FCC Test Report

for

Portable Navigator

Trade Name	**:**	**MAGELLAN**
Model Number	**:**	**Magellan RoadMate 5175,**
		Magellan RoadMate 5175T,
		Magellan RoadMate 5175T-LM
FCC ID	**:**	**P4Q-N376**
Report Number	**:**	**RF-U070-1103-015**
Date of Receipt	**:**	**March 7, 2011**
Date of Report	**:**	**April 1, 2011**

Prepared for

Mitac International Corporation

Building B, No. 209, Sec. 1, Nan Gang Rd., Nan Gan , Taipei, Taiwan, R.O.C.

Prepared by

Central Research Technology Co.

EMC Test Laboratory

No.11, Lane41, Fushuen St., Jungshan Chiu, Taipei, Taiwan, 104, R.O.C.

NVLAP LAB CODE 200575-0

Verification of Compliance

Equipment under Test	**: Portable Navigator**
Trade Name	**: Magellan**
Model No.	**: Magellan RoadMate 5175** **Magellan RoadMate 5175T** **Magellan RoadMate 5175T-LM**
FCC ID	**: P4Q-N376**
Manufacturer	**: Mitac International Corporation**
Applicant	**: Mitac International Corporation**
Address	**: Building B, No. 209, Sec. 1, Nan Gang Rd., Nan Gan , Taipei, Taiwan, R.O.C.**
Applicable Standards	**: 47 CFR part 15, Subpart C**
Date of Testing	**: March 8~ 17, 2011**
Deviation	**: N/A**
Condition of Test Sample	**: Engineering Sample**

We, **Central Research Technology Co**., hereby certify that one sample of the designated product was tested in our facility during the period mentioned above. The test records, data evaluation and Equipment Under Test (EUT) configurations shown in the present report are true and accurate representation of the measurements of the sample's RF characteristics under the conditions herein specified.

The test results show that the EUT as described in the present report is in compliance with the requirements set forth in the standards mentioned above and apply to the tested sample identified in the present report only. The test report shall not be reproduced, except in its entirety, without the written approval of Central Research Technology Co.

PREPARED BY : Cathy Chen , **DATE :** April 1, 2011
(Cathy Chen/ Technical Manager)

APPROVED BY : J. Y. Shih , **DATE :** Apr. 1, 2011
(Tsun-Yu Shih/General Manager)

Contents

1 General Description

1.1 General Description of EUT

Equipment under Test	:	Portable Navigator
Model No.	:	Magellan RoadMate 5175, Magellan RoadMate 5175T, Magellan RoadMate 5175T-LM
Power in	:	Supplied by the power adaptor
AC power adapter	:	Trade Name:PHIHONG Model: PSAA10R-050 Input : 100-240V~, 50-60Hz, 0.3A Output : 5Vdc / 2A
Car Charger	:	Trade Name: MiTAC Model: CA-052-00U-19 Input : 12/24Vdc,1300mA Output : 5Vdc, 2A
Test Voltage	:	120Vac/ 60Hz to AC power adaptor
Manufacturer	:	Mitac International Corporation
Channel Numbers	:	11
Frequency Range	:	2412~2462MHz
Modulation	:	DFSS, OFDM
Antenna Spec	:	Monopole type -1.5dBi
Function Description	:	

The EUT is used to transmit and receive control command both. Please refer to the user's manual for the details.

Perform the function of EUT continuously by executing the test program supplied by manufacturer.

For IEEE 802.11b/g

Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	2	2417
3	2422	4	2427
5	2432	6	2437
7	2442	8	2447
9	2452	10	2457
11	2462		

1.2 Test Methodology

The test modes are shown as below.

Test Mode	Power
Mode 1	Adapter
Mode 2	Charged by the USB port
Mode 3	Car Charger(12V)
Mode 4	Car Charger(24V)

According to the preliminary test, it was found that the test mode 1 is the worst case.

Since the EUT is considered a potable unit, it was pre-tested on the positioned in each of 3 axis by manufacturer. There for only the test data of the worse case- Z axiz was used for Radiated test.

1.3 Applied standards

(1) Conduction Emission Requirement

For intentional device, according to §15.207(a) line conduction emission limit is as below table.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

(2) Radiated Emission Requirement

For intentional device, according to §15.209, the general requirement of field strength of radiated emissions from intentional radiator at a distance of 3 meters shall not exceed the below table.

Frequency (MHz)	Measurement Distance (m)	Field Strength (uV/m)	Field Strength (dBuV/m)
30 – 88	3	100	40.0
88 – 216	3	150	43.5
216 – 960	3	200	46.0
960 – 1610	3	500	54.0
above 1610	3	500	54.0

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

(3) 6dB Bandwidth

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.

(4) Maximun Peak Output Power

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.

(5) 100kHz Bandedge

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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

(6) Power spectral density

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

(7) Restricted Band

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
[2]1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(2)
13.36 - 13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

1.4 The Support Units

No.	Unit	Model No./ Serial No.	Trade Name	Power Code	Supported by lab.
N/A	*	*	*	*	*

1.5 Layout of Setup

EUT

Connecting Cables :

No.	Cable	Length	Shielded	Core	Shielded Backshell	Supported by lab.	Note
N/A	*	*	*	*	*	*	*

1.6 Test Capability

Test Facility

The test facility used for evaluating the conformance of the EUT with each standard in the present report meets what required in CISPR16-1-4, CISPR16-2-3 and ANSI C63.4:2003.

Test Room	Type of Test Room	Descriptions
TR1	10m semi-anechoic chamber (23m×14m×9m)	Complying with the NSA requirements in documents CISPR 22 and ANSI C63.4:2003. For the radiated emission measurement.
TR11	3m semi-anechoic chamber (9m × 6m × 6m)	
TR13	Test Site	For the RF conducted emission measurement.
TR5	Shielding Room (8m×5m×4m)	For the conducted emission measurement.

Test Laboratory Competence Information

Central Research Technology Co. has been accredited / filed / authorized by the agencies listed in the following table.

Certificate	Nation	Agency	Code	Mark
Accreditation Certificate	USA	NVLAP	200575-0	ISO/IEC 17025
	R.O.C. (Taiwan)	TAF	0905	ISO/IEC 17025
	R.O.C. (Taiwan)	BSMI	SL2-IN-E-0033, SL2-IS-E-0033, SL2-R1/R2-E-0033, SL2-A1-E-0033 SL2-L1-E-0033	ISO/IEC 17025
Site Filing Document	USA	FCC	474046, TW1053	Test facility list & NSA Data
	Canada	IC	4699A-1,-3	Test facility list & NSA Data
	Japan	VCCI	R-1527,C-1609,T-131,T-1441, G-10	Test facility list & NSA Data
Authorization Certificate	Germany	TUV	10021687-2010	ISO/IEC 17025
	Norway	Nemko	ELA212	ISO/IEC 17025

The copy of each certificate can be downloaded from our web site: www.crc-lab.com

1.7 Measurement Uncertainty

The assessed measurement uncertainty with a suitable coverage factor K to ensure 95% confidence level for the normal distribution are shown as below, the values are less than U_{cispr} in table 1 of CISPR 16-4-2.

Test Item	Measurement Uncertainty	
Peak Output Power	1.1dB	
Radiated Emission: (30MHz~200MHz)	Horizontal 3.5dB；Vertical 4.0 dB	
Radiated Emission: (200MHz~1GHz)	Horizontal 4.2dB；Vertical 3.9dB	
Radiated Emission: (1GHz~18GHz)	Horizontal 2.5dB；Vertical 2.5dB	
Radiated Emission: (18GHz~26.5GHz)	Horizontal 4.0dB；Vertical 4.0dB	
Line Conducted Emission	ESH2-Z5	3.1dB
	ENV 4200	3.8dB

2 Maximum Peak Output Power

Result: Pass

2.1 Applied standard

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

2.2 Test Instruments

Test Site and Equipment	Manufacturer	Model No./ Serial No.	Last Calibration Date	Calibration Due Date
Spectrum Analyzer	Agilent	E4405B/ MY45106706	2010/3/25	2011/3/25
Chamber	NA	TR13	NCR	NCR

Note:

1. The calibrations are traceable to NML/ROC.
2. NCR : No Calibration Required.

Instrument Setting

RBW	VBW	Detector	Trace	Comment
100kHz/300kHz	300kHz/1MHz	Peak	Maxhold	

Climatic Condition

Ambient Temperature：21℃ Relative Humidity : 54%

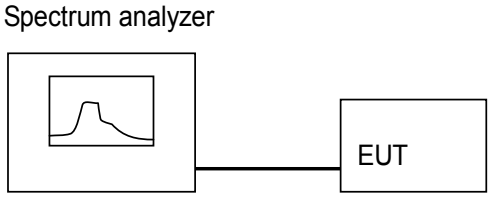
2.3 Measurement Procedure

a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.

b. The software provided by client enabled the EUT to transmit data at lowest, middle and highest channel frequencies individually.

c. Measurement the maximum peak output and power density and compare with the required limit.

2.4 Test configuration



2.5 Test Data

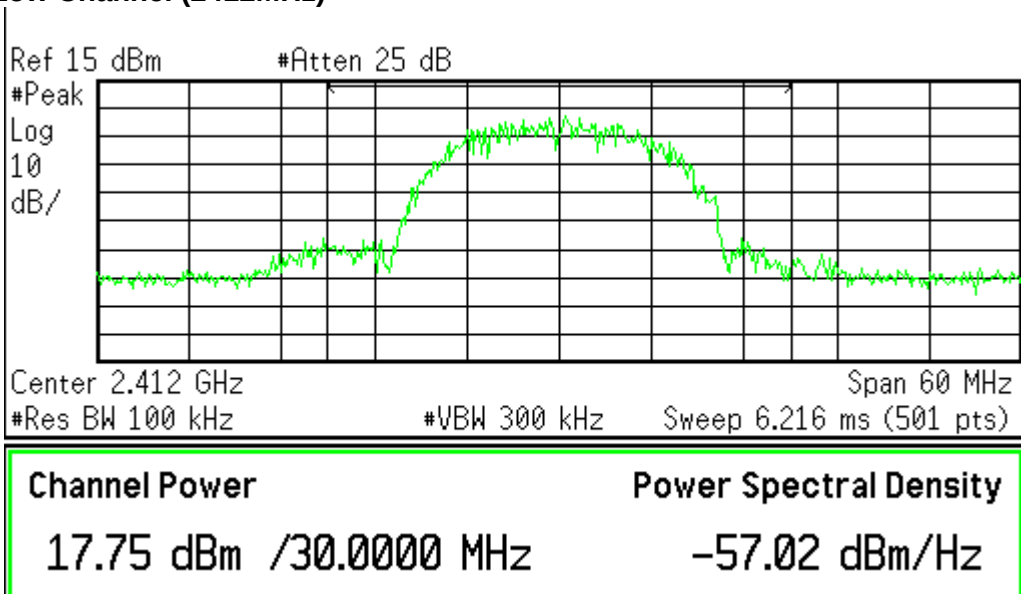
Test Mode : IEEE 802.11b , Continuous Transmitting
Tester : Jun Kong

Operating Frequency (MHz)	Reading Data (dBm)	Correction Factor (dB)	Emission (dBm)	Limit (dBm)	Margin (dB)
2412	17.75	0.5	18.25	30	11.75
2437	17.12	0.5	18.75	30	11.25
2462	16.66	0.5	17.16	30	12.84

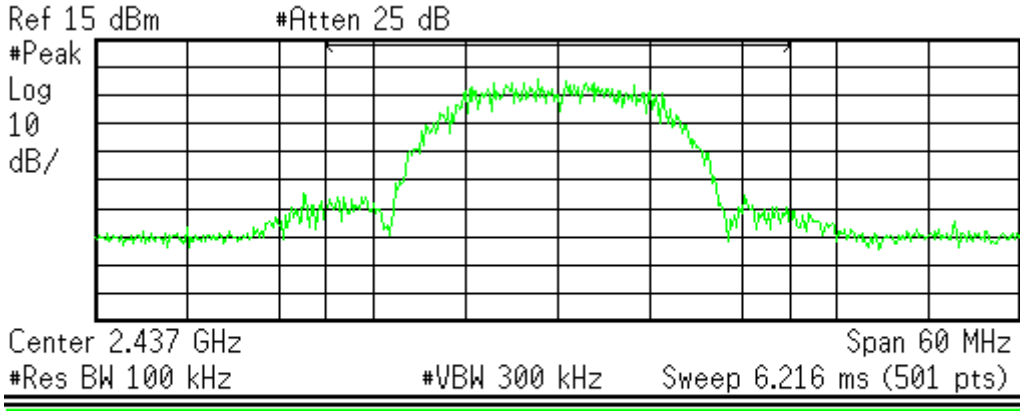
Note:

1. Correction Factor (dB) = Cable Loss
2. Emission (dBm) = Reading Data + Correction Factor
3. Margin (dB) = Limit – Emission

Low Channel (2412MHz)

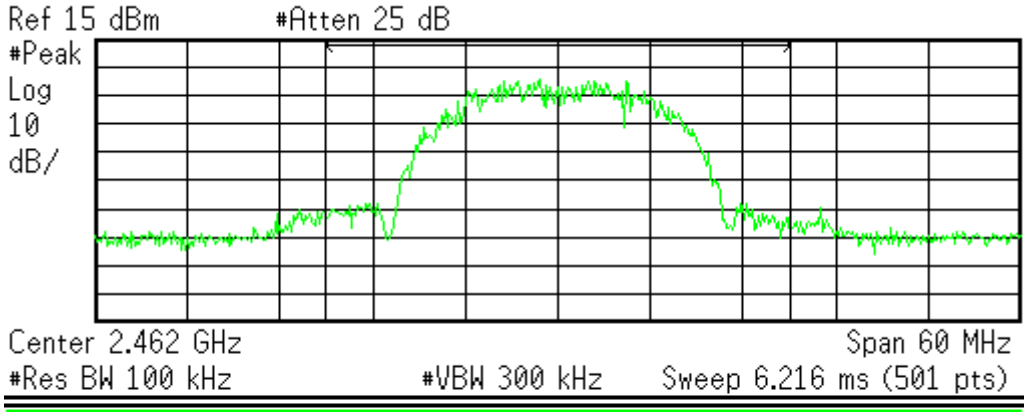


MiddleChannel (2437MHz)



Channel Power	Power Spectral Density
17.12 dBm /30.0000 MHz	-57.65 dBm/Hz

High Channel (2462MHz)



Channel Power	Power Spectral Density
16.66 dBm /30.0000 MHz	-58.11 dBm/Hz

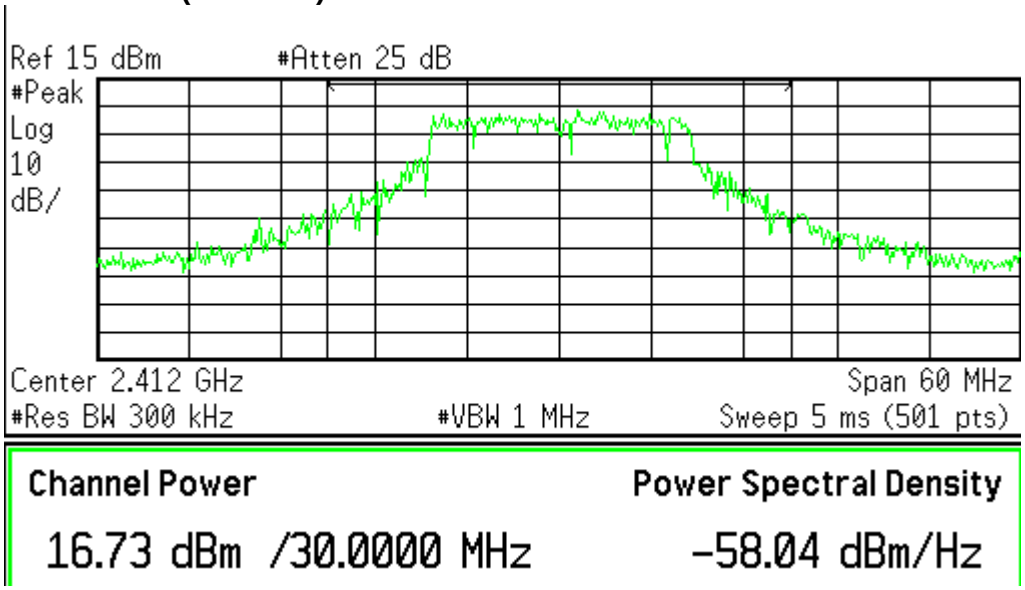
Test Mode : IEEE 802.11g , Continuous Transmitting
Tester : Jun Kong

Operating Frequency (MHz)	Reading Data (dBm)	Correction Factor (dB)	Emission (dBm)	Limit (dBm)	Margin (dB)
2412	16.73	0.5	17.23	30	12.77
2437	16.50	0.5	17.00	30	13.00
2462	16.05	0.5	16.55	30	13.45

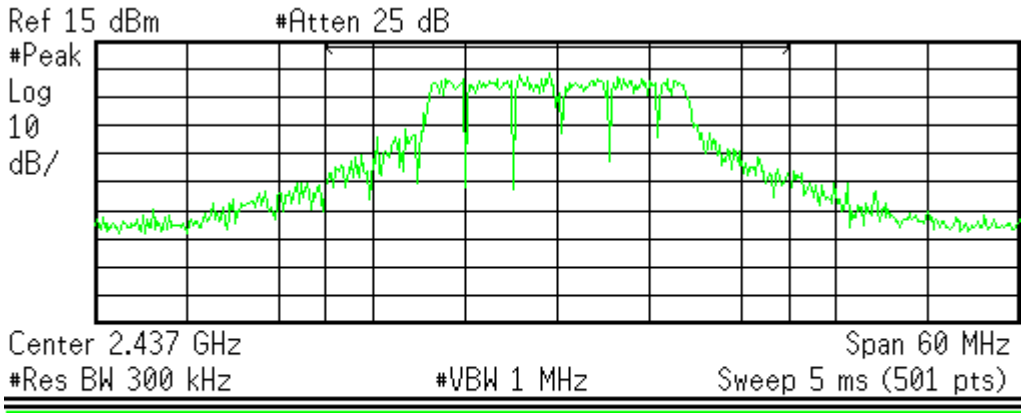
Note:

1. Correction Factor (dB) = Cable Loss
2. Emission (dBm) = Reading Data + Correction Factor
3. Margin (dB) = Limit – Emission

Low Channel (2412MHz)

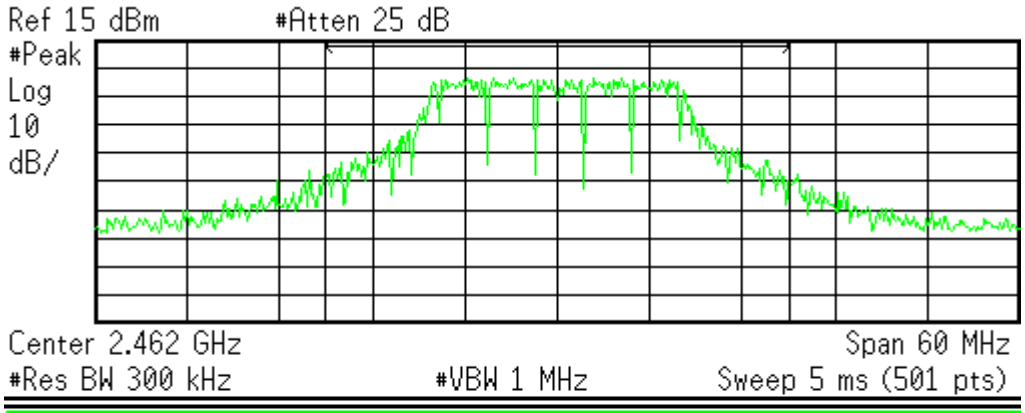


MiddleChannel (2437MHz)



Channel Power	Power Spectral Density
16.50 dBm /30.0000 MHz	-58.27 dBm/Hz

High Channel (2462MHz)



Channel Power	Power Spectral Density
16.05 dBm /30.0000 MHz	-58.72 dBm/Hz

3 Band Edge

Result: Pass

3.1 Applied standard

According to 15.247(c),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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

3.2 Test Instruments

As section 2.2

Instrument Setting

RBW	VBW	Detector	Trace	Comment
100kHz	300kHz	Peak	Maxhold	

Climatic Condition

Ambient Temperature：24℃ Relative Humidity : 54%

3.3 Measurement Procedure

a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.

b. The software provided by client enabled the EUT to transmit data at lowest and highest channel frequencies individually.

c. Measurement the band edge and compare with the required limit.

3.4 Test configuration

As section 2.4

3.5 Test Data

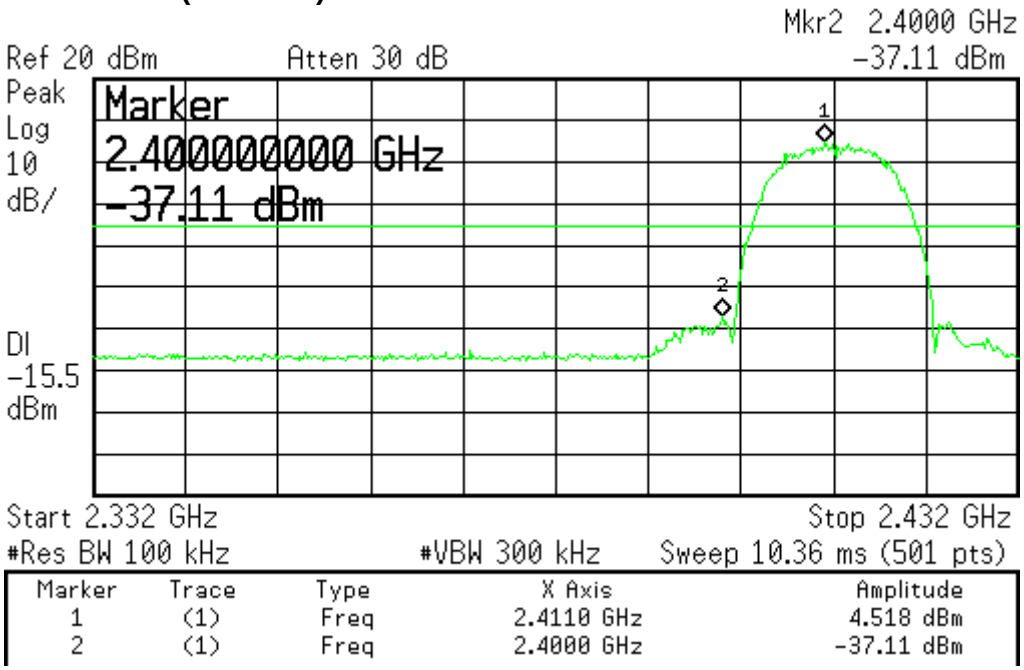
Test Mode : IEEE 802.11b , Continuous Transmitting
Tester : Jun Kong

Operating Frequency (MHz)	Frequency (MHz)	Main Frequency Emission Data (dBm)	Bandedge Emission Data (dBm)	Atenuation (dB)	Limit (dB)	Margin (dB)
2412	2400	4.52	-37.11	41.63	20	21.63
2462	2483.5	3.95	-47.21	51.16	20	31.16

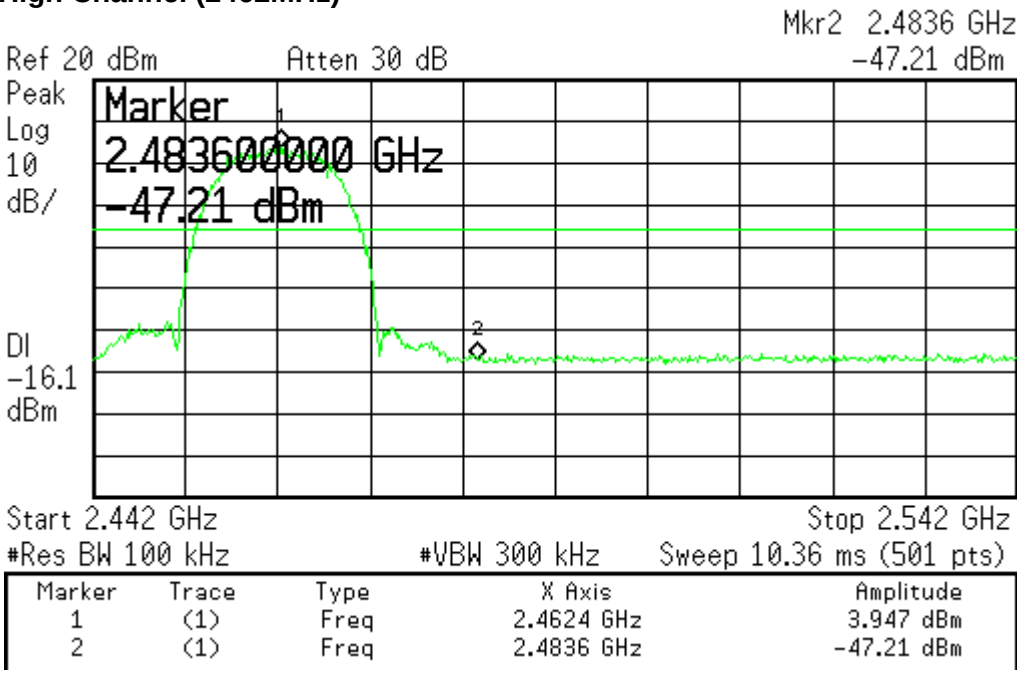
Note:

1. Attenuation (dB) = Main Frequency Emission Data –Bandedge Emission Data
2. Margin(dB) = Atenuation – Limit

Low Channel (2412MHz)



High Channel (2462MHz)



Test Mode : IEEE 802.11g , Continuous Transmitting

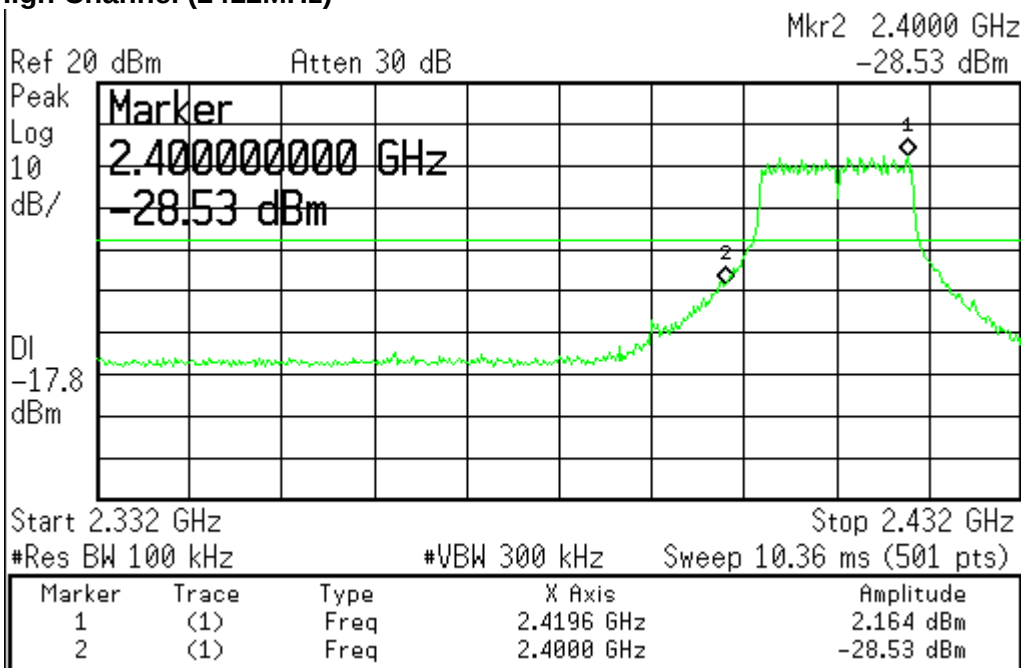
Tester : Jun Kong

Operating Frequency (MHz)	Frequency (MHz)	Main Frequency Emission Data (dBm)	Bandedge Emission Data (dBm)	Atenuation (dB)	Limit (dB)	Margin (dB)
2412	2400	2.16	-28.53	30.69	20	10.69
2462	2483.5	1.76	-41.66	43.42	20	23.42

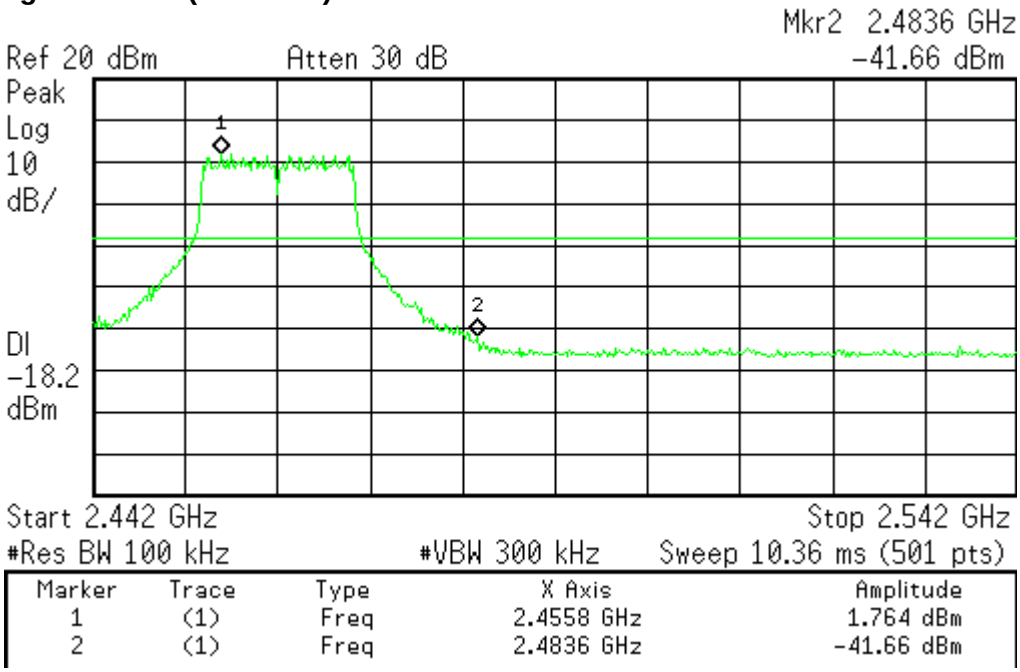
Note:

1. Attenuation (dB) = Main Frequency Emission Data –Bandedge Emission Data
2. Margin(dB) = Atenuation – Limit

High Channel (2412MHz)



High Channel (2462MHz)



4 6dB Bandwidth

Result: Pass

4.1 Applied standard

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.

4.2 Test Instruments

Test Site and Equipment	Manufacturer	Model No. /Serial No.	Last Calibration Date	Calibration Due Date
Spectrum Analyzer	Agilent	E4405B/ MY45106706	2010/3/25	2011/3/25
Chamber	NA	TR13	NCR	NCR

Note:

1. The calibrations are traceable to NML/ROC.
2. NCR:No Calibration Required.

Instrument Setting

RBW	VBW	Detector	Trace	Comment
100kHz	300kHz	Peak	Maxhold	

Climatic Condition

Ambient Temperature：22℃ Relative Humidity :60%

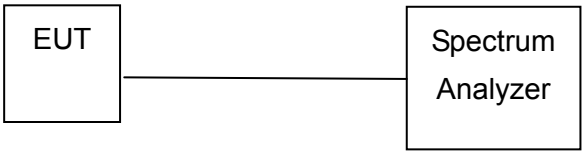
4.3 Measurement Procedure

a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.

b. A software provided by client enabled the EUT to transmit data at low, middle and high channel frequencies individually.

c. Measure the 6dB bandwidth and compare with the required limit.

4.4 Test configuration



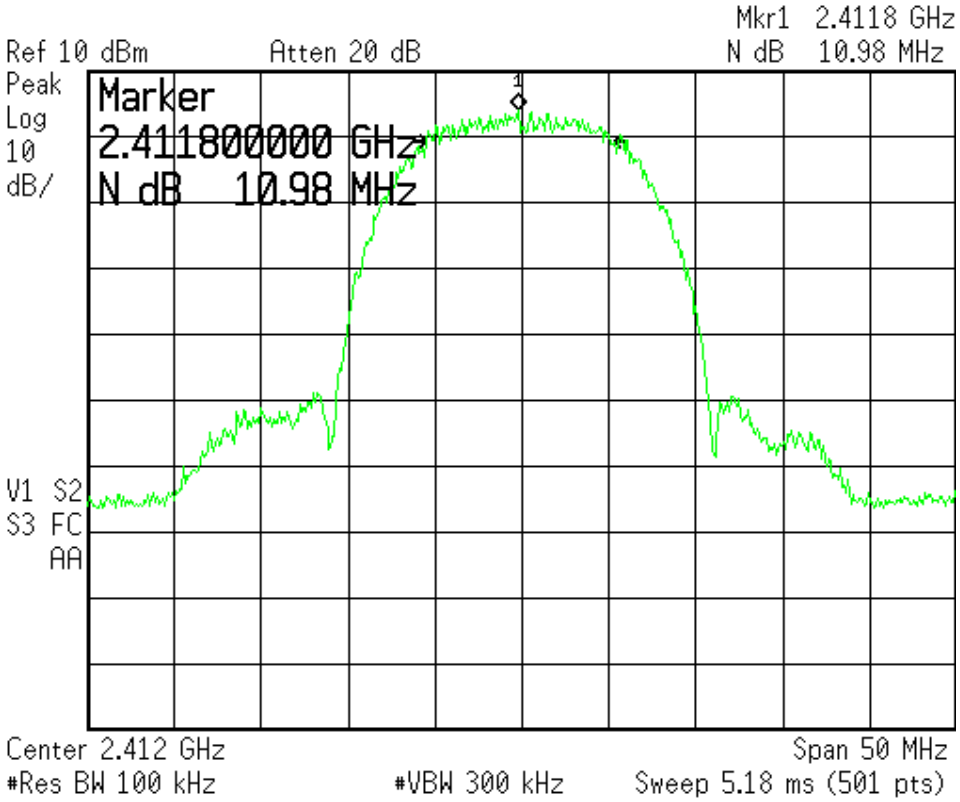
4.5 Test Data

Test Mode **: IEEE 802.11b, Continuous Transmitting**

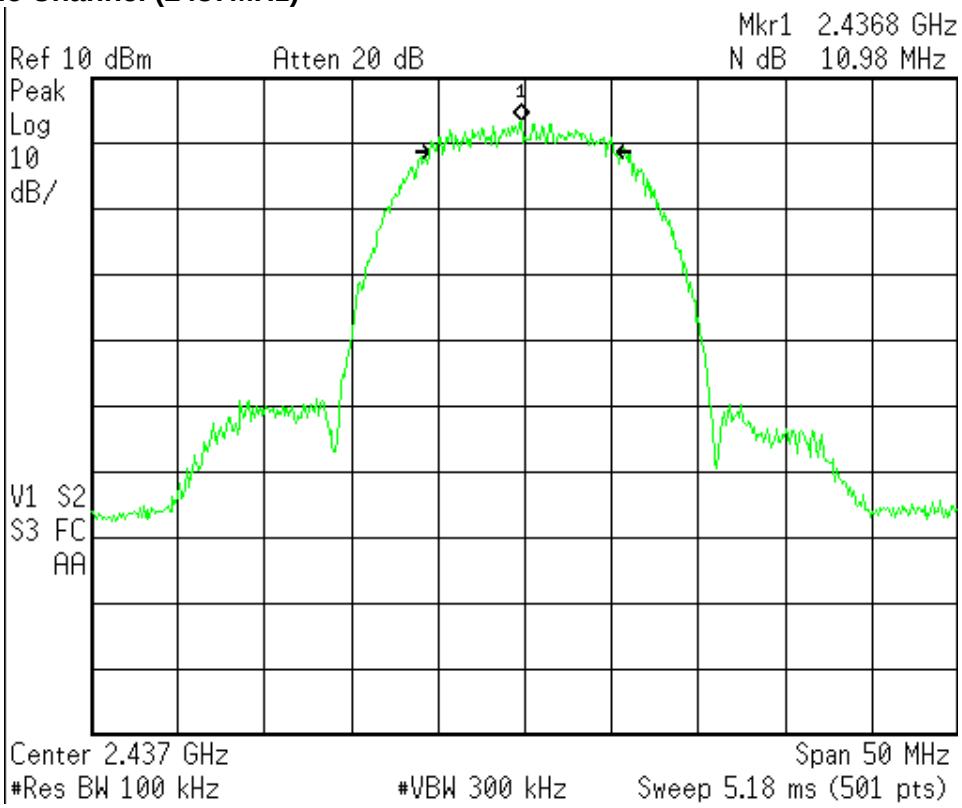
Tester **:** Jun Kong

Operating Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
2412	10.98	500
2437	10.98	500
2462	10.98	500

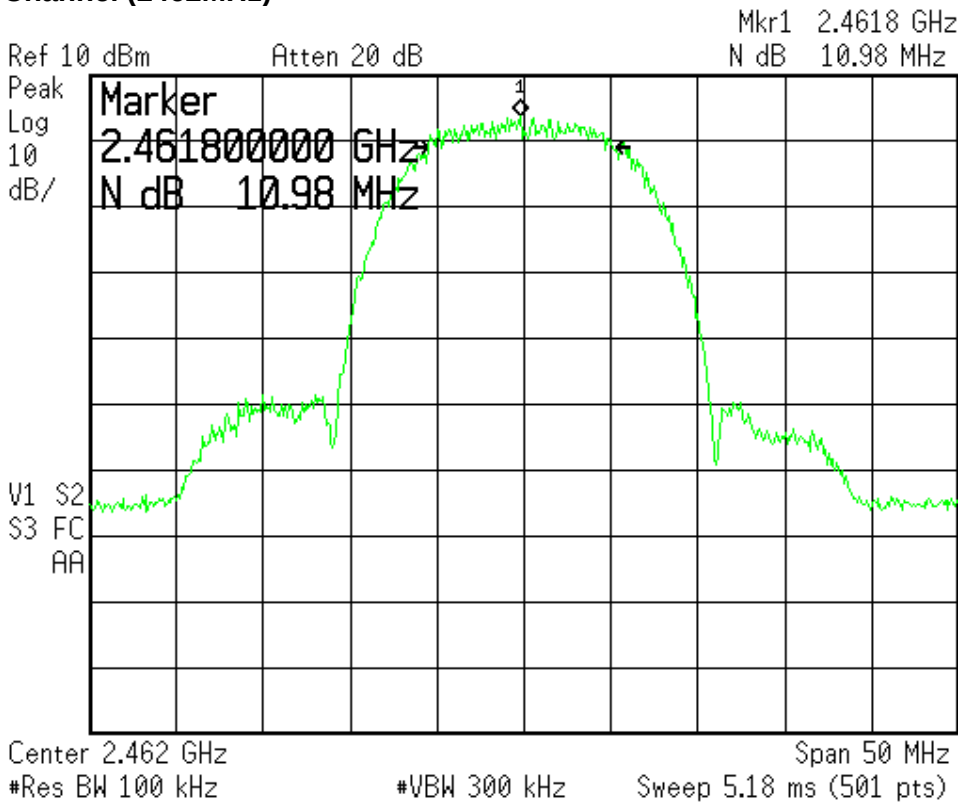
Low Channel (2412MHz)



Middle Channel (2437MHz)



High Channel (2462MHz)

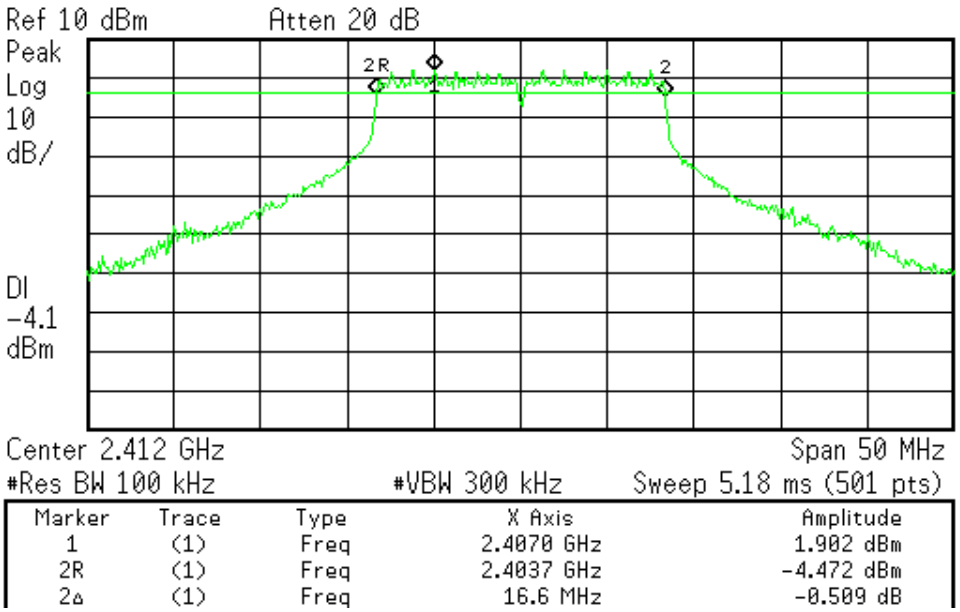


Test Mode **: IEEE 802.11g, Continuous Transmitting**

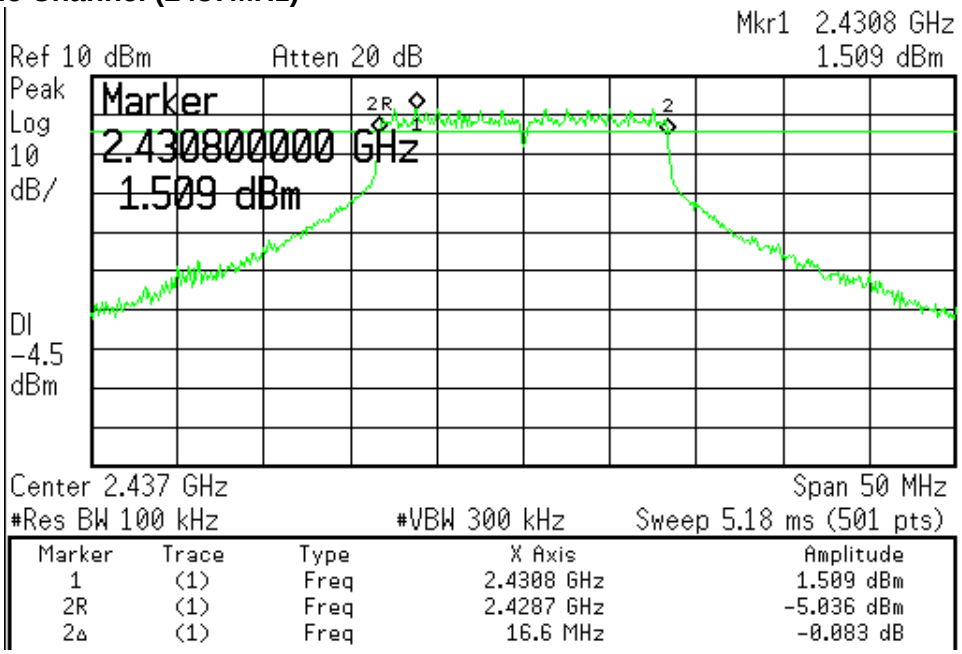
Tester **:** Jun Kong

Operating Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (kHz)
2412	16.6	500
2437	16.6	500
2462	16.6	500

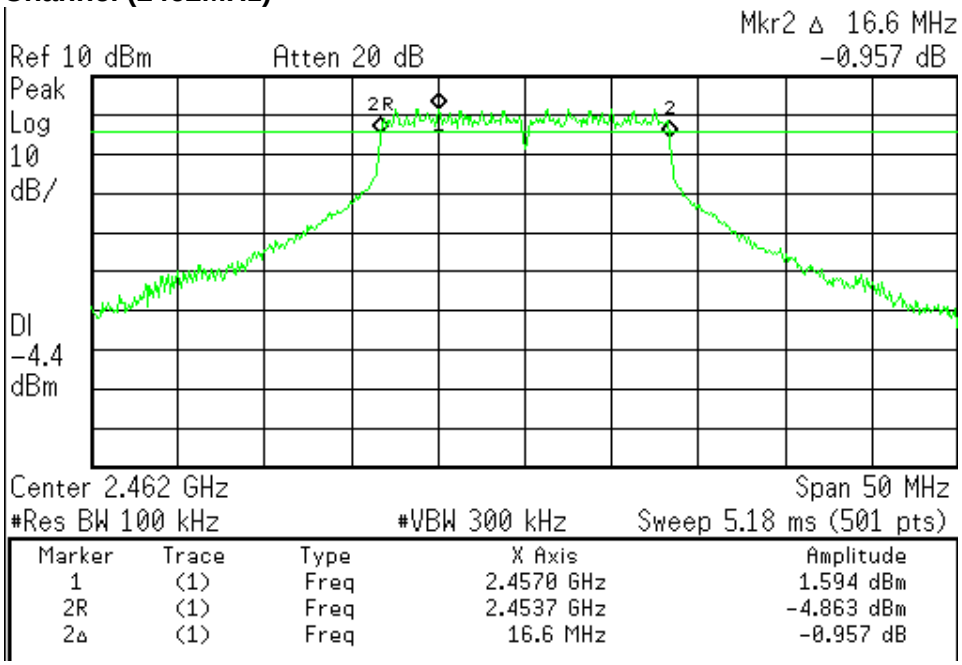
Low Channel (2412MHz)



Middle Channel (2437MHz)



High Channel (2462MHz)



5 Power Spectral Density

Result: Pass

5.1 Applied standard

According to 15.247(e),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 Instruments

See section 4.2

Instrument Setting

RBW	VBW	Detector	Trace	Comment
3kHz	10kHz	Peak	Maxhold	

Climatic Condition

Ambient Temperature：22℃ Relative Humidity :60%

5.3 Measurement Procedure

a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.

b. A software provided by client enabled the EUT to transmit data at low, middle and high channel frequencies individually.

c. Measure the peak power spectrum density and compare with the required limit.

5.4 Test configuration

See section 4.4.

5.5 Test Data

Test Mode **: IEEE 802.11b, Continuous Transmitting**

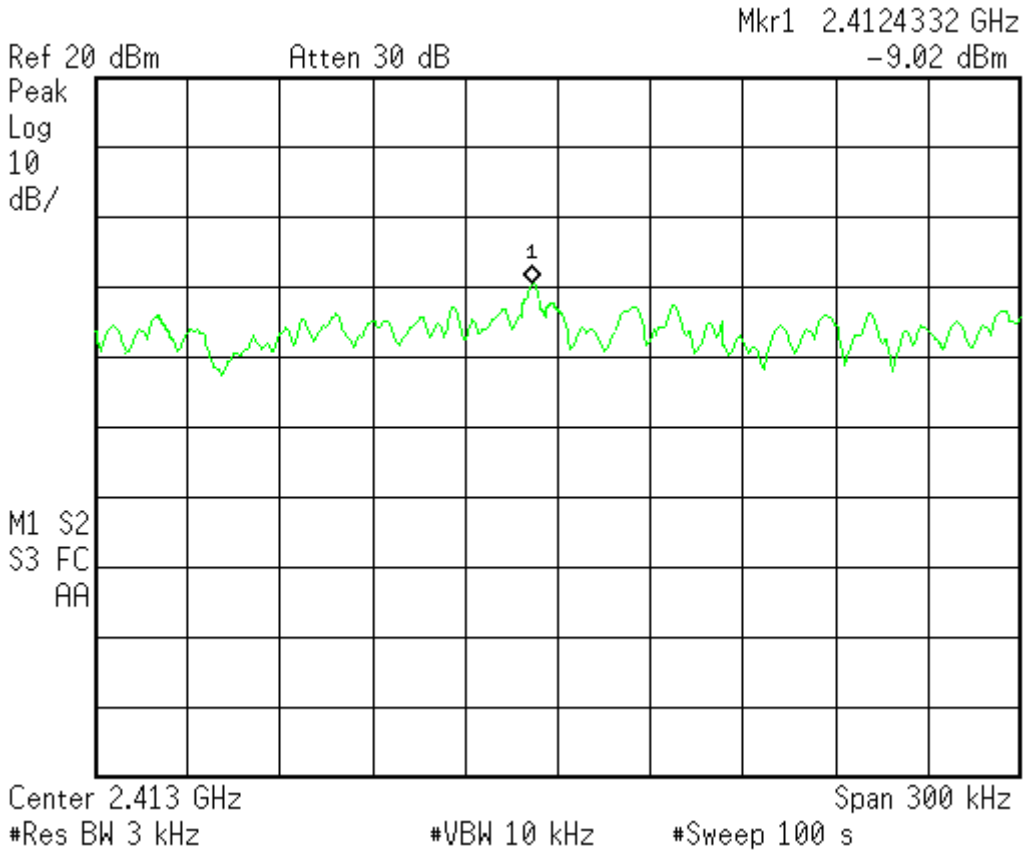
Tester **:** Jun Kong

Operating Frequency (MHz)	Reading Data (dBm)	Correction Factor (dB)	Emission (dBm)	Limit (dBm)	Margin (dB)
2412	-9.02	0.5	-8.52	8	16.52
2437	-10.39	0.5	-9.89	8	17.89
2462	-12.76	0.5	-12.26	8	20.26

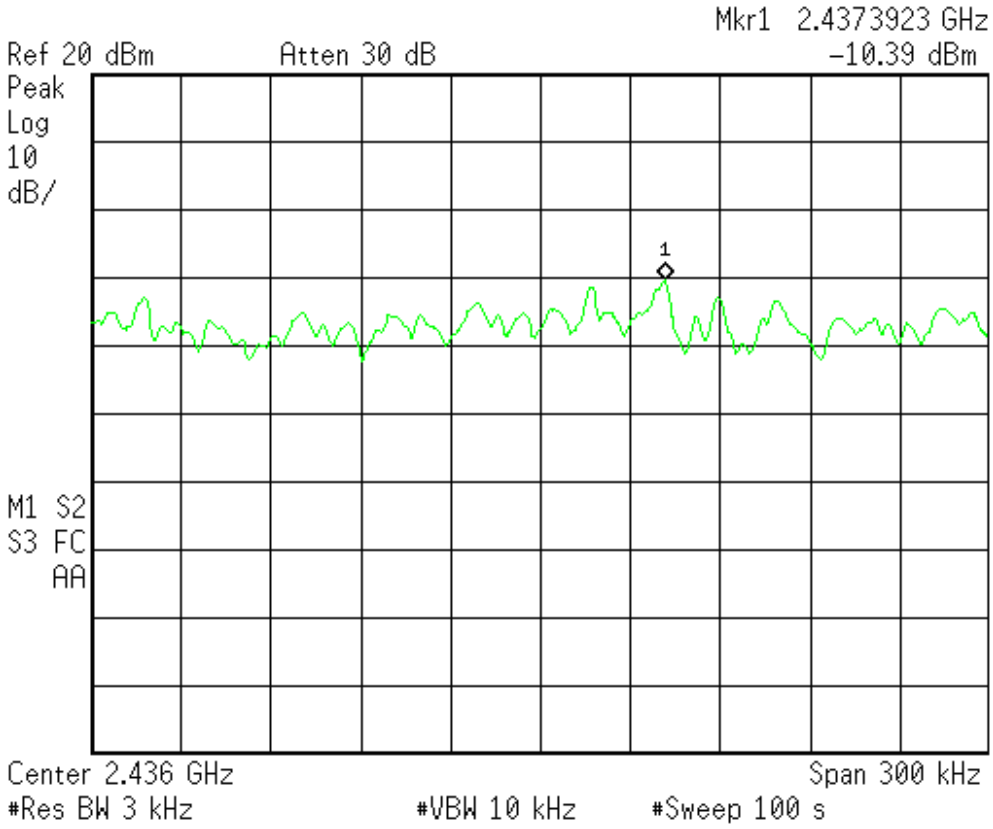
Note:

1. Correction Factor (dB) = Cable Loss + Attenuator
2. Emission (dB) = Reading Data + Correction Factor
3. Margin (dB) = Limit – Emission

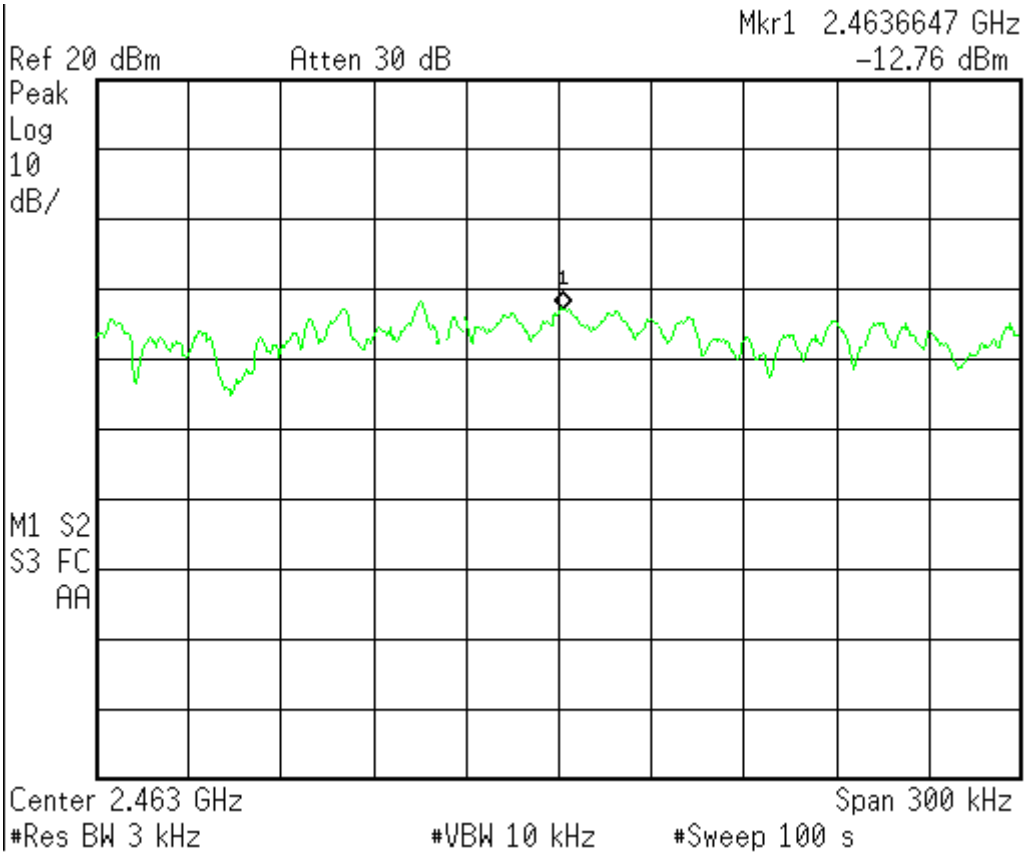
Low channel 2412MHz



Middle channel 2437MHz



High channel 2462MHz



Test Mode **: IEEE 802.11g, Continuous Transmitting**

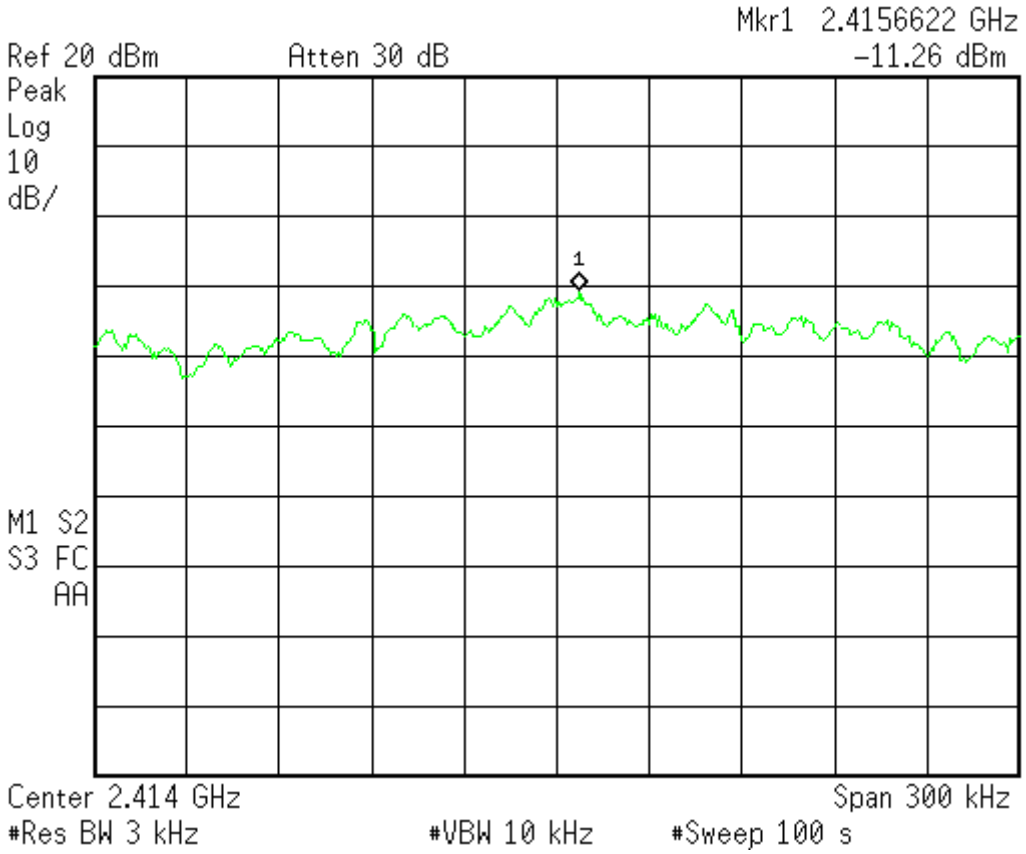
Tester **:** Jun Kong

Operating Frequency (MHz)	Reading Data (dBm)	Correction Factor (dB)	Emission (dBm)	Limit (dBm)	Margin (dB)
2412	-11.26	0.5	-10.76	8	18.76
2437	-10.37	0.5	-9.87	8	17.87
2462	-12.72	0.5	-12.22	8	20.22

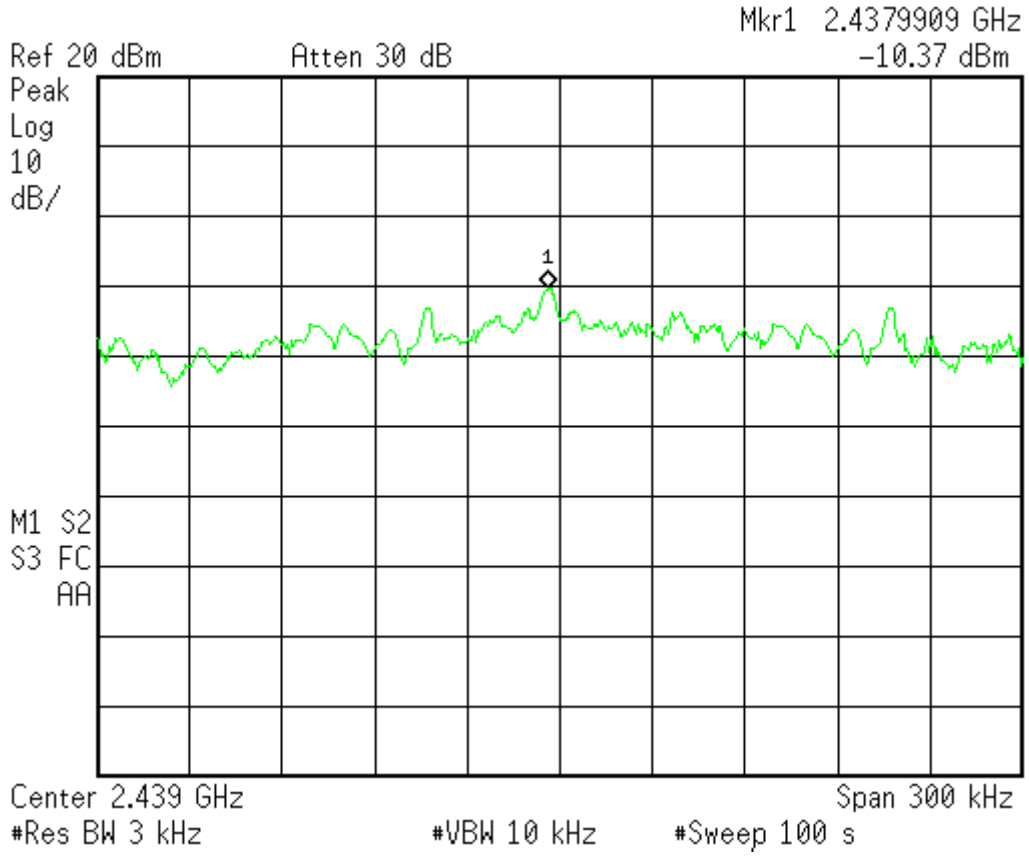
Note:

1. Correction Factor (dB) = Cable Loss + Attenuator
2. Emission (dB) = Reading Data + Correction Factor
3. Margin (dB) = Limit – Emission

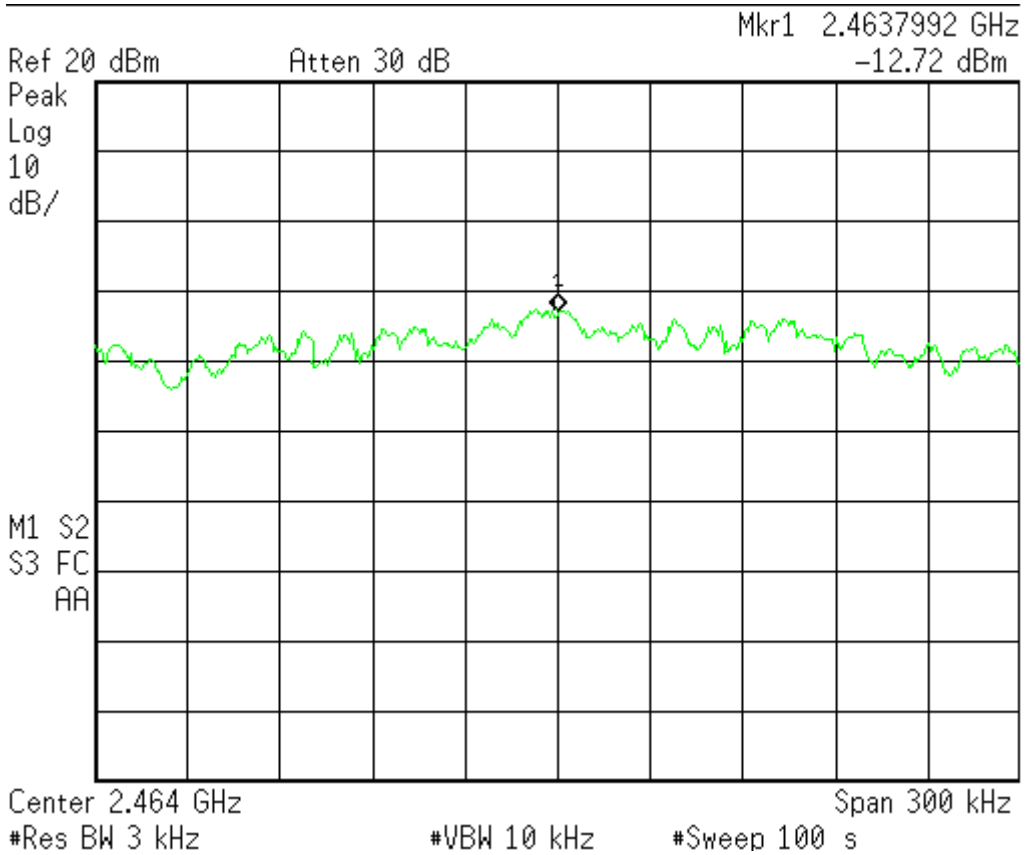
Low channel 2412MHz



Middle channel 2437MHz



High channel 2462MHz



6 Radiated Emission

Result: Pass

6.1 Applied standard

According to 15.247(c),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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

6.2 Test Instruments

Test Site and Equipment	Manufacturer	Model No./ Serial No.	Last Calibration Date	Calibration Due Date
Test Receiver	R&S	ESCI/100019	2010/5/18	2011/5/18
Spectrum Analyzer	Agilent	E4407B/ MY45106795	2010/5/3	2011/5/3
Broadband Antenna	EMCO	3142C/52088	2010/5/17	2011/5/17
Antenna	EMCO	3117/57416	2011/3/4	2012/3/4
Antenna	EMCO	3116/20533	2011/2/11	2012/2/11
Pre-amplifier	MITEQ	JS4-00101800-28-10P/74229	2010/12/15	2011/12/15
Pre-amplifier	Mini Circuit	ZKL-2/004	2010/8/7	2011/8/7
RF Cable	N/A	N/A/C0080	2010/2/7	2011/8/7
RF Cable	N/A	N/A/C0081	2010/10/20	2011/4/20
Semi - anechoic Chamber	ETS. LINDGREN	TR11/ 906-A	2010/4/19	2011/4/19

Note:

1. The calibrations are traceable to NML/ROC.
2. NCR : No Calibration Required.
3. The calibration date of the semi-anechoic chamber listed above is the date of NSA measurement.

Instrument Setting

RBW	VBW	Detector	Trace	Comment
120kHz	N/A	Quasi-Peak	Maxhold	Below 1GHz
1MHz	3MHz	Peak	Maxhold	Above 1GHz, Peak
1MHz	10Hz	Peak	Maxhold	Above 1GHz, Average

Climatic Condition

Ambient Temperature：24℃ Relative Humidity :53%

6.3 Measurement Procedure

a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.

b. A software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

c. If the EUT is tabletop equipment, it was placed on a non-conducted table with a height of 0.8 meters above the reference ground plane in the semi-anechoic chamber. If the EUT is floor-standing equipment, it was placed on a non-conducted support with a height of 12 millimeters above the reference ground plane in the semi-anechoic chamber.

d. The EUT was set 3m away from the interference receiving antenna.

e. Rapidly sweep the signal in the test frequency range by using the spectrum through the Maximum-peak detector.

f. Rotate the EUT from 0° to 360° and position the receiving antenna at heights from 1 to 4 meters above the reference ground plane continuously to determine at least six frequencies associated with higher emission levels and record them.

g. For measurement of frequency above 1000MHz, the beamwidth of receiving horn antenna should keep covering EUT when the receiving horn antenna height varied.

h. Then measure each frequency found from step f. by using the spectrum with rotating the EUT and positioning the receiving antenna height to determine the maximum level.

i. Finely tune the antenna and turntable around the recorded position of each frequency found from step g.

j. For measurement of frequency below 1000MHz, set the receiver detector to be Quasi-Peak per CISPR 16-1 to find out the maximum level occurred.

k. For measurement of frequency above 1000MHz, set the spectrum detector to be Peak or Average to find out the maximum level occurred, if any.

l. Record frequency, azimuth angle of the turntable, height, and polarization of the receiving antenna and compare the maximum level with the required limit.

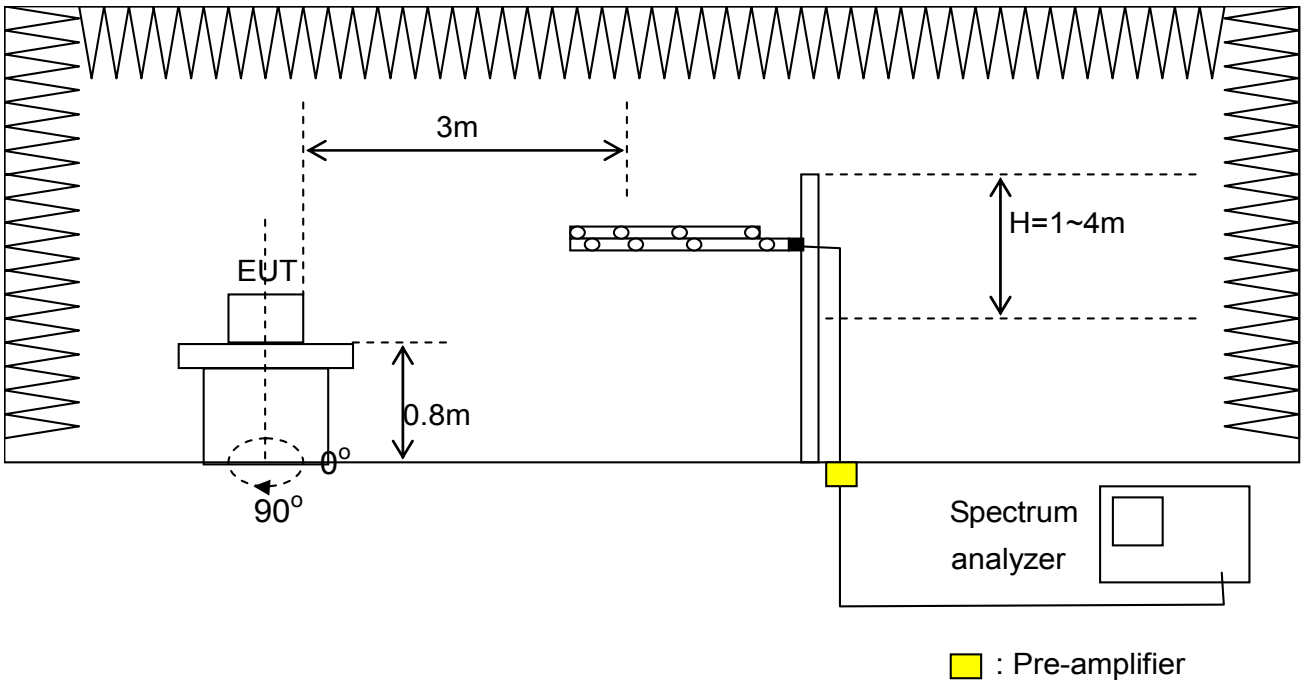
m. Change the receiving antenna to another polarization to measure radiated emission by following step e. to l. again.

n. If the peak emission level below 1000MHz measured from step f. is 4dB lower than the limit specified, then the emission values presented will be the peak value only. Otherwise, accurate Q.P. value will be measured and presented.

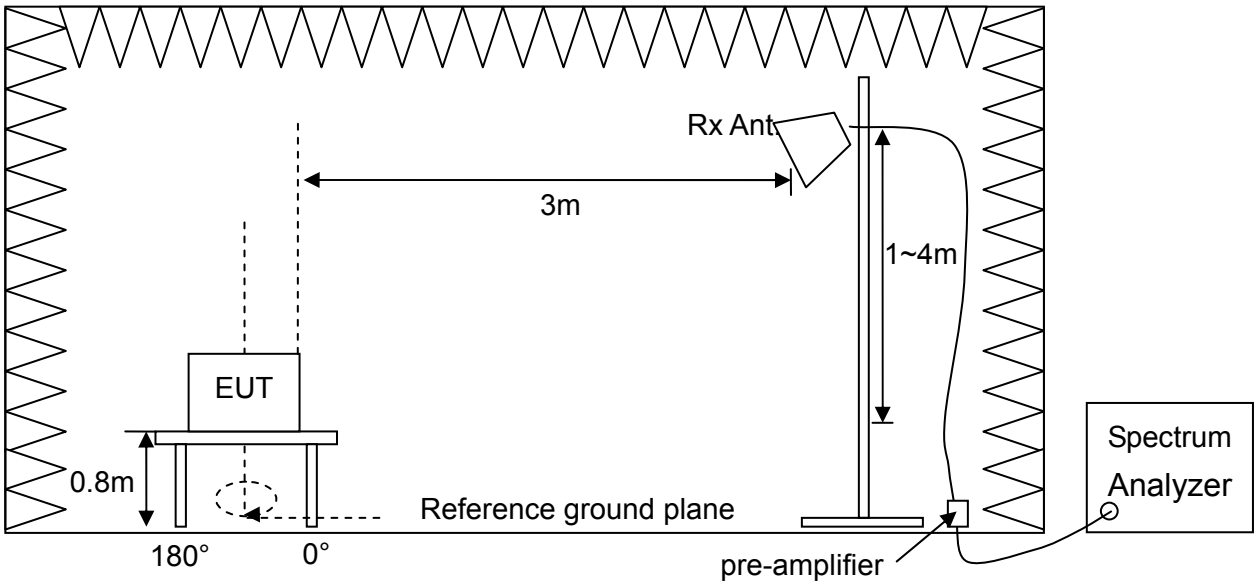
o.If the peak emission level above 1000MHz measured from step f. is 20dB lower than the limit specified, then the emission values presented will be the peak value only. Otherwise, accurate A.V. value will be measured and presented.

6.4 Test configuration

Below 1GHz



Above 1GHz



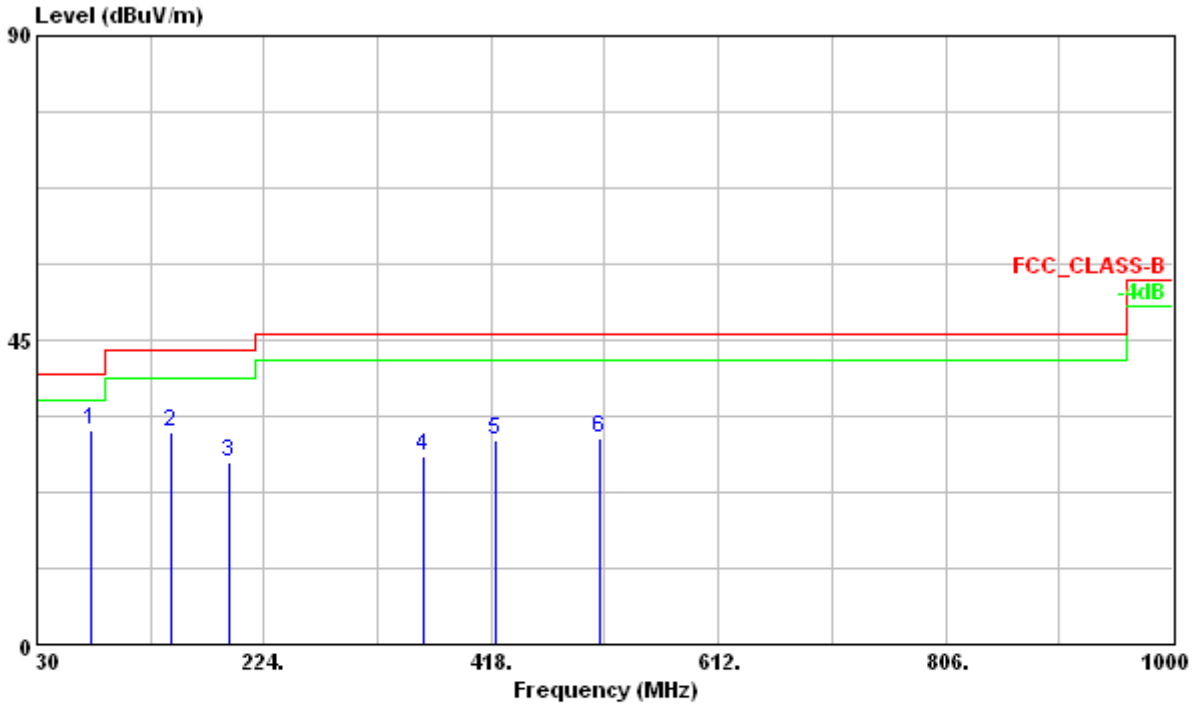
6.5 Test Data

Radiated Emission Measurement below 1000MHz

Test Mode : **IEEE 802.11b, 2412MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Polarization : Vertical **Frequency Range** : 30MHz~1000MHz

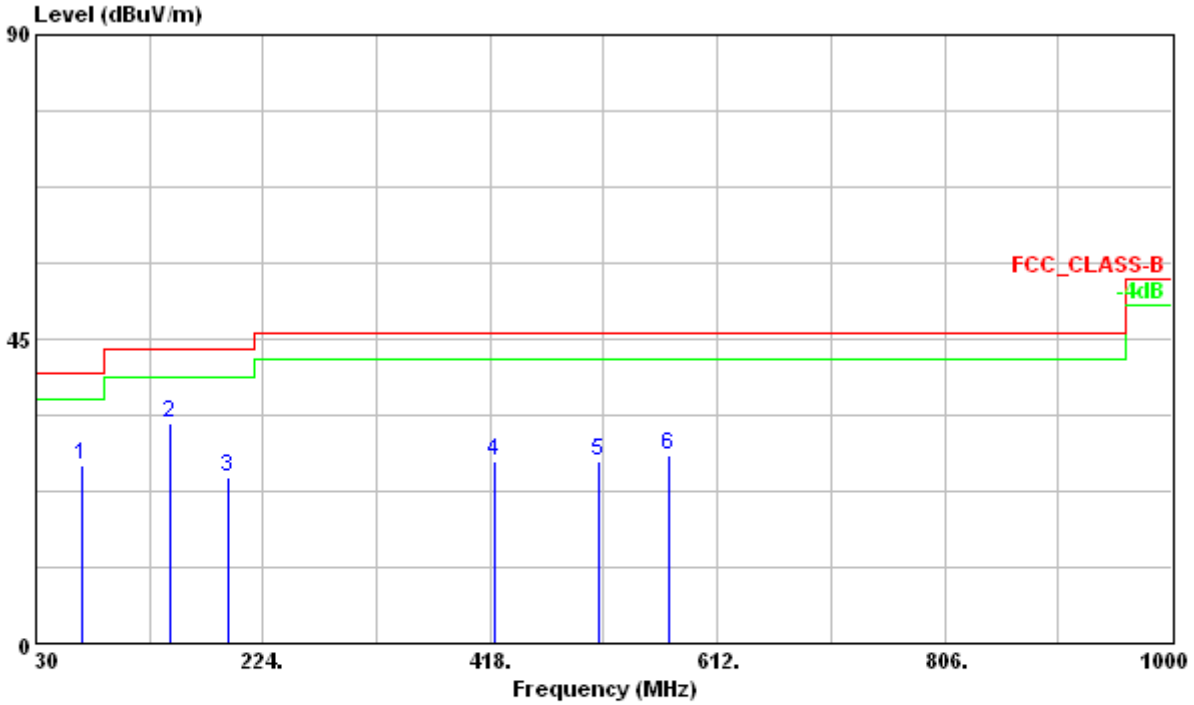


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1 @	75.590	31.69	-20.22	51.91	40.00	-8.31	---	---	VERTICAL	Peak
2	143.974	31.38	-18.68	50.06	43.50	-12.12	152	179	VERTICAL	QP
3	194.900	26.82	-16.24	43.06	43.50	-16.68	---	---	VERTICAL	Peak
4	360.770	27.75	-10.47	38.22	46.00	-18.25	---	---	VERTICAL	Peak
5	420.910	30.17	-8.92	39.09	46.00	-15.83	---	---	VERTICAL	Peak
6	510.150	30.55	-7.01	37.56	46.00	-15.45	---	---	VERTICAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode	**: IEEE 802.11b, 2412MHz, Continuous Transmitting**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Horizontal	**Frequency Range**	**:** 30MHz~1000MHz

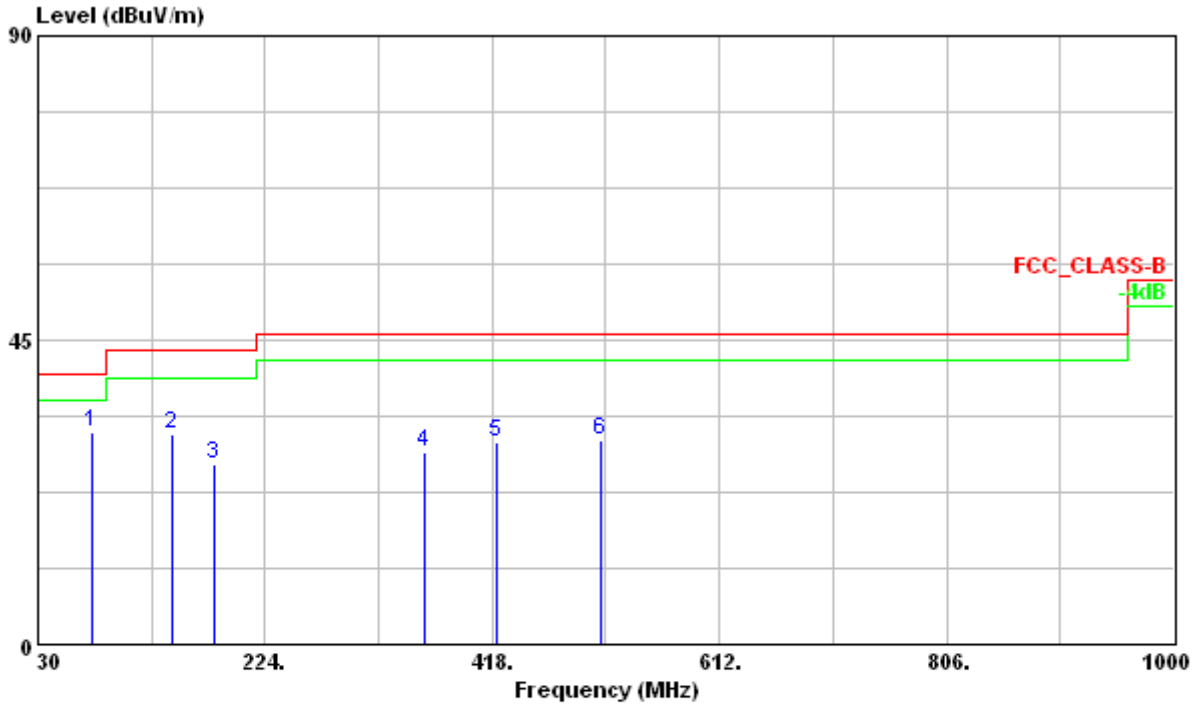


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	69.770	26.21	-20.13	46.34	40.00	-13.79	---	---	HORIZONTAL	Peak
2	143.954	32.59	-18.68	51.27	43.50	-10.91	156	215	HORIZONTAL	QP
3	194.900	24.64	-16.24	40.88	43.50	-18.86	---	---	HORIZONTAL	Peak
4	420.910	26.84	-8.92	35.76	46.00	-19.16	---	---	HORIZONTAL	Peak
5	510.150	26.91	-7.01	33.92	46.00	-19.09	---	---	HORIZONTAL	Peak
6	571.260	27.78	-5.54	33.32	46.00	-18.22	---	---	HORIZONTAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode	**: IEEE 802.11b, 2437MHz, Continuous Transmitting**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Vertical	**Frequency Range**	**:** 30MHz~1000MHz

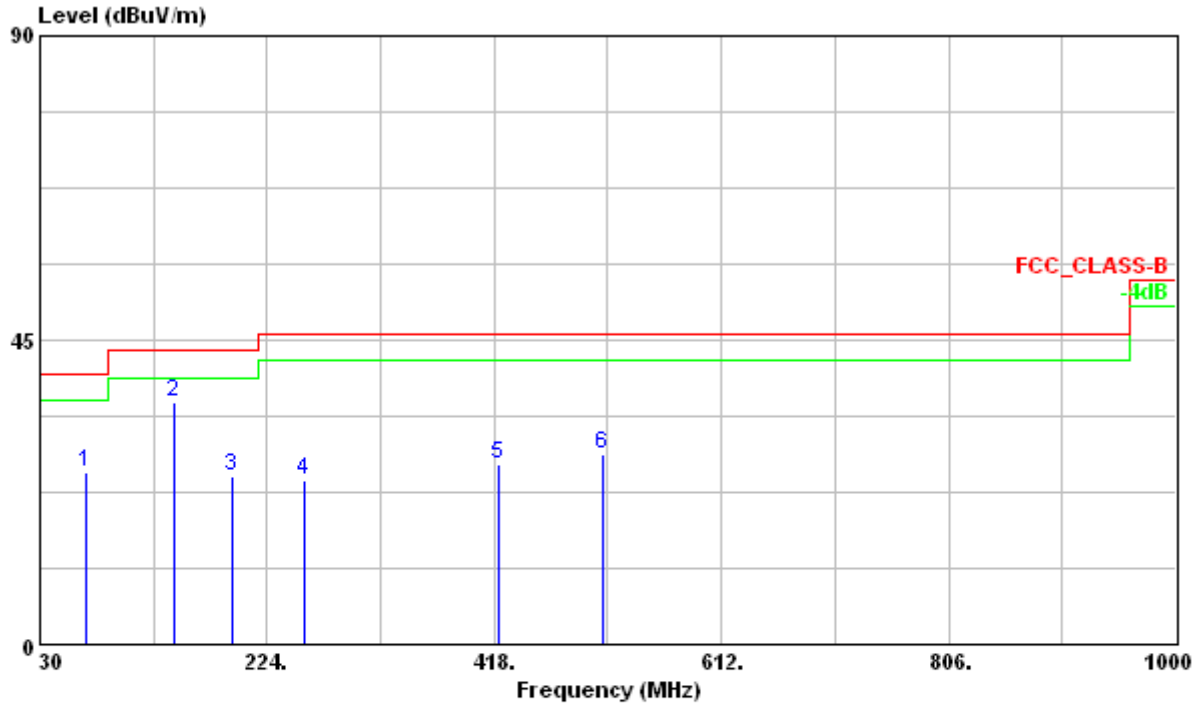


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	75.590	31.50	-20.22	51.72	40.00	-8.50	---	---	VERTICAL	Peak
2	143.934	31.20	-18.69	49.89	43.50	-12.30	130	177	VERTICAL	QP
3	180.350	26.67	-16.66	43.33	43.50	-16.83	---	---	VERTICAL	Peak
4	360.770	28.39	-10.47	38.86	46.00	-17.61	---	---	VERTICAL	Peak
5	420.910	30.04	-8.92	38.96	46.00	-15.96	---	---	VERTICAL	Peak
6	510.150	30.14	-7.01	37.15	46.00	-15.86	---	---	VERTICAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode	**: IEEE 802.11b, 2437MHz, Continuous Transmitting**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Horizontal	**Frequency Range**	**:** 30MHz~1000MHz

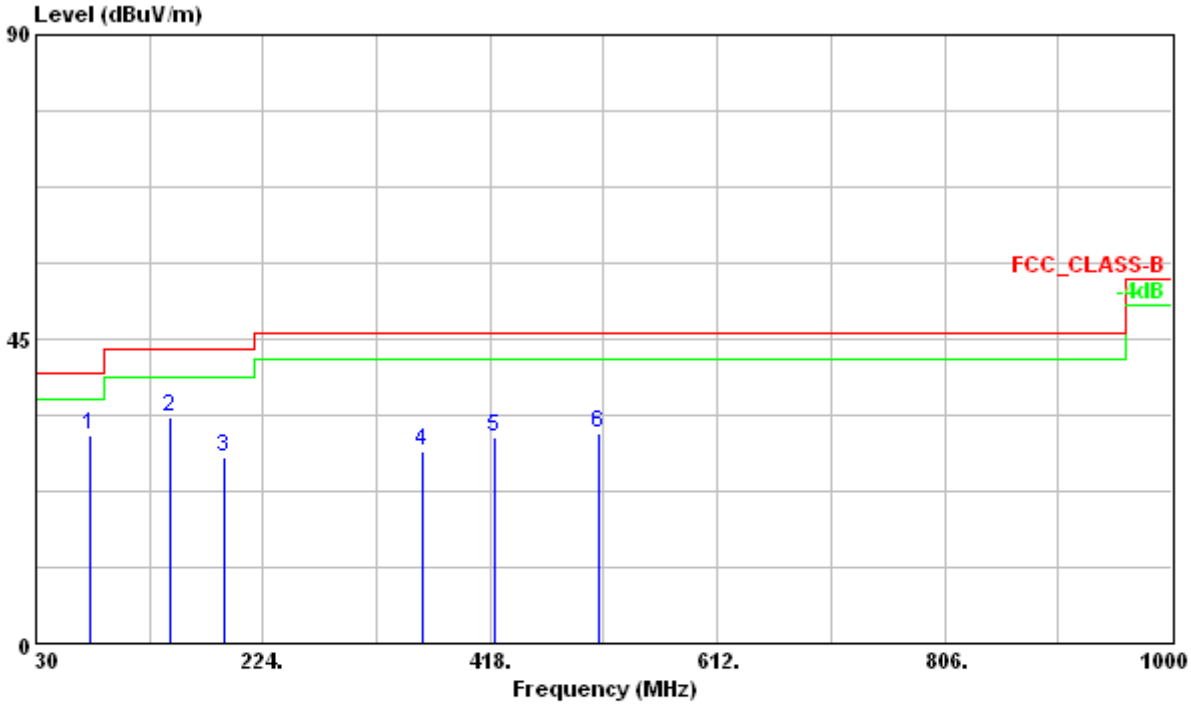


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	69.770	25.53	-20.13	45.66	40.00	-14.47	---	---	HORIZONTAL	Peak
2 @	143.977	35.79	-18.68	54.47	43.50	-7.71	178	213	HORIZONTAL	QP
3	194.900	24.83	-16.24	41.07	43.50	-18.67	---	---	HORIZONTAL	Peak
4	256.010	24.27	-14.06	38.33	46.00	-21.73	---	---	HORIZONTAL	Peak
5	420.910	26.76	-8.92	35.68	46.00	-19.24	---	---	HORIZONTAL	Peak
6	510.150	28.02	-7.01	35.03	46.00	-17.98	---	---	HORIZONTAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Model	**: IEEE 802.11b, 2462MHz, Continuous Transmitting**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Vertical	**Frequency Range**	**:** 30MHz~1000MHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	75.590	30.72	-20.22	50.94	40.00	-9.28	---	---	VERTICAL	Peak
2	143.990	33.36	-18.68	52.04	43.50	-10.14	135	183	VERTICAL	QP
3	190.050	27.41	-16.31	43.72	43.50	-16.09	---	---	VERTICAL	Peak
4	360.770	28.44	-10.47	38.91	46.00	-17.56	---	---	VERTICAL	Peak
5	420.910	30.47	-8.92	39.39	46.00	-15.53	---	---	VERTICAL	Peak
6	510.150	30.99	-7.01	38.00	46.00	-15.01	---	---	VERTICAL	Peak

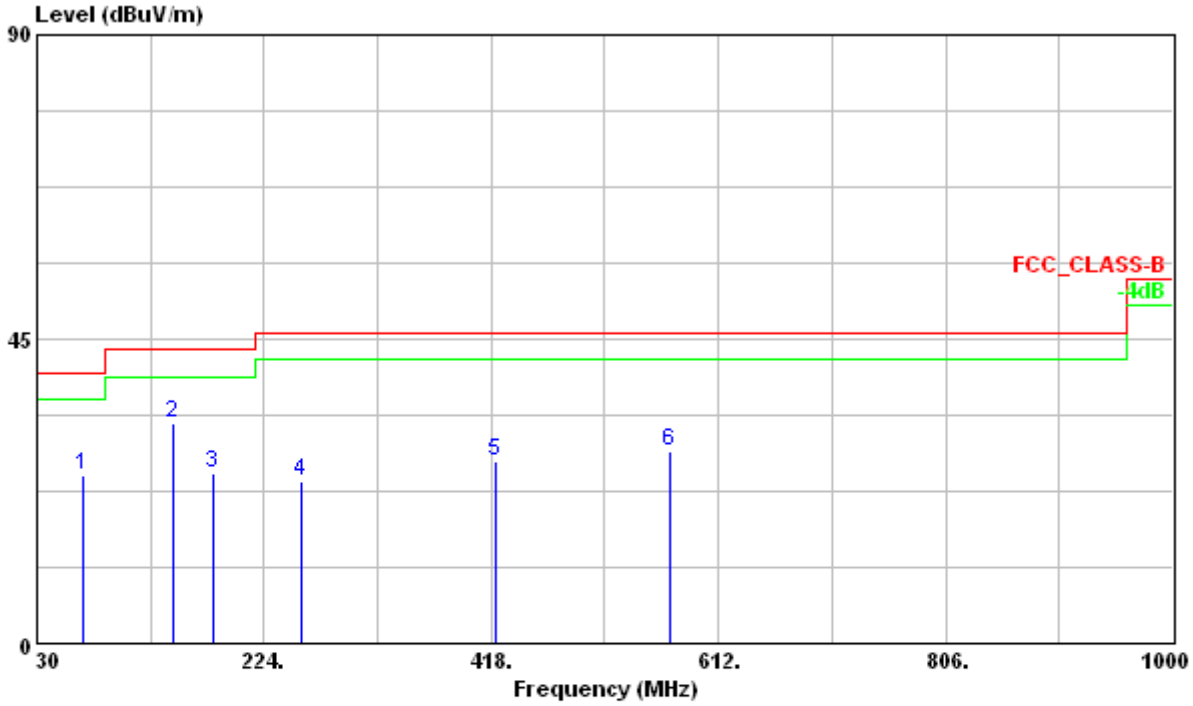
Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Model : **IEEE 802.11b, 2462MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Polarization : Horizontal **Frequency Range** : 30MHz~1000MHz

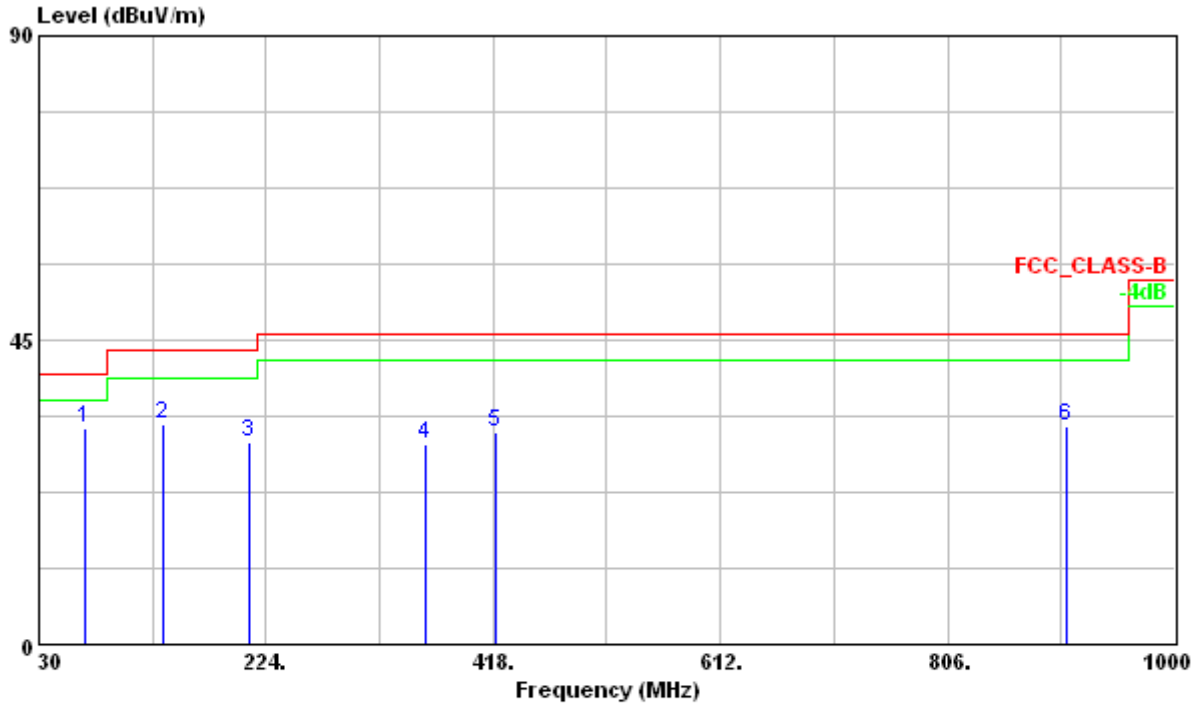


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	69.770	24.82	-20.13	44.95	40.00	-15.18	---	---	HORIZONTAL	Peak
2	146.976	32.55	-18.36	50.91	43.50	-10.95	245	201	HORIZONTAL	QP
3	180.350	25.11	-16.66	41.77	43.50	-18.39	---	---	HORIZONTAL	Peak
4	256.010	23.95	-14.06	38.01	46.00	-22.05	---	---	HORIZONTAL	Peak
5	420.910	26.95	-8.92	35.87	46.00	-19.05	---	---	HORIZONTAL	Peak
6	571.260	28.41	-5.54	33.95	46.00	-17.59	---	---	HORIZONTAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode	**: IEEE 802.11g, 2412MHz, Continuous Transmitting**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Vertical	**Frequency Range**	**:** 30MHz~1000MHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	68.995	31.98	-20.09	52.07	40.00	-8.02	100	359	VERTICAL	QP
2	135.300	32.71	-19.40	52.11	43.50	-10.79	---	---	VERTICAL	Peak
3	210.360	29.81	-15.81	45.62	43.50	-13.69	---	---	VERTICAL	Peak
4	360.900	29.65	-10.47	40.12	46.00	-16.35	---	---	VERTICAL	Peak
5	420.400	31.36	-8.93	40.29	46.00	-14.64	---	---	VERTICAL	Peak
6	908.300	32.30	-0.77	33.07	46.00	-13.70	---	---	VERTICAL	Peak

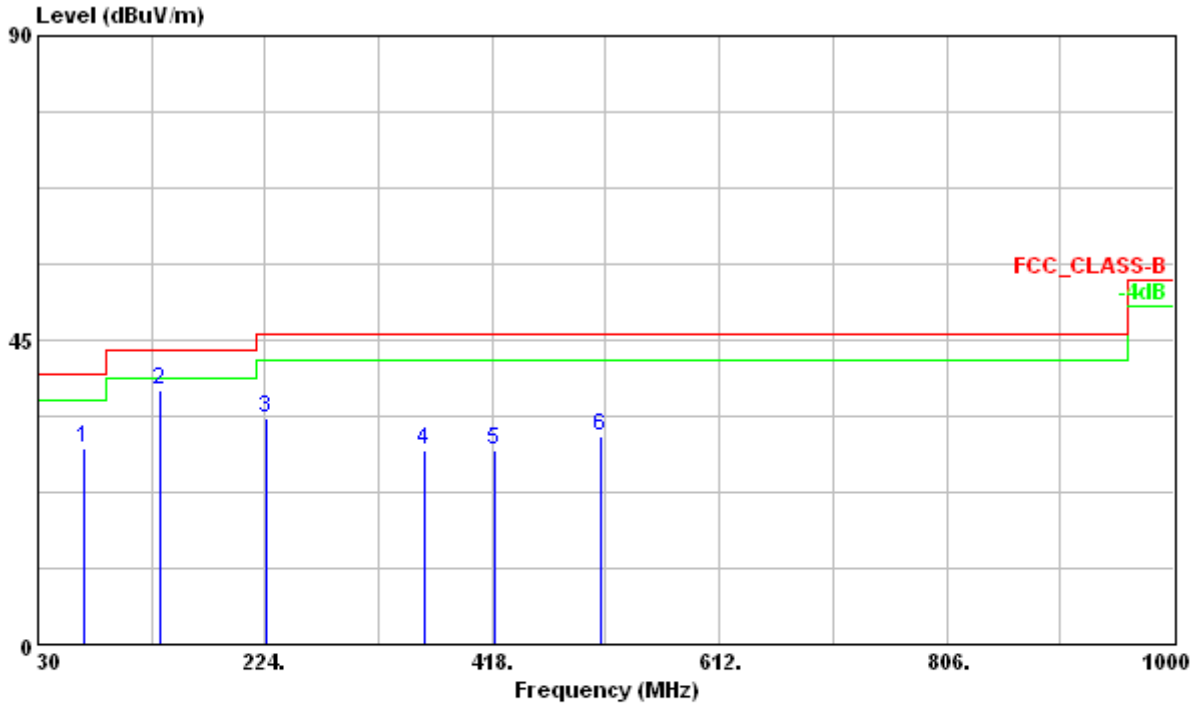
Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode : **IEEE 802.11g, 2412MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Polarization : Horizontal **Frequency Range** : 30MHz~1000MHz

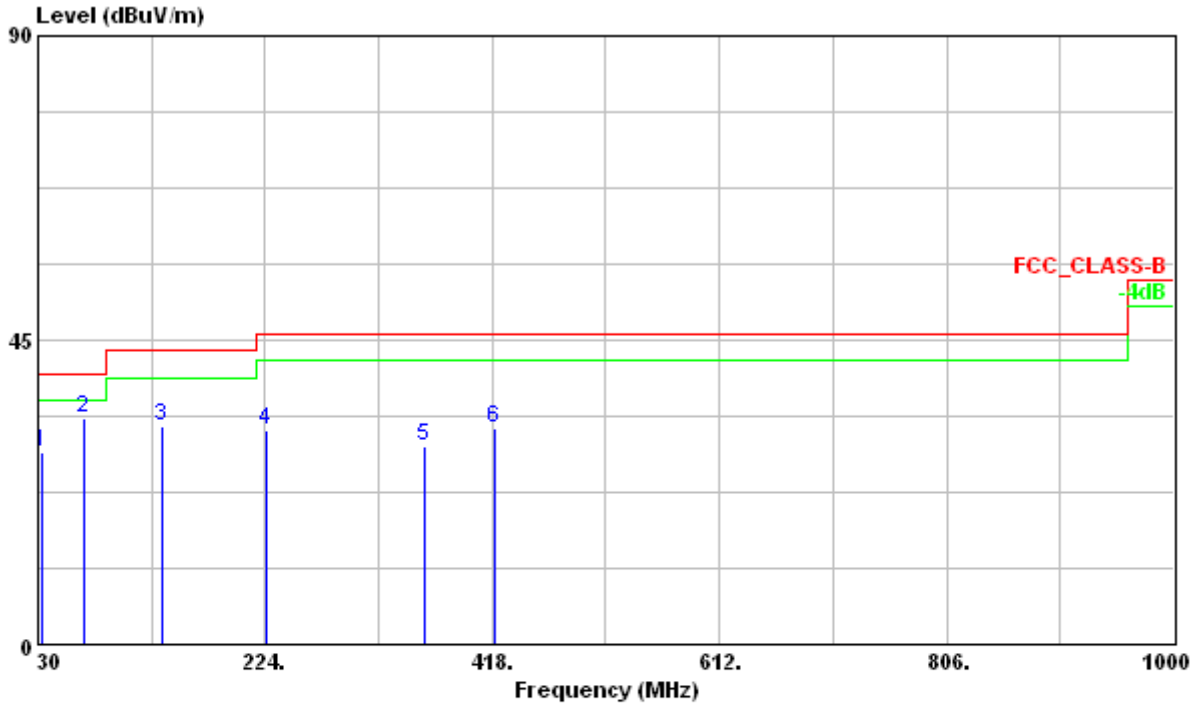


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	69.150	29.12	-20.10	49.22	40.00	-10.88	---	---	HORIZONTAL	Peak
2 @	135.030	37.59	-19.42	57.01	43.50	-5.91	256	275	HORIZONTAL	QP
3	225.480	33.32	-15.23	48.55	46.00	-12.68	---	---	HORIZONTAL	Peak
4	360.900	28.81	-10.47	39.28	46.00	-17.19	---	---	HORIZONTAL	Peak
5	420.400	28.61	-8.93	37.54	46.00	-17.39	---	---	HORIZONTAL	Peak
6	510.000	30.70	-7.01	37.71	46.00	-15.30	---	---	HORIZONTAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode	**: IEEE 802.11g, 2437MHz, Continuous Transmitting**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Vertical	**Frequency Range**	**:** 30MHz~1000MHz

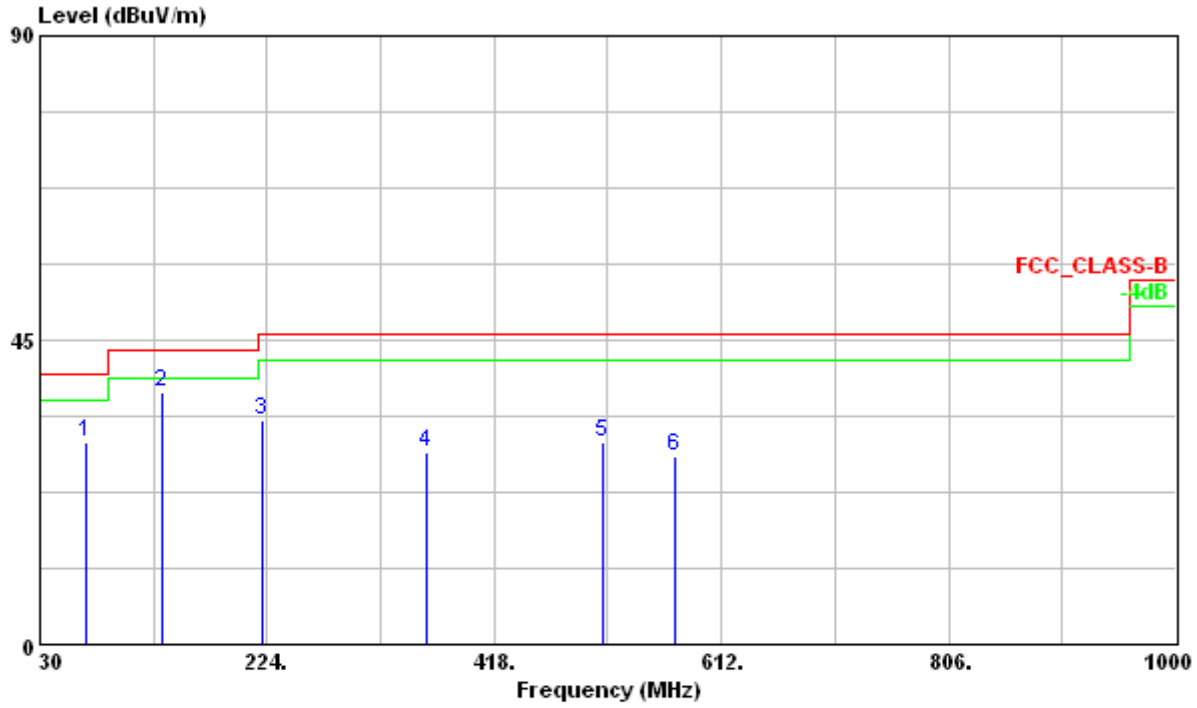


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	33.780	28.39	-11.17	39.56	40.00	-11.61	---	---	VERTICAL	Peak
2	69.000	33.50	-20.09	53.59	40.00	-6.50	100	0	VERTICAL	QP
3	135.300	32.36	-19.40	51.76	43.50	-11.14	---	---	VERTICAL	Peak
4	225.480	31.69	-15.23	46.92	46.00	-14.31	---	---	VERTICAL	Peak
5	360.900	29.24	-10.47	39.71	46.00	-16.76	---	---	VERTICAL	Peak
6	420.400	31.96	-8.93	40.89	46.00	-14.04	---	---	VERTICAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode	**: IEEE 802.11g, 2437MHz, Continuous Transmitting**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Horizontal	**Frequency Range**	**:** 30MHz~1000MHz

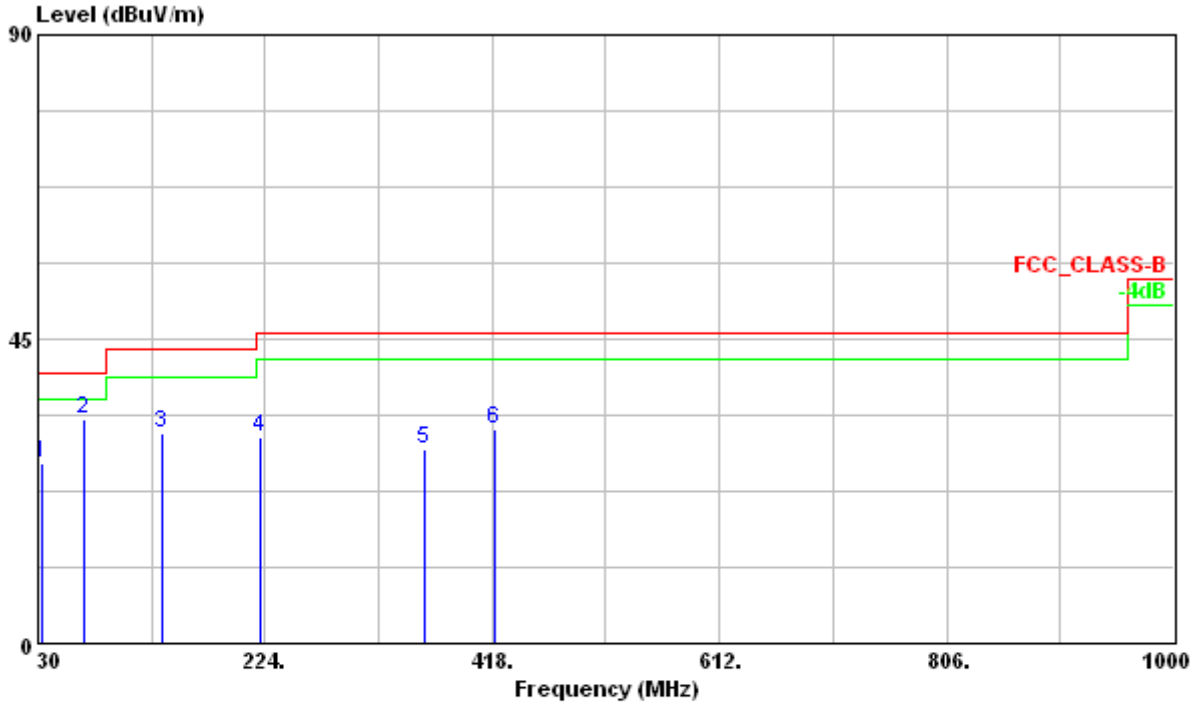


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	69.150	29.98	-20.10	50.08	40.00	-10.02	---	---	HORIZONTAL	Peak
2 @	134.995	37.40	-19.42	56.82	43.50	-6.10	266	258	HORIZONTAL	QP
3	219.270	33.24	-15.59	48.83	46.00	-12.76	---	---	HORIZONTAL	Peak
4	360.900	28.32	-10.47	38.79	46.00	-17.68	---	---	HORIZONTAL	Peak
5	510.000	30.03	-7.01	37.04	46.00	-15.97	---	---	HORIZONTAL	Peak
6	571.600	27.86	-5.53	33.39	46.00	-18.14	---	---	HORIZONTAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Model	**: IEEE 802.11g, 2462MHz, Continuous Transmitting**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Vertical	**Frequency Range**	**:** 30MHz~1000MHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	33.780	26.61	-11.17	37.78	40.00	-13.39	---	---	VERTICAL	Peak
2 @	69.010	33.19	-20.09	53.28	40.00	-6.81	100	0	VERTICAL	QP
3	135.300	31.07	-19.40	50.47	43.50	-12.43	---	---	VERTICAL	Peak
4	219.270	30.40	-15.59	45.99	46.00	-15.60	---	---	VERTICAL	Peak
5	360.900	28.85	-10.47	39.32	46.00	-17.15	---	---	VERTICAL	Peak
6	420.400	31.65	-8.93	40.58	46.00	-14.35	---	---	VERTICAL	Peak

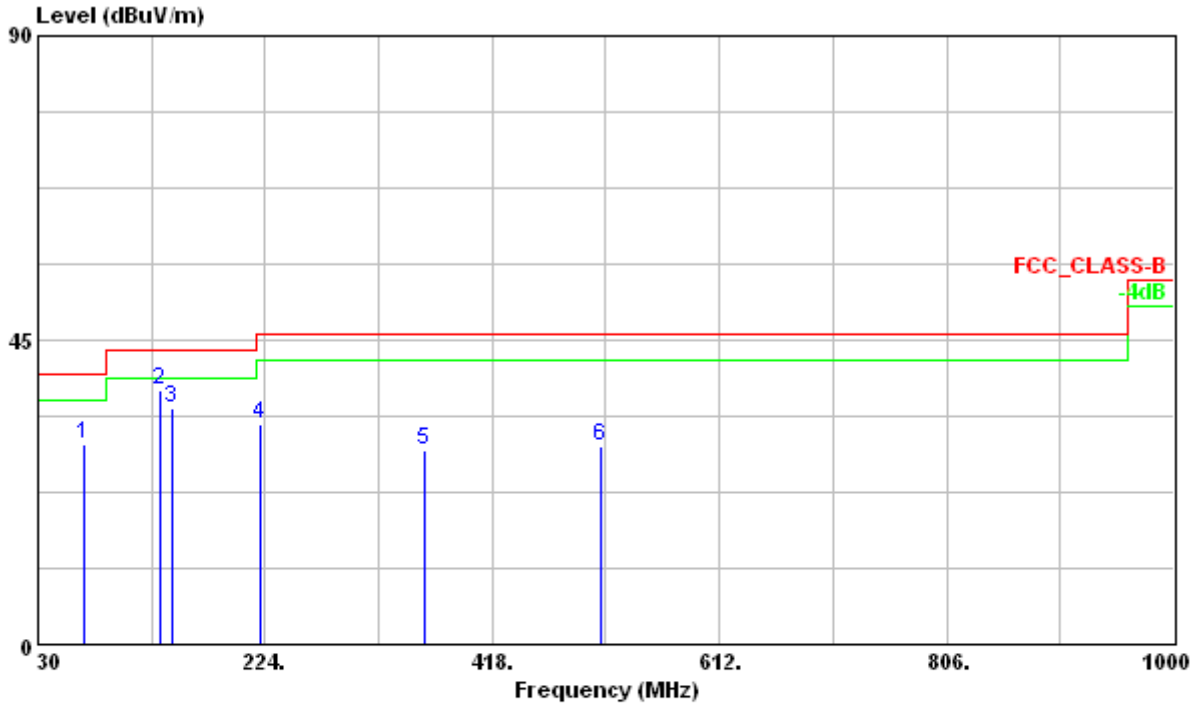
Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Model : **IEEE 802.11g, 2462MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Polarization : Horizontal **Frequency Range** : 30MHz~1000MHz

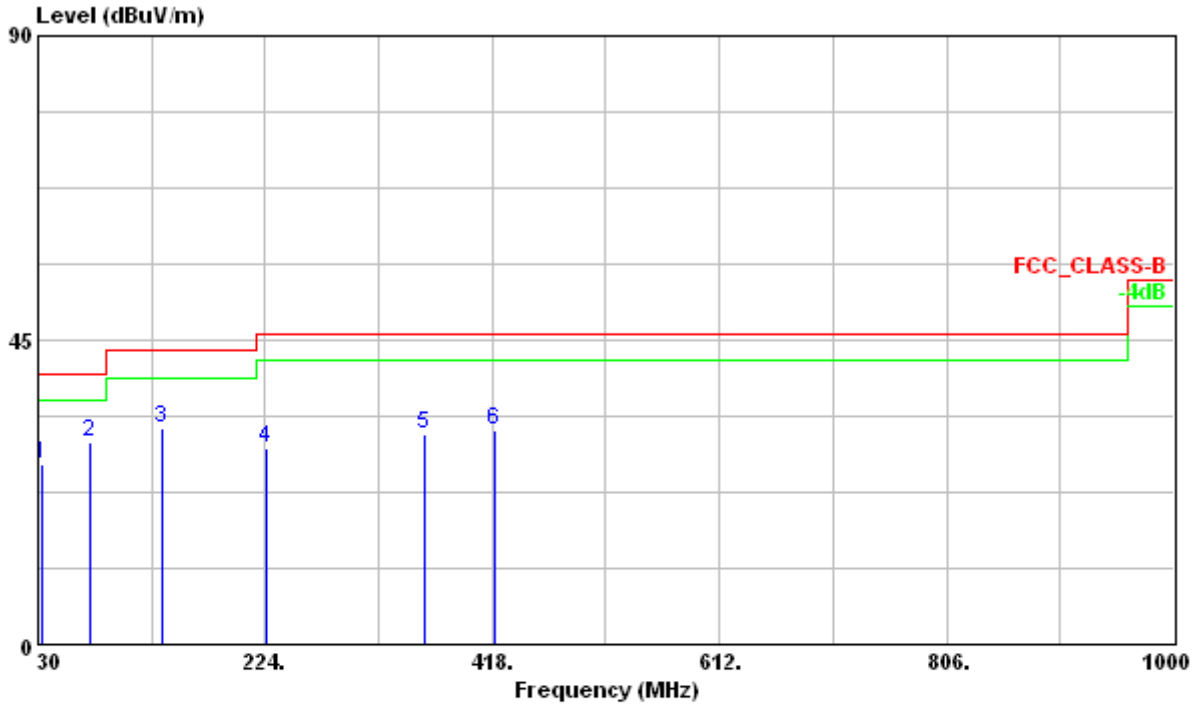


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	69.150	29.47	-20.10	49.57	40.00	-10.53	---	---	HORIZONTAL	Peak
2 @	135.000	37.51	-19.42	56.93	43.50	-5.99	250	275	HORIZONTAL	QP
3	144.210	34.91	-18.66	53.57	43.50	-8.59	---	---	HORIZONTAL	Peak
4	219.270	32.42	-15.59	48.01	46.00	-13.58	---	---	HORIZONTAL	Peak
5	360.900	28.85	-10.47	39.32	46.00	-17.15	---	---	HORIZONTAL	Peak
6	510.000	29.44	-7.01	36.45	46.00	-16.56	---	---	HORIZONTAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode	**: IEEE 802.11b/g, 2412MHz, Continuous Receiving**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Vertical	**Frequency Range**	**:** 30MHz~1000MHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	33.780	26.51	-11.17	37.68	40.00	-13.49	---	---	VERTICAL	Peak
2	74.990	30.00	-20.22	50.22	40.00	-10.00	100	214	VERTICAL	QP
3	135.300	31.97	-19.40	51.37	43.50	-11.53	---	---	VERTICAL	Peak
4	225.480	29.04	-15.23	44.27	46.00	-16.96	---	---	VERTICAL	Peak
5	360.900	31.01	-10.47	41.48	46.00	-14.99	---	---	VERTICAL	Peak
6	420.400	31.74	-8.93	40.67	46.00	-14.26	---	---	VERTICAL	Peak

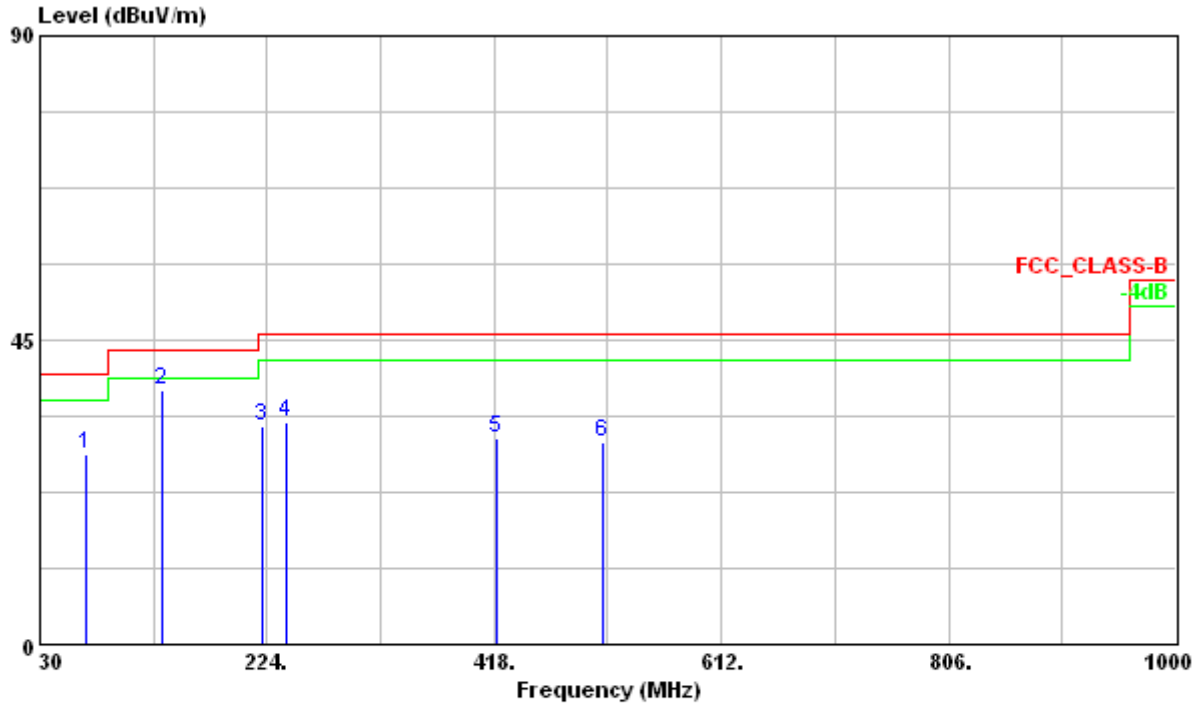
Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode : **IEEE 802.11b/g, 2412MHz, Continuous Receiving**

Test Distance : 3m **Tester** : Liu

Polarization : Horizontal **Frequency Range** : 30MHz~1000MHz

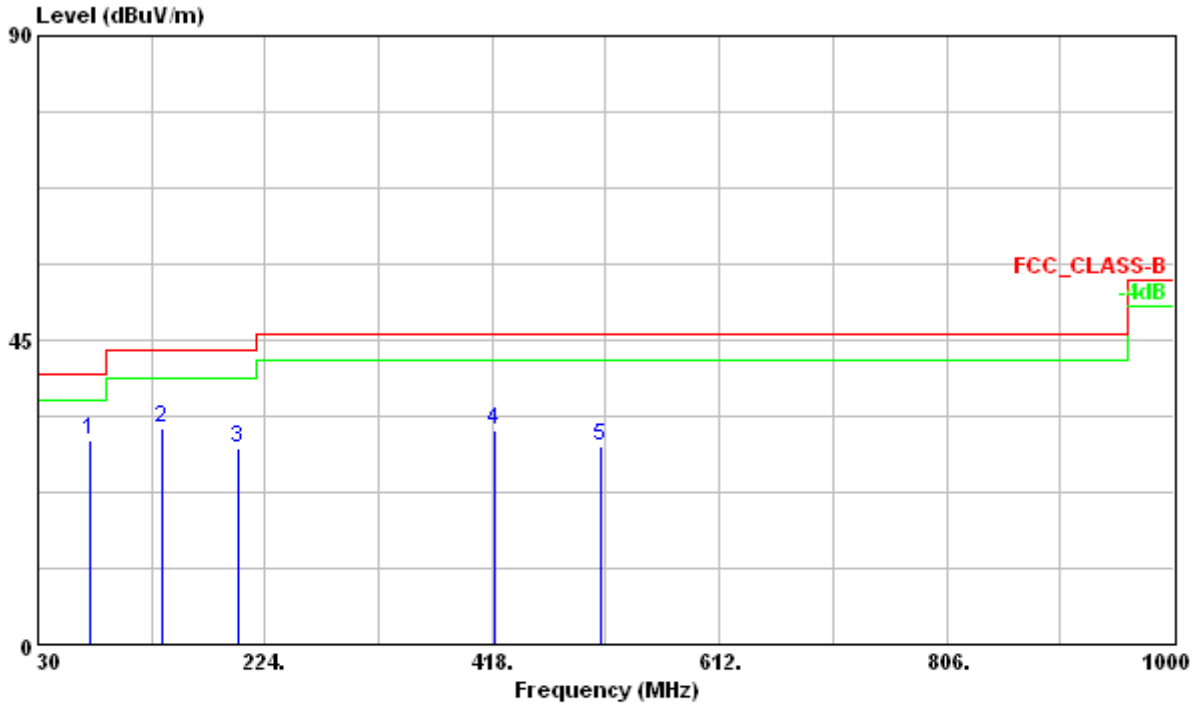


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	69.150	28.23	-20.10	48.33	40.00	-11.77	---	---	HORIZONTAL	Peak
2 @	135.000	37.50	-19.42	56.92	43.50	-6.00	258	252	HORIZONTAL	QP
3	219.270	32.32	-15.59	47.91	46.00	-13.68	---	---	HORIZONTAL	Peak
4	240.330	32.83	-14.59	47.42	46.00	-13.17	---	---	HORIZONTAL	Peak
5	420.400	30.41	-8.93	39.34	46.00	-15.59	---	---	HORIZONTAL	Peak
6	510.000	29.98	-7.01	36.99	46.00	-16.02	---	---	HORIZONTAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode	**: IEEE 802.11b/g, 2437MHz, Continuous Receiving**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Vertical	**Frequency Range**	**:** 30MHz~1000MHz

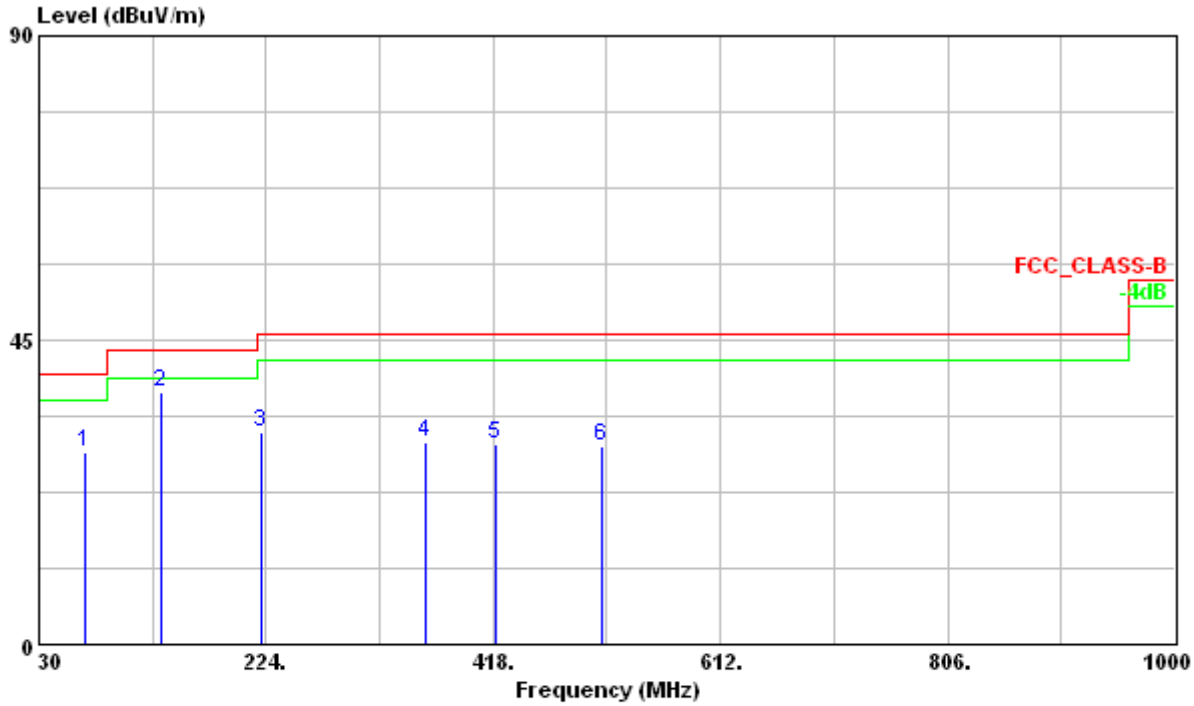


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	75.003	30.31	-20.21	50.52	40.00	-9.69	121	1	VERTICAL	QP
2	135.300	32.06	-19.40	51.46	43.50	-11.44	---	---	VERTICAL	Peak
3	200.910	29.00	-16.13	45.13	43.50	-14.50	---	---	VERTICAL	Peak
4	420.400	31.68	-8.93	40.61	46.00	-14.32	---	---	VERTICAL	Peak
5	510.000	29.25	-7.01	36.26	46.00	-16.75	---	---	VERTICAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Mode	**: IEEE 802.11b/g, 2437MHz, Continuous Receiving**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Horizontal	**Frequency Range**	**:** 30MHz~1000MHz

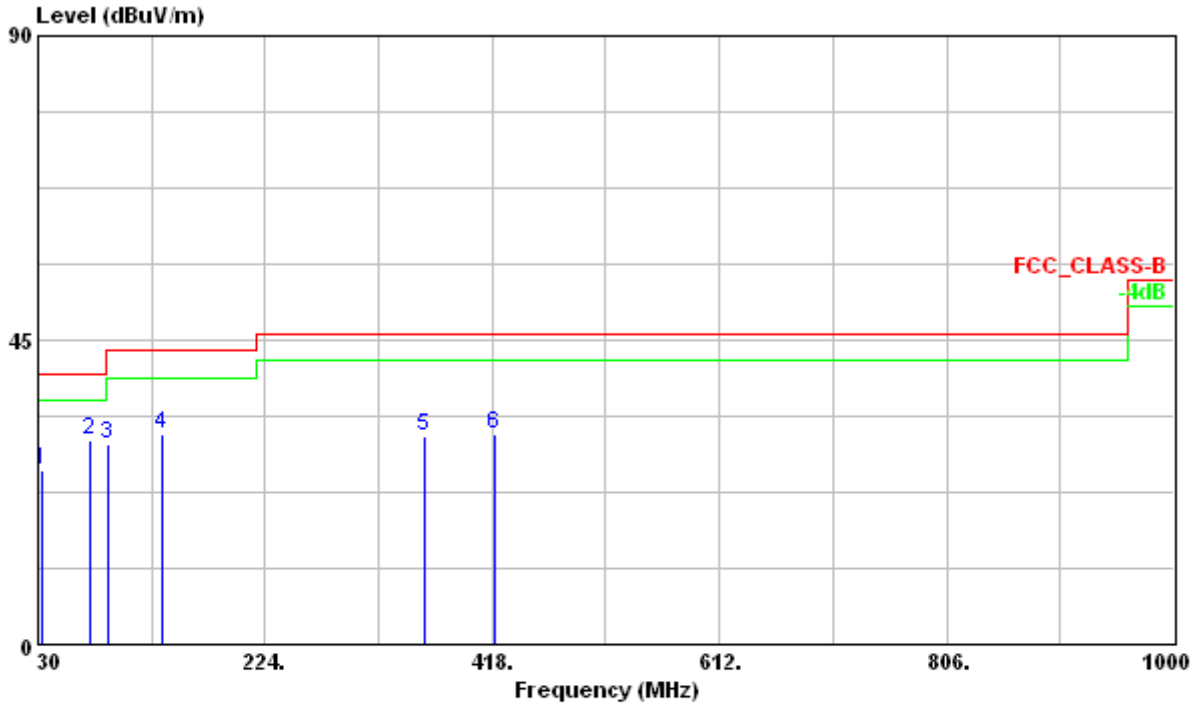


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	69.150	28.47	-20.10	48.57	40.00	-11.53	---	---	HORIZONTAL	Peak
2	134.991	37.41	-19.42	56.83	43.50	-6.09	263	253	HORIZONTAL	QP
3	219.270	31.38	-15.59	46.97	46.00	-14.62	---	---	HORIZONTAL	Peak
4	360.900	29.80	-10.47	40.27	46.00	-16.20	---	---	HORIZONTAL	Peak
5	420.400	29.69	-8.93	38.62	46.00	-16.31	---	---	HORIZONTAL	Peak
6	510.000	29.32	-7.01	36.33	46.00	-16.68	---	---	HORIZONTAL	Peak

Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Model	**: IEEE 802.11b/g, 2462MHz, Continuous Receiving**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Polarization	**:** Vertical	**Frequency Range**	**:** 30MHz~1000MHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	33.780	25.84	-11.17	37.01	40.00	-14.16	---	---	VERTICAL	Peak
2 @	75.025	30.30	-20.21	50.51	40.00	-9.70	119	20	VERTICAL	QP
3	89.940	29.57	-19.76	49.33	43.50	-13.93	---	---	VERTICAL	Peak
4	135.300	31.04	-19.40	50.44	43.50	-12.46	---	---	VERTICAL	Peak
5	360.900	30.83	-10.47	41.30	46.00	-15.17	---	---	VERTICAL	Peak
6	420.400	31.16	-8.93	40.09	46.00	-14.84	---	---	VERTICAL	Peak

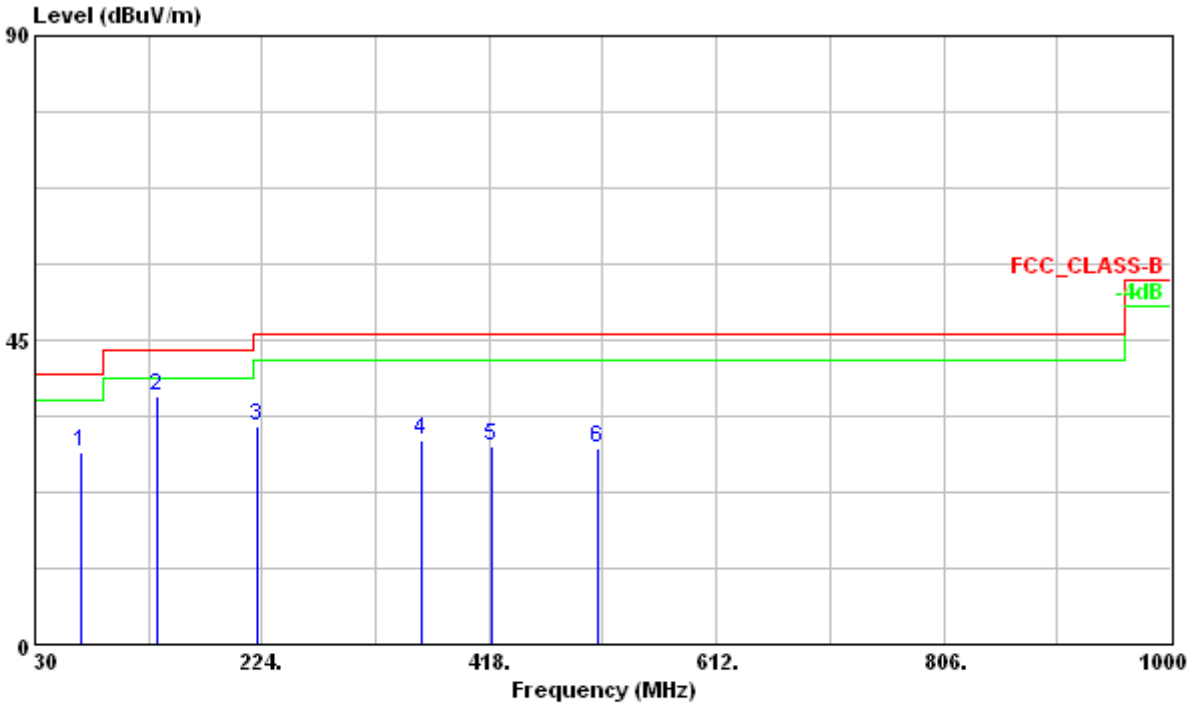
Note：

1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Test Model : **IEEE 802.11b/g, 2462MHz, Continuous Receiving**

Test Distance : 3m **Tester** : Liu

Polarization : Horizontal **Frequency Range** : 30MHz~1000MHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	69.150	28.28	-20.10	48.38	40.00	-11.72	---	---	HORIZONTAL	Peak
2 @	135.010	36.79	-19.42	56.21	43.50	-6.71	255	270	HORIZONTAL	QP
3	219.270	32.24	-15.59	47.83	46.00	-13.76	---	---	HORIZONTAL	Peak
4	360.900	30.13	-10.47	40.60	46.00	-15.87	---	---	HORIZONTAL	Peak
5	420.400	29.31	-8.93	38.24	46.00	-16.69	---	---	HORIZONTAL	Peak
6	510.000	29.12	-7.01	36.13	46.00	-16.88	---	---	HORIZONTAL	Peak

Note：

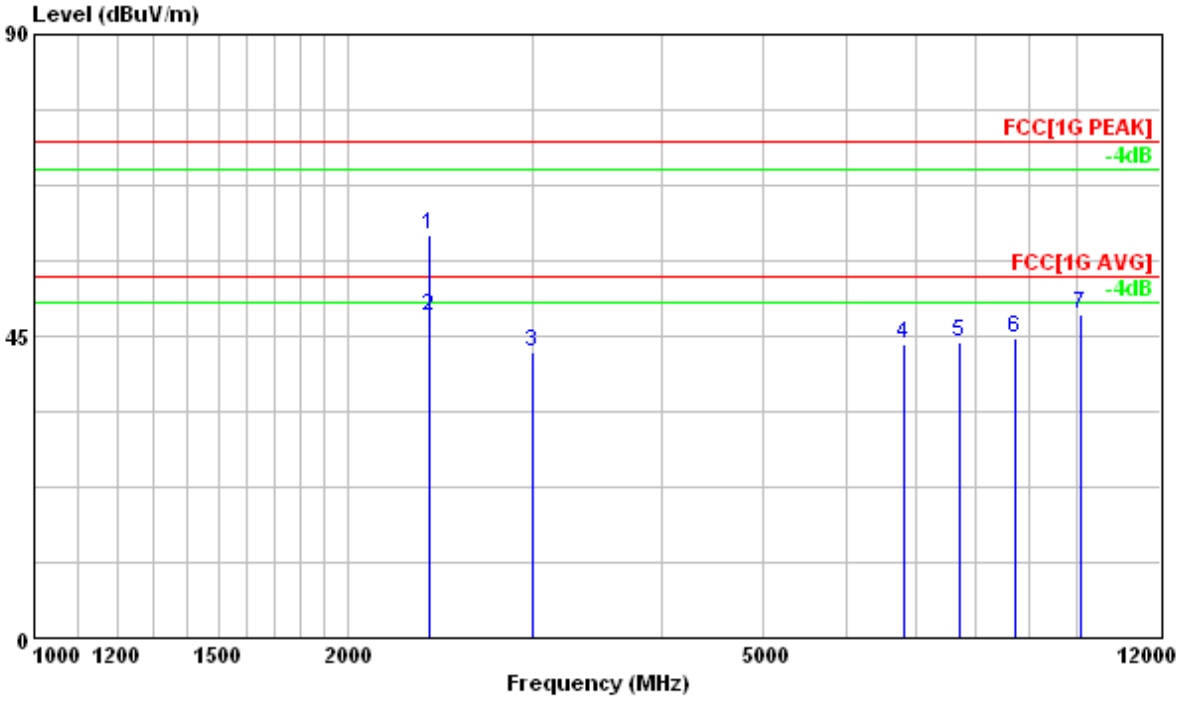
1. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier
2. Emission Level (dBuV/m) = Reading Data + Correction Factor

Radiated Emission Measurement above 1000MHz

Test Model : **IEEE 802.11b, 2412MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Vertical **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2390.000	59.96	-35.84	95.80	74.00	-14.04	255	4	VERTICAL	Peak
2	2390.000	47.88	-35.84	83.72	54.00	-6.12	255	4	VERTICAL	Average
3	3002.000	42.74	-35.13	77.87	74.00	-31.26	---	---	VERTICAL	Peak
4	6808.000	43.79	-28.70	72.49	74.00	-30.21	---	---	VERTICAL	Peak
5	7699.000	44.05	-27.83	71.88	74.00	-29.95	---	---	VERTICAL	Peak
6	8733.000	44.65	-25.26	69.91	74.00	-29.35	---	---	VERTICAL	Peak
7	10053.000	48.13	-22.42	70.55	74.00	-25.87	---	---	VERTICAL	Peak

Note:

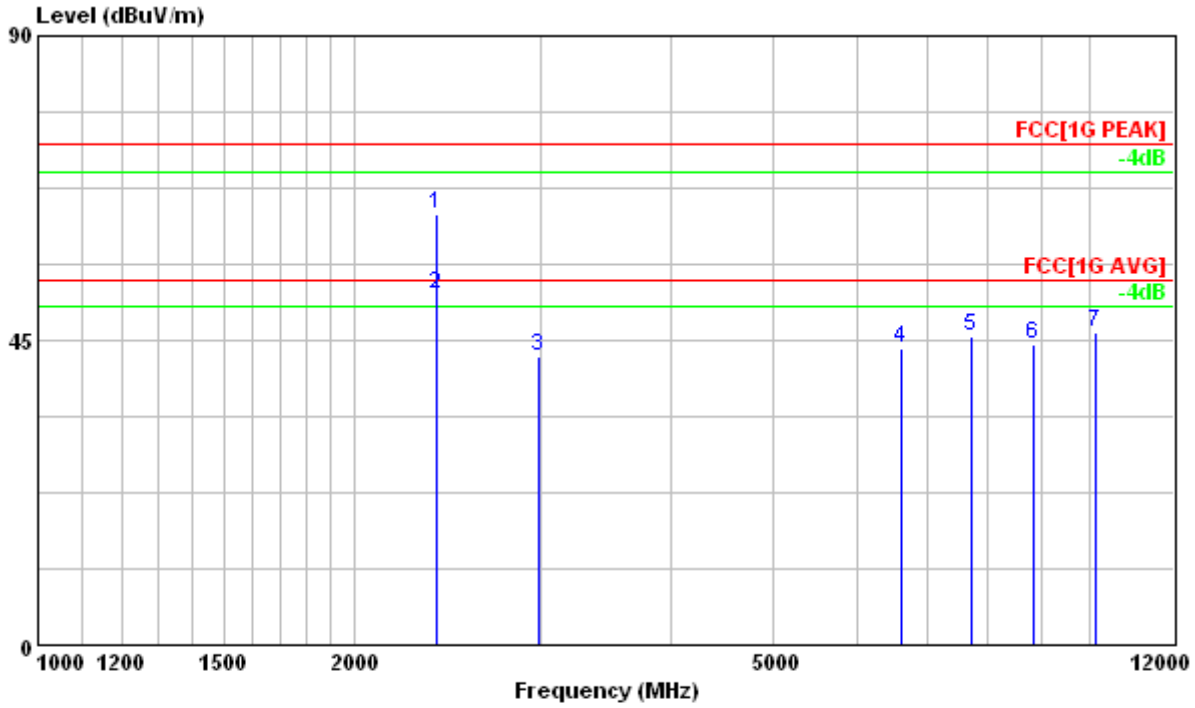
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11b, 2412MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Horizontal **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2390.000	63.65	-35.84	99.49	74.00	-10.35	304	203	HORIZONTAL	Peak
2 @	2390.000	51.69	-35.84	87.53	54.00	-2.31	304	203	HORIZONTAL	Average
3	2991.000	42.70	-35.14	77.84	74.00	-31.30	---	---	HORIZONTAL	Peak
4	6621.000	43.85	-28.71	72.56	74.00	-30.15	---	---	HORIZONTAL	Peak
5	7710.000	45.49	-27.81	73.30	74.00	-28.51	---	---	HORIZONTAL	Peak
6	8832.000	44.26	-25.21	69.47	74.00	-29.74	---	---	HORIZONTAL	Peak
7	10097.000	46.21	-22.20	68.41	74.00	-27.79	---	---	HORIZONTAL	Peak

Note:

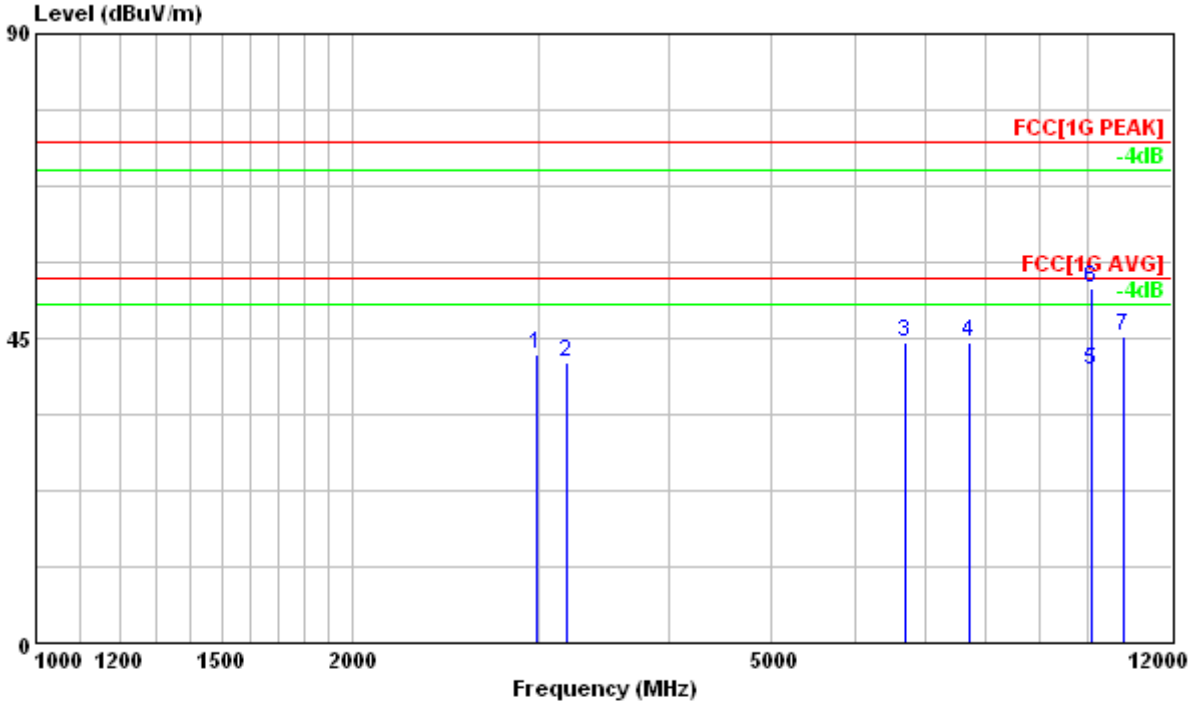
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11b, 2437MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Vertical **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2991.000	42.68	-35.14	77.82	74.00	-31.32	---	---	VERTICAL	Peak
2	3189.000	41.50	-34.92	76.42	74.00	-32.50	---	---	VERTICAL	Peak
3	6698.000	44.32	-28.56	72.88	74.00	-29.68	---	---	VERTICAL	Peak
4	7721.000	44.33	-27.79	72.12	74.00	-29.67	---	---	VERTICAL	Peak
5 @	10058.000	40.30	-22.40	62.70	54.00	-13.70	150	180	VERTICAL	Average
6	10058.000	52.47	-22.40	74.87	74.00	-21.53	150	180	VERTICAL	Peak
7	10823.000	45.34	-20.36	65.70	74.00	-28.66	---	---	VERTICAL	Peak

Note:

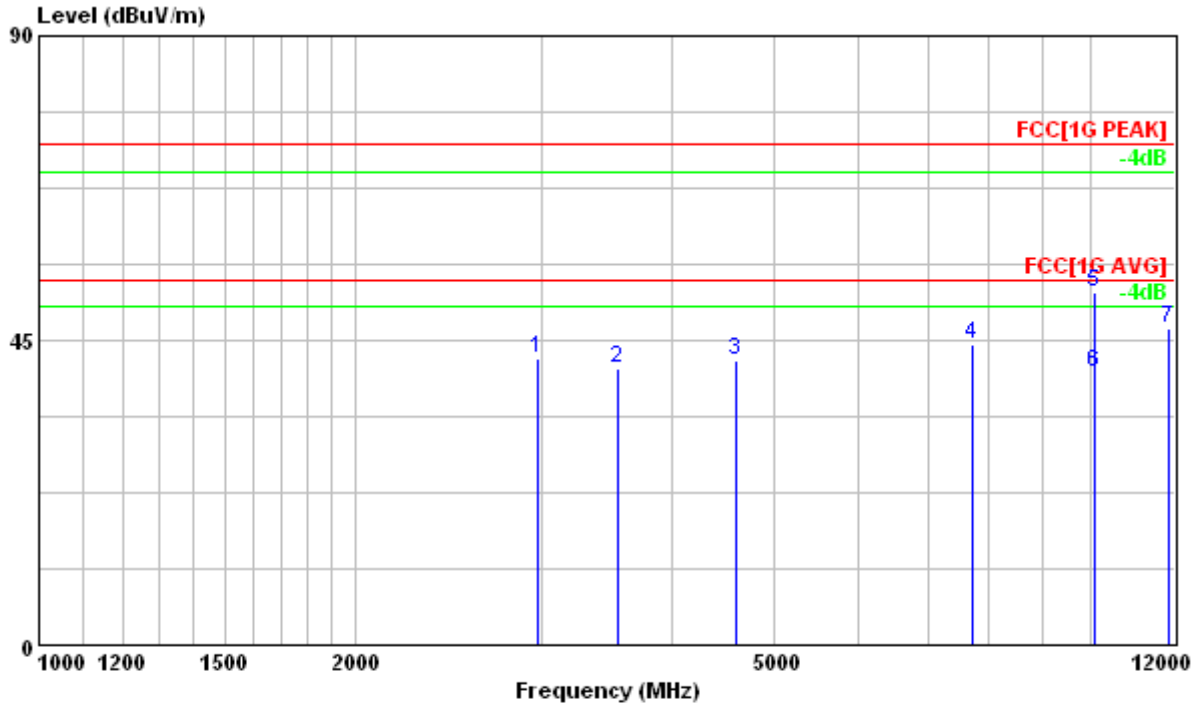
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11b, 2437MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Horizontal **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2980.000	42.29	-35.13	77.42	74.00	-31.71	---	---	HORIZONTAL	Peak
2	3552.000	40.76	-34.84	75.60	74.00	-33.24	---	---	HORIZONTAL	Peak
3	4597.000	42.07	-32.74	74.81	74.00	-31.93	---	---	HORIZONTAL	Peak
4	7710.000	44.30	-27.81	72.11	74.00	-29.70	---	---	HORIZONTAL	Peak
5	10057.750	52.24	-22.40	74.64	74.00	-21.76	200	0	HORIZONTAL	Peak
6	10057.750	40.29	-22.40	62.69	54.00	-13.71	200	0	HORIZONTAL	Average
7	11868.000	46.84	-19.29	66.13	74.00	-27.16	---	---	HORIZONTAL	Peak

Note:

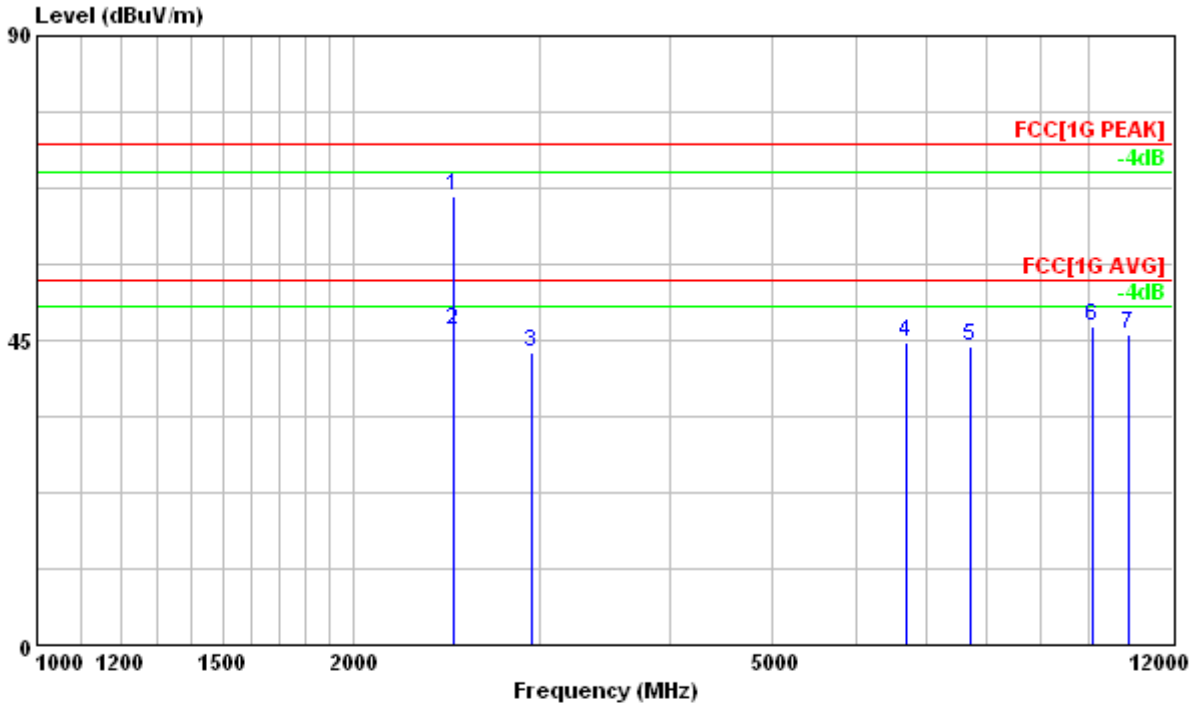
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11b, 2462MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Vertical **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2483.500	66.22	-35.64	101.86	74.00	-7.78	203	16	VERTICAL	Peak
2 @	2483.500	46.63	-35.64	82.27	54.00	-7.37	203	16	VERTICAL	Average
3	2958.000	43.37	-35.14	78.51	74.00	-30.63	---	---	VERTICAL	Peak
4	6687.000	44.62	-28.59	73.21	74.00	-29.38	---	---	VERTICAL	Peak
5	7710.000	44.14	-27.81	71.95	74.00	-29.86	---	---	VERTICAL	Peak
6	10075.000	46.97	-22.30	69.27	74.00	-27.03	---	---	VERTICAL	Peak
7	10889.000	45.97	-19.95	65.92	74.00	-28.03	---	---	VERTICAL	Peak

Note:

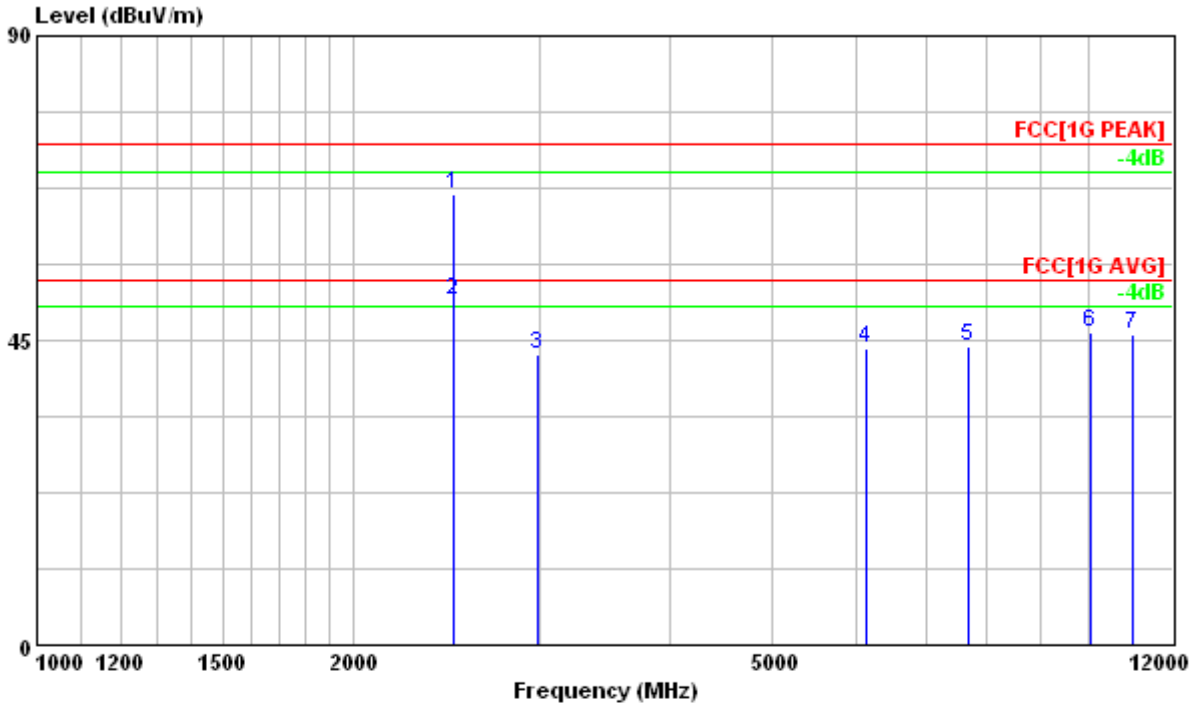
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11b, 2462MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Horizontal **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1 @	2483.500	66.75	-35.64	102.39	74.00	-7.25	179	181	HORIZONTAL	Peak
2 @	2483.500	50.84	-35.64	86.48	54.00	-3.16	179	181	HORIZONTAL	Average
3	2991.000	43.06	-35.14	78.20	74.00	-30.94	---	---	HORIZONTAL	Peak
4	6137.000	43.67	-30.00	73.67	74.00	-30.33	---	---	HORIZONTAL	Peak
5	7677.000	43.97	-27.85	71.82	74.00	-30.03	---	---	HORIZONTAL	Peak
6	10009.000	46.27	-22.64	68.91	74.00	-27.73	---	---	HORIZONTAL	Peak
7	11010.000	45.81	-20.42	66.23	74.00	-28.19	---	---	HORIZONTAL	Peak

Note:

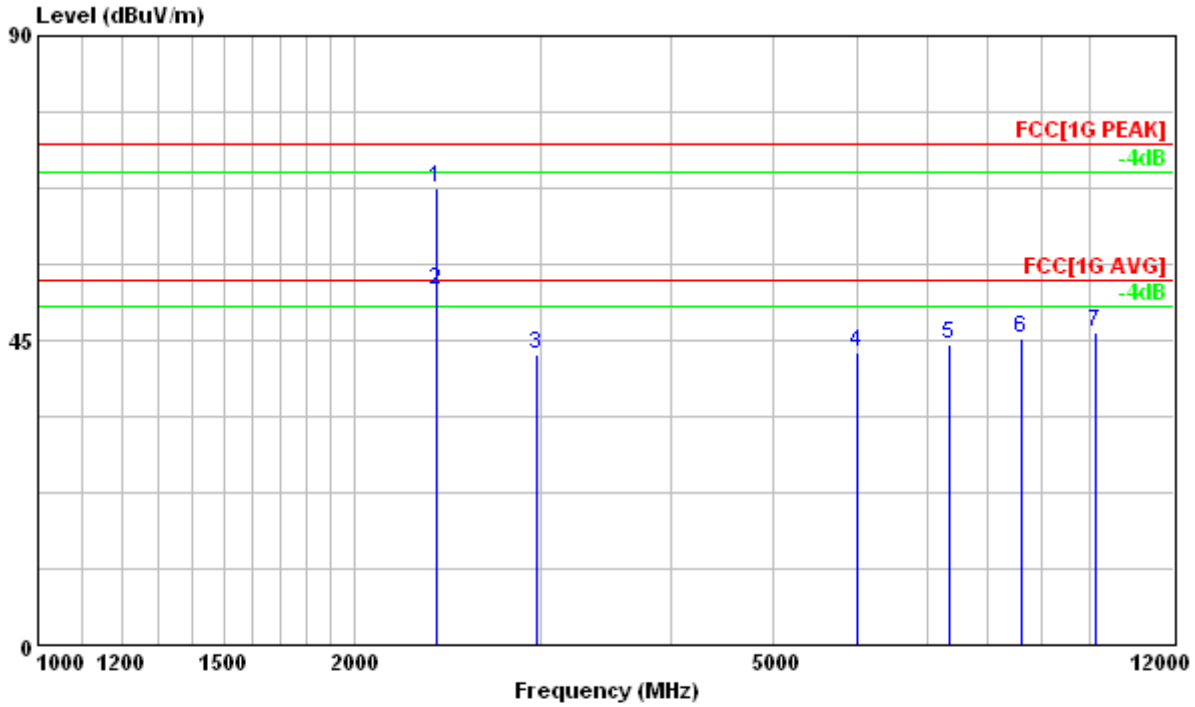
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11g, 2412MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Vertical **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2390.000	67.54	-35.84	103.38	74.00	-6.46	137	360	VERTICAL	Peak
2 @	2390.000	52.36	-35.84	88.20	54.00	-1.64	137	360	VERTICAL	Average
3	2980.000	42.98	-35.13	78.11	74.00	-31.02	---	---	VERTICAL	Peak
4	6016.000	43.09	-30.05	73.14	74.00	-30.91	---	---	VERTICAL	Peak
5	7347.000	44.28	-28.21	72.49	74.00	-29.72	---	---	VERTICAL	Peak
6	8612.000	45.35	-26.02	71.37	74.00	-28.65	---	---	VERTICAL	Peak
7	10108.000	46.28	-22.18	68.46	74.00	-27.72	---	---	VERTICAL	Peak

Note:

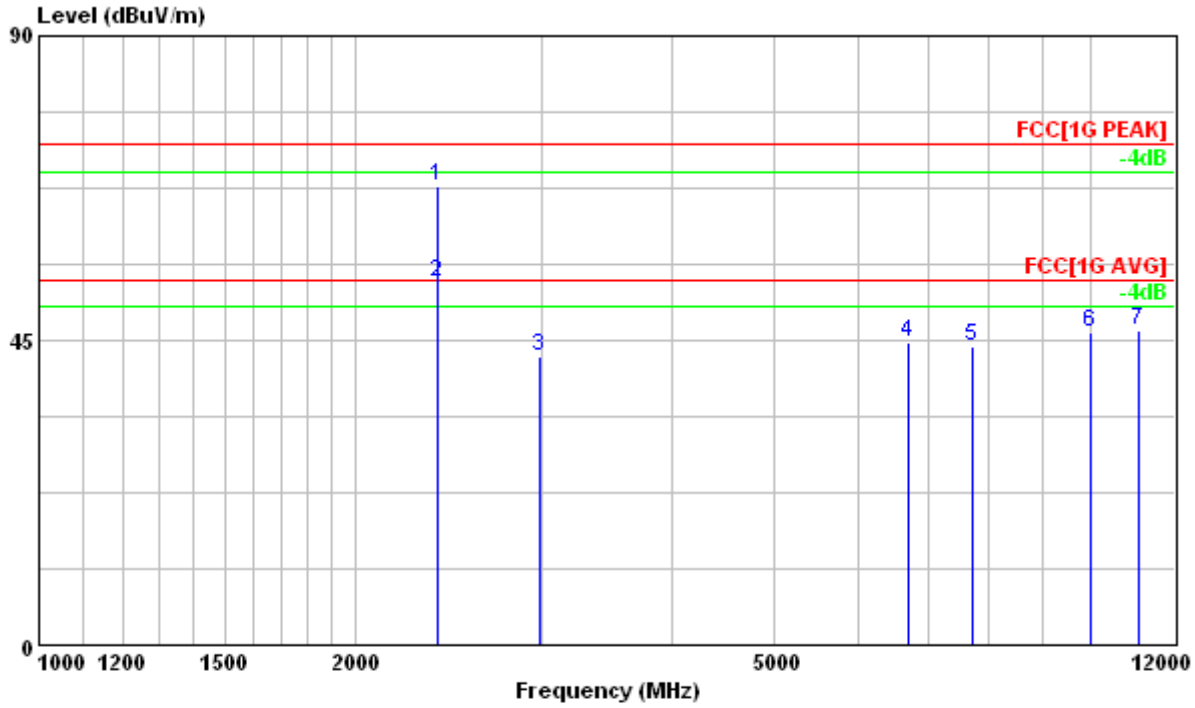
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11g, 2412MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Horizontal **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2390.000	67.79	-35.84	103.63	74.00	-6.21	235	187	HORIZONTAL	Peak
2 @	2390.000	53.50	-35.84	89.34	54.00	-0.50	235	187	HORIZONTAL	Average
3	2991.000	42.60	-35.14	77.74	74.00	-31.40	---	---	HORIZONTAL	Peak
4	6687.000	44.59	-28.59	73.18	74.00	-29.41	---	---	HORIZONTAL	Peak
5	7721.000	44.10	-27.79	71.89	74.00	-29.90	---	---	HORIZONTAL	Peak
6	9965.000	46.13	-22.78	68.91	74.00	-27.87	---	---	HORIZONTAL	Peak
7	11087.000	46.40	-20.73	67.13	74.00	-27.60	---	---	HORIZONTAL	Peak

Note:

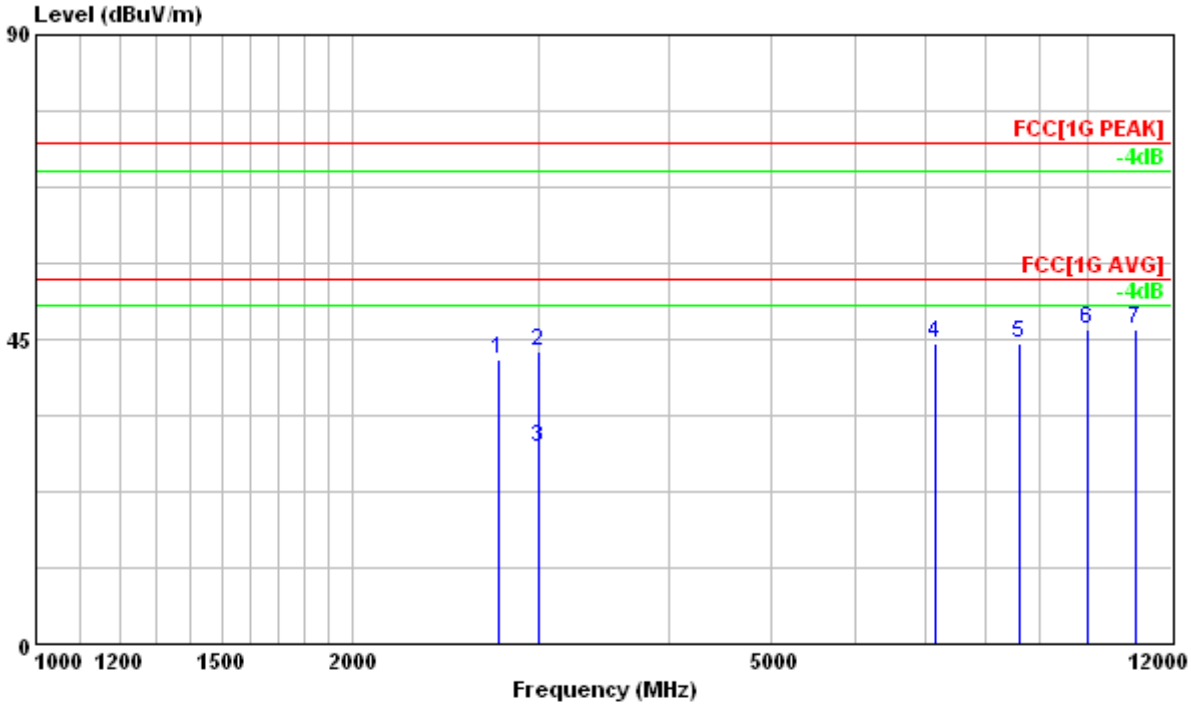
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11g, 2437MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Vertical **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2749.000	42.16	-35.41	77.57	74.00	-31.84	---	---	VERTICAL	Peak
2	2998.000	43.37	-35.13	78.50	74.00	-30.63	100	325	VERTICAL	Peak
3 @	2998.000	28.90	-35.13	64.03	54.00	-25.10	100	325	VERTICAL	Average
4	7160.000	44.36	-28.45	72.81	74.00	-29.64	---	---	VERTICAL	Peak
5	8612.000	44.29	-26.02	70.31	74.00	-29.71	---	---	VERTICAL	Peak
6	9998.000	46.54	-22.68	69.22	74.00	-27.46	---	---	VERTICAL	Peak
7	11087.000	46.35	-20.73	67.08	74.00	-27.65	---	---	VERTICAL	Peak

Note:

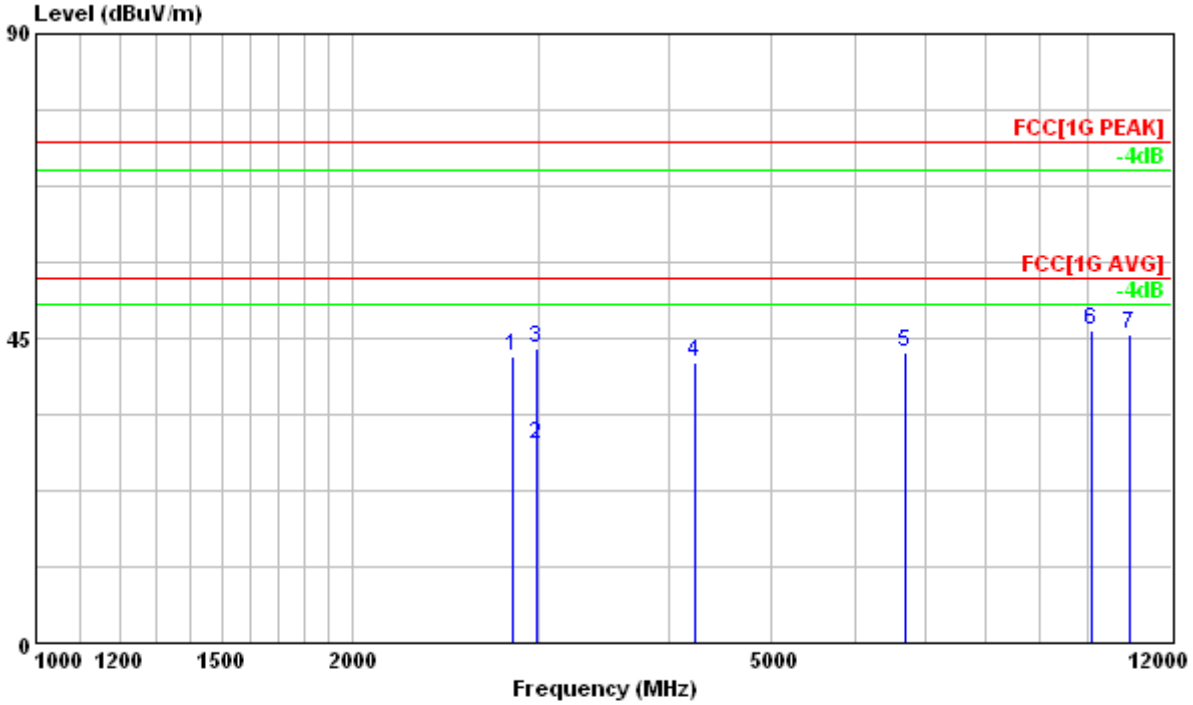
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11g, 2437MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Horizontal **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2837.000	42.36	-35.28	77.64	74.00	-31.64	---	---	HORIZONTAL	Peak
2 @	2989.000	29.33	-35.14	64.47	54.00	-24.67	100	21	HORIZONTAL	Average
3	2989.000	43.55	-35.14	78.69	74.00	-30.45	100	21	HORIZONTAL	Peak
4	4223.000	41.39	-33.55	74.94	74.00	-32.61	---	---	HORIZONTAL	Peak
5	6709.000	42.97	-28.58	71.55	74.00	-31.03	---	---	HORIZONTAL	Peak
6	10086.000	46.27	-22.26	68.53	74.00	-27.73	---	---	HORIZONTAL	Peak
7	10933.000	45.52	-20.05	65.57	74.00	-28.48	---	---	HORIZONTAL	Peak

Note:

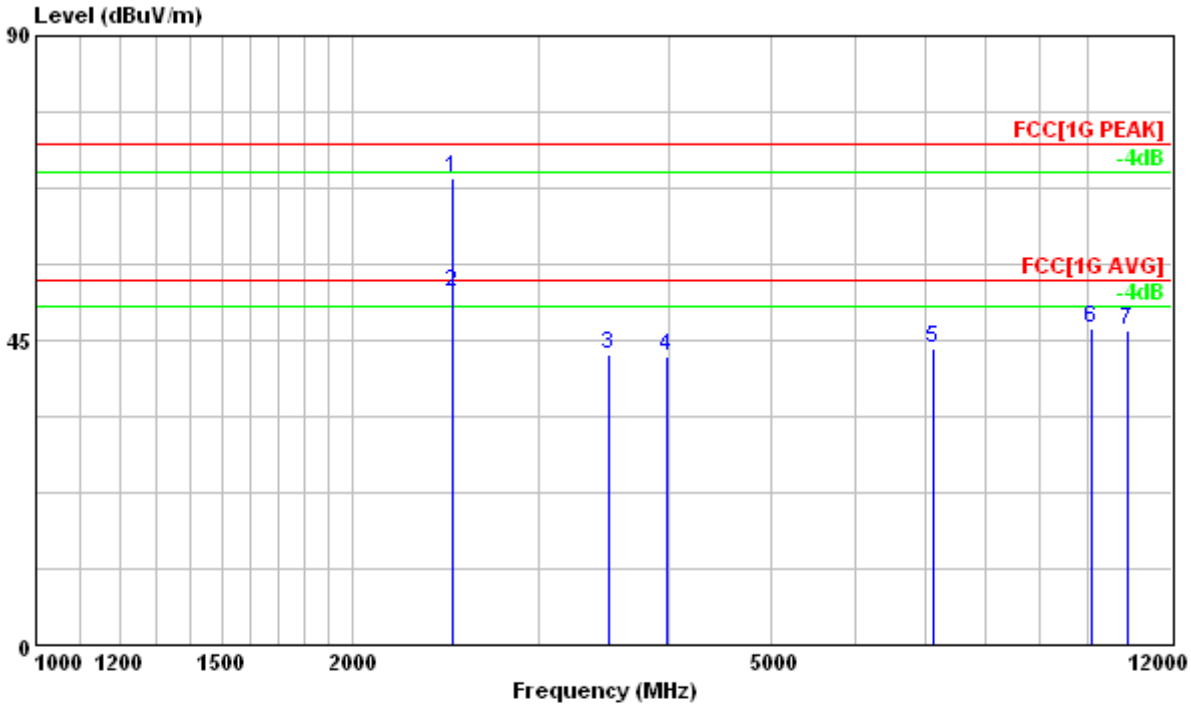
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11g, 2462MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Vertical **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2483.500	69.09	-35.64	104.73	74.00	-4.91	213	353	VERTICAL	Peak
2 @	2483.500	52.10	-35.64	87.74	54.00	-1.90	213	353	VERTICAL	Average
3	3508.000	42.82	-34.84	77.66	74.00	-31.18	---	---	VERTICAL	Peak
4	3981.000	42.68	-34.44	77.12	74.00	-31.32	---	---	VERTICAL	Peak
5	7127.000	43.71	-28.50	72.21	74.00	-30.29	---	---	VERTICAL	Peak
6	10053.000	46.81	-22.42	69.23	74.00	-27.19	---	---	VERTICAL	Peak
7	10878.000	46.54	-20.03	66.57	74.00	-27.46	---	---	VERTICAL	Peak

Note:

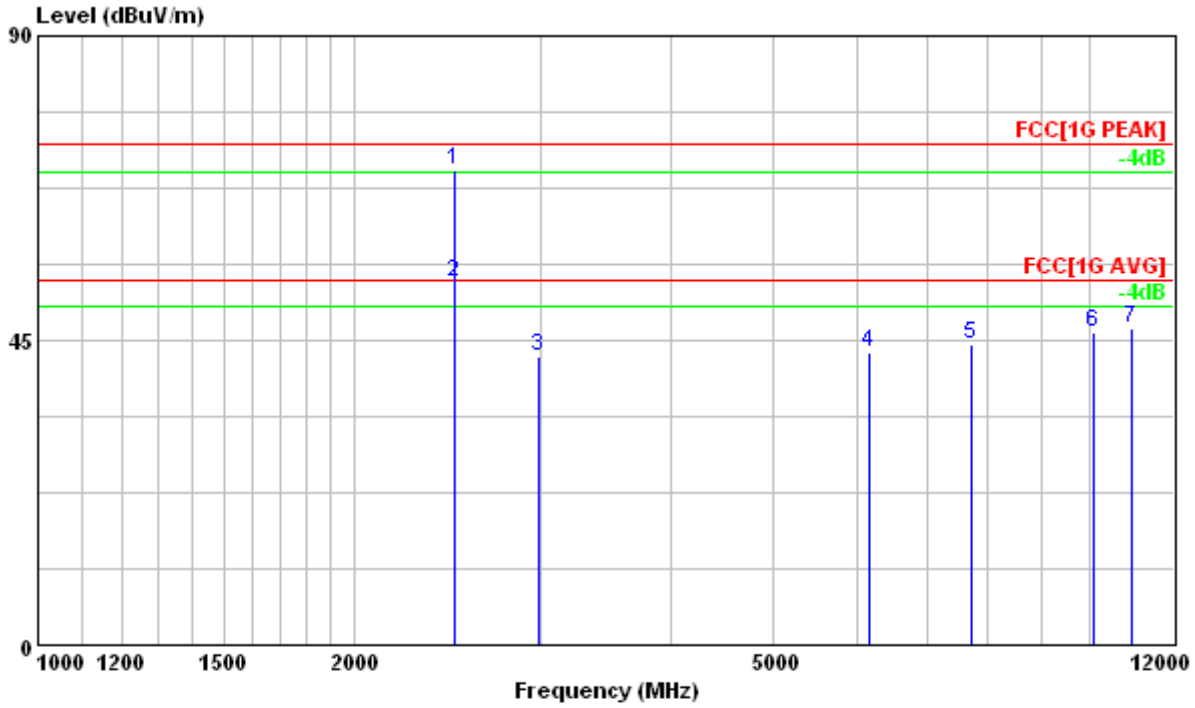
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11g, 2462MHz, Continuous Transmitting**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Horizontal **Frequency Range** :1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1 !	2483.500	70.22	-35.64	105.86	74.00	-3.78	201	115	HORIZONTAL	Peak
2 @	2483.500	53.53	-35.64	89.17	54.00	-0.47	201	115	HORIZONTAL	Average
3	2991.000	42.59	-35.14	77.73	74.00	-31.41	---	---	HORIZONTAL	Peak
4	6159.000	43.22	-29.99	73.21	74.00	-30.78	---	---	HORIZONTAL	Peak
5	7721.000	44.29	-27.79	72.08	74.00	-29.71	---	---	HORIZONTAL	Peak
6	10064.000	46.08	-22.36	68.44	74.00	-27.92	---	---	HORIZONTAL	Peak
7	10922.000	46.77	-19.99	66.76	74.00	-27.23	---	---	HORIZONTAL	Peak

Note:

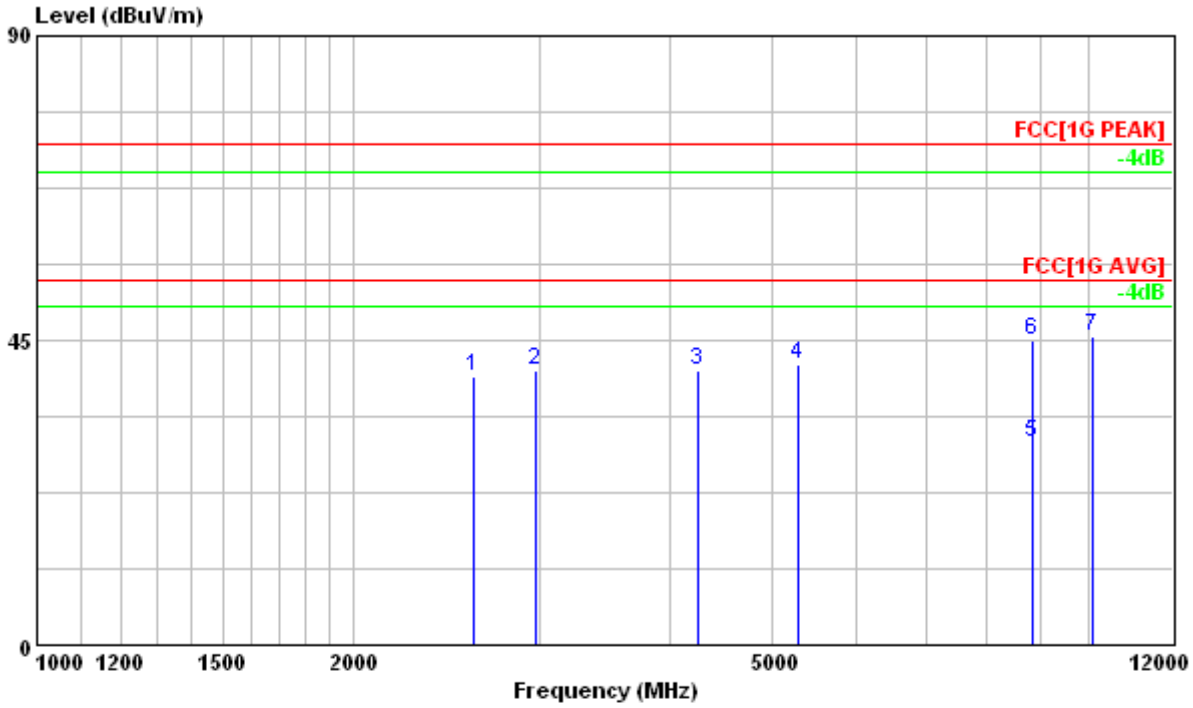
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11b/g, 2412MHz, Continuous Receiving**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Vertical **Frequency Range** :1GHz~25GHz



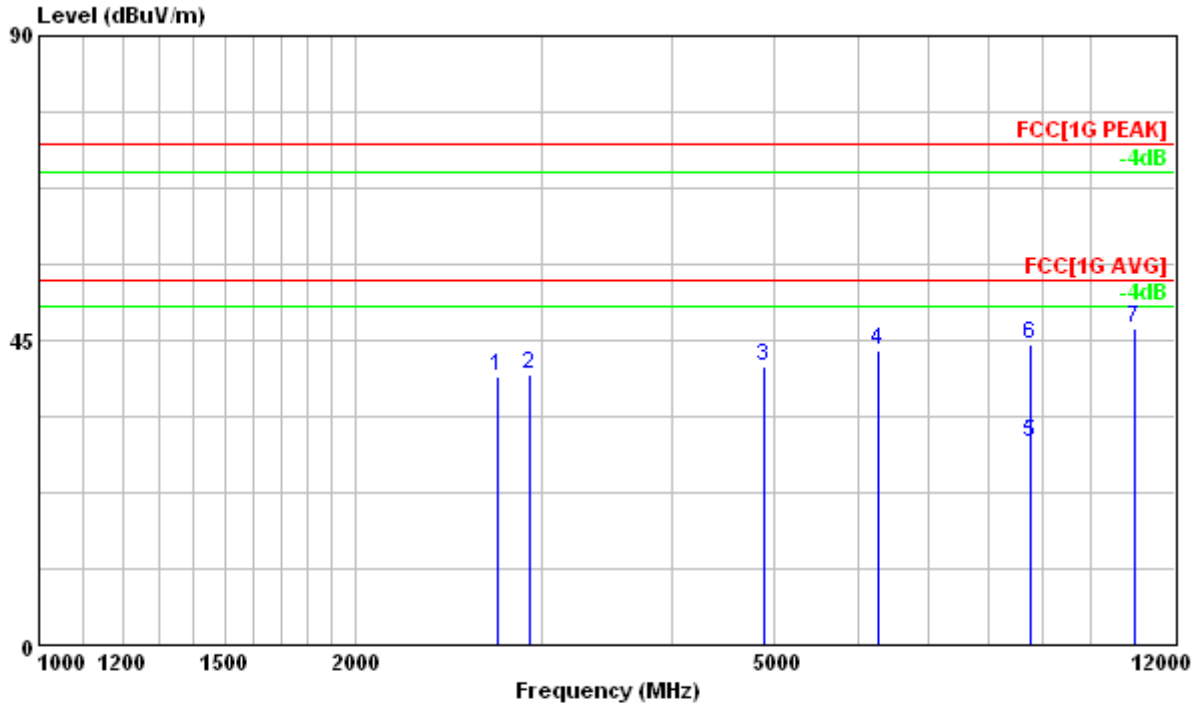
	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2595.000	39.69	-35.60	75.29	74.00	-34.31	---	---	VERTICAL	Peak
2	2980.000	40.42	-35.13	75.55	74.00	-33.58	---	---	VERTICAL	Peak
3	4245.000	40.44	-33.48	73.92	74.00	-33.56	---	---	VERTICAL	Peak
4	5290.000	41.53	-32.21	73.74	74.00	-32.47	---	---	VERTICAL	Peak
5	8821.000	29.90	-25.19	55.09	54.00	-24.10	100	0	VERTICAL	Average
6	8821.000	45.02	-25.19	70.21	74.00	-28.98	100	0	VERTICAL	Peak
7	10086.000	45.65	-22.26	67.91	74.00	-28.35	---	---	VERTICAL	Peak

Note:

1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model	**: IEEE 802.11b/g, 2412MHz, Continuous Receiving**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Antenna Polarization	**:** Horizontal	**Frequency Range :**	1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2727.000	39.66	-35.44	75.10	74.00	-34.34	---	---	HORIZONTAL	Peak
2	2925.000	39.99	-35.16	75.15	74.00	-34.01	---	---	HORIZONTAL	Peak
3	4883.000	41.04	-32.87	73.91	74.00	-32.96	---	---	HORIZONTAL	Peak
4	6280.000	43.38	-29.83	73.21	74.00	-30.62	---	---	HORIZONTAL	Peak
5	8767.313	29.83	-25.20	55.03	54.00	-24.17	100	251	HORIZONTAL	Average
6	8767.313	44.46	-25.20	69.66	74.00	-29.54	100	251	HORIZONTAL	Peak
7	10977.000	46.65	-20.27	66.92	74.00	-27.35	---	---	HORIZONTAL	Peak

Note:

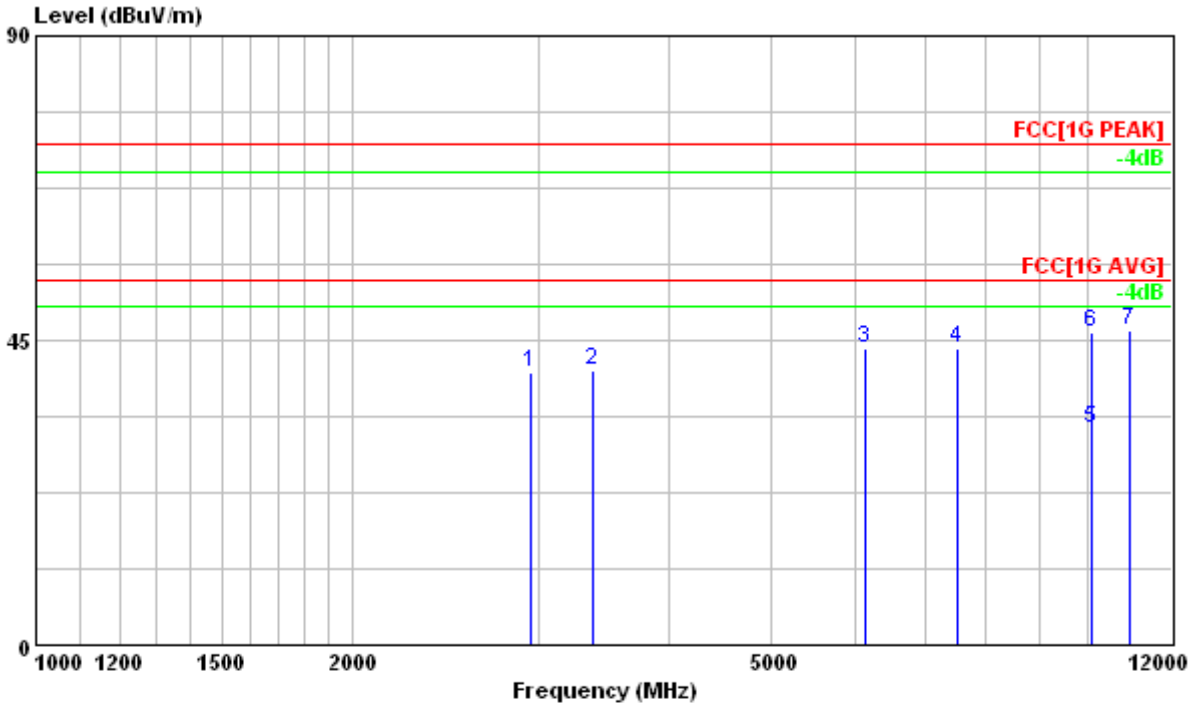
1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model : **IEEE 802.11b/g, 2437MHz, Continuous Receiving**

Test Distance : 3m **Tester** : Liu

Antenna Polarization : Vertical **Frequency Range** :1GHz~25GHz



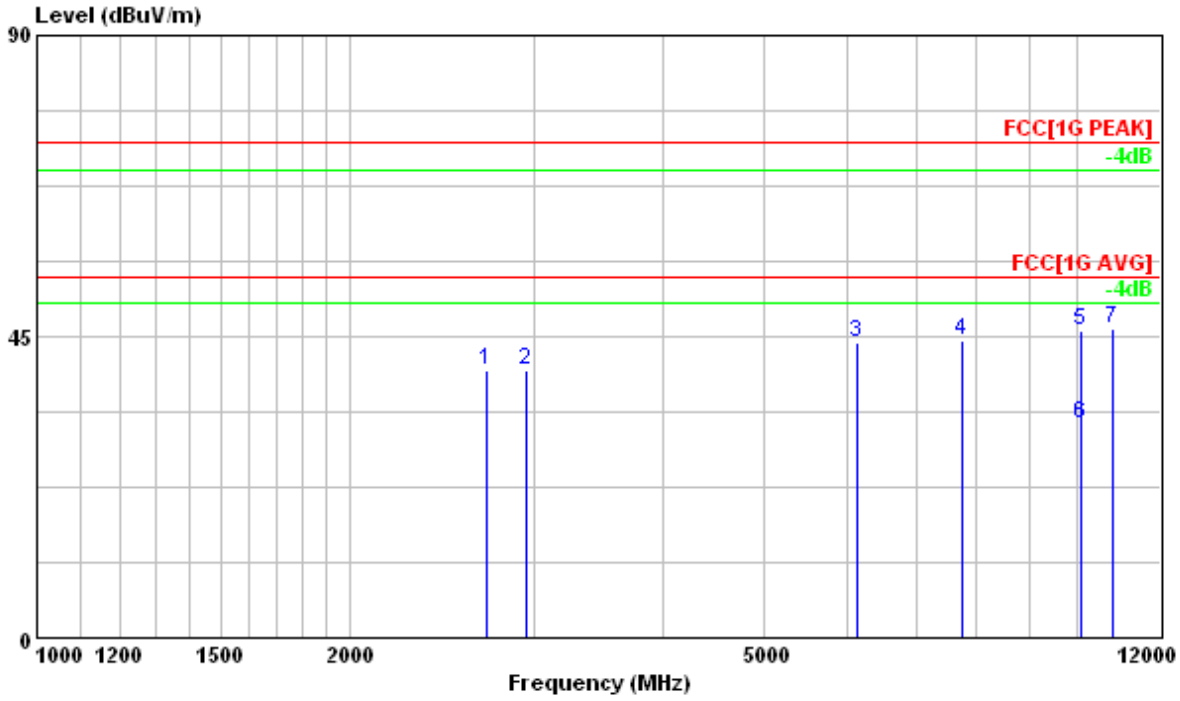
	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2947.000	40.20	-35.15	75.35	74.00	-33.80	---	---	VERTICAL	Peak
2	3387.000	40.52	-34.89	75.41	74.00	-33.48	---	---	VERTICAL	Peak
3	6148.000	43.92	-29.99	73.91	74.00	-30.08	---	---	VERTICAL	Peak
4	7501.000	43.71	-28.02	71.73	74.00	-30.29	---	---	VERTICAL	Peak
5	10087.380	31.83	-22.26	54.09	54.00	-22.17	100	180	VERTICAL	Average
6	10087.380	46.18	-22.26	68.44	74.00	-27.82	100	180	VERTICAL	Peak
7	10944.000	46.54	-20.10	66.64	74.00	-27.46	---	---	VERTICAL	Peak

Note:

1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model	**: IEEE 802.11b/g, 2437MHz, Continuous Receiving**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Antenna Polarization	**:** Horizontal	**Frequency Range :**	1GHz~25GHz



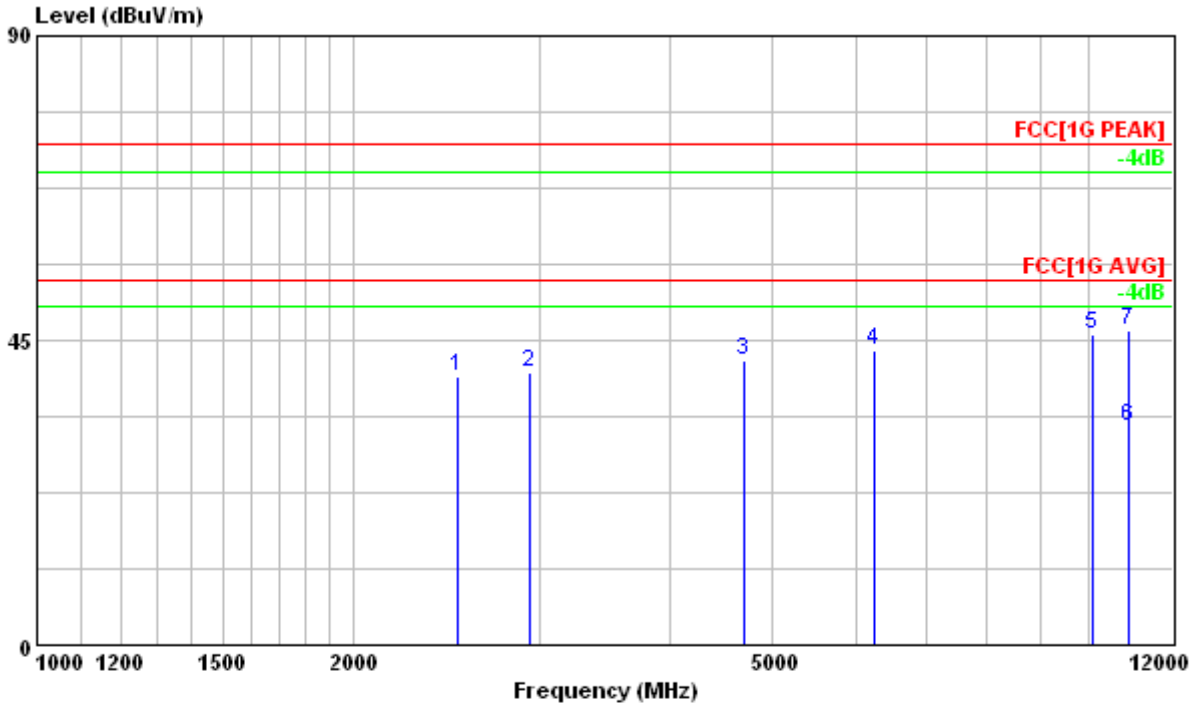
	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2705.000	39.90	-35.47	75.37	74.00	-34.10	---	---	HORIZONTAL	Peak
2	2947.000	39.83	-35.15	74.98	74.00	-34.17	---	---	HORIZONTAL	Peak
3	6148.000	44.24	-29.99	74.23	74.00	-29.76	---	---	HORIZONTAL	Peak
4	7743.000	44.46	-27.75	72.21	74.00	-29.54	---	---	HORIZONTAL	Peak
5	10086.000	45.90	-22.26	68.16	74.00	-28.10	100	153	HORIZONTAL	Peak
6 @	10086.000	31.84	-22.26	54.10	54.00	-22.16	100	153	HORIZONTAL	Average
7	10801.000	46.29	-20.50	66.79	74.00	-27.71	---	---	HORIZONTAL	Peak

Note:

1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model	**: IEEE 802.11b/g, 2462MHz, Continuous Receiving**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Antenna Polarization	**:** Vertical	**Frequency Range :**	1GHz~25GHz



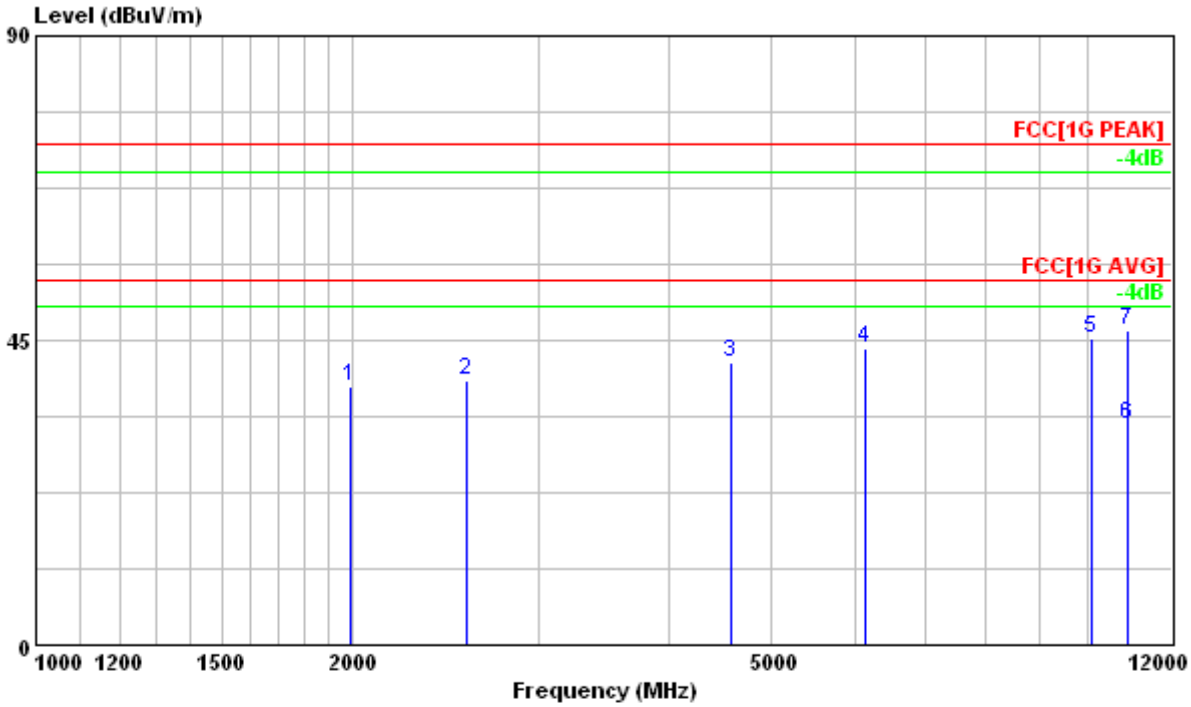
	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	2507.000	39.71	-35.59	75.30	74.00	-34.29	---	---	VERTICAL	Peak
2	2936.000	40.19	-35.15	75.34	74.00	-33.81	---	---	VERTICAL	Peak
3	4696.000	41.90	-32.79	74.69	74.00	-32.10	---	---	VERTICAL	Peak
4	6258.000	43.45	-29.87	73.32	74.00	-30.55	---	---	VERTICAL	Peak
5	10075.000	45.84	-22.30	68.14	74.00	-28.16	---	---	VERTICAL	Peak
6	10889.000	32.40	-19.95	52.35	54.00	-21.60	100	0	VERTICAL	Average
7	10889.000	46.34	-19.95	66.29	74.00	-27.66	100	0	VERTICAL	Peak

Note:

1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

Test Model	**: IEEE 802.11b/g, 2462MHz, Continuous Receiving**		
Test Distance	**:** 3m	**Tester**	**:** Liu
Antenna Polarization	**:** Horizontal	**Frequency Range :**	1GHz~25GHz



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Table Pos	Pol/Phase	Remark
	MHz	dBuV/m	dB/m	dBuV	dBuV/m	dB	cm	deg		
1	1990.000	38.26	-37.22	75.48	74.00	-35.74	---	---	HORIZONTAL	Peak
2	2562.000	39.11	-35.60	74.71	74.00	-34.89	---	---	HORIZONTAL	Peak
3	4575.000	41.87	-32.69	74.56	74.00	-32.13	---	---	HORIZONTAL	Peak
4	6137.000	43.68	-30.00	73.68	74.00	-30.32	---	---	HORIZONTAL	Peak
5	10086.000	45.34	-22.26	67.60	74.00	-28.66	---	---	HORIZONTAL	Peak
6 @	10878.000	32.55	-20.03	52.58	54.00	-21.45	100	360	HORIZONTAL	Average
7	10878.000	46.51	-20.03	66.54	74.00	-27.49	100	360	HORIZONTAL	Peak

Note:

1. Emission Level (dBuV/m) = Reading Value + Correction Factor.
2. Correction Factor (dB/m) = Cable Loss + Antenna Factor – Gain of Preamplifier.
3. PK. and AV. are abbreviation of peak and average respectively.

No signal can be detected from 12GHz to 25GHz, so the graphs are omitted above 12GHz.

7 Conducted Emission Measurement

Result: Pass

7.1 Applied standard

For intentional device, line conduction emission limit is as below table.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

7.2 Test Instruments

Test Site and Equipment	Manufacturer	Model No./ Serial No.	Last Calibration Date	Calibration Due Date
Test Receiver	R&S	ESCS 30/836858/021	2011/1/14	2012/1/14
LISN	R&S	ESH2-Z5/836613/001	2010/5/26	2011/5/26
2nd LISN	R&S	ENV4200/833209/010	2011/1/14	2012/1/14
50Ω terminator	N/A	N/A/001	2010/8/26	2011/8/26
RF Switch	N/A	RSU28/338965/002	2010/2/21	2011/8/21
RF Cable	N/A	N/A/C0052 ~ 56	2010/2/21	2011/8/21
Test Software	Audix	e3/Ver. 5.4.219.f	NCR	NCR
shielded room	ETS LINDGREN	TR5/15353-F	NCR	NCR

Note:

1. The calibrations are traceable to NML/ROC.
2. NCR : No Calibration Required.

Instrument Setting

IF BW	Measurement Time	Detector	Trace	Comment
9kHz	1 second	Quasi-Peak / Average	Maxhold	

Climatic Condition

Ambient Temperature：24℃; Relative Humidity : 53%

7.3 Measurement Procedure

a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.

b. If the EUT is tabletop equipment, it was placed on a non-conducted table with a height of 0.8 meters above the reference ground plane and 0.4 meters from the conducting wall of the shielded room. Also if the EUT is floor-standing equipment, it was placed on a non-conducted support with a height of 12 millimeters above the reference ground plane.

c. Connect the EUT's power source to the appropriate power mains through the LISN.

d. All the other peripherals are connected to the 2nd LISN, if any.

e. The LISN was placed 0.8 meters from the EUT and at least 0.8 meters from other units and other metal planes.

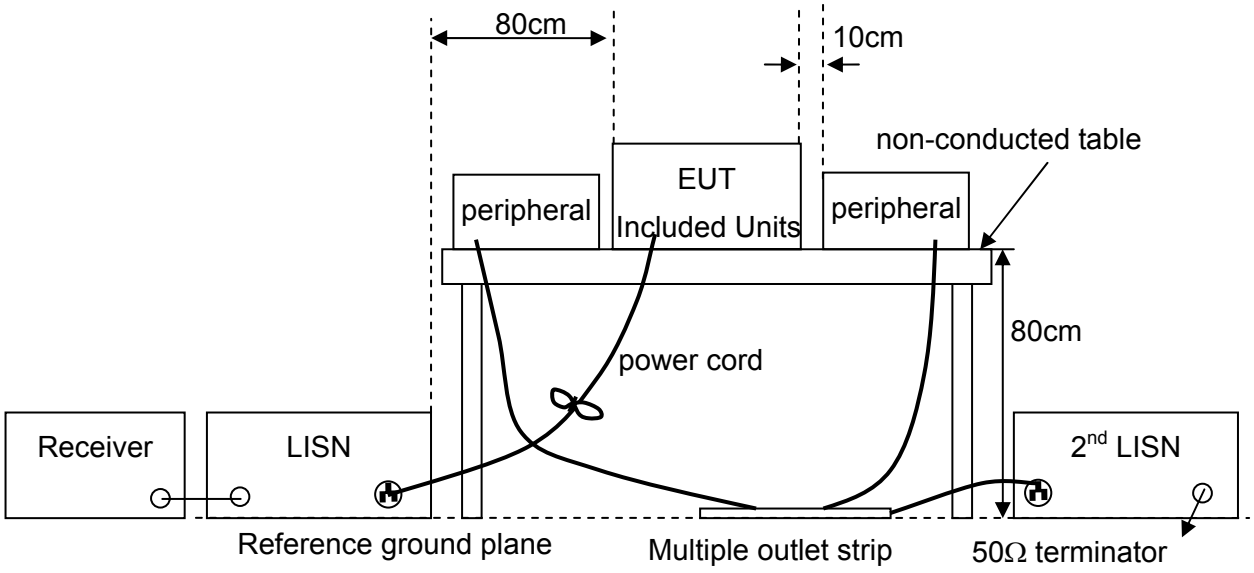
f. Measure the conducted emissions on each power line (Neutral Line and Line 1 – Hot side) of the EUT's power source by using the test receiver connected to the coupling RF output port of LISN.

g. Rapidly scan the signal from 150kHz to 30MHz by using the receiver through the Maximum-Peak detector to determine those frequencies associated with higher emission levels for each measured line.

h. Then measure the maximum level of conducted disturbance for each frequency found from step g. by using the receiver through the Quasi-Peak and Average detectors per CISPR 16-1.

i. Record the level for each frequency and compare with the required limit.

7.4 Test configuration

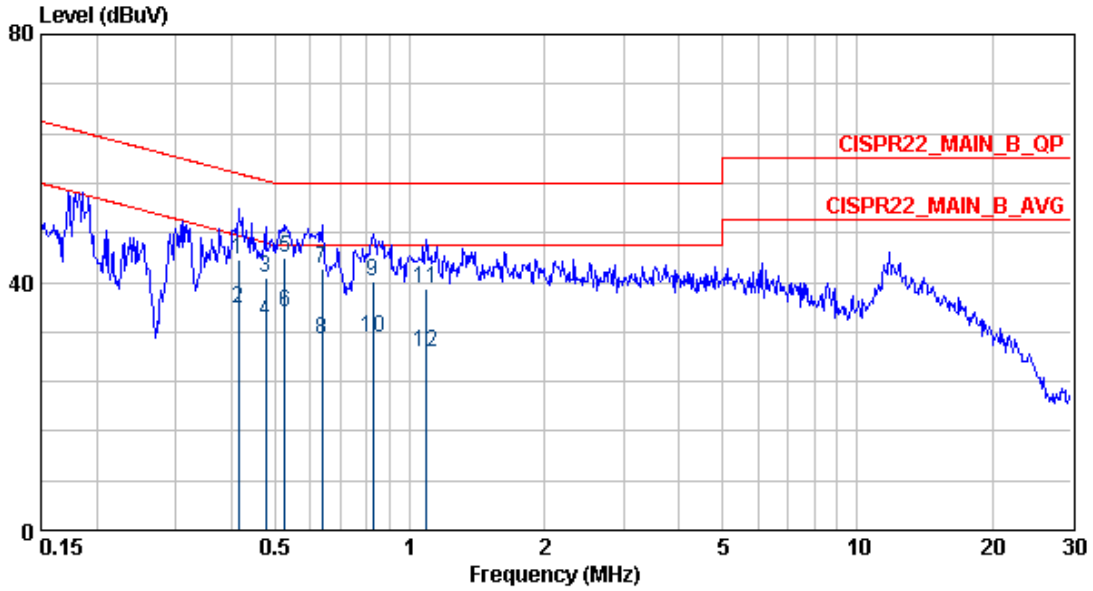


7.5 Test Data

Test Mode : **IEEE 802.11b, 2412MHz, Continuous Transmitting**

Frequency Range : 150kHz~30MHz **Phase** : Line

Tester : CDC



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	cm		
1 @	0.415	43.70	0.24	43.46	57.55	-13.85	---	LINE	QP
2 @	0.415	35.79	0.24	35.55	47.55	-11.76	---	LINE	AVERAGE
3	0.476	40.73	0.27	40.46	56.41	-15.68	---	LINE	QP
4 @	0.476	33.70	0.27	33.43	46.41	-12.71	---	LINE	AVERAGE
5 @	0.527	43.87	0.28	43.59	56.00	-12.13	---	LINE	QP
6 @	0.527	35.07	0.28	34.79	46.00	-10.93	---	LINE	AVERAGE
7 @	0.637	42.25	0.31	41.94	56.00	-13.75	---	LINE	QP
8	0.637	30.89	0.31	30.58	46.00	-15.11	---	LINE	AVERAGE
9	0.826	40.22	0.32	39.90	56.00	-15.78	---	LINE	QP
10	0.826	30.95	0.32	30.63	46.00	-15.05	---	LINE	AVERAGE
11	1.088	38.83	0.34	38.49	56.00	-17.17	---	LINE	QP
12	1.088	28.73	0.34	28.39	46.00	-17.27	---	LINE	AVERAGE

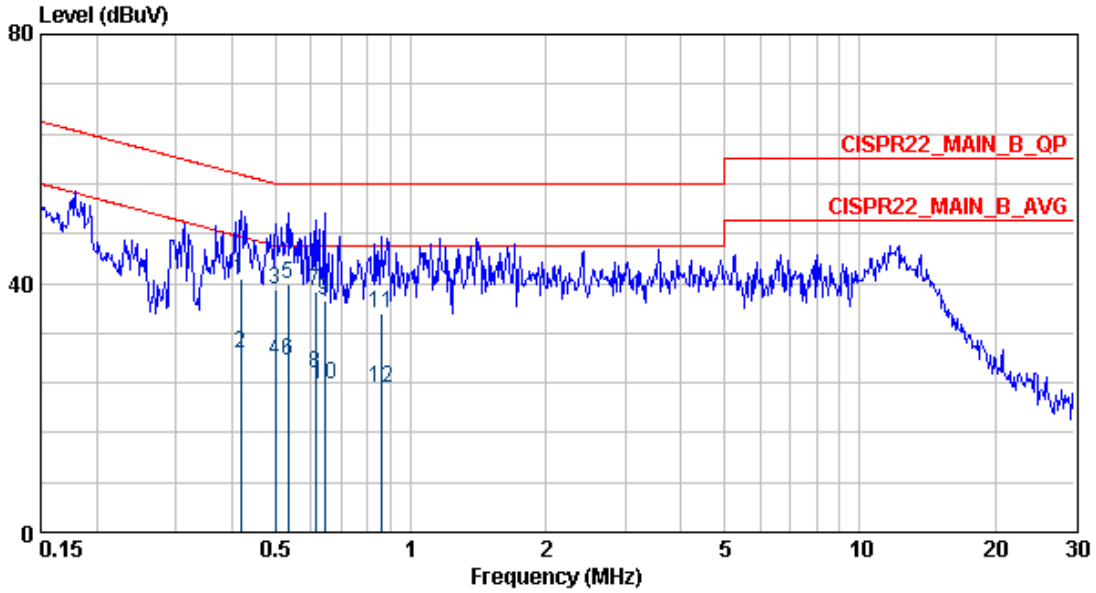
Note:

1. Emission Level = Reading Data + correction factor.
2. Correction factor = cable loss + insertion loss of LISN.
3. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.

Test Mode : **IEEE 802.11b, 2412MHz, Continuous Transmitting**

Frequency Range : 150kHz~30MHz **Phase** : Neutral

Tester : CDC



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	cm		
1	0.419	40.71	0.30	40.41	57.46	-16.75	---	NEUTRAL	QP
2	0.419	28.84	0.30	28.54	47.46	-18.62	---	NEUTRAL	AVERAGE
3	0.499	38.96	0.34	38.62	56.01	-17.05	---	NEUTRAL	QP
4	0.499	27.66	0.34	27.32	46.01	-18.35	---	NEUTRAL	AVERAGE
5	0.532	39.80	0.35	39.45	56.00	-16.20	---	NEUTRAL	QP
6	0.532	27.42	0.35	27.07	46.00	-18.58	---	NEUTRAL	AVERAGE
7	0.614	38.79	0.37	38.42	56.00	-17.21	---	NEUTRAL	QP
8	0.614	25.46	0.37	25.09	46.00	-20.54	---	NEUTRAL	AVERAGE
9	0.644	37.19	0.37	36.82	56.00	-18.81	---	NEUTRAL	QP
10	0.644	23.75	0.37	23.38	46.00	-22.25	---	NEUTRAL	AVERAGE
11	0.857	35.20	0.38	34.82	56.00	-20.80	---	NEUTRAL	QP
12	0.857	23.06	0.38	22.68	46.00	-22.94	---	NEUTRAL	AVERAGE

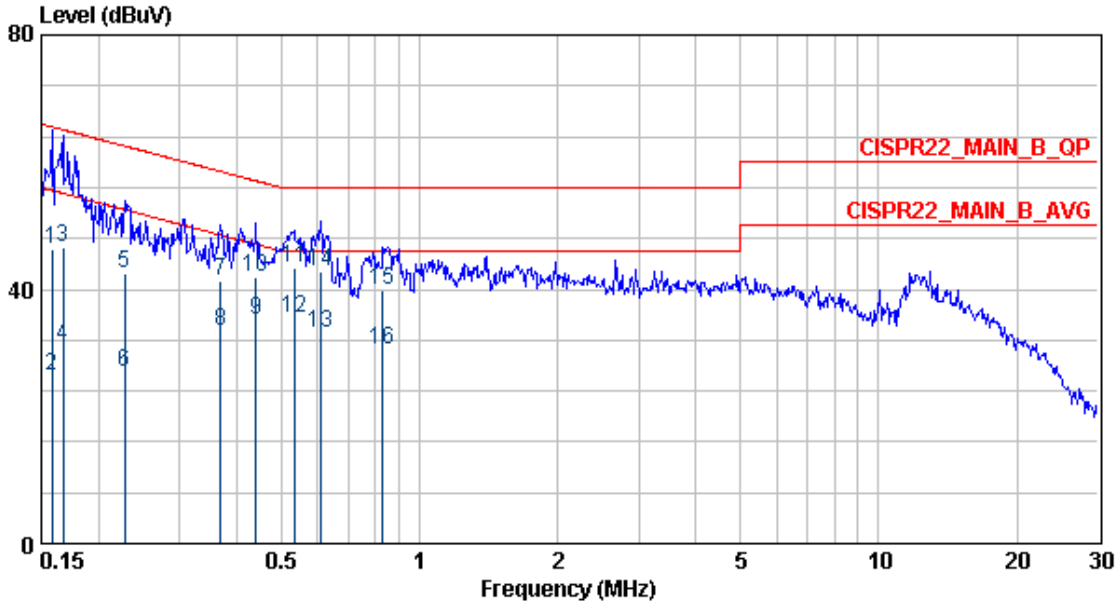
Note:

1. Emission Level = Reading Data + correction factor.
2. Correction factor = cable loss + insertion loss of LISN.
3. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.

Test Mode : **IEEE 802.11g, 2412MHz, Continuous Transmitting**

Frequency Range : 150kHz~30MHz **Phase** : Line

Tester : CDC

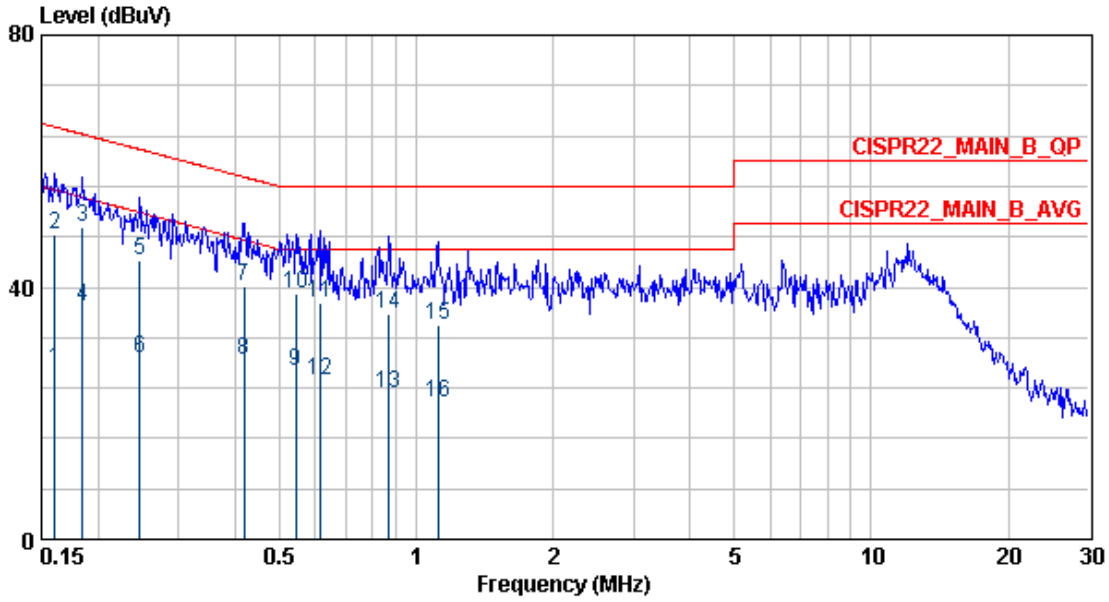


	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	cm		
1	0.158	46.20	0.20	46.00	65.56	-19.36	---	LINE	QP
2	0.158	26.24	0.20	26.04	55.56	-29.32	---	LINE	AVERAGE
3	0.168	46.57	0.20	46.37	65.08	-18.51	---	LINE	QP
4	0.168	31.16	0.20	30.96	55.08	-23.92	---	LINE	AVERAGE
5	0.228	42.62	0.20	42.42	62.52	-19.90	---	LINE	QP
6	0.228	26.86	0.20	26.66	52.52	-25.66	---	LINE	AVERAGE
7	0.369	41.35	0.22	41.13	58.52	-17.17	---	LINE	QP
8	0.369	33.35	0.22	33.13	48.52	-15.17	---	LINE	AVERAGE
9 @	0.440	35.05	0.25	34.80	47.07	-12.02	---	LINE	AVERAGE
10	0.440	41.94	0.25	41.69	57.07	-15.13	---	LINE	QP
11 @	0.532	43.32	0.29	43.03	56.00	-12.68	---	LINE	QP
12 @	0.532	35.60	0.29	35.31	46.00	-10.40	---	LINE	AVERAGE
13 @	0.608	33.14	0.30	32.84	46.00	-12.86	---	LINE	AVERAGE
14 @	0.608	42.84	0.30	42.54	56.00	-13.16	---	LINE	QP
15	0.830	39.82	0.32	39.50	56.00	-16.18	---	LINE	QP
16	0.830	30.37	0.32	30.05	46.00	-15.63	---	LINE	AVERAGE

Note:

1. Emission Level = Reading Data + correction factor.
2. Correction factor = cable loss + insertion loss of LISN.
3. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.

Test Mode : **IEEE 802.11g, 2412MHz, Continuous Transmitting**
Frequency Range : 150kHz~30MHz **Phase** : Neutral
Tester : CDC



	Freq	Level	Factor	Read Level	Limit Line	Over Limit	Ant Pos	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	cm		
1	0.161	26.82	0.26	26.56	55.43	-28.61	---	NEUTRAL	AVERAGE
2	0.161	48.37	0.26	48.11	65.43	-17.06	---	NEUTRAL	QP
3 @	0.184	49.54	0.25	49.29	64.28	-14.74	---	NEUTRAL	QP
4	0.184	36.79	0.25	36.54	54.28	-17.49	---	NEUTRAL	AVERAGE
5	0.247	44.16	0.26	43.90	61.86	-17.71	---	NEUTRAL	QP
6	0.247	28.65	0.26	28.39	51.86	-23.22	---	NEUTRAL	AVERAGE
7	0.419	40.13	0.30	39.83	57.46	-17.33	---	NEUTRAL	QP
8	0.419	28.46	0.30	28.16	47.46	-19.00	---	NEUTRAL	AVERAGE
9	0.544	26.80	0.35	26.45	46.00	-19.20	---	NEUTRAL	AVERAGE
10	0.544	38.95	0.35	38.60	56.00	-17.05	---	NEUTRAL	QP
11	0.614	37.55	0.37	37.18	56.00	-18.45	---	NEUTRAL	QP
12	0.614	25.18	0.37	24.81	46.00	-20.82	---	NEUTRAL	AVERAGE
13	0.871	23.08	0.38	22.70	46.00	-22.92	---	NEUTRAL	AVERAGE
14	0.871	35.85	0.38	35.47	56.00	-20.15	---	NEUTRAL	QP
15	1.117	34.05	0.40	33.65	56.00	-21.95	---	NEUTRAL	QP
16	1.117	21.72	0.40	21.32	46.00	-24.28	---	NEUTRAL	AVERAGE

Note:

1. Emission Level = Reading Data + correction factor.
2. Correction factor = cable loss + insertion loss of LISN.
3. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.

8 Antenna Requirement

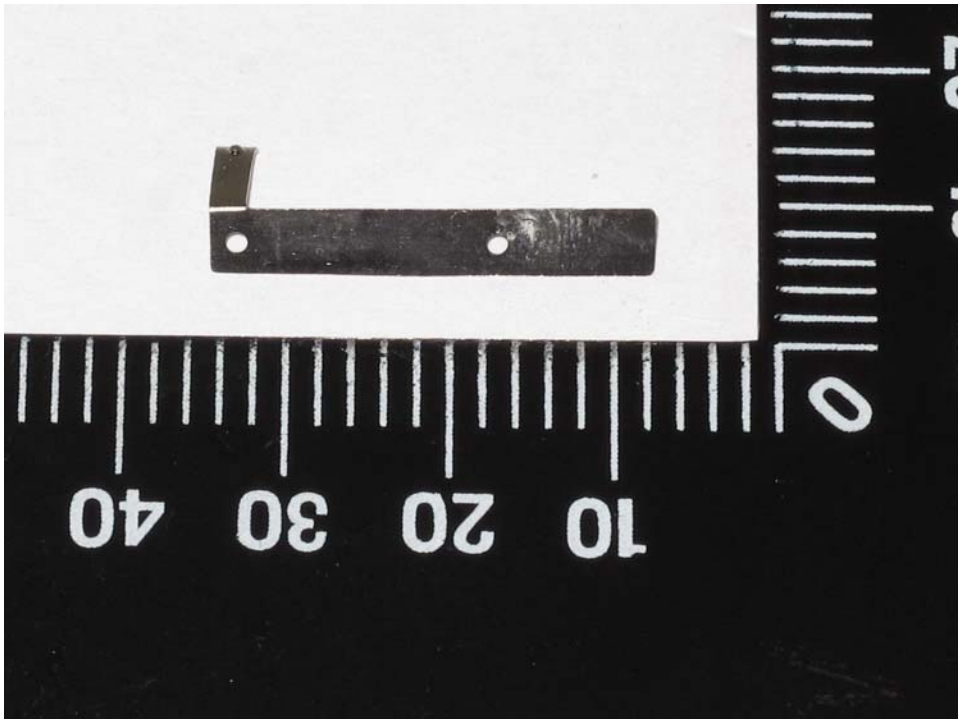
8.1 Applied standard

According to 15.247(4), The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi

8.2 Antenna Information

This antenna's relative information as follow:

Brand	Model	Frequency Range (MHz)	Gain (dBi)	Comment
Mitac	N/A	2412 ~ 2462	-1.5	



8.3 Result

Gain of the antenn is less than 6dBi.