

# TEST REPORT

Reference No..... : WTS17S0579085E  
FCC ID ..... : 2AB6FARKHOLE  
Applicant..... : ALTECZA S.A.S  
Address..... : Calle 13 # 15- 61 Piso 3 oficina 10 bogota Colombia  
Manufacturer ..... : Shenzhen Leed Electronic Co.,LTD  
Address..... : RM 509 Building A3 Navigation City Innovation Pioneer Park,  
Hangcheng RD Xixiang Street, Baoan District, Shenzhen China  
Product Name..... : GSM Mobile Phone  
Model No..... : HOLE  
Brand..... : ARK  
Standards ..... : FCC PART15 SUBPART B: 2016  
Date of Receipt sample .... : May 12, 2017  
Date of Test ..... : May 13 ~ Jul. 04, 2017  
Date of Issue..... : Jul. 05, 2017  
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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## 2 Laboratories Introduction

**Waltek Services Test Group Ltd** is a professional third-party testing and certification organization with multi-year product testing and certification experience, established strictly in accordance with ISO/IEC 17025 requirements, and accredited by CNAS (China National Accreditation Service for Conformity Assessment) AQSIC, CMA and IECEE for CBTL. Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC(The Federal Communications Commission), CPSC(Consumer Product Safety Commission), CEC(California energy efficiency), IC(Industry Canada) and ELI(Efficient Lighting Initiative). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as UL, Intertek(ETL-SEMKO), CSA, TÜV Rheinland, TÜV SÜD, etc.



**Waltek Services Test Group Ltd.** is one of the largest and the most comprehensive third party testing organizations in China, our headquarter located in Shenzhen and have branches in Foshan, Dongguan, Zhongshan, Suzhou, Ningbo and Hong Kong. Our test capability covered four large fields: safety test. ElectroMagnetic Compatibility(EMC), reliability and energy performance, Chemical test. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

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#### 4 Revision History

| Test report No.    | Date of Receipt sample | Date of Test              | Date of Issue | Purpose  | Comment | Approved |
|--------------------|------------------------|---------------------------|---------------|----------|---------|----------|
| WTS17S0579085<br>E | May 12,2017            | May 13 ~ Jul.<br>04, 2017 | Jul. 05, 2017 | original | -       | Valid    |

## 5 General Information

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

|                                       |                                         |
|---------------------------------------|-----------------------------------------|
| Product Name:                         | GSM Mobile Phone                        |
| Model No.:                            | HOLE                                    |
| Model Description:                    | N/A                                     |
| GSM Band(s):                          | GSM 850/900/1800/1900MHz                |
| GPRS Class:                           | 12                                      |
| WCDMA Band(s):                        | N/A                                     |
| Wi-Fi Specification:                  | N/A                                     |
| Bluetooth Version:                    | Bluetooth v2.1+EDR                      |
| GPS:                                  | N/A                                     |
| Hardware Version:                     | V1.2                                    |
| Software Version:                     | MOCOR_12C.W13.04.23.BTDialer.18_Release |
| Highest frequency<br>(Exclude Radio): | 312MHz                                  |
| Storage Location:                     | Internal Storage                        |

Note: This EUT has two SIM card slots, and use same one RF module. We found that RF parameters are the same, when we insert the card 1 and card 2. So we usually performed the test under main card slot 1.

### 5.2 Details of E.U.T.

|                 |                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------|
| Technical Data: | Battery DC 3.7V, 600mAh<br>DC 5V±0.25, 1.0A, charging from adapter<br>(Adapter Input: 100-240V~50Hz/0.15A) |
| Adapter:        | Manufacture: Shenzhen Huateng Electronics Co.,Ltd.                                                         |

### 5.3 Standards Applicable for Testing

The tests were performed according to following standards:

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

## 5.4 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 – 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.

## 5.5 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

## 5.6 Abnormalities from Standard Conditions

None.

## 6 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 | Class B | ANSI C63.4: 2014 | Pass        |
| Radiated Emission<br>30MHz to 1GHz)                | FCC PART 15,<br>SUBPART B | Class B | ANSI C63.4: 2014 | Pass        |
| Radiated Emission<br>(Above 1GHz)                  | FCC PART 15,<br>SUBPART B | Class B | ANSI C63.4: 2014 | 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

## 7 Equipment Used during Test

### 7.1 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.12,2016           | Sep.11,2017          |
| 2.                                                            | LISN                                 | R&S                  | ENV216       | 101215          | Sep.12,2016           | Sep.11,2017          |
| 3.                                                            | Cable                                | Top                  | TYPE16(3.5M) | -               | Sep.12,2016           | Sep.11,2017          |
| 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.12,2016           | Sep.11,2017          |
| 2.                                                            | LISN                                 | SCHWARZBECK          | NSLK 8128    | 8128-289        | Sep.12,2016           | Sep.11,2017          |
| 3.                                                            | Limiter                              | York                 | MTS-IMP-136  | 261115-001-0024 | Sep.12,2016           | Sep.11,2017          |
| 4.                                                            | Cable                                | LARGE                | RF300        | -               | Sep.12,2016           | Sep.11,2017          |
| 3m Semi-anechoic Chamber for Radiation Emissions Test site 1# |                                      |                      |              |                 |                       |                      |
| Item                                                          | Equipment                            | Manufacturer         | Model No.    | Serial No.      | Last Calibration Date | Calibration Due Date |
| 1                                                             | Spectrum Analyzer                    | R&S                  | FSP          | 100091          | Apr.29, 2017          | Apr.28, 2018         |
| 2                                                             | Active Loop Antenna                  | Beijing Dazhi        | ZN30900A     | -               | Apr.09,2017           | Apr.08,2018          |
| 3                                                             | Trilog Broadband Antenna             | SCHWARZBECK          | VULB9163     | 336             | Apr.09,2017           | Apr.08,2018          |
| 4                                                             | Coaxial Cable (below 1GHz)           | Top                  | TYPE16(13M)  | -               | Sep.12,2016           | Sep.11,2017          |
| 5                                                             | Broad-band Horn Antenna              | SCHWARZBECK          | BBHA 9120 D  | 667             | Apr.09,2017           | Apr.08,2018          |
| 6                                                             | Broad-band Horn Antenna              | SCHWARZBECK          | BBHA 9170    | 335             | Apr.09,2017           | Apr.08,2018          |
| 7                                                             | Broadband Preamplifier               | COMPLIANCE DIRECTION | PAP-1G18     | 2004            | Apr.13,2017           | Apr.12,2018          |
| 8                                                             | Coaxial Cable (above 1GHz)           | Top                  | 1GHz-25GHz   | EW02014-7       | Apr.13,2017           | Apr.12,2018          |
| 9                                                             | Universal Radio Communication Tester | R&S                  | CMU 200      | 112461          | Apr.13,2017           | Apr.12,2018          |
| 10                                                            | Smart Antenna                        | SCHWARZBECK          | HA08         | -               | Apr.09,2017           | Apr.08,2018          |
| 11                                                            | Signal Generator                     | R&S                  | SMR20        | 100046          | Sep.12,2016           | Sep.11,2017          |
| 12.                                                           | Universal Radio Communication Tester | R&S                  | CMW 500      | 127818          | Apr.13,2017           | Apr.12,2018          |
| 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    | Apr.13,2017           | Apr.12,2018          |
| 2    | Trilog Broadband Antenna | SCHWARZBECK                            | VULB9160  | 9160-3325 | Apr.09,2017           | Apr.08,2018          |
| 3    | Amplifier                | Compliance<br>pirection<br>systems inc | PAP-0203  | 22024     | Apr.13,2017           | Apr.12,2018          |
| 4    | Cable                    | HUBER+SUHNER                           | CBL2      | 525178    | Apr.13,2017           | Apr.12,2018          |

## 7.2 Description of Support Units

| Equipment    | Manufacturer                           | Model No. | Series No.   |
|--------------|----------------------------------------|-----------|--------------|
| MacBook Air  | APPLE                                  | A1465     | C17KTQDNF5N7 |
| Power Supply | LPS DELTA ELECTRONICS<br>UIANG CO.,LTD | ADP-45GD  | -            |

## 7.3 Measurement Uncertainty

| Test Item                                       | Frequency Range | Uncertainty         | Note |
|-------------------------------------------------|-----------------|---------------------|------|
| Conduction Emission                             | 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)  |
| Confidence interval: 95%. Confidence factor:k=2 |                 |                     |      |

## 8 Emission Test Results

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

Test Requirement ..... : FCC PART 15, SUBPART B  
 Test Method ..... : ANSI C63.4: 2014  
 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        |

#### 8.1.1 E.U.T. Operation

Operating Environment:

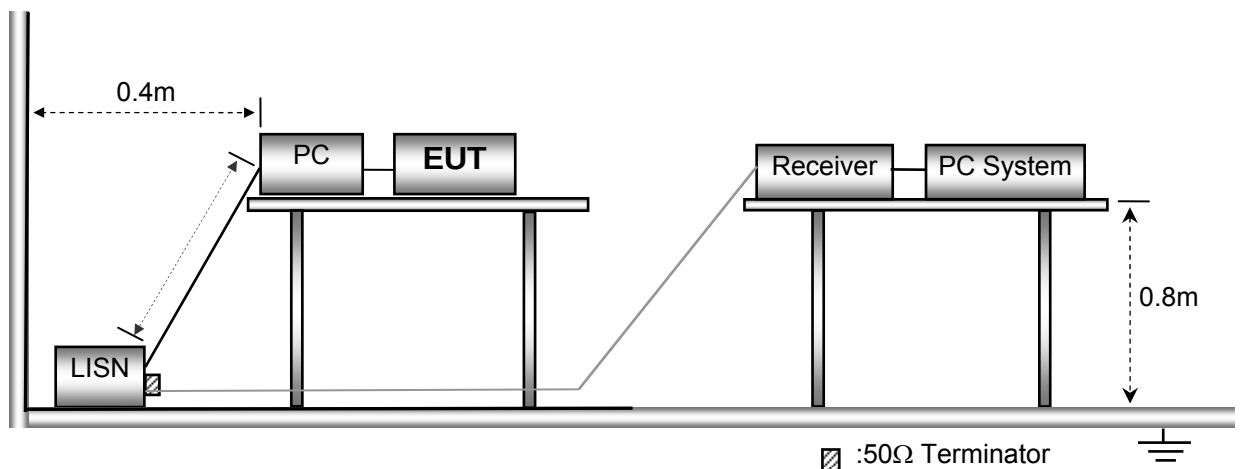
Temperature ..... : 23°C  
 Humidity ..... : 53.6%RH  
 Atmospheric Pressure ..... : 101kPa

EUT Operation:

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

#### 8.1.2 Block Diagram of Test Setup

The Mains Terminals Disturbance Voltage tests were performed in accordance with ANSI C63.4:2014.

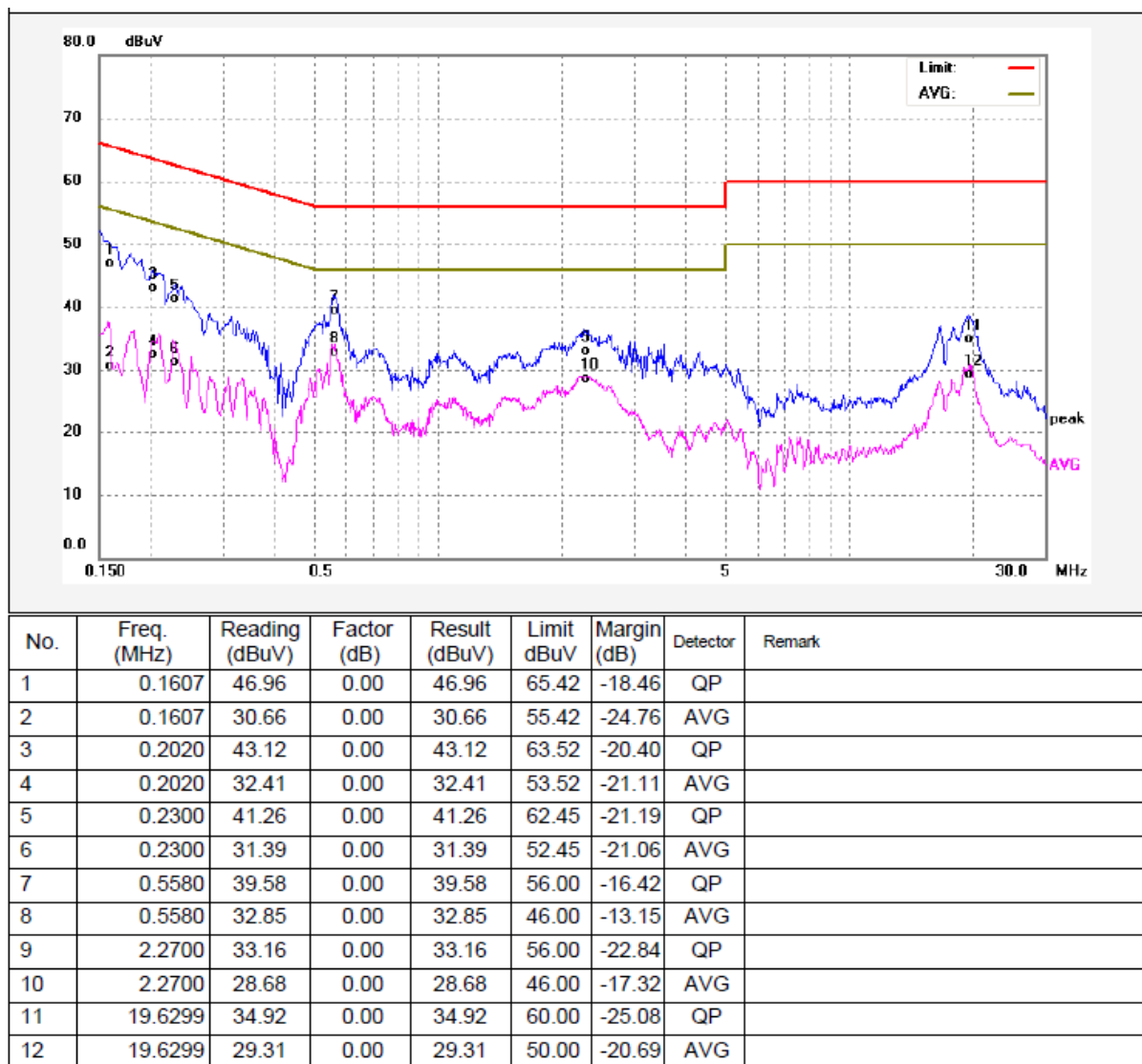


### 8.1.3 Measurement Data

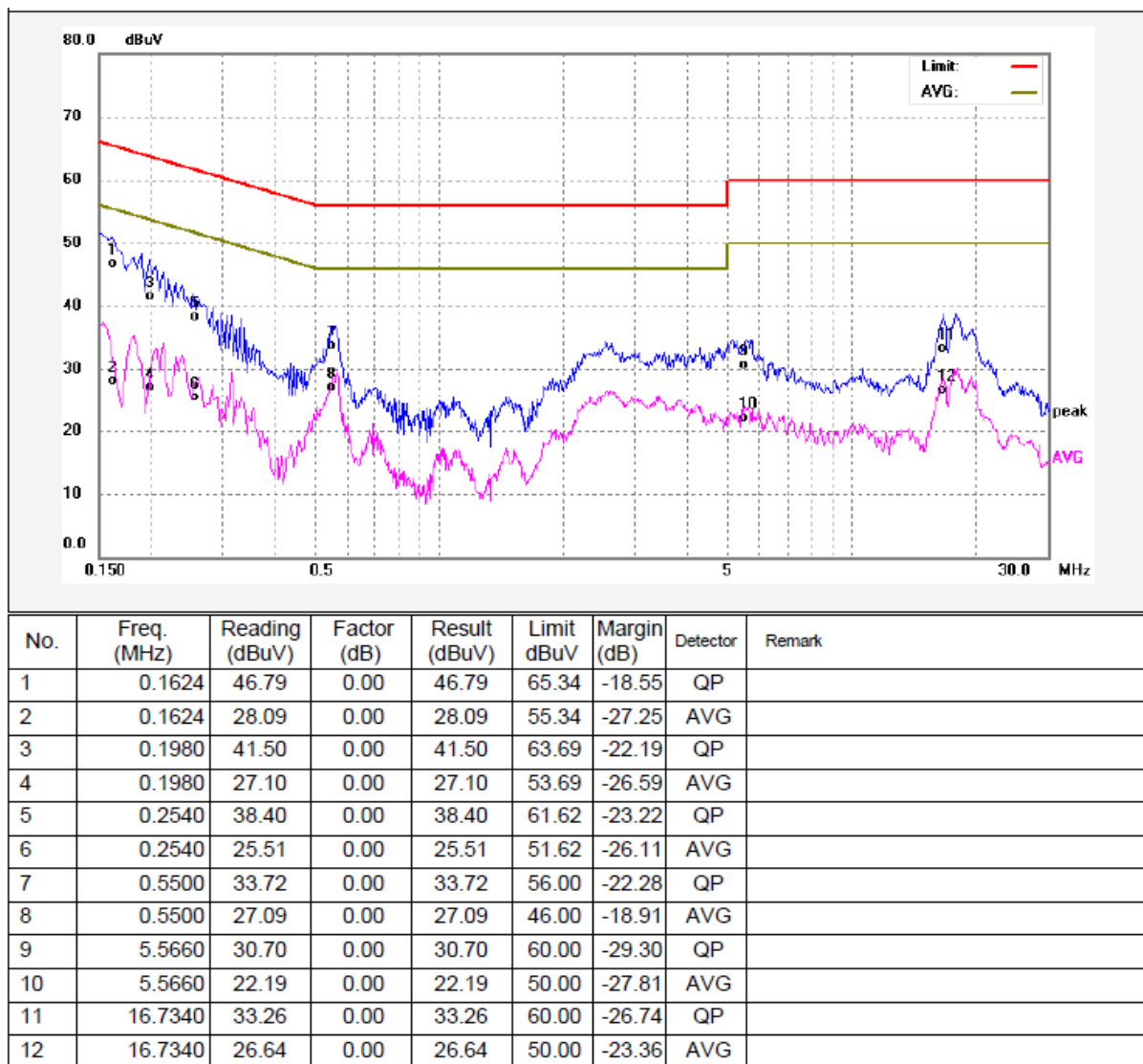
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line. According to the data in below section, the EUT complied with the FCC PART 15, SUBPART B standards.

### 8.1.4 Power Line Conducted Emission Test Data

Live Line:



Neutral Line:



## 8.2 Radiation Emission, 30MHz to 1000MHz

Test Requirement ..... : FCC PART 15, SUBPART B  
 Test Method ..... : ANSI C63.4: 2014  
 Test Result ..... : Pass  
 Frequency Range ..... : 30MHz to 1000MHz  
 Class. .... : Class B  
 Limit..... :

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

### 8.2.1 E.U.T. Operation

Operating Environment:

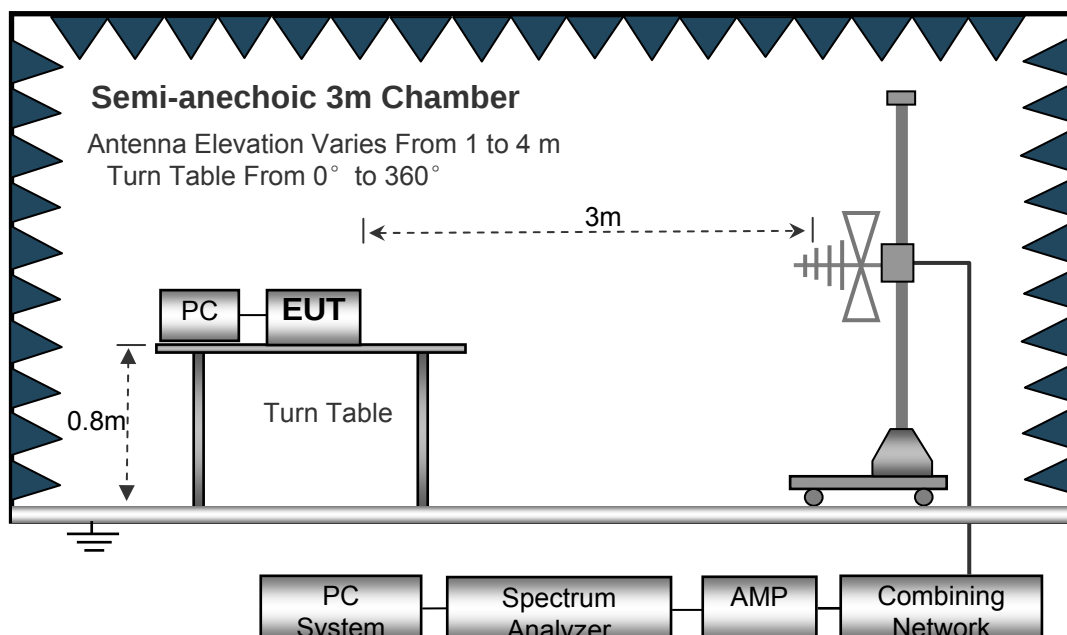
Temperature ..... : 22.5°C  
 Humidity ..... : 52.6%RH  
 Atmospheric Pressure ..... : 101.2kPa

EUT Operation:

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

### 8.2.2 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: 2014.

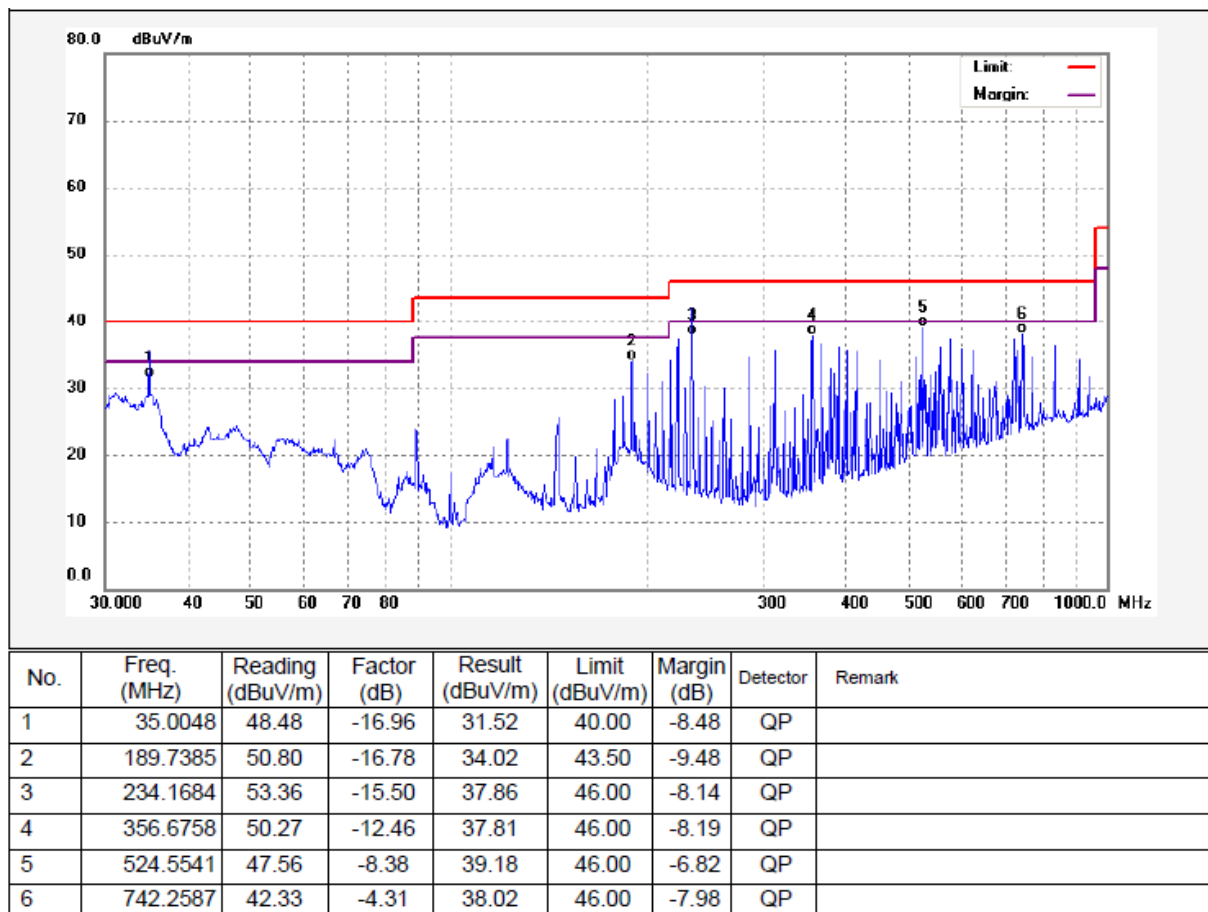


### 8.2.3 Measurement Data

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.

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

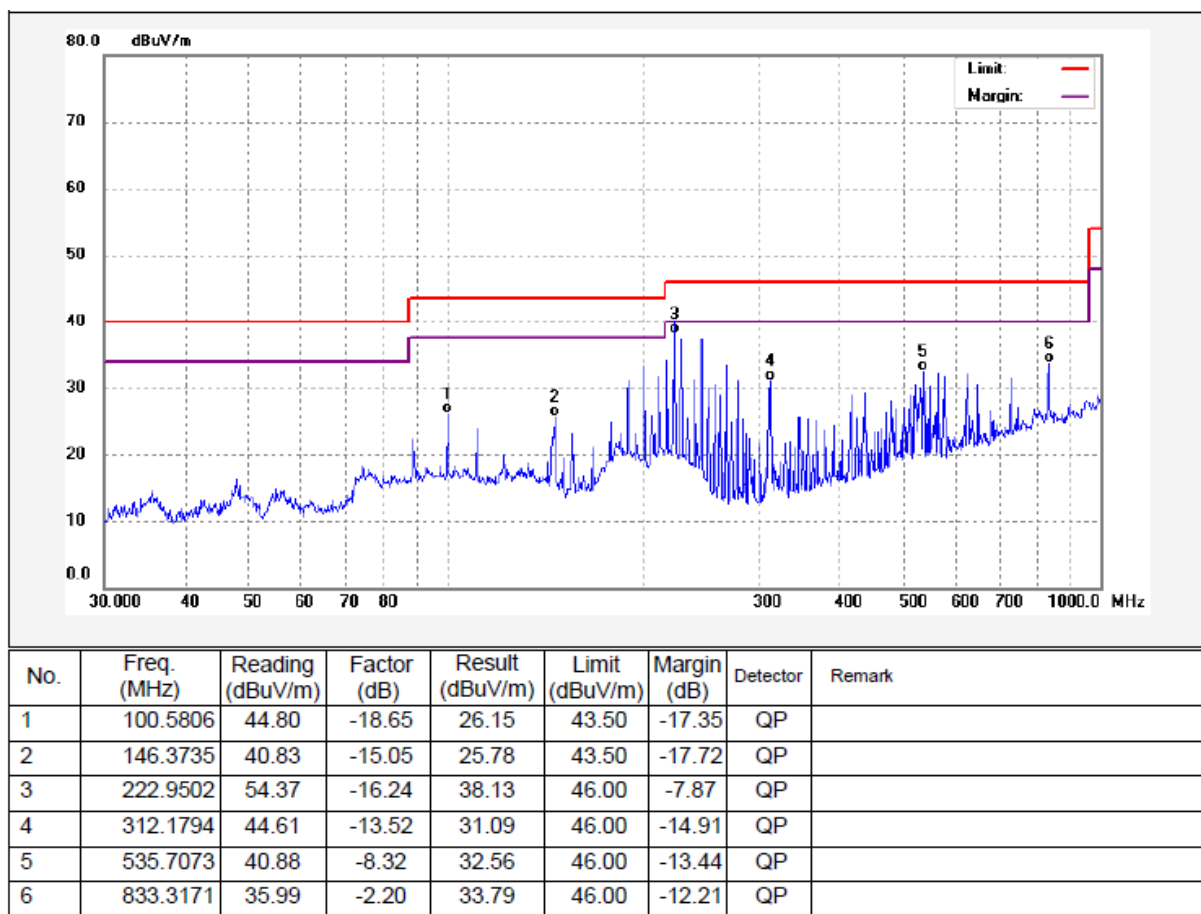
Antenna Polarization: Vertical



Factor= antenna factor + cable loss - preamplifier factor

Result = Reading + Factor

Antenna Polarization: Horizontal



Factor= antenna factor + cable loss - preamplifier factor

Result = Reading + Factor

### 8.3 Radiation Emission, Above 1000MHz

Test Requirement ..... : FCC PART 15, SUBPART B  
 Test Method ..... : ANSI C63.4: 2014  
 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                  |

#### 8.3.1 E.U.T. Operation

Operating Environment:

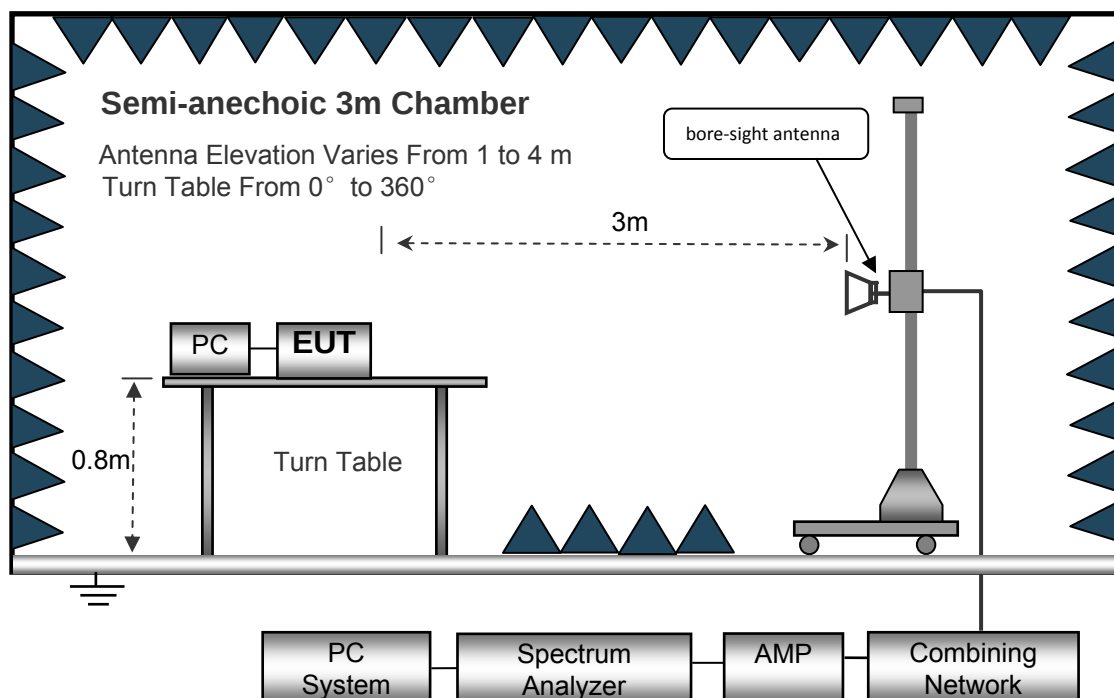
Temperature..... : 22.4°C  
 Humidity ..... : 52.3%RH  
 Atmospheric Pressure..... : 101.3kPa

EUT Operation:

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

#### 8.3.2 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 C63.4:2014.

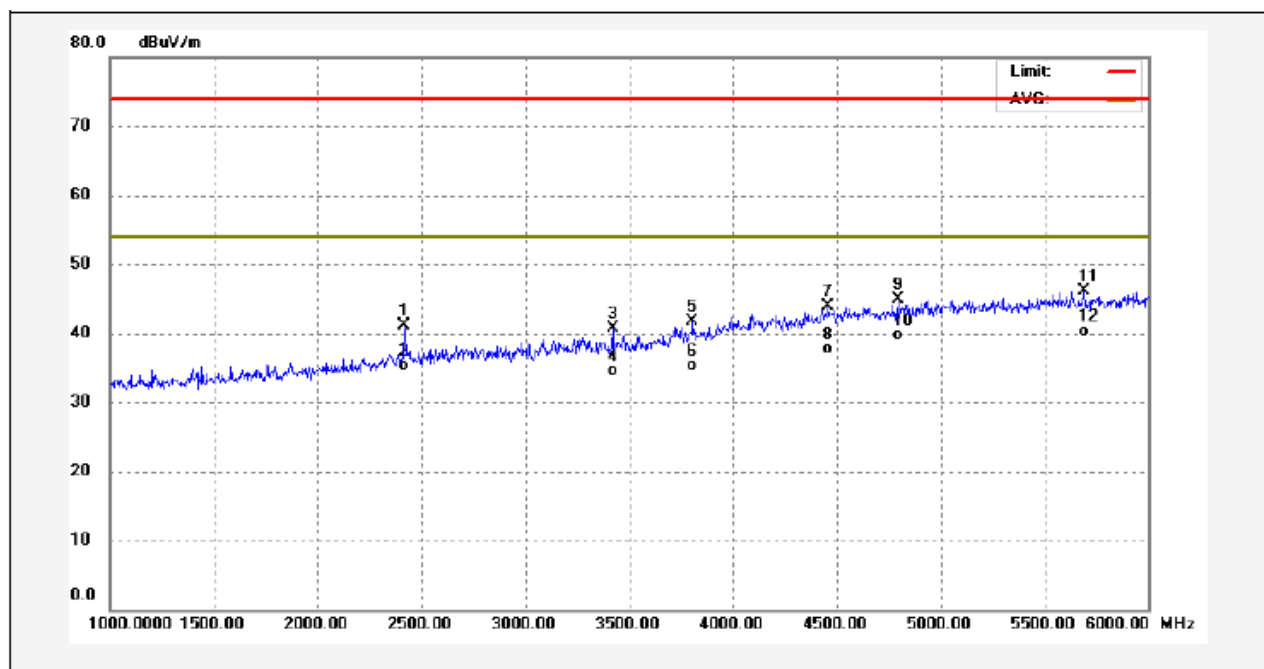


### 8.3.3 Measurement Data

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

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

Antenna Polarization: Vertical

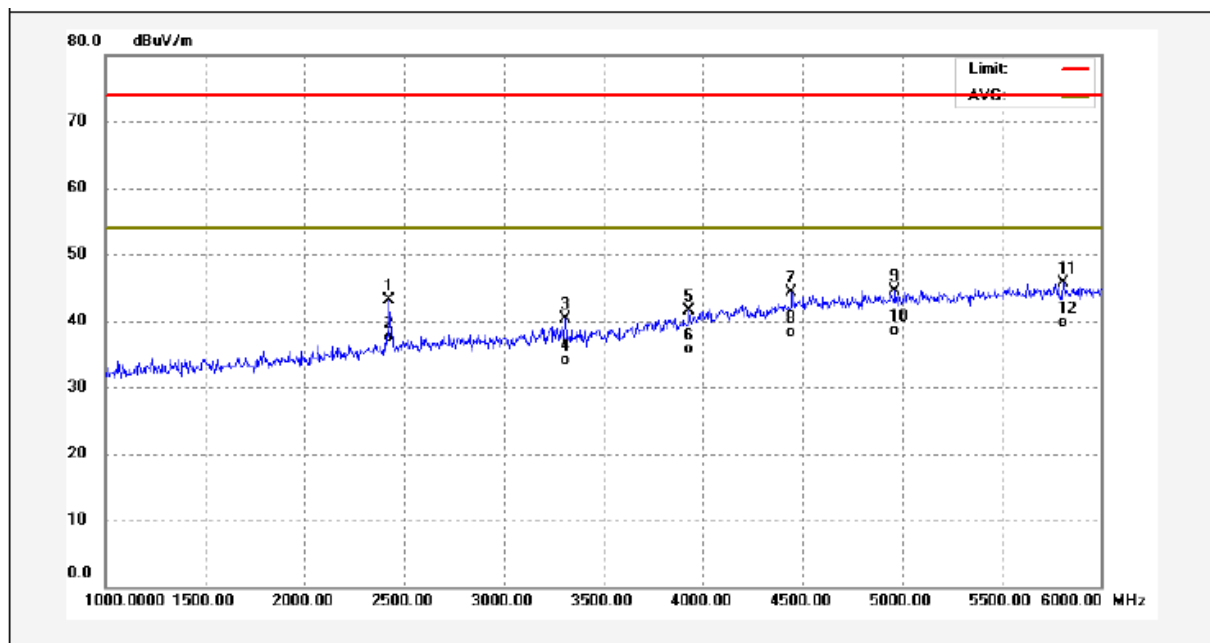


| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|--------|
| 1   | 2415.000    | 52.91            | -11.82      | 41.09           | 74.00          | -32.91      | peak     |        |
| 2   | 2415.000    | 47.08            | -11.82      | 35.26           | 54.00          | -18.74      | AVG      |        |
| 3   | 3420.000    | 50.87            | -10.07      | 40.80           | 74.00          | -33.20      | peak     |        |
| 4   | 3420.000    | 44.62            | -10.07      | 34.55           | 54.00          | -19.45      | AVG      |        |
| 5   | 3805.000    | 50.24            | -8.58       | 41.66           | 74.00          | -32.34      | peak     |        |
| 6   | 3805.000    | 43.85            | -8.58       | 35.27           | 54.00          | -18.73      | AVG      |        |
| 7   | 4455.000    | 50.13            | -6.20       | 43.93           | 74.00          | -30.07      | peak     |        |
| 8   | 4455.000    | 43.94            | -6.20       | 37.74           | 54.00          | -16.26      | AVG      |        |
| 9   | 4795.000    | 50.25            | -5.25       | 45.00           | 74.00          | -29.00      | peak     |        |
| 10  | 4795.000    | 44.91            | -5.25       | 39.66           | 54.00          | -14.34      | AVG      |        |
| 11  | 5690.000    | 49.81            | -3.66       | 46.15           | 74.00          | -27.85      | peak     |        |
| 12  | 5690.000    | 43.95            | -3.66       | 40.29           | 54.00          | -13.71      | AVG      |        |

Factor= antenna factor + cable loss - preamplifier factor

Result = Reading + Factor

Antenna Polarization: Horizontal



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|--------|
| 1   | 2425.000    | 54.95            | -11.79      | 43.16           | 74.00          | -30.84      | peak     |        |
| 2   | 2425.000    | 49.31            | -11.79      | 37.52           | 54.00          | -16.48      | AVG      |        |
| 3   | 3310.000    | 50.45            | -10.23      | 40.22           | 74.00          | -33.78      | peak     |        |
| 4   | 3310.000    | 44.41            | -10.23      | 34.18           | 54.00          | -19.82      | AVG      |        |
| 5   | 3930.000    | 49.50            | -8.01       | 41.49           | 74.00          | -32.51      | peak     |        |
| 6   | 3930.000    | 43.72            | -8.01       | 35.71           | 54.00          | -18.29      | AVG      |        |
| 7   | 4445.000    | 50.61            | -6.22       | 44.39           | 74.00          | -29.61      | peak     |        |
| 8   | 4445.000    | 44.47            | -6.22       | 38.25           | 54.00          | -15.75      | AVG      |        |
| 9   | 4965.000    | 49.23            | -4.78       | 44.45           | 74.00          | -29.55      | peak     |        |
| 10  | 4965.000    | 43.35            | -4.78       | 38.57           | 54.00          | -15.43      | AVG      |        |
| 11  | 5810.000    | 49.14            | -3.46       | 45.68           | 74.00          | -28.32      | peak     |        |
| 12  | 5810.000    | 43.12            | -3.46       | 39.66           | 54.00          | -14.34      | AVG      |        |

Factor= antenna factor + cable loss - preamplifier factor

Result = Reading + Factor

## 9 Photographs – Test Setup FCC ID 2AB6FARKHOLE

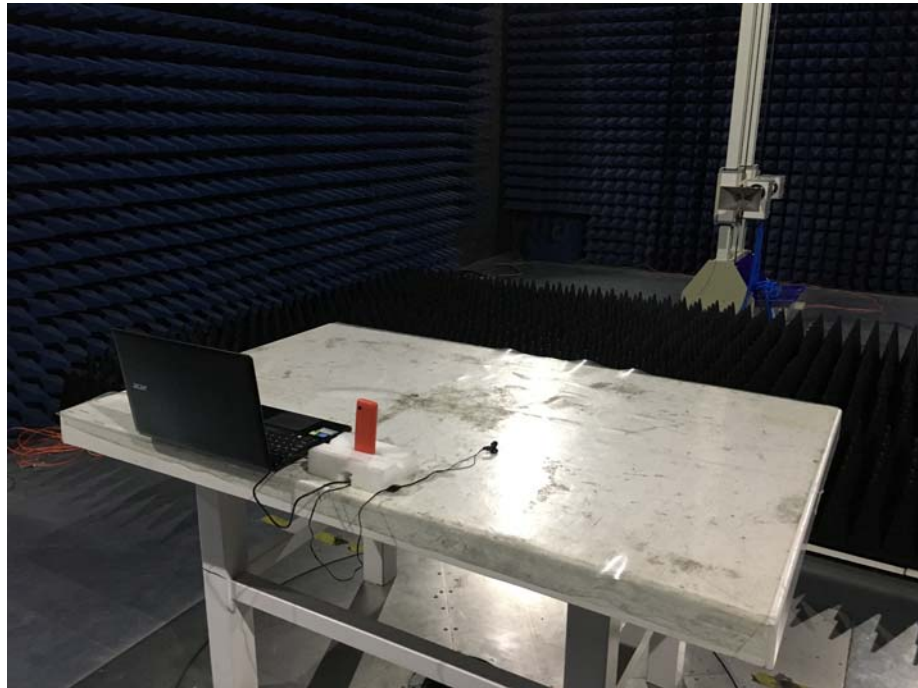
### 9.1 Photograph –Power Line Conducted Emission Test Setup



### 9.2 Photograph – Radiated Emission Test Setup for 30~1000MHz



### 9.3 Photograph – Radiated Emission Test Setup for Above 1GHz



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