

Test Report

Product Name : WIRELESS-A/N 26DBM NETWORK MINI PCI
ADAPTER
Model No. : IWAVEPORT WLM200N5-26
FCC ID : TK4-WLM200N5-26

Applicant : Compex Systems Pte Ltd
Address : 135 Joo Seng Road, #08-01 PM Industrial Building
Singapore 368363

Date of Receipt : 2008/10/30
Issued Date : 2008/12/11
Report No. : 08BS034R-RF-US-P01V02

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 CNLA, NVLAP or any agency of the Government.
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Test Report Certification

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Manufacturer : Compex Systems Pte Ltd

Address : 135 Joo Seng Road, #08-01 PM Industrial Building
Singapore 368363

Model No. : IWAVEPORT WLM200N5-26

FCC ID : TK4-WLM200N5-26

EUT Voltage : DC 3.3V

Trade Name : COMPEX

Applicable Standard : FCC Part 15 Subpart B: 2008 Class B
ANSI C63.4: 2003

Test Result : Complied

Performed Location : SuZhou EMC laboratory
No.99 Hongye Rd., Suzhou Industrial Park Loufeng
Hi-Tech Development Zone., SuZhou, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Registration Number: 800392

Documented By : 

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Laboratory Information

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 by the following accreditation Bodies in compliance with ISO 17025, EN 45001 and Guide 25:

Taiwan R.O.C.	: BSMI, DGT, CNLA
Germany	: TUV Rheinland
Norway	: Nemko, DNV
USA	: FCC, NVLAP
Japan	: VCCI

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>
 The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>
 If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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 TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com



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For 5.0GHz Band

802.11a/n(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz	48	5240 MHz
52	5260 MHz	56	5280 MHz	60	5300 MHz	64	5320 MHz
100	5500 MHz	104	5520 MHz	108	5540 MHz	112	5560 MHz
116	5580 MHz	120	5600 MHz	124	5620 MHz	128	5640 MHz
132	5660 MHz	136	5680 MHz	140	5700 MHz	149	5745 MHz
153	5765 MHz	157	5785 MHz	161	5805 MHz	165	5825 MHz

802.11n(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	54	5270 MHz	62	5310 MHz
102	5510 MHz	110	5550 MHz	118	5590 MHz	126	5630 MHz
134	5670 MHz	151	5755 MHz	159	5795 MHz	N/A	N/A

802.11a/n Antenna List

Antenna	Manufacturer	Model No.	Peak Gain
MIMO Antenna	Exceltek Electronics (Kunshan) Co.,Ltd	C0053-ANG0004	5GHz: 2.0dBi

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:

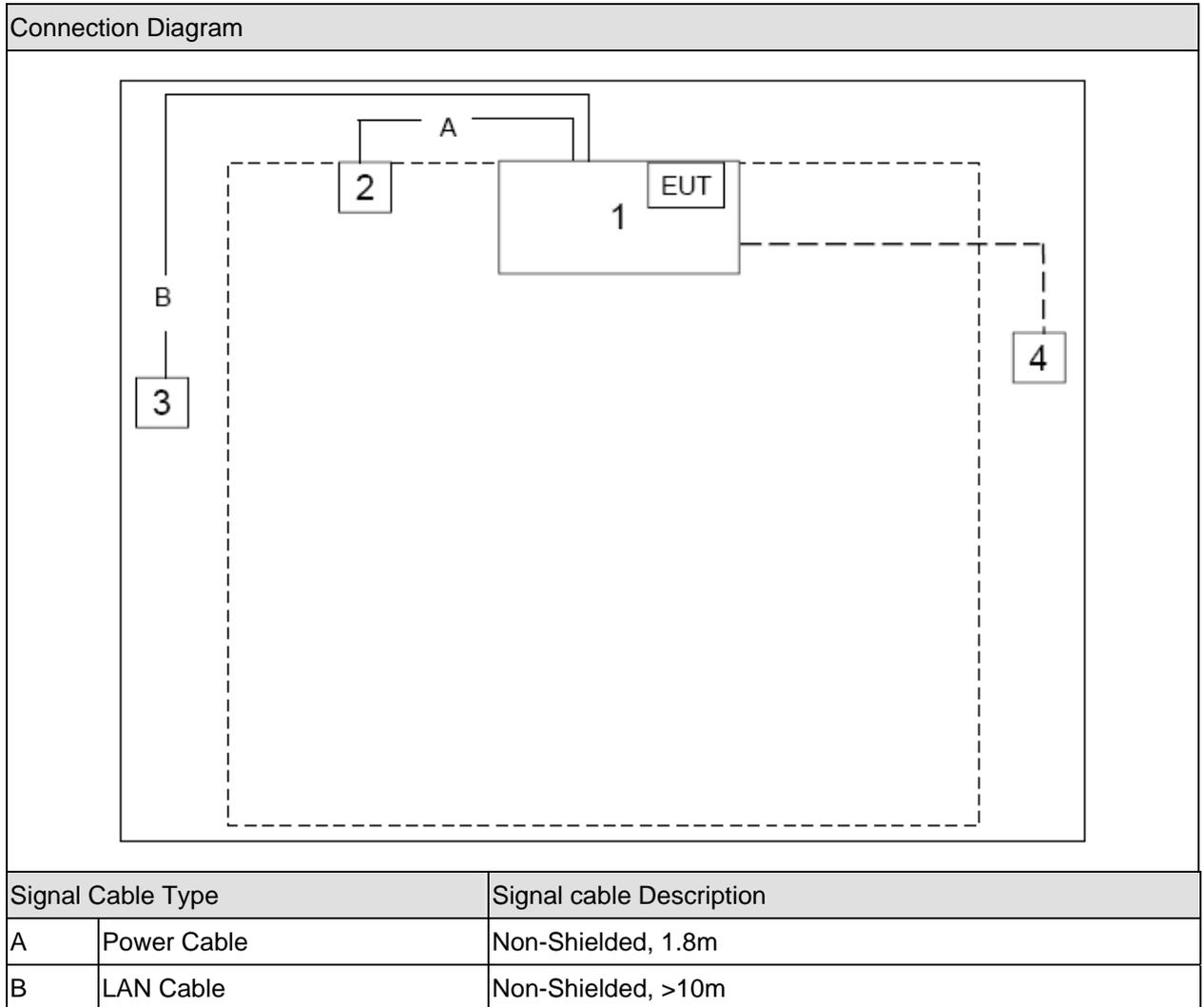
Test Mode
Mode 1: Receive by 802.11a
Mode 3: Receive by 802.11n(40MHz)

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 Frame	Compex	B-543W	N/A	N/A
2	Adapter	DVE	BSW0134	N/A	N/A
3	Notebook	DELL	PP19L	JH097 A01	Power by adapter
4	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.
3	Execute software "bricks", then select test mode and test channel, press OK to communication with another Notebook P.C. by wireless.

2. Technical Test

2.1. Summary of Test Result

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

Emission			
Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart B: 2007 Class B ANSI C63.4: 2003	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart B: 2007 Class B ANSI C63.4: 2003	Yes	No

2.2. List of Test Equipment

Conducted Emission / SR-1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCI	100726	2008/02/07
Two-Line V-Network	R&S	ENV216	100013	2008/11/15
Two-Line V-Network	R&S	ENV216	100014	2008/11/15
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2008/11/21
50ohm Termination	SHX	TF2	07081401	2008/09/28
Coaxial Cable	Luthi	RG214	519358	2008/11/21
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH004	2008/03/31

Radiated Emission / AC-1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4403B	MY45102715	N/A
Spectrum Analyzer	Agilent	E4403B	MY45102798	N/A
Spectrum Analyzer	Agilent	E4408B	MY45102679	2008/11/12
EMI Test Receiver	R&S	ESCI	100175	2008/11/15
Preamplifier	Quietek	AP-025C	QT-AP001	2008/11/21
Preamplifier	Quietek	AP-025C	QT-AP002	2008/11/21
Preamplifier	Quietek	AP-180C	CHM-0602012	2008/11/24
Bilog Type Antenna	Schaffner	CBL6112B	2933	2008/11/21
Bilog Type Antenna	Schaffner	CBL6112B	2931	2008/11/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/11/24
50ohm Coaxial Switch	Anritsu	MP59B	6200447303	2008/11/24
50ohm Coaxial Switch	Anritsu	MP59B	6200464461	2008/11/24
50ohm Coaxial Switch	Anritsu	MP59B	6200447305	2008/11/24
Coaxial Cable	Huber+Suhner	AC1-L	01	2008/11/24
Coaxial Cable	Huber+Suhner	AC1-R	02	2008/11/24
Coaxial Cable	Huber+Suhner	AC1-C	03	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH001	2008/03/31

Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4408B	MY45102679	2008/11/12
EMI Test Receiver	R&S	ESCI	100573	2008/05/10
Preamplifier	Quietek	AP-025C	QT-AP003	2008/11/24
Preamplifier	Quietek	AP-180C	CHM-0602012	2008/11/24
Bilog Type Antenna	Schaffner	CBL6112B	2932	2008/11/21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/11/24
50ohm Coaxial Switch	Anritsu	MP59B	6200447304	2008/11/24
Coaxial Cable	Huber+Suhner	AC2-C	04	2008/11/24
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	2008/11/15
Preamplifier	Quietek	AP-025C	QT-AP004	2008/11/24
Preamplifier	Quietek	AP-180C	CHM-0602012	2008/11/24
Bilog Type Antenna	Schaffner	CBL6112D	22254	2008/11/21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2008/11/24
50ohm Coaxial Switch	Anritsu	MP59B	6200464463	2008/11/24
Coaxial Cable	Huber+Suhner	AC2-C	05	2008/11/24
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2008/03/31

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.26 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 3.19 dB.

2.4. Test Environment

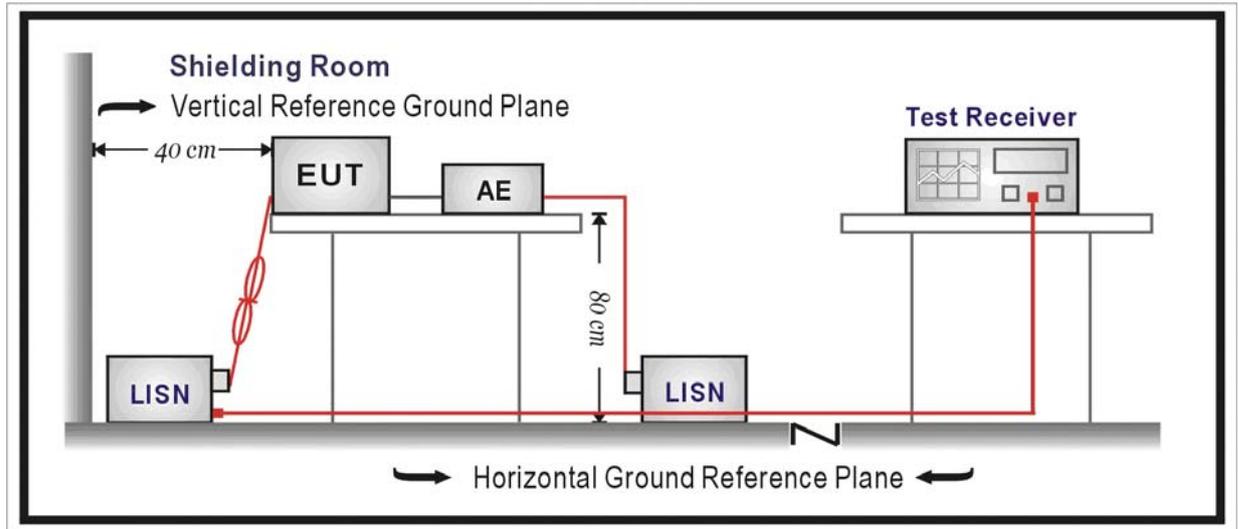
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	43
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	43
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

3.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart B Class B, ANSI C63.4

3.2. Test Setup



3.3. Limit

FCC Part 15 Subpart C Paragraph 15.107 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 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 9kHz.

3.5. Deviation from Test Standard

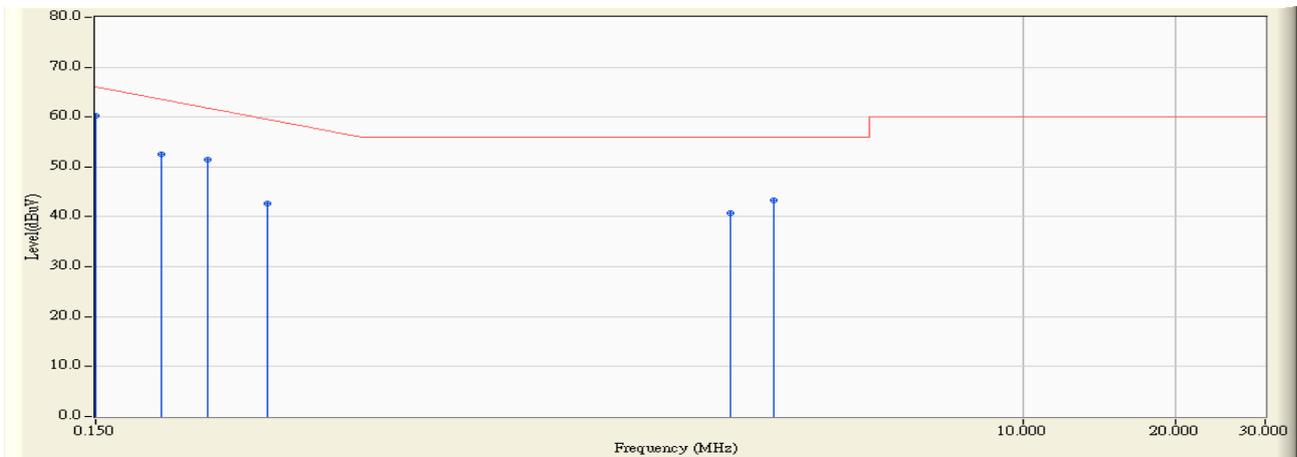
No deviation.

3.6. Test Result

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/11/10 - 16:33
Limit : FCC_SPartB_15.107_00M_QP	Margin : 10
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : ENV216_100014(0.009-30MHz) - Line1
Power : AC 120V/60Hz	Note : Mode 1: Receive by 802.11a at channel 5180MHz

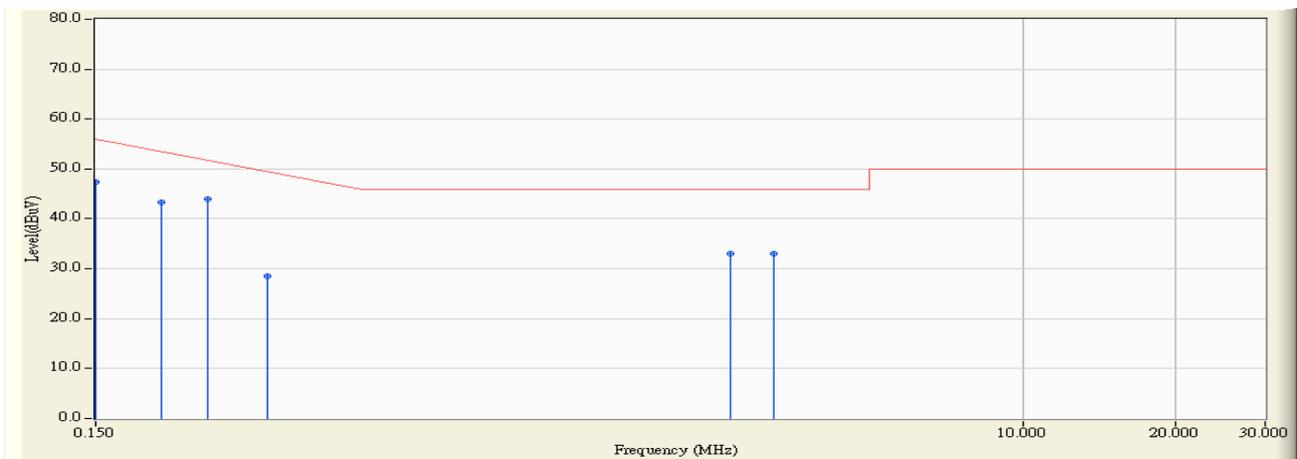


Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/11/10 - 16:34
Limit : FCC_SPartB_15.107_00M_QP	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : ENV216_100014(0.009-30MHz) - Line1
Power : AC 120V/60Hz	Note : Mode 1: Receive by 802.11a at channel 5180MHz



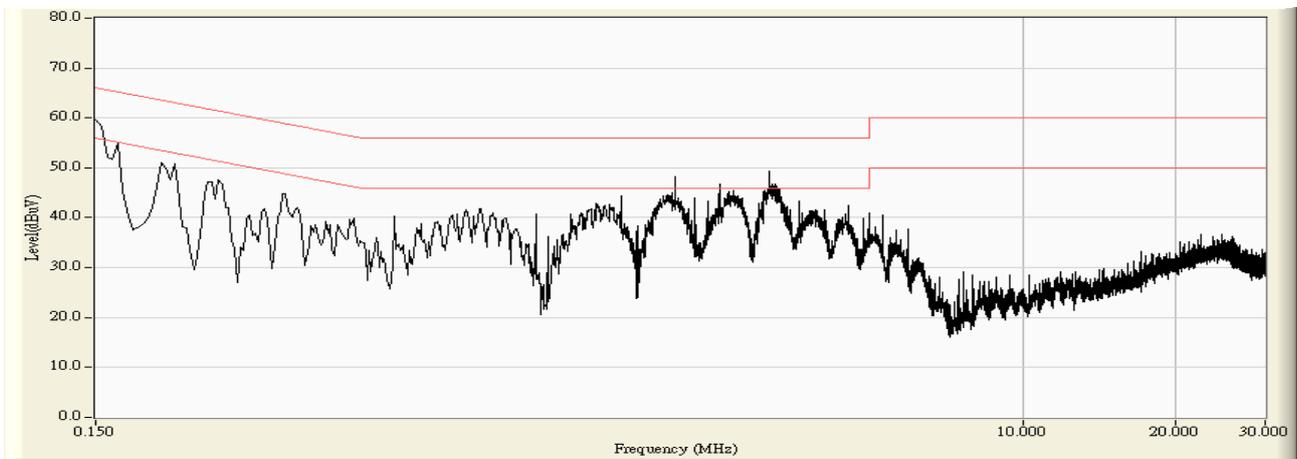
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.150	10.160	50.200	60.360	-5.640	66.000	QUASIPeAK
2		0.202	9.553	42.900	52.453	-12.061	64.514	QUASIPeAK
3		0.250	9.461	42.100	51.561	-11.582	63.143	QUASIPeAK
4		0.326	9.521	33.200	42.721	-18.250	60.971	QUASIPeAK
5		2.666	9.726	31.000	40.726	-15.274	56.000	QUASIPeAK
6		3.230	9.764	33.500	43.264	-12.736	56.000	QUASIPeAK

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/11/10 - 16:34
Limit : FCC_SPartB_15.107_00M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : ENV216_100014(0.009-30MHz) - Line1
Power : AC 120V/60Hz	Note : Mode 1: Receive by 802.11a at channel 5180MHz

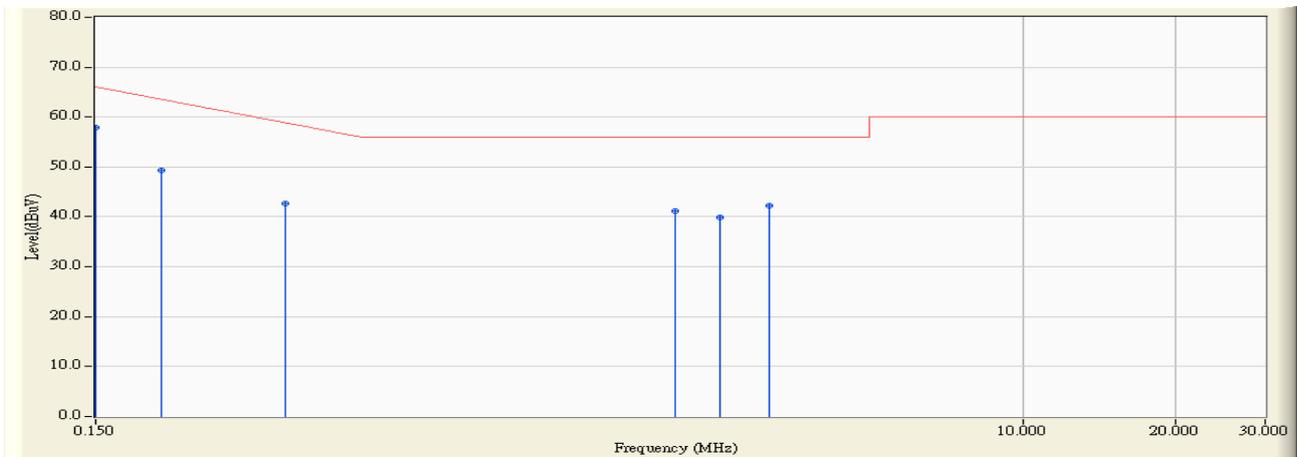


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.150	10.160	37.200	47.360	-8.640	56.000	AVERAGE
2		0.202	9.553	33.800	43.353	-11.161	54.514	AVERAGE
3		0.250	9.461	34.400	43.861	-9.282	53.143	AVERAGE
4		0.326	9.521	19.000	28.521	-22.450	50.971	AVERAGE
5		2.666	9.726	23.400	33.126	-12.874	46.000	AVERAGE
6		3.230	9.764	23.300	33.064	-12.936	46.000	AVERAGE

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/11/10 - 16:28
Limit : FCC_SPartB_15.107_00M_QP	Margin : 10
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : ENV216_100014(0.009-30MHz) - Line2
Power : AC 120V/60Hz	Note : Mode 1: Receive by 802.11a at channel 5180MHz

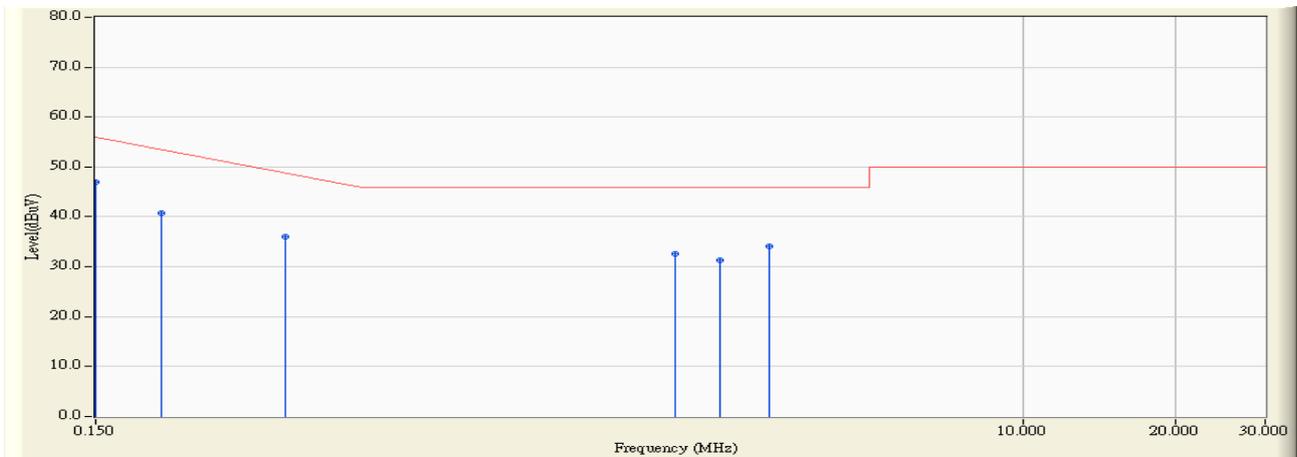


Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/11/10 - 16:29
Limit : FCC_SPartB_15.107_00M_QP	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : ENV216_100014(0.009-30MHz) - Line2
Power : AC 120V/60Hz	Note : Mode 1: Receive by 802.11a at channel 5180MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.150	10.006	48.000	58.006	-7.994	66.000	QUASIPeAK
2		0.202	9.648	39.700	49.348	-15.166	64.514	QUASIPeAK
3		0.354	9.605	33.000	42.605	-17.566	60.171	QUASIPeAK
4		2.074	9.660	31.600	41.260	-14.740	56.000	QUASIPeAK
5		2.530	9.680	30.300	39.980	-16.020	56.000	QUASIPeAK
6		3.174	9.690	32.600	42.290	-13.710	56.000	QUASIPeAK

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	Time : 2008/11/10 - 16:29
Limit : FCC_SPartB_15.107_00M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : ENV216_100014(0.009-30MHz) - Line2
Power : AC 120V/60Hz	Note : Mode 1: Receive by 802.11a at channel 5180MHz

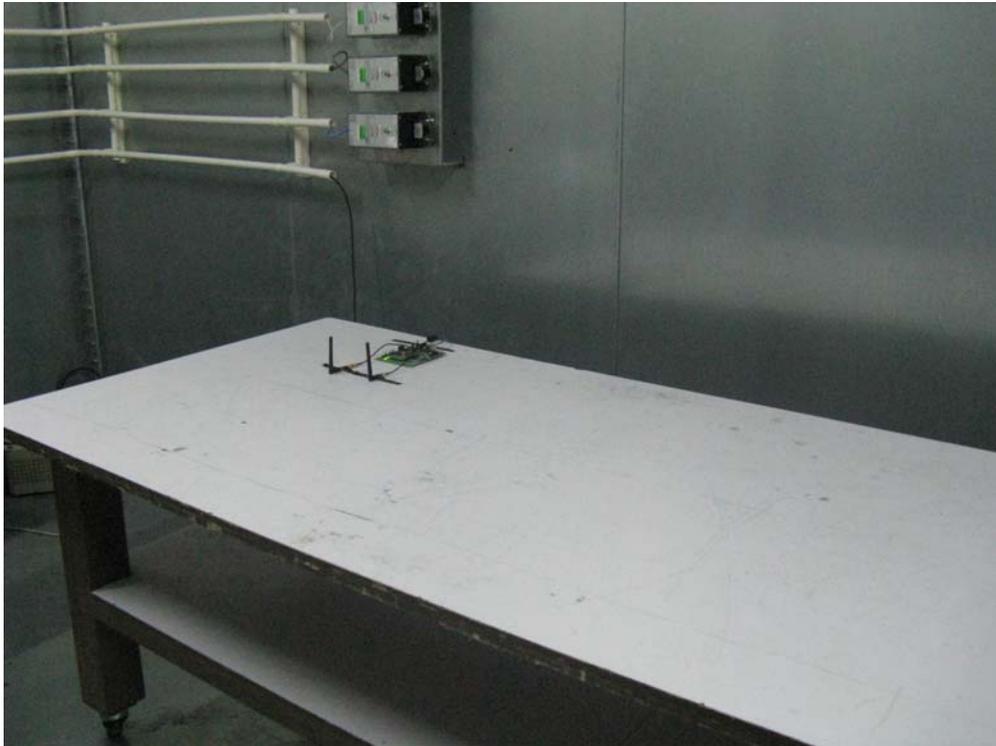


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.150	10.006	36.900	46.906	-9.094	56.000	AVERAGE
2		0.202	9.648	31.100	40.748	-13.766	54.514	AVERAGE
3		0.354	9.605	26.500	36.105	-14.066	50.171	AVERAGE
4		2.074	9.660	22.900	32.560	-13.440	46.000	AVERAGE
5		2.530	9.680	21.600	31.280	-14.720	46.000	AVERAGE
6		3.174	9.690	24.500	34.190	-11.810	46.000	AVERAGE

3.7. Test Photograph

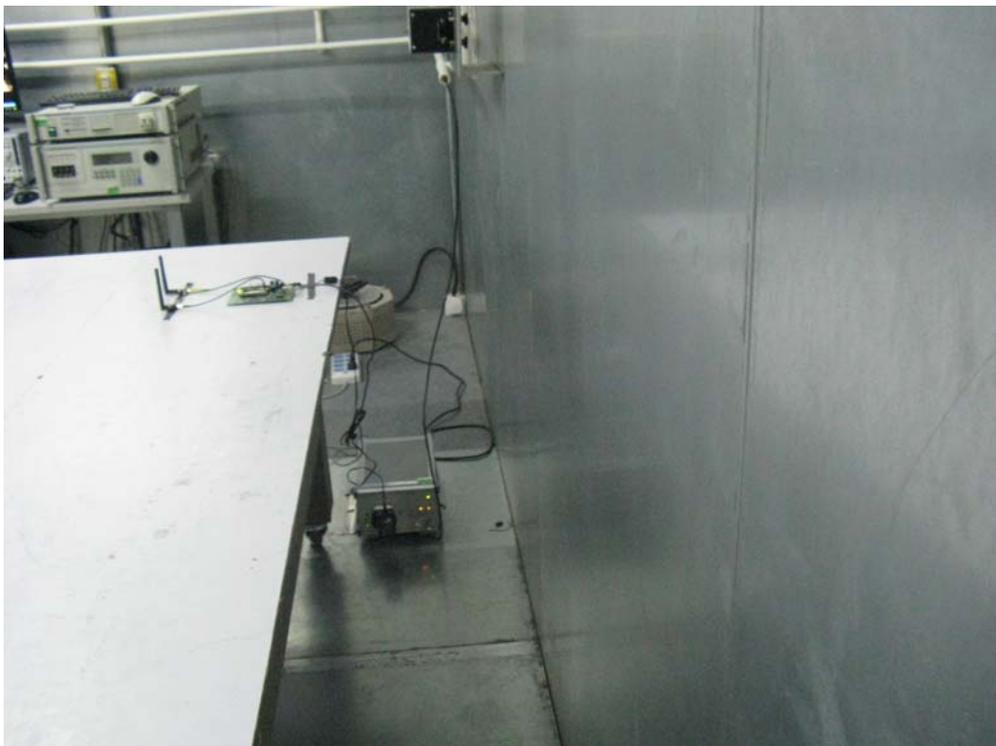
Test Mode: Receive

Description: Front View of Conducted Emission Test Setup



Test Mode: Receive

Description: Back View of Conducted Emission Test Setup



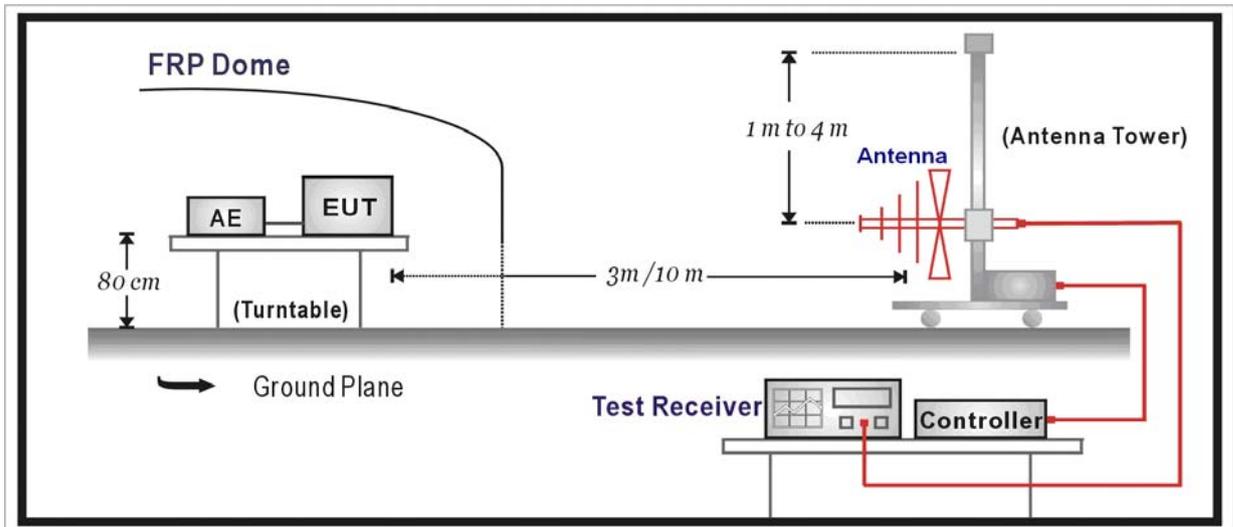
4. Radiated Emission

4.1. Test Specification

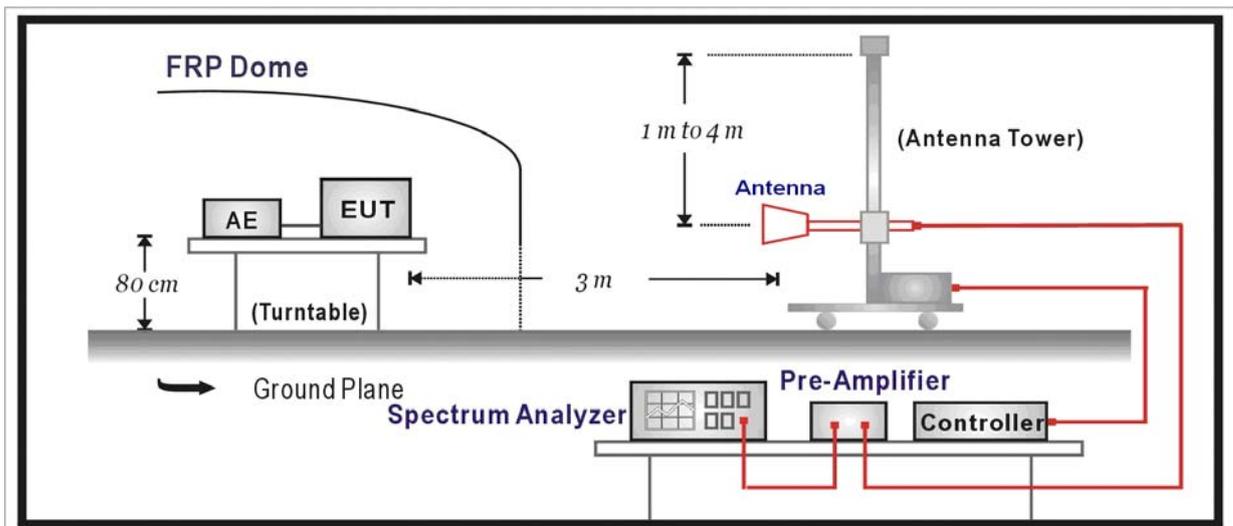
According to EMC Standard: FCC Part 15 Subpart B Class B, ANSI C63.4

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.109		
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 and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 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 10 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000

500 - 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

On any frequency or frequencies below or equal to 1000 MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000 MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

For class A, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and above 1GHz.

For class B, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and 3 meters for above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCI) is 120 kHz and above 1GHz is 1MHz.

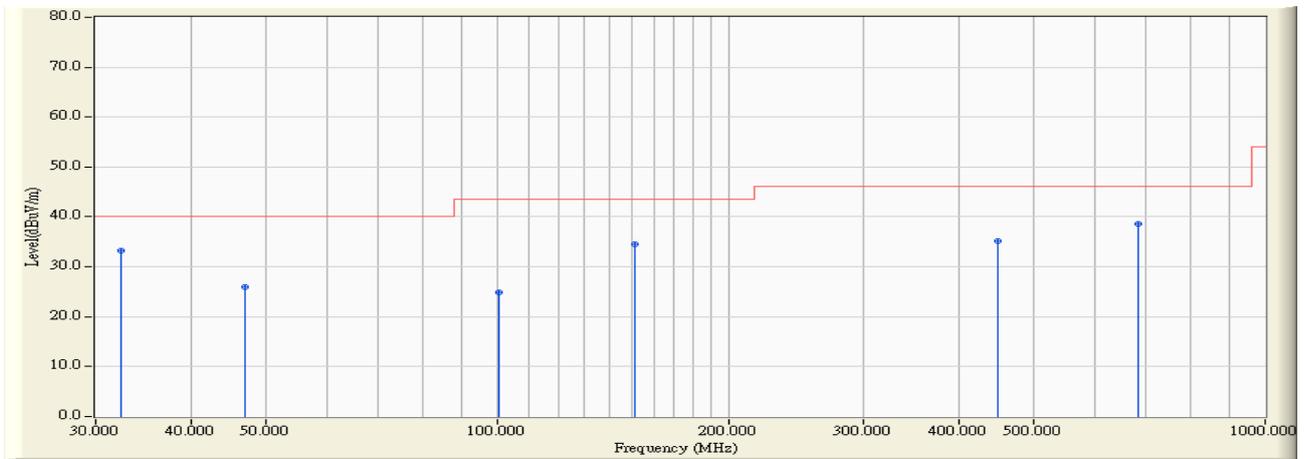
Note: When measurement above 1GHz, the horn antenna will bend down a little (as horn antenna have the narrow beamwidth) in order to find the maximum emission of EUT.

4.5. Deviation from Test Standard

No deviation.

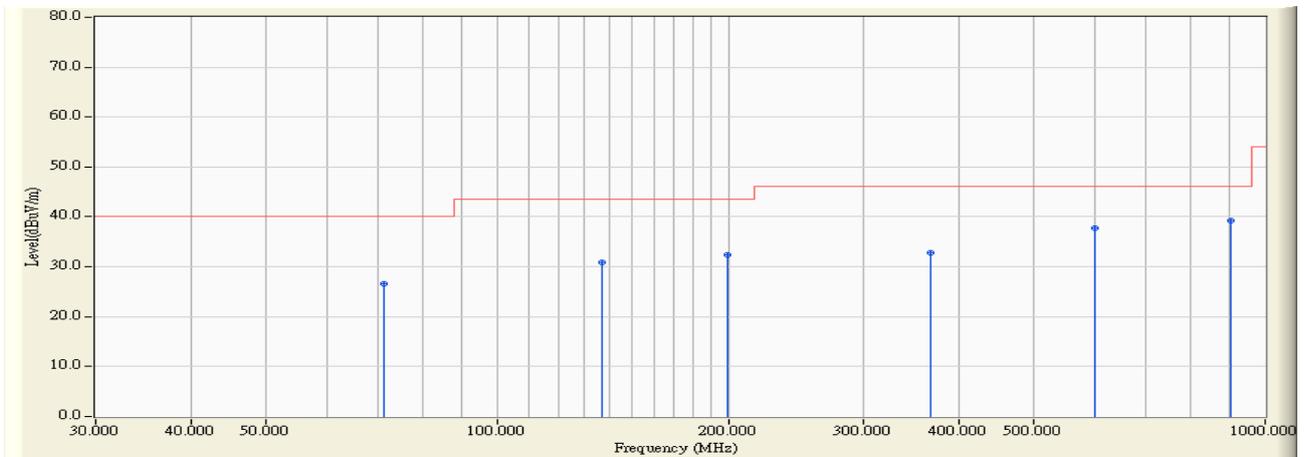
4.6. Test Result

Engineer : Jame	
Site : AC-2 (3m Semi-Aenchoic Chamber)	Time : 2008/11/12 - 11:28
Limit : FCC_SpartB_15.109_03M_QP	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 3: Receive by 802.11n(40MHz) at channel 5190MHz



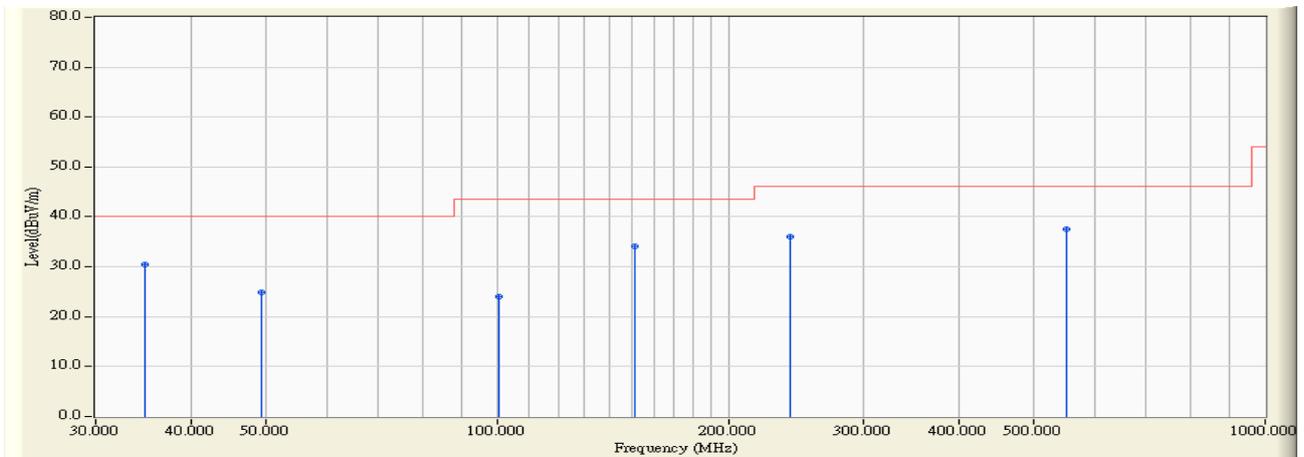
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	32.425	-5.863	39.164	33.301	-6.699	40.000	QUASIPeAK	100.000	215.000
2		46.975	-13.503	39.445	25.942	-14.058	40.000	QUASIPeAK	128.000	88.500
3		100.325	-11.534	36.333	24.799	-18.721	43.520	QUASIPeAK	100.000	274.000
4		151.250	-12.122	46.743	34.621	-8.899	43.520	QUASIPeAK	145.500	209.000
5		449.525	-4.801	40.043	35.242	-10.778	46.020	QUASIPeAK	177.500	93.800
6		684.750	-1.754	40.374	38.620	-7.400	46.020	QUASIPeAK	100.000	174.000

Engineer : Jame	
Site : AC-2 (3m Semi-Aenchoic Chamber)	Time : 2008/11/12 - 11:29
Limit : FCC_SpartB_15.109_03M_QP	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : CBL6112B_2932(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 3: Receive by 802.11n(40MHz) at channel 5190MHz



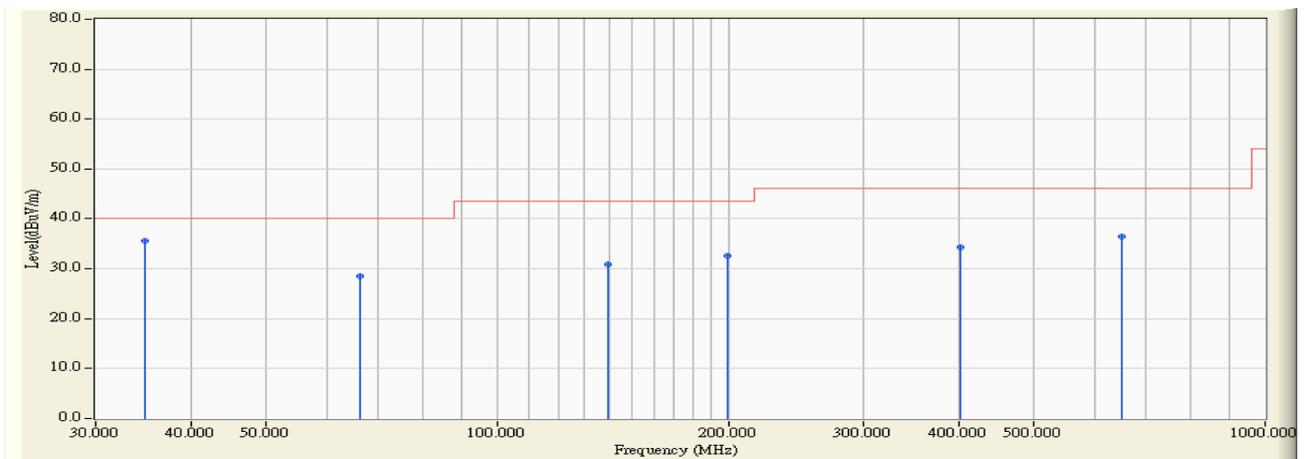
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	71.225	-16.974	43.514	26.541	-13.459	40.000	QUASIPeAK	100.000	74.600
2	136.700	-10.979	41.858	30.879	-12.641	43.520	QUASIPeAK	100.000	116.500
3	199.750	-13.325	45.713	32.388	-11.132	43.520	QUASIPeAK	106.500	44.800
4	367.075	-6.333	39.067	32.734	-13.286	46.020	QUASIPeAK	113.600	210.400
5	599.875	-1.875	39.660	37.785	-8.235	46.020	QUASIPeAK	102.600	95.000
6	* 900.575	0.608	38.555	39.163	-6.857	46.020	QUASIPeAK	100.000	135.200

Engineer : Jame	
Site : AC-2 (3m Semi-Aenchoic Chamber)	Time : 2008/11/12 - 11:30
Limit : FCC_SpartB_15.109_03M_QP	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 3: Receive by 802.11n(40MHz) at channel 5310MHz



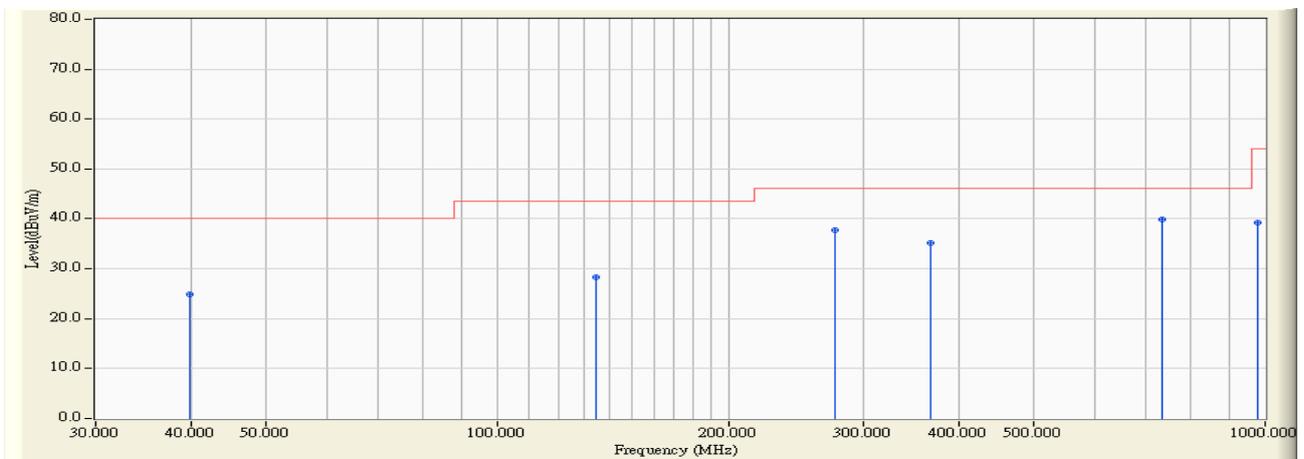
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	34.850	-7.264	37.675	30.411	-9.589	40.000	QUASIPeAK	214.600	78.400
2	49.400	-14.558	39.527	24.969	-15.031	40.000	QUASIPeAK	322.600	46.200
3	100.325	-11.534	35.581	24.047	-19.473	43.520	QUASIPeAK	122.600	136.900
4	151.250	-12.122	46.171	34.049	-9.471	43.520	QUASIPeAK	109.500	83.000
5	240.975	-10.565	46.648	36.083	-9.937	46.020	QUASIPeAK	100.000	74.900
6	* 551.375	-2.252	39.759	37.507	-8.513	46.020	QUASIPeAK	106.200	115.700

Engineer : Jame	
Site : AC-2 (3m Semi-Aenchoic Chamber)	Time : 2008/11/12 - 11:30
Limit : FCC_SpartB_15.109_03M_QP	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : CBL6112B_2932(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 3: Receive by 802.11n(40MHz) at channel 5310MHz



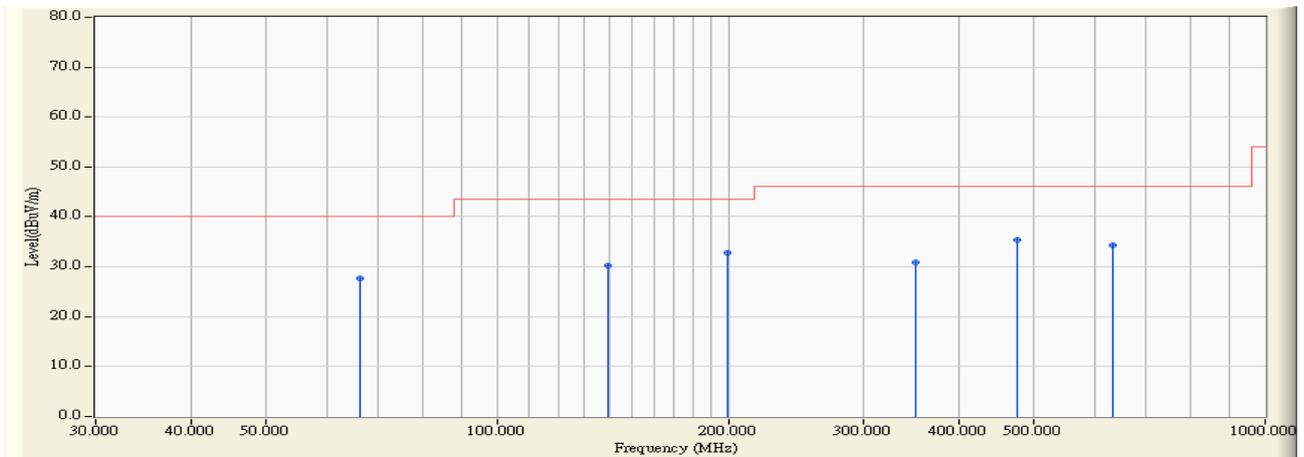
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	34.850	-7.264	42.938	35.674	-4.326	40.000	QUASIPeAK	100.000	36.400
2		66.375	-17.310	45.733	28.424	-11.576	40.000	QUASIPeAK	104.500	93.300
3		139.125	-11.121	41.908	30.787	-12.733	43.520	QUASIPeAK	115.200	265.300
4		199.750	-13.325	46.024	32.699	-10.821	43.520	QUASIPeAK	100.000	84.700
5		401.025	-5.333	39.748	34.415	-11.605	46.020	QUASIPeAK	100.000	172.600
6		650.800	-1.741	38.172	36.431	-9.589	46.020	QUASIPeAK	100.000	49.000

Engineer : Jame	
Site : AC-2 (3m Semi-Aenchoic Chamber)	Time : 2008/11/12 - 11:30
Limit : FCC_SpartB_15.109_03M_QP	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 3: Receive by 802.11n(40MHz) at channel 5670MHz



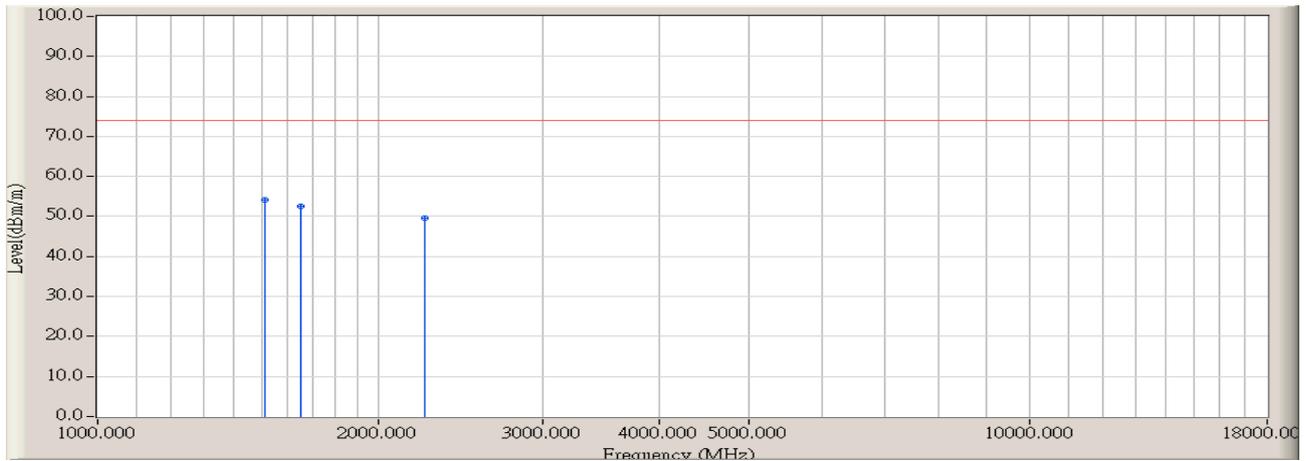
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	39.700	-9.890	34.710	24.820	-15.180	40.000	QUASIPeAK	125.200	74.600
2	134.275	-10.820	39.100	28.280	-15.240	43.520	QUASIPeAK	216.400	85.900
3	274.925	-9.090	46.855	37.765	-8.255	46.020	QUASIPeAK	312.500	96.000
4	367.075	-6.333	41.596	35.263	-10.757	46.020	QUASIPeAK	204.000	117.500
5	* 733.250	-0.411	40.321	39.910	-6.110	46.020	QUASIPeAK	133.000	77.500
6	975.750	1.291	38.032	39.323	-14.647	53.970	QUASIPeAK	146.000	228.000

Engineer : Jame	
Site : AC-2 (3m Semi-Aenchoic Chamber)	Time : 2008/11/12 - 11:31
Limit : FCC_SpartB_15.109_03M_QP	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : CBL6112B_2932(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 3: Receive by 802.11n(40MHz) at channel 5670MHz



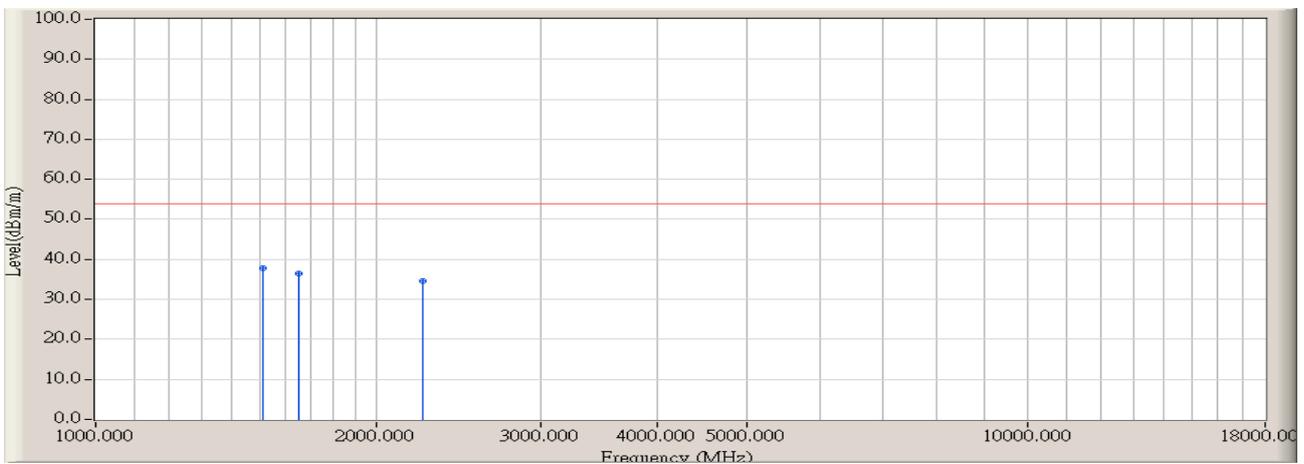
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	66.375	-17.310	45.051	27.742	-12.258	40.000	QUASIPeAK	100.000	65.900
2	139.125	-11.121	41.311	30.190	-13.330	43.520	QUASIPeAK	112.500	46.900
3	199.750	-13.325	46.073	32.748	-10.772	43.520	QUASIPeAK	104.600	117.000
4	350.100	-6.856	37.656	30.800	-15.220	46.020	QUASIPeAK	100.000	99.300
5	* 476.200	-4.070	39.388	35.318	-10.702	46.020	QUASIPeAK	100.000	114.700
6	633.825	-1.775	36.100	34.325	-11.695	46.020	QUASIPeAK	100.000	89.400

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:05
Limit : FCC_SpartB_15.109_03M_PK	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5180MHz



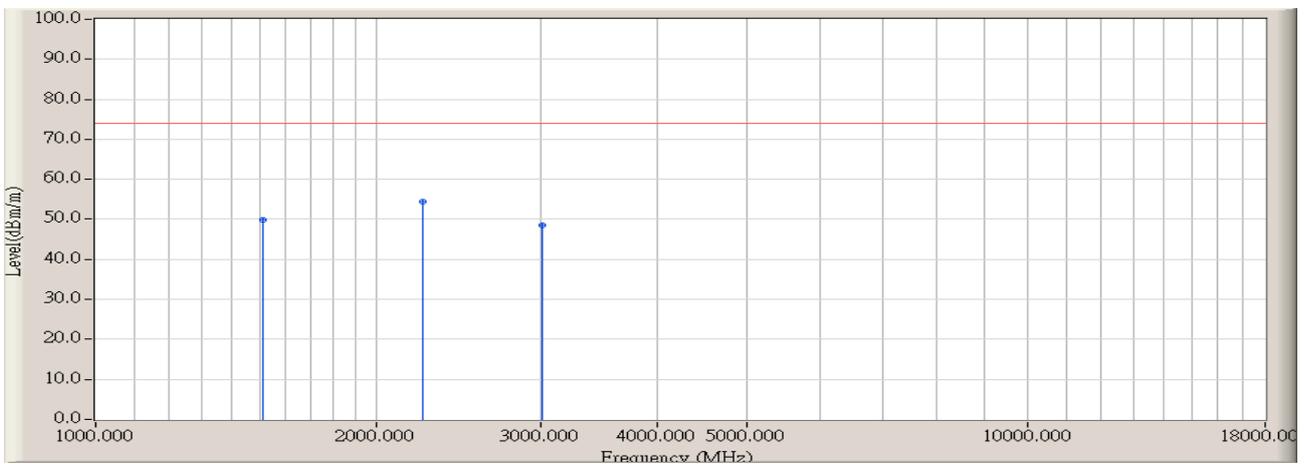
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	1510.000	-7.280	61.397	54.117	-19.853	73.970	PEAK	110.000	165.000
2		1651.667	-7.080	59.612	52.532	-21.438	73.970	PEAK	100.000	206.000
3		2246.667	-3.339	52.904	49.564	-24.406	73.970	PEAK	105.000	145.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:05
Limit : FCC_SpartB_15.109_03M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5180MHz



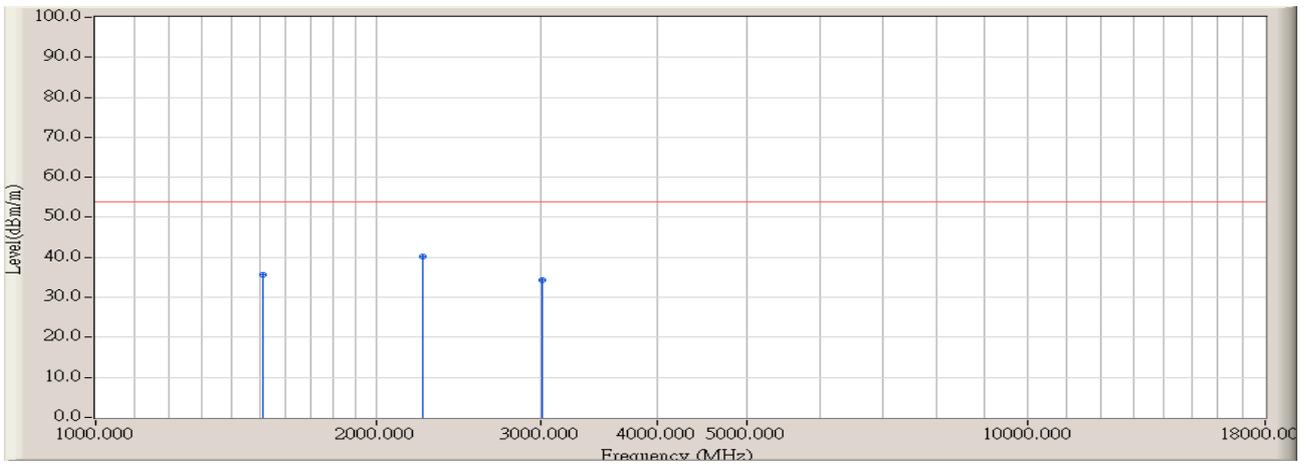
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	1510.000	-7.280	45.210	37.930	-16.040	53.970	AVERAGE	110.000	165.000
2		1651.667	-7.080	43.420	36.340	-17.630	53.970	AVERAGE	100.000	206.000
3		2246.667	-3.339	37.832	34.492	-19.478	53.970	AVERAGE	105.000	145.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:06
Limit : FCC_SpartB_15.109_03M_PK	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5180MHz



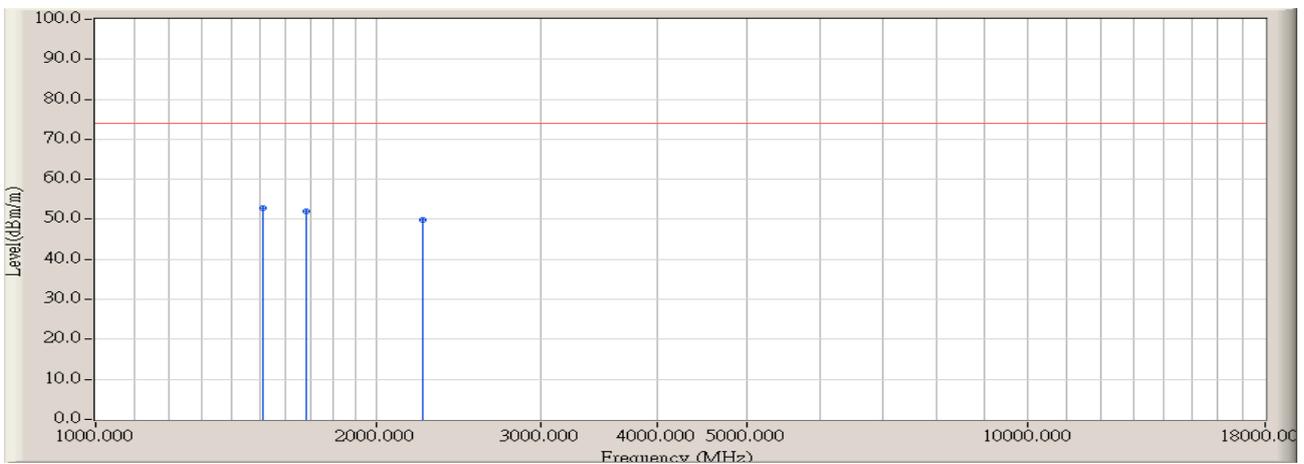
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	1510.000	-7.280	57.151	49.871	-24.099	73.970	PEAK	100.000	155.000
2	* 2246.667	-3.339	57.725	54.385	-19.585	73.970	PEAK	102.000	108.000
3	3011.667	-1.796	50.315	48.518	-25.452	73.970	PEAK	100.000	235.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:06
Limit : FCC_SpartB_15.109_03M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5180MHz



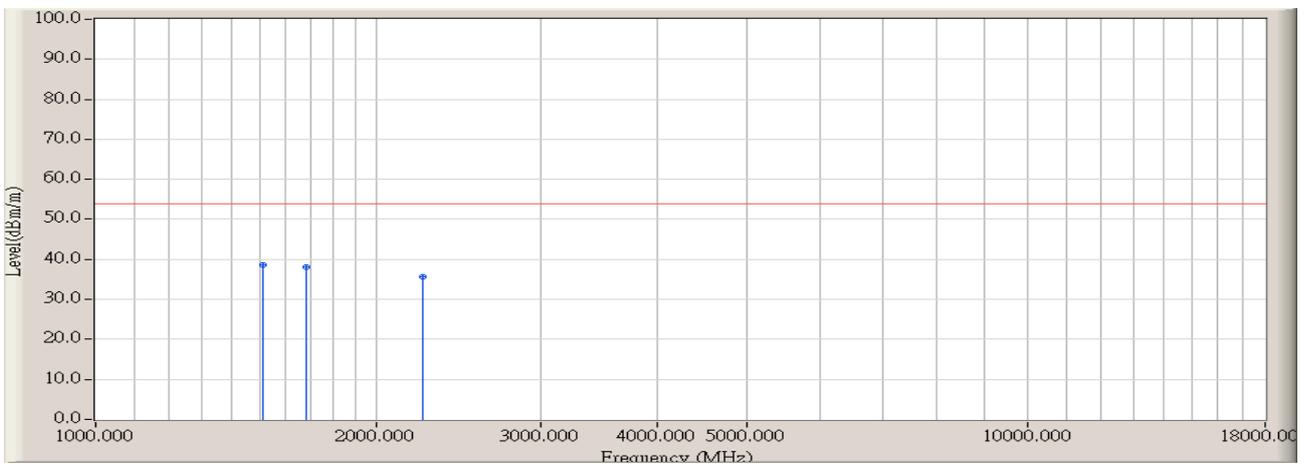
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	1510.000	-7.280	43.023	35.743	-18.227	53.970	AVERAGE	100.000	155.000
2	* 2246.667	-3.339	43.524	40.184	-13.786	53.970	AVERAGE	102.000	108.000
3	3011.667	-1.796	36.208	34.411	-19.559	53.970	AVERAGE	100.000	235.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:07
Limit : FCC_SpartB_15.109_03M_PK	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5300MHz



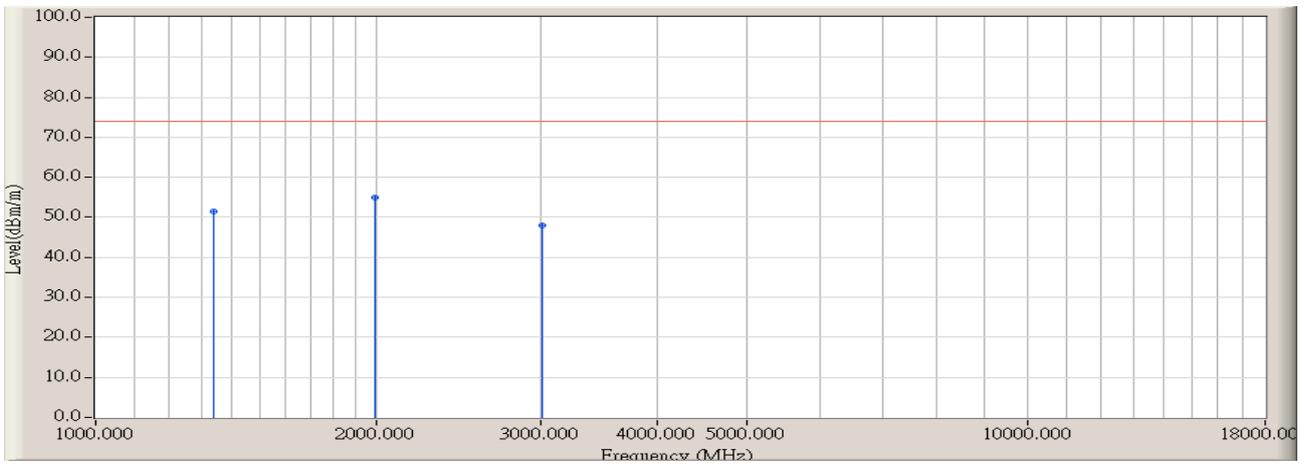
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	1510.000	-7.280	60.006	52.726	-21.244	73.970	PEAK	104.600	117.000
2		1680.000	-7.090	59.014	51.924	-22.046	73.970	PEAK	100.000	128.000
3		2246.667	-3.339	53.177	49.837	-24.133	73.970	PEAK	108.000	192.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:07
Limit : FCC_SpartB_15.109_03M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5300MHz



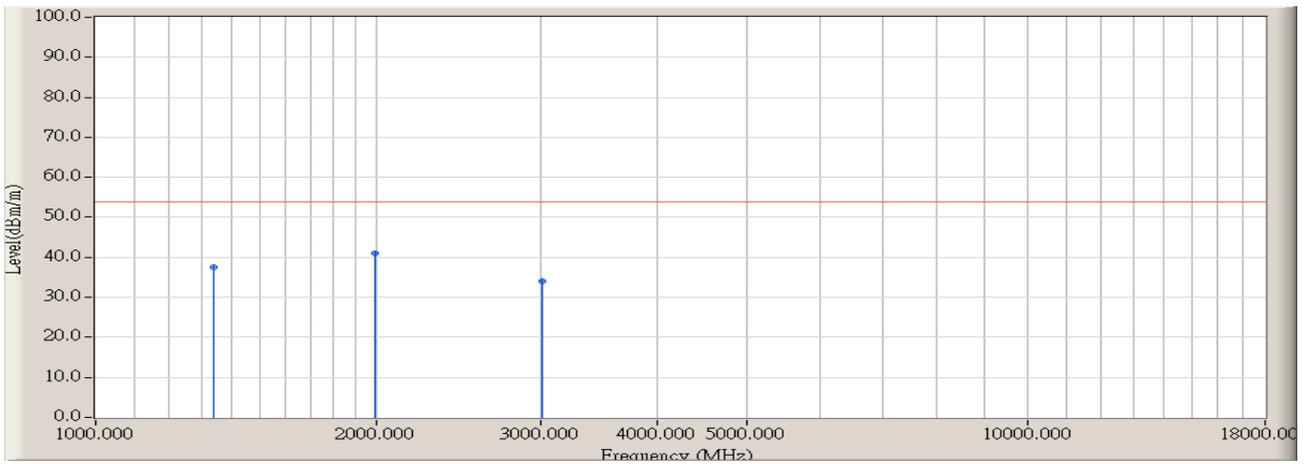
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	1510.000	-7.280	46.002	38.722	-15.248	53.970	AVERAGE	104.600	117.000
2		1680.000	-7.090	45.190	38.100	-15.870	53.970	AVERAGE	100.000	128.000
3		2246.667	-3.339	38.981	35.641	-18.329	53.970	AVERAGE	108.000	192.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:08
Limit : FCC_SpartB_15.109_03M_PK	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5300MHz



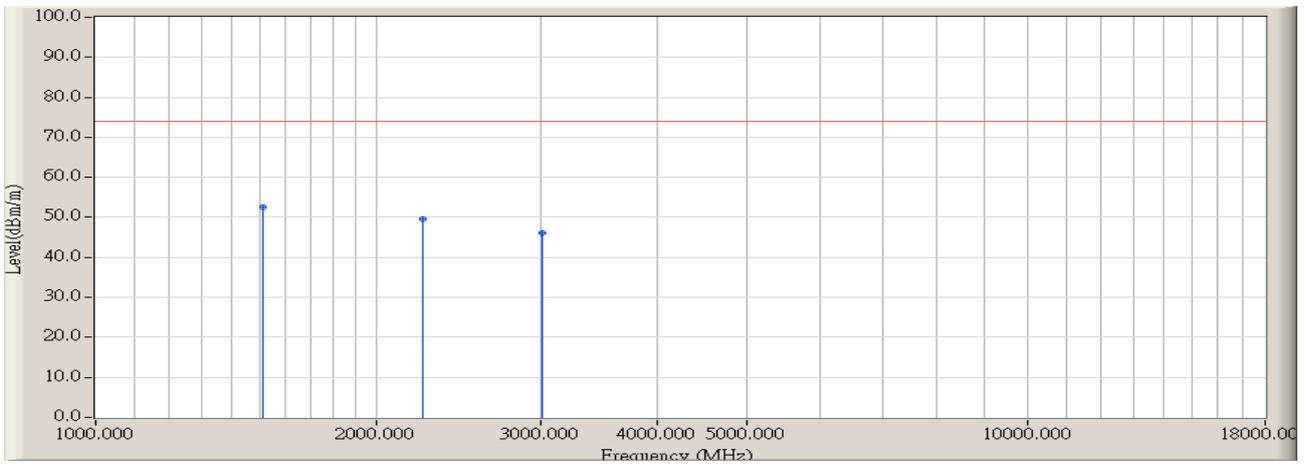
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	1340.000	-7.460	59.036	51.576	-22.394	73.970	PEAK	100.000	125.000
2	* 1991.667	-5.586	60.607	55.020	-18.950	73.970	PEAK	100.000	198.000
3	3011.667	-1.796	49.833	48.036	-25.934	73.970	PEAK	100.000	149.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:08
Limit : FCC_SpartB_15.109_03M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5300MHz



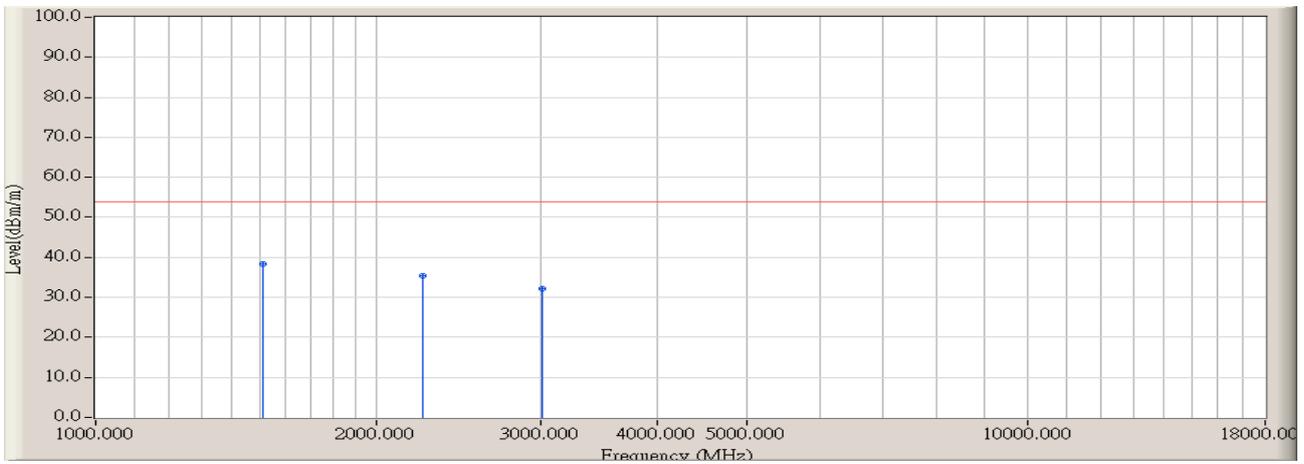
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	1340.000	-7.460	45.021	37.561	-16.409	53.970	AVERAGE	100.000	125.000
2	* 1991.667	-5.586	46.513	40.926	-13.044	53.970	AVERAGE	100.000	198.000
3	3011.667	-1.796	35.814	34.017	-19.953	53.970	AVERAGE	100.000	149.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:10
Limit : FCC_SpartB_15.109_03M_PK	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5500MHz



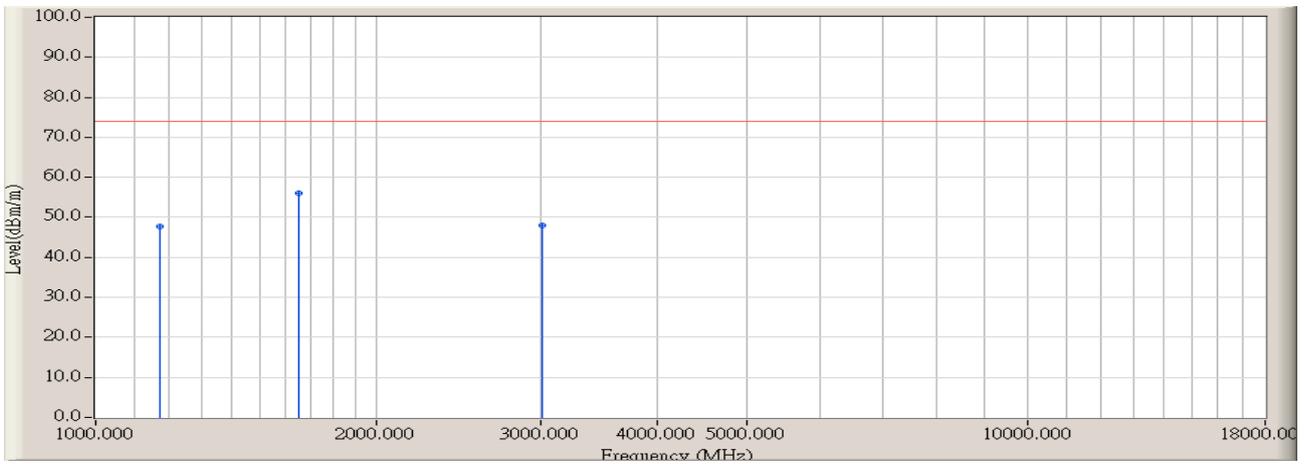
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	1510.000	-7.280	59.720	52.440	-21.530	73.970	PEAK	100.000	226.000
2		2246.667	-3.339	52.883	49.543	-24.427	73.970	PEAK	106.000	207.000
3		3011.667	-1.796	47.917	46.120	-27.850	73.970	PEAK	103.000	117.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:10
Limit : FCC_SpartB_15.109_03M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5500MHz



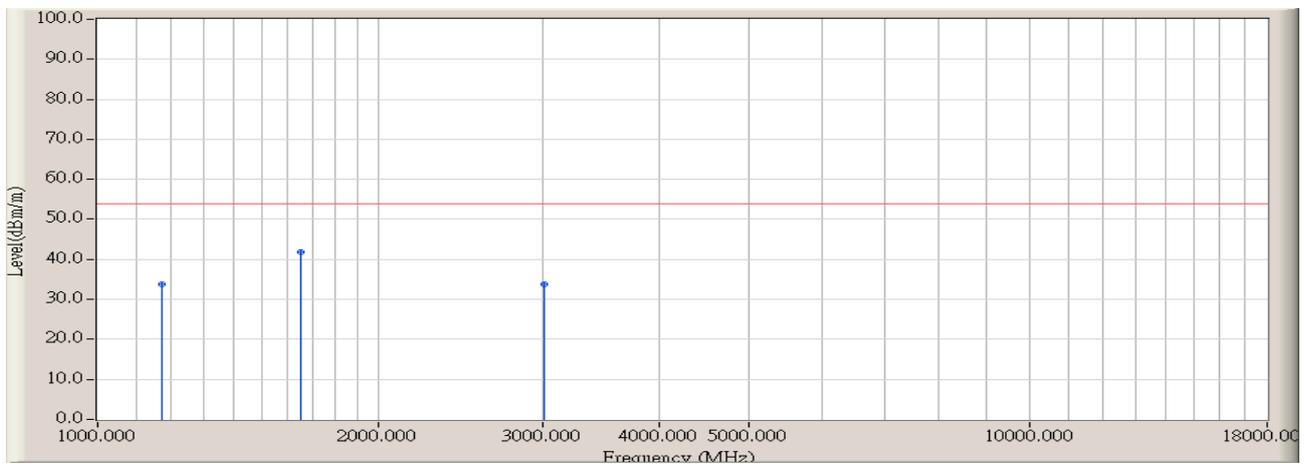
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	1510.000	-7.280	45.530	38.250	-15.720	53.970	AVERAGE	100.000	226.000
2		2246.667	-3.339	38.750	35.410	-18.560	53.970	AVERAGE	106.000	207.000
3		3011.667	-1.796	33.865	32.068	-21.902	53.970	AVERAGE	103.000	117.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:11
Limit : FCC_SpartB_15.109_03M_PK	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5500MHz



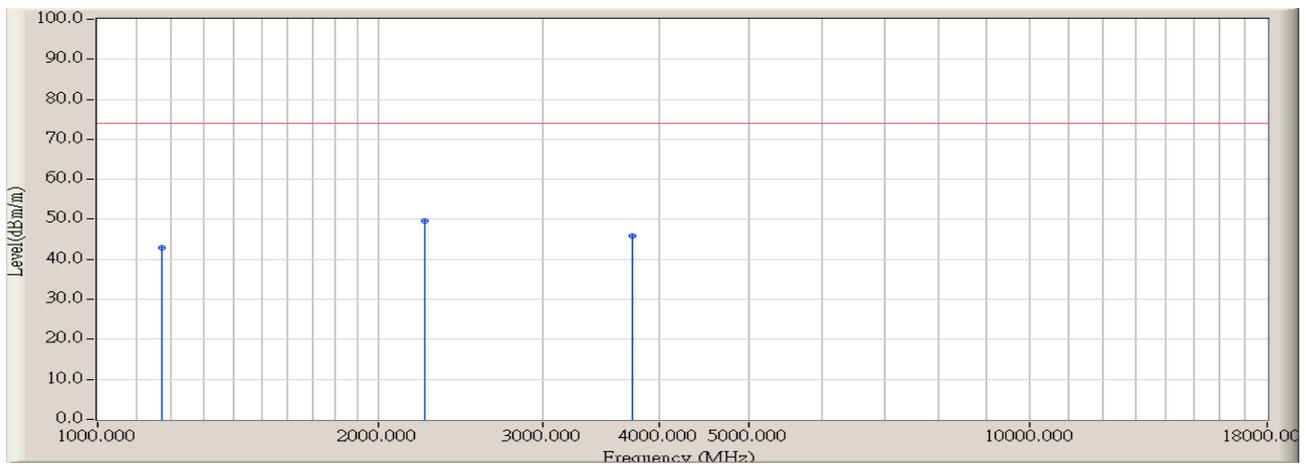
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	1170.000	-8.730	56.446	47.716	-26.254	73.970	PEAK	100.000	199.000
2	* 1651.667	-7.080	63.070	55.990	-17.980	73.970	PEAK	101.500	115.000
3	3011.667	-1.796	49.756	47.959	-26.011	73.970	PEAK	100.000	264.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:11
Limit : FCC_SpartB_15.109_03M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5500MHz



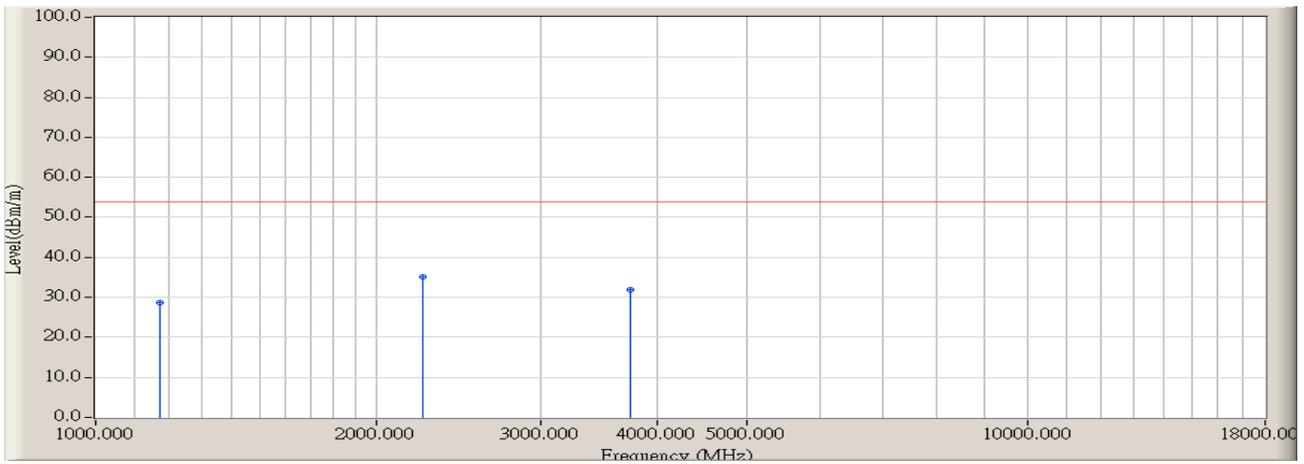
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	1170.000	-8.730	42.410	33.680	-20.290	53.970	AVERAGE	100.000	199.000
2	* 1651.667	-7.080	49.002	41.922	-12.048	53.970	AVERAGE	101.500	115.000
3	3011.667	-1.796	35.470	33.673	-20.297	53.970	AVERAGE	100.000	264.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:13
Limit : FCC_SpartB_15.109_03M_PK	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5700MHz



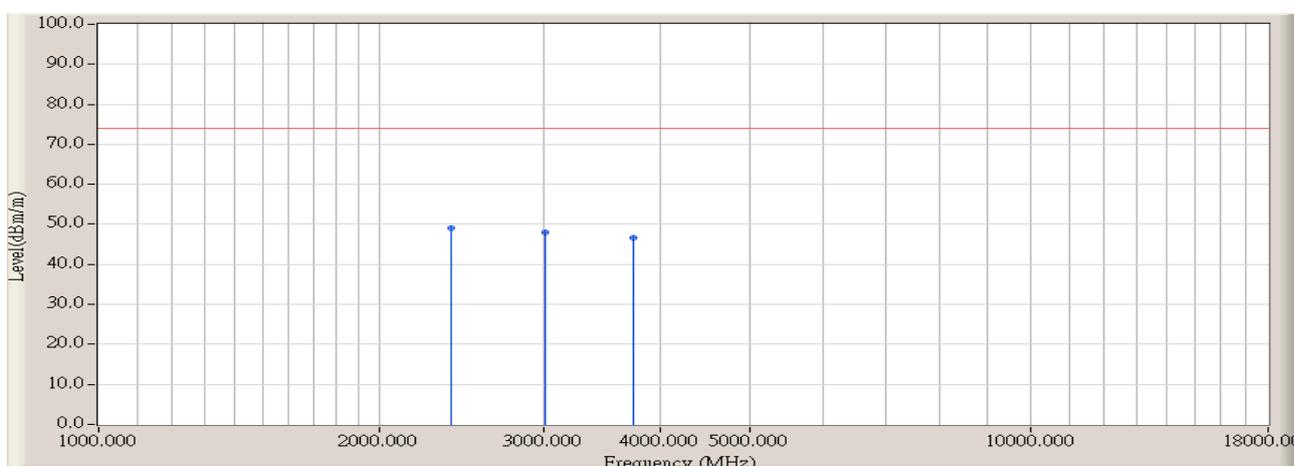
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	1170.000	-8.730	51.631	42.901	-31.069	73.970	PEAK	100.000	199.000
2	* 2246.667	-3.339	52.815	49.475	-24.495	73.970	PEAK	101.500	115.000
3	3748.333	-0.233	46.210	45.977	-27.993	73.970	PEAK	100.000	264.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:13
Limit : FCC_SpartB_15.109_03M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5700MHz



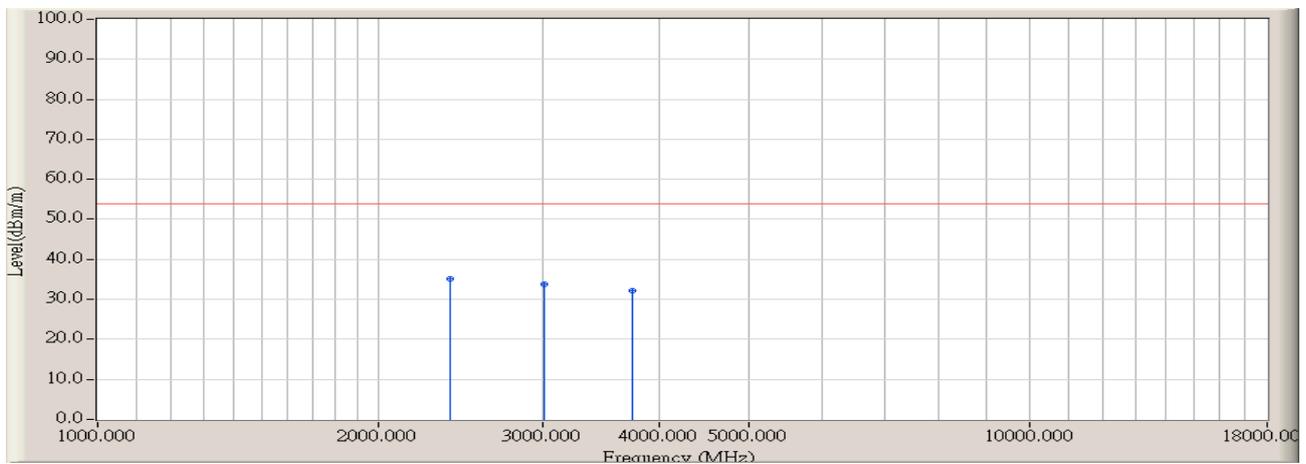
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	1170.000	-8.730	37.540	28.810	-25.160	53.970	AVERAGE	100.000	199.000
2	* 2246.667	-3.339	38.578	35.238	-18.732	53.970	AVERAGE	101.500	115.000
3	3748.333	-0.233	32.120	31.887	-22.083	53.970	AVERAGE	100.000	264.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:14
Limit : FCC_SpartB_15.109_03M_PK	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5700MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	2388.333	-3.207	52.322	49.115	-24.855	73.970	PEAK	100.000	199.000
2		3011.667	-1.796	49.785	47.988	-25.982	73.970	PEAK	101.500	115.000
3		3748.333	-0.233	46.870	46.637	-27.333	73.970	PEAK	100.000	264.000

Engineer : Jame	
Site : AC-2 (3m Semi-Anechoic Chamber)	Time : 2008/11/15 - 16:14
Limit : FCC_SpartB_15.109_03M_AV	Margin : 0
EUT : WIRELESS-A/N 26DBM NETWORK MINI PCI ADAPTER	Probe : BBHA9120D_496(1-18GHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode 2: Receive by 802.11n(20MHz) at channel 5700MHz

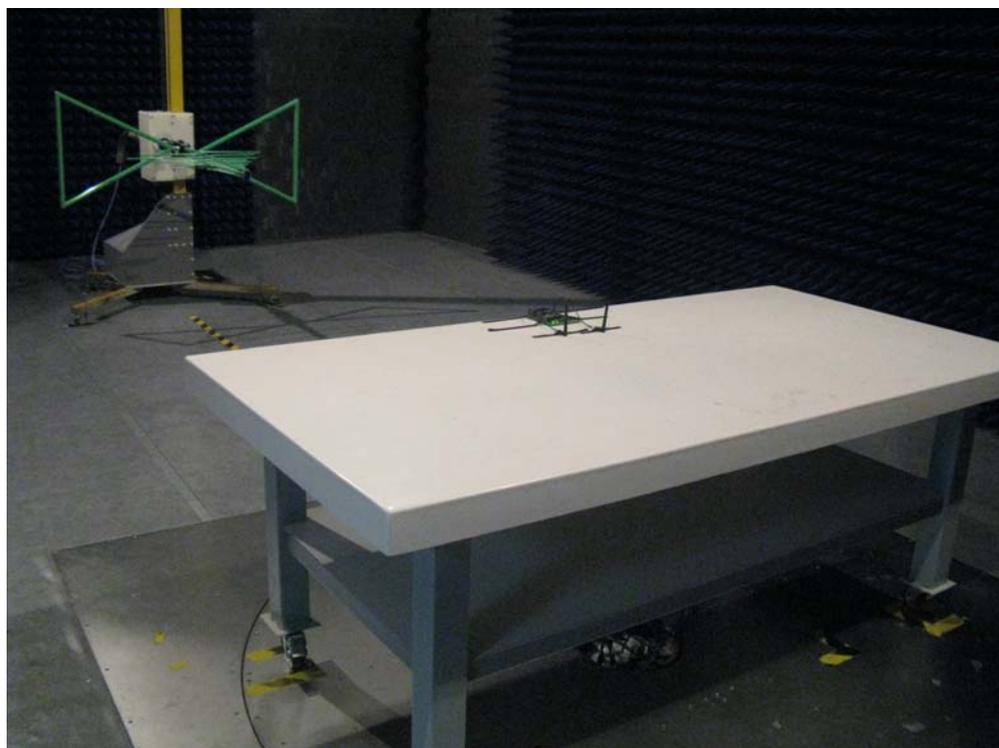


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm)	Margin (dB)	Limit (dBm)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	2388.333	-3.207	38.241	35.034	-18.936	53.970	AVERAGE	100.000	199.000
2		3011.667	-1.796	35.548	33.751	-20.219	53.970	AVERAGE	101.500	115.000
3		3748.333	-0.233	32.447	32.214	-21.756	53.970	AVERAGE	100.000	264.000

4.7. Test Photograph

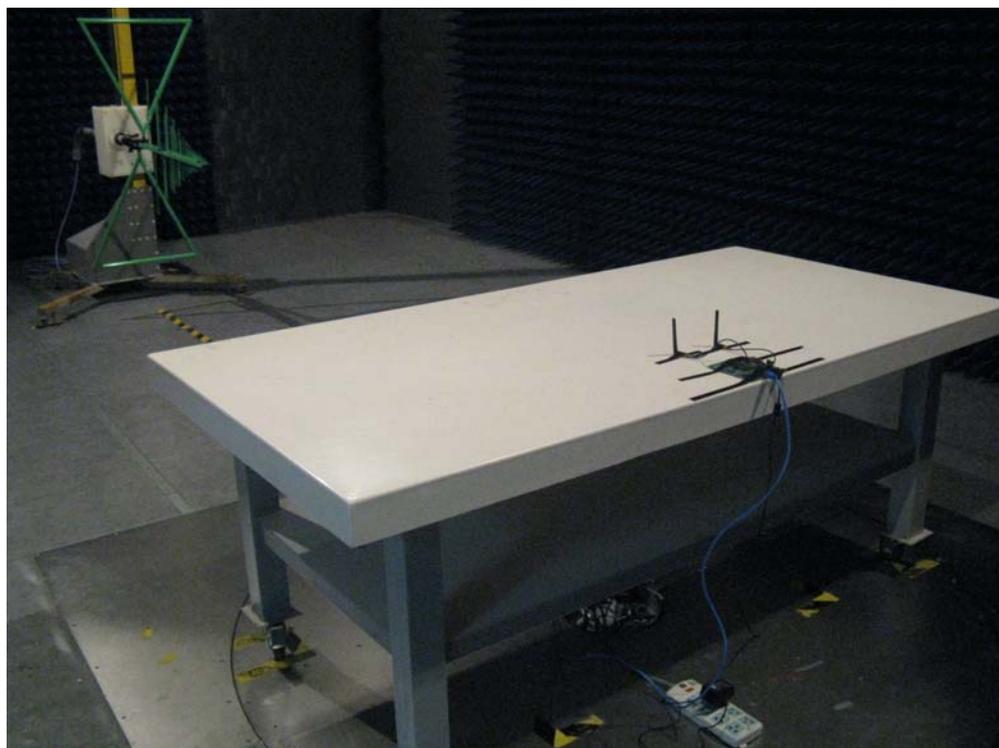
Test Mode: Receive

Description: Front View of Radiated Emission Test Setup for Below 1GHz



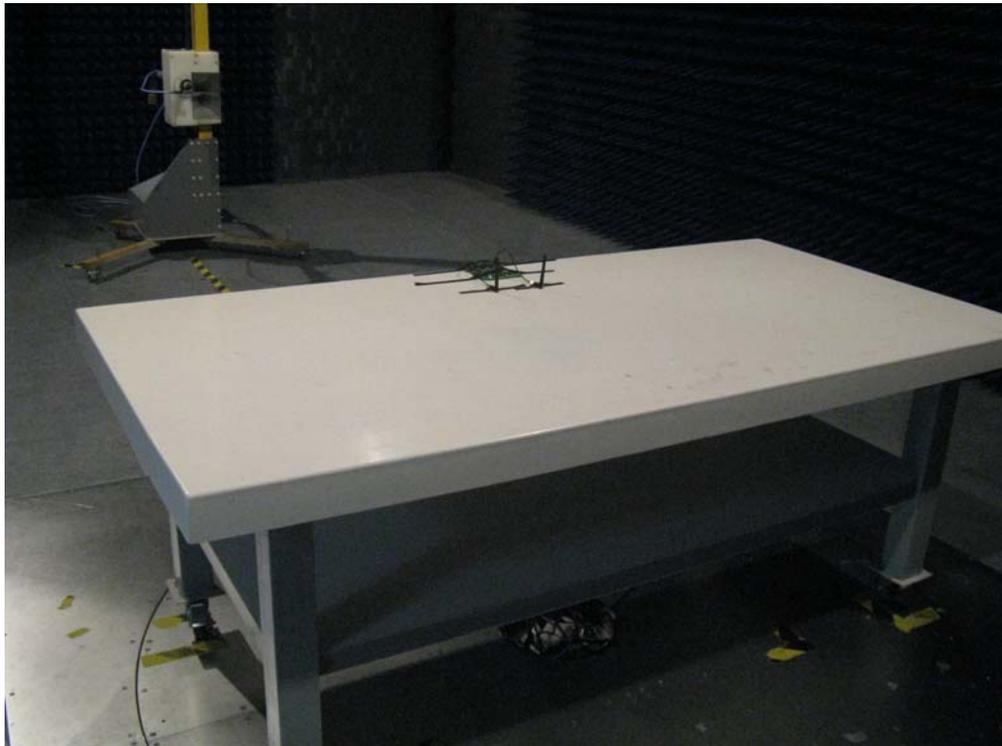
Test Mode: Receive

Description: Back View of Radiated Emission Test Setup for Below 1GHz



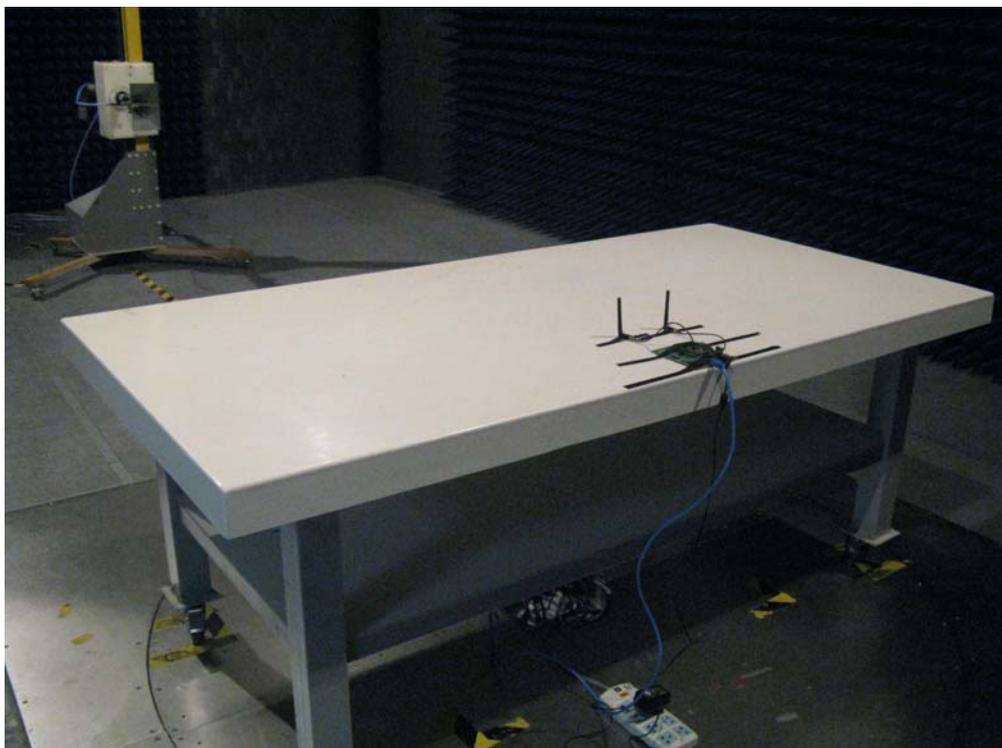
Test Mode: Receive

Description: Front View of Radiated Emission Test Setup for Above 1GHz



Test Mode: Receive

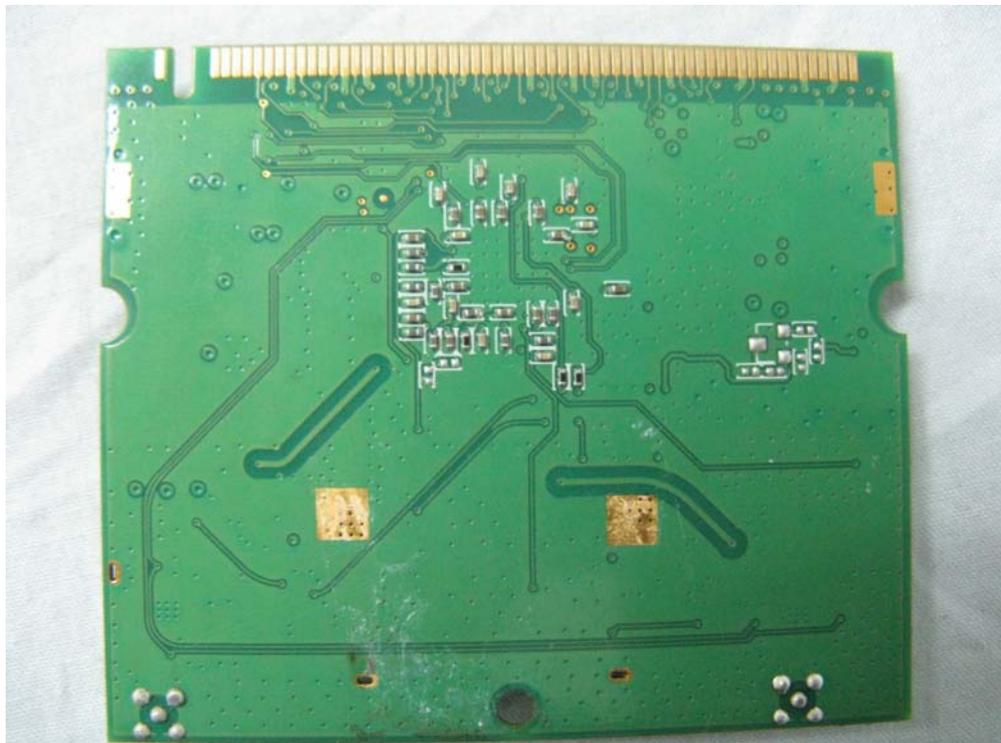
Description: Back View of Radiated Emission Test Setup for Above 1GHz



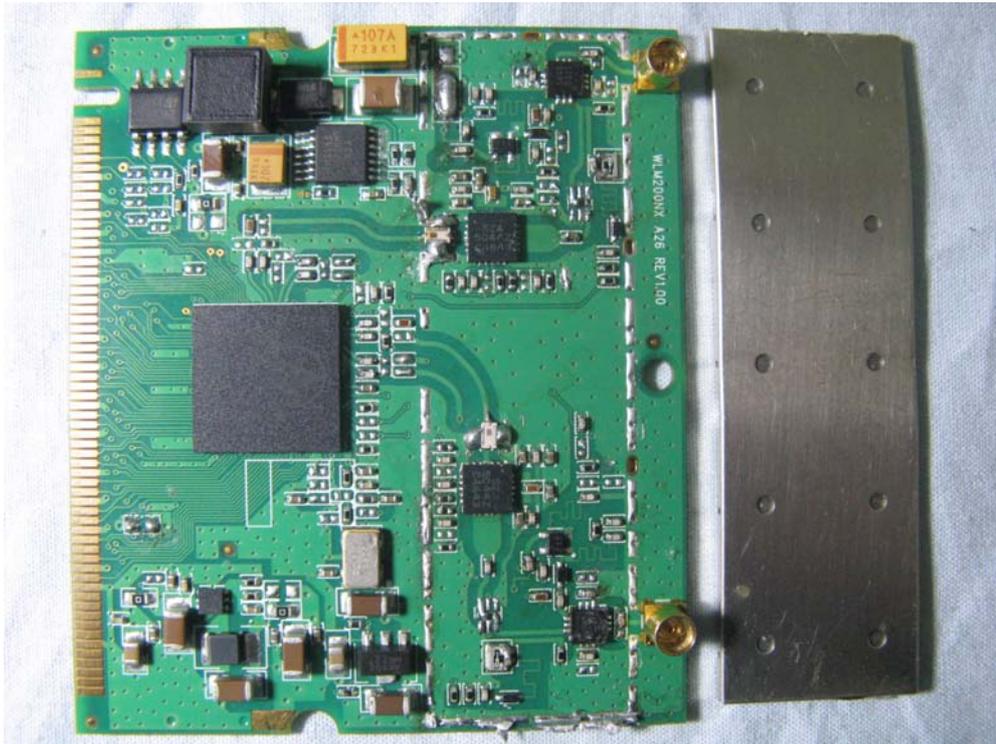
- 5. Attachment
 - EUT Photograph
 - (1) EUT Photo



- (2) EUT Photo



(3) EUT Photo



(4) EUT Photo

