# FCC REPORT

| | |
|---|---|
| **Applicant:** | SENWA MEXICO,S.A.DE C.V |
| **Address of Applicant:** | Av. Javier Barros Sierra 540,Torre I,Planta 5;COL. LOMAS DE SANTA FE DELEGACION ALVARO OBREGON C.P. 01210 MEXICO,DISTRITO FEDERAL |

**Equipment Under Test (EUT)**

| | |
|---|---|
| Product Name: | Smart Phone |
| Model No.: | S750 |
| Trade mark: | SENWA |
| **FCC ID:** | 2AAA6-S750 |
| **Applicable standards:** | FCC CFR Title 47 Part 15 Subpart B |
| **Date of sample receipt:** | 03 Jan., 2014 |
| **Date of Test:** | 06 Jan., to 16 Jan., 2014 |
| **Date of report issued:** | 16 Jan., 2014 |
| **Test Result:** | Pass * |

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Bruce Zhang
Laboratory Manager

## 2 Version

| Version No. | Date | Description |
|---|---|---|
| *00* | *16 Jan., 2014* | *Original* |
| | | |
| | | |
| | | |
| | | |

***Prepared by:*** Sera Xiang ***Date:*** *16 Jan., 2014*

***Report Clerk***

***Reviewed by:*** ***Date:*** *16 Jan., 2014*

***Project Engineer***

# 3 Contents

# 4 Test Summary

| Test Item | Section in CFR 47 | Result |
|---|---|---|
| Conducted Emission | Part15.107 | Pass |
| Radiated Emission | Part15.109 | Pass |

*Pass: The EUT complies with the essential requirements in the standard.*

# 5 General Information

## 5.1 Client Information

| | |
|---|---|
| Applicant: | SENWA MEXICO,S.A.DE C.V |
| Address of Applicant: | Av. Javier Barros Sierra 540,Torre I, Planta 5;COL. LOMAS DE SANTA FE DELEGACION ALVARO OBREGON C.P. 01210 MEXICO,DISTRITO FEDERAL |
| Manufacturer: | Shenzhen Gold Star Group Co., LTD |
| Address of Manufacturer: | 307-308,building B,High-Tech Plaza Phase I,Tian An Cyber Park,Futian Shenzhen,China |

## 5.2 General Description of E.U.T.

| | |
|---|---|
| Product Name: | Smart Phone |
| Model No.: | S750 |
| Trade mark: | SENWA |
| Power supply: | Rechargeable Li-ion Battery DC3.7V-2000mAh |
| AC adapter : | Model:AYANE QS4<br>Input:100-240V AC,50/60Hz 0.3A<br>Output:5.0V DC MAX1000mA |

## 5.3 Test Mode

| Operating mode | Detail description |
|---|---|
| PC mode | Keep the EUT in Downloading mode(Worst case) |
| Charging+recording mode | Keep the EUT in Charging+recording mode |
| Charging+Playing mode | Keep the EUT in Charging+Playing mode |
| FM mode | Keep the EUT in FM receiver mode |
| Multimedia | Keep the EUT in Multimedia mode |
| The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. | |

## 5.4 Description of Support Units

| Manufacturer | Description | Model | Serial Number | FCC ID/DoC |
|---|---|---|---|---|
| DELL | PC | OPTIPLEX745 | N/A | DoC |
| DELL | MONITOR | E178FPC | N/A | DoC |
| DELL | KEYBOARD | SK-8115 | N/A | DoC |
| DELL | MOUSE | MOC5UO | N/A | DoC |
| HP | Printer | CB495A | 05257893 | DoC |
| MERCURY | Wireless router | MW150R | 12922104015 | FCC ID |

## 5.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Registration No.: 817957**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

● **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing.The Registration No. is CNAS L6048.

## 5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District,Shenzhen, Guangdong,China
Tel: 0755-23118282
Fax: 0755-23116366

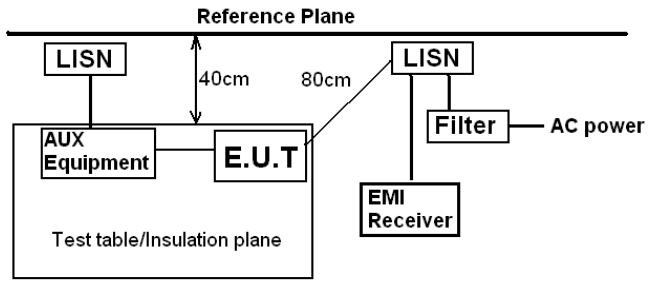
## 5.7 Test Instruments list

| Radiated Emission: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal. Date (mm-dd-yy)** | **Cal. Due date (mm-dd-yy)** |
| 1 | 3m Semi- Anechoic Chamber | SAEMC | 9(L)*6(W)* 6(H) | CCIS0001 | June 09 2013 | June 08 2014 |
| 2 | BiConiLog Antenna | SCHWARZBECK MESS-ELEKTRONIK | VULB9163 | CCIS0005 | May 25 2013 | May 24 2014 |
| 3 | Double -ridged waveguide horn | SCHWARZBECK MESS-ELEKTRONIK | BBHA9120D | CCIS0006 | May 25 2013 | May 24 2014 |
| 4 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 5 | Coaxial Cable | CCIS | N/A | CCIS0016 | Apr. 01 2013 | Mar. 31 2014 |
| 6 | Coaxial Cable | CCIS | N/A | CCIS0017 | Apr. 01 2013 | Mar. 31 2014 |
| 7 | Coaxial cable | CCIS | N/A | CCIS0018 | Apr. 01 2013 | Mar. 31 2014 |
| 8 | Coaxial Cable | CCIS | N/A | CCIS0019 | Apr. 01 2013 | Mar. 31 2014 |
| 9 | Coaxial Cable | CCIS | N/A | CCIS0087 | Apr. 01 2013 | Mar. 31 2014 |
| 10 | Amplifier(10kHz-1.3GHz) | HP | 8447D | CCIS0003 | Apr. 01 2013 | Mar. 31 2014 |
| 11 | Amplifier(1GHz-18GHz) | Compliance Direction Systems Inc. | PAP-1G18 | CCIS0011 | June 09 2013 | June 08 2014 |
| 12 | Pre-amplifier (18-26GHz) | Rohde & Schwarz | AFS33-18002 650-30-8P-44 | GTS218 | Apr. 01 2013 | Mar. 31 2014 |
| 13 | Horn Antenna | ETS-LINDGREN | 3160 | GTS217 | Mar. 30 2013 | Mar. 29 2014 |
| 14 | Printer | HP | HP LaserJet P1007 | N/A | N/A | N/A |
| 15 | Positioning Controller | UC | UC3000 | CCIS0015 | N/A | N/A |
| 16 | Spectrum analyzer 9k-30GHz | Rohde & Schwarz | FSP | CCIS0023 | May. 25 2013 | May. 24 2014 |
| 17 | EMI Test Receiver | Rohde & Schwarz | ESPI | CCIS0022 | Apr 01 2013 | Mar. 31 2014 |
| 18 | Loop antenna | Laplace instrument | RF300 | EMC0701 | Aug. 12 2013 | Aug. 11 2014 |
| 19 | Universal radio communication tester | Rhode & Schwarz | CMU200 | CCIS0069 | May. 25 2013 | May. 24 2014 |
| 20 | Signal Analyzer | Rohde & Schwarz | FSIQ3 | CCIS0088 | May. 25 2013 | May. 24 2014 |

| Conducted Emission: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | Shielding Room | ZhongShuo Electron | 11.0(L)x4.0(W)x3.0(H) | CCIS0061 | June 09 2013 | June 08 2014 |
| 2 | EMI Test Receiver | Rohde & Schwarz | ESCI | CCIS0002 | May 25 2013 | May. 24 2014 |
| 3 | LISN | CHASE | MN2050D | CCIS0074 | Apr. 01 2013 | Mar. 31 2014 |
| 4 | Coaxial Cable | CCIS | N/A | CCIS0086 | Apr. 01 2013 | Mar. 31 2014 |

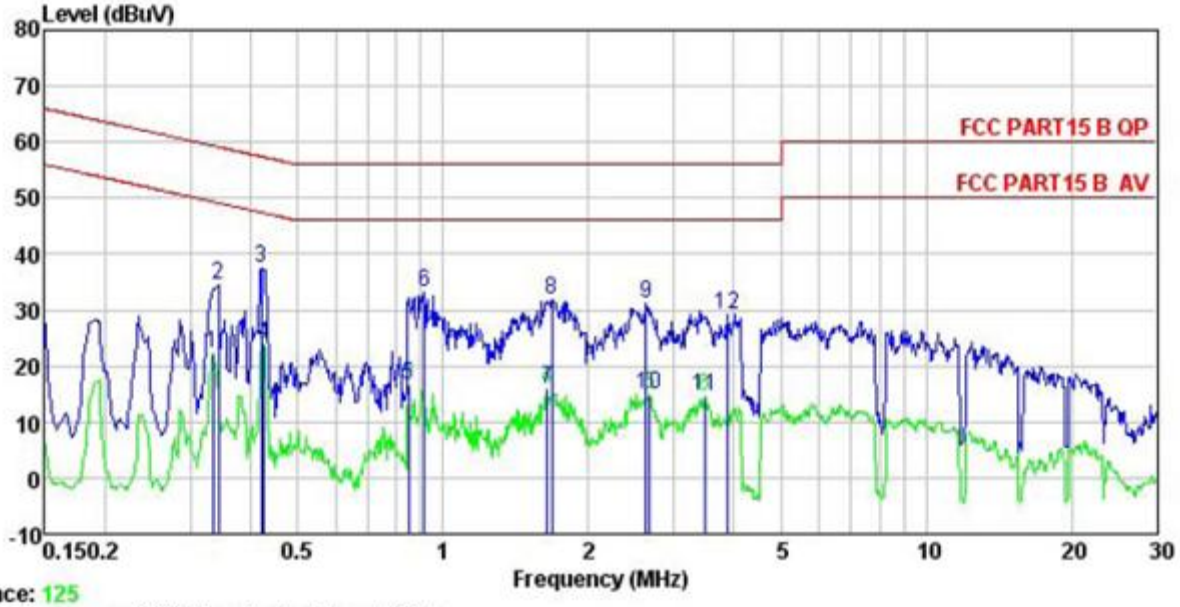
# 6 Test results and Measurement Data

## 6.1 Conducted Emission

| | |
|---|---|
| Test Requirement: | FCC Part15 B Section 15.107 |
| Test Method: | ANSI C63.4:2003 |
| Test Frequency Range: | 150kHz to 30MHz |
| Class / Severity: | Class B |
| Receiver setup: | RBW=9kHz, VBW=30kHz |
| Limit: | Frequency range (MHz) / Limit (dBµV): Quasi-peak / Average<br>0.15-0.5: 66 to 56* / 56 to 46*<br>0.5-5: 56 / 46<br>0.5-30: 60 / 50 |
| Test setup: |  <br>*Remark:*<br>*E.U.T: Equipment Under Test*<br>*LISN: Line Impedence Stabilization Network*<br>*Test table height=0.8m* |
| Test procedure | 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment.<br>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs).<br>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement. |
| Test environment: | Temp.: 23 °C \| Humid.: 56% \| Press.: 1 01kPa |
| Measurement Record: | Uncertainty: 3.28dB |
| Test Instruments: | Refer to section 5.7 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Pass |

**Measurement data:**

Line:

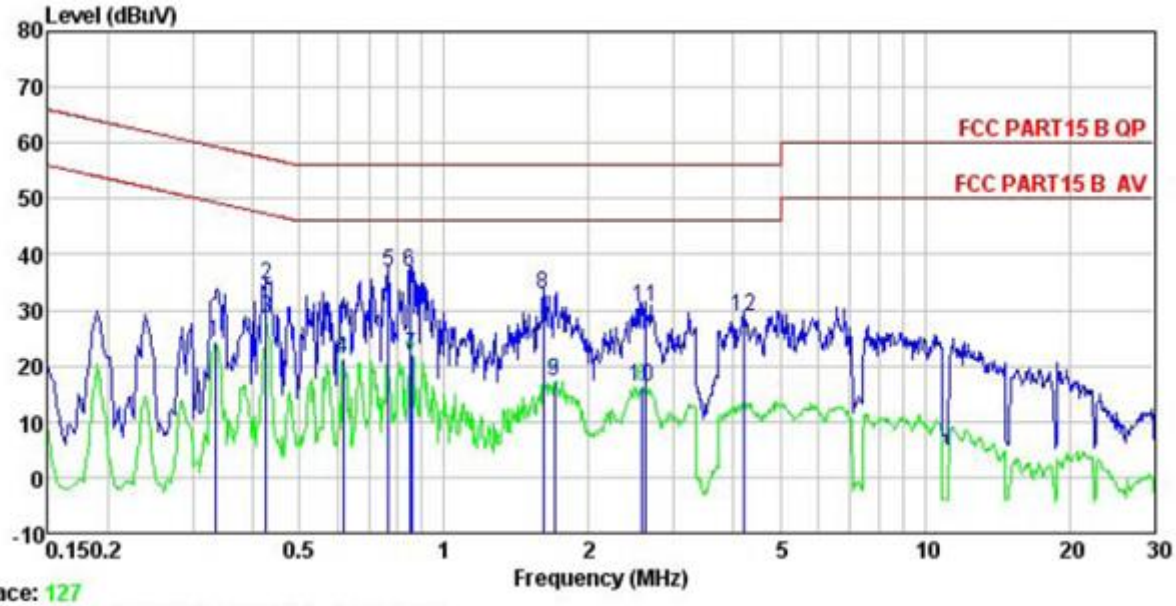



Trace: 125

Site : CCIS Conducted test Site
Condition : FCC PART15 B QP LISN LINE
Job No. : 001RF
EUT : Smart phone
Model : S750
Test Mode : PC mode
Power Rating : AC 120V/ 60 Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: Joe
Remark : 1#

| | Freq | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.334 | 11.20 | 0.27 | 10.73 | 22.20 | 49.35 | -27.15 | Average |
| 2 | 0.343 | 23.56 | 0.27 | 10.73 | 34.56 | 59.13 | -24.57 | QP |
| 3 | 0.421 | 26.38 | 0.28 | 10.73 | 37.39 | 57.42 | -20.03 | QP |
| 4 | 0.426 | 12.85 | 0.28 | 10.73 | 23.86 | 47.33 | -23.47 | Average |
| 5 | 0.848 | 5.67 | 0.24 | 10.82 | 16.73 | 46.00 | -29.27 | Average |
| 6 | 0.914 | 22.06 | 0.24 | 10.84 | 33.14 | 56.00 | -22.86 | QP |
| 7 | 1.645 | 4.61 | 0.26 | 10.93 | 15.80 | 46.00 | -30.20 | Average |
| 8 | 1.680 | 20.55 | 0.26 | 10.94 | 31.75 | 56.00 | -24.25 | QP |
| 9 | 2.636 | 19.82 | 0.27 | 10.93 | 31.02 | 56.00 | -24.98 | QP |
| 10 | 2.678 | 3.68 | 0.27 | 10.93 | 14.88 | 46.00 | -31.12 | Average |
| 11 | 3.472 | 3.34 | 0.28 | 10.91 | 14.53 | 46.00 | -31.47 | Average |
| 12 | 3.881 | 17.98 | 0.28 | 10.89 | 29.15 | 56.00 | -26.85 | QP |

Neutral:




Trace: 127

Site : CCIS Conducted test Site
Condition : FCC PART15 B QP LISN NEUTRAL
Job No. : 001RF
EUT : Smart phone
Model : S750
Test Mode : PC mode
Power Rating : AC 120V/ 60 Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: Joe
Remark : 1#

| | Freq | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.334 | 13.27 | 0.26 | 10.73 | 24.26 | 49.35 | -25.09 | Average |
| 2 | 0.426 | 23.47 | 0.26 | 10.73 | 34.46 | 57.33 | -22.87 | QP |
| 3 | 0.426 | 17.68 | 0.26 | 10.73 | 28.67 | 47.33 | -18.66 | Average |
| 4 | 0.617 | 10.06 | 0.22 | 10.77 | 21.05 | 46.00 | -24.95 | Average |
| 5 | 0.767 | 25.68 | 0.19 | 10.80 | 36.67 | 56.00 | -19.33 | QP |
| 6 | 0.848 | 25.75 | 0.20 | 10.82 | 36.77 | 56.00 | -19.23 | QP |
| 7 | 0.857 | 10.87 | 0.20 | 10.83 | 21.90 | 46.00 | -24.10 | Average |
| 8 | 1.610 | 21.77 | 0.27 | 10.93 | 32.97 | 56.00 | -23.03 | QP |
| 9 | 1.698 | 6.16 | 0.27 | 10.94 | 17.37 | 46.00 | -28.63 | Average |
| 10 | 2.581 | 4.92 | 0.29 | 10.93 | 16.14 | 46.00 | -29.86 | Average |
| 11 | 2.622 | 19.37 | 0.29 | 10.93 | 30.59 | 56.00 | -25.41 | QP |
| 12 | 4.202 | 17.76 | 0.29 | 10.88 | 28.93 | 56.00 | -27.07 | QP |

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

## 6.2 Radiated Emission

| | |
|---|---|
| Test Requirement: | FCC Part15 B Section 15.109 |
| Test Method: | ANSI C63.4:2003 |
| Test Frequency Range: | 30MHz to 6000MHz |
| Test site: | Measurement Distance: 3m (Semi-Anechoic Chamber) |

Receiver setup:

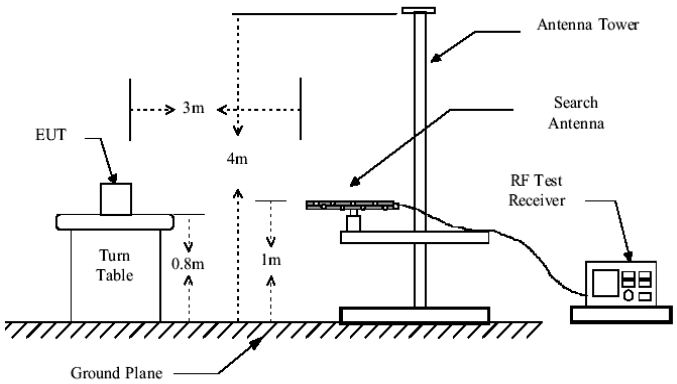
| Frequency | Detector | RBW | VBW | Remark |
|---|---|---|---|---|
| 30MHz-1GHz | Quasi-peak | 120 kHz | 300 kHz | Quasi-peak Value |
| Above 1GHz | Peak | 1MHz | 3MHz | Peak Value |
| | Peak | 1MHz | 10Hz | Average Value |

Limit:

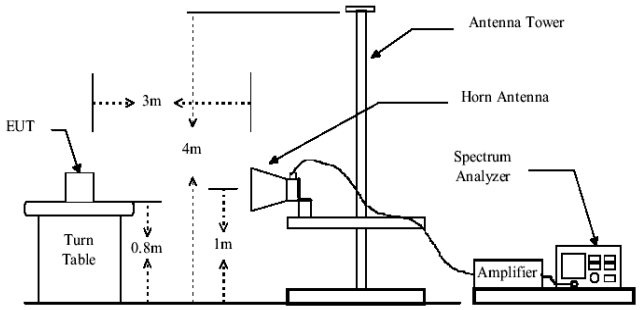
| Frequency | Limit (dBuV/m @3m) | Remark |
|---|---|---|
| 30MHz-88MHz | 40.0 | Quasi-peak Value |
| 88MHz-216MHz | 43.5 | Quasi-peak Value |
| 216MHz-960MHz | 46.0 | Quasi-peak Value |
| 960MHz-1GHz | 54.0 | Quasi-peak Value |
| Above 1GHz | 54.0 | Average Value |
| | 74.0 | Peak Value |

Test setup:

Below 1GHz




Above 1GHz

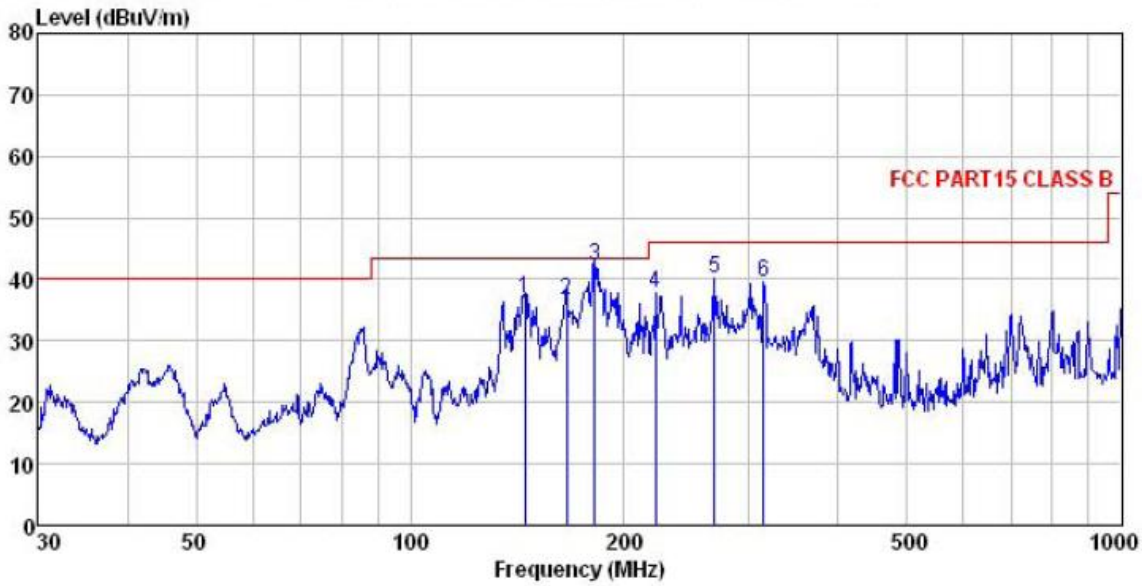


| | | | | | | |
|---|---|---|---|---|---|---|
| Test Procedure: | 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. | | | | | |
| Test environment: | Temp.: | 25 °C | Humid.: | 55% | Press.: | 1 01kPa |
| Measurement Record: | Uncertainty: 4.88dB | | | | | |
| Test Instruments: | Refer to section 5.7 for details | | | | | |
| Test mode: | Refer to section 5.3 for details | | | | | |
| Test results: | Passed | | | | | |

**Measurement Data**

Below 1GHz

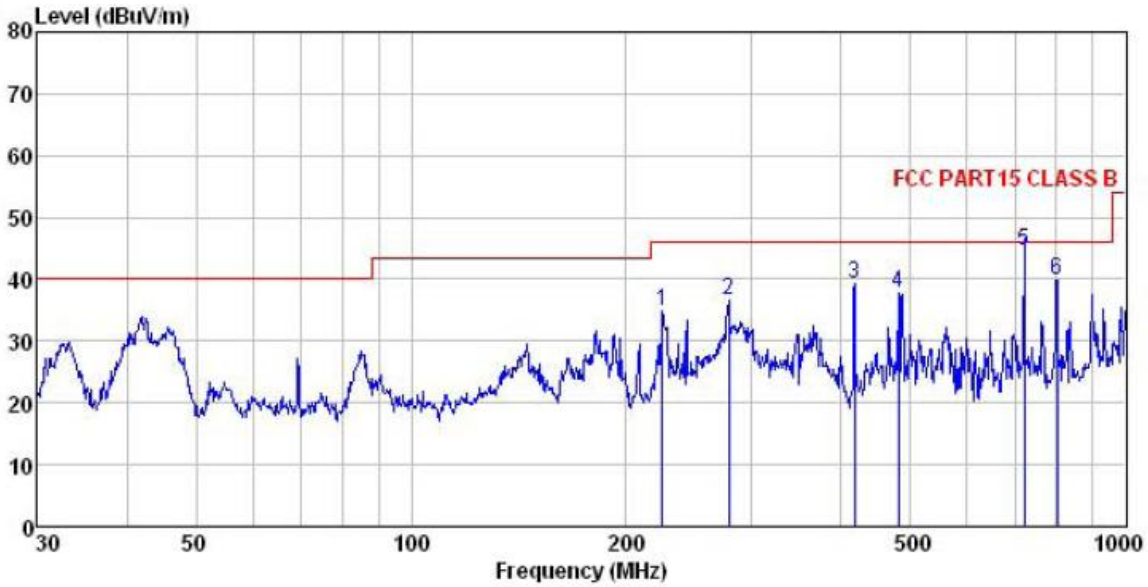
Horizontal:




Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
Job NO. : 001RF
Test mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: Joe
Remark :

| | Freq | ReadAntenna Level | Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 144.842 | 55.46 | 8.23 | 2.45 | 29.30 | 36.84 | 43.50 | -6.66 | QP |
| 2 | 166.068 | 54.35 | 8.85 | 2.63 | 29.25 | 36.58 | 43.50 | -6.92 | QP |
| 3 | 181.920 | 56.77 | 9.84 | 2.74 | 27.02 | 42.33 | 43.50 | -1.17 | QP |
| 4 | 221.392 | 53.40 | 11.25 | 2.84 | 29.71 | 37.78 | 46.00 | -8.22 | QP |
| 5 | 267.546 | 54.42 | 12.30 | 2.86 | 29.54 | 40.04 | 46.00 | -5.96 | QP |
| 6 | 314.377 | 52.69 | 13.26 | 2.98 | 29.51 | 39.42 | 46.00 | -6.58 | QP |

Vertical:

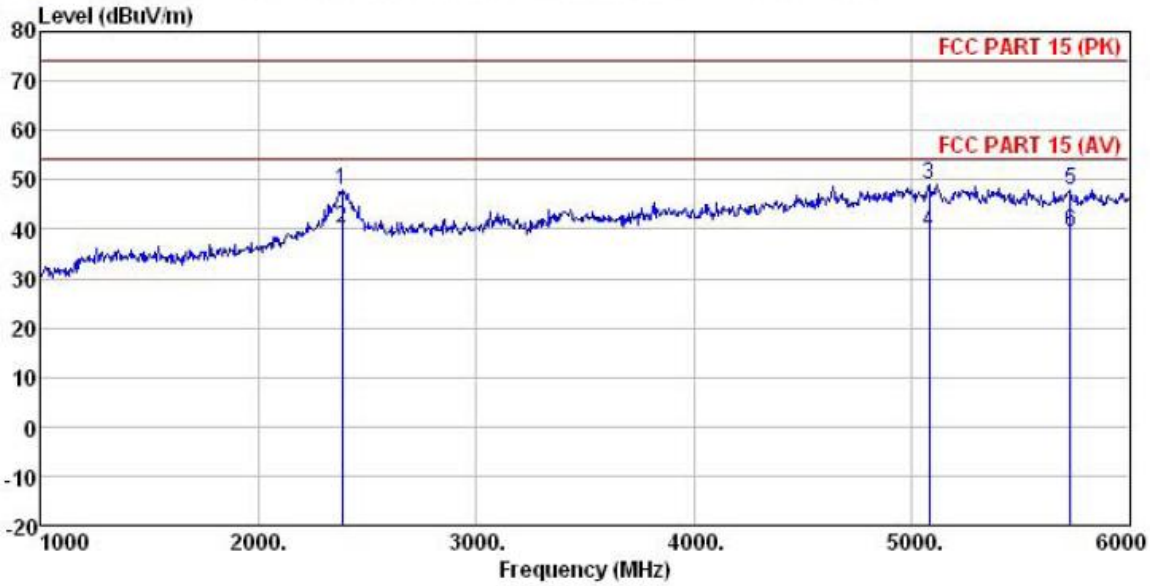



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL
Job NO. : 001RF
Test mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Joe
Remark :

| | Freq | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 224.519 | 50.32 | 11.41 | 2.84 | 29.70 | 34.87 | 46.00 | -11.13 | QP |
| 2 | 278.067 | 50.73 | 12.63 | 2.88 | 29.50 | 36.74 | 46.00 | -9.26 | QP |
| 3 | 417.641 | 50.69 | 15.43 | 3.12 | 30.13 | 39.11 | 46.00 | -6.89 | QP |
| 4 | 480.528 | 48.65 | 16.07 | 3.46 | 30.52 | 37.66 | 46.00 | -8.34 | QP |
| 5 | 721.726 | 51.72 | 19.10 | 4.26 | 30.55 | 44.53 | 46.00 | -1.47 | QP |
| 6 | 801.786 | 45.95 | 20.06 | 4.34 | 30.40 | 39.95 | 46.00 | -6.05 | QP |

Above 1GHz

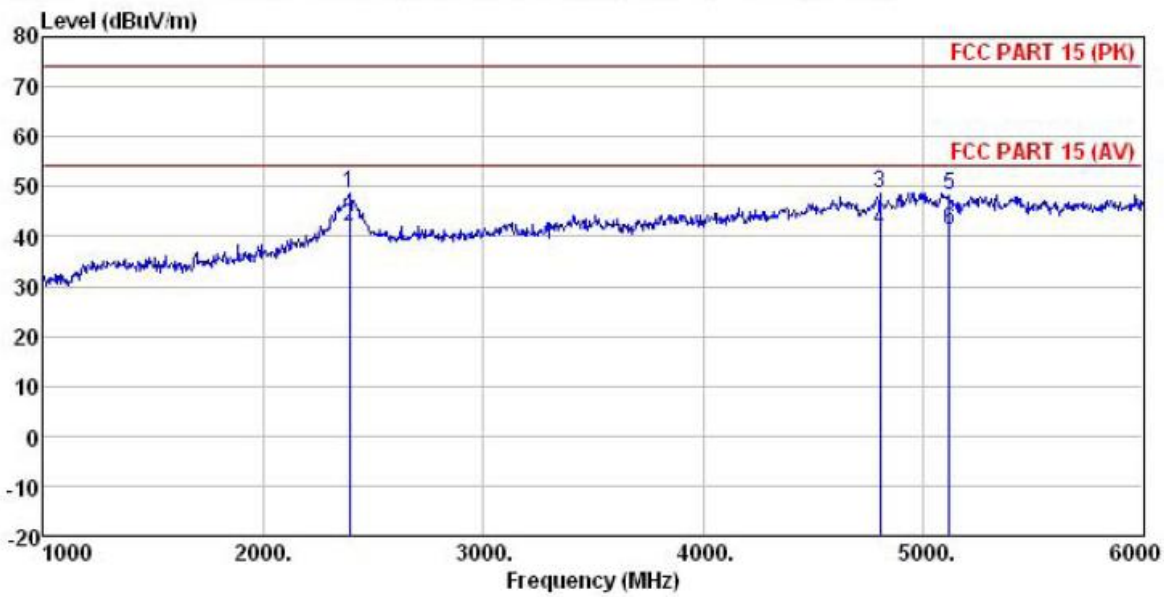
Horizontal:




Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Job NO. : 001RF
Test mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Joe
Remark :

| | Freq | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2385.000 | 47.34 | 27.58 | 5.59 | 32.51 | 48.00 | 74.00 | -26.00 | Peak |
| 2 | 2385.000 | 39.32 | 27.58 | 5.59 | 32.51 | 39.98 | 54.00 | -14.02 | Average |
| 3 | 5080.000 | 47.84 | 32.06 | 9.13 | 40.03 | 49.00 | 74.00 | -25.00 | Peak |
| 4 | 5080.000 | 38.15 | 32.06 | 9.13 | 40.03 | 39.31 | 54.00 | -14.69 | Average |
| 5 | 5730.000 | 46.93 | 32.34 | 9.30 | 40.54 | 48.03 | 74.00 | -25.97 | Peak |
| 6 | 5730.000 | 38.15 | 32.34 | 9.30 | 40.54 | 39.25 | 54.00 | -14.75 | Average |

Vertical:




Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Job NO. : 001RF
Test mode : PC mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Joe
Remark :

| | Freq | ReadAntenna Level | Factor | Cable Loss | Preamp Factor | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 2390.000 | 46.69 | 27.58 | 5.67 | 31.35 | 48.59 | 74.00 | -25.41 | Peak |
| 2 | 2390.000 | 40.21 | 27.58 | 5.67 | 31.35 | 42.11 | 54.00 | -11.89 | Average |
| 3 | 4805.000 | 48.56 | 31.53 | 8.90 | 40.24 | 48.75 | 74.00 | -25.25 | Peak |
| 4 | 4805.000 | 41.05 | 31.53 | 8.90 | 40.24 | 41.24 | 54.00 | -12.76 | Average |
| 5 | 5120.000 | 47.15 | 32.10 | 9.13 | 40.05 | 48.33 | 74.00 | -25.67 | Peak |
| 6 | 5120.000 | 40.24 | 32.10 | 9.13 | 40.05 | 41.42 | 54.00 | -12.58 | Average |