# TEST REPORT

 Reference No.
 :
 WTS15S0832004-5E

 FCC ID
 :
 2AFJXA5UNLIMITED

Address .....: Room 1501, 15/F, SPA Centre, 53-55 Lockhart Road, Wanchai, Hong

Kong

Manufacturer .....: Uwin Innovation (Hongkong) Limited

Address ......: 206A, 2nd floor of No. 30 building, Wisdomland Business Park, 2nd

road, Nantou Gate, NanShan District, ShenZhen P.R.C.

Product Name.....: Mobile Phone

Model No. ..... : A5 UNLIMITED, NOW LTE OC55

Brand...... : AUDINAC(A5 UNLIMITED), I-modo(NOW LTE OC55)

Standards ...... : FCC PART15 SUBPART B: 2014

Date of Receipt sample .... : Aug. 18, 2015

**Date of Test** ..... : Aug. 21 – Sep.06, 2015

**Date of Issue**.....: Sep.10, 2015

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:

#### Waltek Services (Shenzhen) Co., Ltd.

Address: 1/F., Fukangtai Building, West Baima Road, Songgang Street, Baoan District, Shenzhen, Guangdong, China

Tel:+86-755-83551033 Fax:+86-755-83552400

Compiled by:

Zero Zhou / Project Engineer

1 Z

Approved b

Philo Zhon

Reference No.: WTS15S0832004-5E Page 2 of 18

# 1 Test Summary

| Test Item   | Test Requirement                | Class   | Test Method      | Test Result |
|---|---------------------------------|---------|------------------|-------------|
| Power Line Conducted<br>Emission<br>(150kHz to 30MHz) | FCC PART 15,<br>SUBPART B: 2014 | Class B | ANSI C63.4: 2009 | Pass        |
| Radiated Emission<br>30MHz to 1GHz)                   | FCC PART 15,<br>SUBPART B: 2014 | Class B | ANSI C63.4: 2009 | Pass        |
| Radiated Emission<br>(Above 1GHz)                     | FCC PART 15,<br>SUBPART B: 2014 | 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  |
|---|--|---|-------|
|   | COV  | ER PAGE   | 1     |
| 1 | TEST   | SUMMARY   | 2     |
| 2 | CON  | TENTS   | 3     |
| 3 | GENI   | ERAL INFORMATION  | 4     |
| 4 | 3.1<br>3.2<br>3.3<br>3.4<br>3.5<br>3.6<br><b>EQUI</b><br>4.1<br>4.2<br>4.3 | GENERAL DESCRIPTION OF E.U.T.  DETAILS OF E.U.T.  STANDARDS APPLICABLE FOR TESTING.  TEST FACILITY.  SUBCONTRACTED.  ABNORMALITIES FROM STANDARD CONDITIONS.  PMENT USED DURING TEST.  EQUIPMENT LIST.  DESCRIPTION OF SUPPORT UNITS.  MEASUREMENT UNCERTAINTY. | 45566 |
| 5 | EMIS   | SION TEST RESULTS   |       |
|   | 5.1<br>5.2<br>5.3  | Power Line Conducted Emission, 150kHz to 30MHzRadiation Emission, 30MHz to 1000MHzRadiation Emission, Above 1000MHz   | 11    |
| 6 | PHO  | TOGRAPHS – TEST SETUP   | 17    |
|   | 6.1<br>6.2<br>6.3  | PHOTOGRAPH –POWER LINE CONDUCTED EMISSION TEST SETUP AT TEST SITE 1#  | 17    |

Reference No.: WTS15S0832004-5E Page 4 of 18

#### 3 General Information

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

Product Name : Mobile Phone

Model No. : A5 UNLIMITED, NOW LTE OC55

Model Description : Only model number and brand name are different

GSM Band(s) : GSM 850/900/1800/1900MHz

GPRS/EGPRS Class : 12

WCDMA Band(s) : FDD Band II/V

LTE Bnad(s) : LTE Band 4

Wi-Fi Specification : 2.4G: 802.11b/g/n HT20/n HT40

5G Band I: 802.11a/ n HT20/ n HT40 5G Band IV: 802.11a/ n HT20/ n HT40

Bluetooth Version : Bluetooth v4.0 with BLE

GPS : Support

NFC : N/A

Hardware Version : ALPS.L1.MP3.V2.0\_KLINK6735.64.L1\_P9

Software Version : MT6735 QF506Ah.2015081309

#### 3.2 Details of E.U.T.

Technical Data :Battery DC 3.8V, 2500mAh

DC 5V,1000mA, Charging form adapter (Adapter Input:100-240V~50/60Hz, 0.2A)

Adapter :Manufacture: iSWAG

### 3.3 Standards Applicable for Testing

The tests were performed according to following standards:

FCC PART 15, SUBPART B: Electronic Code of Federal Regulations- Unintentional Radiators 2014

Reference No.: WTS15S0832004-5E Page 5 of 18

# 3.4 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, July 12, 2012.

#### 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.

#### 3.5 Subcontracted

☐ Yes

| Whether parts | of tests fo | r the produ | ıct have | been s | ubcontracted | I to other | labs: |
|---------------|-------------|-------------|----------|--------|--------------|------------|-------|
|               |             |             |          |        |              |            |       |

| If Yes, I | list the re | elated te | est items | and lab | information: |
|-----------|-------------|-----------|-----------|---------|--------------|

⊠ No

Test Lab: N/A
Lab address: N/A

Test items: N/A

#### 3.6 Abnormalities from Standard Conditions

None.

# 4 Equipment Used during Test

# 4.1 Equipment List

| Condu  | Conducted Emissions Test Site 1# |                                  |                  |                     |                             |                         |  |  |
|--------|----------------------------------|----------------------------------|------------------|---------------------|-----------------------------|-------------------------|--|--|
| Item   | Equipment                        | Manufacturer                     | Model No.        | Serial No.          | Last<br>Calibration<br>Date | Calibration<br>Due Date |  |  |
| 1.     | EMI Test Receiver                | R&S                              | ESCI             | 100947              | Sep.15,2014                 | Sep.14,2015             |  |  |
| 2.     | LISN                             | R&S                              | ENV216           | 101215              | Sep.15,2014                 | Sep.14,2015             |  |  |
| 3.     | Cable                            | Тор                              | TYPE16(3.5M)     | -                   | Sep.15,2014                 | Sep.14,2015             |  |  |
| Condu  | cted Emissions Test \$           | Site 2#                          |                  |                     |                             |                         |  |  |
| Item   | Equipment                        | Manufacturer                     | Model No.        | Serial No.          | Last<br>Calibration<br>Date | Calibration<br>Due Date |  |  |
| 1.     | EMI Test Receiver                | R&S                              | ESCI             | 101155              | Sep.15,2014                 | Sep.14,2015             |  |  |
| 2.     | LISN                             | SCHWARZBECK                      | NSLK 8128        | 8128-289            | Sep.15,2014                 | Sep.14,2015             |  |  |
| 3.     | Limiter                          | York                             | MTS-IMP-136      | 261115-001-<br>0024 | Sep.15,2014                 | Sep.14,2015             |  |  |
| 4.     | Cable                            | LARGE                            | RF300            | -                   | Sep.15,2014                 | Sep.14,2015             |  |  |
| 3m Sei | mi-anechoic Chamber              | for Radiation Emis               | ssions Test site | 1#                  |                             |                         |  |  |
| Item   | Equipment                        | Manufacturer                     | Model No.        | Serial No.          | Last<br>Calibration<br>Date | Calibration<br>Due Date |  |  |
| 1      | EMC Analyzer                     | Agilent                          | E7405A           | MY45114943          | Sep.15,2014                 | Sep.14,2015             |  |  |
| 2      | Active Loop Antenna              | Beijing Dazhi                    | ZN30900A         | -                   | Sep.15,2014                 | Sep.14,2015             |  |  |
| 3      | Trilog Broadband<br>Antenna      | SCHWARZBECK                      | VULB9163         | 336                 | Apr.19,2015                 | Apr.18,2016             |  |  |
| 4      | Coaxial Cable<br>(below 1GHz)    | Тор                              | TYPE16(13M)      | -                   | Sep.15,2014                 | Sep.14,2015             |  |  |
| 5      | Broad-band Horn<br>Antenna       | SCHWARZBECK                      | BBHA 9120 D      | 667                 | Apr.19,2015                 | Apr.18,2016             |  |  |
| 6      | Broad-band Horn<br>Antenna       | SCHWARZBECK                      | BBHA 9170        | 335                 | Apr.19,2015                 | Apr.18,2016             |  |  |
| 7      | Broadband<br>Preamplifier        | COMPLIANCE<br>DIRECTION          | PAP-1G18         | 2004                | Mar.17,2015                 | Mar.16,2016             |  |  |
| 8      | Coaxial Cable (above 1GHz)       | Тор                              | 1GHz-25GHz       | EW02014-7           | Apr.10,2015                 | Apr.09,2016             |  |  |
| 3m Sei | mi-anechoic Chamber              | for Radiation Emis               | ssions Test site | 2#                  |                             |                         |  |  |
| Item   | Equipment                        | Manufacturer                     | Model No.        | Serial No           | Last<br>Calibration<br>Date | Calibration<br>Due Date |  |  |
| 1      | Test Receiver                    | R&S                              | ESCI             | 101296              | Sep.15,2014                 | Sep.14,2015             |  |  |
| 2      | Trilog Broadband<br>Antenna      | SCHWARZBECK                      | VULB9160         | 9160-3325           | Sep.15,2014                 | Sep.14,2015             |  |  |
| 3      | Amplifier                        | Compliance pirection systems inc | PAP-0203         | 22024               | Sep.15,2014                 | Sep.14,2015             |  |  |

| 4     | Cable                           | HUBER+SUHNER | CBL2      | 525178     | Sep.15,2014                 | Sep.14,2015             |  |  |
|-------|---------------------------------|--------------|-----------|------------|-----------------------------|-------------------------|--|--|
| RF Co | RF Conducted Testing            |              |           |            |                             |                         |  |  |
| Item  | Equipment                       | Manufacturer | Model No. | Serial No. | Last<br>Calibration<br>Date | Calibration<br>Due Date |  |  |
| 1.    | EMC Analyzer<br>(9k~26.5GHz)    | Agilent      | E7405A    | MY45114943 | Sep.15,2014                 | Sep.14,2015             |  |  |
| 2.    | Spectrum Analyzer (9k-6GHz)     | R&S          | FSL6      | 100959     | Sep.15,2014                 | Sep.14,2015             |  |  |
| 3.    | Signal Analyzer<br>(9k~26.5GHz) | Agilent      | N9010A    | MY50520207 | Sep.15,2014                 | Sep.14,2015             |  |  |

# 4.2 Description of Support Units

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

# 4.3 Measurement Uncertainty

| Test Item              | Frequency Range | Uncertainty | Note |
|------------------------|-----------------|-------------|------|
| Conduction disturbance | 150kHz~30MHz    | ±3.64dB     | (1)  |
| Dadiation Emission     | 30MHz~1000MHz   | ±5.03dB     | (1)  |
| Radiation Emission     | 1GHz~6GHz       | ±5.47dB     | (1)  |

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

Reference No.: WTS15S0832004-5E Page 8 of 18

#### 5 Emission Test Results

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

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

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

Test Result.....: Pass

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

Class .....: Class B

Limit .....:

| Fraguenov (MUz) | Limit (d   | dΒμV      |
|-----------------|------------|-----------|
| Frequency (MHz) | 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        |

### 5.1.1 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

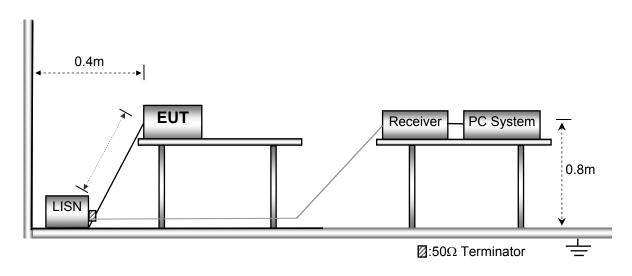
Operating Mode .....: Data transmitting

Remark .....: The worse case(Data transmitting mode) is under the condition of

AC 120V/60Hz adapter input and the data is shown as follow.

### 5.1.2 Block Diagram of Test Setup

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



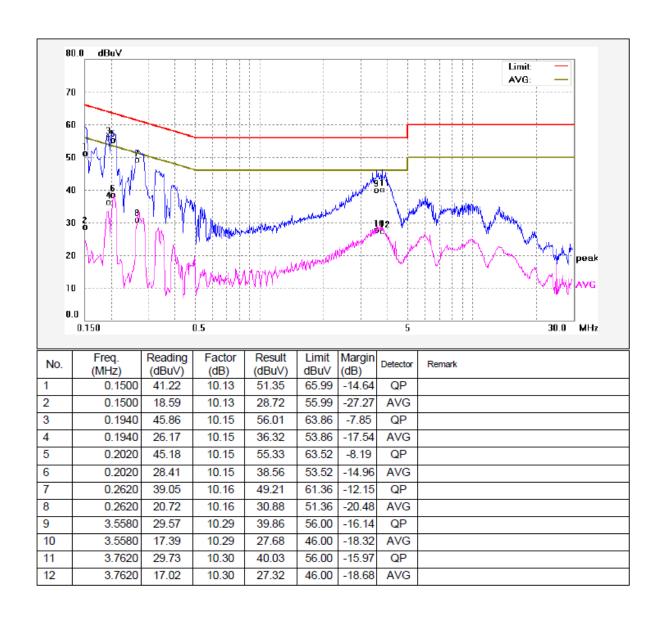
Reference No.: WTS15S0832004-5E Page 9 of 18

#### 5.1.3 Measurement Data

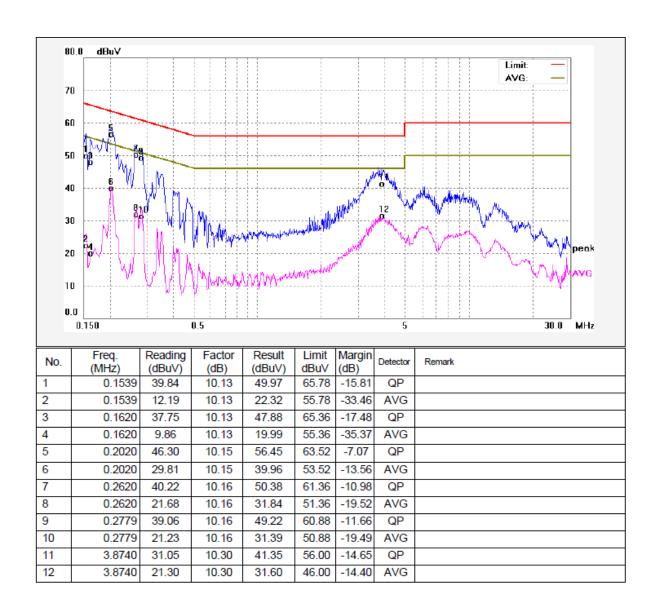
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line. According to the data in section 5.1.4, the EUT complied with the FCC PART 15, SUBPART B standards.

#### 5.1.4 Power Line Conducted Emission Test Data

Live Line:



#### Neutral Line:



Reference No.: WTS15S0832004-5E Page 11 of 18

## 5.2 Radiation Emission, 30MHz to 1000MHz

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

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

Test Result .....: Pass

Frequency Range .....: 30MHz to 1000MHz

Class B : Class B

Limit.....: :

| Fraguency (MHz) | Distance | Limit (dBµV/m |
|-----------------|----------|---------------|
| Frequency (MHz) | (Meter)  | Quasi-peak    |
| 30 to 88        | 3        | 40            |
| 88 to 21        | 3        | 43.5          |
| 216 to 960      | 3        | 46            |
| 960 to 1000     | 3        | 54            |

## 5.2.1 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

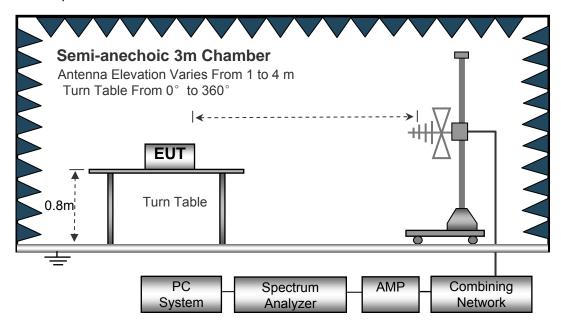
Operating Mode .....: Data transmitting

Remark ......: The worse case(Data transmitting) is under the condition of AC

120V/60Hz adapter input and the data is shown as follow.

### 5.2.2 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.



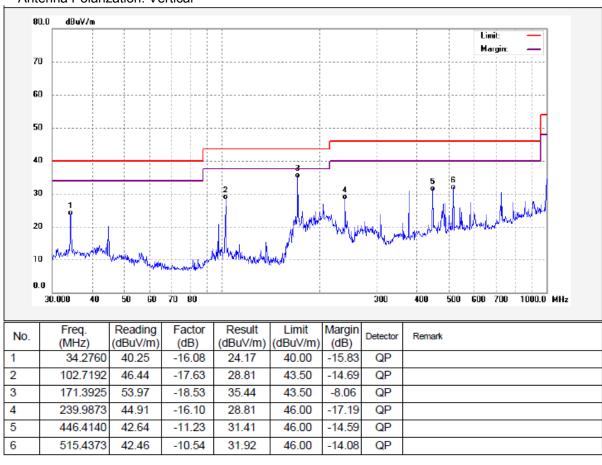
Reference No.: WTS15S0832004-5E Page 12 of 18

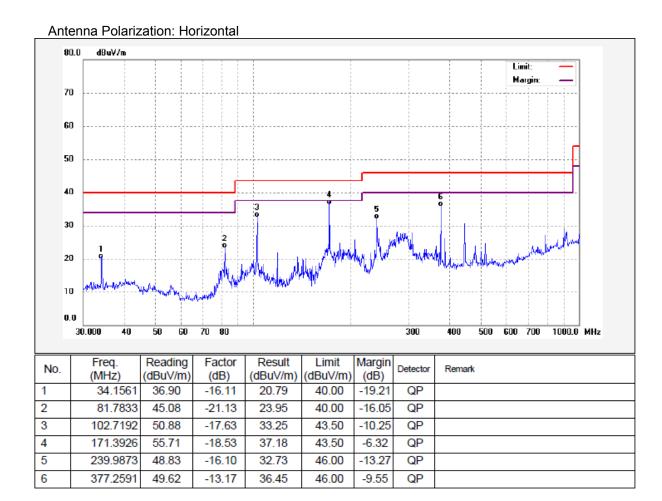
#### 5.2.3 Measurement Data

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.

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







Reference No.: WTS15S0832004-5E Page 14 of 18

## 5.3 Radiation Emission, Above 1000MHz

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

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

Test Result.....: Pass

Frequency Range ..... : 1GHz~6GHz

Class B : Class B

Limit. .....

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

### 5.3.1 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

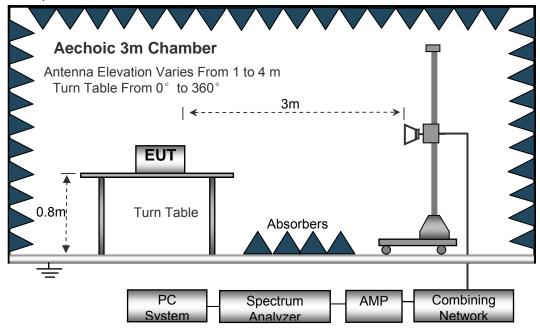
Operating Mode .....: Data transmitting

Remark.....: The worse case(Data transmitting mode) is under the condition of

AC 120V/60Hz adapter input and the data is shown as follow.

### 5.3.2 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.



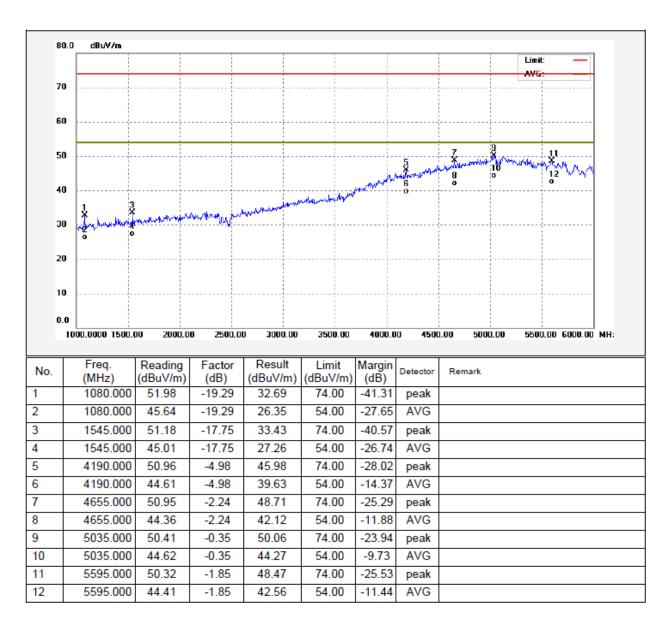
Reference No.: WTS15S0832004-5E Page 15 of 18

#### 5.3.3 Measurement Data

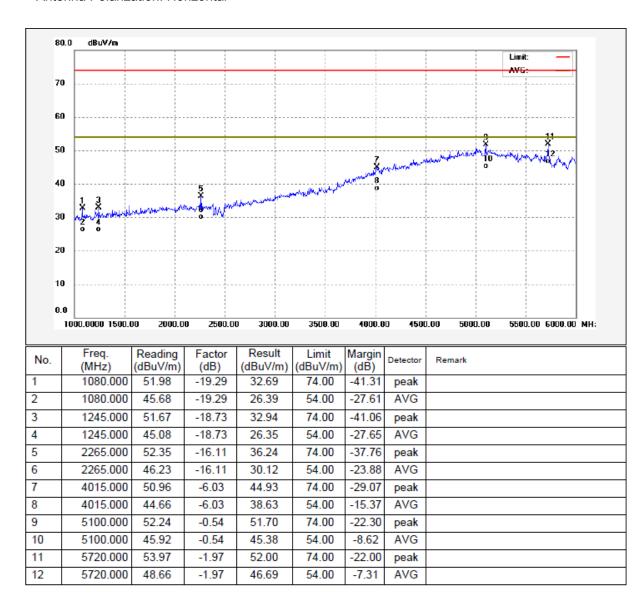
The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Average measurements were performed if peak emissions were within 6dB of the average limit line

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

Antenna Polarization: Vertical



#### Antenna Polarization: Horizontal



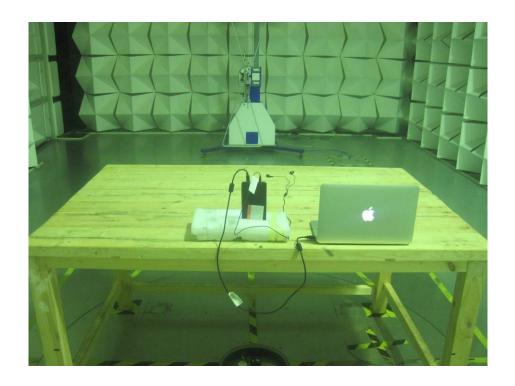
Reference No.: WTS15S0832004-5E Page 17 of 18

# 6 Photographs – Test Setup

# 6.1 Photograph -Power Line Conducted Emission Test Setup at Test Site 1#



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



# 6.3 Photograph - Radiated Emission Test Setup for Above 1GHz at Test Site 1#



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