



## Test Report

Product Name : Wireless VoIP Phone

Model No. : ASGuru S1

FCC ID : MSQ-ASGURUS1

Applicant : ASUSTeK COMPUTER INC.

Address : 4FL., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

Date of Receipt : Feb. 24, 2006

Issued Date : Mar. 06, 2006

Report No. : 062L109-RF-US-P05V01

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: Mar. 06, 2006

Report No.: 062L109-RF-US-P05V01



Accredited by NIST (NVLAP)  
NVLAP Lab Code: 200533-0

Product Name : Wireless VoIP Phone

Applicant : ASUSTeK COMPUTER INC.

Address : 4FL., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

Manufacturer : ASUSTeK COMPUTER INC.

Model No. : ASGuru S1

Rated Voltage : AC 120V/60Hz

Working Voltage : DC 5V

Trade Name : ASUS

Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2005  
CISPR 22 Edition 4.1: 2004  
ANSI C63.4: 2003



Test Result : Complied

Test results relate only to the samples tested.

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Documented By : Rita Huang  
( Rita Huang )



0914

Tested By : Tom Hsieh  
( Tom Hsieh )

Approved By : Gene Chang  
( Gene Chang )



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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	Wireless VoIP Phone
Trade Name	ASUS
Model No.	ASGuru S1
FCC ID	MSQ-ASGURUS1
Frequency Range	2412 – 2462MHz
Channel Number	11
Data Speed	IEEE 802.11b – 1, 2, 5.5, 11Mbps IEEE 802.11g – 6, 9, 12, 18, 24, 36 48, 54Mbps
Type of Modulation	DSSS/ OFDM
Antenna Type	Soldered on PCB
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter (1)	MFR: PI, M/N: P005WA050N0120LF Cable Out: Non-Shielded, 1.5m with one ferrite core bonded.
Power Adapter (1)	MFR: DVE, M/N: DSA-0051-03FUS.50100F Cable Out: Non- Shielded, 1.5m with one ferrite core bonded.

#### Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	WHA YU	C851-520005	0.14 dBi for 2.4 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 Wireless VoIP Phone including a 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 11Mbps and 802.11g is 54Mbps)
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.

## 1.2. Operational Description

The EUT is a Wireless VoIP Phone with 11 channels. This device provided four kinds of transmitting speed 1, 2, 5.5 and 11Mbps. The device of RF carrier is DBPSK, DQPSK and CCK (IEEE 802.11b) or eight kinds of transmitting speed 6, 9, 12, 18, 24, 36, 48 and 54Mbps. The device of RF carrier is OFDM (IEEE 802.11g).

The device adapts direct sequence spread spectrum modulation. The antenna was Connector provides diversity function to improve the receiving function.

This Wireless VoIP Phone, compliant 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 being bound to the network wires. Operation in 2.4GHz Direct Sequence Spread Spectrum (DSSS) radio transmission, the Wireless VoIP Phone 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(Adapter 1)
	Mode 2: Transmitter 802.11g(Adapter 1)
	Mode 3: Transmitter 802.11b(Adapter 2)
	Mode 4: Transmitter 802.11g(Adapter 2)

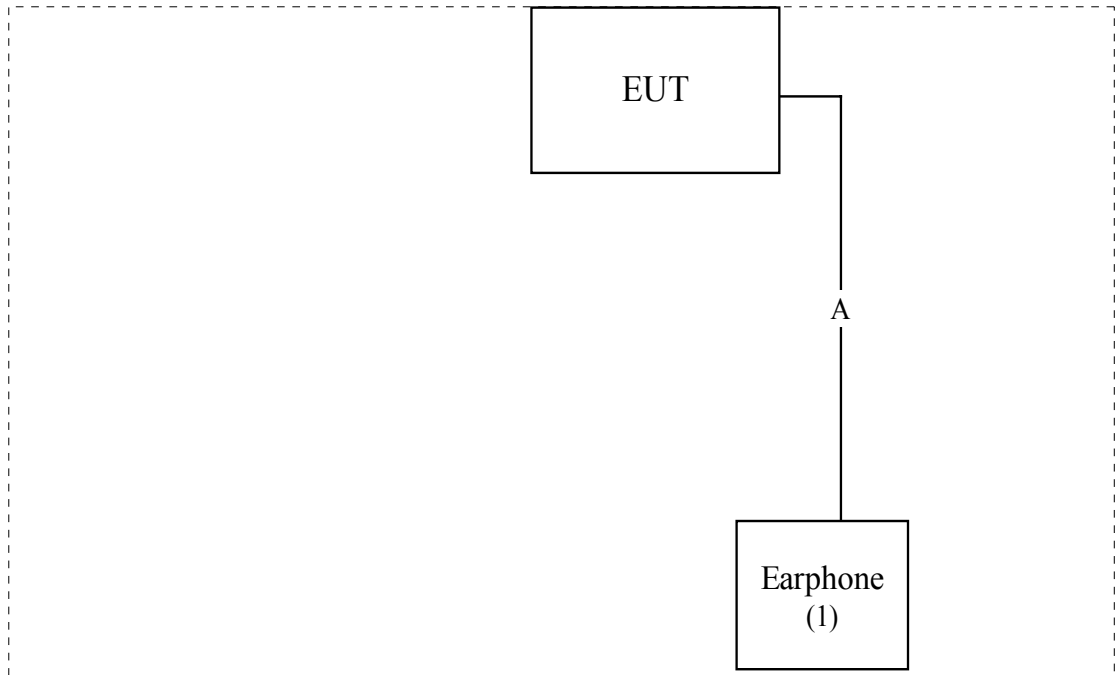
### 1.3. Tested System Details

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.	FCC ID	Power Cord
(1)	Earphone	AIWA	N/A	N/A	N/A	N/A

	Signal Cable Type	Signal cable Description
A.	Earphone Cable	Non-shielded, 1.7m

### 1.4. Configuration of Test System



### 1.5. EUT Exercise Software

- (1) Press mode txpower channel rate (mode=1 or 2, txpower=14, channel=1 to 11, rate=0 to 13)
- (2) Press Dial to start continuous transmission.
- (3) Press Cancel to stop transmission.
- (4) Press channel
- (5) Press Dial to start receiving.



**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: June 22, 2001 File on  
 Federal Communications Commission  
 FCC Engineering Laboratory  
 7435 Oakland Mills Road  
 Columbia, MD 21046  
 Reference 31040/SIT1300F2



July 03, 2001 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](mailto:service@quietek.com)



## 2. Conducted Emission

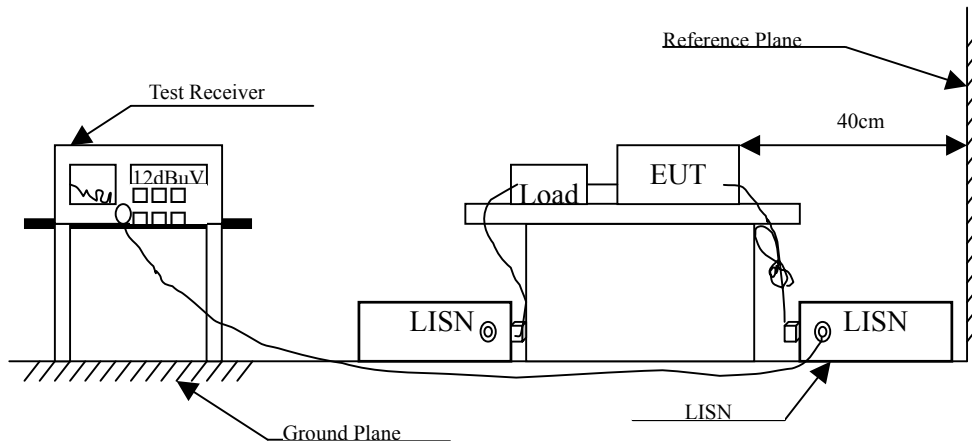
### 2.1. Test Equipment

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, 2005	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2005	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2005	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2005	
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	
	uV	dBuV
0.15 - 0.50	66-56 <sup>(註)</sup>	56-46 <sup>(註)</sup>
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 investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

## 2.5. Uncertainty

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

## 2.6. Test Result of Conducted Emission

Product : Wireless VoIP Phone  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.162	0.497	42.970	43.467	-22.190	65.657
0.228	0.451	36.190	36.641	-27.130	63.771
0.283	0.300	30.860	31.160	-31.040	62.200
2.849	0.370	31.280	31.650	-24.350	56.000
3.818	0.390	32.510	32.900	-23.100	56.000
12.435	0.817	29.580	30.397	-29.603	60.000
<b>Average</b>					
0.162	0.497	24.810	25.307	-30.350	55.657
0.228	0.451	15.900	16.351	-37.420	53.771
0.283	0.300	9.140	9.440	-42.760	52.200
2.849	0.370	17.110	17.480	-28.520	46.000
3.818	0.390	20.270	20.660	-25.340	46.000
12.435	0.817	21.220	22.037	-27.963	50.000

Note:

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

Product : Wireless VoIP Phone  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.162	0.300	46.560	46.860	-18.797	65.657
0.224	0.300	39.350	39.650	-24.236	63.886
0.240	0.300	40.200	40.500	-22.929	63.429
2.607	0.360	32.750	33.110	-22.890	56.000
3.713	0.390	35.660	36.050	-19.950	56.000
13.533	0.840	30.660	31.500	-28.500	60.000
<b>Average</b>					
0.162	0.300	28.850	29.150	-26.507	55.657
0.224	0.300	17.680	17.980	-35.906	53.886
0.240	0.300	22.320	22.620	-30.809	53.429
2.607	0.360	19.680	20.040	-25.960	46.000
3.713	0.390	22.910	23.300	-22.700	46.000
13.533	0.840	22.830	23.670	-26.330	50.000

Note:

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

Product : Wireless VoIP Phone  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.153	0.349	41.220	41.569	-24.345	65.914
0.361	0.300	30.770	31.070	-28.901	59.971
0.538	0.300	30.430	30.730	-25.270	56.000
2.615	0.360	31.250	31.610	-24.390	56.000
3.670	0.390	34.580	34.970	-21.030	56.000
12.400	0.808	31.130	31.938	-28.062	60.000
<b>Average</b>					
0.153	0.349	25.400	25.749	-30.165	55.914
0.361	0.300	15.360	15.660	-34.311	49.971
0.538	0.300	16.410	16.710	-29.290	46.000
2.615	0.360	19.450	19.810	-26.190	46.000
3.670	0.390	24.450	24.840	-21.160	46.000
12.400	0.808	23.090	23.898	-26.102	50.000

Note:

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

Product : Wireless VoIP Phone  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.158	0.300	38.150	38.450	-27.321	65.771
0.303	0.300	27.080	27.380	-34.249	61.629
0.610	0.310	27.650	27.960	-28.040	56.000
2.474	0.360	32.190	32.550	-23.450	56.000
3.802	0.390	33.110	33.500	-22.500	56.000
12.388	0.703	28.980	29.683	-30.317	60.000
<b>Average</b>					
0.158	0.300	20.550	20.850	-34.921	55.771
0.303	0.300	16.460	16.760	-34.869	51.629
0.610	0.310	13.880	14.190	-31.810	46.000
2.474	0.360	18.340	18.700	-27.300	46.000
3.802	0.390	21.260	21.650	-24.350	46.000
12.388	0.703	21.270	21.973	-28.027	50.000

Note:

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

Product : Wireless VoIP Phone  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 3: Transmitter 802.11b(Adapter 2) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.150	0.300	52.570	52.870	-13.130	66.000
0.223	0.486	43.410	43.896	-20.018	63.914
0.473	0.300	27.940	28.240	-28.531	56.771
0.537	0.300	29.910	30.210	-25.790	56.000
1.896	0.340	24.740	25.080	-30.920	56.000
17.849	1.060	25.640	26.700	-33.300	60.000
<b>Average</b>					
0.150	0.300	36.740	37.040	-18.960	56.000
0.223	0.486	25.990	26.476	-27.438	53.914
0.473	0.300	12.990	13.290	-33.481	46.771
0.537	0.300	18.950	19.250	-26.750	46.000
1.896	0.340	15.080	15.420	-30.580	46.000
17.849	1.060	14.800	15.860	-34.140	50.000

Note:

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



Product : Wireless VoIP Phone  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 3: Transmitter 802.11b(Adapter 2) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.154	0.300	52.350	52.650	-13.236	65.886
0.309	0.300	37.870	38.170	-23.287	61.457
0.466	0.310	29.180	29.490	-27.481	56.971
1.099	0.320	28.490	28.810	-27.190	56.000
2.334	0.360	21.480	21.840	-34.160	56.000
17.576	0.900	25.640	26.540	-33.460	60.000
<b>Average</b>					
0.154	0.300	37.850	38.150	-17.736	55.886
0.309	0.300	21.870	22.170	-29.287	51.457
0.466	0.310	12.230	12.540	-34.431	46.971
1.099	0.320	14.450	14.770	-31.230	46.000
2.334	0.360	10.170	10.530	-35.470	46.000
17.576	0.900	14.480	15.380	-34.620	50.000

Note:

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

Product : Wireless VoIP Phone  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 4: Transmitter 802.11g(Adapter 2) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.197	0.669	34.910	35.579	-29.078	64.657
0.228	0.451	42.640	43.091	-20.680	63.771
0.291	0.300	36.240	36.540	-25.431	61.971
0.377	0.300	32.890	33.190	-26.324	59.514
1.197	0.320	30.650	30.970	-25.030	56.000
17.752	1.050	25.330	26.380	-33.620	60.000
<b>Average</b>					
0.197	0.669	11.060	11.729	-42.928	54.657
0.228	0.451	25.770	26.221	-27.550	53.771
0.291	0.300	17.440	17.740	-34.231	51.971
0.377	0.300	20.700	21.000	-28.514	49.514
1.197	0.320	16.360	16.680	-29.320	46.000
17.752	1.050	14.450	15.500	-34.500	50.000

Note:

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

Product : Wireless VoIP Phone  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 4: Transmitter 802.11g(Adapter 2) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.151	0.300	51.920	52.220	-13.751	65.971
0.236	0.300	41.550	41.850	-21.693	63.543
0.516	0.310	29.350	29.660	-26.340	56.000
0.795	0.320	25.560	25.880	-30.120	56.000
0.861	0.320	28.860	29.180	-26.820	56.000
18.017	0.900	25.500	26.400	-33.600	60.000
<b>Average</b>					
0.151	0.300	36.050	36.350	-19.621	55.971
0.236	0.300	24.110	24.410	-29.133	53.543
0.516	0.310	15.110	15.420	-30.580	46.000
0.795	0.320	13.830	14.150	-31.850	46.000
0.861	0.320	14.400	14.720	-31.280	46.000
18.017	0.900	13.910	14.810	-35.190	50.000

Note:

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

### 3. Peak Power Output

#### 3.1. Test Equipment

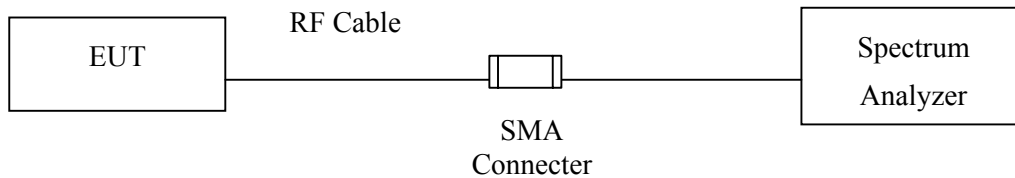
The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2005

- 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

##### Conduction Power Measurement



#### 3.3. Limits

The maximum peak power shall be less 1 Watt.

#### 3.4. Uncertainty

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

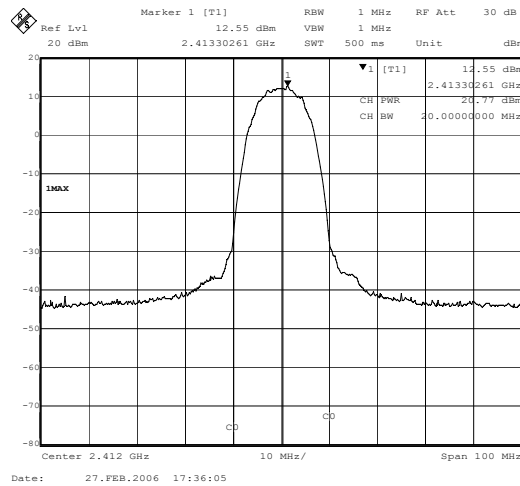
### 3.5. Test Result of Peak Power Output

Product : Wireless VoIP Phone  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1)

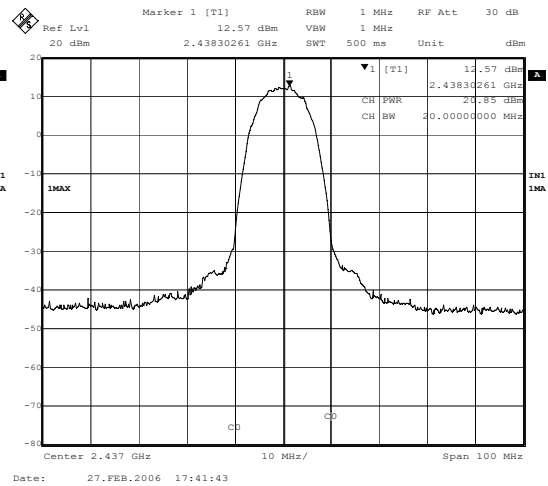
#### Data Speed: 11Mbps

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
1	2412.00	20.77dBm	1 Watt= 30 dBm	Pass
6	2437.00	20.85dBm	1 Watt= 30 dBm	Pass
11	2462.00	19.75dBm	1 Watt= 30 dBm	Pass

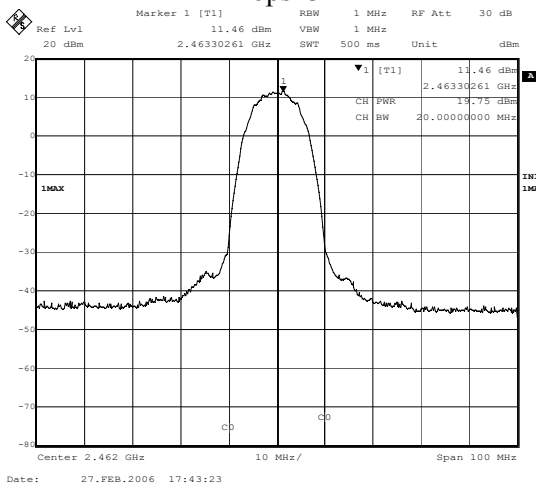
11Mbps-CH01



11Mbps-CH 06



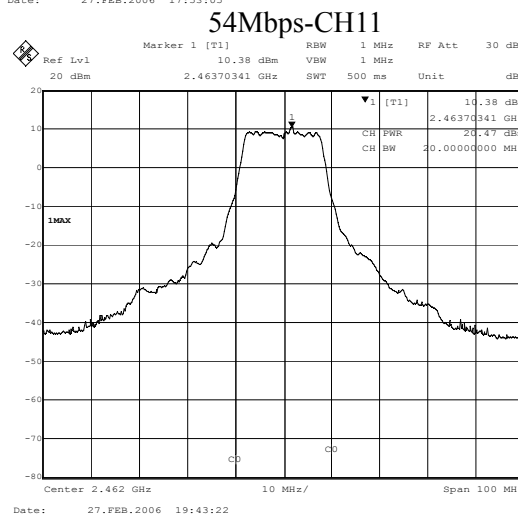
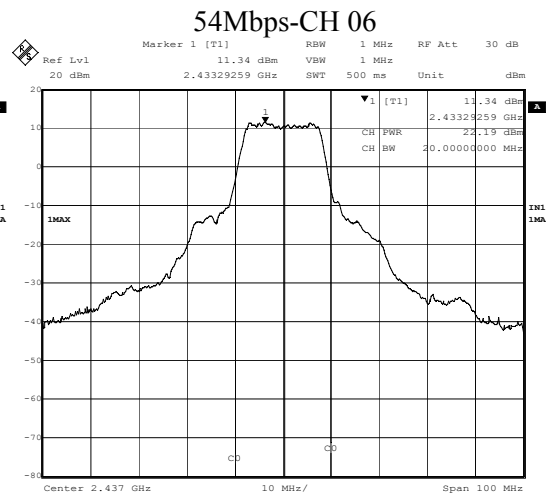
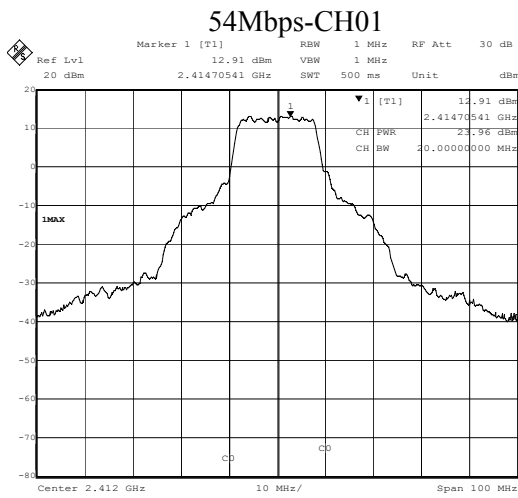
11Mbps-CH11



Product : Wireless VoIP Phone  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1)

**Data Speed: 54Mbps**

Channel No.	Frequency (MHz)	Measurement	Required Limit	Result
1	2412.00	23.96dBm	1 Watt= 30 dBm	Pass
6	2437.00	22.19dBm	1 Watt= 30 dBm	Pass
11	2462.00	20.47dBm	1 Watt= 30 dBm	Pass



## 4. Radiated Emission

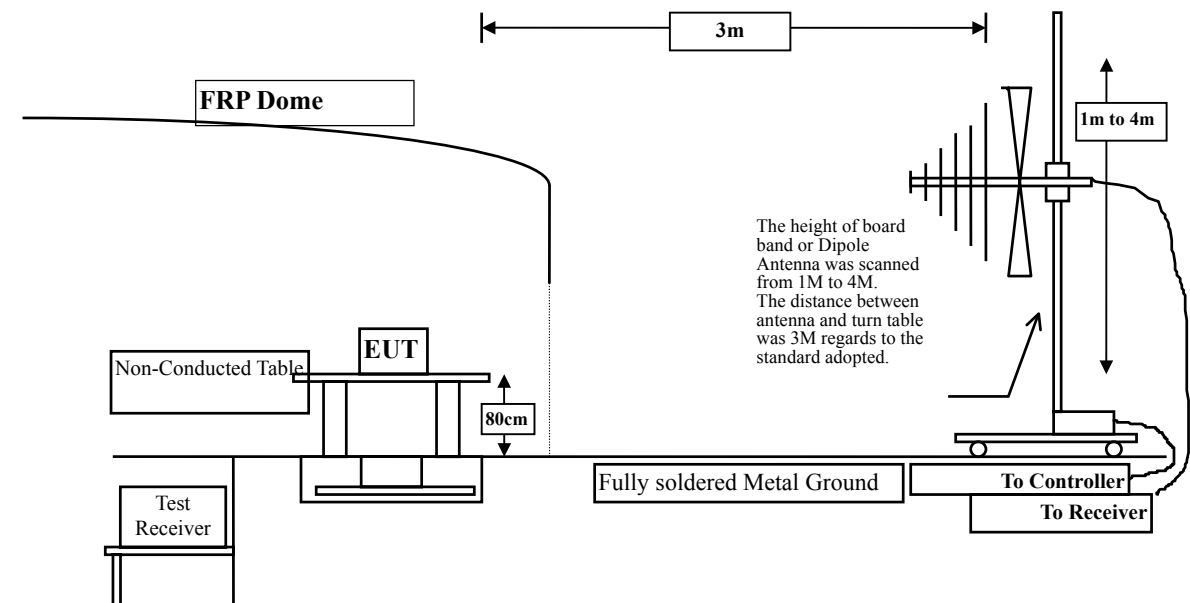
### 4.1. Test Equipment

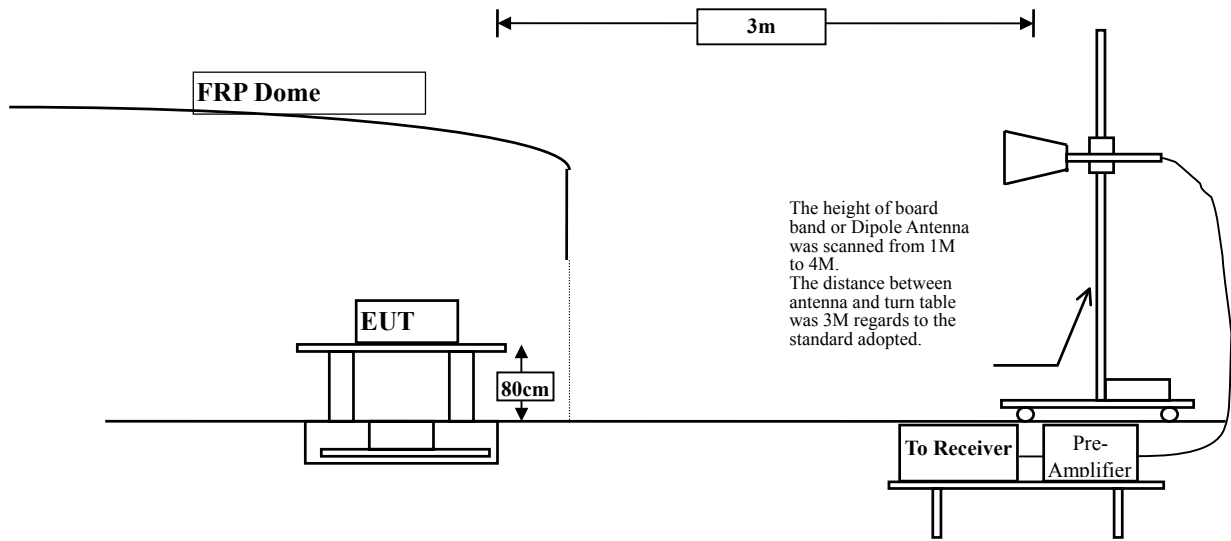
The following test equipment are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 1	Test Receiver	R & S	ESCS 30 / 825442/14	May, 2005
	Spectrum Analyzer	Advantest	R3261C / 71720140	May, 2005
	Pre-Amplifier	HP	8447D/3307A01812	May, 2005
	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 2005
	Horn Antenna	EM	EM6917 / 103325	May, 2005
Site # 2	Test Receiver	R & S	ESCS 30 / 825442/17	May, 2005
	Spectrum Analyzer	Advantest	R3261C / 71720609	May, 2005
	Pre-Amplifier	HP	8447D/3307A01814	May, 2005
	Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2005
	Horn Antenna	EM	EM6917 / 103325	May, 2005
Site # 3	X Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2005
	X Spectrum Analyzer	Advantest	R3162 / 100803480	May, 2005
	X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2005
	X Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2005
	X Horn Antenna	ETS	3115 / 0005-6160	July, 2005
	X Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2005

- Note:
1. All instruments are calibrated every one year.
  2. The test instruments 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.

<b>FCC Part 15 Subpart C Paragraph 15.209(a) Limits</b>		
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 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 (R&S Test Receiver ESCS 30 )is 120 kHz, above 1GHz are 1 MHz.

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

#### 4.5. Uncertainty

The measurement uncertainty is defined as  $\pm 3.8$  dB above 1GHz as  $\pm 3.9$  dB

#### 4.6. Test Result of Radiated Emission

Product : Wireless VoIP Phone  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4824.000	3.723	57.649	61.372	-12.598	74.00
7236.000	9.439	37.809	47.248	-26.722	74.00
9648.000	11.829	37.646	49.475	-24.495	74.00
<b>Average Detector:</b>					
4824.000	3.723	46.498	50.221	-23.749	74.00
<b>Vertical</b>					
<b>Peak Detector:</b>					
4824.000	3.723	54.220	57.943	-16.027	74.00
7236.000	9.439	38.019	47.458	-26.512	74.00
9648.000	11.829	36.575	48.404	-25.566	74.00
<b>Average Detector:</b>					
4824.000	3.723	42.873	46.596	-27.374	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
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 : Wireless VoIP Phone  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4874.000	3.893	53.425	57.318	-16.652	74.00
7311.000	9.625	37.815	47.440	-26.530	74.00
9748.000	11.805	37.380	49.186	-24.784	74.00
<b>Average Detector:</b>					
4874.000	3.899	45.699	49.598	-4.372	74.00
<b>Vertical</b>					
<b>Peak Detector:</b>					
4874.000	3.892	53.360	57.251	-16.719	74.00
7311.000	9.623	37.658	47.281	-26.689	74.00
9748.000	11.806	37.379	49.185	-24.785	74.00
<b>Average Detector:</b>					
4874.000	3.899	42.064	45.963	-8.007	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
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 : Wireless VoIP Phone  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	4.075	54.638	58.713	-15.257	74.00
7386.000	9.812	37.276	47.088	-26.882	74.00
9848.000	11.819	36.909	48.728	-25.242	74.00
<b>Average Detector:</b>					
4924.000	4.081	45.587	49.669	-4.301	74.00
<b>Vertical</b>					
<b>Peak Detector:</b>					
4924.000	4.075	52.777	56.851	-17.119	74.00
7386.000	9.811	37.941	47.752	-26.218	74.00
9848.000	11.819	37.159	48.978	-24.992	74.00
<b>Average Detector:</b>					
4924.000	4.081	41.937	46.019	-7.951	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
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 : Wireless VoIP Phone  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2412 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	4.080	51.192	55.271	-18.699	74.00
7386.000	9.812	38.218	48.030	-25.940	74.00
9848.000	11.819	36.810	48.629	-25.341	74.00
<b>Average Detector:</b>					
4924.000	4.081	38.288	42.369	-11.601	74.00
<b>Vertical</b>					
<b>Peak Detector:</b>					
4835.000	3.760	50.043	53.802	-20.168	74.00
7236.000	9.439	36.909	46.348	-27.622	74.00
9647.500	11.829	35.428	47.257	-26.713	74.00
<b>Average Detector:</b>					
4924.000	4.080	37.944	42.024	-11.946	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
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 : Wireless VoIP Phone  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4874.000	3.898	54.536	58.434	-15.536	74.00
7311.000	9.624	37.384	47.008	-26.962	74.00
9748.000	11.805	36.881	48.687	-25.283	74.00
<b>Average Detector:</b>					
4874.000	3.898	43.920	47.819	-6.151	74.00
<b>Vertical</b>					
<b>Peak Detector:</b>					
4874.000	3.892	51.272	55.163	-18.807	74.00
7311.000	9.624	37.439	47.063	-26.907	74.00
9748.000	11.805	37.328	49.134	-24.836	74.00
<b>Average Detector:</b>					
4874.000	3.893	41.192	45.084	-8.886	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
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 : Wireless VoIP Phone  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	4.102	52.680	56.781	-17.189	74.00
7386.000	9.812	37.515	47.327	-26.643	74.00
9848.000	11.819	35.446	47.265	-26.705	74.00
<b>Average Detector:</b>					
4924.000	4.075	44.081	48.156	-5.814	74.00
<b>Vertical</b>					
<b>Peak Detector:</b>					
4924.000	4.075	51.714	55.789	-18.181	74.00
7386.000	9.812	36.504	46.316	-27.654	74.00
9848.000	11.819	36.358	48.177	-25.793	74.00
<b>Average Detector:</b>					
4924.000	4.075	40.697	44.772	-9.198	74.00

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
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 : Wireless VoIP Phone  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2412 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
32.400	18.231	10.500	28.731	-11.269	40.000
253.100	13.532	15.600	29.132	-16.868	46.000
546.500	20.459	7.470	27.929	-18.071	46.000
696.800	20.891	15.500	36.391	-9.609	46.000
825.400	21.862	7.400	29.262	-16.738	46.000
861.700	22.362	7.800	30.161	-15.839	46.000
<b>Vertical</b>					
51.830	7.661	10.400	18.061	-21.939	40.000
127.000	11.673	12.800	24.473	-19.027	43.500
160.100	9.854	8.500	18.354	-25.146	43.500
211.800	10.287	8.400	18.687	-24.813	43.500
379.200	16.655	16.100	32.755	-13.245	46.000
505.100	18.595	9.800	28.395	-17.605	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “■” means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions were checked with horizontal and vertical positions of the cords to find the worst emissions.



Product : Wireless VoIP Phone  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
127.000	12.778	8.100	20.878	-22.622	43.500
254.100	13.766	5.600	19.366	-26.634	46.000
393.100	16.142	8.440	24.582	-21.418	46.000
546.500	20.459	7.740	28.199	-17.801	46.000
725.100	21.216	7.300	28.516	-17.484	46.000
860.100	22.320	7.800	30.120	-15.880	46.000
<b>Vertical</b>					
127.100	11.671	11.840	23.511	-19.989	43.500
160.000	9.875	8.600	18.474	-25.026	43.500
250.100	13.323	11.150	24.473	-21.527	46.000
284.900	13.792	16.100	29.892	-16.108	46.000
377.100	16.616	11.900	28.516	-17.484	46.000
505.100	18.595	8.900	27.495	-18.505	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “■” means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions were checked with horizontal and vertical positions of the cords to find the worst emissions.

Product : Wireless VoIP Phone  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
50.100	9.023	11.100	20.124	-19.876	40.000
160.800	10.649	10.500	21.149	-22.351	43.500
250.100	13.276	11.150	24.427	-21.573	46.000
284.600	13.562	12.600	26.161	-19.839	46.000
380.100	15.603	6.600	22.204	-23.796	46.000
500.100	18.307	8.300	26.607	-19.393	46.000
<b>Vertical</b>					
127.100	11.671	8.900	20.571	-22.929	43.500
255.100	13.828	5.620	19.448	-26.552	46.000
394.100	17.621	8.440	26.061	-19.939	46.000
699.100	20.612	15.500	36.111	-9.889	46.000
825.100	21.439	7.180	28.619	-17.381	46.000
861.100	22.109	7.820	29.929	-16.071	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “█” means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions were checked with horizontal and vertical positions of the cords to find the worst emissions.

Product : Wireless VoIP Phone  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2412 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
253.100	13.532	5.620	19.152	-26.848	46.000
379.100	15.679	11.470	27.149	-18.851	46.000
393.500	16.237	8.440	24.677	-21.323	46.000
545.100	20.070	7.710	27.780	-18.220	46.000
825.100	21.861	7.180	29.041	-16.959	46.000
861.100	22.383	7.830	30.212	-15.788	46.000
<b>Vertical</b>					
127.100	11.671	11.820	23.491	-20.009	43.500
160.900	9.692	11.580	21.272	-22.228	43.500
253.100	13.581	5.730	19.311	-26.689	46.000
284.600	13.791	9.600	23.391	-22.609	46.000
379.100	16.655	16.100	32.755	-13.245	46.000
505.100	18.595	6.220	24.815	-21.185	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “■” means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions were checked with horizontal and vertical positions of the cords to find the worst emissions.

Product : Wireless VoIP Phone  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
127.000	12.778	8.900	21.678	-21.822	43.500
253.900	13.722	10.620	24.342	-21.658	46.000
393.850	16.296	8.500	24.796	-21.204	46.000
546.300	20.416	7.710	28.126	-17.874	46.000
699.800	20.762	5.580	26.342	-19.658	46.000
825.100	21.861	7.480	29.341	-16.659	46.000
<b>Vertical</b>					
127.000	11.673	8.120	19.793	-23.707	43.500
160.800	9.712	8.580	18.292	-25.208	43.500
212.100	10.257	8.400	18.657	-24.843	43.500
284.600	13.791	9.600	23.391	-22.609	46.000
379.200	16.655	6.010	22.665	-23.335	46.000
504.900	18.595	8.710	27.305	-18.695	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “█” means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions were checked with horizontal and vertical positions of the cords to find the worst emissions.

Product : Wireless VoIP Phone  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
254.100	13.766	5.620	19.386	-26.614	46.000
379.200	15.669	10.470	26.139	-19.861	46.000
393.500	16.237	8.440	24.677	-21.323	46.000
546.500	20.459	7.740	28.199	-17.801	46.000
825.400	21.862	7.480	29.342	-16.658	46.000
861.700	22.362	5.750	28.111	-17.889	46.000
<b>Vertical</b>					
45.100	9.733	20.100	29.833	-10.167	40.000
127.100	11.671	10.800	22.471	-21.029	43.500
160.800	9.712	8.580	18.292	-25.208	43.500
210.100	10.162	8.420	18.582	-24.918	43.500
253.100	13.581	10.150	23.731	-22.269	46.000
284.600	13.791	9.600	23.391	-22.609	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “█” means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions were checked with horizontal and vertical positions of the cords to find the worst emissions.

## 5. Band Edge

### 5.1. Test Equipment

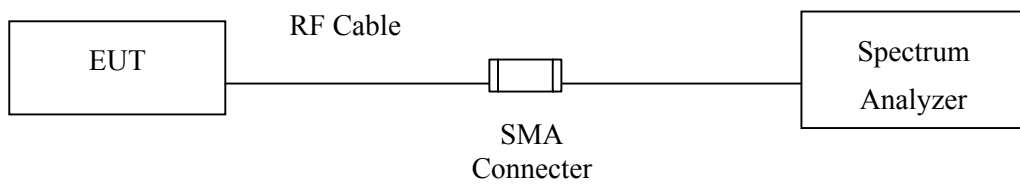
The following test equipments are used during the band edge tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Spectrum Analyzer	HP	E4407B / US39440758	May, 2005
X Test Receiver	R & S	ESCS 30 / 825442/14	May, 2005
X Spectrum Analyzer	Advantest	R3261C / 71720140	May, 2005
X Pre-Amplifier	HP	8447D/3307A01812	May, 2005
X Bilog Antenna	Chase	CBL6112B / 12452	Sep., 2005
X Horn Antenna	EM	EM6917 / 103325	May, 2005

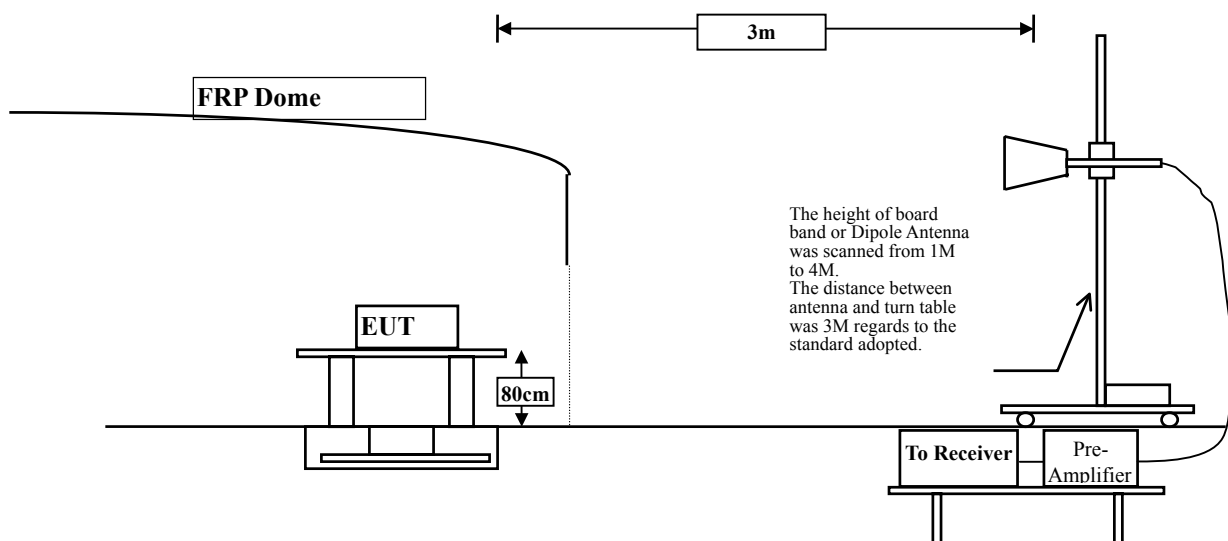
- Note: 1. All instruments are calibrated every one year.  
 2. The test instruments marked by "X" are used to measure the final test results.

### 5.2. Test Setup

#### RF Conducted Measurement:



#### 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 below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30 )is 120 kHz, above 1GHz are 1 MHz.

### 5.5. Uncertainty

The measurement uncertainty Conducted is defined as  $\pm 1$  MHz and Radiated above 1GHz as  $\pm 3.9$  dB.

### 5.6. Test Result of Band Edge

Product : Wireless VoIP Phone  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1)

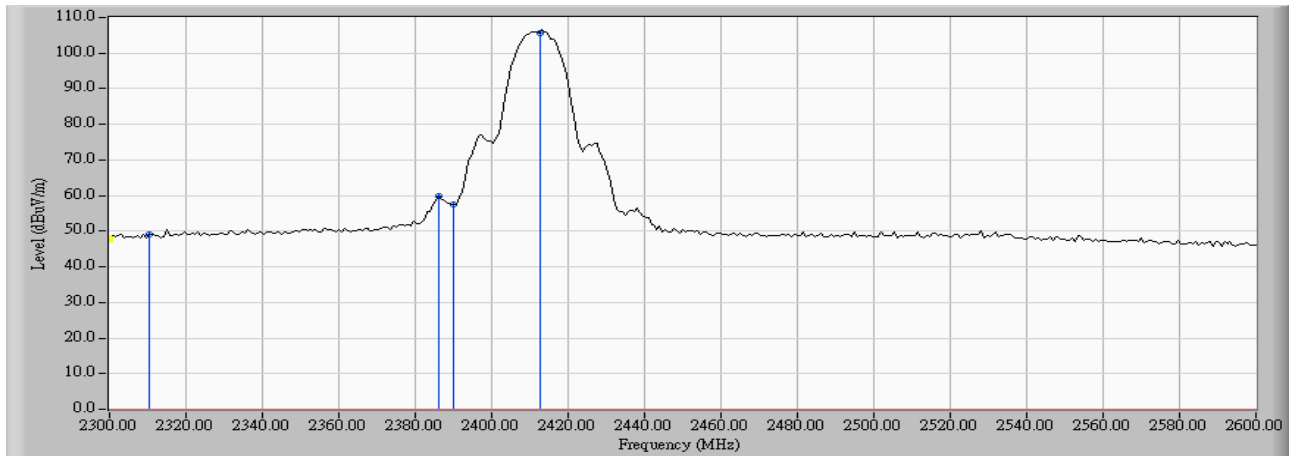
**RF Radiated Measurement:**

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

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2386.250	60.860	59.750	74.00	54.00	Pass
1 (Average)	2386.250	49.710	48.600	74.00	54.00	Pass

**Figure Channel 1: (Horizontal)**





Product : Wireless VoIP Phone  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1)

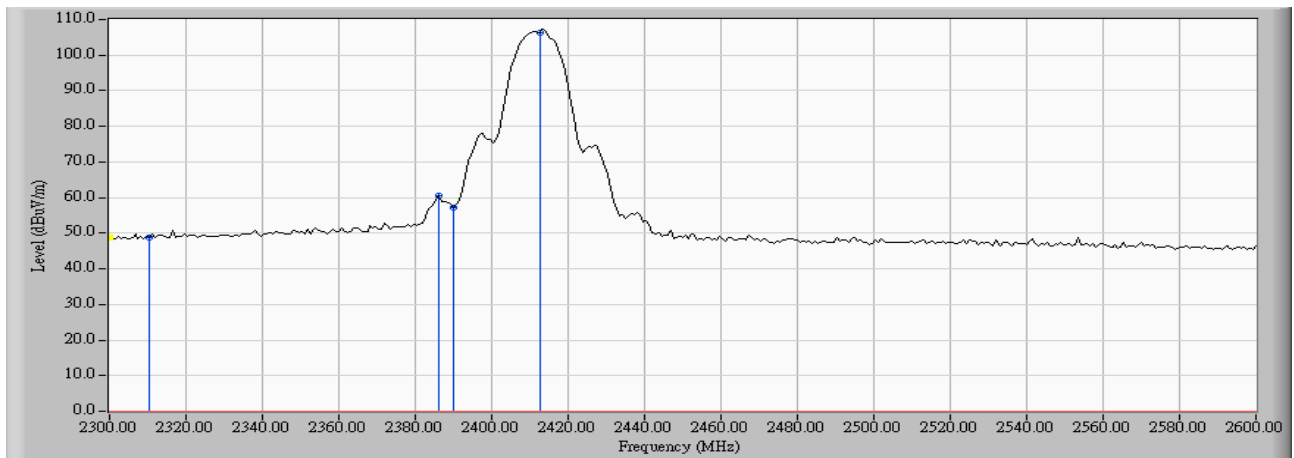
**RF Radiated Measurement:**

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

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2386.250	61.570	60.460	74.00	54.00	Pass
1 (Average)	2386.250	50.090	48.980	74.00	54.00	Pass

**Figure Channel 1: (Vertical)**

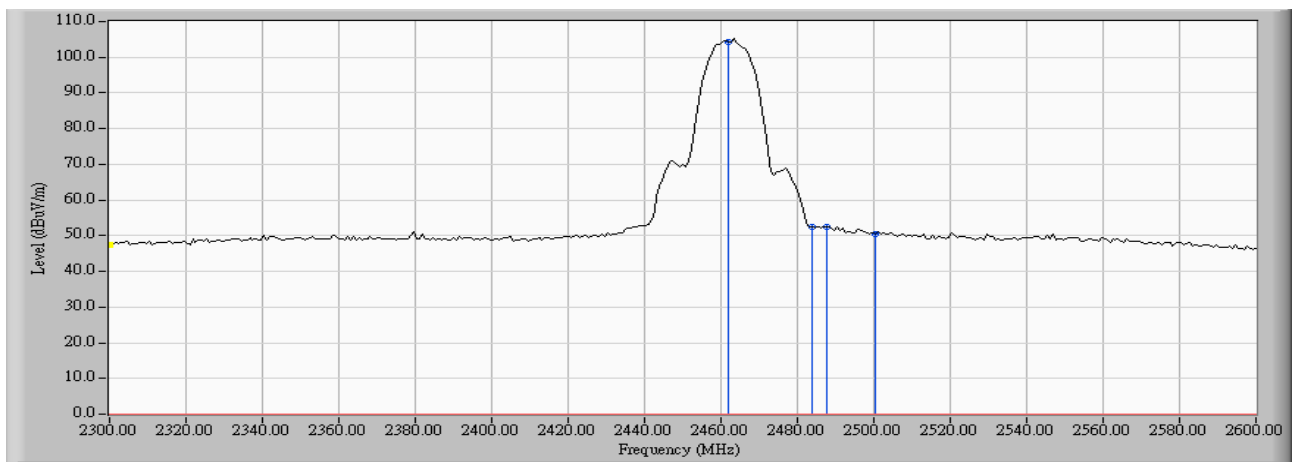


Product : Wireless VoIP Phone  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1)

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2487.500	54.560	52.410	74.00	54.00	Pass
11(Average)	2487.520	44.230	42.080	74.00	54.00	Pass

**Figure Channel 11: (Horizontal)**

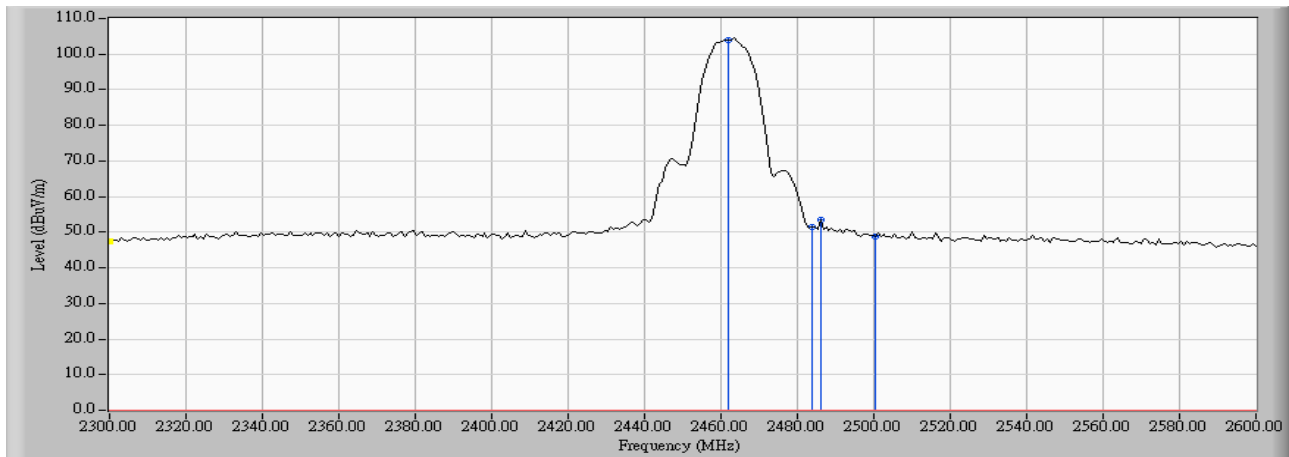


Product : Wireless VoIP Phone  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1)

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2486.000	55.637	53.480	74.00	54.00	Pass
11(Average)	2486.120	43.486	41.330	74.00	54.00	Pass

**Figure Channel 11: (Vertical)**



Product : Wireless VoIP Phone  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1)

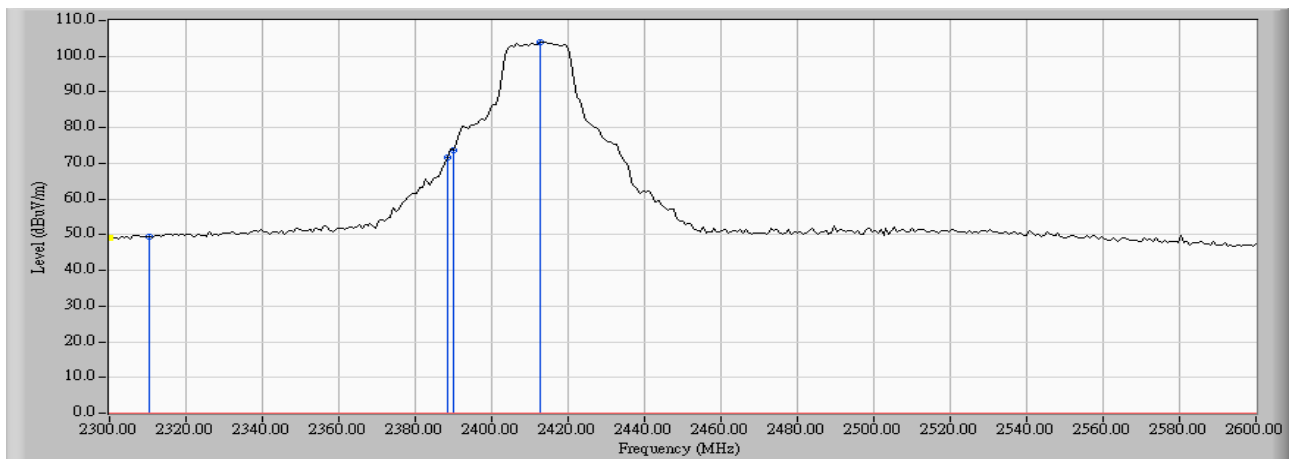
**RF Radiated Measurement:**

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

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	2388.500	72.924	71.790	74.00	54.00	Pass
1 (Average)	2388.500	47.365	44.980	74.00	54.00	Pass

**Figure Channel 1: (Horizontal)**



Product : Wireless VoIP Phone  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1)

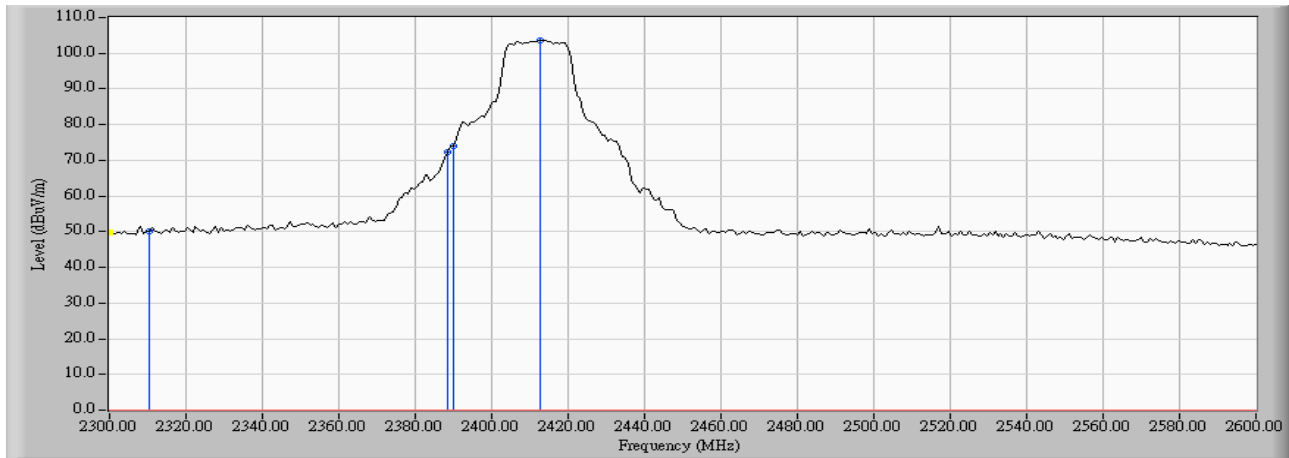
**RF Radiated Measurement:**

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

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Reading Level (dBUV)	Emission Level (dBUV/m)	Peak Limit (dBUV/m)	Average Limit (dBUV/m)	Result
1 (Peak)	2388.500	73.624	72.490	74.00	54.00	Pass
1 (Average)	2388.500	49.195	46.810	74.00	54.00	Pass

**Figure Channel 1: (Vertical)**

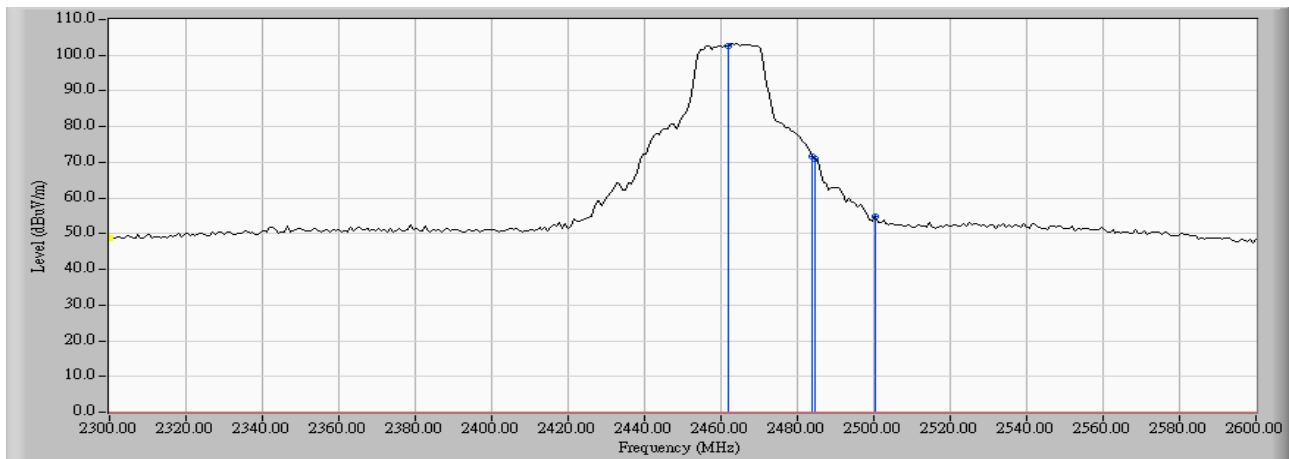


Product : Wireless VoIP Phone  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1)

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2484.500	73.293	71.130	74.00	54.00	Pass
11(Average)	2484.550	51.004	49.070	74.00	54.00	Pass

**Figure Channel 11: (Horizontal)**

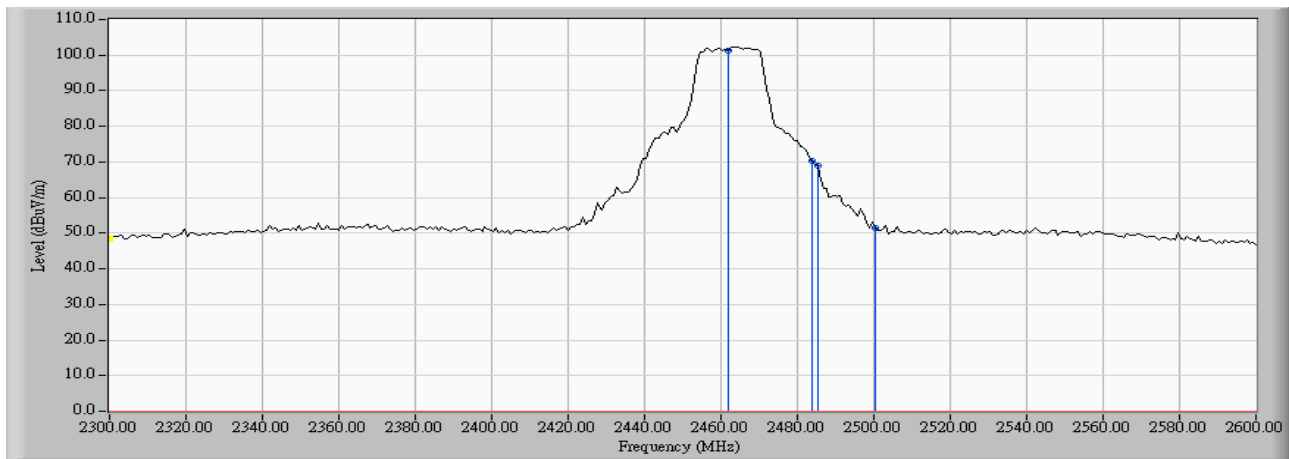


Product : Wireless VoIP Phone  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1)

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2485.250	71.210	69.050	74.00	54.00	Pass
11(Average)	2485.250	49.332	47.400	74.00	54.00	Pass

**Figure Channel 11: (Vertical)**



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

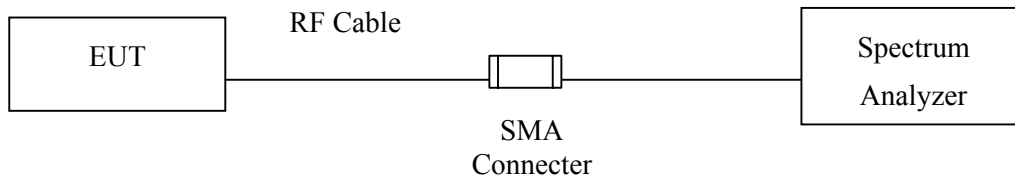
### 6.1. Test Equipment

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

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2005

- 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 bandwidth shall be at least 500kHz.

### 6.4. Uncertainty

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

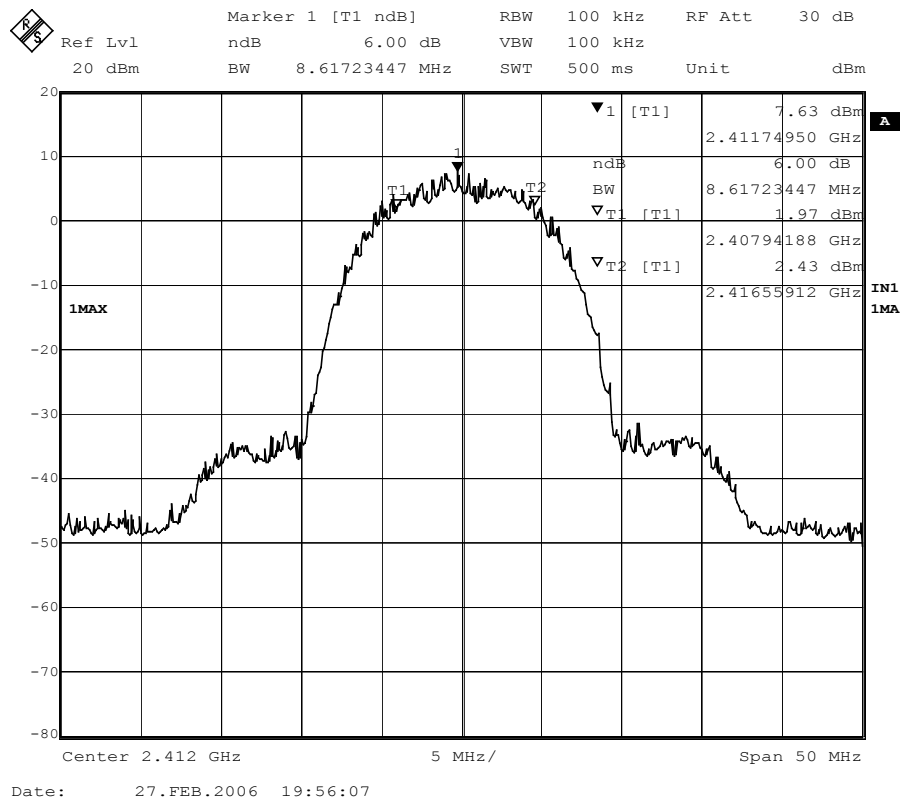


### 6.5. Test Result of Occupied Bandwidth

Product : Wireless VoIP Phone  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1 (11Mbps)	2412.00	8617	>500	Pass

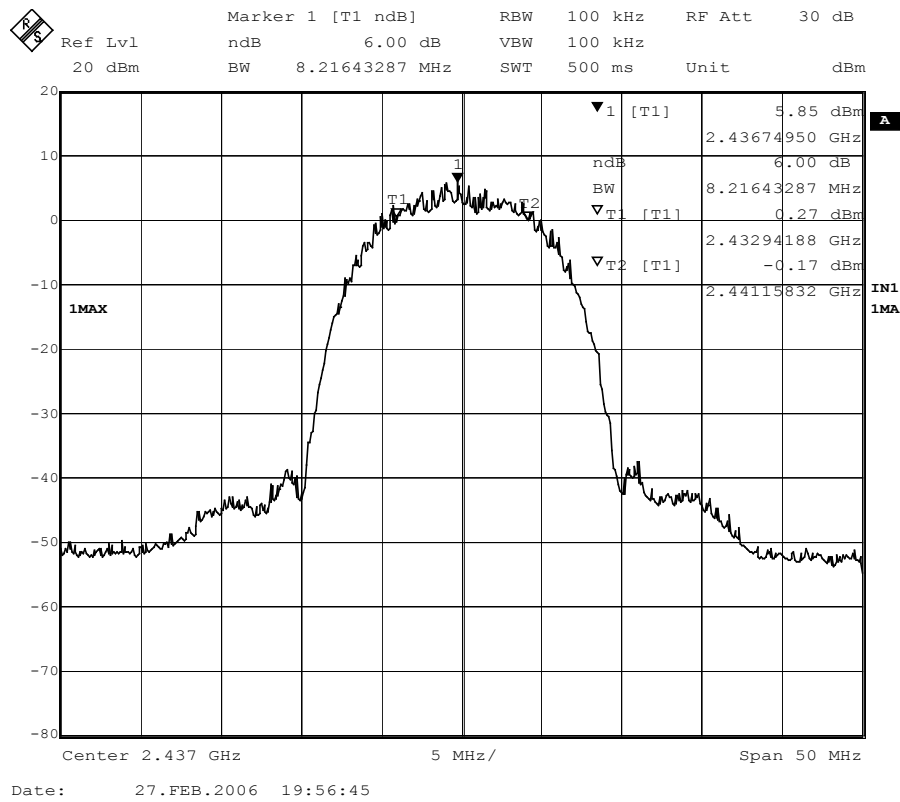
**Figure Channel 1:** 11Mbps



Product : Wireless VoIP Phone  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6 (11Mbps)	2437.00	8216	>500	Pass

**Figure Channel 6:** 11Mbps

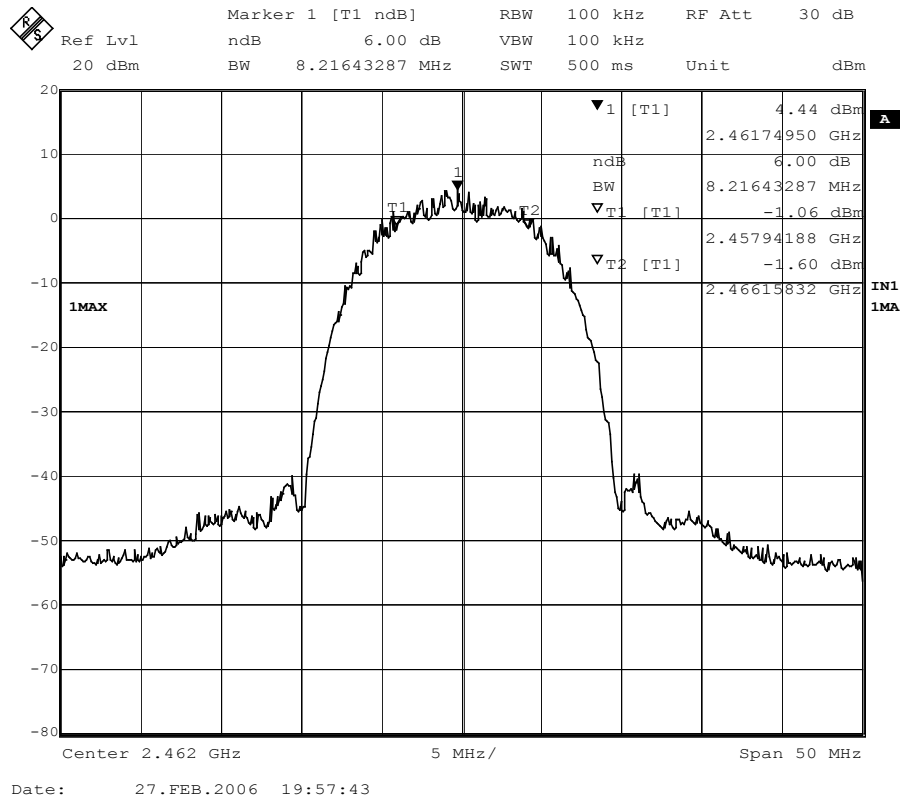


Product : Wireless VoIP Phone  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11 (11Mbps)	2462.00	8216	>500	Pass

Figure Channel 11:

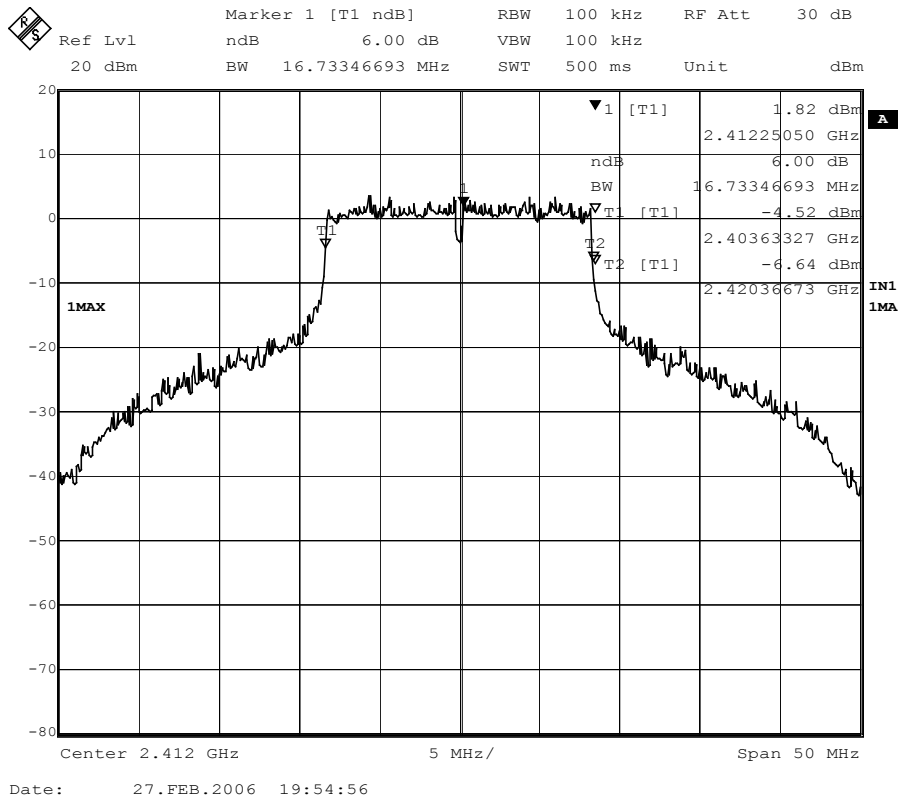
11Mbps



Product : Wireless VoIP Phone  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1 (54Mbps)	2412.00	16733	>500	Pass

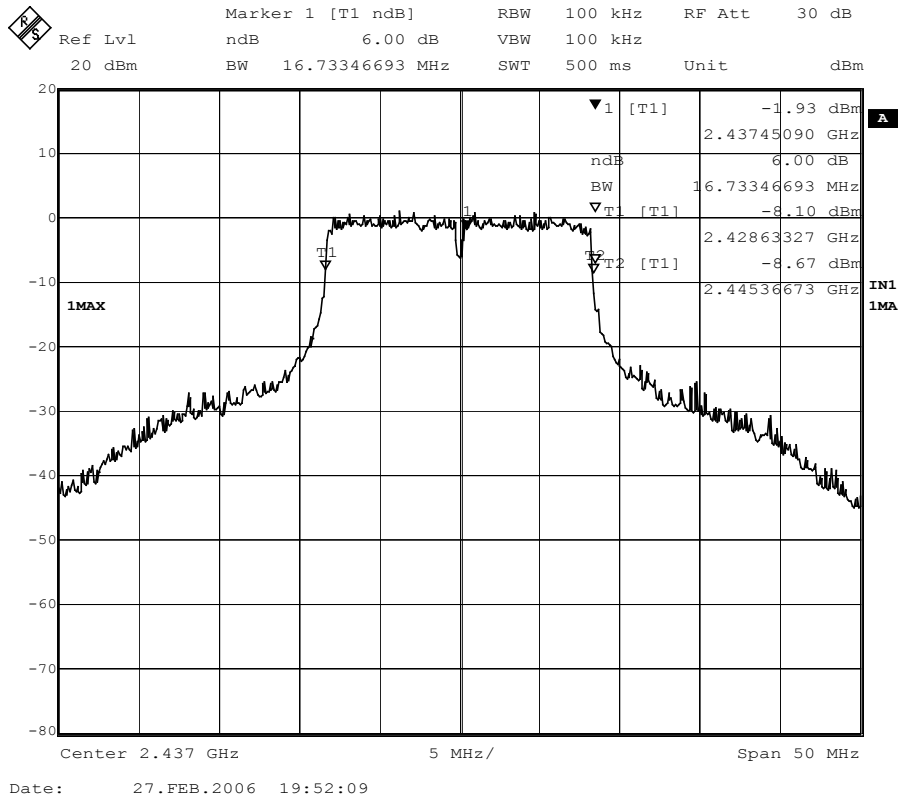
**Figure Channel 1:** 54Mbps



Product : Wireless VoIP Phone  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6 (54Mbps)	2437.00	16733	>500	Pass

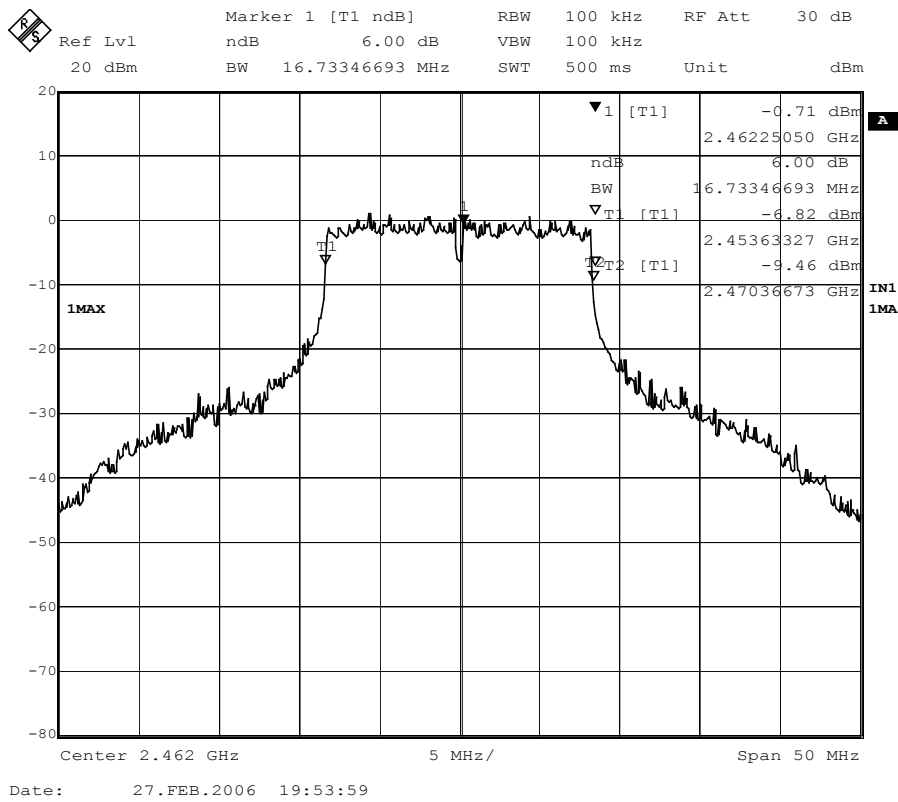
**Figure Channel 6: 54Mbps**



Product : Wireless VoIP Phone  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11 (54Mbps)	2462.00	16733	>500	Pass

Figure Channel 11: 54Mbps



**7. Power Density**

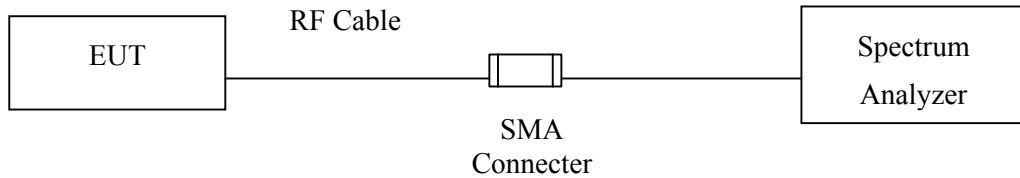
**7.1. Test Equipment**

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

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2005

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.  
 2. Mark “X” test instruments 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**

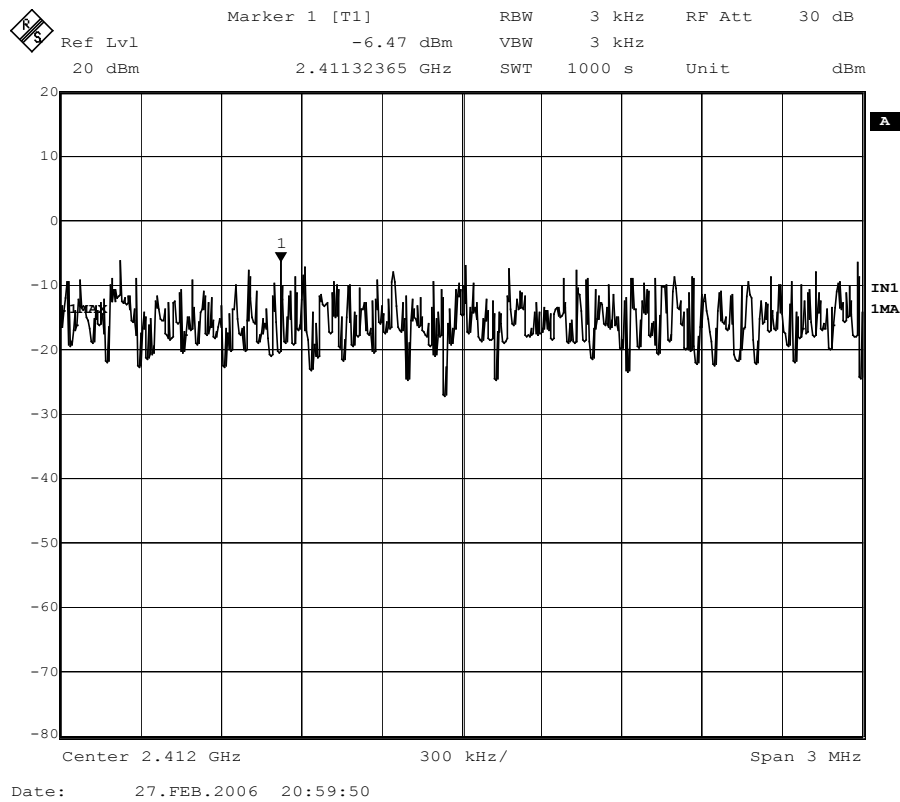
The measurement uncertainty is defined as  $\pm 1.27$  dB

### 7.5. Test Result of Power Density

Product : Wireless VoIP Phone  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1 (11Mbps)	2412.00	-6.47	< 8dBm	Pass

**Figure Channel 1:** 11Mbps



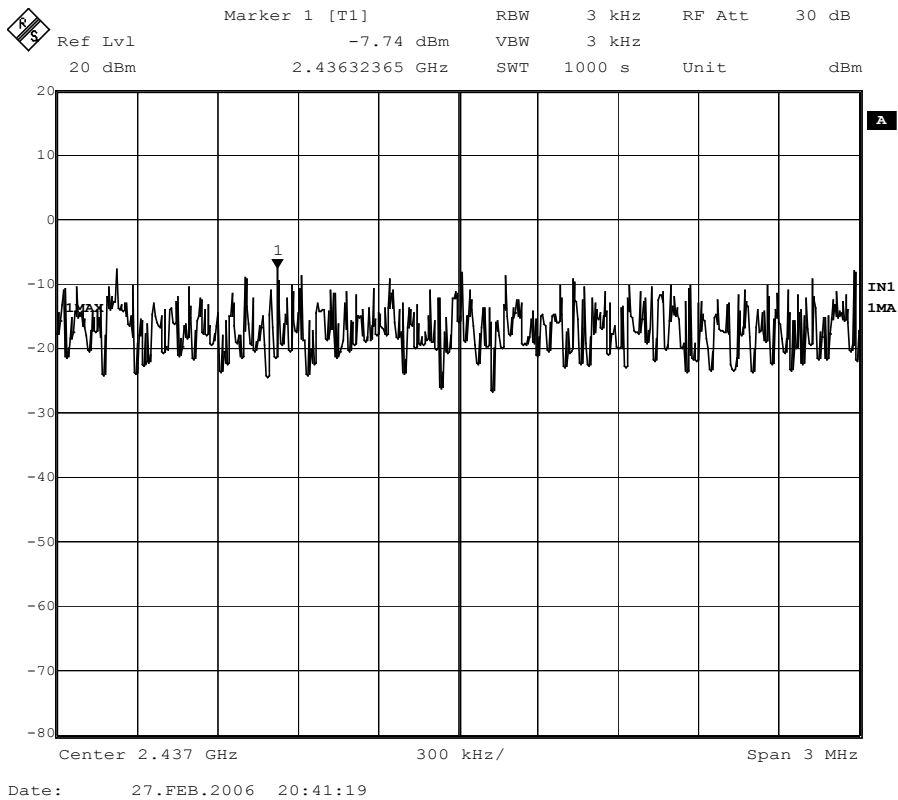


Product : Wireless VoIP Phone  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6 (11Mbps)	2437.000	-7.74	< 8dBm	Pass

**Figure Channel 6:**

11Mbps

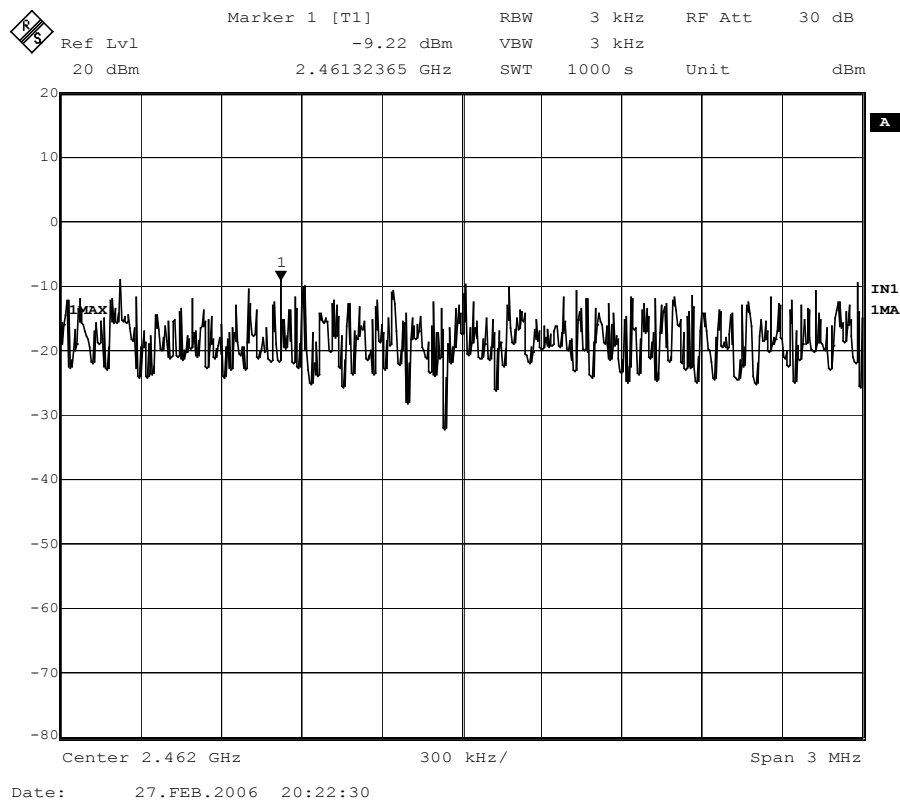


Product : Wireless VoIP Phone  
 Test Item : Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11b(Adapter 1) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11 (11Mbps)	2462.00	-9.22	< 8dBm	Pass

**Figure Channel 11:**

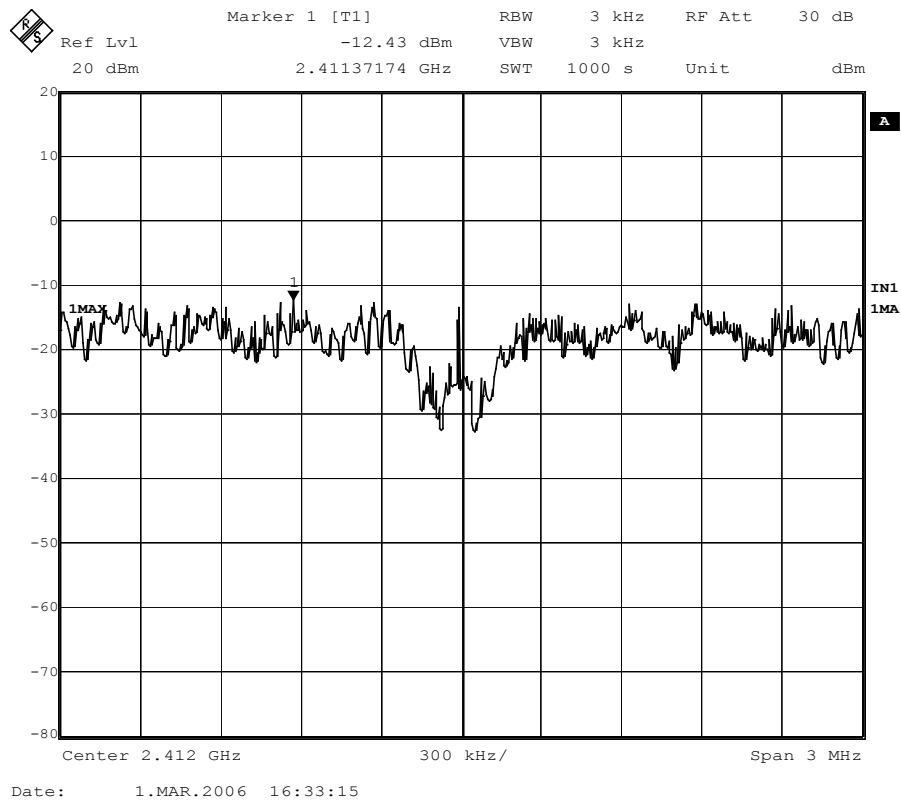
11Mbps



Product : Wireless VoIP Phone  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1 (54Mbps)	2412.00	-12.43	< 8dBm	Pass

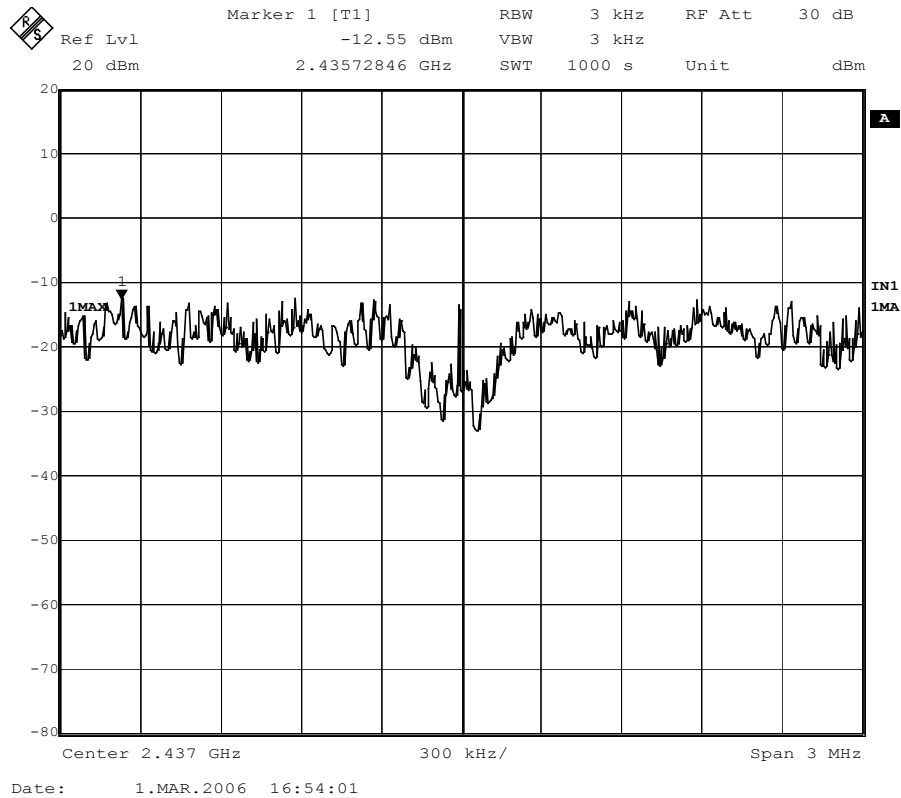
**Figure Channel 1:** 54Mbps



Product : Wireless VoIP Phone  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6 (54Mbps)	2437.000	-12.55	< 8dBm	Pass

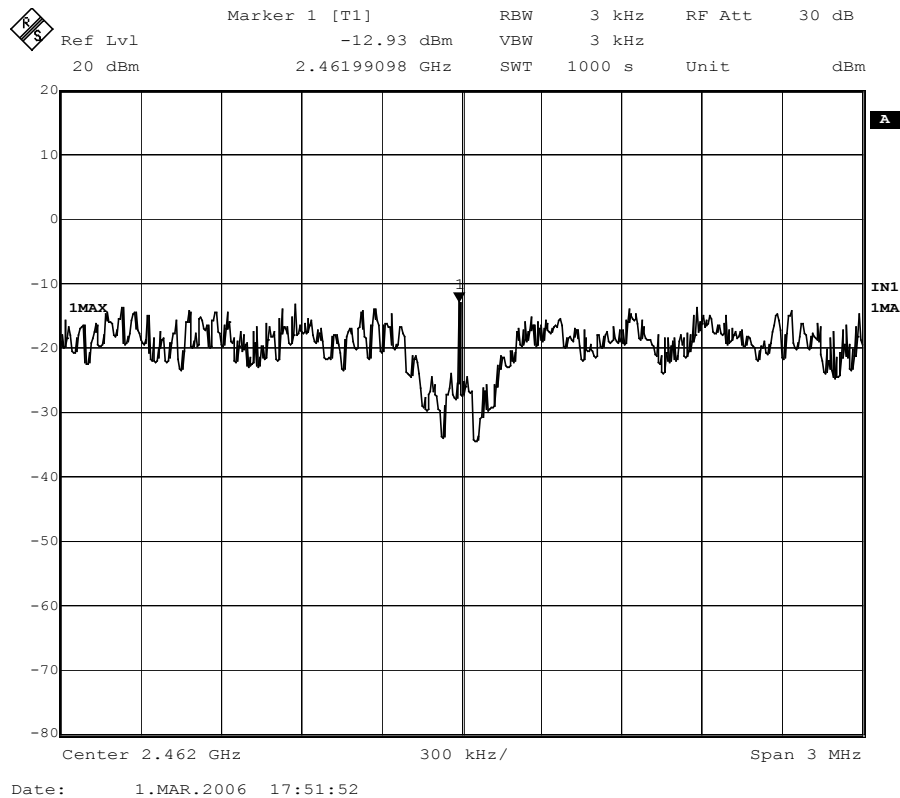
**Figure Channel 6:** 54Mbps



Product : Wireless VoIP Phone  
 Test Item : Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmitter 802.11g(Adapter 1) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11 (54Mbps)	2462.00	-12.93	< 8dBm	Pass

**Figure Channel 11:** 54Mbps



## 8. EMI Reduction Method During Compliance Testing

No modification was made during testing.

## Attachment 1: EUT Test Photographs

## Attachment 2: EUT Detailed Photographs