



## Test Report

Product Name : Wireless Headset  
Model No. : KM2-R, Voice 210-R  
FCC ID. : BJM-KM2R

Applicant : TATUNG CO.

Address : 22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C.

Date of Receipt : June. 18, 2008  
Issued Date : July. 04, 2008  
Report No. : 086344R-RFUSP07V01  
Version : V1.0

The Test Results relate only to the samples tested.  
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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

# Test Report Certification

Issued Date: July. 04, 2008

Report No. : 086344R-RFUSP07V01



Product Name : Wireless Headset  
 Applicant : TATUNG CO.  
 Address : 22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C.  
 Manufacturer : TATUNG CO.  
 Model No. : KM2-R, Voice 210-R  
 FCC ID. : BJM-KM2R  
 Rated Voltage : 120V/60Hz  
 Working Voltage : DC 5V(Power by USB)  
 Trade Name : TATUNG, SoundOn  
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2007  
 ANSI C63.4: 2003

Test Result : Complied



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 ( Engineer / Dino Chen)

Approved By : Vincent Lin  
 ( Deputy Manager / Vincent Lin)



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## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	: Wireless Headset
Trade Name	: TATUNG, SoundOn
FCC ID.	: BJM-KM2R
Model No.	: KM2-R, Voice 210-R
Frequency Range	: 2405 – 2477MHz
Type of Modulation	: $\pi/4$ DQPSK (Differential Quadrature Phase Shift Keying)
Number of Channels	: 37
Channel Control	: Auto
Antenna Type	: Printed on PCB
Antenna Gain	: Refer to the table “Antenna List”

#### Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	TATUNG	N/A	2.0 dBi for 2.4 GHz

#### Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 2:	2405 MHz	Channel 3:	2407 MHz	Channel 4:	2409 MHz
Channel 5:	2411 MHz	Channel 6:	2413 MHz	Channel 7:	2415 MHz
Channel 8:	2417 MHz	Channel 9:	2419 MHz	Channel 10:	2421 MHz
Channel 11:	2423 MHz	Channel 12:	2425 MHz	Channel 13:	2427 MHz
Channel 14:	2429 MHz	Channel 15:	2431 MHz	Channel 16:	2433 MHz
Channel 17:	2435 MHz	Channel 18:	2437 MHz	Channel 19:	2439 MHz
Channel 20:	2441 MHz	Channel 21:	2443 MHz	Channel 22:	2445 MHz
Channel 23:	2447 MHz	Channel 24:	2449 MHz	Channel 25:	2451 MHz
Channel 26:	2453 MHz	Channel 27:	2455 MHz	Channel 28:	2457 MHz
Channel 29:	2459 MHz	Channel 30:	2461 MHz	Channel 31:	2463 MHz
Channel 32:	2465 MHz	Channel 33:	2467 MHz	Channel 34:	2469 MHz
Channel 35:	2471 MHz	Channel 36:	2473 MHz	Channel 37:	2475 MHz
Channel 38:	2477 MHz				

## Note:

1. The EUT is a Wireless Headset with a built-in 2.4GHz transceiver
2. The EUT is including two models and the different of each model is shown as below:

Trade Name	Model Number
TATUNG	KM2-R
SoundOn	Voice 210-R

3. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249.
4. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

EMI Test Mode	Mode 1: Transmitter
---------------	---------------------

## 1.2. Operation Description

The EUT is a Wireless Headset with a built-in 2.4GHz transceiver. The EUT operation frequency is 2.405GHz-2.477GHz. The signals modulated by  $\pi/4$  DQPSK (Differential Quadrature Phase Shift Keying) are transmitted from the Printed on the PCB of the EUT.

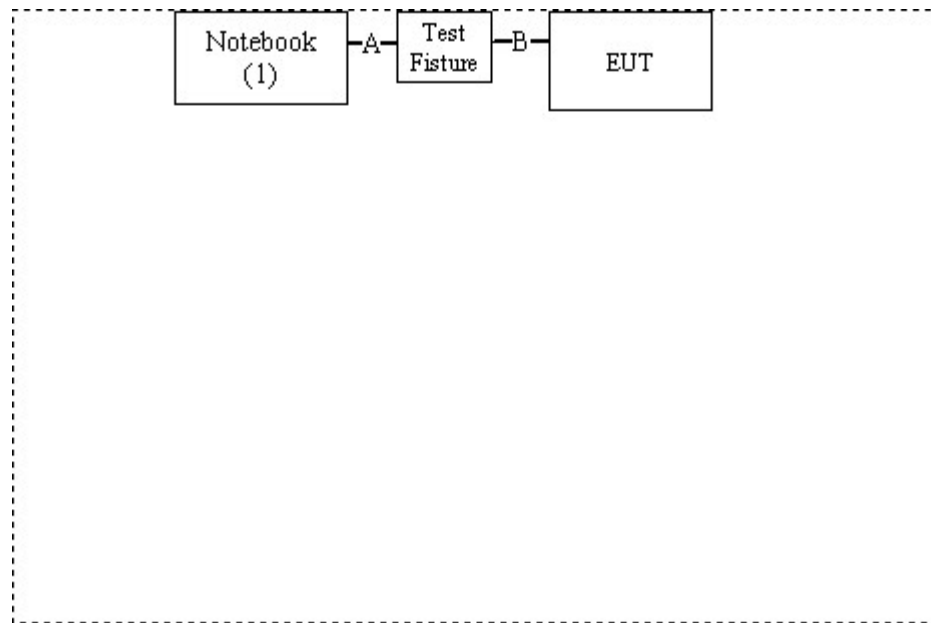
### 1.3. Tested System Details

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	ASUS	L4000L	37NP067733	Non-Shielded, 0.8m

	Signal Cable Type	Signal cable Description
A.	USB Cable	Shielded, 0.8m
B.	Controller Cable	Non-Shielded, 0.3m

### 1.4. Configuration of Test System



### 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4.
- (2) Connect the EUT to a notebook via a USB.
- (3) Execute Avnera Wireless.exe on the notebook.
- (4) Double-click “Audio Suite Ver1.67” and select USB as a primary connection interface.
- (5) Setup the test channel.
- (6) Presses “Apply” to start the continuous transmit.
- (7) Verify that the EUT works correctly.

**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  
 Registration Number: 92195



Accreditation on NVLAP  
 NVLAP Lab Code: 200533-0



Site Name: Quietek Corporation

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FCC Accreditation Number: TW1014





## 2. Conducted Emission

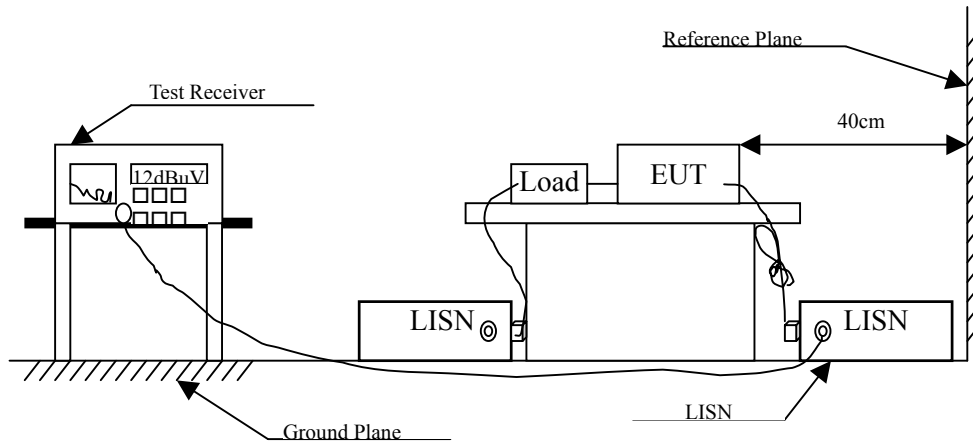
### 2.1. Test Equipment

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, 2008	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2008	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2008	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2008	
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	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

## 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

$\pm 2.26$  dB

## 2.6. Test Result of Conducted Emission

Product : Wireless Headset  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter (2441MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.173	9.815	43.840	53.655	-11.688	65.343
0.205	9.825	38.960	48.785	-15.644	64.429
0.262	9.830	35.820	45.650	-17.150	62.800
0.302	9.830	33.110	42.940	-18.717	61.657
0.521	9.820	29.370	39.190	-16.810	56.000
0.693	9.830	24.240	34.070	-21.930	56.000
<b>Average</b>					
0.173	9.815	31.770	41.585	-13.758	55.343
0.205	9.825	24.850	34.675	-19.754	54.429
0.262	9.830	31.800	41.630	-11.170	52.800
0.302	9.830	32.060	41.890	-9.767	51.657
0.521	9.820	18.930	28.750	-17.250	46.000
0.693	9.830	13.110	22.940	-23.060	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 : Wireless Headset  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmitter (2441MHz)

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	9.875	46.920	56.795	-9.091	65.886
0.170	9.866	44.580	54.446	-10.983	65.429
0.181	9.863	42.840	52.703	-12.411	65.114
0.259	9.857	34.300	44.157	-18.729	62.886
0.299	9.850	35.110	44.960	-16.783	61.743
0.505	9.830	28.670	38.500	-17.500	56.000
<b>Average</b>					
0.154	9.875	36.470	46.345	-9.541	55.886
0.170	9.866	32.060	41.926	-13.503	55.429
0.181	9.863	32.740	42.603	-12.511	55.114
0.259	9.857	31.120	40.977	-11.909	52.886
0.299	9.850	33.690	43.540	-8.203	51.743
0.505	9.830	15.180	25.010	-20.990	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. Radiated Emission

#### 3.1. Test Equipment

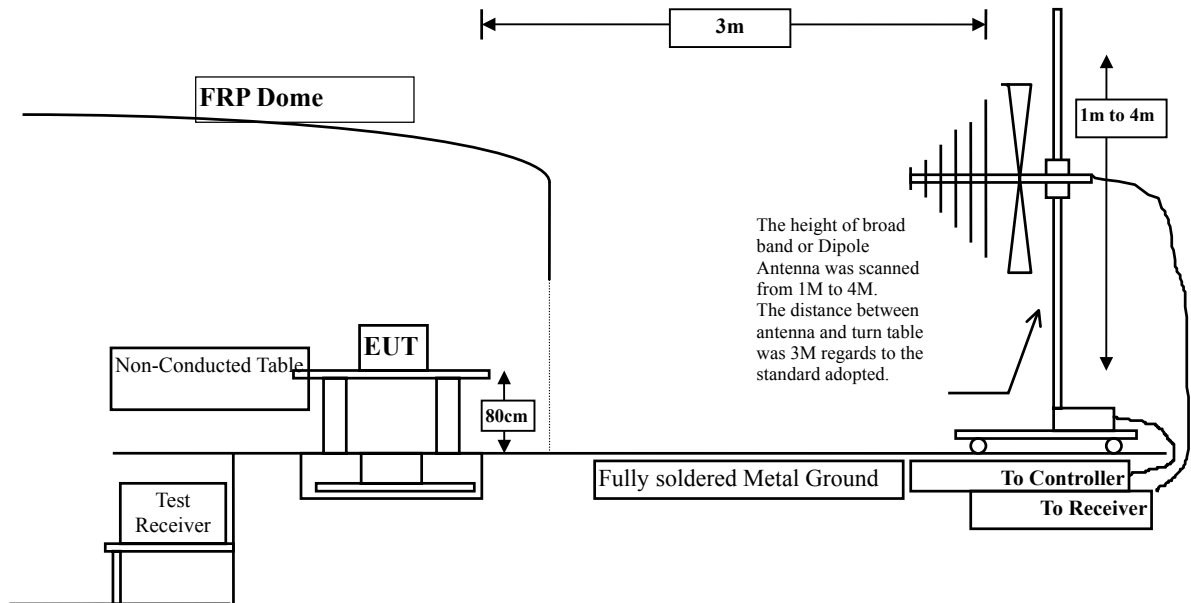
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
<input type="checkbox"/> Site # 1		Test Receiver	R & S	ESVS 10 / 834468/003	May, 2008
		Spectrum Analyzer	Advantest	R3162/ 00803480	May, 2008
		Pre-Amplifier	Advantest	BB525C/ 3307A01812	May, 2008
		Bilog Antenna	SCHAFFNER	CBL6112B / 2697	Sep., 2007
<input type="checkbox"/> Site # 2		Test Receiver	R & S	ESCS 30 / 836858 / 022	May, 2008
		Spectrum Analyzer	Advantest	R3162 / 100803466	May, 2008
		Pre-Amplifier	Advantest	BB525C/3307A01814	May, 2008
		Bilog Antenna	SCHAFFNER	CBL6112B / 2705	May, 2008
		Horn Antenna	ETS	3115 / 0005-6160	Sep., 2007
		Pre-Amplifier	QTK	QTK-AMP-01/ 0001	May, 2008
<input checked="" type="checkbox"/> Site # 3	X	Test Receiver	R & S	ESI 26 / 838786/004	May, 2008
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2008
	X	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2008
	X	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2008
	X	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2008
	X	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2008
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2008
	X	Pre-Amplifier	HP	8449B / 3008A01123	July, 2008

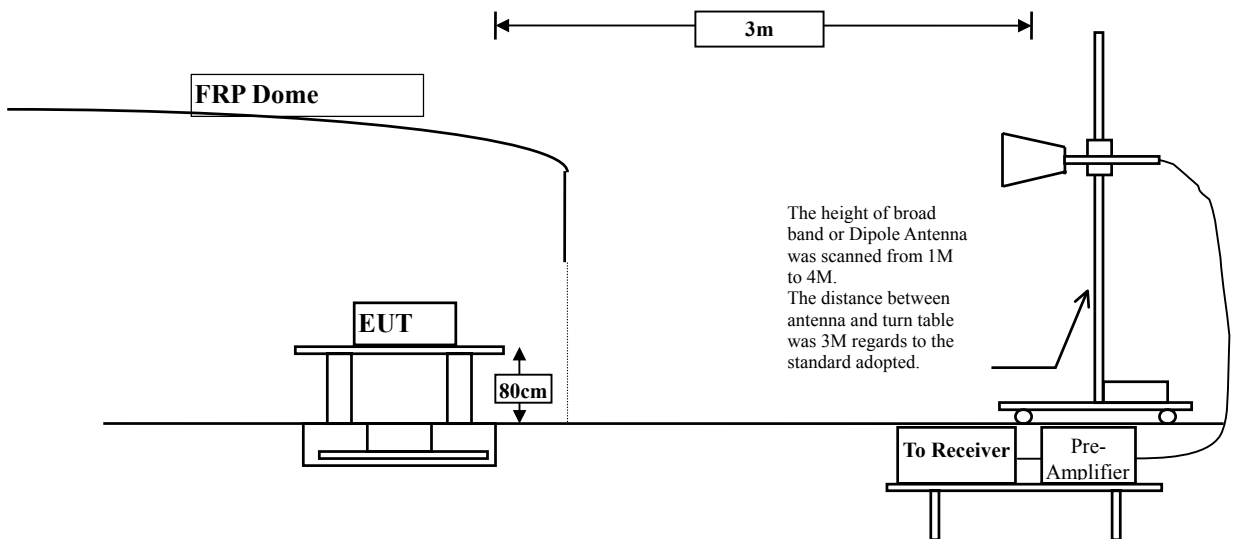
- Note:
1. All equipments are calibrated every one year.
  2. Test equipments marked by "X" are used to measure the final test results.

### 3.2. Test Setup

Below 1GHz



Above 1GHz



### 3.3. Limits

#### ➤ Fundamental and Harmonics Emission Limits

FCC Part 15 Subpart C Paragraph 15.249 Limits				
Frequency MHz	Field Strength of Fundamental		Field Strength of Harmonics	
	(mV/m @3m)	(dBuV/m @3m)	(uV/m @3m)	(dBuV/m @3m)
902-928	50	94	500	54
2400-2483.5	50	94	500	54
5725-5875	50	94	500	54

- Remarks :
1. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)
  2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

#### ➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB 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 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/m) = 20 log RF Voltage (uV/m)
  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.

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

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB beamwidth of the antenna.

The worst radiated emission is measured on the Final Measurement.

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

### 3.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz



### 3.6. Test Result of Radiated Emission

Product : Wireless Headset  
 Test Item : Fundamental Radiated Emission  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmitter (2405 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>					
Channel 02					
2405.000	-2.303	89.500	87.197	-26.803	114.000
<b>Average Detector</b>					
Channel 02					
2405.000	-2.303	77.890	75.587	-18.413	94.000
<b>Vertical</b>					
<b>Peak Detector</b>					
Channel 02					
2405.000	-2.303	92.010	89.707	-24.293	114.000
<b>Average Detector</b>					
Channel 02					
2405.000	-2.303	79.910	77.607	-16.393	94.000

Note:

1. Measurement Level = Reading Level + Correct Factor.
2. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Product : Wireless Headset  
 Test Item : Fundamental Radiated Emission  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmitter (2441 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Average Detector</b>					
Channel 20					
2441.000	-2.128	88.120	85.991	-28.009	114.000
<b>Average Detector</b>					
Channel 20					
2441.000	-2.128	76.770	74.641	-19.359	94.000
<b>Vertical</b>					
<b>Peak Detector</b>					
Channel 20					
2441.000	-2.128	91.380	89.251	-24.749	114.000
<b>Average Detector</b>					
Channel 20					
2441.000	-2.128	79.410	77.281	-16.719	94.000

Note:

1. Measurement Level = Reading Level + Correct Factor.
2. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Product : Wireless Headset  
 Test Item : Fundamental Radiated Emission  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmitter (2477 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Average Detector</b>					
Channel 38					
2477.000	-1.966	86.000	84.035	-29.965	114.000
<b>Average Detector</b>					
Channel 38					
2477.000	-1.966	74.710	72.745	-21.255	94.000
<b>Vertical</b>					
<b>Peak Detector</b>					
Channel 38					
2477.000	-1.966	90.190	88.225	-25.775	114.000
<b>Average Detector</b>					
Channel 38					
2477.000	-1.966	78.680	76.715	-17.285	94.000

Note:

1. Measurement Level = Reading Level + Correct Factor.
2. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Product : Wireless Headset  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (2405 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Peak Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4810.000	3.681	38.070	41.751	-32.219	74.000
7215.000	9.381	38.370	47.751	-26.219	74.000
9620.000	11.834	36.390	48.224	-25.746	74.000
<b>Average Detector</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4810.000	3.681	39.140	42.821	-31.149	74.000
7215.000	9.381	40.460	49.841	-24.129	74.000
9620.000	11.834	35.360	47.194	-26.776	74.000
<b>Average Detector</b>					
--					

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 Headset  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (2441 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Peak Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4882.000	3.921	37.360	41.281	-32.689	74.000
7323.000	9.657	36.420	46.077	-27.893	74.000
9764.000	11.798	36.000	47.798	-26.172	74.000
<b>Average Detector</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4882.000	3.921	39.520	43.441	-30.529	74.000
7323.000	9.657	37.290	46.947	-27.023	74.000
9764.000	11.798	35.290	47.088	-26.882	74.000
<b>Average Detector</b>					
--					

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 Headset  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (2477 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Peak Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4954.000	4.176	37.980	42.156	-31.814	74.000
7431.000	9.933	36.990	46.923	-27.047	74.000
9908.000	11.851	35.190	47.042	-26.928	74.000
<b>Average Detector</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4954.000	4.176	40.140	44.316	-29.654	74.000
7431.000	9.933	38.860	48.793	-25.177	74.000
9908.000	11.851	35.310	47.162	-26.808	74.000
<b>Average Detector</b>					
--					

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 Headset  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (2441 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
416.060	17.754	13.616	31.370	-14.630	46.000
511.120	18.928	16.847	35.775	-10.225	46.000
577.080	19.784	16.637	36.421	-9.579	46.000
697.360	20.835	13.560	34.395	-11.605	46.000
769.140	21.924	12.939	34.863	-11.137	46.000
899.120	22.337	9.688	32.025	-13.975	46.000
<b>Vertical</b>					
383.080	16.900	15.589	32.489	-13.511	46.000
480.080	18.459	9.633	28.092	-17.908	46.000
528.580	18.993	14.497	33.490	-12.510	46.000
623.640	21.210	7.866	29.076	-16.924	46.000
749.740	23.178	7.902	31.080	-14.920	46.000
930.160	24.128	8.894	33.022	-12.978	46.000

Note:

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

## 4. Band Edge

### 4.1. 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, 2008
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2008
X	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2008
X	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2008
X	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2008
X	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2008
X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2008
X	Pre-Amplifier	HP	8449B / 3008A01123	July, 2008

OATS No.3

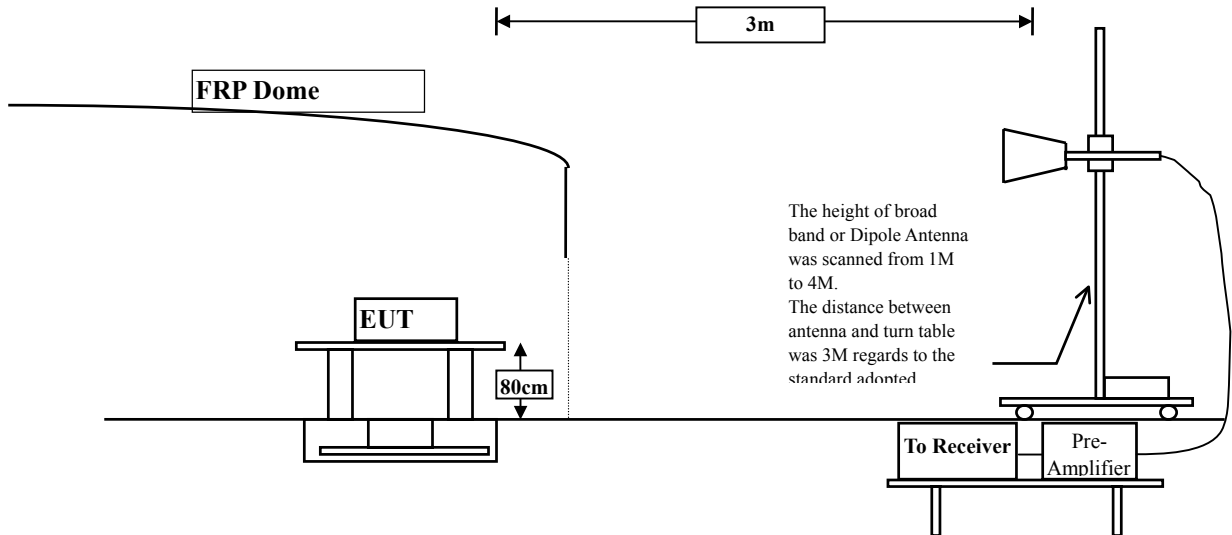
- Note:
1. All equipments are calibrated every one year.
  2. The test equipments marked by “X” are used to measure the final test results.



## 4.2. Test Setup

### RF Radiated Measurement:

Above 1GHz



## 4.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 50 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)).

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

#### 4.5. Uncertainty

Conducted is  $\pm 1.27$  dB

Radiated is  $\pm 3.9$  dB.

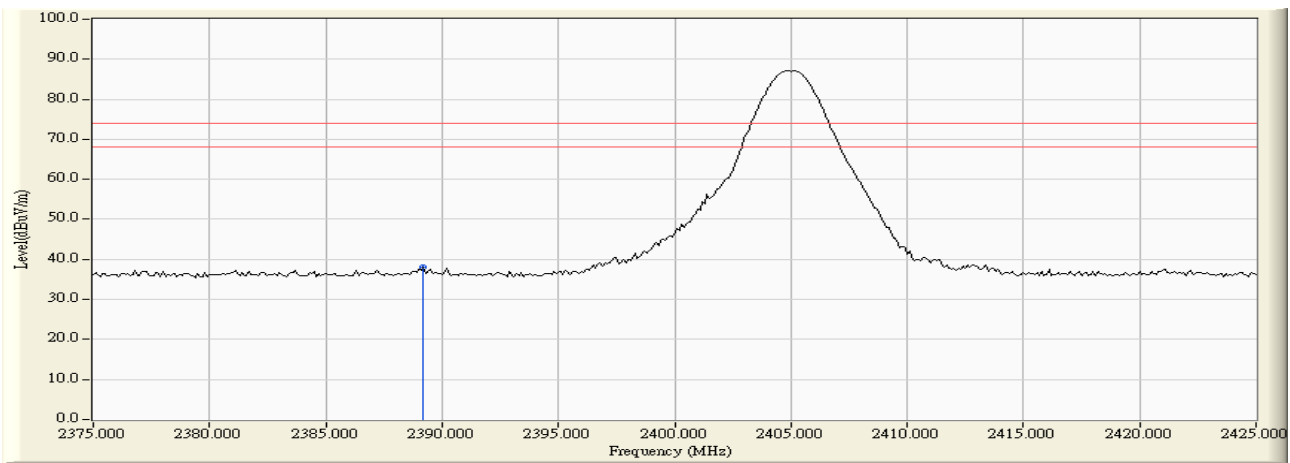
#### 4.6. Test Result of Band Edge

Product : Wireless Headset  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (2405 MHz)

##### 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
02(Peak)	2389.200	-2.381	40.379	37.998	74.000	54.000	Pass
02(Average)	--	--	--	--	74.000	54.000	Pass

**Figure Channel 02: Horizontal (Peak)**



Note:

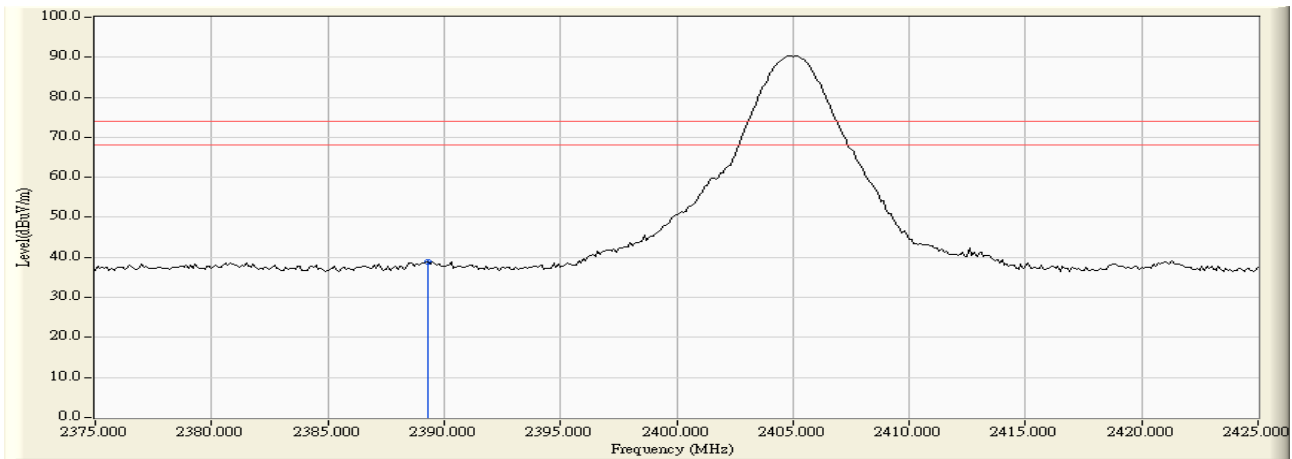
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Headset  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (2405 MHz)

**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
02(Peak)	2389.300	-2.381	41.347	38.966	74.000	54.000	Pass
02(Average)	--	--	--	--	74.000	54.000	Pass

**Figure Channel 02: Vertical (Peak)**



**Note:**

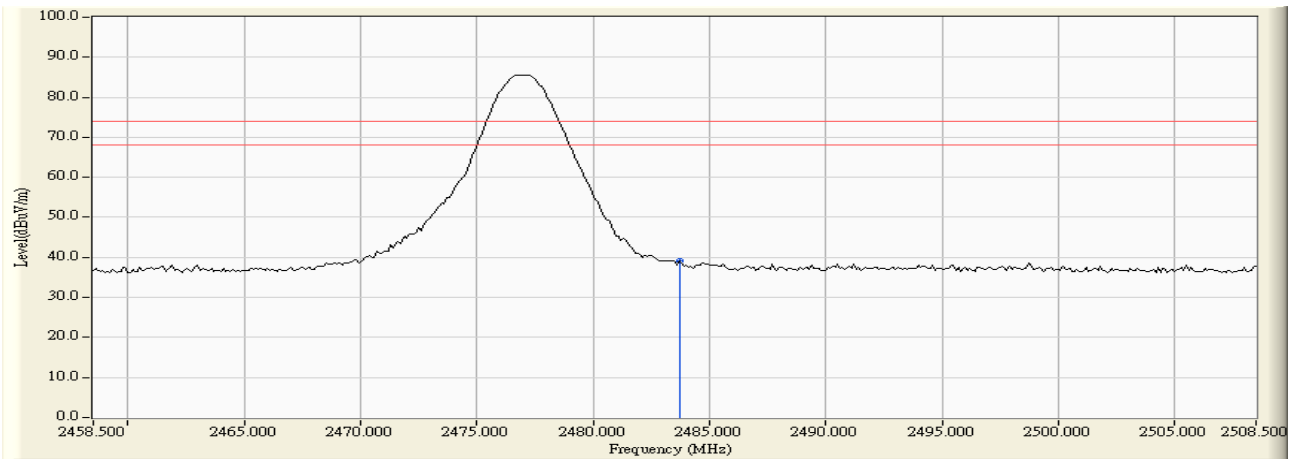
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Headset  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (2477 MHz)

**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
38(Peak)	2483.700	-1.936	41.155	39.219	74.000	54.000	Pass
38(Average)	--	--	--	--	74.000	54.000	Pass

**Figure Channel 38: Horizontal(Peak)**



**Note:**

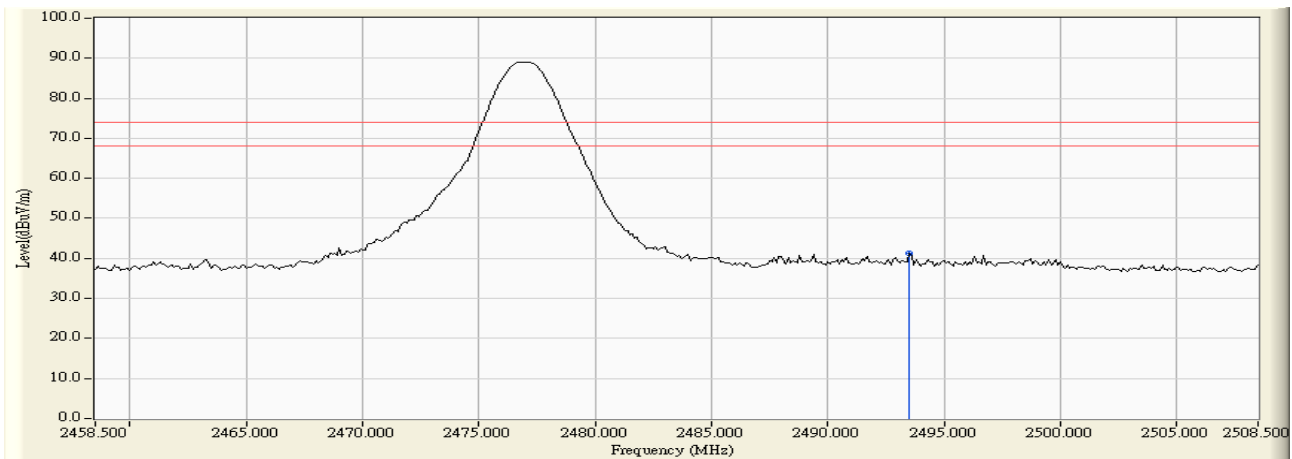
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless Headset  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter (2477 MHz)

**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
38(Peak)	2493.500	-1.905	43.184	41.278	74.000	54.000	Pass
38(Average)	--	--	--	--	74.000	54.000	Pass

**Figure Channel 38: Vertical(Peak)**



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

## 5. EMI Reduction Method During Compliance Testing

No modification was made during testing.