

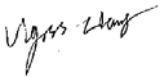
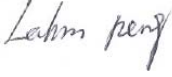

# FCC Part 15B Measurement and Test Report

For

**Xwireless LLC**

**11426 Rockville pike, Rockville Md**

**FCC ID: 2ADLJQWERTY**

<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>qwerty</u>
<b>Report No.:</b>	<u>STR15018255I-3</u>
<b>Tested Date:</b>	<u>2015-01-28 to 2015-02-09</u>
<b>Issued Date:</b>	<u>2015-02-09</u>
<b>Tested By:</b>	<u>Vigoss Liang / Engineer</u> 
<b>Reviewed By:</b>	<u>Lahm Peng / EMC Manager</u> 
<b>Approved &amp; Authorized By:</b>	<u>Jandy So / PSQ Manager</u> 
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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.:	qwerty
Hardware Version:	P6041_MB_V2.0
Software Version:	qwerty20150129
IMEI:	865378020042044
Battery:	BL-4C/800mAh
Device Category:	Portable Device
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	AC120V/60Hz; Battery: DC 3.7V
Rated Current:	/
Rated Power:	/
Power Adapter Model:	QWERTY
	INPUT:AC100-260V 50/6Hz;OUTPUT:DC5V-500mA
Lowest Internal Frequency:	32.768KHz
Highest Internal Frequency:	40MHz
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 C63.4-2014, 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 2<sup>nd</sup> 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 + Camera	With earphone
TM2	Charging + Playing	With earphone

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Earphone Cable	1.2	Unshielded	Without Core
DC Cable	0.8	Unshielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
/	/	/	/

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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FCC Rules	Description of Test Item	Result
§ 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.

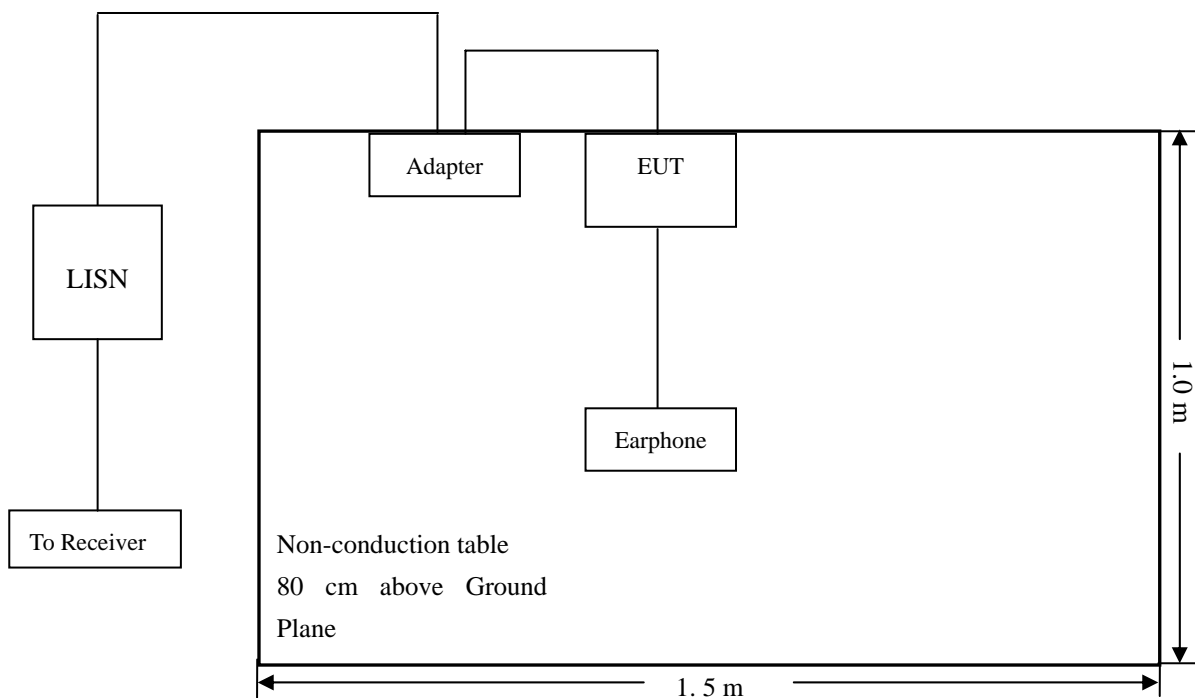
#### 3.2 Test Equipment List and Details

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 C63.4-2014, 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.

#### 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 3.7V, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

**-5.39dB at 2.7300 MHz in the Neutral, Peak detector, 0.15-30MHz**

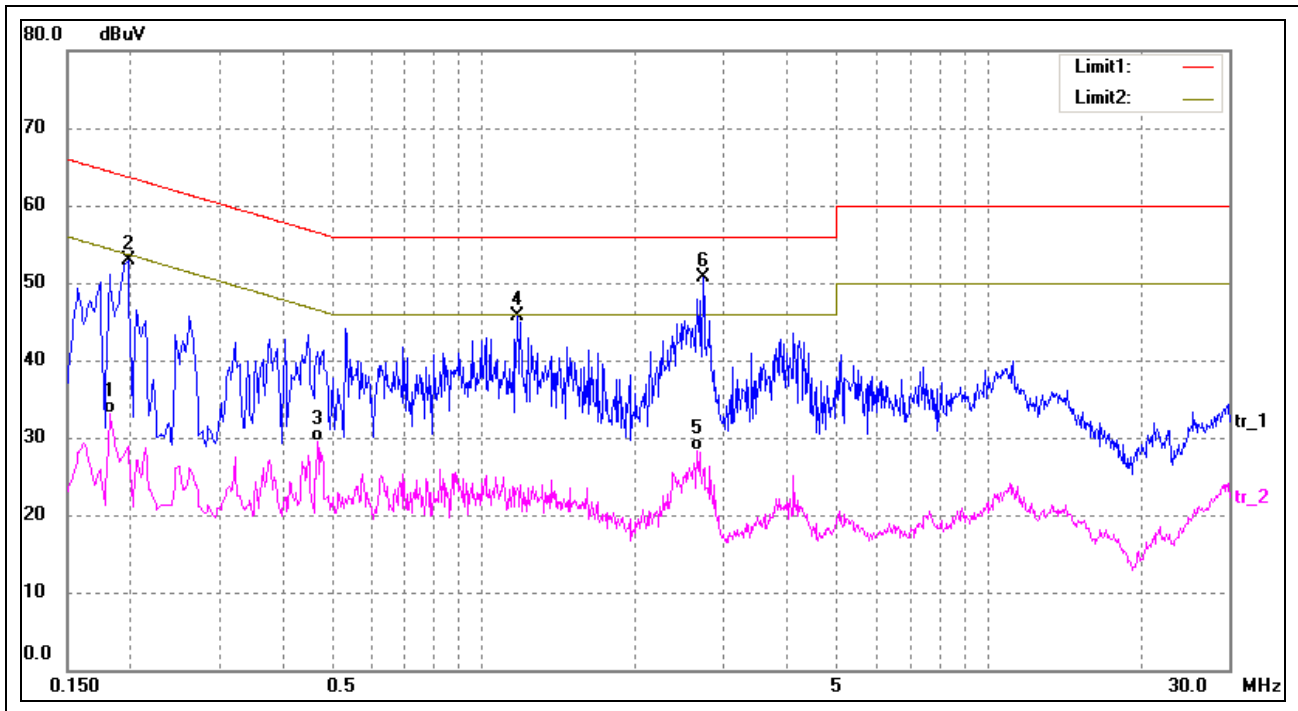
### 3.7V Conducted Emissions Test Data



**Plot of Conducted Emissions Test Data**

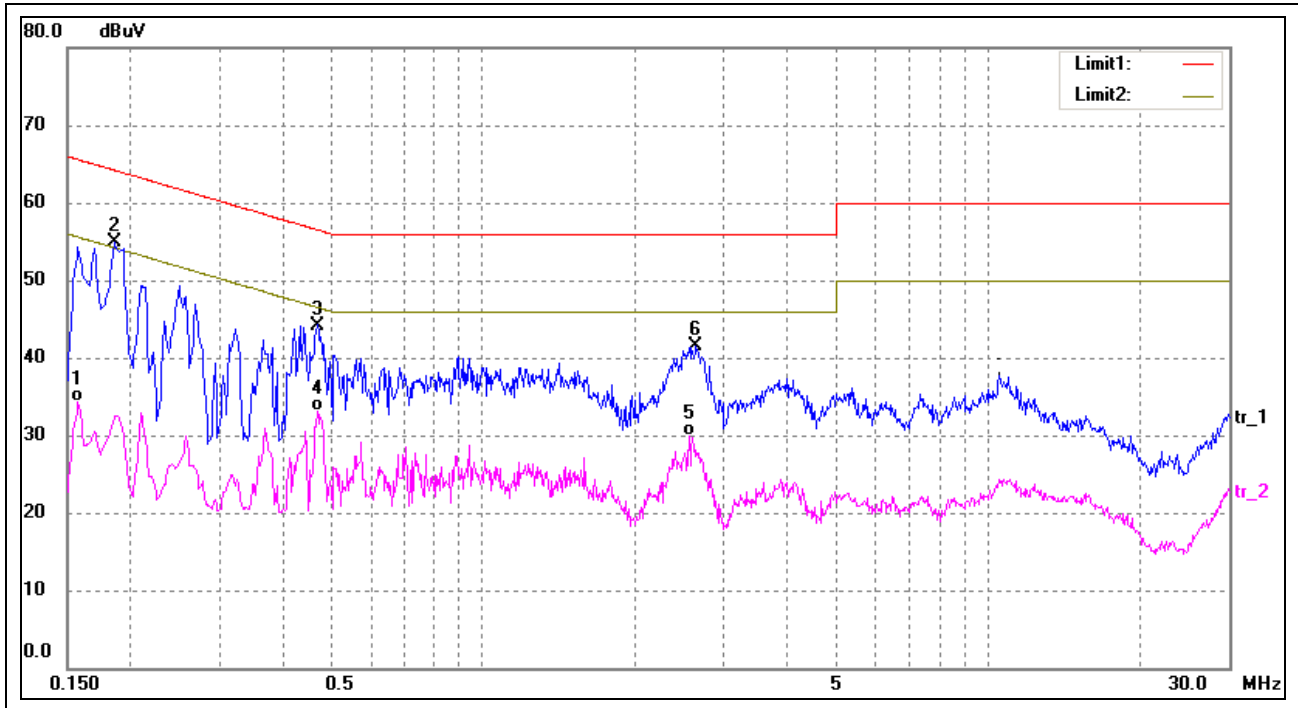
EUT: *mobile phone*  
 Tested Model: *qwerty*  
 Operating Condition: *TM2*  
 Comment: *AC 120V/60Hz*

Test Specification: *Neutral*



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1820	23.60	9.50	33.10	54.39	-21.29	AVG
2	0.1980	43.48	9.50	52.98	63.69	-10.71	peak
3	0.4700	20.06	9.50	29.56	46.51	-16.95	AVG
4	1.1660	35.64	10.00	45.64	56.00	-10.36	peak
5	2.6500	18.36	10.00	28.36	46.00	-17.64	AVG
6	2.7300	40.61	10.00	50.61	56.00	-5.39	peak

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	24.72	9.50	34.22	55.57	-21.35	AVG
2	0.1860	45.41	9.50	54.91	64.21	-9.30	peak
3	0.4700	34.70	9.50	44.20	56.51	-12.31	peak
4	0.4700	23.62	9.50	33.12	46.51	-13.39	AVG
5	2.5580	19.91	10.00	29.91	46.00	-16.09	AVG
6	2.6380	31.41	10.00	41.41	56.00	-14.59	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.

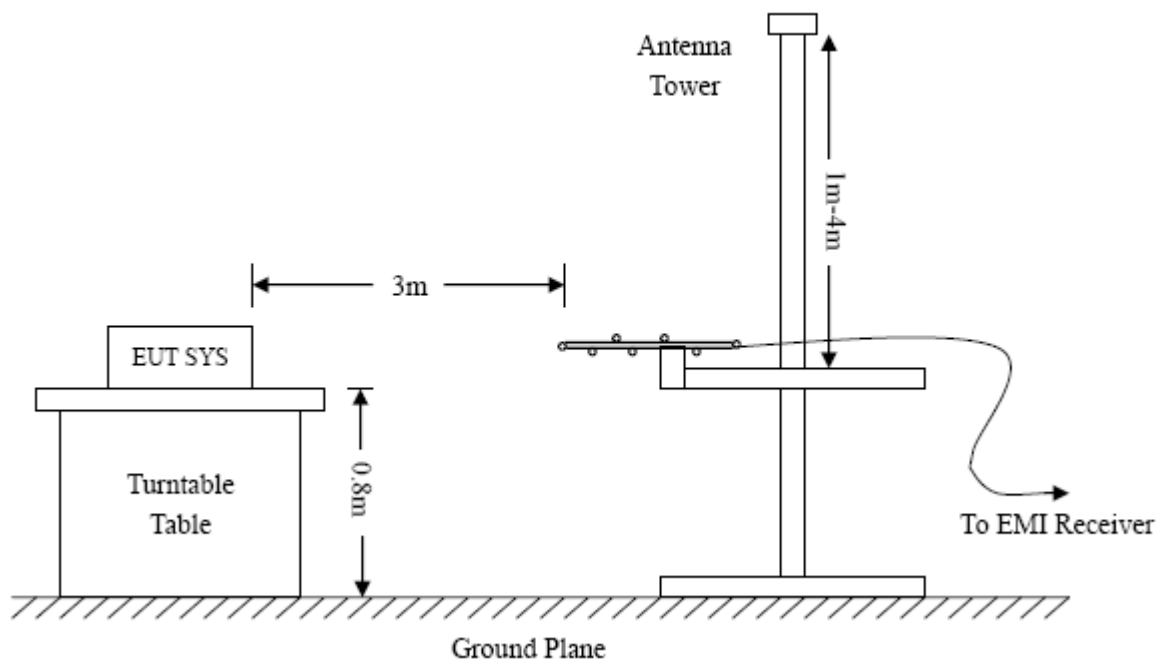
### 4.2 Test Equipment List and Details

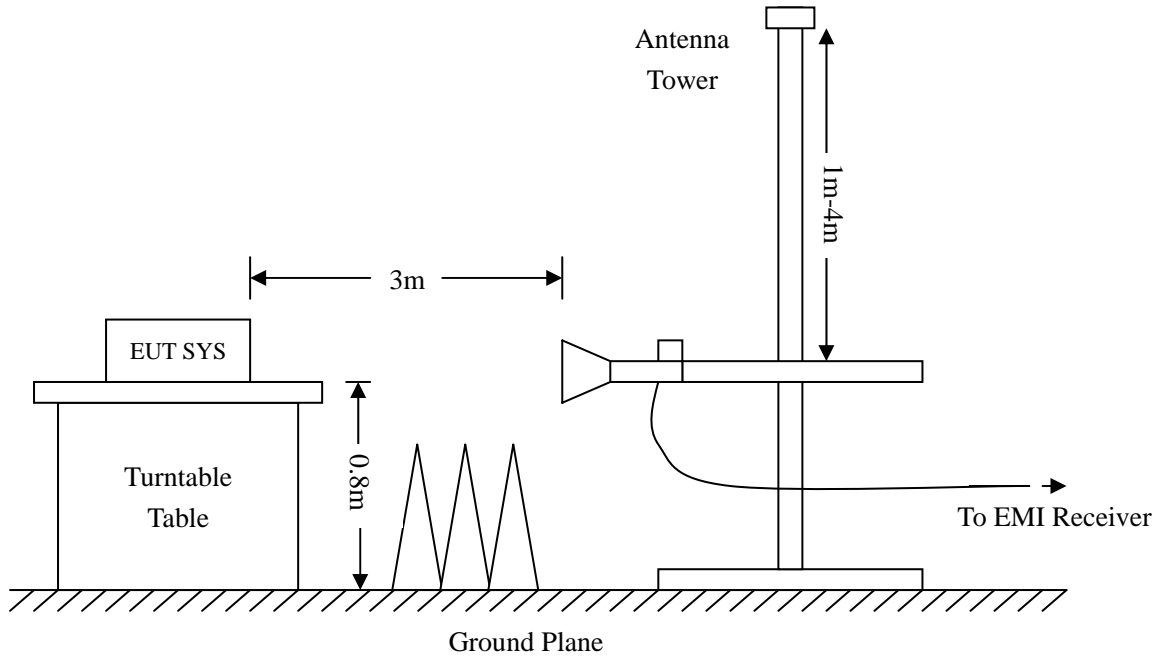
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2014-05-28	2015-05-27
EMI Test Receiver	R&S	ESVB	825471/005	2014-05-28	2015-05-27
Pre-amplifier	Agilent	8447F	3113A06717	2014-05-28	2015-05-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2014-05-28	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	2014-05-24	2015-05-23

### 4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 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  
 RBW=10KHz,  
 VBW =30KHz  
 Sweep time= Auto  
 Trace = max hold  
 Detector function = peak

Frequency :30MHz-1GHz  
 RBW=120KHz,  
 VBW=300KHz  
 Sweep time= Auto  
 Trace = max hold  
 Detector function = peak, QP

Frequency :Above 1GHz  
 RBW=1MHz,  
 VBW=3MHz(Peak), 10Hz(AV)  
 Sweep time= Auto  
 Trace = max hold  
 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

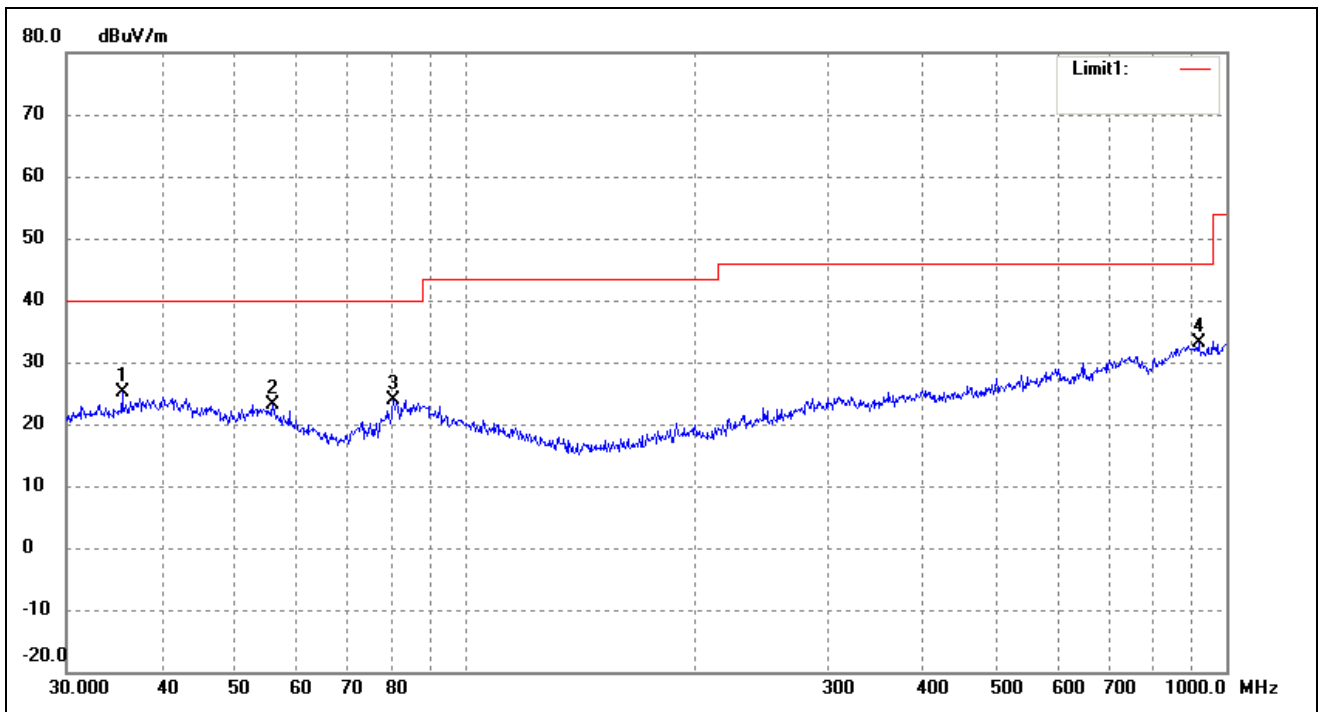
### 4.7 Summary of Test Results/Plots

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

**-2.59 dB at 45.3755 MHz in the Vertical polarization, TM1 mode, 9 kHz to 1 GHz, 3Meters**

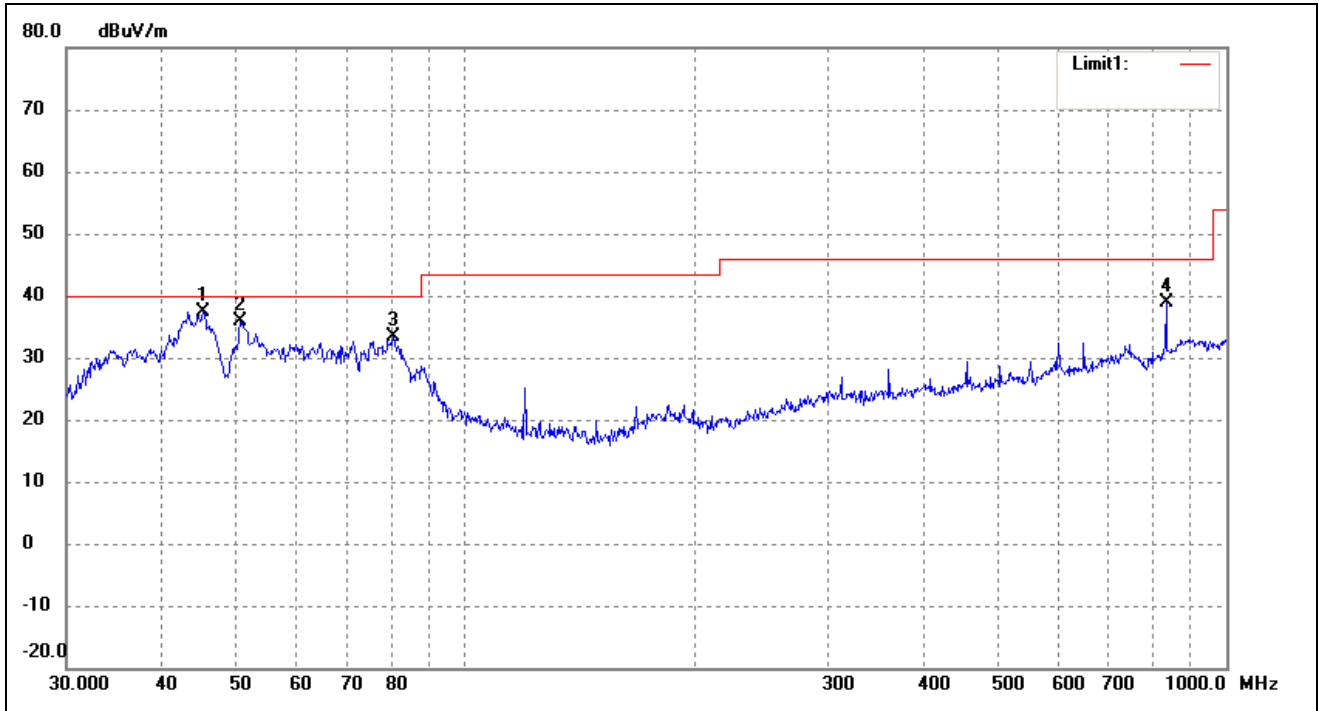
#### Plot of Radiated Emissions Test Data

EUT: *mobile phone*  
 Tested Model: *qwerty*  
 Operating Condition: *TM1*  
 Comment: *AC 120V/60Hz*  
  
 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	35.4993	18.99	6.02	25.01	40.00	-14.99	0	100	peak
2	56.0007	17.50	5.73	23.23	40.00	-16.77	360	100	peak
3	80.6442	22.81	1.17	23.98	40.00	-16.02	290	100	peak
4	919.2866	16.74	16.50	33.24	46.00	-12.76	0	100	peak

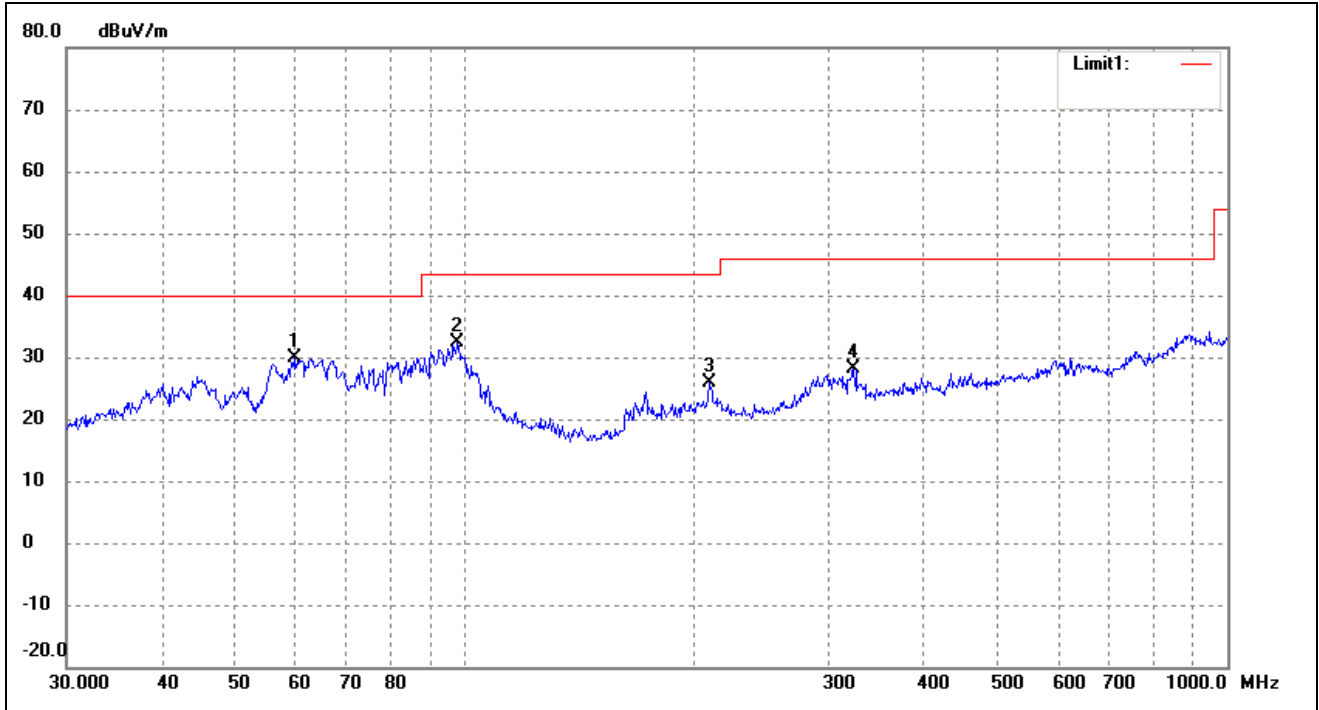
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	45.3755	29.76	7.65	37.41	40.00	-2.59	12	100	peak
2	50.7637	29.63	6.19	35.82	40.00	-4.18	200	100	peak
3	80.6442	32.13	1.17	33.30	40.00	-6.70	100	100	peak
4	833.3171	23.54	15.36	38.90	46.00	-7.10	306	100	peak

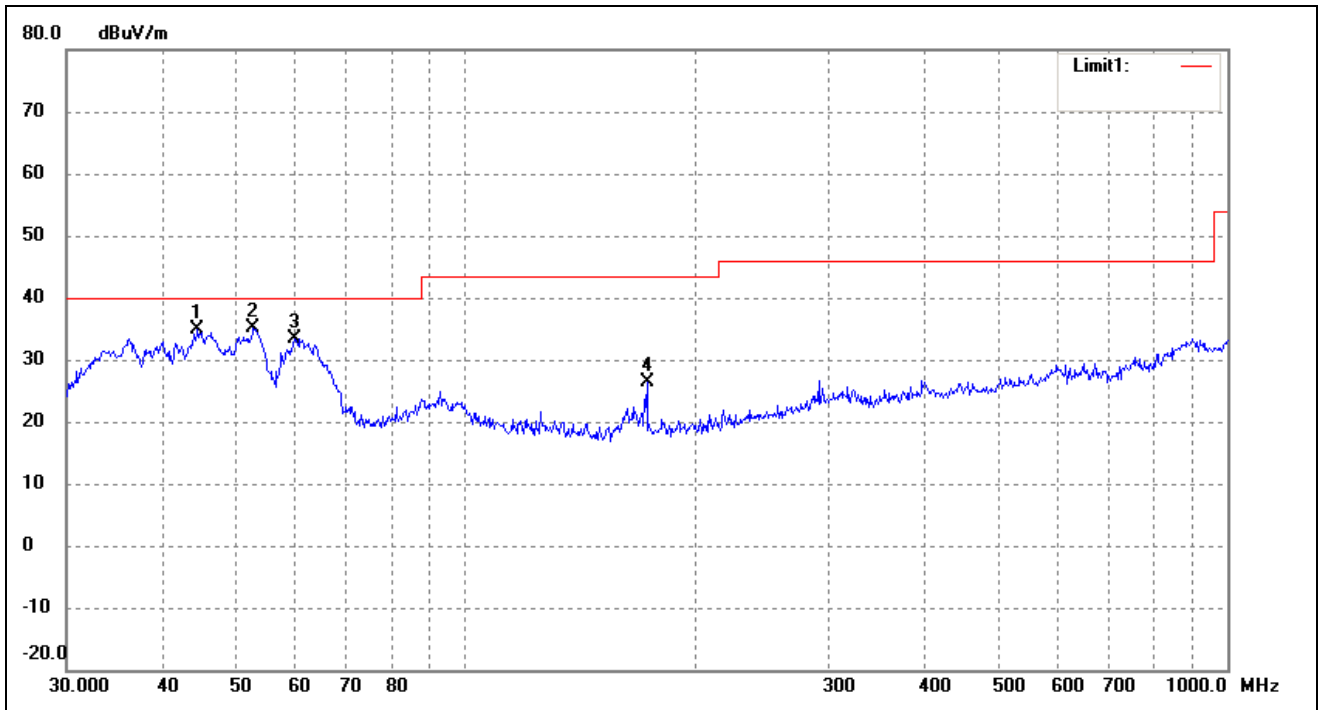
**Plot of Radiated Emissions Test Data**

EUT: mobile phone  
 Tested Model: qwerty  
 Operating Condition: TM2  
 Comment: AC 120V/60Hz  
 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	59.8588	24.47	5.39	29.86	40.00	-10.14	0	100	peak
2	97.7983	26.90	5.58	32.48	43.50	-11.02	180	100	peak
3	209.3129	21.63	4.35	25.98	43.50	-17.52	0	100	peak
4	323.3204	19.05	9.19	28.24	46.00	-17.76	0	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	44.5868	26.89	7.88	34.77	40.00	-5.23	20	100	peak
2	52.7600	29.03	6.02	35.05	40.00	-4.95	20	100	peak
3	59.8588	28.03	5.39	33.42	40.00	-6.58	20	100	peak
4	173.2051	23.59	2.70	26.29	43.50	-17.21	0	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 \*\*\*\*\*