

MEASUREMENT REPORT
of the Base of
WIRELESS HANDS-FREE
CELLULAR HEADSET

Applicant : Fitright Industrial Co., Ltd.
Model No. : FR-CH0001 (Base)
EUT : Wireless Hands-free Cellular Headset (Base)
FCC ID : QJIFR-CH0002
Report No. : F2915477 (Version 2.2a)

Tested by :

Training Research Co., Ltd.

TEL : 886-2-26935155 FAX : 886-2-26934440
255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C.

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CERTIFICATION

We here by verify that:

The test data, data evaluation, test procedures and equipment configurations shown in this report were made mainly in accordance with the procedures given in ANSI C63.4 (1992) as a reference. All test were conducted by *Training Research Co., Ltd.*, 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Also, we attest to the accuracy of each.

We further submit that the energy emitted by the sample EUT tested as described in the report is in compliance with the technical requirements set forth in the FCC Rules Part 15 Subpart C Section 15.249.

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Model No. : FR-CH0001 (Base)
EUT : Wireless Hands-free Cellular Headset (Base)
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Test Date : Oct, 31, 2002

Prepared by: _____
Eric Wong

Approved by: _____
Frank Tsai

Tested by :

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. GENERAL

1.1 Introduction

The following measurement report is submitted on behalf of applicant supporting that the *Wireless hand-free cellular* certification in accordance with Part 2 Subpart J and Part 15 Subpart A and C of the Commission's Rules and Regulations.

1.2 Description of EUT

EUT : Wireless Hands-free Cellular Headset (Base)

Model No. : FR-CH0001

Granted FCC ID : QJIFR-CH0002

Frequency Range : 2401.056 MHz-2482.272 MHz

Support Channel : 95 Channels

Channel Spacing : 864 kHz

Modulation Skill : GFSK

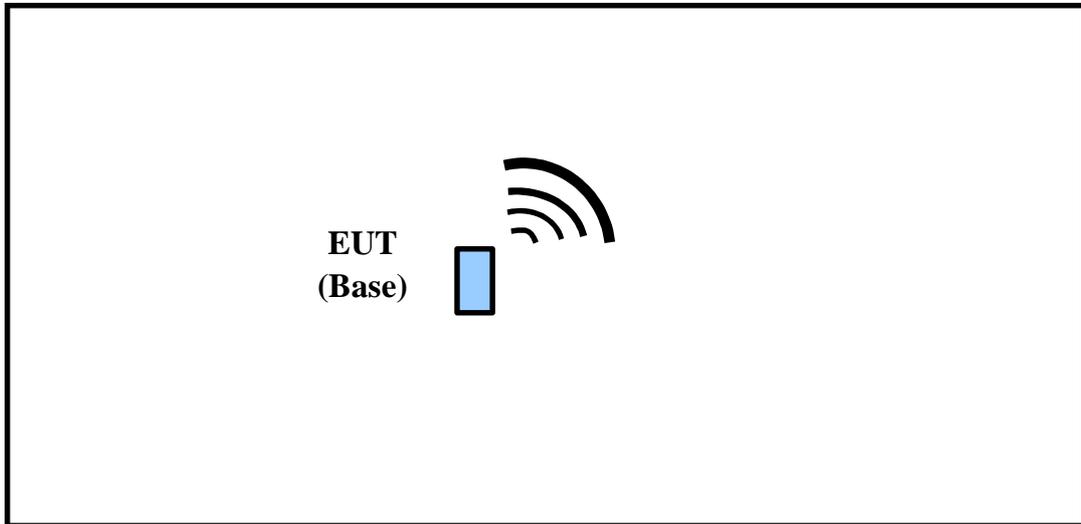
Power Type : 1. *Base*: Rechargeable Li-Polymer Battery 200mA
3. *Changer*:
 a. Car charger:
 110VAC 60 Hz, 3W / 9Vdc 150mA
 b. Wall charger:
 100-240VAC, 50-60 Hz, 7W 150mA / 12.5V 7W 500mA

Applicant : Fitright Industrial Co., Ltd.
402, 4F/6, Wu-Chang 1st Rd., Wu-Ku Industrial Dist.,
Shin-Chauang 248, Taipei, Taiwan, R.O.C.

1.3 Description of Support Equipment

Nil

1.4 Configuration of System Under Test



The tests below are carried out the EUT transmitter set at high power in TDD mode. The EUT is connected to the notebook computer through the COM port to the EUT to select the specific conditions by the utility. The EUT is forced among selection of output power level and channel number. Since the device is portable, we have performed the pre-test in the 3 orthogonal axes that including all possible using condition. The final testes is then performed in the worst case from one of those 3 orthogonal conditions and shown in follows.

The setting up procedure was recorded in <Appendix A>.

1.5 Verify the Frequency and Channel

<i>Channel</i>	<i>Base (MHz)</i>	<i>Headset (MHz)</i>	<i>Channel</i>	<i>Base (MHz)</i>	<i>Headset (MHz)</i>
0	2401.0560	2401.0560	26	2423.5200	2423.5200
1	2401.9200	2401.9200	27	2424.3840	2424.3840
2	2402.7840	2402.7840	28	2425.2480	2425.2480
3	2403.6480	2403.6480	29	2426.1120	2426.1120
4	2404.5120	2404.5120	30	2426.9760	2426.9760
5	2405.3760	2405.3760	31	2427.8400	2427.8400
6	2406.2400	2406.2400	32	2428.7040	2428.7040
7	2407.1040	2407.1040	33	2429.5680	2429.5680
8	2407.9680	2407.9680	34	2430.4320	2430.4320
9	2408.8320	2408.8320	35	2431.2960	2431.2960
10	2409.6960	2409.6960	36	2432.1600	2432.1600
11	2410.5600	2410.5600	37	2433.0240	2433.0240
12	2411.4240	2411.4240	38	2433.8880	2433.8880
13	2412.2880	2412.2880	39	2434.7520	2434.7520
14	2413.1520	2413.1520	40	2435.6160	2435.6160
15	2414.0160	2414.0160	41	2436.4800	2436.4800
16	2414.8800	2414.8800	42	2437.3440	2437.3440
17	2415.7440	2415.7440	43	2438.2080	2438.2080
18	2416.6080	2416.6080	44	2439.0720	2439.0720
19	2417.4720	2417.4720	45	2439.9360	2439.9360
20	2418.3360	2418.3360	46	2440.8000	2440.8000
21	2419.2000	2419.2000	47	2441.6640	2441.6640
22	2420.0640	2420.0640	48	2442.5280	2442.5280
23	2420.9280	2420.9280	49	2443.3920	2443.3920
24	2421.7920	2421.7920	50	2444.2560	2444.2560
25	2422.6560	2422.6560	51	2445.1200	2445.1200

<i>Channel</i>	<i>Base (MHz)</i>	<i>Headset (MHz)</i>	<i>Channel</i>	<i>Base (MHz)</i>	<i>Headset (MHz)</i>
52	2445.9840	2445.9840	76	2466.7200	2466.7200
53	2446.8480	2446.8480	77	2467.5840	2467.5840
54	2447.7120	2447.7120	78	2468.4480	2468.4480
55	2448.5760	2448.5760	79	2469.3120	2469.3120
56	2449.4400	2449.4400	80	2470.1760	2470.1760
57	2450.3040	2450.3040	81	2471.0400	2471.0400
58	2451.1680	2451.1680	82	2471.9040	2471.0940
59	2452.0320	2452.0320	83	2472.7680	2472.7680
60	2452.8960	2452.8960	84	2473.6320	2473.6320
61	2453.7600	2453.7600	85	2474.4960	2474.4960
62	2454.6240	2454.6240	86	2475.3600	2475.3600
63	2455.4880	2455.4880	87	2476.2240	2476.2240
64	2456.3520	2456.3520	88	2477.0880	2477.0880
65	2457.2160	2457.2160	89	2477.9520	2477.9520
66	2458.0800	2458.0880	90	2478.8160	2478.8160
67	2458.9440	2458.9440	91	2479.6800	2479.6800
68	2459.8080	2459.8080	92	2480.5440	2480.5440
69	2460.6720	2460.6720	93	2481.4080	2481.4080
70	2461.5360	2461.5360	94	2482.2720	2482.2720
71	2462.4000	2462.4000			
72	2463.2640	2463.2640			
73	2464.1280	2464.1280			
74	2464.9920	2464.9920			
75	2465.8560	2465.8560			

Note:

This is for sure that all frequencies are in 2.400GHz to 2.483.5GHz.

Section 15.31(m): Measurements on intentional radiators or receivers shall be performed at three frequencies for operating frequency range over 10MHz. (The locations of these frequencies one near the top, one near the middle and one near the bottom.) After test, the EUT operating frequencies are in 2.401GHz to 2.482GHz. So all the items as followed in testing report are need to test these three frequencies: top: Channel 0, middle: Channel 47, bottom: Channel 94.

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1.6 Test Procedure

All measurements contained in this report were performed mainly according to the techniques described in ANSI C63.4 (1992) and the pre-setup was written on Appendix A, the detail setup was written on each test item.

1.7 Location of the Test Site

The radiated emissions measurements required by the rules were performed on the **three-meter, Anechoic Chamber (Registration Number: 93906)** maintained by *Training Research Co., Ltd.* - 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Complete description and measurement data have been placed on file with the commission. The conducted power line emissions tests and other test items were performed in an anechoic chamber also located at Training Research Co., Ltd.

255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C., *Training Research Co., Ltd.* is listed by the FCC as a facility available to do measurement work for others on a contract basis.

1.8 General Test Condition

The conditions under which the EUT operates were varied to determine their effect on the equipment's emission characteristics. The final configuration of the test system and the mode of operation used during these tests were chosen as that which produced the highest emission levels. However, only those conditions, which the EUT was considered likely to encounter in normal use were investigated.

In tests, the base and the headset are tested separately. They were set in high power and continuously transmitting mode that is selected through the COM port of the Notebook's utility. The Ch.00, Ch.47 and Ch.94 of EUT were all tested.

The setting up procedure is recorded on Appendix A.

II. Power Line Conducted Emissions for AC Powered Units

2.1 Test Condition & Setup

The power line conducted emission measurements were performed in an anechoic chamber. The EUT was assembled on a wooden table, which is 80 centimeters high, was placed 40 centimeters from the back-wall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and Line Impedance Stabilization Networks (LISNs). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer (or EMI receiver) was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPER quasi-peak detection mode. The analyzer's 6dB bandwidth was set to 9KHz. No post-detector video filter was used.

The spectrum was scanned from 450 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 2.4.

There is test conditions apply in this test item, the test procedure description as the following:

1.EUT transmit only:

Using the COM port of notebook computer and utility software to control the EUT. Then making access to the mode of continuous transmission and setting the testing channel. Three channels were tested, one in the top (CH.00), one in the middle (CH.47) and the other in bottom (CH.94).

The setting up procedure is recorded on <Appendix A>.

2.2 List of Test Instruments

<u>Instrument Name</u>	<u>Model No.</u>	<u>Brand</u>	<u>Serial No.</u>	<u>Last time</u>	<u>Next time</u>
EMI Receiver	8546A	H P	3520A00242	06/29/02	06/29/03
RF Filter Section	85460A	H P	3448A00217	06/29/02	06/29/03
LISN (EUT)	LISN-01	TRC	9912-03,04	12/09/01	12/09/02
LISN (Support E.)	LISN-01	TRC	9912-05	01/04/02	01/04/03
Switch/Control Unit (< 30MHz)	3488A	HP	N/A	11/20/01	11/20/02
Auto Switch Box (< 30MHz)	ASB-01	TRC	9904-01	11/20/01	11/20/02

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2.3 Test configuration

Conducted Emissions Test Placement



2.4 Test Results of Conducted Emissions

EUT - base only (w/o charging battery)

The following table shows a summary of the highest emissions of power line conducted emissions on the LIVE and NETURAL conductors of the EUT power cord.

Table 1 Power Line Conducted Emissions

Conductor	Power Connected Emissions			FCC Class B	
	Frequency (KHz)	Peak Amplitude (dB μ V)	QP Amplitude (dB μ V)	Limit (dB μ V)	Margin (dB)
Line 1	480.00	37.95	---	48.00	-10.05
	512.00	30.07	---	48.00	-17.93
	545.00	32.45	---	48.00	-15.55
	615.00	29.72	---	48.00	-18.28
	650.00	32.89	---	48.00	-15.11
	684.00	29.87	---	48.00	-18.13
	783.00	27.14	---	48.00	-20.86
	818.00	28.42	---	48.00	-19.58
	880.00	26.00	---	48.00	-22.00
	1224.00	25.13	---	48.00	-22.87
Line 2	457.00	23.49	---	48.00	-24.51
	477.00	34.70	---	48.00	-13.30
	512.00	29.09	---	48.00	-18.91
	549.00	31.38	---	48.00	-16.62
	582.00	23.44	---	48.00	-24.56
	512.00	27.18	---	48.00	-20.82
	650.00	30.45	---	48.00	-17.55
	684.00	24.04	---	48.00	-23.96
	783.00	24.88	---	48.00	-23.12
	818.00	24.11	---	48.00	-23.89

NOTE:

1. Margin = Peak Amplitude - Limit
2. A "+" sign in the margin column means the emission is OVER the Class B Limit and "-" sign of means UNDER the Class B limit

EUT - base only (w/ battery charging)

The following table shows a summary of the highest emissions of power line conducted emissions on the LIVE and NETURAL conductors of the EUT power cord.

Table 2 Power Line Conducted Emissions

Conductor	Power Connected Emissions			FCC Class B	
	Frequency (KHz)	Peak Amplitude (dB μ V)	QP Amplitude (dB μ V)	Limit (dB μ V)	Margin (dB)
Line 1	499.00	42.34	---	48.00	-5.66
	538.00	33.27	---	48.00	-14.73
	571.00	42.75	---	48.00	-5.25
	637.00	36.06	---	48.00	-11.94
	701.00	38.53	---	48.00	-9.47
	734.00	37.18	---	48.00	-10.82
	798.00	38.41	---	48.00	-9.59
	833.00	39.42	---	48.00	-8.58
	935.00	34.87	---	48.00	-13.13
	972.00	36.36	---	48.00	-11.64
Line 2	467.00	32.93	---	48.00	-15.07
	502.00	39.35	---	48.00	-8.65
	568.00	35.49	---	48.00	-12.51
	604.00	33.15	---	48.00	-14.85
	637.00	32.13	---	48.00	-15.87
	671.00	32.64	---	48.00	-15.36
	701.00	38.00	---	48.00	-10.00
	803.00	33.48	---	48.00	-14.52
	839.00	35.56	---	48.00	-12.44
	935.00	31.17	---	48.00	-16.83

***The reading amplitudes are all under limit.**

III. Measurement of Field Strength

3.1 Test Condition & Setup

These testes required for measuring the field strength produced by the EUT. It must be performed with highest gain or each type of antenna proposed for use with the EUT. The testes are performed inside the anechoic chamber by using the following spectrum analyzer settings:

PEAK Detector Mode	AVERAGER Detector Mode
SPAN (wide enough for fully capture the emission)	SPAN (wide enough for fully capture the emission)
RBW=1 MHz	RBW=1 MHz
VBW=1 MHz	VBW=1 kHz
Sweep mode: AUTO	Sweep mode: AUTO
Trace: MAX HOLD	Trace: MAX HOLD

Following the guidelines in ANSI C63.4-1992 with respect to maximizing the emission by rotating the EUT, measuring the emissions while the EUT is situated in three orthogonal planes, adjusting the measurement antenna height and polarization, etc. a pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in section 15.35(b).

3.2 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
EMI Receiver	8546A	H P	3520A00242	10/18/02	10/18/03
RF FilterSection	85460A	H P	3448A00217	10/18/02	10/18/03
Horn Antenna	3115	EMCO	9704 – 5178	08/15/02	08/15/03

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3.3 Test Configuration



Front View of the Test Configuration (BASE)



Rear View of the Test Configuration (BASE)

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3.4 Test Results

Field Strength Measurement of the Base (Y-axis)

<i>Radiated Emission</i>			<i>Correction Factors (dB)</i>	<i>Peak Corrected Amplitude(dBuV)</i>
<i>Channel</i>	<i>Ant. H.(m)</i>	<i>Table(°)</i>		
Ch.00	1.00	219	2.97	85.14
Ch.47	1.00	249	3.19	85.36
Ch.94	1.00	218	3.41	87.91

IV. Measurement of Occupied Bandwidth

4.1 Test Condition

Use the following spectrum analyzer setting:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW 1% of the 20 dB bandwidth

VBW RBW

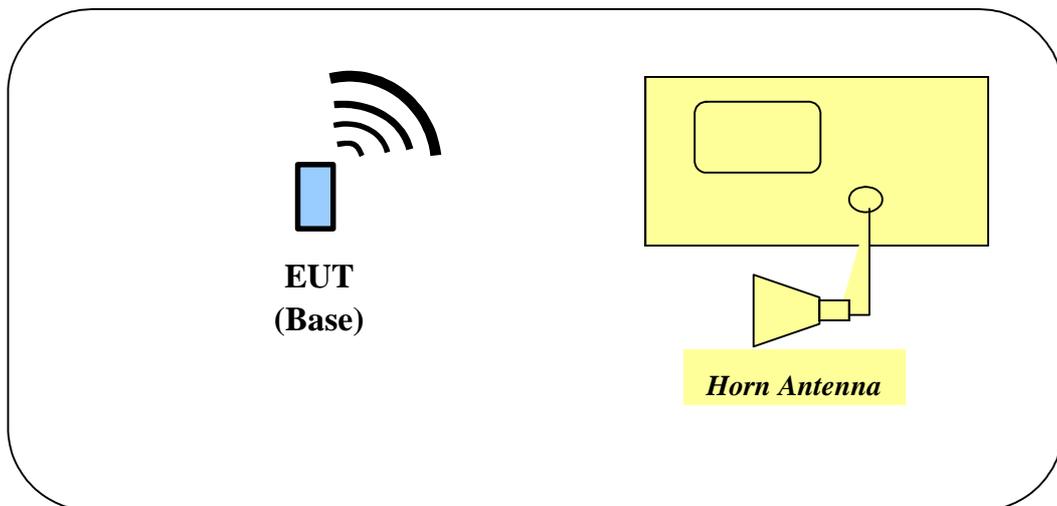
Sweep = auto

Detector function = peak

Trace = max hold

The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of emission. Use the marker-delta function to measure 20dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20dB bandwidth of the emission. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this section. Submit this plot(s).

4.2 Test Instruments Configuration



Test Configuration of Bandwidth for Direct Sequence System

4.3 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
EMI Receiver	8546A	H P	3520A00242	10/18/02	10/18/03
RF FilterSection	85460A	H P	3448A00217	10/18/02	10/18/03
Horn Antenna	3115	EMCO	9704 – 5178	08/15/02	08/15/03

4.4 Test Results

Bandwidth of Channel 0

Bandwidth of Base : 690 kHz

Bandwidth of Channel 47

Bandwidth of Base : 668 kHz

Bandwidth of Channel 94

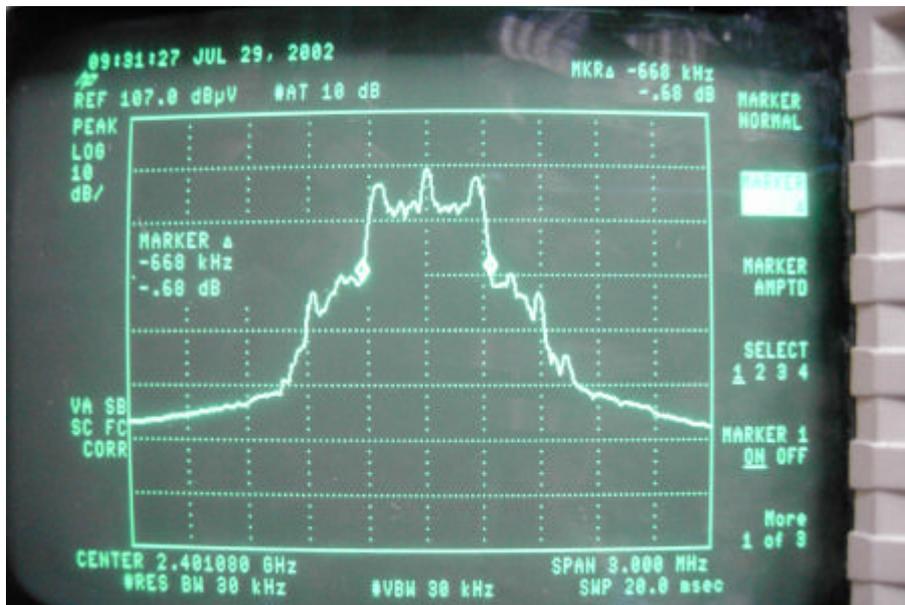
Bandwidth of Base : 675 kHz

Note:

The data in the above table are summarizing the following attachment spectrum analyzer.

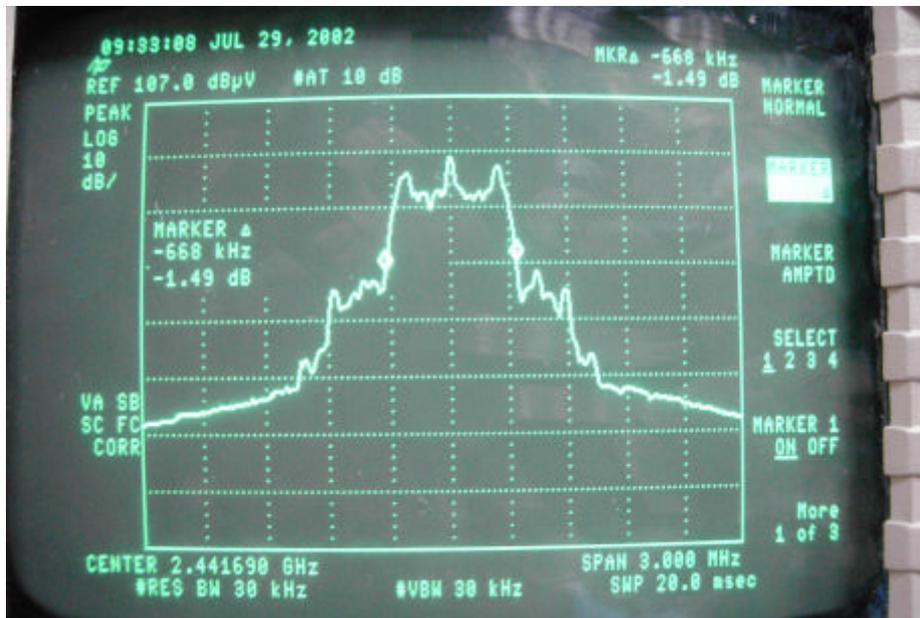
Bandwidth of Channel 0:

Base:



Bandwidth of Channel 47:

Base:



Bandwidth of Channel 94:

Base:



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V. Band-edge Compliance

5.1 Test Condition

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation

RBW 1% of the span

VBW RBW

Sweep = auto

Detector function = peak

Trace = max hold

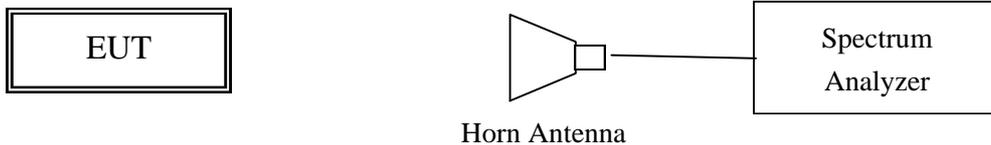
Allow the trace to stabilize. Set the marker on the emission at the band-edge, or on the highest modulation product outside of the band, if this level is greater than that at the band-edge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. the marker-delta value now displayed must comply with the limit specified in this section. Submit this plot.

Now, using the same instrument setting, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emission caused by the hopping function also comply with the specified limit. Submit this plot.

5.2 List of Test Instruments

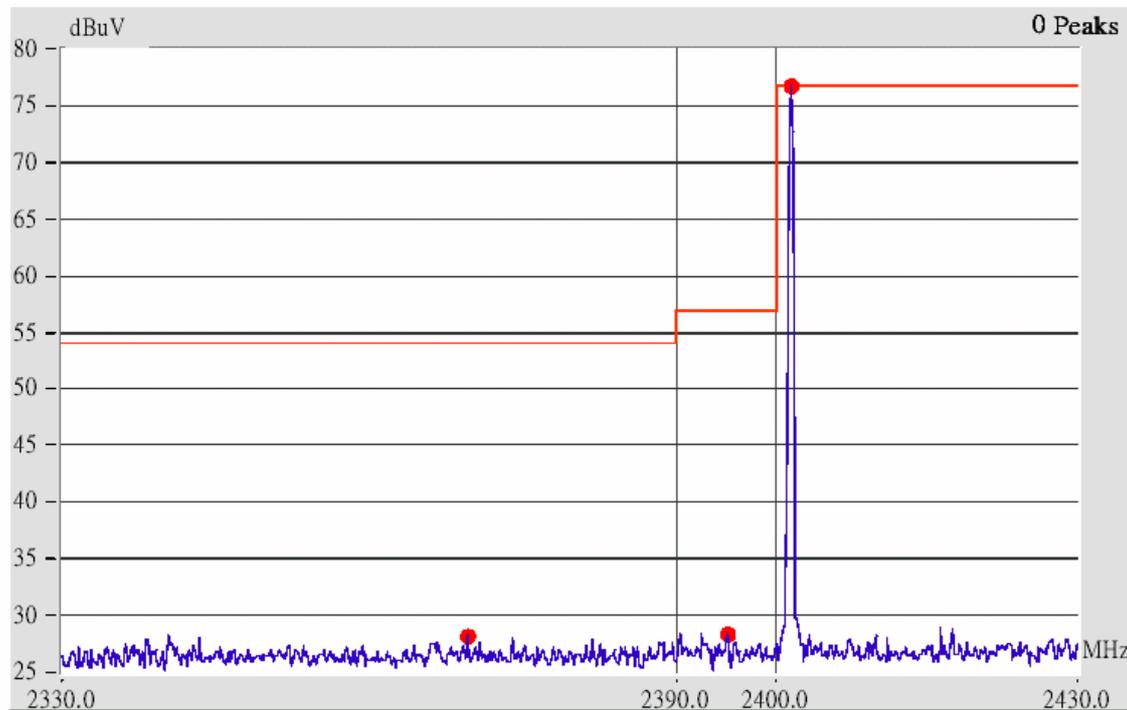
Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
EMI Receiver	8546A	H P	3520A00242	10/18/02	10/18/03
RF FilterSection	85460A	H P	3448A00217	10/18/02	10/18/03
Horn Antenna	3115	EMCO	9704 – 5178	08/15/02	08/15/03

5.3 Test Instruments Configuration



5.4 Test Results

Channel 00 (Hopping disabled)

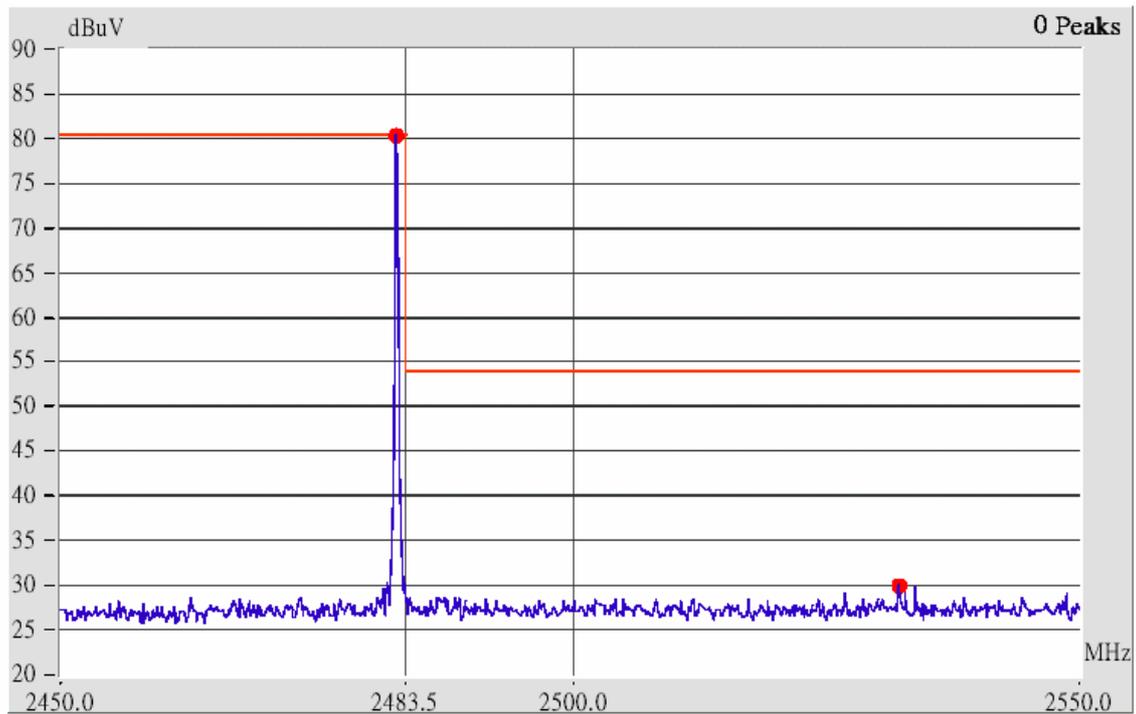


This is the hard copy of our band-edge measurement generated by our band-edge testing program.

The picture shown above is the band-edge of channel 00 while the hopping is disabled.

1. The lobe right by the fundamental side is already 20dB below the highest emission level.
2. The emissions recorded in the restricted band (<2400MHz) is do comply with the Part 15.209(a) – under the limited line marked in red color.

Channel 94 (Hopping disabled)



This is the hard copy of our band-edge measurement generated by our band-edge testing program.

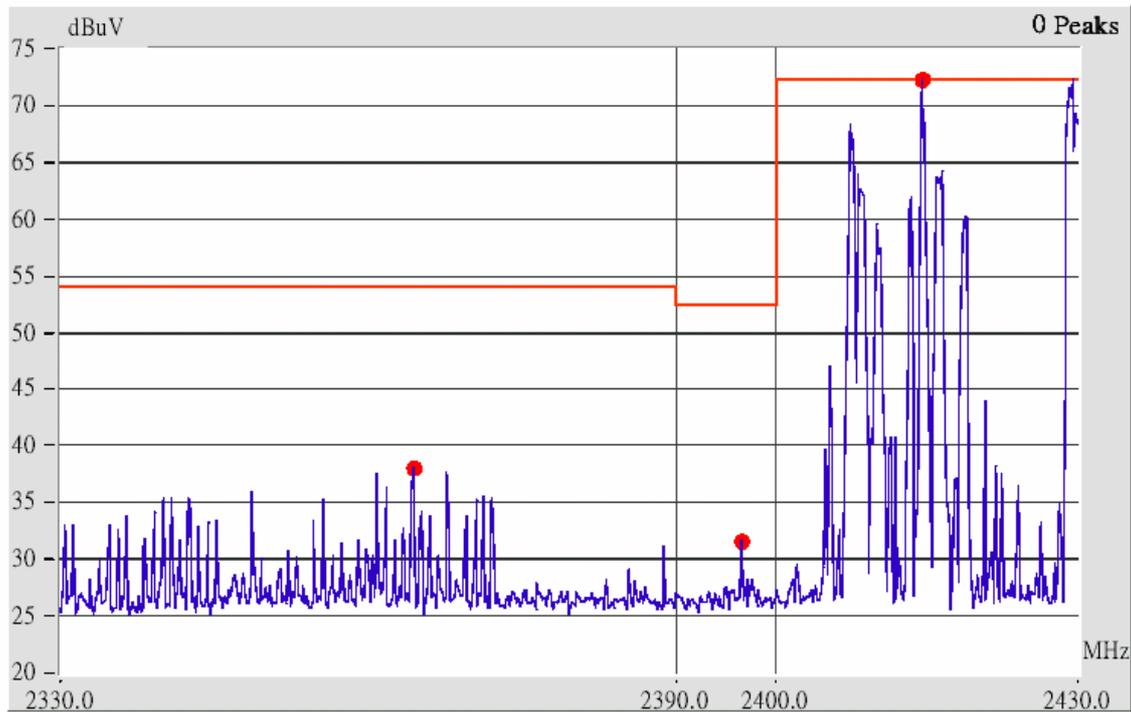
The picture shown above is the band-edge of channel 94 while the hopping is disabled.

1. The lobe right by the fundamental side is already 20dB below the highest emission level.
2. The emissions recorded in the restricted band (>2483.5MHz) is do comply with the Part 15.209(a) – under the limited line marked in red color.

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Channel 00 (Hopping enabled)



This is the hard copy of our band-edge measurement generated by our band-edge testing program.

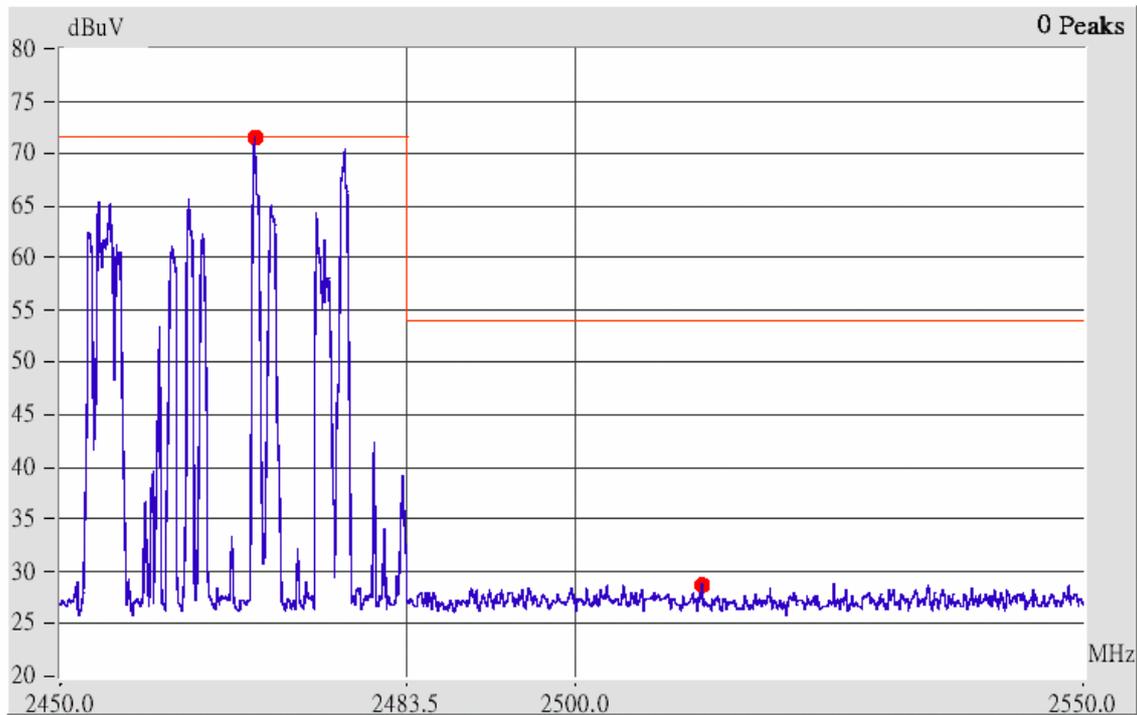
The picture shown above is the band-edge of channe00 while the hopping is functioning.

3. The lobe right by the fundamental side is already 20dB below the highest emission level.
4. The emissions recorded in the restricted band (<2400MHz) is do comply with the Part 15.209(a) – under the limited line marked in red color.

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Channel 94 (Hopping enabled)



This is the hard copy of our band-edge measurement generated by our band-edge testing program.

The picture shown above is the band-edge of channel 94 while the hopping is functioning.

5. The lobe right by the fundamental side is already 20dB below the highest emission level.
6. The emissions recorded in the restricted band (>2483.5MHz) is do comply with the Part 15.209(a) – under the limited line marked in red color.

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VI. Spurious Radiated Emissions

6.1 Test Condition

This test is required for any spurious emission or modulation product that falls in a restricted band, as defined in section 15.205. It must be performed with highest gain or each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f > 1$ GHz, 100 KHz for $f < 1$ GHz

VBW = RBW

Sweep = auto

Detector function = peak

Trace = max hold

Following the guidelines in ANSI C63.4-1992 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. a pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in section 15.35(b). submit this data.

Now set the VBW to 10 Hz, while maintaining all the other instrument settings. This peak level, once corrected, must comply with the limit specified in section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from $20\log(\text{dwell time}/100\text{ms})$, in an effort to demonstrate compliance with the 15.209 limit. If the emission on which a reading measurement must be made is located at the edge of the authorized band of operation, then the alternative “marker-delta” method, listed at the end of this document, may be employed.

6.2 List of Test Instruments

<u>Instrument Name</u>	<u>Model No.</u>	<u>Brand</u>	<u>Serial No.</u>	<u>Last time</u>	<u>Next time</u>
EMI Receiver	8546A	H P	3520A00242	10/18/02	10/18/03
RF FilterSection	85460A	H P	3448A00217	10/18/02	10/18/03
Horn Antenna	3115	EMCO	9704 – 5178	08/15/02	08/15/03

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6.3 Test Instruments Configuration



Front View of the Test Configuration (BASE)



Rear View of the Test Configuration (BASE)

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6.4 Test Results of Spurious Radiated Emissions

1. Test Results

The highest peak values of radiated emissions from the EUT at various antenna heights, antenna polarization, EUT orientation, etc. are recorded on the following.

Test Conditions: Testing room :Temperature : 27 ° C Humidity : 67 % RH

 Testing site :Temperature : 31 ° C Humidity : 74 % RH

Open Field Radiated Emissions For 9KHz 1GHz [Channel 00, Base, Horizontal, Y-axis]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 m)	
Frequency (MHz)	Amplitude (dBmV/m)	Ant. H. (m)	Table (°)			Limit (dBmV/m)	Margin (dB)

Open Field Radiated Emissions For 9KHz 1GHz [Channel 00, Base Vertical, Y-axis]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 m)	
Frequency (MHz)	Amplitude (dBmV/m)	Ant. H. (m)	Table (°)			Limit (dBmV/m)	Margin (dB)

Note: 1. Margin = Corrected Amplitude – Limit.

(The emissions recorded are all at least 20dB below the limits.)

2. Peak Amplitude – Correction Factors = Corrected Amplitude

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Open Field Radiated Emissions For 1GHz 25GHz [Channel 00, Base Horizontal, Y-axis]

Radiated Emission				Correction Factors (dB)	Corrected Amplitude		FCC Class B (3 m)				
Freq. (GHz)	Amplitude (dBmV/m)		Ant. (m)		Table (°)	Peak	Average	Limit (dBmV/m)	Margin (dB)		
2.401	82.17	---	1.00	219	2.97	85.14	---	---	---	---	---
*3.602	48.11	35.63	1.00	276	0.02	48.13	35.65	74.0	54.0	-25.87	-18.35
6.001	57.44	44.75	1.00	21	6.72	64.16	51.74	74.0	54.0	-9.84	-2.26
7.205	49.11	37.19	1.00	194	9.92	59.03	47.11	74.0	54.0	-14.97	-6.89
9.605	40.44	27.05	1.00	114	11.49	51.93	38.54	74.0	54.0	-22.07	-15.46

Open Field Radiated Emissions For 1GHz 25GHz [Channel 00, Base Vertical, Y-axis]

Radiated Emission				Correction Factors (dB)	Corrected Amplitude		FCC Class B (3 m)				
Freq. (GHz)	Amplitude (dBmV/m)		Ant. (m)		Table (°)	Peak	Average	Limit (dBmV/m)	Margin (dB)		
2.401	69.50	---	1.00	132	2.97	72.47	---	---	---	---	---
*3.602	46.27	35.57	1.00	317	0.02	46.29	35.59	74.0	54.0	-27.71	-18.41
6.001	50.77	39.05	1.00	193	6.72	57.49	45.77	74.0	54.0	-16.51	-8.23
7.202	49.10	33.93	1.00	279	9.91	59.01	43.84	74.0	54.0	-14.99	-10.16
*8.403	42.11	27.70	1.00	117	11.32	53.43	39.02	74.0	54.0	-20.57	-14.98
9.607	41.27	28.29	1.00	29	11.48	52.75	39.77	74.0	54.0	-21.25	-14.23

Open Field Radiated Emissions For 9KHz 1GHz [Channel 47, Base, Horizontal, Y-axis]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 m)	
Frequency (MHz)	Amplitude (dBmV/m)	Ant. H. (m)	Table (°)			Limit (dBmV/m)	Margin (dB)

Open Field Radiated Emissions For 9KHz 1GHz [Channel 47, Base Vertical, Y-axis]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 m)	
Frequency (MHz)	Amplitude (dBmV/m)	Ant. H. (m)	Table (°)			Limit (dBmV/m)	Margin (dB)

Note:

1. Margin = Corrected Amplitude – Limit.
(The emissions recorded are all at least 20dB below the limits.)
2. Peak Amplitude – Correction Factors = Corrected Amplitude

Open Field Radiated Emissions For 1GHz 25GHz [Channel 47, Base Horizontal, Y-axis]

Radiated Emission				Correction Factors (dB)	Corrected Amplitude		FCC Class B (3 m)				
Freq. (GHz)	Amplitude (dBmV/m)		Ant. (m)		Table (°)	Peak	Average	Limit (dBmV/m)		Margin (dB)	
2.442	82.17	---	1.00	249	3.19	85.36	---	---	---	---	---
*3.662	49.61	35.52	1.00	129	0.10	49.71	35.62	74.0	54.0	-24.29	-18.38
6.103	56.61	44.21	1.00	167	7.21	63.82	51.42	74.0	54.0	-10.18	-2.58
8.546	46.11	34.40	1.00	293	11.22	57.33	45.62	74.0	54.0	-16.67	-8.38
9.769	39.10	23.24	1.00	291	11.91	51.01	35.15	74.0	54.0	-22.99	-18.85

Open Field Radiated Emissions For 1GHz 25GHz [Channel 47, Base Vertical, Y-axis]

Radiated Emission				Correction Factors (dB)	Corrected Amplitude		FCC Class B (3 m)				
Freq. (GHz)	Amplitude (dBmV/m)		Ant. (m)		Table (°)	Peak	Average	Limit (dBmV/m)		Margin (dB)	
2.442	73.00	---	1.00	220	3.19	76.19	---	---	---	---	---
*3.662	46.78	33.65	1.00	29	0.10	46.88	33.75	74.0	54.0	-27.12	-20.25
6.103	49.61	37.56	1.00	76	7.21	56.82	44.77	74.0	54.0	-17.18	-9.23
8.548	45.78	34.45	1.00	63	11.22	57.00	45.67	74.0	54.0	-17.00	-8.33
9.766	40.60	27.23	1.00	316	11.91	52.51	39.14	74.0	54.0	-21.49	-14.86

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Open Field Radiated Emissions For 9KHz 1GHz [Channel 97, Base, Horizontal, Y-axis]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 m)	
Frequency (MHz)	Amplitude (dBmV/m)	Ant. H. (m)	Table (°)			Limit (dBmV/m)	Margin (dB)

Open Field Radiated Emissions For 9KHz 1GHz [Channel 97, Base Vertical, Y-axis]

Radiated Emission				Correction Factors	Corrected Amplitude	FCC Class B (3 m)	
Frequency (MHz)	Amplitude (dBmV/m)	Ant. H. (m)	Table (°)			Limit (dBmV/m)	Margin (dB)

Note:

1. Margin = Corrected Amplitude – Limit.
(The emissions recorded are all at least 20dB below the limits.)
2. Peak Amplitude – Correction Factors = Corrected Amplitude

Open Field Radiated Emissions For 1GHz 25GHz [Channel 97, Base Horizontal, Y-axis]

Radiated Emission				Correction Factors (dB)	Corrected Amplitude		FCC Class B (3 m)				
Freq. (GHz)	Amplitude (dBmV/m)		Ant. (m)		Table (°)	Peak	Average	Limit (dBmV/m)		Margin (dB)	
2.483	84.50	---	1.00	218	3.41	87.91	---	---	---	---	---
6.204	57.77	45.09	1.00	116	7.53	65.30	52.62	74.0	54.0	-8.70	-1.38
8.686	44.27	28.85	1.00	38	11.40	55.67	40.25	74.0	54.0	-18.33	-13.75
9.931	39.28	26.13	1.00	249	11.61	50.89	37.74	74.0	54.0	-23.11	-16.26

Open Field Radiated Emissions For 1GHz 25GHz [Channel 97, Base Vertical, Y-axis]

Radiated Emission				Correction Factors (dB)	Corrected Amplitude		FCC Class B (3 m)				
Freq. (GHz)	Amplitude (dBmV/m)		Ant. (m)		Table (°)	Peak	Average	Limit (dBmV/m)		Margin (dB)	
2.483	73.50	---	1.00	334	3.41	76.91	---	---	---	---	---
*3.725	48.94	35.97	1.00	27	0.28	49.22	36.25	74.0	54.0	-24.78	-17.75
6.204	49.77	37.07	1.00	119	7.53	57.30	44.60	74.0	54.0	-16.70	-9.40
8.691	44.27	31.48	1.00	39	11.41	55.68	42.89	74.0	54.0	-18.32	-11.11
9.931	38.11	27.16	1.00	1	11.61	49.72	38.77	74.0	54.0	-24.28	-15.23

Appendix A

Setting up Procedure

1. Connect the EUT with the notebook computer through the COM port.
2. Using the utility provided by the manufacturer operating in the Windows to control the EUT at its specific channel and in the mode of continuous transmission.
3. Testes are performed under the specific testing conditions, and recorded as above.