



## FCC 47 CFR PART 15 SUBPART C TEST REPORT FOR

GPS Sport Watch

Model : GoWatch X-PRO

Trade Name: GOLiFE

Issued to

GOYOURLIFE INC.  
6F., No. 189, Xinhu 3rd Rd., Neihu Dist., Taipei City 114,  
Taiwan (R.O.C.)

Issued by

WH Technology Corp.



|                                                    |                             |                                                                                               |
|----------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------|
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## APPENDIX 1 PHOTOS OF TEST CONFIGURATION

## APPENDIX 2 PHOTOS OF EUT



## 1. GENERAL INFORMATION

**Applicant** : GOYOURLIFE INC.

**Address** : 6F., No. 189, Xinhu 3rd Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

**Manufacturer** : Dongguan-Chou Chin Watch & Clock Co., Ltd

**Address** : No. 14, NingJiang Rd., Daning Village, Humen Town, Dongguan City, Guangdong Province, China

**EUT** : GPS Sport Watch

**Model Name** : GoWatch X-PRO

**Model Differences** : N/A

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 : 06/08/2015

Final Test Date : 06/18/2015

**Tested By:**

Jun. 18, 2015  
Date

Alex Chou

Jun. 18, 2015  
Date

**Reviewed by:**

Ben Lu / Manager

Designation Number: TW1083



## 2. REPORT OF MEASUREMENTS AND EXAMINATIONS

### 2.1 LIST OF MEASUREMENTS AND EXAMINATIONS

| FCC Rule                             | Description of Test      | Result |
|--------------------------------------|--------------------------|--------|
| 15.207                               | . Conducted Emission     | Pass   |
| 15.205<br>15.209<br>15.249           | . Radiated Emission      | Pass   |
| 15.215(c)                            | . 20dB Bandwidth         | Pass   |
| 1.1307<br>1.1310<br>2.1091<br>2.1093 | . RF Exposure Compliance | Pass   |



## 2.2 DESCRIPTION OF THE TESTED SAMPLES

EUT Name : GPS Sport Watch

Model Number :: GoWatch X-PRO

FCCID Number 2AA5BGLGWP0

Receipt Date : 06/08/2015

Input Voltage : 3.7Vdc From Li-ion Battery or 5Vdc From USB Port

Power From Inside Outside  
Adaptor BATTERY AC Power Source  
DC Power Source Support Unit PC or NB

Operate Frequency : Refer to the channel list as described below

Modulation Technique : GFSK

Number of Channels : 1

Channel spacing : N/A  \_\_\_\_\_ MHz

Operating Mode : Simplex  Half Duplex

Antenna Type : Integral antenna: Helix  
a dedicated antenna

Antenna gain 1 dBi



## 3. TEST METHODOLOGY

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

### 3.1 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.



### 3.2 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:

| <b>MHz</b>          | <b>MHz</b>            | <b>MHz</b>      | <b>GHz</b>     |
|---------------------|-----------------------|-----------------|----------------|
| 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     | <sup>2</sup> ) |
| 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.

### 3.3 DESCRIPTION OF TEST MODES

New Battery was used for all testing and the worst radiated emission case from X,Y and Z axis evaluation was selected for testing

The EUT was tested under following modes:

**Modes:**

1. Continuous transmitting

**Channels:**

1. 2.457 GHz



## 3.4 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/<br>BSMI ID | Trade<br>name | Data Cable | Power Cord |
| 1.                        | N/A       | N/A   | N/A        | N/A                | N/A           | N/A        | N/A        |

| INSIDE SUPPORT EQUIPMENT |                |                               |                              |                    |                                                                |            |            |
|--------------------------|----------------|-------------------------------|------------------------------|--------------------|----------------------------------------------------------------|------------|------------|
| No.                      | Equipment      | Model                         | Serial No.                   | FCC ID/<br>BSMI ID | Trade<br>name                                                  | Data Cable | Power Cord |
| 1.                       | PCB            | X-PRO<br>V2.0 FR4             | 323-07000<br>7-003601-<br>00 | N/A                | N/A                                                            | N/A        | N/A        |
| 2.                       | Li-ion Battery | CA422436<br>3.7VDC,<br>320mAh | N/A                          | N/A                | Coslight<br>Technology<br>Internationa<br>l Group Co.,<br>Ltd. | 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.



## 4. TEST AND MEASUREMENT EQUIPMENT

### 4.1 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.

### 4.2 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.

**List of Test and Measurement Equipment**

| Test Site  | Instrument              | Manufacturer                   | Model No.      | S/N          | Next Cal. Date |
|------------|-------------------------|--------------------------------|----------------|--------------|----------------|
| Conduction | Receiver                | R&S                            | ESHS10         | 830223/008   | Nov. 23, 2015  |
|            | Spectrum Analyzer       | ADVANTEST                      | R3261C         | 87120343     | Mar. 18, 2016  |
|            | RF Cable                | MIYAZAKI & Anritsu             | RG58A0 & MP59B | M79094       | Apr. 08, 2016  |
|            | L.I.S.N                 | Rolf Heine Hochfrequenztechnik | NNB-2/16z      | 98062        | Jan. 16, 2016  |
|            | EMI Test Receiver       | R&S                            | EAHS-10        | 1093.4495.03 | Mar. 21, 2016  |
|            | Click Analyzer          | Schaffner                      | DIA1512C       | 5218         | Jun. 15, 2016  |
| Radiation  | Spectrum Analyzer       | Nexl Future                    | NS-265         | N05044006    | Aug. 04, 2015  |
|            | 30MHz~1GHz RF Cable     | YEIDA WIRE CABLE               | N/A            | N/A          | Jan. 18, 2016  |
|            | 1GHz~18GHz RF Cable     | EMCI                           | N/A            | N/A          | July 30, 2015  |
|            | Hron Antenna 1GHz~18GHz | COM-POWER                      | AH-118         | 10056        | Mar. 12, 2016  |
|            | Antenna(30M-1G)         | SCHWARZBECH                    | VULB 9161      | 4078         | Jan. 16, 2016  |
|            | Pre-Amplifier           | Schaffner                      | CPA-9232       | 1028         | Jan. 20, 2016  |
|            | Preamplifier 1GHz~18GHz | EMCI                           | EMC051845      | 980108       | Oct.08, 2015   |
|            | 18G~26G RF Cable        | YEIDA WIRE CABLE               | N/A            | N/A          | July 30, 2015  |
|            | Hron Antenna 18G~26G    | COM-Power                      | AH-826         | 081000       | Mar. 21, 2016  |
|            | Preamplifier 18G~26G    | MITEQ                          | 30-5A          | 808329       | May 28, 2016   |

- CALIBRATION INTERVAL OF INSTRUMENTS LISTED ABOVE IS ONE YEAR



## 5. SECTION 15.249 REQUIREMENTS (FUNDAMENTAL/ HARMONICS)

### 5.1 TEST SETUP

Refer to paragraph 7.1.

### 5.2 LIMIT

| Fundamental Frequency (MHz)             | Field Strength of Fundamental (dB $\mu$ V/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 (dB $\mu$ V/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       |

### 5.3 RESULT: PASSED

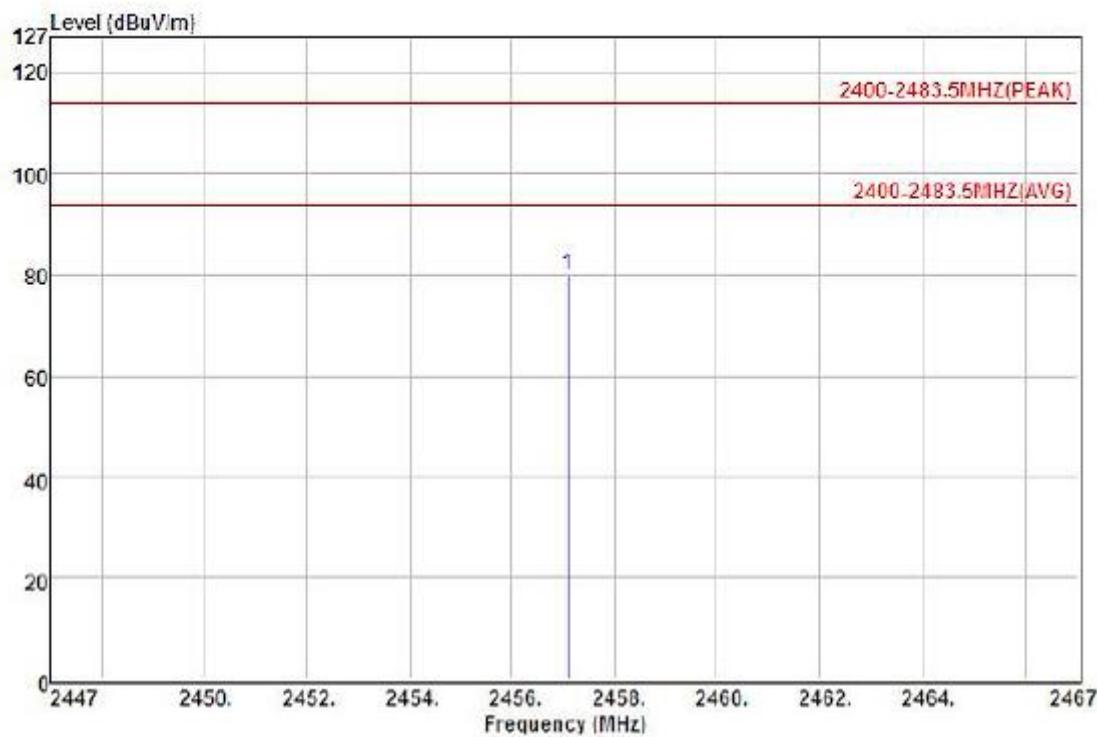
### 5.4 TEST DATA:



## Fundamental

Vertical

X axis



Site : Radiation  
Condition : 2400-2483.5MHZ(Peak) 3m AH-118(1-180)104 VERTICAL  
EUT :  
Power : DC 3.7V  
Mode : Transmit  
Temperature : 23  
Humidity : 65  
Memo : OFSK

Remarks:  
1. Result=Read Value+Factor  
2. Factor=Antenna Factor+Cable loss-  
Amplifier Factor

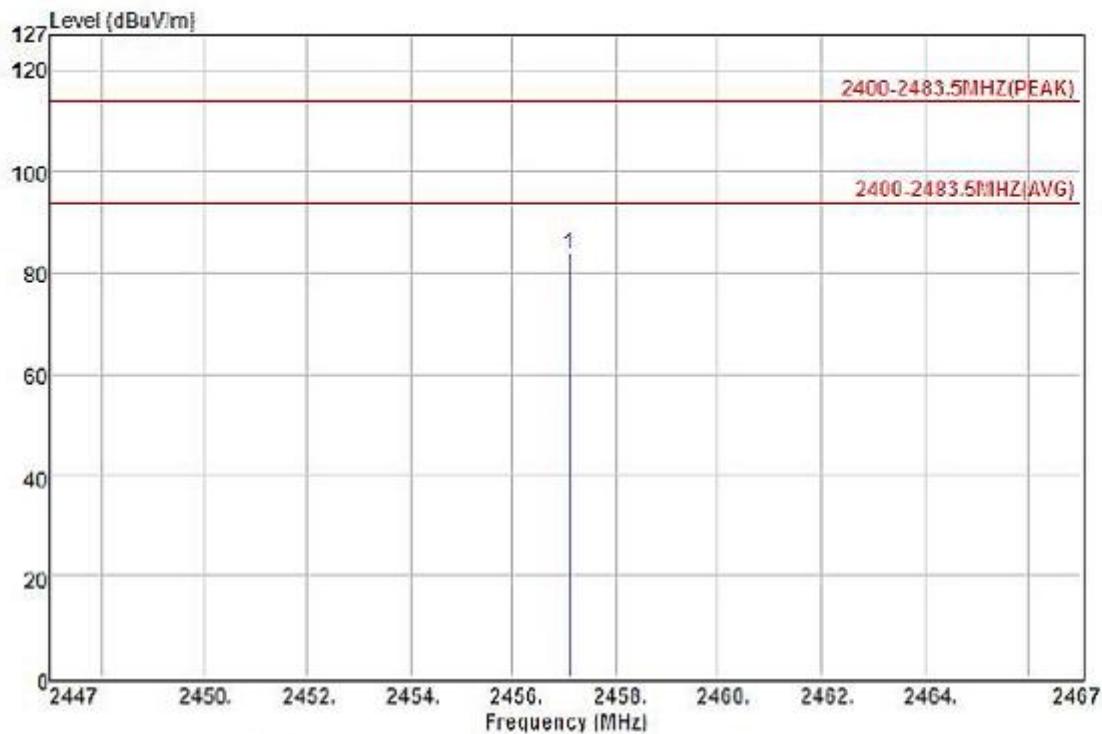
| Freq | Level   | Read  |        | Over Limit | Line   | Remark      |
|------|---------|-------|--------|------------|--------|-------------|
|      |         | Level | Factor |            |        |             |
| MHz  | dBuV/m  | dBuV  | dB/m   | dB         | dBuV/m |             |
| 1    | 2457.10 | 79.88 | 94.93  | -15.05     | -34.12 | 114.00 Peak |



## Fundamental

Horizontal

X axis



Site : Radiation  
Condition : 2400-2483.5MHz(Peak) 3m AH-118(1-180)104 HORIZONTAL

EUT :

Power : DC 3.7V

Mode : Transmit

Temperature : 23

Humidity : 65

Memo : QPSK

Remarks:  
1. Result=Read Value+Factor  
2. Factor=Antenna Factor+Cable loss  
Amplifier Factor

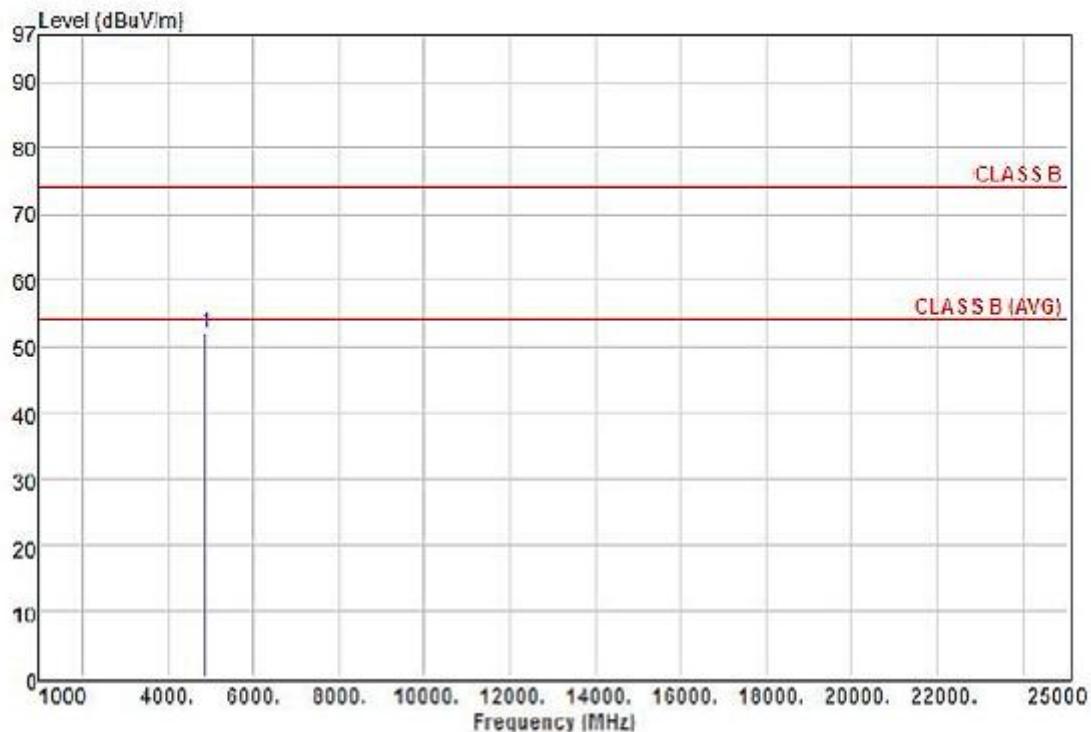
|   |         | Read   |       | Over   | Limit  |        |        |
|---|---------|--------|-------|--------|--------|--------|--------|
|   | Freq    | Level  | Level | Factor | Limit  | Line   | Remark |
|   | MHz     | dBuV/m | dBuV  | dB/m   | dB     | dBuV/m |        |
| 1 | 2457.10 | 83.82  | 98.87 | -15.05 | -30.18 | 114.00 | Peak   |



## Harmonics

Vertical

X axis



Site : Radiation  
Condition : CLASS B 3m AH-118(1-180)104 VERTICAL  
EUT :

Power : DC 3.7V  
Mode : Transmit  
Temperature : 23  
Humidity : 65  
Memo : QPSK

Remarks :  
: 1. Result=Read Value+Factor  
: 2. Factor=Antenna Factor+Cable loss-  
: Amplifier Factor

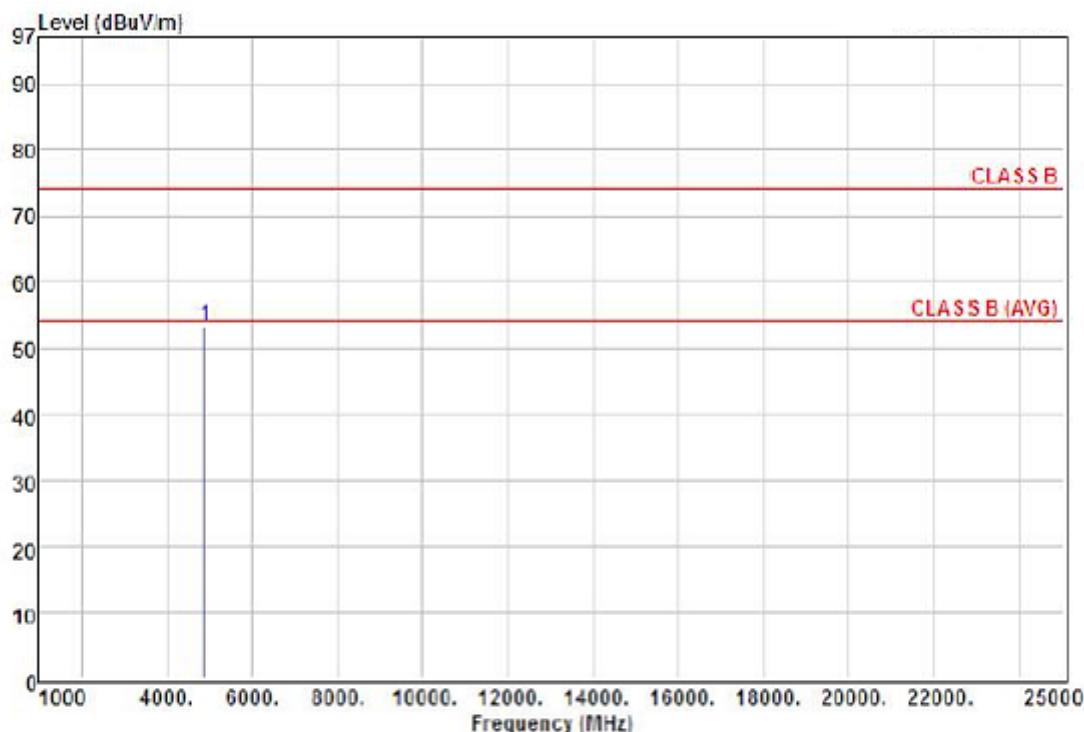
|   | Freq    | Read Level | Over Level | Limit | Line   | Remark     |
|---|---------|------------|------------|-------|--------|------------|
|   | MHz     | dBuV/m     | dBuV       | dB/m  | dB     | dBuV/m     |
| 1 | 4913.90 | 52.01      | 58.98      | -6.97 | -21.99 | 74.00 Peak |



## Harmonics

Horizontal

X axis



Site : Radiation  
Condition : CLASS B 3m AH-118(1-180)104 HORIZONTAL  
EUT :  
Power : DC 3.7V  
Mode : Transmit  
Temperature : 23  
Humidity : 65  
Memo : GFSK

Remarks:  
1. Result=Read Value+Factor  
2. Factor=Antenna Factor+Cable loss-  
Amplifier Factor

| Freq | Level   | Read  | Over Limit | Line  | Remark     |
|------|---------|-------|------------|-------|------------|
|      |         | Level |            |       |            |
| MHz  | dBuV/m  | dBuV  | dB/m       | dB    | dBuV/m     |
| 1    | 4914.00 | 53.39 | 60.36      | -6.97 | -20.61     |
|      |         |       |            |       | 74.00 Peak |



Note:

1. Emission level = Reading level + Correction factor
2. Correction factor : Antenna factor, Cable loss, Pre-Amp, etc.
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:  
1 MHz RBW with 1 MHz VBW (Peak Detector).
5. Measurements above 1000 MHz, Average detector setting:  
1 MHz RBW with 1 MHz VBW (RMS Detector).
6. Peak detector measurement data will represent the worst case results.
7. “---” denotes the data which is not available.
8. Where limits are specified for both average and peak detector functions, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.



## 6. SECTION 15.205 REQUIREMENTS (BAND EDGE)

### 6.1 TEST SETUP

Refer to paragraph 7.1.

### 6.2 LIMIT

Restricted Bands:

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 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     | ( <sup>2</sup> ) |
| 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<br>( $\mu$ V/m at 3-meter) | Field Strength<br>(dB $\mu$ V/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 RESULT: PASSED

## 6.4 TEST DATA:

| <2400 MHz       |             |                      |                       |                 |        |                | Fundamental Frequency: 2457 MHz |             |            |              |
|-----------------|-------------|----------------------|-----------------------|-----------------|--------|----------------|---------------------------------|-------------|------------|--------------|
| Frequency (MHz) | Ant-Pol H/V | Meter Reading (dBuV) | Corrected Factor (dB) | Result (dBuV/m) | Remark | Limit (dBuV/m) |                                 | Margin (dB) | Table Deg. | Ant High (m) |
|                 |             |                      |                       |                 |        | Peak           | Ave                             |             |            |              |
| 2398.90         | H           | 66.08                | -15.22                | 50.86           | Peak   | 74             | 54                              | -23.14      | 158        | 1.00         |
| ---             | H           | ---                  | ---                   | ---             | Ave    | 74             | 54                              | ---         | ---        | ---          |
| 2397.17         | V           | 60.77                | -15.22                | 45.55           | Peak   | 74             | 54                              | -28.45      | 194        | 1.00         |
| ---             | V           | ---                  | ---                   | ---             | Ave    | 74             | 54                              | ---         | ---        | ---          |
| >2483.5 MHz     |             |                      |                       |                 |        |                | Fundamental Frequency: 2457 MHz |             |            |              |
| Frequency (MHz) | Ant-Pol H/V | Meter Reading (dBuV) | Corrected Factor (dB) | Result (dBuV/m) | Remark | Limit (dBuV/m) |                                 | Margin (dB) | Table Deg. | Ant High (m) |
|                 |             |                      |                       |                 |        | Peak           | Ave                             |             |            |              |
| 2483.68         | H           | 68.89                | -14.98                | 53.91           | Peak   | 74             | 54                              | -20.09      | 159        | 1.00         |
| ---             | H           | ---                  | ---                   | ---             | Ave    | 74             | 54                              | ---         | ---        | ---          |
| 2483.50         | V           | 67.25                | -14.98                | 52.27           | Peak   | 74             | 54                              | -21.73      | 195        | 1.00         |
| ---             | V           | ---                  | ---                   | ---             | Ave    | 74             | 54                              | ---         | ---        | ---          |

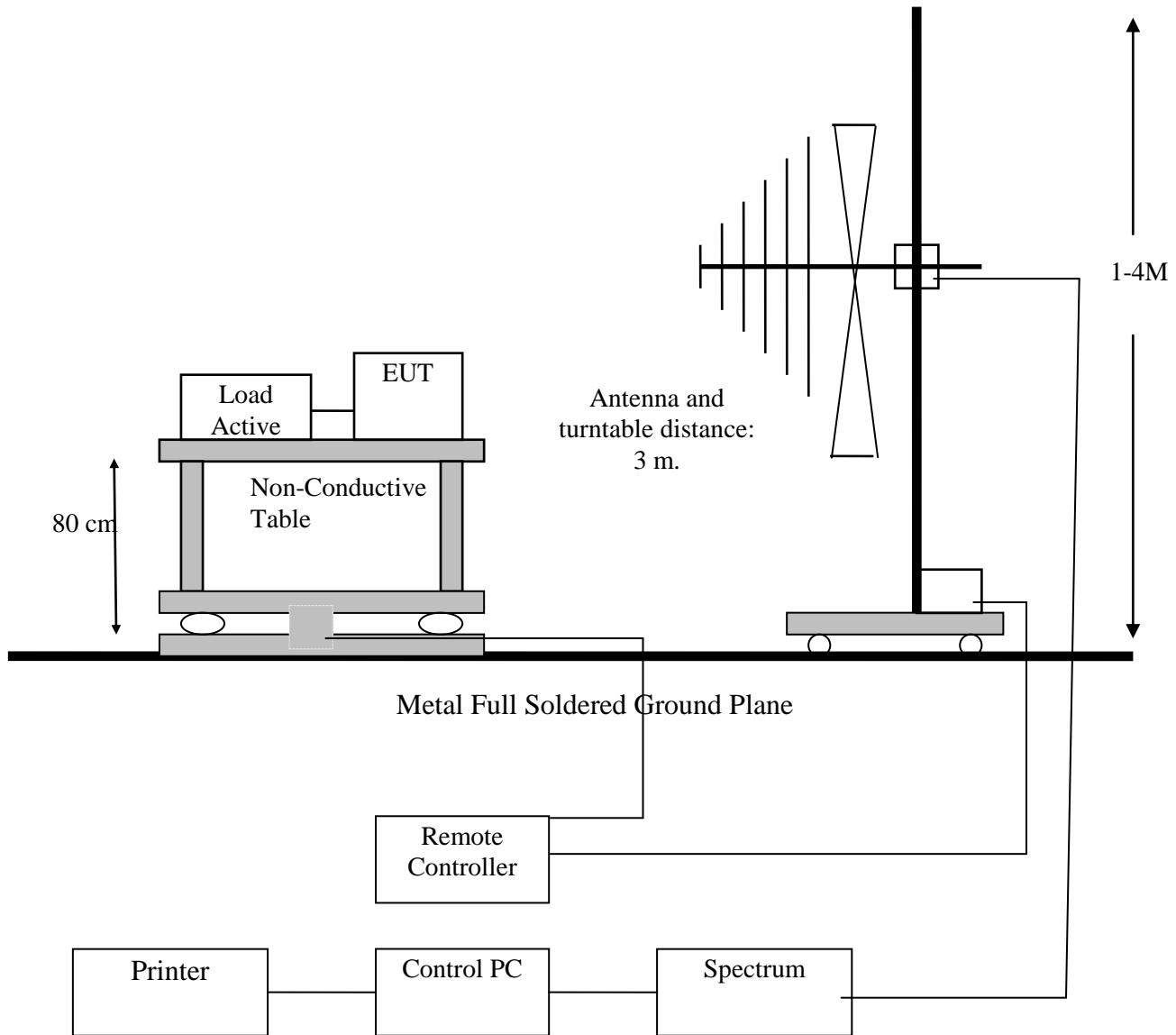
Note:

1. Emission level = Reading level + Correction factor
2. Correction factor : Antenna factor, Cable loss, Pre-Amp, etc.
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:  
1 MHz RBW with 1 MHz VBW (Peak Detector).
5. Measurements above 1000 MHz, Average detector setting:  
1 MHz RBW with 1 MHz VBW (RMS Detector).
6. Peak detector measurement data will represent the worst case results.
7. Where limits are specified for both average and peak detector functions, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.



## 7. SECTION 15.209 REQUIREMENTS (GENERAL RADIATED EMISSION)

### 7.1 TEST SETUP





## 7.2 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                                 |



## 7.3 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.

## 7.4 RESULT: PASSED

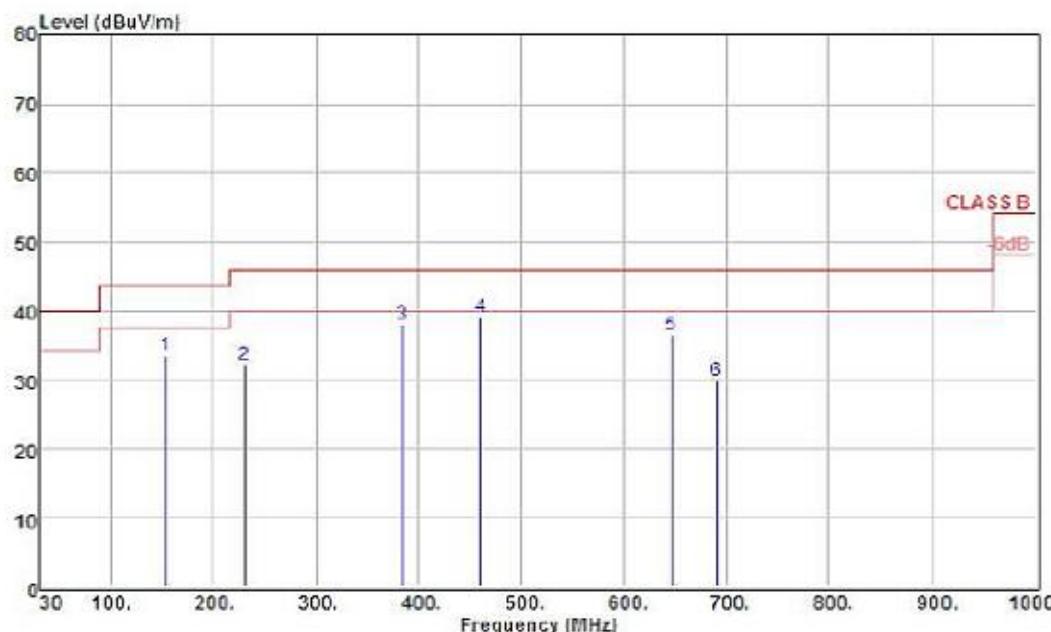


## 7.5 TEST DATA:

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.

### Vertical

X axis



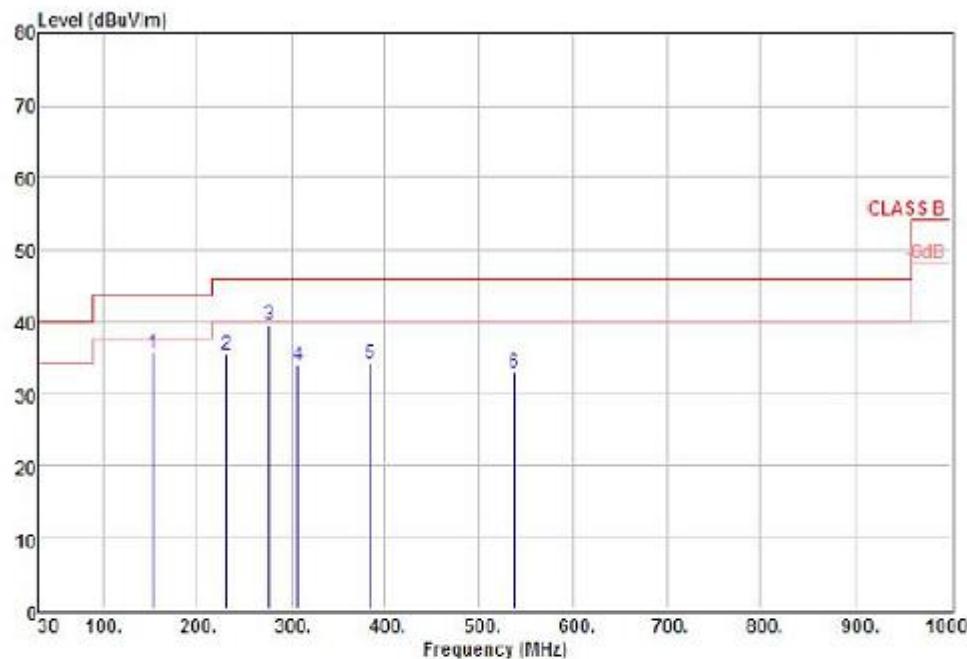
Site Condition : open site  
Condition : CLASS D 3m VULB9160(30-10)-104 VERTICAL  
EUT Power : DC 3.7V  
Mode : Transmit  
Temperature : 23  
Humidity : 65  
Memo : GFSK  
  
Remarks: : 1.Result=Read Value+Factor  
: 2.Factor=Antenna Factor+Cable loss.  
: Amplifier Factor

| Freq | Read   |       | Over Limit | Line   | Remark |          |
|------|--------|-------|------------|--------|--------|----------|
|      | Level  | Level |            |        |        |          |
| MHz  | dBuV/m | dBuV  | dB/m       | dB     | dBuV/m |          |
| 1    | 152.74 | 33.46 | 48.04      | -14.58 | -10.04 | 43.50 QP |
| 2    | 229.48 | 32.15 | 48.25      | -16.10 | -13.85 | 46.00 QP |
| 3    | 384.26 | 37.92 | 49.59      | -11.67 | -8.08  | 46.00 QP |
| 4    | 460.19 | 39.07 | 48.35      | -9.28  | -6.93  | 46.00 QP |
| 5    | 646.42 | 36.36 | 41.70      | -5.34  | -9.64  | 46.00 QP |
| 6    | 690.23 | 29.75 | 32.15      | -2.40  | -16.25 | 46.00 QP |



## Horizontal

X axis



Site : open site  
Condition : CLASS B 3m VULB9160(30-10)-104 HORIZONTAL  
EUT :  
Power : DC 3.7V  
Mode : Transmit  
Temperature : 23  
Humidity : 65  
Memo : GFSK  
Remarks :  
1. Result=Read Value+Factor  
2. Factor=Antenna Factor+Cable loss-  
Amplifier Factor

| Freq | Read   |        | Over Limit | Line   | Remark |        |    |
|------|--------|--------|------------|--------|--------|--------|----|
|      | MHz    | Level  | Level      | Factor | Limit  |        |    |
|      | MHz    | dBuV/m | dBuV       | dB/m   | dB     | dBuV/m |    |
| 1    | 153.57 | 35.58  | 50.12      | -14.54 | -7.92  | 43.50  | QP |
| 2    | 230.32 | 35.40  | 51.49      | -16.09 | -10.60 | 46.00  | QP |
| 3    | 275.94 | 39.37  | 54.02      | -14.65 | -6.63  | 46.00  | QP |
| 4    | 306.95 | 33.92  | 47.50      | -13.58 | -12.08 | 46.00  | QP |
| 5    | 384.39 | 34.04  | 45.71      | -11.67 | -11.96 | 46.00  | QP |
| 6    | 537.62 | 32.91  | 41.11      | -8.20  | -13.09 | 46.00  | QP |



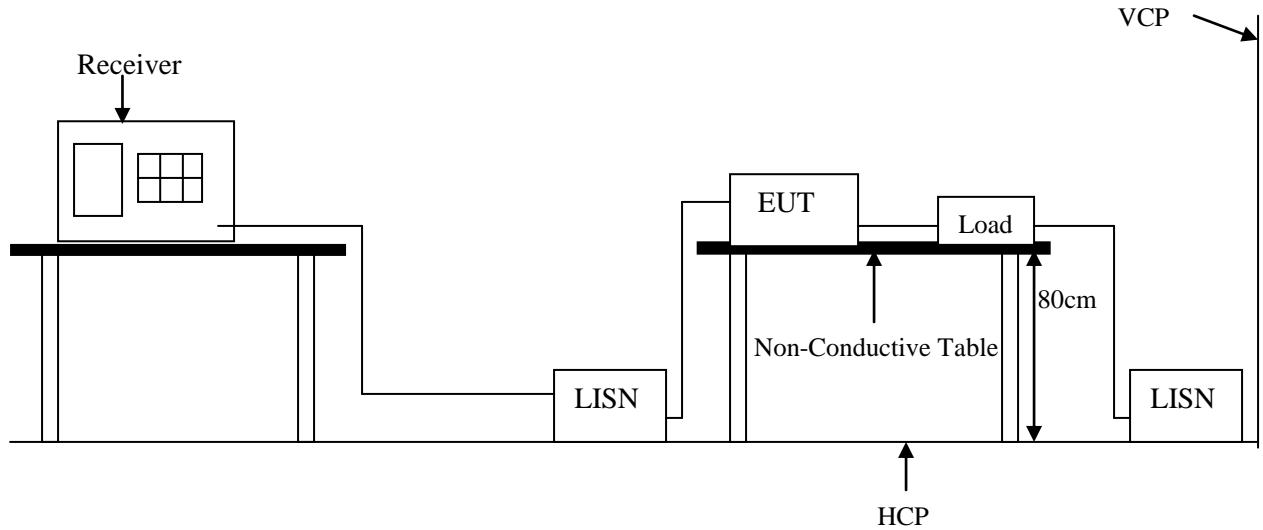
Note:

1. Emission level = Reading level + Correction factor
2. Correction factor : Antenna factor, Cable loss, Pre-Amp, etc.
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.



## 8. SECTION 15.207 REQUIREMENTS (POWERLINE CONDUCTED EMISSIONS)

### 8.1 TEST SETUP



### 8.2 LIMIT

| Frequency range (MHz) | CLASS B      |                |
|-----------------------|--------------|----------------|
|                       | QP dB(uV)    | Average dB(uV) |
| 0.15-0.5              | 66 - 56 dBuV | 56 - 46 dBuV   |
| 0.5-5.0               | 56 dBuV      | 46 dBuV        |
| 5.0-30.0              | 60 dBuV      | 50 dBuV        |

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

### 8.3 TEST PROCEDURE

The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). It provides a 50 ohm / 50  $\mu$ H coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm / 50  $\mu$ H coupling impedance with 50 ohm termination. (Please refer to the block diagram of the test setup and photograph.)

Both sides of AC line are checked for the maximum conducted emission interference. In order to find the maximum emissions, the relating positions of equipment and all of the interference cables must be changed according to EN 55022 regulations: The measurement procedure on conducted emission interference.

The resolution bandwidth of the field strength meter is set at 9 KHz.



## 8.4 TEST SPECIFICATION

According to PART15.207

## 8.5 RESULT: PASSED

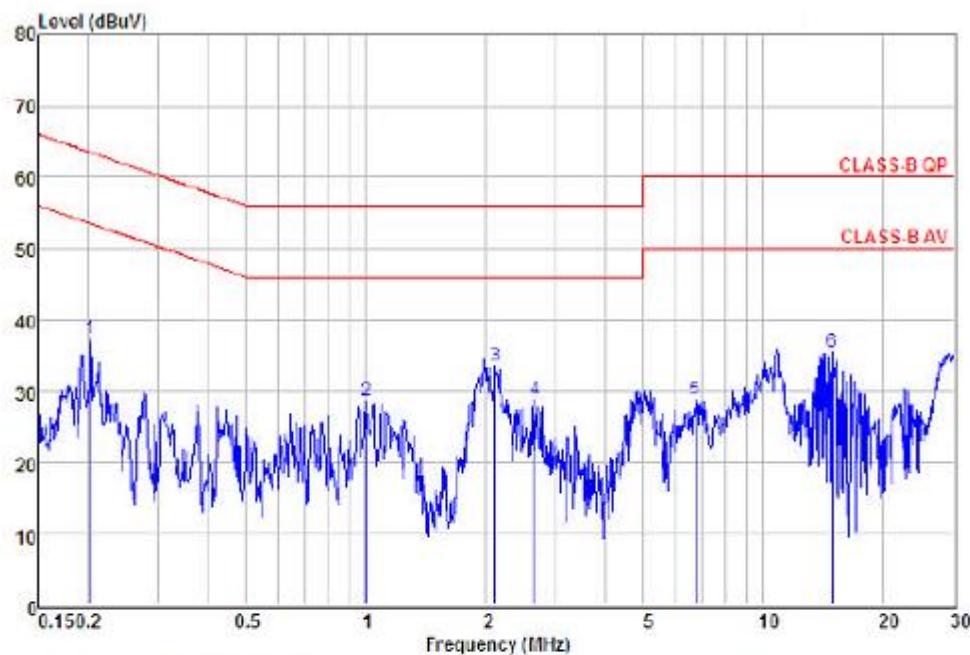
EMI Receiver/Spectrum Analyzer Configuration (for the frequencies tested)

|                       |                           |
|-----------------------|---------------------------|
| Frequency Range:      | 150KHz--30MHz             |
| Detector Function:    | Quasi-Peak / Average Mode |
| Resolution Bandwidth: | 9KHz                      |



## 8.6 TEST DATA:

|             |   |               |             |   |       |
|-------------|---|---------------|-------------|---|-------|
| Power       | : | From System   | Pol/Phase   | : | LINE  |
| Test Mode 1 | : | GFSK          | Temperature | : | 25 °C |
| Test Date   | : | Jun. 17, 2015 | Humidity    | : | 60 %  |
| Memo        | : | X axis        |             |   |       |

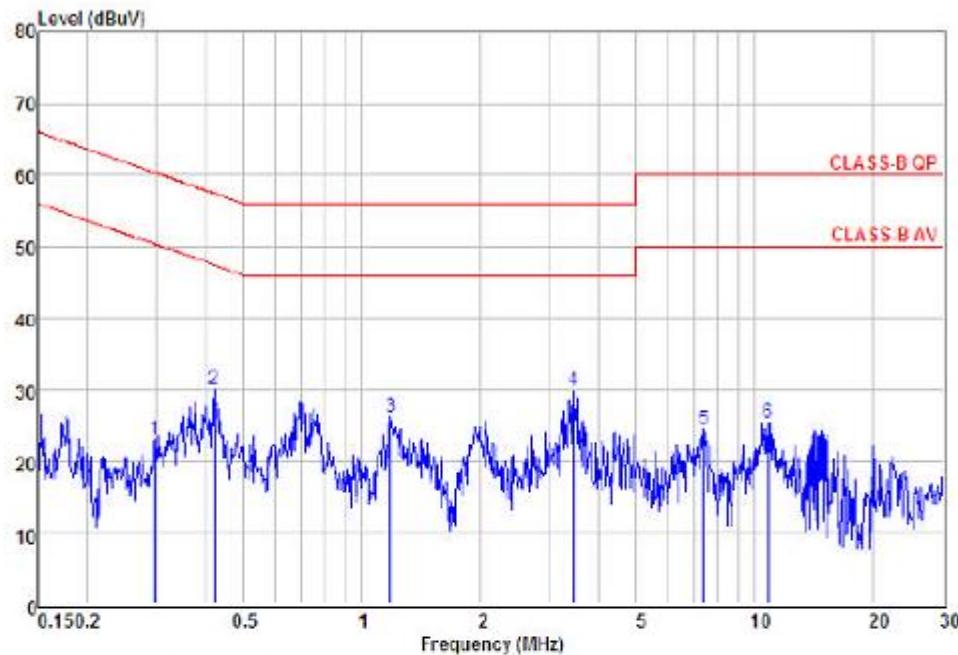


Site : Conduction  
Condition : CLASS-B QP CON-LISN(103) LINE  
EUT :  
Power : From System  
Mode : GFSK  
Temperature : 22  
Humidity : 55  
Memo : ANT+

| Remarks: | Factor=Insertion loss+Cable loss |            |            |      |        |            |
|----------|----------------------------------|------------|------------|------|--------|------------|
|          | Freq                             | Read Level | Over Limit | Line | Remark | Factor     |
|          | MHz                              | dBuV       | dBuV       | dB   | dB     | dBuV       |
| 1        | 0.20                             | 36.98      | 37.32      | 0.34 | -26.17 | 63.49 Peak |
| 2        | 1.00                             | 28.18      | 28.56      | 0.38 | -27.44 | 56.00 Peak |
| 3        | 2.11                             | 33.14      | 33.56      | 0.42 | -22.44 | 56.00 Peak |
| 4        | 2.65                             | 28.26      | 28.70      | 0.44 | -27.30 | 56.00 Peak |
| 5        | 6.73                             | 28.09      | 28.64      | 0.55 | -31.36 | 60.00 Peak |
| 6        | 14.83                            | 34.83      | 35.50      | 0.67 | -24.50 | 60.00 Peak |



|             |                 |             |           |
|-------------|-----------------|-------------|-----------|
| Power       | : From System   | Pol/Phase   | : NEUTRAL |
| Test Mode 1 | : GFSK          | Temperature | : 25 °C   |
| Test Date   | : Jun. 17, 2015 | Humidity    | : 60 %    |
| Memo        | X axis          |             |           |



Site : Conduction  
Condition : CLASS-B QP CON-LISN(103) NEUTRAL  
EUT :  
Power : From System  
Mode : GFSK  
Temperature : 22  
Humidity : 55  
Memo : ANT+

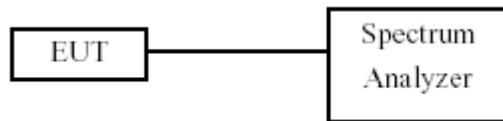
Remarks: : Factor=Insertion loss+Cable loss  
Read Level Over Limit

| Freq | MHz   | dBuV  | dBuV  | Factor |        | dB    | dB    | dBuV | Line | Remark |
|------|-------|-------|-------|--------|--------|-------|-------|------|------|--------|
|      |       |       |       | Over   | Limit  |       |       |      |      |        |
| 1    | 0.30  | 22.59 | 22.97 | 0.38   | -37.35 | 60.32 | 57.46 | Peak |      |        |
| 2    | 0.42  | 29.66 | 30.05 | 0.39   | -27.41 | 57.46 | 56.00 | Peak |      |        |
| 3    | 1.18  | 25.70 | 26.12 | 0.42   | -29.88 | 56.00 | 55.00 | Peak |      |        |
| 4    | 3.45  | 29.41 | 29.91 | 0.50   | -26.09 | 56.00 | 55.00 | Peak |      |        |
| 5    | 7.37  | 23.79 | 24.38 | 0.59   | -35.62 | 60.00 | 59.00 | Peak |      |        |
| 6    | 10.79 | 24.76 | 25.41 | 0.65   | -34.59 | 60.00 | 60.00 | Peak |      |        |



## 9. 20DB BANDWIDTH MEASUREMENT

### 9.1 TEST SETUP



### 9.2 LIMIT

N/A

### 9.3 TEST PROCEDURE

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW=30KHz and VBW=100KHz.
- c. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.
- d. The 20 dB Bandwidth was measured and recorded.

### 9.4 RESULT: PASSED



## 9.5 TEST DATA

Test Date: Jun. 17, 2015

Temperature: 25°C

Atmospheric pressure: 1025 hPa

Humidity: 60%

| Modulation Standard | Channel | Frequency (MHz) | 20dB Bandwidth (MHz) |
|---------------------|---------|-----------------|----------------------|
| GFSK                | 1       | 2457            | 0.152                |

Modulation Standard: GFSK

Channel: 1

