# FCC 47 CFR PART 15 SUBPART C

# TEST REPORT

# FOR

Product Name: Traveler 6000Z BlueEye

Model : GM-140016/T
Trade Name: Genius

Issued to

KYE SYSTEMS CORP.
No. 492, Sec. 5, Chongxin Rd., Sanchong Dist., New Taipei City 24160, Taiwan, R.O.C.

Issued by

Global Certification Corp.
No.146, Sec. 2, Xiangzhang Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

## Revision History

| Revision | No. | Report Number | Issue Date | Description | Author/ Revised by |
|---|---|---|---|---|---|
| 1. | 370401 | 370401 | 2013.07.11 | Original Report | Lillian |
| 2. | 4D0904 | 370401-01 | 2014.12.26 | Change Wireless module IC | Jane |
| | | | | | |
| | | | | | |
| | | | | | |

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## 1. GENERAL INFORMATION

| | | |
|---|---|---|
| **Applicant** | **:** | KYE SYSTEMS CORP. |
| **Address** | **:** | No. 492, Sec. 5, Chongxin Rd., Sanchong Dist., New Taipei City 24160,, Taiwan, R.O.C. |
| **Manufacturer** | **:** | Dongguan Kunying Computer Products Co., Ltd |
| **Address** | **:** | Baodun Industrial District, Houjie Town, Dongguan City, Guangdong Province, 523961 China |
| **EUT** | **:** | Traveler 6000Z BlueEye |
| **Model No.** | **:** | GM-140016/T |

Is here with confirmed to comply with the requirements set out in the FCC Rules and Regulations Part 15 Subpart C and the measurement procedures were according to ANSI C63.4-2009. The said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

**FCC Part 15 Subpart C**

Receipt Date : Dec. 09, 2014 Issue Date : Dec. 26, 2014

New Taipei City, Taiwan Dec. 26, 2014 ***Adam Chou, Manager***

(Place) (Date) (Signature) Designation Number: TW1069

## 1.1 DESCRIPTION OF THE TESTED SAMPLES

| | |
|---|---|
| EUT Name | : Traveler 6000Z BlueEye |
| Model Number | : GM-140016/T |
| FCC ID | : FSUGMZKX |
| Input Voltage | : 1.5Vdc |
| Power From | : ☑Inside ☐Outside |
| | ☐Adapter ☑Battery ☐AC Power Source ☐DC Power Source ☐Support Unit PC |
| Operate Frequency | : 2409, 2417, 2426, 2435, 2445, 2455, 2465, 2476 |
| Modulation Technique | : O-QPSK/MSK |
| Number of Channels | : 8 |
| Channel spacing | : 8~11 MHz |
| Operating Mode | : Duplex |
| Bit Rate of Transmission | : 2Mbps |
| Antenna Type | : ☑integral antenna: PCB Antenna (Omnidirection) |
| | ☐a dedicated antenna |
| Antenna gain | 0 dBi |
| EUT Received Date | : Dec. 09, 2014 |
| EMC Test Completed Date | : Dec. 26, 2014 |

# 2. TEST METHODOLOGY

All testing as described bellowed were performed in accordance with ANSI C63.4:2009 and FCC CFR 47 Part 15 Subpart C.

## 2.1 GENERAL TEST PROCEDURES

### Conducted Emissions

The EUT is placed on a wood table, which is at 0.8 m above ground plane acceding to clause 15.207 and requirements of ANSI C63.4:2009. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz are using CISPR Quasi-Peak / Average detectors.

### Radiated Emissions

The EUT is a placed on a turn table, which is 0.8 m above ground plane. The turntable was rotated through 360 degrees to determine the position of maximum emission level. The EUT is placed at 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

## 2.2 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| 10.495 - 0.505 | 16.69475 - 16.69525 | 608 - 614 | 5.35 - 5.46 |
| 2.1735 - 2.1905 | 16.80425 - 16.80475 | 960 - 1240 | 7.25 - 7.75 |
| 4.125 - 4.128 | 25.5 - 25.67 | 1300 - 1427 | 8.025 - 8.5 |
| 4.17725 - 4.17775 | 37.5 - 38.25 | 1435 - 1626.5 | 9.0 - 9.2 |
| 4.20725 - 4.20775 | 73 - 74.6 | 1645.5 - 1646.5 | 9.3 - 9.5 |
| 6.215 - 6.218 | 74.8 - 75.2 | 1660 - 1710 | 10.6 - 12.7 |
| 6.26775 - 6.26825 | 108 - 121.94 | 1718.8 - 1722.2 | 13.25 - 13.4 |
| 6.31175 - 6.31225 | 123 - 138 | 2200 - 2300 | 14.47 - 14.5 |
| 8.291 - 8.294 | 149.9 - 150.05 | 2310 - 2390 | 15.35 - 16.2 |
| 8.362 - 8.366 | 156.52475 - 156.52525 | 2483.5 - 2500 | 17.7 - 21.4 |
| 8.37625 - 8.38675 | 156.7 - 156.9 | 2655 - 2900 | 22.01 - 23.12 |
| 8.41425 - 8.41475 | 162.0125 - 167.17 | 3260 - 3267 | 23.6 - 24.0 |
| 12.29 - 12.293 | 167.72 - 173.2 | 3332 - 3339 | 31.2 - 31.8 |
| 12.51975 - 12.52025 | 240 - 285 | 3345.8 - 3358 | 36.43 - 36.5 |
| 12.57675 - 12.57725 | 322 - 335.4 | 3600 - 4400 | ( [2] ) |
| 13.36 - 13.41 | | | |

1 Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

2 Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

## 2.3 DESCRIPTION OF TEST MODES

The EUT was tested under following modes:

**Modes:**

1. **Continuous transmitting**

**Channels:**

1. **2.408GHz (**Lowest Channel**)**
2. **2.434GHz (**Middle Channel**)**
3. **2.476GHz (**Highest Channel**)**

## 2.4 DESCRIPTION OF THE SUPPORT EQUIPMENTS

**Setup Diagram**

See test photographs attached in appendix 1 for the actual connections between EUT and support equipment.

EUT

**Support Equipment**

Peripherals Devices:

| OUTSIDE SUPPORT EQUIPMENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Equipment | Model | Serial No. | FCC ID/ BSMI ID | Trade name | Data Cable | Power Cord |
| 1. | MONITOR | 3008WFPT | G32VDD1 | R33002 | DELL | Shielded 1.6m | Unshielded 1.8m |
| 2. | KEY BOARD | 1576 | 0066904835299 | R31264 | Microsoft | Unshielded 1.2m / USB | N/A |
| 3. | PC | QZ709AV | SGH419R1HS | R33001 | HP | N/A | Unshielded 1.8m |
| 4. | PRINTER | STYLUS PHOTO750 | BDEK017629 | 3872P011 | EPSON | Shielded 1.8m | Unshielded 1.8m |
| 5. | USB storage | TS1GJFV30 | 160294-7997 | DOC/ D33193 | TRANSCEND | Shielded 1m | N/A |
| EUT | | | | | | | |
| No. | Equipment | Model | Serial No. | FCC ID/ BSMI ID | Trade name | Data Cable | Power Cord |
| 1. | PCB | 10230275109 REV:2 | N/A | N/A | N/A | N/A | N/A |
| 2. | Dongle | GM-130012/R | N/A | FSUGMZKQ | Genius | N/A | N/A |

**Note:** All the above equipment /cable were placed in worse case position to maximize emission signals during emission test

**Grounding:** Grounding was in accordance with the manufacturer's requirement and conditions for the intended use.

# 3. TEST AND MEASUREMENT EQUIPMENT

## 3.1 CALIBRATION

The measuring equipment utilized to perform the tests documented in the report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

## 3.2 EQUIPMENT

The following list contains measurement equipment used for testing. The equipment conforms to the requirement of CISPR 16-1, ANSI C63.2 and other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective.

**TABLE 1 LIST OF TEST AND MEASUREMENT EQUIPMENT**

| Instrument | Manufacturer | Model No. | Serial No. | Calibration Due Date | Note |
|---|---|---|---|---|---|
| EMC Test Receiver | R&S | ESCI | 100438 | Apr. 29, 2015 | |
| Bilog Antenna | SUNOL | JB1 | A052204 | Nov. 06, 2015 | |
| Turn table | EMCO | 2080 | 9508-1805 | N/A | |
| Controller | EMCO | 2090 | 9804-1328 | N/A | |
| Amplifier | G.W | GAP-801 | EF150001 | Jul. 18, 2015 | |
| Amplifier | Schwarzbeck | BBV 9718 | 9718-008 | Aug. 10, 2015 | |
| Spectrum Analyzer | NEX1 | Ns-265 | 5044006 | Aug. 07, 2015 | |
| RF Cable | BELDEN | RG-8/U | 28M-002 | Nov. 02, 2015 | |
| RF Cable | Huber Suhner | SUCOFLEX 104 | 293864/4 | Nov. 13, 2015 | |
| Thermo-Hygro meter | WISEWIND | 4-IN-1 | 050100378 | Apr. 08, 2015 | |
| Loop Antenna | TESEO | HLA6120 | 26349 | Sep. 11, 2015 | |
| Horn Antenna | Schwarzbeck | BBHA 9120D | 9120D-491 | Aug. 05, 2015 | |
| Wideband Peak Power Meter | Anritsu | ML2495A | 0841006 | Oct. 03, 2015 | |

※ Calibration interval of instruments listed above is one year

# 4. SECTION 15.249 REQUIREMENTS (FUNDAMENTAL / HARMONICS)

## 4.1 TEST SETUP

Refer to paragraph 6.1.

## 4.2 LIMIT

| Fundamental Frequency (MHz) | Field Strength of Fundamental (dBµV/m at 3-meter) | Detector |
|---|---|---|
| 902 - 928<br>2400 – 2483<br>5725 - 5875 | 114 | Peak |
| 902 - 928<br>2400 – 2483<br>5725 - 5875 | 94 | AV |

| Fundamental Frequency (MHz) | Field Strength of Harmonics (dBµV/m at 3-meter) | Detector |
|---|---|---|
| 902 - 928<br>2400 – 2483<br>5725 - 5875 | 74 | Peak |
| 902 - 928<br>2400 – 2483<br>5725 - 5875 | 54 | AV |

## 4.3 RESULT: PASS

## 4.4 TEST DATA:

### 4.4.1 Fundamental

**Lowest Channel-Horizontal**

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Global Certification Corp.
No.146, Sec. 2, Xiangzhang Rd.,
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TEL:886-2-26426992 FAX:886-2-26487450
WebSite: http://www.gcc.tw

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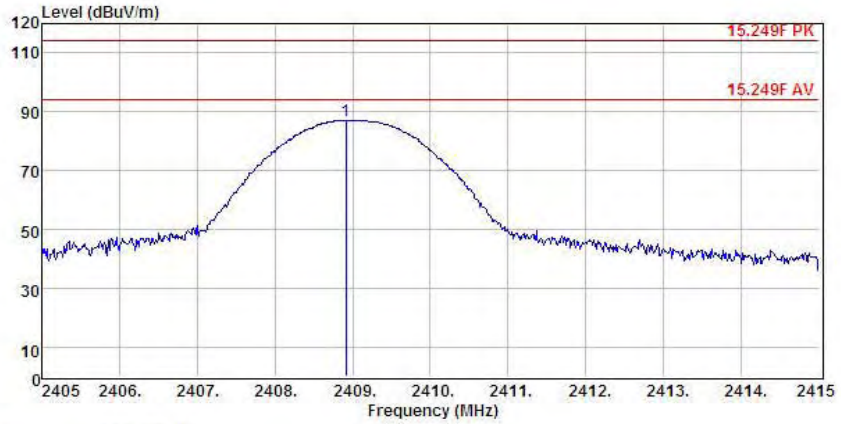
Time:14:39:36 Date:2014-12-15




Site : GCC_RE-02
Condition : 15.249F PK HORIZONTAL
: RBW:1000 KHz VBW:1000 KHz
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
Test Mode : TX CHL

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2408.91 | 105.87 | -18.81 | 5.11 | 31.67 | 55.59 | 87.06 | 114.00 | -26.94 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

## Lowest Channel-Vertical

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WebSite: http://www.gcc.tw

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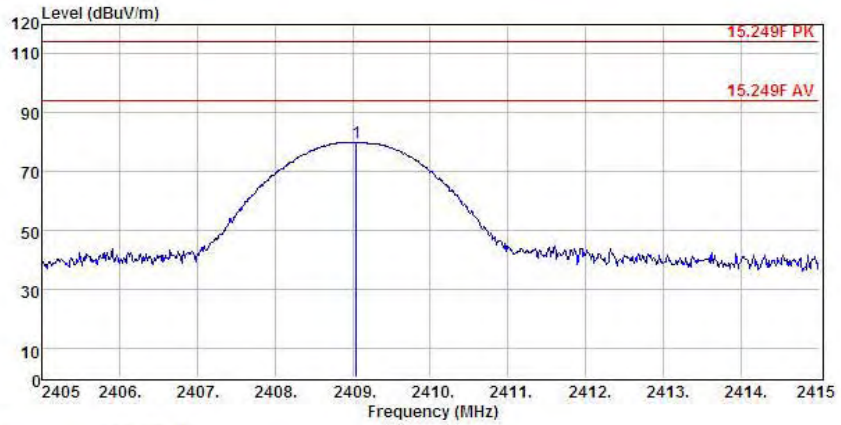


Site : GCC_RE-02
Condition : 15.249F PK VERTICAL
: RBW:1000 KHz VBW:1000 KHz
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
Test Mode : TX CHL

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2409.05 | 98.61 | -18.81 | 5.11 | 31.67 | 55.59 | 79.80 | 114.00 | -34.20 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

## Middle Channel-Horizontal

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WebSite: http://www.gcc.tw

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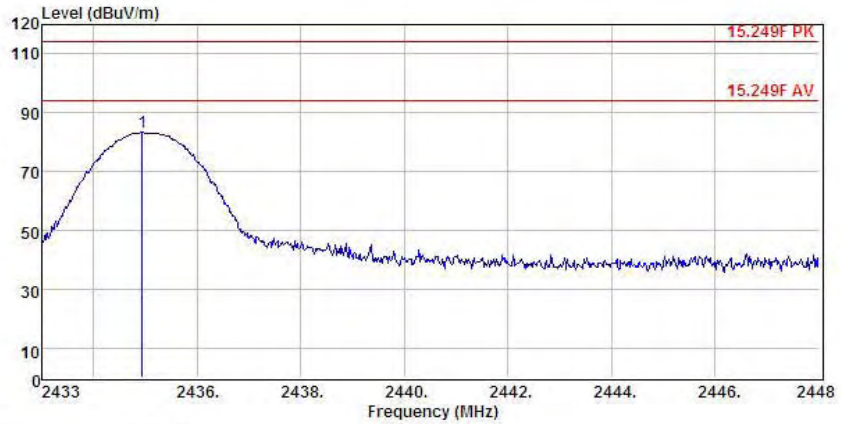


Site : GCC_RE-02
Condition : 15.249F PK HORIZONTAL
: RBW:1000 KHz VBW:1000 KHz
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
Test Mode : TX CHM

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2434.94 | 101.97 | -18.73 | 5.14 | 31.71 | 55.58 | 83.24 | 114.00 | -30.76 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

## Middle Channel-Vertical

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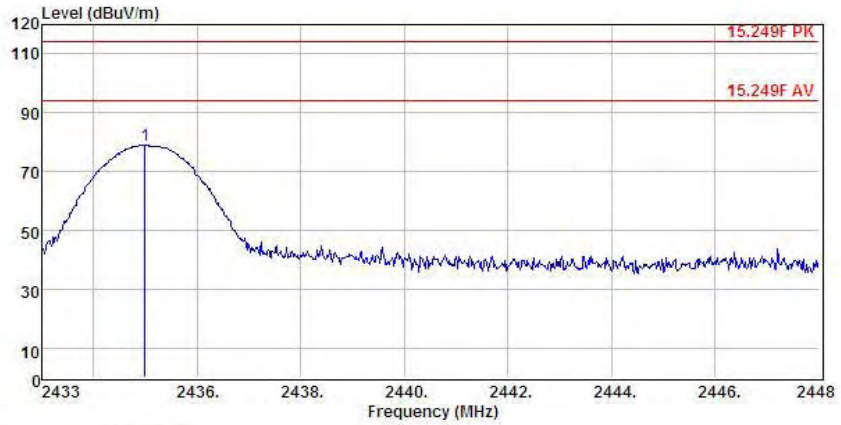
Time:14:39:26 Date:2014-12-15




Site : GCC_RE-02
Condition : 15.249F PK VERTICAL
: RBW:1000 KHz VBW:1000 KHz
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
Test Mode : TX CHM

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2435.00 | 97.55 | -18.73 | 5.14 | 31.71 | 55.58 | 78.82 | 114.00 | -35.18 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

## Highest Channel-Horizontal

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WebSite: http://www.gcc.tw

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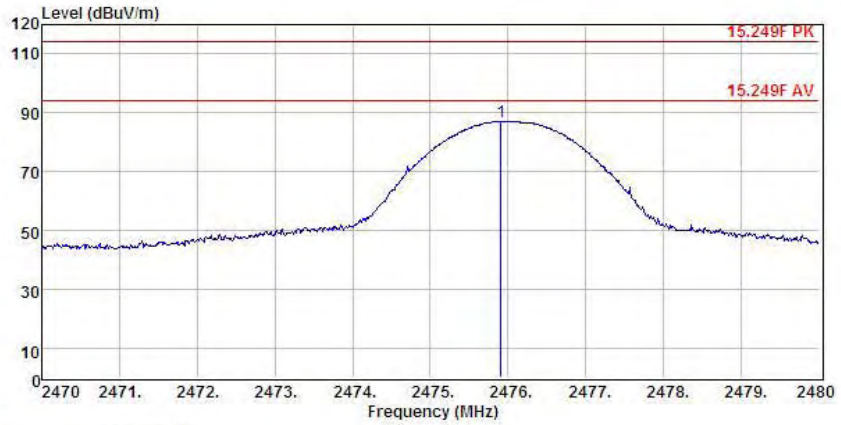
Time:14:39:15 Date:2014-12-15




Site : GCC_RE-02
Condition : 15.249F PK HORIZONTAL
: RBW:1000 KHz VBW:1000 KHz
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
Test Mode : TX CHH

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2475.91 | 105.61 | -18.61 | 5.18 | 31.77 | 55.56 | 87.00 | 114.00 | -27.00 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

## Highest Channel-Vertical

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WebSite: http://www.gcc.tw

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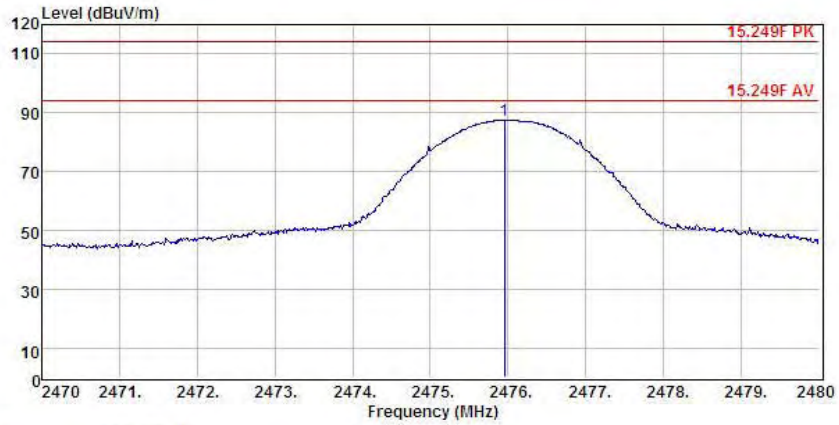
Time:14:39:08 Date:2014-12-15




Site : GCC_RE-02
Condition : 15.249F PK VERTICAL
: RBW:1000 KHz VBW:1000 KHz
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
Test Mode : TX CHH

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2475.95 | 106.00 | -18.61 | 5.18 | 31.77 | 55.56 | 87.39 | 114.00 | -26.61 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

### 4.4.2 Harmonics

**Lowest Channel**

HORIZONTAL

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 4817.50 | 76.37 | -14.82 | 7.06 | 33.66 | 55.54 | 61.55 | 74.00 | -12.45 | Peak |
| 2 | 7232.50 | 73.63 | -11.22 | 8.14 | 35.35 | 54.71 | 62.41 | 74.00 | -11.59 | Peak |
| 3 | 9632.50 | 61.35 | -9.70 | 8.99 | 36.46 | 55.15 | 51.65 | 74.00 | -22.35 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

VERTICAL

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 4817.50 | 63.40 | -14.82 | 7.06 | 33.66 | 55.54 | 48.58 | 74.00 | -25.42 | Peak |
| 2 | 7232.50 | 58.76 | -11.22 | 8.14 | 35.35 | 54.71 | 47.54 | 74.00 | -26.46 | Peak |
| 3 | 9970.00 | 58.67 | -9.50 | 8.92 | 36.86 | 55.28 | 49.17 | 74.00 | -24.83 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

**Middle Channel**

HORIZONTAL

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 4870.00 | 74.76 | -14.76 | 7.08 | 33.67 | 55.51 | 60.00 | 74.00 | -14.00 | Peak |
| 2 | 7315.00 | 71.54 | -11.18 | 8.13 | 35.36 | 54.67 | 60.36 | 74.00 | -13.64 | Peak |
| 3 | 9737.50 | 60.61 | -9.64 | 8.97 | 36.58 | 55.19 | 50.97 | 74.00 | -23.03 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

VERTICAL

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 4870.00 | 63.46 | -14.76 | 7.08 | 33.67 | 55.51 | 48.70 | 74.00 | -25.30 | Peak |
| 2 | 7352.50 | 59.15 | -11.16 | 8.12 | 35.37 | 54.65 | 47.99 | 74.00 | -26.01 | Peak |
| 3 | 9947.50 | 58.66 | -9.51 | 8.92 | 36.84 | 55.27 | 49.15 | 74.00 | -24.85 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

**Highest Channel**

HORIZONTAL

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 4952.50 | 72.91 | -14.65 | 7.13 | 33.69 | 55.47 | 58.26 | 74.00 | -15.74 | Peak |
| 2 | 7435.00 | 65.84 | -11.12 | 8.10 | 35.39 | 54.61 | 54.72 | 74.00 | -19.28 | Peak |
| 3 | 9947.50 | 58.83 | -9.51 | 8.92 | 36.84 | 55.27 | 49.32 | 74.00 | -24.68 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

VERTICAL

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 4952.50 | 69.23 | -14.65 | 7.13 | 33.69 | 55.47 | 54.58 | 74.00 | -19.42 | Peak |
| 2 | 7435.00 | 59.67 | -11.12 | 8.10 | 35.39 | 54.61 | 48.55 | 74.00 | -25.45 | Peak |
| 3 | 9947.50 | 59.45 | -9.51 | 8.92 | 36.84 | 55.27 | 49.94 | 74.00 | -24.06 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

Note:

1. Emission level = Reading level + Correction factor
2. Correction factor = Antenna factor + Cable loss - PreAmp
3. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
4. Measurements above 1000 MHz, Peak detector setting: use a 1 MHz RBW, a 3 MHz VBW.
5. Measurements above 1000 MHz, Average detector setting: 1 MHz RBW with 10 Hz VBW.
6. Peak detector measurement data will represent the worst case results.
7. "---" denotes the data which is not available.

# 5. SECTION 15.205 REQUIREMENTS (BAND EDGE)

## 5.1 TEST SETUP

Refer to paragraph 6.1.

## 5.2 LIMIT

Restricted Bands:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| [1]0.495 - 0.505 | 16.69475 - 16.69525 | 608 - 614 | 5.35 - 5.46 |
| 2.1735 - 2.1905 | 16.80425 - 16.80475 | 960 - 1240 | 7.25 - 7.75 |
| 4.125 - 4.128 | 25.5 - 25.67 | 1300 - 1427 | 8.025 - 8.5 |
| 4.17725 - 4.17775 | 37.5 - 38.25 | 1435 - 1626.5 | 9.0 - 9.2 |
| 4.20725 - 4.20775 | 73 - 74.6 | 1645.5 - 1646.5 | 9.3 - 9.5 |
| 6.215 - 6.218 | 74.8 - 75.2 | 1660 - 1710 | 10.6 - 12.7 |
| 6.26775 - 6.26825 | 108 - 121.94 | 1718.8 - 1722.2 | 13.25 - 13.4 |
| 6.31175 - 6.31225 | 123 - 138 | 2200 - 2300 | 14.47 - 14.5 |
| 8.291 - 8.294 | 149.9 - 150.05 | 2310 - 2390 | 15.35 - 16.2 |
| 8.362 - 8.366 | 156.52475 - 156.52525 | 2483.5 - 2500 | 17.7 - 21.4 |
| 8.37625 - 8.38675 | 156.7 - 156.9 | 2690 - 2900 | 22.01 - 23.12 |
| 8.41425 - 8.41475 | 162.0125 - 167.17 | 3260 - 3267 | 23.6 - 24.0 |
| 12.29 - 12.293 | 167.72 - 173.2 | 3332 - 3339 | 31.2 - 31.8 |
| 12.51975 - 12.52025 | 240 - 285 | 3345.8 - 3358 | 36.43 - 36.5 |
| 12.57675 - 12.57725 | 322 - 335.4 | 3600 - 4400 | ([2]) |
| 13.36 - 13.41 | | | |

Operation within the bands:
902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz.

| Frequency (Hz) | Field Strength (μV/m at 3-meter) | Field Strength (dBμV/m at 3-meter) |
|---|---|---|
| 1.705-30 | 30 (at 30-meter) | 49.5 |
| 30-88 | 100 | 40 |
| 88-216 | 150 | 43 |
| 216-960 | 200 | 46 |
| Above 960 | 500 | 54 |

## 5.3 RESULT: PASS

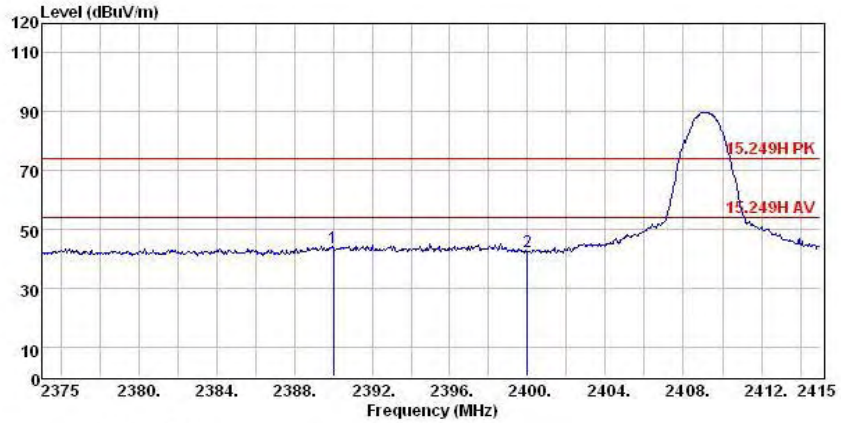
## 5.4 TEST DATA:

Lowest Channel-Horizontal

環球認證有限公司
Global Certification Corp.
Global Certification Corp.
No.146, Sec. 2, Xiangzhang Rd.,
Xizhi Dist., New Taipei City 221,Taiwan (R.O.C.)
TEL:886-2-26426992 FAX:886-2-26487450

Data:15 File:C:\Documents and Settings\Administrator\桌面\E3測試數據\4D0904\TX 定頻.EM6

Time:13:56:23 Date:2014-12-15




Site : GCC_RE-02
Condition : 15.249H PK HORIZONTAL
: RBW:1000 VBW:1000
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
MEMO : TX CHL
T/H :
:
:

| | Freq | Meter Level | System Cable Factor | Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.00 | 62.58 | -18.86 | 5.09 | 31.65 | 55.60 | 43.72 | 74.00 | -30.28 | Peak |
| 2 | 2400.00 | 61.31 | -18.84 | 5.10 | 31.66 | 55.60 | 42.47 | 74.00 | -31.53 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

- 1 -

Lowest Channel-Vertical

環球認證有限公司
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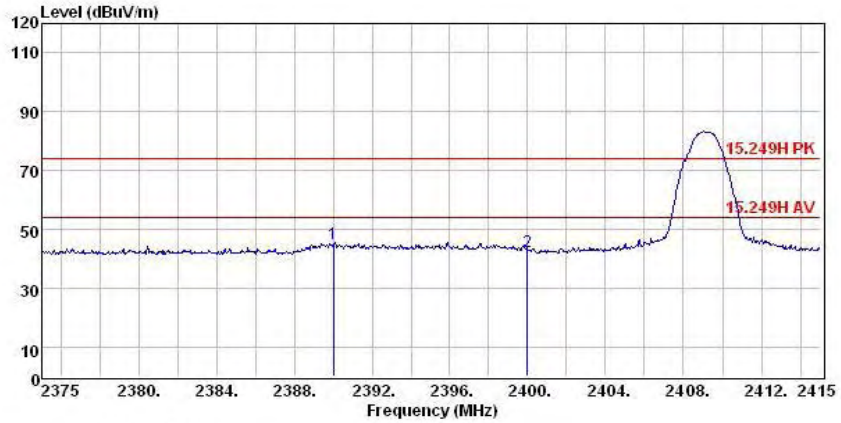
Global Certification Corp.
No.146, Sec. 2, Xiangzhang Rd.,
Xizhi Dist., New Taipei City 221,Taiwan (R.O.C.)
TEL:886-2-26426992 FAX:886-2-26487450

Data:16 File:C:\Documents and Settings\Administrator\桌面\E3測試數據\4D0904\TX 定頻.EM6

Time:13:57:43 Date:2014-12-15




Site : GCC_RE-02
Condition : 15.249H PK VERTICAL
: RBW:1000 VBW:1000
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
MEMO : TX CHL
T/H :
:
:

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.00 | 64.14 | -18.86 | 5.09 | 31.65 | 55.60 | 45.28 | 74.00 | -28.72 | Peak |
| 2 | 2400.00 | 61.13 | -18.84 | 5.10 | 31.66 | 55.60 | 42.29 | 74.00 | -31.71 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

Highest Channel-Horizontal

環球認證有限公司
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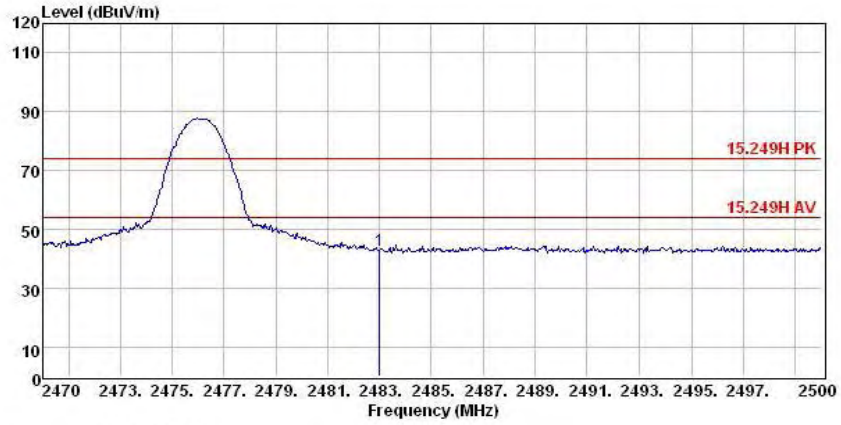
Global Certification Corp.
No.146, Sec. 2, Xiangzhang Rd.,
Xizhi Dist., New Taipei City 221,Taiwan (R.O.C.)
TEL:886-2-26426992 FAX:886-2-26487450

Data:14 File:C:\Documents and Settings\Administrator\桌面\E3測試數據\4D0904\TX 定頻.EM6

Time:13:48:57 Date:2014-12-15




Site : GCC_RE-02
Condition : 15.249H PK HORIZONTAL
: RBW:1000 VBW:1000
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
MEMO : TX CHH
T/H :
:
:

| | Freq | Meter Level | System Cable Factor Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2482.99 | 61.45 | -18.59 5.19 | 31.78 | 55.56 | 42.86 | 74.00 | -31.14 | Peak |

System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

Highest Channel-Vertical

環球認證有限公司
Global Certification Corp.
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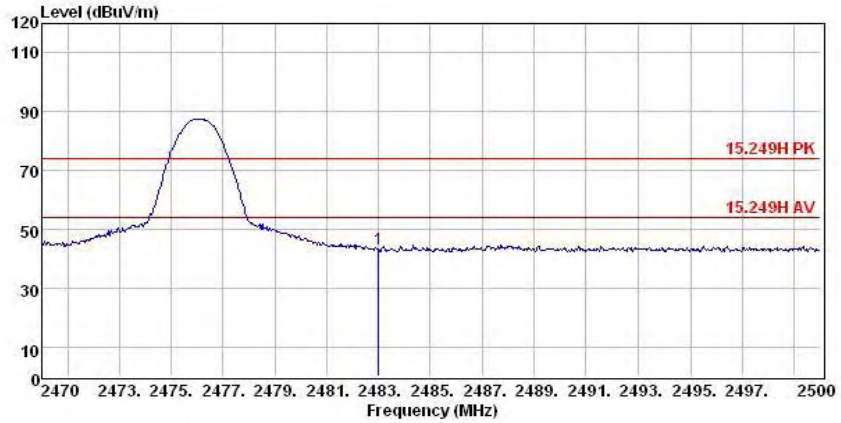
TEL:886-2-26426992 FAX:886-2-26487450

Data:13 File:C:\Documents and Settings\Administrator\桌面\E3測試數據\4D0904\TX 定頻.EM6

Time:13:50:23 Date:2014-12-15




Site : GCC_RE-02
Condition : 15.249H PK VERTICAL
: RBW:1000 VBW:1000
EUT : See Page 1 of EMC Report
MODEL : See Page 1 for Details
MEMO : TX CHH
T/H :
:
:

| | Freq | Meter Level | System Factor | Cable Loss | Antenna Factor | Preamp Gain | Real Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB/m | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2482.99 | 61.70 | -18.59 | 5.19 | 31.78 | 55.56 | 43.11 | 74.00 | -30.89 | Peak |

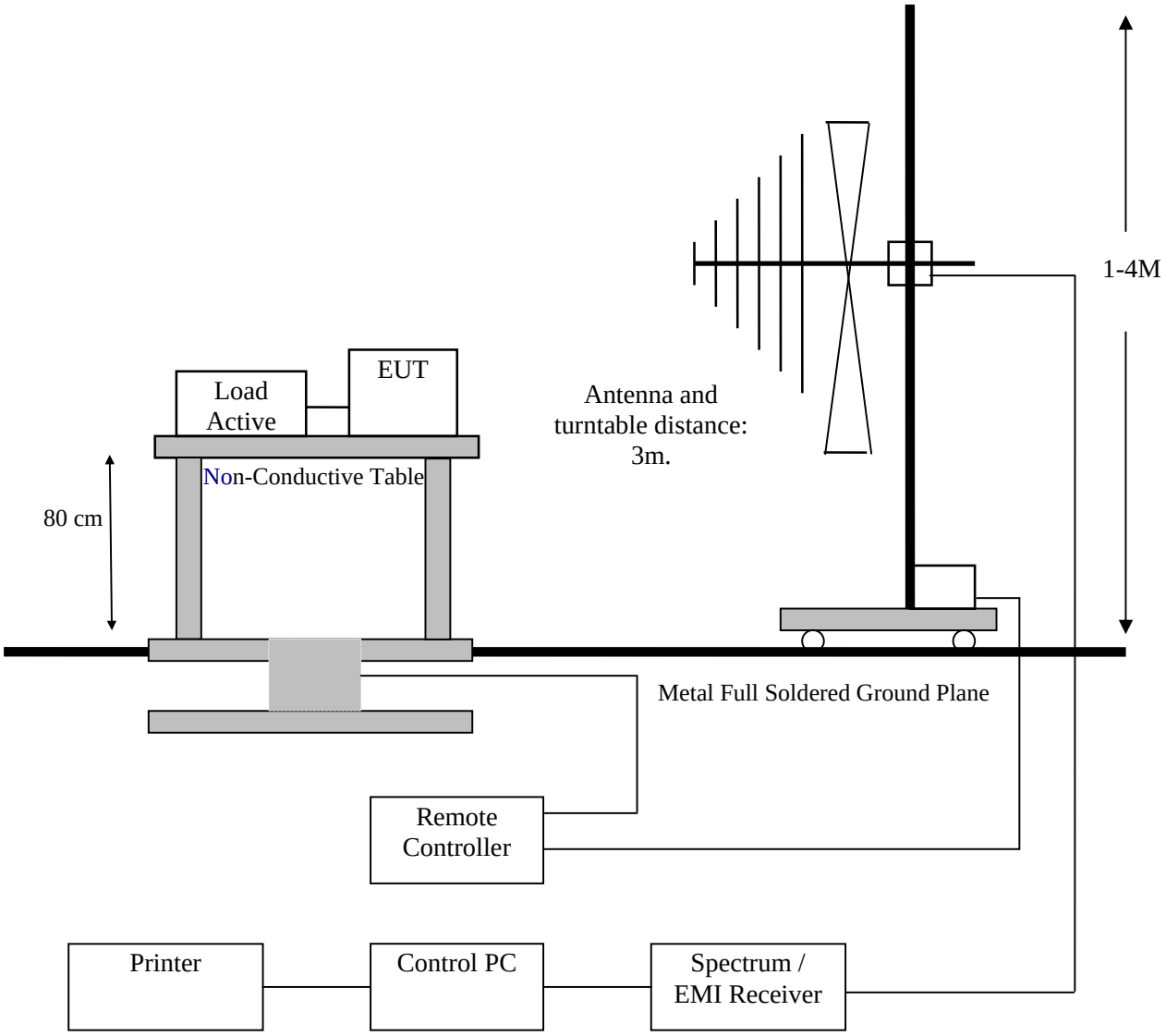
System Factor = Cable Loss + Antenna Factor - Preamp Gain
Real Level = Meter Level + System Factor
Over Limit = Real Level - Limit Line

Note:

1. Emission level = Reading level + Correction factor
2. Correction factor = Antenna factor + Cable loss - PreAmp
3. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
4. Measurements above 1000 MHz, Peak detector setting: use a 1 MHz RBW, a 3 MHz VBW.
5. Measurements above 1000 MHz, Average detector setting: 1 MHz RBW with 10 Hz VBW.
6. Peak detector measurement data will represent the worst case results.

# 6. SECTION 15.209 REQUIREMENTS (GENERAL RADIATED EMISSION)

## 6.1 TEST SETUP



## 6.2 LIMIT

The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209 as below.

| Frequency (MHz) | Field Strength (mV/m) | Measurement Distance (m) |
|---|---|---|
| 1.705-30 | 30 | 30 |
| 30-88 | 100* | 3 |
| 88-216 | 150* | 3 |
| 216-960 | 200* | 3 |
| Above 960 | 500* | 3 |

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.*

*In the above emission table, the tighter limit applies at the band edges.*

| Frequency (Hz) | Field Strength (μV/m at 3-meter) | Field Strength (dBμV/m at 3-meter) |
|---|---|---|
| 1.705-30 | 30 (at 30-meter) | 49.5 |
| 30-88 | 100 | 40 |
| 88-216 | 150 | 43 |
| 216-960 | 200 | 46 |
| Above 960 | 500 | 54 |

## 6.3 TEST PROCEDURE

1、 The EUT was placed on a turntable, which was 0.8m above ground plane.

2、 The turntable was rotated for 360 degrees to determine the position of maximum emission level.

3、 EUT was set at 3m away from the receiving antenna, which was varied from 1m to 4m to find out the highest emissions.

4、 Maximum procedure was performed on the six highest emissions to ensure EUT compliance.

5、 And also, each emission was maximized by changing the polarization of receiving antenna, both horizontal and vertical.

6、 Repeated above procedures until the measurements for all frequencies are completed.

## 6.4 RESULT: PASS

## 6.5 TEST DATA:

All frequencies not described in this test report and within the range of the general radiated emission limits are not detectable significantly. The table as below is representing worst emissions found.

Lowest Channel (worst emissions found)

| Frequency (MHz) | Ant. Polarization | Reading (dBμV) | Correction factor(dB) | Emission (dBμV/m) | Limit (dBμV/m) |
|---|---|---|---|---|---|
| 227.88 | H | 39.15 | -15.93 | 23.22 | 46 |
| 286.08 | H | 41.17 | -13.40 | 28.31 | 46 |
| 456.80 | H | 32.04 | -8.91 | 23.13 | 46 |
| 513.06 | H | 32.41 | -7.38 | 25.03 | 46 |
| 627.52 | H | 33.48 | -5.17 | 28.31 | 46 |
| 685.72 | H | 29.66 | -4.01 | 25.65 | 46 |
| 40.67 | V | 50.22 | -15.71 | 34.51 | 40 |
| 227.88 | V | 46.23 | -15.93 | 30.30 | 46 |
| 286.08 | V | 48.82 | -13.40 | 35.42 | 46 |
| 571.26 | V | 39.10 | -6.27 | 32.83 | 46 |
| 627.52 | V | 40.77 | -5.17 | 35.60 | 46 |
| 882.13 | V | 36.18 | -0.06 | 36.12 | 46 |

Note:

1. Emission level = Reading level + Correction factor
2. Correction factor = Antenna factor + Cable loss - PreAmp
3. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
4. Measurements from 9 kHz to 150 kHz, Peak detector setting: 100 Hz RBW
5. Measurements from 150 kHz to 30MHz, Peak detector setting: 10 kHz RBW
6. Measurements from 30 MHz to 1000 MHz, Peak detector setting: 100 kHz RBW
7. Measurements from 9 kHz to 150 kHz, CISPR Quasi-Peak detector: 200 Hz RBW
8. Measurements from 150 kHz to 30MHz, CISPR Quasi-Peak detector: 9 kHz RBW
9. Measurements from 30 MHz to 1000 MHz, CISPR Quasi-Peak detector: 120 kHz RBW
10. Peak detector measurement data will represent the worst case results.

# 7. SECTION 15.207 REQUIREMENTS (POWERLINE CONDUCTED EMISSIONS)

The EUT is powered by the battery; therefore this test item is not applicable.

# Appendix 1

## PHOTOS OF TEST CONFIGURATION

Low Frq.


Hight Frq.