

# FCC PART 15B, CLASS B

## TEST REPORT

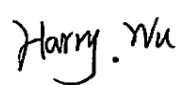
For

### **Xiamen Scaletech Co., Ltd.**

Zone A, 4<sup>th</sup> Floor, #10 of Ai-de Air Industry Park, Gaoqi South 12th Road,

Xiamen, Fujian, China

**FCC ID: ORBSDC5LBSCALE**

|                                                                                                                                                                                                                                                                                 |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>Report Type:</b><br>Original Report                                                                                                                                                                                                                                          | <b>Product Type:</b><br>Stamps.com Stainless Steel 5 LB<br>Digital Postal Scale |
| <b>Test Engineer:</b> Jone Lv                                                                                                                                                              |                                                                                 |
| <b>Report Number:</b> R1XM121011050-00A1                                                                                                                                                                                                                                        |                                                                                 |
| <b>Report Date:</b> 2012-09-29                                                                                                                                                                                                                                                  |                                                                                 |
| <b>Reviewed By:</b> Harry Wu <br>EMC Engineer                                                                                                                                              |                                                                                 |
| <b>Test Laboratory:</b> Bay Area Compliance Laboratories Corp. (Dongguan)<br>No.69 Pulongcun, Puxinhu Industrial Zone,<br>Tangxia, Dongguan, Guangdong, China<br>Tel: +86-769-86858888<br>Fax: +86-769-86858891<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. (Dongguan).

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## GENERAL INFORMATION

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

The XIAMEN SCALETECH Co., LTD.'s product, model number: SDC 550 5LB (FCC ID: ORBSDC5LBSCALE) (the "EUT") in this report is a *Stamps.com Stainless Steel 5 lb.Digital Postal Scale*, which was measured approximately: 19.5 cm (L) x 19.5 cm (W) x 2.5 cm (H), rated input voltage: DC 5V from system, the highest operating frequency is 6MHz.

*All measurement and test data in this report was gathered from production sample serial number: 121011050 (Assigned by BACL, Dongguan). The EUT was received on 2012-09-24.*

### Objective

This report is prepared on behalf of XIAMEN SCALETECH Co., LTD. 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 compliance with FCC Part 15B, Class B.

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

No Related Submittal(s)/Grant(s)

### Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) 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 February 02, 2012. 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.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

## SYSTEM TEST CONFIGURATION

### Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

### EUT Exercise Software

Elane USB Scale PC Program (Used for the numerical display) was used

### Equipment Modifications

No modification was made to the EUT.

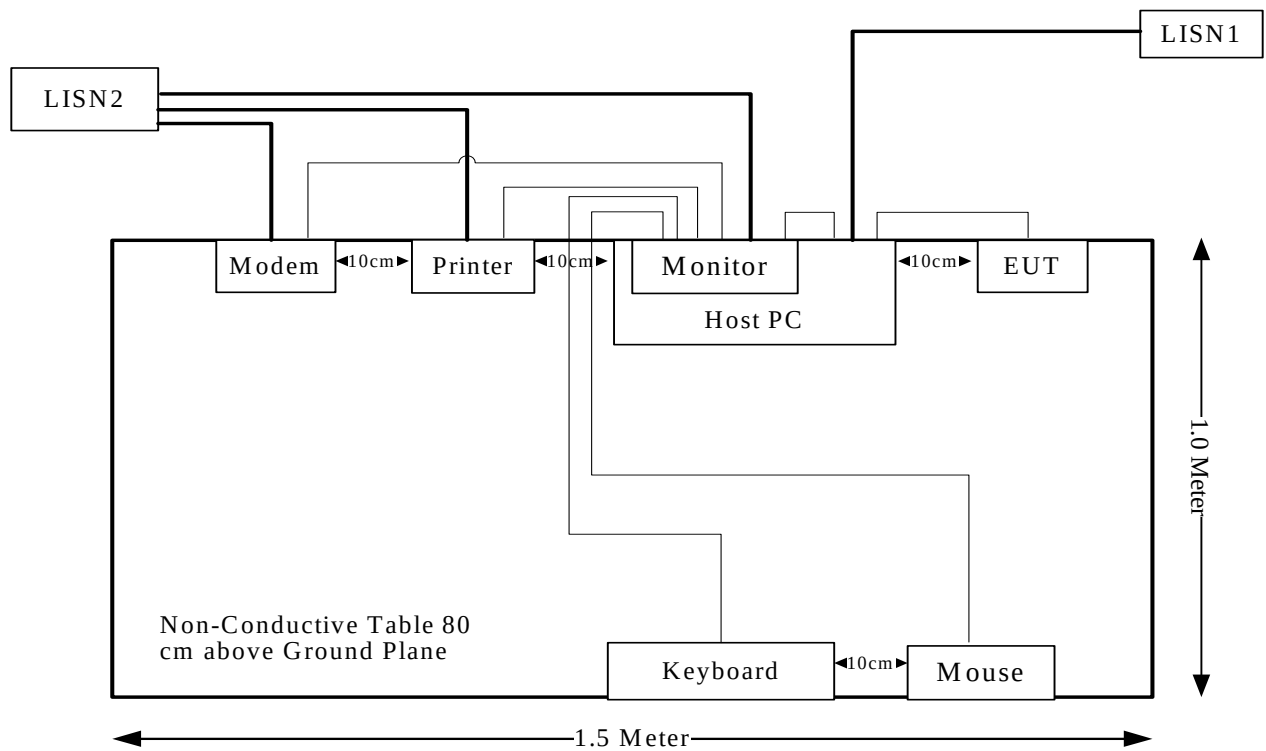
### Local Support Equipment List and Details

| Manufacturer | Description | Model    | Serial Number            |
|--------------|-------------|----------|--------------------------|
| DELL         | Host PC     | DCNE     | CK2Z891                  |
| DELL         | Monitor     | E2010HC  | CH-03D6N6-64180-042-DQ1M |
| HP           | Keyboard    | KU-0316  | 435382-001               |
| HP           | Mouse       | MO-5013U | IMJS01161006745          |
| HP           | Printer     | C3941A   | JPTV013237               |
| Trust        | Modem       | MD-230   | KF2T003-A                |

### External I/O Cable

| Cable Description                  | Length (m) | From                 | To       |
|------------------------------------|------------|----------------------|----------|
| Shielded Detachable Keyboard Cable | 1.5        | Keyboard Port / Host | Keyboard |
| Shielded Detachable Mouse Cable    | 1.5        | Mouse Port / Host    | Mouse    |
| Shielded Detachable Printer Cable  | 1.2        | Parallel Port / Host | Printer  |
| Shielded Detachable Serial Cable   | 1.2        | Serial Port / Host   | Modem    |
| Shielded Detachable VGA Cable      | 1.5        | VGA Port / Host      | Monitor  |

## 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 |

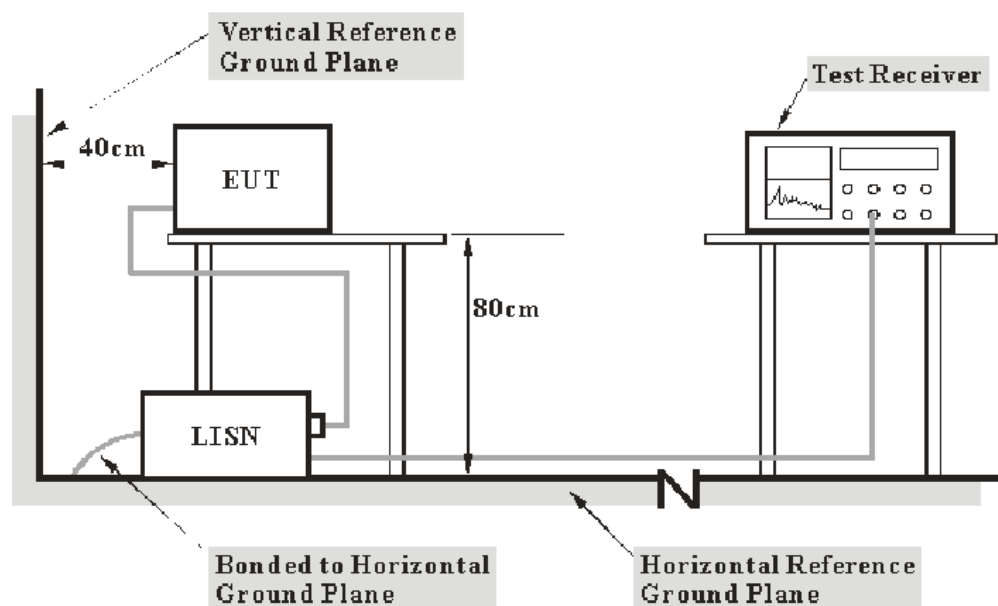
## FCC §15.107 – AC LINE CONDUCTED EMISSIONS

### 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 1.5 dB, and the uncertainty will not be taken into consideration for all the test data recorded in the report.

### 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 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 Procedure

During the conducted emission test, the PC was connected to the outlet of the first LISN and the other support equipments 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 Equipment List and Details

| Manufacturer | Description       | Model   | Serial Number | Calibration Date | Calibration Due Date |
|--------------|-------------------|---------|---------------|------------------|----------------------|
| R & S        | EMI Test Receiver | ESCS 30 | 830245/006    | 2011-10-08       | 2012-10-07           |
| R & S        | LISN1             | ESH3-Z5 | 843331/015    | 2011-10-08       | 2012-10-07           |
| R & S        | LISN2             | ESH3-Z5 | 100113        | 2011-10-08       | 2012-10-07           |

## 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:

**13.83 dB at 0.755MHz in the Neutral** conducted

## Test Data

### Environmental Conditions

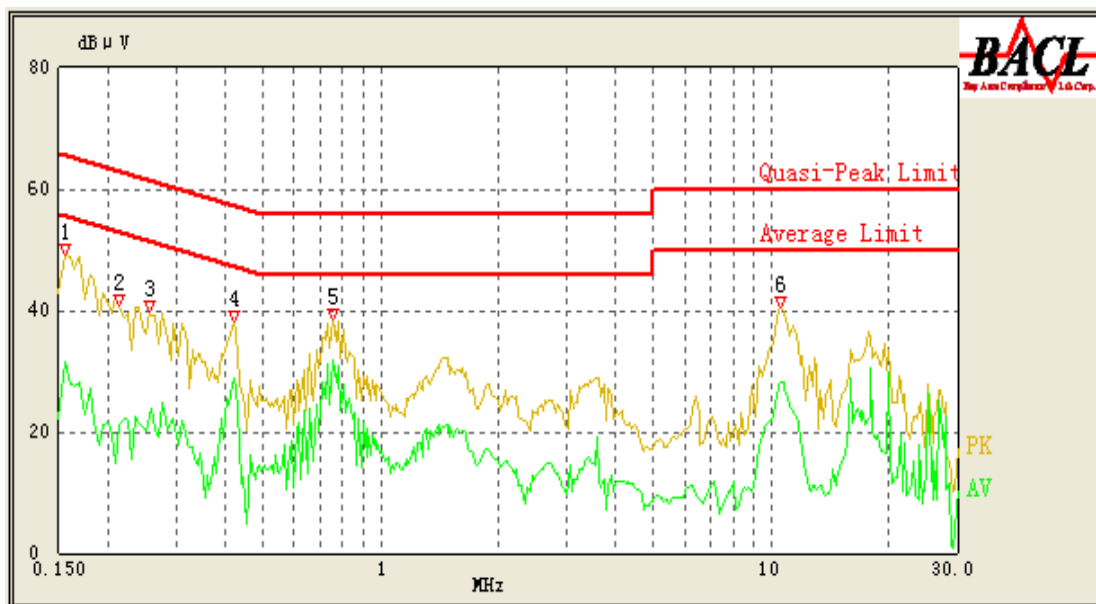
|                    |           |
|--------------------|-----------|
| Temperature:       | 23 °C     |
| Relative Humidity: | 45 %      |
| ATM Pressure:      | 102.3 kPa |

*The testing was performed by Jone Lv on 2012-9-25.*

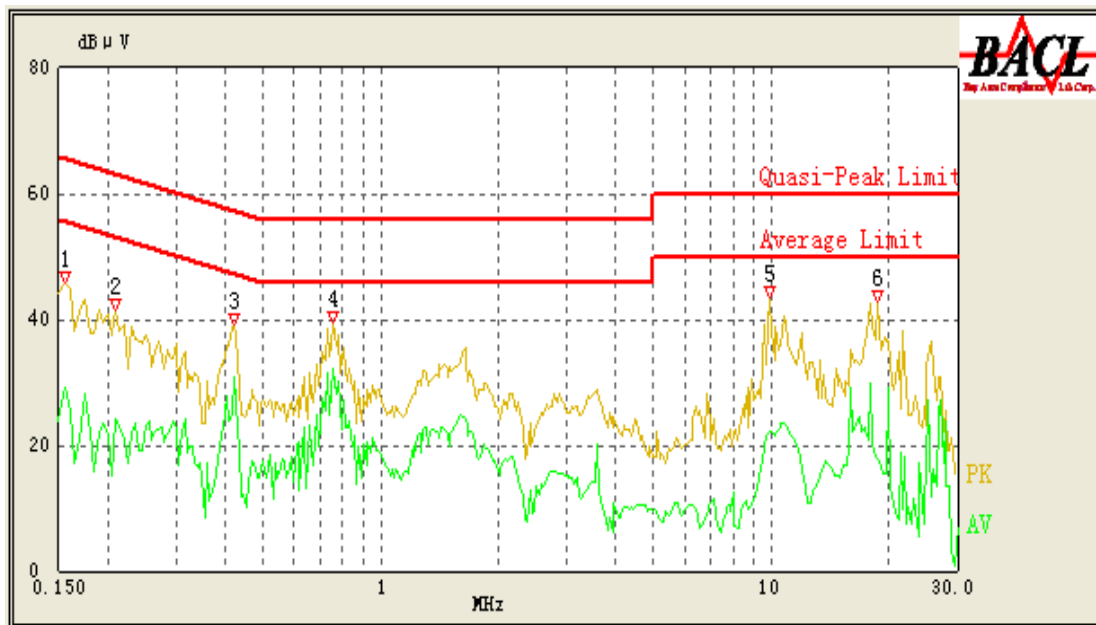


Test mode: Running

120 V, 60 Hz, Line:



| No. | Frequency (MHz) | Cord. Reading (dBμV) | Correction Factor (dB) | Limit (dBμV) | Margin (dB) | Detector (PK/AV/QP) |
|-----|-----------------|----------------------|------------------------|--------------|-------------|---------------------|
| 1   | 0.155           | 43.14                | 0.40                   | 65.86        | 22.72       | QP                  |
| 2   | 0.155           | 31.39                | 0.40                   | 55.86        | 24.47       | Ave.                |
| 3   | 0.215           | 36.65                | 0.42                   | 64.14        | 27.49       | QP                  |
| 4   | 0.215           | 21.29                | 0.42                   | 54.14        | 32.85       | Ave.                |
| 5   | 0.255           | 33.84                | 0.42                   | 63.00        | 29.16       | QP                  |
| 6   | 0.255           | 22.57                | 0.42                   | 53.00        | 30.43       | Ave.                |
| 7   | 0.420           | 36.47                | 0.42                   | 58.29        | 21.82       | QP                  |
| 8   | 0.420           | 28.77                | 0.42                   | 48.29        | 19.52       | Ave.                |
| 9   | 0.755           | 35.12                | 0.44                   | 56.00        | 20.88       | QP                  |
| 10  | 0.755           | 31.79                | 0.44                   | 46.00        | 14.21       | Ave.                |
| 11  | 10.600          | 31.16                | 0.74                   | 60.00        | 28.84       | QP                  |
| 12  | 10.600          | 28.18                | 0.74                   | 50.00        | 21.82       | Ave.                |

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

| No. | Frequency (MHz) | Cord. Reading (dBμV) | Correction Factor (dB) | Limit (dBμV) | Margin (dB) | Detector (PK/AV/QP) |
|-----|-----------------|----------------------|------------------------|--------------|-------------|---------------------|
| 1   | 0.155           | 42.34                | 0.40                   | 65.86        | 23.52       | QP                  |
| 2   | 0.155           | 29.01                | 0.40                   | 55.86        | 26.85       | Ave.                |
| 3   | 0.210           | 36.08                | 0.42                   | 64.29        | 28.21       | QP                  |
| 4   | 0.210           | 24.09                | 0.42                   | 54.29        | 30.20       | Ave.                |
| 5   | 0.420           | 36.95                | 0.42                   | 58.29        | 21.34       | QP                  |
| 6   | 0.420           | 30.97                | 0.42                   | 48.29        | 17.32       | Ave.                |
| 7   | 0.755           | 36.16                | 0.44                   | 56.00        | 19.84       | QP                  |
| 8   | 0.755           | 32.17                | 0.44                   | 46.00        | 13.83       | Ave.                |
| 9   | 9.925           | 27.72                | 0.67                   | 60.00        | 32.28       | QP                  |
| 10  | 9.985           | 22.27                | 0.67                   | 50.00        | 27.73       | Ave.                |
| 11  | 18.810          | 22.57                | 1.61                   | 60.00        | 37.43       | QP                  |
| 12  | 18.790          | 17.90                | 1.61                   | 50.00        | 32.10       | Ave.                |

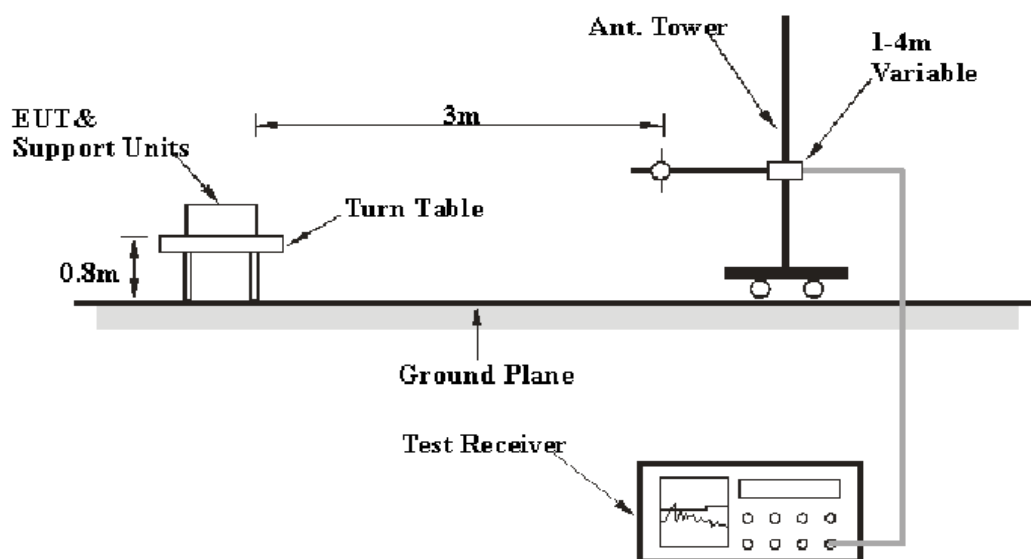
## FCC §15.109 - RADIATED EMISSIONS

### 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 radiation emissions measurement from 30 MHz to 1 GHz at Bay Area Compliance Laboratories Corp. (Dongguan) is 4.9 dB, and the uncertainty will not be taken into consideration for all the test data recorded in the report.

### EUT Setup



The radiated emission tests were performed in the 3 meters chamber 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 PC connected to a 120 VAC/60 Hz power source.

### EMI Test Receiver Setup

According to FCC 15.33 requirements, the system was measured from 30 MHz to 1 GHz.

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

| <b><i>Frequency Range</i></b> | <b><i>RBW</i></b> | <b><i>Video B/W</i></b> | <b><i>Detector</i></b> |
|-------------------------------|-------------------|-------------------------|------------------------|
| 30MHz – 1000 MHz              | 120 kHz           | 300 kHz                 | QP                     |

## Test Procedure

For the radiated emissions test, the PC was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

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

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz

## 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 Equipment List and Details

| Manufacturer   | Description        | Model      | Serial Number | Calibration Date | Calibration Due Date |
|----------------|--------------------|------------|---------------|------------------|----------------------|
| R & S          | EMI Test Receiver  | ESCI       | 100224        | 2011-11-11       | 2012-11-10           |
| Sunol Sciences | Hybrid Antennas    | JB3        | A060611-1     | 2012-09-06       | 2013-09-05           |
| HP             | Pre-amplifier      | 8447E      | 2434A02181    | 2011-10-08       | 2012-10-07           |
| R & S          | Spectrum Analyzer  | FSEM       | 1079 8500     | 2011-10-09       | 2012-10-08           |
| Beijingdayang  | Horn Antenna       | OMCDH10180 | 10279001B     | 2010-07-30       | 2015-07-29           |
| Mini-Circuits  | Wideband Amplifier | ZVA-183-S+ | 96901149      | N/A              | N/A                  |

## 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:

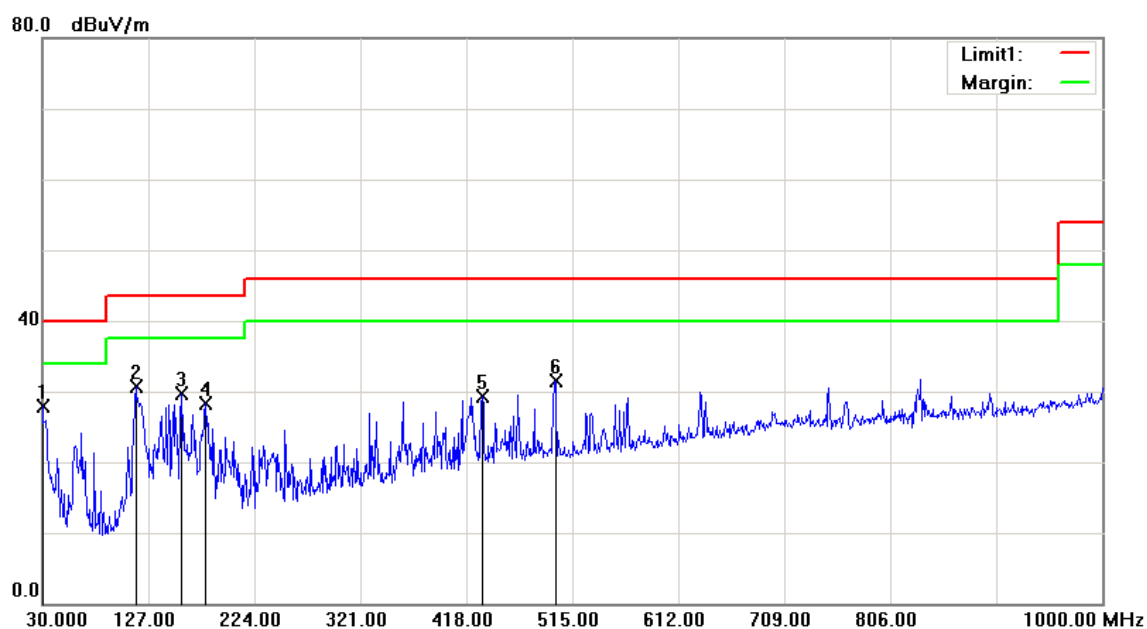
**6.36 dB at 30.000 MHz in the Vertical polarization**

**Test Data****Environmental Conditions**

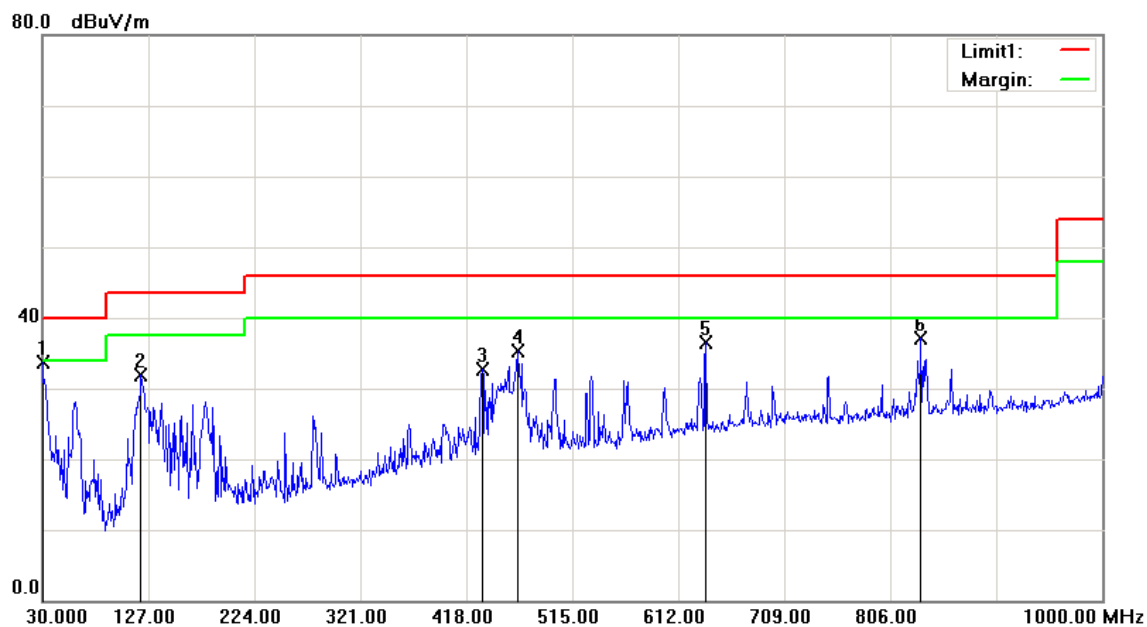
|                           |           |
|---------------------------|-----------|
| <b>Temperature:</b>       | 23°C      |
| <b>Relative Humidity:</b> | 45 %      |
| <b>ATM Pressure:</b>      | 101.3 kPa |

The testing was performed by Jone Lv on 2012-09-26.

Test mode: Running

**Horizontal:**

| Frequency (MHz) | Receiver Reading (dBuV/m) | Detector (PK/QP/Ave) | Correction Factor (dB) | Cord. Amp. (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|---------------------------|----------------------|------------------------|---------------------|----------------|-------------|
| 30.0000         | 25.47                     | QP                   | 2.44                   | 27.91               | 40.00          | 12.09       |
| 115.3600        | 36.67                     | QP                   | -5.94                  | 30.73               | 43.50          | 12.77       |
| 157.0700        | 36.23                     | QP                   | -6.57                  | 29.66               | 43.50          | 13.84       |
| 499.4800        | 32.03                     | QP                   | -0.62                  | 31.41               | 46.00          | 14.59       |
| 179.3800        | 36.21                     | QP                   | -7.96                  | 28.25               | 43.50          | 15.25       |
| 432.5500        | 31.01                     | QP                   | -1.80                  | 29.21               | 46.00          | 16.79       |

**Vertical:**

| Frequency (MHz) | Receiver Reading (dBuV/m) | Detector (PK/QP/Ave) | Correction Factor (dB) | Cord. Amp. (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|---------------------------|----------------------|------------------------|---------------------|----------------|-------------|
| 30.0000         | 31.20                     | QP                   | 2.44                   | 333.64              | 40.00          | 6.36        |
| 834.1300        | 33.51                     | QP                   | 3.65                   | 37.16               | 46.00          | 8.84        |
| 637.2200        | 34.83                     | QP                   | 1.74                   | 36.57               | 46.00          | 9.43        |
| 464.5600        | 36.23                     | QP                   | -0.96                  | 35.27               | 46.00          | 10.73       |
| 120.2100        | 37.34                     | QP                   | -5.39                  | 31.95               | 43.50          | 11.55       |
| 432.5500        | 34.57                     | QP                   | -1.80                  | 32.77               | 46.00          | 13.23       |

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