

# FCC Part 15C

## Measurement And Test Report For

### Amcrest Technologies LLC

12633 Memorial Dr. #211, Houston, TX 77024, United States

**FCC ID: ZZ2AGASIO-A8**

Sep 26, 2011

<b>This Report Concerns:</b> <input checked="" type="checkbox"/> Original Report	<b>Equipment Type:</b> AGASION DROPAD A8
<b>Report Number:</b>	MT1110910001RF-1
<b>Test Engineer:</b>	Bill Chen <i>Bill Chen</i>
<b>Reviewed By:</b>	Jason Zheng <i>Jason Zheng</i>
<b>Approved &amp; Authorized By:</b>	Hebe Lee <i>Hebe Lee</i>
<b>Test Date:</b>	Sep 15-23, 2011
<b>Prepared By:</b>	<b>MTI Technology Laboratory Ltd.</b> 10F, Yinxing Business Hotel, Xixiang Road, Bao'an District, Shenzhen, P.R.China. Tel: +86-755-8885 0135 Fax: +86-755-8885 0136



**Note:** This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of MTI Technology Laboratory Ltd.

## TABLE OF CONTENTS

<b>1. GENERAL INFORMATION</b>	<b>3</b>
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
1.2 RELATED SUBMITTAL(S) / GRANT (S)	3
1.3 TEST METHODOLOGY	3
1.4 TEST FACILITY	4
<b>2. SYSTEM TEST CONFIGURATION</b>	<b>5</b>
2.1 EUT CONFIGURATION	5
2.2 EUT EXERCISE	5
2.3 GENERAL TEST PROCEDURES	5
2.4 LIST OF MEASURING EQUIPMENTS USED	6
<b>3. SUMMARY OF TEST RESULTS</b>	<b>7</b>
<b>4. ANTENNA REQUIREMENT</b>	<b>8</b>
4.1 STANDARD APPLICABLE	8
4.2 ANTENNA CONNECTED CONSTRUCTION	8
<b>5. 6DB BANDWIDTH MEASUREMENT</b>	<b>9</b>
5.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT	9
5.2 EUT SETUP	9
5.3 TEST EQUIPMENT LIST AND DETAILS	9
5.4 TEST PROCEDURE	9
5.5 TEST RESULT	9
<b>6. MAXIMUM PEAK OUTPUT POWER</b>	<b>13</b>
6.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT	13
6.2 EUT SETUP	13
6.3 TEST EQUIPMENT LIST AND DETAILS	13
6.4 TEST PROCEDURE	13
6.5 TEST RESULT	14
<b>7. POWER SPECTRAL DENSITY MEASUREMENT</b>	<b>18</b>
7.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	18
7.2 EUT SETUP	18
7.3 TEST EQUIPMENT LIST AND DETAILS	18
7.4 TEST PROCEDURE	18
7.5 TEST RESULT	18
<b>8. BAND EDGES MEASUREMENT</b>	<b>23</b>
8.1 LIMITS OF BAND EDGES MEASUREMENT	23
8.2 TEST EQUIPMENT LIST AND DETAILS	23
8.3 TEST PROCEDURE	23
8.4 TEST RESULT	23
<b>9. RADIATED EMISSION MEASUREMENT</b>	<b>28</b>
9.1 LIMITS OF RADIATED EMISSION MEASUREMENT	28
9.2 EUT SETUP	28
9.3 TEST EQUIPMENT LIST AND DETAILS	28
9.4 TEST PROCEDURE	29
9.5 TEST RESULT	29

## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment Under Test (EUT)

Applicant:	Amcrest Technologies LLC
Address of applicant:	12633 Memorial Dr. #211,Houston, TX 77024,United States
Manufacturer:	Amcrest Technologies LLC
Address of manufacturer:	12633 Memorial Dr. #211,Houston, TX 77024,United States
Equipment Under Test:	AGASION DROPAD A8
Tested Model No.:	DROPAD A8
Supplementary Models No:	N/A
	Remark: supplementary models are only different in exterior with tested Model and with the same circuit construction
Trade Name:	/
Type of Modulation:	CCK, OFDM
Frequency Band:	2412~2462 MHz
Number of Channels:	11
Channel Separation:	5MHz
EIRP Power:	13.64 dBm
Power Supply:	120V/60Hz

Remark: \* The test data gathered are from the production sample provided by the manufacturer.

### 1.2 Related Submittal(s) / Grant (s)

This submittal(s) is a test report based on the Electromagnetic Interference (EMI) tests performed on the EUT. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 - 2003.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.207, and 15.247 rules.

### 1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 - 2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. Radiated testing was performed at an antenna to EUT distance 3 meters.

## 1.4 Test Facility

All measurement required was performed at laboratory of NTEK Testing Technology Co., Ltd., at 1/F, Building E, Fenda Science Park Sanwei Community, Xixiang Street, Baoan District, Shenzhen, Guangdong

The test facility is recognized, certified, or accredited by the following organizations:

### **FCC – Registration No.: 238937**

NTEK Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 238937.

## **2. SYSTEM TEST CONFIGURATION**

The tests documented in this report were performed in accordance with ANSI C63.4-2003 and FCC CFR 47 Part 15 Subpart C.

### **2.1 EUT Configuration**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

### **2.2 EUT Exercise**

The calibrated antennas used to sample the radiated field strength are mounted on a non-conductive, motorized antenna mast 3 or 10 meters from the leading edge of the turntable.

### **2.3 General Test Procedures**

**Conducted Emissions** The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 7.1 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak detector mode.

**Radiated Emissions** The EUT is placed on a turntable, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4-2003.

## 2.4 List of Measuring Equipments Used

Items	Equipment	Manufacturer	Model No.	Serial No.	Last Cal	Calibration Period
1	EMI Test Receiver	ROHDE & SCHWARZ	ESI 26	100079	2011/6	1 year
2	Horn Antenna	R/S	CH14-H052	1091698	2011/6	1 year
3	3m Semi- Anechoic Chamber	ETS	N/A	N/A	2011/6	1 year
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100038	2010/11	1 year
2	EMI Test Receiver	ROHDE & SCHWARZ	ESI 26	100009	2010/11	1 year
3	Receiver/ Spectrum Analyzer	ROHDE & SCHWARZ	ESCI	100106	2010/11	1 year
4	Spectrum Analyzer	Agilent	E7405A	US41160415	2010/11	1 year
5	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	2010/11	1 year
6	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100044	2010/11	1 year
7	LISN	COM Power	LI-200	12212	2010/11	1 year
8	LISN	COM Power	LI-200	12019	2010/11	1 year
9	3m/5m Semi- Anechoic Chamber	ETS	N/A	N/A	2010/11	1 year
10	Ultra-Broadband Antenna	R/S	HL562	100015	2010/11	1 year
11	Horn Antenna	R/S	HF906	100039	2010/11	1 year
12	RF Test Panel	R/S	TS / RSP	335015/ 0017	N/A	N/A
13	Turntable	ETS	2088	2149	N/A	N/A
14	Antenna Mast	ETS	2075	2346	N/A	N/A

### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
15.203/15.247(b)/(c)	Antenna Requirement	Pass
15.207	AC Power Line Conducted Emission	Pass
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System	Pass
15.247(e)	Power Spectral Density	Pass
15.247(b)(1)	Maximum Peak Output Power	Pass
15.247(d)	Band Edges Emission	Pass
15.247(d)	Radiated Emission	Pass

## **4. ANTENNA REQUIREMENT**

### **4.1 Standard Applicable**

Section 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 use of a standard antenna jack or electrical connector is prohibited.

Section 15.247(b)/(c):

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

If the intentional radiator is used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

### **4.2 Antenna Connected Construction**

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

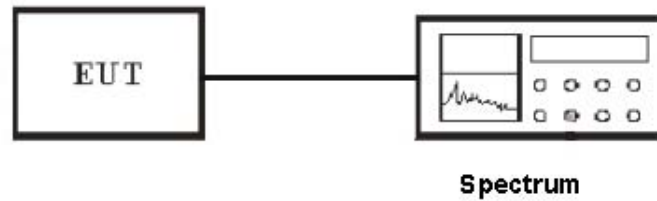


## 5. 6dB Bandwidth Measurement

### 5.1 Limits of 6dB Bandwidth Measurement

According to 15.247(a)(2). Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

### 5.2 EUT Setup



### 5.3 Test Equipment List and Details

See section 2.4.

### 5.4 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set center frequency of spectrum analyzer = operating frequency.
3. The spectrum analyzer as RBW=300 KHz (1 % of Bandwidth.), Sweep=auto
4. Mark the peak frequency and –6dB (upper and lower) frequency.

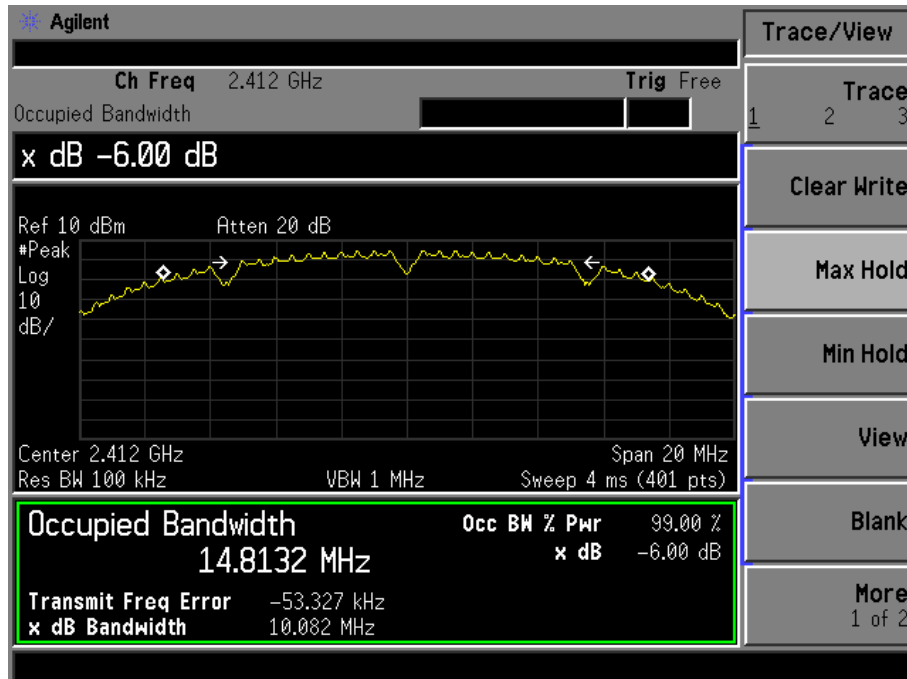
### 5.5 Test Result

PASS

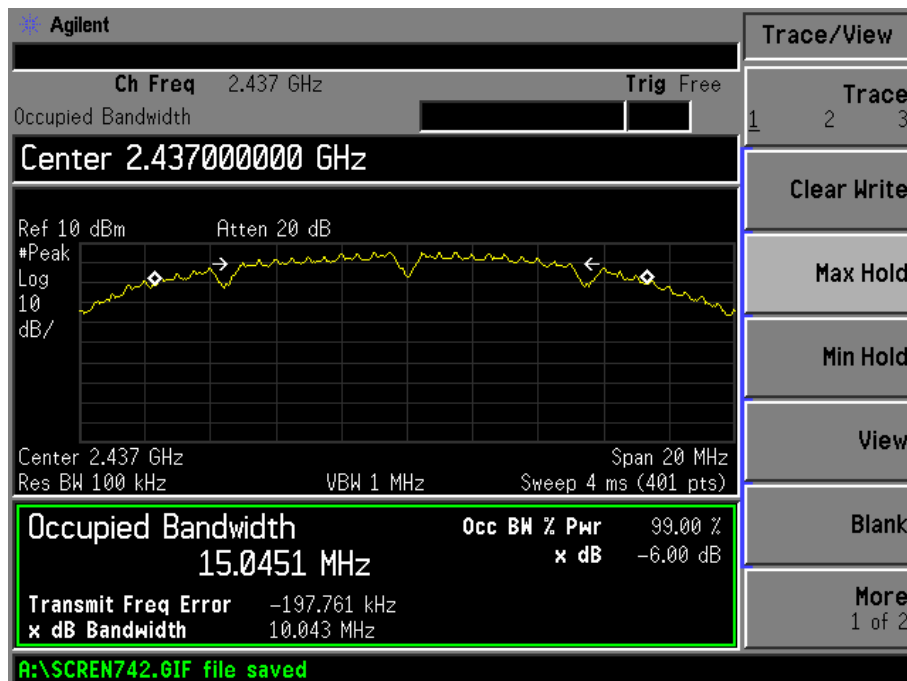
Detailed information, Please refer to the following pages.

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

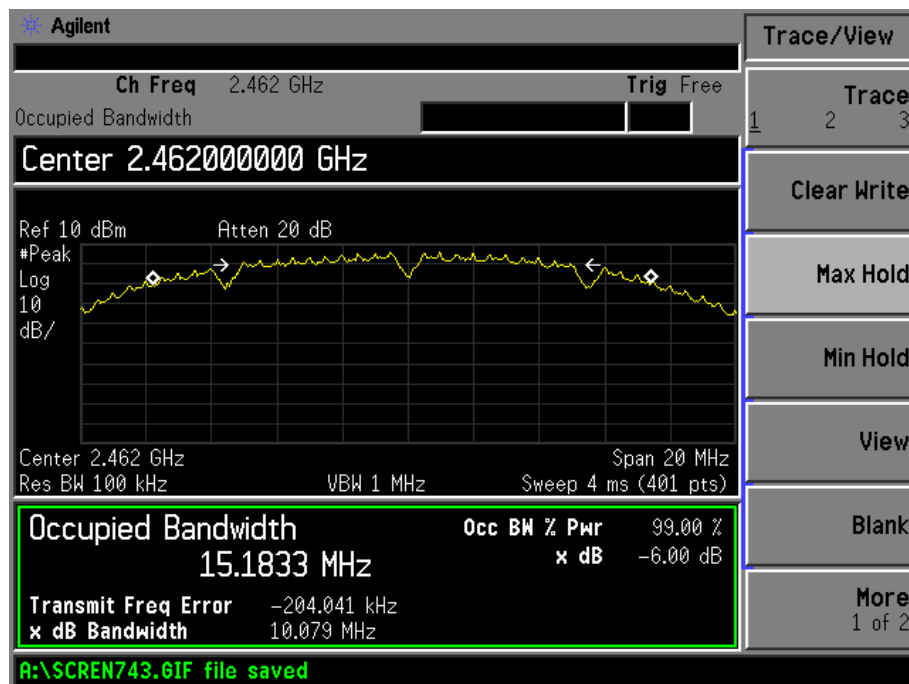
**For 802.11b**  
Low Channel



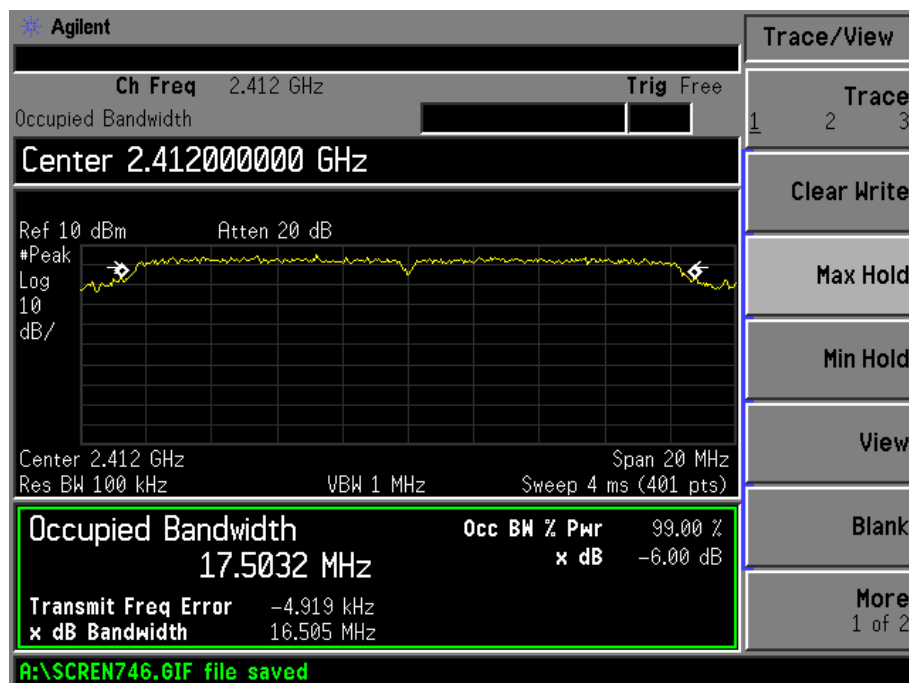
Middle Channel



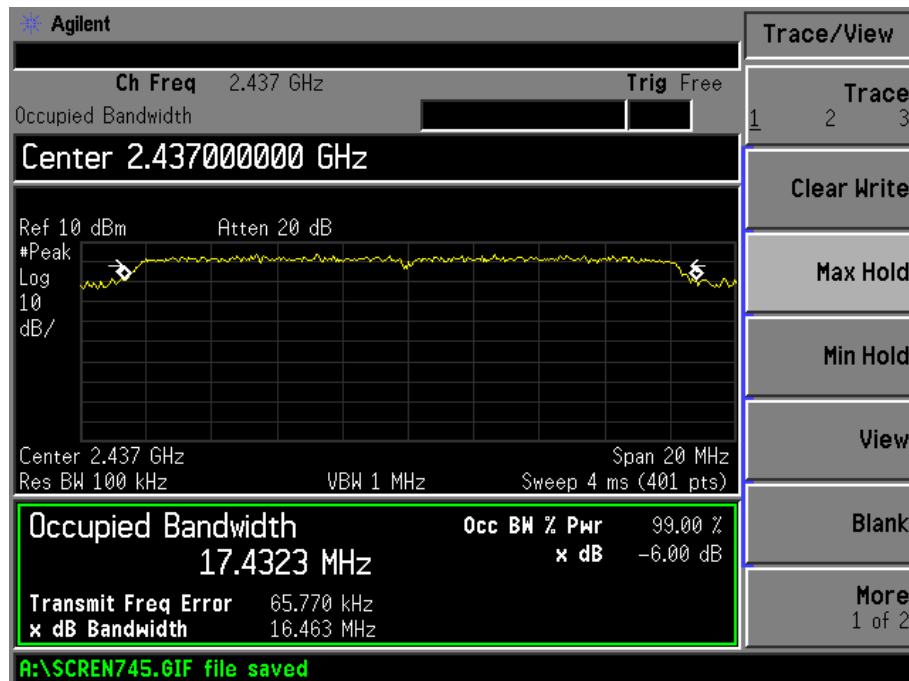
## High Channel



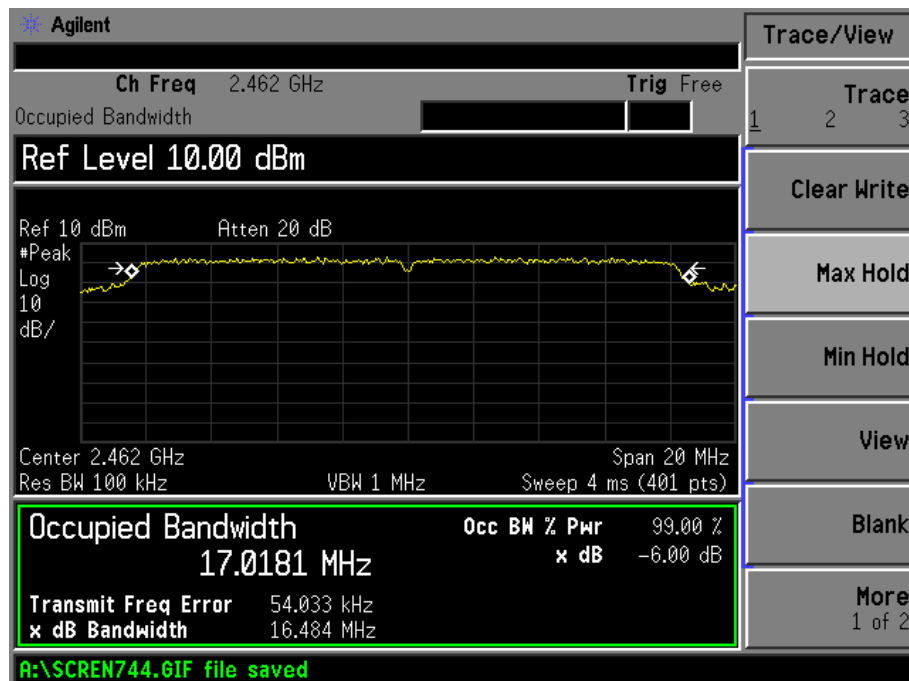
## For 802.11g Low Channel



## Middle Channel



## High Channel

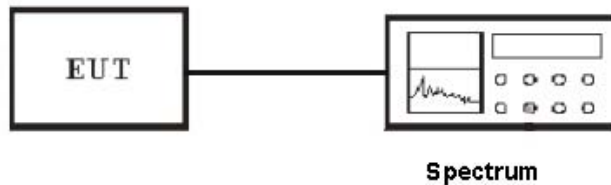


## 6. Maximum Peak Output Power

### 6.1 Limits of Maximum Peak Output Power Measurement

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

### 6.2 EUT Setup



### 6.3 Test Equipment List and Details

See section 2.4.

### 6.4 Test Procedure

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW  $\geq$  3 MHz.
3. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.
4. 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”.
5. Trace average 100 traces in power averaging mode.
6. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer’s band power measurement function with band limits set equal to the EBW band edges.

## 6.5 Test Result

PASS

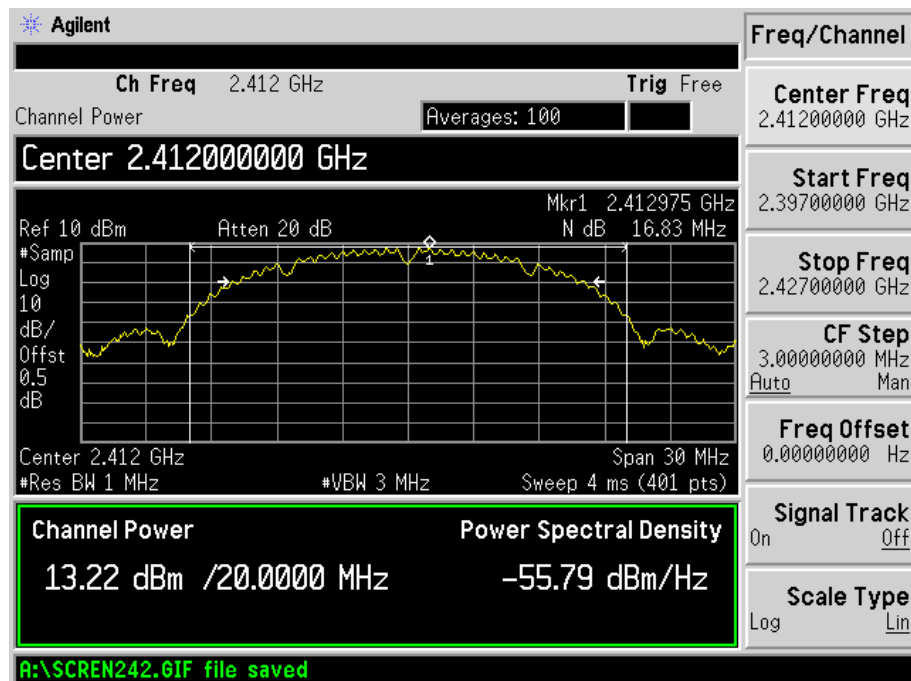
802.11b:

Channel No.	Frequency (MHz)	PEAK POWEROUTPUT (dBm)	PEAK POWEROUTPUT (W)	PEAK POWER LIMIT (W)	PASS/FAIL
LOW	2412	13.22	0.0210	1	PASS
Mid	2437	13.64	0.0231	1	PASS
High	2462	13.18	0.0208	1	PASS

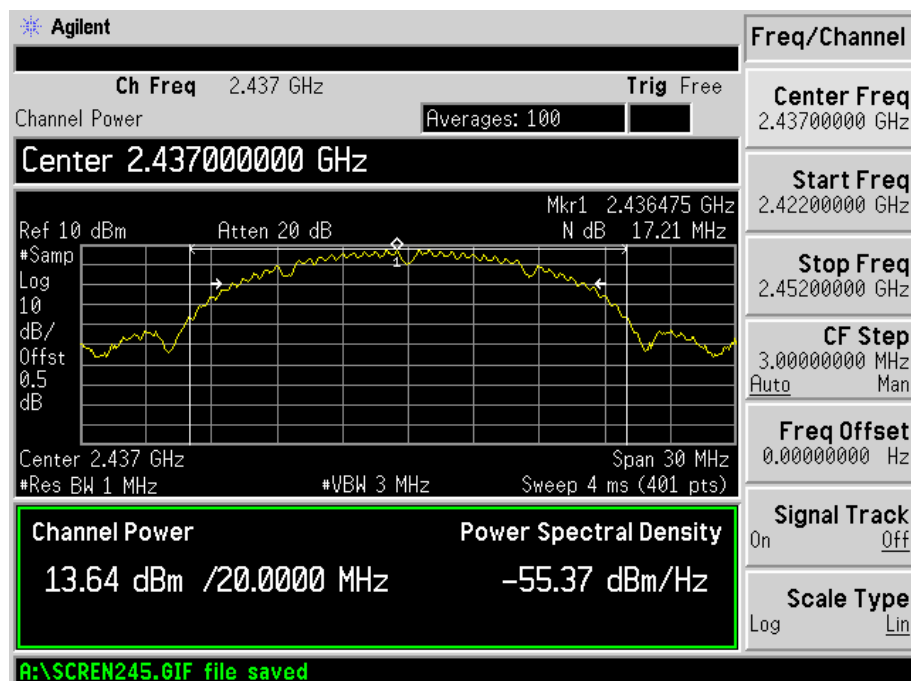
802.11g:

Channel No.	Frequency (MHz)	PEAK POWEROUTPUT ( dBm )	PEAK POWEROUTPUT (W)	PEAK POWER LIMIT (W)	PASS/FAIL
LOW	2412	10.82	0.0121	1	PASS
Mid	2437	10.45	0.0111	1	PASS
High	2462	10.55	0.0114	1	PASS

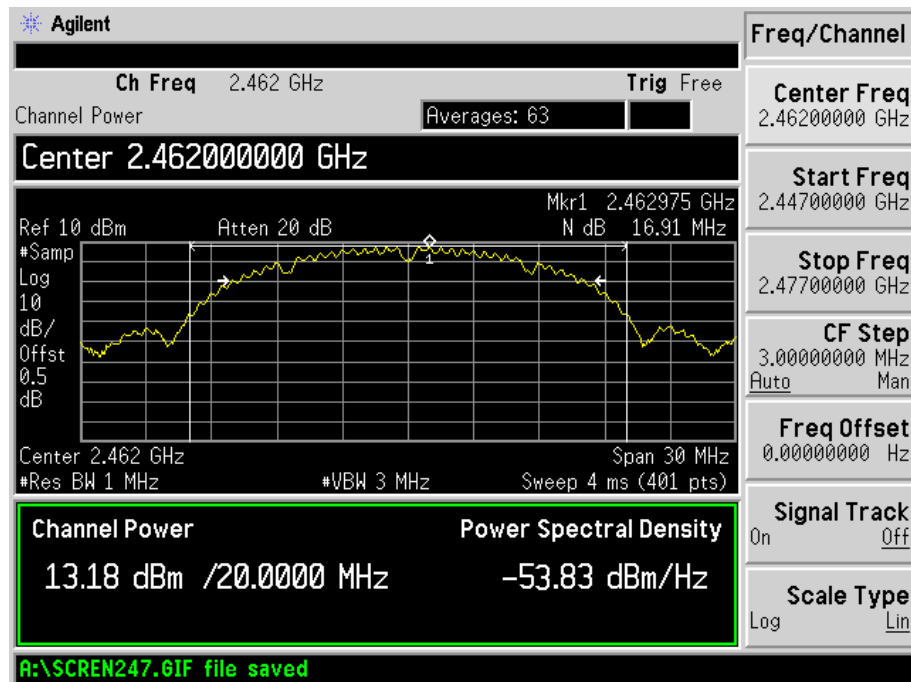
For 802.11b  
Low Channel



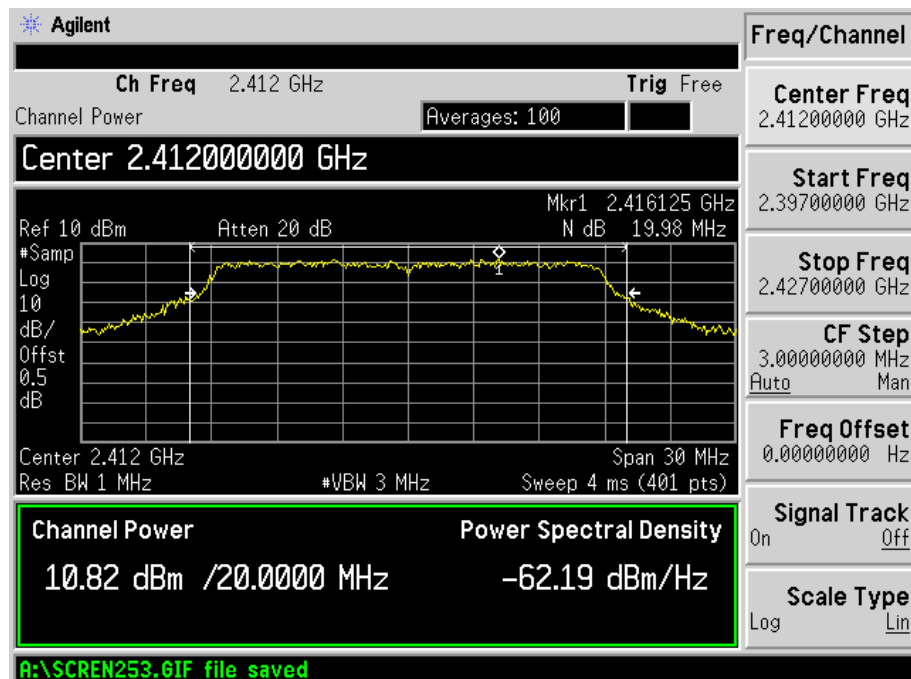
Middle Channel



## High Channel

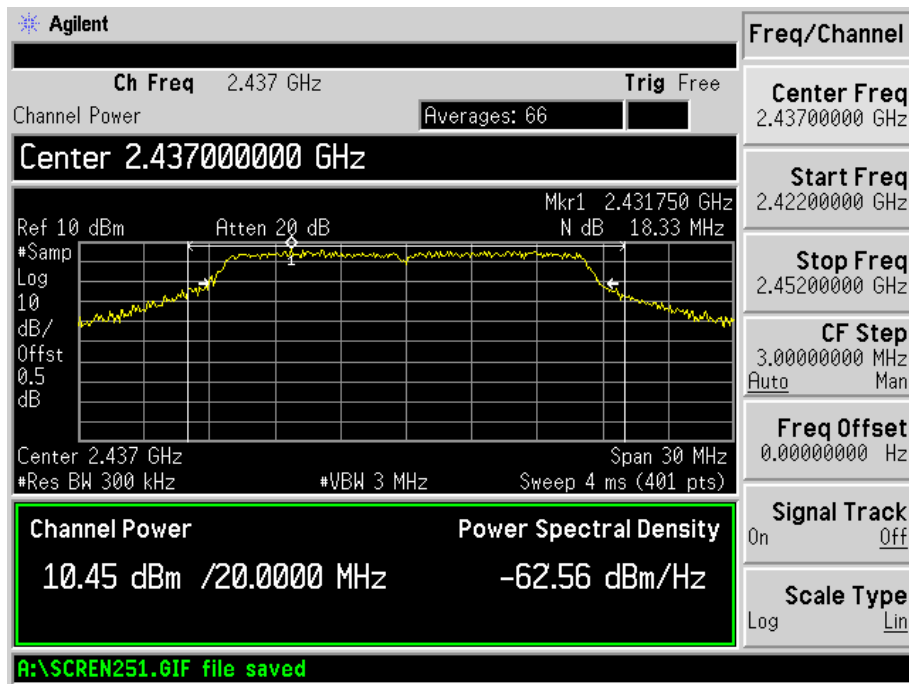


## For 802.11g Low Channel

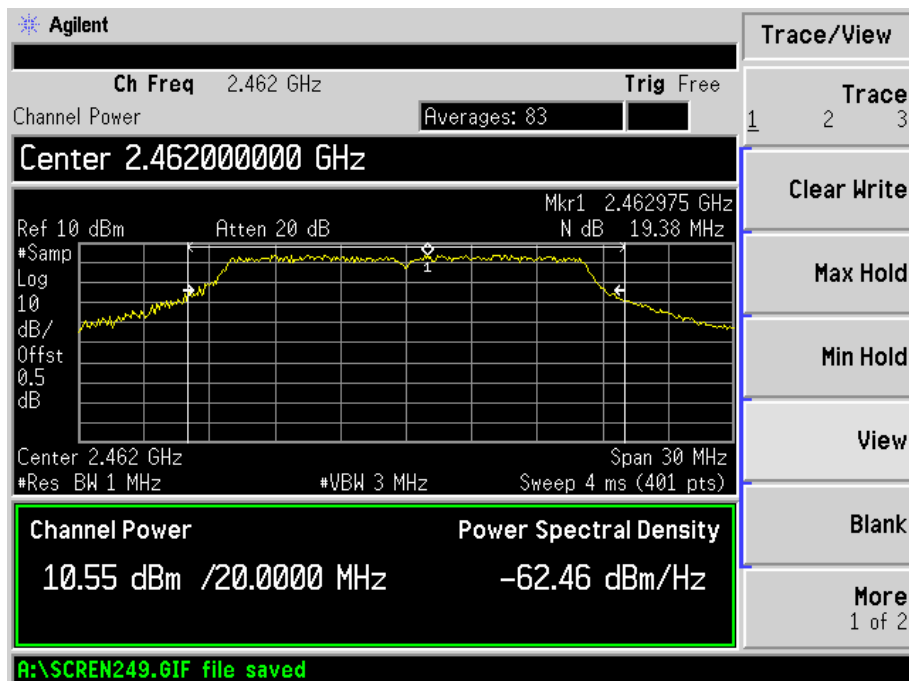




## Middle Channel



## High Channel

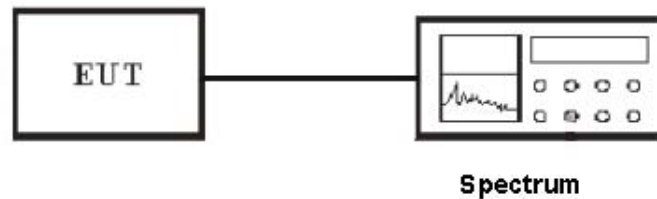


## 7. Power Spectral Density Measurement

### 7.1 Limits of Power Spectral Density Measurement

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

### 7.2 EUT Setup



### 7.3 Test Equipment List and Details

See section 2.4.

### 7.4 Test Procedure

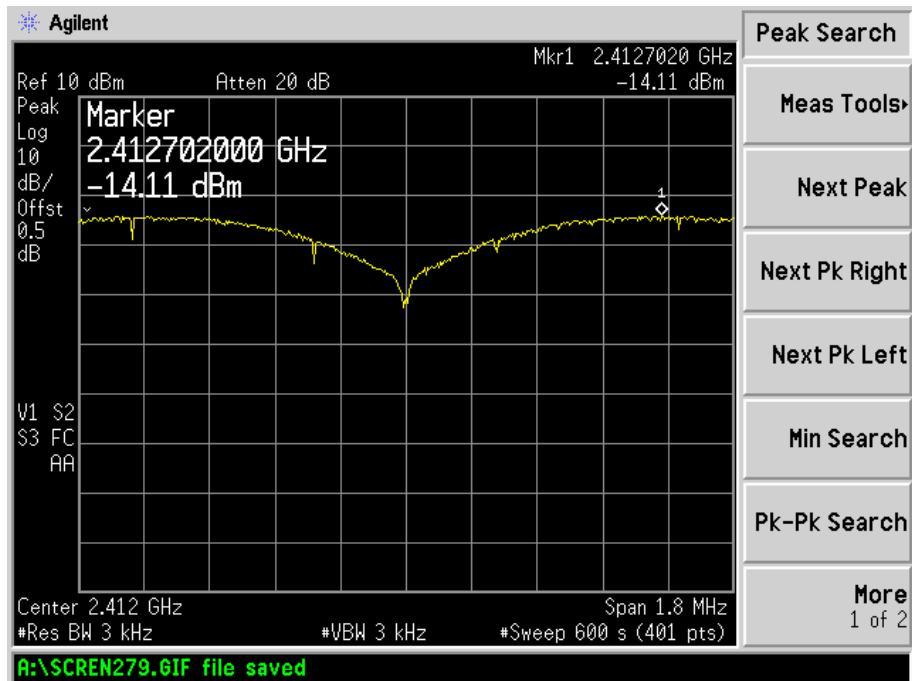
1. The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 3kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

### 7.5 Test Result

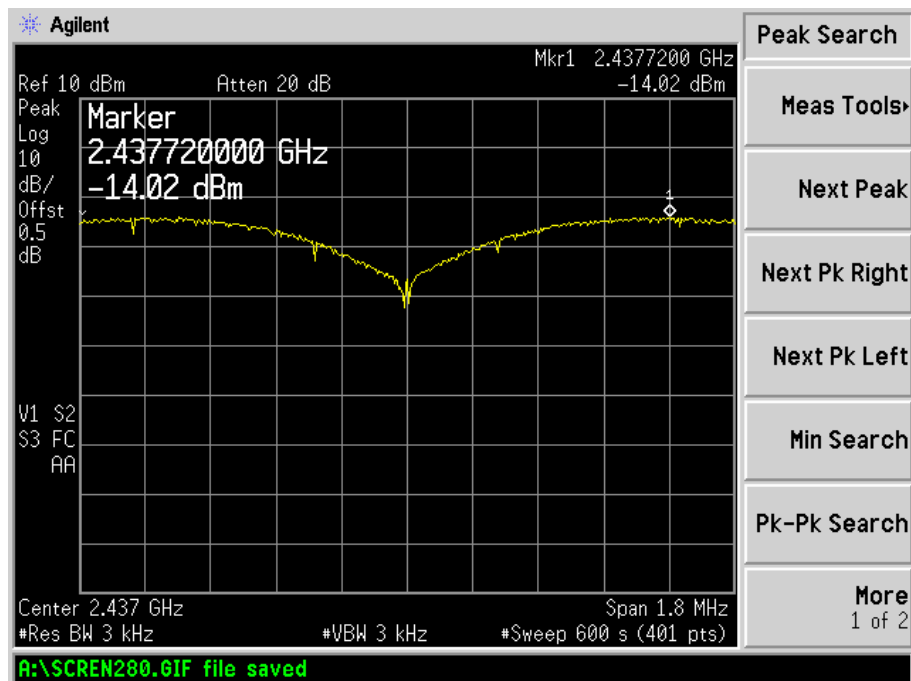
PASS

Test mode	Test channel	Reading dBm/3kHz	Limit dBm/3kHz
802.11b	Low channel (2412MHz)	-14.11	8
	Middle channel (2437MHz)	-14.02	8
	High channel (2462MHz)	-13.73	8
802.11g	Low channel (2412MHz)	-14.50	8
	Middle channel (2437MHz)	-14.39	8
	High channel (2462MHz)	-14.78	8

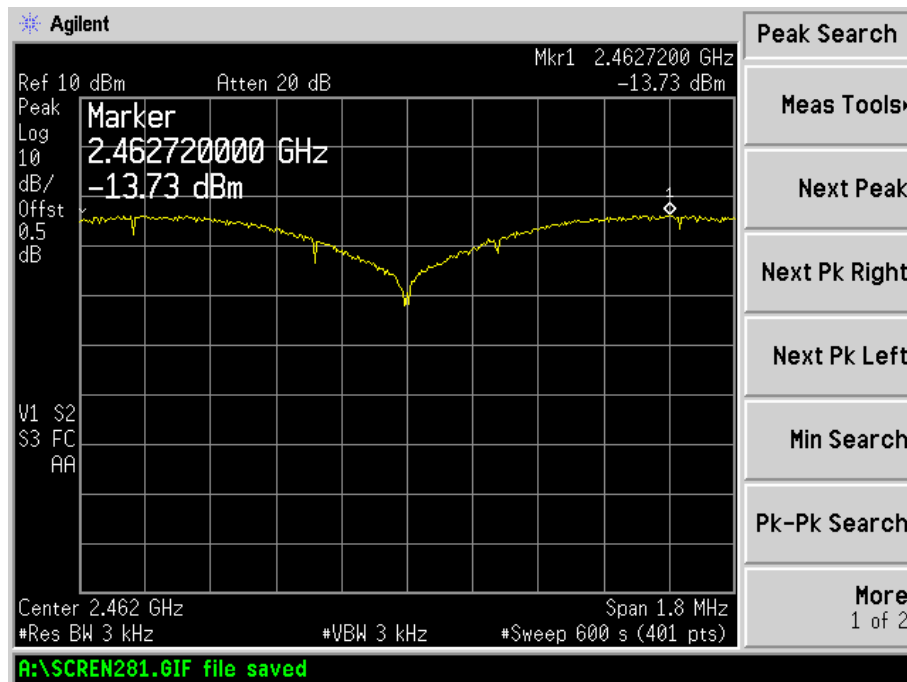
**IEEE 802.11b**  
Low Channel:



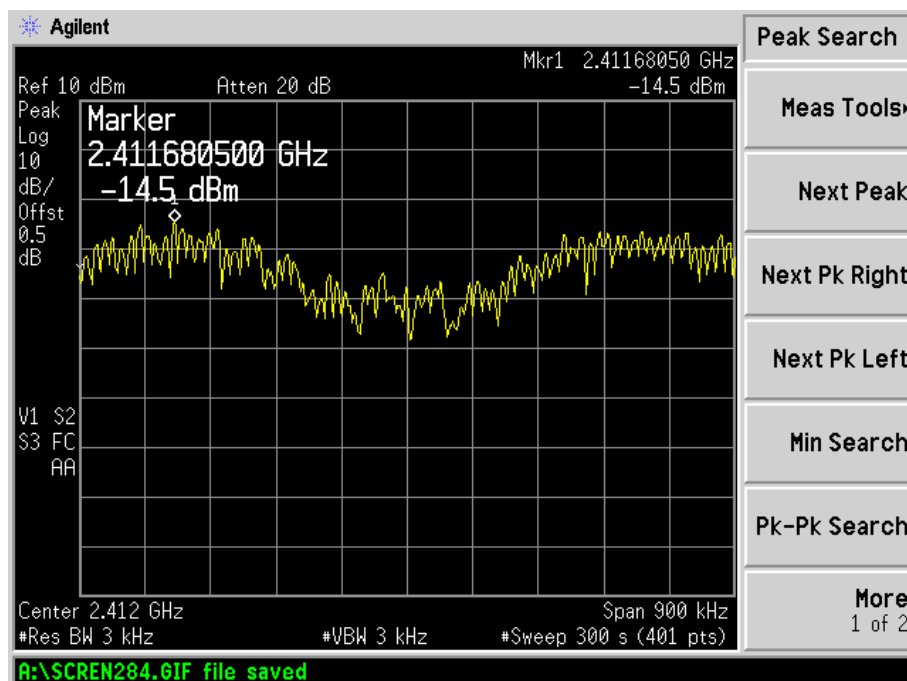
Middle Channel



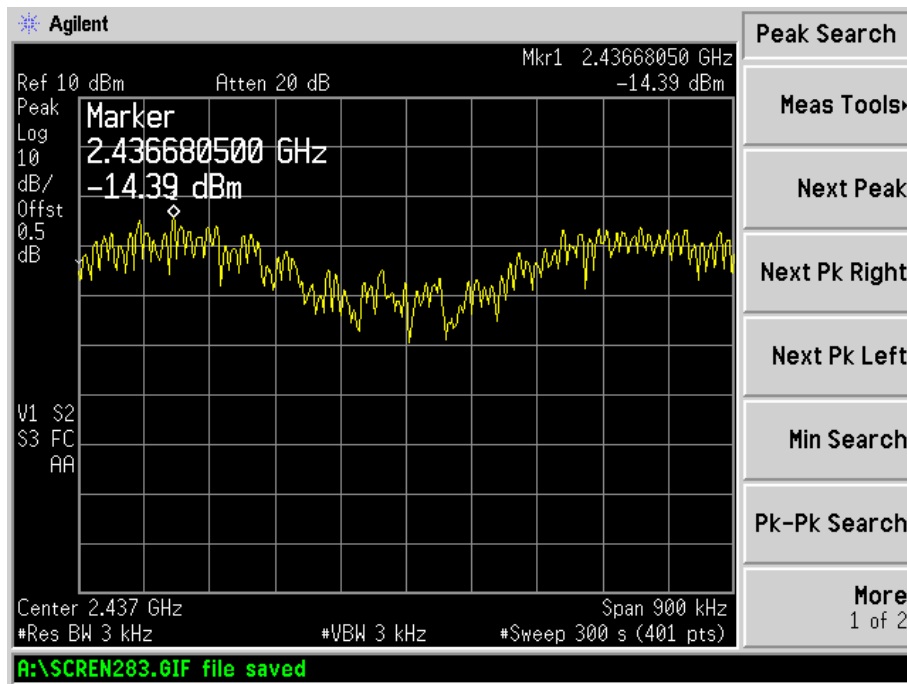
## High Channel



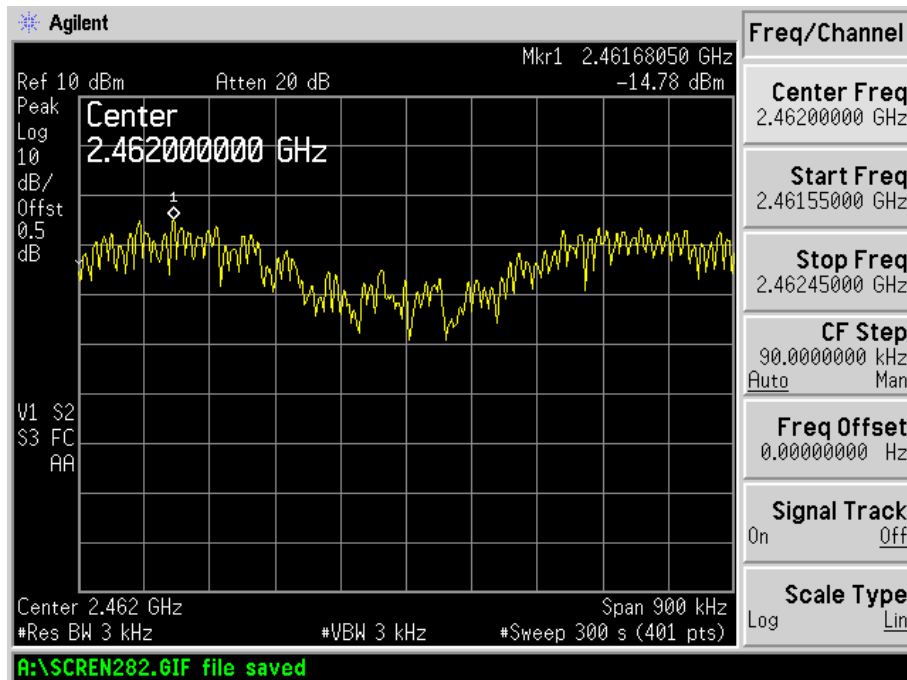
## For 802.11g Low Channel



## Middle Channel



## High Channel



## 8. Band Edges Measurement

### 8.1 Limits of Band Edges Measurement

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

### 8.2 Test Equipment List and Details

See section 2.4.

### 8.3 Test Procedure

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded. The spectrum plots (Peak RBW=VBW=100kHz; Average RBW=1MHz, VBW=10Hz) are attached on the following pages.

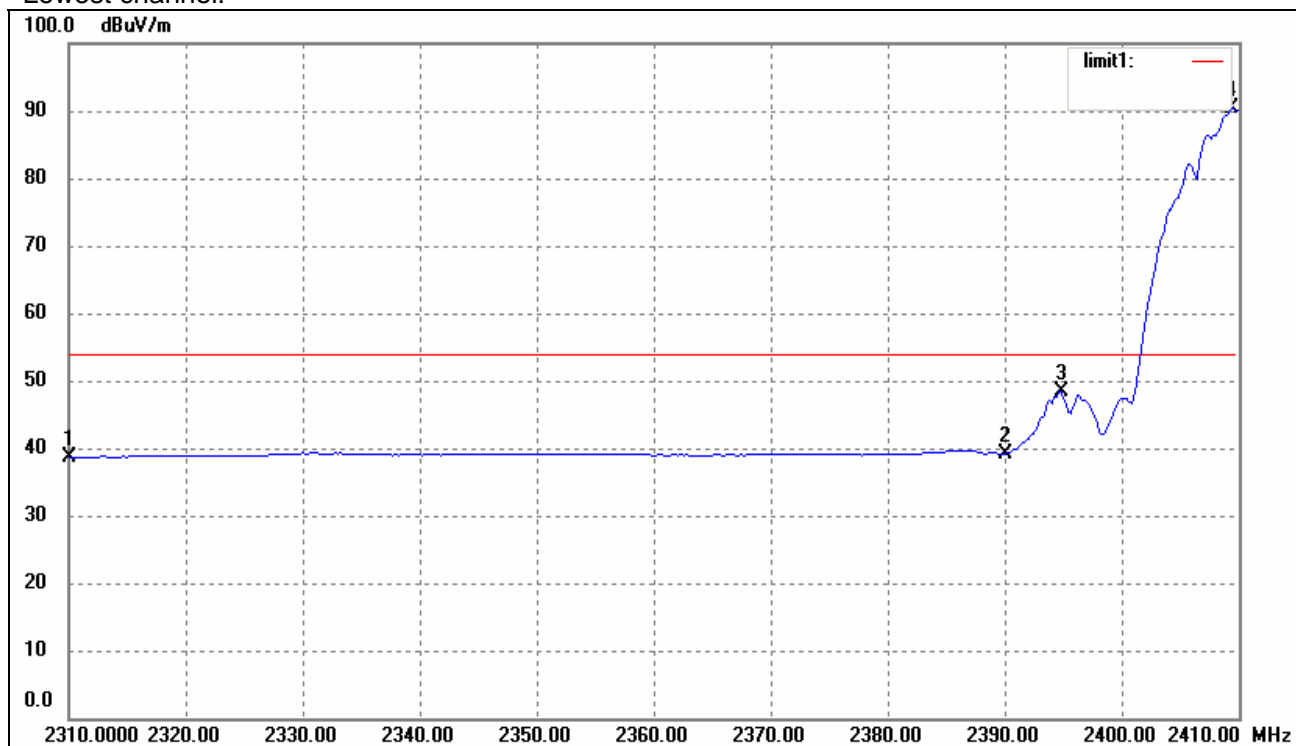
### 8.4 Test Result

PASS

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

# IEEE 802.11b

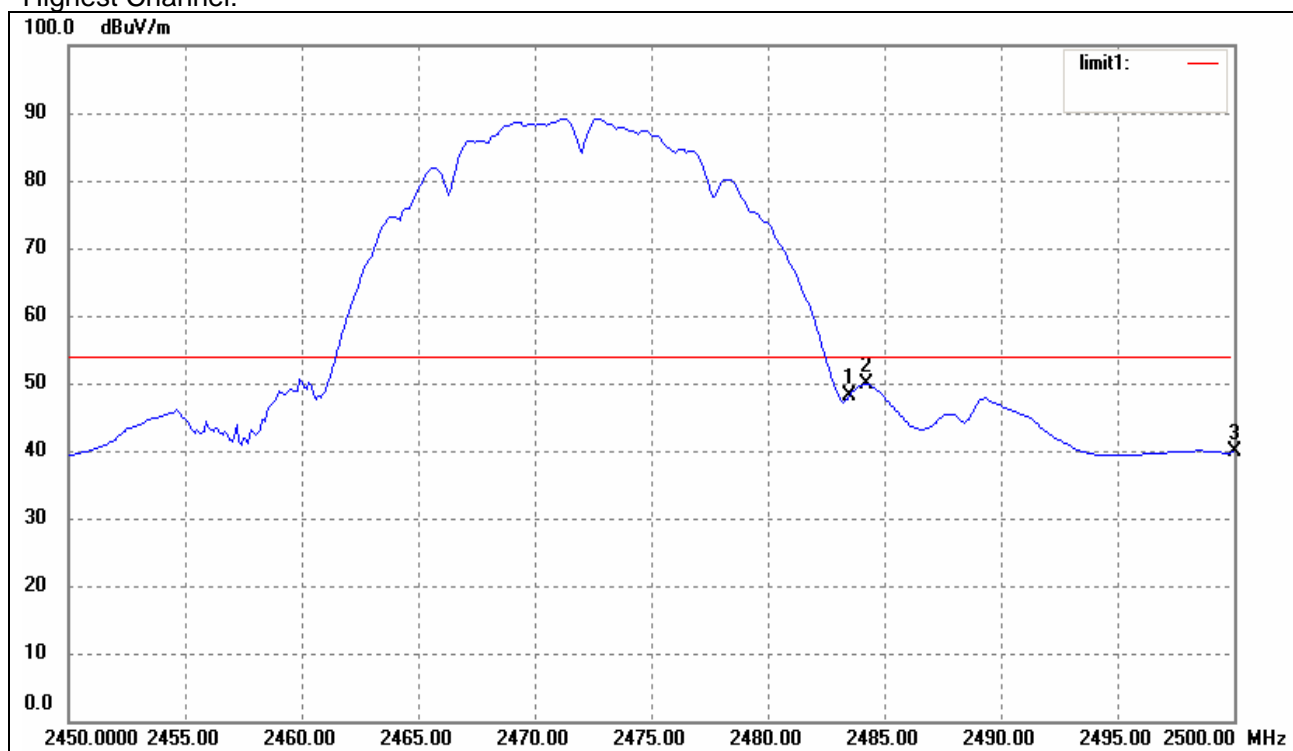
Lowest channel:



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	36.21	2.49	38.70	54.00	-15.30	Average
	2310.000	44.05	2.49	46.54	74.00	-27.46	Peak
2	2390.000	36.58	2.66	39.24	54.00	-14.76	Average
	2390.000	45.23	2.66	47.89	74.00	-26.11	Peak

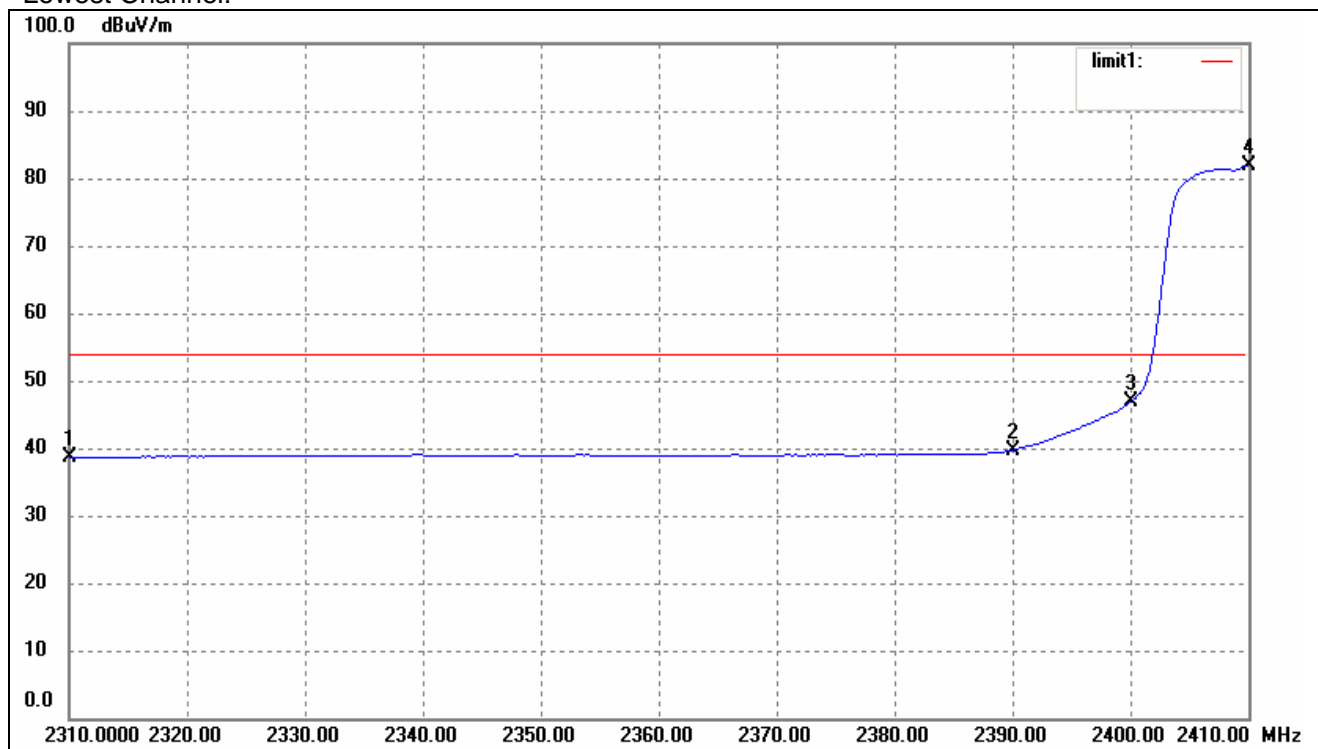


Highest Channel:

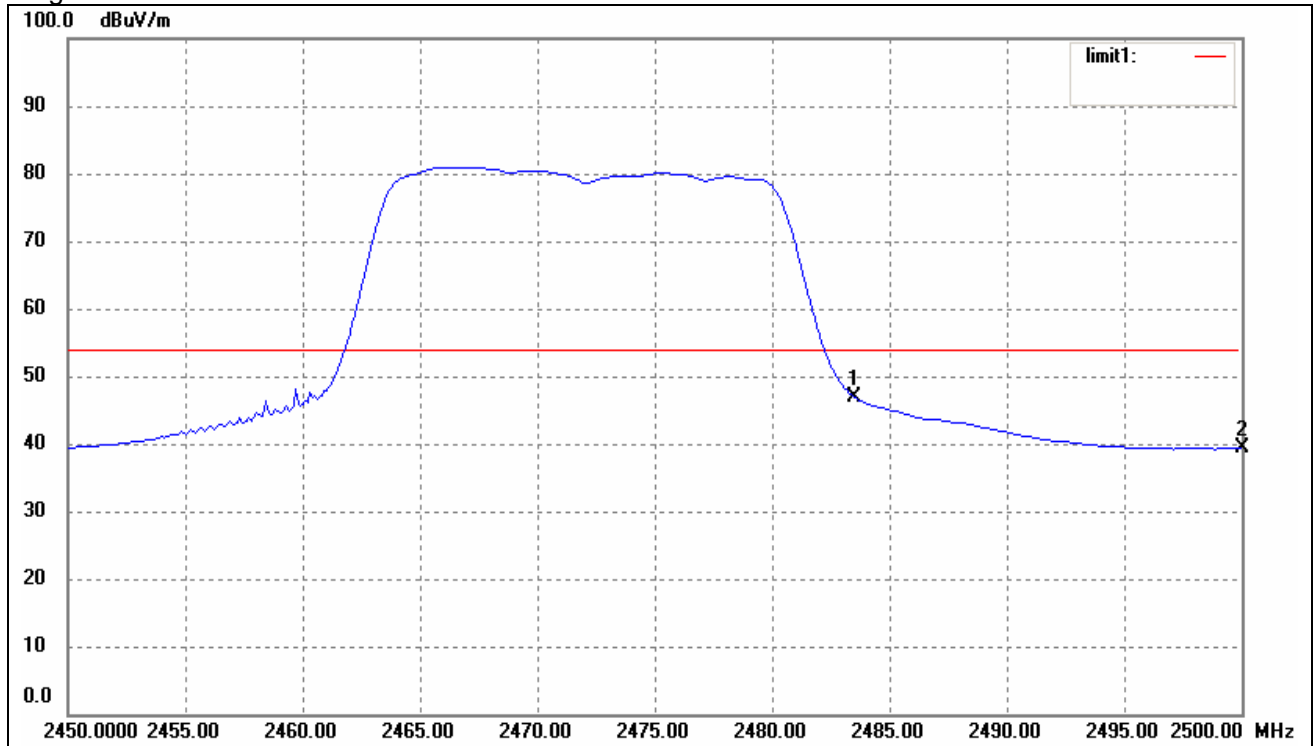


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	45.36	2.87	48.23	54.00	-5.77	Average
	2483.500	53.49	2.87	56.36	74.00	-17.64	Peak
2	2484.200	47.09	2.87	49.96	54.00	-4.04	Average
	2484.200	54.08	2.87	56.95	74.00	-17.05	Peak
3	2500.000	36.86	2.92	39.78	54.00	-14.22	Average
	2500.000	44.63	2.92	47.55	74.00	-26.45	Peak

**IEEE 802.11g**  
Lowest Channel:



Highest Channel:



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	44.03	2.87	46.90	54.00	-7.10	Average
	2483.500	52.14	2.87	55.01	74.00	-18.99	Peak
2	2500.000	36.43	2.92	39.35	54.00	-14.65	Average
	2500.000	44.43	2.92	47.35	74.00	-26.65	Peak

## 9. Radiated Emission Measurement

### 9.1 Limits of Radiated Emission Measurement

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

Section 15.209:

30 - 88 MHz 40 dBuV/m @3M

88 -216 MHz 43.5 dBuV/m @3M

216 -960 MHz 46 dBuV/m @3M

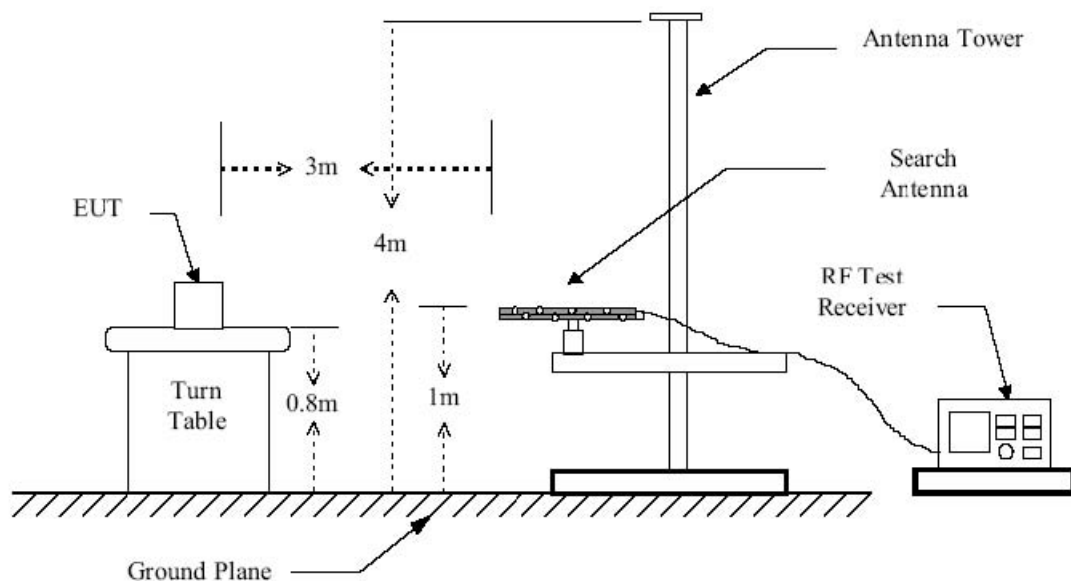
Above 960 MHz 54dBuV/m @3M

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

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

### 9.2 EUT Setup

#### Radiated Measurement Setup



### 9.3 Test Equipment List and Details

See section 2.4.

## 9.4 Test Procedure

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the

highest radiation.

2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

### NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.

2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

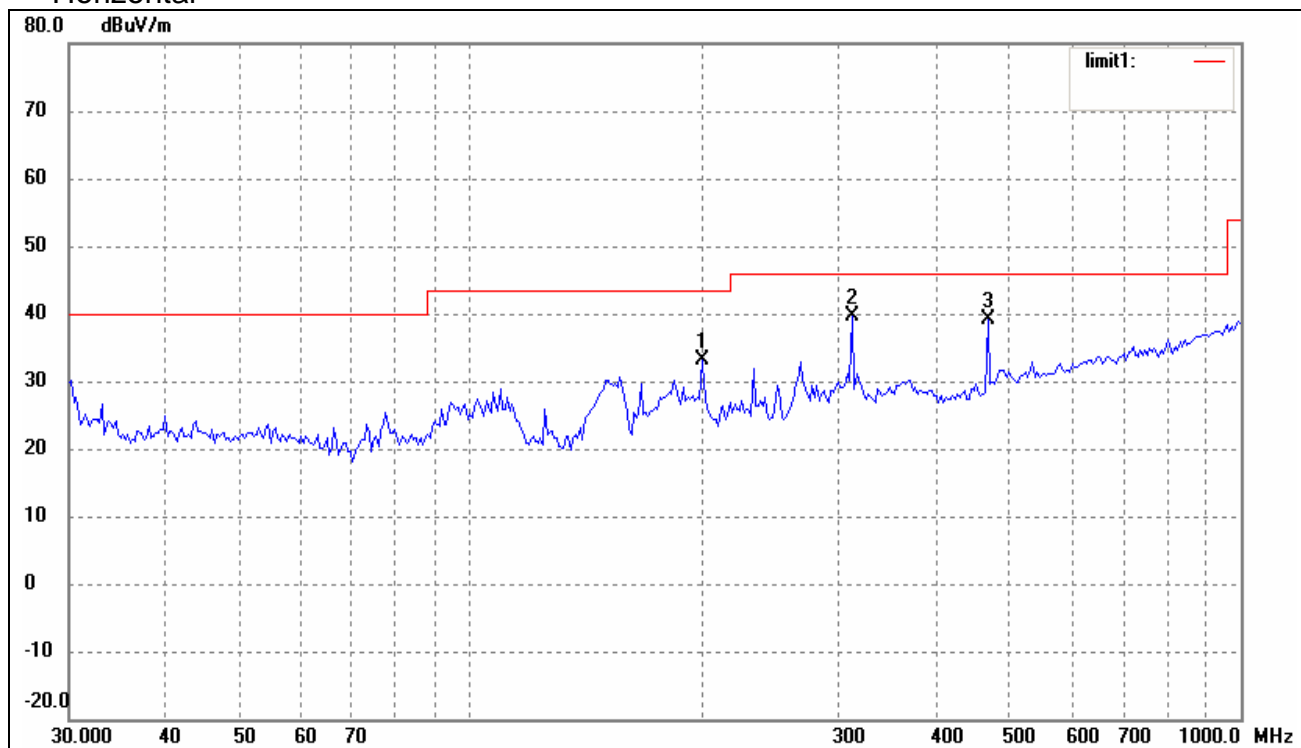
## 9.5 Test Result

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

**-1.2 dBμV at 4824MHz in the Vertical polarization, Transmitting 802.11g Low Channel test mode with, 30 MHz to 25 GHz, 3Meters**

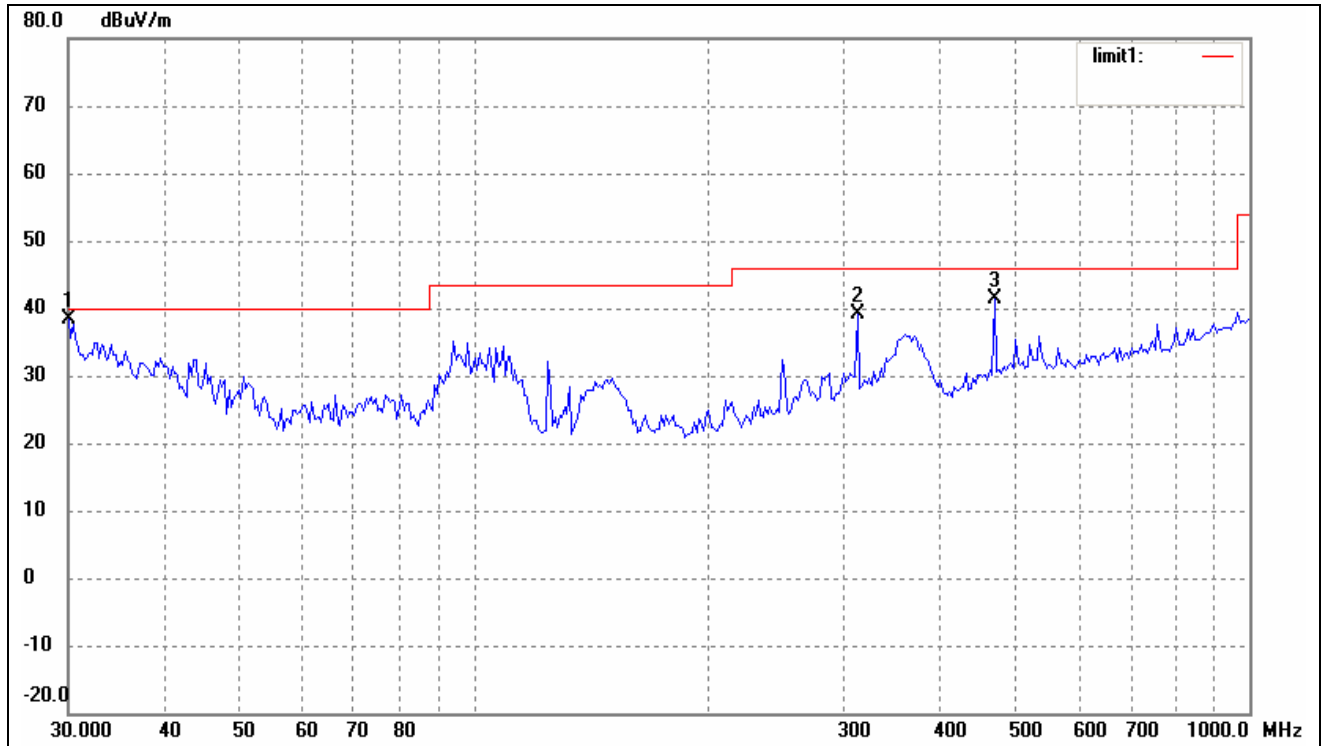
**Note:** this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Spurious Emission From 30 MHz to 1 GHz  
802.11b-Middle CH  
Horizontal



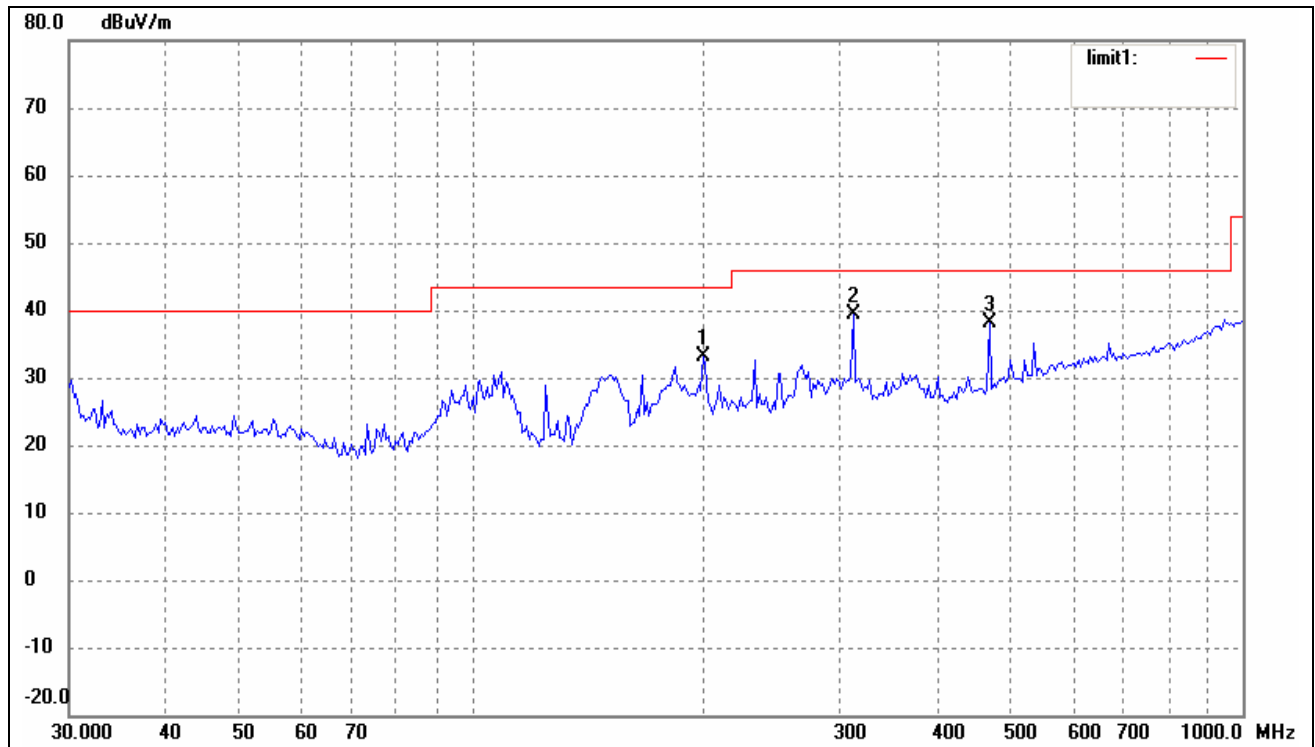
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	199.2855	26.49	6.58	33.07	43.50	-10.43	114	100	peak
2	312.1794	29.61	9.90	39.51	46.00	-6.49	71	100	peak
3	468.8762	26.95	12.06	39.01	46.00	-6.99	26	100	peak

# Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	30.0000	31.67	6.77	38.44	40.00	-1.56	203	100	peak
2	312.1794	29.17	9.90	39.07	46.00	-6.93	47	100	peak
3	468.8762	29.40	12.06	41.46	46.00	-4.54	58	100	peak

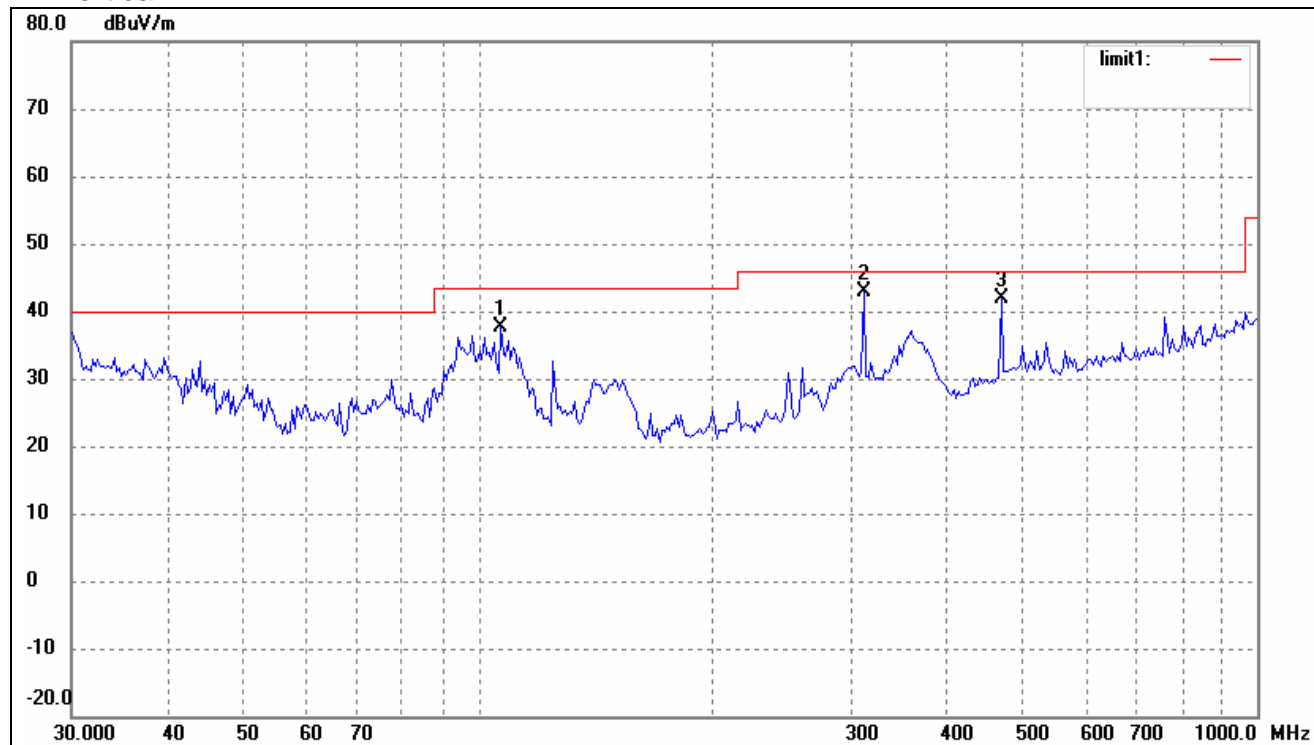
802.11g-Middle CH  
Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	199.2855	26.67	6.58	33.25	43.50	-10.25	225	100	peak
2	312.1794	29.59	9.90	39.49	46.00	-6.51	47	100	peak
3	468.8762	25.96	12.06	38.02	46.00	-7.98	69	100	peak



# Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	106.7587	29.80	7.86	37.66	43.50	-5.84	330	100	peak
2	312.1794	33.01	9.90	42.91	46.00	-3.09	44	100	peak
3	468.8762	29.73	12.06	41.79	46.00	-4.21	36	100	peak

## Spurious Emission Above 1GHz

For 802.11b

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (1G to 25GHz)										
4824.0	PK	54.8	90	V	34.1	5.2	33.0	61.1	74	-12.9
7236.0	PK	52.3	270	V	37.4	6.1	33.5	62.3	74	-11.7
7236.0	PK	53.4	180	H	37.4	6.1	33.5	63.4	74	-10.6
4824.0	PK	57.8	45	H	34.1	5.2	33.0	64.1	74	-9.9
4824.0	AV	43.3	270	V	34.1	5.2	33.0	49.6	54	-4.4
7236.0	AV	40.8	90	V	37.4	6.1	33.5	50.8	54	-3.2
7236.0	AV	41.9	45	H	37.4	6.1	33.5	51.9	54	-2.1
4824.0	AV	46.3	60	H	34.1	5.2	33.0	52.6	54	-1.4
Middle Channel (1G to 25GHz)										
7311.0	PK	51.0	45	V	37.4	6.1	33.5	61.0	74	-13.0
4874.0	PK	53.4	270	V	34.1	5.2	33.0	59.7	74	-14.3
7311.0	PK	53.2	45	H	37.4	6.1	33.5	63.2	74	-10.8
4874.0	PK	55.3	180	H	34.1	5.2	33.0	61.6	74	-12.4
7311.0	AV	39.5	270	V	37.4	6.1	33.5	49.5	54	-4.5
4874.0	AV	41.9	90	V	34.1	5.2	33.0	48.2	54	-5.8
7311.0	AV	41.7	60	H	37.4	6.1	33.5	51.7	54	-2.3
4874.0	AV	43.8	45	H	34.1	5.2	33.0	50.1	54	-3.9
High Channel (1G to 25GHz)										
4924.0	PK	53.5	270	V	34.1	5.2	33.0	59.8	74	-14.2
7386.0	PK	48.9	45	V	37.4	6.1	33.5	58.9	74	-15.1
4924.0	PK	57.9	180	H	34.1	5.2	33.0	64.2	74	-9.8
7386.0	PK	51.8	45	H	37.4	6.1	33.5	61.8	74	-12.2
4924.0	AV	42.0	90	V	34.1	5.2	33.0	48.3	54	-5.7
7386.0	AV	37.4	270	V	37.4	6.1	33.5	47.4	54	-6.6
4924.0	AV	46.4	60	H	34.1	5.2	33.0	52.7	54	-1.3
7386.0	AV	40.3	60	H	37.4	6.1	33.5	50.3	54	-3.7

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

For 802.11g

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (1G to 25GHz)										
4824.0	PK	54.8	144	V	34.1	5.2	33.0	61.1	74	-12.9
7236.0	PK	49.7	55	V	37.4	6.1	33.5	59.7	74	-14.3
7236.0	PK	50.9	85	H	37.4	6.1	33.5	60.9	74	-13.1
4824.0	PK	48.2	255	H	34.1	5.2	33.0	54.5	74	-19.5
4824.0	AV	46.5	256	V	34.1	5.2	33.0	52.8	54	-1.2
7236.0	AV	40.7	55	V	37.4	6.1	33.5	50.7	54	-3.3
7236.0	AV	32.2	11	H	37.4	6.1	33.5	42.2	54	-11.8
4824.0	AV	38.3	58	H	34.1	5.2	33.0	44.6	54	-9.4
Middle Channel (1G to 25GHz)										
4874.0	PK	55.9	43	V	37.4	6.1	33.5	62.2	74	-11.8
7311.0	PK	48.6	53	V	34.1	5.2	33.0	58.6	74	-15.4
7311.0	PK	40.3	77	H	37.4	6.1	33.5	50.3	74	-23.7
4874.0	PK	44.8	271	H	34.1	5.2	33.0	51.1	74	-22.9
4874.0	AV	45.7	270	V	37.4	6.1	33.5	52.0	54	-2.0
7311.0	AV	39.4	5	V	34.1	5.2	33.0	49.4	54	-4.6
7311.0	AV	31.8	60	H	37.4	6.1	33.5	41.8	54	-12.2
4874.0	AV	36.3	0	H	34.1	5.2	33.0	42.6	54	-11.4
High Channel (1G to 25GHz)										
4924.0	PK	55.8	56	V	34.1	5.2	33.0	62.1	74	-11.9
7386.0	PK	48.3	45	V	37.4	6.1	33.5	58.3	74	-15.7
4924.0	PK	44.0	83	H	34.1	5.2	33.0	54.0	74	-20.0
7386.0	PK	44.4	26	H	37.4	6.1	33.5	50.7	74	-23.3
4924.0	AV	44.2	87	V	34.1	5.2	33.0	50.5	54	-3.5
7386.0	AV	39.2	221	V	37.4	6.1	33.5	49.2	54	-4.8
4924.0	AV	32.7	60	H	34.1	5.2	33.0	42.7	54	-11.3
7386.0	AV	34.0	60	H	37.4	6.1	33.5	40.3	54	-13.7

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