

***MEASUREMENT REPORT
of the Headset of
WIRELESS HANDS-FREE
CELLULAR HEADSET***

Applicant : Fitright Industrial Co., Ltd.
Model No. : FR-CH0001 (Headset)
EUT : Wireless Hands-free Cellular Headset (Headset)
FCC ID : QJIFR-CH0001
Report No. : F2915477 (Version 2.1a)

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.

Report No.: F2915477 (Version 2.1a)

Training Research Co., Ltd., TEL: 886-2-26935155, Fax: 886-2-26934440

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.

Applicant : Fitright Industrial Co., Ltd.
Model No. : FR-CH0001 (Headset)
EUT : Wireless Hands-free Cellular Headset (Headset)
FCC ID : QJIFR-CH0001
Report No. : F2915477 (Version 2.1a)
Test Date : Oct, 31, 2002

Prepared by: _____
Eric Wong

Approved by: _____
Frank Tsai

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.

Report No.: F2915477 (Version 2.1a)

Training Research Co., Ltd., TEL: 886-2-26935155, Fax: 886-2-26934440

Tables of Contents

| | |
|--|----|
| I. GENERAL | 4 |
| 1.1 Introduction | 4 |
| 1.2 Description of EUT | 4 |
| 1.3 Description of Support Equipment | 5 |
| 1.4 Configuration of System Under Test | 5 |
| 1.5 Verify the Frequency and Channel | 6 |
| 1.6 Test Procedure | 8 |
| 1.7 Location of the Test Site | 8 |
| 1.8 General Test Condition | 8 |
| II. Power Line Conducted Emissions for AC Powered Units | 9 |
| 2.1 Test Condition & Setup | 9 |
| 2.2 List of Test Instruments | 9 |
| 2.3 Test Results of Conducted Emissions | 9 |
| III. Measurement of Field Strength | 10 |
| 3.1 Test Condition & Setup | 10 |
| 3.2 List of Test Instruments | 10 |
| 3.3 Test Configuration | 11 |
| 3.4 Test Results of Conducted Emissions | 12 |
| IV. Measurement of Occupied Bandwidth | 13 |
| 4.1 Test Condition | 13 |
| 4.2 Test Instruments Configuration | 14 |
| 4.3 List of Test Instruments | 14 |
| 4.4 Test Results | 15 |
| V. Band-edge Compliance | 18 |
| 5.1 Test Condition & Setup | 18 |
| 5.2 List of Test Instruments | 18 |
| 5.3 Test Instruments Configuration | 18 |
| 5.4 Test Results | 19 |
| VI. Measurement of Spurious Radiated Emissions | 23 |
| 6.1 Test Condition & Setup | 23 |
| 6.2 List of Test Instruments | 23 |
| 6.3 Test Instruments Configuration | 24 |
| 6.4 Test Results of Spurious Radiated Emissions | 25 |
| Appendix A: Set Up Procedure | 31 |

. 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.

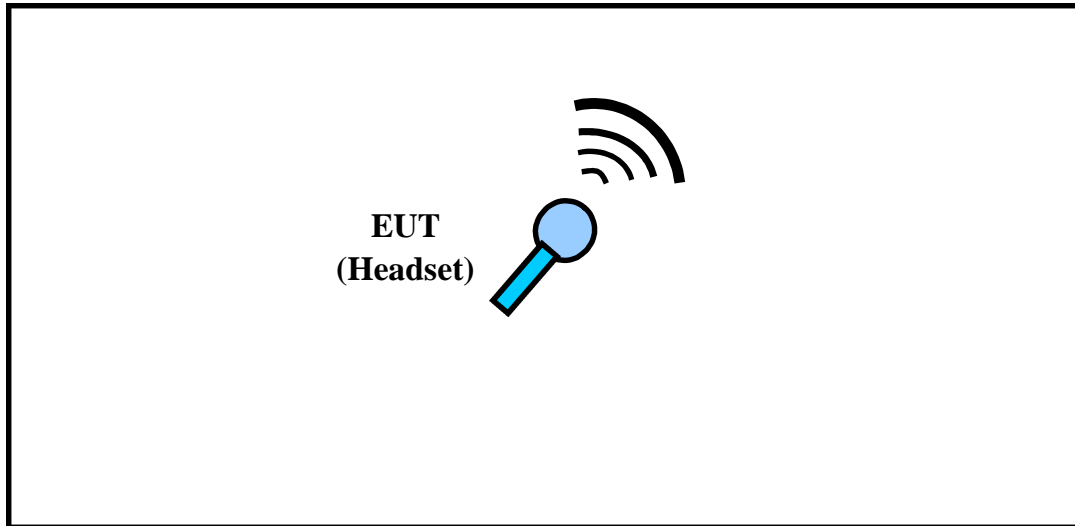
1.2 Description of EUT

EUT : Wireless Hands-free Cellular Headset (Headset)
Model No. : FR-CH0001 (Headset)
Granted FCC ID : QJIFR-CH0001
Frequency Range : 2401.056 MHz-2482.272 MHz
Support Channel : 95 Channels
Channel Spacing : 864 kHz
Modulation Skill : GFSK
Power Type : *Headset:* Rechargeable Li-Polymer Battery 200mA
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.

Report No.: F2915477 (Version 2.1a)

Training Research Co., Ltd., TEL: 886-2-26935155, Fax: 886-2-26934440

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:

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

2.2 List of Test Instruments

| Instrument Name | Model No. | Brand | Serial No. | Last time | Next time |
|----------------------------------|-----------|-------|------------|-----------|-----------|
| 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 |

2.3 Test Results of Conducted Emissions

N/A (Not applied)

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 is 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 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).

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 |

3.3 Test Configuration



Front View of the Test Configuration (HEADSET)



Rear View of the Test Configuration (HEADSET)

Report No.: F2915477 (Version 2.1a)

Training Research Co., Ltd., TEL: 886-2-26935155, Fax: 886-2-26934440

3.4 Test Results

Field Strength Measurement of the Headset (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 | 117 | 2.97 | 84.64 |
| Ch.47 | 1.00 | 276 | 3.19 | 84.03 |
| Ch.94 | 1.00 | 231 | 3.41 | 84.57 |

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

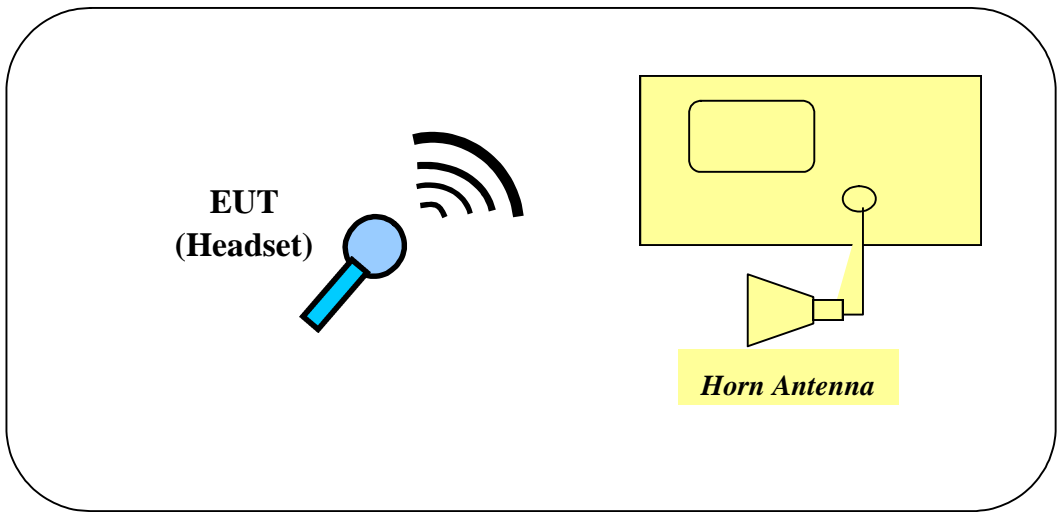
Sweep = auto

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 Headset : 848 kHz

Bandwidth of Channel 47

Bandwidth of Headset : 825 kHz

Bandwidth of Channel 94

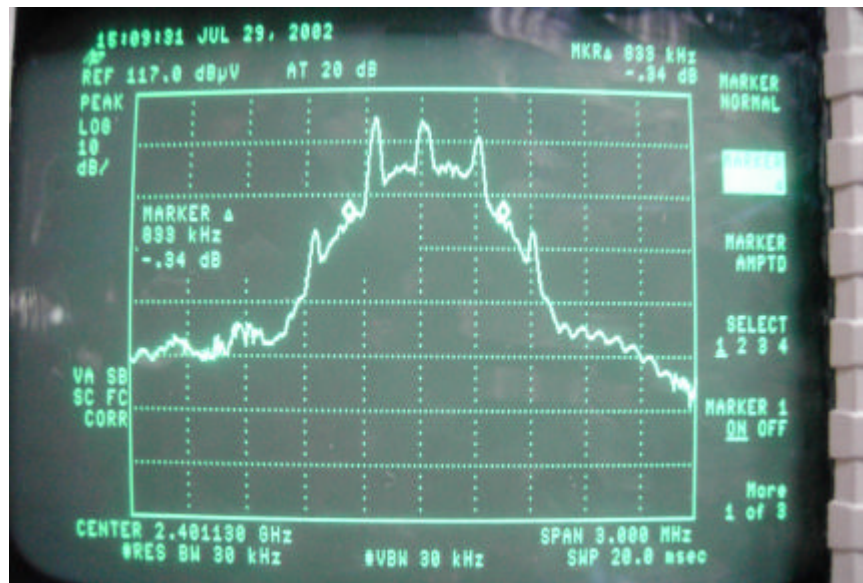
Bandwidth of Headset : 848 kHz

Note:

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

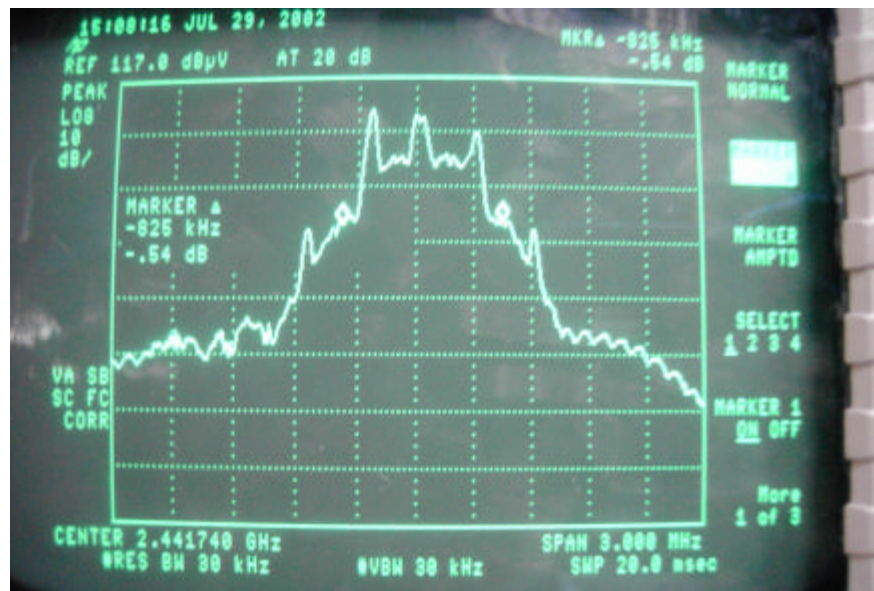
Bandwidth of Channel 0:

Headset:



Bandwidth of Channel 47:

Headset:



Bandwidth of Channel 94:

Headset:



Report No.: F2915477 (Version 2.1a)

Training Research Co., Ltd., TEL: 886-2-26935155, Fax: 886-2-26934440

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

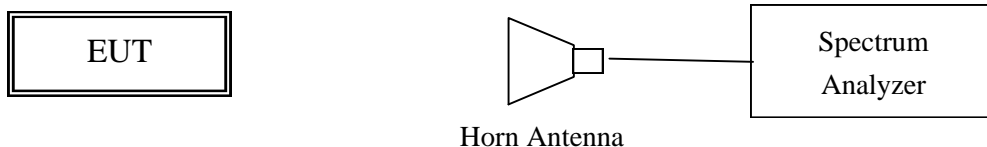
Allow the trace to stabilize. Set the marker on the emission at the band-edge, or on the highest modulation product outside of the band, if this level is greater than that at the band-edge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band 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

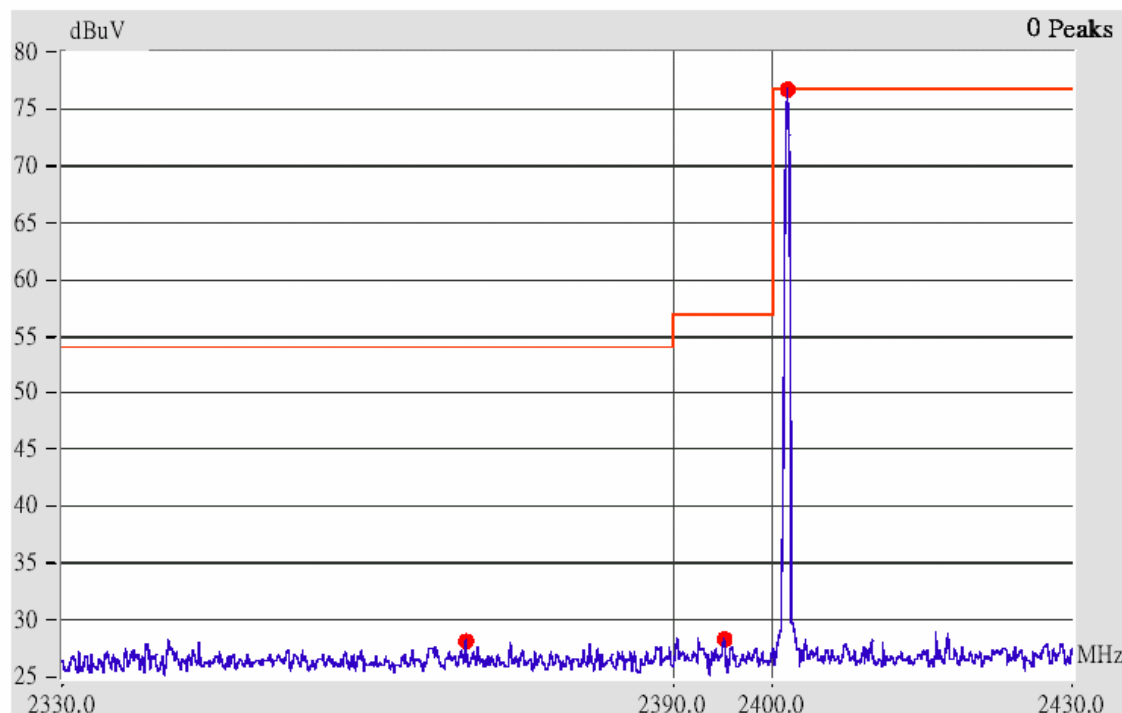
| Instrument Name | Model No. | Brand | Serial No. | Last time | Next time |
|------------------|-----------|-------|-------------|-----------|-----------|
| EMI Receiver | 8546A | H P | 3520A00242 | 10/18/02 | 10/18/03 |
| RF FilterSection | 85460A | H P | 3448A00217 | 10/18/02 | 10/18/03 |
| Horn Antenna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

5.3 Test Instruments Configuration



5.4 Test Results

Channel 00 (Hopping disabled)

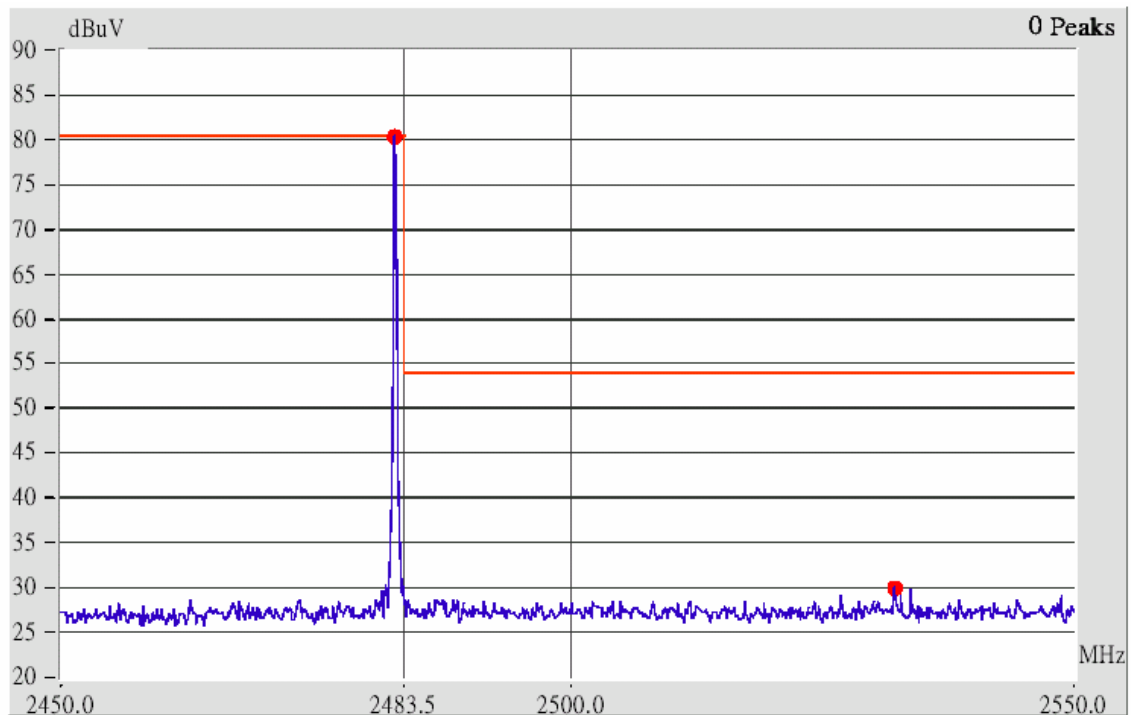


This is the hard copy of our band-edge measurement generated by our band-edge testing program.

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)

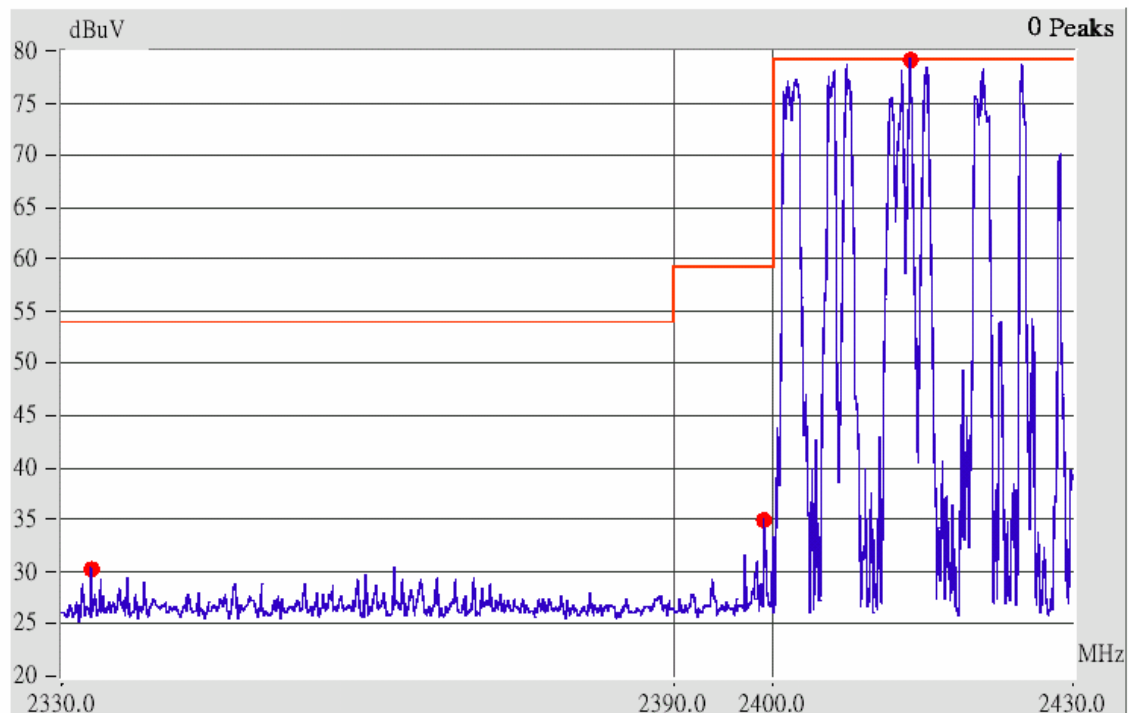


This is the hard copy of our band-edge measurement generated by our band-edge testing program.

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.

Channel 00 (Hopping enabled)

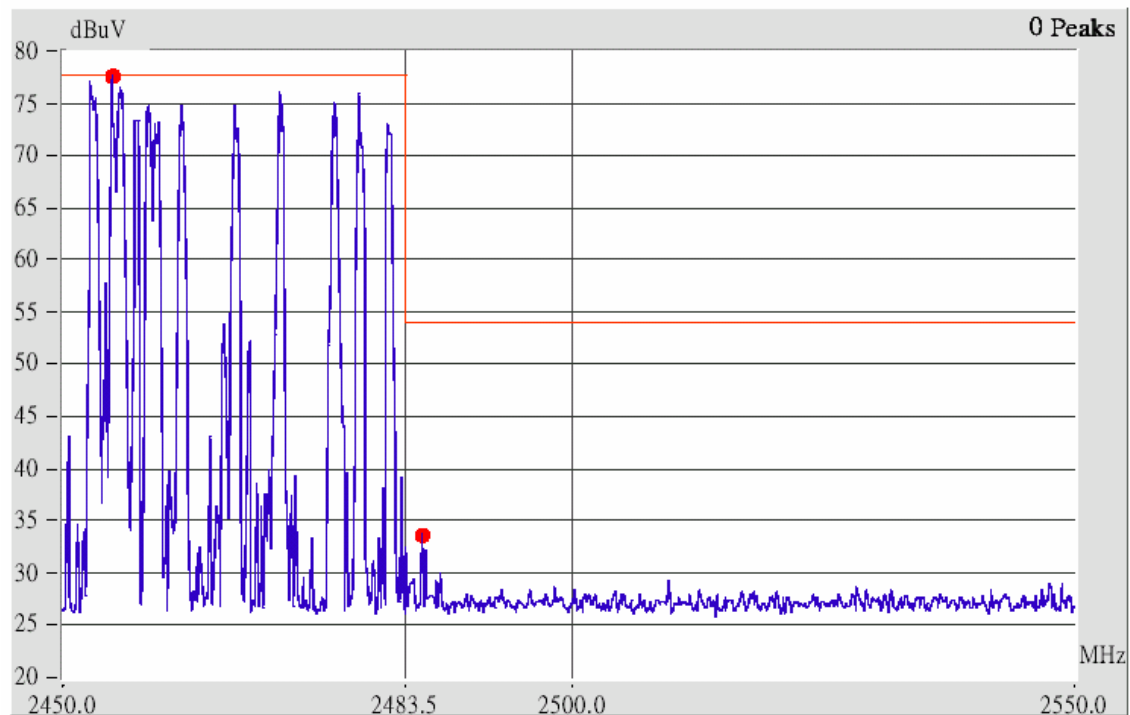


This is the hard copy of our band-edge measurement generated by our band-edge testing program.

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

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 with 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.

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

| 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 |

6.3 Test Instruments Configuration



Front View of the Test Configuration (HEADSET)



Rear View of the Test Configuration (HEADSET)

Report No.: F2915477 (Version 2.1a)

Training Research Co., Ltd., TEL: 886-2-26935155, Fax: 886-2-26934440

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, Headset, 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, Headset 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

Report No.: F2915477 (Version 2.1a)

Training Research Co., Ltd., TEL: 886-2-26935155, Fax: 886-2-26934440

Open Field Radiated Emissions For 1GHz 25GHz [Channel 00, Headset 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 | 81.67 | --- | 1.00 | 117 | 2.97 | 84.64 | --- | --- | --- | --- | --- |
| 3.599 | 67.29 | 51.65 | 1.00 | 103 | 0.02 | 67.29 | 51.67 | 74.0 | 54.0 | -6.71 | -2.33 |
| 6.001 | 51.77 | 37.03 | 1.00 | 9 | 6.72 | 58.49 | 43.75 | 74.0 | 54.0 | -15.51 | -10.25 |
| 7.204 | 42.44 | 27.75 | 1.00 | 334 | 9.91 | 52.35 | 37.66 | 74.0 | 54.0 | -21.65 | -16.34 |
| *8.403 | 39.12 | 23.85 | 1.00 | 27 | 11.32 | 50.44 | 35.17 | 74.0 | 54.0 | -3.56 | -18.83 |
| 9.608 | 42.77 | 28.72 | 1.00 | 72 | 11.47 | 54.24 | 40.19 | 74.0 | 54.0 | -19.76 | -13.81 |
| *12.007 | 41.28 | 27.21 | 1.00 | 111 | 10.03 | 51.31 | 37.24 | 74.0 | 54.0 | -2.69 | -16.76 |
| 13.206 | 43.44 | 29.12 | 1.00 | 94 | 8.75 | 52.19 | 37.87 | 74.0 | 54.0 | -21.81 | -16.13 |
| --- | | | | | | | | | | | |

Open Field Radiated Emissions For 1GHz 25GHz [Channel 00, Headset 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 | 69.00 | --- | 1.00 | 173 | 2.97 | 71.97 | --- | --- | --- | --- | --- |
| 3.599 | 55.94 | 40.61 | 1.00 | 27 | 0.02 | 55.96 | 40.63 | 74.0 | 54.0 | -18.04 | -13.37 |
| 6.001 | 50.77 | 35.89 | 1.00 | 62 | 6.72 | 57.49 | 42.61 | 74.0 | 54.0 | -16.51 | -11.39 |
| 7.201 | 42.11 | 29.27 | 1.00 | 249 | 9.90 | 52.01 | 39.17 | 74.0 | 54.0 | -21.99 | -14.83 |
| 9.605 | 44.44 | 32.17 | 1.00 | 228 | 11.49 | 55.93 | 43.66 | 74.0 | 54.0 | -18.07 | -10.34 |
| 12.004 | 45.44 | 28.67 | 1.00 | 119 | 10.04 | 50.48 | 38.71 | 74.0 | 54.0 | -23.52 | -15.29 |
| 13.203 | 45.44 | 32.39 | 1.00 | 9 | 8.76 | 54.20 | 41.15 | 74.0 | 54.0 | -19.80 | -12.85 |
| *15.608 | 43.44 | 31.18 | 1.00 | 54 | 5.88 | 49.32 | 37.06 | 74.0 | 54.0 | -24.68 | -16.94 |
| --- | | | | | | | | | | | |

Report No.: F2915477 (Version 2.1a)

Training Research Co., Ltd., TEL: 886-2-26935155, Fax: 886-2-26934440

Open Field Radiated Emissions For 9KHz 1GHz [Channel 47, Headset, 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, Headset 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:

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

Open Field Radiated Emissions For 1GHz 25GHz [Channel 47, Headset 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) | |
| *2.207 | 40.27 | 40.27 | 1.00 | 96 | 9.80 | 50.07 | 37.16 | 74.0 | 54.0 | -23.93 | -16.84 |
| 2.442 | 80.84 | --- | 1.00 | 276 | 3.19 | 84.03 | --- | --- | --- | --- | --- |
| 6.103 | 55.27 | 55.27 | 1.00 | 16 | 7.21 | 62.48 | 38.75 | 74.0 | 54.0 | -11.52 | -15.25 |
| *7.326 | 40.61 | 40.61 | 1.00 | 21 | 10.33 | 50.94 | 49.23 | 74.0 | 54.0 | -3.06 | -4.77 |
| 8.548 | 49.94 | 49.94 | 1.00 | 179 | 11.22 | 61.16 | 40.05 | 74.0 | 54.0 | -12.84 | -13.95 |
| 9.766 | 43.94 | 43.94 | 1.00 | 219 | 11.91 | 55.85 | 37.16 | 74.0 | 54.0 | -18.15 | -16.84 |
| --- | | | | | | | | | | | |

Open Field Radiated Emissions For 1GHz 25GHz [Channel 47, Headset 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 | 69.84 | --- | 1.00 | 85 | 3.19 | 73.03 | --- | --- | --- | --- | --- |
| 6.103 | 51.27 | 35.95 | 1.00 | 117 | 7.22 | 58.49 | 43.17 | 74.0 | 54.0 | -15.51 | -10.83 |
| *7.324 | 43.44 | 31.31 | 1.00 | 249 | 10.33 | 53.77 | 41.64 | 74.0 | 54.0 | -20.23 | -12.36 |
| 8.545 | 48.61 | 36.04 | 1.00 | 73 | 11.22 | 59.83 | 47.26 | 74.0 | 54.0 | -14.17 | -6.74 |
| 9.771 | 42.10 | 28.63 | 1.00 | 183 | 11.91 | 54.01 | 40.54 | 74.0 | 54.0 | -19.99 | -13.46 |
| *12.206 | 40.61 | 24.34 | 1.00 | 24 | 9.79 | 50.40 | 34.13 | 74.0 | 54.0 | -23.60 | -19.87 |
| 13.429 | 41.44 | 26.37 | 1.00 | 271 | 8.78 | 50.22 | 35.15 | 74.0 | 54.0 | -23.78 | -18.85 |
| --- | | | | | | | | | | | |

Report No.: F2915477 (Version 2.1a)
Training Research Co., Ltd., TEL: 886-2-26935155, Fax: 886-2-26934440

Open Field Radiated Emissions For 9KHz 1GHz [Channel 94, Headset, 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 94, Headset 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:

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

Open Field Radiated Emissions For 1GHz 25GHz [Channel 94, Headset 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 | 81.16 | --- | 1.00 | 231 | 3.41 | 84.57 | --- | --- | --- | --- | --- |
| 6.204 | 51.61 | 35.60 | 1.00 | 57 | 7.53 | 59.14 | 43.13 | 74.0 | 54.0 | -14.86 | -10.87 |
| *7.446 | 40.44 | 23.87 | 1.00 | 147 | 10.32 | 50.76 | 34.19 | 74.0 | 54.0 | -23.24 | -19.81 |
| 9.931 | 44.61 | 32.53 | 1.00 | 241 | 11.61 | 56.22 | 44.14 | 74.0 | 54.0 | -17.78 | -9.86 |
| 13.655 | 43.44 | 25.29 | 1.00 | 151 | 8.83 | 52.27 | 34.12 | 74.0 | 54.0 | -21.73 | -19.88 |
| --- | | | | | | | | | | | |

Open Field Radiated Emissions For 1GHz 25GHz [Channel 94, Headset 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 | 68.83 | --- | 1.00 | 224 | 3.41 | 72.24 | --- | --- | --- | --- | --- |
| 6.204 | 49.94 | 33.73 | 1.00 | 132 | 7.53 | 57.47 | 41.26 | 74.0 | 54.0 | -16.53 | -12.74 |
| *7.446 | 42.77 | 29.45 | 1.00 | 24 | 10.32 | 53.09 | 39.77 | 74.0 | 54.0 | -20.91 | -14.23 |
| 8.686 | 46.10 | 32.72 | 1.00 | 176 | 11.40 | 57.50 | 44.12 | 74.0 | 54.0 | -16.50 | -9.88 |
| 9.933 | 41.11 | 28.02 | 1.00 | 93 | 11.60 | 52.71 | 39.62 | 74.0 | 54.0 | -21.29 | -14.38 |
| 13.652 | 42.77 | 26.91 | 1.00 | 218 | 8.84 | 51.61 | 35.75 | 74.0 | 54.0 | -22.39 | -18.25 |
| --- | | | | | | | | | | | |

Appendix A

Setting up Procedure

1. Connect the EUT with the notebook computer through the COM port.
2. Using the software 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.