Lab Code: 200707-0

# FCC PART 15 B, 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: ZYPES980

| Report Type: | Product Type: |
|---|---|
| Original Report | Mobile Phone |

| | |
|---|---|
| **Test Engineer:** | Ares Liu |
| **Report Number:** | R1DG120710004-00C |
| **Report Date:** | 2012-07-23 |
| **Reviewed By:** | Ivan Cao<br>EMC Engineer |
| **Test Laboratory:** | 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>www.baclcorp.com.cn |

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# GENERAL INFORMATION

## Product Description for Equipment under Test (EUT)

The *Nexpro International Limitada*'s product, model number:*EVE (FCC ID: ZYPES980)* (the "EUT") in this report was a Mobile Phone, named as EVE by applicant,which was measured approximately: 11.0 cm (L) x 6.0cm (W) x 1.5cm (H), rated input voltage: DC 3.7V Lithium battery or DC 5.0V from adapter for charging.

Adapter Information:
MODEL NO:C325A50070
ADAPTADER AC/DC
INPUT: 100-240V, 50/60 Hz, 120mA
OUTPUT: 5V, 700mA.

Frequency Range:
GSM 850: 824-849 MHz (Tx), 869-894 MHz (Rx)
PCS 1900: 1850-1910 MHz (Tx), 1930-1990 MHz (Rx)
WCDMA Band II 1850-1910 MHz (Tx), 1930-1990 MHz (Rx)
WCDMA Band V 824-849 MHz (Tx), 869-894 MHz (Rx)
BT: 2400-2483.5 MHz
WIFI: 2412-2462 MHz

Modulation Mode: GMSK (Cellular/PCS); QPSK/BPSK (WCDMA)
DSSS, OFDM (Wifi)
GFSK, 8-DPSK, π/4-DQPSK (Bluetooth)

Transmitter Output Power:
GSM/GPRS Cellular Band: 31.94 dBm (Conducted)
WCDMA Band V: 22.73 dBm (Conducted)
GSM/GPRS PCS Band: 29.52 dBm (Conducted)
WCDMA Band II: 22.82 dBm (Conducted)
BT: 7.09 dBm (Conducted)
Wi-Fi: 13.62 dBm (Conducted)

** All measurement and test data in this report was gathered from production sample serial number: 120710004 (Assigned by BACL,Shenzhen). The EUT was received on 2012-07-11.*

## 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 22H&24E PCE submissions with FCC ID: ZYPES980.
FCC Part 15C DSS submissions with FCC ID: ZYPES980 for Bluetooth.
FCC Part 15C DTS submissions with FCC ID: ZYPES980 for WIFI.

## 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

The test was performed under "Winthrax.exe", which was provided by BACL.

## Equipment Modifications

No modification was made to the EUT tested.

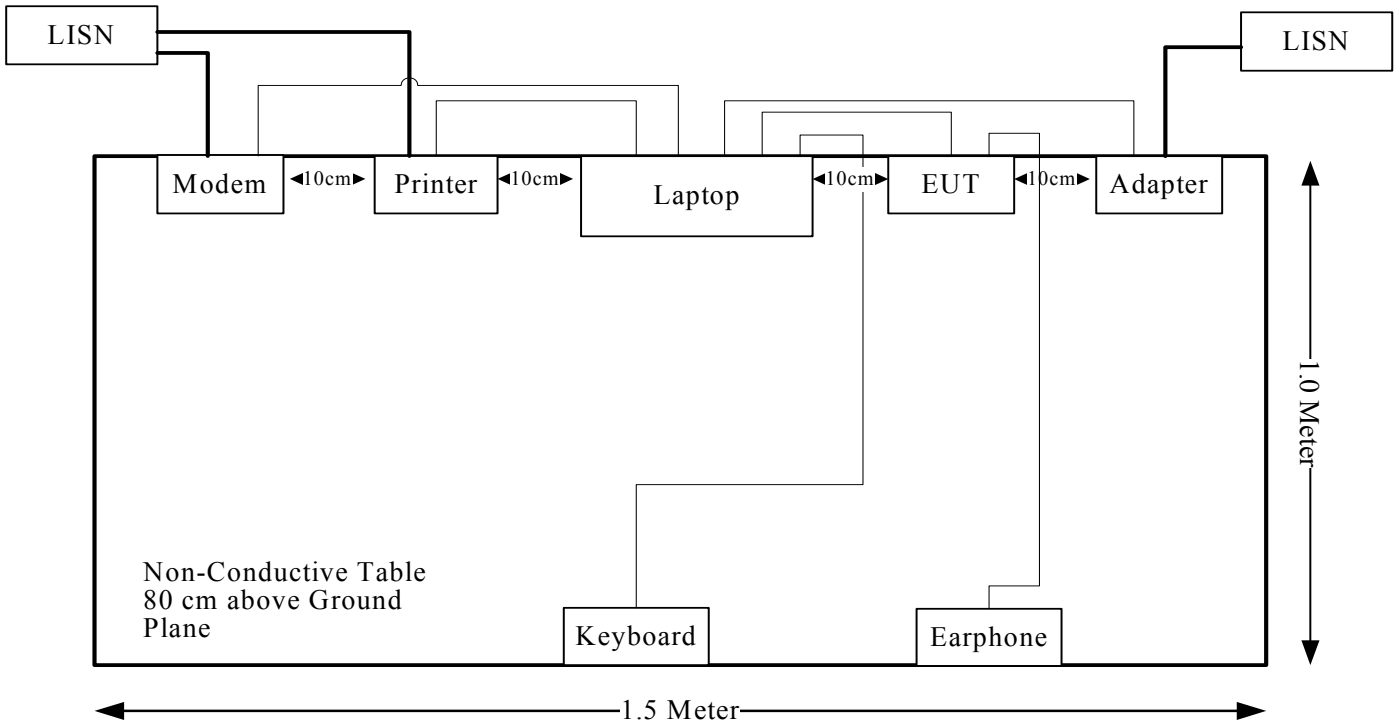
## Local Support Equipment List and Details

| Manufacturer | Description | Model | Serial Number |
|---|---|---|---|
| HP | Printer | Laser Jet5L | JPTVOB2337 |
| SAST | Modem | AEM-2100 | 090200213 |
| DELL | Keyboard | L100 | CNORH656658907BL05DC |
| DELL | Laptop | PP11L | N/A |

## External I/O Cable

| Cable Description | Length (m) | From/Port | To |
|---|---|---|---|
| Shielded Detachable Keyboard Cable | 1.5 | Keyboard Port of Laptop | Keyboard |
| USB Cable | 1.00 | USB Port of Laptop | EUT |
| Shielded Detachable Serial Cable | 1.2 | Serial Port of Laptop | Modem |
| Shielded Detachable Printer Cable | 1.2 | Parallel Port of Laptop | Printer |

**Block Diagram of Test Setup**



# SUMMARY OF TEST RESULTS

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

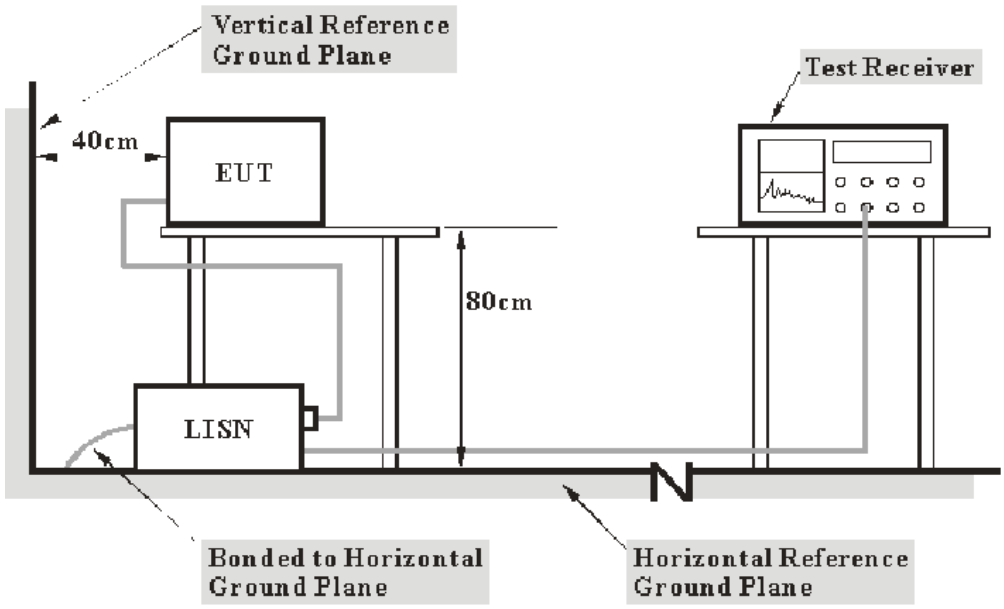
# FCC §15.107 – AC LINE CONDUCTED EMISSIONS

## 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. (Dongguan) 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.

The Adapter 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:

| ***Frequency Range*** | ***IF BW*** |
|---|---|
| 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 | 100176 | 2011-11-24 | 2012-11-23 |
| Rohde & Schwarz | L.I.S.N. | ESH2-Z5 | 892107/021 | 2011-11-17 | 2012-11-16 |
| Com-Power | L.I.S.N. | LI-200 | 12208 | N/A | N/A |

*** 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 first LISN, the printer, 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:

**7.79 dB** at **0.345 MHz** in the **Neutral** mode for mode downloading.

## Test Data

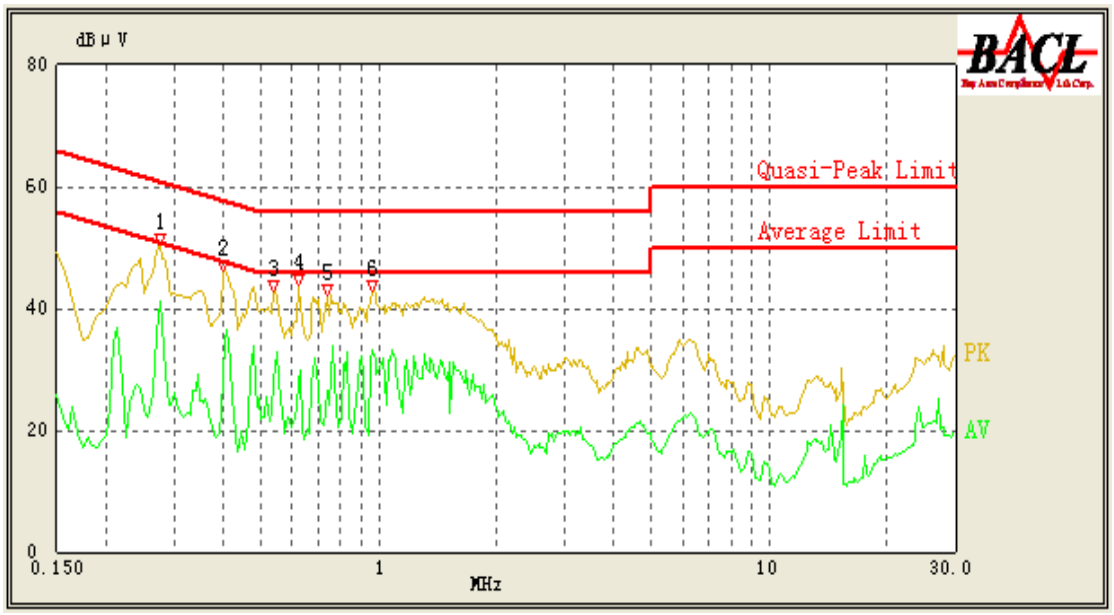
### Environmental Conditions

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

*The testing was performed by Ares Liu on 2012-07-17.*

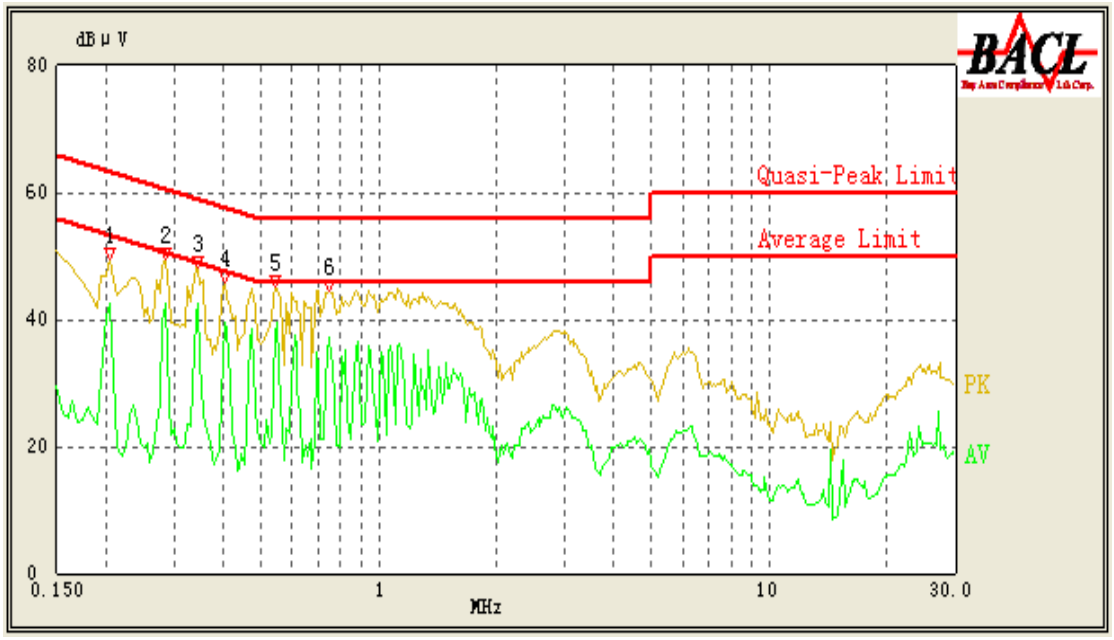
Test Mode: Downloading

**120 V, 60 Hz, Line:**




| Frequency (MHz) | Corrected Result (dBµV) | Correction Factor (dB) | Limit (dBµV) | Margin (dB) | Detector (PK /QP/Ave.) |
|---|---|---|---|---|---|
| 0.275 | 41.12 | 0.42 | 52.43 | 11.31 | Ave. |
| 0.960 | 33.19 | 0.45 | 46.00 | 12.81 | Ave. |
| 0.405 | 34.46 | 0.42 | 48.71 | 14.25 | Ave. |
| 0.535 | 28.32 | 0.42 | 46.00 | 17.68 | Ave. |
| 0.625 | 28.29 | 0.43 | 46.00 | 17.71 | Ave. |
| 0.740 | 26.64 | 0.44 | 46.00 | 19.36 | Ave. |
| 0.275 | 42.50 | 0.42 | 62.43 | 19.93 | QP |
| 0.400 | 37.72 | 0.42 | 58.86 | 21.14 | QP |
| 0.965 | 33.91 | 0.45 | 56.00 | 22.09 | QP |
| 0.625 | 33.71 | 0.43 | 56.00 | 22.29 | QP |
| 0.740 | 31.43 | 0.44 | 56.00 | 24.57 | QP |
| 0.535 | 30.90 | 0.42 | 56.00 | 25.10 | QP |

**120V, 60 Hz, Neutral:**




| Frequency (MHz) | Corrected Result (dBµV) | Correction Factor (dB) | Limit (dBµV) | Margin (dB) | Detector (PK /QP/Ave.) |
|---|---|---|---|---|---|
| 0.345 | 42.64 | 0.42 | 50.43 | 7.79 | Ave. |
| 0.545 | 37.37 | 0.42 | 46.00 | 8.63 | Ave. |
| 0.750 | 37.14 | 0.44 | 46.00 | 8.86 | Ave. |
| 0.405 | 39.58 | 0.42 | 48.71 | 9.13 | Ave. |
| 0.285 | 42.39 | 0.42 | 52.14 | 9.75 | Ave. |
| 0.205 | 42.66 | 0.42 | 54.43 | 11.77 | Ave. |
| 0.745 | 39.83 | 0.44 | 56.00 | 16.17 | QP |
| 0.405 | 41.94 | 0.42 | 58.71 | 16.77 | QP |
| 0.345 | 43.36 | 0.42 | 60.43 | 17.07 | QP |
| 0.545 | 38.70 | 0.42 | 56.00 | 17.30 | QP |
| 0.285 | 43.21 | 0.42 | 62.14 | 18.93 | QP |
| 0.205 | 43.92 | 0.42 | 64.43 | 20.51 | QP |

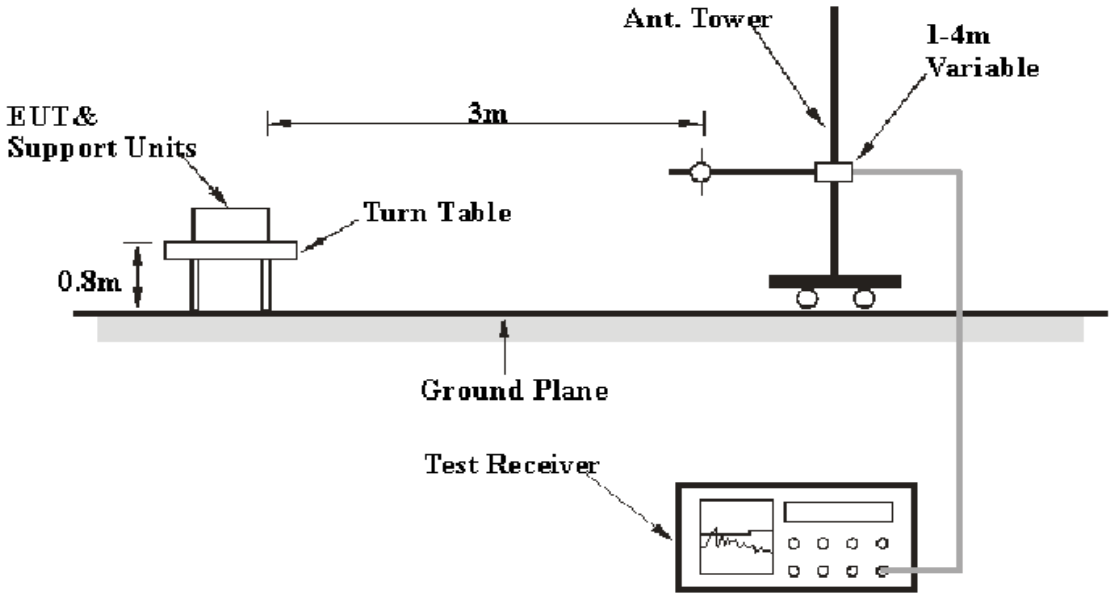
# FCC §15.109 - RADIATED EMISSIONS

## 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. (Dongguan) 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 Adapter 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:

| *Frequency* | *RBW* | *VBW* | *IF BW* | *Detection* |
|---|---|---|---|---|
| 30 MHz-1 GHz | 100 kHz | 300 kHz | 120 kHz | Quasi-peak |

## Test Procedure

During the radiated emissions test, the adapter of notebook, 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 Install combinations.

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

## Test Equipment List and Details

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| HP | Amplifier | HP8447E | 1937A01046 | 2011-11-24 | 2012-11-23 |
| Rohde & Schwarz | EMI Test Receiver | ESCI | 101122 | 2011-11-17 | 2012-11-16 |
| Sunol Sciences | Broadband Antenna | JB1 | A040904-2 | 2011-11-28 | 2012-11-27 |

*** 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:

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - 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:

Margin = Limit – 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:

**5.60 dB** at **180.3500 MHz** in the **Horizontal** polarization for the mode downloading.

## Test Data

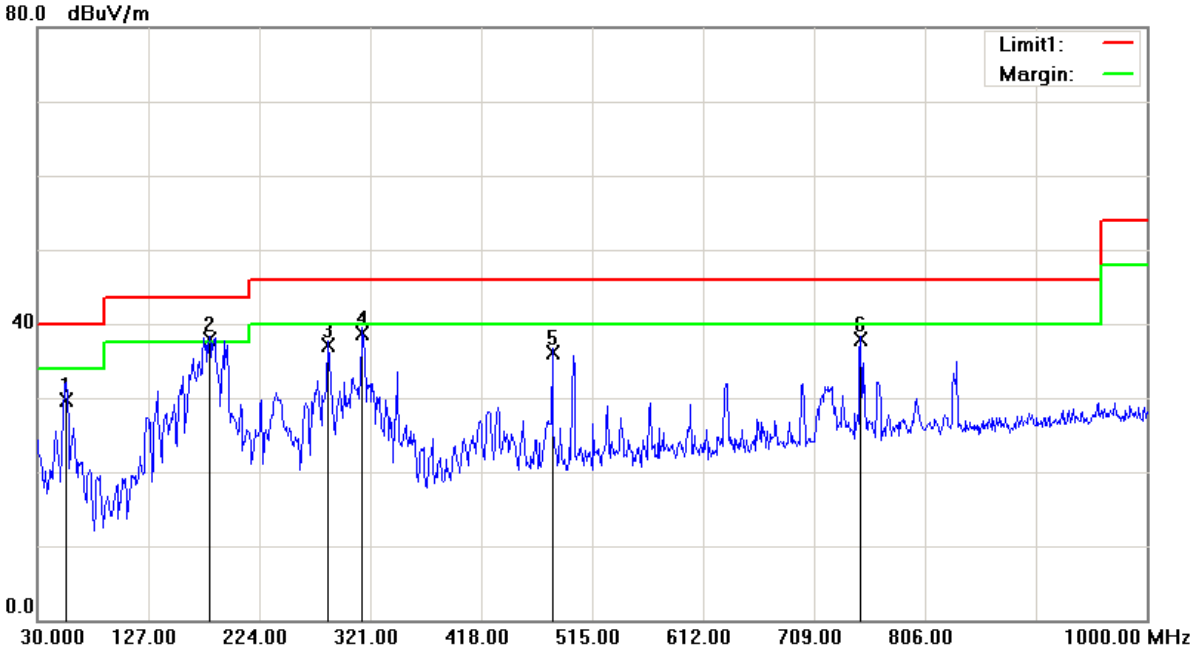
### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 26 °C |
| **Relative Humidity:** | 60 % |
| **ATM Pressure:** | 100.0 kPa |

*The testing was performed by Ares Liu on 2012-07-11.*

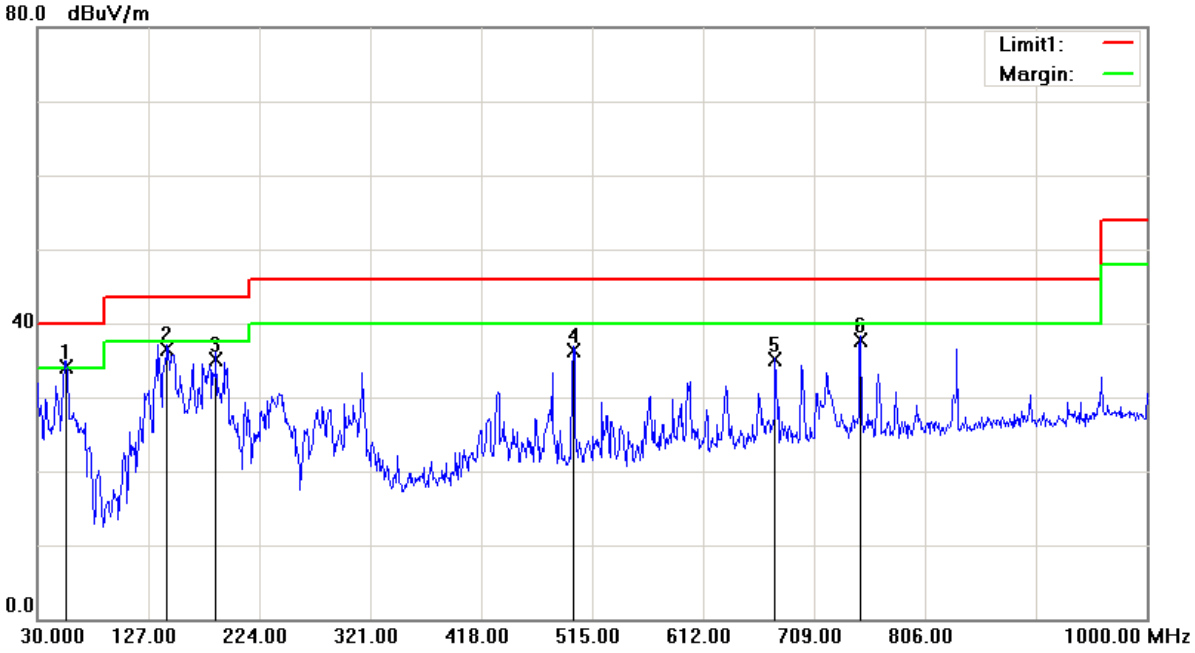
*EUT Operation Mode: Downloading*

### Horizontal




| Frequency (MHz) | Reading (dBµV) | Detector | Correction Factor (dB) | Corrected Amplitude (dBµV/m) | Limit (dBuV/m) | Margin (dB) |
|---|---|---|---|---|---|---|
| 180.3500 | 46.40 | QP | -8.50 | 37.90 | 43.50 | 5.60 |
| 314.2100 | 43.66 | QP | -4.96 | 38.70 | 46.00 | 7.30 |
| 749.7400 | 35.50 | QP | 2.40 | 37.90 | 46.00 | 8.10 |
| 284.1400 | 42.89 | QP | -5.69 | 37.20 | 46.00 | 8.80 |
| 480.0800 | 37.36 | QP | -1.26 | 36.10 | 46.00 | 9.90 |
| 55.2200 | 42.67 | QP | -12.87 | 29.80 | 40.00 | 10.20 |

**Vertical**




| Frequency (MHz) | Reading (dBµV) | Detector | Correction Factor (dB) | Corrected Amplitude (dBµV/m) | Limit (dBuV/m) | Margin (dB) |
|---|---|---|---|---|---|---|
| 55.2200 | 47.07 | QP | -12.87 | 34.20 | 40.00 | 5.80 |
| 143.4900 | 43.59 | QP | -6.99 | 36.60 | 43.50 | 6.90 |
| 749.7400 | 35.40 | QP | 2.40 | 37.80 | 46.00 | 8.20 |
| 186.1700 | 43.64 | QP | -8.44 | 35.20 | 43.50 | 8.30 |
| 498.5100 | 37.52 | QP | -1.22 | 36.30 | 46.00 | 9.70 |
| 675.0500 | 34.04 | QP | 1.06 | 35.10 | 46.00 | 10.90 |

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