

# FCC Part 15B Measurement and Test Report

For

**Xwireless LLC**

**11426 Rockville pike, Rockville Md**

**FCC ID: 2ADLJPROFILE**

|                                      |  |
|--------------------------------------|--|
| <b>Test Rule(s):</b>                 | <u>FCC Part 15 Subpart B</u>                     |
| <b>Product Description:</b>          | <u>mobile phone</u>                              |
| <b>Tested Model:</b>                 | <u>Profile</u>                                   |
| <b>Report No.:</b>                   | <u>STR15028017I-3</u>                            |
| <b>Tested Date:</b>                  | <u>2015-02-03 to 2015-02-11</u>                  |
| <b>Issued Date:</b>                  | <u>2015-02-11</u>                                |
| <b>Tested By:</b>                    | <u>Lebron Wang / Engineer</u> <i>Lebron Wang</i> |
| <b>Reviewed By:</b>                  | <u>Lahm Peng / EMC Manager</u> <i>Lahm peng</i>  |
| <b>Approved &amp; Authorized By:</b> | <u>Jandy So / PSQ Manager</u> <i>Jandyso</i>     |
| <b>Prepared By:</b>                  |  |

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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: Xwireless LLC  
 Address of applicant: 11426 Rockville pike, Rockville Md

Manufacturer: Xwireless LLC  
 Address of manufacturer: 11426 Rockville pike, Rockville Md

| General Description of EUT   |              |
|--|--------------|
| Product Name:  | mobile phone |
| Trade Name:  | /            |
| Model No.:   | Profile      |
| Adding Model(s):   | /            |
| <p><i>The EUT is GSM850/900/DCS1800/PCS1900 Mobile phone. The Mobile phone is intended for speech and Multimedia Message Service (MMS) transmission. It is equipped with GPRS class 12 for GSM850 and GSM1900 and Bluetooth, camera functions. For more information see the following datasheet</i></p> <p><i>Note: The test data is gathered from a production sample provided by the manufacturer.</i></p> |              |

| Technical Characteristics of EUT |           |
|----------------------------------|-----------|
| Rated Voltage:                   | 5.0V      |
| Rated Current:                   | 500mA     |
| Rated Power:                     | /         |
| Power Adapter Model:             | Profile   |
| Lowest Internal Frequency:       | 32.768KHz |
| Highest Internal Frequency:      | 260MHz    |
| Classification of ITE:           | Class B   |

## 1.2 Test Standards

The following report is prepared on behalf of the Xwireless LLC in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

**Maintenance of compliance** is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

## 1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

## 1.4 Test Facility

- **FCC – Registration No.: 934118**

Shenzhen SEM.Test Technology 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 and the Registration is 934118.

- **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101)

## 1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

| Test Mode | Description                 | Remark             |
|-----------|-----------------------------|--------------------|
| TM1       | Charging & Playing & Camera | Connect to Adapter |
| TM2       | Downloading                 | Connect to PC      |

EUT Cable List and Details

| Cable Description | Length (M) | Shielded/Unshielded | With Core/Without Core |
|-------------------|------------|---------------------|------------------------|
| USB Cable         | 0.8        | Unshielded          | Without Core           |
| Earphone          | 1.2        | Unshielded          | Without Core           |

Auxiliary Equipment List and Details

| Description | Manufacturer | Model | Serial Number |
|-------------|--------------|-------|---------------|
| Notebook    | Lenovo       | E10   | LR-63C8R      |

Special Cable List and Details

| Cable Description | Length (M) | Shielded/Unshielded | With Core/Without Core |
|-------------------|------------|---------------------|------------------------|
| /                 | /          | /                   | /                      |

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## 2. SUMMARY OF TEST RESULTS

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| <b>FCC Rules</b> | <b>Description of Test Item</b> | <b>Result</b> |
|------------------|---------------------------------|---------------|
| § 15.107 (a)     | Conducted Emissions             | Compliant     |
| § 15.109 (a)     | Radiated Emissions              | Compliant     |

N/A: not applicable

### 3. Conducted Emissions

#### 3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is  $\pm 2.88$  dB.

#### 3.2 Test Equipment List and Details

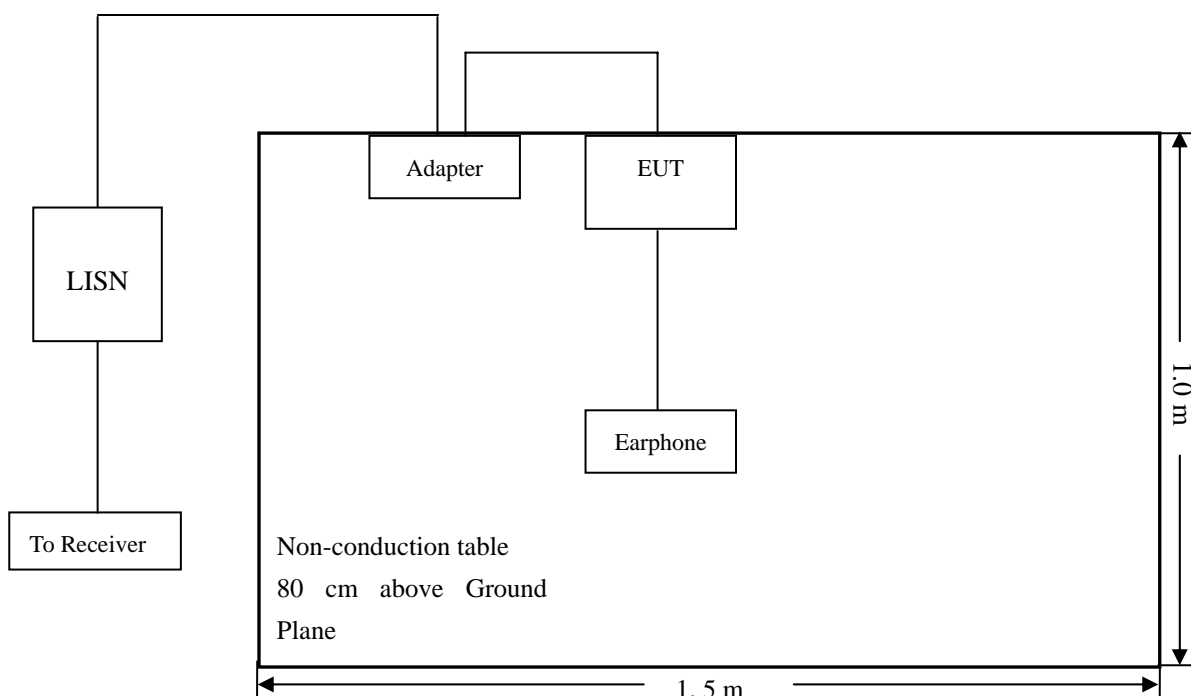
| Description       | Manufacturer    | Model    | Serial Number | Cal. Date  | Due. Date  |
|-------------------|-----------------|----------|---------------|------------|------------|
| EMI Test Receiver | Rohde & Schwarz | ESPI     | 101611        | 2014-05-28 | 2015-05-27 |
| L.I.S.N           | Schwarz beck    | NSLK8126 | 8126-224      | 2014-05-28 | 2015-05-27 |
| Pulse Limiter     | Rohde & Schwarz | ESH3-Z2  | 100911        | 2014-05-28 | 2015-05-27 |

#### 3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

*Note: Base on the calibrated result, for the impedance characteristic and insertion loss, the effect shall be ignored from the placed multiple outlet power strip between the device and LISN.*

#### 3.4 Basic Test Setup Block Diagram



### 3.5 Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23 °C     |
| Relative Humidity: | 52%       |
| ATM Pressure:      | 1011 mbar |

### 3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

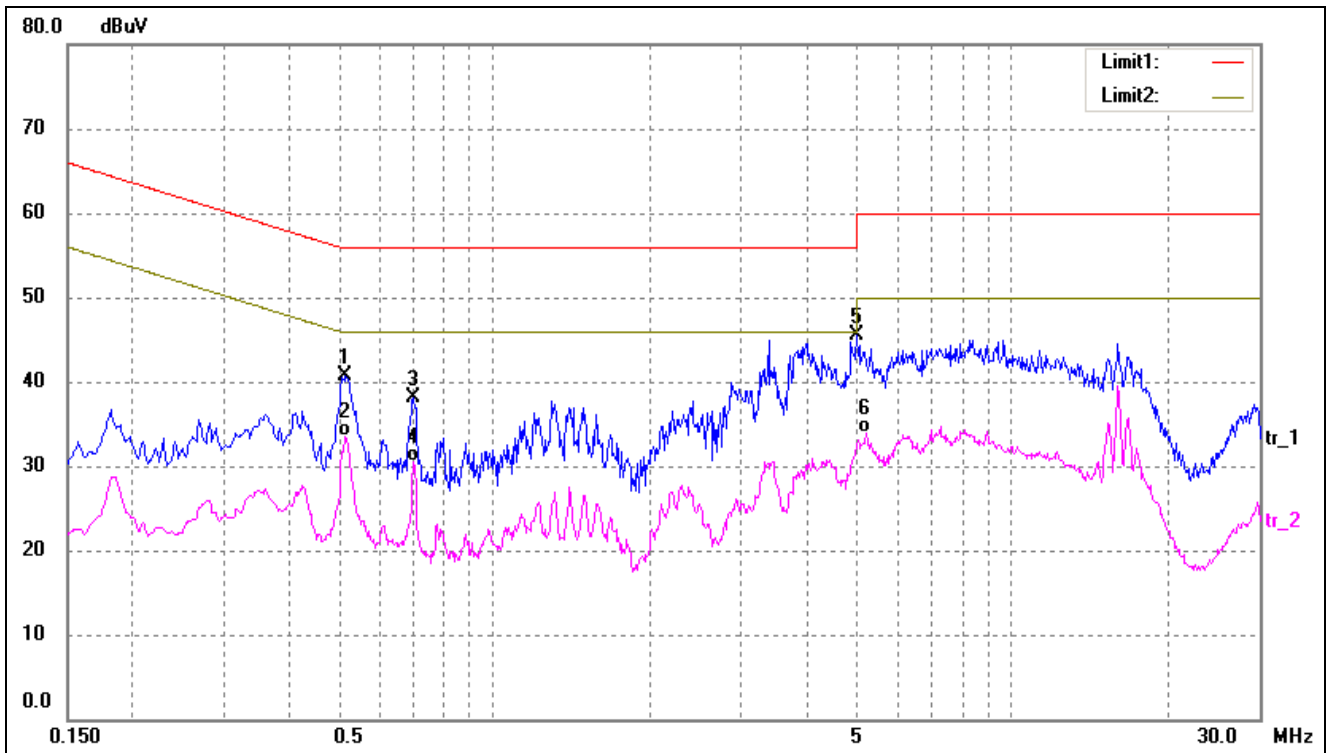
**-3.42 dB at 0.5220 MHz** in the **Line, AVG** detector, 0.15-30MHz

### 3.7 Conducted Emissions Test Data



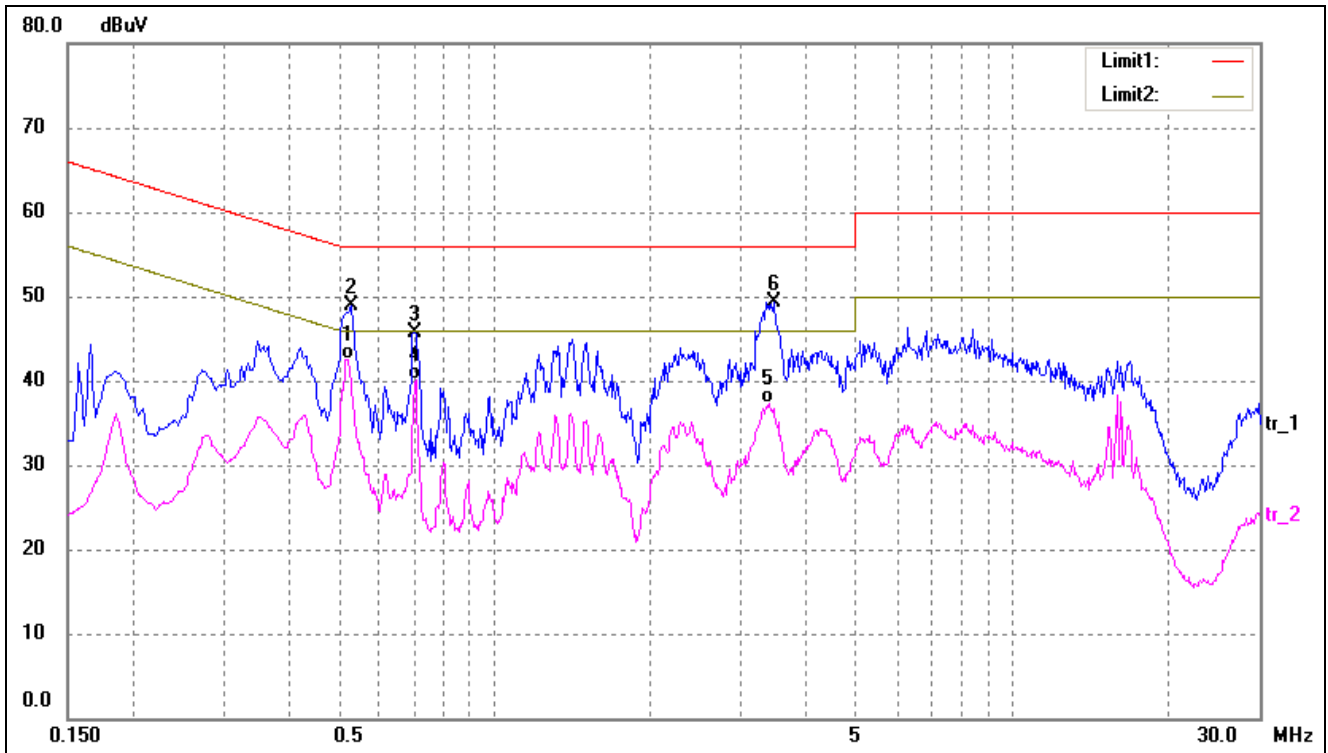
**Plot of Conducted Emissions Test Data**

EUT: *mobile phone*  
 Tested Model: *Profile*  
 Operating Condiation: *TM1*  
 Comment: *AC 120V/60Hz,Adapter DC 5V/0.5A*  
 Test Specification: *Neutral*



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|----------------|---------------|--------------|-------------|----------|
| 1   | 0.5180          | 31.27          | 9.52           | 40.79         | 56.00        | -15.21      | peak     |
| 2*  | 0.5180          | 23.90          | 9.52           | 33.42         | 46.00        | -12.58      | AVG      |
| 3   | 0.6980          | 28.37          | 9.70           | 38.07         | 56.00        | -17.93      | peak     |
| 4   | 0.6980          | 20.82          | 9.70           | 30.52         | 46.00        | -15.48      | AVG      |
| 5   | 5.0260          | 35.42          | 10.00          | 45.42         | 60.00        | -14.58      | peak     |
| 6   | 5.2460          | 23.81          | 10.00          | 33.81         | 50.00        | -16.19      | AVG      |

Test Specification: Line



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|----------------|---------------|--------------|-------------|----------|
| 1*  | 0.5220          | 33.06          | 9.52           | 42.58         | 46.00        | -3.42       | AVG      |
| 2   | 0.5300          | 39.33          | 9.53           | 48.86         | 56.00        | -7.14       | peak     |
| 3   | 0.7020          | 36.01          | 9.70           | 45.71         | 56.00        | -10.29      | peak     |
| 4   | 0.7060          | 30.31          | 9.71           | 40.02         | 46.00        | -5.98       | AVG      |
| 5   | 3.3820          | 27.25          | 10.00          | 37.25         | 46.00        | -8.75       | AVG      |
| 6   | 3.4580          | 39.34          | 10.00          | 49.34         | 56.00        | -6.66       | peak     |

## 4. Radiated Emissions

### 4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is  $\pm 5.10$  dB.

### 4.2 Test Equipment List and Details

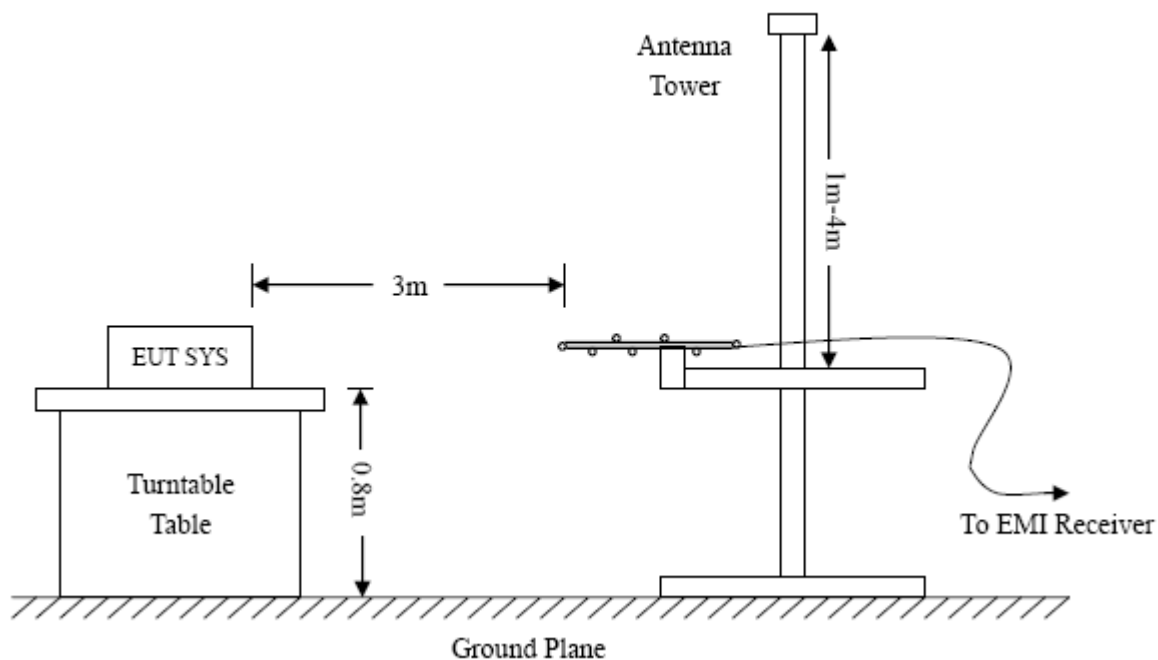
| Description              | Manufacturer         | Model     | Serial Number | Cal. Date  | Due. Date  |
|--------------------------|----------------------|-----------|---------------|------------|------------|
| Spectrum Analyzer        | R&S                  | FSP       | 836079/035    | 2014-05-28 | 2015-05-27 |
| EMI Test Receiver        | R&S                  | ESVB      | 825471/005    | 2014-05-28 | 2015-05-27 |
| Pre-amplifier            | Agilent              | 8447F     | 3113A06717    | 2014-05-28 | 2015-05-27 |
| Pre-amplifier            | Compliance Direction | PAP-0118  | 24002         | 2014-05-28 | 2015-05-27 |
| Trilog Broadband Antenna | SCHWARZBECK          | VULB9163  | 9163-333      | 2014-05-24 | 2015-05-23 |
| Horn Antenna             | ETS                  | 3117      | 00086197      | 2014-05-24 | 2015-05-23 |
| Loop Antenna             | SCHWARZECK           | HFRA 5165 | 9365          | 2014-05-28 | 2015-05-27 |

### 4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



#### 4.4 Test Receiver Setup

|                          |                              |                              |
|--------------------------|------------------------------|------------------------------|
| Frequency :9kHz-30MHz    | Frequency :30MHz-1GHz        | Frequency :Above 1GHz        |
| RBW=10KHz,               | RBW=120KHz,                  | RBW=1MHz,                    |
| VBW =30KHz               | VBW=300KHz                   | VBW=3MHz(Peak), 10Hz(AV)     |
| Sweep time= Auto         | Sweep time= Auto             | Sweep time= Auto             |
| Trace = max hold         | Trace = max hold             | Trace = max hold             |
| Detector function = peak | Detector function = peak, QP | Detector function = peak, AV |

#### 4.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

#### 4.6 Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 23 °C     |
| Relative Humidity: | 55 %      |
| ATM Pressure:      | 1011 mbar |

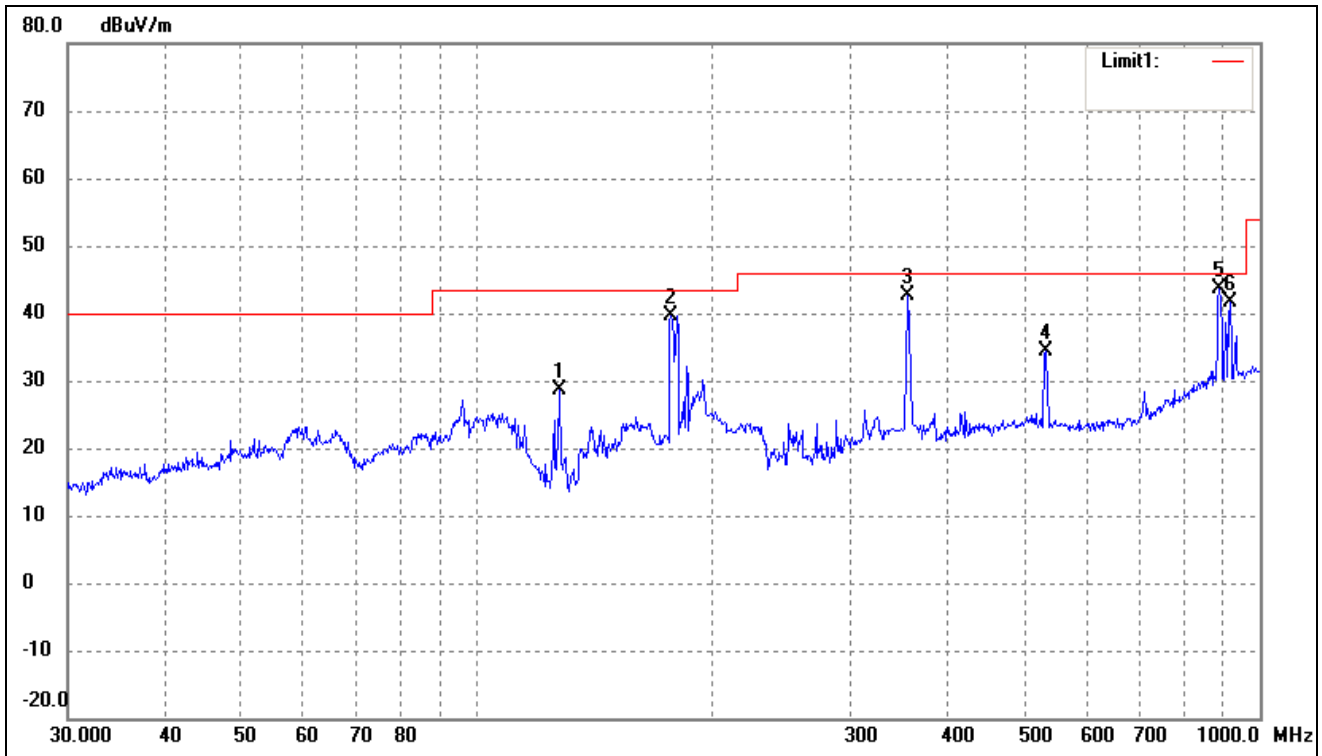
#### 4.7 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

**-2.30 dB at 887.6099 MHz in the Horizontal polarization, TM1 mode, 9 kHz to 6 GHz, 3Meters**

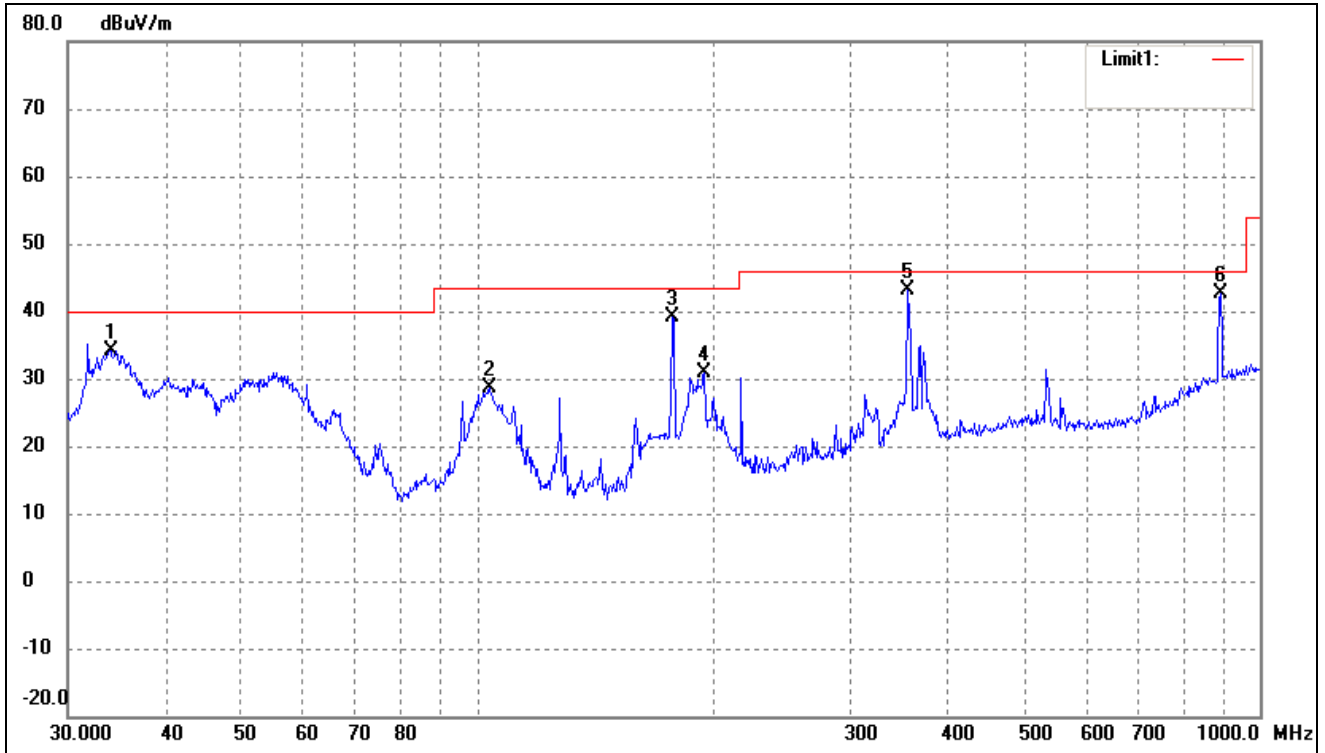
**Plot of Radiated Emissions Test Data**

EUT: mobile phone  
 Tested Model: Profile  
 Operating Condition: TM1  
 Comment: AC 120V/60Hz,Adapter DC 5V/0.5A  
 Test Specification: Horizontal



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct Factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (°) | Height (cm) | Remark |
|-----|-----------------|------------------|--------------------|-----------------|----------------|-------------|------------|-------------|--------|
| 1   | 127.6645        | 41.11            | -12.39             | 28.72           | 43.50          | -14.78      | 108        | 100         | peak   |
| 2   | 176.8877        | 50.92            | -11.36             | 39.56           | 43.50          | -3.94       | 130        | 100         | peak   |
| 3   | 355.4273        | 46.81            | -4.15              | 42.66           | 46.00          | -3.34       | 229        | 100         | peak   |
| 4   | 531.9634        | 35.70            | -1.28              | 34.42           | 46.00          | -11.58      | 120        | 100         | peak   |
| 5   | 887.6099        | 38.69            | 5.01               | 43.70           | 46.00          | -2.30       | 187        | 100         | peak   |
| 6   | 916.0687        | 36.03            | 5.56               | 41.59           | 46.00          | -4.41       | 194        | 100         | peak   |

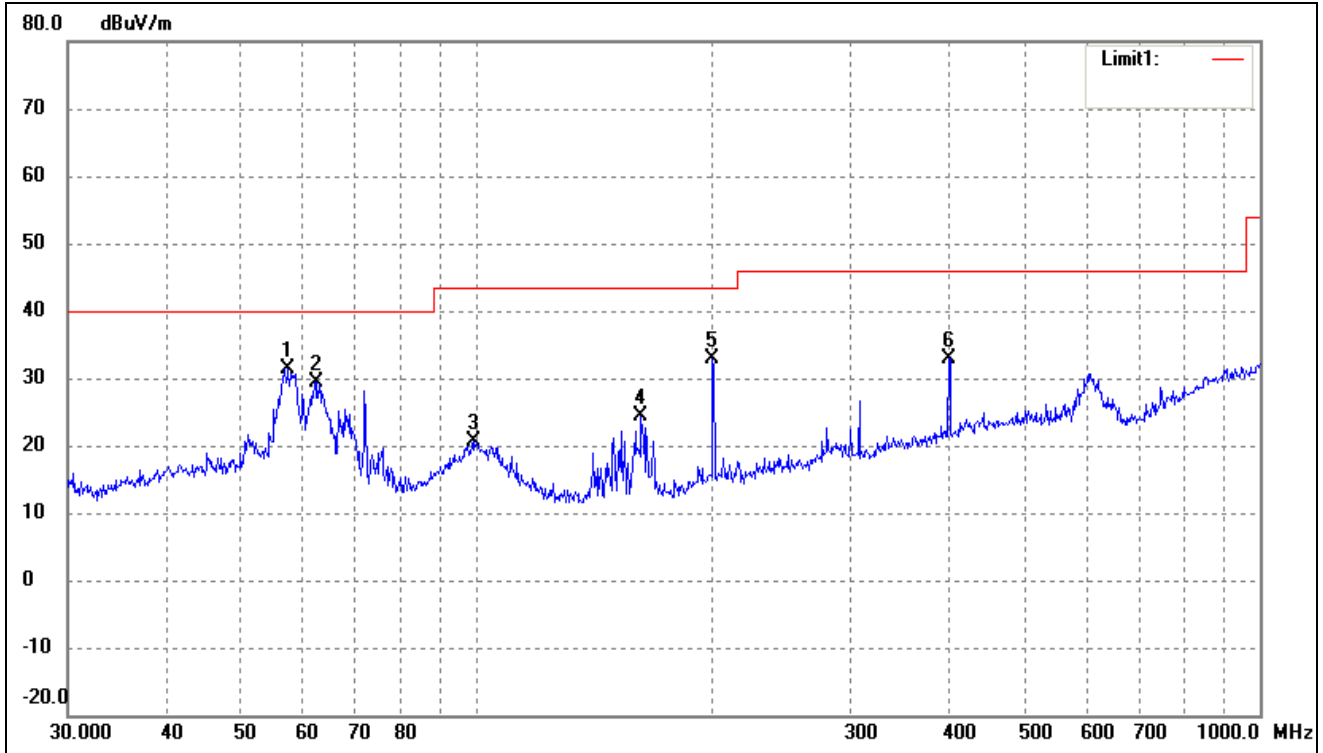
Test Specification: Vertical



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct Factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (°) | Height (cm) | Remark |
|-----|-----------------|------------------|--------------------|-----------------|----------------|-------------|------------|-------------|--------|
| 1   | 34.0364         | 44.50            | -10.27             | 34.23           | 40.00          | -5.77       | 251        | 100         | peak   |
| 2   | 103.8054        | 38.14            | -9.57              | 28.57           | 43.50          | -14.93      | 308        | 100         | peak   |
| 3   | 177.5091        | 50.37            | -11.31             | 39.06           | 43.50          | -4.44       | 120        | 100         | peak   |
| 4   | 195.1365        | 40.44            | -9.55              | 30.89           | 43.50          | -12.61      | 359        | 100         | peak   |
| 5   | 355.4273        | 47.33            | -4.15              | 43.18           | 46.00          | -2.82       | 152        | 100         | peak   |
| 5   | 890.7278        | 37.52            | 5.19               | 42.71           | 46.00          | -3.29       | 164        | 100         | peak   |

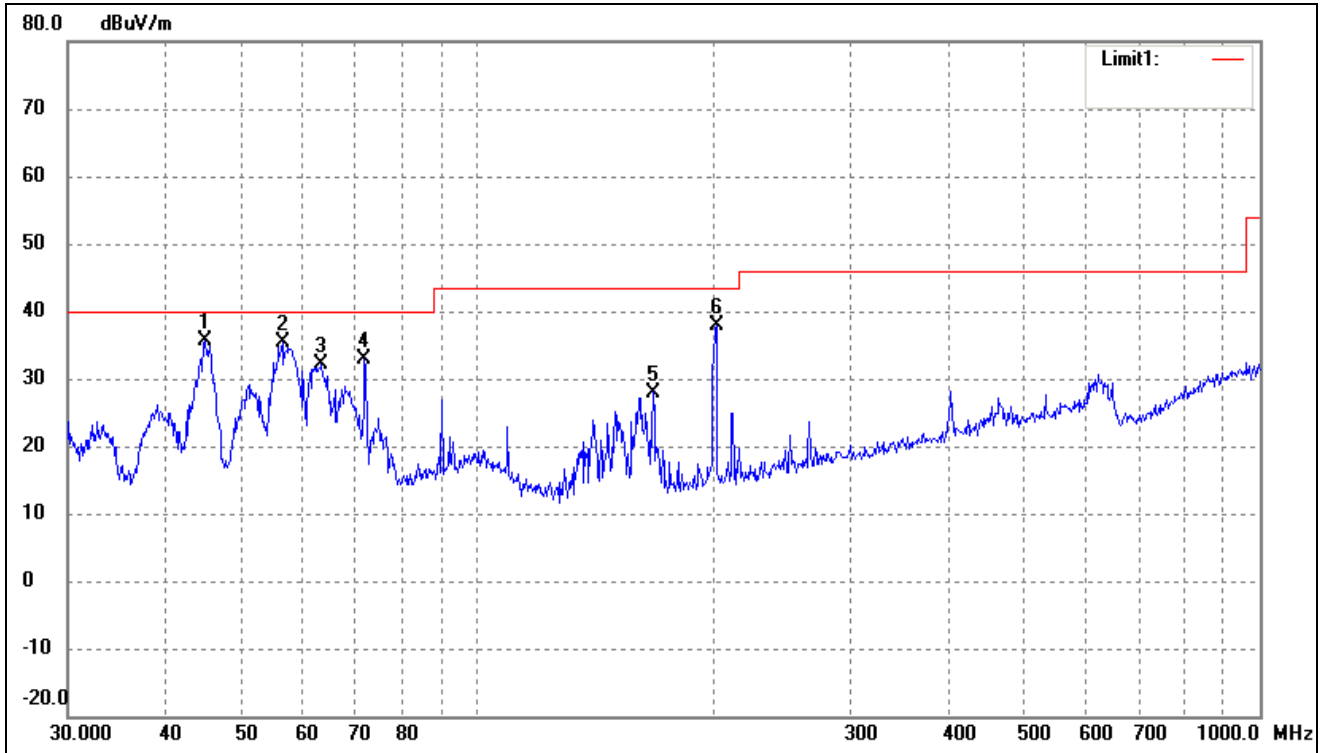
**Plot of Radiated Emissions Test Data**

EUT: *mobile phone*  
 Tested Model: *Profile*  
 Operating Condition: *TM2*  
 Comment: *AC 120V/60Hz, USB DC 5V*  
 Test Specification: *Horizontal*



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct Factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (°) | Height (cm) | Remark |
|-----|-----------------|------------------|--------------------|-----------------|----------------|-------------|------------|-------------|--------|
| 1   | 57.3923         | 39.85            | -8.39              | 31.46           | 40.00          | -8.54       | 158        | 100         | Peak   |
| 2   | 62.4314         | 38.71            | -9.42              | 29.29           | 40.00          | -10.71      | 226        | 100         | Peak   |
| 3   | 98.8326         | 30.32            | -9.70              | 20.62           | 43.50          | -22.88      | 129        | 150         | Peak   |
| 4   | 162.0414        | 36.58            | -12.23             | 24.35           | 43.50          | -19.15      | 109        | 100         | Peak   |
| 5   | 199.9856        | 41.95            | -9.06              | 32.89           | 43.50          | -10.61      | 115        | 100         | Peak   |
| 6   | 400.4319        | 35.75            | -2.92              | 32.83           | 46.00          | -13.17      | 145        | 100         | Peak   |

Test Specification: Vertical



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct Factor(dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (°) | Height (cm) | Remark |
|-----|-----------------|------------------|--------------------|-----------------|----------------|-------------|------------|-------------|--------|
| 1   | 44.9006         | 43.18            | -7.49              | 35.69           | 40.00          | -4.31       | 51         | 100         | peak   |
| 2   | 56.3948         | 43.57            | -8.16              | 35.41           | 40.00          | -4.59       | 308        | 100         | peak   |
| 3   | 63.3132         | 41.62            | -9.57              | 32.05           | 40.00          | -7.95       | 120        | 100         | peak   |
| 4   | 71.8320         | 45.06            | -12.26             | 32.80           | 40.00          | -7.20       | 359        | 100         | peak   |
| 5   | 167.8243        | 39.95            | -11.95             | 28.00           | 43.50          | -15.50      | 178        | 100         | peak   |
| 6   | 202.1005        | 46.92            | -9.05              | 37.87           | 43.50          | -5.63       | 165        | 100         | peak   |

Note: Testing is carried out with frequency rang 9kHz to the 6GHz, which above 1GHz is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.

The measurements greater than 20dB below the limit from 9kHz to 30MHz and test data are not provided.

\*\*\*\*\* END OF REPORT \*\*\*\*\*