# FCC TEST REPORT

| | |
|---|---|
| **FCC ID** | : AZQKC096-08 |
| **Applicant** | : Shenzhen KOHO Technology Co., Ltd |
| **Address** | : Building3, Jin Yuda Industrial Park, ShangLiao, Shajin, Baoan, Shenzhen |
| **Manufacturer** | : Shenzhen Kanghai Electronics CO.,LTD |
| **Address** | : Shenzhen Baoan District Shajing Street 107 State Road jinyuda industrial park(I,II,3)3 2 nd Floor, 3rd Floor, A |

**Equipment Under Test (EUT) :**

| | |
|---|---|
| Product Name | : MID |
| Model No. | : KC096-08 |
| **Rules** | : FCC CFR47 Part15 B Section 15.109:2010 |

| | |
|---|---|
| **Date of Test** | : May 28, 2013 |
| **Date of Issue** | : June 5, 2013 |
| **Test Result** | : PASS* |

Remark:

* The sample detailed above has been tested to the requirements of FCC rules mentioned above.

The test results have been reviewed against the directives above and found to meet their essential requirements.

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company.

The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

PERPARED BY:
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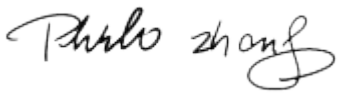
Approved by:



Philo Zhong / Manager

# 2 Test Summary

| Test Items | Test Requirement | Result |
|---|---|---|
| Conducted Emissions | 15.107 | PASS |
| Radiated Emissions | 15.109 | PASS |

# 3 Contents

**Page**

**1 COVER PAGE ..... 1**

**2 TEST SUMMARY ..... 2**

**3 CONTENTS ..... 3**

**4 GENERAL INFORMATION ..... 4**

4.1 GENERAL DESCRIPTION OF E.U.T. ..... 4
4.2 DETAILS OF E.U.T. ..... 4
4.3 TEST FACILITY ..... 4
4.4 TEST LOCATION ..... 4
4.5 TEST MODE LIST ..... 5

**5 EQUIPMENT USED DURING TEST ..... 6**

5.1 EQUIPMENTS LIST ..... 6
5.2 MEASUREMENT UNCERTAINTY ..... 7
5.3 TEST EQUIPMENT CALIBRATION ..... 7

**6 CONDUCTED EMISSIONS ..... 8**

6.1 E.U.T. TEST CONDITION ..... 8
6.2 EUT SETUP ..... 8
6.3 CONDUCTED EMISSION TEST RESULT ..... 9

**7 RADIATED EMISSIONS ..... 11**

7.1 EUT OPERATION: ..... 11
7.2 TEST SETUP ..... 11
7.3 SPECTRUM ANALYZER SETUP ..... 13
7.4 TEST PROCEDURE ..... 14
7.5 CORRECTED AMPLITUDE & MARGIN CALCULATION ..... 14
7.6 SUMMARY OF TEST RESULTS ..... 15

**8 PHOTOGRAPHS –TEST SETUP ..... 19**

8.1 CONDUCTED EMISSIONS ..... 19
8.2 RADIATED EMISSIONS ..... 19

**9 PHOTOGRAPHS - CONSTRUCTIONAL DETAILS ..... 22**

9.1 EUT – EXTERNAL VIEW ..... 22
9.2 EUT- INTERNAL VIEW ..... 22

# 4 General Information

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

| | |
|---|---|
| **Product Name** | : MID |
| **Model No.** | : KC096-08 |
| **Model Description** | : The circuit principle,PCB wiring and internal structure are the same except for appearance. |
| **Oscillator** | : Crystal 24MHz and 32.768KHz for CPU,40MHz for RF module |

## 4.2 Details of E.U.T.

| | |
|---|---|
| **Technical Data** | : DC 5V, 2A powered from adapter |
| **Adapter** | : SOY Techonolgy |
| | Model:SUN-0500200 |
| | INPUT:100-240V~ 50/60Hz 0.3A |

## 4.3 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A**

Waltek Services (Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration 7760A, July 12, 2012.

- **FCC – Registration No.: 880581**

Waltek Services (Shenzhen) 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 our files. Registration 880581, May 26, 2011.

## 4.4 Test Location

All the tests were performed at:
Waltek Services (Shenzhen) Co., Ltd. at 1/F, Fukangtai Building, West Baima Rd., Songgang Street, Baoan District, Shenzhen, China

## 4.5 Test Mode List

| Test Item | Test Mode | Remark |
|---|---|---|
| Conducted Emissions | data transmitting mode | The worst data |
| | charging mode | Do not report |
| | video playing mode | Do not report |
| | recording mode | Do not report |
| Radiated Emissions (30MHz~1GHz) | data transmitting mode | The worst data |
| | charging mode | Do not report |
| | video playing mode | Do not report |
| | recording mode | Do not report |
| Radiated Emissions (1GHz~6GHz) | data transmitting mode | The worst data |

# 5 Equipment Used during Test

## 5.1 Equipments List

| Conducted Emissions | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Calibration Date** | **Calibration Due Date** |
| 1. | EMI Test Receiver | R&S | ESCI | 100947 | Aug. 13,2012 | Aug. 13,2013 |
| 2. | LISN | R&S | ENV216 | 101215 | Aug. 13,2012 | Aug. 13,2013 |
| 3. | Cable | Top | TYPE16(3.5M) | - | Aug.14,2012 | Aug. 14,2013 |
| **3m Semi-anechoic Chamber for Radiation(TDK) (Test Frequency: Below 1000MHz)** | | | | | | |
| **Item** | **Equipment** | **Manufacturer** | **Model No.** | **Serial No** | **Last Calibration Date** | **Calibration Due Date** |
| 1 | Test Receiver | R&S | ESCI | 101296 | Aug.09,2012 | Aug.09,2013 |
| 2 | Active Loop Antenna | Beijing Dazhi | ZN30900A | - | Aug. 13,2012 | Aug. 13,2013 |
| 3 | Trilog Broadband Antenna | SCHWARZBECK | VULB9160 | 9160-3325 | Aug.11,2012 | Aug.11,2013 |
| 4 | Amplifier | Compliance pirection systems inc | PAP-0203 | 22024 | Apr.07,2013 | Apr.07,2014 |
| 5 | Cable | HUBER+SUHNER | CBL2 | 525178 | Sep.15,2012 | Sep.15,2013 |
| **3m Semi-anechoic Chamber for Radiation Emissions (Test Frequency:Above 1GHz)** | | | | | | |
| **Item** | **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Calibration Date** | **Calibration Due Date** |
| 1. | EMC Analyzer | Agilent | E7405A | MY45114943 | Aug. 13,2012 | Aug. 13,2013 |
| 2. | Broad-band Horn Antenna | SCHWARZBECK | BBHA 9120 D | 667 | Aug. 13,2012 | Aug. 13,2013 |
| 3. | Broad-band Horn Antenna | SCHWARZBECK | BBHA 9170 | 399 | Aug. 13,2012 | Aug. 13,2013 |
| 4. | Broadband Preamplifier | COMPLIANCE DIRECTION | PAP-1G18 | 2004 | Apr.07,2013 | Apr.07,2014 |
| 5. | Broadband Preamplifier | SCHWARZBECK | BBV 9718 | 9718-148 | Aug. 13,2012 | Aug. 13,2013 |
| 6. | 10m Coaxial Cable with N- plug | SCHWARZBECK | AK 9515 H | - | Aug. 13,2012 | Aug. 13,2013 |
| **Associated Equipment** | | | | | | |
| 1. | Notebook | FLORA | PC4NB8 | - | - | - |
| 2. | Notebook | IBM | 2672-39C | 99-8D3W4 | - | - |

## 5.2 Measurement Uncertainty

| Parameter | Uncertainty |
|---|---|
| Radiated Spurious Emissions test | ± 5.03 dB (Bilog antenna 30M~1000MHz) |
| | ± 4.74 dB (Horn antenna 1000M~25000MHz) |
| Conducted Spurious Emissions test | ± 3.64 dB (AC mains 150KHz~30MHz) |

## 5.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

# 6 Conducted Emissions

| | |
|---|---|
| Test Requirement: | FCC CFR 47 Part 15 Section 15.107 |
| Test Method: | ANSI C63.4:2003 |
| Test Result: | PASS |
| Frequency Range: | 150kHz to 30MHz |
| Class: | Class B |
| Limit: | 66-56 dBμV between 0.15MHz & 0.5MHz<br>56 dBμV between 0.5MHz & 5MHz<br>60 dBμV between 5MHz & 30MHz |
| Detector: | Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit |

## 6.1 E.U.T. Test Condition

**Operating Environment:**

| | |
|---|---|
| Temperature: | 25.5 °C |
| Humidity: | 51 % RH |
| Atmospheric Pressure: | 1012 mbar |

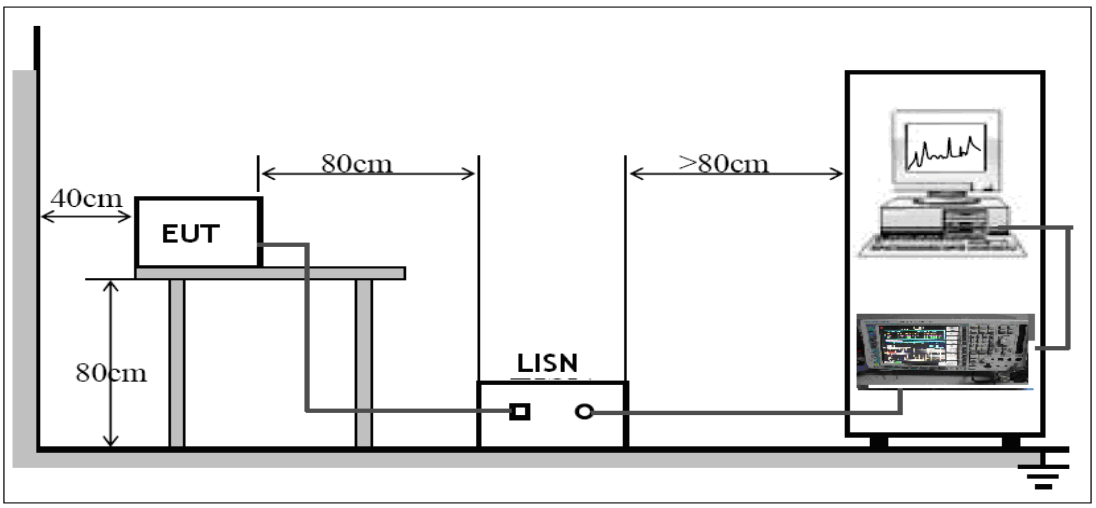
**Operation Mode:**

The EUT was tested in the following mode and the data of worst mode(data transmitting mode) is shown in the report.

(1) data transmitting mode
(2) charging mode
(3) video playing mode
(4) recording mode

## 6.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.4:2003, the specification used in this report was the FCC Part15.207 limits. The EUT was placed on the test table in shielding room

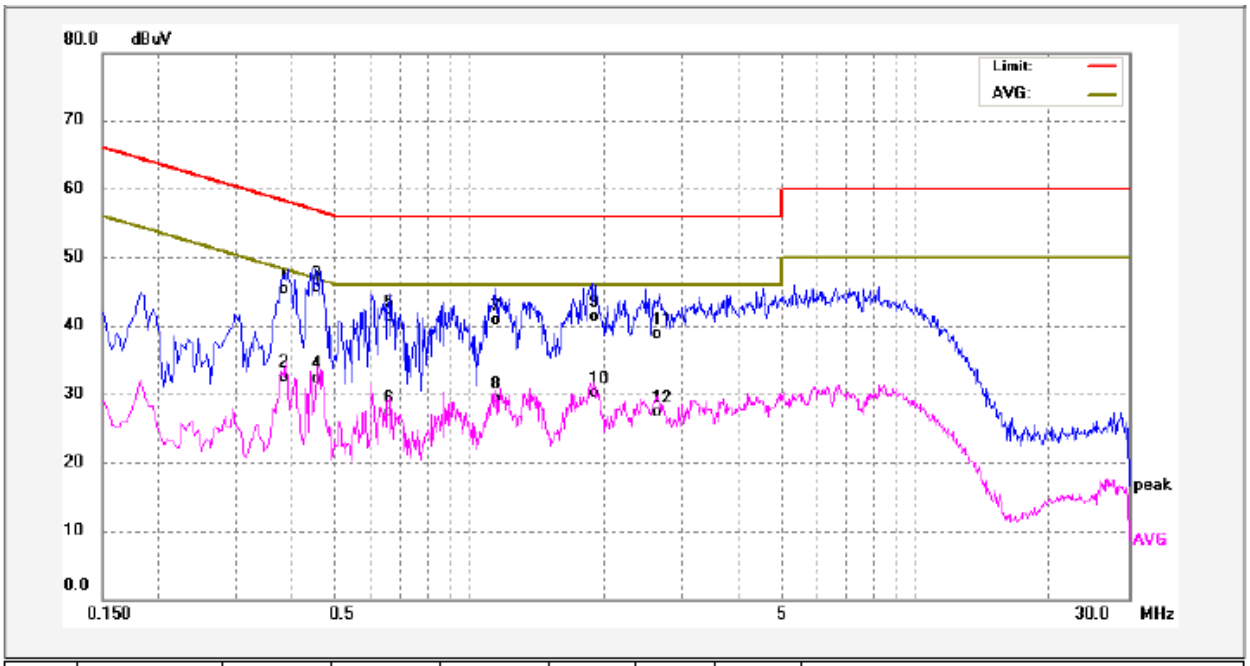


## 6.3 Conducted Emission Test Result

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

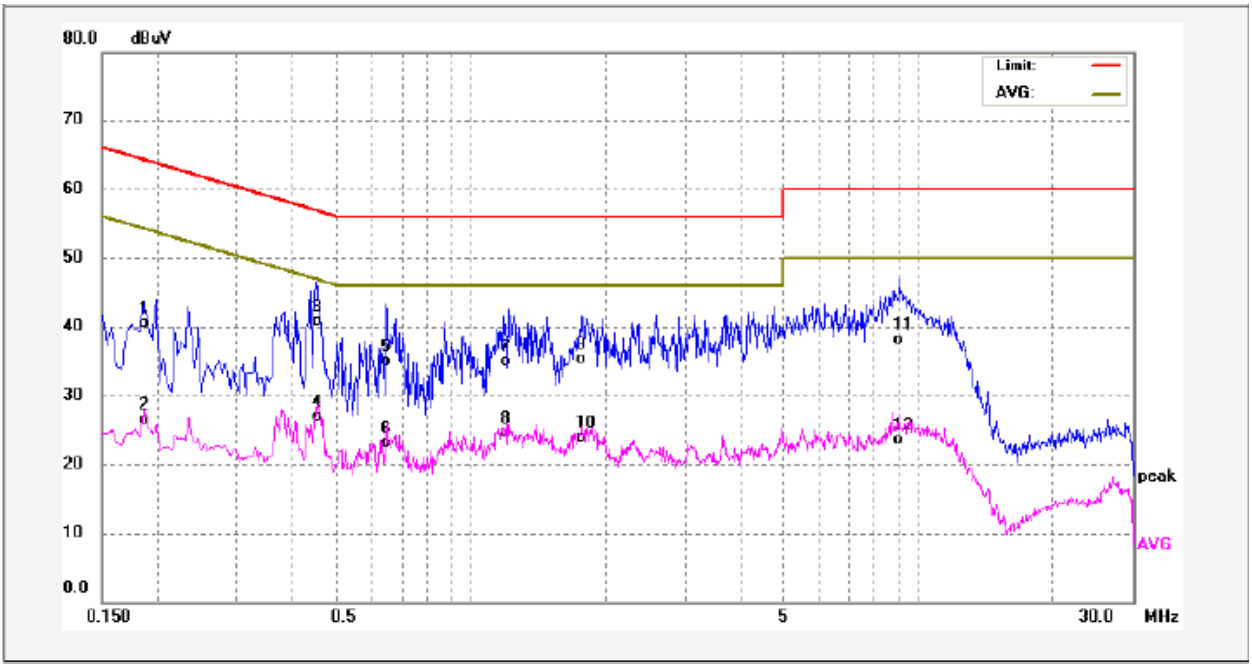
data transmitting mode(the worst data)

Live line:




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.3871 | 34.06 | 11.31 | 45.37 | 58.12 | -12.75 | QP | |
| 2 | 0.3871 | 21.18 | 11.31 | 32.49 | 48.12 | -15.63 | AVG | |
| 3 | 0.4500 | 34.26 | 11.31 | 45.57 | 56.87 | -11.30 | QP | |
| 4 | 0.4500 | 20.93 | 11.31 | 32.24 | 46.87 | -14.63 | AVG | |
| 5 | 0.6660 | 29.89 | 11.33 | 41.22 | 56.00 | -14.78 | QP | |
| 6 | 0.6660 | 15.90 | 11.33 | 27.23 | 46.00 | -18.77 | AVG | |
| 7 | 1.1420 | 29.57 | 11.18 | 40.75 | 56.00 | -15.25 | QP | |
| 8 | 1.1420 | 18.11 | 11.18 | 29.29 | 46.00 | -16.71 | AVG | |
| 9 | 1.8900 | 30.09 | 11.20 | 41.29 | 56.00 | -14.71 | QP | |
| 10 | 1.8900 | 18.84 | 11.20 | 30.04 | 46.00 | -15.96 | AVG | |
| 11 | 2.6619 | 27.56 | 11.21 | 38.77 | 56.00 | -17.23 | QP | |
| 12 | 2.6619 | 16.14 | 11.21 | 27.35 | 46.00 | -18.65 | AVG | |

Neutral line:




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1860 | 29.16 | 11.26 | 40.42 | 64.21 | -23.79 | QP | |
| 2 | 0.1860 | 15.28 | 11.26 | 26.54 | 54.21 | -27.67 | AVG | |
| 3 | 0.4580 | 29.35 | 11.31 | 40.66 | 56.73 | -16.07 | QP | |
| 4 | 0.4580 | 15.62 | 11.31 | 26.93 | 46.73 | -19.80 | AVG | |
| 5 | 0.6460 | 23.57 | 11.33 | 34.90 | 56.00 | -21.10 | QP | |
| 6 | 0.6460 | 11.86 | 11.33 | 23.19 | 46.00 | -22.81 | AVG | |
| 7 | 1.2100 | 23.66 | 11.18 | 34.84 | 56.00 | -21.16 | QP | |
| 8 | 1.2100 | 13.24 | 11.18 | 24.42 | 46.00 | -21.58 | AVG | |
| 9 | 1.7700 | 24.05 | 11.20 | 35.25 | 56.00 | -20.75 | QP | |
| 10 | 1.7700 | 12.75 | 11.20 | 23.95 | 46.00 | -22.05 | AVG | |
| 11 | 9.0340 | 26.73 | 11.29 | 38.02 | 60.00 | -21.98 | QP | |
| 12 | 9.0340 | 12.25 | 11.29 | 23.54 | 50.00 | -26.46 | AVG | |

# 7 Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.109
Test Method: ANSI C63.4:2003
Test Result: PASS
Except as otherwise indicated in paragraphs (b)(2) or (b)(3), for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to 5th harmonic of the highest frequency .
Measurement Distance: 3m
15.109 Limit:

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009 -0.490 | 2400/F(kHz) | 300 |
| **0.490 - 1.705** | **24000/F(kHz)** | **30** |
| **1.705 - 30.0** | **30** | **30** |
| **30-88** | **100**** | **3** |
| **88-216** | **150**** | **3** |
| **216-960** | **200**** | **3** |
| **Above 960** | **500** | **3** |

## 7.1 EUT Operation:

Operating Environment:

Temperature: 25.5 °C
Humidity: 51 % RH
Atmospheric Pressure: 1012 mbar

Operation Mode:

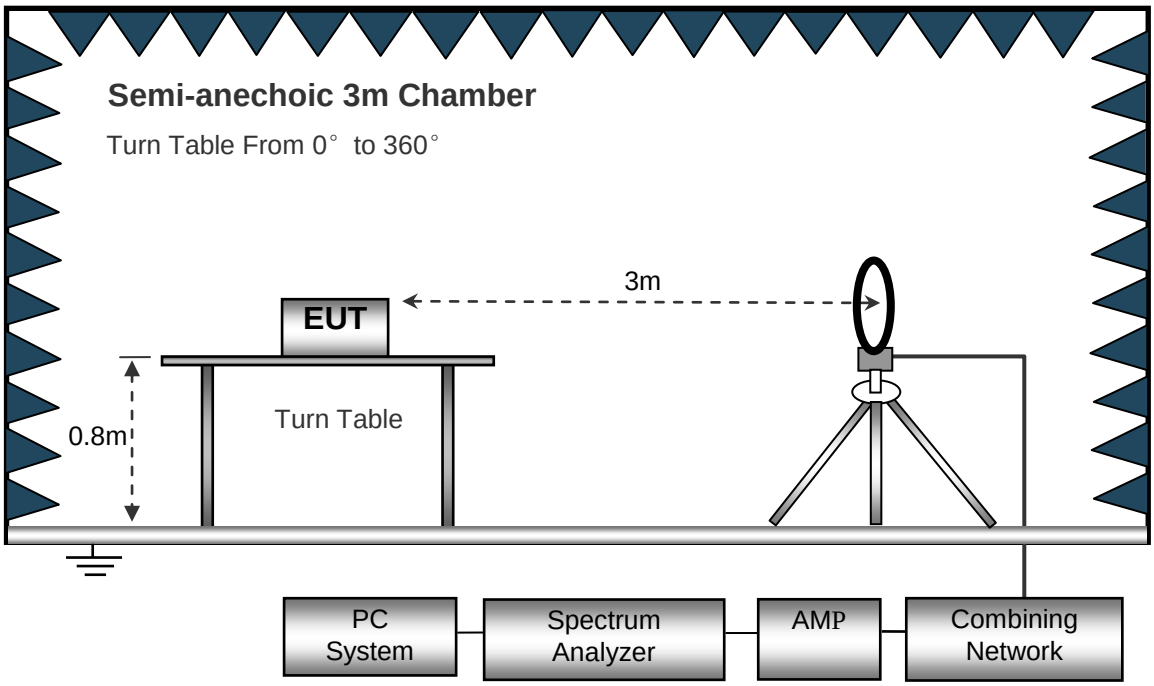
The EUT was tested in the following mode and the data of worst mode(data transmitting mode) is shown in the report.

(1) data transmitting mode
(2) charging mode
(3) video playing mode
(4) recording mode

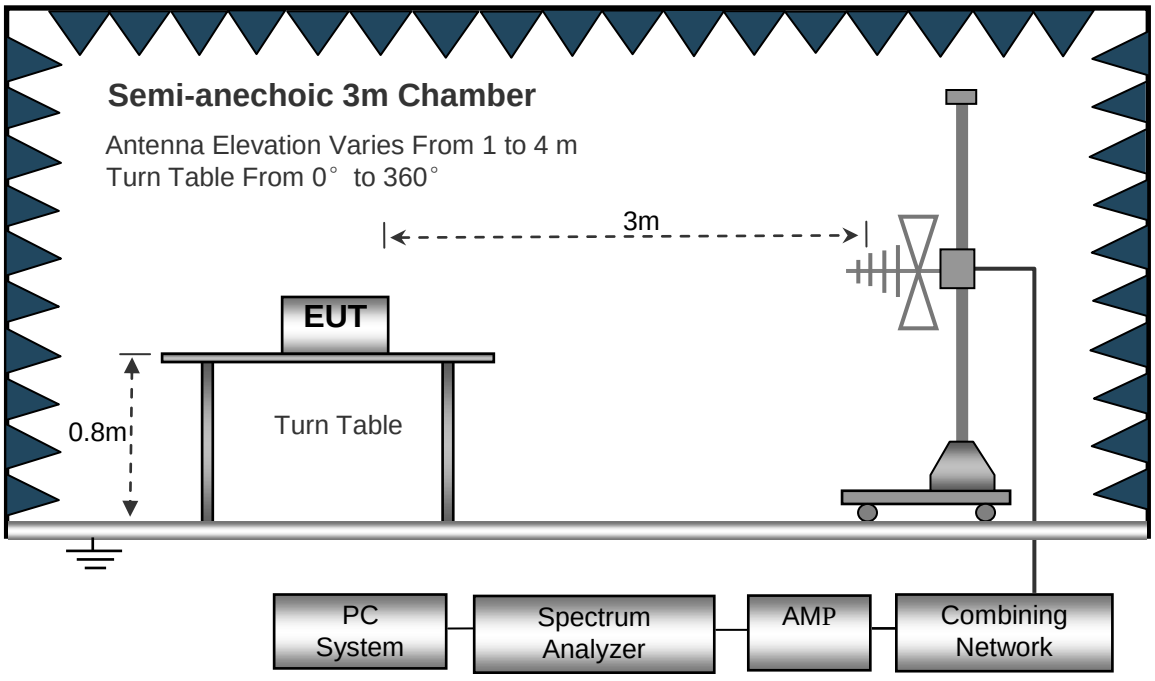
## 7.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4: 2003.

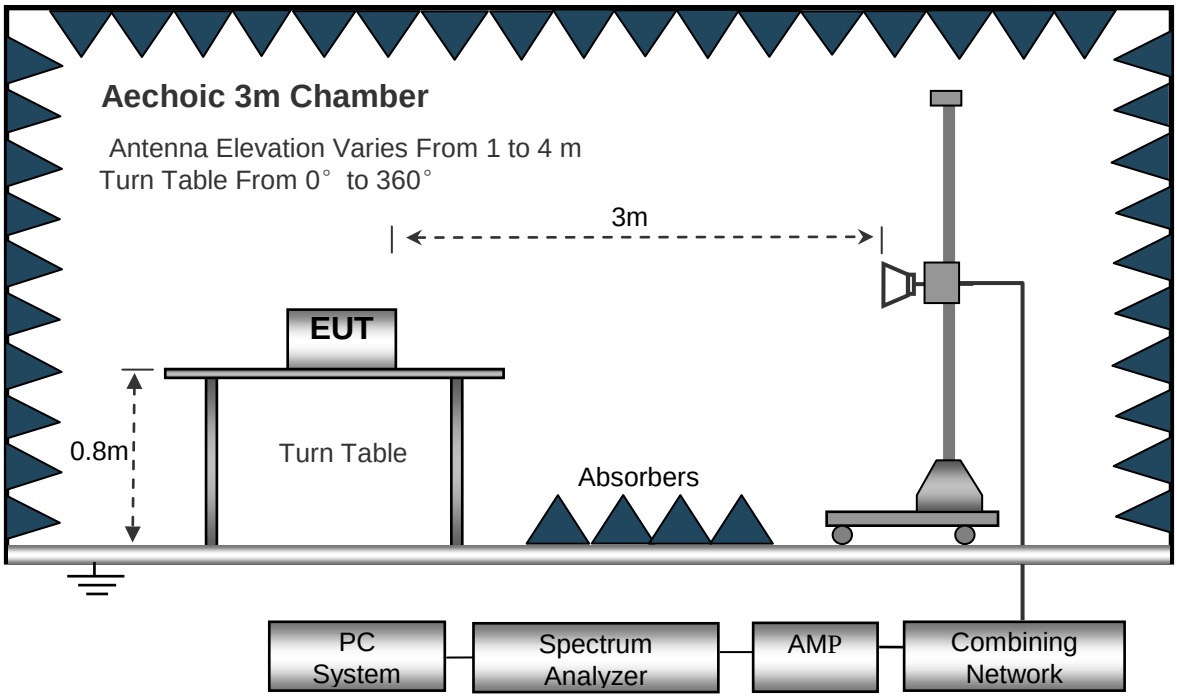
**The test setup for emission measurement below 30MHz.**




**The test setup for emission measurement from 30 MHz to 1 GHz.**



**The test setup for emission measurement above 1 GHz.**




## 7.3 Spectrum Analyzer Setup

**According to FCC Part15 Rules, the system was tested from 32.768KHz to 6 GHz.**

Below 30MHz

Sweep Speed .....Auto
IF Bandwidth .....10KHz
Video Bandwidth.....10KHz

Resolution Bandwidth.....10KHz

30 MHz to 1 GHz

Sweep Speed .....Auto
IF Bandwidth .....120 KHz
Video Bandwidth.....100KHz
Quasi-Peak Adapter Bandwidth .....120 KHz
Quasi-Peak Adapter Mode .....Normal
Resolution Bandwidth.....100KHz

Above 1GHz

Sweep Speed .....Auto
IF Bandwidth.....120 KHz
Video Bandwidth.....3MHz
Quasi-Peak Adapter Bandwidth .....120 KHz
Quasi-Peak Adapter Mode .....Normal
Resolution Bandwidth.....1MHz

## 7.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under X-axis.The worst data were shown as follow.

## 7.5 Corrected Amplitude & Margin Calculation

**The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows: Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain the "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:**

**Margin = Corr. Ampl. – Limit**

## 7.6 Summary of Test Results

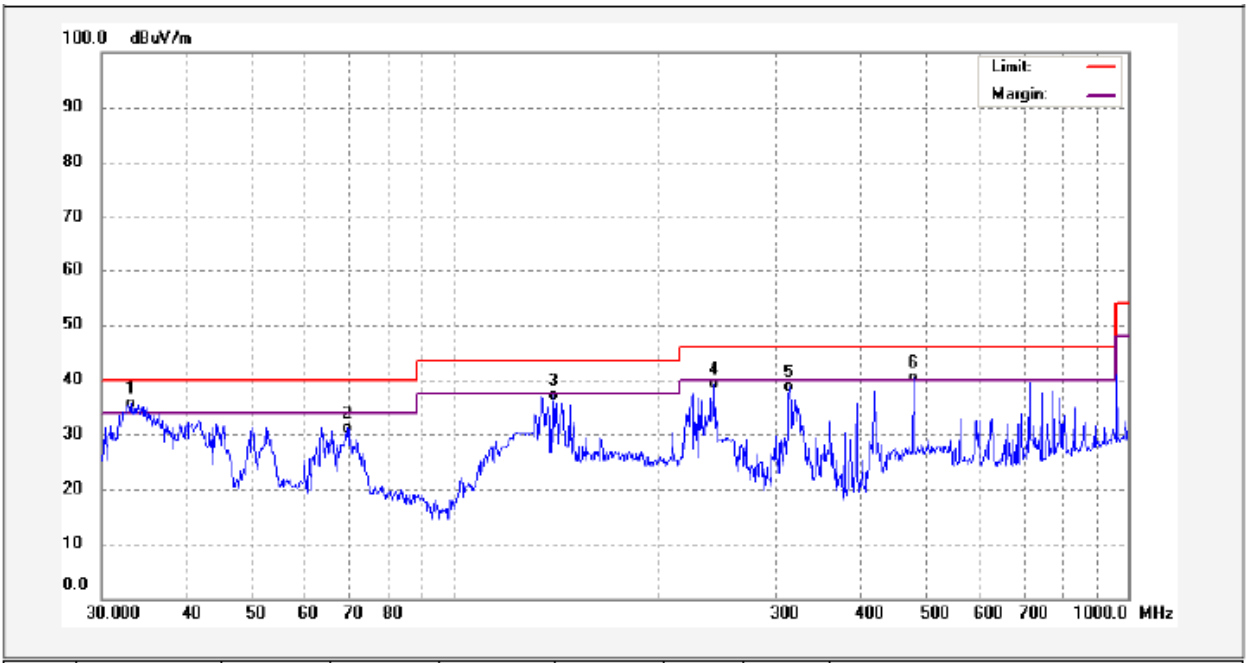
Test Frequency : Below 30MHz

After pretested, the emission below 30MHz is no more than background level. So the data is not shown in the report.

data transmitting mode(the worst data)

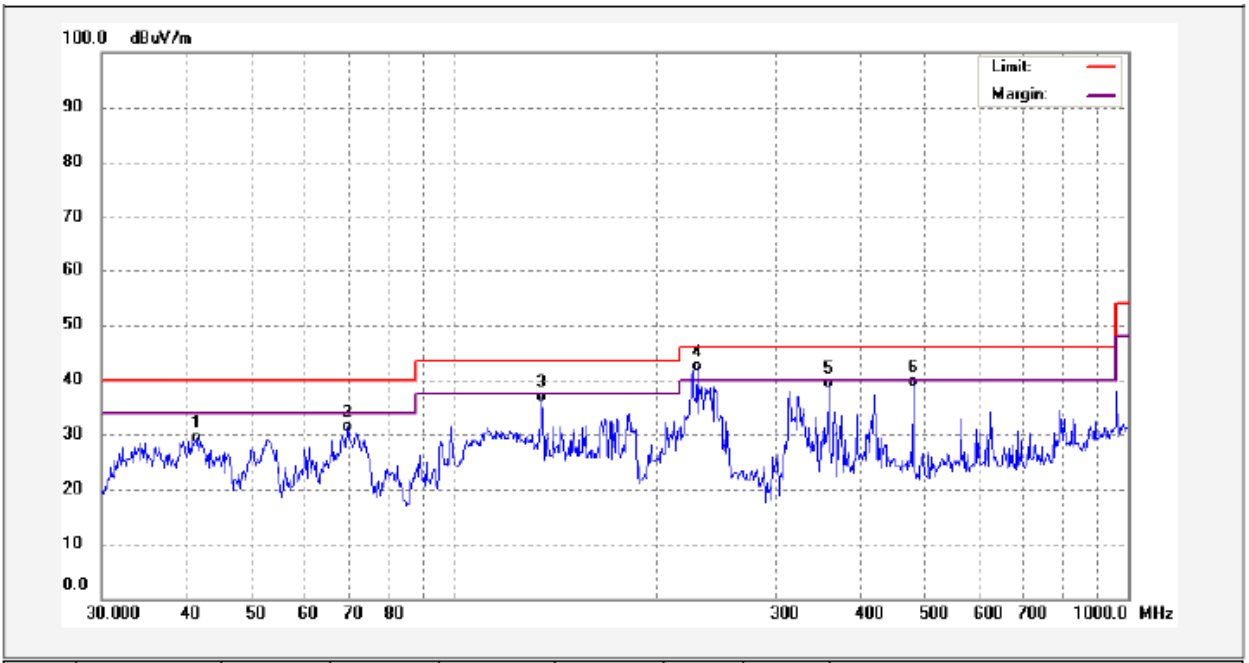
Test Frequency : 30MHz ~ 1000MHz

Antenna polarization: Vertical




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 33.2111 | 55.63 | -19.96 | 35.67 | 40.00 | -4.33 | QP | |
| 2 | 69.3568 | 54.36 | -23.21 | 31.15 | 40.00 | -8.85 | QP | |
| 3 | 140.3420 | 58.52 | -21.50 | 37.02 | 43.50 | -6.48 | QP | |
| 4 | 243.3771 | 61.14 | -21.92 | 39.22 | 46.00 | -6.78 | QP | |
| 5 | 314.3763 | 57.91 | -19.23 | 38.68 | 46.00 | -7.32 | QP | |
| 6 | 480.5276 | 55.12 | -14.80 | 40.32 | 46.00 | -5.68 | QP | |

Antenna polarization: Horizontal

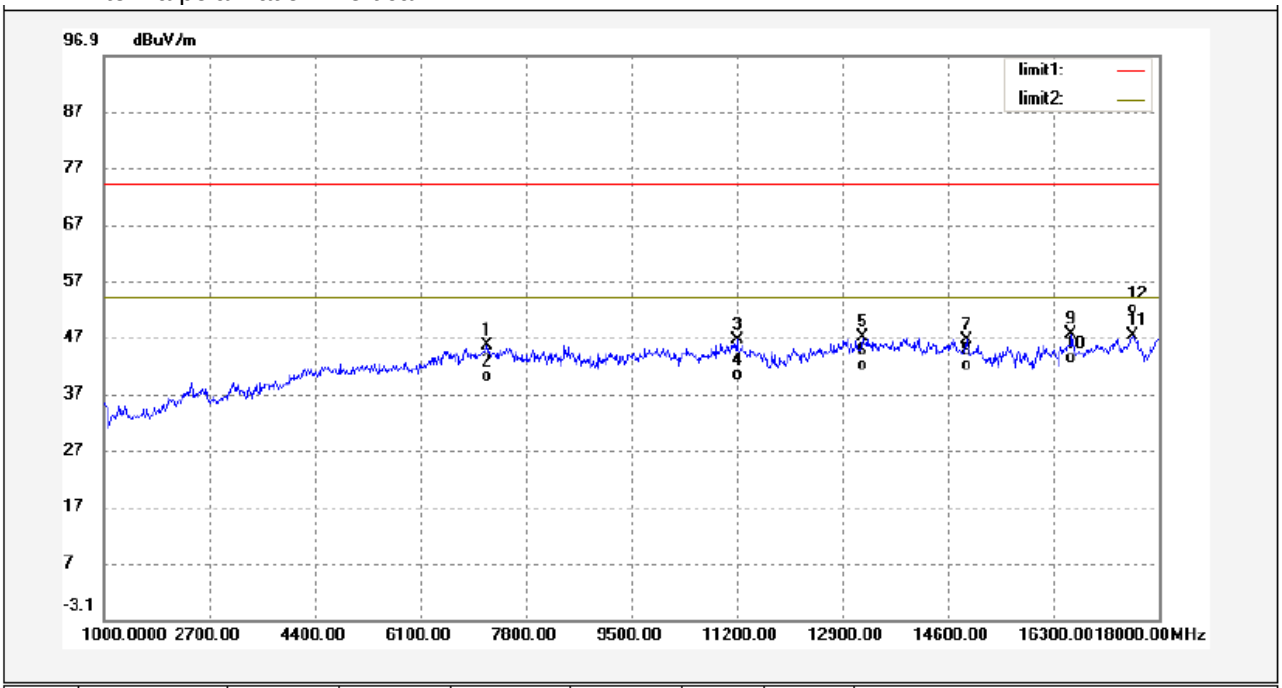



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 41.4215 | 48.46 | -19.17 | 29.29 | 40.00 | -10.71 | QP | |
| 2 | 69.3568 | 54.36 | -23.02 | 31.34 | 40.00 | -8.66 | QP | |
| 3 | 134.5591 | 58.59 | -21.76 | 36.83 | 43.50 | -6.67 | QP | |
| 4 | 229.2930 | 64.85 | -22.55 | 42.30 | 46.00 | -3.70 | QP | |
| 5 | 360.4476 | 57.27 | -17.96 | 39.31 | 46.00 | -6.69 | QP | |
| 6 | 480.5276 | 54.16 | -14.62 | 39.54 | 46.00 | -6.46 | QP | |

data transmitting mode (the worst data)

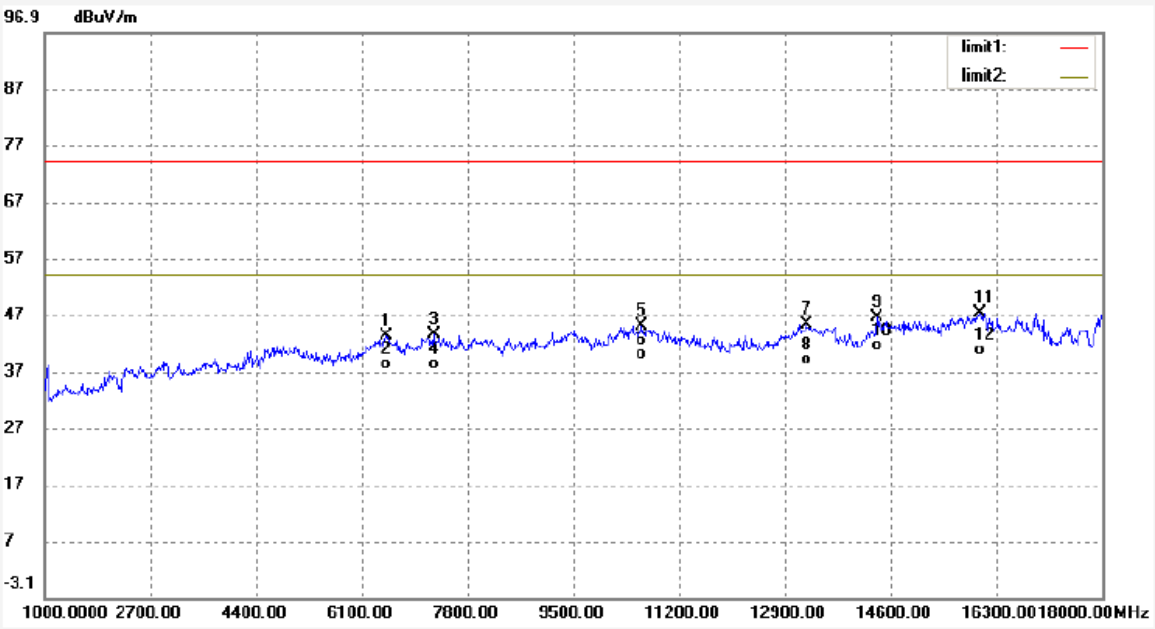
Test Frequency : 1000MHz ~ 6000MHz

Antenna polarization: Vertical




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 7171.000 | 41.73 | 3.85 | 45.58 | 74.00 | -28.42 | peak | |
| 2 | 7171.000 | 35.23 | 3.85 | 39.08 | 54.00 | -14.92 | AVG | |
| 3 | 11200.000 | 35.30 | 11.13 | 46.43 | 74.00 | -27.57 | peak | |
| 4 | 11200.000 | 28.23 | 11.13 | 39.36 | 54.00 | -14.64 | AVG | |
| 5 | 13223.000 | 33.30 | 13.82 | 47.12 | 74.00 | -26.88 | peak | |
| 6 | 13223.000 | 27.21 | 13.82 | 41.03 | 54.00 | -12.97 | AVG | |
| 7 | 14906.000 | 28.79 | 17.67 | 46.46 | 74.00 | -27.54 | peak | |
| 8 | 14906.000 | 23.25 | 17.67 | 40.92 | 54.00 | -13.08 | AVG | |
| 9 | 16589.000 | 29.30 | 18.14 | 47.44 | 74.00 | -26.56 | peak | |
| 10 | 16589.000 | 24.24 | 18.14 | 42.38 | 54.00 | -11.62 | AVG | |
| 11 | 17575.000 | 23.89 | 23.38 | 47.27 | 74.00 | -26.73 | peak | |
| 12 | 17575.000 | 27.65 | 23.38 | 51.03 | 54.00 | -2.97 | AVG | |

Antenna polarization: Horizontal




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 6491.000 | 41.09 | 2.09 | 43.18 | 74.00 | -30.82 | peak | |
| 2 | 6491.000 | 35.23 | 2.09 | 37.32 | 54.00 | -16.68 | AVG | |
| 3 | 7256.000 | 39.45 | 4.11 | 43.56 | 74.00 | -30.44 | peak | |
| 4 | 7256.000 | 33.25 | 4.11 | 37.36 | 54.00 | -16.64 | AVG | |
| 5 | 10605.000 | 34.68 | 10.46 | 45.14 | 74.00 | -28.86 | peak | |
| 6 | 10605.000 | 28.54 | 10.46 | 39.00 | 54.00 | -15.00 | AVG | |
| 7 | 13240.000 | 31.26 | 13.92 | 45.18 | 74.00 | -28.82 | peak | |
| 8 | 13240.000 | 24.21 | 13.92 | 38.13 | 54.00 | -15.87 | AVG | |
| 9 | 14379.000 | 28.22 | 18.33 | 46.55 | 74.00 | -27.45 | peak | |
| 10 | 14379.000 | 22.25 | 18.33 | 40.58 | 54.00 | -13.42 | AVG | |
| 11 | 16045.000 | 31.73 | 15.48 | 47.21 | 74.00 | -26.79 | peak | |
| 12 | 16045.000 | 24.21 | 15.48 | 39.69 | 54.00 | -14.31 | AVG | |

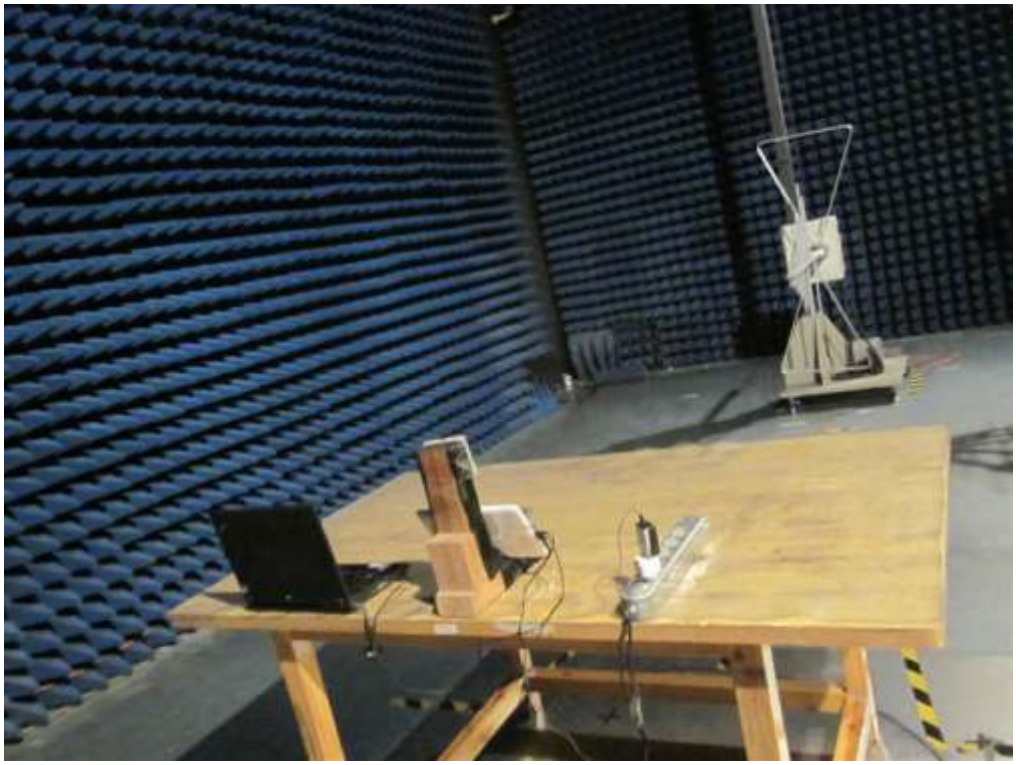
# 8 Photographs –Test Setup

## 8.1 Conducted Emissions

## 8.2 Radiated Emissions

Below 30MHz

From 30-1000MHz



From 1GHz-6GHz

# 9 Photographs - Constructional Details

## 9.1 EUT – External View

Refer to test report No.: WTS13S0503859E

## 9.2 EUT- Internal View

Refer to test report No.: WTS13S0503859E

==End of test report==