

**FCC PART 15 CLASS B  
MEASUREMENT AND TEST REPORT**

For

**Bess Mobile HK, Limited**

Unit21 15/F Tuen Mun Central Square, 22 Hoi Wing Rd. Tuen Mun New Territories,  
Hong Kong, China

**FCC ID: ZE6F1**

|   |                                      |
|---|--------------------------------------|
| <b>Report Type:</b><br>Original Report  | <b>Product Type:</b><br>Mobile Phone |
| <b>Test Engineer:</b> <u>Brown Lu</u> <i>Brown Lu</i>   |                                      |
| <b>Report Number:</b> <u>RSZ120111005-00A</u>   |                                      |
| <b>Report Date:</b> <u>2012-02-22</u>   |                                      |
| <b>Reviewed By:</b> <u>Merry Zhao</u> <i>merry.zhao</i><br>EMC Engineer   |                                      |
| <b>Test Laboratory:</b><br>Bay Area Compliance Laboratories Corp. (Shenzhen)<br>6/F, the 3rd Phase of WanLi Industrial Building,<br>ShiHua Road, FuTian Free Trade Zone<br>Shenzhen, Guangdong, China<br>Tel: +86-755-33320018<br>Fax: +86-755-33320008<br><a href="http://www.baclcorp.com.cn">www.baclcorp.com.cn</a> |                                      |

**Note:** This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP\*, or any agency of the Federal Government.

\* This report contains data that are not covered by the NVLAP accreditation and are marked with an asterisk "★" (Rev.2)

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## GENERAL INFORMATION

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### Product Description for Equipment under Test (EUT)

The *Bess Mobile HK, Limited*'s product, model number: *F1* (FCC ID: *ZE6F1*) (the "EUT") in this report was a *Mobile Phone*, which was measured approximately: 10.5 cm (W) x 5.5 cm (D) x 1.0 cm (H), rated input voltage: DC 3.7V battery or DC 5.0V from adapter for charging. The highest frequency generated in the device is 104 MHz.

Adapter Information: Adaptador CA/CC

Modelo: F1

Entrada: 100-240Vac. 50/60 Hz. 0.15A

Salida: 5.0V<sub>DC</sub> 500mA

*\* All measurement and test data in this report was gathered from production sample serial number: 1201029 (Assigned by BACL, Shenzhen). The EUT was received on 2012-01-11.*

### Objective

This report is prepared on behalf of *Bess Mobile HK, Limited* in accordance with Part 2- Subpart J, Part 15- Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of EUT with FCC Part 15 Class B.

### Related Submittal(s)/Grant(s)

FCC Part 15.247 DSS and 22H&24E PCE submissions with FCC ID: ZE6F1

### Test Facility

The Test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at <http://ts.nist.gov/Standards/scopes/2007070.htm>

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in a typical mode which is provided by manufacture.

### EUT Exercise Software

Winthraw.exercise software was provided by BACL

### Equipment Modifications

No modification was made to the EUT tested.

### Local Support Equipment List and Details

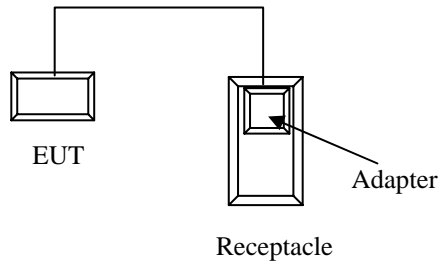
| Manufacturer | Description | Model    | Serial Number        |
|--------------|-------------|----------|----------------------|
| DELL         | Host PC     | DCSCSF   | 127BP2X              |
| DELL         | LCD monitor | 6737-66N | 23-P3242             |
| DELL         | Mouse 1#    | MOC5UO   | G1B0096D             |
| DELL         | Keyboard 1# | L100     | CNORH656658907BL04TY |
| SAST         | Modem       | AEM-2100 | 0293                 |

### External I/O Cable

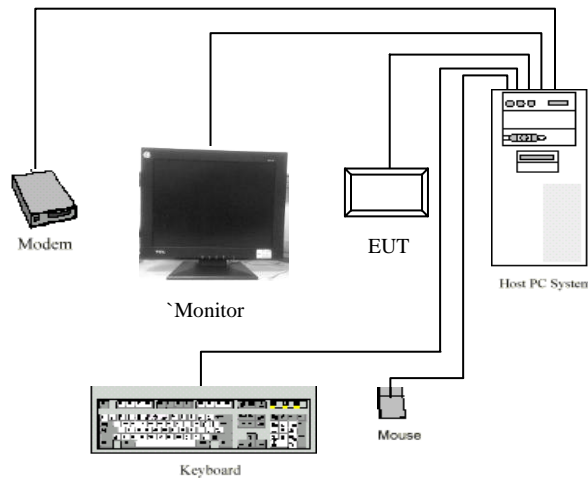
| Cable Description                      | Length (m) | From/Port          | To       |
|--|------------|--------------------|----------|
| Shielded Detachable USB Keyboard Cable | 1.5        | Keyboard Port/Host | Keyboard |
| Shielded Detachable USB Mouse Cable    | 1.5        | Mouse Port/Host    | Mouse    |
| Shielded Detachable Serial Cable       | 1.5        | Serial Port/Host   | Modem    |
| Shielded Detachable VGA Cable          | 1.5        | VGA Port/Host      | Monitor  |
| Shielded Detachable USB Cable          | 1.0        | EUT                | Host PC  |

## Configuration of Test Setup

For charging mode:

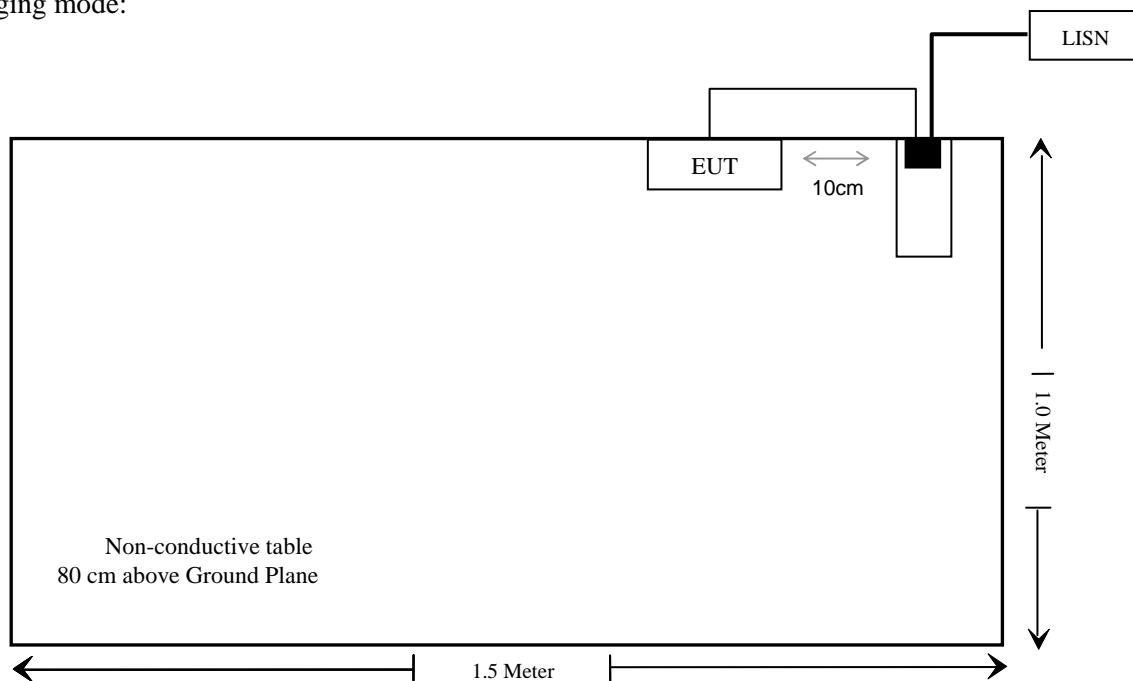


For downloading mode:

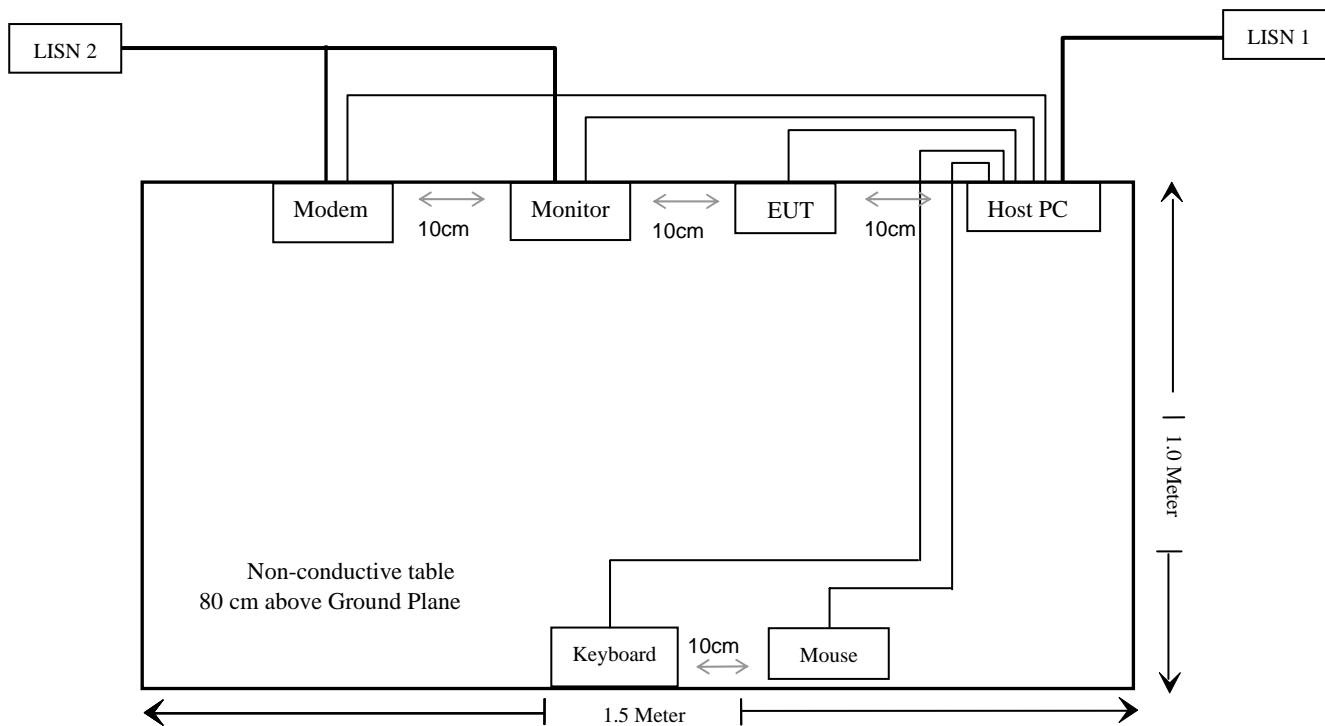


## Block Diagram of Test Setup

For charging mode:



For downloading mode:



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**SUMMARY OF TEST RESULTS**

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| FCC Rules | Description of Test         | Results    |
|-----------|-----------------------------|------------|
| §15.107   | AC Line Conducted Emissions | Compliance |
| §15.109   | Radiated Emissions          | Compliance |



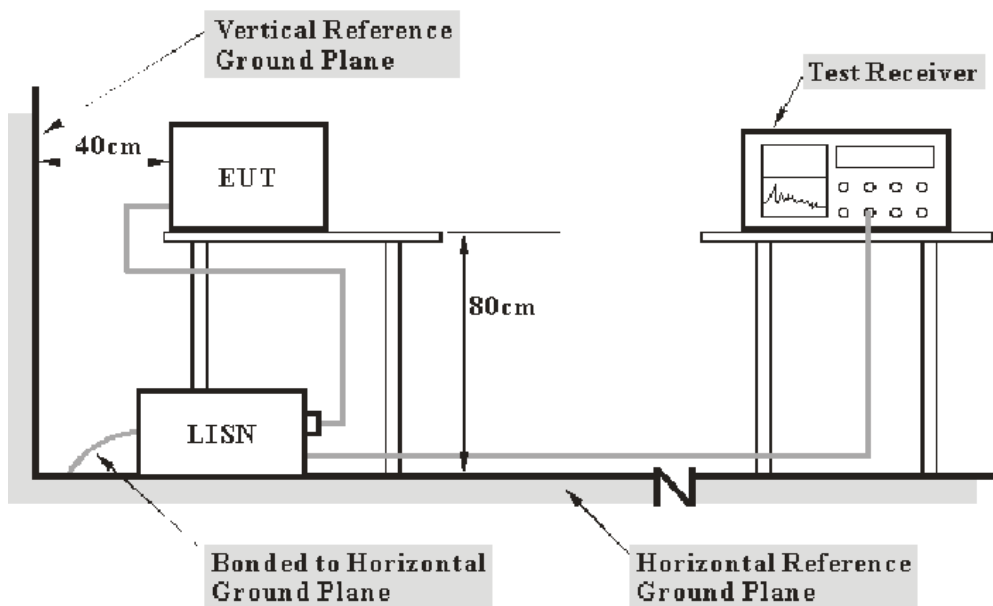
## FCC §15.107 – AC LINE CONDUCTED EMISSIONS

### Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 2.4 dB.(k=2, 95% level of confidence)

### EUT Setup



- Note: 1. Support units were connected to second LISN.  
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.107 Class B limits.

The spacing between the peripherals was 10 cm.

For charging mode, the adapter was connected to a 120 VAC/60 Hz power source.

For downloading mode, the host PC was connected to a 120 VAC/60 Hz power source.

## EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

| <u>Frequency Range</u> | <u>IF B/W</u> |
|------------------------|---------------|
| 150 kHz – 30 MHz       | 9 kHz         |

## Test Equipment List and Details

| Manufacturer    | Description       | Model   | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|---------|---------------|------------------|----------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCS30  | 830245/006    | 2011-03-03       | 2012-03-02           |
| Rohde & Schwarz | L.I.S.N.          | ESH2-Z5 | 892107/021    | 2011-03-09       | 2012-03-08           |
| Com-Power       | L.I.S.N.          | LI-200  | 12005         | N/A              | N/A                  |
| Com-Power       | L.I.S.N.          | LI-200  | 12208         | N/A              | N/A                  |
| Rohde & Schwarz | Pulse limiter     | ESH3Z2  | DE25985       | 2011-07-08       | 2012-07-07           |

\* **Statement of Traceability:** Bay Area Compliance Laboratory Corp. attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN for charging mode; the host PC was connected to the outlet of the first LISN for downloading mode.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

## Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107, with the worst margin reading of:

**9.19 dB at 2.160 MHz** in the **Neutral** conducted for charging mode

## Test Data

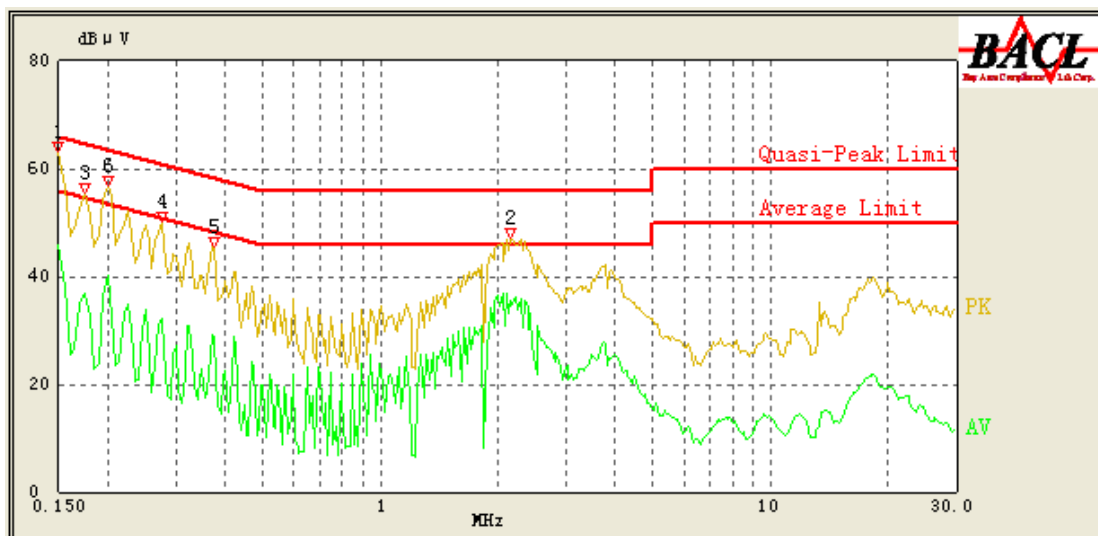
### Environmental Conditions

|                           |           |
|---------------------------|-----------|
| <b>Temperature:</b>       | 25 °C     |
| <b>Relative Humidity:</b> | 48 %      |
| <b>ATM Pressure:</b>      | 100.0 kPa |

*The testing was performed by Brown Lu on 2012-01-18.*

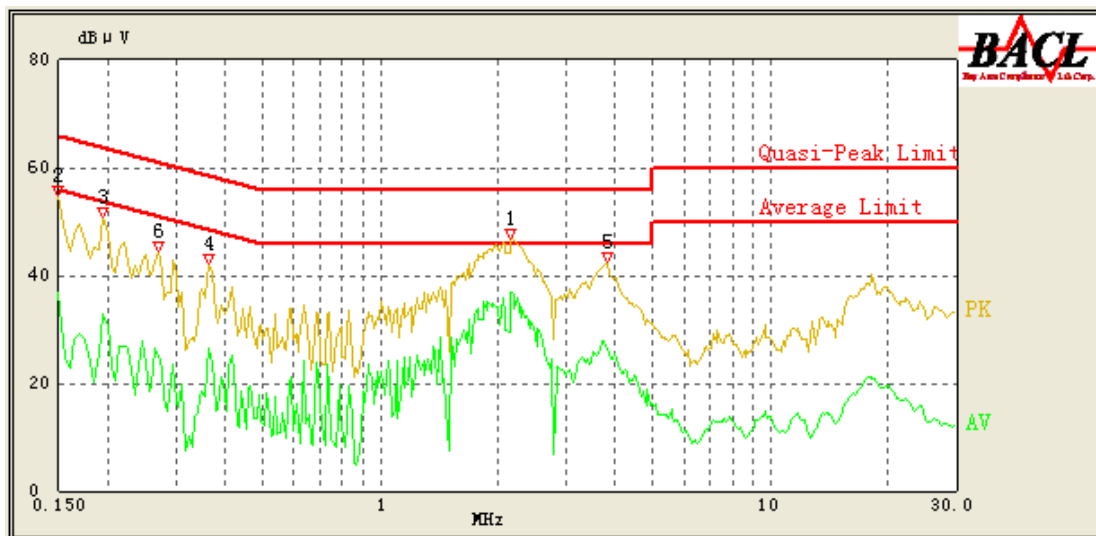
Test Mode: Charging

AC 120V/60 Hz, Line



| Frequency (MHz) | Corrected Amplitude (dBμV) | Correction Factor (dB) | Limit (dBμV) | Margin (dB) | Detector (PK/ QP/Ave.) |
|-----------------|----------------------------|------------------------|--------------|-------------|------------------------|
| 0.150           | 45.77                      | 10.10                  | 56.00        | 10.23       | Ave.                   |
| 2.160           | 35.59                      | 10.10                  | 46.00        | 10.41       | Ave.                   |
| 0.150           | 51.77                      | 10.10                  | 66.00        | 14.23       | QP                     |
| 0.200           | 40.01                      | 10.10                  | 54.57        | 14.56       | Ave.                   |
| 2.150           | 38.40                      | 10.10                  | 56.00        | 17.60       | QP                     |
| 0.175           | 36.88                      | 10.10                  | 55.29        | 18.41       | Ave.                   |
| 0.200           | 45.39                      | 10.10                  | 64.57        | 19.18       | QP                     |
| 0.275           | 32.08                      | 10.10                  | 52.43        | 20.35       | Ave.                   |
| 0.375           | 28.89                      | 10.10                  | 49.57        | 20.68       | Ave.                   |
| 0.175           | 43.10                      | 10.10                  | 65.29        | 22.19       | QP                     |
| 0.275           | 37.35                      | 10.10                  | 62.43        | 25.08       | QP                     |
| 0.375           | 29.43                      | 10.10                  | 59.57        | 30.14       | QP                     |

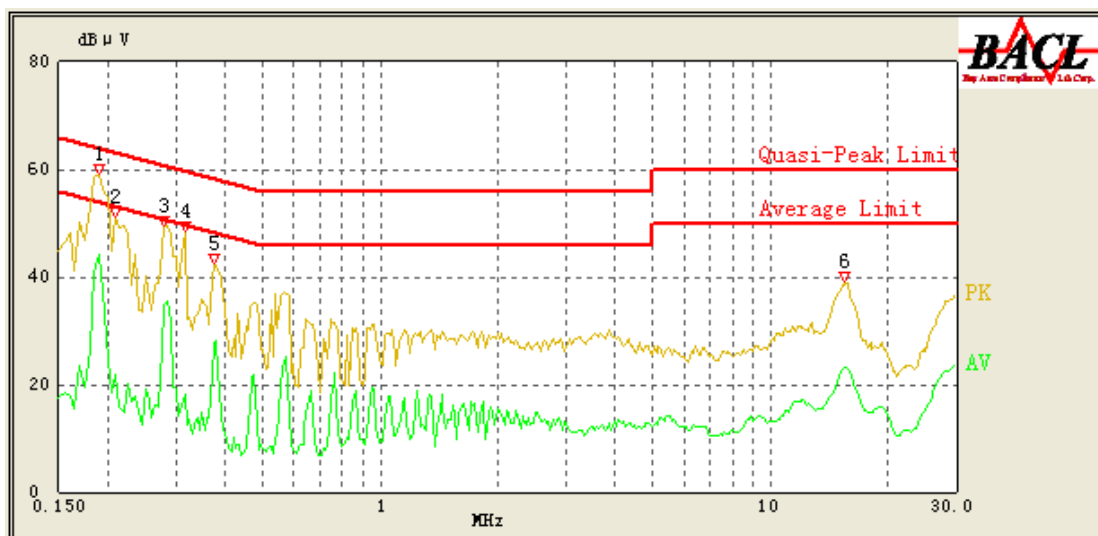
## AC 120V/60 Hz, Neutral



| Frequency (MHz) | Corrected Amplitude (dBμV) | Correction Factor (dB) | Limit (dBμV) | Margin (dB) | Detector (PK/ QP/Ave.) |
|-----------------|----------------------------|------------------------|--------------|-------------|------------------------|
| 2.160           | 36.81                      | 10.10                  | 46.00        | 9.19        | Ave.                   |
| 2.160           | 42.30                      | 10.10                  | 56.00        | 13.70       | QP                     |
| 0.150           | 50.08                      | 10.10                  | 66.00        | 15.92       | QP                     |
| 3.800           | 37.83                      | 10.10                  | 56.00        | 18.17       | QP                     |
| 0.195           | 45.91                      | 10.10                  | 64.71        | 18.80       | QP                     |
| 0.150           | 36.90                      | 10.10                  | 56.00        | 19.10       | Ave.                   |
| 3.800           | 26.65                      | 10.10                  | 46.00        | 19.35       | Ave.                   |
| 0.195           | 32.71                      | 10.10                  | 54.71        | 22.00       | Ave.                   |
| 0.365           | 37.83                      | 10.10                  | 59.86        | 22.03       | QP                     |
| 0.365           | 26.49                      | 10.10                  | 49.86        | 23.37       | Ave.                   |
| 0.270           | 37.92                      | 10.10                  | 62.57        | 24.65       | QP                     |
| 0.270           | 25.27                      | 10.10                  | 52.57        | 27.30       | Ave.                   |

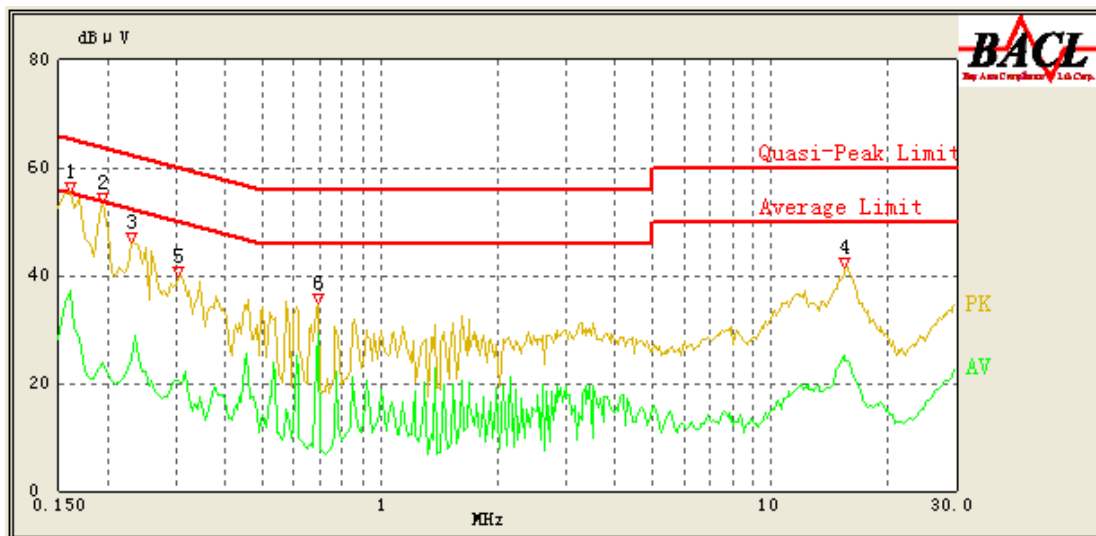
Test Mode: Downloading

### AC 120V/60 Hz, Line



| Frequency (MHz) | Corrected Amplitude (dBμV) | Correction Factor (dB) | Limit (dBμV) | Margin (dB) | Detector (PK/ QP/Ave.) |
|-----------------|----------------------------|------------------------|--------------|-------------|------------------------|
| 0.180           | 43.06                      | 10.23                  | 54.86        | 11.80       | Ave.                   |
| 0.270           | 33.91                      | 10.23                  | 52.29        | 18.38       | Ave.                   |
| 0.180           | 45.18                      | 10.23                  | 64.86        | 19.68       | QP                     |
| 0.375           | 27.85                      | 10.23                  | 49.57        | 21.72       | Ave.                   |
| 0.315           | 35.02                      | 10.23                  | 61.29        | 26.27       | QP                     |
| 15.405          | 22.80                      | 11.45                  | 50.00        | 27.20       | Ave.                   |
| 0.270           | 35.00                      | 10.23                  | 62.29        | 27.29       | QP                     |
| 0.215           | 36.84                      | 10.23                  | 64.29        | 27.45       | QP                     |
| 0.375           | 31.30                      | 10.23                  | 59.57        | 28.27       | QP                     |
| 15.405          | 30.73                      | 11.45                  | 60.00        | 29.27       | QP                     |
| 0.215           | 21.67                      | 10.23                  | 54.29        | 32.62       | Ave.                   |
| 0.315           | 18.15                      | 10.23                  | 51.29        | 33.14       | Ave.                   |

## AC 120V/60 Hz, Neutral



| Frequency (MHz) | Corrected Amplitude (dBμV) | Correction Factor (dB) | Limit (dBμV) | Margin (dB) | Detector (PK/ QP/Ave.) |
|-----------------|----------------------------|------------------------|--------------|-------------|------------------------|
| 0.690           | 29.13                      | 10.24                  | 46.00        | 16.87       | Ave.                   |
| 0.160           | 37.18                      | 10.23                  | 55.71        | 18.53       | Ave.                   |
| 15.535          | 38.19                      | 11.45                  | 60.00        | 21.81       | QP                     |
| 0.690           | 32.10                      | 10.24                  | 56.00        | 23.90       | QP                     |
| 15.525          | 24.28                      | 11.45                  | 50.00        | 25.72       | Ave.                   |
| 0.160           | 39.34                      | 10.23                  | 65.71        | 26.37       | QP                     |
| 0.195           | 36.80                      | 10.23                  | 64.71        | 27.91       | QP                     |
| 0.230           | 24.51                      | 10.23                  | 53.71        | 29.20       | Ave.                   |
| 0.230           | 33.68                      | 10.23                  | 63.71        | 30.03       | QP                     |
| 0.195           | 23.90                      | 10.23                  | 54.71        | 30.81       | Ave.                   |
| 0.305           | 20.54                      | 10.23                  | 51.57        | 31.03       | Ave.                   |
| 0.305           | 29.32                      | 10.23                  | 61.57        | 32.25       | QP                     |

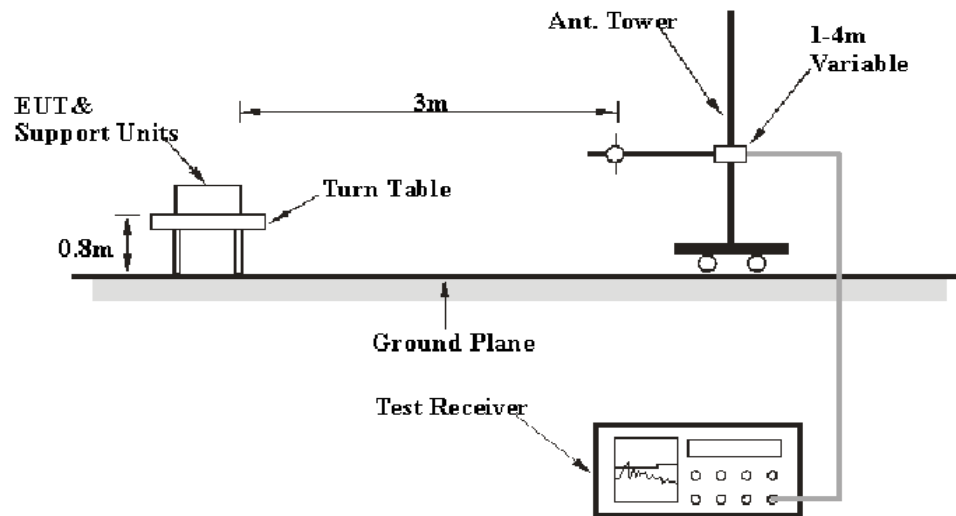
## FCC §15.109 - RADIATED EMISSIONS

### Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 4.0 dB. (k=2, 95% level of confidence)

### EUT Setup



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15.109 Class B limits.

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.

For charging mode, the adapter was connected to a 120 VAC/60 Hz power source.

For downloading mode, the host PC was connected to a 120 VAC/60 Hz power source.

## EMI Test Receiver Setup

The system was investigated from 30 MHz to 1000 MHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

| <i><b>Frequency</b></i> | <i><b>RB/W</b></i> | <i><b>VB/W</b></i> | <i><b>IF B/W</b></i> | <i><b>Detection</b></i> |
|-------------------------|--------------------|--------------------|----------------------|-------------------------|
| 30 MHz-1 GHz            | 100 kHz            | 300 kHz            | 120 kHz              | Quasi-peak              |

## Test Procedure

During the radiated emissions test, the adapter was connected to AC floor outlet for charging mode, and the host PC, monitor, modem and the printer were connected to AC floor outlet for downloading mode.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode from 30 MHz to 1 GHz.

## Test Equipment List and Details

| <b>Manufacturer</b> | <b>Description</b> | <b>Model</b> | <b>Serial Number</b> | <b>Calibration Date</b> | <b>Calibration Due Date</b> |
|---------------------|--------------------|--------------|----------------------|-------------------------|-----------------------------|
| HP                  | Amplifier          | HP8447E      | 1937A01046           | 2011-08-02              | 2012-08-02                  |
| Rohde & Schwarz     | EMI Test Receiver  | ESCI         | 100035               | 2011-11-11              | 2012-11-10                  |
| Sunol Sciences      | Broadband Antenna  | JB1          | A040904-1            | 2011-07-05              | 2012-07-04                  |

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp (Shenzhen). attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Corrected Amplitude & Margin Calculation

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

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

## Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109 Class B, with the worst margin reading of:

**3.3 dB at 42.355750 MHz in the Vertical polarization for charging mode**



## Test Data

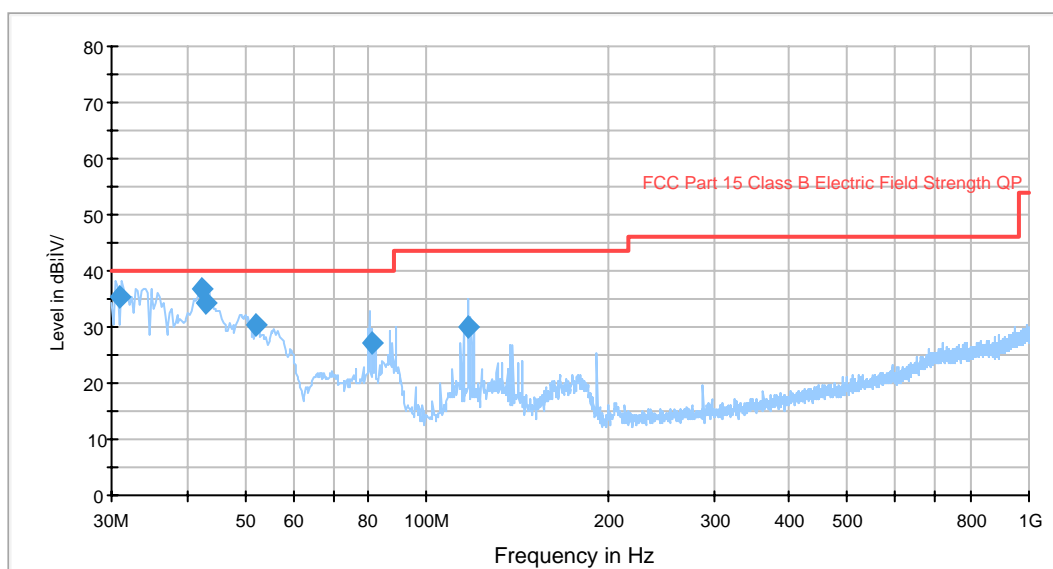
### Environmental Conditions

|                           |           |
|---------------------------|-----------|
| <b>Temperature:</b>       | 25 °C     |
| <b>Relative Humidity:</b> | 48 %      |
| <b>ATM Pressure:</b>      | 100.0 kPa |

The testing was performed by Brown Lu on 2012-01-18.

Test Mode: Charging

Auto Test(FCC 15 Class B)

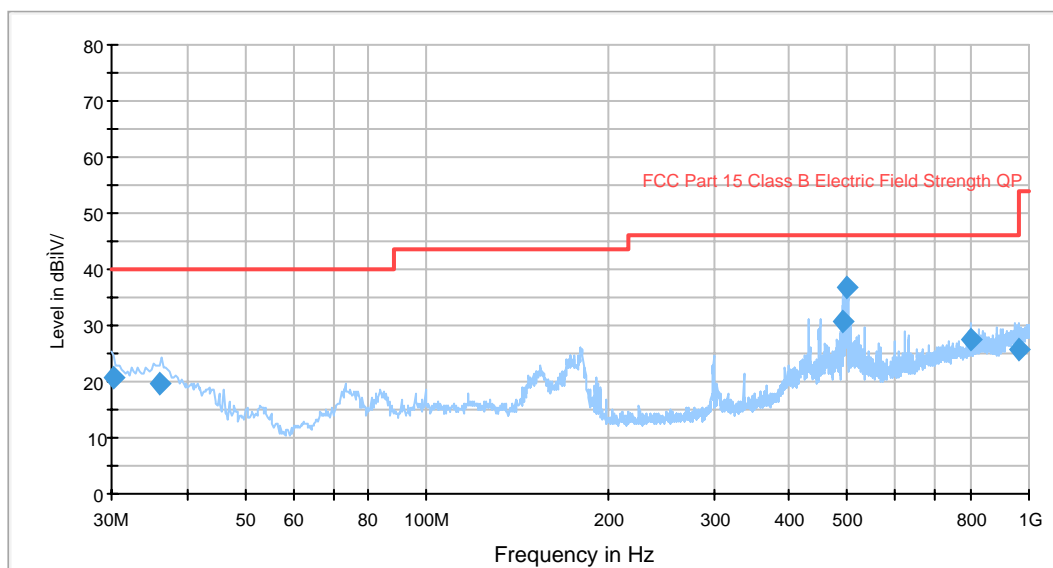


| Frequency (MHz) | Corrected Amplitude (dBμV/m) | Test Antenna |                | Turntable Position (degree) | Correction Factor (dB) | Limit (dBμV/m) | Margin (dB) |
|-----------------|------------------------------|--------------|----------------|-----------------------------|------------------------|----------------|-------------|
|                 |                              | Height (cm)  | Polarity (H/V) |                             |                        |                |             |
| 42.355750       | 36.7                         | 103.0        | V              | 266.0                       | -13.6                  | 40.0           | 3.3*        |
| 30.887239       | 35.2                         | 102.0        | V              | 25.0                        | -6.0                   | 40.0           | 4.8         |
| 42.886750       | 34.2                         | 103.0        | V              | 287.0                       | -13.9                  | 40.0           | 5.8         |
| 52.261250       | 30.2                         | 102.0        | V              | 249.0                       | -17.6                  | 40.0           | 9.8         |
| 80.927250       | 27.0                         | 274.0        | H              | 344.0                       | -18.1                  | 40.0           | 13.0        |
| 117.373250      | 29.9                         | 124.0        | H              | 172.0                       | -12.6                  | 43.5           | 13.6        |

\*Within measurement uncertainty

Test Mode: Downloading

Auto Test(FCC 15 Class B)



| Frequency (MHz) | Corrected Amplitude (dBµV/m) | Test Antenna |                | Turntable Position (degree) | Correction Factor (dB) | Limit (dBµV/m) | Margin (dB) |
|-----------------|------------------------------|--------------|----------------|-----------------------------|------------------------|----------------|-------------|
|                 |                              | Height (cm)  | Polarity (H/V) |                             |                        |                |             |
| 496.974750      | 36.8                         | 204.0        | V              | 249.0                       | -8.4                   | 46.0           | 9.2         |
| 492.300750      | 30.8                         | 103.0        | V              | 147.0                       | -8.5                   | 46.0           | 15.2        |
| 799.623500      | 27.5                         | 103.0        | V              | 316.0                       | -1.8                   | 46.0           | 18.5        |
| 30.293750       | 20.6                         | 102.0        | V              | 249.0                       | -5.6                   | 40.0           | 19.4        |
| 35.913750       | 19.8                         | 103.0        | V              | 58.0                        | -9.4                   | 40.0           | 20.2        |
| 959.725000      | 25.7                         | 102.0        | H              | 80.0                        | 0.8                    | 46.0           | 20.3        |

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