



**Spectrum Research &  
Testing Lab., Inc.**  
No. 101-10, Ling 8,  
Shan-Tong Li, Chung-Li  
City, Taoyuan, Taiwan

## TEST REPORT

Reference No.: A11042102  
Report No.: FCCA11042102  
FCC ID : FSUGMZJN  
Page: 1 of 29  
Date: Jun. 21, 2011

Product Name: ScrollToo 6010  
Model No.: GM-110002/T  
Applicant: KYE SYSTEMS CORP.  
No. 492, Sec. 5, Chung Hsin Rd., San Chung,  
New Taipei City, 24160, Taiwan, R.O.C.  
Date of Receipt: Apr. 21, 2011  
Finished date of Test: Jun. 21, 2011  
Applicable Standards: 47 CFR Part 15, Subpart C  
47 CFR Part 15, Subpart B  
ANSI C63.4: 2003

We, **Spectrum Research & Testing Laboratory Inc.**, hereby certify that one sample of the above was tested in our laboratory with positive results according to the above-mentioned standards. The records in the report are an accurate account of the results. Details of the results are given in the subsequent pages of this report.

Tested By :

Jeff Lo

(Jeff Lo)

Date: 06.21.2011

Approved By :

JH

( Johnson Ho, Director )

Date: June 21, 2011.



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|  <b>Spectrum Research &amp; Testing Lab., Inc.</b><br>No. 101-10, Ling 8,<br>Shan-Tong Li, Chung-Li<br>City, Taoyuan, Taiwan | <h1>TEST REPORT</h1> | Reference No.: A11042102<br>Report No.: FCCA11042102<br>FCC ID : FSUGMZJN<br>Page: 3 of 29<br>Date: Jun. 21, 2011 |
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## 1. DOCUMENT POLICY AND TEST STATEMENT

### 1.1 DOCUMENT POLICY

- The report shall not be reproduced except in full, without the written approval of SRT Lab, Inc.

### 1.2 TEST STATEMENT

- The test results in the report apply only to the unit tested by SRT Lab.
- There was no deviation from the requirements of test standards during the test.
- DC power source, 1.5Vdc of AA3 battery (TX) and AC power source, 120 VAC/60 Hz for PC (RX, from USB port ), was used during the test.

### 1.3 EUT MODIFICATION

- No modification in SRT Lab.



## TEST REPORT

## 2. DESCRIPTION OF EUT AND TEST MODE

### 2.1 GENERAL DESCRIPTION OF EUT

|                             |                                                                                                                    |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------|
| PRODUCT                     | ScrollToo 6010                                                                                                     |
| MODEL NO.                   | GM-110002/T                                                                                                        |
| POWER SUPPLY                | DC power source of TX from AA3 battery : 1.5Vdc<br>AC power source of PC for RX applied USB port : AC<br>120V/60Hz |
| CABLE                       | NA                                                                                                                 |
| FREQUENCY BAND              | 2.400GHz ~ 2.4835GHz                                                                                               |
| CARRIER FREQUENCY           | 2.404GHz ~ 2.480GHz                                                                                                |
| CHANNEL SPACING             | 4MHz                                                                                                               |
| NUMBER OF CHANNEL           | 20                                                                                                                 |
| RATED RF OUTPUT POWER       | 87.5dBuV/m                                                                                                         |
| MODULATION TYPE             | GFSK                                                                                                               |
| MODE OF OPERATION           | Simplex                                                                                                            |
| ANTENNA TYPE                | PCB Printed                                                                                                        |
| ANTENNA GAIN                | -3 dBi                                                                                                             |
| OPERATING TEMPERATURE RANGE | -20 ~ 50°C                                                                                                         |

#### NOTE :

For more detailed information, please refer to the EUT's specification or user's manual provided by manufacturer.

### 2.2 DESCRIPTION OF EUT INTERNAL DEVICE

| DEVICE | BRAND / MAKER | MODEL # | FCC ID / DOC | REMARK |
|--------|---------------|---------|--------------|--------|
| NA     |               |         |              |        |

### 2.3 EUT OPERATING CONDITION

1. Setup the EUT and all peripheral devices .
2. Turn on the power of all equipment and EUT.
3. Set the EUT under continuous transmission condition, standby and link mode.
4. The EUT was set to the highest available power level.

|                                                                                                                                                                                                               |                      |                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------|
|  <b>Spectrum Research &amp; Testing Lab., Inc.</b><br>No. 101-10, Ling 8,<br>Shan-Tong Li, Chung-Li<br>City, Taoyuan, Taiwan | <h1>TEST REPORT</h1> | Reference No.: A11042102<br>Report No.: FCCA11042102<br>FCC ID : FSUGMZJN<br>Page: 5 of 29<br>Date: Jun. 21, 2011 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------|

## 2.4 DESCRIPTION OF TEST MODE

| Mode |    |         |          |
|------|----|---------|----------|
| 1    | TX | TX      | 2404 MHz |
| 2    |    |         | 2448 MHz |
| 3    |    |         | 2480 MHz |
| 4    | RX | Standby | NA       |
| 5    |    | Link    | NA       |

**Note:** The axis X,Y and Z we evaluate in chamber, the X axis is worst case.

X axis:



Y axis:



Z axis:



## 2.5 DESCRIPTION OF SUPPORT UNIT

The EUT was configured by the requirement of ANSI C63.4:2003. All interface ports were connected to the appropriate support units via specific cables. The support units and cables are listed below.

| NO | DEVICE      | BRAND   | MODEL #      | FCC ID/DOC | CABLE                                                                     |
|----|-------------|---------|--------------|------------|---------------------------------------------------------------------------|
| 1  | PC          | ACER    | Aspire SA85  | DoC        | 1.5m unshielded power cable                                               |
| 2  | CRT Monitor | SAMSUNG | PG17IS       | DOC        | 1.8m unshielded power cord<br>1.5m shielded data cable.<br>with one core. |
| 3  | Keyboard    | WinTEK  | WM530        | DoC        | 1.8m shielded data cable                                                  |
| 4  | Mouse       | WinTEK  | WSS30        | DoC        | 1.5m shielded data cable.                                                 |
| 5  | Modem       | ACEEX   | DM-1414      | DOC        | 1.5m unshielded power cord<br>1.5m shielded data cable.                   |
| 6  | Printer     | EPSON   | STYLUS C20SX | N/A        | 1.5m unshielded power cord<br>1.2m shielded data cable.                   |

**NOTE :** For the actual test configuration, please refer to the photos of testing.

## 3. DESCRIPTION OF APPLIED STANDARDS

The EUT is a wireless product. According to the specifications provided by the applicant, it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart C

47 CFR Part 15, Subpart B

ANSI C63.4: 2003

All tests have been performed and recorded as the above standards.



## TEST REPORT

### 4. TECHNICAL CHARACTERISTICS TEST

#### 4.1 Bandedge TEST

##### 4.1.1 LIMIT

FCC Part15, Subpart C Section 15.249. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

| OPERATING<br>FREQUENCY RANGE<br>(MHz) | SPURIOUS EMISSION<br>FREQUENCY<br>(MHz) | LIMIT                                 |                        |
|---------------------------------------|-----------------------------------------|---------------------------------------|------------------------|
|                                       |                                         | Peak power ration to<br>emission(dBc) | Emission level(dBuV/m) |
| 902 - 928                             | <902                                    | >20                                   | NA                     |
|                                       | >928                                    | >20                                   | NA                     |
|                                       | 960-1240                                | NA                                    | 54                     |
| 2400 - 2483.5                         | <2400                                   | >20                                   | NA                     |
|                                       | >2483.5-2500                            | NA                                    | 54                     |
| 5725 - 5850                           | <5350-5460                              | NA                                    | 54                     |
|                                       | <5725                                   | >20                                   | NA                     |
|                                       | >5850                                   | >20                                   | NA                     |

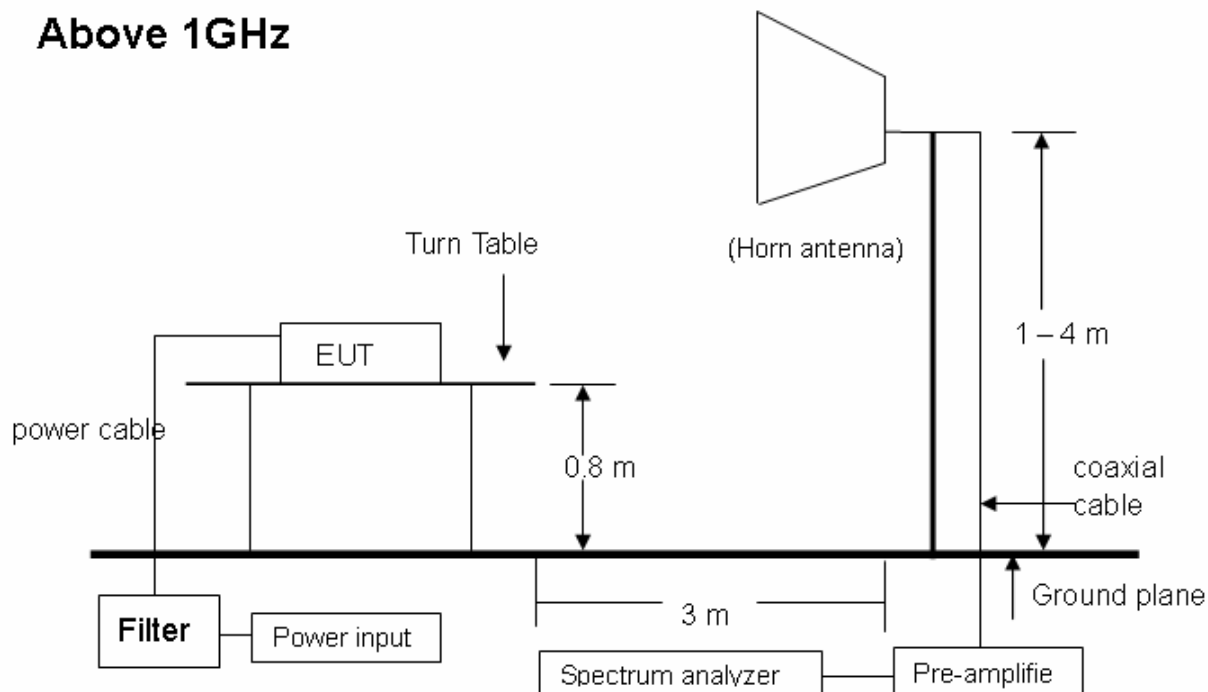
##### 4.1.2 TEST EQUIPMENT

| EQUIPMENT/<br>FACILITIES | SPECIFICATIONS       | MANUFACTURER | MODEL#/<br>SERIAL#         | DUE DATE OF CAL. &<br>CAL. CENTER |
|--------------------------|----------------------|--------------|----------------------------|-----------------------------------|
| SPECTRUM                 | 9K-40GHz             | R&S          | FSP40/<br>100093           | DEC. 2011<br>ETC                  |
| PRE-AMPLIFIER            | 1 GHz TO<br>26.5 GHz | HP           | 8449B/<br>3008A01995       | JAN. 2012<br>ETC                  |
| HORN ANTENNA             | 1 GHz TO<br>18 GHz   | EMCO         | 3115/<br>6881              | NOV. 2011<br>ETC                  |
| K-TYPE CABLE             | 15M                  | HUBER SUHNER | SF 102-40/2*11/<br>23932/2 | MAY. 2011<br>ETC                  |
| K-TYPE CABLE             | 1M                   | HUBER SUHNER | SF 102-40/2*11/<br>23934/2 | NOV. 2011<br>ETC                  |

**NOTE:** The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

## 4.1.3 TEST SETUP

### Above 1GHz



#### NOTE :

1. The EUT system was put on a wooden table with 0.8m heights above a ground plane. For the actual test configuration, please refer to the photos of testing.

## 4.1.4 TEST PROCEDURE

1. The EUT was operating in continuous transmission mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.
2. The EUT was tested according to the requirement of ANSI C63.4 and CISPR 22. The measurements were made at an open area test site with 3 meter measurement distance under 1 GHz and with 3m distance above 1GHz. The frequency spectrum measured started from 30 MHz. Under 1 GHz. All readings were quasi-peak values with 120 kHz resolution bandwidth of the test receiver. Above 1 GHz, the measurements were made at an open area test site with 3 meter measurement distance and all readings were peak and average values with 1 MHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. The cables connected to EUT and support units were moved to find the maximum emission levels for each frequency.



## TEST REPORT

### 4.1.5 TEST RESULT

|                         |             |              |               |
|-------------------------|-------------|--------------|---------------|
| Temperature:            | 26°C        | Humidity:    | 58%RH         |
| Spectrum Detector:      | PK. and AV. | Tested Mode: | TX            |
| Modulation Type:        | GFSK        | Tested By:   | Jeff Lo       |
| Radiated emission test: |             | Tested Date: | Jun. 17, 2011 |

Below 2400MHz (mode 1 of 2404MHz emission)

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant. Fac.<br>(dB) | Ant. Pol.<br>(H/V) | Reading<br>(dBuV) |      | Emission<br>(dBuV/m) |      | Limit Line<br>(dBuV/m) |      | Over Limit<br>(dBuV/m) |       |
|--------------------|---------------------------|-------------------|--------------------|-------------------|------|----------------------|------|------------------------|------|------------------------|-------|
|                    |                           |                   |                    | PK                | AV   | PK                   | AV   | PK                     | AV   | PK                     | AV    |
| 2400.00            | -22.75                    | 28.08             | H                  | 46.4              | 32.1 | 51.7                 | 37.4 | 74.0                   | 54.0 | -22.3                  | -16.6 |
| 2400.00            | -22.75                    | 28.08             | V                  | 45.5              | 36.6 | 50.8                 | 41.9 | 74.0                   | 54.0 | -23.2                  | -12.1 |
| 2399.00            | -22.76                    | 28.08             | H                  | 48.1              | 34.7 | 53.4                 | 40.0 | 74.0                   | 54.0 | -20.6                  | -14.0 |
| 2399.00            | -22.76                    | 28.08             | V                  | 48.3              | 35.9 | 54.1                 | 41.7 | 74.0                   | 54.0 | -19.9                  | -12.3 |
| 2390.00            | -22.79                    | 28.06             | H                  | 47.8              | 34.5 | 53.1                 | 39.8 | 74.0                   | 54.0 | -20.9                  | -14.2 |
| 2390.00            | -22.51                    | 28.26             | V                  | 48.3              | 35.9 | 54.1                 | 41.7 | 74.0                   | 54.0 | -19.9                  | -12.3 |

About 2483.5MHz (mode 3 of 2480MHz emission)

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant. Fac.<br>(dB) | Ant. Pol.<br>(H/V) | Reading<br>(dBuV) |      | Emission<br>(dBuV/m) |      | Limit Line<br>(dBuV/m) |      | Over Limit<br>(dBuV/m) |       |
|--------------------|---------------------------|-------------------|--------------------|-------------------|------|----------------------|------|------------------------|------|------------------------|-------|
|                    |                           |                   |                    | PK                | AV   | PK                   | AV   | PK                     | AV   | PK                     | AV    |
| 2483.50            | -22.51                    | 28.26             | H                  | 48.1              | 34.7 | 53.9                 | 40.5 | 74.0                   | 54.0 | -20.1                  | -13.5 |
| 2483.50            | -22.51                    | 28.26             | V                  | 48.3              | 35.9 | 54.1                 | 41.7 | 74.0                   | 54.0 | -19.9                  | -12.3 |
| 2485.20            | -22.50                    | 28.27             | H                  | 43.1              | 33.7 | 48.9                 | 39.5 | 74.0                   | 54.0 | -25.1                  | -14.5 |
| 2485.20            | -22.50                    | 28.27             | V                  | 44                | 33   | 49.8                 | 38.8 | 74.0                   | 54.0 | -24.2                  | -15.2 |
| 2489.60            | -22.49                    | 28.28             | H                  | 48.3              | 32.6 | 54.1                 | 38.4 | 74.0                   | 54.0 | -19.9                  | -15.6 |
| 2489.60            | -22.49                    | 28.28             | V                  | 46.1              | 35.7 | 51.9                 | 41.5 | 74.0                   | 54.0 | -22.1                  | -12.5 |



## TEST REPORT

### 4.2 RADIATED EMISSION TEST

#### 4.2.1 LIMIT

FCC Part15, Subpart C Section 15.209 limit of radiated emission for frequency below 1000MHz. The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| FREQUENCY (MHz) | DISTANCE (m) | FIELD STRENGTH (dB $\mu$ V/m) |
|-----------------|--------------|-------------------------------|
| 0.009 - 0.490   | 300          | 2400/F(KHz)                   |
| 0.490 - 1.705   | 30           | 24000/F(KHz)                  |
| 1.705 - 30      | 30           | 30                            |
| 30 - 88         | 3            | 40.0                          |
| 88 - 216        | 3            | 43.5                          |
| 216 - 960       | 3            | 46.0                          |
| Above 960       | 3            | 54.0                          |

FCC Part15, Subpart C Section 15.249 limit of radiated emission (Average).

| FREQUENCY (MHz) | FIELD STRENGTH OF FUNDAMENTAL (millivolts/meter) | FIELD STRENGTH OF HARMONICS (millivolts/meter) |
|-----------------|--------------------------------------------------|------------------------------------------------|
| 902 - 928       | 50                                               | 500                                            |
| 2400 - 2483.5   | 50                                               | 500                                            |
| 5725 - 5875     | 50                                               | 500                                            |
| 24000 - 24250   | 250                                              | 2500                                           |

#### NOTE :

1. In the emission tables above , the tighter limit applies at the band edges.
2. Distance refers to the distance between measuring instrument, antenna, and the closest point of any part of the device or system.
3. 50mV = 94dBuV

FCC Part 15, Section15.35(b) limit of radiated emission for frequency above 1000 MHz

| FREQUENCY (MHz) | Class A (dBuV/m) (at 3m) |         | Class B (dBuV/m) (at 3m) |         |
|-----------------|--------------------------|---------|--------------------------|---------|
|                 | PEAK                     | AVERAGE | PEAK                     | AVERAGE |
| Above 1000      | 80.0                     | 60.0    | 74.0                     | 54.0    |

|                                                                                                                                                                                                               |                      |                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------|
|  <b>Spectrum Research &amp; Testing Lab., Inc.</b><br>No. 101-10, Ling 8,<br>Shan-Tong Li, Chung-Li<br>City, Taoyuan, Taiwan | <h1>TEST REPORT</h1> | Reference No.: A11042102<br>Report No.: FCCA11042102<br>FCC ID : FSUGMZJN<br>Page: 10 of 29<br>Date: Jun. 21, 2011 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------|

## 4.2.2 TEST EQUIPMENT

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

| EQUIPMENT/<br>FACILITIES | SPECIFICATIONS          | MANUFACTURER       | MODEL#/<br>SERIAL#         | DUE DATE OF CAL. &<br>CAL. CENTER |
|--------------------------|-------------------------|--------------------|----------------------------|-----------------------------------|
| EMI TEST<br>RECEIVER     | 20 MHz TO<br>1000 MHz   | ROHDE &<br>SCHWARZ | ESVS30 /<br>841977/003     | DEC. 2011<br>ETC                  |
| BI-LOG<br>ANTENNA        | 30 MHz TO<br>2 GHz      | SCHAFFNER          | CBL6141A /<br>4181         | MAY 2012<br>ETC                   |
| OATS                     | 3 – 10 M<br>MEASUREMENT | SRT                | SRT-1                      | NOV. 2011<br>SRT                  |
| COAXIAL CABLE            | 30M                     | TIMES              | LMR-400 /<br>#30M          | MAY 2012<br>ETC                   |
| FILTER                   | 2 LINE, 30A             | FIL.COIL           | FC-943 /<br>869            | NCR                               |
| SPECTRUM<br>ANALYZER     | 9K-40GHz                | R&S                | FSP40/<br>100093           | DEC. 2011<br>ETC                  |
| PRE-AMPLIFIER            | 1 GHz TO<br>26.5 GHz    | HP                 | 8449B/<br>3008A01995       | JAN. 2012<br>ETC                  |
| HORN ANTENNA             | 1 GHz TO<br>18 GHz      | EMCO               | 3115/<br>6881              | NOV. 2011<br>ETC                  |
| HORN ANTENNA             | 18 GHz TO<br>40 GHz     | EMCO               | 3116/<br>00032255          | FEB. 2012<br>ETC                  |
| K-TYPE CABLE             | 15M                     | HUBER SUHNER       | SF 102-40/2*11<br>/23932/2 | MAY 2012<br>ETC                   |
| K-TYPE CABLE             | 1M                      | HUBER SUHNER       | SF 102-40/2*11<br>/23934/2 | NOV. 2011<br>ETC                  |

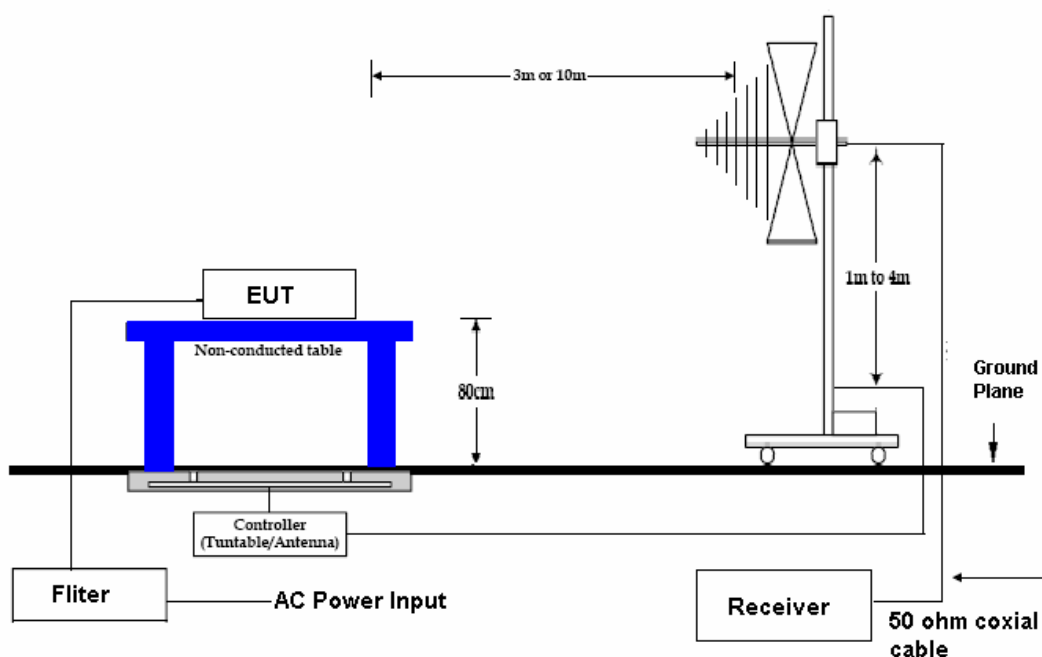
### NOTE:

1. The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

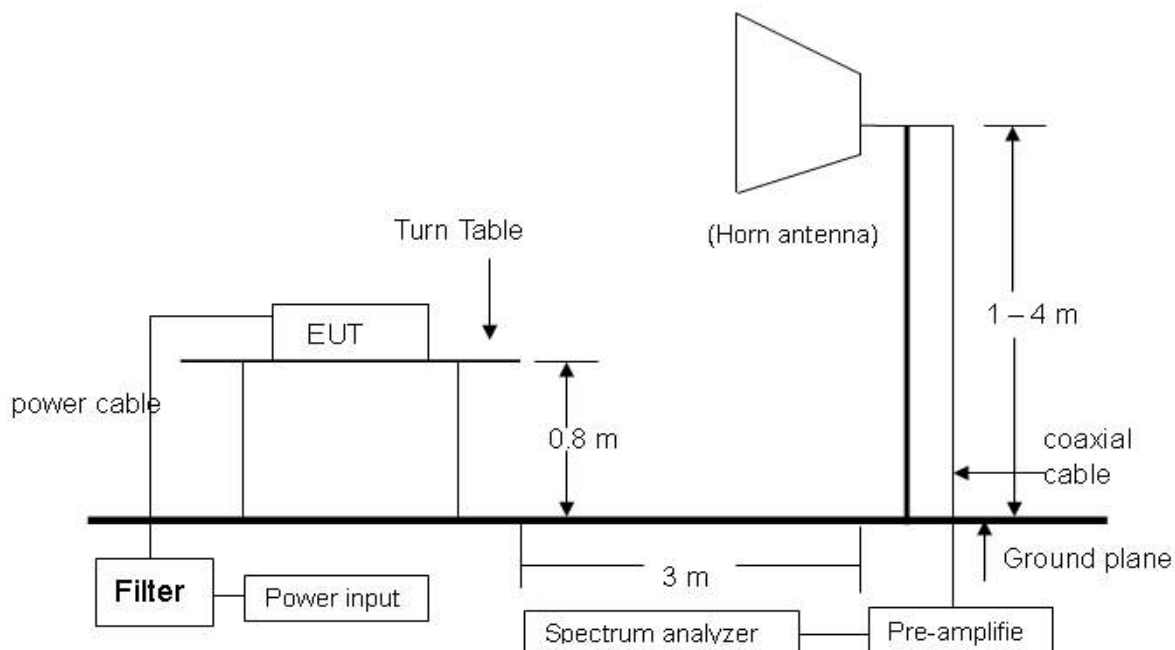


## 4.2.3 TEST SET-UP

30MHz ~ 1GHz



Above 1GHz



### NOTE :

1. The EUT system was put on a wooden table with 0.8m heights above a ground plane. For the actual test configuration, please refer to the photos of testing.



#### 4.2.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.4:2003 and CISPR 22:2003. The measurements were made at an open area test site with 3 meter measurement distance under 1 GHz and with 3m distance above 1GHz. The frequency spectrum measured started from 30 MHz. Under 1 GHz, all readings were quasi-peak values with 120 kHz resolution bandwidth of the test receiver. Above 1 GHz, the measurements were made at an open area test site with 3 meter measurement distance and all readings were peak or average values with 1 MHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. The cables connected to EUT and support units were moved to find the maximum emission levels for each frequency.

First, find the margin or higher points at least 6 points by software, then use manual to find the maximum data. The procedure is referred on the test procedure of SRT LAB.



## TEST REPORT

### 4.2.5 TEST RESULT

|                    |             |                  |               |
|--------------------|-------------|------------------|---------------|
| Temperature:       | 24 °C       | Humidity:        | 55 %RH        |
| Tested By:         | Jeff Lo     | Tested Mode:     | 1             |
| Receiver Detector: | Q.P. or AV. | Modulation Type: | GFSK          |
| Frequency Range:   | 30M – 1GHz  | Tested Date:     | Jun. 17, 2011 |

Antenna Polarization : Horizontal

| Frequency<br>(MHz) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Reading<br>Data<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | AZ(°) | EL(m) |
|--------------------|-----------------------|-----------------------------|---------------------------|-------------------------------|-------------------|----------------|-------|-------|
| 199.2870           | 1.90                  | 11.71                       | 11.4                      | 25.0                          | 43.5              | -18.5          | 35    | 3.51  |
| 623.4400           | 3.59                  | 19.92                       | 4.3                       | 27.8                          | 46.0              | -18.2          | 118   | 2.55  |
| 861.1000           | 4.34                  | 22.94                       | 8.0                       | 35.3                          | 46.0              | -10.7          | 25    | 1.69  |
| 909.3500           | 4.52                  | 23.30                       | 5.9                       | 33.7                          | 46.0              | -12.3          | 21    | 1.58  |
| 963.1400           | 4.63                  | 24.30                       | 12.3                      | 41.2                          | 54.0              | -12.8          | 56    | 1.31  |
| 975.0780           | 4.65                  | 24.40                       | 14.8                      | 43.9                          | 54.0              | -10.2          | 144   | 1.28  |

Antenna Polarization : Vertical

| Frequency<br>(MHz) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Reading<br>Data<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | AZ(°) | EL(m) |
|--------------------|-----------------------|-----------------------------|---------------------------|-------------------------------|-------------------|----------------|-------|-------|
| 46.2000            | 1.06                  | 15.94                       | 9.3                       | 26.3                          | 40.0              | -13.7          | 189   | 1.28  |
| 308.1100           | 2.43                  | 14.09                       | 11.9                      | 28.4                          | 46.0              | -17.6          | 198   | 1.59  |
| 323.4700           | 2.49                  | 14.45                       | 12.8                      | 29.7                          | 46.0              | -16.3          | 121   | 1.67  |
| 805.1150           | 4.12                  | 22.18                       | 4.0                       | 30.3                          | 46.0              | -15.7          | 69    | 3.06  |
| 883.7900           | 4.43                  | 23.03                       | 3.5                       | 31.0                          | 46.0              | -15.0          | 80    | 3.27  |
| 965.6100           | 4.63                  | 24.32                       | 12.0                      | 41.0                          | 54.0              | -13.1          | 91    | 3.86  |

#### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "\*": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



## TEST REPORT

|                    |             |                  |               |
|--------------------|-------------|------------------|---------------|
| Temperature:       | 24 °C       | Humidity:        | 55 %RH        |
| Tested By:         | Jeff Lo     | Tested Mode:     | 2             |
| Receiver Detector: | Q.P. or AV. | Modulation Type: | GFSK          |
| Frequency Range:   | 30M – 1GHz  | Tested Date:     | Jun. 17, 2011 |

### Antenna Polarization : Horizontal

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Reading Data (dBμV) | Emission Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | AZ(°) | EL(m) |
|-----------------|-----------------|-----------------------|---------------------|-------------------------|----------------|-------------|-------|-------|
| 554.3900        | 3.41            | 18.68                 | 8.6                 | 30.7                    | 46.0           | -15.3       | 195   | 2.26  |
| 596.4700        | 3.49            | 19.52                 | 7.6                 | 30.6                    | 46.0           | -15.4       | 144   | 2.18  |
| 623.3400        | 3.59            | 19.92                 | 7.8                 | 31.3                    | 46.0           | -14.7       | 189   | 1.97  |
| 786.5500        | 4.04            | 22.04                 | 8.2                 | 34.3                    | 46.0           | -11.7       | 153   | 1.78  |
| 846.3800        | 4.28            | 22.84                 | 2.9                 | 30.0                    | 46.0           | -16.0       | 197   | 1.59  |
| 929.0500        | 4.56            | 23.74                 | 5.8                 | 34.1                    | 46.0           | -11.9       | 52    | 1.37  |

### Antenna Polarization : Vertical

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Reading Data (dBμV) | Emission Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | AZ(°) | EL(m) |
|-----------------|-----------------|-----------------------|---------------------|-------------------------|----------------|-------------|-------|-------|
| 46.2000         | 1.06            | 15.94                 | 9.6                 | 26.6                    | 40.0           | -13.4       | 44    | 1.18  |
| 366.2500        | 2.66            | 15.48                 | 13.0                | 31.1                    | 46.0           | -14.9       | 118   | 1.56  |
| 795.3980        | 4.08            | 22.08                 | 10.0                | 36.2                    | 46.0           | -9.8        | 151   | 2.97  |
| 832.0500        | 4.23            | 22.61                 | 7.6                 | 34.4                    | 46.0           | -11.6       | 18    | 3.18  |
| 856.1780        | 4.32            | 22.92                 | 8.3                 | 35.5                    | 46.0           | -10.5       | 123   | 3.29  |
| 892.9900        | 4.47            | 23.07                 | 4.6                 | 32.1                    | 46.0           | -13.9       | 224   | 3.41  |

#### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "\*": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



## TEST REPORT

|                    |             |                  |               |
|--------------------|-------------|------------------|---------------|
| Temperature:       | 24 °C       | Humidity:        | 55 %RH        |
| Tested By:         | Jeff Lo     | Tested Mode:     | 3             |
| Receiver Detector: | Q.P. or AV. | Modulation Type: | GFSK          |
| Frequency Range:   | 30M – 1GHz  | Tested Date:     | Jun. 17, 2011 |

### Antenna Polarization : Horizontal

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Reading Data (dBμV) | Emission Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | AZ(°) | EL(m) |
|-----------------|-----------------|-----------------------|---------------------|-------------------------|----------------|-------------|-------|-------|
| 143.2000        | 1.70            | 12.67                 | 9.7                 | 24.1                    | 43.5           | -19.4       | 112   | 3.56  |
| 519.8800        | 3.28            | 18.23                 | 11.2                | 32.7                    | 46.0           | -13.3       | 56    | 2.38  |
| 594.3300        | 3.49            | 19.48                 | 8.9                 | 31.9                    | 46.0           | -14.1       | 197   | 2.29  |
| 611.3180        | 3.54            | 19.75                 | 9.0                 | 32.3                    | 46.0           | -13.7       | 53    | 2.05  |
| 623.2700        | 3.59            | 19.92                 | 7.4                 | 30.9                    | 46.0           | -15.1       | 144   | 1.97  |
| 841.4400        | 4.26            | 22.76                 | 8.4                 | 35.4                    | 46.0           | -10.6       | 158   | 1.44  |

### Antenna Polarization : Vertical

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Reading Data (dBμV) | Emission Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | AZ(°) | EL(m) |
|-----------------|-----------------|-----------------------|---------------------|-------------------------|----------------|-------------|-------|-------|
| 46.1800         | 1.06            | 15.94                 | 9.9                 | 26.9                    | 40.0           | -13.1       | 26    | 1.21  |
| 497.8800        | 3.19            | 17.96                 | 10.6                | 31.7                    | 46.0           | -14.3       | 147   | 1.98  |
| 623.2500        | 3.59            | 19.92                 | 6.5                 | 30.0                    | 46.0           | -16.0       | 258   | 2.59  |
| 786.6100        | 4.04            | 22.04                 | 6.2                 | 32.3                    | 46.0           | -13.7       | 99    | 2.78  |
| 834.3100        | 4.24            | 22.64                 | 4.7                 | 31.6                    | 46.0           | -14.4       | 313   | 3.09  |
| 875.8100        | 4.40            | 23.00                 | 3.9                 | 31.3                    | 46.0           | -14.7       | 198   | 3.28  |

### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "\*": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



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## TEST REPORT

Reference No.: A11042102  
Report No.: FCCA11042102  
FCC ID : FSUGMZJN  
Page: 16 of 29  
Date: Jun. 21, 2011

|                    |             |                  |               |
|--------------------|-------------|------------------|---------------|
| Temperature:       | 24 °C       | Humidity:        | 55 %RH        |
| Tested By:         | Jeff Lo     | Tested Mode:     | 4             |
| Receiver Detector: | Q.P. or AV. | Modulation Type: | GFSK          |
| Frequency Range:   | 30M – 1GHz  | Tested Date:     | Jun. 17, 2011 |

Antenna Polarization : Horizontal

| Frequency<br>(MHz) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Reading<br>Data<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | AZ(°) | EL(m) |
|--------------------|-----------------------|-----------------------------|---------------------------|-------------------------------|-------------------|----------------|-------|-------|
| 199.8700           | 1.90                  | 11.71                       | 10.4                      | 24.0                          | 43.5              | -19.5          | 311   | 2.47  |
| 216.3300           | 2.00                  | 12.80                       | 12.7                      | 27.5                          | 46.0              | -18.5          | 254   | 2.19  |
| 526.4400           | 3.30                  | 18.31                       | 5.6                       | 27.2                          | 46.0              | -18.8          | 69    | 1.88  |
| 623.1800           | 3.59                  | 19.92                       | 3.3                       | 26.8                          | 46.0              | -19.2          | 158   | 1.64  |
| 798.0300           | 4.09                  | 22.09                       | 2.3                       | 28.5                          | 46.0              | -17.5          | 118   | 1.53  |
| 897.4100           | 4.49                  | 23.09                       | 2.9                       | 30.5                          | 46.0              | -15.5          | 16    | 1.47  |

Antenna Polarization : Vertical

| Frequency<br>(MHz) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Reading<br>Data<br>(dBμV) | Emission<br>Level<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | AZ(°) | EL(m) |
|--------------------|-----------------------|-----------------------------|---------------------------|-------------------------------|-------------------|----------------|-------|-------|
| 46.2000            | 1.06                  | 15.94                       | 8.9                       | 25.9                          | 40.0              | -14.1          | 99    | 1.18  |
| 526.4700           | 3.30                  | 18.31                       | 2.6                       | 24.2                          | 46.0              | -21.8          | 31    | 2.18  |
| 623.1500           | 3.59                  | 19.92                       | 2.4                       | 25.9                          | 46.0              | -20.1          | 34    | 2.29  |
| 761.4800           | 3.94                  | 21.94                       | 3.6                       | 29.5                          | 46.0              | -16.5          | 187   | 3.04  |
| 846.3300           | 4.28                  | 22.84                       | 4.1                       | 31.2                          | 46.0              | -14.8          | 199   | 3.24  |
| 965.2100           | 4.63                  | 24.32                       | 8.9                       | 37.9                          | 54.0              | -16.2          | 132   | 3.81  |

### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "\*": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



## TEST REPORT

|                    |             |                  |               |
|--------------------|-------------|------------------|---------------|
| Temperature:       | 24 °C       | Humidity:        | 55 %RH        |
| Tested By:         | Jeff Lo     | Tested Mode:     | 5             |
| Receiver Detector: | Q.P. or AV. | Modulation Type: | GFSK          |
| Frequency Range:   | 30M – 1GHz  | Tested Date:     | Jun. 17, 2011 |

### Antenna Polarization : Horizontal

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Reading Data (dBμV) | Emission Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | AZ(°) | EL(m) |
|-----------------|-----------------|-----------------------|---------------------|-------------------------|----------------|-------------|-------|-------|
| 315.2550        | 2.46            | 14.26                 | 15.3                | 32.0                    | 46.0           | -14.0       | 233   | 2.61  |
| 676.4500        | 3.75            | 20.51                 | 9.6                 | 33.9                    | 46.0           | -12.1       | 54    | 1.88  |
| 754.2500        | 3.92            | 21.92                 | 4.6                 | 30.4                    | 46.0           | -15.6       | 132   | 1.75  |
| 807.6100        | 4.13            | 22.21                 | 6.3                 | 32.6                    | 46.0           | -13.4       | 128   | 1.54  |
| 849.4400        | 4.30            | 22.88                 | 6.0                 | 33.2                    | 46.0           | -12.8       | 154   | 1.47  |
| 897.1300        | 4.49            | 23.09                 | 2.9                 | 30.5                    | 46.0           | -15.5       | 122   | 1.29  |

### Antenna Polarization : Vertical

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Reading Data (dBμV) | Emission Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | AZ(°) | EL(m) |
|-----------------|-----------------|-----------------------|---------------------|-------------------------|----------------|-------------|-------|-------|
| 46.2000         | 1.06            | 15.94                 | 9.0                 | 26.0                    | 40.0           | -14.0       | 46    | 1.31  |
| 371.1500        | 2.68            | 15.60                 | 15.1                | 33.4                    | 46.0           | -12.6       | 129   | 2.09  |
| 621.3800        | 3.58            | 19.89                 | 15.2                | 38.7                    | 46.0           | -7.3        | 47    | 3.14  |
| 739.5900        | 3.88            | 21.64                 | 7.0                 | 32.5                    | 46.0           | -13.5       | 21    | 3.27  |
| 790.1800        | 4.06            | 22.06                 | 7.1                 | 33.2                    | 46.0           | -12.8       | 236   | 3.42  |
| 829.3800        | 4.22            | 22.56                 | 9.1                 | 35.9                    | 46.0           | -10.1       | 111   | 3.59  |

#### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "\*": Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.



# TEST REPORT

|                    |            |                  |               |
|--------------------|------------|------------------|---------------|
| Temperature:       | 24 °C      | Humidity:        | 55 %RH        |
| Receiver Detector: | PK. or AV. | Tested Mode:     | 1             |
| Frequency Range:   | 1 – 25GHz  | Modulation Type: | GFSK          |
| Tested By:         | Jeff Lo    | Tested Date:     | Jun. 17, 2011 |

Antenna Polarization : Horizontal

| Frequency (MHz) | Correct Factor (dB) | Ant. Factor (dB/m) | Reading Data (dBμV) |      | Emission Level (dBμV/m) |      | Limit (dBμV/m) |      | Margin (dB) |       | AZ (°) | EL (m) |
|-----------------|---------------------|--------------------|---------------------|------|-------------------------|------|----------------|------|-------------|-------|--------|--------|
|                 |                     |                    | PK.                 | AV.  | PK.                     | AV.  | PK.            | AV.  | PK.         | AV.   |        |        |
| 1019.13         | -35.68              | 24.25              | 54.5                | 44.1 | 43.1                    | 32.7 | 74.0           | 54.0 | -30.9       | -21.3 | 257    | 2.48   |
| 1065.30         | -35.57              | 24.36              | 54.4                | 43.9 | 43.2                    | 32.7 | 74.0           | 54.0 | -30.8       | -21.3 | 119    | 2.43   |
| 1094.43         | -35.50              | 24.43              | 56.0                | 45.5 | 44.9                    | 34.4 | 74.0           | 54.0 | -29.1       | -19.6 | 108    | 2.40   |
| 1175.25         | -35.31              | 24.62              | 51.8                | 41.4 | 41.1                    | 30.7 | 74.0           | 54.0 | -32.9       | -23.3 | 37     | 2.37   |
| 1260.27         | -35.12              | 24.82              | 51.4                | 40.8 | 41.1                    | 30.5 | 74.0           | 54.0 | -32.9       | -23.5 | 99     | 2.21   |
| 1337.11         | -34.94              | 25.01              | 51.3                | 42.7 | 41.4                    | 32.8 | 74.0           | 54.0 | -32.6       | -21.2 | 309    | 2.14   |

Antenna Polarization : Vertical

| Frequency (MHz) | Correct Factor (dB) | Ant. Factor (dB/m) | Reading Data (dBμV) |      | Emission Level (dBμV/m) |      | Limit (dBμV/m) |      | Margin (dB) |       | AZ (°) | EL (m) |
|-----------------|---------------------|--------------------|---------------------|------|-------------------------|------|----------------|------|-------------|-------|--------|--------|
|                 |                     |                    | PK.                 | AV.  | PK.                     | AV.  | PK.            | AV.  | PK.         | AV.   |        |        |
| 1019.15         | -35.68              | 24.25              | 47.8                | 37.4 | 36.4                    | 26.0 | 74.0           | 54.0 | -37.6       | -28.0 | 222    | 1.05   |
| 1107.25         | -35.47              | 24.46              | 47.7                | 37.1 | 36.7                    | 26.1 | 74.0           | 54.0 | -37.3       | -27.9 | 12     | 1.07   |
| 1145.66         | -35.38              | 24.55              | 46.8                | 35.5 | 36.0                    | 24.7 | 74.0           | 54.0 | -38.0       | -29.3 | 355    | 1.12   |
| 1179.52         | -35.30              | 24.63              | 50.2                | 40.1 | 39.5                    | 29.4 | 74.0           | 54.0 | -34.5       | -24.6 | 199    | 1.15   |
| 1256.02         | -35.13              | 24.81              | 46.6                | 36.8 | 36.3                    | 26.5 | 74.0           | 54.0 | -37.7       | -27.5 | 77     | 1.17   |
| 1328.00         | -34.96              | 24.99              | 48.2                | 38.3 | 38.2                    | 28.3 | 74.0           | 54.0 | -35.8       | -25.7 | 202    | 1.21   |

## NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "F": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



## TEST REPORT

|                    |            |                  |                 |
|--------------------|------------|------------------|-----------------|
| Temperature:       | 24 °C      | Humidity:        | 55 %RH          |
| Receiver Detector: | PK. or AV. | Tested Mode:     | 1 (Fundamental) |
| Frequency Range:   | 1 – 25GHz  | Modulation Type: | GFSK            |
| Tested By:         | Shunm Wang | Tested Date:     | Jun. 17, 2011   |

### Antenna Polarization : Horizontal

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dB $\mu$ V) |      | Emission<br>Level<br>(dB $\mu$ V/m) |      | Limit<br>(dB $\mu$ V/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------------|------|-------------------------------------|------|-------------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                             | AV.  | PK.                                 | AV.  | PK.                     | AV.  | PK.            | AV.   |           |           |
| 2404.00            | -22.75                    | 28.08                    | 81.9                            | 77.4 | 87.2                                | 82.7 | 114                     | 94.0 | -26.8          | -11.3 | 159       | 1.53      |
| 4808.00            | -16.80                    | 33.05                    | 41.1                            | 30.8 | 57.4                                | 47.1 | 74.0                    | 54.0 | -16.6          | -6.9  | 221       | 1.42      |
| 7212.00            | -12.81                    | 35.74                    | 34.2                            | 21.2 | 57.1                                | 44.1 | 74.0                    | 54.0 | -16.9          | -9.9  | 15        | 1.38      |
| 9614.00            | -10.12                    | 38.06                    | 27.7                            | 17.7 | 55.6                                | 45.6 | 74.0                    | 54.0 | -18.4          | -8.4  | 304       | 1.41      |
| 12018.00           | -6.38                     | 39.59                    | 21.4                            | 11.0 | 54.6                                | 44.2 | 74.0                    | 54.0 | -19.4          | -9.8  | 118       | 1.55      |
| 14422.00           | -2.40                     | 42.41                    | 15.1                            | 5.9  | 55.1                                | 45.9 | 74.0                    | 54.0 | -18.9          | -8.1  | 204       | 1.64      |

### Antenna Polarization : Vertical

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dB $\mu$ V) |      | Emission<br>Level<br>(dB $\mu$ V/m) |      | Limit<br>(dB $\mu$ V/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------------|------|-------------------------------------|------|-------------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                             | AV.  | PK.                                 | AV.  | PK.                     | AV.  | PK.            | AV.   |           |           |
| 2404.00            | -22.75                    | 28.08                    | 81.8                            | 75.9 | 87.1                                | 81.2 | 114                     | 94.0 | -26.9          | -12.8 | 147       | 1.44      |
| 4808.00            | -16.80                    | 33.05                    | 41.3                            | 30.8 | 57.6                                | 47.1 | 74.0                    | 54.0 | -16.4          | -6.9  | 25        | 1.29      |
| 7212.00            | -12.81                    | 35.74                    | 32.4                            | 20.2 | 55.3                                | 43.1 | 74.0                    | 54.0 | -18.7          | -10.9 | 321       | 1.35      |
| 9614.00            | -10.12                    | 38.06                    | 27.5                            | 17.2 | 55.4                                | 45.1 | 74.0                    | 54.0 | -18.6          | -8.9  | 229       | 1.39      |
| 12018.00           | -6.38                     | 39.59                    | 19.9                            | 8.7  | 53.1                                | 41.9 | 74.0                    | 54.0 | -20.9          | -12.1 | 26        | 1.48      |
| 14422.00           | -2.40                     | 42.41                    | 21.3                            | 11.4 | 61.3                                | 51.4 | 74.0                    | 54.0 | -12.7          | -2.6  | 119       | 1.53      |

#### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "F": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.: Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F): The field strength of fundamental frequency.



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## TEST REPORT

Reference No.: A11042102  
Report No.: FCCA11042102  
FCC ID : FSUGMZJN  
Page: 20 of 29  
Date: Jun. 21, 2011

|                    |            |                  |               |
|--------------------|------------|------------------|---------------|
| Temperature:       | 24 °C      | Humidity:        | 55 %RH        |
| Receiver Detector: | PK. or AV. | Tested Mode:     | 2             |
| Frequency Range:   | 1 – 25GHz  | Modulation Type: | GFSK          |
| Tested By:         | Jeff Lo    | Tested Date:     | Jun. 17, 2011 |

Antenna Polarization : Horizontal

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dB $\mu$ V) |      | Emission<br>Level<br>(dB $\mu$ V/m) |      | Limit<br>(dB $\mu$ V/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------------|------|-------------------------------------|------|-------------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                             | AV.  | PK.                                 | AV.  | PK.                     | AV.  | PK.            | AV.   |           |           |
| 1175.32            | -35.31                    | 24.62                    | 51.5                            | 41.2 | 40.8                                | 30.5 | 74.0                    | 54.0 | -33.2          | -23.5 | 57        | 2.43      |
| 1252.32            | -35.14                    | 24.80                    | 49.8                            | 39.7 | 39.5                                | 29.4 | 74.0                    | 54.0 | -34.5          | -24.6 | 108       | 2.40      |
| 1341.79            | -34.93                    | 25.02                    | 52.0                            | 41.3 | 42.1                                | 31.4 | 74.0                    | 54.0 | -31.9          | -22.6 | 81        | 2.38      |
| 1413.25            | -34.76                    | 25.19                    | 49.0                            | 38.5 | 39.4                                | 28.9 | 74.0                    | 54.0 | -34.6          | -25.1 | 137       | 2.35      |
| 1502.50            | -34.56                    | 25.41                    | 46.1                            | 35.9 | 36.9                                | 26.7 | 74.0                    | 54.0 | -37.1          | -27.3 | 330       | 2.22      |
| 2442.00            | -33.87                    | 28.17                    | 44.5                            | 34.1 | 38.8                                | 28.4 | 74.0                    | 54.0 | -35.2          | -25.6 | 316       | 1.97      |

Antenna Polarization : Vertical

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dB $\mu$ V) |      | Emission<br>Level<br>(dB $\mu$ V/m) |      | Limit<br>(dB $\mu$ V/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------------|------|-------------------------------------|------|-------------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                             | AV.  | PK.                                 | AV.  | PK.                     | AV.  | PK.            | AV.   |           |           |
| 1022.12            | -35.67                    | 24.25                    | 49.7                            | 39.5 | 38.3                                | 28.1 | 74.0                    | 54.0 | -35.7          | -25.9 | 207       | 1.07      |
| 1099.72            | -35.49                    | 24.44                    | 47.1                            | 37.4 | 36.0                                | 26.3 | 74.0                    | 54.0 | -38.0          | -27.7 | 127       | 1.12      |
| 1188.42            | -35.28                    | 24.65                    | 46.7                            | 35.5 | 36.1                                | 24.9 | 74.0                    | 54.0 | -37.9          | -29.1 | 305       | 1.17      |
| 1260.40            | -35.12                    | 24.82                    | 46.0                            | 34.3 | 35.7                                | 24.0 | 74.0                    | 54.0 | -38.3          | -30.0 | 101       | 1.27      |
| 1341.11            | -34.93                    | 25.02                    | 49.4                            | 39.1 | 39.5                                | 29.2 | 74.0                    | 54.0 | -34.5          | -24.8 | 99        | 1.34      |
| 2437.91            | -33.88                    | 28.16                    | 44.6                            | 34.2 | 38.9                                | 28.5 | 74.0                    | 54.0 | -35.1          | -25.5 | 318       | 1.99      |

### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "F": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



## TEST REPORT

|                    |            |                  |                 |
|--------------------|------------|------------------|-----------------|
| Temperature:       | 24 °C      | Humidity:        | 55 %RH          |
| Receiver Detector: | PK. or AV. | Tested Mode:     | 2 (Fundamental) |
| Frequency Range:   | 1 – 25GHz  | Modulation Type: | GFSK            |
| Tested By:         | Jeff Lo    | Tested Date:     | Jun. 17, 2011   |

### Antenna Polarization : Horizontal

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dBμV) |      | Emission<br>Level<br>(dBμV/m) |      | Limit<br>(dBμV/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------|------|-------------------------------|------|-------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                       | AV.  | PK.                           | AV.  | PK.               | AV.  | PK.            | AV.   |           |           |
| 2448.00            | -22.61                    | 28.19                    | 80.3                      | 77.7 | 85.9                          | 83.3 | 114               | 94.0 | -28.1          | -10.7 | 154       | 1.52      |
| 4896.00            | -16.62                    | 33.21                    | 37.8                      | 29.1 | 54.4                          | 45.7 | 74.0              | 54.0 | -19.6          | -8.3  | 226       | 1.43      |
| 7344.00            | -12.64                    | 36.09                    | 31.4                      | 20.2 | 54.9                          | 43.6 | 74.0              | 54.0 | -19.1          | -10.4 | 20        | 1.39      |
| 9792.00            | -9.86                     | 38.18                    | 26.8                      | 16.1 | 55.1                          | 44.4 | 74.0              | 54.0 | -18.9          | -9.6  | 311       | 1.42      |
| 12240.00           | -5.93                     | 39.46                    | 13.3                      | 8.8  | 46.8                          | 42.3 | 74.0              | 54.0 | -27.2          | -11.7 | 108       | 1.41      |
| 14688.00           | -2.30                     | 41.67                    | 10.3                      | 7.1  | 49.7                          | 46.5 | 74.0              | 54.0 | -24.3          | -7.5  | 197       | 1.56      |

### Antenna Polarization : Vertical

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dBμV) |      | Emission<br>Level<br>(dBμV/m) |      | Limit<br>(dBμV/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------|------|-------------------------------|------|-------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                       | AV.  | PK.                           | AV.  | PK.               | AV.  | PK.            | AV.   |           |           |
| 2448.00            | -22.61                    | 28.19                    | 79.4                      | 69.9 | 85.0                          | 75.5 | 114               | 94.0 | -29.0          | -18.5 | 151       | 1.42      |
| 4896.00            | -16.62                    | 33.21                    | 35.5                      | 29.1 | 52.1                          | 45.7 | 74.0              | 54.0 | -21.9          | -8.3  | 21        | 1.28      |
| 7344.00            | -12.64                    | 36.09                    | 28.4                      | 18.3 | 51.9                          | 41.8 | 74.0              | 54.0 | -22.1          | -12.2 | 324       | 1.34      |
| 9792.00            | -9.86                     | 38.18                    | 23.8                      | 21.2 | 52.1                          | 49.5 | 74.0              | 54.0 | -21.9          | -4.5  | 231       | 1.38      |
| 12240.00           | -5.93                     | 39.46                    | 13.2                      | 8.7  | 46.7                          | 42.2 | 74.0              | 54.0 | -27.3          | -11.8 | 221       | 1.44      |
| 14688.00           | -2.30                     | 41.67                    | 11.5                      | 7.5  | 50.9                          | 46.9 | 74.0              | 54.0 | -23.1          | -7.1  | 188       | 1.55      |

#### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "F": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.: Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F): The field strength of fundamental frequency.



**Spectrum Research &  
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No. 101-10, Ling 8,  
Shan-Tong Li, Chung-Li  
City, Taoyuan, Taiwan

## TEST REPORT

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Report No.: FCCA11042102  
FCC ID : FSUGMZJN  
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|                    |            |                  |               |
|--------------------|------------|------------------|---------------|
| Temperature:       | 24 °C      | Humidity:        | 55 %RH        |
| Receiver Detector: | PK. or AV. | Tested Mode:     | 3             |
| Frequency Range:   | 1 – 25GHz  | Modulation Type: | GFSK          |
| Tested By:         | Jeff Lo    | Tested Date:     | Jun. 17, 2011 |

Antenna Polarization : Horizontal

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dB $\mu$ V) |      | Emission<br>Level<br>(dB $\mu$ V/m) |      | Limit<br>(dB $\mu$ V/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------------|------|-------------------------------------|------|-------------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                             | AV.  | PK.                                 | AV.  | PK.                     | AV.  | PK.            | AV.   |           |           |
| 1043.51            | -35.62                    | 24.30                    | 53.9                            | 43.4 | 42.6                                | 32.1 | 74.0                    | 54.0 | -31.4          | -21.9 | 114       | 2.37      |
| 1083.24            | -35.53                    | 24.40                    | 55.2                            | 44.7 | 44.1                                | 33.6 | 74.0                    | 54.0 | -29.9          | -20.4 | 53        | 2.31      |
| 1324.61            | -34.97                    | 24.98                    | 50.1                            | 39.8 | 40.1                                | 29.8 | 74.0                    | 54.0 | -33.9          | -24.2 | 169       | 2.15      |
| 1379.71            | -34.84                    | 25.11                    | 50.1                            | 38.4 | 40.3                                | 28.7 | 74.0                    | 54.0 | -33.7          | -25.3 | 324       | 2.09      |
| 1834.10            | -34.17                    | 26.60                    | 50.7                            | 40.1 | 43.1                                | 32.5 | 74.0                    | 54.0 | -30.9          | -21.5 | 144       | 1.91      |
| 2442.31            | -33.87                    | 28.17                    | 51.4                            | 40.2 | 45.7                                | 34.5 | 74.0                    | 54.0 | -28.3          | -19.5 | 151       | 1.83      |

Antenna Polarization : Vertical

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dB $\mu$ V) |      | Emission<br>Level<br>(dB $\mu$ V/m) |      | Limit<br>(dB $\mu$ V/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------------|------|-------------------------------------|------|-------------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                             | AV.  | PK.                                 | AV.  | PK.                     | AV.  | PK.            | AV.   |           |           |
| 1048.91            | -35.61                    | 24.32                    | 50.7                            | 40.3 | 39.4                                | 29.0 | 74.0                    | 54.0 | -34.6          | -25.0 | 43        | 1.21      |
| 1107.31            | -35.47                    | 24.46                    | 53.9                            | 42.1 | 42.9                                | 31.1 | 74.0                    | 54.0 | -31.1          | -22.9 | 94        | 1.32      |
| 1133.54            | -35.41                    | 24.52                    | 54.6                            | 44.9 | 43.7                                | 34.0 | 74.0                    | 54.0 | -30.3          | -20.0 | 355       | 1.39      |
| 1298.34            | -35.03                    | 24.92                    | 48.2                            | 38.5 | 38.0                                | 28.4 | 74.0                    | 54.0 | -36.0          | -25.6 | 111       | 1.44      |
| 1830.13            | -34.18                    | 26.59                    | 50.1                            | 40.6 | 42.5                                | 33.0 | 74.0                    | 54.0 | -31.5          | -21.0 | 309       | 1.89      |
| 2442.34            | -33.87                    | 28.17                    | 49.1                            | 39.7 | 43.4                                | 34.0 | 74.0                    | 54.0 | -30.6          | -20.0 | 189       | 2.11      |

### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "★": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



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## TEST REPORT

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|                    |            |                  |                 |
|--------------------|------------|------------------|-----------------|
| Temperature:       | 24 °C      | Humidity:        | 55 %RH          |
| Receiver Detector: | PK. or AV. | Tested Mode:     | 3 (Fundamental) |
| Frequency Range:   | 1 – 25GHz  | Modulation Type: | GFSK            |
| Tested By:         | Jeff Lo    | Tested Date:     | Jun. 17, 2011   |

Antenna Polarization : Horizontal

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dBμV) |      | Emission<br>Level<br>(dBμV/m) |      | Limit<br>(dBμV/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------|------|-------------------------------|------|-------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                       | AV.  | PK.                           | AV.  | PK.               | AV.  | PK.            | AV.   |           |           |
| 2480.00            | -22.52                    | 28.26                    | 81.8                      | 73.1 | 87.5                          | 78.8 | 114               | 94.0 | -26.5          | -15.2 | 156       | 1.54      |
| 4960.00            | -16.50                    | 33.33                    | 37.9                      | 28.3 | 54.7                          | 45.1 | 74.0              | 54.0 | -19.3          | -8.9  | 218       | 1.41      |
| 7440.00            | -12.52                    | 36.34                    | 32.5                      | 22.4 | 56.3                          | 46.2 | 74.0              | 54.0 | -17.7          | -7.8  | 13        | 1.37      |
| 9920.00            | -9.68                     | 38.25                    | 25.5                      | 18.8 | 54.1                          | 47.4 | 74.0              | 54.0 | -19.9          | -6.6  | 300       | 1.4       |
| 12400.00           | -5.62                     | 39.36                    | 17.7                      | 7.9  | 51.4                          | 41.6 | 74.0              | 54.0 | -22.6          | -12.4 | 101       | 1.58      |
| 14800.00           | -2.25                     | 41.18                    | 10.1                      | 3.7  | 49.0                          | 42.6 | 74.0              | 54.0 | -25.0          | -11.4 | 334       | 1.44      |

Antenna Polarization : Vertical

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dBμV) |      | Emission<br>Level<br>(dBμV/m) |      | Limit<br>(dBμV/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------|------|-------------------------------|------|-------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                       | AV.  | PK.                           | AV.  | PK.               | AV.  | PK.            | AV.   |           |           |
| 2480.00            | -22.52                    | 28.26                    | 79.9                      | 69.1 | 85.6                          | 74.8 | 114               | 94.0 | -28.4          | -19.2 | 150       | 1.42      |
| 4960.00            | -16.50                    | 33.33                    | 37.5                      | 27.7 | 54.3                          | 44.5 | 74.0              | 54.0 | -19.7          | -9.5  | 23        | 1.3       |
| 7440.00            | -12.52                    | 36.34                    | 30.8                      | 20.0 | 54.6                          | 43.8 | 74.0              | 54.0 | -19.4          | -10.2 | 318       | 1.36      |
| 9920.00            | -9.68                     | 38.25                    | 25.4                      | 15.5 | 54.0                          | 44.1 | 74.0              | 54.0 | -20.0          | -9.9  | 224       | 1.38      |
| 12400.00           | -5.62                     | 39.36                    | 18.8                      | 10.2 | 52.5                          | 43.9 | 74.0              | 54.0 | -21.5          | -10.1 | 108       | 1.61      |
| 14800.00           | -2.25                     | 41.18                    | 15.8                      | 5.7  | 54.7                          | 44.6 | 74.0              | 54.0 | -19.3          | -9.4  | 44        | 1.44      |

### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "★": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.



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## TEST REPORT

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|                    |            |                  |               |
|--------------------|------------|------------------|---------------|
| Temperature:       | 24 °C      | Humidity:        | 55 %RH        |
| Receiver Detector: | PK. or AV. | Tested Mode:     | 4             |
| Frequency Range:   | 1 – 25GHz  | Modulation Type: | GFSK          |
| Tested By:         | Jeff Lo    | Tested Date:     | Jun. 17, 2011 |

Antenna Polarization : Horizontal

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dB $\mu$ V) |      | Emission<br>Level<br>(dB $\mu$ V/m) |      | Limit<br>(dB $\mu$ V/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------------|------|-------------------------------------|------|-------------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                             | AV.  | PK.                                 | AV.  | PK.                     | AV.  | PK.            | AV.   |           |           |
| 1048.35            | -35.61                    | 24.32                    | 53.6                            | 43.1 | 42.3                                | 31.8 | 74.0                    | 54.0 | -31.7          | -22.2 | 33        | 2.33      |
| 1082.37            | -35.53                    | 24.40                    | 56.5                            | 45.4 | 45.3                                | 34.3 | 74.0                    | 54.0 | -28.7          | -19.7 | 154       | 2.21      |
| 1128.45            | -35.42                    | 24.51                    | 51.7                            | 40.5 | 40.8                                | 29.6 | 74.0                    | 54.0 | -33.2          | -24.4 | 301       | 2.16      |
| 1388.54            | -34.82                    | 25.13                    | 48.5                            | 38.8 | 38.8                                | 29.1 | 74.0                    | 54.0 | -35.2          | -24.9 | 221       | 2.04      |
| 1830.92            | -34.18                    | 26.59                    | 50.7                            | 40.1 | 43.1                                | 32.5 | 74.0                    | 54.0 | -30.9          | -21.5 | 41        | 1.94      |
| 2442.73            | -33.87                    | 28.17                    | 49.4                            | 39.3 | 43.7                                | 33.6 | 74.0                    | 54.0 | -30.3          | -20.4 | 199       | 1.78      |

Antenna Polarization : Vertical

| Frequency<br>(MHz) | Correct<br>Factor<br>(dB) | Ant.<br>Factor<br>(dB/m) | Reading<br>Data<br>(dB $\mu$ V) |      | Emission<br>Level<br>(dB $\mu$ V/m) |      | Limit<br>(dB $\mu$ V/m) |      | Margin<br>(dB) |       | AZ<br>(°) | EL<br>(m) |
|--------------------|---------------------------|--------------------------|---------------------------------|------|-------------------------------------|------|-------------------------|------|----------------|-------|-----------|-----------|
|                    |                           |                          | PK.                             | AV.  | PK.                                 | AV.  | PK.                     | AV.  | PK.            | AV.   |           |           |
| 1043.55            | -35.62                    | 24.30                    | 57.1                            | 46.2 | 45.8                                | 34.9 | 74.0                    | 54.0 | -28.2          | -19.1 | 137       | 1.39      |
| 1103.45            | -35.48                    | 24.45                    | 58.7                            | 48.3 | 47.7                                | 37.3 | 74.0                    | 54.0 | -26.3          | -16.7 | 192       | 1.42      |
| 1141.25            | -35.39                    | 24.54                    | 54.2                            | 43.1 | 43.4                                | 32.2 | 74.0                    | 54.0 | -30.6          | -21.8 | 141       | 1.51      |
| 1252.77            | -35.14                    | 24.80                    | 51.4                            | 40.5 | 41.0                                | 30.2 | 74.0                    | 54.0 | -33.0          | -23.8 | 308       | 1.57      |
| 1830.95            | -34.18                    | 26.59                    | 51.4                            | 40.9 | 43.8                                | 33.3 | 74.0                    | 54.0 | -30.2          | -20.7 | 97        | 1.62      |
| 2463.18            | -33.87                    | 28.22                    | 47.5                            | 37.1 | 41.9                                | 31.4 | 74.0                    | 54.0 | -32.1          | -22.6 | 147       | 2.18      |

### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "F": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.: Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F): The field strength of fundamental frequency.



# TEST REPORT

|                    |            |                  |               |
|--------------------|------------|------------------|---------------|
| Temperature:       | 20 °C      | Humidity:        | 65 %RH        |
| Receiver Detector: | PK. or AV. | Tested Mode:     | 5             |
| Frequency Range:   | 1 – 25GHz  | Modulation Type: | GFSK          |
| Tested By:         | Jeff Lo    | Tested Date:     | Jun. 17, 2011 |

## Antenna Polarization : Horizontal

| Frequency (MHz) | Correct Factor (dB) | Ant. Factor (dB/m) | Reading Data (dBμV) |      | Emission Level (dBμV/m) |      | Limit (dBμV/m) |      | Margin (dB) |       | AZ (°) | EL (m) |
|-----------------|---------------------|--------------------|---------------------|------|-------------------------|------|----------------|------|-------------|-------|--------|--------|
|                 |                     |                    | PK.                 | AV.  | PK.                     | AV.  | PK.            | AV.  | PK.         | AV.   |        |        |
| 1052.11         | -35.60              | 24.32              | 56.5                | 46.1 | 45.2                    | 34.8 | 74.0           | 54.0 | -28.8       | -19.2 | 109    | 2.28   |
| 1086.33         | -35.52              | 24.41              | 57.1                | 47.3 | 46.0                    | 36.2 | 74.0           | 54.0 | -28.0       | -17.8 | 153    | 2.21   |
| 1150.21         | -35.37              | 24.56              | 54.9                | 44.5 | 44.1                    | 33.7 | 74.0           | 54.0 | -29.9       | -20.3 | 111    | 2.13   |
| 1230.45         | -35.19              | 24.75              | 56.2                | 45.3 | 45.7                    | 34.9 | 74.0           | 54.0 | -28.3       | -19.1 | 234    | 2.04   |
| 1753.87         | -34.27              | 26.31              | 51.7                | 41.6 | 43.7                    | 33.6 | 74.0           | 54.0 | -30.3       | -20.4 | 244    | 1.94   |
| 1830.24         | -34.18              | 26.59              | 50.7                | 40.4 | 43.1                    | 32.8 | 74.0           | 54.0 | -30.9       | -21.2 | 51     | 1.77   |

## Antenna Polarization : Vertical

| Frequency (MHz) | Correct Factor (dB) | Ant. Factor (dB/m) | Reading Data (dBμV) |      | Emission Level (dBμV/m) |      | Limit (dBμV/m) |      | Margin (dB) |       | AZ (°) | EL (m) |
|-----------------|---------------------|--------------------|---------------------|------|-------------------------|------|----------------|------|-------------|-------|--------|--------|
|                 |                     |                    | PK.                 | AV.  | PK.                     | AV.  | PK.            | AV.  | PK.         | AV.   |        |        |
| 1094.32         | -35.50              | 24.43              | 54.6                | 43.6 | 43.5                    | 32.5 | 74.0           | 54.0 | -30.5       | -21.5 | 143    | 1.24   |
| 1128.40         | -35.42              | 24.51              | 57.1                | 47.2 | 46.2                    | 36.3 | 74.0           | 54.0 | -27.8       | -17.7 | 99     | 1.29   |
| 1248.37         | -35.14              | 24.80              | 53.3                | 43.5 | 42.9                    | 33.2 | 74.0           | 54.0 | -31.1       | -20.8 | 135    | 1.34   |
| 1753.89         | -34.27              | 26.31              | 51.0                | 41.8 | 43.1                    | 33.8 | 74.0           | 54.0 | -30.9       | -20.2 | 101    | 1.69   |
| 1830.27         | -34.18              | 26.59              | 51.0                | 41.4 | 43.5                    | 33.8 | 74.0           | 54.0 | -30.5       | -20.2 | 93     | 1.78   |
| 2442.36         | -33.87              | 28.17              | 51.0                | 39.7 | 45.3                    | 34.0 | 74.0           | 54.0 | -28.7       | -20.0 | 98     | 2.14   |

### NOTE :

1. Measurement uncertainty is +/- 4.73dB.
2. "": The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.

|                                                                                                                                                                                                               |                      |                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------|
|  <b>Spectrum Research &amp; Testing Lab., Inc.</b><br>No. 101-10, Ling 8,<br>Shan-Tong Li, Chung-Li<br>City, Taoyuan, Taiwan | <h1>TEST REPORT</h1> | Reference No.: A11042102<br>Report No.: FCCA11042102<br>FCC ID : FSUGMZJN<br>Page: 26 of 29<br>Date: Jun. 21, 2011 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------|

## 5. Antenna application

### 5.1 Antenna requirement

The EUT's antenna is met the requirement of FCC part15C section15.203 and 15.204.

### 5.2 Result

The EUT's antenna used a PCB printed. Gain of antenna types is -3dBi that meet the requirement.



## 6. PHOTOS OF TESTING

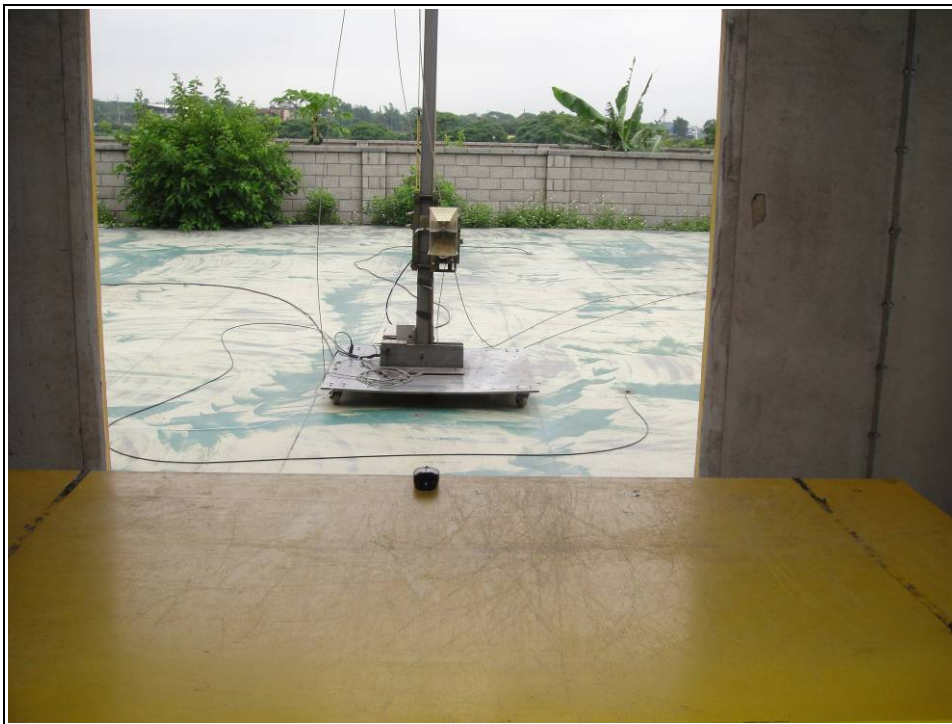
- Radiated test (below 1G , TX & Standby)





## TEST REPORT

- Radiated test (above 1G , TX & Standby)





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### 7. TERMS OF ABBREVIATION

|          |                                              |
|----------|----------------------------------------------|
| AV.      | Average detection                            |
| AZ(°)    | Turn table azimuth                           |
| Correct. | Correction                                   |
| EL(m)    | Antenna height (meter)                       |
| EUT      | Equipment Under Test                         |
| Horiz.   | Horizontal direction                         |
| LISN     | Line Impedance Stabilization Network         |
| NSA      | Normalized Site Attenuation                  |
| Q.P.     | Quasi-peak detection                         |
| SRT Lab  | Spectrum Research & Testing Laboratory, Inc. |
| Vert.    | Vertical direction                           |