

# TEST REPORT

**Reference No.**..... : WTS16S0346212E V1  
**FCC ID** ..... : 2AEE8LAVAIRIS758  
**Applicant**..... : LAVA INTERNATIONAL (H.K) LIMITED  
**Address**..... : UNIT L 1/F MAU LAM COMM BLDG 16-18 MAU LAM ST,  
**Manufacturer** ..... : LAVA INTERNATIONAL (H.K) LIMITED  
**Address**..... : UNIT L 1/F MAU LAM COMM BLDG 16-18 MAU LAM ST,  
JORDAN  
KL, HK  
**Product Name**..... : Mobile Phone  
**Model No.**..... : iris 758  
**Brand**..... : LAVA  
**Standards** ..... : FCC PART15 SUBPART B: 2015  
**Date of Receipt sample** .... : Mar. 28, 2016  
**Date of Test** ..... : Mar. 29 – Apr. 17, 2016  
**Date of Issue**..... : May. 12, 2016  
**Test Result**..... : **Pass**

Remarks:

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.

**Prepared By:**

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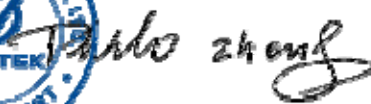
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Compiled by:



Zero Zhou / Test Engineer

Approved by:



Philo Zhong / Manager

## 1 Test Summary

| Test Item                                          | Test Requirement                | Class   | Test Method      | Test Result |
|----------------------------------------------------|---------------------------------|---------|------------------|-------------|
| Power Line Conducted Emission<br>(150kHz to 30MHz) | FCC PART 15,<br>SUBPART B: 2015 | Class B | ANSI C63.4: 2009 | Pass        |
| Radiated Emission<br>30MHz to 1GHz)                | FCC PART 15,<br>SUBPART B: 2015 | Class B | ANSI C63.4: 2009 | Pass        |
| Radiated Emission<br>(Above 1GHz)                  | FCC PART 15,<br>SUBPART B: 2015 | Class B | ANSI C63.4: 2009 | Pass        |

Remark:

Pass Test item meets the requirement

Fail Test item does not meet the requirement

N/A Test case does not apply to the test object

## 2 Contents

|                                                                                    | Page      |
|------------------------------------------------------------------------------------|-----------|
| <b>COVER PAGE</b> .....                                                            | <b>1</b>  |
| <b>1 TEST SUMMARY</b> .....                                                        | <b>2</b>  |
| <b>2 CONTENTS</b> .....                                                            | <b>3</b>  |
| <b>3 REPORT REVISION HISTORY</b> .....                                             | <b>4</b>  |
| <b>4 GENERAL INFORMATION</b> .....                                                 | <b>5</b>  |
| 4.1 GENERAL DESCRIPTION OF E.U.T. ....                                             | 5         |
| 4.2 DETAILS OF E.U.T. ....                                                         | 5         |
| 4.3 STANDARDS APPLICABLE FOR TESTING .....                                         | 5         |
| 4.4 TEST FACILITY .....                                                            | 6         |
| 4.5 SUBCONTRACTED .....                                                            | 6         |
| 4.6 ABNORMALITIES FROM STANDARD CONDITIONS .....                                   | 6         |
| <b>5 EQUIPMENT USED DURING TEST</b> .....                                          | <b>7</b>  |
| 5.1 EQUIPMENT LIST .....                                                           | 7         |
| 5.2 DESCRIPTION OF SUPPORT UNITS .....                                             | 8         |
| 5.3 MEASUREMENT UNCERTAINTY .....                                                  | 8         |
| <b>6 EMISSION TEST RESULTS</b> .....                                               | <b>9</b>  |
| 6.1 POWER LINE CONDUCTED EMISSION, 150KHZ TO 30MHZ .....                           | 9         |
| 6.2 RADIATION EMISSION, 30MHZ TO 1000MHZ .....                                     | 12        |
| 6.3 RADIATION EMISSION, ABOVE 1000MHZ .....                                        | 15        |
| <b>7 PHOTOGRAPHS – TEST SETUP MODEL - IRIS 758</b> .....                           | <b>18</b> |
| 7.1 PHOTOGRAPH –POWER LINE CONDUCTED EMISSION TEST SETUP AT TEST SITE 1# .....     | 18        |
| 7.2 PHOTOGRAPH – RADIATED EMISSION TEST SETUP FOR 30~1000MHZ AT TEST SITE 2# ..... | 18        |
| 7.3 PHOTOGRAPH – RADIATED EMISSION TEST SETUP FOR ABOVE 1GHZ AT TEST SITE 1# ..... | 19        |

### 3 Report Revision History

| Report No.     | Report Version | Description | Issue Date    |
|----------------|----------------|-------------|---------------|
| WTS16S0346212E | NONE           | Original    | Apr. 18, 2016 |
| WTS16S0346212E | V1             | Version 1   | May. 12, 2016 |
|                |                |             |               |

## 4 General Information

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

|                           |                                   |
|---------------------------|-----------------------------------|
| Product Name              | : Mobile Phone                    |
| Model No.                 | : iris 758                        |
| Model Description         | : N/A                             |
| GSM Band(s)               | : GSM 850/900/1800/1900MHz        |
| GPRS Class                | : 12                              |
| WCDMA Band(s)             | : FDD Band II/V                   |
| LTE Bnad(s)               | : LTE Band 2/4/7                  |
| Wi-Fi Specification       | : 2.4G: 802.11b/g/n HT20 HT40     |
| Bluetooth Version         | : Bluetooth v4.0 with BLE         |
| GPS                       | : Support                         |
| NFC                       | : N/A                             |
| Hardware Version          | : V2.0                            |
| Software Version          | : LAVA _iris 758_MX_S101_20160311 |
| Highest Operate Frequency | : 1.3GHz                          |

### 4.2 Details of E.U.T.

|                 |                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------|
| Technical Data: | : Battery DC 3.8V 2000mAh<br>DC 5V, 1A, charging from adapter<br>(Adapter Input: 100-300V~50/60Hz 0.15A) |
| Adapter:        | : Manufacture: Shenzhen Tianyin Electronics Co.,LTD.<br>Model No.: CLV-14                                |

### 4.3 Standards Applicable for Testing

The tests were performed according to following standards:

FCC PART 15, SUBPART B: Electronic Code of Federal Regulations- Unintentional Radiators 2015

#### 4.4 Test Facility

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

- **IC – Registration No.: 7760A-1**

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-1, October 15, 2015.

- **FCC Test Site 1#– 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, April 29, 2014.

- **FCC Test Site 2#– Registration No.: 328995**

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 328995, December 3, 2014.

#### 4.5 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes      ☒ No

If Yes, list the related test items and lab information:

Test Lab:      N/A

Lab address: N/A

Test items:      N/A

#### 4.6 Abnormalities from Standard Conditions

None.

## 5 Equipment Used during Test

### 5.1 Equipment List

| Conducted Emissions Test Site 1#                              |                            |                                  |              |                 |                       |                      |
|---------------------------------------------------------------|----------------------------|----------------------------------|--------------|-----------------|-----------------------|----------------------|
| Item                                                          | Equipment                  | Manufacturer                     | Model No.    | Serial No.      | Last Calibration Date | Calibration Due Date |
| 1.                                                            | EMI Test Receiver          | R&S                              | ESCI         | 100947          | Sep.15,2015           | Sep.14,2016          |
| 2.                                                            | LISN                       | R&S                              | ENV216       | 101215          | Sep.15,2015           | Sep.14,2016          |
| 3.                                                            | Cable                      | Top                              | TYPE16(3.5M) | -               | Sep.15,2015           | Sep.14,2016          |
| Conducted Emissions Test Site 2#                              |                            |                                  |              |                 |                       |                      |
| Item                                                          | Equipment                  | Manufacturer                     | Model No.    | Serial No.      | Last Calibration Date | Calibration Due Date |
| 1.                                                            | EMI Test Receiver          | R&S                              | ESCI         | 101155          | Sep.15,2015           | Sep.14,2016          |
| 2.                                                            | LISN                       | SCHWARZBECK                      | NSLK 8128    | 8128-289        | Sep.15,2015           | Sep.14,2016          |
| 3.                                                            | Limiter                    | York                             | MTS-IMP-136  | 261115-001-0024 | Sep.15,2015           | Sep.14,2016          |
| 4.                                                            | Cable                      | LARGE                            | RF300        | -               | Sep.15,2015           | Sep.14,2016          |
| 3m Semi-anechoic Chamber for Radiation Emissions Test site 1# |                            |                                  |              |                 |                       |                      |
| Item                                                          | Equipment                  | Manufacturer                     | Model No.    | Serial No.      | Last Calibration Date | Calibration Due Date |
| 1                                                             | EMC Analyzer               | Agilent                          | E7405A       | MY45114943      | Sep.15,2015           | Sep.14,2016          |
| 2                                                             | Active Loop Antenna        | Beijing Dazhi                    | ZN30900A     | -               | Sep.15,2015           | Sep.14,2016          |
| 3                                                             | Trilog Broadband Antenna   | SCHWARZBECK                      | VULB9163     | 336             | Apr.19,2015           | Apr.18,2016          |
| 4                                                             | Coaxial Cable (below 1GHz) | Top                              | TYPE16(13M)  | -               | Sep.15,2015           | Sep.14,2016          |
| 5                                                             | Broad-band Horn Antenna    | SCHWARZBECK                      | BBHA 9120 D  | 667             | Apr.19,2015           | Apr.18,2016          |
| 6                                                             | Broad-band Horn Antenna    | SCHWARZBECK                      | BBHA 9170    | 335             | Apr.19,2015           | Apr.18,2016          |
| 7                                                             | Broadband Preamplifier     | COMPLIANCE DIRECTION             | PAP-1G18     | 2004            | Apr.19,2015           | Apr.18,2016          |
| 8                                                             | Coaxial Cable (above 1GHz) | Top                              | 1GHz-25GHz   | EW02014-7       | Apr.10,2016           | Apr.09,2017          |
| 3m Semi-anechoic Chamber for Radiation Emissions Test site 2# |                            |                                  |              |                 |                       |                      |
| Item                                                          | Equipment                  | Manufacturer                     | Model No.    | Serial No       | Last Calibration Date | Calibration Due Date |
| 1                                                             | Test Receiver              | R&S                              | ESCI         | 101296          | Sep.15,2015           | Sep.14,2016          |
| 2                                                             | Trilog Broadband Antenna   | SCHWARZBECK                      | VULB9160     | 9160-3325       | Sep.15,2015           | Sep.14,2016          |
| 3                                                             | Amplifier                  | Compliance pirection systems inc | PAP-0203     | 22024           | Sep.15,2015           | Sep.14,2016          |

| 4                           | Cable                           | HUBER+SUHNER | CBL2      | 525178     | Sep.15,2015           | Sep.14,2016          |
|-----------------------------|---------------------------------|--------------|-----------|------------|-----------------------|----------------------|
| <b>RF Conducted Testing</b> |                                 |              |           |            |                       |                      |
| Item                        | Equipment                       | Manufacturer | Model No. | Serial No. | Last Calibration Date | Calibration Due Date |
| 1.                          | EMC Analyzer<br>(9k~26.5GHz)    | Agilent      | E7405A    | MY45114943 | Sep.15,2015           | Sep.14,2016          |
| 2.                          | Spectrum Analyzer<br>(9k~6GHz)  | R&S          | FSL6      | 100959     | Sep.15,2015           | Sep.14,2016          |
| 3.                          | Signal Analyzer<br>(9k~26.5GHz) | Agilent      | N9010A    | MY50520207 | Sep.15,2015           | Sep.14,2016          |

## 5.2 Description of Support Units

| Equipment   | Manufacturer | Model No. | Series No.   |
|-------------|--------------|-----------|--------------|
| MacBook Air | APPLE        | A1465     | C17KTQDNF5N7 |

## 5.3 Measurement Uncertainty

| Test Item              | Frequency Range | Uncertainty         | Note |
|------------------------|-----------------|---------------------|------|
| Conduction disturbance | 150kHz~30MHz    | $\pm 3.64\text{dB}$ | (1)  |
| Radiation Emission     | 30MHz~1000MHz   | $\pm 5.03\text{dB}$ | (1)  |
|                        | 1GHz~18GHz      | $\pm 5.47\text{dB}$ | (1)  |

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

## 6 Emission Test Results

### 6.1 Power Line Conducted Emission, 150kHz to 30MHz

Test Requirement ..... : FCC PART 15, SUBPART B

Test Method ..... : ANSI C63.4 2009

Test Result ..... : Pass

Frequency Range ..... : 150kHz to 30MHz

Class ..... : Class B

Limit ..... :

| Frequency (MHz) | Limit (dB $\mu$ V) |           |
|-----------------|--------------------|-----------|
|                 | Quasi-peak         | Average   |
| 0.15 to 0.5     | 66 to 56*          | 56 to 46* |
| 0.5 to 5        | 56                 | 46        |
| 5 to 30         | 60                 | 50        |

#### 6.1.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 23°C

Humidity ..... : 53.6%RH

Atmospheric Pressure ..... : 101kPa

EUT Operation:

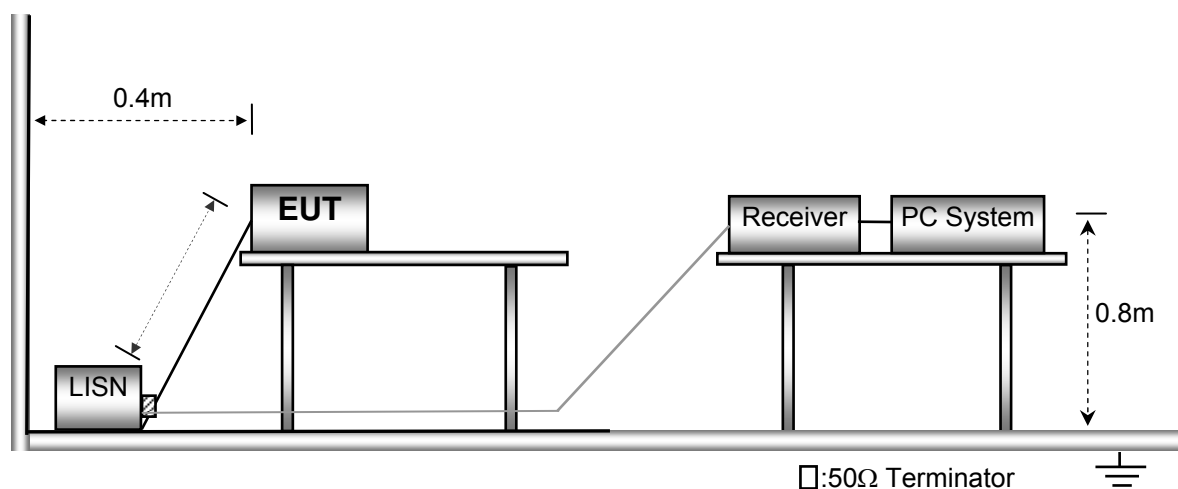
Input Voltage ..... : DC 5V by Adapter Input AC 120V/60Hz

Operating Mode ..... : Data transmitting +earphone+adapter mode

Remark ..... : The worse case(Data transmitting+earphone+adapter mode) is under the condition of AC 120V/60Hz adapter input and the data is shown as follow.

#### 6.1.2 Block Diagram of Test Setup

The Mains Terminals Disturbance Voltage tests were performed in accordance with the ANSI C63.4 2009.

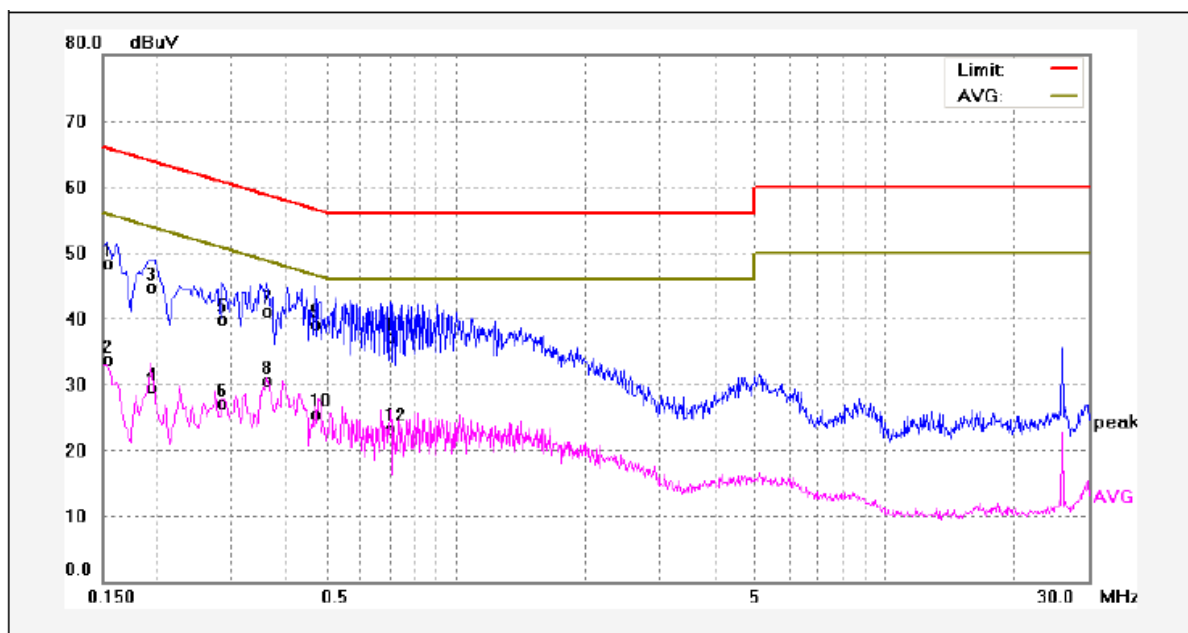


### 6.1.3 Measurement Data

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. According to the data in section 5.1.4, the EUT complied with the FCC PART 15, SUBPART B standards.

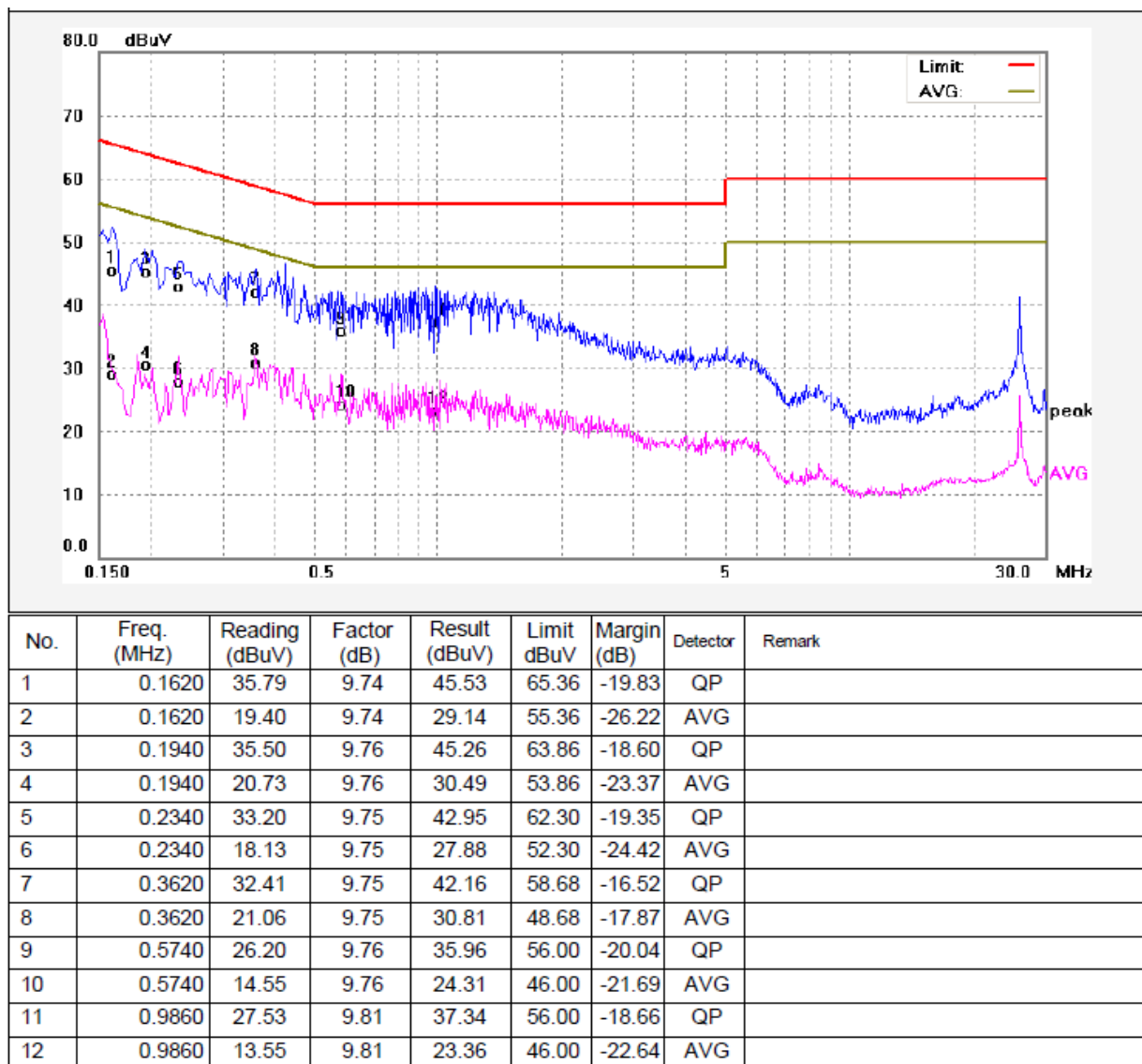
### 6.1.4 Power Line Conducted Emission Test Data

Live Line:



| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|-----|-------------|----------------|-------------|---------------|------------|-------------|----------|--------|
| 1   | 0.1539      | 38.63          | 9.75        | 48.38         | 65.78      | -17.40      | QP       |        |
| 2   | 0.1539      | 23.90          | 9.75        | 33.65         | 55.78      | -22.13      | AVG      |        |
| 3   | 0.1940      | 34.89          | 9.76        | 44.65         | 63.86      | -19.21      | QP       |        |
| 4   | 0.1940      | 19.76          | 9.76        | 29.52         | 53.86      | -24.34      | AVG      |        |
| 5   | 0.2860      | 30.23          | 9.75        | 39.98         | 60.64      | -20.66      | QP       |        |
| 6   | 0.2860      | 17.30          | 9.75        | 27.05         | 50.64      | -23.59      | AVG      |        |
| 7   | 0.3620      | 31.38          | 9.75        | 41.13         | 58.68      | -17.55      | QP       |        |
| 8   | 0.3620      | 20.69          | 9.75        | 30.44         | 48.68      | -18.24      | AVG      |        |
| 9   | 0.4700      | 29.35          | 9.76        | 39.11         | 56.51      | -17.40      | QP       |        |
| 10  | 0.4700      | 15.81          | 9.76        | 25.57         | 46.51      | -20.94      | AVG      |        |
| 11  | 0.7019      | 27.26          | 9.77        | 37.03         | 56.00      | -18.97      | QP       |        |
| 12  | 0.7019      | 13.61          | 9.77        | 23.38         | 46.00      | -22.62      | AVG      |        |

Neutral Line:



## 6.2 Radiation Emission, 30MHz to 1000MHz

Test Requirement ..... : FCC PART 15, SUBPART B  
 Test Method ..... : ANSI C63.4 2009  
 Test Result ..... : Pass  
 Frequency Range ..... : 30MHz to 1000MHz  
 Class. .... : Class B  
 Limit..... :

| Frequency (MHz) | Distance (Meter) | Limit (dB $\mu$ V/m) |
|-----------------|------------------|----------------------|
|                 |                  | Quasi-peak           |
| 30 to 88        | 3                | 40                   |
| 88 to 211       | 3                | 43.5                 |
| 216 to 960      | 3                | 46                   |
| 960 to 1000     | 3                | 54                   |

### 6.2.1 E.U.T. Operation

Operating Environment:

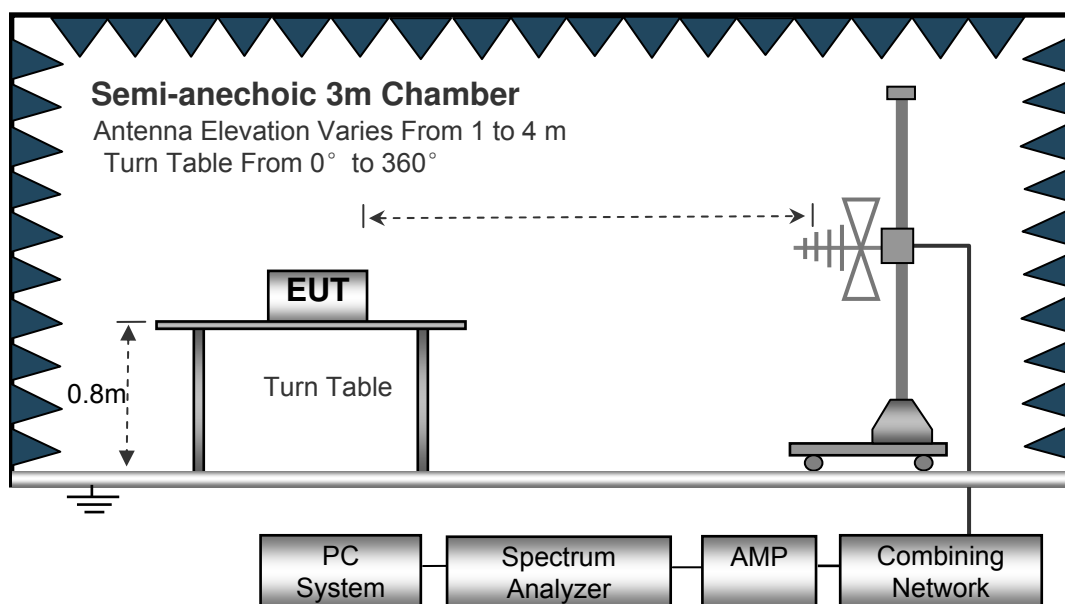
Temperature ..... : 22.5°C  
 Humidity ..... : 52.6%RH  
 Atmospheric Pressure ..... : 101.2kPa

EUT Operation:

Input Voltage ..... : DC 5V by Adapter Input AC 120V/60Hz  
 Operating Mode ..... : Data transmitting +earphone+adapter  
 Remark ..... : The worse case(Data transmitting +earphone+adapter) is under the condition of AC 120V/60Hz adapter input and the data is shown as follow.

### 6.2.2 Block Diagram of 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.

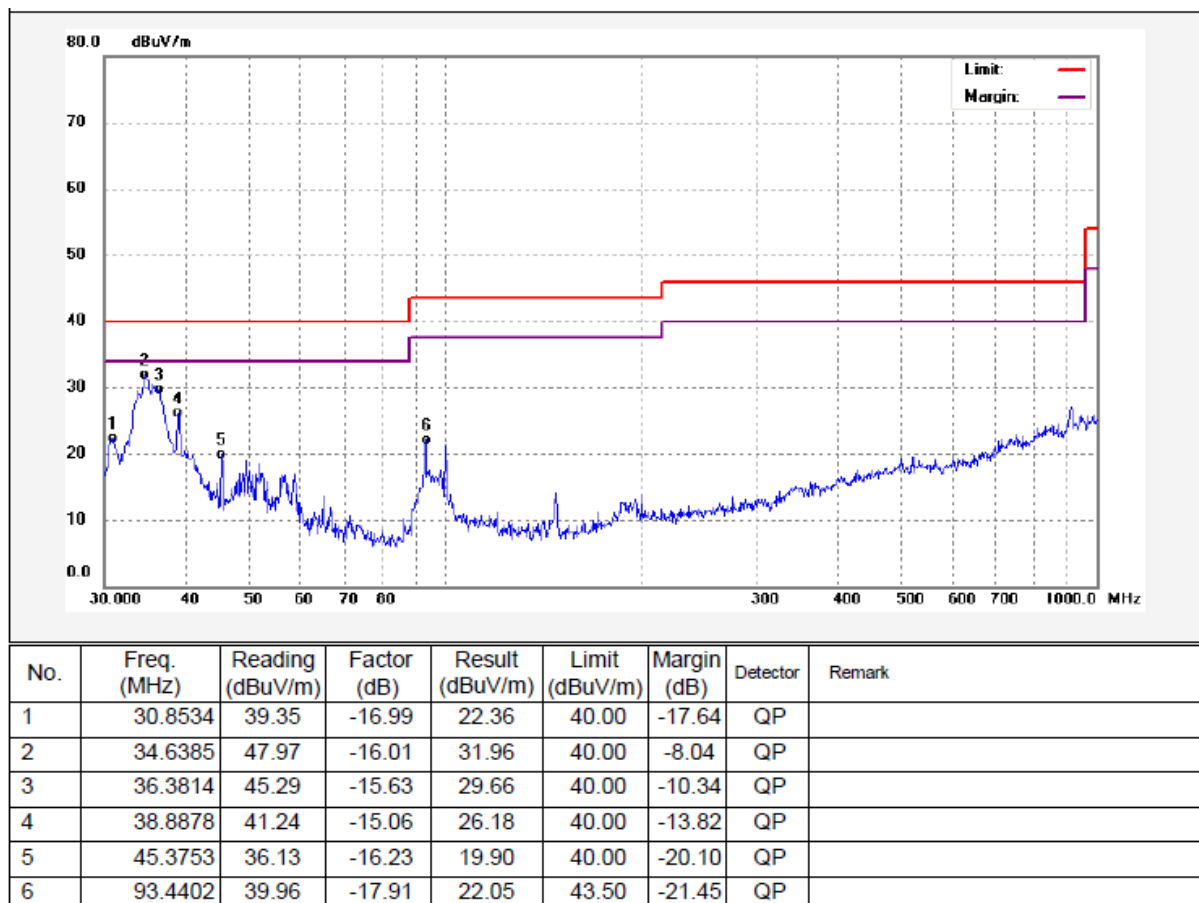


### 6.2.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Quasi-peak measurements were performed if peak emissions were within 6dB of the Quasi-peak limit line.

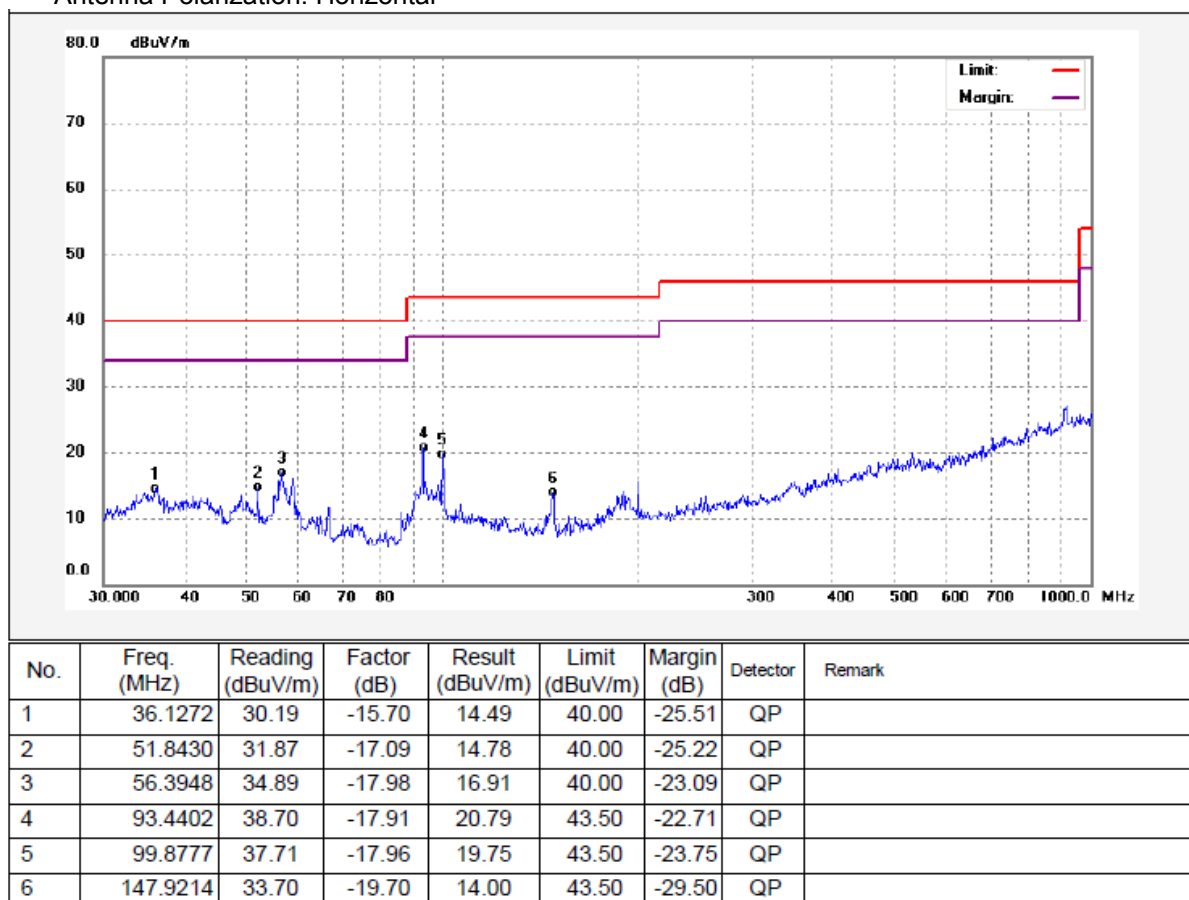
### 6.2.4 Radiated Emission Test Data, 30MHz to 1000MHz

Antenna Polarization: Vertical



Factor= antenna factor + cable loss - preamplifier factor

Antenna Polarization: Horizontal



Factor= antenna factor + cable loss - preamplifier factor

### 6.3 Radiation Emission, Above 1000MHz

Test Requirement ..... : FCC PART 15, SUBPART B  
 Test Method ..... : ANSI C63.4 2009  
 Test Result ..... : Pass  
 Frequency Range ..... : 1GHz~18GHz  
 Class. .... : Class B  
 Limit. .... :

| Frequency Range (MHz) | Distance (Meter) | Average Limit dB(uV/m) | Peak Limit (dBUV/m) |
|-----------------------|------------------|------------------------|---------------------|
| Above 1GHz            | 3                | 54                     | 74                  |

#### 6.3.1 E.U.T. Operation

Operating Environment:

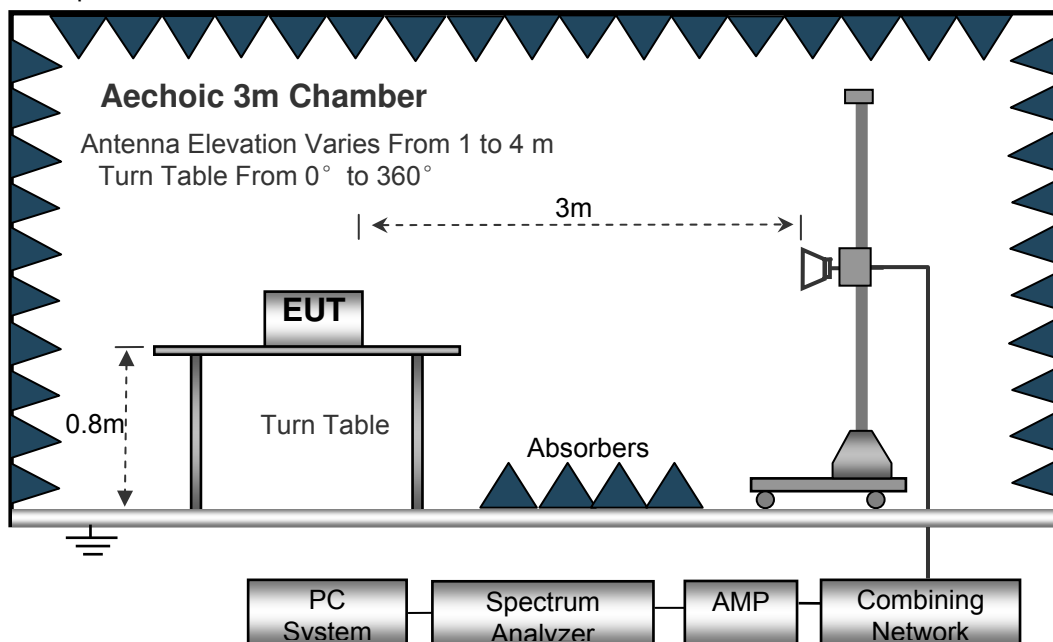
Temperature ..... : 22.4°C  
 Humidity ..... : 52.3%RH  
 Atmospheric Pressure ..... : 101.3kPa

EUT Operation:

Input Voltage ..... : DC 5V by Adapter Input AC 120V/60Hz  
 Operating Mode ..... : Data transmitting+adapter+earphone mode  
 Remark ..... : The worse case(Data transmitting+adapter+earphone mode) is under the condition of AC 120V/60Hz adapter input and the data is shown as follow.

#### 6.3.2 Block Diagram of 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.

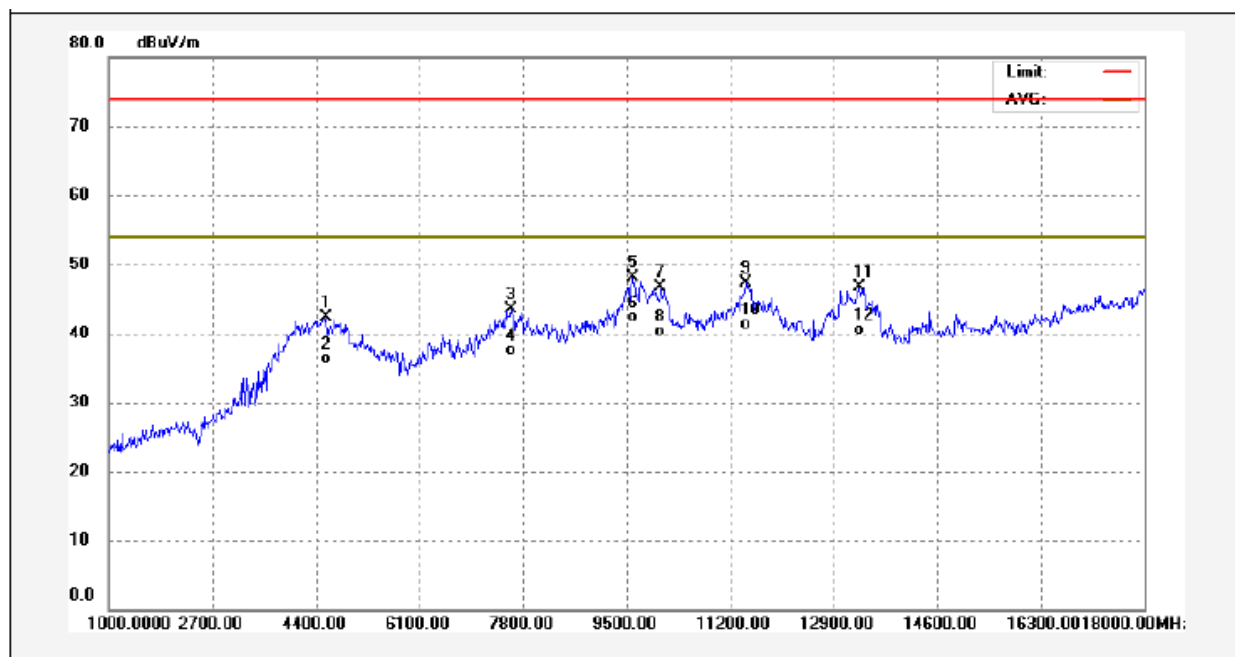


### 6.3.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Average measurements were performed if peak emissions were within 6dB of the average limit line

### 6.3.4 Radiated Emission Test Data, Above 1000MHz

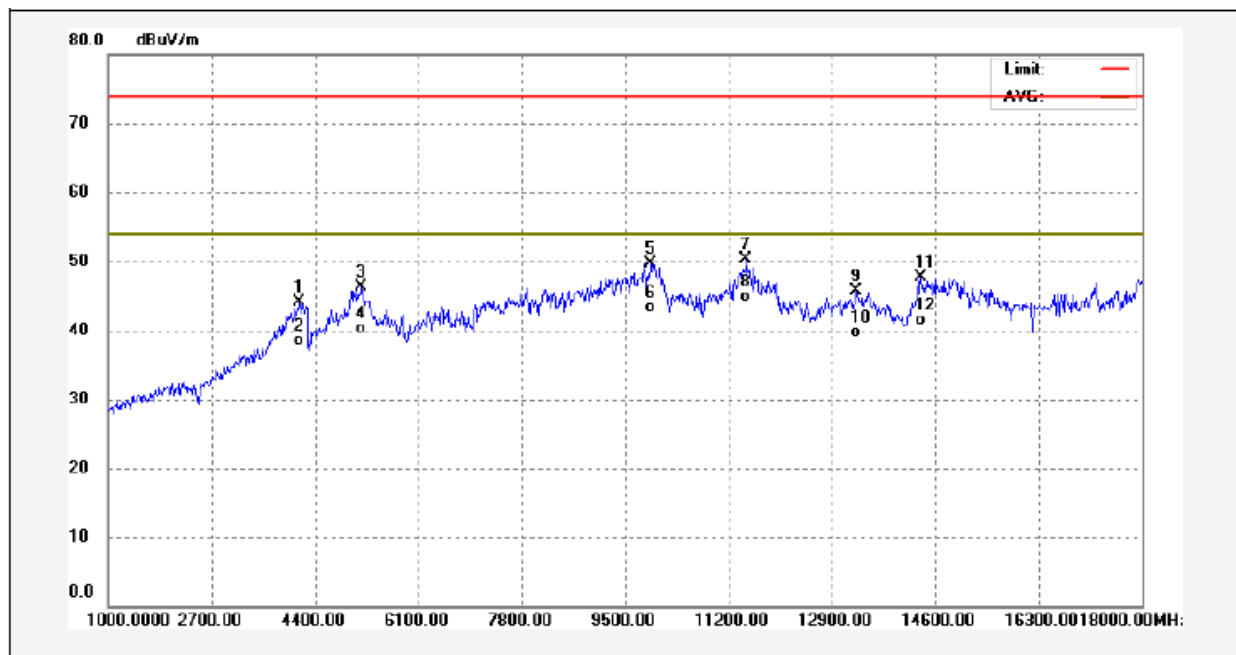
Antenna Polarization: Vertical



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|--------|
| 1   | 4570.000    | 45.08            | -2.73       | 42.35           | 74.00          | -31.65      | peak     |        |
| 2   | 4570.000    | 39.05            | -2.73       | 36.32           | 54.00          | -17.68      | AVG      |        |
| 3   | 7596.000    | 40.14            | 3.43        | 43.57           | 74.00          | -30.43      | peak     |        |
| 4   | 7596.000    | 34.09            | 3.43        | 37.52           | 54.00          | -16.48      | AVG      |        |
| 5   | 9602.000    | 43.75            | 4.37        | 48.12           | 74.00          | -25.88      | peak     |        |
| 6   | 9602.000    | 37.99            | 4.37        | 42.36           | 54.00          | -11.64      | AVG      |        |
| 7   | 10061.000   | 40.05            | 6.61        | 46.66           | 74.00          | -27.34      | peak     |        |
| 8   | 10061.000   | 33.60            | 6.61        | 40.21           | 54.00          | -13.79      | AVG      |        |
| 9   | 11455.000   | 38.35            | 9.01        | 47.36           | 74.00          | -26.64      | peak     |        |
| 10  | 11455.000   | 32.22            | 9.01        | 41.23           | 54.00          | -12.77      | AVG      |        |
| 11  | 13325.000   | 40.06            | 6.68        | 46.74           | 74.00          | -27.26      | peak     |        |
| 12  | 13325.000   | 33.89            | 6.68        | 40.57           | 54.00          | -13.43      | AVG      |        |

Factor= antenna factor + cable loss - preamplifier factor

Antenna Polarization: Horizontal



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|--------|
| 1   | 4145.000    | 49.38            | -5.25       | 44.13           | 74.00          | -29.87      | peak     |        |
| 2   | 4145.000    | 43.77            | -5.25       | 38.52           | 54.00          | -15.48      | AVG      |        |
| 3   | 5165.000    | 47.01            | -0.74       | 46.27           | 74.00          | -27.73      | peak     |        |
| 4   | 5165.000    | 41.10            | -0.74       | 40.36           | 54.00          | -13.64      | AVG      |        |
| 5   | 9925.000    | 43.31            | 6.31        | 49.62           | 74.00          | -24.38      | peak     |        |
| 6   | 9925.000    | 37.01            | 6.31        | 43.32           | 54.00          | -10.68      | AVG      |        |
| 7   | 11489.000   | 40.99            | 9.23        | 50.22           | 74.00          | -23.78      | peak     |        |
| 8   | 11489.000   | 35.66            | 9.23        | 44.89           | 54.00          | -9.11       | AVG      |        |
| 9   | 13291.000   | 39.02            | 6.64        | 45.66           | 74.00          | -28.34      | peak     |        |
| 10  | 13291.000   | 33.04            | 6.64        | 39.68           | 54.00          | -14.32      | AVG      |        |
| 11  | 14362.000   | 39.58            | 8.20        | 47.78           | 74.00          | -26.22      | peak     |        |
| 12  | 14362.000   | 33.37            | 8.20        | 41.57           | 54.00          | -12.43      | AVG      |        |

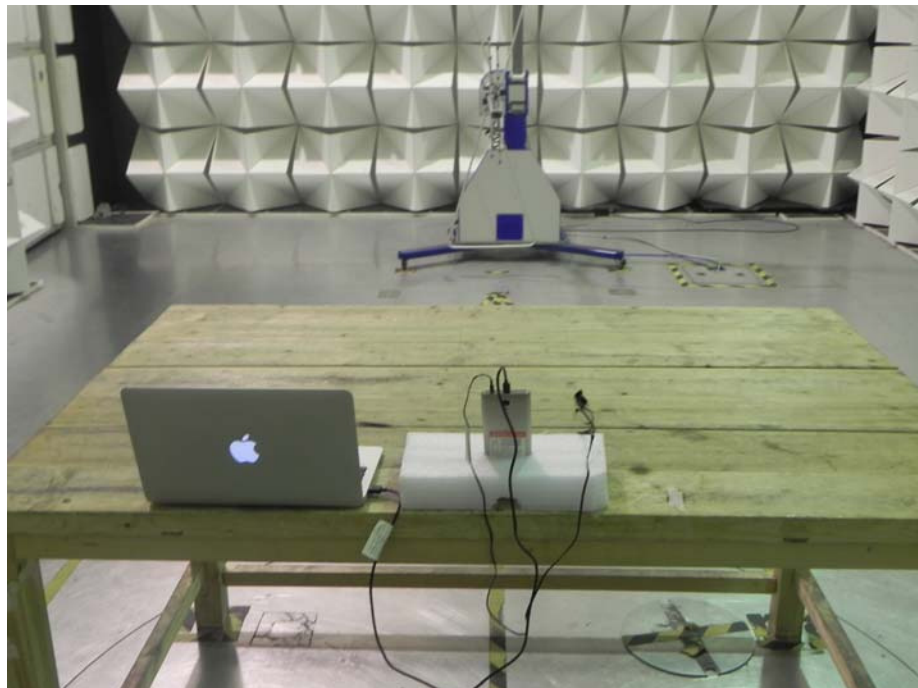
Factor= antenna factor + cable loss - preamplifier factor

## 7 Photographs – Test Setup model - iris 758

### 7.1 Photograph –Power Line Conducted Emission Test Setup at Test Site 1#



### 7.2 Photograph – Radiated Emission Test Setup for 30~1000MHz at Test Site 2#



### 7.3 Photograph – Radiated Emission Test Setup for Above 1GHz at Test Site 1#



=====End of Report=====