



**FCC Part 15C**  
**Measurement and Test Report**  
**For**  
**HANTECH CORPORATION**

**500 Cochrane Drive Unit 1, Markham, Ont. L3R 8E2, Canada**

**FCC ID: V5ZWG100R**

<b>Report Concerns:</b> Original Report	<b>Equipment Type:</b> ENZO Wireless Network Router
<b>Model:</b>	<u>WG-100R</u>
<b>Report No.:</b>	<u>STR08068114I</u>
<b>Test/Witness Engineer:</b>	<u>Lahm Peng</u> 
<b>Test Date:</b>	<u>2008-06-19 to 2008-06-27</u>
<b>Issued Date:</b>	<u>2008-06-28</u>
<b>Prepared By:</b>	<p style="text-align: center;"><b>SEM.Test Compliance Service Co., Ltd</b> 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101)</p>
<b>Approved &amp; Authorized By:</b>	<p style="text-align: center;"> _____ Jandy So / PSQ Manager</p>

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd.

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## 1. GENERAL INFORMATION

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

#### Client Information

Applicant: HANTECH CORPORATION  
Address of applicant: 500 Cochrane Drive Unit 1, Markham, Ont. L3R 8E2, Canada

Manufacturer: ZIONCOM (SHENZHEN) TECHNOLOGY LTD  
Address of manufacturer: Lantian Technology Park, Xinyu Road, Xinqiao henggang Block, Shajing Street, Baoan District, Shenzhen City, China

#### General Description of E.U.T

Items	Description
EUT Description:	ENZO Wireless Network Router
Trade Name:	/
Model No.:	WG-100R
Rated Voltage:	DC 9V Adapter
Max. Output Power	< 18dBm
Antenna gain:	2dBi
Frequency range:	2412-2462MHz
Number of channels:	11
Size:	5MHz
Channel Separation:	Unique Antenna
Type of Antenna:	17.0x10.7x3.0cm

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

### 1.2 Test Standards

The following report is prepared on behalf of the HANTECH CORPORATION in accordance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

**Maintenance of compliance** is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

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

No Related Submittal(s).

## 1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted with Low Channel, Middle Channel and High Channel, accordingly in reference to the Operating Instructions.

## 1.5 Test Facility

- **FCC – Registration No.: 994117**

SEM.Test Compliance Services Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**

The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5169.

Measurement required was performed at laboratory of SEM.Test Compliance Service Co., Ltd. at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101).

Tel: +86 755 3366 3308 Fax: +86 755 3366 3309

## 1.6 EUT Exercise Software

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

## 1.7 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
IBM	Notebook	T22	LV14893
TP-LINK	Modem	TM-EC5658V	KT99CTQC-508
Lenovo	Printer	3110	OD65133711480

## 1.8 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.5	Shielded	Without Core

## 2. SUMMARY OF TEST RESULTS

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

### **3. §15.203 - ANTENNA REQUIREMENT**

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#### **3.1 Standard Applicable**

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

#### **3.2 Test Result**

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

## 4. CONDUCTED EMISSIONS

### 4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is  $\pm 0.5$  dB.

### 4.2 Test Equipment List and Details

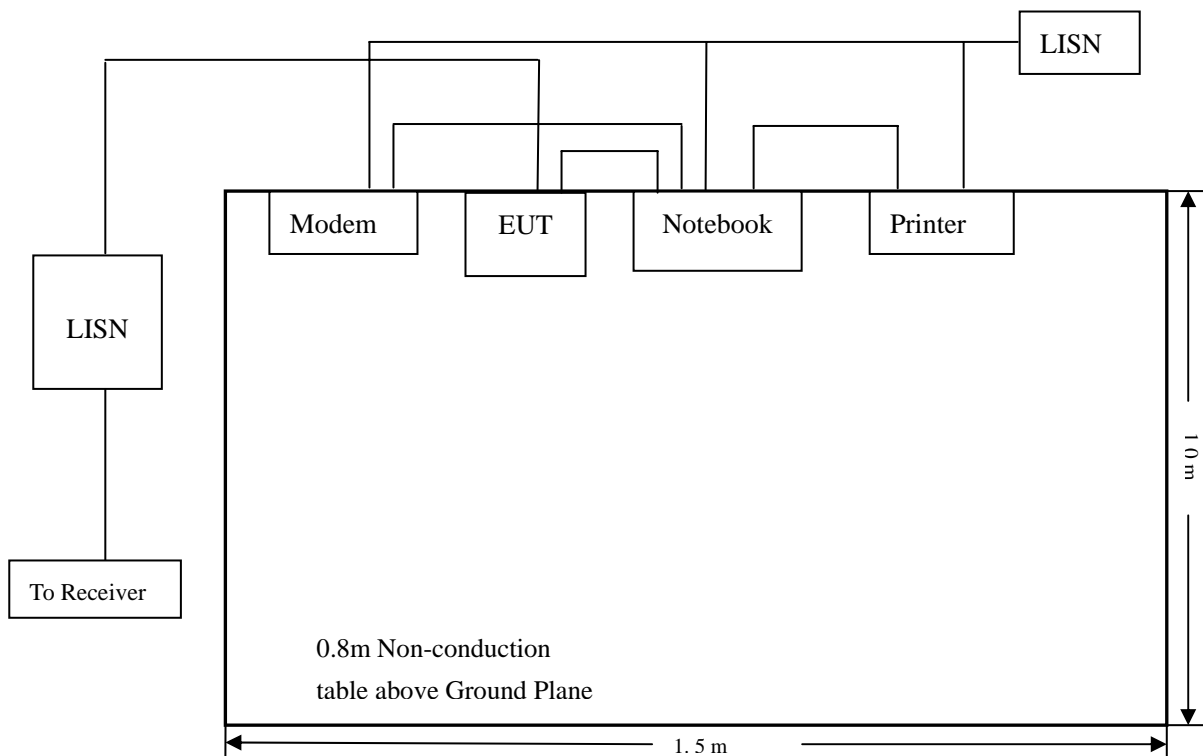
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2008-01-25	2009-01-24
Puls Limiter	Rohde & Schwarz	ESH3-Z2	100911	2008-01-25	2009-01-24
L.I.S.N.	SCHWARZBECK	NSLK812 6	8126-224	2008-01-25	2009-01-24
L.I.S.N.	EMCO	3825/2	11967C	2008-01-25	2009-01-24

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

### 4.3 Test Procedure

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

### 4.4 Basic Test Setup Block Diagram



## 4.5 Environmental Conditions

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

## 4.6 Summary of Test Results/Plots

According to the data in section 4.7, the EUT complied with the FCC 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

**-0.3 dB $\mu$ V at 1.122 MHz in the Neutral, 0.15-30MHz**

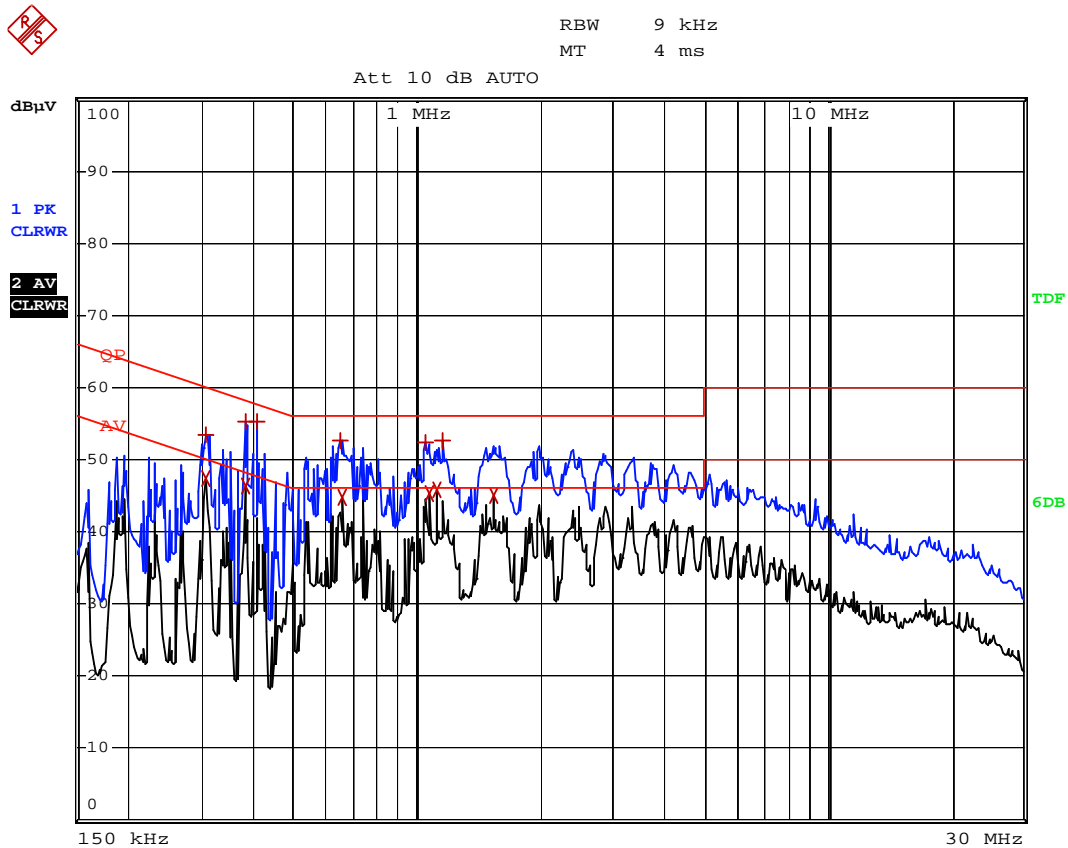
## 4.7 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC 15.207	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dB $\mu$ V	QP/Ave/Pk	Line/Neutral	dB $\mu$ V	dB
1.122	45.75	AV	Neutral	46	-0.3
1.078	45.29	AV	Neutral	46	-0.7
1.542	45.11	AV	Neutral	46	-0.9
0.658	44.70	AV	Neutral	46	-1.3
0.378	46.77	AV	Line	48.32	-1.6
0.382	46.25	AV	Neutral	48.24	-2.0
0.538	43.58	AV	Line	46	-2.4
1.126	43.58	AV	Line	46	-2.4
0.386	45.65	AV	Line	48.15	-2.5
0.406	55.18	PK	Neutral	57.73	-2.5
0.646	53.45	PK	Line	56	-2.6
1.118	43.26	AV	Line	46	-2.7
0.306	47.40	AV	Neutral	50.08	-2.7
0.382	55.26	PK	Neutral	58.24	-3.0
0.650	52.70	PK	Neutral	56	-3.3
1.158	52.64	PK	Neutral	56	-3.4
1.154	52.55	PK	Line	56	-3.5
0.306	46.44	AV	Line	50.08	-3.6
0.378	54.64	PK	Line	58.32	-3.7
1.050	52.27	PK	Neutral	56	-3.7
0.386	53.56	PK	Line	58.15	-4.6
0.334	53.78	PK	Line	59.35	-5.6
0.306	53.35	PK	Line	60.08	-6.7
0.310	53.31	PK	Neutral	59.97	-6.7



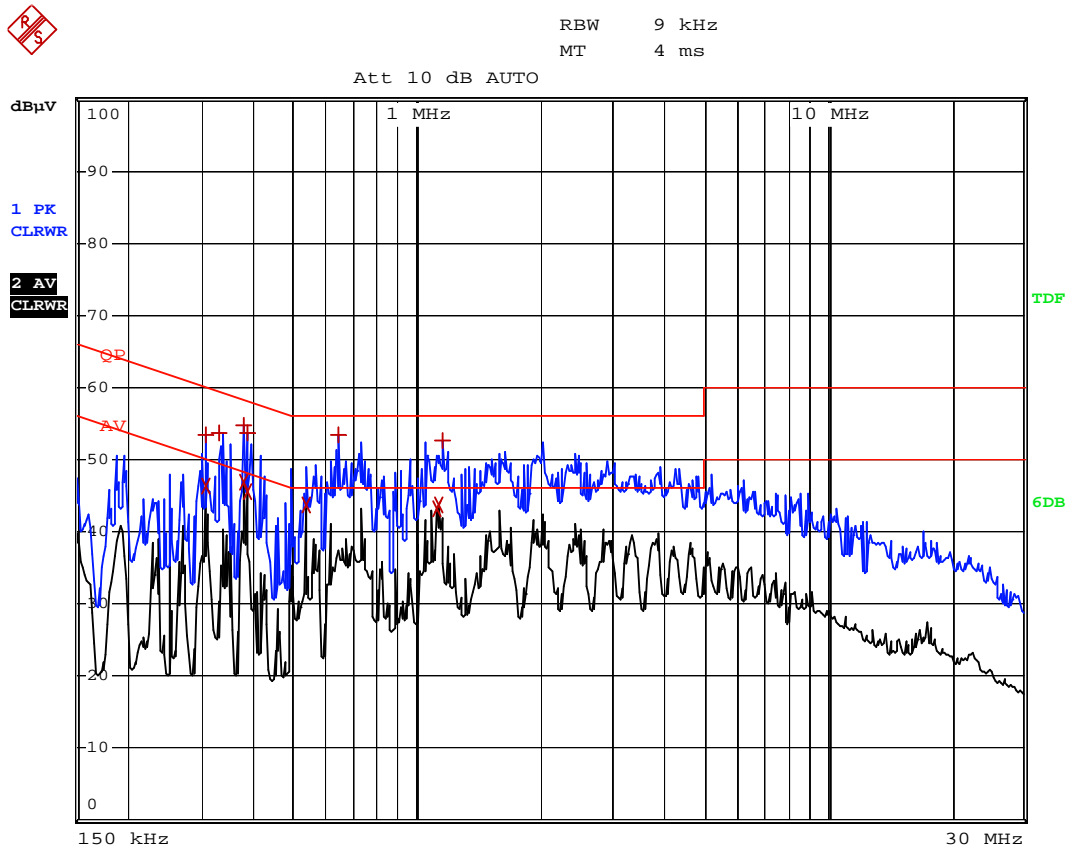
Plot of Conducted Emissions Test Data

Conducted Disturbance  
EUT: ENZO Wireless Network Router  
M/N: WG-100R  
Operating Condition: Running  
Test Specification: N  
Comment: AC120V/60Hz USB 5V



Plot of Conducted Emissions Test Data

Conducted Disturbance  
EUT: ENZO Wireless Network Router  
M/N: WG-100R  
Operating Condition: Running  
Test Specification: L  
Comment: AC120V/60Hz USB 5V



## 5. POWER SPECTRAL DENSITY

### 5.1 Standard Applicable

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

### 5.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Agilent	Spectrum Analyzer	E4402B	US41192821	2008-01-25	2009-01-24
Agilent	RF Limiter	11867A	MY42241685	2008-01-25	2009-01-24

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

### 5.3 Test Procedure

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

### 5.4 Environmental Conditions

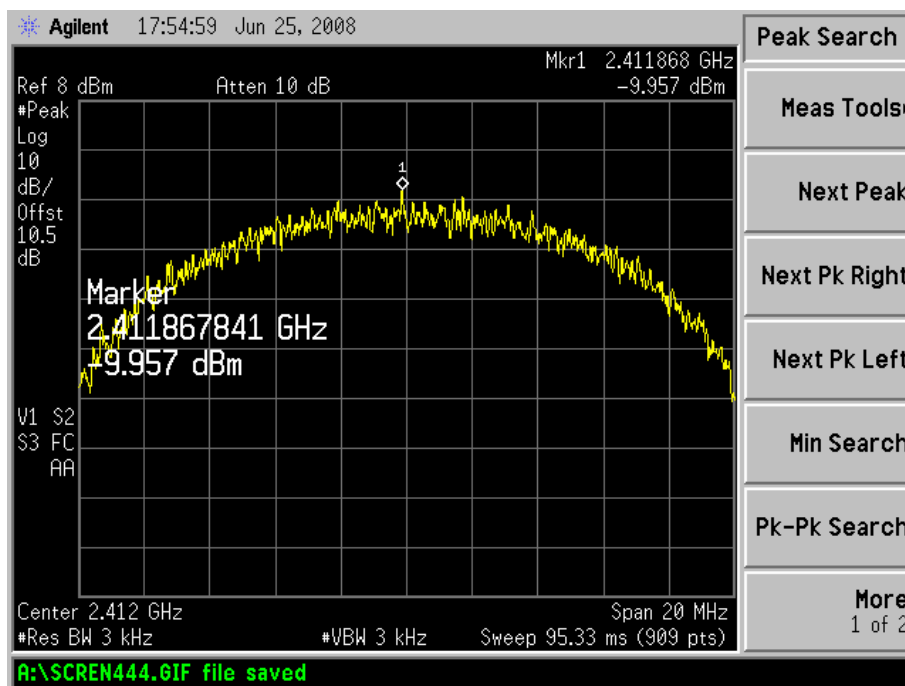
Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

**5.5 Summary of Test Results/Plots**

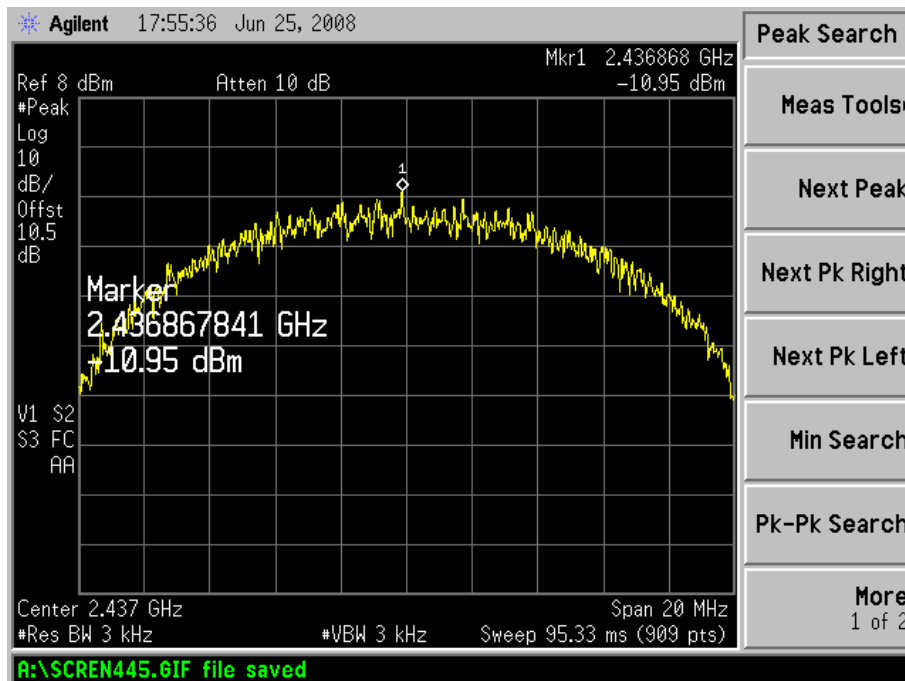
Test mode	Test channel	Reading dBm/3kHz	Limit dBm/3kHz
802.11b	Low channel (2412MHz)	-9.957	8
	Middle channel (2437MHz)	-10.95	8
	High channel (2462MHz)	-12.11	8
802.11g	Low channel (2412MHz)	-18.58	8
	Middle channel (2437MHz)	-19.68	8
	High channel (2462MHz)	-19.81	8

# For 802.11b

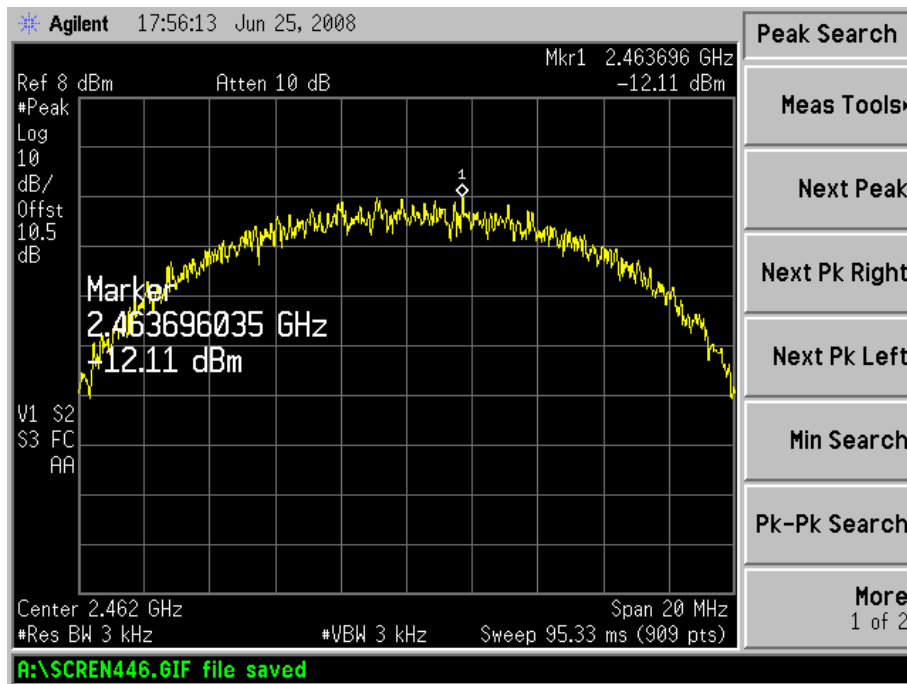
Low Channel:



Middle Channel:

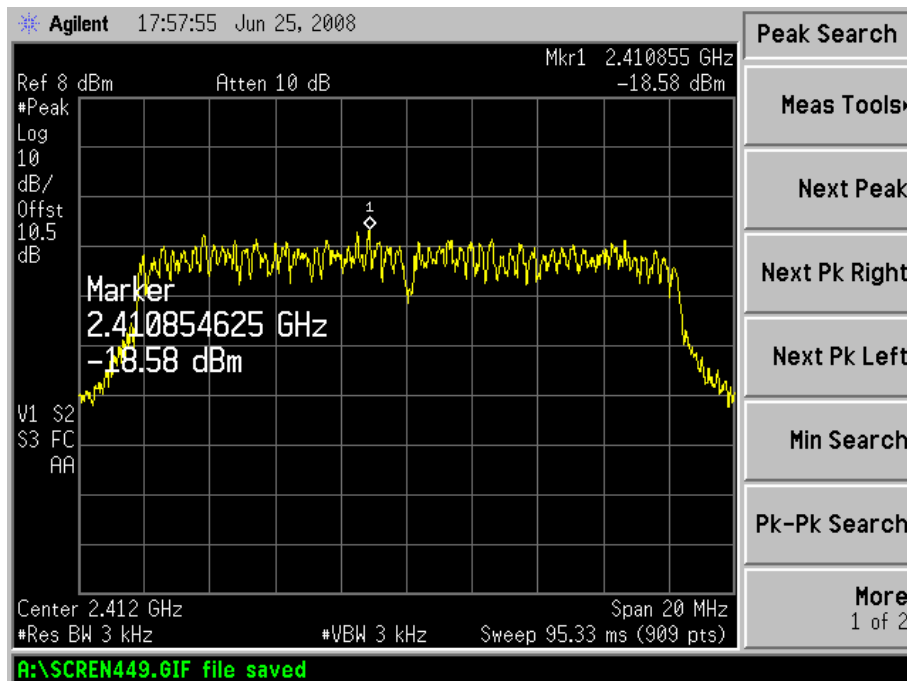


High Channel:

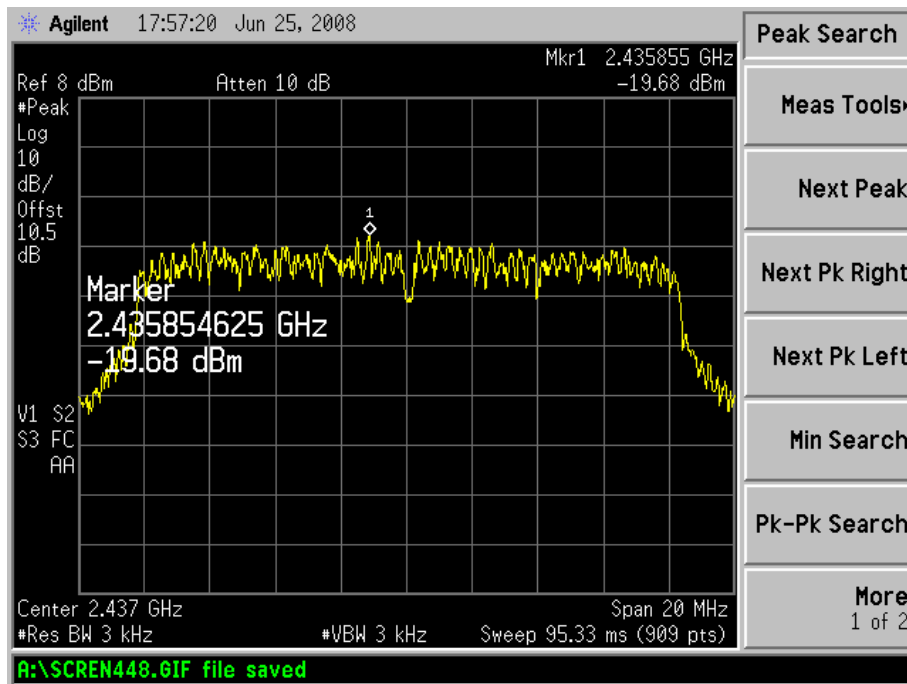


For 802.11g

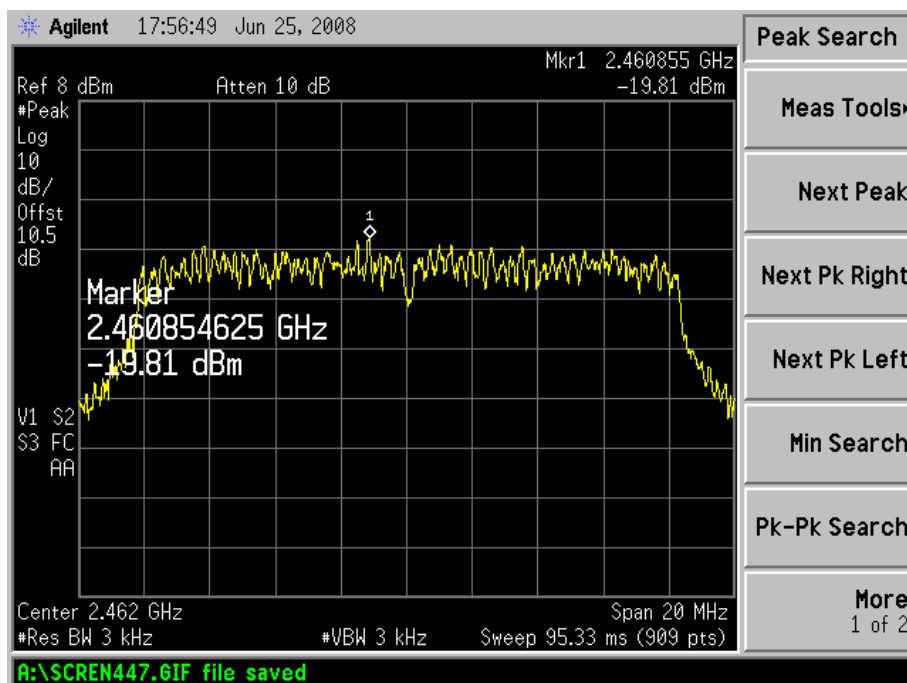
Low Channel:



Middle Channel:



High Channel:



## 6. 6-dB BANDWIDTH

### 6.1 Standard Applicable

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

### 6.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2008-01-25	2009-01-24
RF Limiter	Agilent	11867A	MY42241685	2008-01-25	2009-01-24

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

### 6.3 Test Procedure

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

### 6.4 Environmental Conditions

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

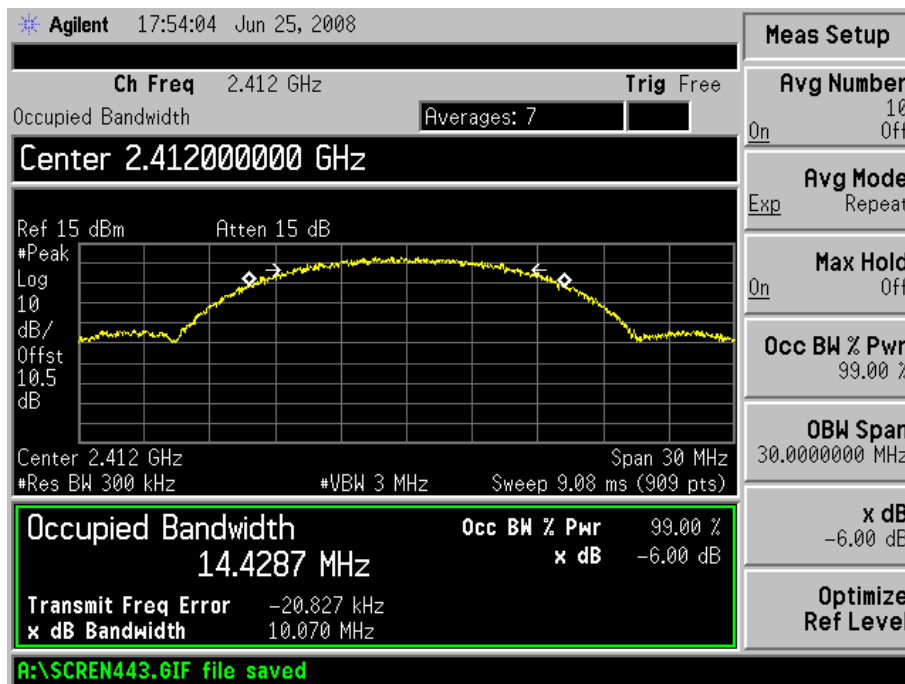
### 6.5 Summary of Test Results/Plots

Test mode	Frequency MHz	6 dB Bandwidth kHz	Limit kHz
802.11b	2412	10070	500
	2437	10052	500
	2462	9860	500
802.11g	2412	16268	500
	2437	16161	500
	2462	16259	500

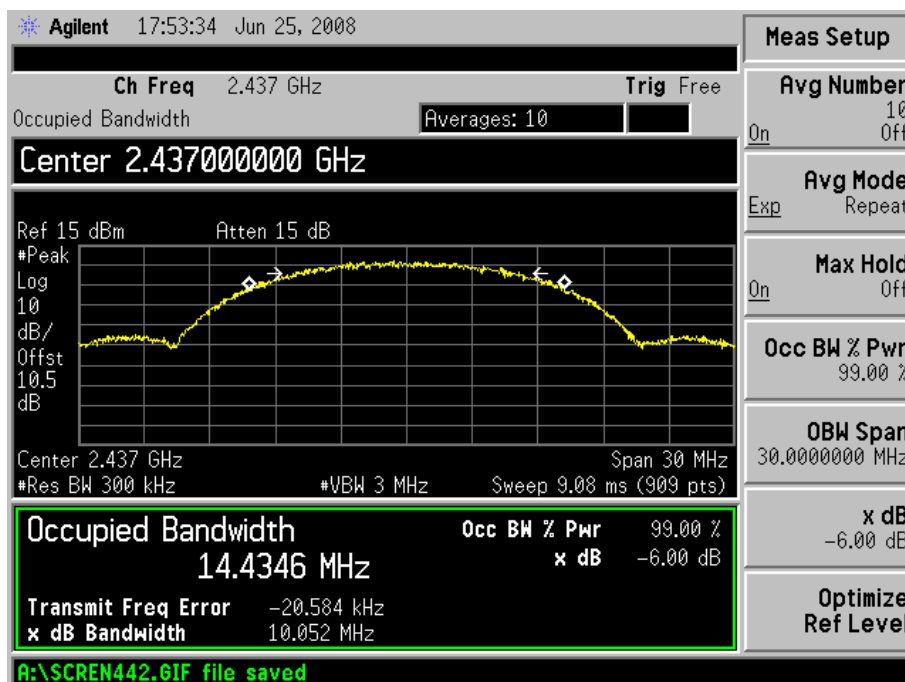


# For 802.11b

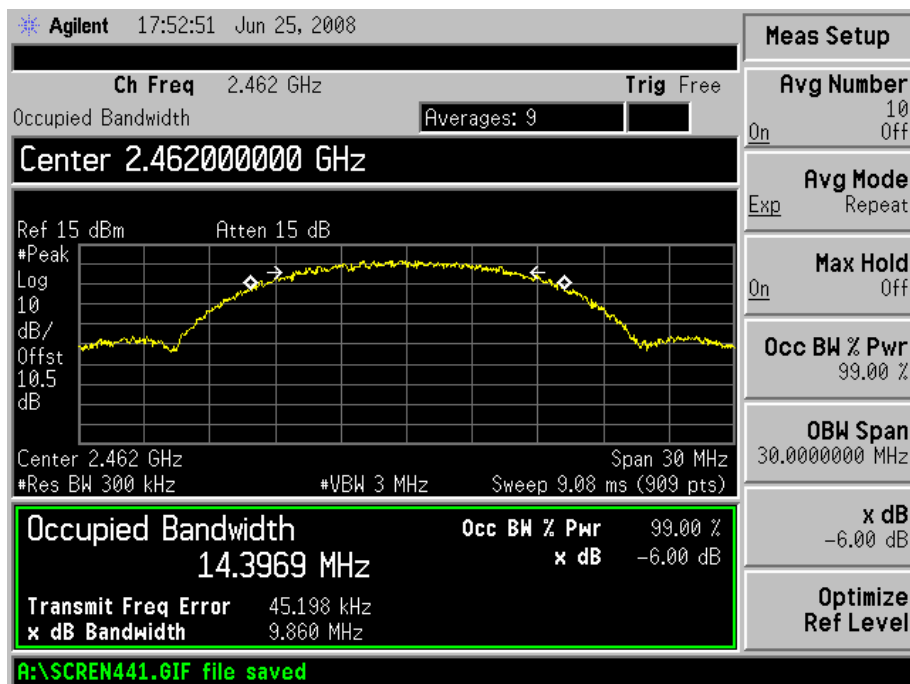
Low Channel:



Mid Channel:

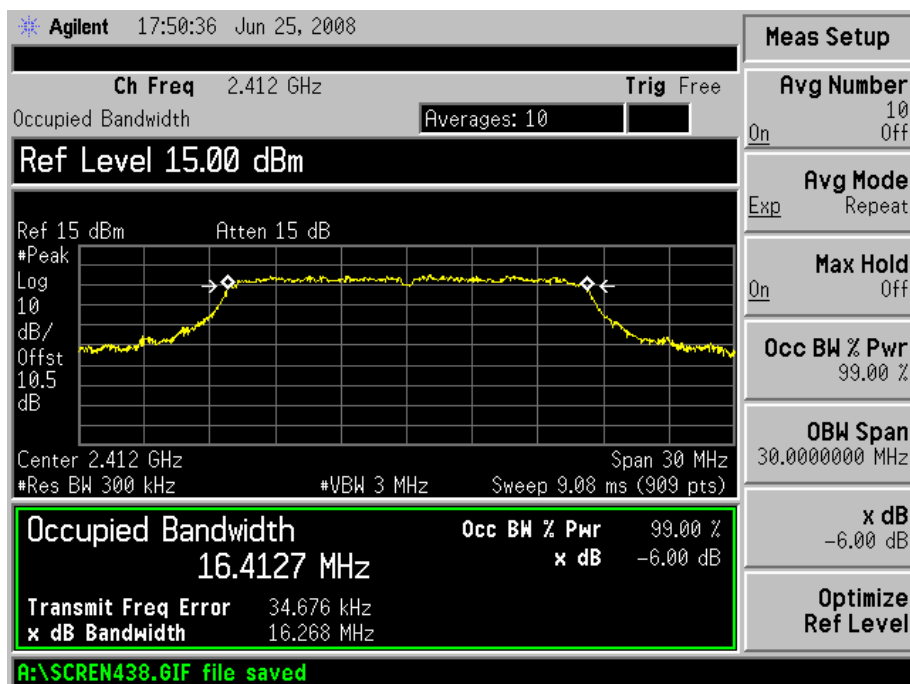


High Channel:

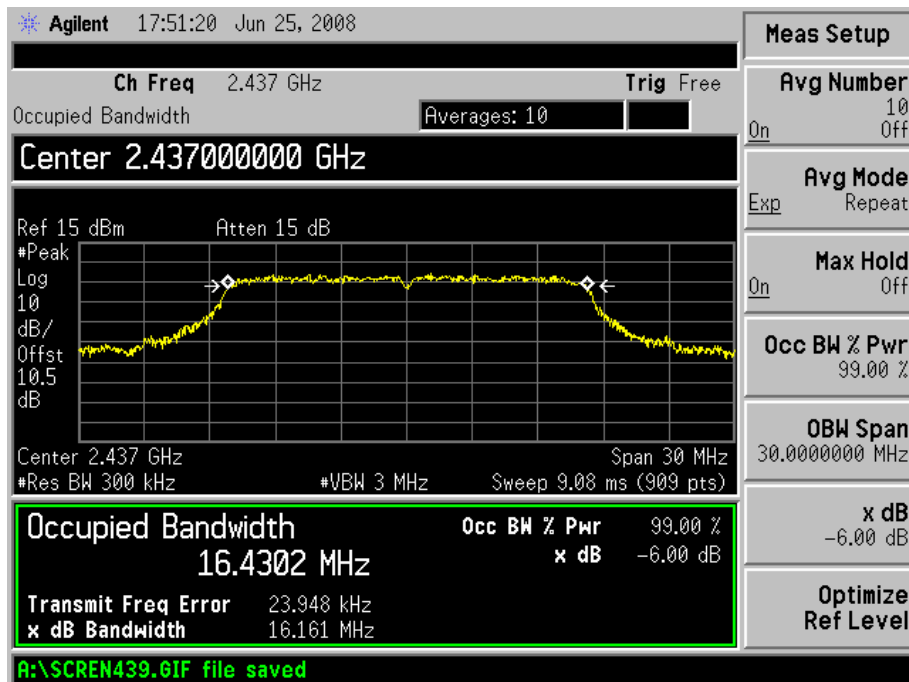


For 802.11g

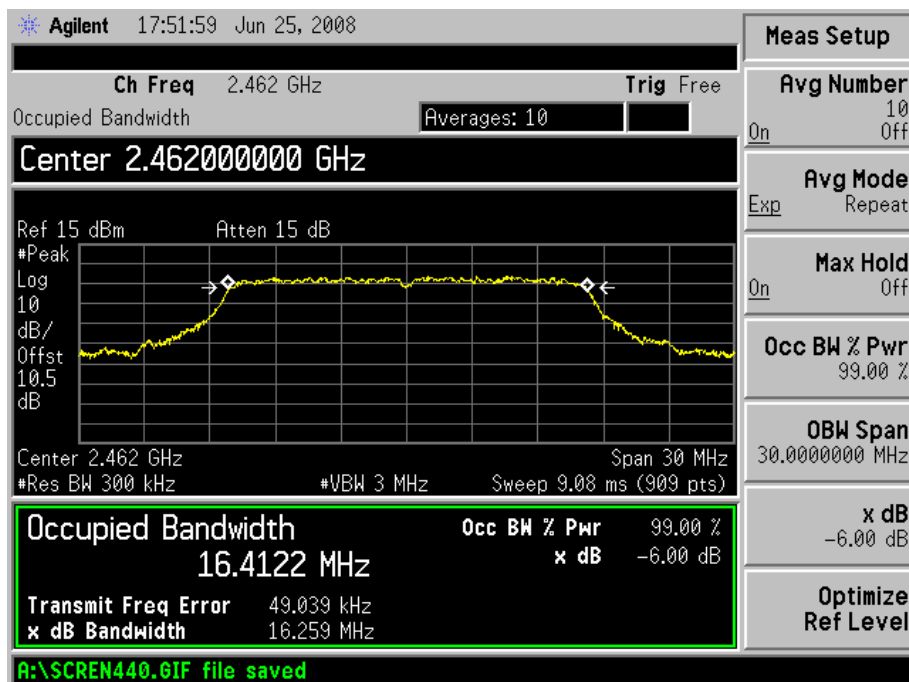
Low Channel:



Mid Channel:



High Channel:



## 7. POWER OUTPUT

### 7.1 Standard Applicable

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

### 7.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Agilent	Spectrum Analyzer	E4402B	US41192821	2008-01-25	2009-01-24
RF Limiter	Agilent	11867A	MY42241685	2008-01-25	2009-01-24

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

### 7.3 Test Procedure

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

### 7.4 Environmental Conditions

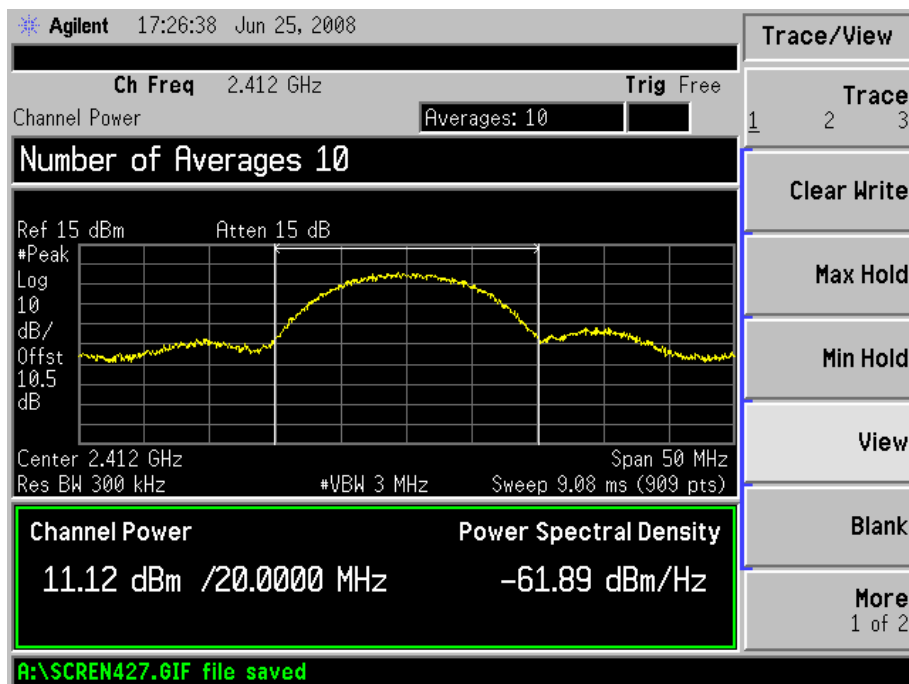
Temperature:	21° C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

### 7.5 Summary of Test Results/Plots

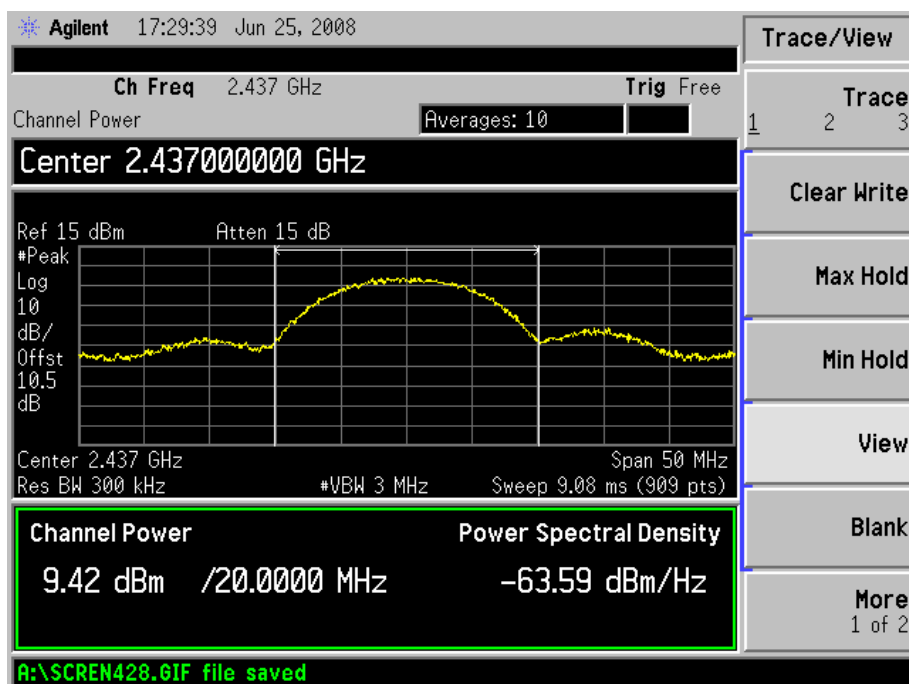
Test mode	Frequency MHz	Reading dBm	Output power W	Limit W
802.11b	2412	11.12	0.012942	1
	2437	9.42	0.008750	1
	2462	12.76	0.018880	1
802.11g	2412	12.08	0.016144	1
	2437	11.99	0.015812	1
	2462	11.90	0.015488	1

**For 802.11b**

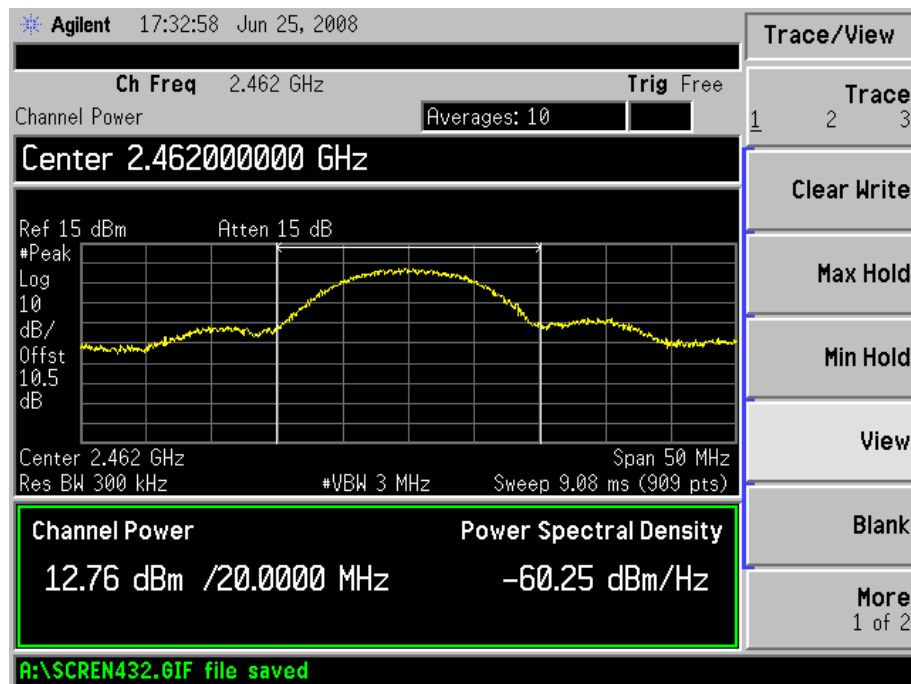
Low Channel:



Middle Channel:

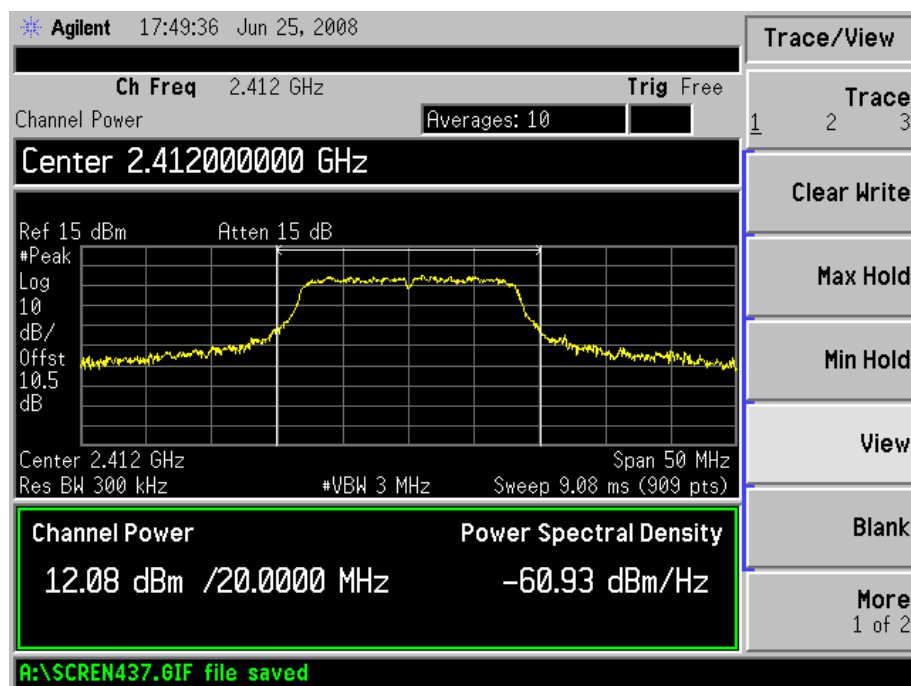


High Channel:

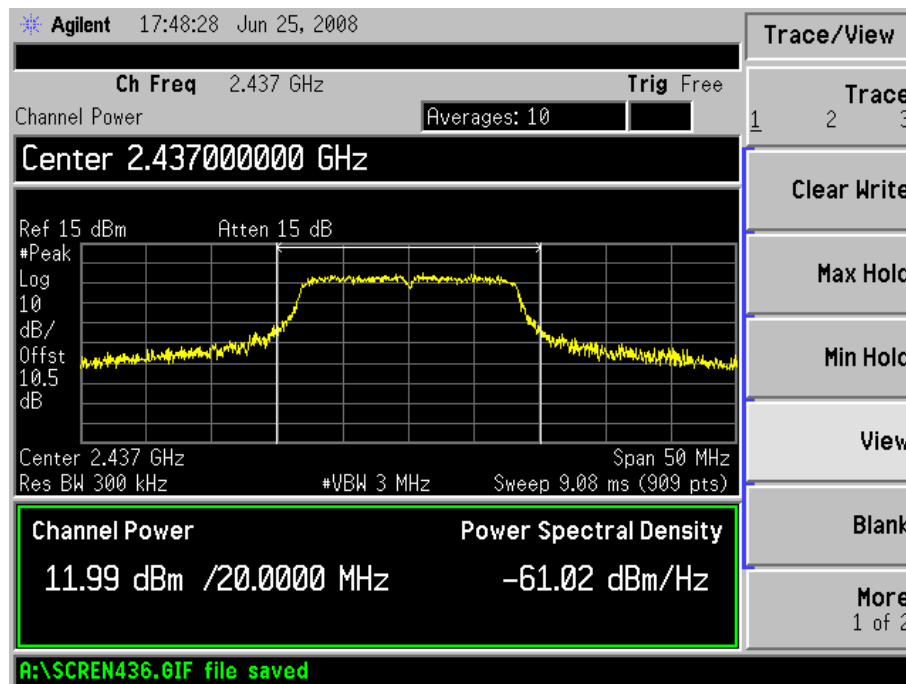


For 802.11g

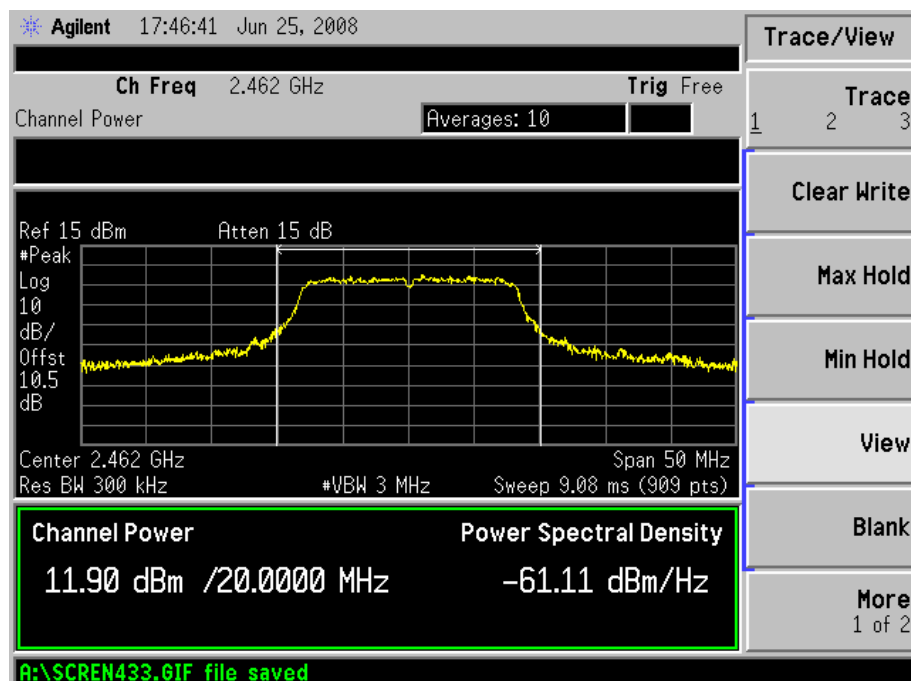
Low Channel:



Middle Channel:



High Channel:



## 8. FIELD STRENGTH OF SPURIOUS EMISSIONS

### 8.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is  $\pm 3.0$  dB.

### 8.2 Standard Applicable

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

Section 15.209:

30 - 88 MHz 40 dBuV/m @3M

88 -216 MHz 43.5 dBuV/m @3M

216 -960 MHz 46 dBuV/m @3M

Above 960 MHz 54dBuV/m @3M

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

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

### 8.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEM30	DE20133	2008-01-25	2009-01-24
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008-01-25	2009-01-24
Test Receiver	ROHDE&SCHWARZ	ESVB	825471/005	2008-01-25	2009-01-24
Amplifier	Agilent	8447F	3113A06717	2008-01-25	2009-01-24
RF Switch	EM	EMSW18	SW060023	2008-01-25	2009-01-24
Positioning Controller	C&C	CC-C-1F	N/A	2008-01-25	2009-01-24
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008-01-25	2009-01-24
Horn Antenna	SCHWARZBECK	BBHX 9120	9120	2008-01-25	2009-01-24

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

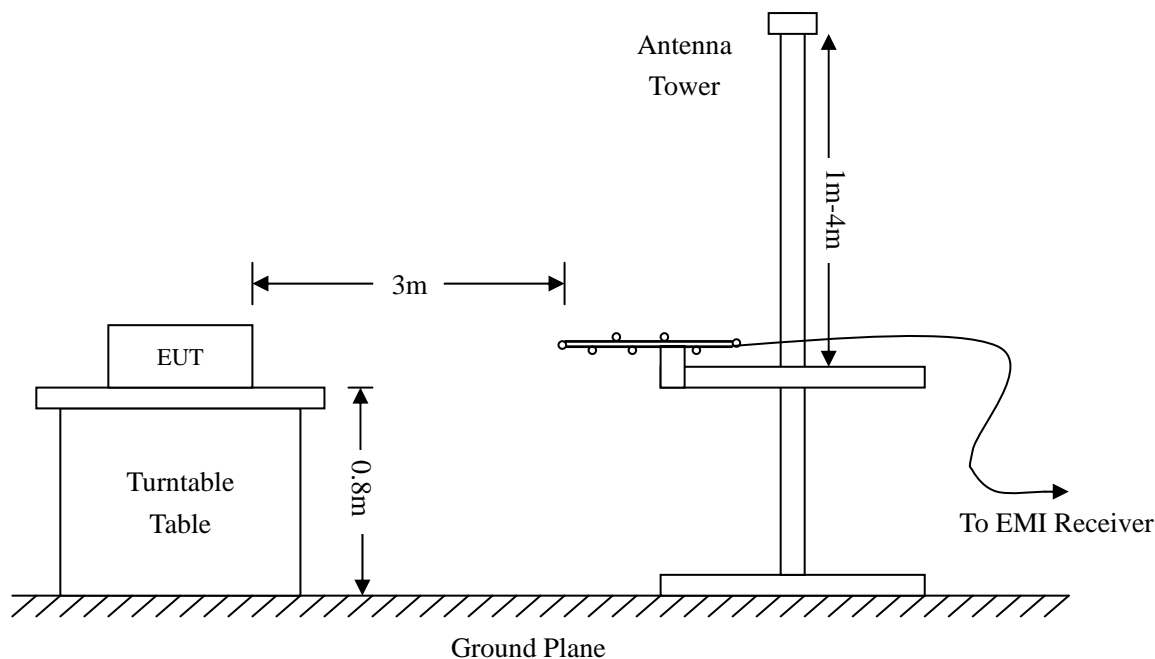


## 8.4 Test Procedure

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

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

The spacing between the peripherals was 10 cm.



## 8.5 Corrected Amplitude & Margin Calculation

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

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

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

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

## 8.6 Environmental Conditions

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

## 8.7 Summary of Test Results/Plots

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

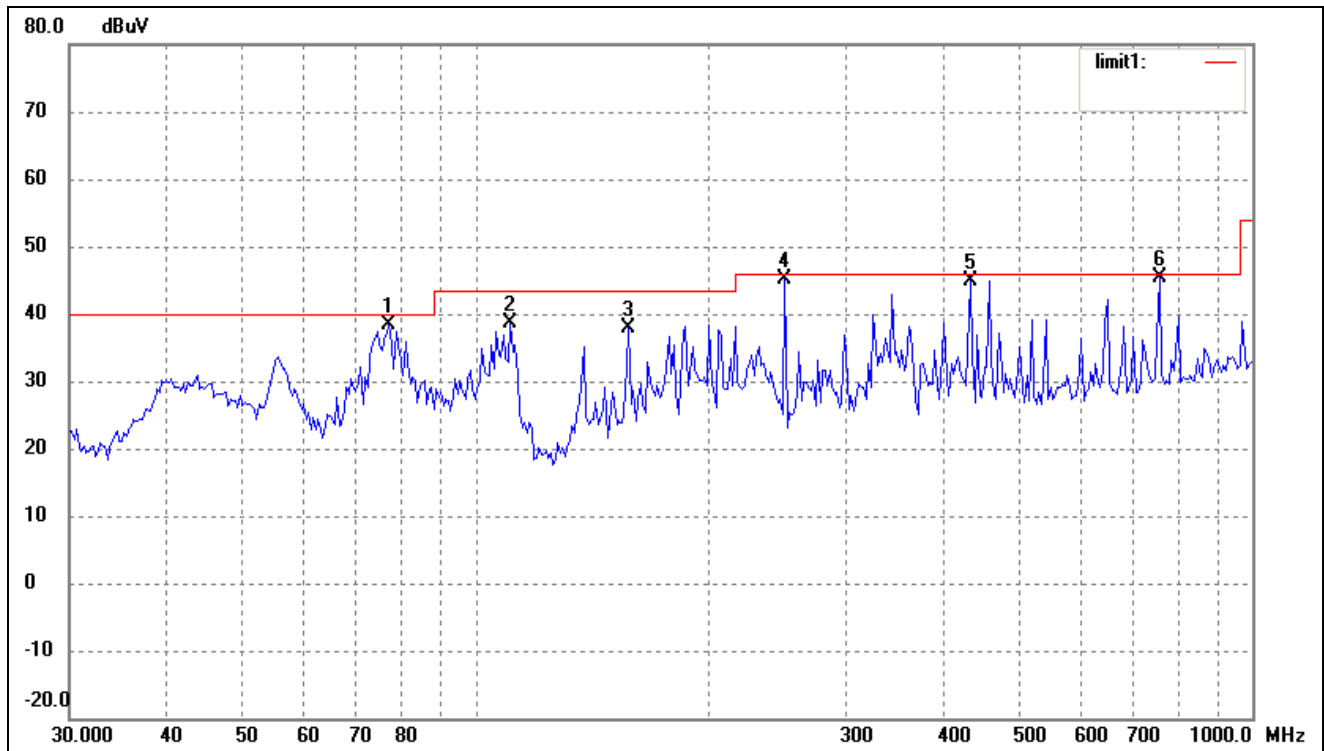
**-0.62 dB $\mu$ V at 760.2867 MHz in the **Horizontal** polarization, **30 MHz to 25 GHz**, **3Meters****

*Test Result/Plots:*

*Spurious Emission From 30 MHz to 1 GHz*

*Test mode: Transmitting*

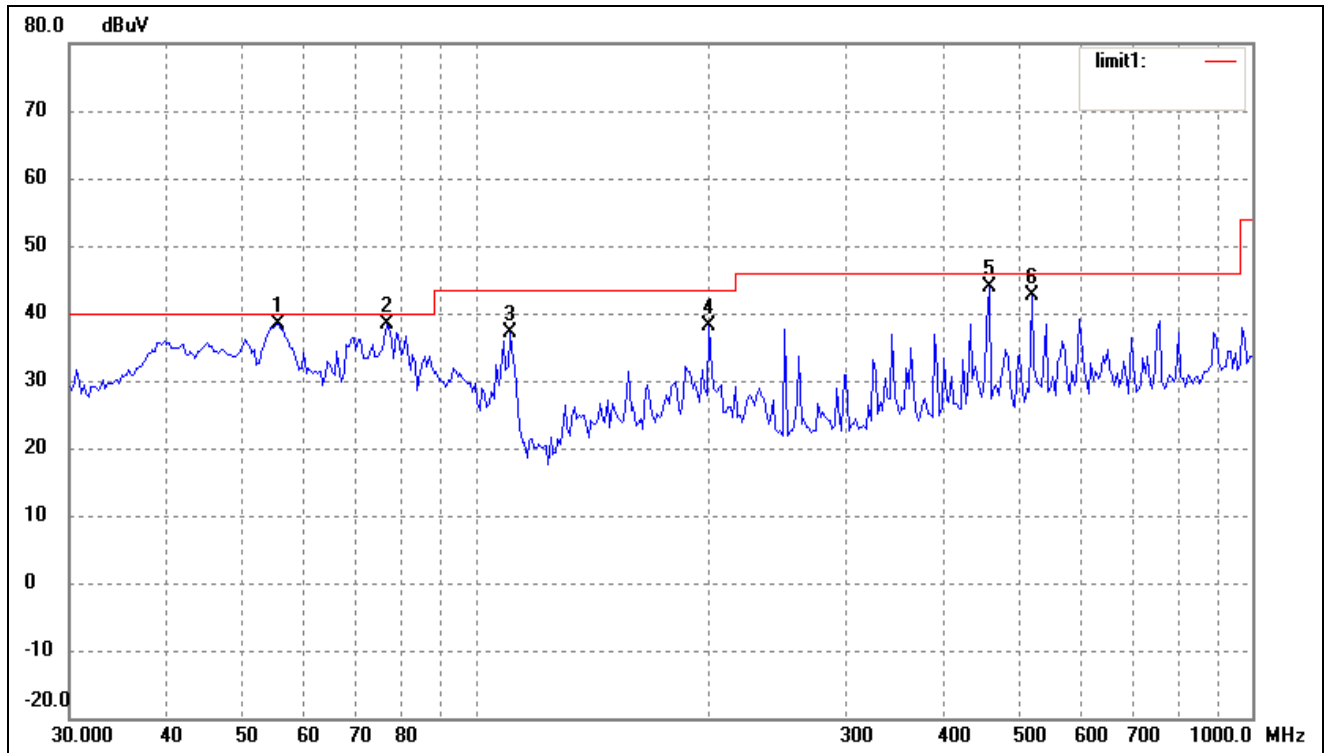
*Horizontal*



No.	Frequency (MHz)	Reading (dB $\mu$ V)	Correct Factor(dB)	Result (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Degree (° )	Height (cm)	Remark
1	77.4680	35.13	3.23	38.36	40.00	-1.64	25	100	QP
2	110.8581	31.29	7.45	38.74	43.50	-4.76	0	100	QP
3	157.5290	33.53	4.42	37.95	43.50	-5.55	124	100	QP
4	250.4859	36.53	8.70	45.23	46.00	-0.77	78	200	QP
5	433.3397	32.99	11.91	44.90	46.00	-1.10	360	100	QP
6	760.2867	30.27	15.11	45.38	46.00	-0.62	270	200	QP

Test mode: Transmitting

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Degree ( ° )	Height (cm)	Remark
1	55.6782	30.60	7.74	38.34	40.00	-1.66	0	100	QP
2	76.9256	35.13	3.14	38.27	40.00	-1.73	124	100	QP
3	110.8581	29.78	7.45	37.23	43.50	-6.27	78	200	QP
4	200.0432	31.62	6.58	38.20	43.50	-5.30	360	100	QP
5	458.3987	32.73	11.24	43.97	46.00	-2.03	270	200	QP
6	520.2079	29.95	12.76	42.71	46.00	-3.29	25	100	QP

*Spurious Emission Above 1GHz*

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (1G to 25GHz)										
4824.0	AV	44.8	270	V	34.1	5.2	33.0	51.1	54	-2.9
7236.0	AV	39.3	90	V	37.4	6.1	33.5	49.3	54	-4.7
4824.0	AV	42.9	60	H	34.1	5.2	33.0	49.2	54	-4.8
7236.0	AV	37.5	45	H	37.4	6.1	33.5	47.5	54	-6.5
4824.0	PK	53.3	90	V	34.1	5.2	33.0	59.6	74	-14.4
7236.0	PK	47.9	270	V	37.4	6.1	33.5	57.9	74	-16.1
4824.0	PK	50.2	45	H	34.1	5.2	33.0	56.5	74	-17.5
7236.0	PK	43.6	180	H	37.4	6.1	33.5	53.6	74	-20.4
2412.0	AV	98.6	60	H	29.1	3.7	34.0	97.4		(Fund.)
2412.0	AV	103.7	270	V	29.1	3.7	34.0	102.5		(Fund.)
2412.0	PK	102.7	45	H	29.1	3.7	34.0	101.5		(Fund.)
2412.0	PK	108.9	90	V	29.1	3.7	34.0	107.7		(Fund.)
Middle Channel (1G to 25GHz)										
4874.0	AV	44.2	90	V	34.1	5.2	33.0	50.5	54	-3.5
7311.0	AV	39.8	270	V	37.4	6.1	33.5	49.8	54	-4.2
4874.0	AV	41.6	45	H	34.1	5.2	33.0	47.9	54	-6.1
7311.0	AV	36.5	60	H	37.4	6.1	33.5	46.5	54	-7.5
4874.0	PK	51.2	270	V	34.1	5.2	33.0	57.5	74	-16.5
7311.0	PK	46.4	45	V	37.4	6.1	33.5	56.4	74	-17.6
4874.0	PK	49.0	180	H	34.1	5.2	33.0	55.3	74	-18.7
7311.0	PK	44.2	45	H	37.4	6.1	33.5	54.2	74	-19.8
2437.0	AV	98.4	45	H	29.1	3.7	34.0	97.2		(Fund.)
2437.0	AV	103.0	90	V	29.1	3.7	34.0	101.8		(Fund.)
2437.0	PK	103.9	90	H	29.1	3.7	34.0	102.7		(Fund.)
2437.0	PK	108.0	60	V	29.1	3.7	34.0	106.8		(Fund.)

High Channel (1G to 25GHz)										
4924.0	AV	46.0	90	V	34.1	5.2	33.0	52.3	54	-1.7
7386.0	AV	40.4	270	V	37.4	6.1	33.5	50.4	54	-3.6
4924.0	AV	43.8	60	H	34.1	5.2	33.0	50.1	54	-3.9
7386.0	AV	37.8	60	H	37.4	6.1	33.5	47.8	54	-6.2
4924.0	PK	53.0	270	V	34.1	5.2	33.0	59.3	74	-14.7
7386.0	PK	47.4	45	V	37.4	6.1	33.5	57.4	74	-16.6
4924.0	PK	49.2	180	H	34.1	5.2	33.0	55.5	74	-18.5
7386.0	PK	43.8	45	H	37.4	6.1	33.5	53.8	74	-20.2
2462.0	AV	99.5	45	H	29.1	3.7	34.0	98.3		(Fund.)
2462.0	AV	104.6	90	V	29.1	3.7	34.0	103.4		(Fund.)
2462.0	PK	104.7	90	H	29.1	3.7	34.0	103.5		(Fund.)
2462.0	PK	109.8	90	V	29.1	3.7	34.0	108.6		(Fund.)

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.

## 9. OUT OF BAND EMISSIONS

### 9.1 Standard Applicable

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

### 9.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEM30	DE20133	2008-01-25	2009-01-24
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008-01-25	2009-01-24
Test Receiver	ROHDE&SCHWARZ	ESVB	825471/005	2008-01-25	2009-01-24
Amplifier	Agilent	8447F	3113A06717	2008-01-25	2009-01-24
RF Switch	EM	EMSW18	SW060023	2008-01-25	2009-01-24
Positioning Controller	C&C	CC-C-1F	N/A	2008-01-25	2009-01-24
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008-01-25	2009-01-24
Horn Antenna	SCHWARZBECK	BBHX 9120	9120	2008-01-25	2009-01-24

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

### 9.3 Test Procedure

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

### 9.4 Environmental Conditions

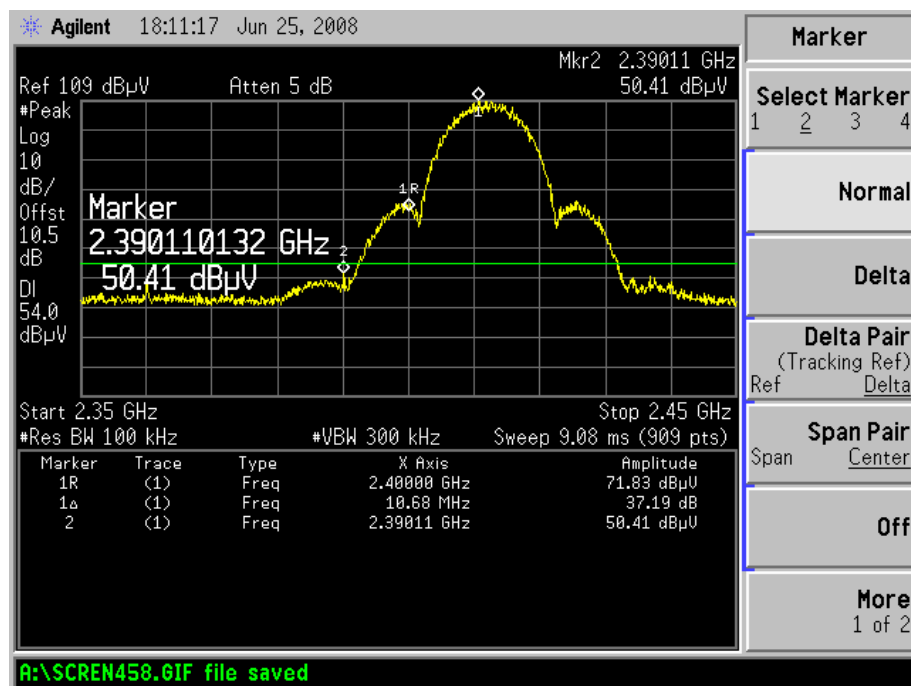
Temperature:	21° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

## 9.5 Summary of Test Results/Plots

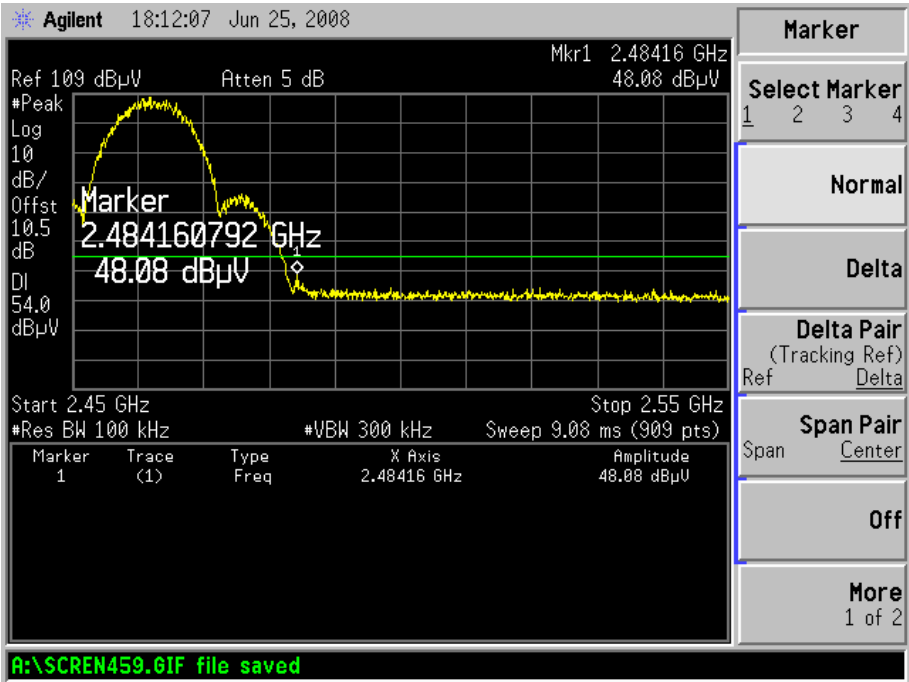
Test mode	Frequency MHz	Limit dBuV /dB	Result
802.11b	2390.00	<54dBuV	Pass
	2400.00	>20dB	Pass
	2483.50	<54dBuV	Pass
802.11g	2390.00	<54dBuV	Pass
	2400.00	>20dB	Pass
	2483.50	<54dBuV	Pass

### For 802.11b

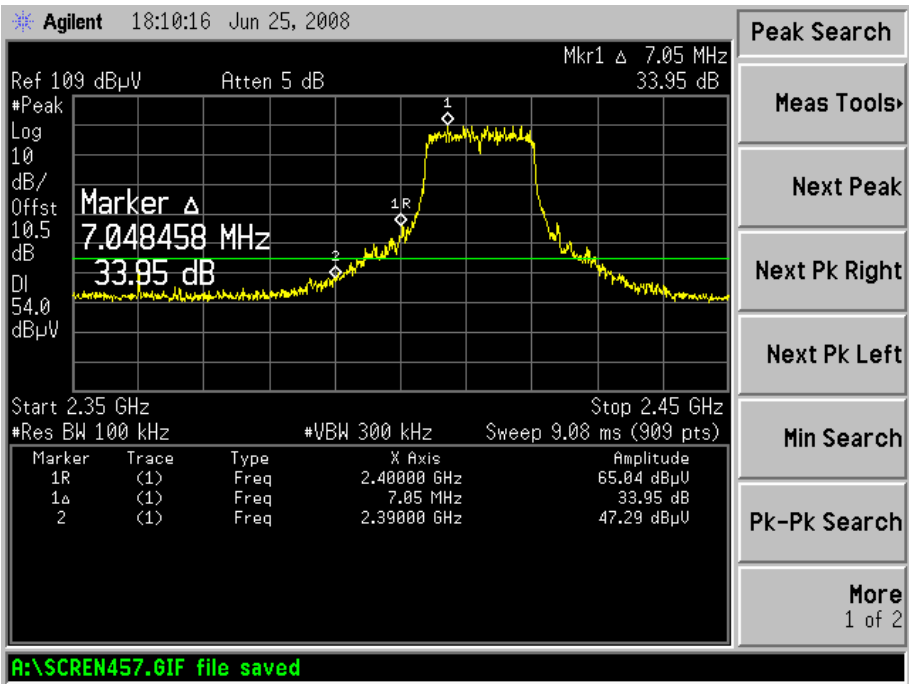
Lowest Bandedge



Highest Bandedge



For 802.11g  
Lowest Bandedge





Highest Bandedge

