



## FCC PART 15B, CLASS B

# MEASUREMENT AND TEST REPORT

For

## Nexpro International Limitada

San Jose-Goicoechea, Guadalupe, Barrio Tournon, frente Al Hotel Villas Tournon,  
Oficinas Del Bufete Facio Y Canas, Costa Rica

**FCC ID: ZYPEV531**

<b>Report Type:</b> Original Report	<b>Product Type:</b> GSM Mobile Phone
<b>Test Engineer:</b> <u>Ares Liu</u> <i>Ares Liu</i>	
<b>Report Number:</b> <u>R1DG111226001-00C</u>	
<b>Report Date:</b> <u>2012-02-06</u>	
<b>Reviewed By:</b> <u>Merry Zhao</u> <i>Merry. Zhao</i>	
<b>Test Laboratory:</b> Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 <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)

## **TABLE OF CONTENTS**

<b>GENERAL INFORMATION.....</b>	<b>3</b>
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	3
OBJECTIVE .....	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST FACILITY .....	3
<b>SYSTEM TEST CONFIGURATION.....</b>	<b>4</b>
DESCRIPTION OF TEST CONFIGURATION .....	4
EUT EXERCISE SOFTWARE .....	4
EQUIPMENT MODIFICATIONS .....	4
LOCAL SUPPORT EQUIPMENT LIST AND DETAILS .....	4
EXTERNAL I/O CABLE.....	4
BLOCK DIAGRAM OF TEST SETUP .....	5
<b>SUMMARY OF TEST RESULTS.....</b>	<b>6</b>
<b>FCC §15.107 – AC LINE CONDUCTED EMISSIONS.....</b>	<b>7</b>
MEASUREMENT UNCERTAINTY .....	7
EUT SETUP .....	7
EMI TEST RECEIVER SETUP.....	8
TEST EQUIPMENT LIST AND DETAILS.....	8
TEST PROCEDURE .....	8
TEST RESULTS SUMMARY .....	8
TEST DATA .....	8
<b>FCC §15.109 - RADIATED EMISSIONS.....</b>	<b>13</b>
MEASUREMENT UNCERTAINTY .....	13
EUT SETUP .....	13
EMI TEST RECEIVER SETUP.....	14
TEST PROCEDURE .....	14
TEST EQUIPMENT LIST AND DETAILS.....	14
CORRECTED AMPLITUDE & MARGIN CALCULATION .....	14
TEST RESULTS SUMMARY .....	14
TEST DATA .....	15

## GENERAL INFORMATION

---

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

The *Nexpro International Limitada*'s product, model number: *EV531 (FCC ID: ZYPEV531)* (the "EUT") in this report was a *GSM Mobile Phone*, which was measured approximately: 110 mm (W) x 61 mm (D) x 13 mm (H), rated input voltage: DC 3.7V Lithium battery or DC 5.2V from adapter for charging.

#### AC/DC Adaptor

Input: 100-240 VAC 50/60 Hz 120 mA

Output : 5.2 VDC 500 mA

*\* All measurement and test data in this report was gathered from production sample serial number: 1112261 (Assigned by BACL, Shenzhen). The EUT was received on 2011-12-26.*

### Objective

This report is prepared on behalf of *Nexpro International Limitada* 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, 22H&24E PCE submissions with FCC ID: ZYPEV531.

### 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 manufacturer.

### 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

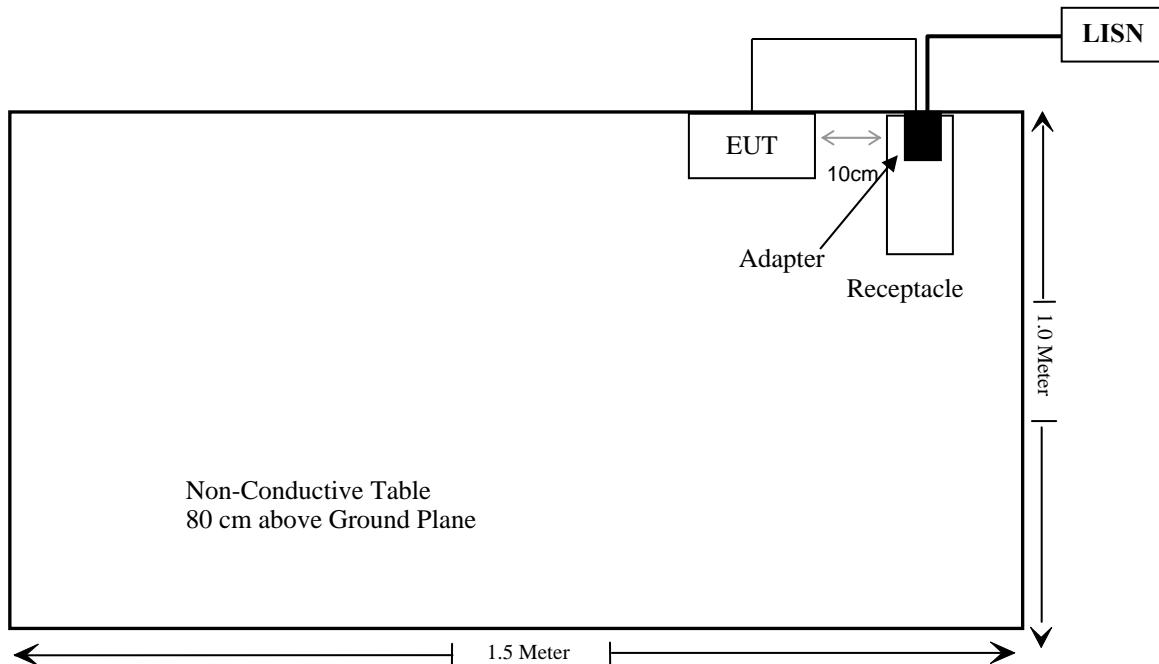
Manufacturer	Description	Model	Serial Number
DELL	PC	GX280	N/A
DELL	Keyboard	L100	CNORH656658907BL05DC
DELL	Mouse	MOC5UO	G1900NKD
DELL	LCD	E178WFPC	CN-OWY564-64180-7C4-2SQH
AST	Modem	AEM-2100	0293
HP	Printer	C3941A	JPTVOB2337

### External I/O Cable

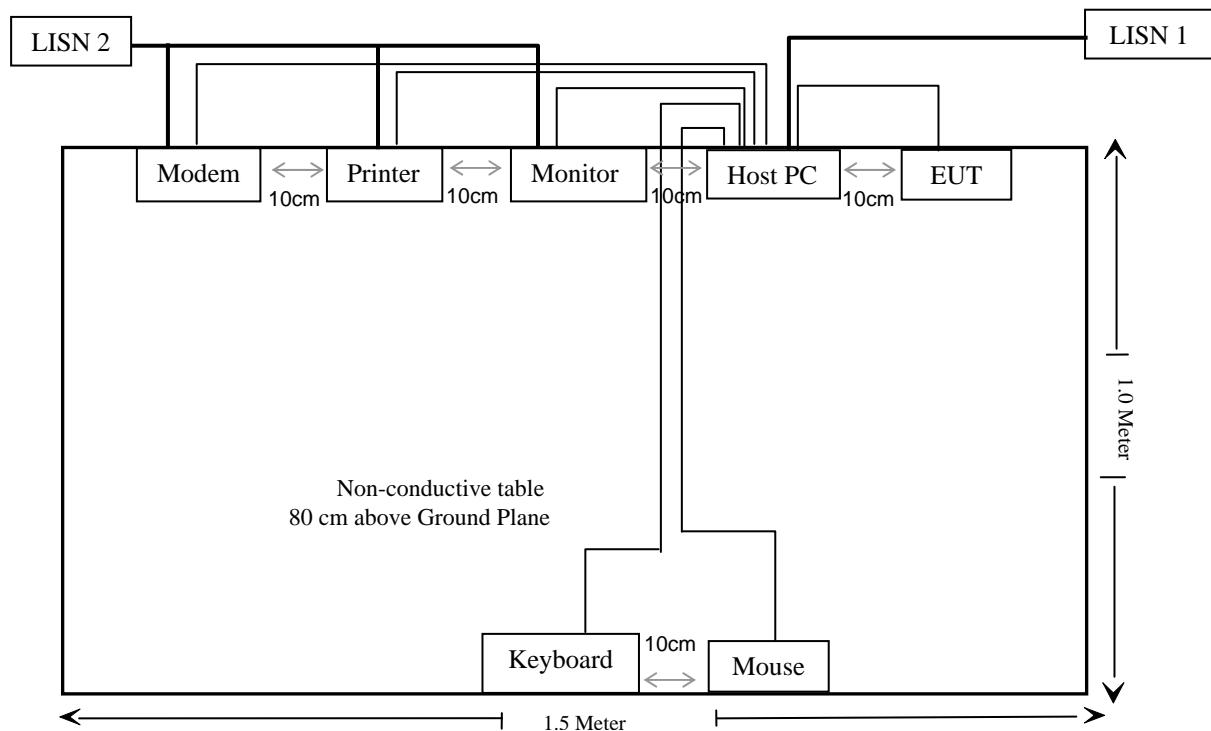
Cable Description	Length (M)	From/Port	To
Shielded Detachable K/B Cable	1.5	K/B Port/Host PC	Keyboard
Shielded Detachable Mouse Cable	1.5	Mouse Port/Host PC	Mouse
Shielded Detachable VGA Cable	1.5	VGA Port/Host PC	Monitor
Unshielded Detachable Cable	1.5	Host PC	EUT
Unshielded Detachable Cable	1.0	Host PC	LISN
Shielded Detachable Serial Cable	1.2	Serial Port/Host	Modem
Shielded Detachable Printer Cable	1.8	Parallel Port/Host	Printer

## Block Diagram of Test Setup

Charging mode



Downloading mode:



**SUMMARY OF TEST RESULTS**

---

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

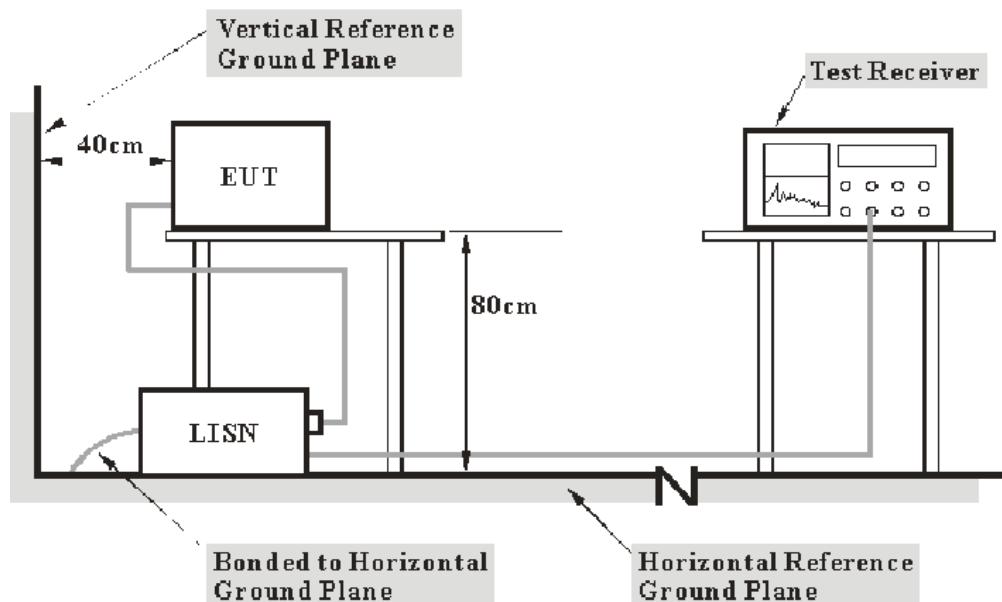
## FCC §15.107 – AC LINE CONDUCTED EMISSIONS

### 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:

<b>Frequency Range</b>	<b>IF B/W</b>
150 kHz – 30 MHz	9 kHz

## 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>
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

\* **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, For charging mode, the adapter was connected to the outlet of the LISN; For downloading mode, the host PC was connected to the outlet of the first LISN, the printer, monitor and modem were connected to the outlet of the second LISN.

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:

**3.05 dB at 1.750 MHz in the Line conducted mode**

## Test Data

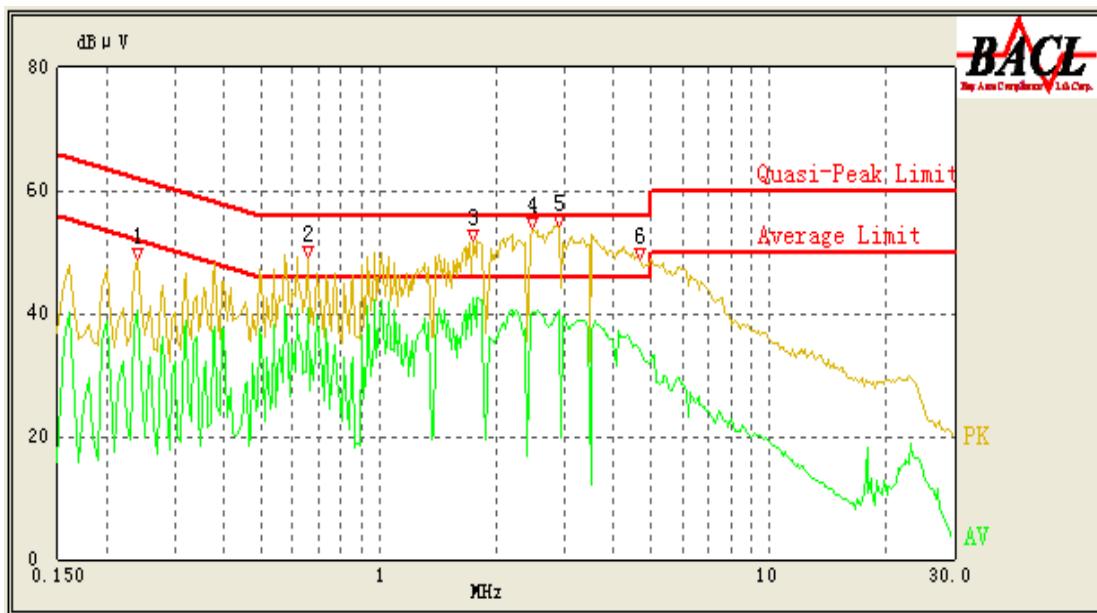
### Environmental Conditions

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

*The testing was performed by Ares Liu on 2011-12-30.*

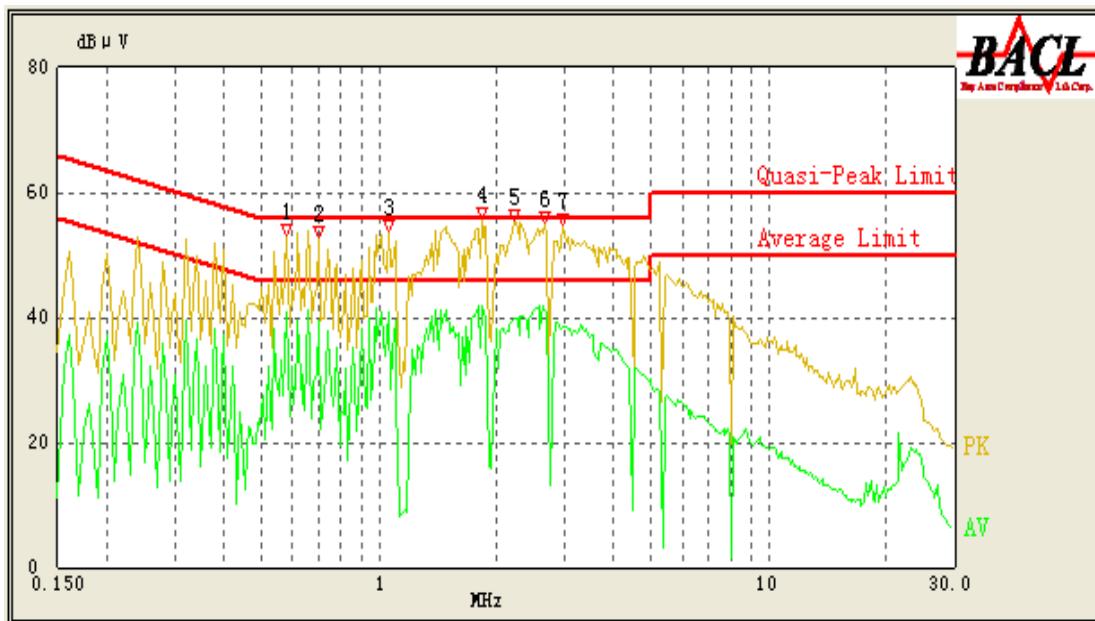
*EUT Operation Mode: Charging*

**AC 120V/60 Hz, Line**



Frequency (MHz)	Corrected Amplitude (dB $\mu$ V)	Correction Factor (dB)	Limit (dB $\mu$ V)	Margin (dB)	Detector (PK/ QP/Ave.)
1.750	42.95	1.1	46.00	3.05	Ave.
2.890	41.44	1.1	46.00	4.56	Ave.
2.480	40.25	1.1	46.00	5.75	Ave.
0.655	39.98	1.1	46.00	6.02	Ave.
2.890	49.25	1.1	56.00	6.75	QP
1.750	48.77	1.1	56.00	7.23	QP
0.655	48.11	1.1	56.00	7.89	QP
4.660	35.25	1.1	46.00	10.75	Ave.
2.480	43.98	1.1	56.00	12.02	QP
0.230	39.78	1.1	53.43	13.65	Ave.
4.660	41.58	1.1	56.00	14.42	QP
0.230	47.34	1.1	63.43	16.09	QP

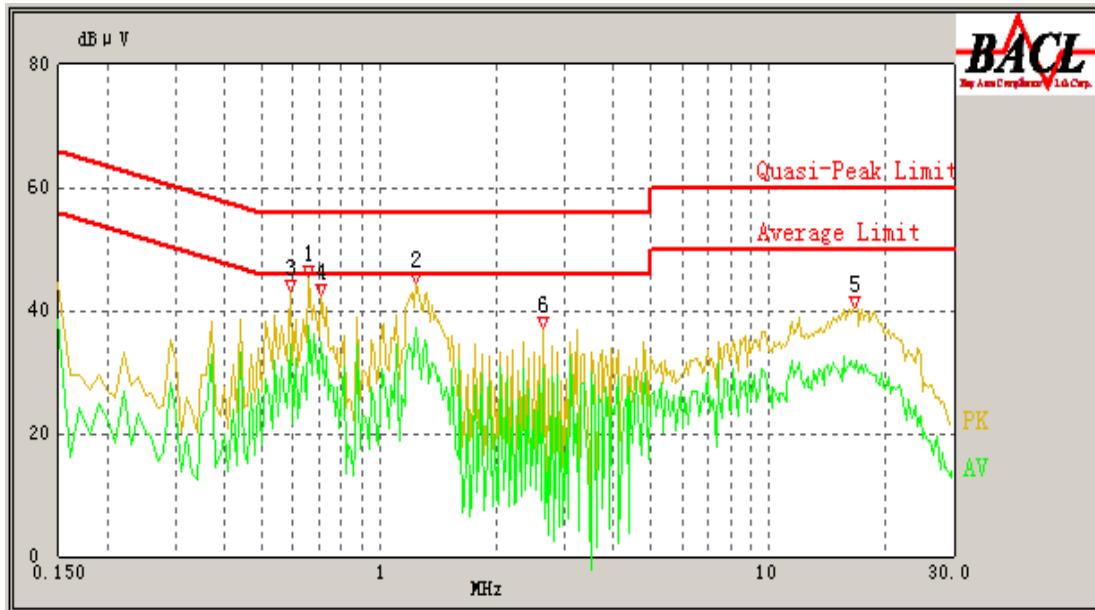
## AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dB $\mu$ V)	Correction Factor (dB)	Limit (dB $\mu$ V)	Margin (dB)	Detector (PK/ QP/Ave.)
2.665	40.29	1.1	46.00	5.71	Ave
2.225	39.25	1.1	46.00	6.75	Ave
1.060	38.47	1.1	46.00	7.53	Ave
1.845	37.58	1.1	46.00	8.42	Ave
0.700	37.48	1.1	46.00	8.52	Ave
2.225	45.88	1.1	56.00	10.12	QP
0.580	34.25	1.1	46.00	11.75	Ave
1.845	43.69	1.1	56.00	12.31	QP
2.665	43.25	1.1	56.00	12.75	QP
0.700	42.12	1.1	56.00	13.88	QP
1.060	40.26	1.1	56.00	15.74	QP
0.580	40.15	1.1	56.00	15.85	QP

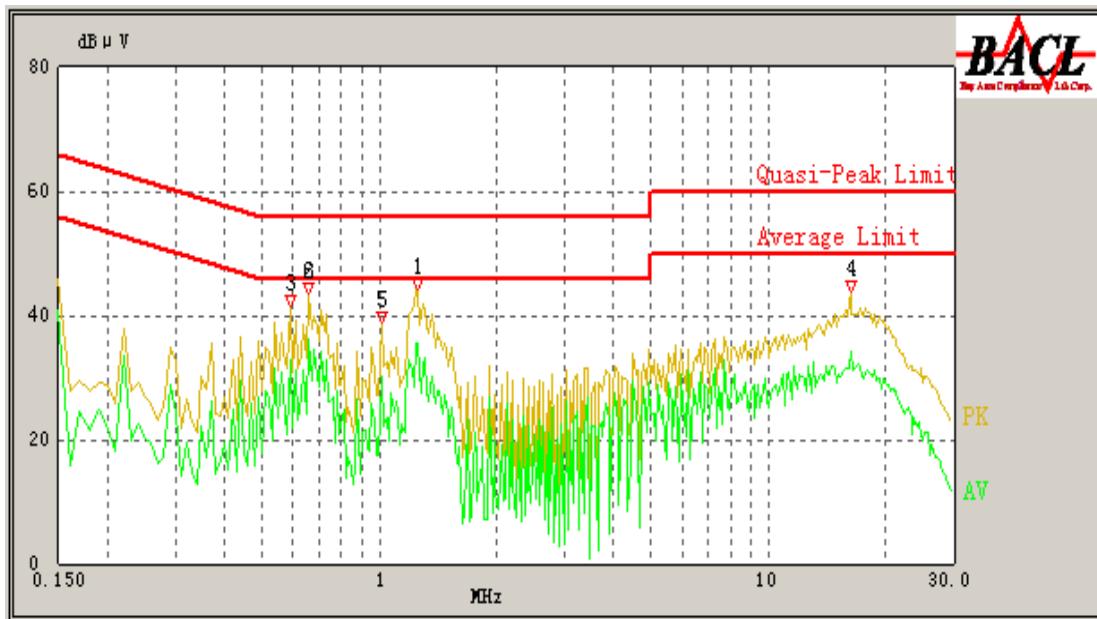
EUT Operation Mode: Downloading

**AC 120V/60 Hz, Line**



Frequency (MHz)	Corrected Amplitude (dB $\mu$ V)	Correction Factor (dB)	Limit (dB $\mu$ V)	Margin (dB)	Detector (PK/ QP/Ave.)
0.660	37.54	1.10	46.00	8.46	Ave.
1.240	37.32	1.10	46.00	8.68	Ave.
0.710	34.82	1.10	46.00	11.18	Ave.
0.590	34.64	1.10	46.00	11.36	Ave.
1.240	42.54	1.10	56.00	13.46	QP
0.660	42.38	1.10	56.00	13.62	QP
0.590	40.63	1.10	56.00	15.37	QP
2.640	30.58	1.10	46.00	15.42	Ave.
0.710	38.75	1.10	56.00	17.25	QP
16.660	30.36	1.10	50.00	19.64	Ave.
2.640	32.20	1.10	56.00	23.80	QP
16.660	35.19	1.10	60.00	24.81	QP

## AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dB $\mu$ V)	Correction Factor (dB)	Limit (dB $\mu$ V)	Margin (dB)	Detector (PK/ QP/Ave.)
0.660	36.13	1.10	46.00	9.87	Ave.
1.260	35.34	1.10	46.00	10.66	Ave.
0.590	32.91	1.10	46.00	13.09	Ave.
1.260	41.63	1.10	56.00	14.37	QP
0.660	40.85	1.10	56.00	15.15	QP
16.230	34.20	1.10	50.00	15.80	Ave.
1.020	30.16	1.10	46.00	15.84	Ave.
0.590	39.19	1.10	56.00	16.81	QP
16.230	39.10	1.10	60.00	20.90	QP
1.020	34.79	1.10	56.00	21.21	QP

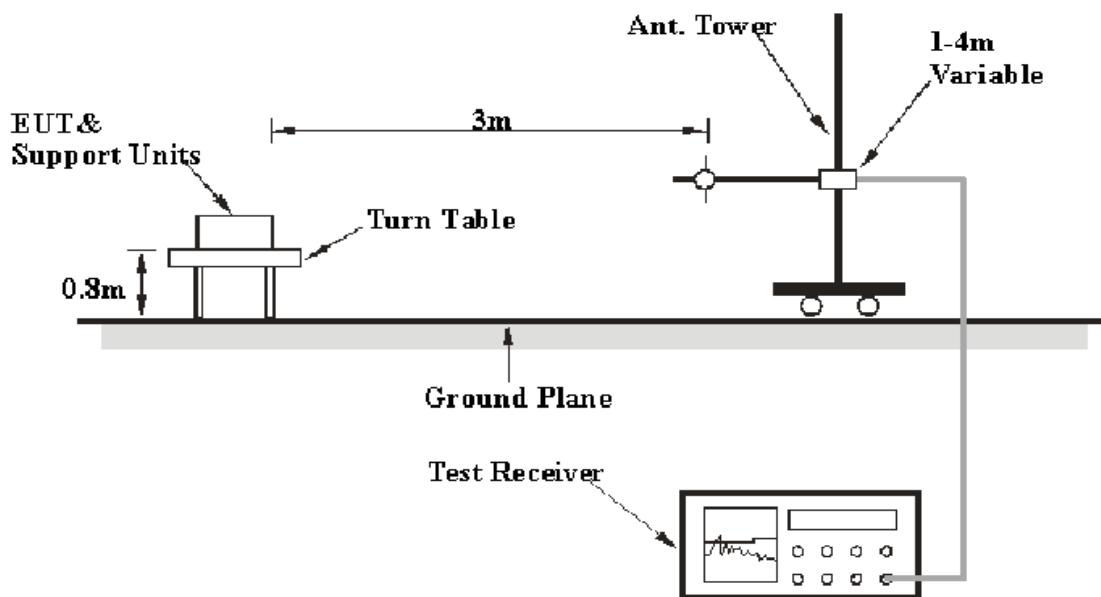
## FCC §15.109 - RADIATED EMISSIONS

### 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.

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:

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

## Test Procedure

During the radiated emissions test, the host PC, monitor, modem and the printer were connected to AC floor outlet

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 with 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:

**2.06 dB at 38.7300 MHz in the Vertical polarization**

## Test Data

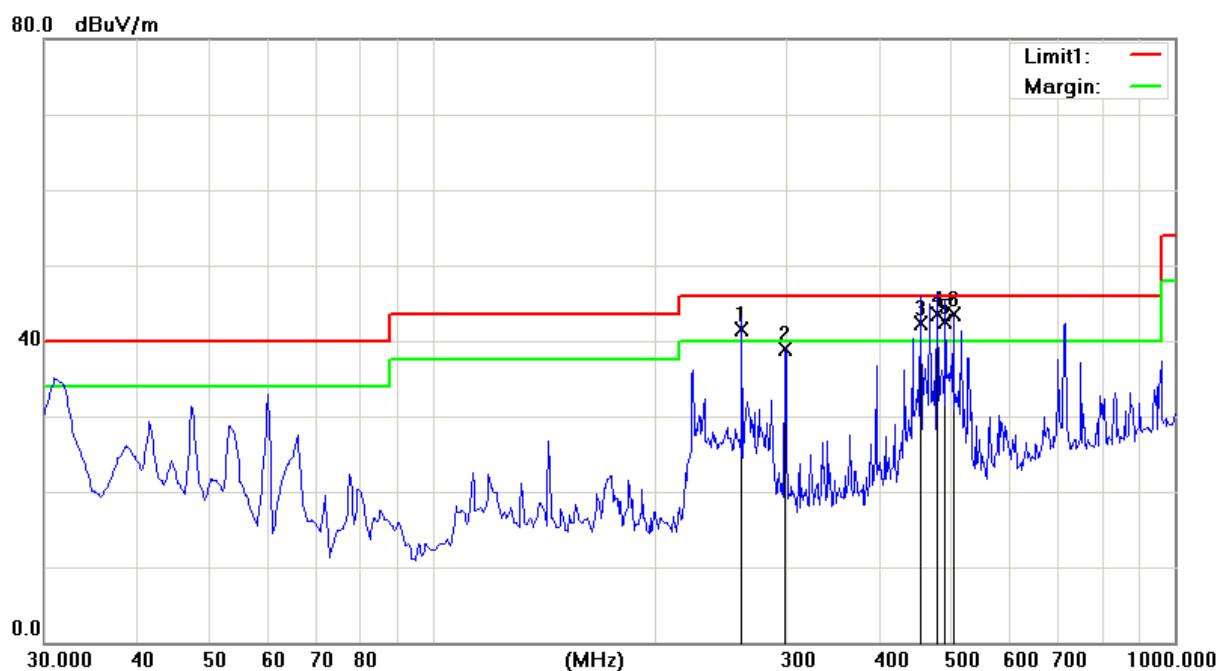
### Environmental Conditions

Temperature:	25 °C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

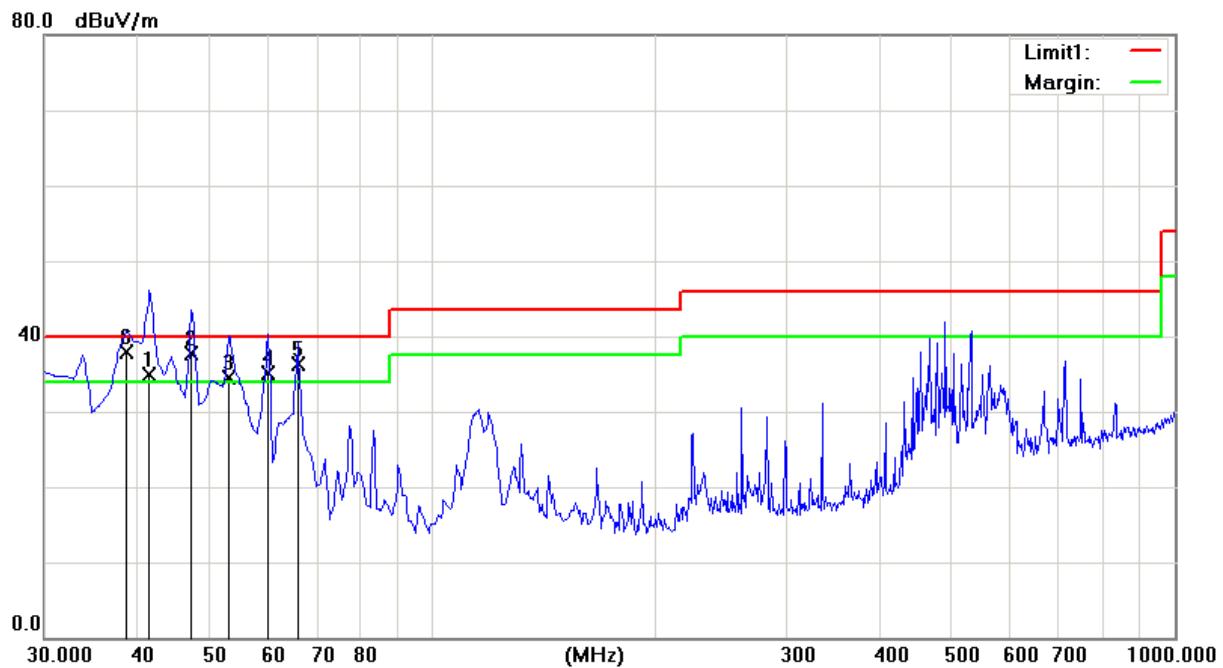
The testing was performed by Ares Liu on 2012-01-19.

EUT Operation Mode: Downloading

### Horizontal



Frequency (MHz)	Detector (PK/QP)	Correction Factor (dB)	Corrected Amplitude (dB $\mu$ V/m)	Limit (dBuV/m)	Margin (dB)
504.3300	QP	-0.62	43.60	46.00	2.40*
480.0800	QP	-0.53	43.54	46.00	2.46*
491.7200	QP	-0.54	42.56	46.00	3.44*
455.8300	QP	-1.22	42.35	46.00	3.65*
261.8300	QP	-6.07	41.43	46.00	4.57
298.6900	QP	-4.91	38.83	46.00	7.17

**Vertical**

Frequency (MHz)	Detector (PK/QP)	Correction Factor (dB)	Corrected Amplitude (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
38.7300	QP	-4.56	37.94	40.00	2.06*
47.4600	QP	-10.23	37.75	40.00	2.25*
65.8900	QP	-11.99	36.31	40.00	3.69*
60.0700	QP	-12.59	35.05	40.00	4.95
41.6400	QP	-6.71	34.87	40.00	5.13
53.2800	QP	-12.22	34.55	40.00	5.45

\*Within measurement uncertainty

Note: The green line on the plot is 6 dB below of the limits.

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