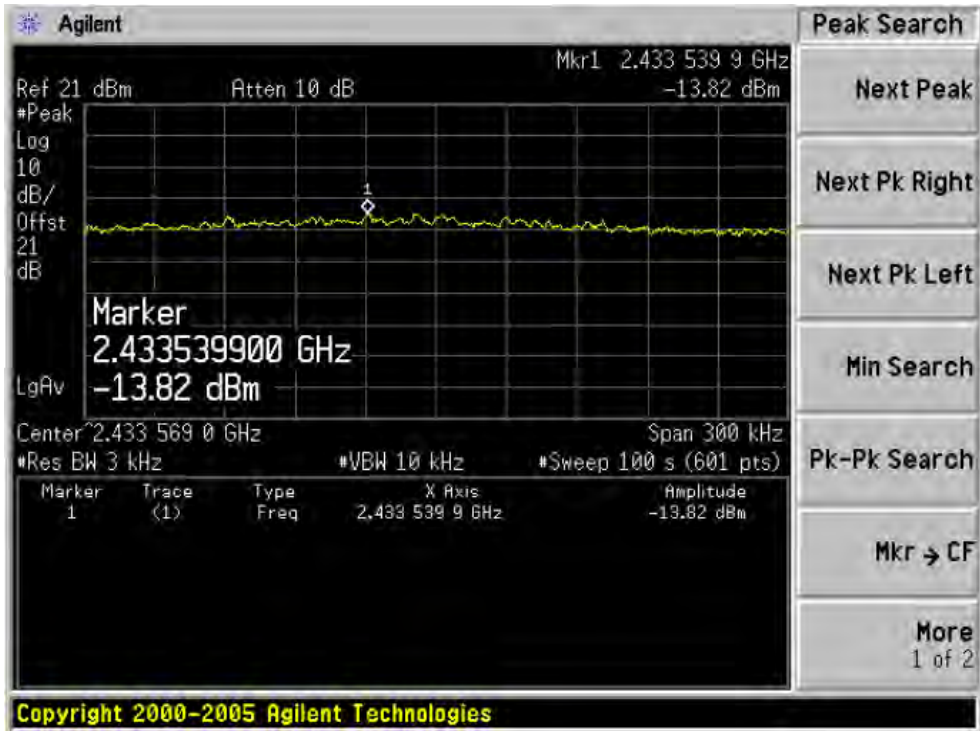




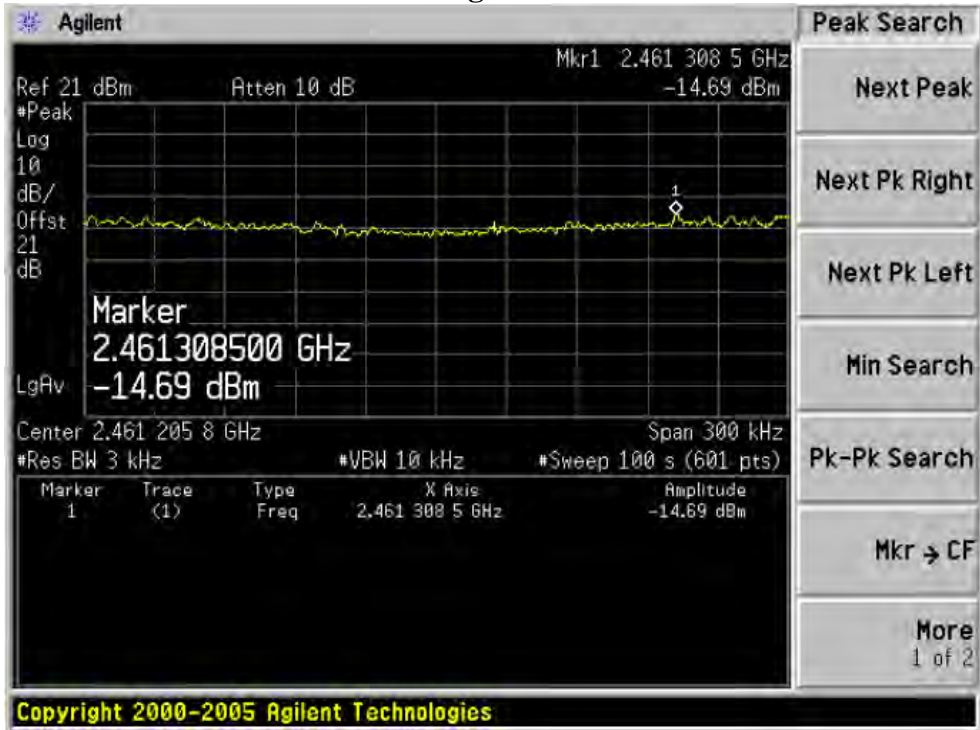
802.11g Mode:



Middle Channel

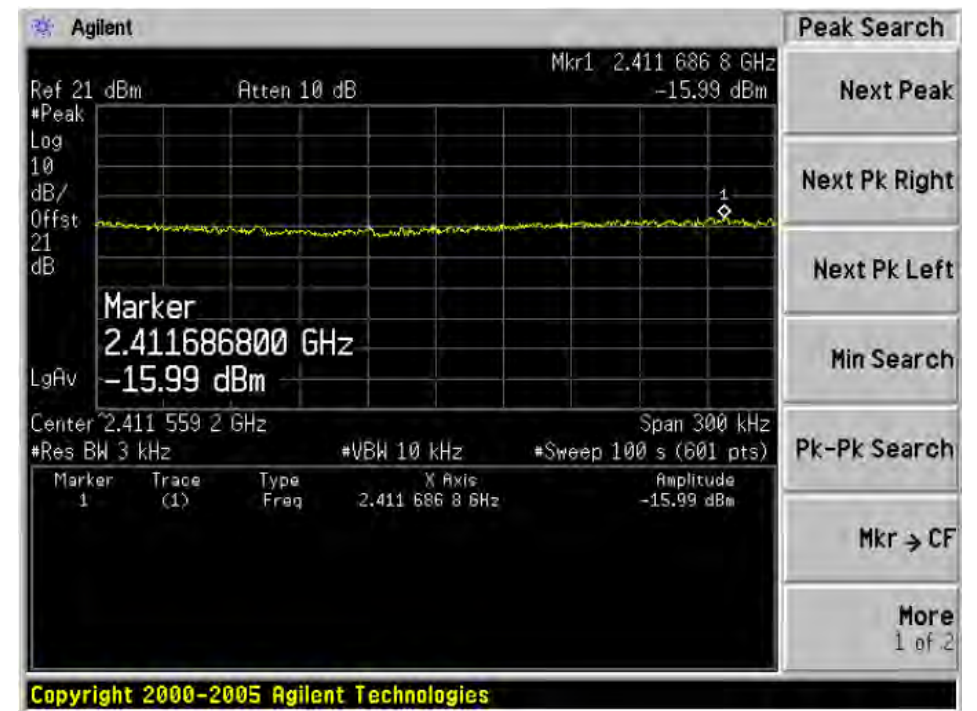


High Channel

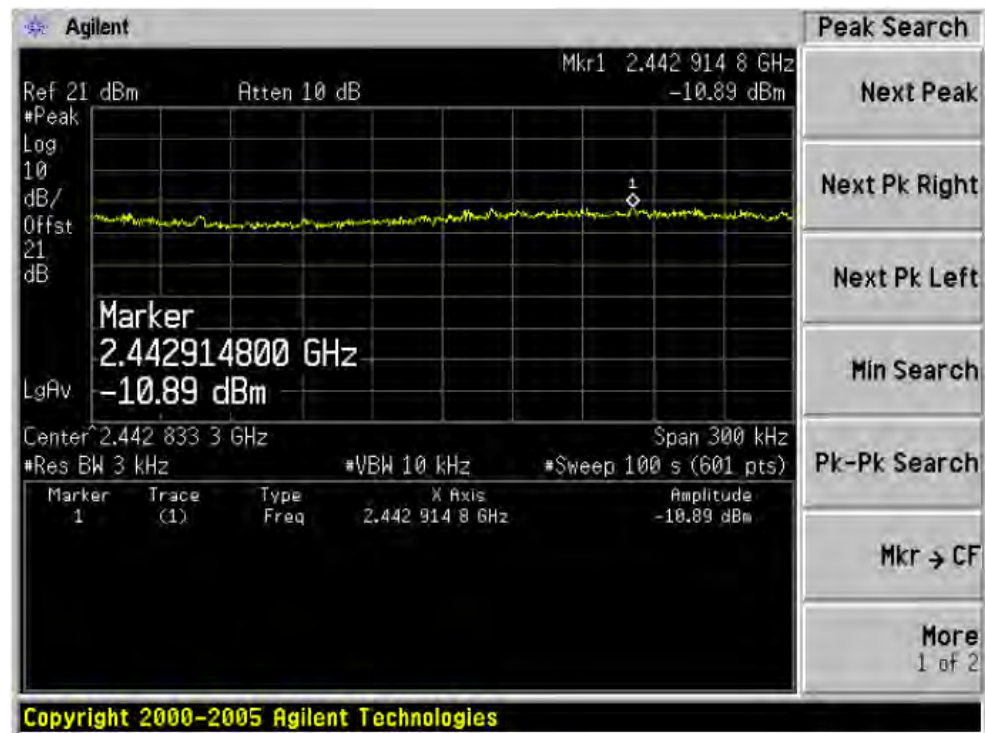


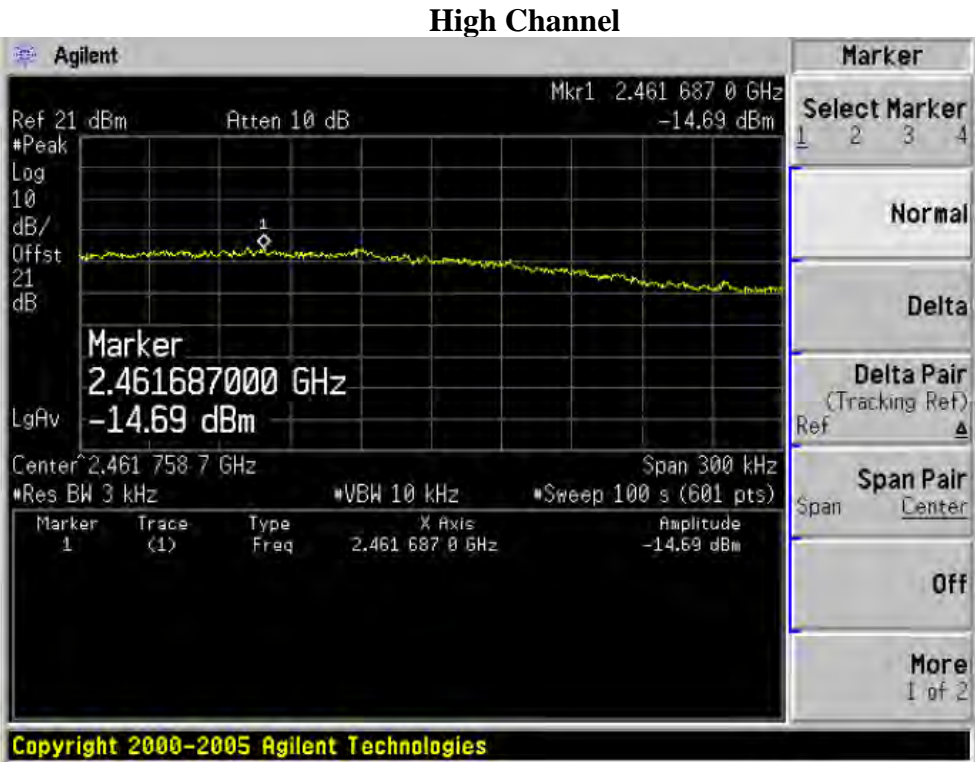
802.11n HT20 Mode:

Low Channel

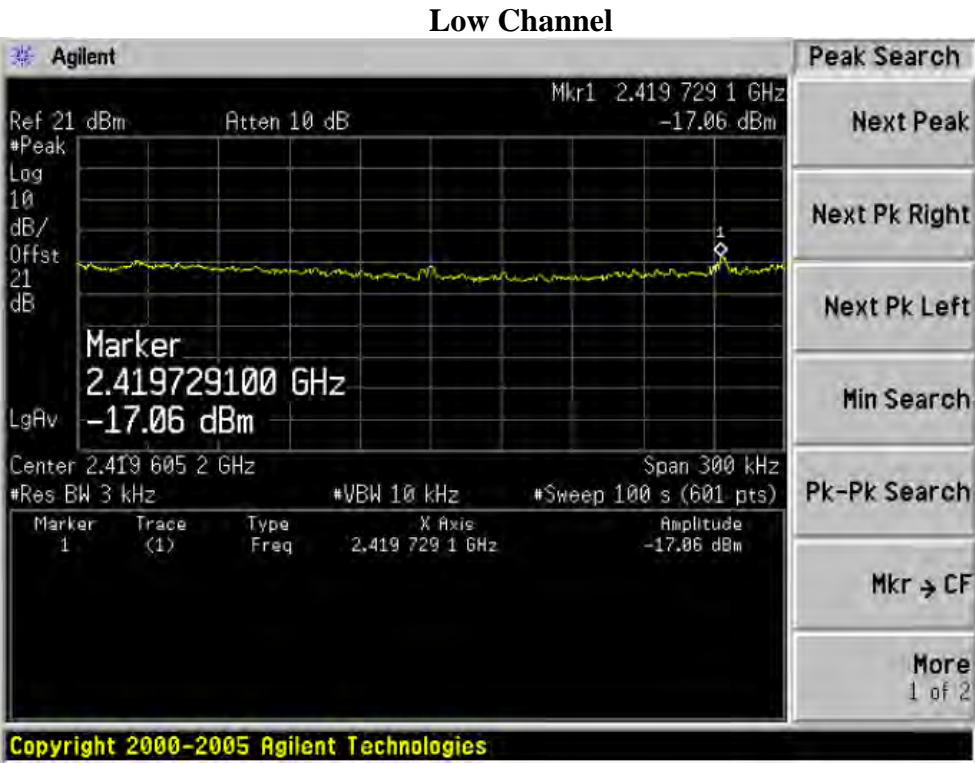


Middle Channel



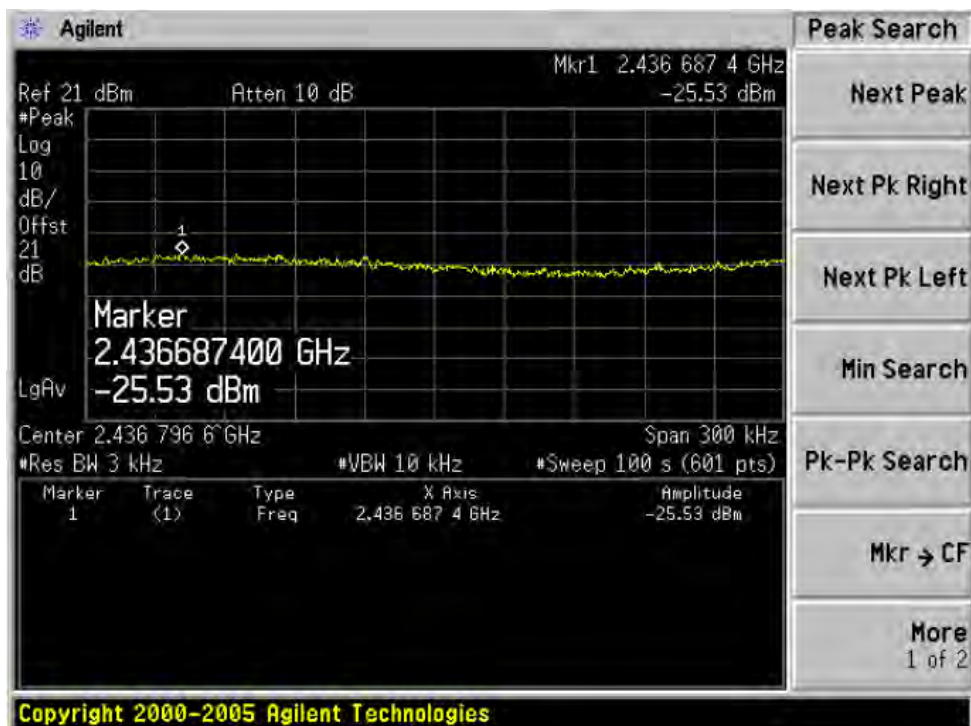


802.11n (40M) Mode:





### Middle Channel



### High Channel

