



Test Report

Product Name	2G Wireless NPort
Model No.	NPort W2150 Plus, NPort W2250 Plus
FCC ID	SLEW2250Plus

Applicant	Moxa Technologies Co., Ltd
Address	F1.4, No. 135, Lane 235, Pao-Chiao Rd., Shing Tien City, Taipei, Taiwan, R.O.C.

Date of Receipt	March 13, 2007
Issued Date	May 04, 2007
Report No.	073L065-RFUSP05V01

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Issued Date: May 04, 2007

Report No.: 073L065-RFUSP05V01



Product Name	2G Wireless NPort
Applicant	Moxa Technologies Co., Ltd
Address	Fl.4, No. 135, Lane 235, Pao-Chiao Rd., Shing Tien City, Taipei, Taiwan, R.O.C.
Manufacturer	Moxa Technologies Co., Ltd
Model No.	NPort W2150 Plus, NPort W2250 Plus
Rated Voltage	AC 120V/60Hz
Working Voltage	DC 12V
Trade Name	Moxa
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2005 ANSI C63.4: 2003
Test Result	Complied



Test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of Quietek Corporation.

This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By :

Genie Chang

(Engineering Adm. Specialist /
Genie Chang)



Tested By :

Tim Sung

(Senior Engineer /Tim Sung)



Approved By :

Gene Chang

(President /Gene Chang)

0914

TABLE OF CONTENTS

Description	Page
1. GENERAL INFORMATION.....	5
1.1. EUT Description.....	5
1.2. Operational Description	6
1.3. Tested System Details.....	7
1.4. Configuration of Test System.....	7
1.5. EUT Exercise Software	7
1.6. Test Facility	8
2. Conducted Emission.....	9
2.1. Test Equipment.....	9
2.2. Test Setup	9
2.3. Limits	9
2.4. Test Procedure	10
2.5. Uncertainty	10
2.6. Test Result of Conducted Emission.....	11
3. Peak Power Output	15
3.1. Test Equipment.....	15
3.2. Test Setup	15
3.3. Limits	15
3.4. Uncertainty	15
3.5. Test Result of Peak Power Output.....	16
4. Radiated Emission.....	20
4.1. Test Equipment.....	20
4.2. Test Setup	21
4.3. Limits	21
4.4. Test Procedure	22
4.5. Uncertainty	22
4.6. Test Result of Radiated Emission.....	23
5. Band Edge	31
5.1. Test Equipment.....	31
5.2. Test Setup	31
5.3. Limits	32
5.4. Test Procedure	32
5.5. Uncertainty	32
5.6. Test Result of Band Edge	33
6. Occupied Bandwidth.....	41
6.1. Test Equipment.....	41
6.2. Test Setup	41
6.3. Limits	41

6.4.	Uncertainty	41
6.5.	Test Result of Occupied Bandwidth	42
7.	Power Density	48
7.1.	Test Equipment	48
7.2.	Test Setup	48
7.3.	Limits	48
7.4.	Uncertainty	48
7.5.	Test Result of Power Density	49
8.	EMI Reduction Method During Compliance Testing	55

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	2G Wireless NPort
Trade Name	Moxa
Model No.	NPort W2150 Plus, NPort W2250 Plus
FCC ID	SLEW2250Plus
Frequency Range	2412MHz - 2462MHz, 5150-5250MHz, 5725-5825MHz
Channel Number	11 in 2.4GHz band, 8 in 5GHz band
Data Speed	802.11b – 1, 2, 5.5, 11Mbps 802.11a/g – 6, 9, 12, 18, 24, 36, 48, 54Mbps
Type of Modulation	DSSS/OFDM
Antenna Type	Connector (Reverse SMA)
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Channel Separation	5MHz in 2.4GHz band, 20MHz in 5GHz band
Power Adapter	MFR: BLANCE, M/N: GPSA-1200120 Input: AC 100-240V, 50-60Hz, 0.5A Output: DC 12V-1.2A Cable out: Non-Shielded, 1.9m with one ferrite core bonded.

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	SmartAnt	SAA05-220420	2.0 dBi for 2.4 GHz 2.0 dBi for 5.0 GHz

Frequency of Each Channel:

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

Note:

1. The EUT is a 2G Wireless NPort with a built-in 2.4GHz transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps and 802.11a/g is 6Mbps)
4. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
5. Part 15 Subpart B compliance for spread spectrum devices is shown on the report no. 073L065-RFUSP01V02.
6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

1.2. Operational Description

EUT is a 2G Wireless NPort with a built-in 2.4GHz transceiver. There are 11 channels in 2412 – 2462MHz. The channels are separated by 5MHz. This device supports the data rates of 1, 2, 5.5, 11Mbps in 802.11b mode and 6, 9, 12, 18, 24, 36, 48, 54Mbps in 802.11g mode. The signals are modulated by DSSS in 802.11b mode and OFDM in 802.11g mode. The antennas are Connector and use diversity to improve the receiving sensitivity.

This 2G Wireless NPort, complied with IEEE 802.11b and IEEE 802.11g, is a high-efficiency Wireless LAN adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without network wires. Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b and IEEE 802.11g network.

Test Mode	Mode 1: Transmitter 802.11b
	Mode 2: Transmitter 802.11g

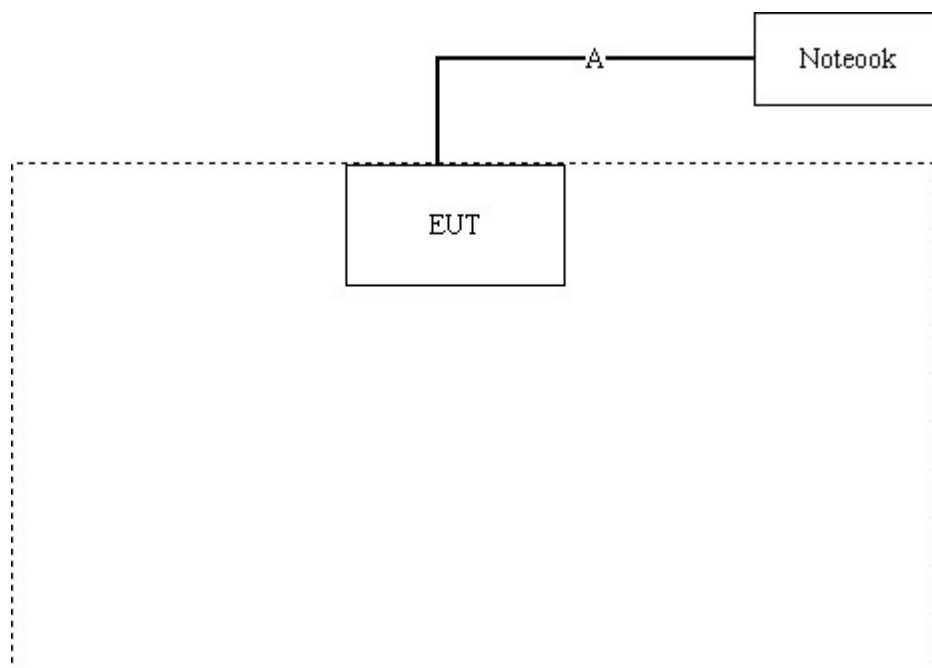
1.3. Tested System Details

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

Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	PP04X	C8YYM1S
				Non-Shielded, 0.8m

Signal Cable Type	Signal cable Description
A	LAN Cable
	Non-Shielded, 7.0m

1.4. Configuration of Test System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute Telnet IP on the notebook.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous transmission.
- (5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Reference 31040/SIT1300F2



Accreditation on NVLAP
NVLAP Lab Code: 200533-0



Site Name: Quietek Corporation
Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
Lin-Kou Shiang, Taipei,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com



2. Conducted Emission

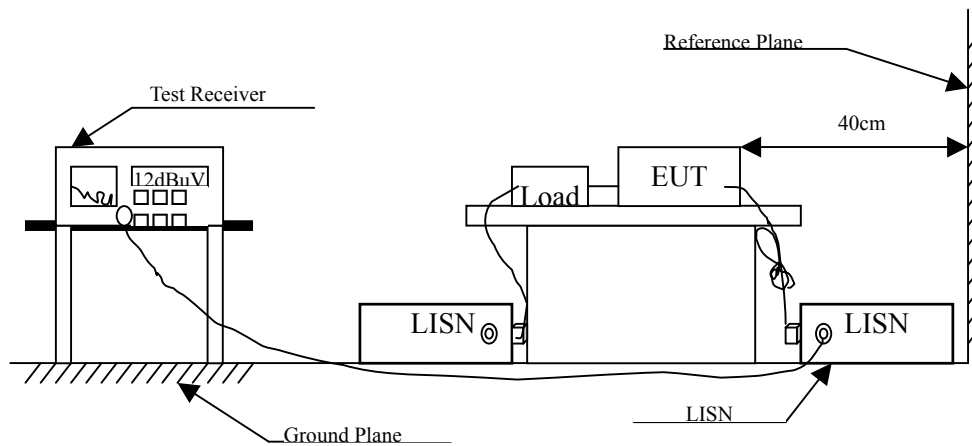
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2007	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2007	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2007	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2007	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

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

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : 2G Wireless NPort
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.201	0.643	38.720	39.363	-25.180	64.543
0.261	0.320	29.350	29.670	-33.159	62.829
0.331	0.300	32.650	32.950	-27.879	60.829
0.391	0.300	20.810	21.110	-38.004	59.114
0.461	0.300	26.380	26.680	-30.434	57.114
0.531	0.300	36.590	36.890	-19.110	56.000
Average					
0.201	0.643	38.080	38.723	-15.820	54.543
0.261	0.320	27.460	27.780	-25.049	52.829
0.331	0.300	30.520	30.820	-20.009	50.829
0.391	0.300	20.020	20.320	-28.794	49.114
0.461	0.300	25.620	25.920	-21.194	47.114
0.531	0.300	33.390	33.690	-12.310	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : 2G Wireless NPort
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.197	0.300	40.050	40.350	-24.307	64.657
0.267	0.300	31.840	32.140	-30.517	62.657
0.327	0.300	28.720	29.020	-31.923	60.943
0.397	0.310	31.370	31.680	-27.263	58.943
0.457	0.310	18.720	19.030	-38.199	57.229
0.527	0.310	36.870	37.180	-18.820	56.000
Average					
0.197	0.300	39.420	39.720	-14.937	54.657
0.267	0.300	29.950	30.250	-22.407	52.657
0.327	0.300	26.580	26.880	-24.063	50.943
0.397	0.310	30.650	30.960	-17.983	48.943
0.457	0.310	17.430	17.740	-29.489	47.229
0.527	0.310	33.630	33.940	-12.060	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : 2G Wireless NPort
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.197	0.670	40.150	40.820	-23.837	64.657
0.267	0.306	31.720	32.026	-30.631	62.657
0.327	0.300	29.170	29.470	-31.473	60.943
0.397	0.300	31.330	31.630	-27.313	58.943
0.457	0.300	18.930	19.230	-37.999	57.229
0.527	0.300	37.190	37.490	-18.510	56.000
Average					
0.197	0.670	39.500	40.170	-14.487	54.657
0.267	0.306	29.880	30.186	-22.471	52.657
0.327	0.300	27.110	27.410	-23.533	50.943
0.397	0.300	30.580	30.880	-18.063	48.943
0.457	0.300	17.880	18.180	-29.049	47.229
0.527	0.300	33.940	34.240	-11.760	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : 2G Wireless NPort
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.197	0.300	40.330	40.630	-24.027	64.657
0.267	0.300	31.740	32.040	-30.617	62.657
0.327	0.300	29.510	29.810	-31.133	60.943
0.397	0.310	31.270	31.580	-27.363	58.943
0.457	0.310	19.820	20.130	-37.099	57.229
0.527	0.310	37.560	37.870	-18.130	56.000
Average					
0.197	0.300	39.690	39.990	-14.667	54.657
0.267	0.300	29.950	30.250	-22.407	52.657
0.327	0.300	27.410	27.710	-23.233	50.943
0.397	0.310	30.520	30.830	-18.113	48.943
0.457	0.310	18.520	18.830	-28.399	47.229
0.527	0.310	34.380	34.690	-11.310	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Equipment

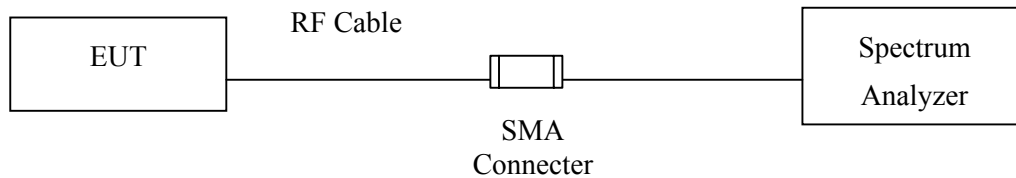
The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

3.2. Test Setup

Conducted Measurement



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Uncertainty

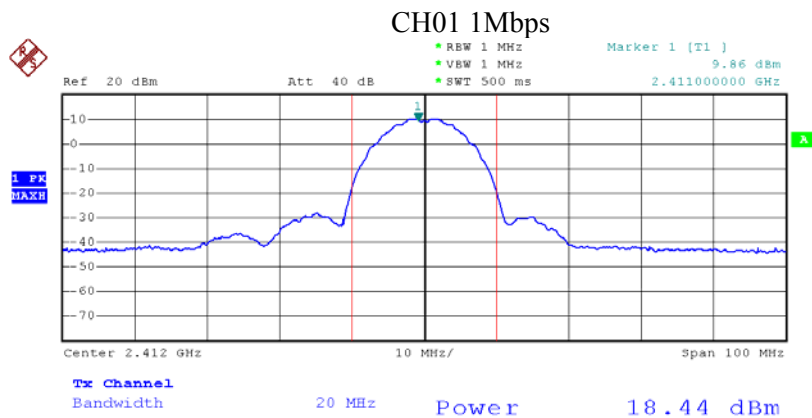
± 1.27 dB

3.5. Test Result of Peak Power Output

Product : 2G Wireless NPort
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b

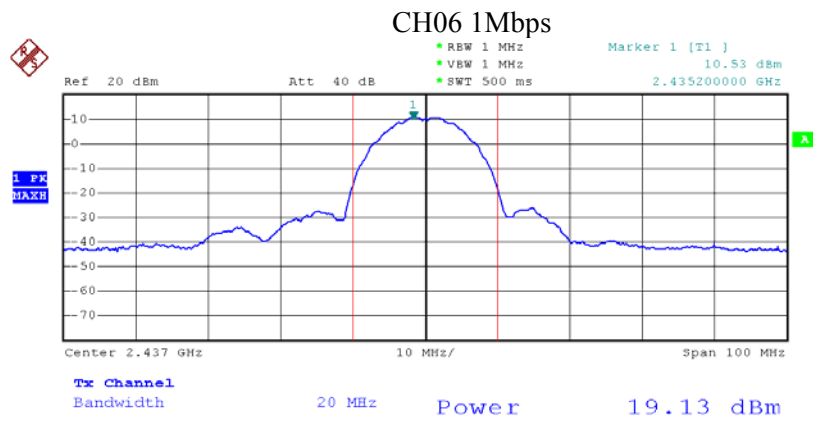
Data Speed: 1Mbps

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
1	2412.00	18.44dBm	1 Watt= 30 dBm	Pass
6	2437.00	19.13dBm	1 Watt= 30 dBm	Pass
11	2462.00	19.40dBm	1 Watt= 30 dBm	Pass



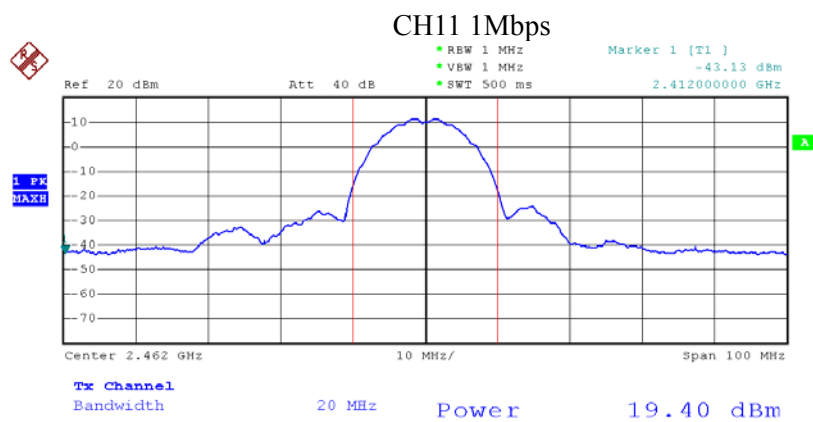
PN1

Date: 11.APR.2007 04:50:06



PN1

Date: 11.APR.2007 04:49:42



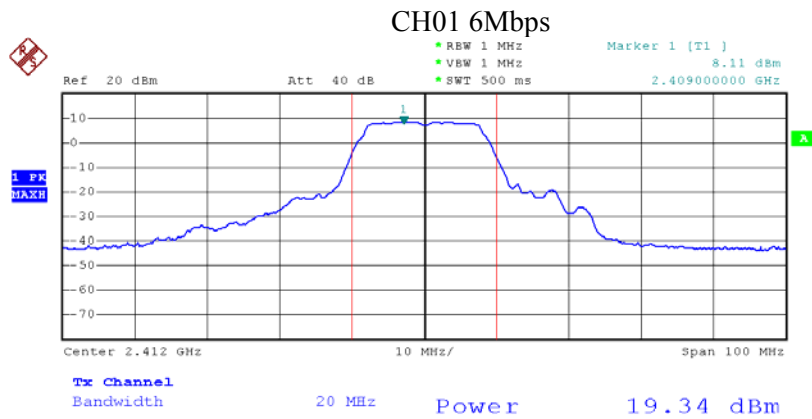
PN1

Date: 11.APR.2007 04:50:42

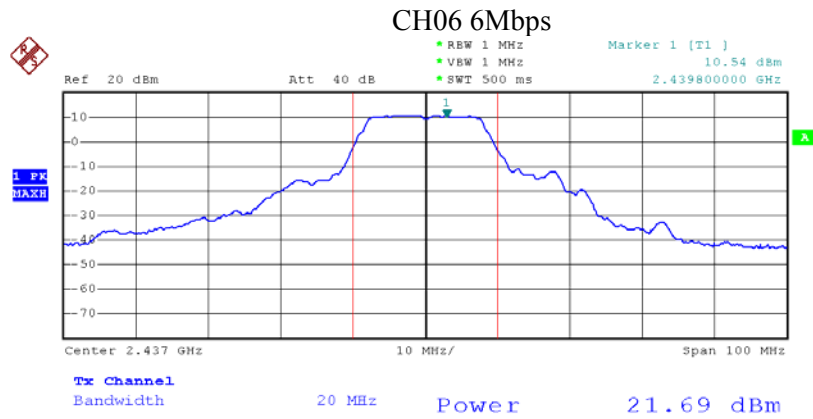
Product : 2G Wireless NPort
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g

Data Speed: 6Mbps

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
1	2412.00	19.34dBm	1 Watt= 30 dBm	Pass
6	2437.00	21.69dBm	1 Watt= 30 dBm	Pass
11	2462.00	18.62dBm	1 Watt= 30 dBm	Pass

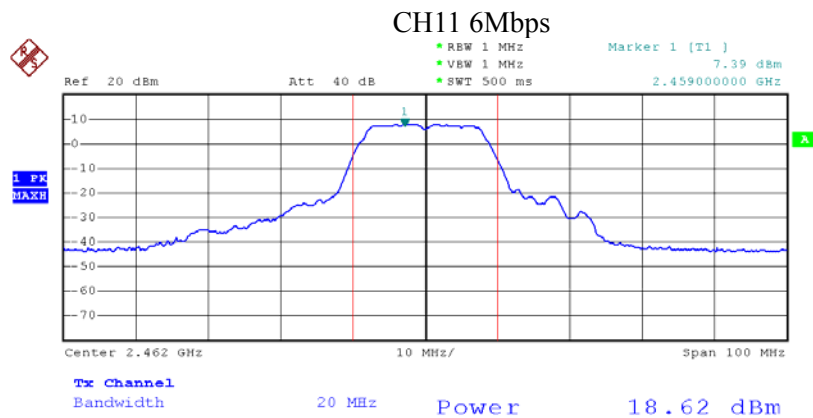


PN1
 Date: 11.APR.2007 04:52:25



PN1

Date: 11.APR.2007 04:52:50



PN1

Date: 11.APR.2007 04:53:57

4. Radiated Emission

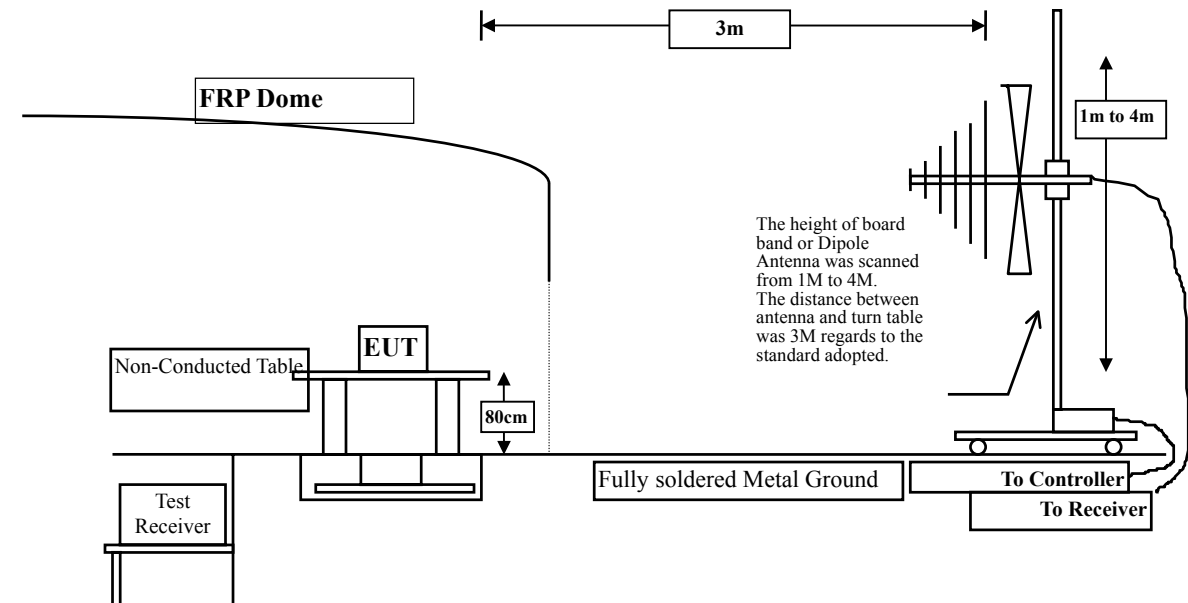
4.1. Test Equipment

The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☐ Site # 1		Test Receiver	R & S	ESVS 10 / 834468/003	May, 2007
		Spectrum Analyzer	Advantest	R3162/ 00803480	May, 2007
		Pre-Amplifier	Advantest	BB525C/ 3307A01812	May, 2007
		Bilog Antenna	SCHAFFNER	CBL6112B / 2697	Sep., 2006
☐ Site # 2		Test Receiver	R & S	ESCS 30 / 836858 / 022	May, 2007
		Spectrum Analyzer	Advantest	R3162 / 100803466	May, 2007
		Pre-Amplifier	Advantest	BB525C/3307A01814	May, 2007
		Bilog Antenna	SCHAFFNER	CBL6112B / 2705	May, 2007
		Horn Antenna	ETS	3115 / 0005-6160	Sep., 2006
		Pre-Amplifier	QTK	QTK-AMP-01/ 0001	May, 2007
☒ Site # 3	X	Test Receiver	R & S	ESI 26 / 838786/004	May, 2007
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
	X	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
	X	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2006
	X	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2006
	X	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2006
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
	X	Pre-Amplifier	HP	8449B / 3008A01123	July, 2006

Note: 1. All equipments are calibrated every one year.
2. Test equipments marked by "X" are used to measure the final test results.

4.2. Test Setup



4.3. Limits

➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

- Remarks :
1. RF Voltage (dBuV) = $20 \log \text{RF Voltage (uV)}$
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

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 3 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 according to ANSI C63.4: 2003 on radiated measurement.

The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The frequency range from 30MHz to 10th harmonics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : 2G Wireless NPort
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter 802.11b (2412MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4824.000	2.867	36.493	39.360	-34.640	74.000
7236.000	7.707	34.832	42.539	-31.461	74.000
9648.000	9.302	34.072	43.374	-30.626	74.000

Average

Detector:

--

Vertical

Peak Detector:

4824.000	2.867	40.627	43.494	-30.506	74.000
7236.000	7.707	36.972	44.679	-29.321	74.000
9648.000	9.302	35.009	44.311	-29.689	74.000

Average

Detector:

--

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz °
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : 2G Wireless NPort
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4874.000	3.000	35.205	38.204	-35.796	74.000
7311.000	7.872	34.308	42.180	-31.820	74.000
9748.000	9.359	34.280	43.639	-30.361	74.000

Average

Detector:

--

Vertical

Peak Detector:

4874.000	3.000	39.340	42.339	-31.661	74.000
7311.000	7.872	36.405	44.277	-29.723	74.000
9748.000	9.359	33.744	43.103	-30.897	74.000

Average

Detector:

--

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz °
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : 2G Wireless NPort
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4924.000	3.142	35.413	38.555	-35.445	74.000
7386.000	8.040	34.062	42.102	-31.898	74.000
9848.000	9.409	33.649	43.058	-30.942	74.000

Average

Detector:

--

Vertical

Peak Detector:

4924.000	3.142	41.238	44.380	-29.620	74.000
7386.000	8.040	35.947	43.987	-30.013	74.000
9848.000	9.409	33.042	42.451	-31.549	74.000

Average

Detector:

--

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz °
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : 2G Wireless NPort
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3OATS
 Test Mode : Mode 2: Transmitter 802.11g (2412 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4824.000	2.867	35.960	38.827	-35.173	74.000
7236.000	7.707	34.154	41.861	-32.139	74.000
9648.000	9.302	33.508	42.810	-31.190	74.000

Average

Detector:

--

Vertical

Peak Detector:

4824.000	2.867	39.209	42.076	-31.924	74.000
7236.000	7.707	39.016	46.723	-27.277	74.000
9648.000	9.302	34.311	43.613	-30.387	74.000

Average

Detector:

--

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz °
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : 2G Wireless NPort
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter 802.11g (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4874.000	3.000	34.586	37.585	-36.415	74.000
7311.000	7.872	33.538	41.410	-32.590	74.000
9748.000	9.359	32.882	42.241	-31.759	74.000

Average

Detector:

--

Vertical

Peak Detector:

4874.000	3.000	37.965	40.964	-33.036	74.000
7311.000	7.872	38.190	46.062	-27.938	74.000
9748.000	9.359	32.743	42.102	-31.898	74.000

Average

Detector:

--

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz °
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : 2G Wireless NPort
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4924.000	3.142	35.287	38.429	-35.571	74.000
7386.000	8.040	34.356	42.396	-31.604	74.000
9848.000	9.409	33.815	43.224	-30.776	74.000

Average

Detector:

--

Vertical

Peak Detector:

4924.000	3.142	40.501	43.643	-30.357	74.000
7386.000	8.040	39.297	47.337	-26.663	74.000
9848.000	9.409	33.807	43.216	-30.784	74.000

Average

Detector:

--

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz °
4. Emission Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : 2G Wireless NPort
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
287.050	13.473	29.307	42.780	-3.220	46.000
384.050	15.761	24.759	40.520	-5.480	46.000
481.050	18.786	19.754	38.540	-7.460	46.000
672.625	20.659	22.321	42.980	-3.020	46.000
767.200	22.117	17.733	39.850	-6.150	46.000
864.200	22.212	18.538	40.750	-5.250	46.000
Vertical					
117.300	11.516	19.225	30.741	-12.759	43.500
287.050	13.637	26.943	40.580	-5.420	46.000
384.050	16.822	15.841	32.663	-13.337	46.000
612.000	21.748	9.320	31.068	-14.932	46.000
672.625	19.955	22.588	42.543	-3.457	46.000
864.200	21.968	8.378	30.346	-15.654	46.000

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : 2G Wireless NPort
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
287.050	13.473	29.090	42.563	-3.437	46.000
384.050	15.761	25.582	41.343	-4.657	46.000
481.050	18.786	17.716	36.502	-9.498	46.000
672.625	20.659	22.139	42.798	-3.202	46.000
767.200	22.117	15.110	37.227	-8.773	46.000
864.200	22.212	20.085	42.297	-3.703	46.000
Vertical					
107.600	11.442	19.204	30.646	-12.854	43.500
287.050	13.637	27.636	41.273	-4.727	46.000
384.050	16.822	15.216	32.038	-13.962	46.000
612.000	21.748	8.033	29.781	-16.219	46.000
672.625	19.955	22.072	42.027	-3.973	46.000
864.200	21.968	8.479	30.447	-15.553	46.000

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

5. Band Edge

5.1. Test Equipment

The following test equipments are used during the band edge tests:

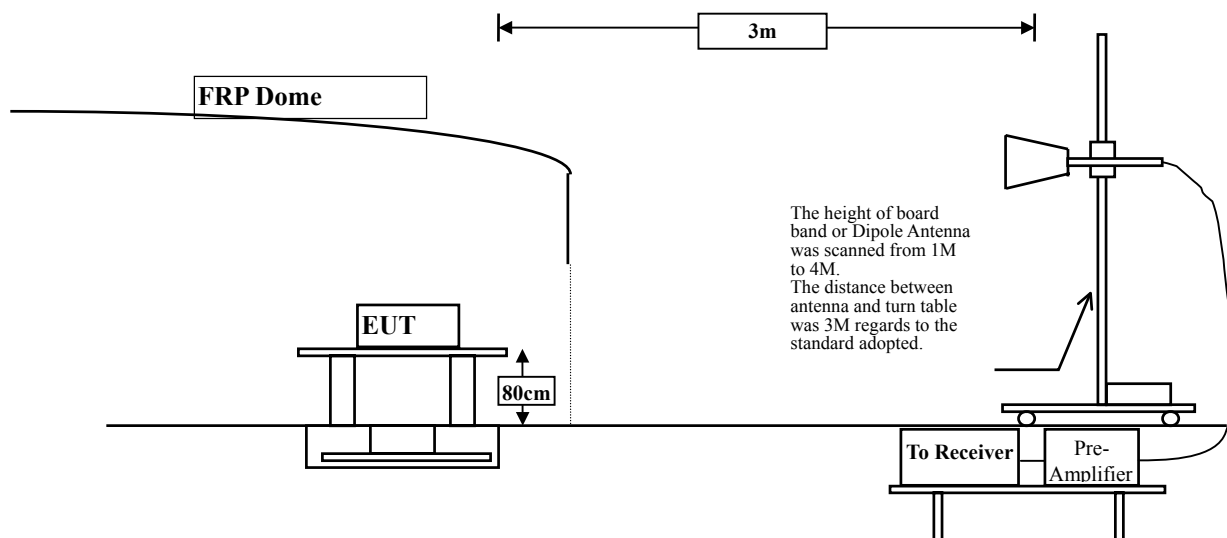
Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Test Receiver	R & S	ESI 26 / 838786/004	May, 2007
X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
X Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
X Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2006
X Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2006
X Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2006
X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
X Pre-Amplifier	HP	8449B / 3008A01123	July, 2006

Test Site: Site3

- Note:
1. All equipments are calibrated every one year.
 2. The test equipments marked by "X" are used to measure the final test results.

5.2. Test Setup

RF Radiated Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. 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) (see Section 15.205(c)).

5.4. 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 3 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 according to ANSI C63.4: 2003 on radiated measurement.

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

5.5. Uncertainty

Conducted is ± 1.27 dB

Radiated is ± 3.9 dB

5.6. Test Result of Band Edge

Product : 2G Wireless NPort
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b

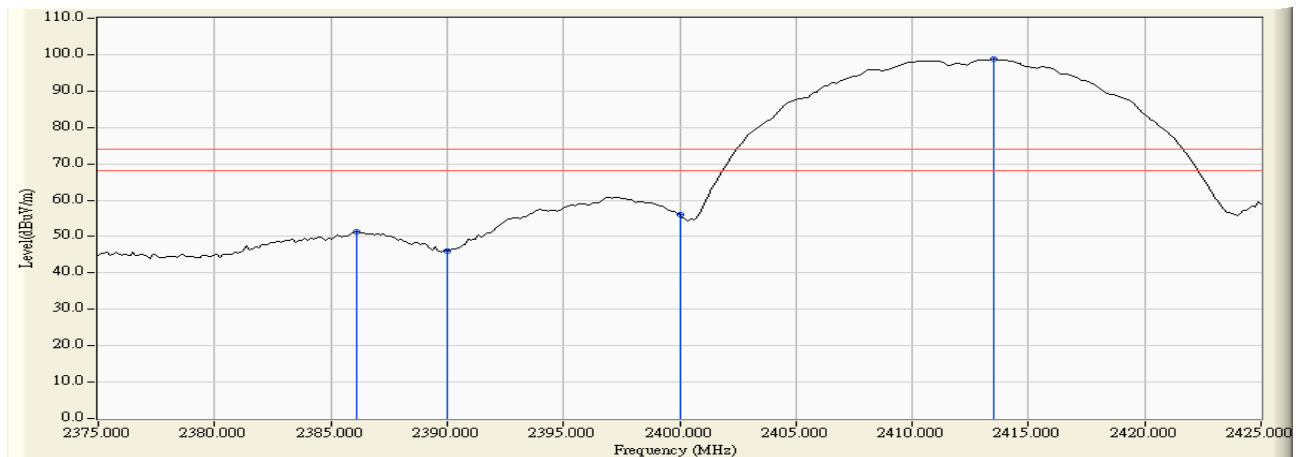
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
1 (Horizontal)	<2400	>20	Pass

RF Radiated Measurement (Horizontal):

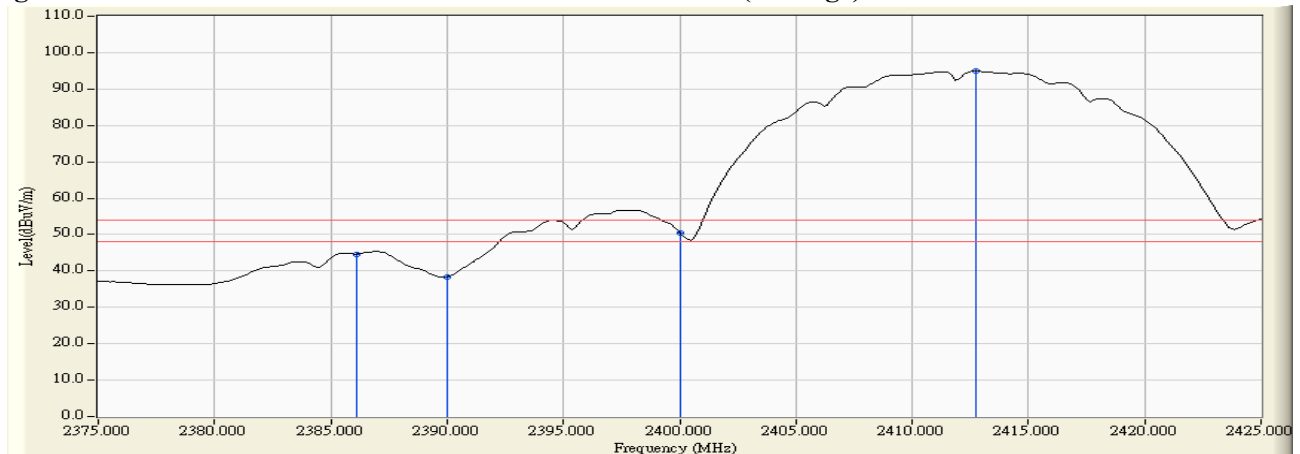
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2386.125	-2.419	53.602	51.183	74.00	54.00	Pass
1 (Average)	2386.125	-2.419	47.038	44.619	74.00	54.00	Pass

Figure Channel 1: Horizontal (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1: Horizontal (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : 2G Wireless NPort
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b

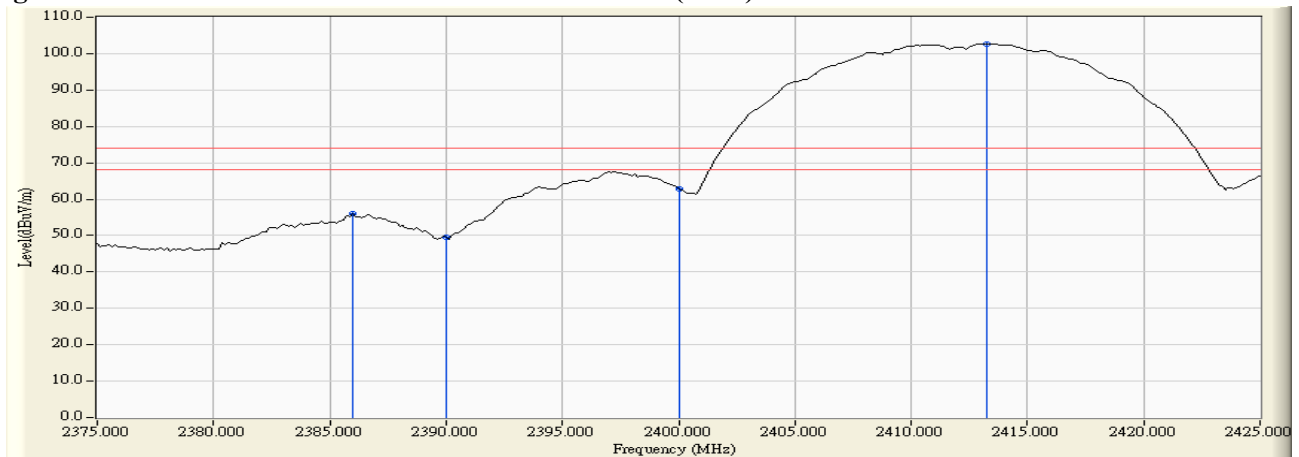
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
1 (Vertical)	<2400	>20	Pass

RF Radiated Measurement (Vertical):

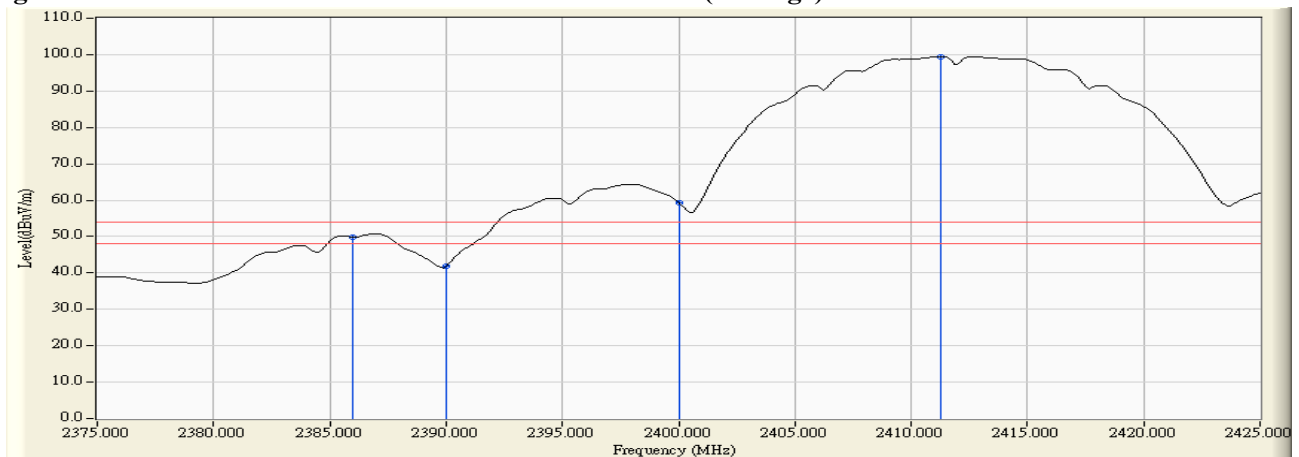
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2386.000	-2.419	58.333	55.914	74.00	54.00	Pass
1 (Average)	2386.000	-2.419	52.168	49.749	74.00	54.00	Pass

Figure Channel 1: Vertical (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1: Vertical (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : 2G Wireless NPort
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b

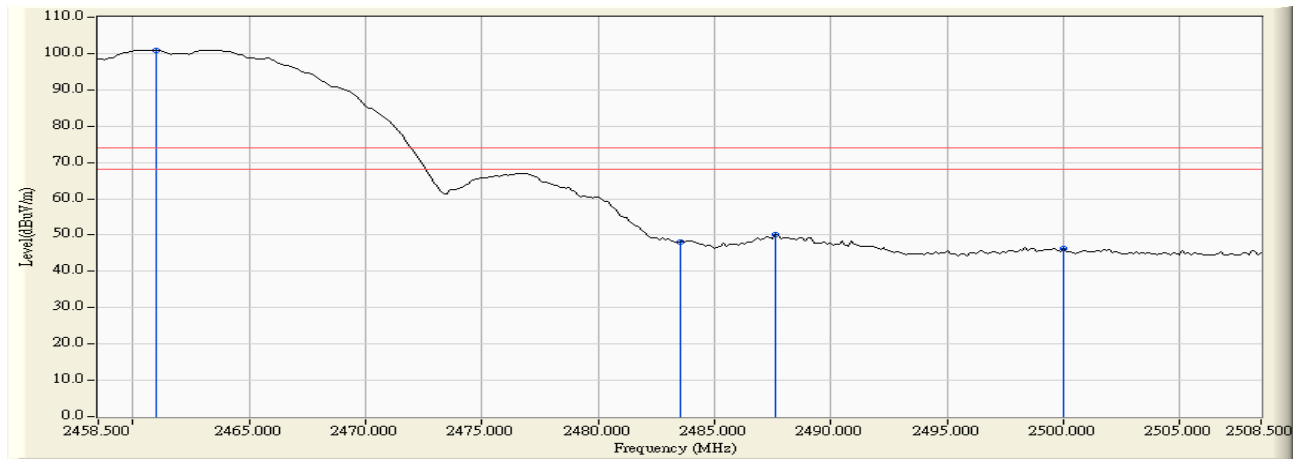
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
11 (Horizontal)	>2483.5	>20	Pass

RF Radiated Measurement (Horizontal):

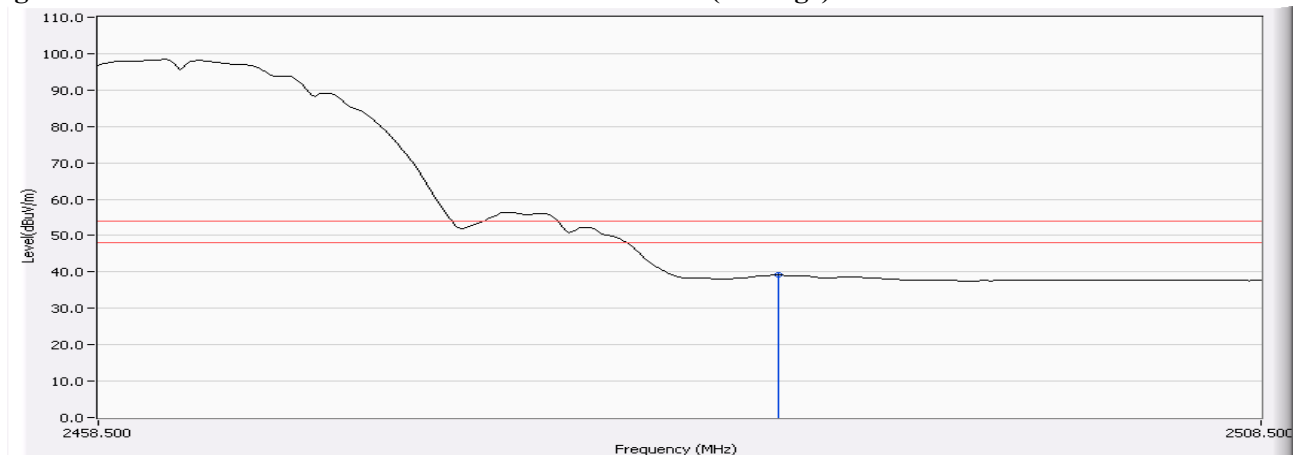
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2487.625	-1.976	52.121	50.145	74.00	54.00	Pass
11(Average)	2487.625	-1.027	40.139	39.112	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 11: Horizontal (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : 2G Wireless NPort
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b

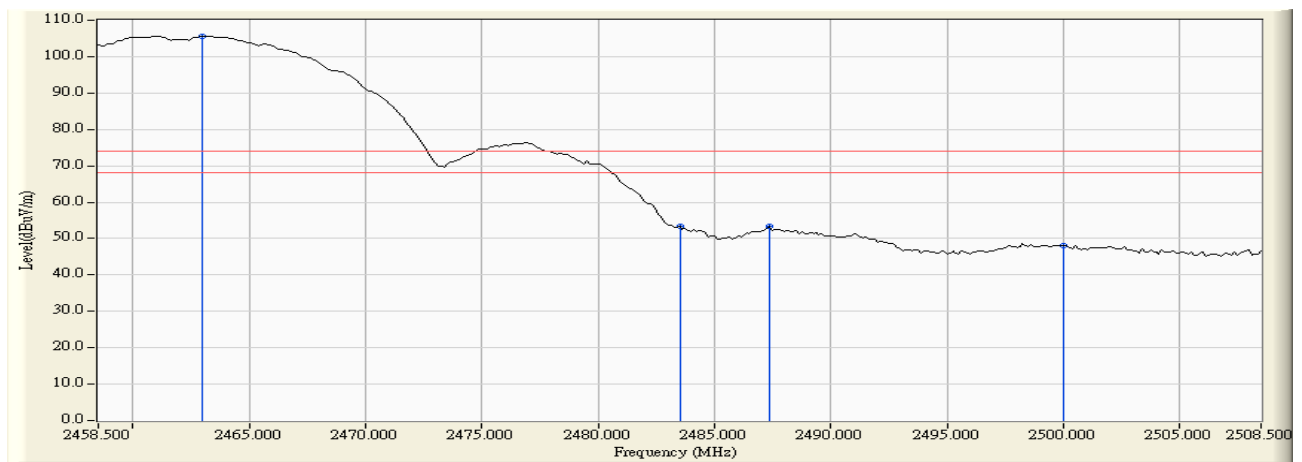
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
11 (Vertical)	>2483.5	>20	Pass

RF Radiated Measurement (Vertical):

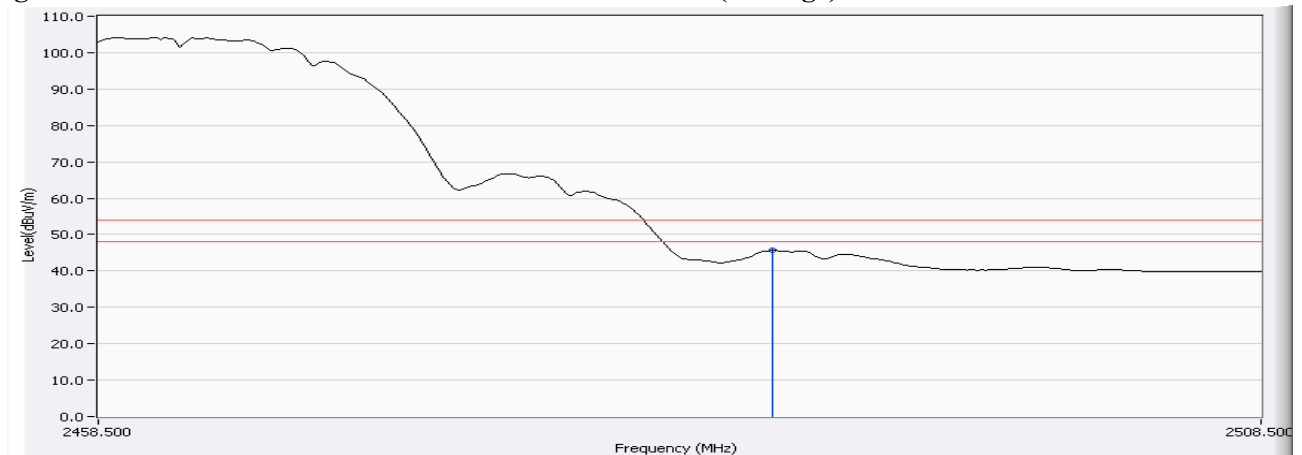
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2487.375	-1.977	55.295	53.319	74.00	54.00	Pass
11(Average)	2487.375	-1.028	46.598	45.570	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 11: Vertical (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : 2G Wireless NPort
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g

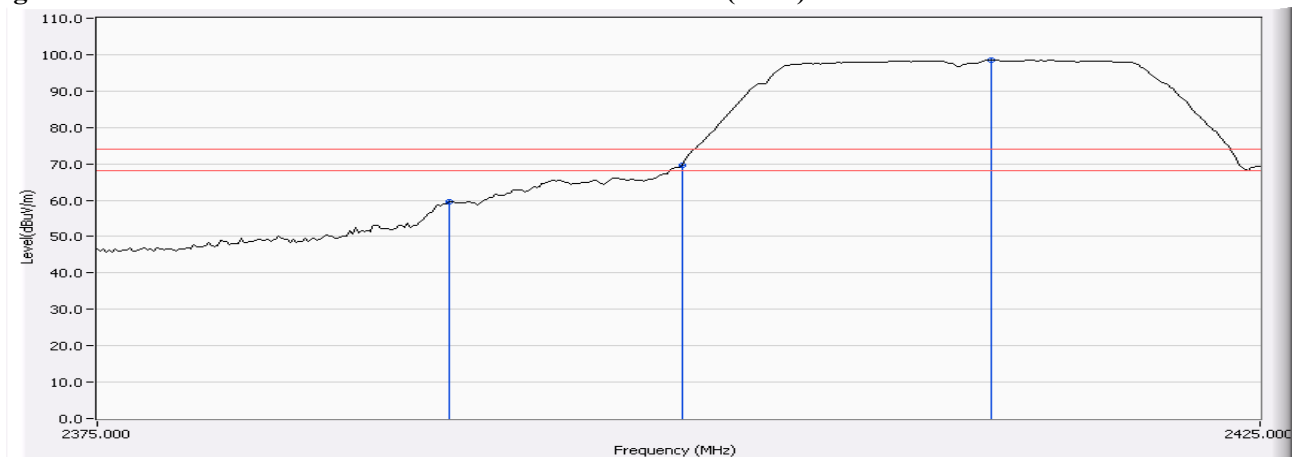
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
1 (Horizontal)	<2400	>20	Pass

RF Radiated Measurement (Horizontal):

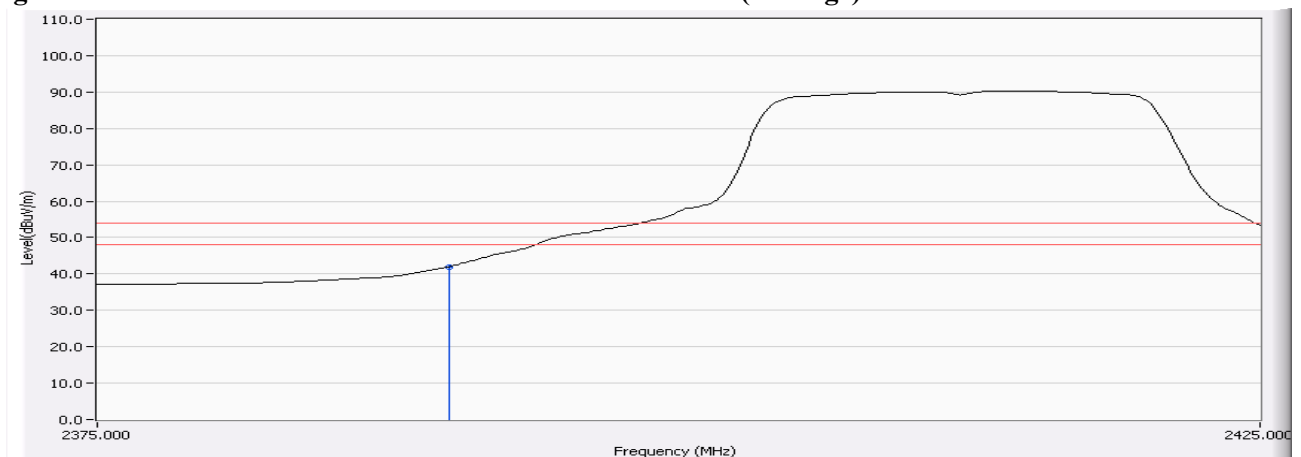
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2390.000	-1.407	61.031	59.624	74.00	54.00	Pass
1 (Average)	2390.000	-1.407	43.381	41.974	74.00	54.00	Pass

Figure Channel 1: Horizontal (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1: Horizontal (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : 2G Wireless NPort
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g

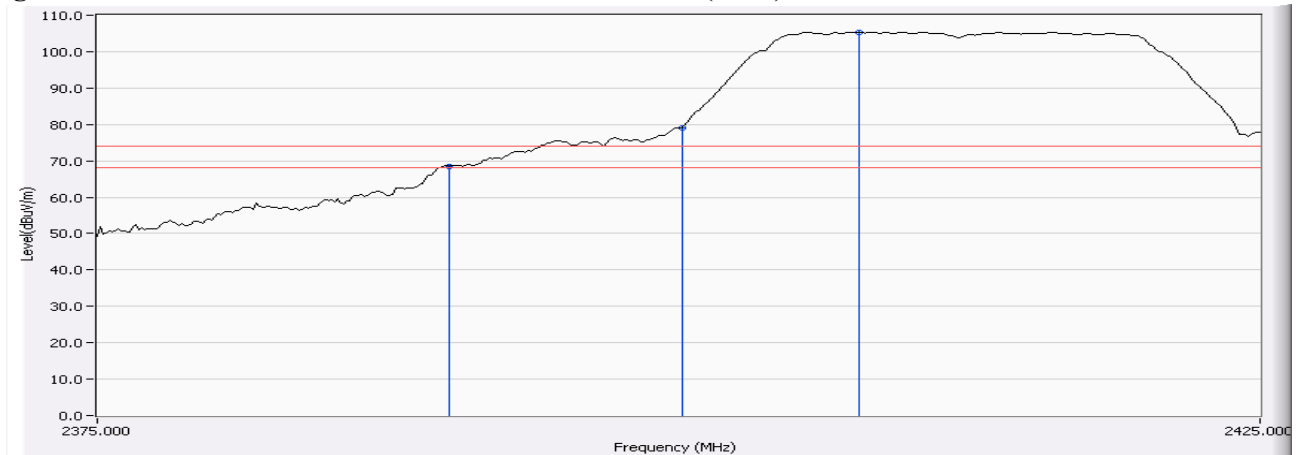
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
1 (Vertical)	<2400	>20	Pass

RF Radiated Measurement (Vertical):

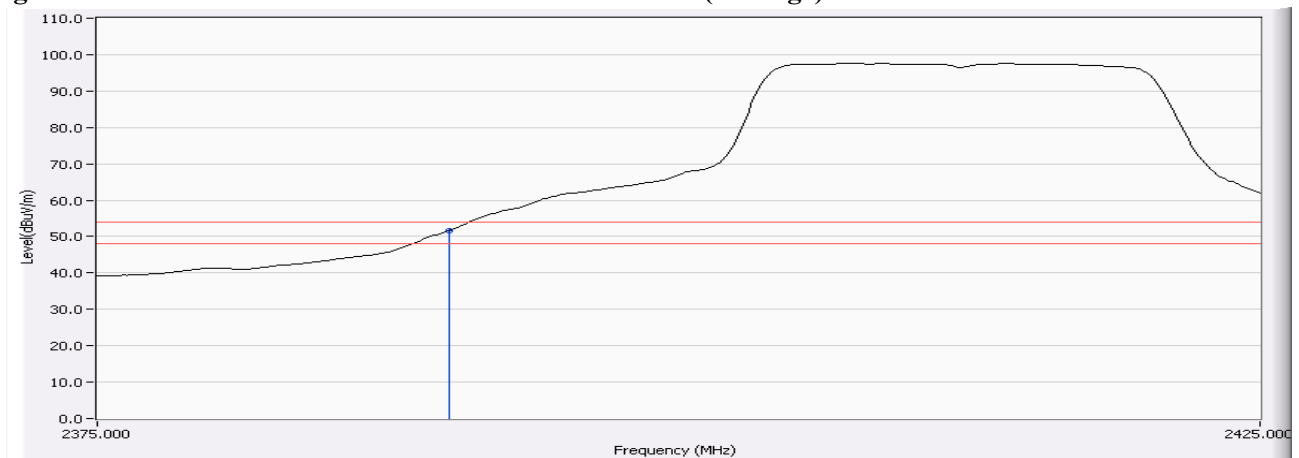
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2390.000	-1.407	69.954	68.547	74.00	54.00	Pass
1 (Average)	2390.000	-1.407	53.014	51.607	74.00	54.00	Pass

Figure Channel 1: Vertical (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 1: Vertical (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : 2G Wireless NPort
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g

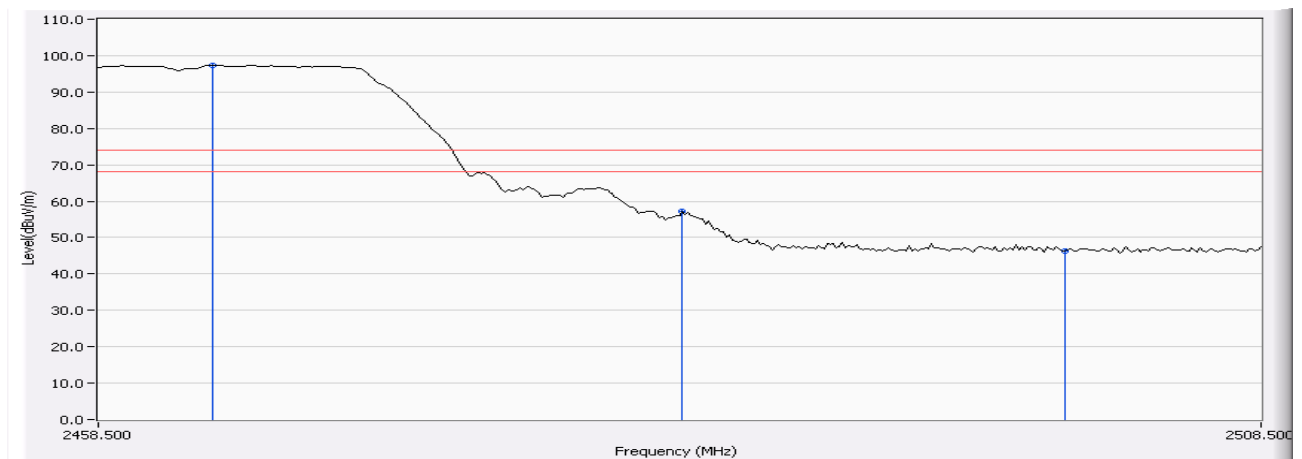
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
11 (Horizontal)	>2483.5	>20	Pass

RF Radiated Measurement (Horizontal):

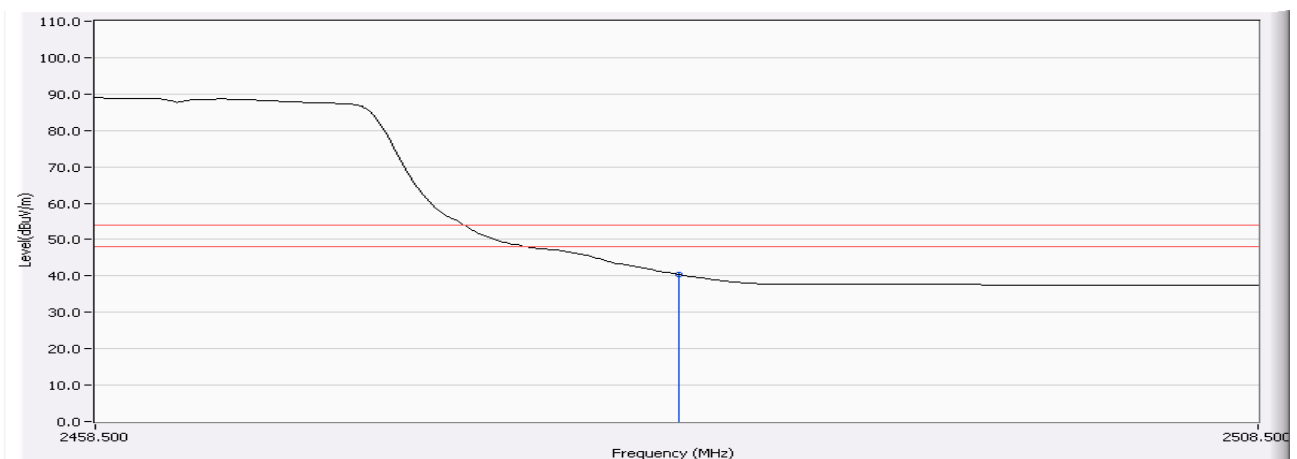
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2483.500	-1.037	58.379	57.342	74.00	54.00	Pass
11(Average)	2483.500	-1.037	41.327	40.290	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 11: Horizontal (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : 2G Wireless NPort
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g

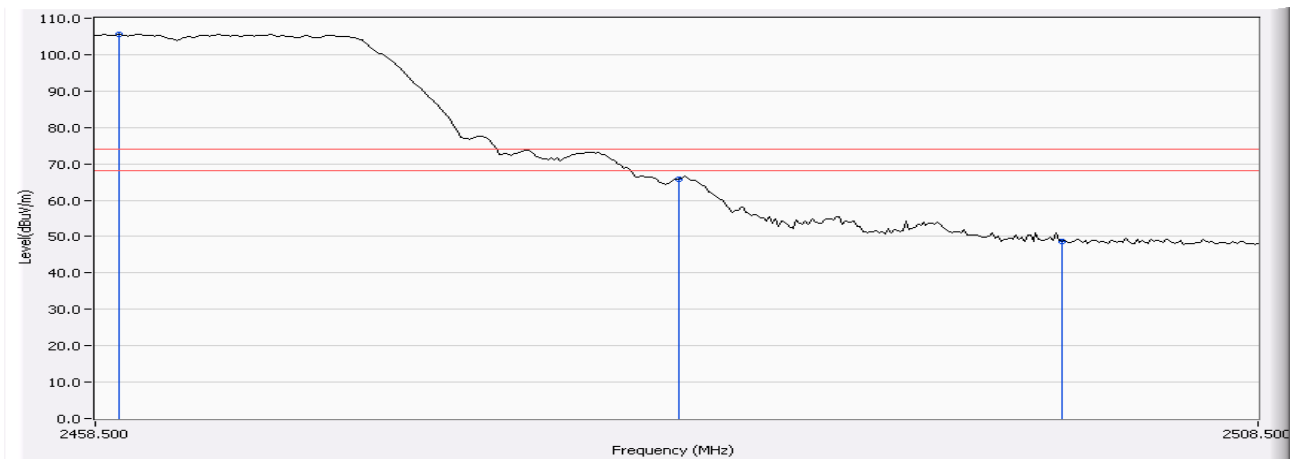
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
11 (Vertical)	>2483.5	>20	Pass

RF Radiated Measurement (Vertical):

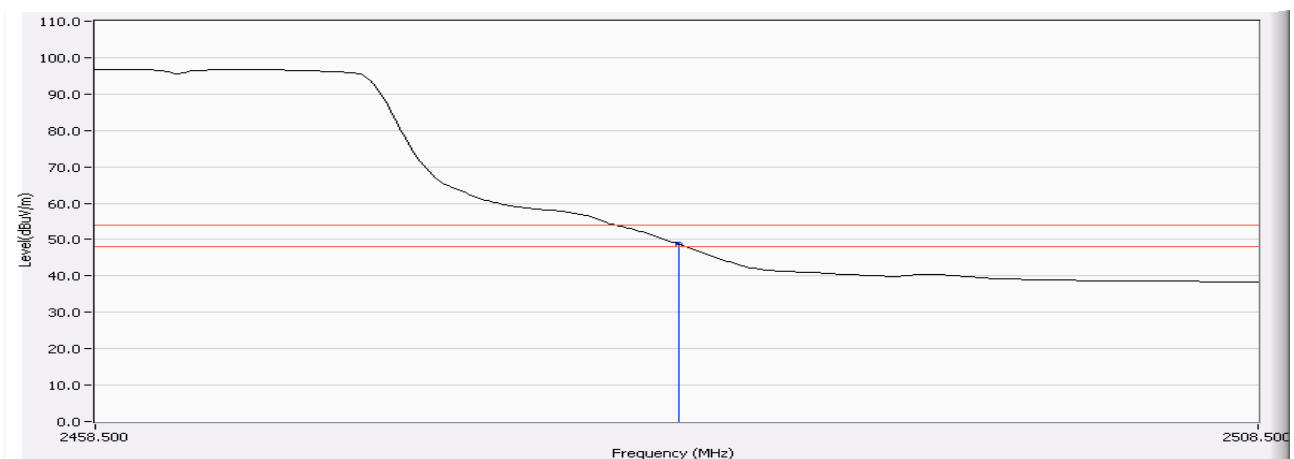
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2483.500	-1.037	66.784	65.747	74.00	54.00	Pass
11(Average)	2483.500	-1.037	49.608	48.571	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 11: Vertical (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

6. Occupied Bandwidth

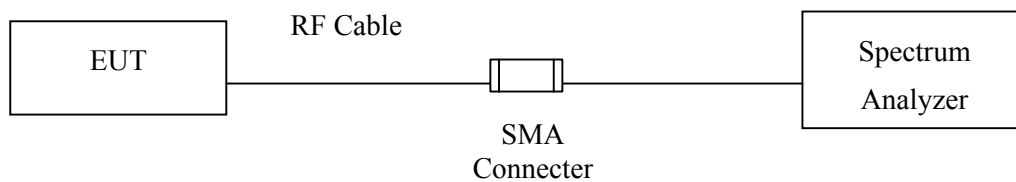
6.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

6.2. Test Setup



6.3. Limits

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

6.4. Uncertainty

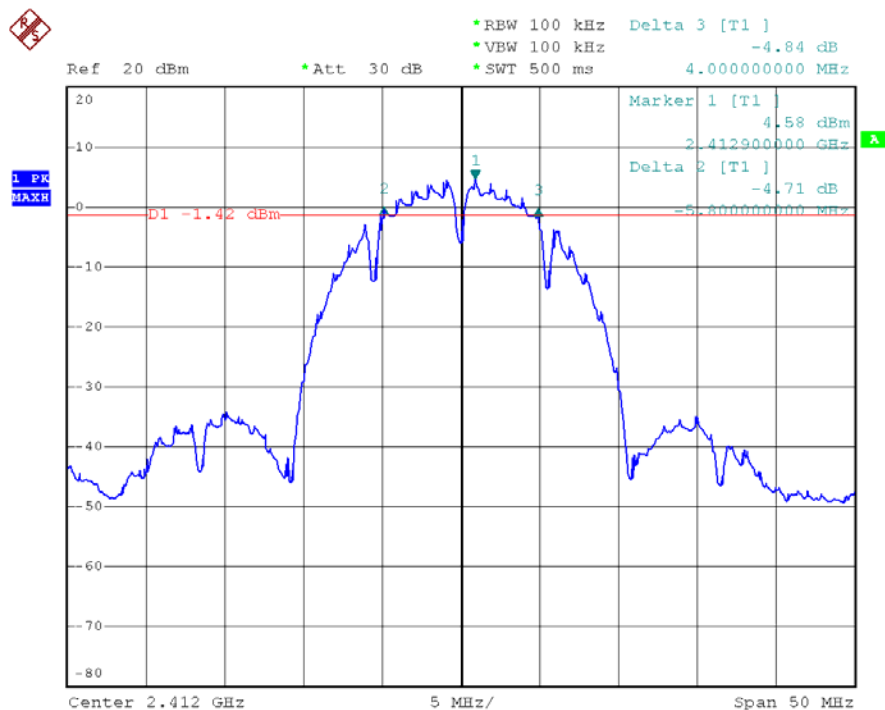
$\pm 150\text{Hz}$

6.5. Test Result of Occupied Bandwidth

Product : 2G Wireless NPort
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1 (1Mbps)	2412.00	9800	>500	Pass

Figure Channel 1:



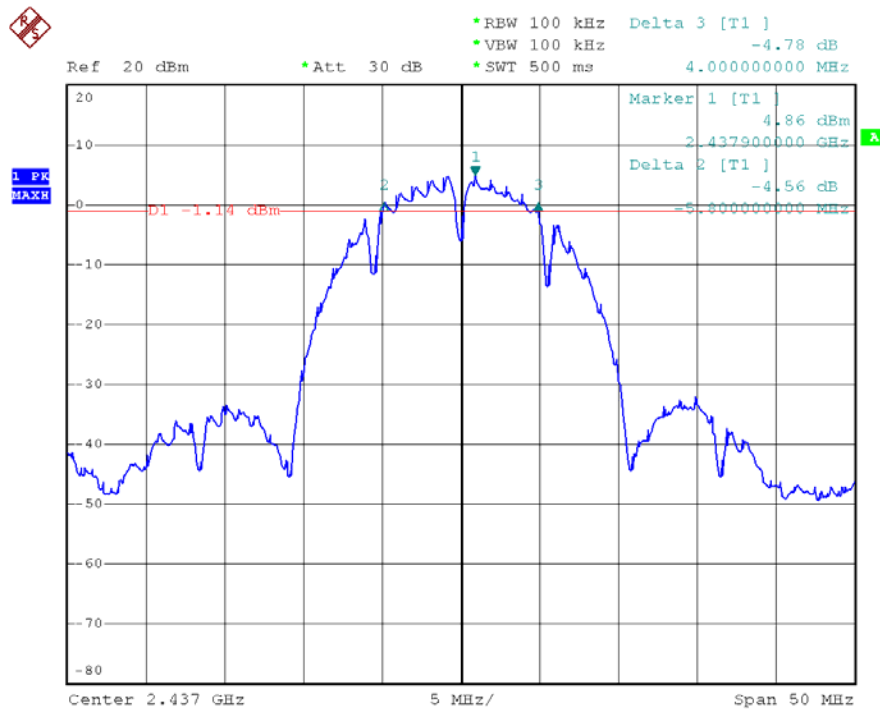
PN1

Date: 11.APR.2007 07:15:39

Product : 2G Wireless NPort
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6 (1Mbps)	2437.00	9800	>500	Pass

Figure Channel 6:



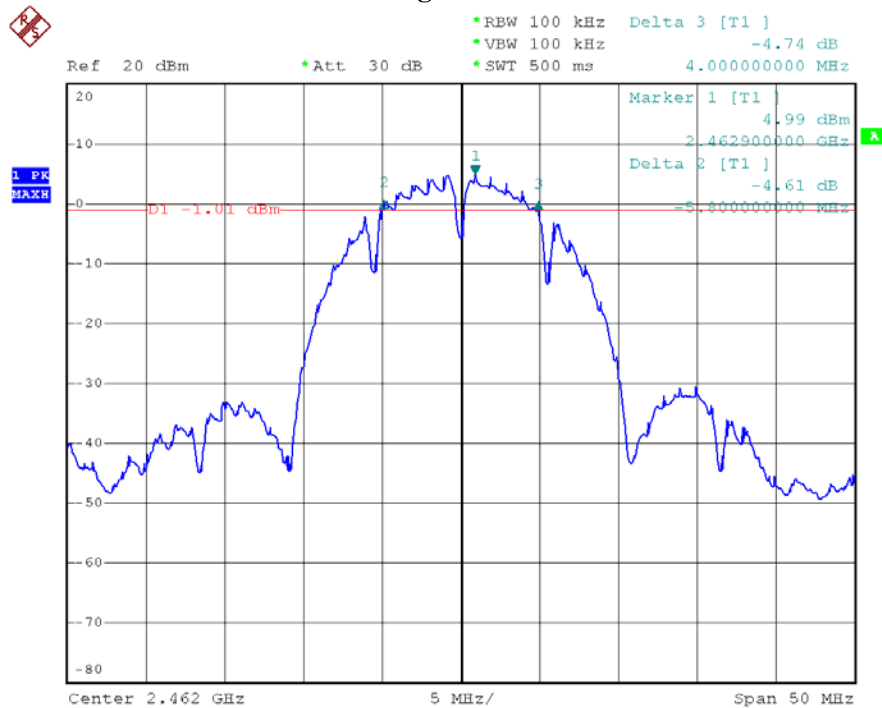
PN1

Date: 11.APR.2007 07:16:54

Product : 2G Wireless NPort
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11 (1Mbps)	2462.00	9800	>500	Pass

Figure Channel 11:



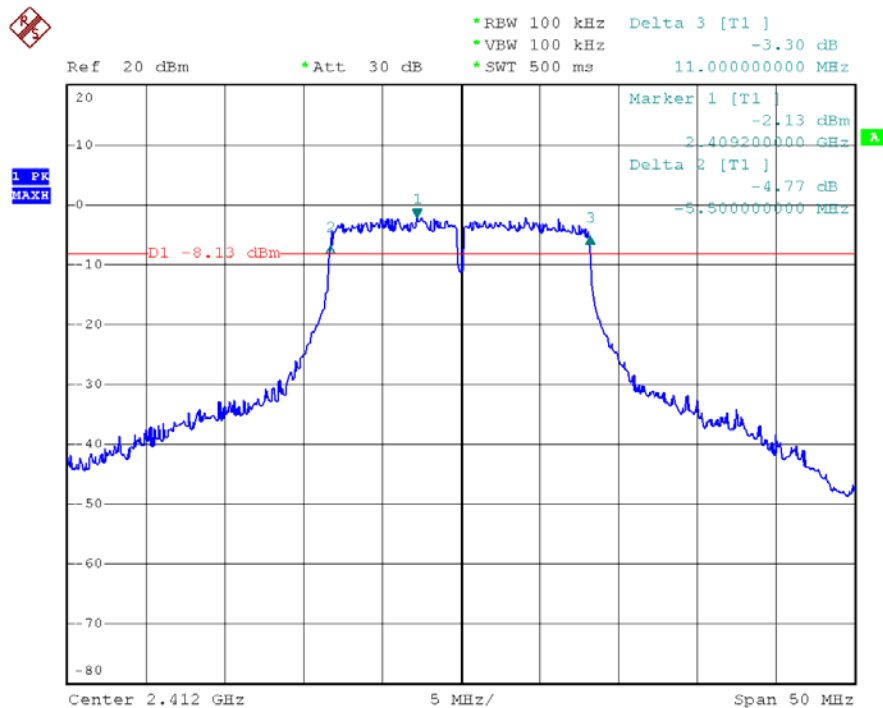
PN1

Date: 11.APR.2007 07:18:18

Product : 2G Wireless NPort
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1 (6Mbps)	2412.00	16500	>500	Pass

Figure Channel 1:



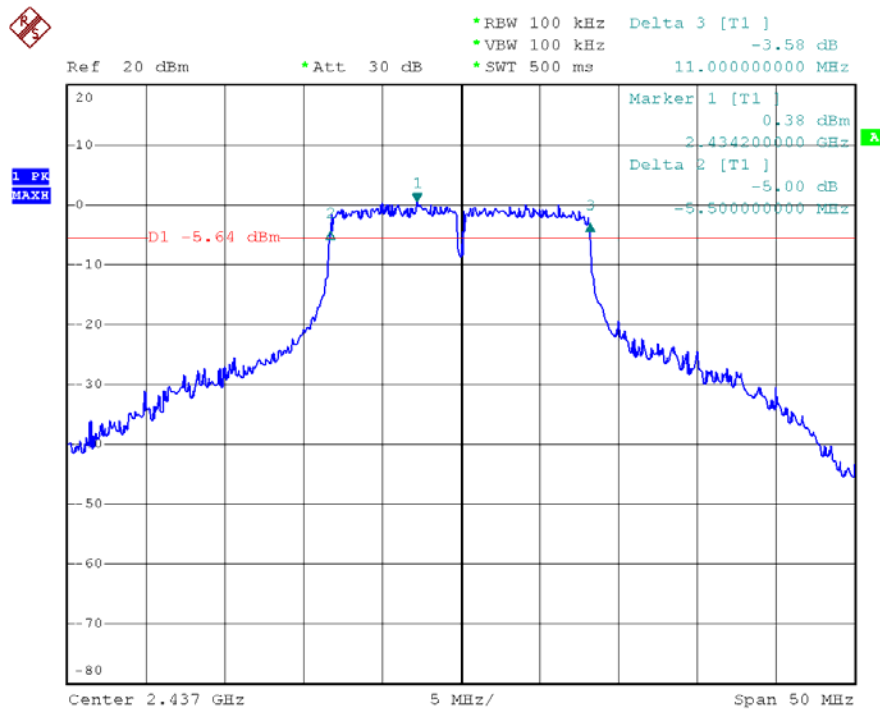
FN1

Date: 11.APR.2007 07:19:52

Product : 2G Wireless NPort
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6 (6Mbps)	2437.00	16500	>500	Pass

Figure Channel 6:



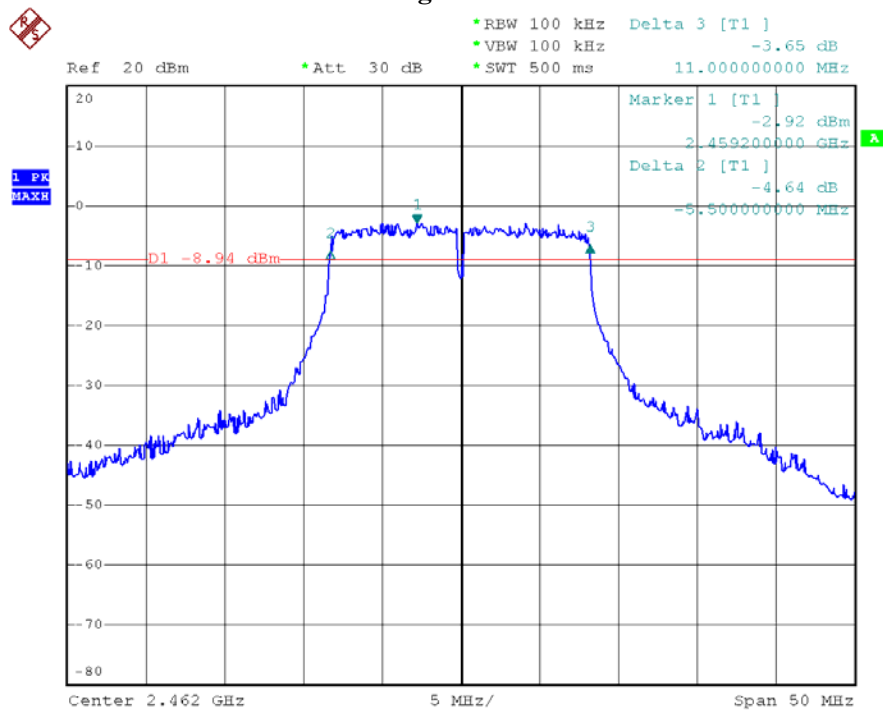
PN1

Date: 11.APR.2007 07:22:54

Product : 2G Wireless NPort
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11 (6Mbps)	2462.00	16500	>500	Pass

Figure Channel 11:



PN1

Date: 11.APR.2007 07:27:48

7. Power Density

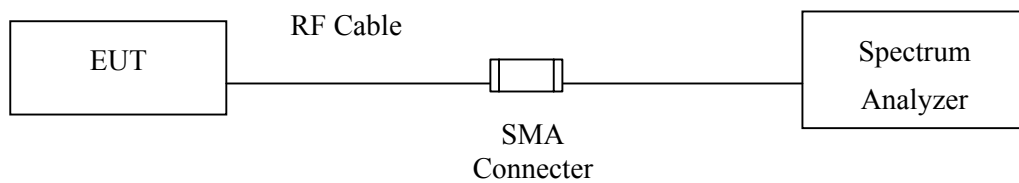
7.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

Note: 1. All equipments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

7.4. Uncertainty

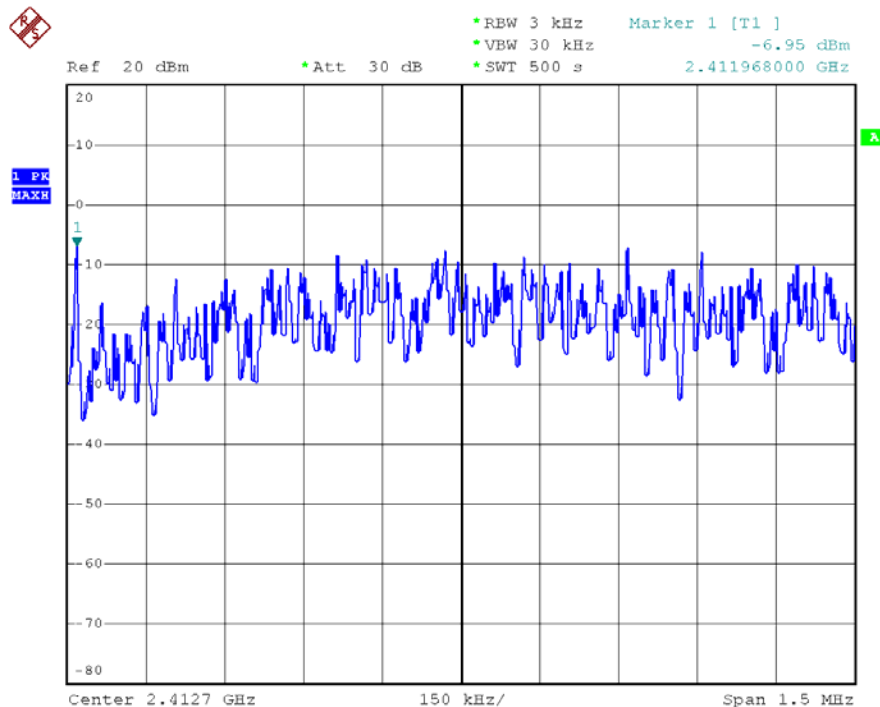
± 1.27 dB

7.5. Test Result of Power Density

Product : 2G Wireless NPort
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1 (1Mbps)	2412.00	-6.95	< 8dBm	Pass

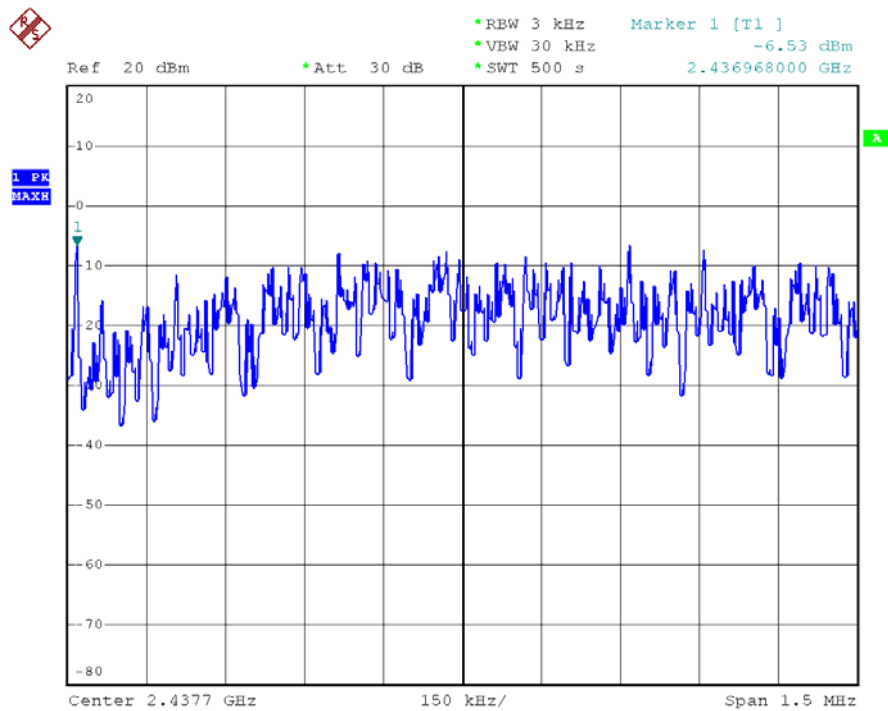
Figure Channel 1:



Product : 2G Wireless NPort
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmitter 802.11b (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6 (1Mbps)	2437.000	-6.53	< 8dBm	Pass

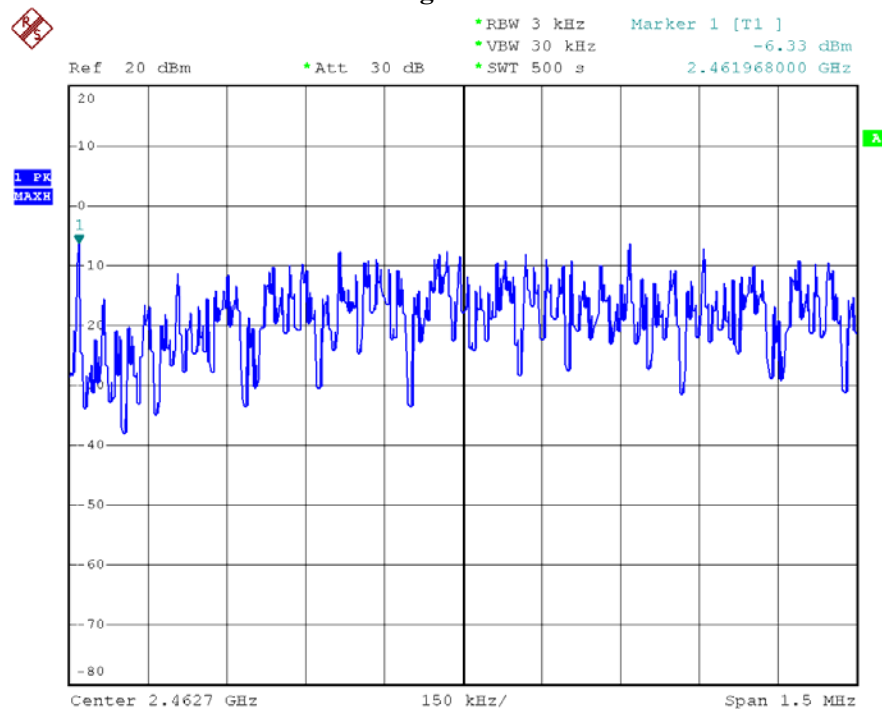
Figure Channel 6:



Product : 2G Wireless NPort
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11b (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11 (1Mbps)	2462.00	-6.33	< 8dBm	Pass

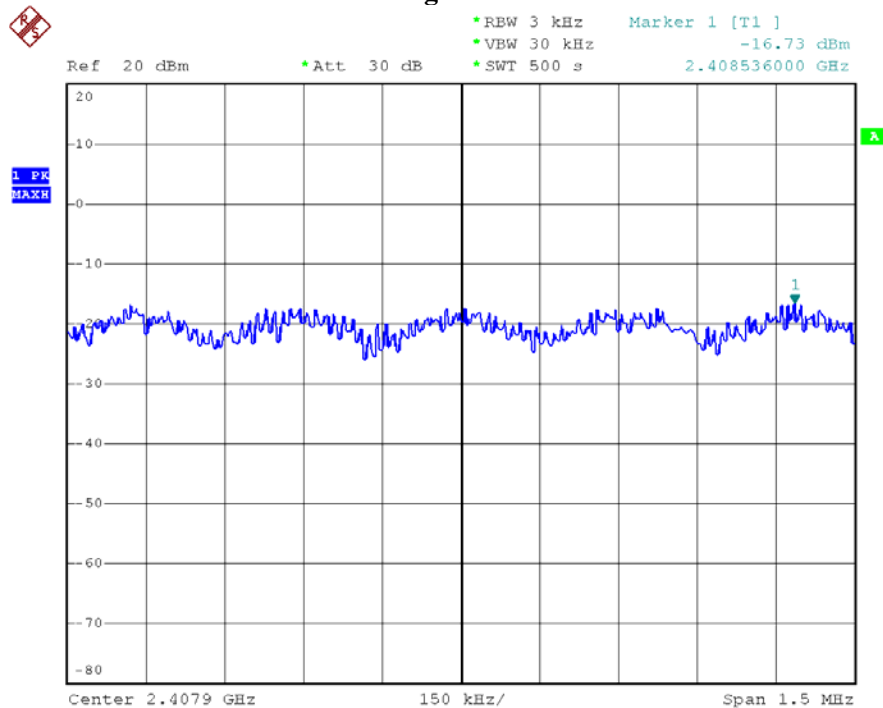
Figure Channel 11:



Product : 2G Wireless NPort
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1 (6Mbps)	2412.00	-16.73	< 8dBm	Pass

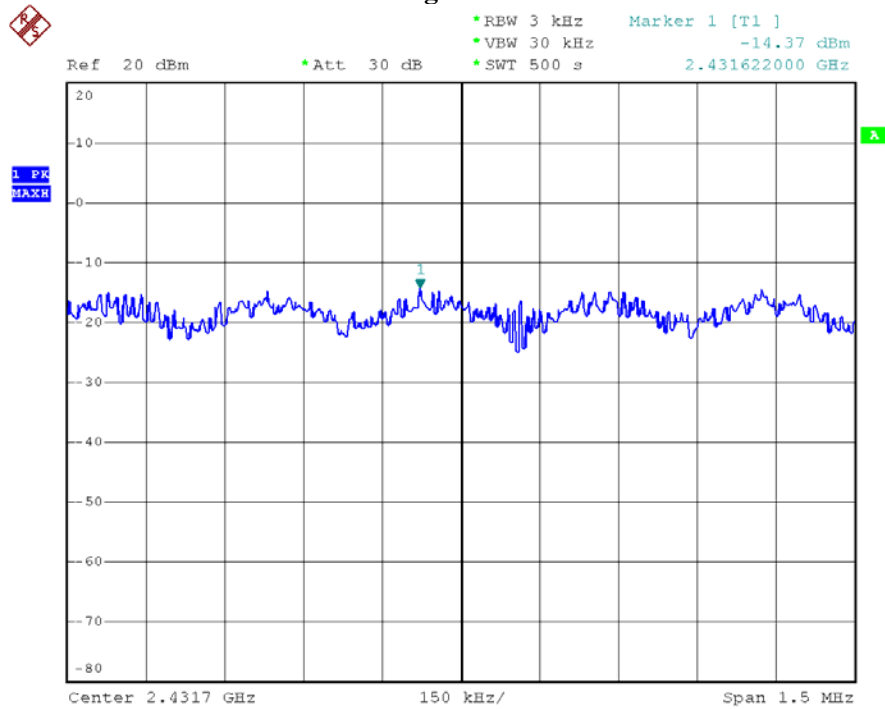
Figure Channel 1:



Product : 2G Wireless NPort
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 2: Transmitter 802.11g (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6 (6Mbps)	2437.000	-14.37	< 8dBm	Pass

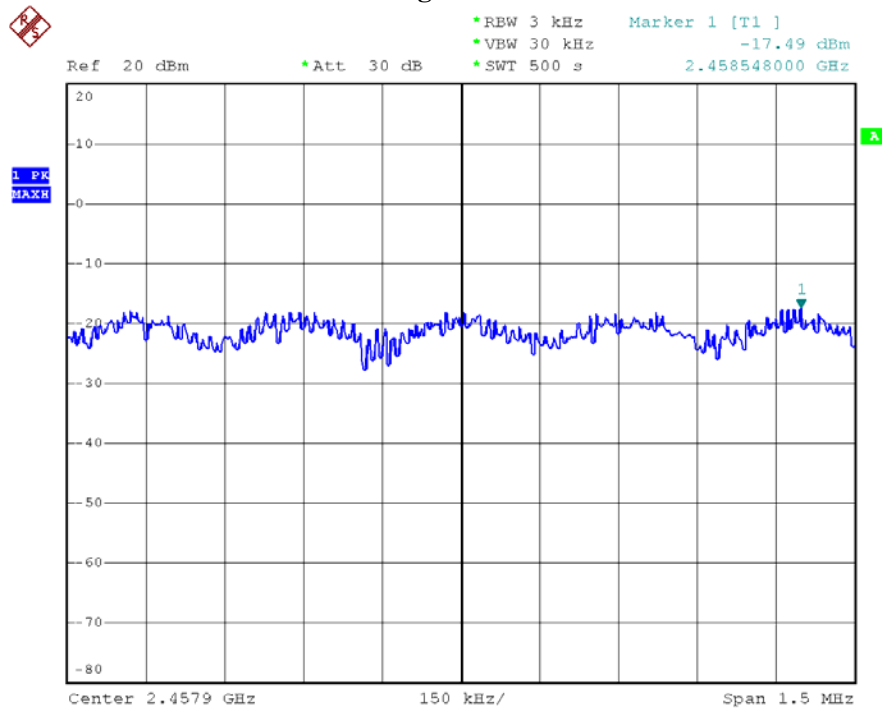
Figure Channel 6:



Product : 2G Wireless NPort
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11g (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11 (6Mbps)	2462.00	-17.49	< 8dBm	Pass

Figure Channel 11:



8. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 1: EUT Test Setup Photographs

Front View of Conducted Test



Back View of Conducted Test



Front View of Radiated Test



Back View of Radiated Test



Front View of Radiated Test (Horn)



Back View of Radiated Test (Horn)



Front View of Radiated Test (Horn)



Back View of Radiated Test (Horn)



Attachment 2: EUT Detailed Photographs

Attachment 2 : EUT Detailed Photographs

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



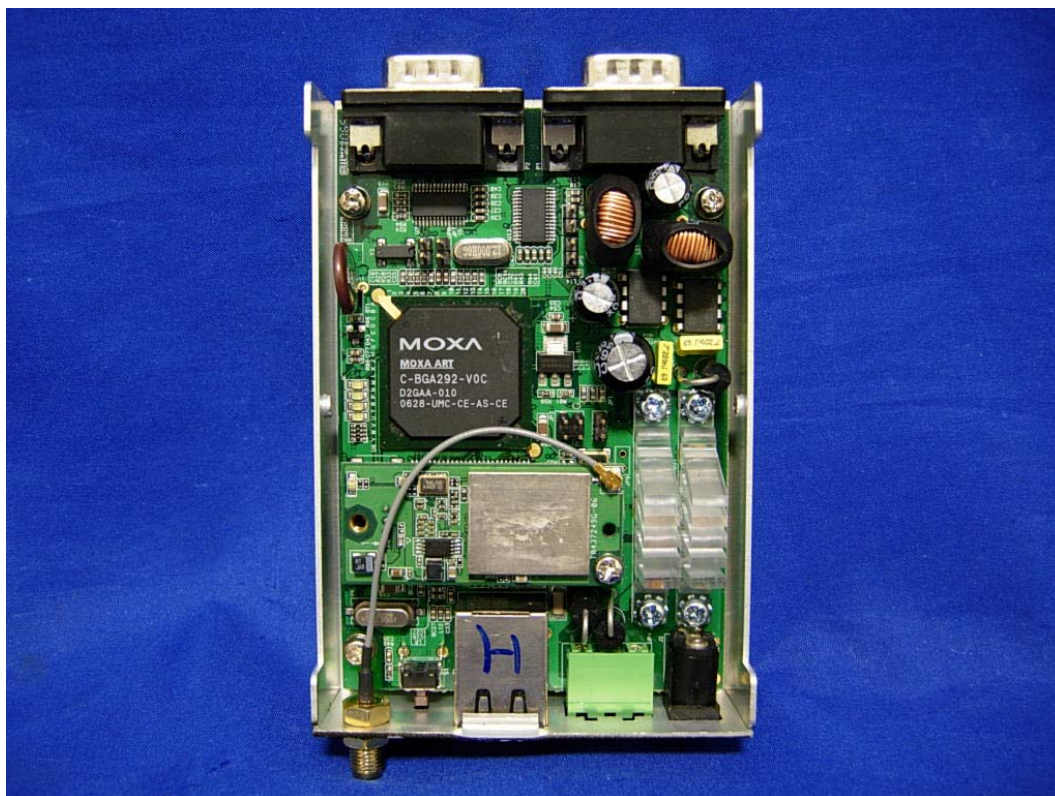
(4) EUT Photo



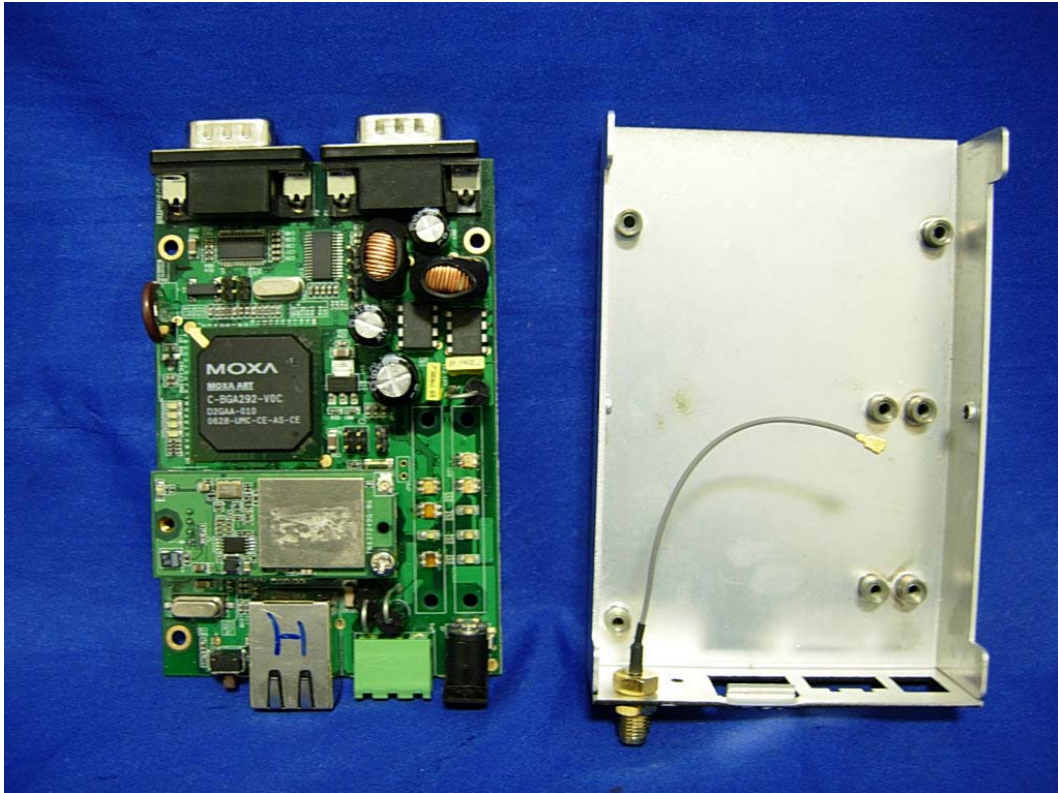
(5) EUT Photo



(6) EUT Photo



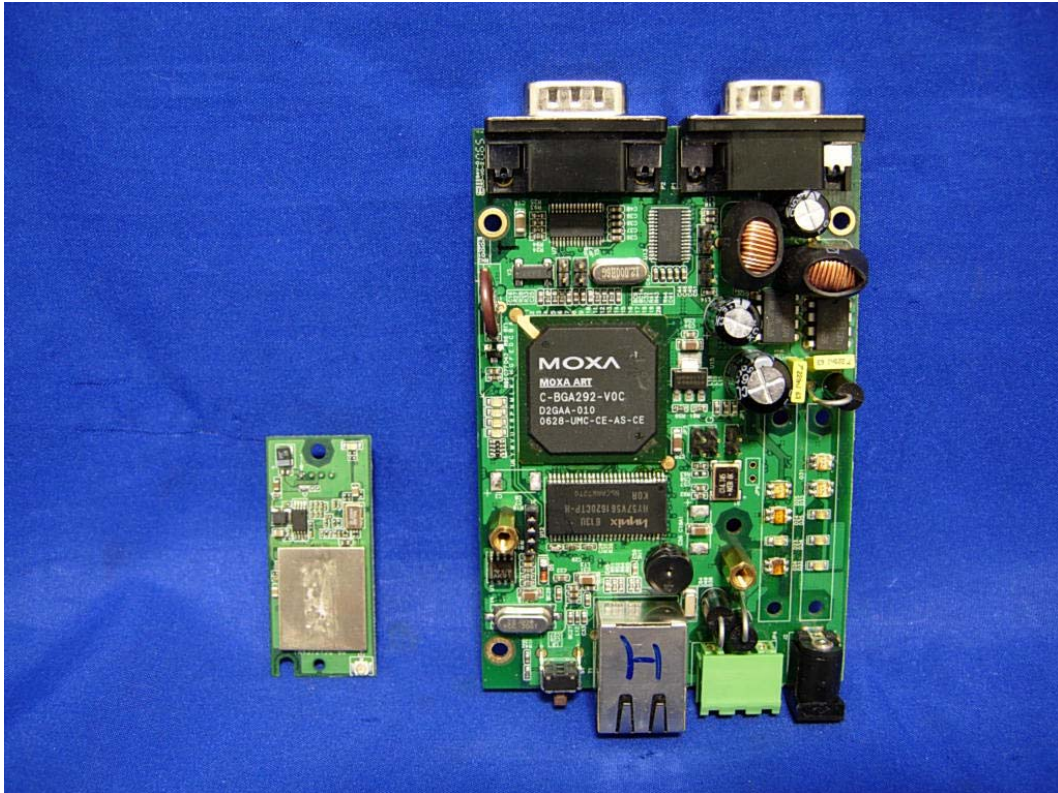
(7) EUT Photo



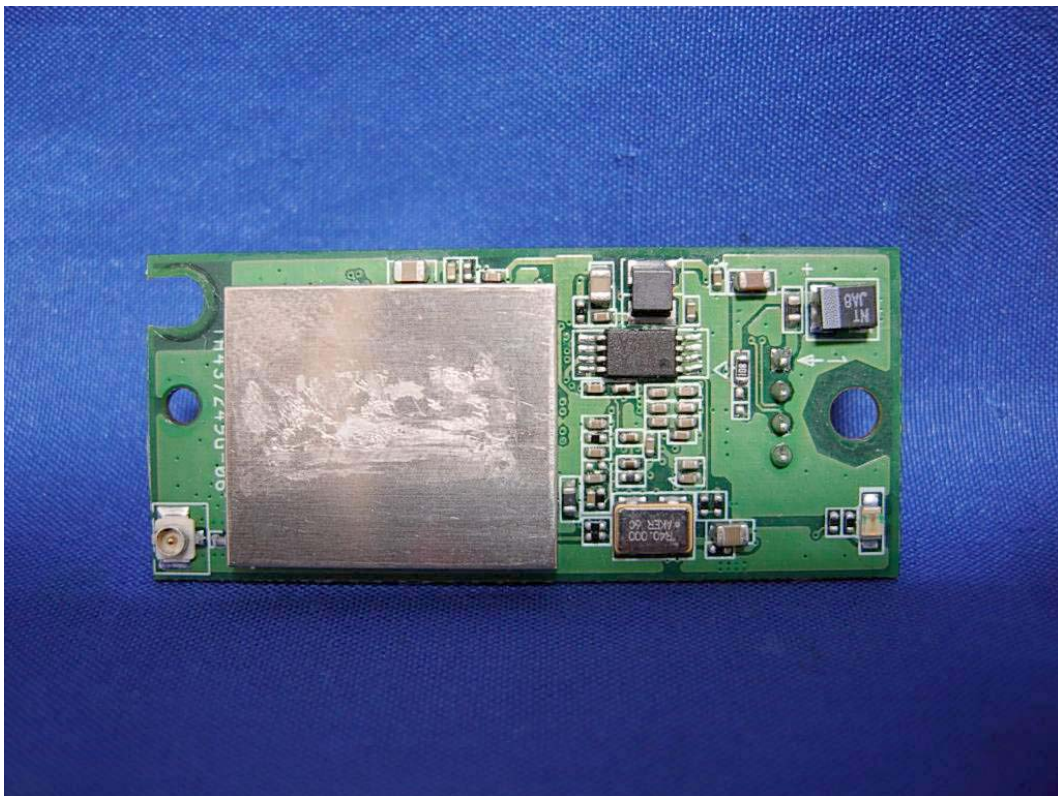
(8) EUT Photo



(9) EUT Photo



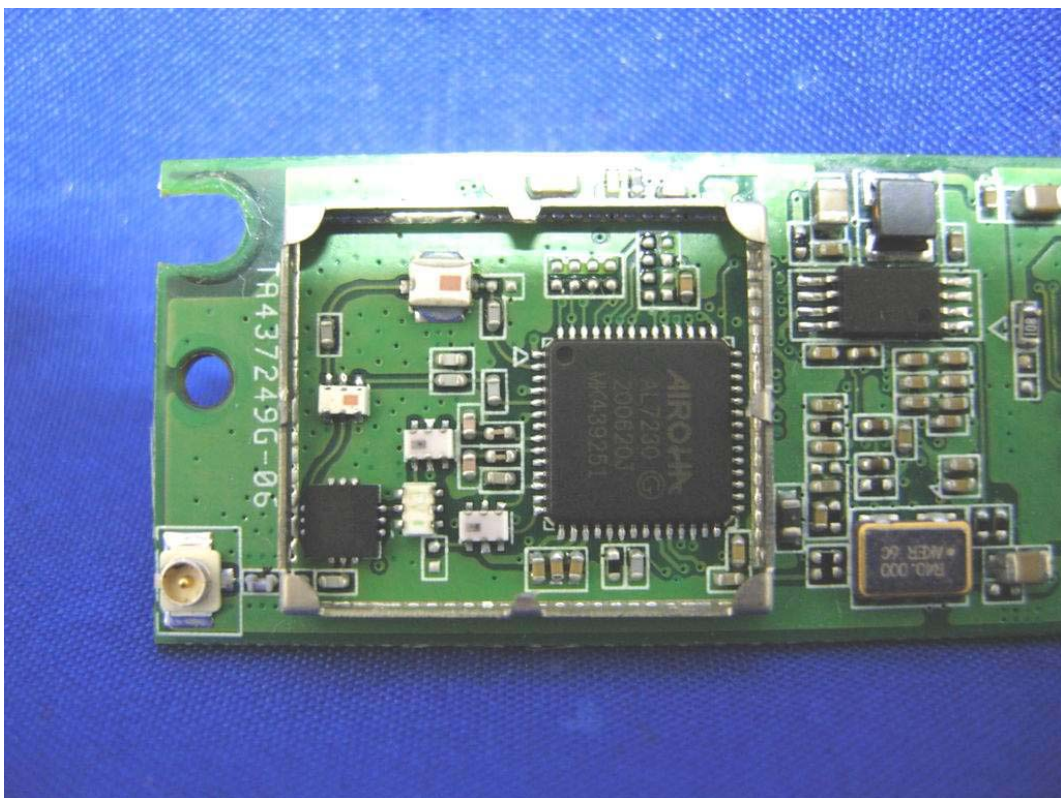
(10) EUT Photo



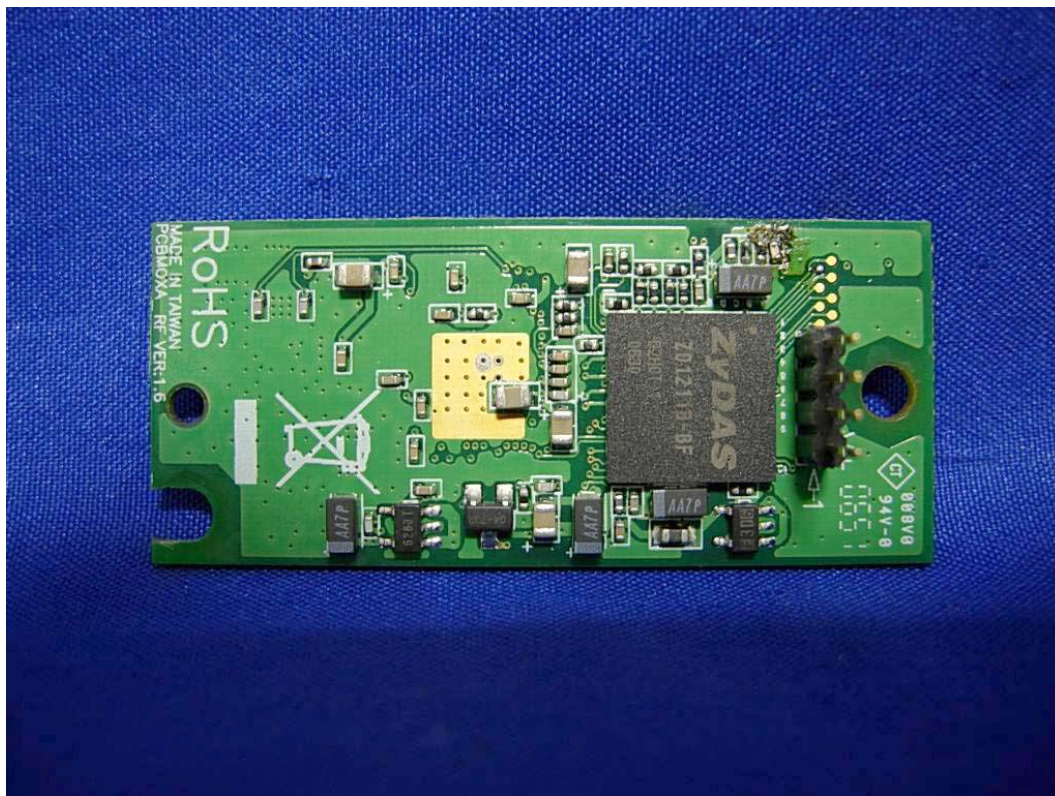
(11) EUT Photo



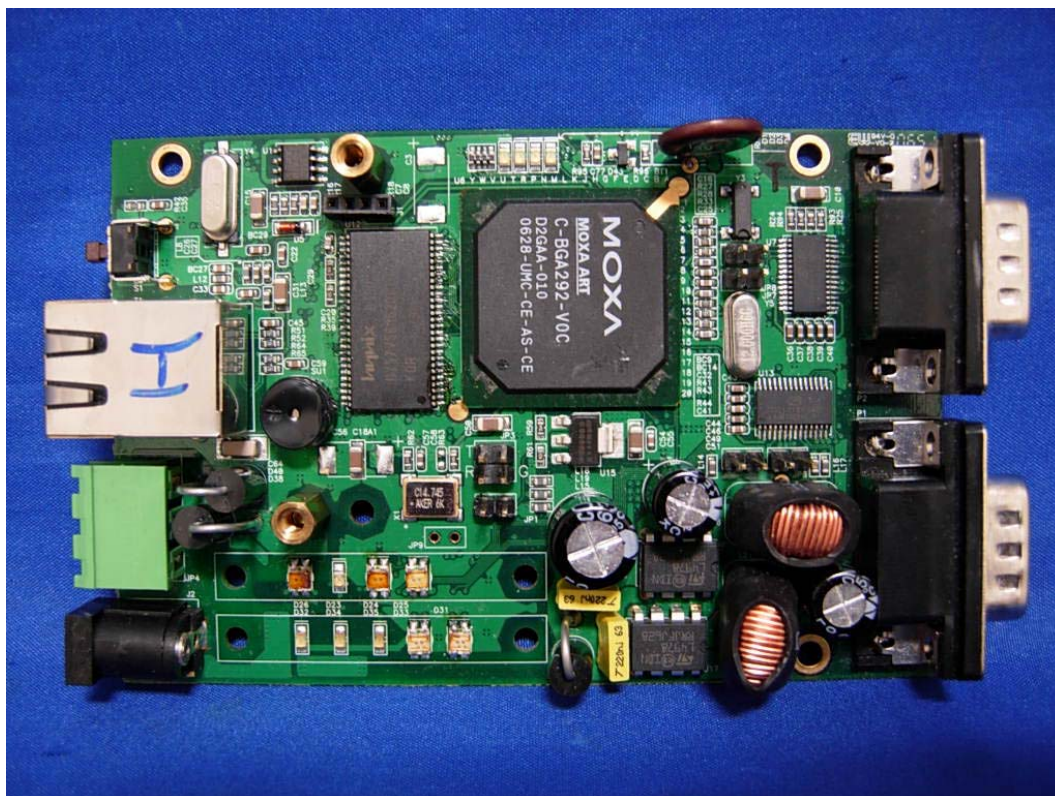
(12) EUT Photo



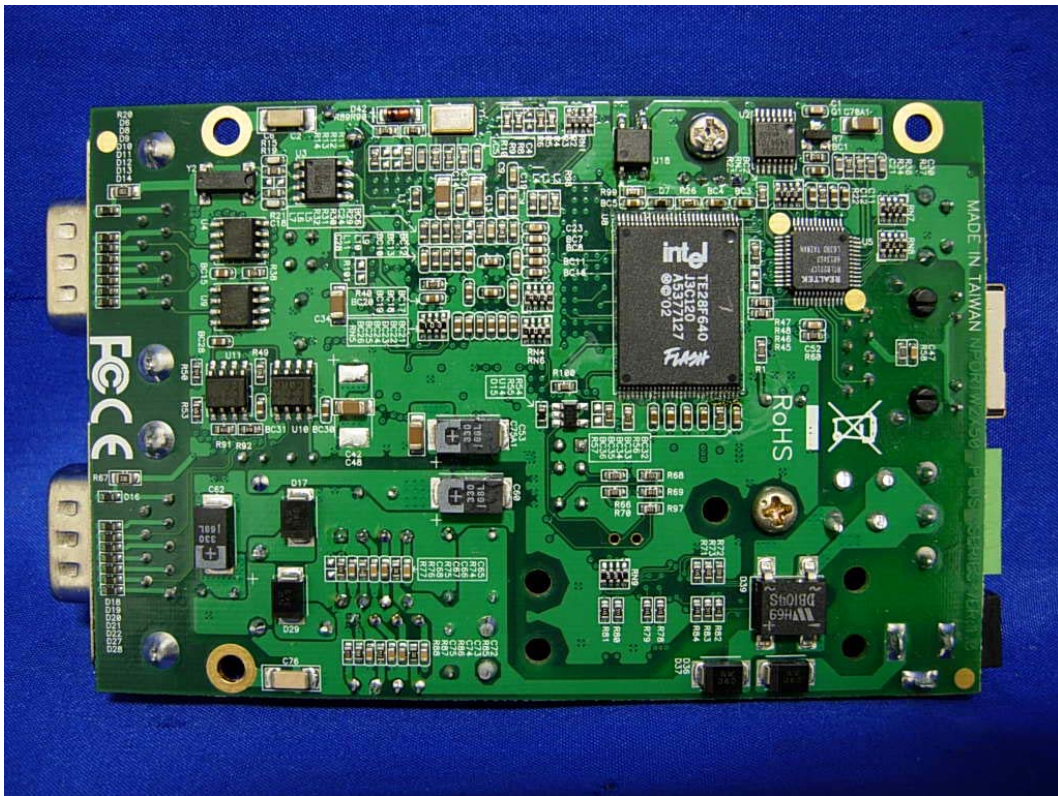
(13) EUT Photo



(14) EUT Photo



(15) EUT Photo



(16) EUT Photo



(17) EUT Photo



(18) EUT Photo

