



# FC

## Test Report

Product Name : MiniPCI BG 1W 2.4GHz  
Model No. : XBG24-30  
FCC ID : NS912XBG24-30  
IC : 3143A-12XBG2430

Applicant : Microhard Systems Inc.

Address : 150 Country Hills Landing NW Calgary Alberta Canada  
T3K 5P3

Date of Receipt : 29/03/2012  
Issued Date : 10/04/2012  
Report No. : 123S103R-RF-US-P05V01  
Report Version : V1.2

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, CNAS or any agency of the Government.

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## Test Report Certification

Issued Date : 10/04/2012

Report No. : 123S103R-RF-US-P05V01



Product Name : MiniPCI BG 1W 2.4GHz  
Applicant : Microhard Systems Inc.  
Address : 150 Country Hills Landing NW Calgary Alberta Canada  
T3K 5P3  
Manufacturer : Microhard Systems Inc.  
Address : 150 Country Hills Landing NW Calgary Alberta Canada  
T3K 5P3  
Model No. : XBG24-30  
FCC ID : NS912XBG24-30  
IC : 3143A-12XBG2430  
EUT Voltage : DC 3.3V  
Trade Name : Microhard  
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2008  
ANSI C63.4: 2009; ANSI C63.10: 2009  
Industry Canada RSS-Gen Issue 3/RSS-210 Issue 8  
Test Result : Complied  
Performed Location : Suzhou EMC Laboratory  
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FCC Registration Number: 800392; IC Lab Code: 4075B

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We, **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

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<b>Germany</b>	<b>:</b>	<b>TUV Rheinland</b>
<b>Norway</b>	<b>:</b>	<b>Nemko, DNV</b>
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<b>China</b>	<b>:</b>	<b>CNAS</b>

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site :<http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site :  
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**TABLE OF CONTENTS**

Description	Page
1. General Information .....	6
1.1. EUT Description .....	6
1.2. Mode of Operation .....	8
1.3. Tested System Details .....	9
1.4. Configuration of Tested System .....	10
1.5. EUT Exercise Software .....	11
2. Technical Test .....	12
2.1. Summary of Test Result .....	12
2.2. Test Environment .....	14
3. Conducted Emission .....	15
3.1. Test Equipment .....	15
3.2. Test Setup .....	15
3.3. Limit.....	16
3.4. Test Procedure .....	16
3.5. Uncertainty .....	16
3.6. Test Result .....	17
3.7. Test Photograph .....	23
4. Radiated Emission.....	24
4.1. Test Equipment .....	24
4.2. Test Setup .....	25
4.3. Limit.....	26
4.4. Test Procedure .....	26
4.5. Uncertainty .....	26
4.6. Test Result .....	27
4.7. Test Photograph .....	63
5. RF Antenna Conducted Spurious.....	65
5.1. Test Equipment .....	67
5.2. Test Setup .....	67
5.3. Limit.....	67
5.4. Test Procedure .....	68
5.5. Uncertainty .....	68
5.6. Test Result .....	69
6. Radiated Emission Band Edge .....	73
6.1. Test Equipment .....	73
6.2. Test Setup .....	74
6.3. Limit.....	74
6.4. Test Procedure .....	74

- 6.5. Uncertainty ..... 74
- 6.6. Test Result ..... 75
- 7. Operation Frequency Range of 20dB Bandwidth ..... 91
  - 7.1. Test Equipment ..... 91
  - 7.2. Test Setup ..... 91
  - 7.3. Limit..... 91
  - 7.4. Test Procedure ..... 91
  - 7.5. Uncertainty ..... 91
  - 7.6. Test Result ..... 92
- 8. Occupied Bandwidth ..... 96
  - 8.1. Test Equipment ..... 96
  - 8.2. Test Setup ..... 96
  - 8.3. Limit..... 96
  - 8.4. Test Procedure ..... 97
  - 8.5. Uncertainty ..... 97
  - 8.6. Test Result ..... 98
- 9. Power Output..... 106
  - 9.1. Test Equipment ..... 106
  - 9.2. Test Setup ..... 106
  - 9.3. Limit..... 106
  - 9.4. Test Procedure ..... 106
  - 9.5. Uncertainty ..... 107
  - 9.6. Test Result ..... 108
- 10. Power Spectral Density ..... 112
  - 10.1. Test Equipment..... 112
  - 10.2. Test Setup ..... 112
  - 10.3. Limit..... 112
  - 10.4. Test Procedure ..... 113
  - 10.5. Uncertainty ..... 113
  - 10.6. Test Result..... 114

## 1. General Information

### 1.1. EUT Description

Product Name	MiniPCI BG 1W 2.4GHz
Trade Name	Microhard
Model No.	XBG24-30
FCC ID	NS912XBG24-30
IC	3143A-12XBG2430
Working Voltage	DC 3.3V
Frequency Range	802.11b/g: 2412 - 2462 MHz
Channel Number	802.11b/g: 11
Type of Modulation	802.11b: DSSS
	802.11g: OFDM
Data Rate	802.11b: 1/2/5.5/11 Mbps
	802.11g: 6/9/12/18/24/36/48/54 Mbps
Channel Control	Auto
Antenna Type	Dipole
Antenna Gain	2.0 dBi

802.11b/g Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz	04	2427 MHz
05	2432 MHz	06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	10	2457 MHz	11	2462 MHz	N/A	N/A

**802.11b/g Antenna List**

Antenna	Manufacturer	Model No.	Peak Gain
Combined Antenna	Exceltek Electronics (Kunshan) Co.,Ltd	C0053-ANG0004	2.0 dBi

**1.2. Mode of Operation**

Quietek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmit by 802.11b
Mode 2: Transmit by 802.11g

Note: 1.This copy report was based on Quietek report No: 089S060.

2. This report only increased the test data of 99% Occupied Bandwidth.

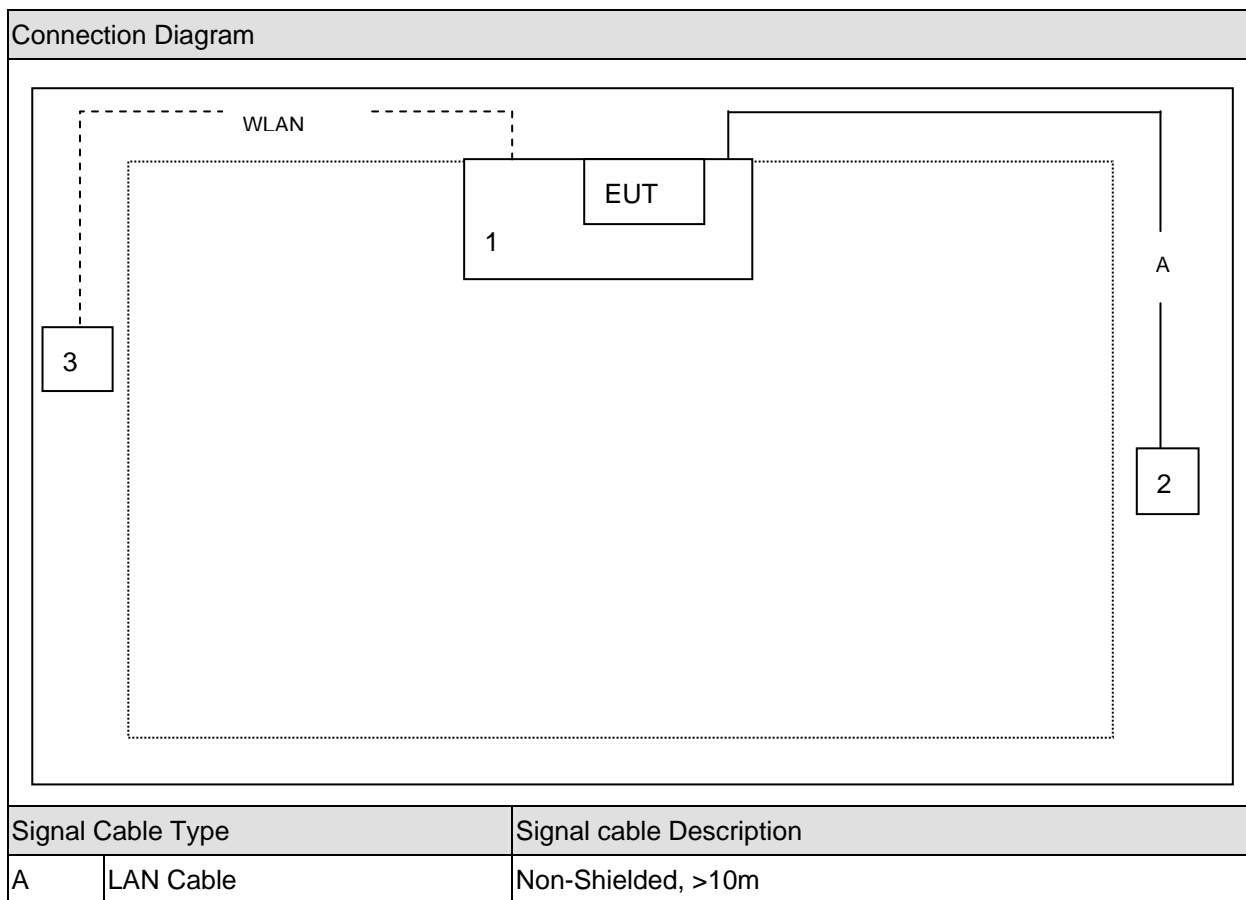


**1.3. Tested System Details**

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Router Plant	Compex	C-5HPWE	N/A	N/A
2 Notebook	DELL	PP19L	JH097 A01	Power by adapter
3 MacBook	Apple	MB061CH	W8732B4TZ5V	Power by adapter

1.4. Configuration of Tested System



**1.5. EUT Exercise Software**

1	Setup the EUT and simulators as shown on above
2	Turn on the power of equipment and run control software “bricks” provided by applicant.
3	Select wireless mode bandwidth and channel for testing, click the “Start Transmit” button.

## 2. Technical Test

### 2.1. Summary of Test Result

- No deviations from the test standards  
 Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.209	Yes	No
RF Antenna Conducted Spurious	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2008 15.247(d)	Yes	No
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2008 15.215(c)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(2)	Yes	No
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(b)(3)	Yes	No
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(e)	Yes	No

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	RSS-Gen Issue 3 December 2010 Section 7.2.2	Yes	No
Radiated Emission	RSS-210 Issue 8 December 2010 Section 2.7 Table 2 and Table 3	Yes	No
RF Antenna Conducted Spurious	RSS-210 Issue 8 December 2010 Section A8.5	Yes	No
Radiated Emission Band Edge	RSS-210 Issue 8 December 2010 Section A8.5	Yes	No
Occupied Bandwidth	RSS-Gen Issue 3 December 2010 Section 4.6.1 and 4.6.2 RSS-210 Issue 8 December 2010 Section A8.2(1)	Yes	No
Power Output	RSS-210 Issue 8 December 2010 Section A8.4(4)	Yes	No
Power Spectral Density	RSS-210 Issue 8 December 2010 Section A8.2(2)	Yes	No

**2.2. Test Environment**

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

### 3. Conducted Emission

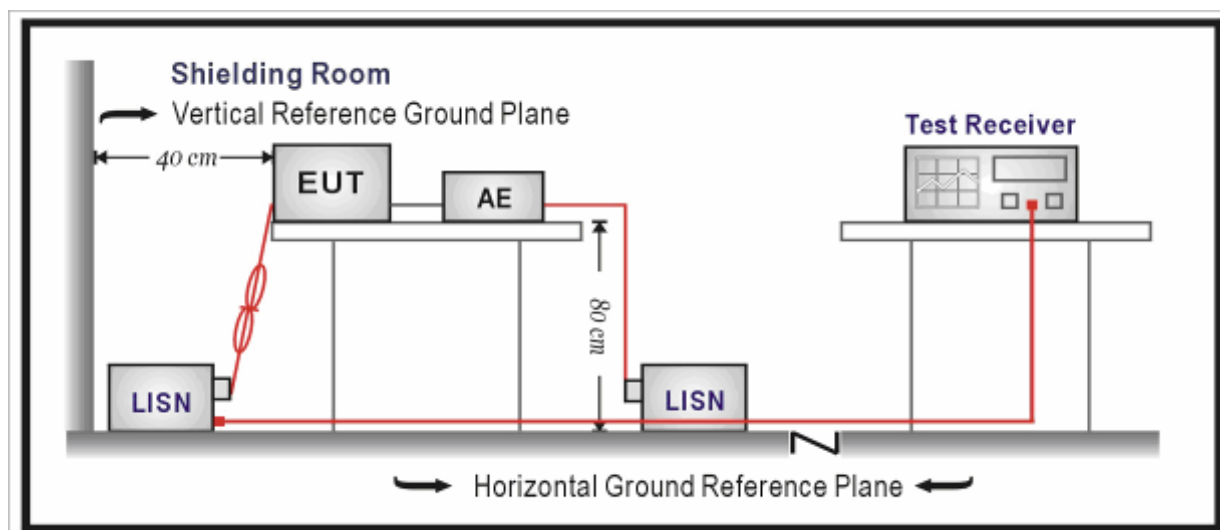
#### 3.1. Test Equipment

Conducted Emission / SR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100726	2008/06/28
Two-Line V-Network	R&S	ENV216	100013	2008/06/28
Two-Line V-Network	R&S	ENV216	100014	2008/06/28
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2007/11/25
50ohm Termination	SHX	TF2	07081401	2007/10/19
Coaxial Cable	Luthi	RG214	519358	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH004	2008/03/31

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

#### 3.2. Test Setup



**3.3. Limit**

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

**3.4. Test Procedure**

The EUT was setup according to ANSI C63.4, 2009 and tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

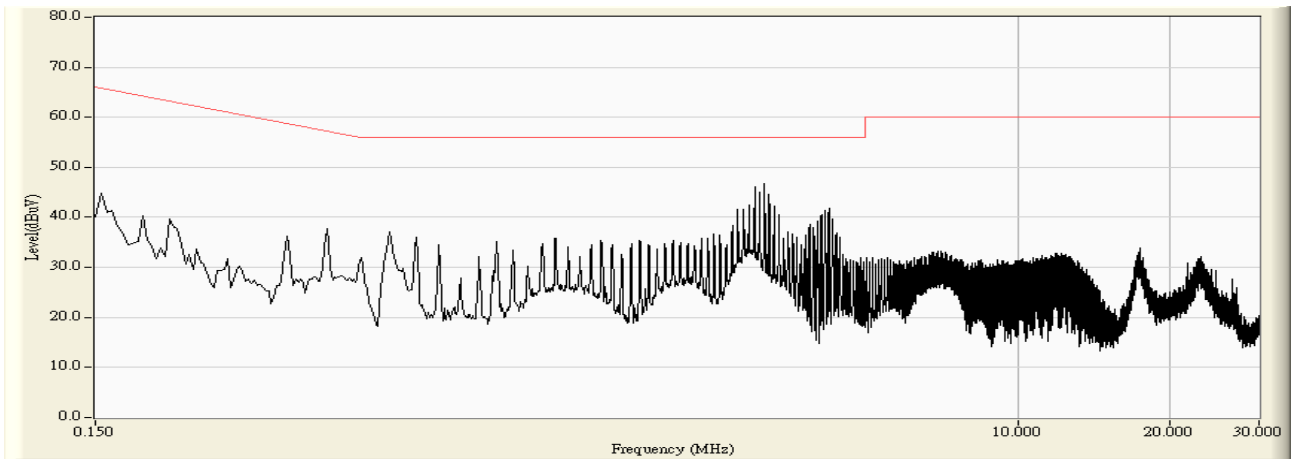
**3.5. Uncertainty**

The measurement uncertainty is defined as  $\pm 2.02$  dB

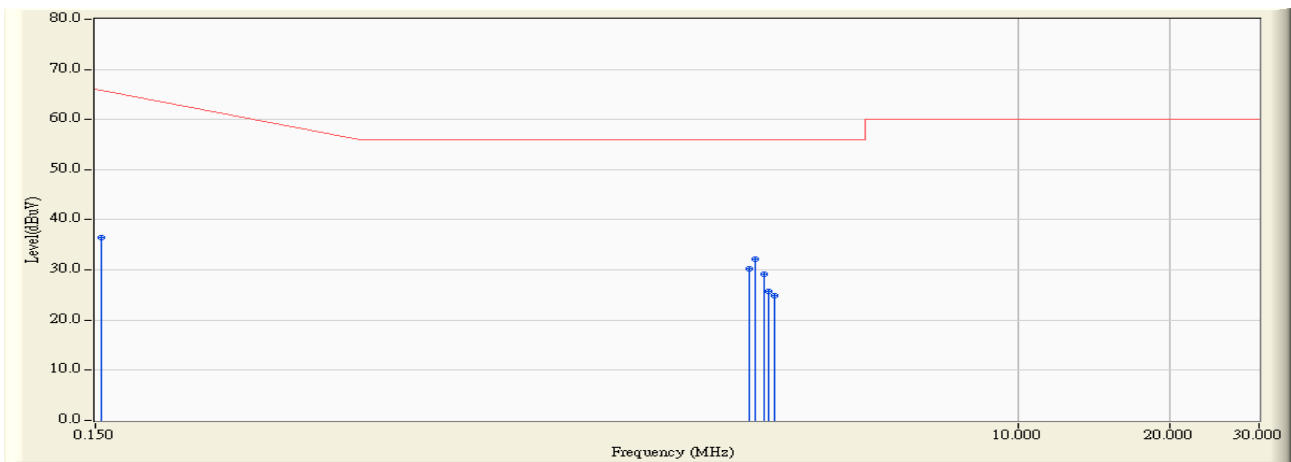


**3.6. Test Result**

Engineer : Sky	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/09/18 - 09:45
Limit : FCC_Part15.207_00M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : ENV216_100014(0.009-30MHz) - Line1
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b



Engineer : Sky	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/09/18 - 09:45
Limit : FCC_Part15.207_00M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : ENV216_100014(0.009-30MHz) - Line1
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b

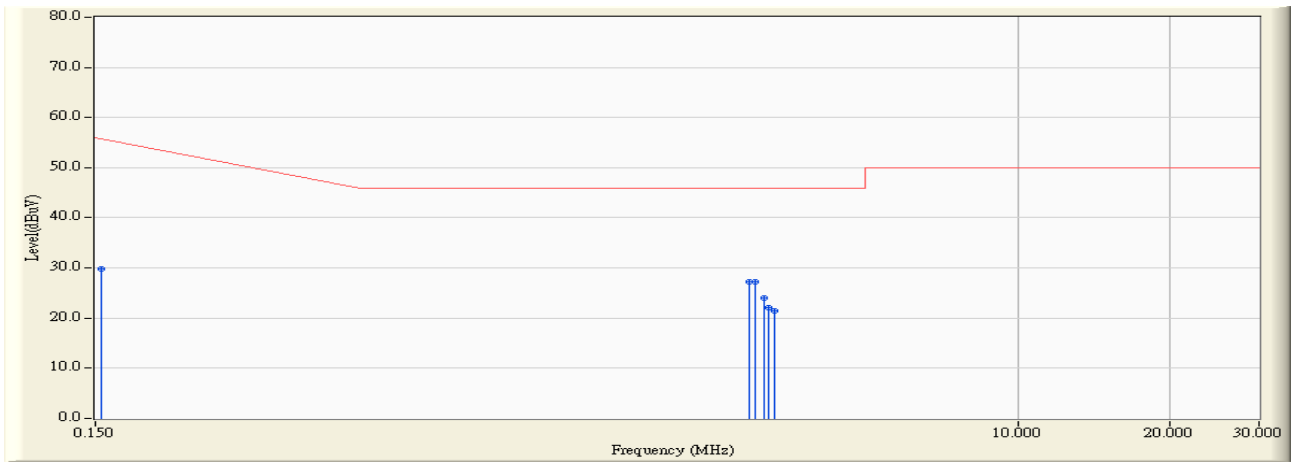


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	0.154	10.187	26.200	36.387	-29.499	65.886	QUASIPeAK
2	2.942	9.740	20.600	30.340	-25.660	56.000	QUASIPeAK
3	* 3.018	9.753	22.500	32.253	-23.747	56.000	QUASIPeAK
4	3.158	9.760	19.400	29.160	-26.840	56.000	QUASIPeAK
5	3.226	9.763	15.900	25.663	-30.337	56.000	QUASIPeAK
6	3.294	9.770	15.100	24.870	-31.130	56.000	QUASIPeAK

**Note:**

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Sky	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/09/18 - 09:45
Limit : FCC_Part15.207_00M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : ENV216_100014(0.009-30MHz) - Line1
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b

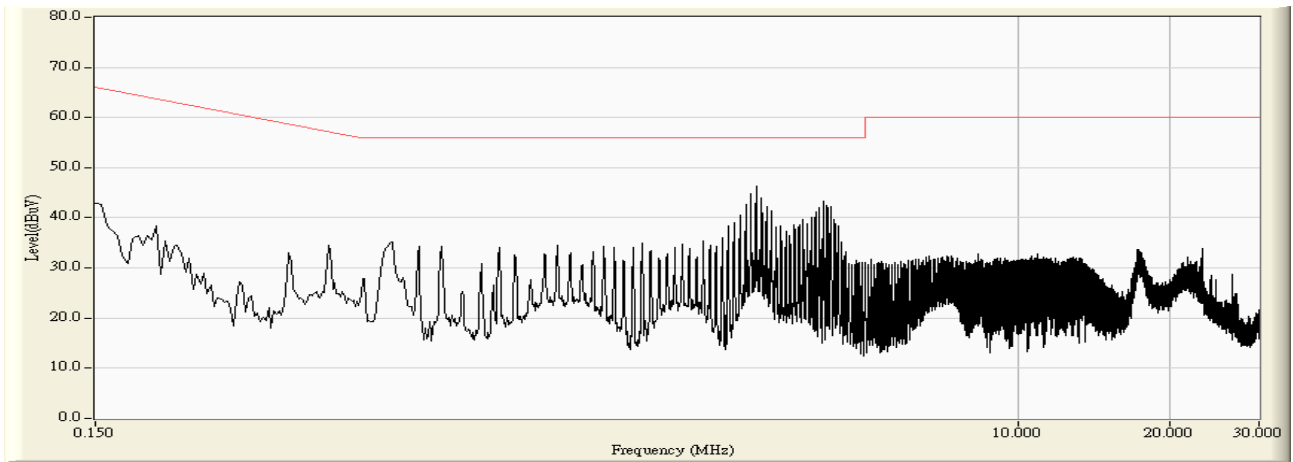


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.154	10.187	19.700	29.887	-25.999	55.886	AVERAGE
2	*	2.942	9.740	17.500	27.240	-18.760	46.000	AVERAGE
3		3.018	9.753	17.400	27.153	-18.847	46.000	AVERAGE
4		3.158	9.760	14.300	24.060	-21.940	46.000	AVERAGE
5		3.226	9.763	12.400	22.163	-23.837	46.000	AVERAGE
6		3.294	9.770	11.700	21.470	-24.530	46.000	AVERAGE

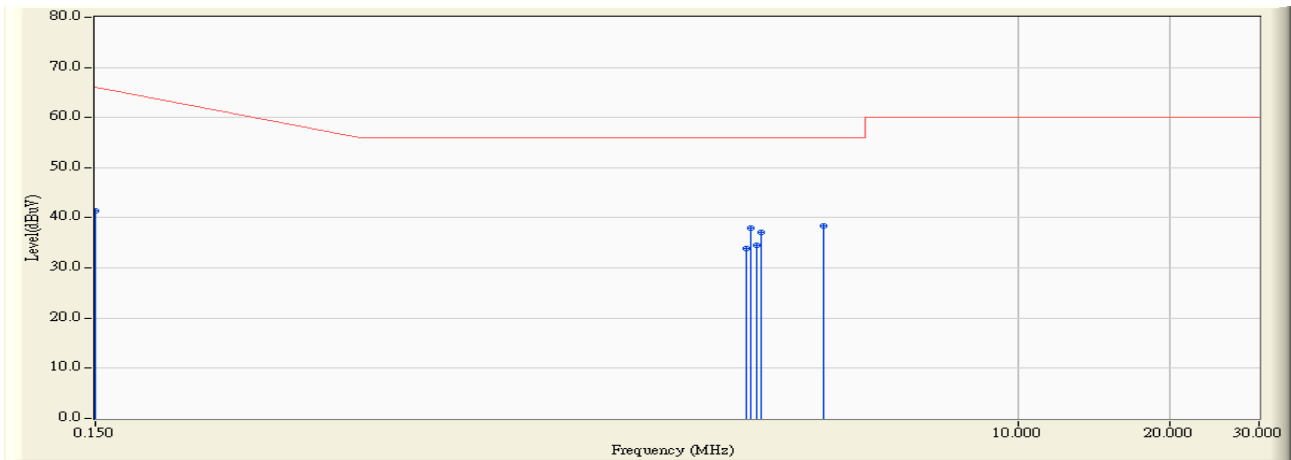
**Note:**

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

<b>Engineer : Sky</b>	
<b>Site : SR-1 (Conducted Emission and Power Disturbance Test)</b>	<b>Time : 2008/09/18 - 09:45</b>
<b>Limit : FCC_Part15.207_00M_QP</b>	<b>Margin : 0</b>
<b>EUT : MiniPCI BG 1W 2.4GHz</b>	<b>Probe : ENV216_100014(0.009-30MHz) - Line2</b>
<b>Power : AC 120V/60Hz</b>	<b>Note : Mode 1: Transmit by 802.11b</b>



Engineer : Sky	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/09/18 - 09:45
Limit : FCC_Part15.207_00M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : ENV216_100014(0.009-30MHz) - Line2
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b

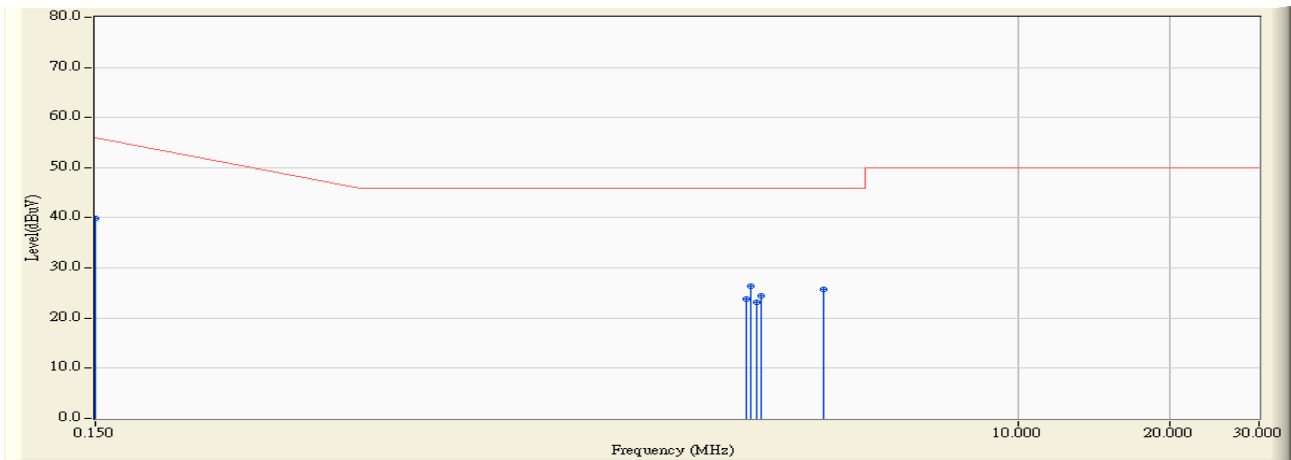


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	0.150	10.006	31.400	41.406	-24.594	66.000	QUASIPeAK
2	2.898	9.680	24.200	33.880	-22.120	56.000	QUASIPeAK
3	2.970	9.680	28.300	37.980	-18.020	56.000	QUASIPeAK
4	3.038	9.690	24.800	34.490	-21.510	56.000	QUASIPeAK
5	3.114	9.690	27.500	37.190	-18.810	56.000	QUASIPeAK
6	* 4.130	9.710	28.700	38.410	-17.590	56.000	QUASIPeAK

**Note:**

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Sky	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/09/18 - 09:45
Limit : FCC_Part15.207_00M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : ENV216_100014(0.009-30MHz) - Line2
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.150	10.006	29.800	39.806	-16.194	56.000	AVERAGE
2		2.898	9.680	14.100	23.780	-22.220	46.000	AVERAGE
3		2.970	9.680	16.600	26.280	-19.720	46.000	AVERAGE
4		3.038	9.690	13.500	23.190	-22.810	46.000	AVERAGE
5		3.114	9.690	14.700	24.390	-21.610	46.000	AVERAGE
6		4.130	9.710	16.000	25.710	-20.290	46.000	AVERAGE

**Note:**

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

## 4. Radiated Emission

### 4.1. Test Equipment

Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2008/06/11
EMI Test Receiver	R&S	ESCI	100573	2008/05/10
Preamplifier	Quietek	AP-025C	QT-AP003	2007/11/25
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Bilog Type Antenna	Schaffner	CBL6112B	2932	2007/11/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/06/28
High-Pass Filter	Wainwright	WHKX2.8/18G-12SS	SN1	2008/03/03
Band Reject Filter	Wainwright	WRCG2400/2485-2375 /2510-60/11SS	SN9	2008/03/03
High-Pass Filter	Wainwright	WHKX7.0/18G-8SS	SN16	2008/03/03
Low-Pass Filter	Wainwright	WLKS4500-9SS	SN2	2008/03/03
50ohm Coaxial Switch	Anritsu	MP59B	6200447304	2007/11/25
Coaxial Cable	Huber+Suhner	AC2-C	04	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2008/03/31

Radiated Emission / AC-3

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2008/04/24
EMI Test Receiver	R&S	ESCI	100176	2007/11/15
Preamplifier	Quietek	AP-025C	QT-AP004	2007/11/25
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Bilog Type Antenna	Schaffner	CBL6112D	22254	2007/11/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/06/28
High-Pass Filter	Wainwright	WHKX2.8/18G-12SS	SN1	2008/03/03
Band Reject Filter	Wainwright	WRCG2400/2485-2375 /2510-60/11SS	SN9	2008/03/03
High-Pass Filter	Wainwright	WHKX7.0/18G-8SS	SN16	2008/03/03
Low-Pass Filter	Wainwright	WLKS4500-9SS	SN2	2008/03/03
50ohm Coaxial Switch	Anritsu	MP59B	6200464463	2007/11/25
Coaxial Cable	Huber+Suhner	AC2-C	05	2007/11/25

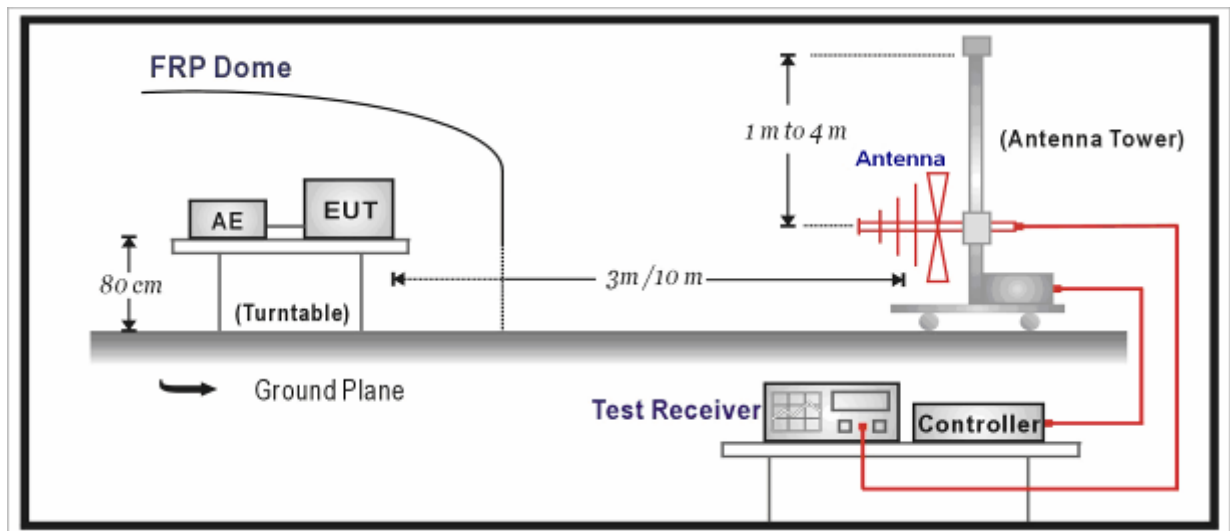
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2008/03/31
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Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

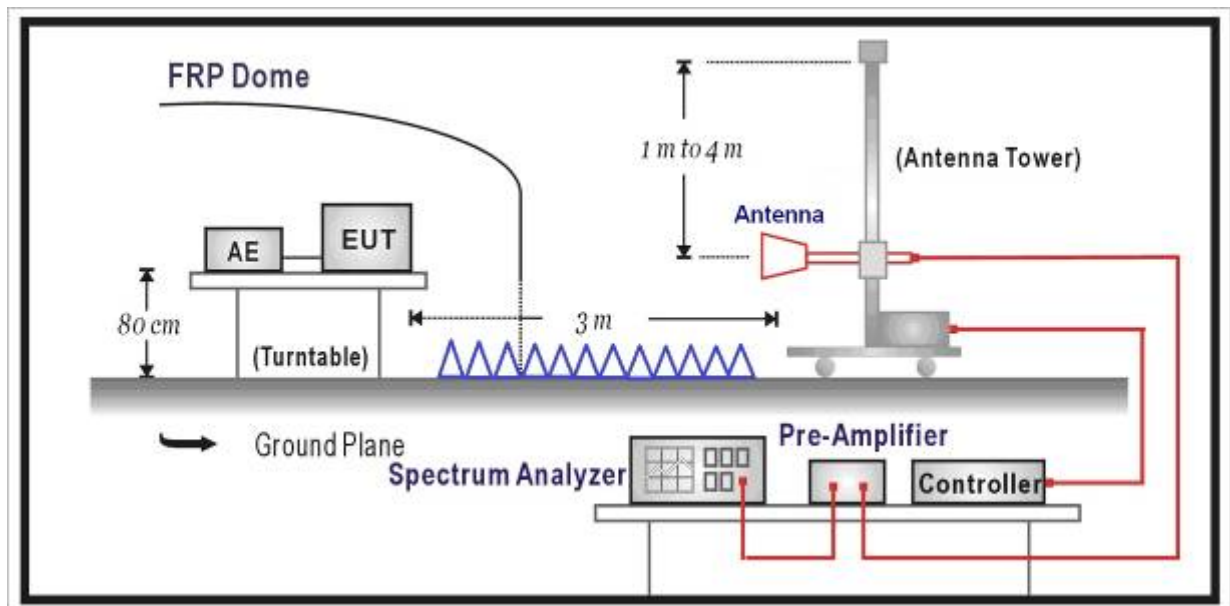
Note 2: The test instruments marked with "X" are used to measure the final test results.

## 4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:





**4.3. Limit**

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

**4.4. Test Procedure**

The EUT was setup according to ANSI C63.4, 2009 and tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

The frequency range from 30MHz to 10th harmonic is checked.

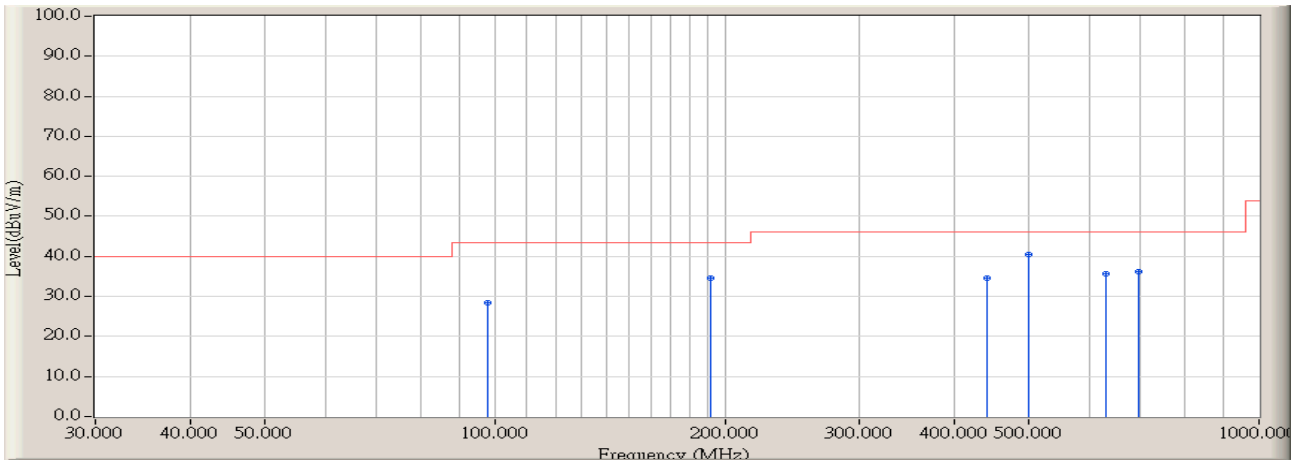
Note: When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the “cone of radiation” of EUT. The 3dB beamwidth is 10~60 degrees for H-plane and 10~90 degrees for E-plane.

**4.5. Uncertainty**

The measurement uncertainty above 1G is defined as ± 3.9 dB  
 below 1G is defined as ± 3.8 dB

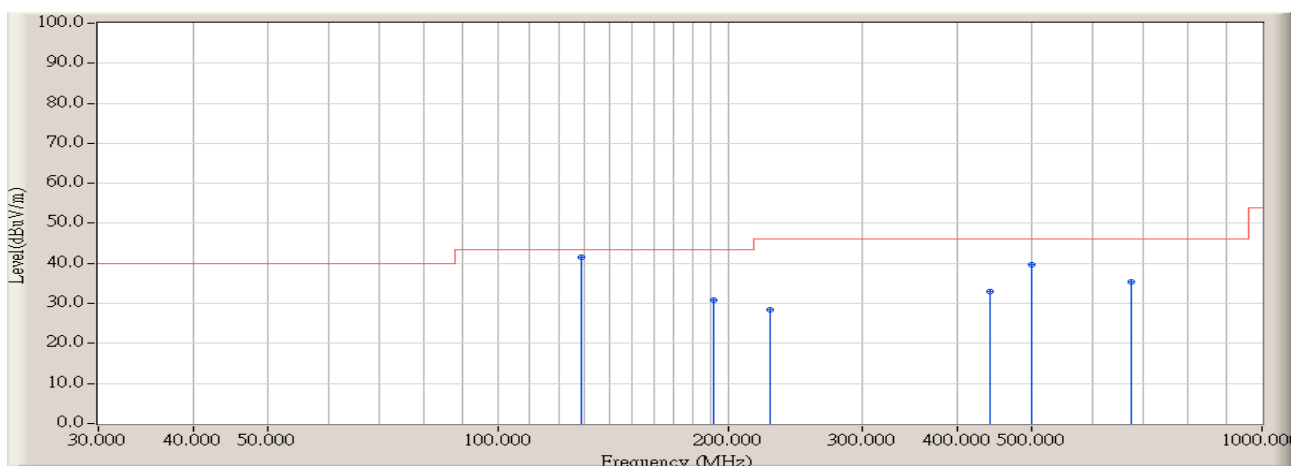
4.6. Test Result

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:39
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz



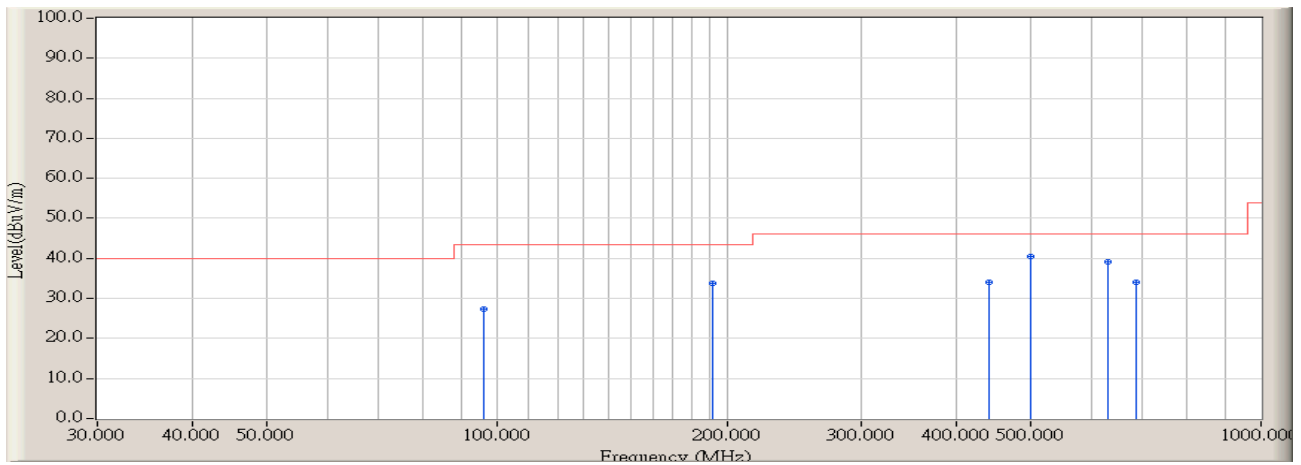
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	97.900	-11.793	40.294	28.501	-15.019	43.520	QUASIPeAK	226.300	79.500
2	191.667	-11.284	45.746	34.462	-9.058	43.520	QUASIPeAK	206.400	98.300
3	440.633	-4.605	39.097	34.491	-11.529	46.020	QUASIPeAK	108.900	43.100
4	* 500.450	-3.384	43.760	40.376	-5.644	46.020	QUASIPeAK	211.700	96.800
5	631.400	-0.952	36.714	35.762	-10.258	46.020	QUASIPeAK	243.000	76.400
6	696.067	0.357	35.906	36.264	-9.756	46.020	QUASIPeAK	119.500	48.500

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:39
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz



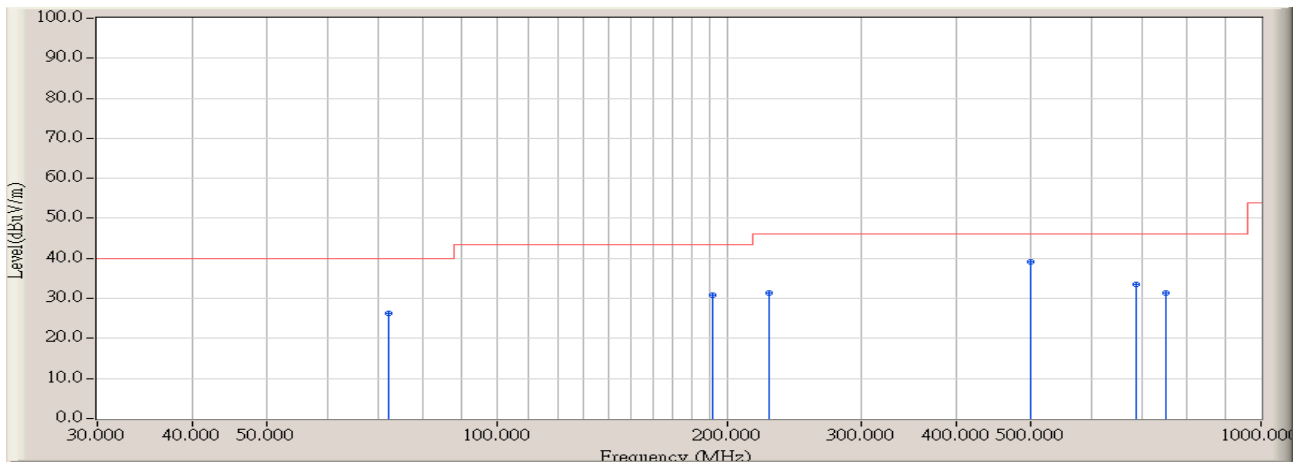
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	128.617	-9.483	50.955	41.472	-2.048	43.520	QUASIPeAK	100.000	79.700
2		191.667	-11.284	42.102	30.818	-12.702	43.520	QUASIPeAK	100.000	46.900
3		227.233	-8.954	37.396	28.441	-17.579	46.020	QUASIPeAK	100.000	24.200
4		440.633	-4.605	37.652	33.046	-12.974	46.020	QUASIPeAK	100.000	47.600
5		500.450	-3.384	42.988	39.604	-6.416	46.020	QUASIPeAK	100.000	80.200
6		673.433	0.282	35.186	35.468	-10.552	46.020	QUASIPeAK	118.100	169.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:40
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2437MHz



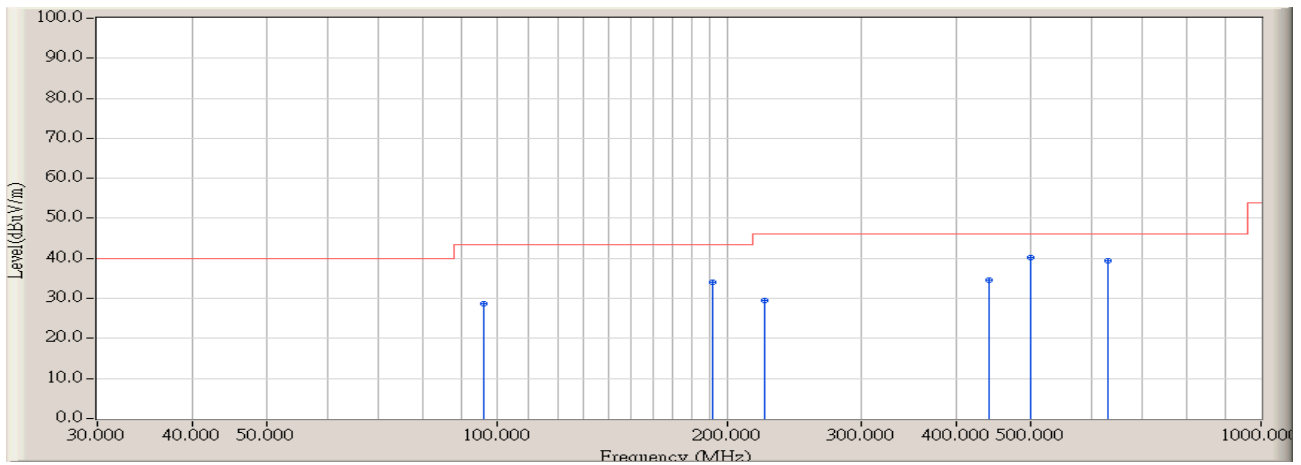
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	96.283	-11.976	39.405	27.429	-16.091	43.520	QUASIPeAK	224.000	75.200
2	191.667	-11.284	45.189	33.905	-9.615	43.520	QUASIPeAK	206.000	78.500
3	440.633	-4.605	38.728	34.122	-11.898	46.020	QUASIPeAK	163.000	115.000
4	* 500.450	-3.384	43.781	40.397	-5.623	46.020	QUASIPeAK	113.500	96.500
5	629.783	-0.952	40.218	39.267	-6.753	46.020	QUASIPeAK	205.000	41.000
6	686.367	0.236	33.690	33.925	-12.095	46.020	QUASIPeAK	104.900	108.500

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:40
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2437MHz



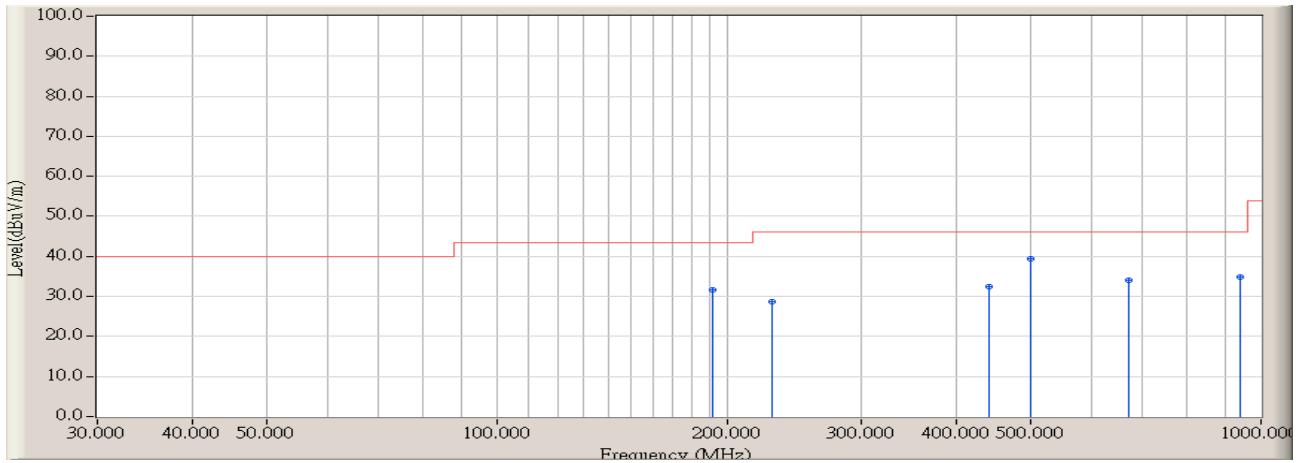
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	72.033	-14.436	40.757	26.321	-13.679	40.000	QUASIPeAK	120.300	114.600
2	191.667	-11.284	42.025	30.741	-12.779	43.520	QUASIPeAK	100.000	93.800
3	227.233	-8.954	40.198	31.243	-14.777	46.020	QUASIPeAK	133.500	205.400
4	* 500.450	-3.384	42.597	39.213	-6.807	46.020	QUASIPeAK	100.000	45.800
5	686.367	0.236	33.321	33.556	-12.464	46.020	QUASIPeAK	162.500	253.000
6	749.417	1.434	29.991	31.425	-14.595	46.020	QUASIPeAK	113.200	68.400

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:40
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz



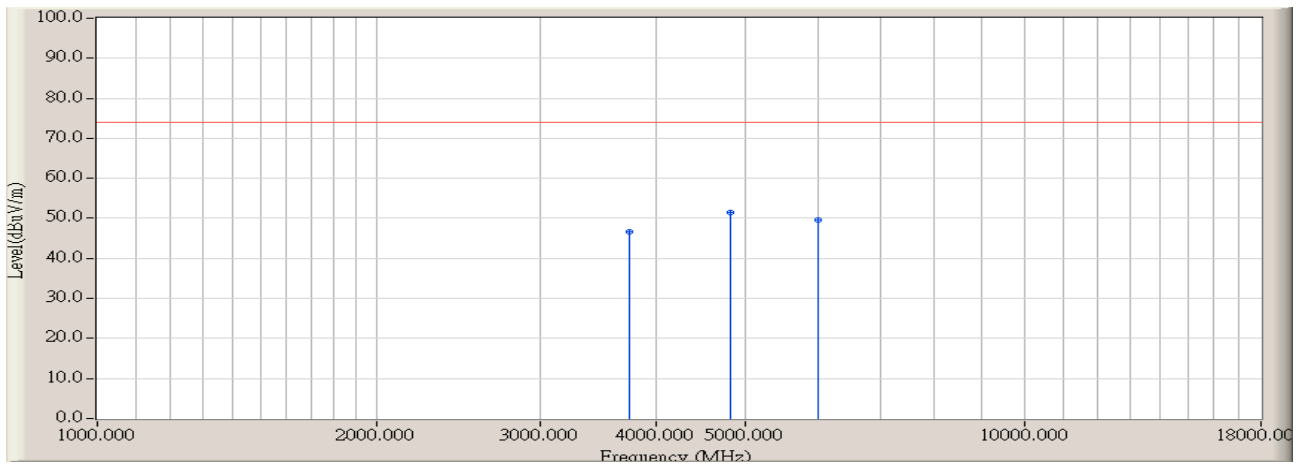
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	96.283	-11.976	40.649	28.673	-14.847	43.520	QUASIPeAK	100.000	163.500
2	191.667	-11.284	45.410	34.126	-9.394	43.520	QUASIPeAK	105.400	67.500
3	224.000	-8.608	38.098	29.490	-16.530	46.020	QUASIPeAK	100.000	82.500
4	440.633	-4.605	39.147	34.541	-11.479	46.020	QUASIPeAK	114.200	205.000
5	* 500.450	-3.384	43.618	40.234	-5.786	46.020	QUASIPeAK	114.500	80.000
6	629.783	-0.952	40.433	39.482	-6.538	46.020	QUASIPeAK	100.000	152.800

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:40
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	191.667	-11.284	42.901	31.617	-11.903	43.520	QUASIPeAK	174.000	12.000
2	228.850	-9.159	37.749	28.590	-17.430	46.020	QUASIPeAK	184.000	124.000
3	440.633	-4.605	36.933	32.327	-13.693	46.020	QUASIPeAK	206.000	84.000
4	* 500.450	-3.384	42.663	39.279	-6.741	46.020	QUASIPeAK	194.000	46.000
5	671.817	0.223	33.812	34.035	-11.985	46.020	QUASIPeAK	144.000	19.000
6	938.567	3.536	31.384	34.920	-11.100	46.020	QUASIPeAK	167.000	102.000

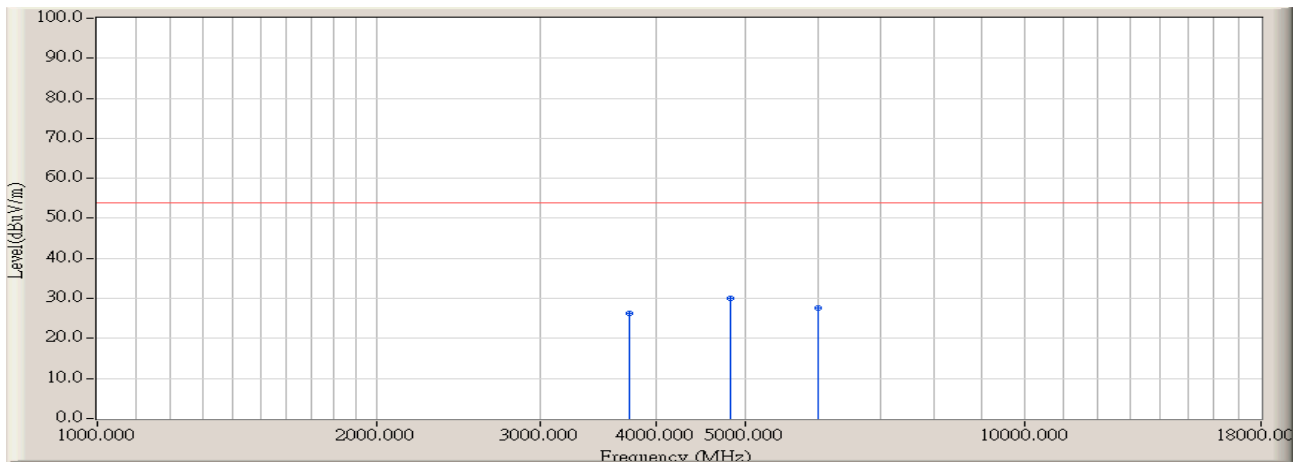
Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:52
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3748.333	-0.233	46.804	46.571	-27.399	73.970	PEAK	150.000	224.300
2	* 4825.000	3.610	47.839	51.449	-22.521	73.970	PEAK	148.000	14.200
3	5986.667	5.699	43.928	49.628	-24.342	73.970	PEAK	155.000	234.500

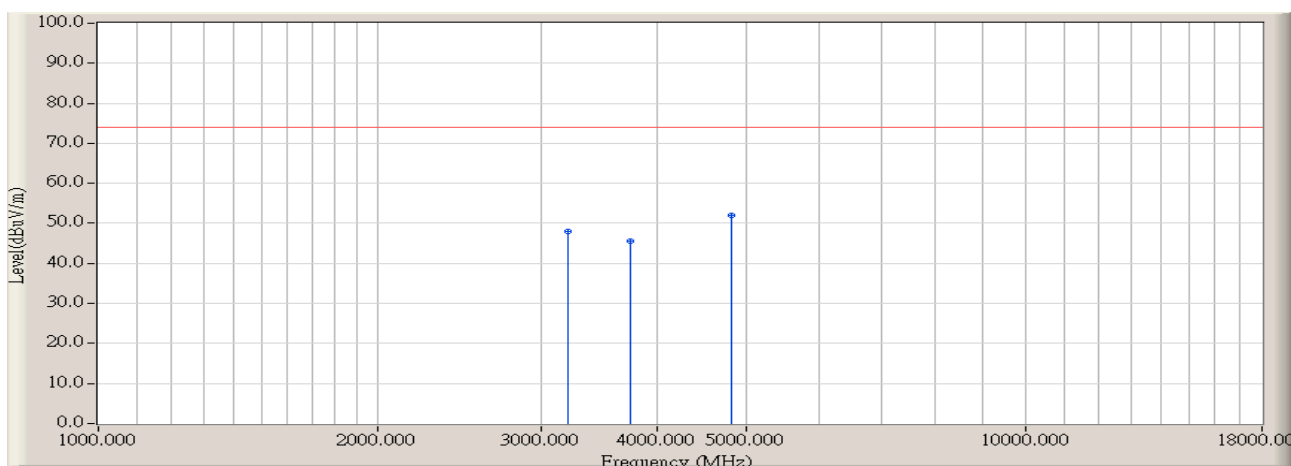


Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:52
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz



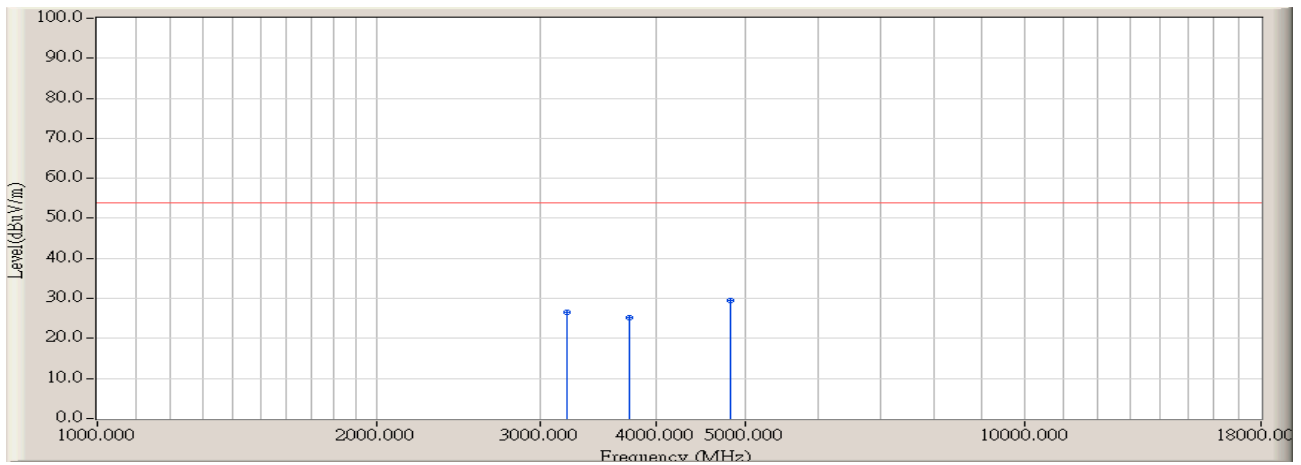
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3748.333	-0.233	26.500	26.267	-27.703	53.970	AVERAGE	150.000	224.300
2	* 4825.000	3.610	26.300	29.910	-24.060	53.970	AVERAGE	148.000	14.200
3	5986.667	5.699	22.000	27.700	-26.270	53.970	AVERAGE	155.000	234.500

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:52
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz



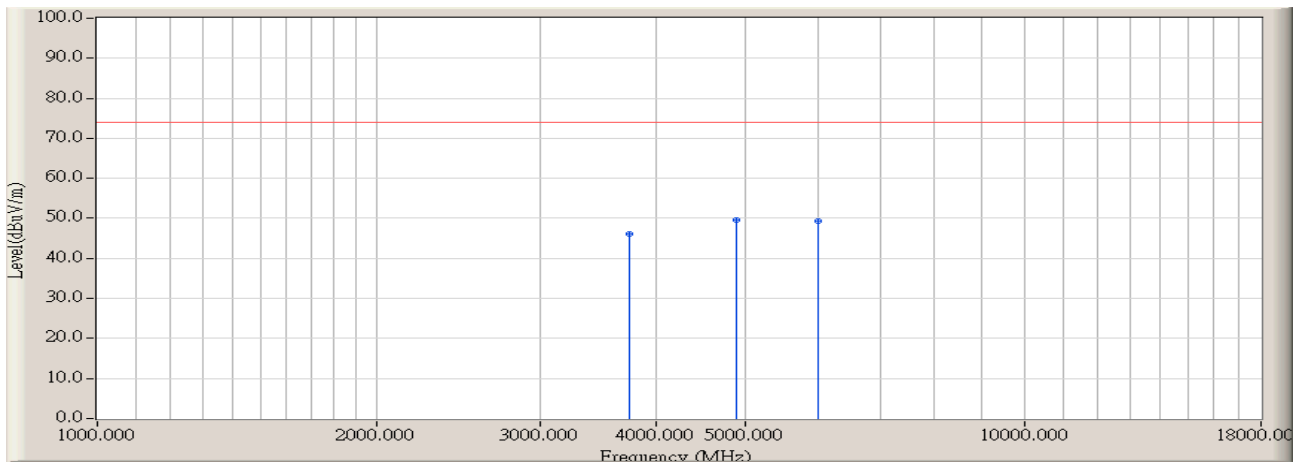
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3210.000	-1.490	49.390	47.900	-26.070	73.970	PEAK	150.000	325.300
2	3748.333	-0.233	45.904	45.671	-28.299	73.970	PEAK	134.000	98.500
3	* 4825.000	3.610	48.509	52.119	-21.851	73.970	PEAK	133.000	56.400

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:52
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz



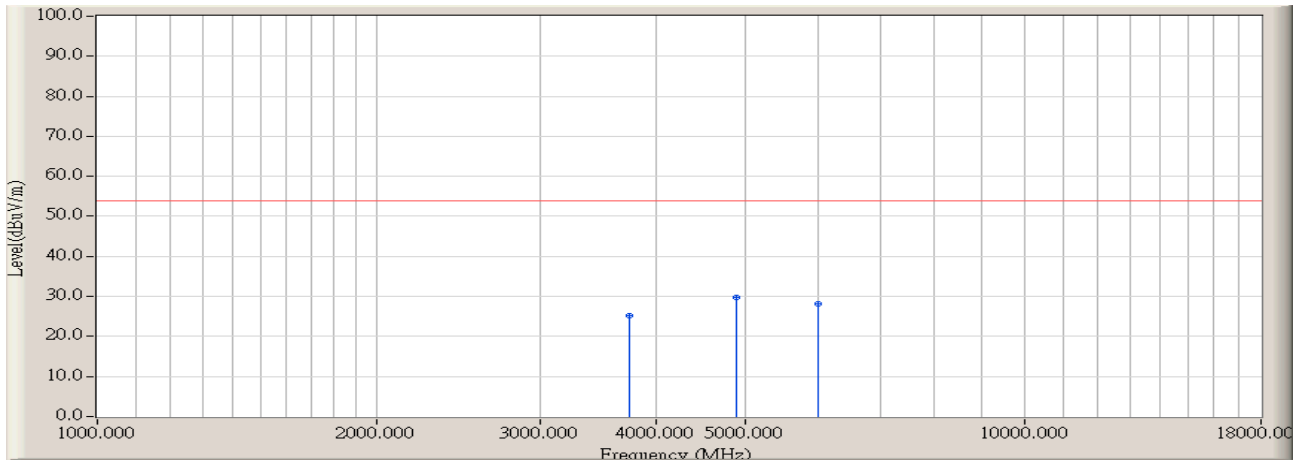
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3210.000	-1.490	28.000	26.510	-27.460	53.970	AVERAGE	150.000	325.300
2	3748.333	-0.233	25.400	25.167	-28.803	53.970	AVERAGE	134.000	98.500
3	* 4825.000	3.610	26.000	29.610	-24.360	53.970	AVERAGE	133.000	56.400

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2437MHz



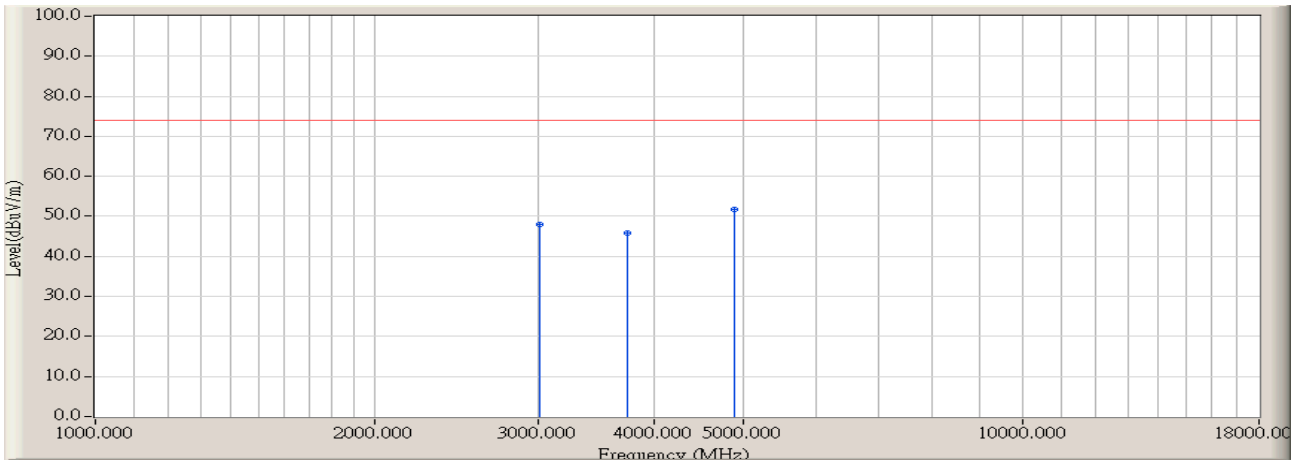
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1	3748.333	-0.233	46.421	46.188	-27.782	73.970	PEAK	150.000	125.600
2	* 4881.667	3.633	46.021	49.654	-24.316	73.970	PEAK	145.000	178.600
3	5986.667	5.699	43.522	49.222	-24.748	73.970	PEAK	150.000	145.300

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2437MHz



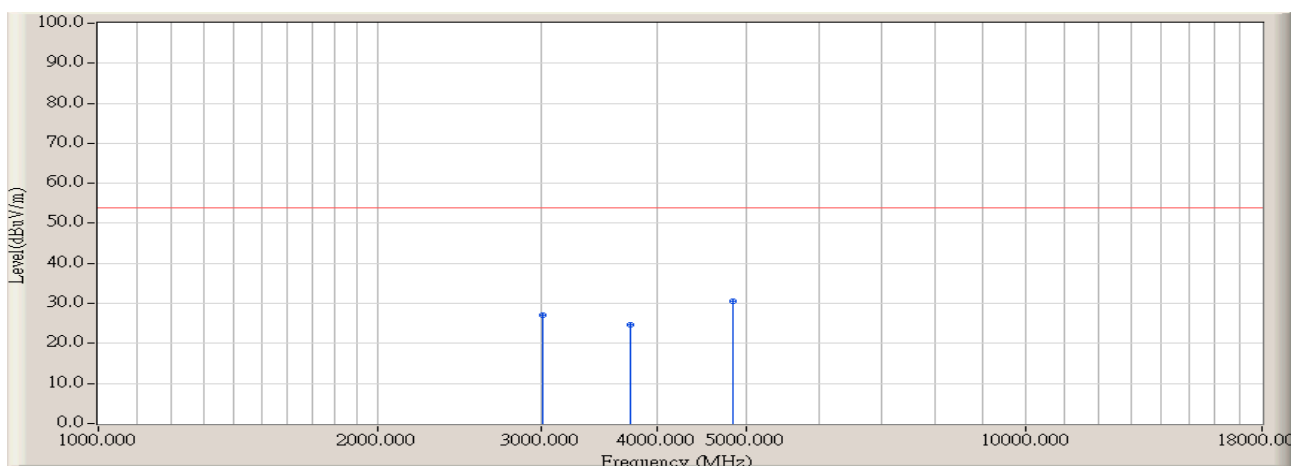
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3748.333	-0.233	25.500	25.267	-28.703	53.970	AVERAGE	150.000	125.600
2	* 4881.667	3.633	26.000	29.633	-24.337	53.970	AVERAGE	145.000	178.600
3	5986.667	5.699	22.500	28.200	-25.770	53.970	AVERAGE	150.000	145.300

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2437MHz



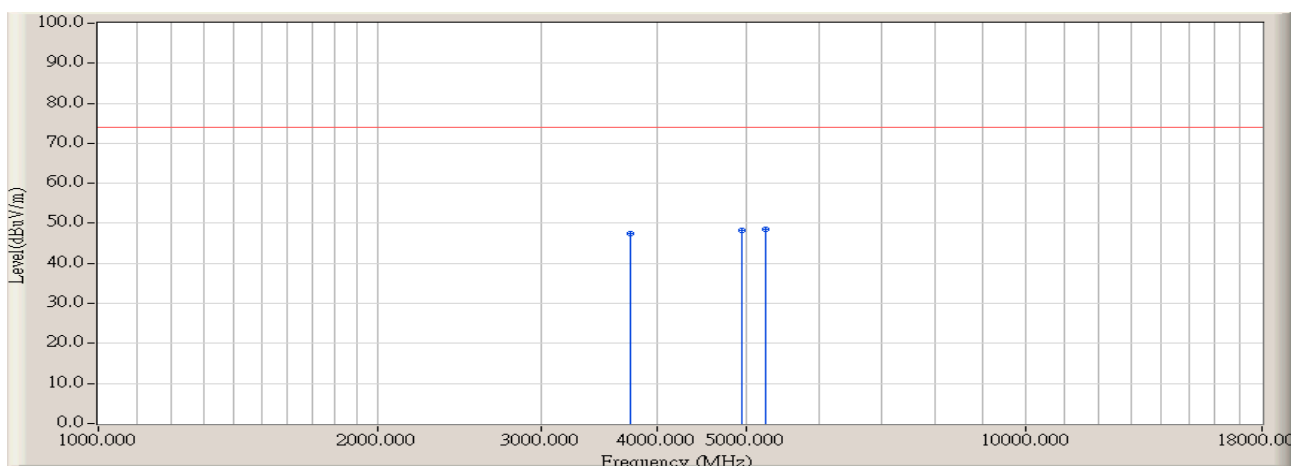
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3011.667	-1.796	49.773	47.976	-25.994	73.970	PEAK	124.000	128.000
2	3748.333	-0.233	46.016	45.783	-28.187	73.970	PEAK	134.000	78.500
3	* 4881.667	3.633	48.030	51.663	-22.307	73.970	PEAK	145.000	166.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2437MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3011.667	-1.796	28.800	27.003	-26.967	53.970	AVERAGE	124.000	128.000
2	3748.333	-0.233	25.000	24.767	-29.203	53.970	AVERAGE	134.000	78.500
3	* 4841.667	3.659	27.000	30.659	-23.311	53.970	AVERAGE	145.000	166.000

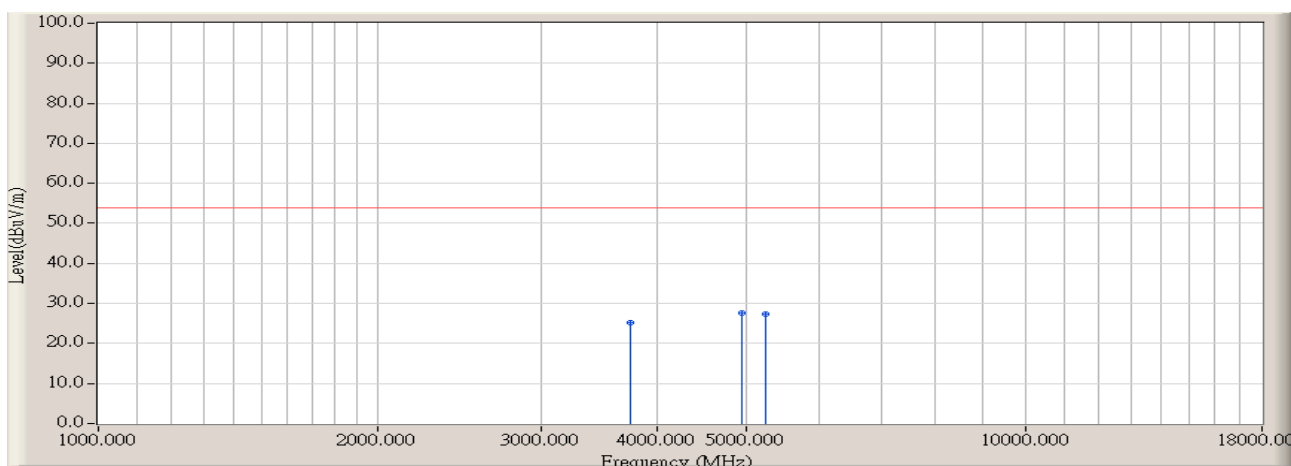
Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3748.333	-0.233	47.591	47.358	-26.612	73.970	PEAK	124.000	256.000
2	4938.333	4.046	44.175	48.222	-25.748	73.970	PEAK	150.000	124.000
3	* 5250.000	3.970	44.460	48.430	-25.540	73.970	PEAK	134.000	125.000

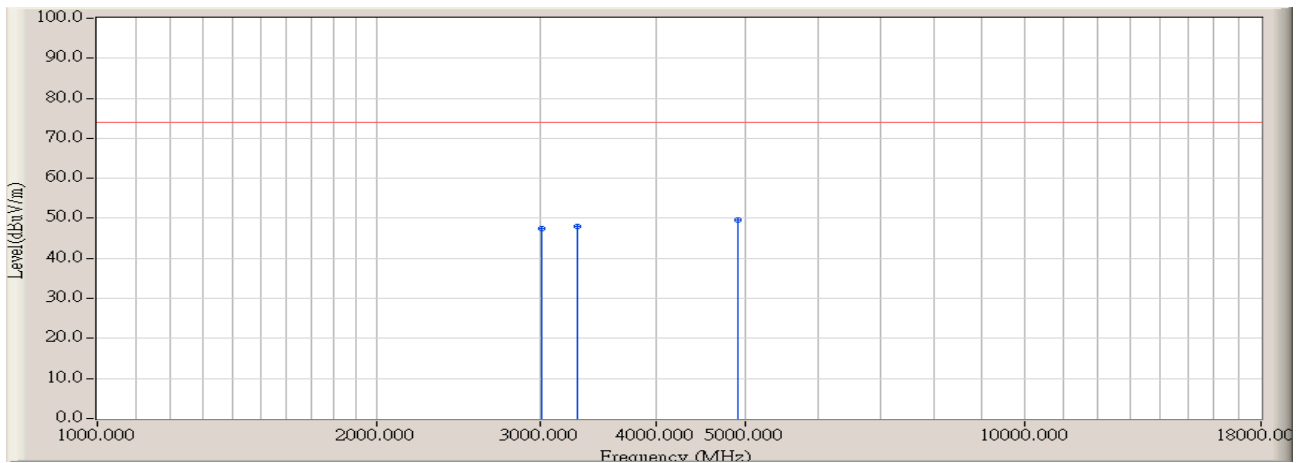


Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz



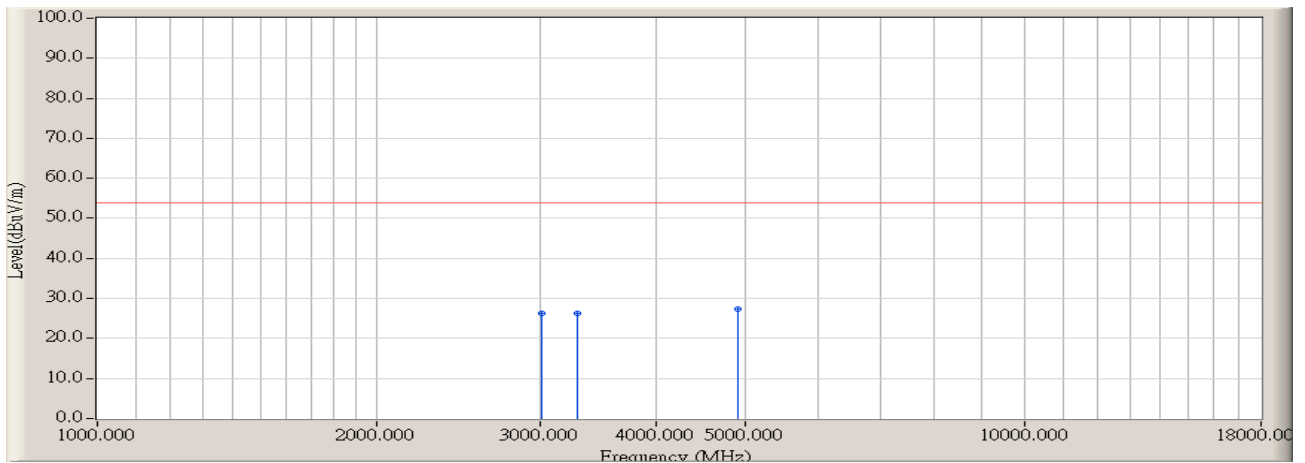
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3748.333	-0.233	25.500	25.267	-28.703	53.970	AVERAGE	124.000	256.000
2	* 4938.333	4.046	23.500	27.547	-26.423	53.970	AVERAGE	150.000	124.000
3	5250.000	3.970	23.500	27.470	-26.500	53.970	AVERAGE	134.000	125.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz



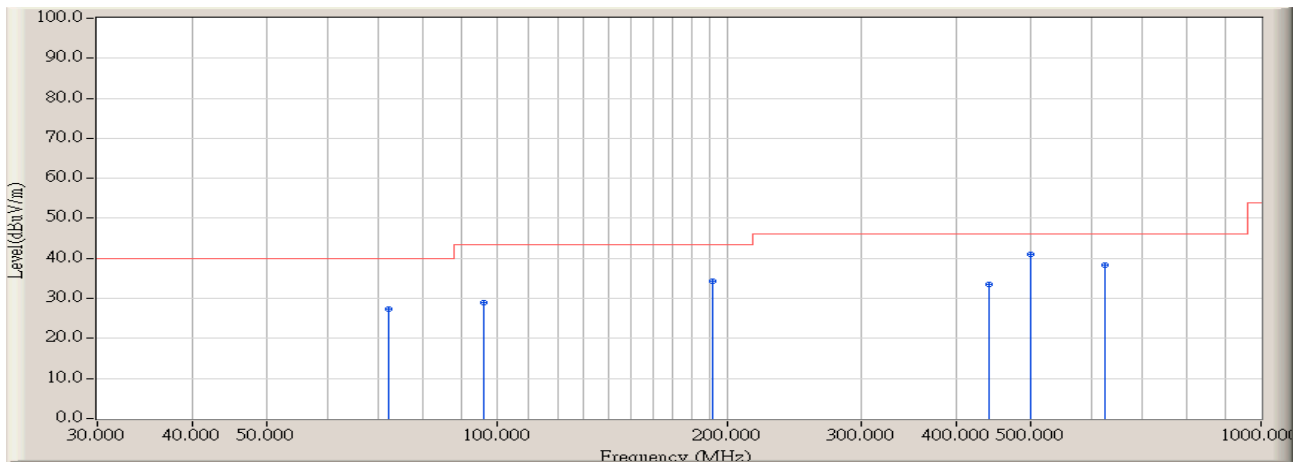
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3011.667	-1.796	49.366	47.569	-26.401	73.970	PEAK	143.000	345.000
2	3295.000	-1.720	49.726	48.006	-25.964	73.970	PEAK	125.000	24.500
3	* 4910.000	3.720	45.827	49.547	-24.423	73.970	PEAK	150.000	124.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz



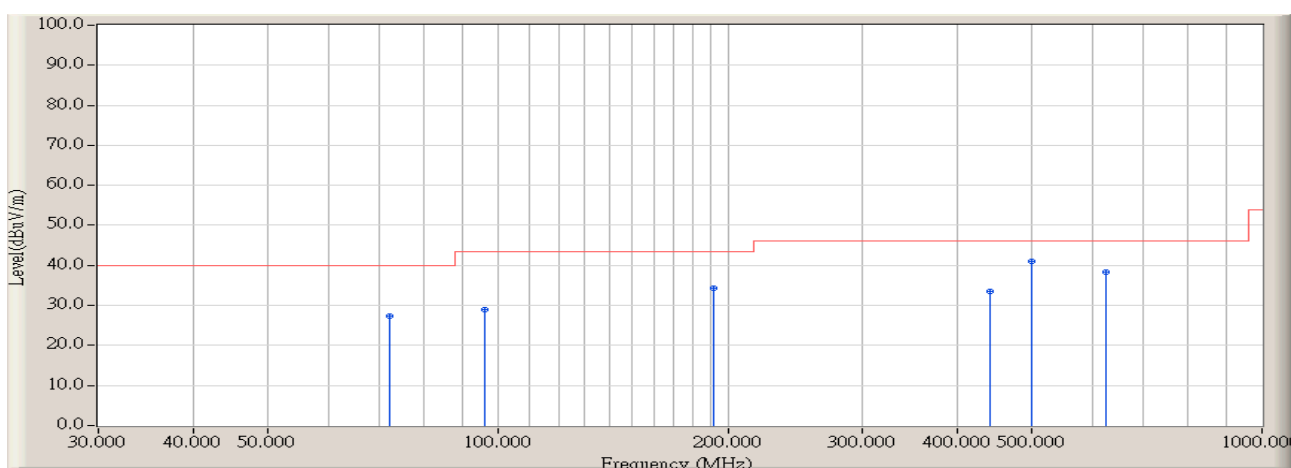
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3011.667	-1.796	28.000	26.203	-27.767	53.970	AVERAGE	143.000	345.000
2	3295.000	-1.720	28.000	26.280	-27.690	53.970	AVERAGE	125.000	24.500
3	* 4910.000	3.720	23.600	27.320	-26.650	53.970	AVERAGE	150.000	124.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:40
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz



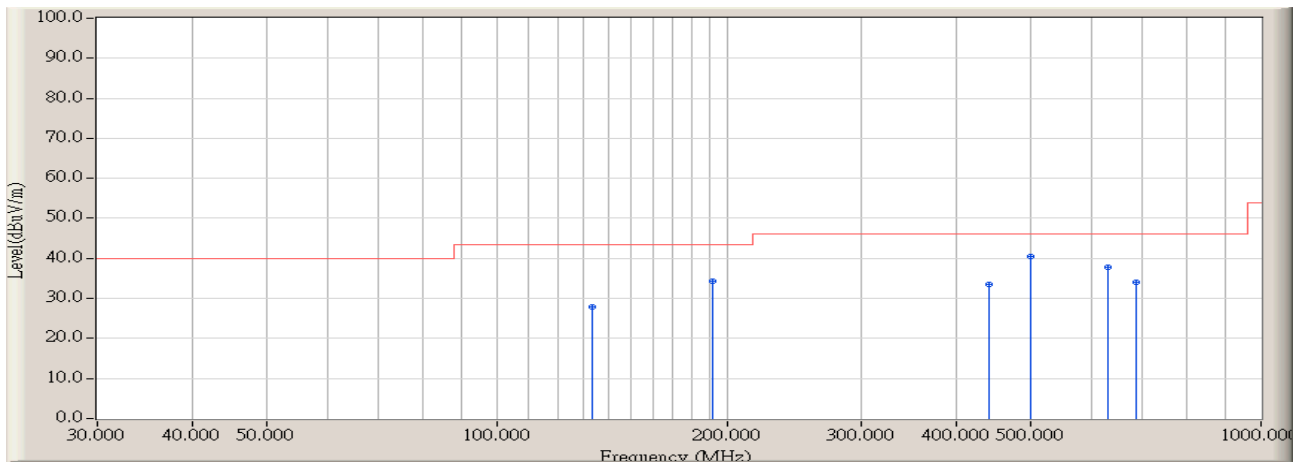
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	72.033	-14.436	41.739	27.303	-12.697	40.000	QUASIPeAK	100.000	193.000
2	96.283	-11.976	41.014	29.038	-14.482	43.520	QUASIPeAK	106.000	19.000
3	191.667	-11.284	45.704	34.420	-9.100	43.520	QUASIPeAK	114.000	203.000
4	440.633	-4.605	38.240	33.634	-12.386	46.020	QUASIPeAK	129.000	15.000
5	* 500.450	-3.384	44.289	40.905	-5.115	46.020	QUASIPeAK	152.000	324.000
6	624.933	-1.043	39.452	38.408	-7.612	46.020	QUASIPeAK	109.000	178.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:40
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz



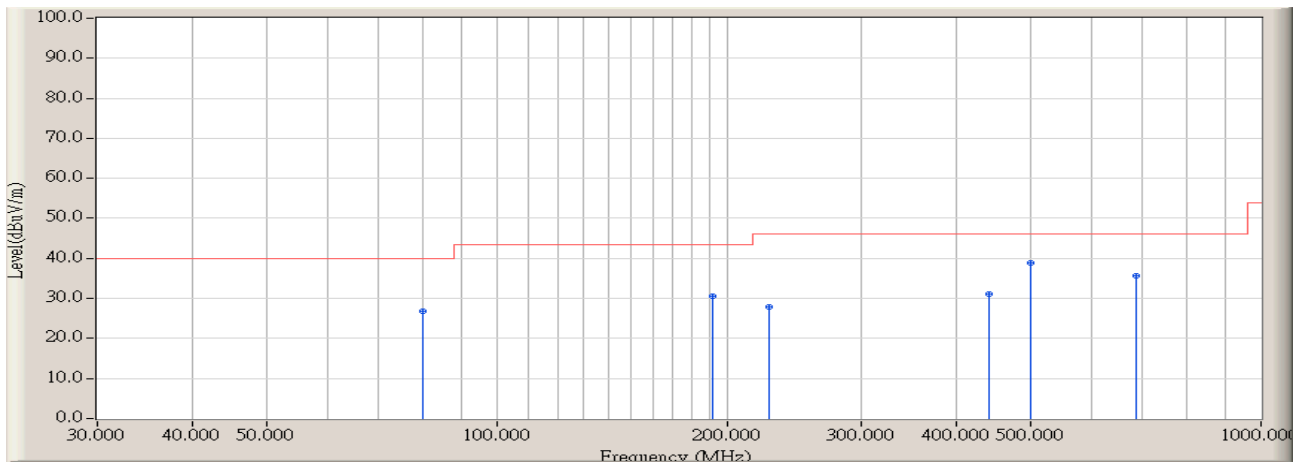
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	72.033	-14.436	41.739	27.303	-12.697	40.000	QUASIPeAK	174.000	12.000
2	96.283	-11.976	41.014	29.038	-14.482	43.520	QUASIPeAK	184.000	124.000
3	191.667	-11.284	45.704	34.420	-9.100	43.520	QUASIPeAK	206.000	84.000
4	440.633	-4.605	38.240	33.634	-12.386	46.020	QUASIPeAK	194.000	46.000
5	* 500.450	-3.384	44.289	40.905	-5.115	46.020	QUASIPeAK	144.000	19.000
6	624.933	-1.043	39.452	38.408	-7.612	46.020	QUASIPeAK	167.000	102.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:40
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2437MHz



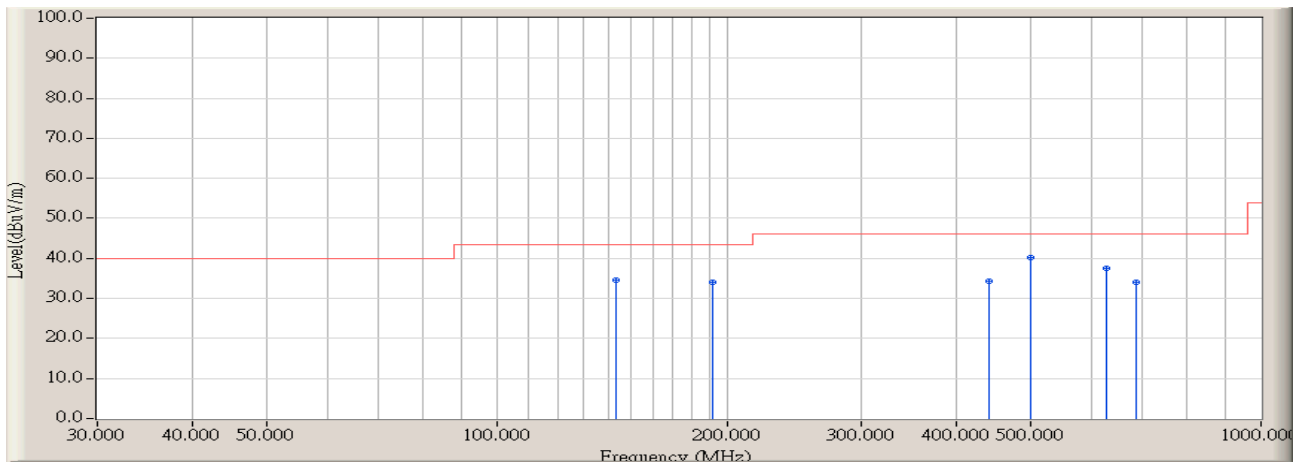
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	133.467	-9.432	37.306	27.875	-15.645	43.520	QUASIPeAK	100.000	193.000
2	191.667	-11.284	45.701	34.417	-9.103	43.520	QUASIPeAK	106.000	19.000
3	440.633	-4.605	38.220	33.614	-12.406	46.020	QUASIPeAK	114.000	203.000
4	* 500.450	-3.384	43.860	40.476	-5.544	46.020	QUASIPeAK	129.000	15.000
5	629.783	-0.952	38.816	37.865	-8.155	46.020	QUASIPeAK	152.000	324.000
6	686.367	0.236	33.745	33.980	-12.040	46.020	QUASIPeAK	109.000	178.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:40
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2437MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	80.117	-13.720	40.597	26.877	-13.123	40.000	QUASIPeAK	100.100	115.300
2	191.667	-11.284	41.922	30.638	-12.882	43.520	QUASIPeAK	123.200	105.000
3	227.233	-8.954	36.718	27.763	-18.257	46.020	QUASIPeAK	115.200	230.400
4	440.633	-4.605	35.817	31.211	-14.809	46.020	QUASIPeAK	125.600	112.400
5	* 500.450	-3.384	42.316	38.932	-7.088	46.020	QUASIPeAK	142.600	79.200
6	686.367	0.236	35.440	35.675	-10.345	46.020	QUASIPeAK	100.000	185.000

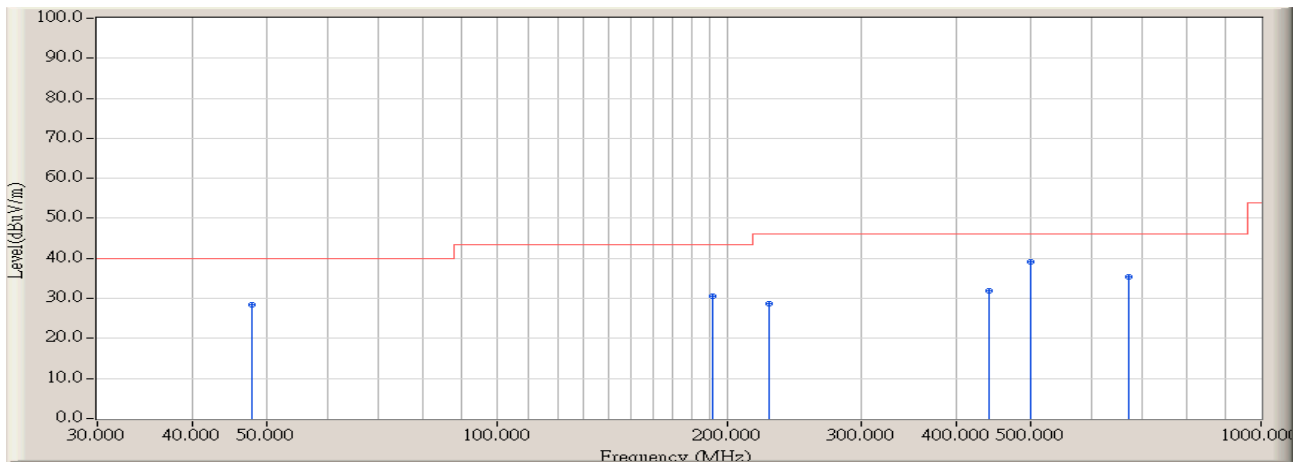
Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:41
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	143.167	-9.179	43.642	34.463	-9.057	43.520	QUASIPeAK	143.500	177.000
2	191.667	-11.284	45.227	33.943	-9.577	43.520	QUASIPeAK	106.500	93.500
3	440.633	-4.605	39.053	34.447	-11.573	46.020	QUASIPeAK	100.000	196.500
4	* 500.450	-3.384	43.701	40.317	-5.703	46.020	QUASIPeAK	106.800	92.800
5	626.550	-1.011	38.542	37.531	-8.489	46.020	QUASIPeAK	100.000	253.800
6	686.367	0.236	33.877	34.112	-11.908	46.020	QUASIPeAK	142.500	78.600

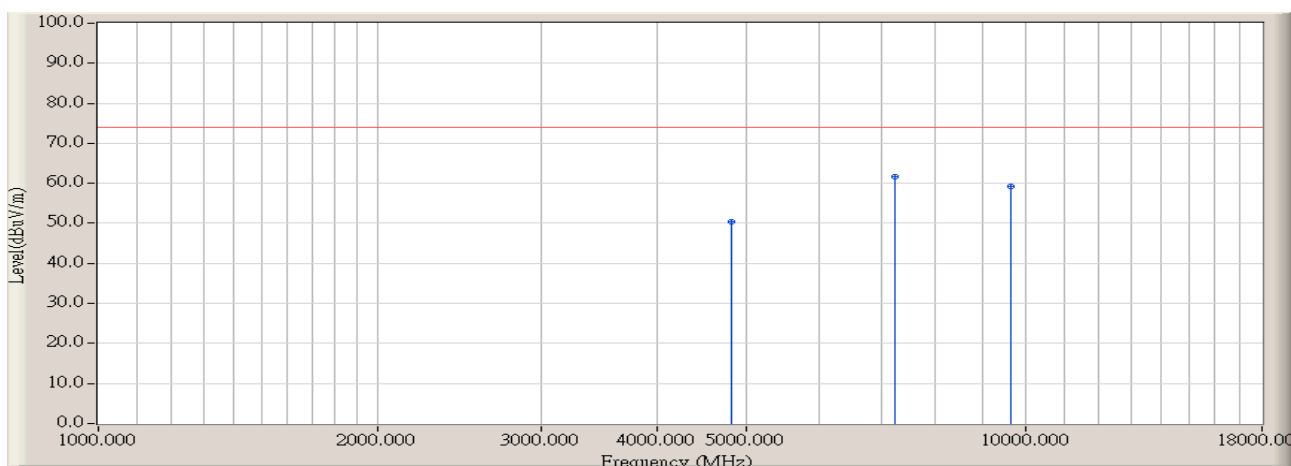


Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/20 - 10:41
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : CBL6141A_4278(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz



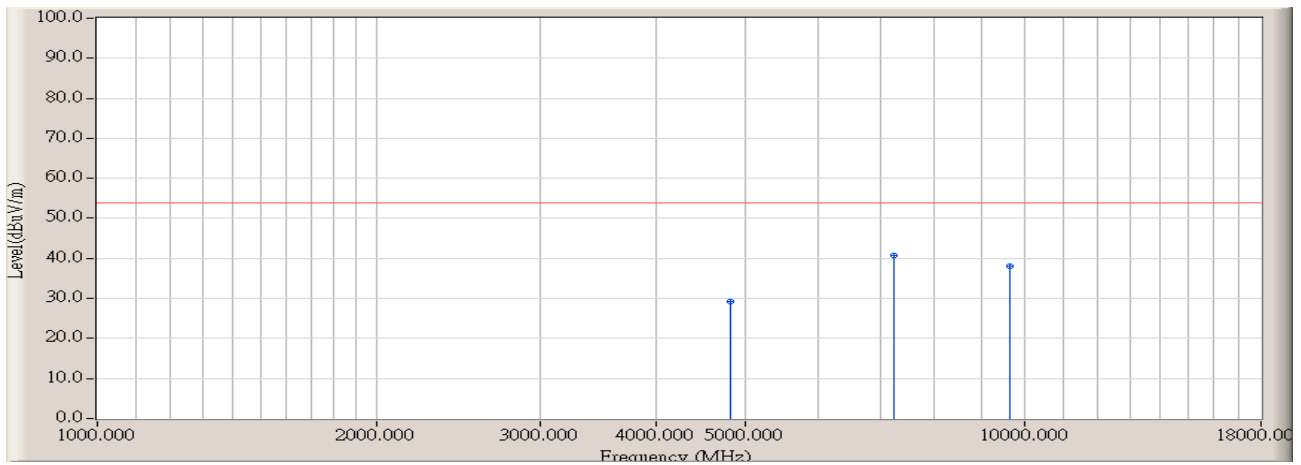
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	47.783	-7.312	35.651	28.339	-11.661	40.000	QUASIPeAK	100.000	79.400
2	191.667	-11.284	41.949	30.665	-12.855	43.520	QUASIPeAK	108.400	95.800
3	227.233	-8.954	37.731	28.776	-17.244	46.020	QUASIPeAK	100.000	126.000
4	440.633	-4.605	36.389	31.783	-14.237	46.020	QUASIPeAK	109.000	93.800
5	* 500.450	-3.384	42.501	39.117	-6.903	46.020	QUASIPeAK	125.800	46.100
6	671.817	0.223	35.042	35.265	-10.755	46.020	QUASIPeAK	100.000	175.600

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz



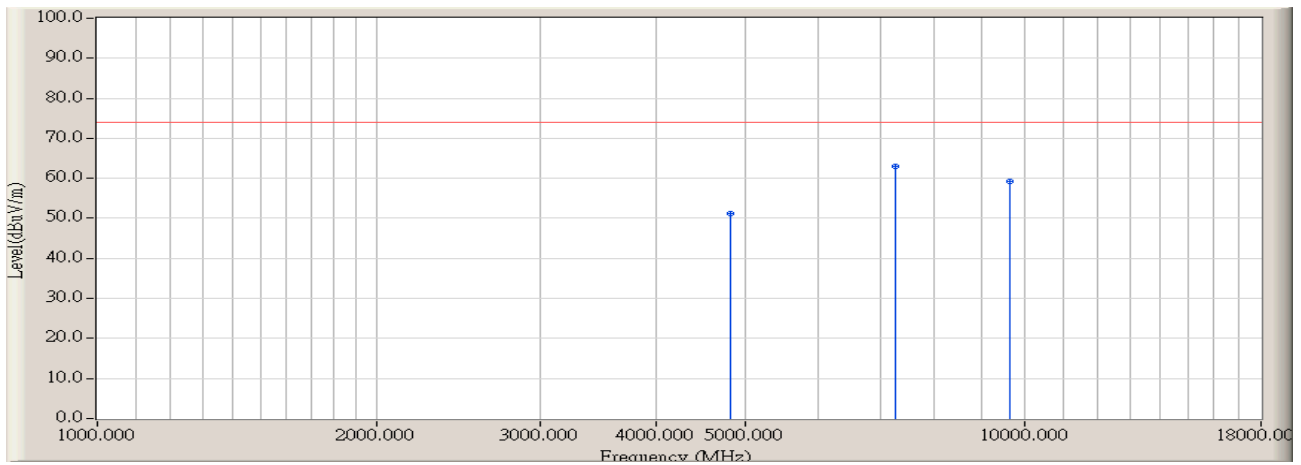
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	4825.000	3.610	46.780	50.390	-23.580	73.970	PEAK	144.000	124.000
2	* 7233.333	12.273	49.428	61.701	-12.269	73.970	PEAK	144.000	148.000
3	9641.667	14.070	45.219	59.289	-14.681	73.970	PEAK	166.000	25.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz



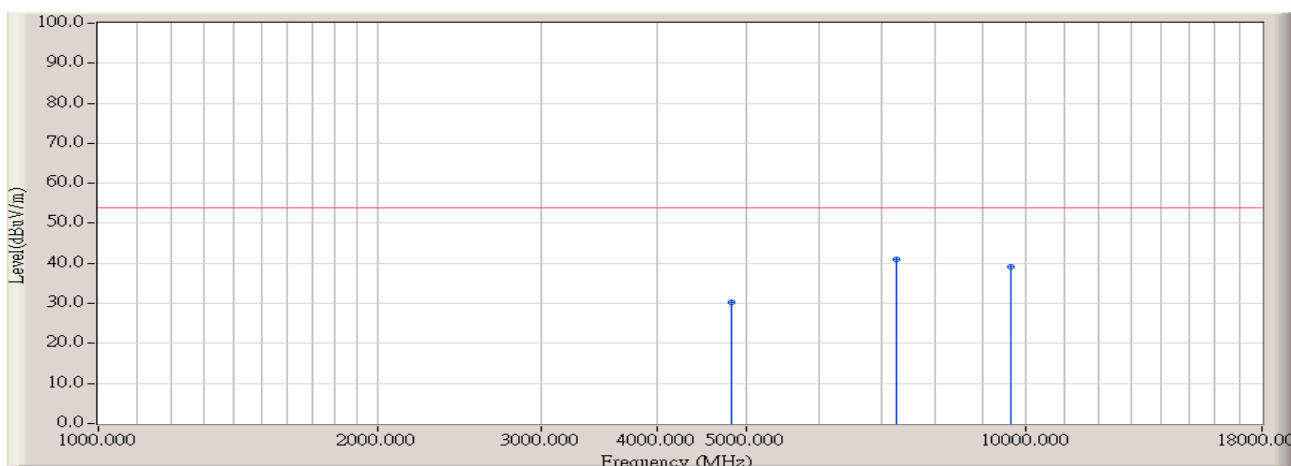
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	4825.000	3.610	25.500	29.110	-24.860	53.970	AVERAGE	144.000	124.000
2	* 7233.333	12.273	28.500	40.773	-13.197	53.970	AVERAGE	144.000	148.000
3	9641.667	14.070	24.000	38.070	-15.900	53.970	AVERAGE	166.000	25.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz



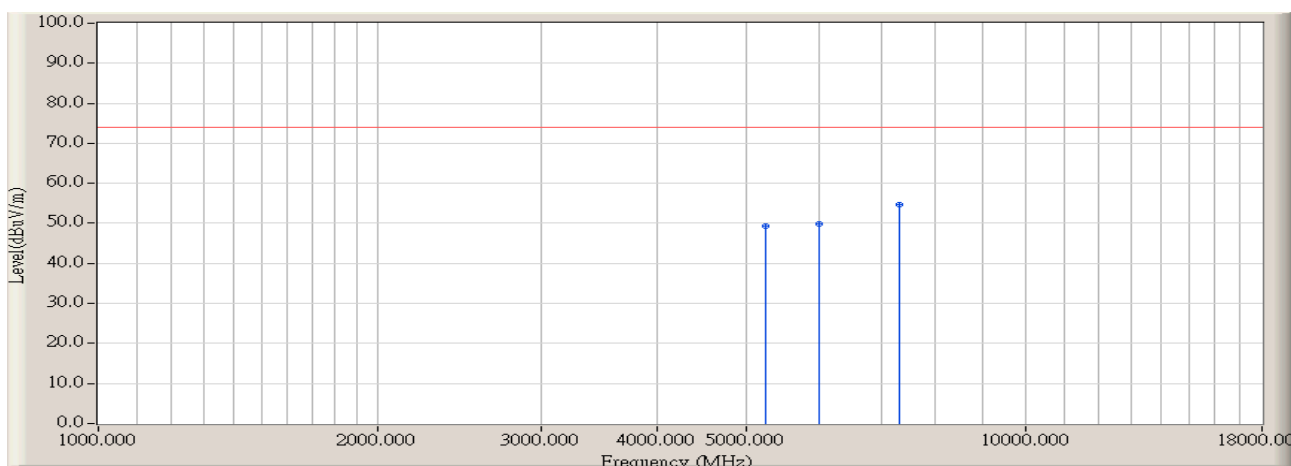
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	4825.000	3.610	47.730	51.340	-22.630	73.970	PEAK	153.000	45.600
2	* 7261.667	12.250	50.697	62.947	-11.023	73.970	PEAK	150.000	148.000
3	9641.667	14.070	45.232	59.302	-14.668	73.970	PEAK	162.000	12.300

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz



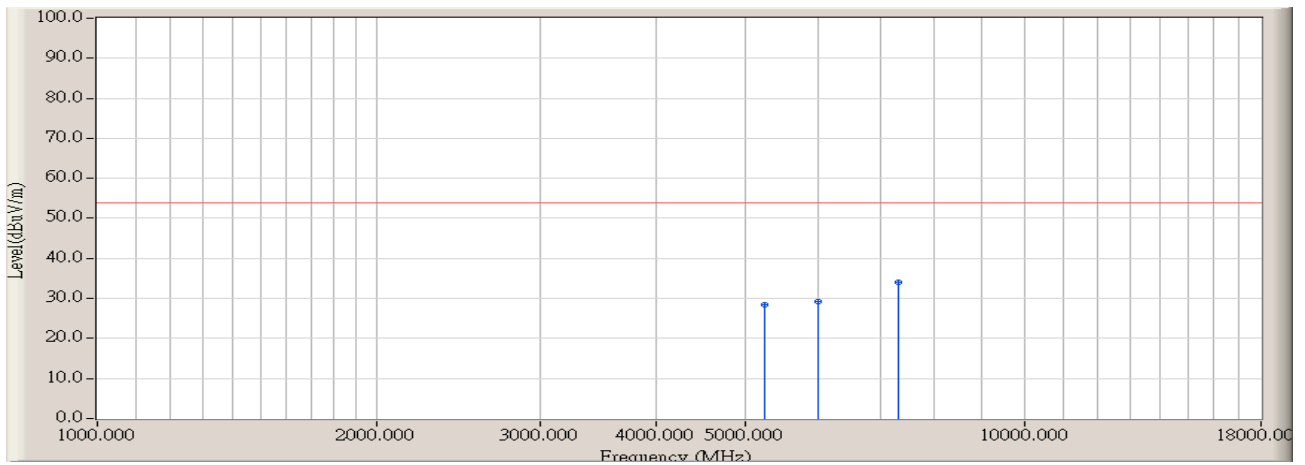
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	4825.000	3.610	26.600	30.210	-23.760	53.970	AVERAGE	153.000	45.600
2	* 7261.667	12.250	28.900	41.150	-12.820	53.970	AVERAGE	150.000	148.000
3	9641.667	14.070	25.000	39.070	-14.900	53.970	AVERAGE	162.000	12.300

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2437MHz



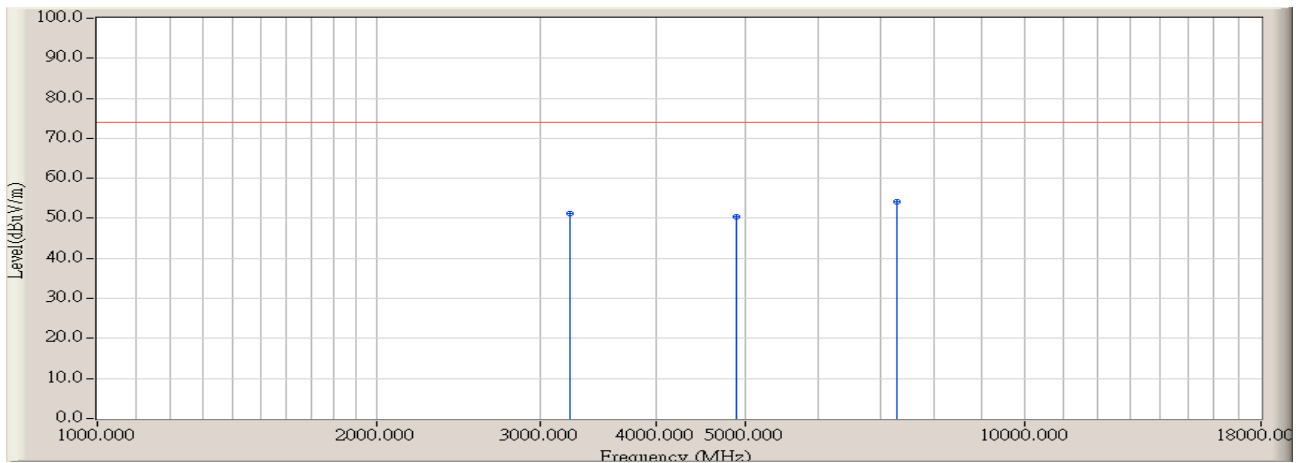
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	5250.000	3.970	45.399	49.369	-24.601	73.970	PEAK	150.000	36.000
2	5986.667	5.699	44.115	49.815	-24.155	73.970	PEAK	146.000	157.000
3	* 7318.333	12.017	42.664	54.681	-19.289	73.970	PEAK	146.000	155.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2437MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	5250.000	3.970	24.500	28.470	-25.500	53.970	AVERAGE	150.000	36.000
2	5986.687	5.699	23.400	29.100	-24.870	53.970	AVERAGE	146.000	157.000
3	* 7318.333	12.017	22.100	34.117	-19.853	53.970	AVERAGE	146.000	155.000

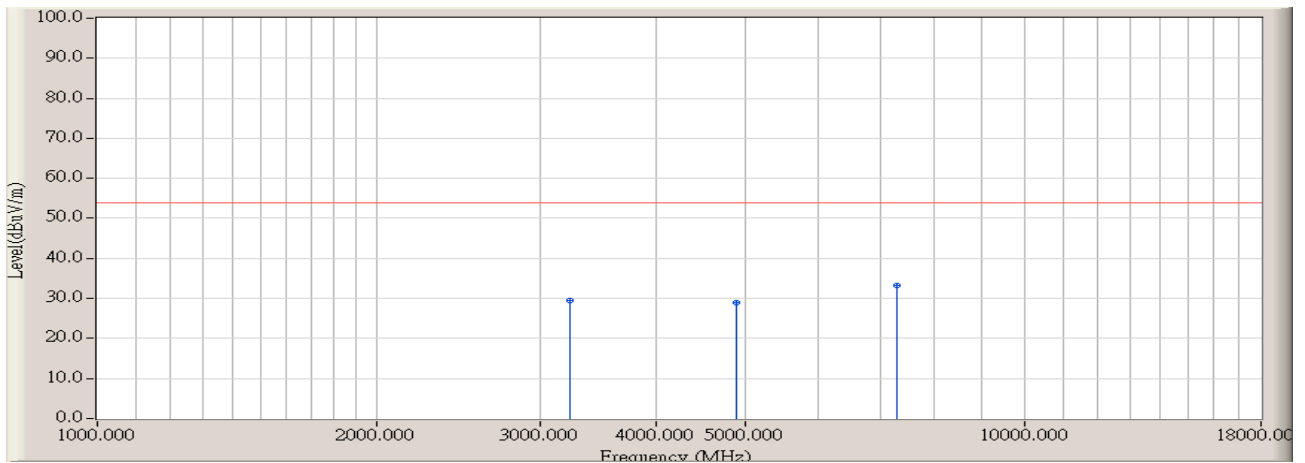
Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2437MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3238.333	-1.743	52.980	51.237	-22.733	73.970	PEAK	144.000	154.000
2	4881.667	3.633	46.897	50.530	-23.440	73.970	PEAK	164.000	178.000
3	* 7290.000	12.210	41.875	54.085	-19.885	73.970	PEAK	151.000	167.000

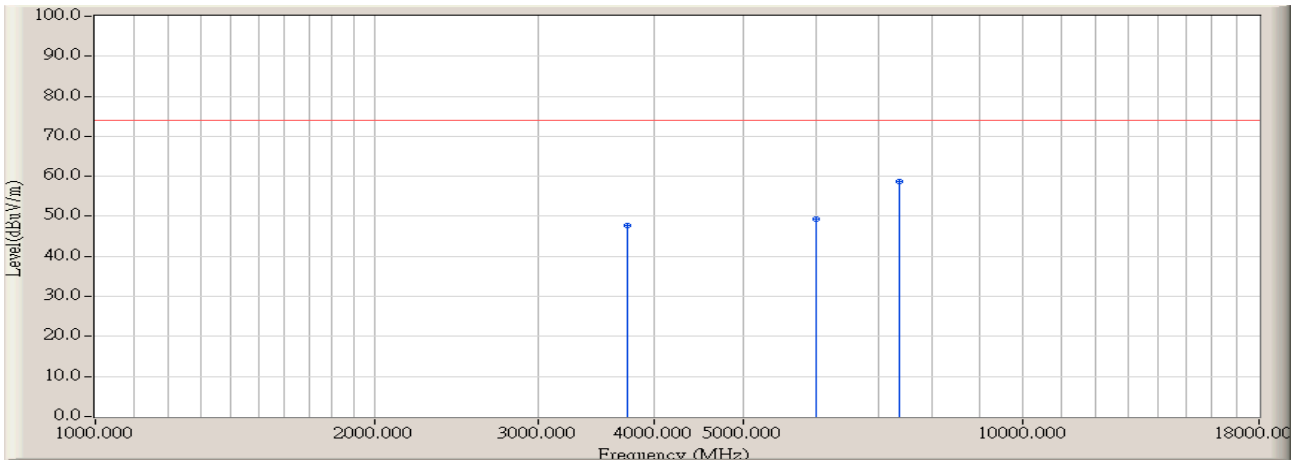


Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:53
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2437MHz



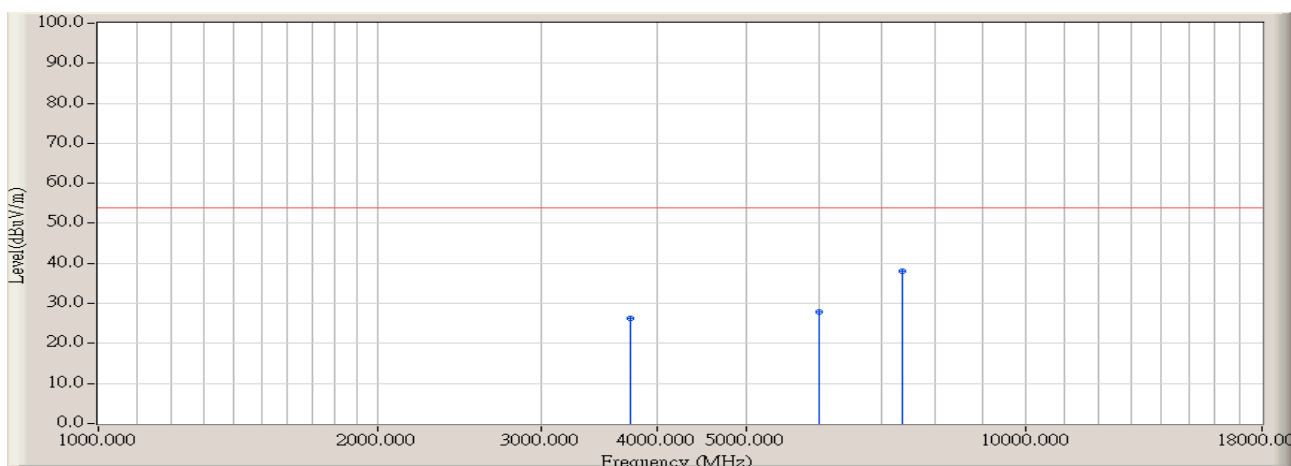
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3238.333	-1.743	31.200	29.457	-24.513	53.970	AVERAGE	144.000	154.000
2	4881.667	3.633	25.400	29.033	-24.937	53.970	AVERAGE	164.000	178.000
3	* 7290.000	12.210	21.100	33.310	-20.660	53.970	AVERAGE	151.000	167.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:54
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz



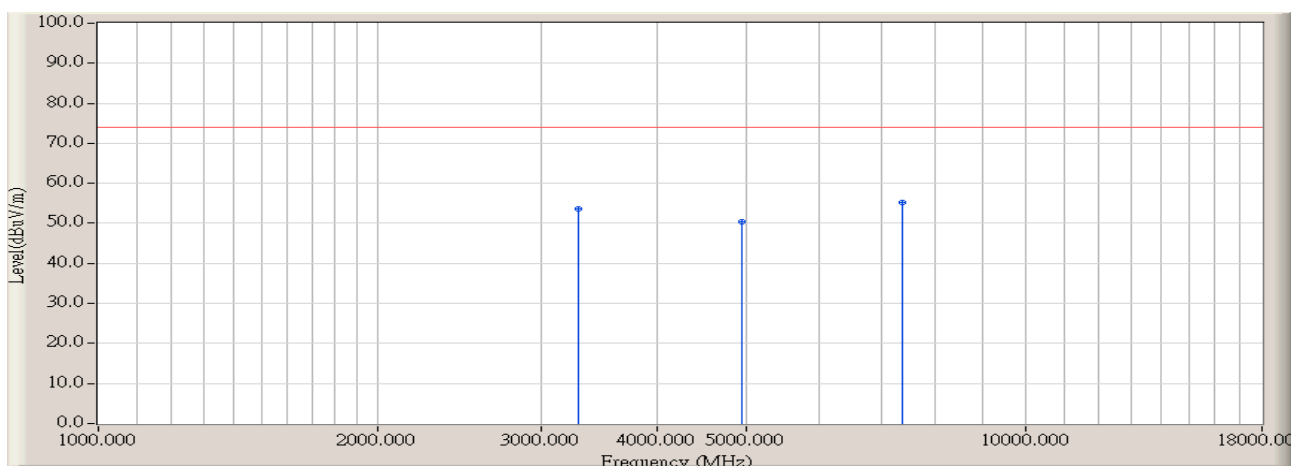
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3748.333	-0.233	47.929	47.696	-26.274	73.970	PEAK	144.000	149.000
2	5986.667	5.699	43.698	49.398	-24.572	73.970	PEAK	150.000	225.000
3	* 7375.000	11.650	47.052	58.702	-15.268	73.970	PEAK	123.000	145.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:54
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz



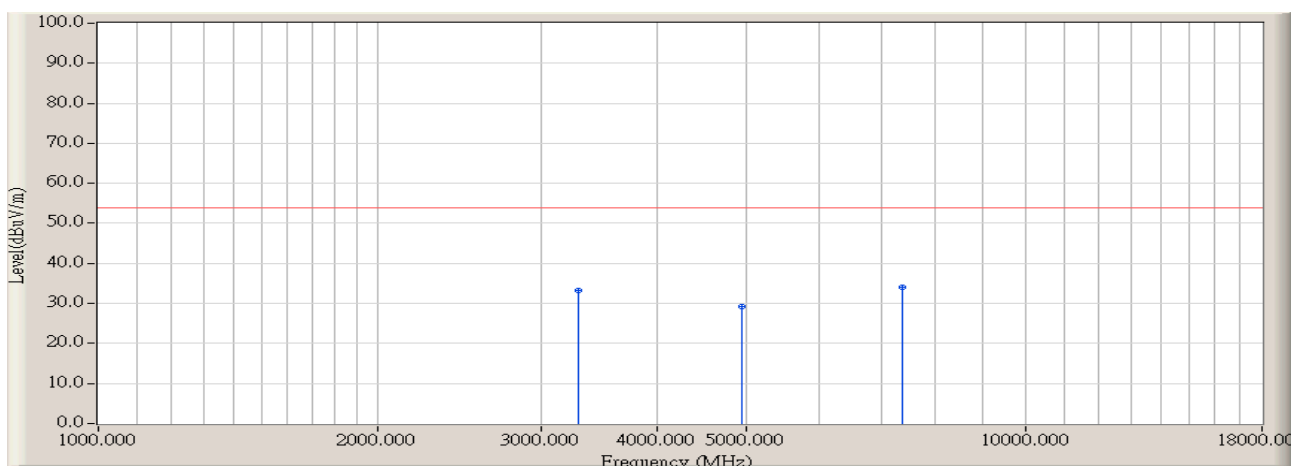
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3748.333	-0.233	26.500	26.267	-27.703	53.970	AVERAGE	144.000	149.000
2	5986.667	5.699	22.300	28.000	-25.970	53.970	AVERAGE	150.000	225.000
3	* 7375.000	11.650	26.500	38.150	-15.820	53.970	AVERAGE	123.000	145.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:54
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3295.000	-1.720	55.253	53.533	-20.437	73.970	PEAK	144.000	201.000
2	4938.333	4.046	46.283	50.330	-23.640	73.970	PEAK	165.000	114.000
3	* 7375.000	11.650	43.695	55.345	-18.625	73.970	PEAK	140.000	182.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/21 - 10:54
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_499(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	3295.000	-1.720	35.000	33.280	-20.690	53.970	AVERAGE	144.000	201.000
2	4938.333	4.046	25.300	29.347	-24.623	53.970	AVERAGE	165.000	114.000
3	* 7375.000	11.650	22.500	34.150	-19.820	53.970	AVERAGE	140.000	182.000

## 5. RF Antenna Conducted Spurious

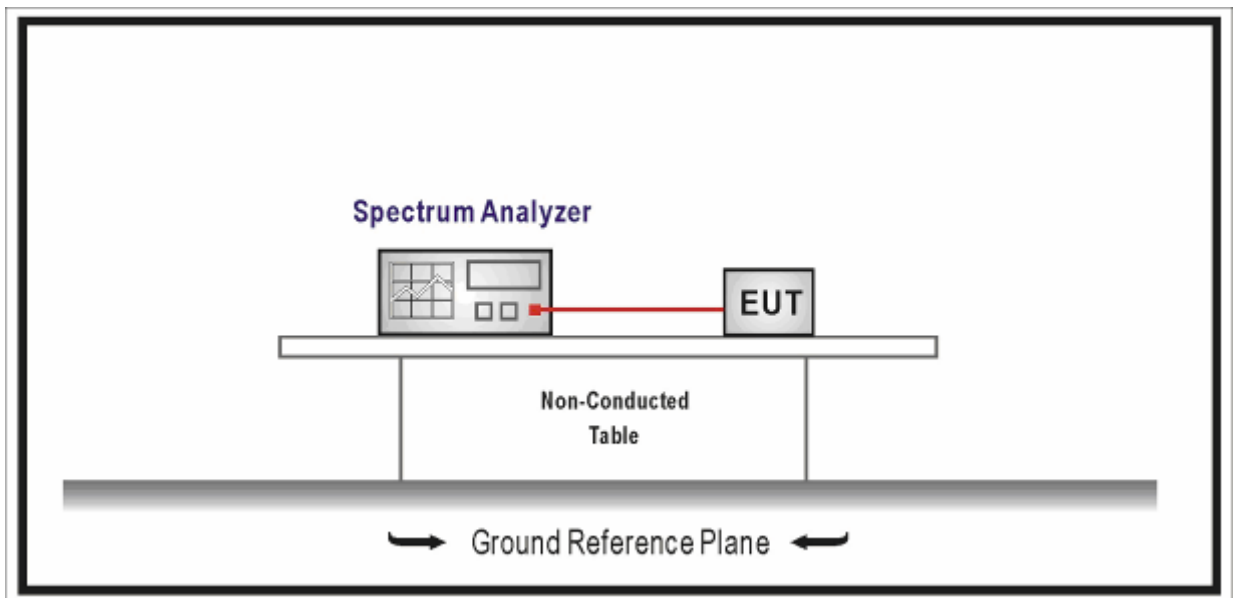
### 5.1. Test Equipment

RF Antenna Conducted Spurious / AC-4

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 5.2. Test Setup



### 5.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

#### **5.4. Test Procedure**

The EUT was tested according to DTS test procedure of ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

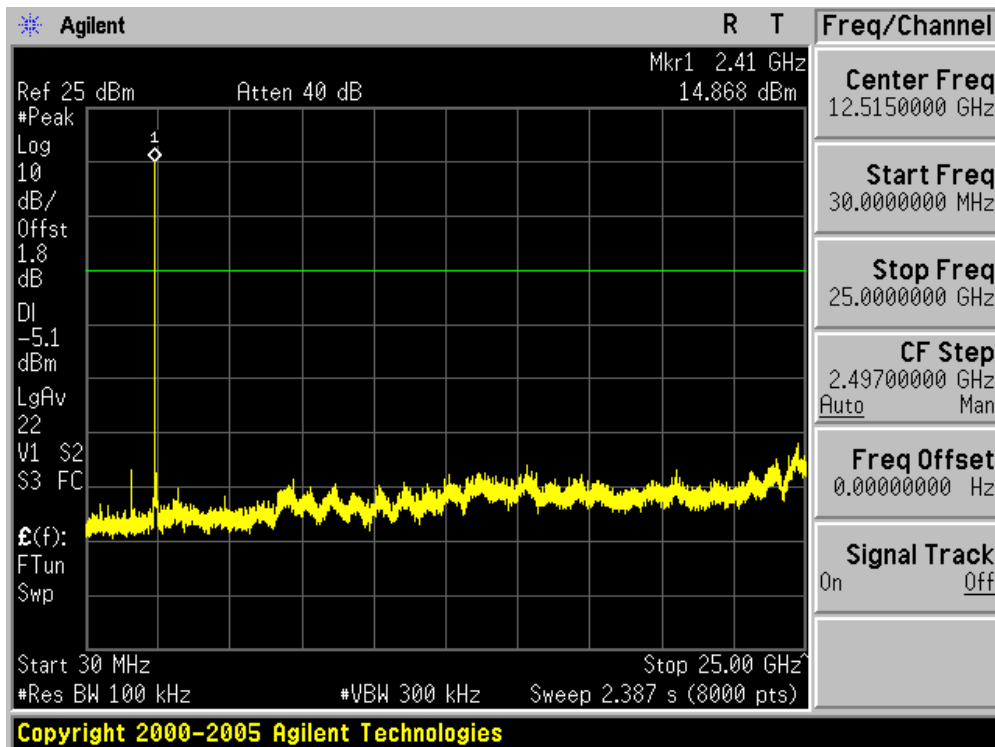
#### **5.5. Uncertainty**

The measurement uncertainty is defined as  $\pm 1.27$  dB

5.6. Test Result

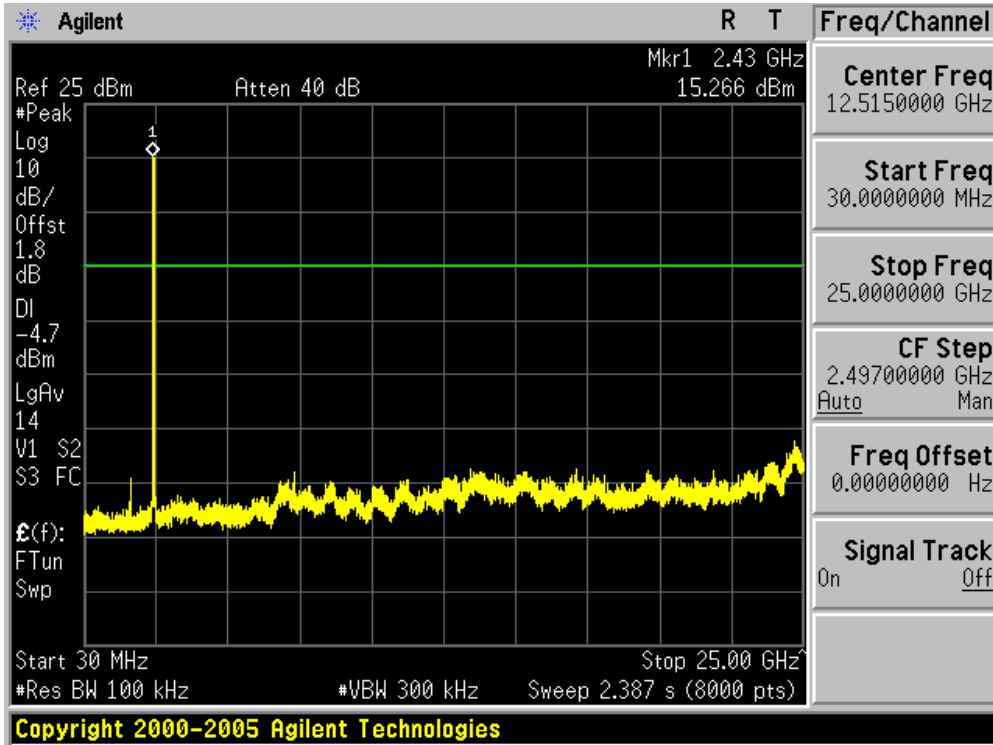
Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit by 802.11b

Channel 01 (2412MHz)

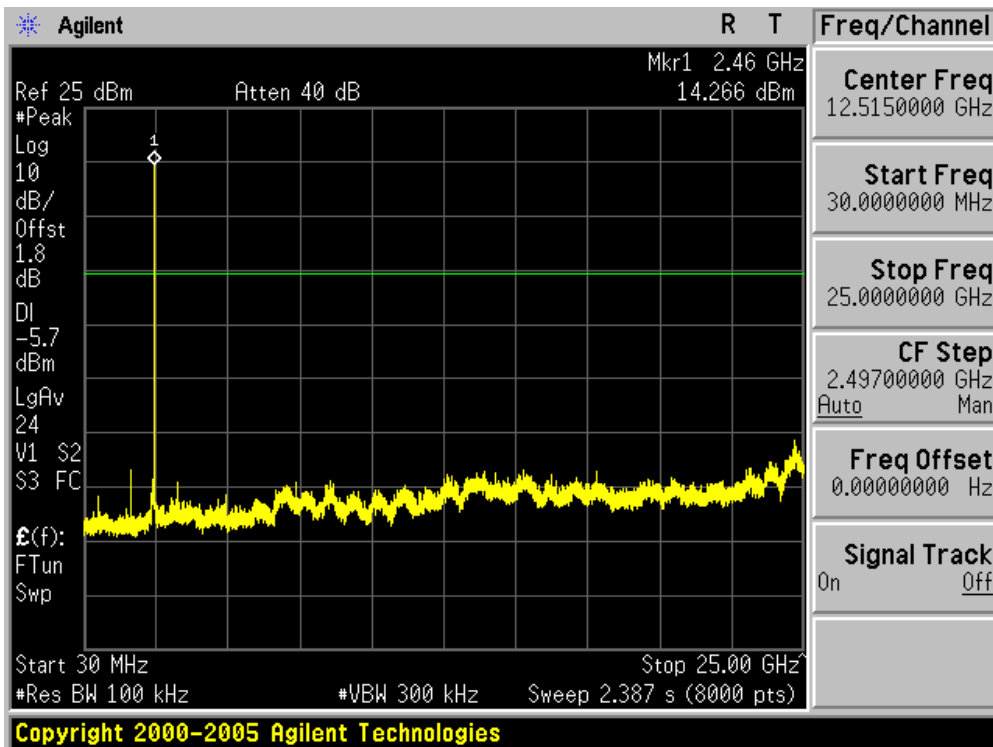




Channel 06 (2437MHz)

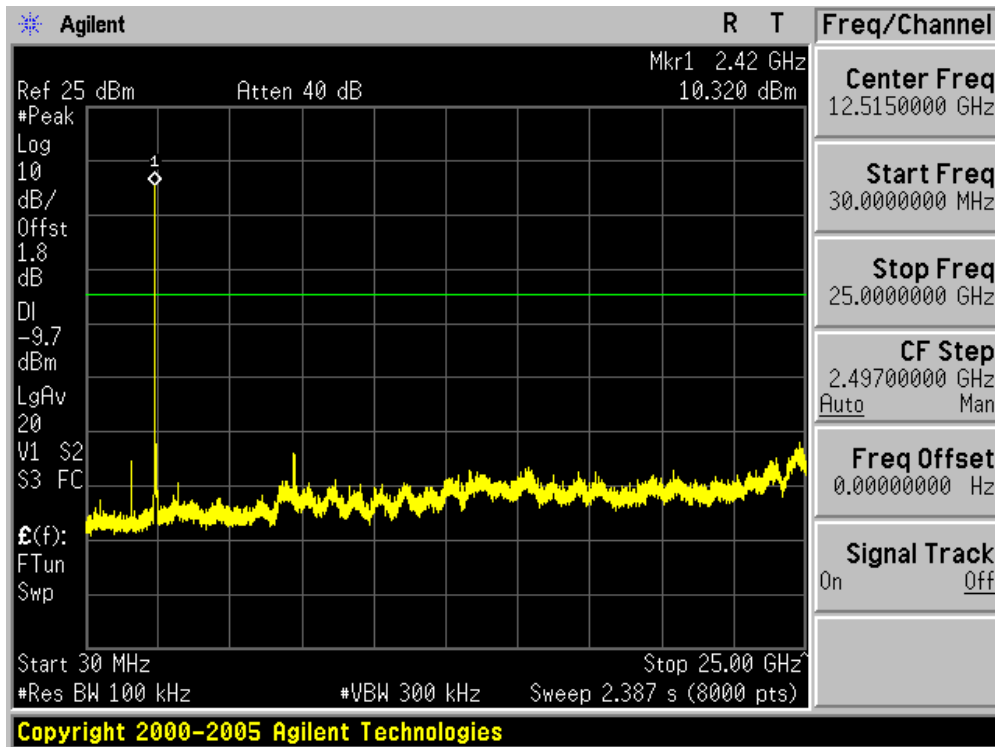


Channel 11 (2462MHz)

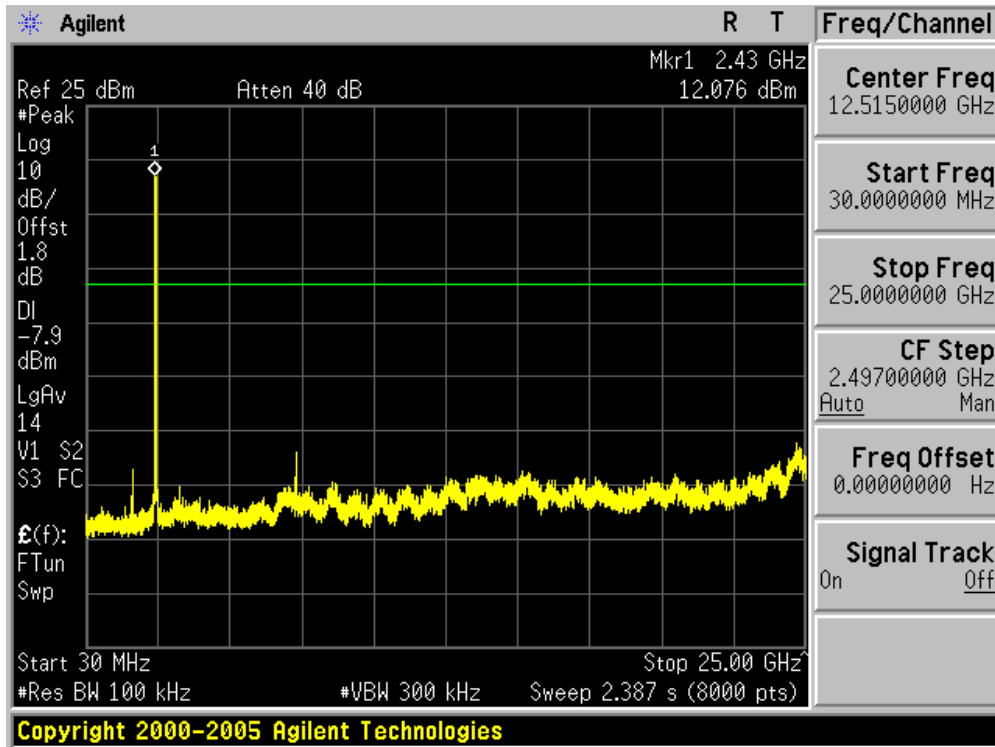


Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	AC-4
Test Mode	:	Mode 2: Transmit by 802.11g

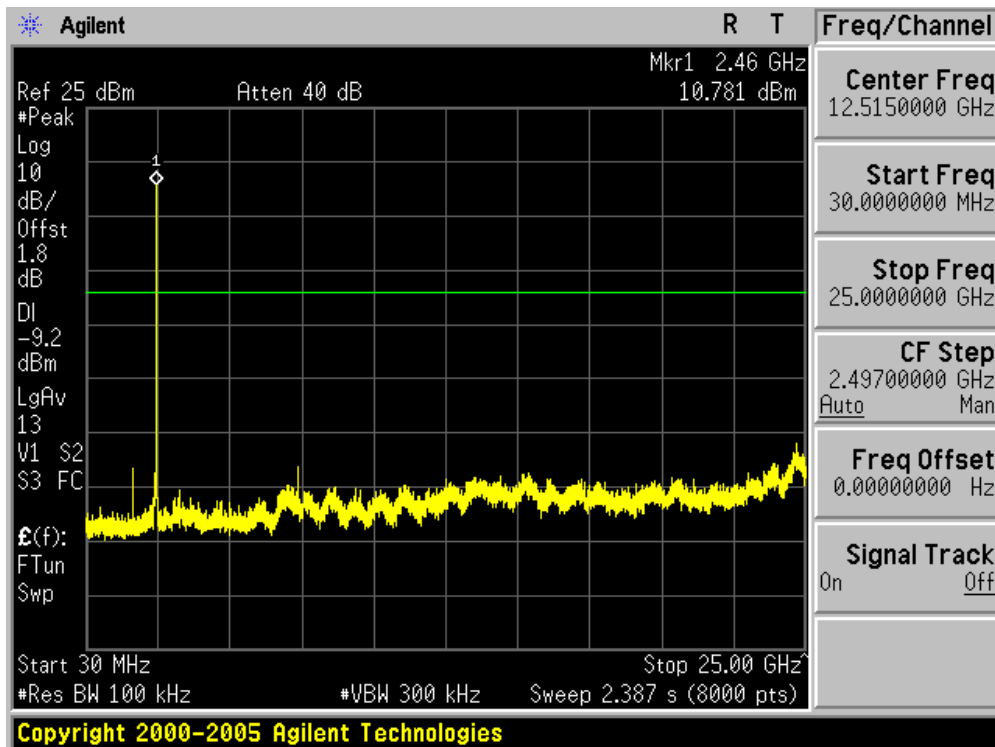
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



**6. Radiated Emission Band Edge**

**6.1. Test Equipment**

Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2008/06/11
EMI Test Receiver	R&S	ESCI	100573	2008/05/10
Preamplifier	Quietek	AP-025C	QT-AP003	2007/11/25
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Bilog Type Antenna	Schaffner	CBL6112B	2932	2007/11/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/06/28
50ohm Coaxial Switch	Anritsu	MP59B	6200447304	2007/11/25
Coaxial Cable	Huber+Suhner	AC2-C	04	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2008/03/31

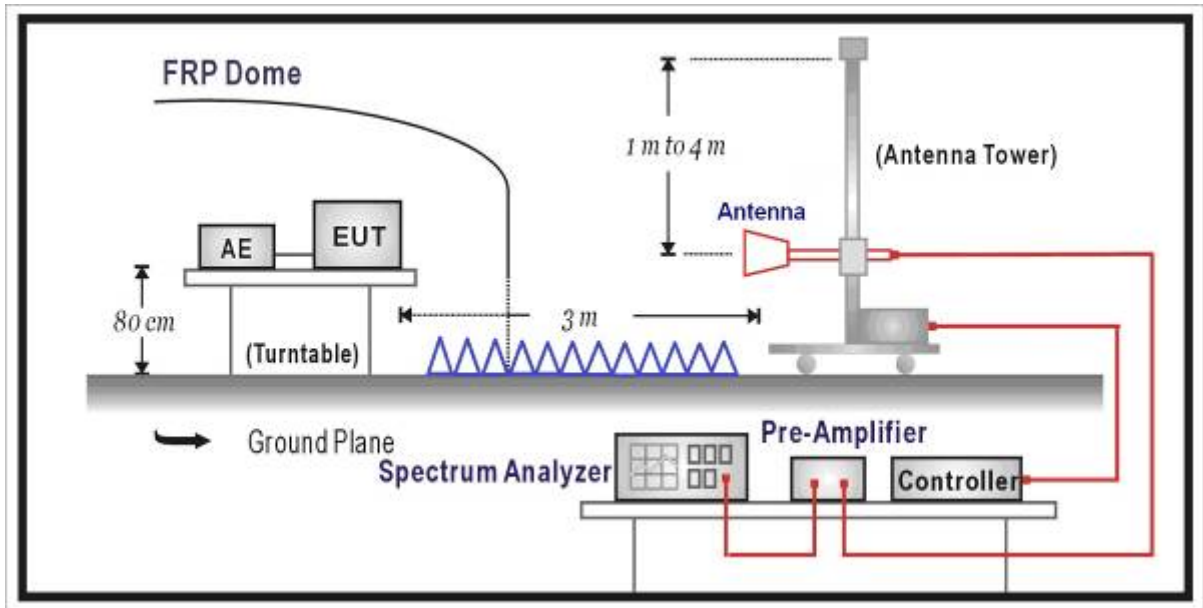
Radiated Emission / AC-3

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2008/04/24
EMI Test Receiver	R&S	ESCI	100176	2007/11/15
Preamplifier	Quietek	AP-025C	QT-AP004	2007/11/25
Preamplifier	Quietek	AP-180C	CHM-0602012	2007/11/25
Bilog Type Antenna	Schaffner	CBL6112D	22254	2007/11/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/06/28
50ohm Coaxial Switch	Anritsu	MP59B	6200464463	2007/11/25
Coaxial Cable	Huber+Suhner	AC2-C	05	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2008/03/31

Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Note 2: The test instruments marked with "X" are used to measure the final test results.

**6.2. Test Setup**



**6.3. Limit**

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

**6.4. Test Procedure**

The EUT was setup according to ANSI C63.4, 2009 and tested according to ANSI C63.10 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

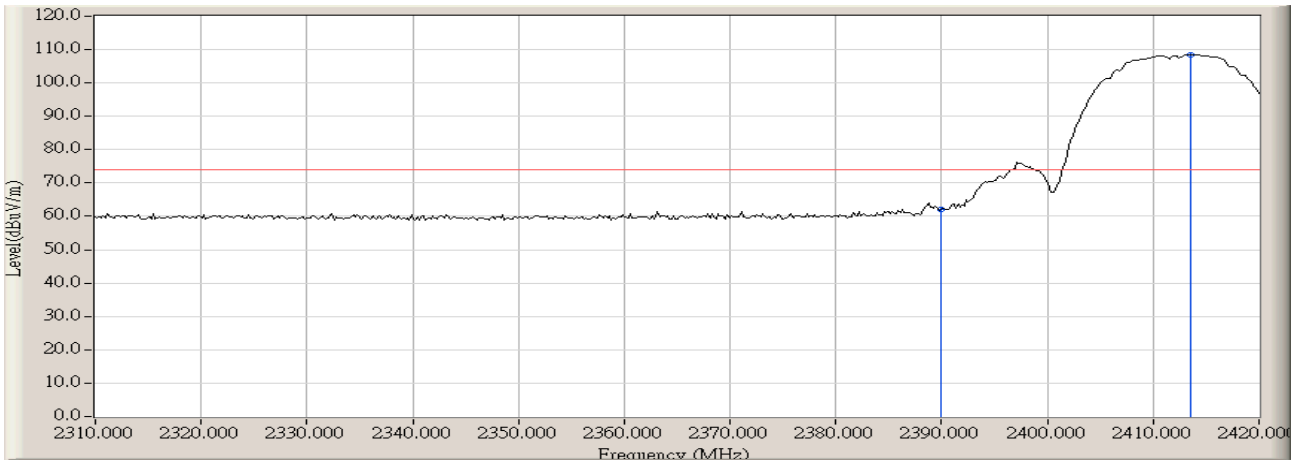
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.

**6.5. Uncertainty**

The measurement uncertainty above 1G is defined as  $\pm 3.9$  dB

6.6. Test Result

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/05 - 19:43
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MiniPCI BG 1W 2.4GHz	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz

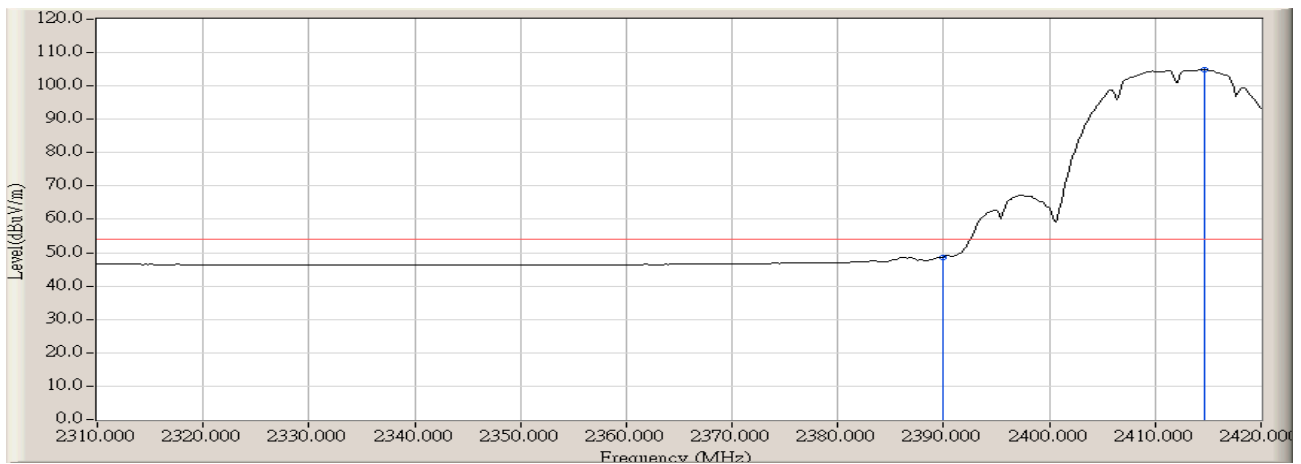


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	32.722	29.530	62.252	-11.718	73.970	PEAK
2	*	2413.583	32.734	75.801	108.536	N/A	N/A	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/05 - 19:44
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz power 16

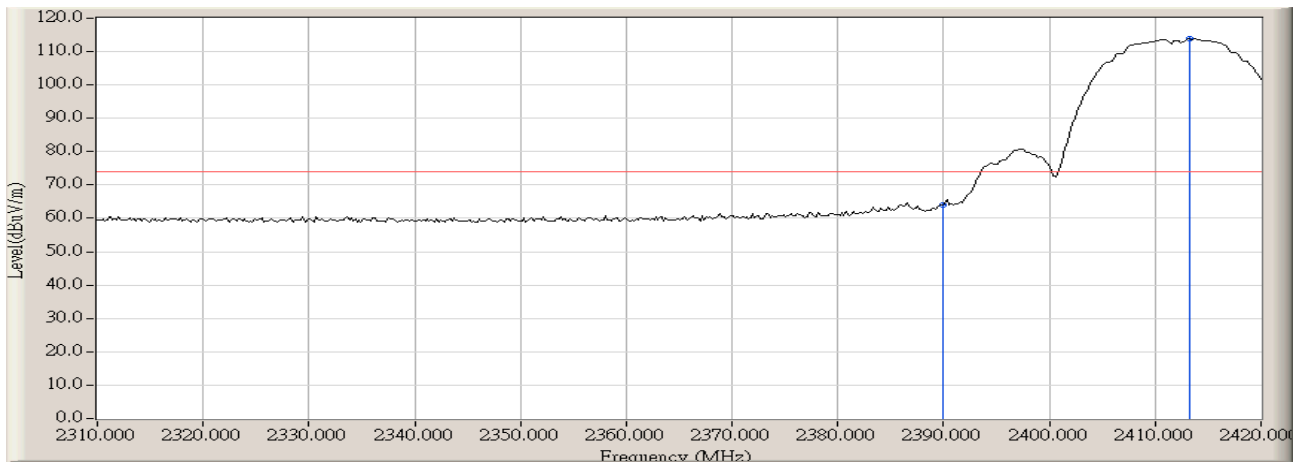


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	32.722	15.990	48.712	-5.258	53.970	AVERAGE
2	*	2414.683	32.737	72.228	104.965	N/A	N/A	AVERAGE

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/05 - 19:40
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz



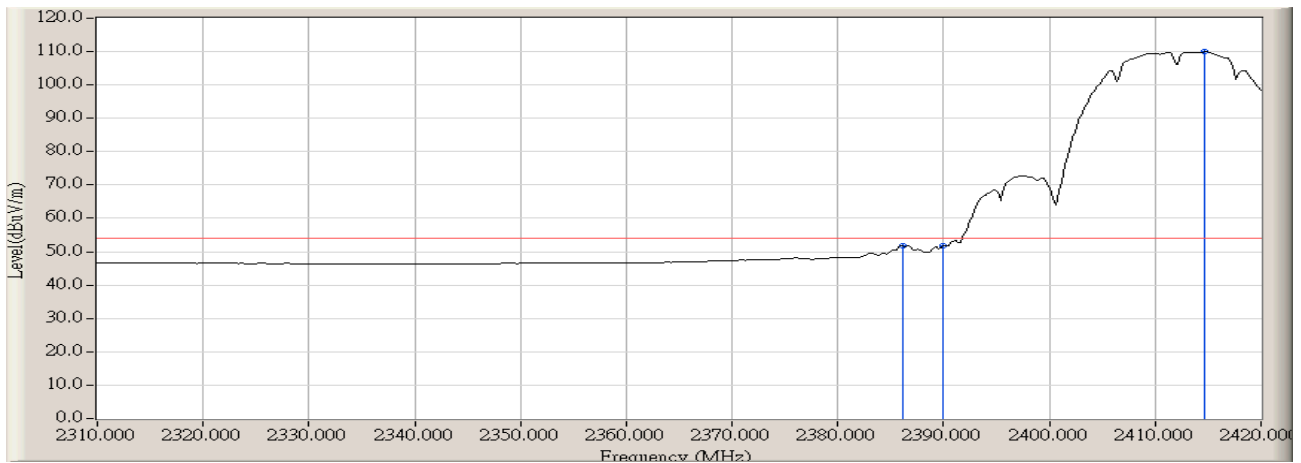
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2390.000	32.722	31.390	64.112	-9.858	73.970	PEAK
2	* 2413.217	32.734	81.014	113.748	N/A	N/A	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor



Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/05 - 19:36
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2412MHz

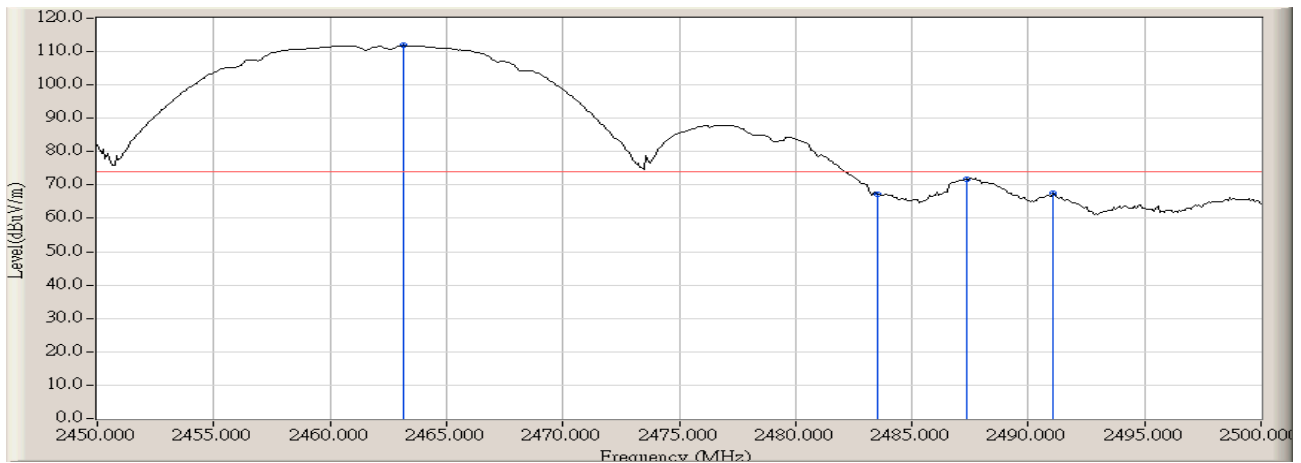


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2386.083	32.725	19.048	51.773	-2.197	53.970	AVERAGE
2	2390.000	32.722	19.095	51.817	-2.153	53.970	AVERAGE
3	* 2414.683	32.737	77.211	109.948	N/A	N/A	AVERAGE

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/05 - 21:41
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz

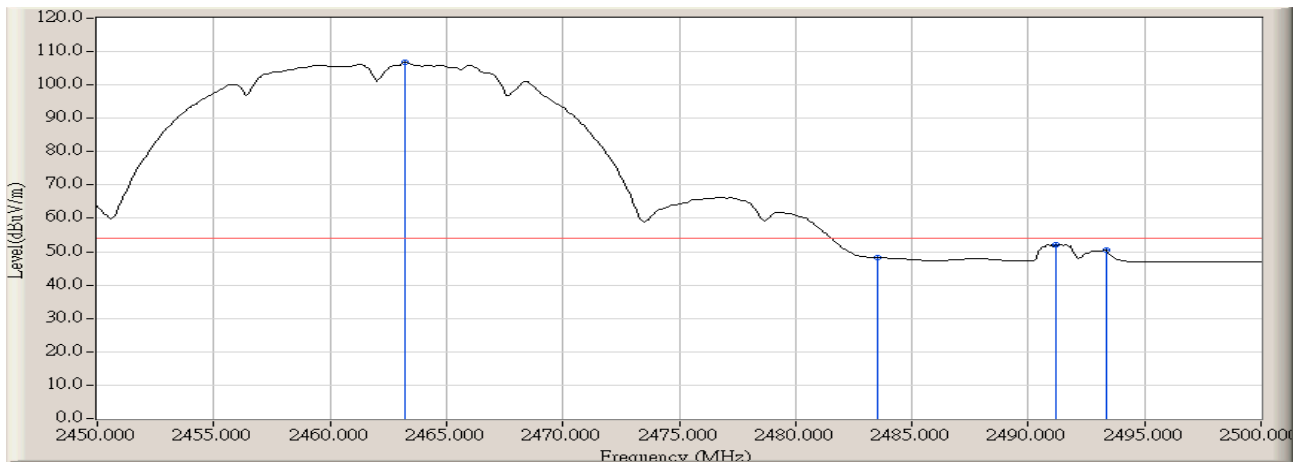


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.167	32.790	79.100	111.890	N/A	N/A	PEAK
2		2483.500	32.787	34.367	67.154	-6.816	73.970	PEAK
3		2487.333	32.785	38.812	71.597	-2.373	73.970	PEAK
4		2491.083	32.783	34.680	67.463	-6.507	73.970	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/05 - 21:41
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz

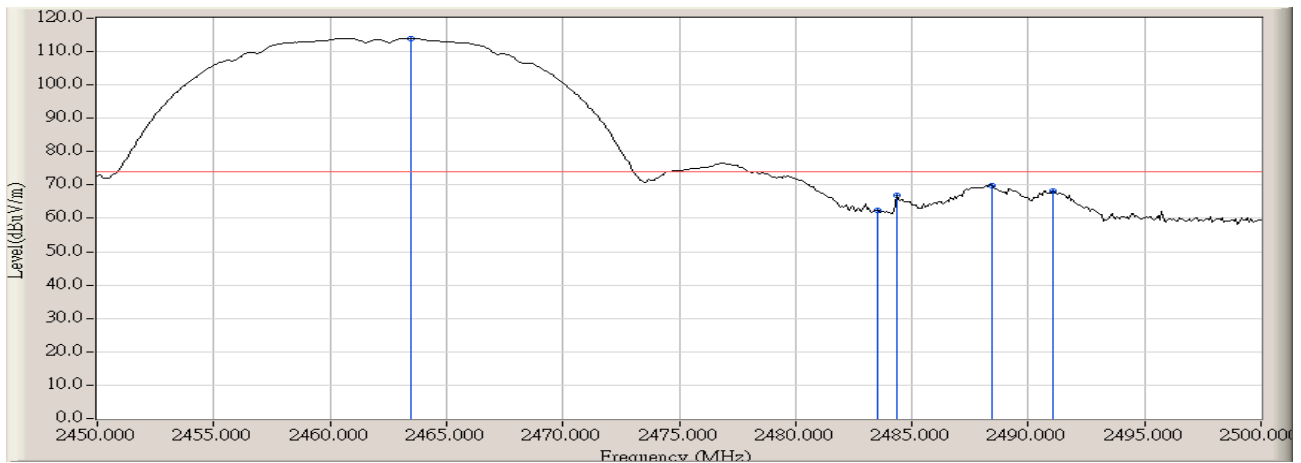


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.250	32.790	73.975	106.765	N/A	N/A	AVERAGE
2		2483.500	32.787	15.574	48.361	-5.609	53.970	AVERAGE
3		2491.167	32.783	19.307	52.090	-1.880	53.970	AVERAGE
4		2493.333	32.782	17.844	50.626	-3.344	53.970	AVERAGE

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/05 - 21:31
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz

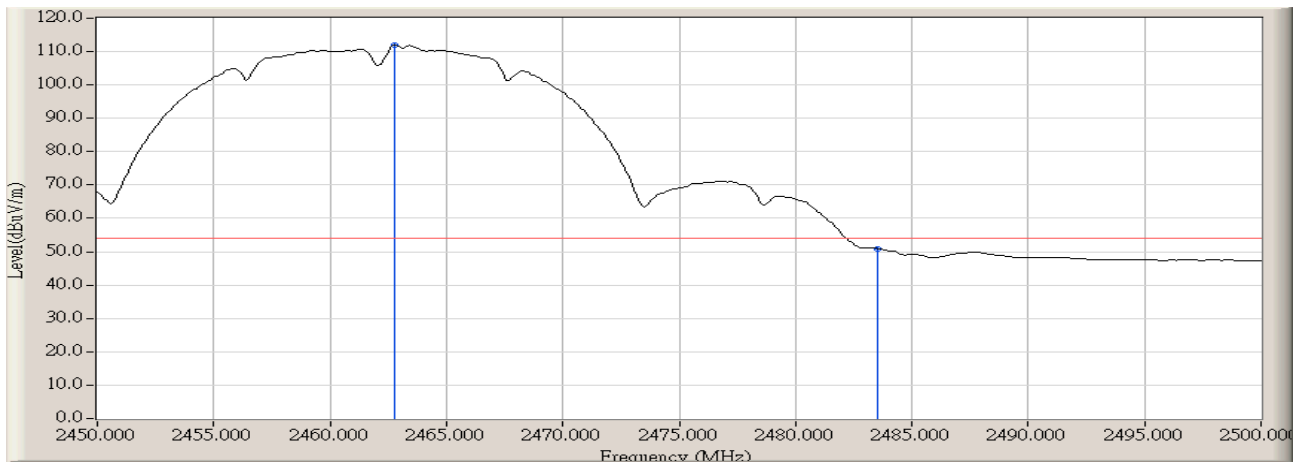


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.500	32.790	81.115	113.905	N/A	N/A	PEAK
2		2483.500	32.787	29.765	62.552	-11.418	73.970	PEAK
3		2484.333	32.787	34.002	66.789	-7.181	73.970	PEAK
4		2488.417	32.784	37.082	69.866	-4.104	73.970	PEAK
5		2491.083	32.783	35.468	68.251	-5.719	73.970	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/05 - 21:29
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 1: Transmit by 802.11b at channel 2462MHz

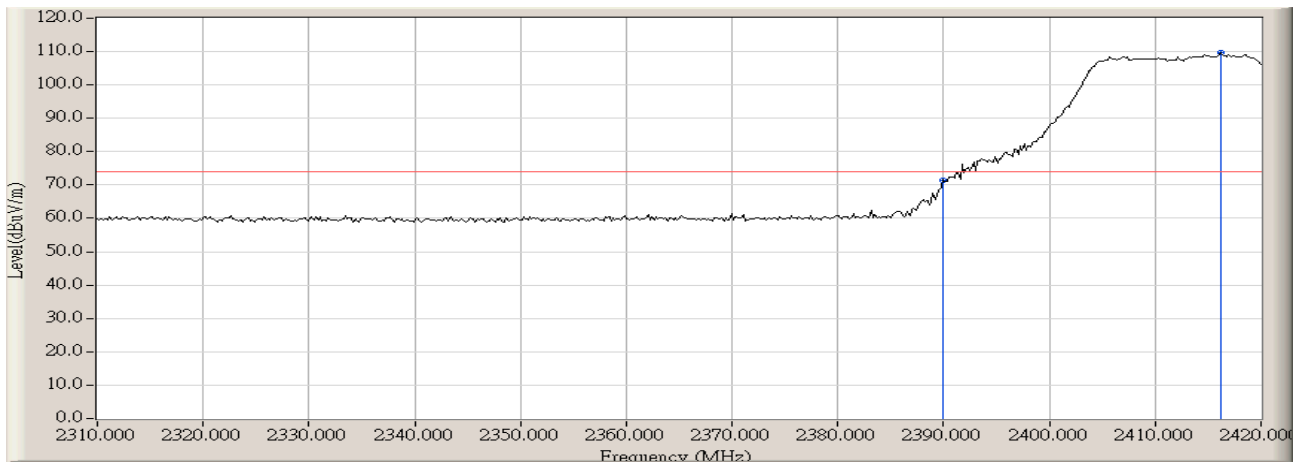


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2462.750	32.790	79.246	112.036	N/A	N/A	AVERAGE
2		2483.500	32.787	18.139	50.926	-3.044	53.970	AVERAGE

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/07 - 08:56
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz

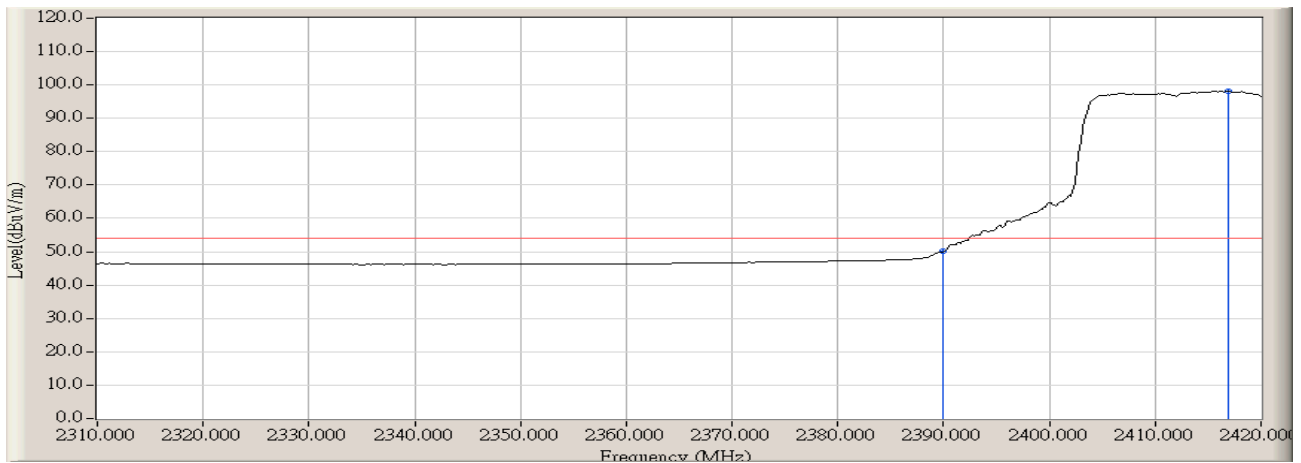


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	32.722	38.822	71.544	-2.426	73.970	PEAK
2	*	2416.150	32.739	77.020	109.759	N/A	N/A	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/07 - 08:57
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz

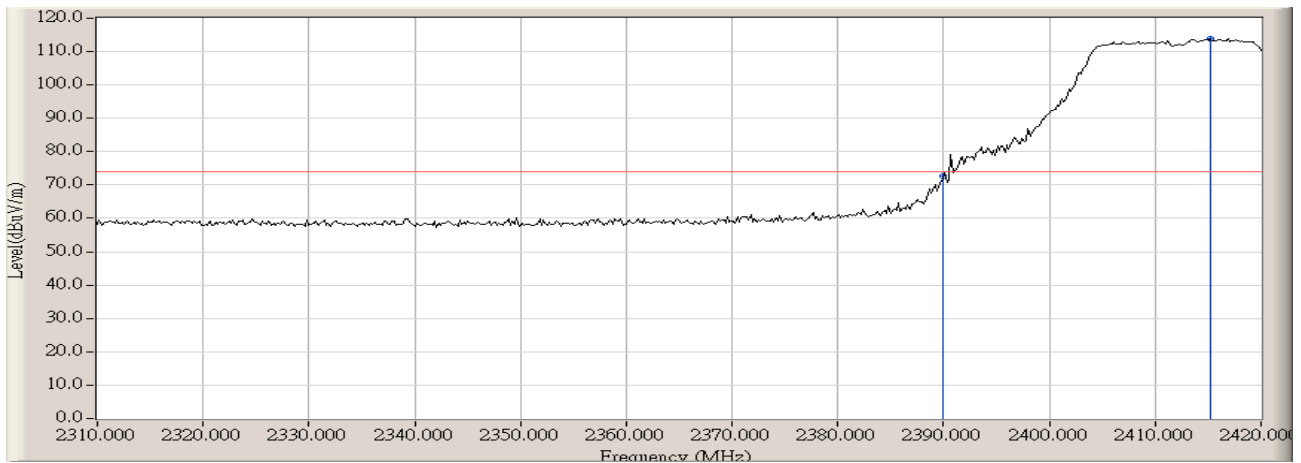


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	32.722	17.355	50.077	-3.893	53.970	AVERAGE
2	*	2416.883	32.741	65.374	98.114	N/A	N/A	AVERAGE

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/07 - 08:54
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz



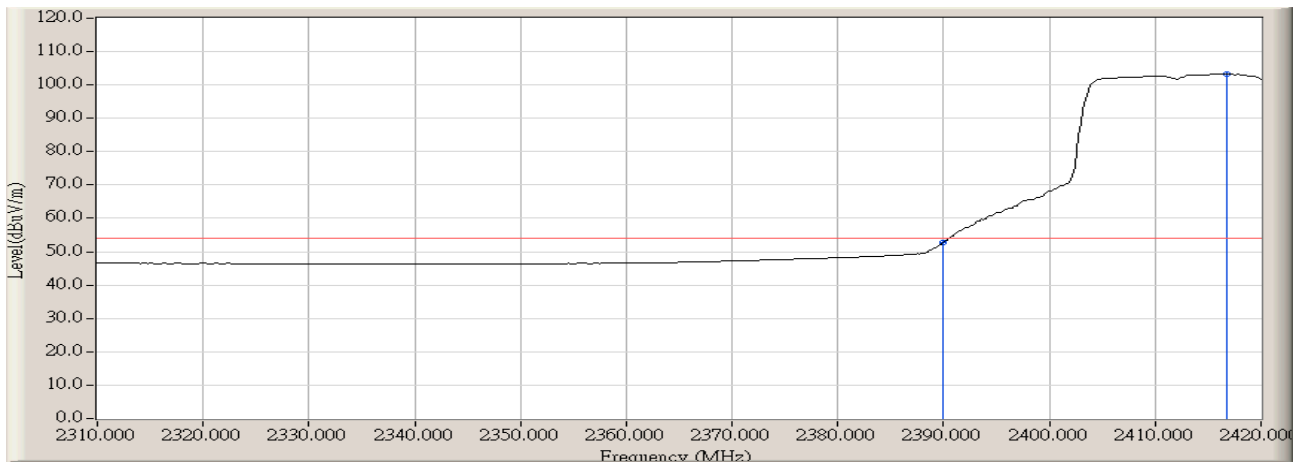
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	32.722	39.961	72.683	-1.287	73.970	PEAK
2	*	2415.233	32.738	81.200	113.937	N/A	N/A	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor



Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/07 - 08:54
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2412MHz

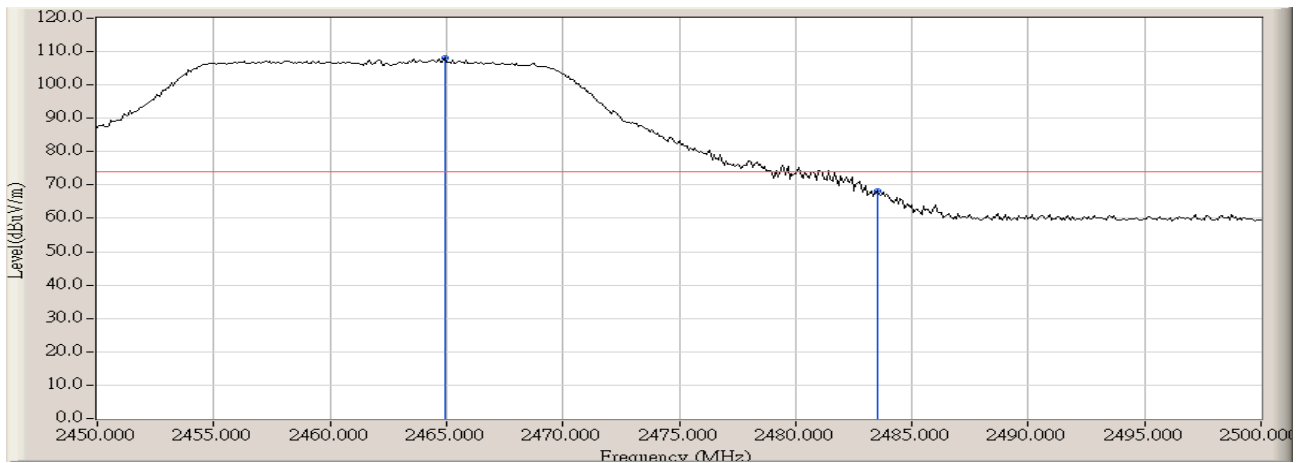


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	32.722	20.054	52.776	-1.194	53.970	PEAK
2	*	2416.700	32.740	70.591	103.331	N/A	N/A	AVERAGE

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/07 - 09:06
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz

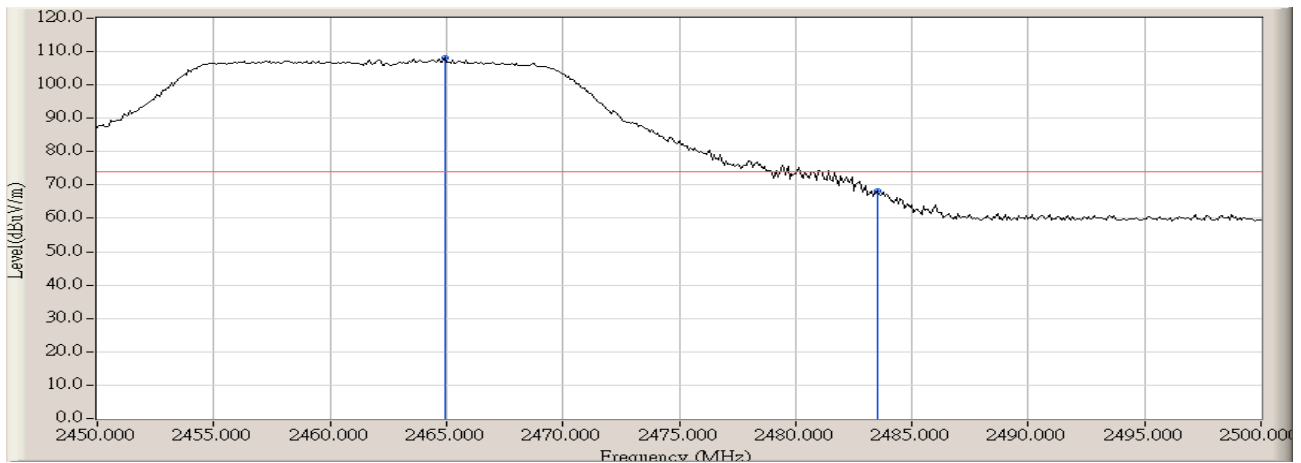


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2464.917	32.790	75.397	108.187	N/A	N/A	PEAK
2		2483.500	32.787	35.372	68.159	-5.811	73.970	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/07 - 09:06
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz

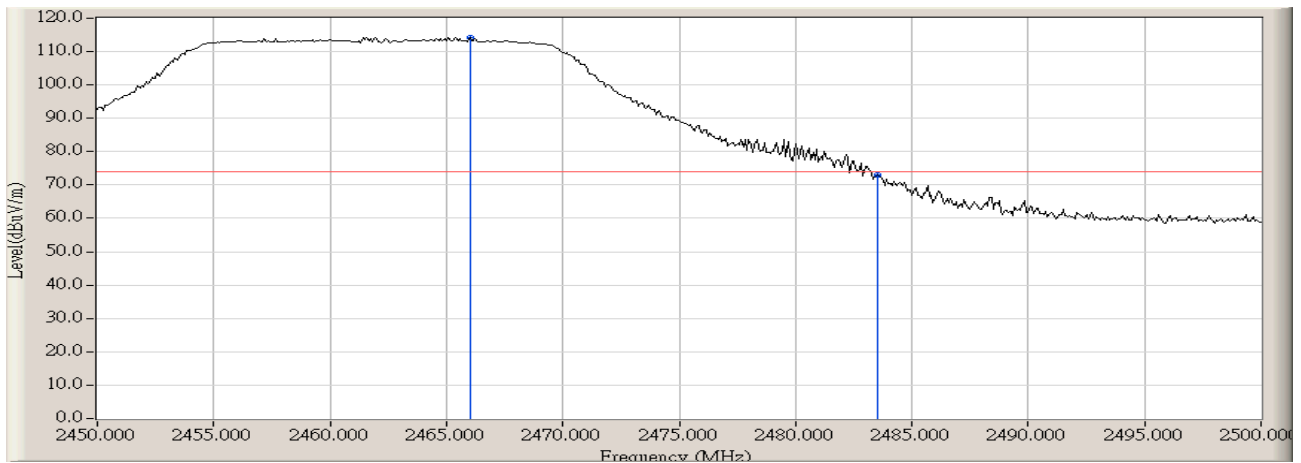


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2464.917	32.790	75.397	108.187	N/A	N/A	PEAK
2		2483.500	32.787	35.372	68.159	-5.811	73.970	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/07 - 09:04
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz

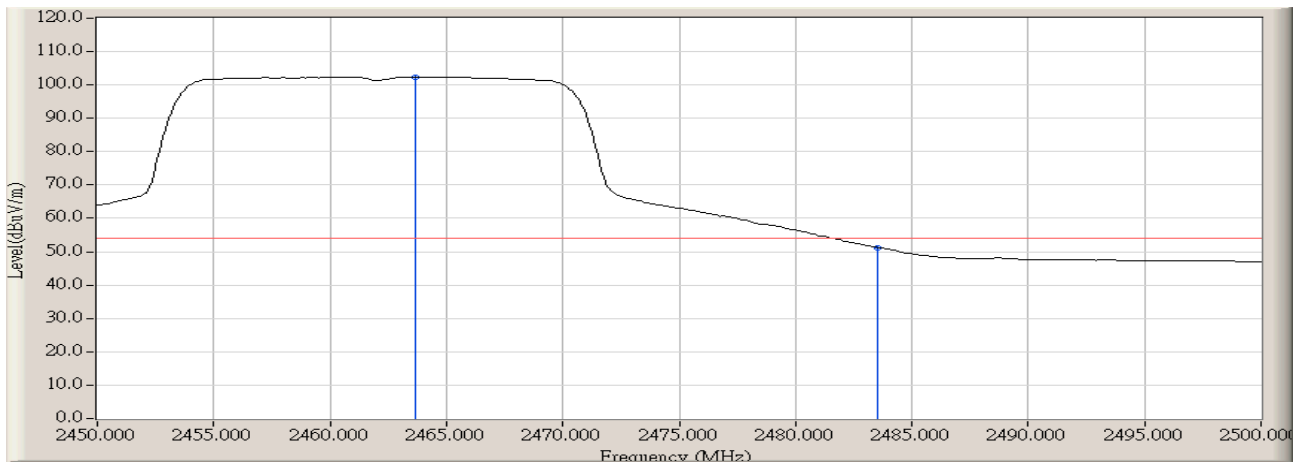


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2466.000	32.790	81.443	114.233	N/A	N/A	PEAK
2		2483.500	32.787	40.232	73.019	-0.951	73.970	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/09/07 - 09:03
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : MINIPCI BG 1W 2.4GHZ	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Transmit by 802.11g at channel 2462MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.667	32.790	69.612	102.402	N/A	N/A	AVERAGE
2		2483.500	32.787	18.491	51.278	-2.692	53.970	AVERAGE

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

## 7. Operation Frequency Range of 20dB Bandwidth

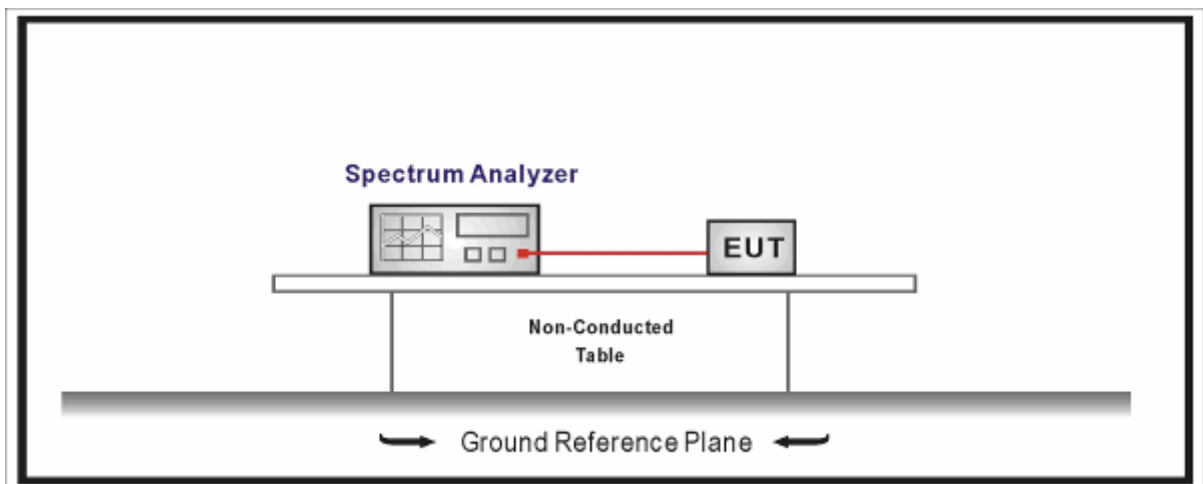
### 7.1. Test Equipment

Operation Frequency Range of 20dB Bandwidth / AC-4

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 7.2. Test Setup



### 7.3. Limit

20 dB bandwidth of the emission is contained within the operation frequency band.

### 7.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

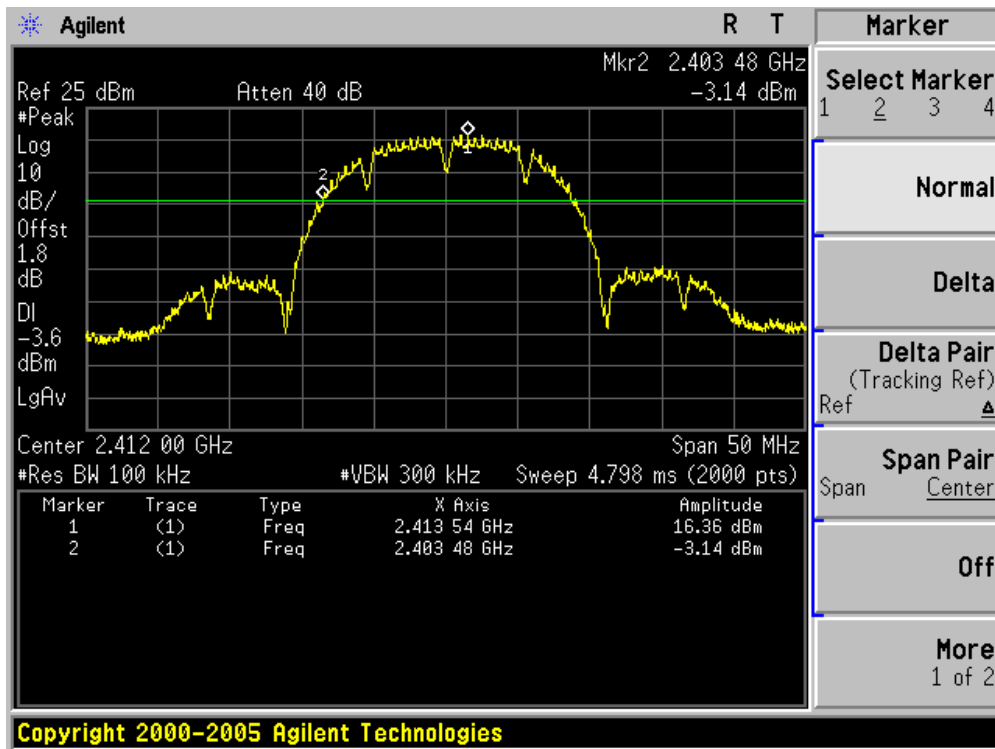
### 7.5. Uncertainty

The measurement uncertainty is defined as  $\pm 1$  kHz

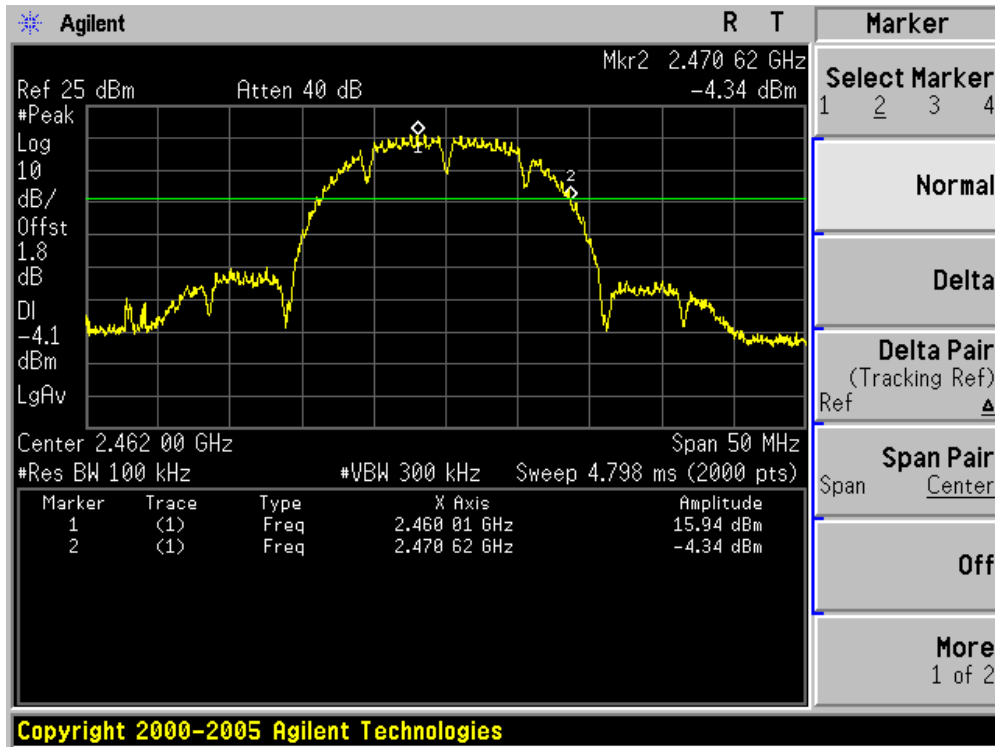
7.6. Test Result

Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit by 802.11b

Channel 01 (2412MHz)



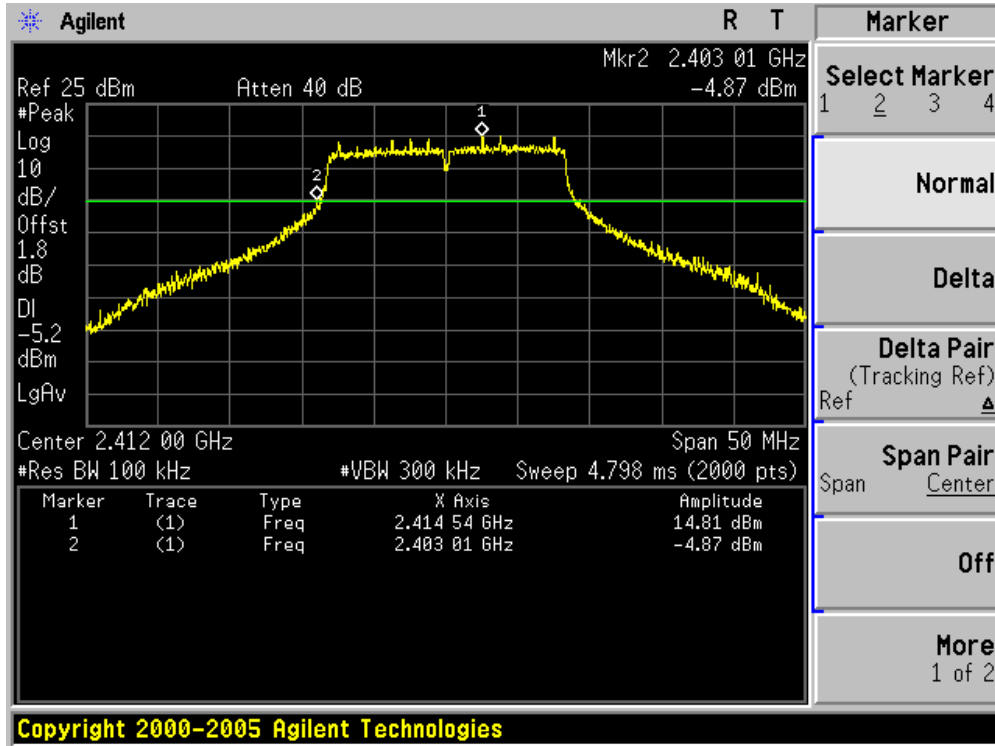
Channel 11 (2462MHz)



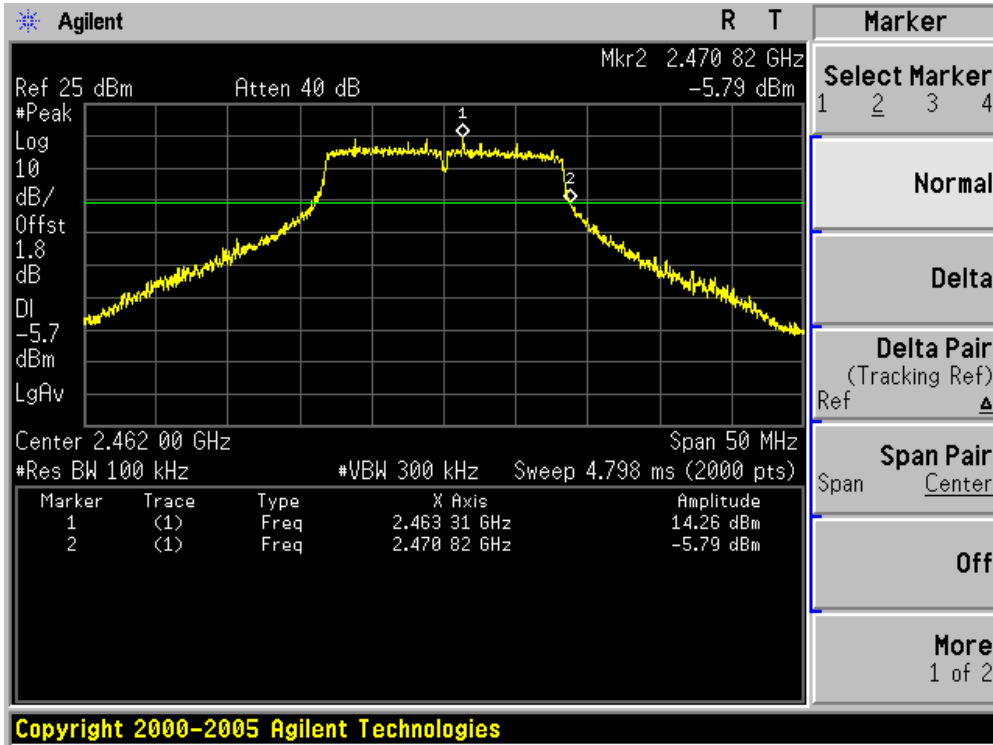


Product	: MiniPCI BG 1W 2.4GHz
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: AC-4
Test Mode	: Mode 2: Transmit by 802.11g

Channel 01 (2412MHz)



Channel 11 (2462MHz)



## 8. Occupied Bandwidth

### 8.1. Test Equipment

Occupied Bandwidth / AC-4

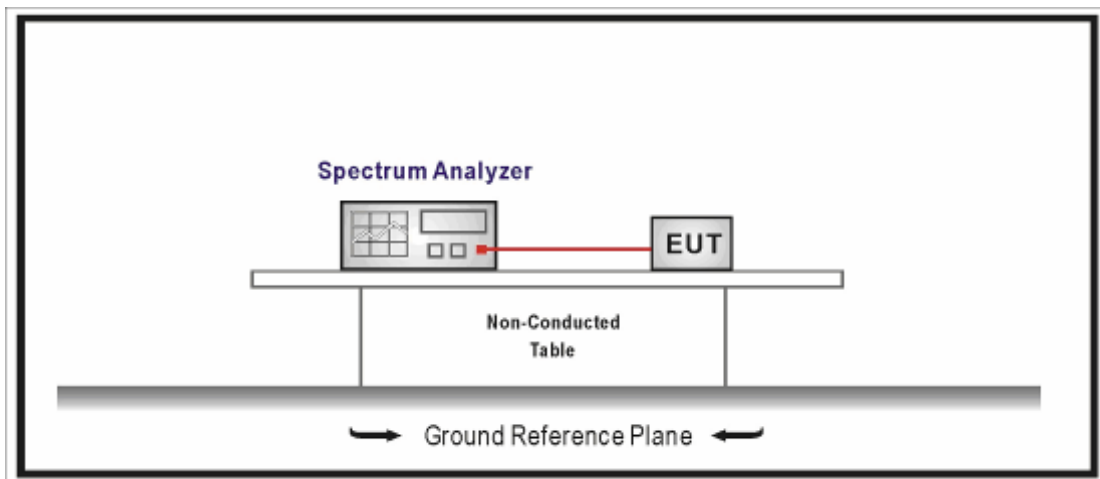
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

99% Occupied Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2012.04.30
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2012.05.04

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 8.2. Test Setup



### 8.3. Limit

The minimum 6 dB bandwidth shall be at least 500 kHz.

#### **8.4. Test Procedure**

The EUT was tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

#### **8.5. Uncertainty**

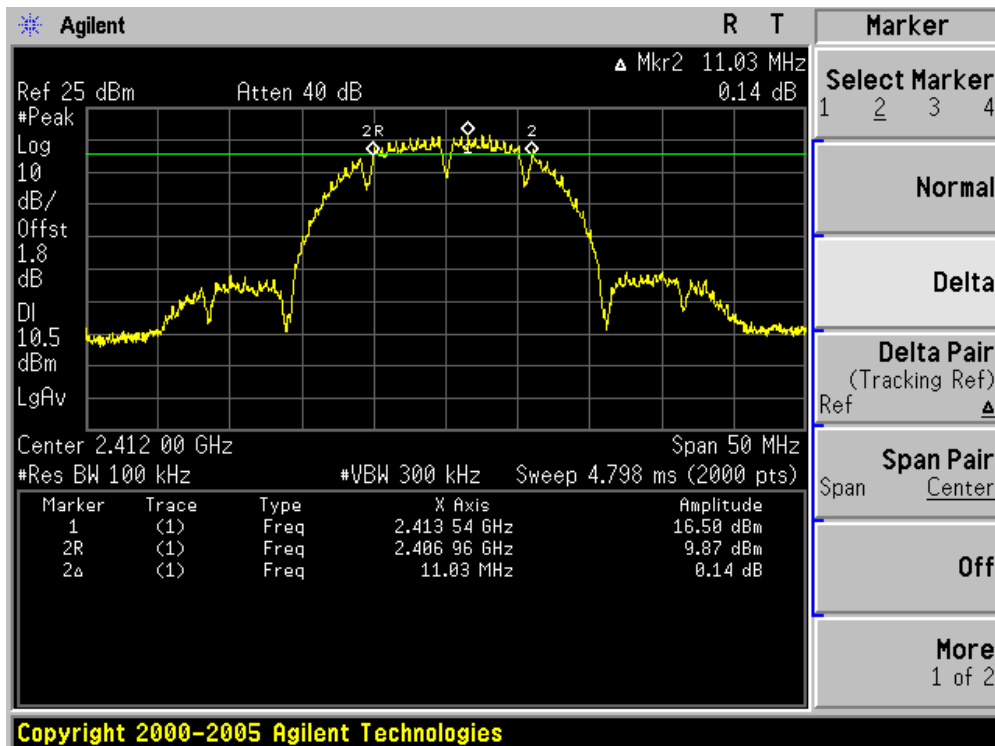
The measurement uncertainty is defined as  $\pm 1$  kHz

8.6. Test Result

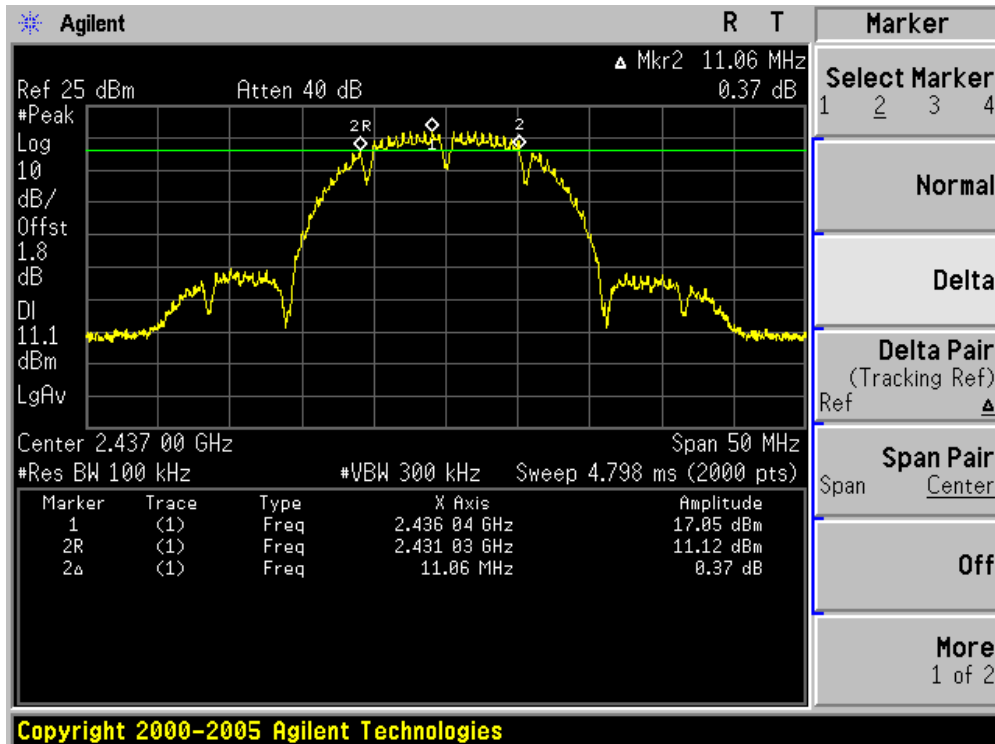
Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	Occupied Bandwidth
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	11030	500	Pass
06	2437	11060	500	Pass
11	2462	10980	500	Pass

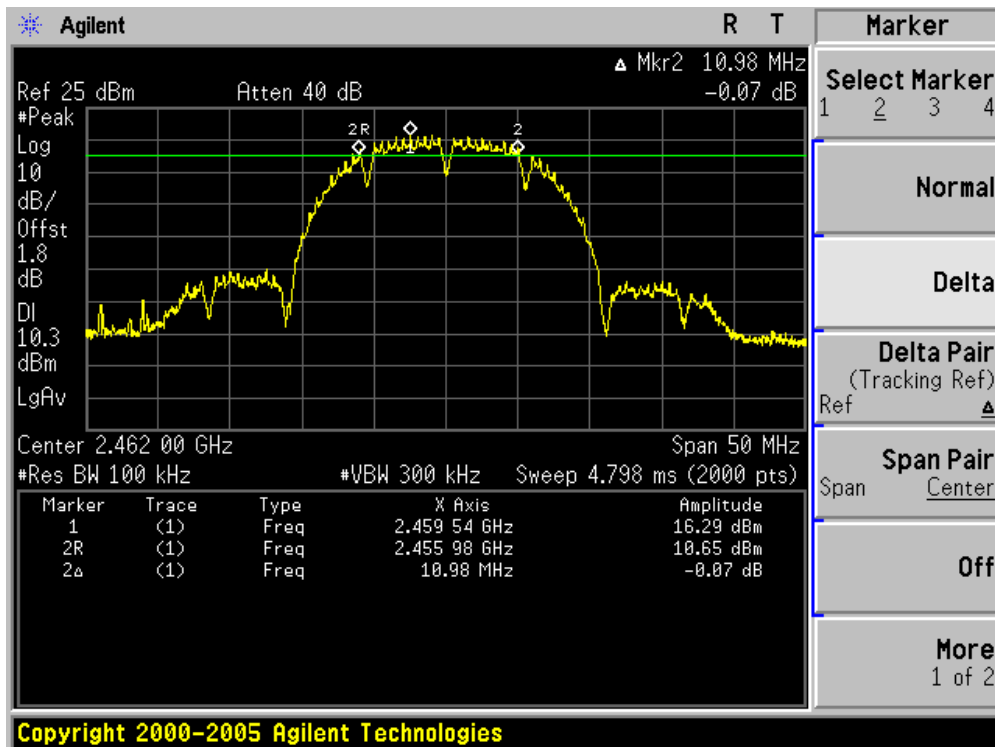
Channel 01 (2412MHz)



Channel 06 (2437MHz)



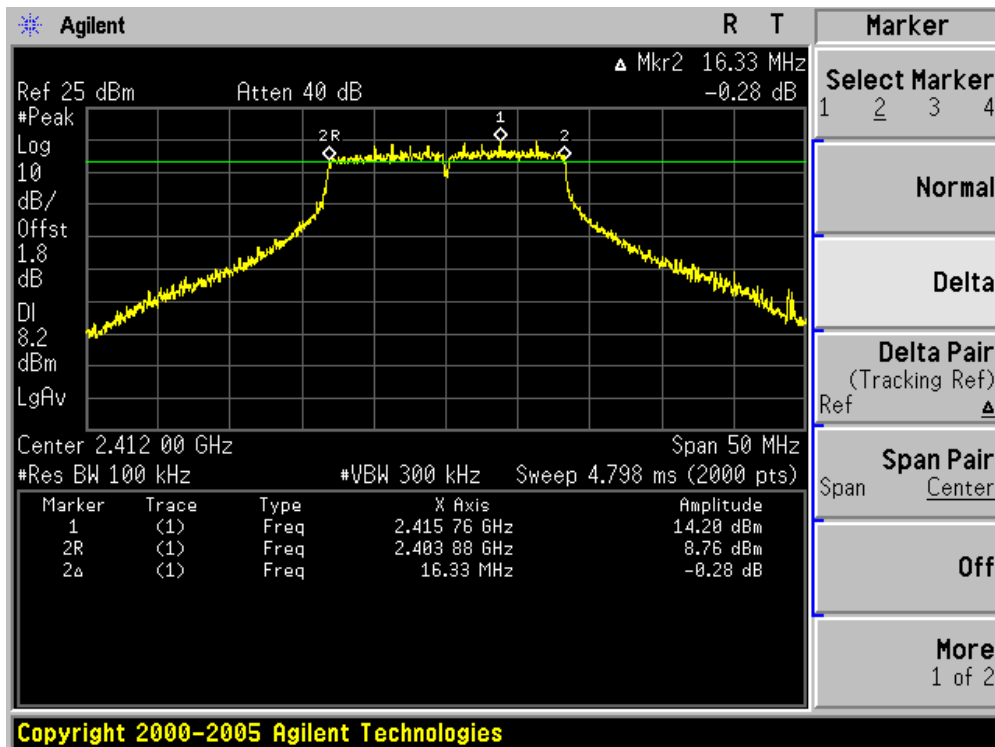
Channel 11 (2462MHz)



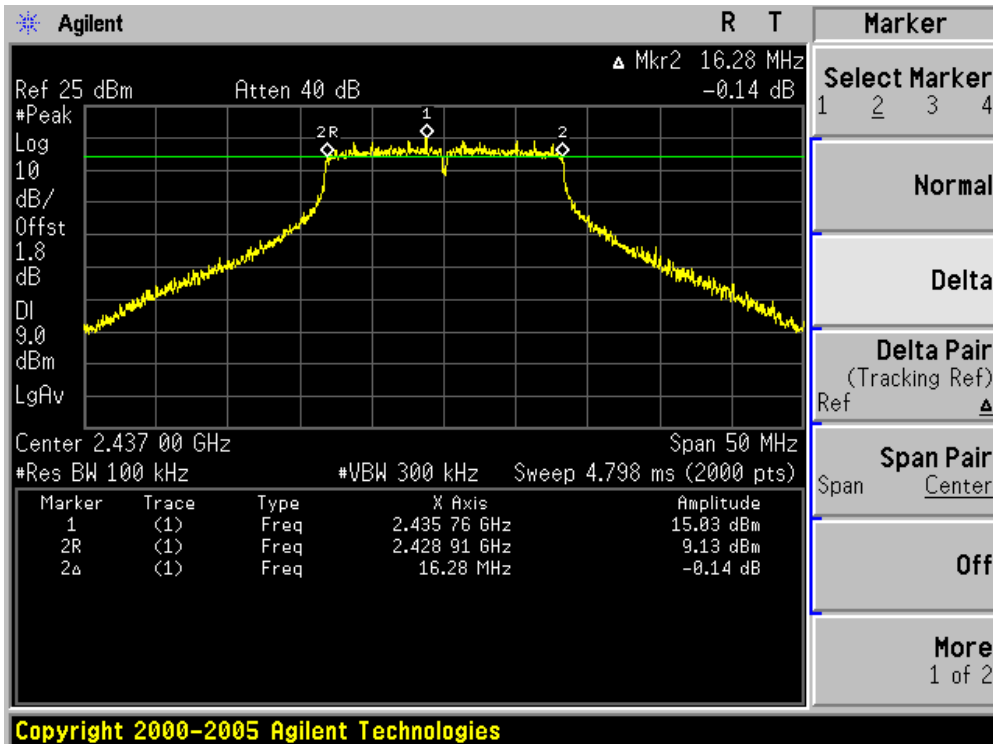
Product	: MiniPCI BG 1W 2.4GHz
Test Item	: Occupied Bandwidth
Test Site	: AC-4
Test Mode	: Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	16330	500	Pass
06	2437	16280	500	Pass
11	2462	16280	500	Pass

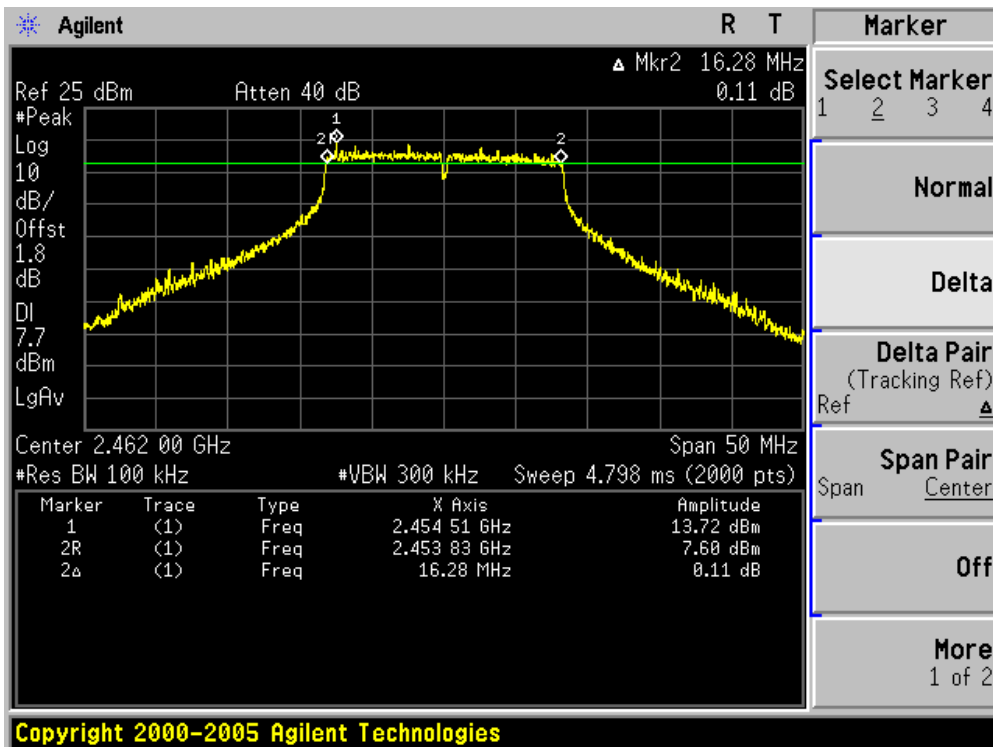
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)

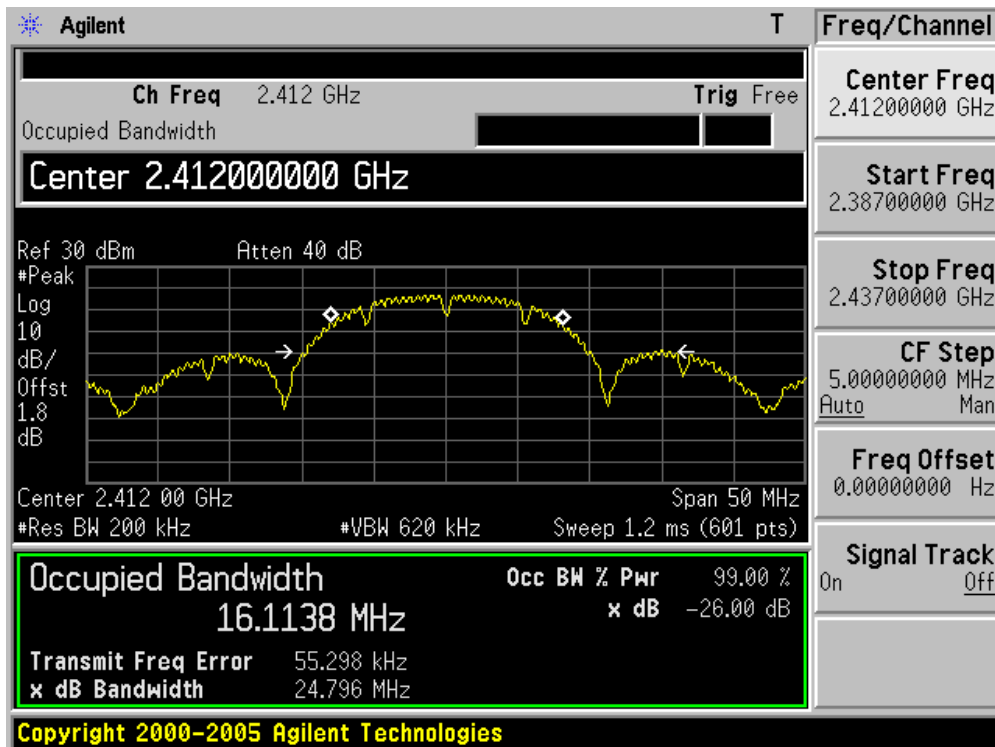




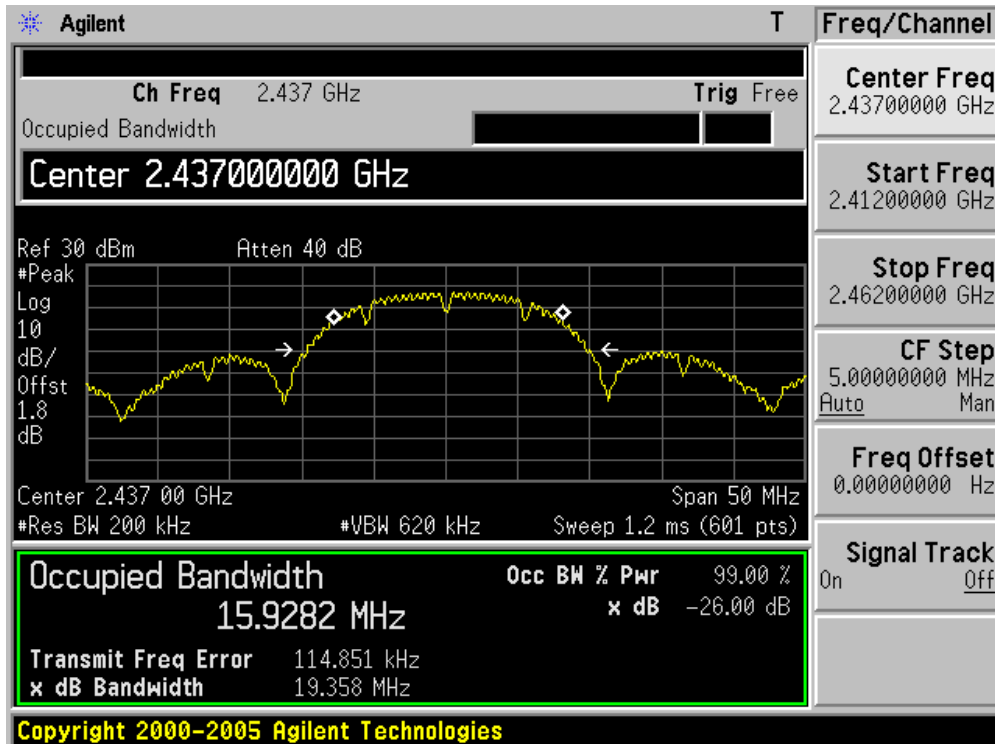
Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	16113.8
06	2437	15928.2
11	2462	15803.9

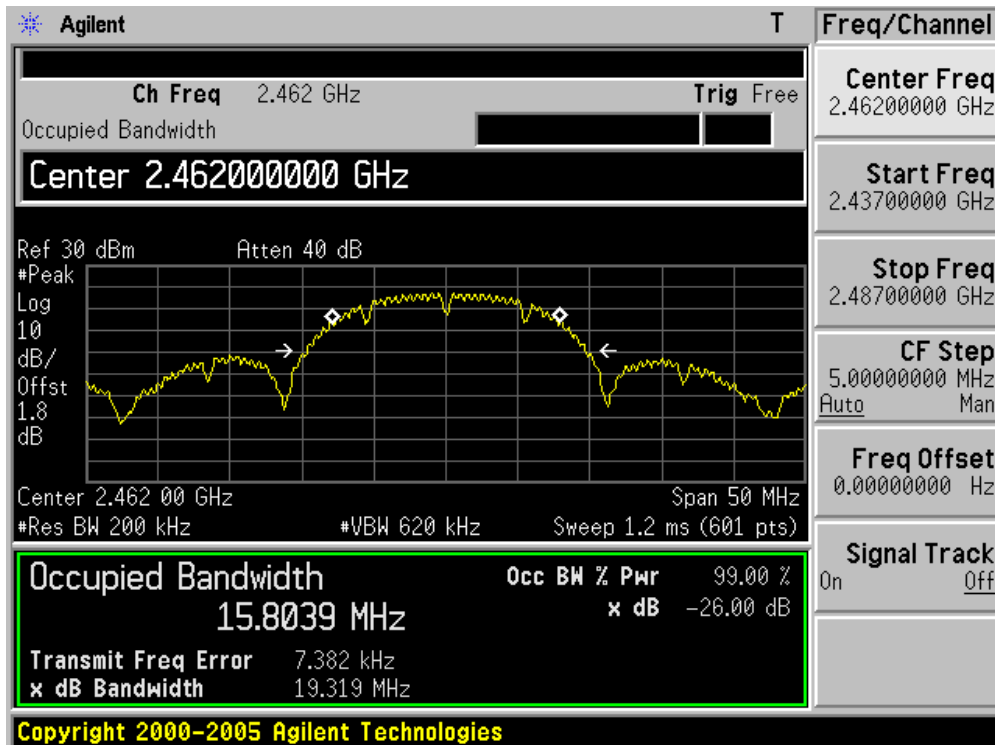
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



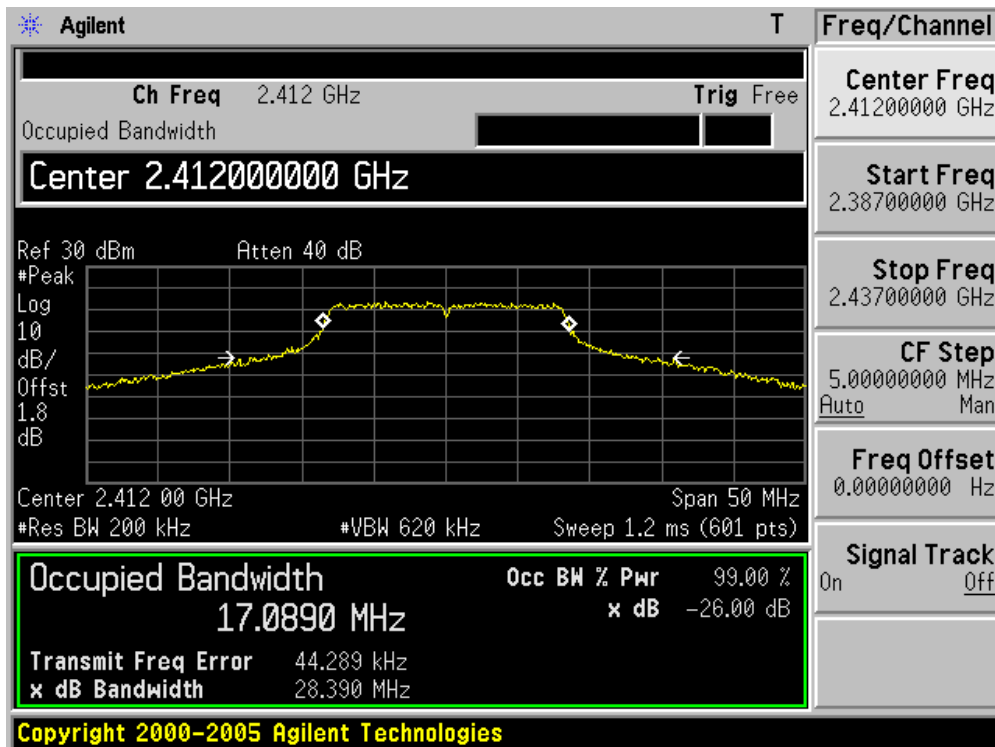
Channel 11 (2462MHz)



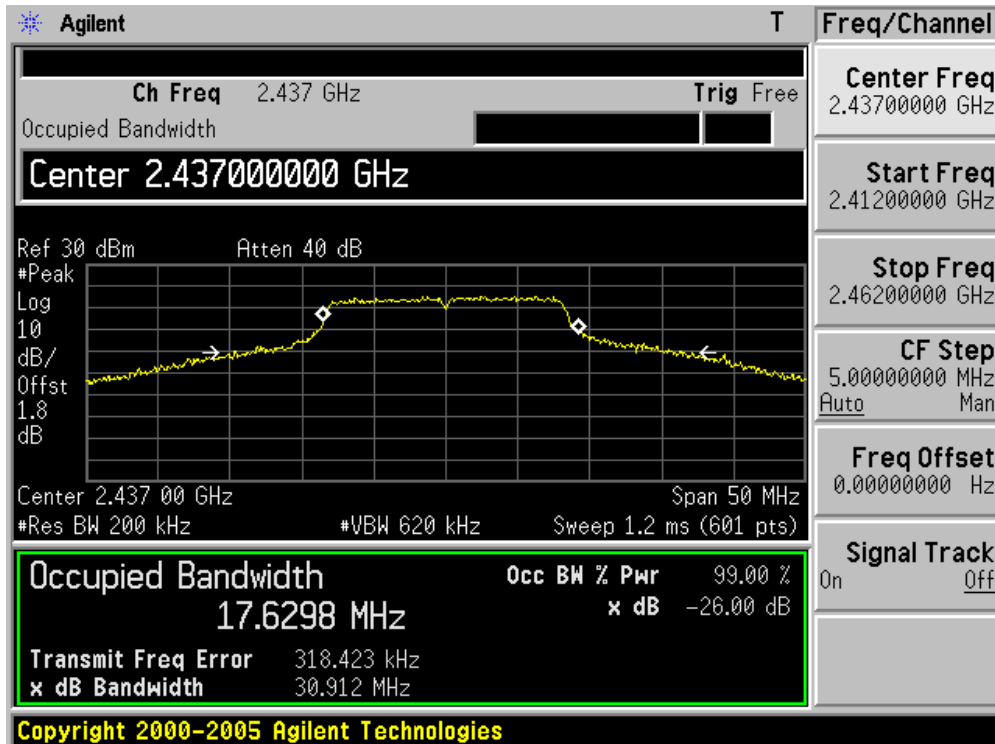
Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11g

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	17089.0
06	2437	17629.8
11	2462	17019.5

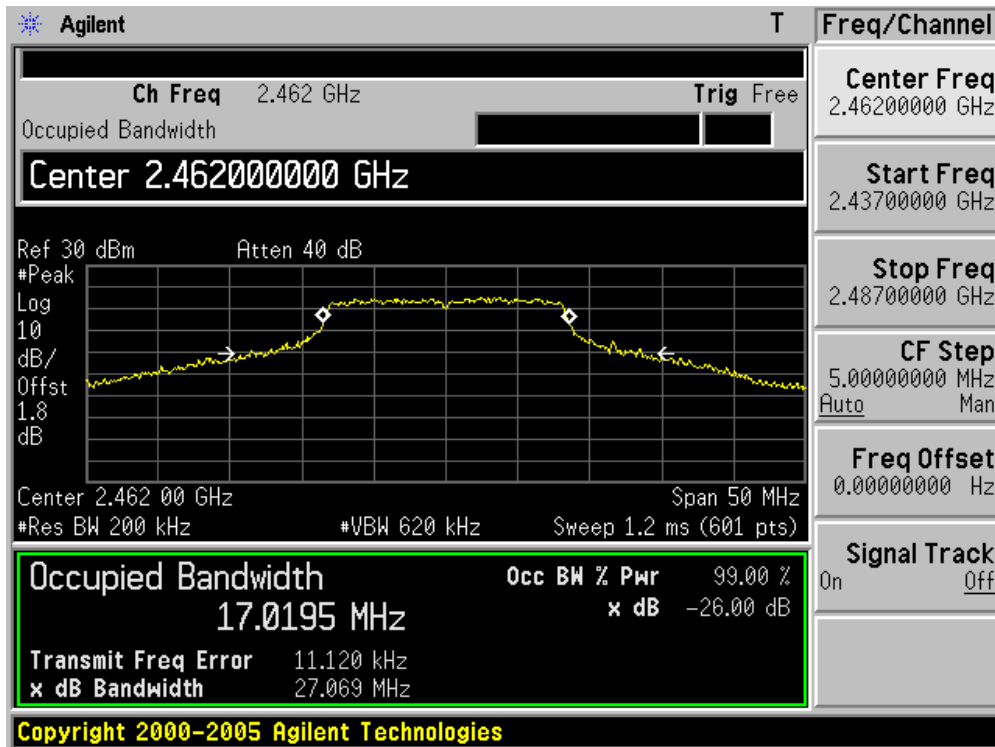
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



## 9. Power Output

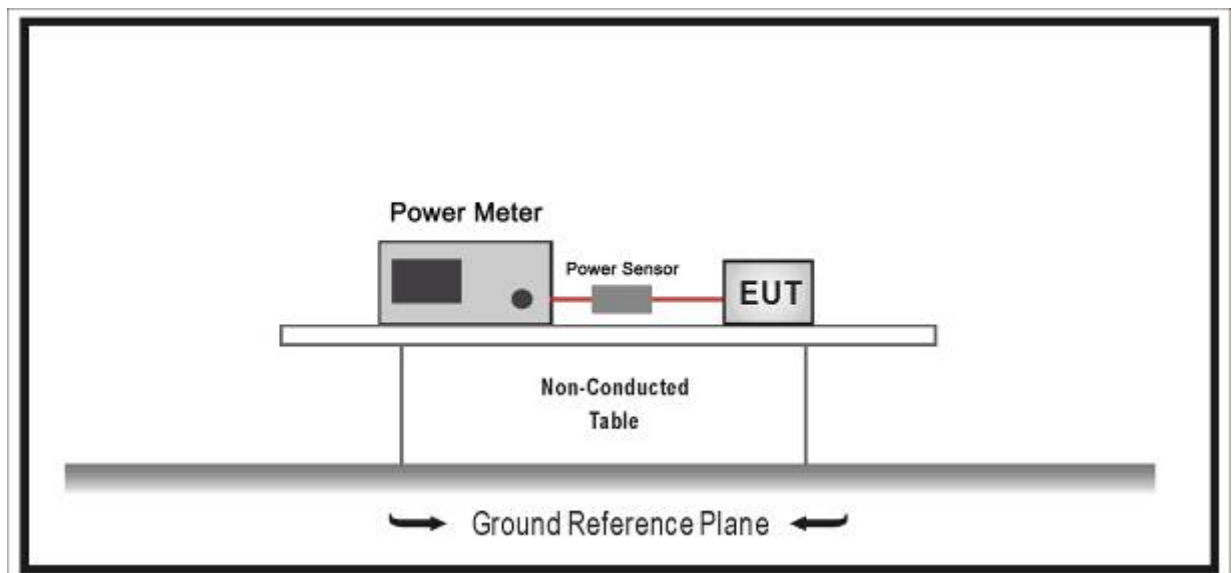
### 9.1. Test Equipment

Power Output / AC-4

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 9.2. Test Setup



### 9.3. Limit

The maximum peak power shall be less 1 Watt (30dBm).

Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

### 9.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247

requirements.

Use the wideband power meter to test peak power and record the result.

### **9.5. Uncertainty**

The measurement uncertainty is defined as  $\pm 1.27$  dB

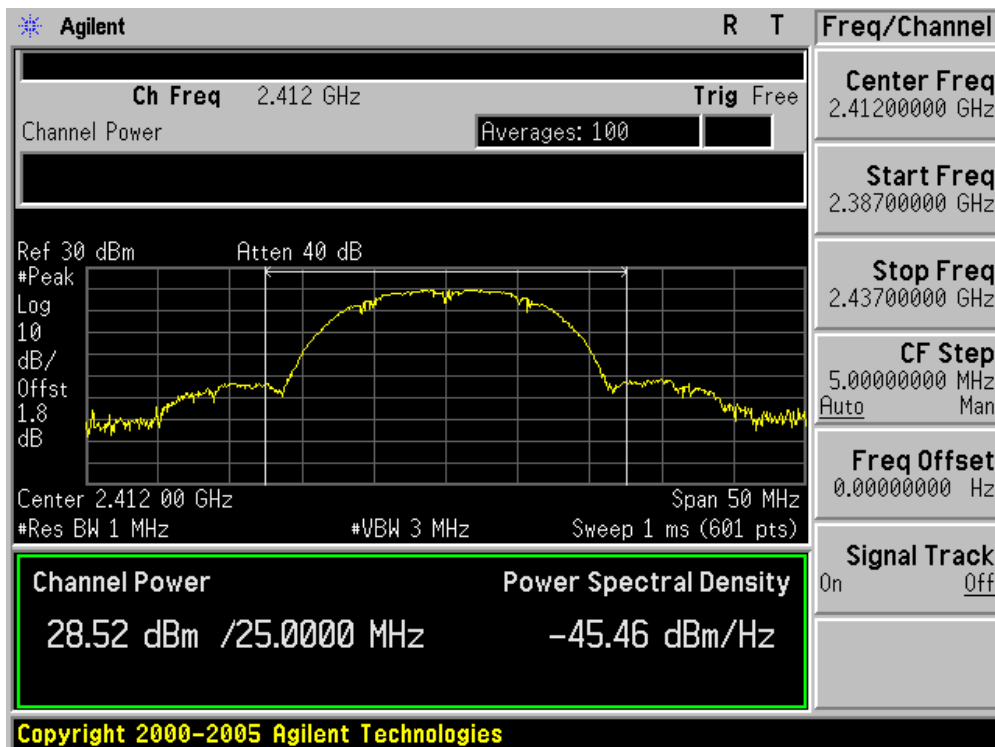
9.6. Test Result

Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	Power Output
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit by 802.11b

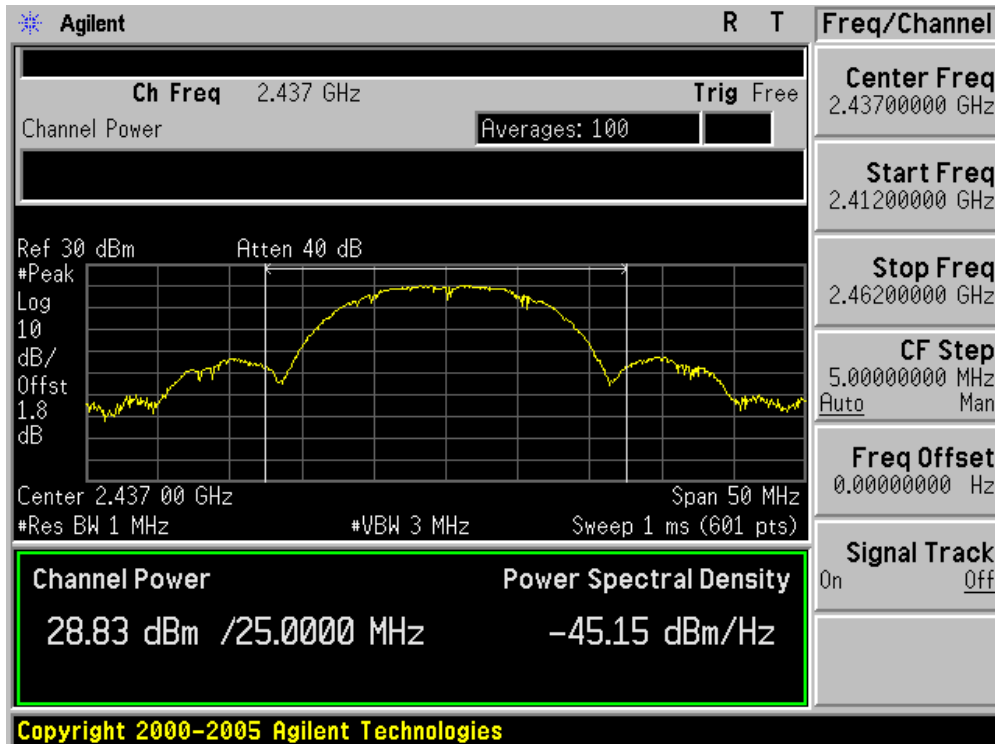
Channel No.	Frequency (MHz)	Data Rate (Mbps)				Limit (dBm)
		1	2	5.5	11	
01	2412	28.52	--	--	--	30
06	2437	28.83	28.72	28.66	28.54	30
11	2462	28.64	--	--	--	30

Note: The antenna gain of transmitter is less than 6 dBi and other than fixed, point-to-point operation, therefore the limit is 30 dBm.

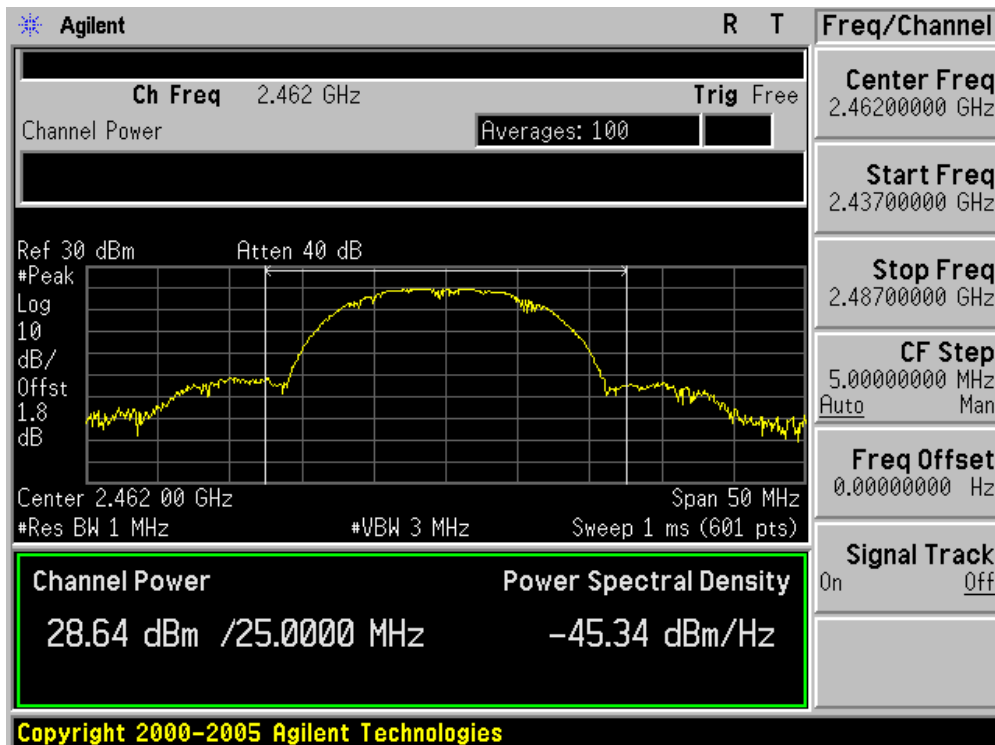
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



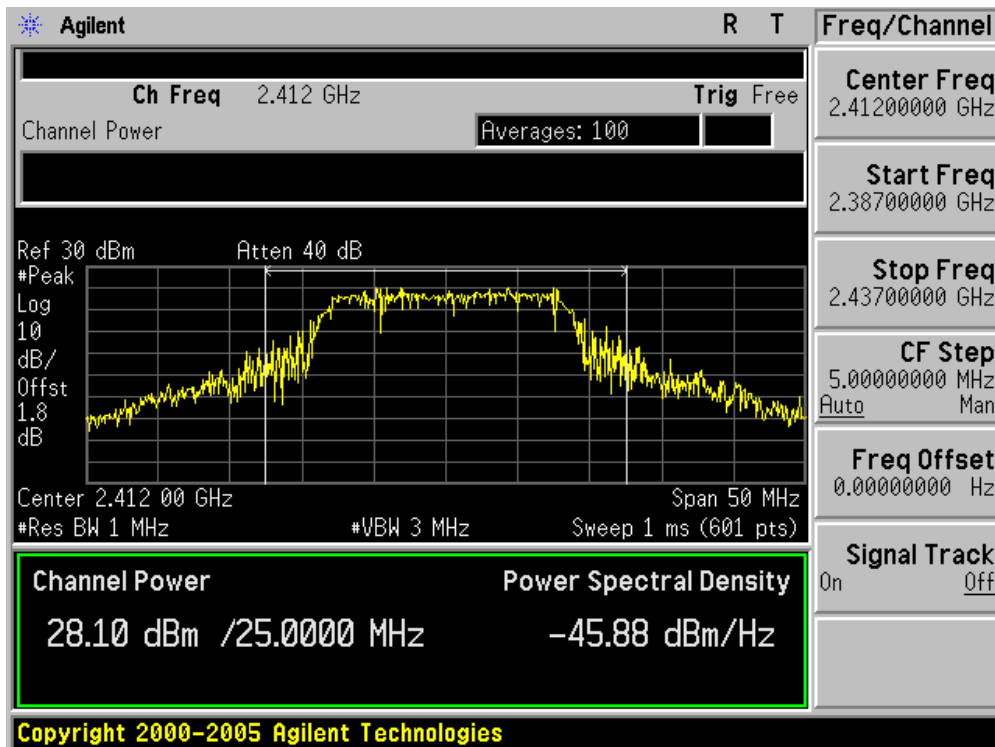


Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	Power Output
Test Site	:	AC-4
Test Mode	:	Mode 2: Transmit by 802.11g

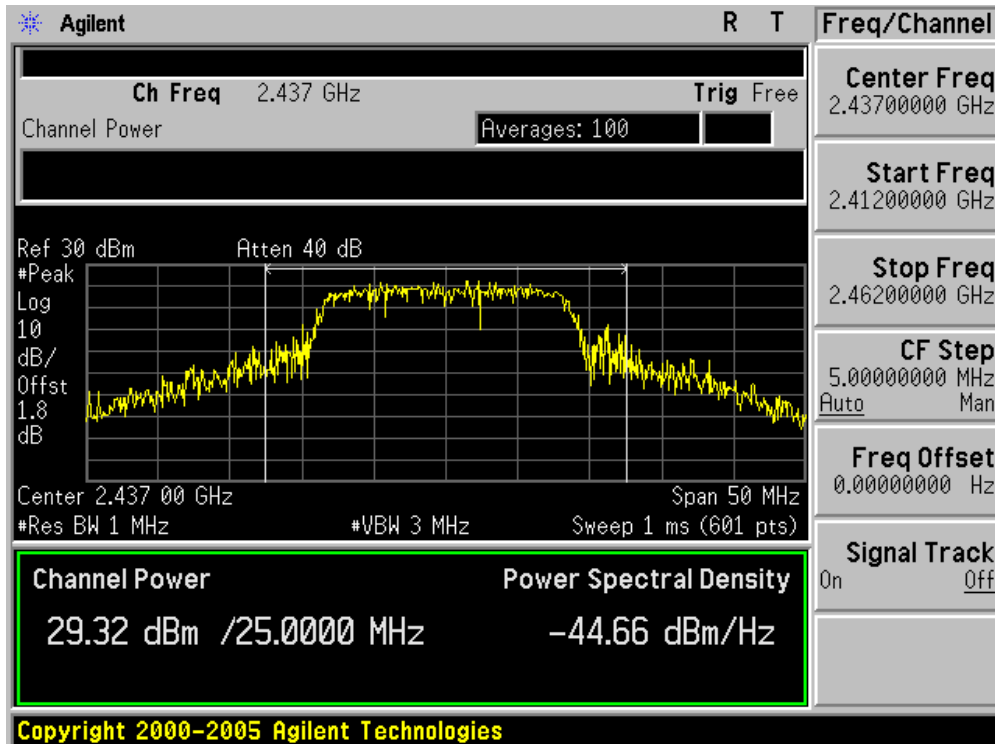
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Limit (dBm)
		6	9	12	18	24	36	48	54	
01	2412	28.10	--	--	--	--	--	--	--	30
06	2437	29.32	29.25	29.22	29.20	29.16	29.13	29.10	29.08	30
11	2462	28.61	--	--	--	--	--	--	--	30

Note: The antenna gain of transmitter is less than 6 dBi and other than fixed, point-to-point operation, therefore the limit is 30 dBm.

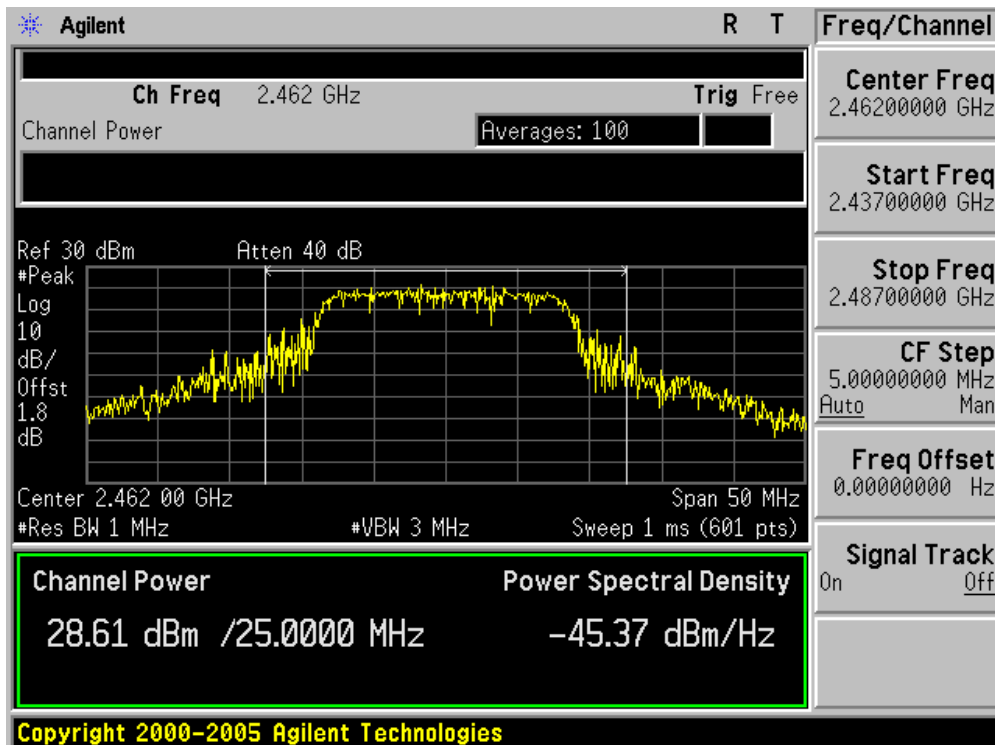
### Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



## 10. Power Spectral Density

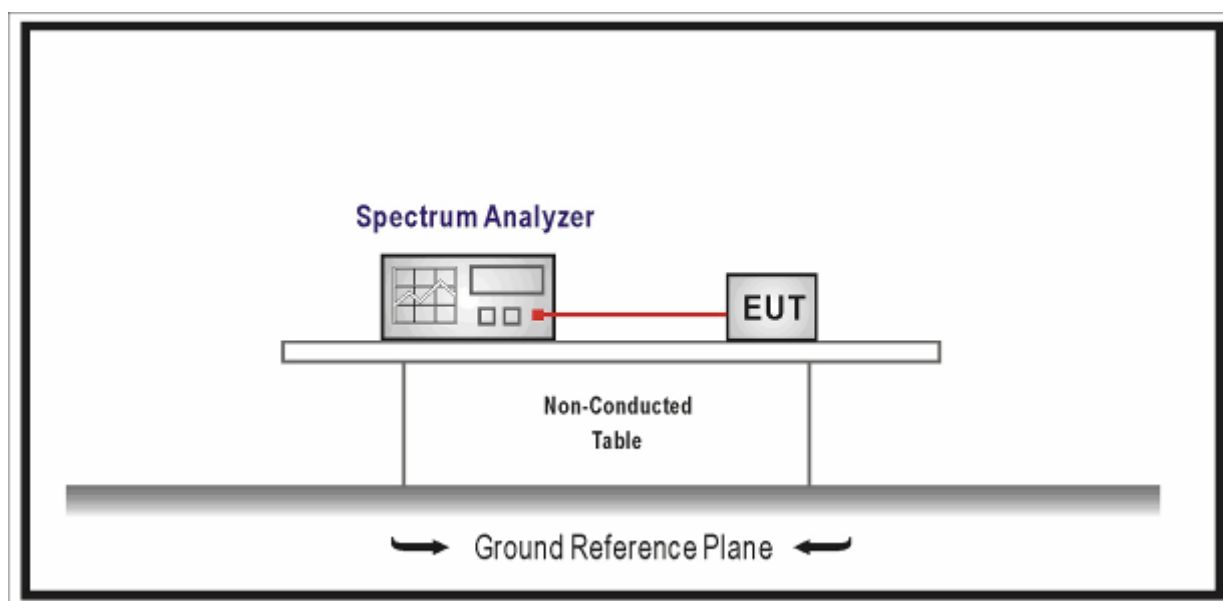
### 10.1. Test Equipment

Power Spectral Density / AC-4

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2008/06/11
Coaxial Cable	Huber+Suhner	AC4-RF	09	2007/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2008/03/09

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 10.2. Test Setup



### 10.3. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiated to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

#### **10.4. Test Procedure**

The EUT was tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 3 kHz, Set VBW  $\cong$  10 kHz, Sweep time=100s, Set detector=Peak detector.

#### **10.5. Uncertainty**

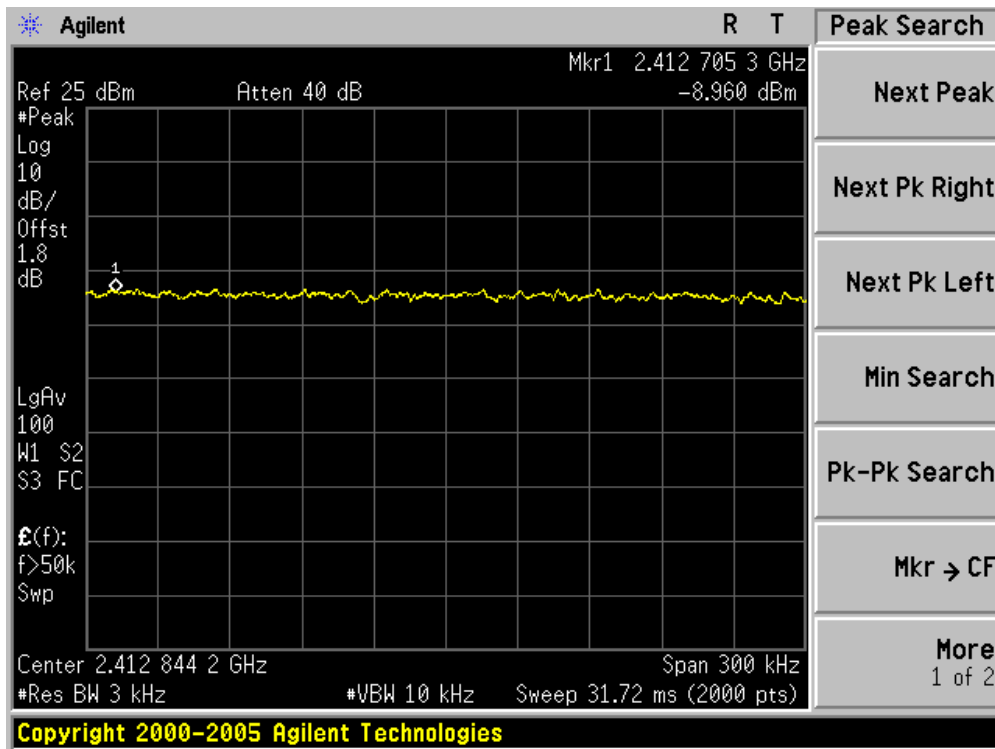
The measurement uncertainty is defined as  $\pm 1.27$  dB

10.6. Test Result

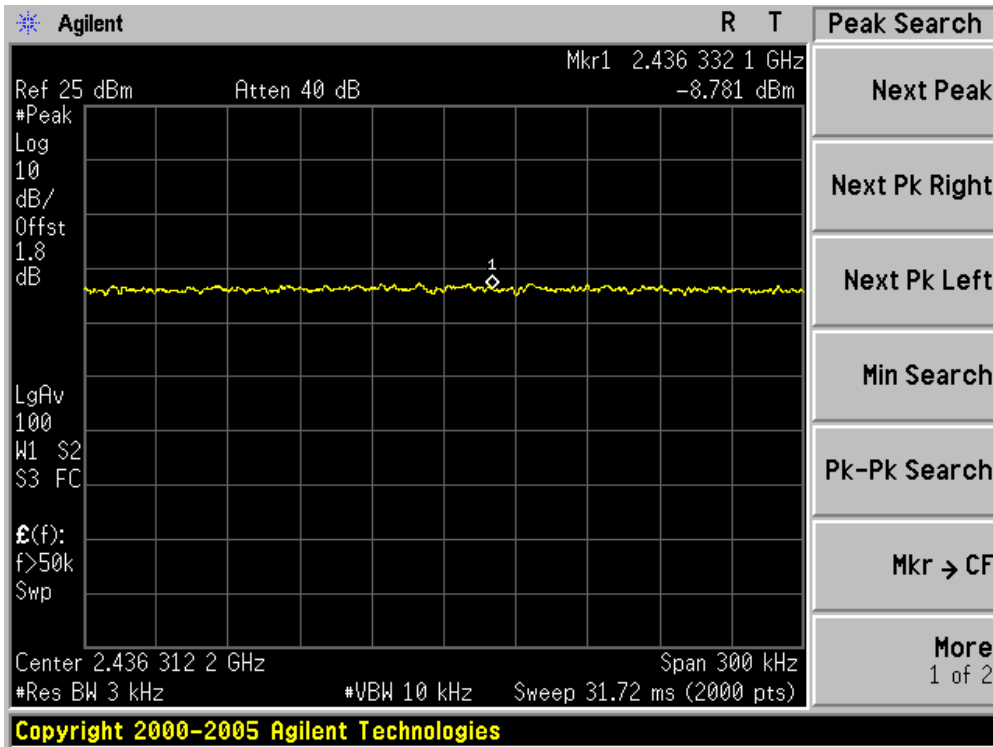
Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	Power Spectral Density
Test Site	:	AC-4
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	-8.960	8	Pass
06	2437	-8.781	8	Pass
11	2462	-9.620	8	Pass

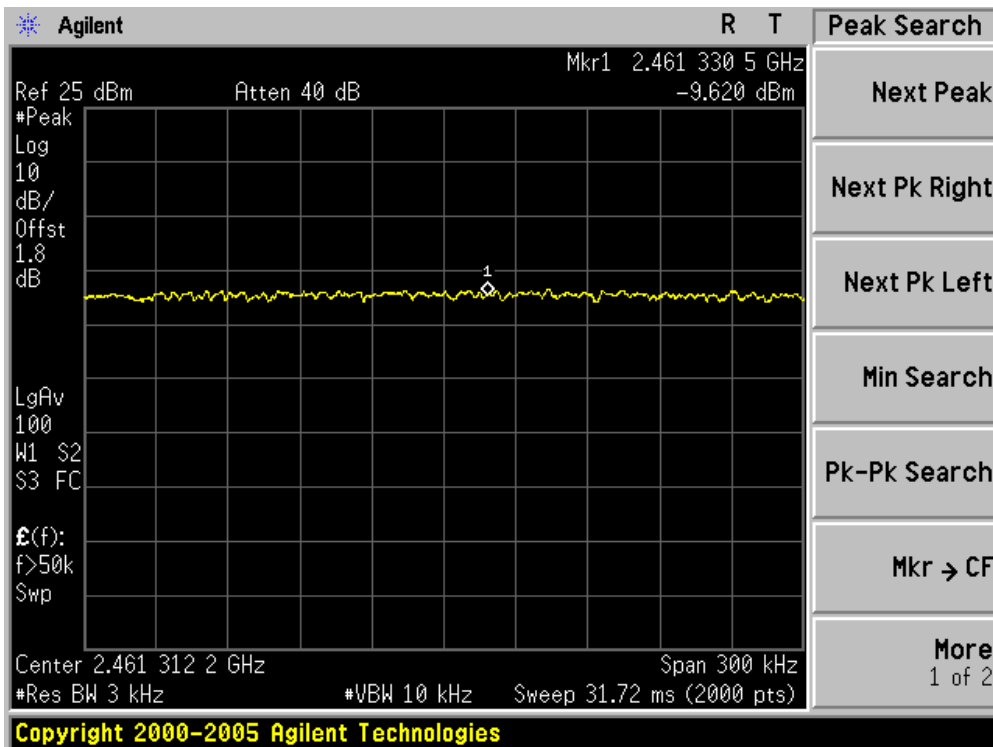
Channel 01 (2412MHz)



Channel 06 (2437MHz)



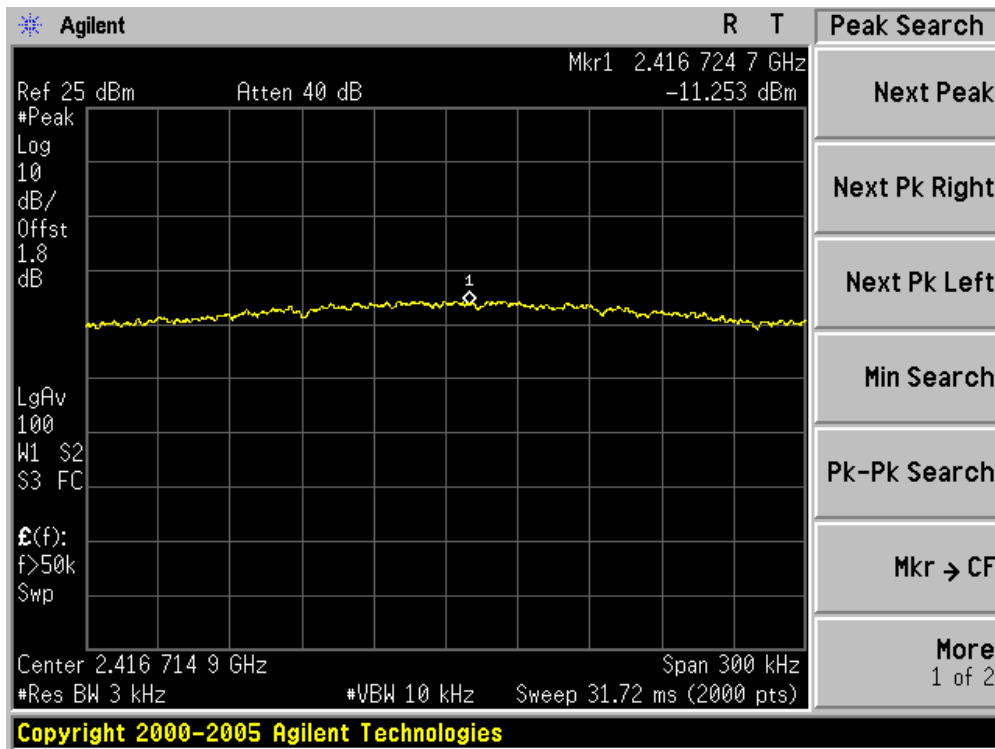
Channel 11 (2462MHz)



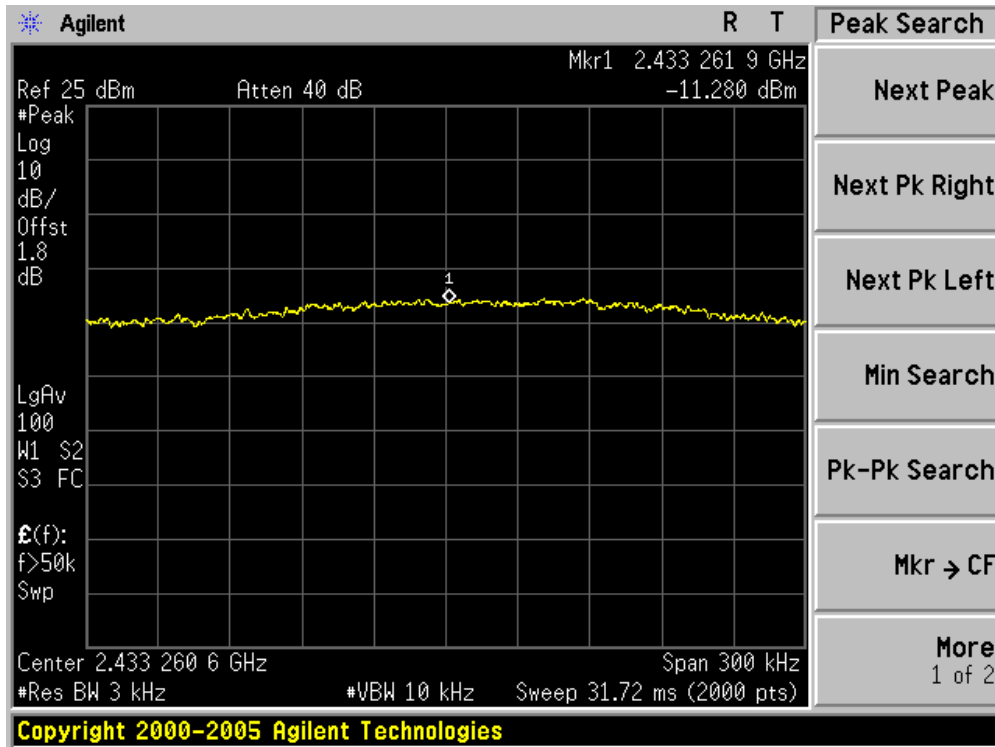
Product	:	MiniPCI BG 1W 2.4GHz
Test Item	:	Power Spectral Density
Test Site	:	AC-4
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	-11.253	8	Pass
06	2437	-11.280	8	Pass
11	2462	-11.361	8	Pass

### Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)

