# TEST REPORT

| | | |
|---|---|---|
| **Reference No.** | : | WTS16S0961089E V1 |
| **FCC ID** | : | 2ABV4-A600 |
| **Applicant** | : | Southern Telecom Inc. |
| **Address** | : | 14-C 53rd Street Brooklyn, NY 11232 United states |
| **Manufacturer** | : | Southern Telecom Inc. |
| **Address** | : | 14-C 53rd Street Brooklyn, NY 11232 United states |
| **Product Name** | : | Mobile Phone |
| **Model No.** | : | A600, UW6009K |
| **Brand** | : | Polaroid |
| **Standards** | : | FCC PART15 SUBPART B: 2015 |
| **Date of Receipt sample** | : | Sep. 20, 2016 |
| **Date of Test** | : | Sep. 21 – Oct. 12, 2016 |
| **Date of Issue** | : | Nov., 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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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 (150kHz to 30MHz) | FCC PART 15, SUBPART B: 2015 | Class B | ANSI C63.4: 2014 | Pass |
| Radiated Emission 30MHz to 1GHz) | FCC PART 15, SUBPART B: 2015 | Class B | ANSI C63.4: 2014 | Pass |
| Radiated Emission (Above 1GHz) | FCC PART 15, SUBPART B: 2015 | 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 |

## 2 Contents

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## 3 Report Revision History

| Report No. | Report Version | Description | Issue Date |
|---|---|---|---|
| WTS16S0961089E | NONE | Original | Oct. 13, 2016 |
| WTS16S0961089E V1 | V1 | Version 1 | Nov. 04, 2016 |

# 4 General Information

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

| | |
|---|---|
| Product Name | : Mobile Phone |
| Model No. | : A600, UW6009K |
| Model Description | : Only the model names are different. |
| GSM Band(s) | : GSM 850/900/1800/1900MHz |
| GPRS/EGPRS Class | : 12 |
| WCDMA Band(s) | : FDD Band II/IV/V |
| LTE Bnad(s) | :N/A |
| 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 | : AL_T56_MB_V12 |
| Software Version | : full_t56_x60_uw6009k_user_201609131338 |
| Storage Location | : Internal Storage |

## 4.2 Details of E.U.T.

| | |
|---|---|
| Technical Data | : Battery DC 3.7V, 2500mAh |
| Adapter | DC 5V, 1.0A, charging from adapter<br>(Adapter Input: 100-240V~50/60Hz 0.3A)<br>: Manufacture: Shenzhen BOYE ELECTRONIC TECHNOLOGY Co.,LTD.<br>Model No.: BY120501000 |

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

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | Cable | HUBER+SUHNER | CBL2 | 525178 | Apr.19,2016 | Apr.18,2017 |
| **RF Conducted Testing** | | | | | | |
| **Item** | **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Calibration Date** | **Calibration Due Date** |
| 1. | EMC Analyzer (9k~26.5GHz) | Agilent | E7405A | MY45114943 | Apr.19,2016 | Apr.18,2017 |
| 2. | Spectrum Analyzer (9k-6GHz) | R&S | FSL6 | 100959 | Apr.19,2016 | Apr.18,2017 |
| 3. | Signal Analyzer (9k~26.5GHz) | Agilent | N9010A | MY50520207 | Apr.19,2016 | Apr.18,2017 |

## 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 | ±3.64dB | (1) |
| Radiation Emission | 30MHz~1000MHz | ±5.03dB | (1) |
| | 1GHz~18GHz | ±5.47dB | (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 2014

Test Result ..... : Pass

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

Class ..... : Class B

Limit ..... :

| Frequency (MHz) | Limit (dBμV) | |
|---|---|---|
| | Quasi-peak | Avera e |
| 0.15 to 0.5 | 66 to 56* | 56 to 46* |
| 0.5 to 5 | 56 | 60 |
| 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:

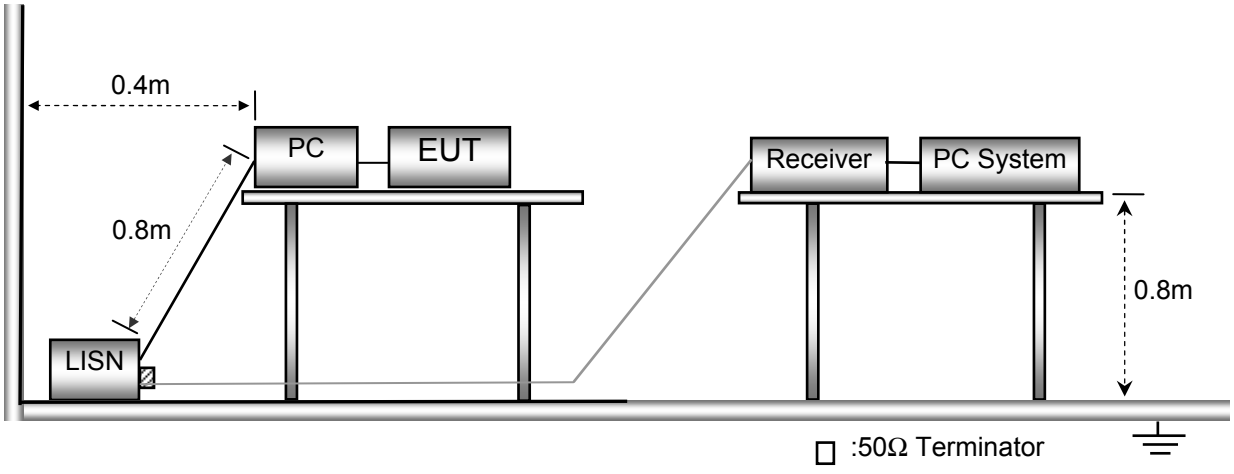
Input Voltage ..... : DC 5V by Adapter Input AC 120V/60Hz

Operating Mode ..... : Data transmitting mode, Earphone mode, Adapter mode

Remark ..... : The worse case Data transmitting mode is under the condition of AC 120V/60Hz adapter input for PC 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.

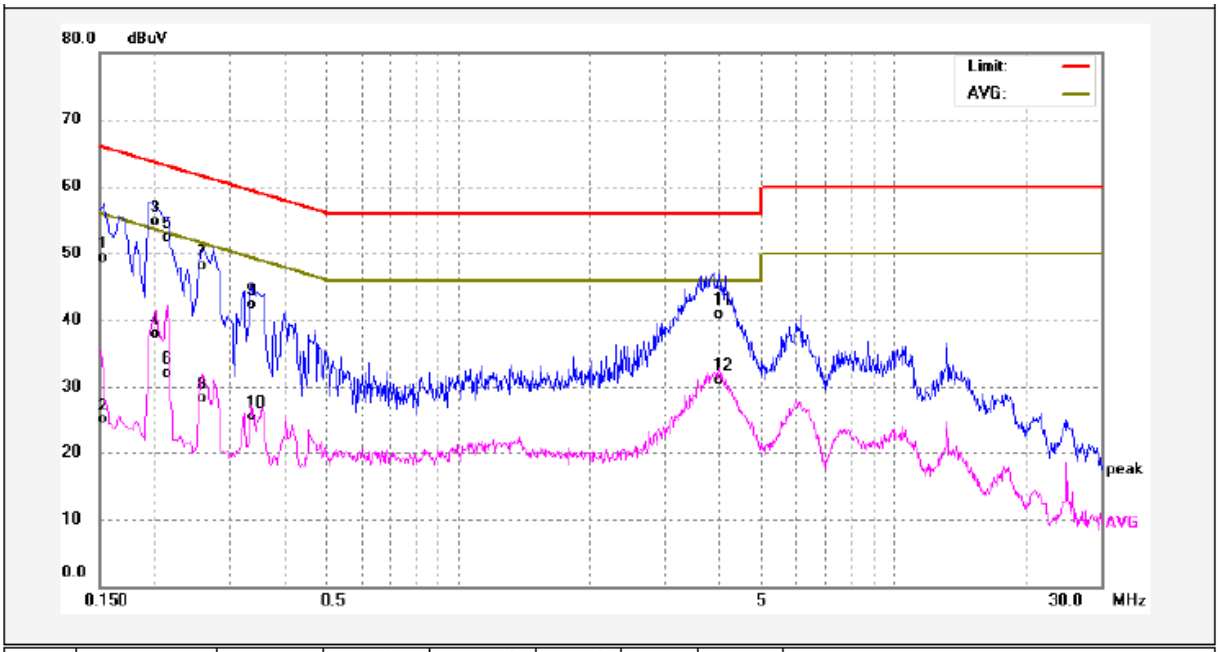


### 6.1.3 Measurement Data

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 below section 6.1.4, the EUT complied with the FCC PART 15, SUBPART B standards.

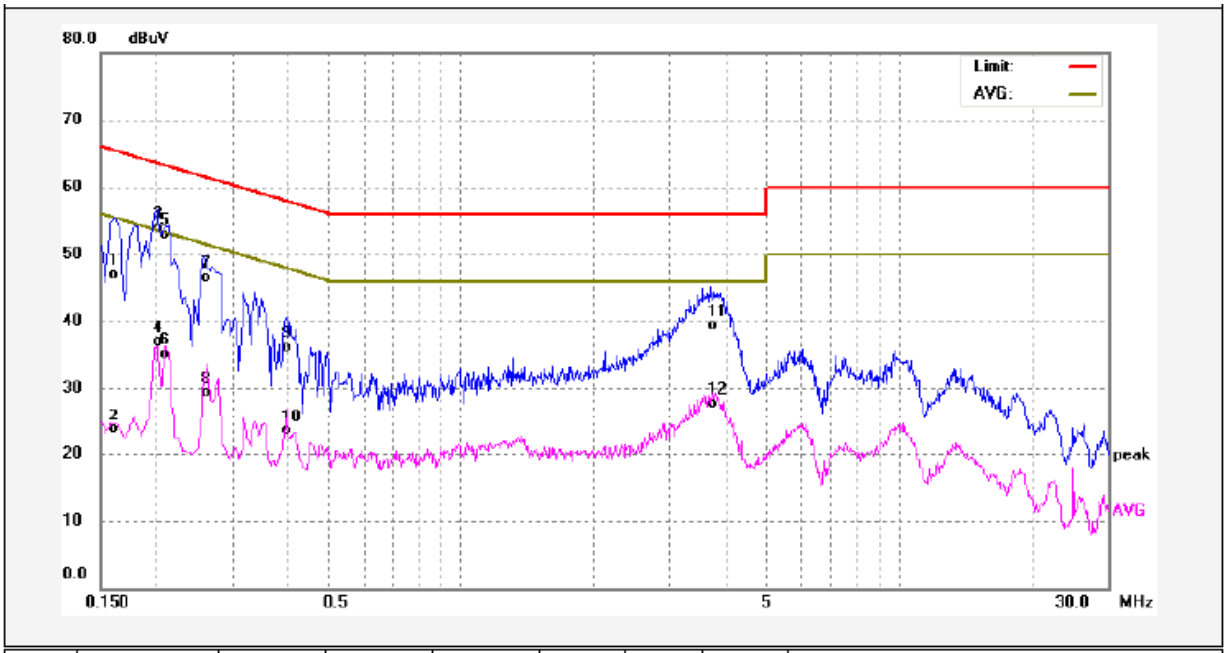
### 6.1.4 Power Line Conducted Emission Test Data

Live Line:




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1539 | 38.95 | 10.29 | 49.24 | 65.78 | -16.54 | QP | |
| 2 | 0.1539 | 14.77 | 10.29 | 25.06 | 55.78 | -30.72 | AVG | |
| 3 | 0.2020 | 44.53 | 10.26 | 54.79 | 63.52 | -8.73 | QP | |
| 4 | 0.2020 | 27.59 | 10.26 | 37.85 | 53.52 | -15.67 | AVG | |
| 5 | 0.2140 | 42.08 | 10.26 | 52.34 | 63.04 | -10.70 | QP | |
| 6 | 0.2140 | 21.93 | 10.26 | 32.19 | 53.04 | -20.85 | AVG | |
| 7 | 0.2580 | 37.81 | 10.26 | 48.07 | 61.49 | -13.42 | QP | |
| 8 | 0.2580 | 18.08 | 10.26 | 28.34 | 51.49 | -23.15 | AVG | |
| 9 | 0.3339 | 31.92 | 10.29 | 42.21 | 59.35 | -17.14 | QP | |
| 10 | 0.3339 | 15.28 | 10.29 | 25.57 | 49.35 | -23.78 | AVG | |
| 11 | 3.9820 | 30.36 | 10.51 | 40.87 | 56.00 | -15.13 | QP | |
| 12 | 3.9820 | 20.57 | 10.51 | 31.08 | 46.00 | -14.92 | AVG | |

Neutral Line:




| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.1620 | 36.59 | 10.28 | 46.87 | 65.36 | -18.49 | QP | |
| 2 | 0.1620 | 13.34 | 10.28 | 23.62 | 55.36 | -31.74 | AVG | |
| 3 | 0.2020 | 43.65 | 10.26 | 53.91 | 63.52 | -9.61 | QP | |
| 4 | 0.2020 | 26.57 | 10.26 | 36.83 | 53.52 | -16.69 | AVG | |
| 5 | 0.2100 | 42.70 | 10.26 | 52.96 | 63.20 | -10.24 | QP | |
| 6 | 0.2100 | 24.78 | 10.26 | 35.04 | 53.20 | -18.16 | AVG | |
| 7 | 0.2620 | 36.25 | 10.26 | 46.51 | 61.36 | -14.85 | QP | |
| 8 | 0.2620 | 19.08 | 10.26 | 29.34 | 51.36 | -22.02 | AVG | |
| 9 | 0.3980 | 25.87 | 10.27 | 36.14 | 57.89 | -21.75 | QP | |
| 10 | 0.3980 | 13.24 | 10.27 | 23.51 | 47.89 | -24.38 | AVG | |
| 11 | 3.7460 | 28.79 | 10.51 | 39.30 | 56.00 | -16.70 | QP | |
| 12 | 3.7460 | 17.26 | 10.51 | 27.77 | 46.00 | -18.23 | AVG | |

## 6.2 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 (dBμV/m) |
|---|---|---|
| | | Quas -peak |
| 30 to 88 | 3 | 40 |
| 88 to 216 | 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:

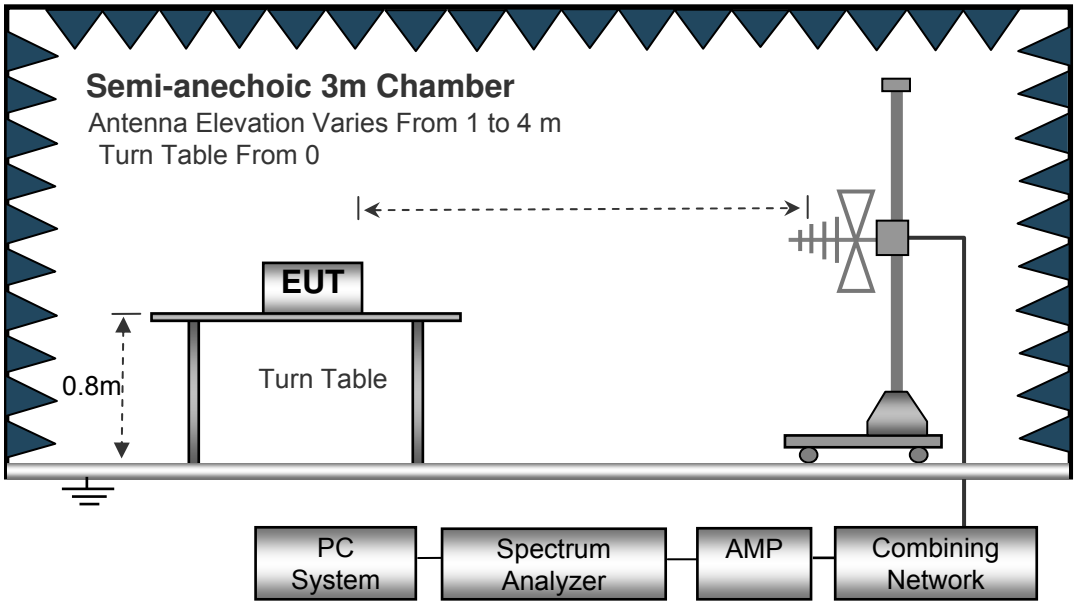
Input Voltage..... : DC 5V by Adapter Input AC 120V/60Hz

Operating Mode ..... : Data transmitting 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 for PC 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.

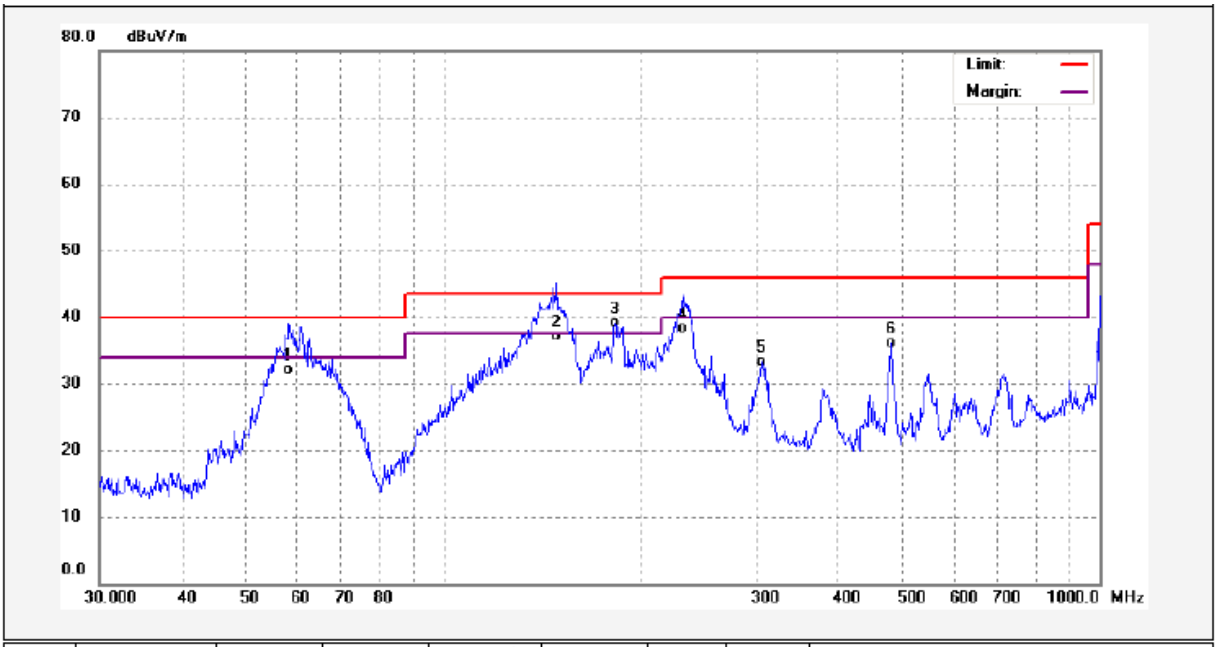


### 6.2.3 Measurement Data

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




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 58.2030 | 47.10 | -14.97 | 32.13 | 40.00 | -7.87 | QP | |
| 2 | 148.9625 | 49.92 | -12.82 | 37.10 | 43.50 | -6.40 | QP | |
| 3 | 182.5592 | 51.92 | -12.91 | 39.01 | 43.50 | -4.49 | QP | |
| 4 | 231.7179 | 53.01 | -14.61 | 38.40 | 46.00 | -7.60 | QP | |
| 5 | 305.6799 | 47.70 | -14.40 | 33.30 | 46.00 | -12.70 | QP | |
| 6 | 480.5276 | 45.82 | -9.72 | 36.10 | 46.00 | -9.90 | QP | |

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 | 59.2325 | 51.27 | -18.87 | 32.40 | 40.00 | -7.60 | QP | |
| 2 | 130.8369 | 51.37 | -13.84 | 37.53 | 43.50 | -5.97 | QP | |
| 3 | 140.3421 | 55.98 | -18.24 | 37.74 | 43.50 | -5.76 | QP | |
| 4 | 146.3735 | 56.18 | -18.39 | 37.79 | 43.50 | -5.71 | QP | |
| 5 | 150.5378 | 57.89 | -18.99 | 38.90 | 43.50 | -4.60 | QP | |
| 6 | 237.4760 | 57.65 | -16.35 | 41.30 | 46.00 | -4.70 | QP | |

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 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 |

### 6.3.1 E.U.T. Operation

Operating Environment:

Temperature..... : 22.4°C

Humidity ..... : 52.3%RH

Atmospheric Pressure..... : 101.3kPa

EUT Operation:

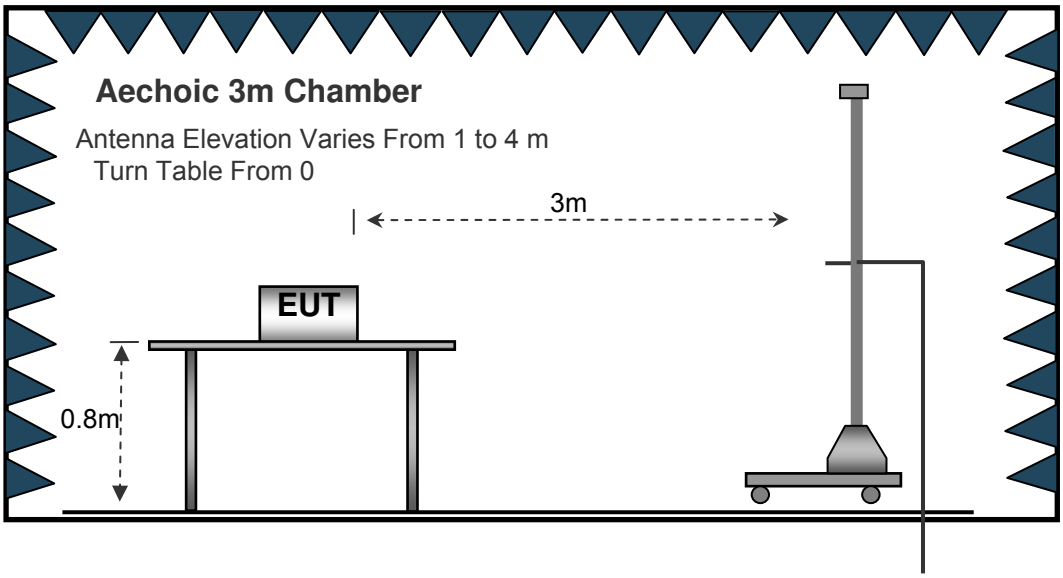
Input Voltage ..... : DC 5V by Adapter Input AC 120V/60Hz

Operating Mode ..... : Data transmitting with PC mode, Earphone mode, Adapter mode

Remark..... : The worse case Data transmitting mode is under the condition of AC 120V/60Hz adapter input for PC 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.

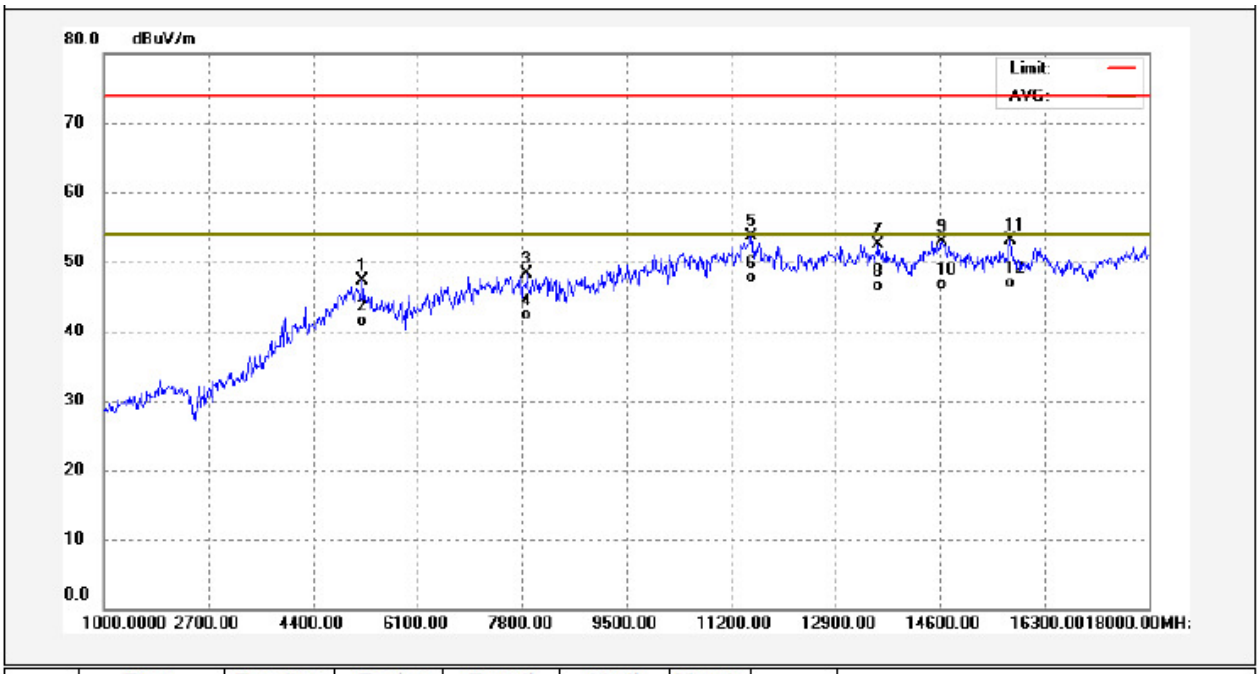


### 6.3.3 Measurement Data

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

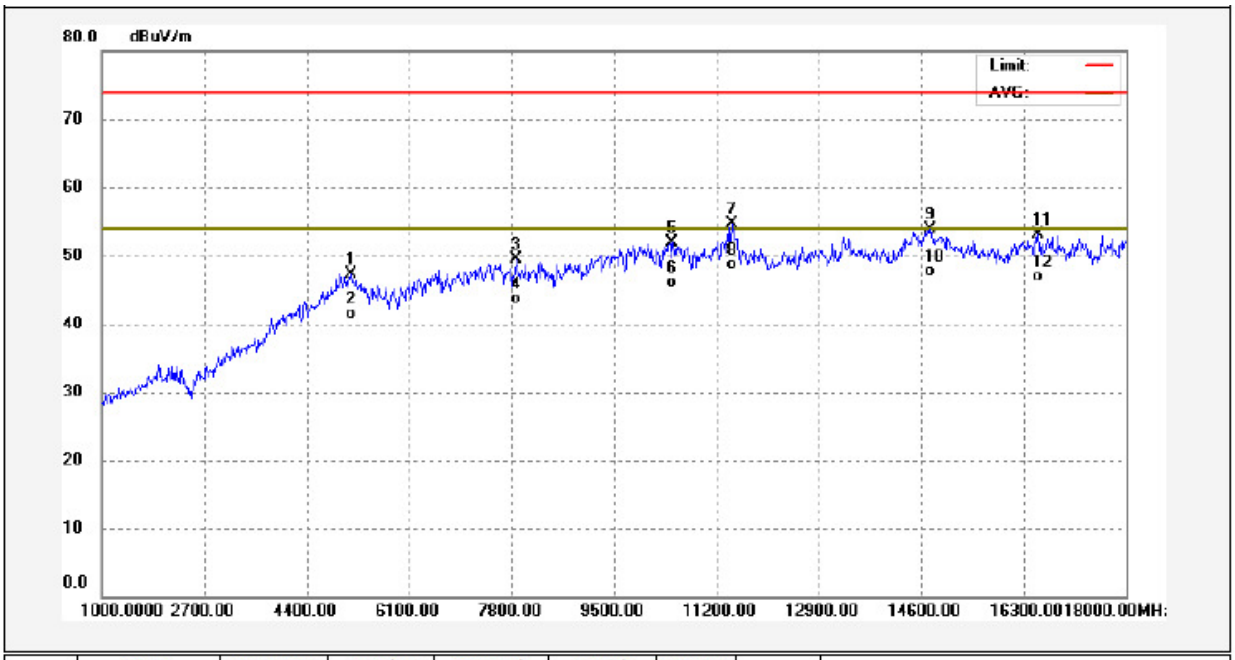
Antenna Polarization: Vertical




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 5199.000 | 48.82 | -1.56 | 47.26 | 74.00 | -26.74 | peak | |
| 2 | 5199.000 | 42.98 | -1.56 | 41.42 | 54.00 | -12.58 | AVG | |
| 3 | 7885.000 | 46.82 | 1.44 | 48.26 | 74.00 | -25.74 | peak | |
| 4 | 7885.000 | 40.95 | 1.44 | 42.39 | 54.00 | -11.61 | AVG | |
| 5 | 11523.000 | 46.79 | 6.99 | 53.78 | 74.00 | -20.22 | peak | |
| 6 | 11523.000 | 40.66 | 6.99 | 47.65 | 54.00 | -6.35 | AVG | |
| 7 | 13597.000 | 44.22 | 8.23 | 52.45 | 74.00 | -21.55 | peak | |
| 8 | 13597.000 | 38.33 | 8.23 | 46.56 | 54.00 | -7.44 | AVG | |
| 9 | 14634.000 | 42.51 | 10.35 | 52.86 | 74.00 | -21.14 | peak | |
| 10 | 14634.000 | 36.42 | 10.35 | 46.77 | 54.00 | -7.23 | AVG | |
| 11 | 15739.000 | 43.93 | 9.11 | 53.04 | 74.00 | -20.96 | peak | |
| 12 | 15739.000 | 37.83 | 9.11 | 46.94 | 54.00 | -7.06 | AVG | |

Factor= antenna factor + cable loss - preamplifier factor

Antenna Polarization: Horizontal



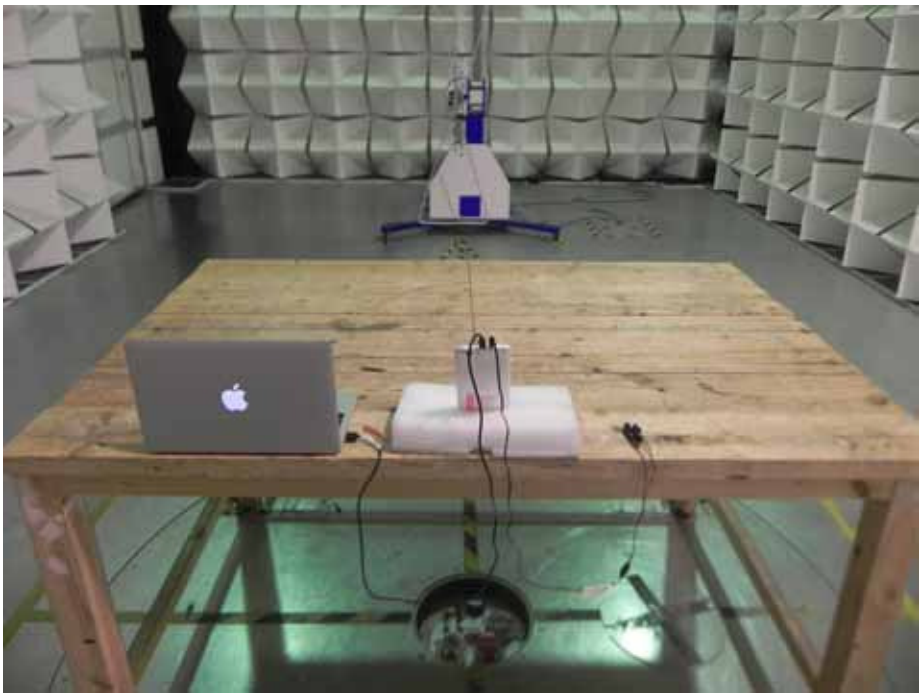

| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 5131.000 | 48.68 | -1.31 | 47.37 | 74.00 | -26.63 | peak | |
| 2 | 5131.000 | 42.82 | -1.31 | 41.51 | 54.00 | -12.49 | AVG | |
| 3 | 7885.000 | 48.04 | 1.44 | 49.48 | 74.00 | -24.52 | peak | |
| 4 | 7885.000 | 42.18 | 1.44 | 43.62 | 54.00 | -10.38 | AVG | |
| 5 | 10469.000 | 47.99 | 3.95 | 51.94 | 74.00 | -22.06 | peak | |
| 6 | 10469.000 | 42.08 | 3.95 | 46.03 | 54.00 | -7.97 | AVG | |
| 7 | 11455.000 | 47.75 | 6.89 | 54.64 | 74.00 | -19.36 | peak | |
| 8 | 11455.000 | 41.88 | 6.89 | 48.77 | 54.00 | -5.23 | AVG | |
| 9 | 14736.000 | 43.52 | 10.33 | 53.85 | 74.00 | -20.15 | peak | |
| 10 | 14736.000 | 37.40 | 10.33 | 47.73 | 54.00 | -6.27 | AVG | |
| 11 | 16538.000 | 42.93 | 10.09 | 53.02 | 74.00 | -20.98 | peak | |
| 12 | 16538.000 | 36.87 | 10.09 | 46.96 | 54.00 | -7.04 | AVG | |

Factor= antenna factor + cable loss - preamplifier factor

# 7 Photographs – Test Setup FCC ID 2ABV4-A600

## 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======