

TEST REPORT

For

ZTE Corporation

ZTE Plaza, Hi-Tech, Industrial Park, Nanshan District,
Shenzhen, Guangdong, China

FCC PART 15 CLASS B

FCC ID: Q78-ZXDSL931WII

Report Type: Class II Permissive Change	Product Type: VDSL CPE
Test Engineer: Eric Lee	<i>Eric Lee</i>
Report Number: RSZ110715001-00A1	
Report Date: 2011-08-05	
Reviewed By: Merry Zhao	<i>Merry Zhao</i>
Test Laboratory:	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 www.baclcorp.com.cn

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

GENERAL INFORMATION.....3

 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)3

 OBJECTIVE3

 RELATED SUBMITTAL(S)/GRANT(S).....3

 TEST METHODOLOGY4

 TEST FACILITY4

SYSTEM TEST CONFIGURATION.....5

 JUSTIFICATION5

 EUT EXERCISE SOFTWARE5

 EQUIPMENT MODIFICATIONS5

 LOCAL SUPPORT EQUIPMENT LIST AND DETAILS5

 EXTERNAL I/O CABLE.....5

 CONFIGURATION OF TEST SETUP5

 BLOCK DIAGRAM OF TEST SETUP6

SUMMARY OF TEST RESULTS7

FCC §15.107 – AC LINE CONDUCTED EMISSIONS.....8

 MEASUREMENT UNCERTAINTY8

 EUT SETUP8

 EMI TEST RECEIVER SETUP.....9

 TEST EQUIPMENT LIST AND DETAILS.....9

 TEST PROCEDURE9

 TEST RESULTS SUMMARY.....9

 TEST DATA9

FCC §15.109 - RADIATED SPURIOUS EMISSIONS14

 MEASUREMENT UNCERTAINTY14

 EUT SETUP14

 EMI TEST RECEIVER SETUP.....15

 TEST EQUIPMENT LIST AND DETAILS.....15

 TEST PROCEDURE15

 CORRECTED AMPLITUDE & MARGIN CALCULATION15

 TEST RESULTS SUMMARY.....15

 TEST DATA16

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *ZTE Corporation's* product, model number: *ZXDSL 931WIIB (FCC ID: Q78-ZXDSL931WII)* or the "EUT" as referred to in this report is a *VDSL CPE*, which measures approximately: 21.2 cm (L) x 4.9 cm (W) x 18.8 cm (H), rated input voltage: DC 12V adapter.

Adapter 1 information:

Model: MSP-C2000IC12.0-24W-US;
Input: AC 100-240V 50/60 Hz 0.8A Max;
Output: DC 12.0V 2A.

Adapter 2 information:

Model: CP5024120200U;
Input: AC 100-240V 50/60 Hz 0.55A;
Output: DC 12.0V 2A.

All measurement and test data in this report was gathered from production sample serial number: E40KB5F00016 (Assigned by Applicant). The EUT was received on 2011-07-15.

Objective

This Type approval report is prepared on behalf of *ZTE Corporation* 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 15 Class B.

This is the CIIPC application of the device. The difference between the original device and the current one is as follows:

Part	Original	New
Adding a Adapter	Adapter: Model: MSP-C2000IC12.0-24W-US; Input: AC 100-240V 50/60 Hz 0.8A Max; Output: DC 12.0V 2A.	Adapter 1: Model: MSP-C2000IC12.0-24W-US; Input: AC 100-240V 50/60 Hz 0.8A Max; Output: DC 12.0V 2A. Adapter 2: Model: CP5024120200U; Input: AC 100-240V 50/60 Hz 0.55A; Output: DC 12.0V 2A.
Adding a WAN Port	No WAN Port	Adding a WAN Port

For the changes made to the device, the Conducted Emissions and Radiated Emissions.

Related Submittal(s)/Grant(s)

Part 15.247 DTS submission with FCC ID: Q78-ZXDSL931WII.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, 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.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located in 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

Justification

The system was configured for testing in a manufacturer testing fashion.

EUT Exercise Software

N/A

Equipment Modifications

No modification was made to the unit tested.

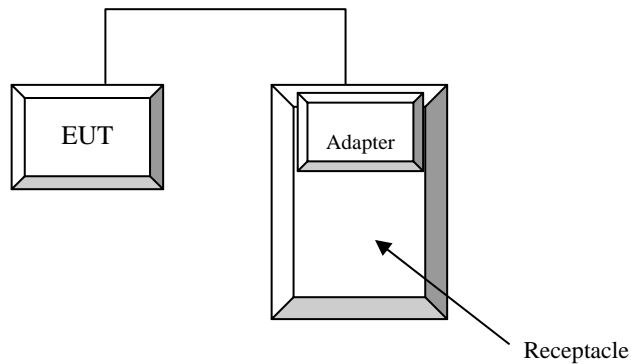
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	Laptop	D600	00045-438-852-864	DoC
ARESCOM	20-PORT CONCENTRATOR	CDS 6020	N/A	N/A

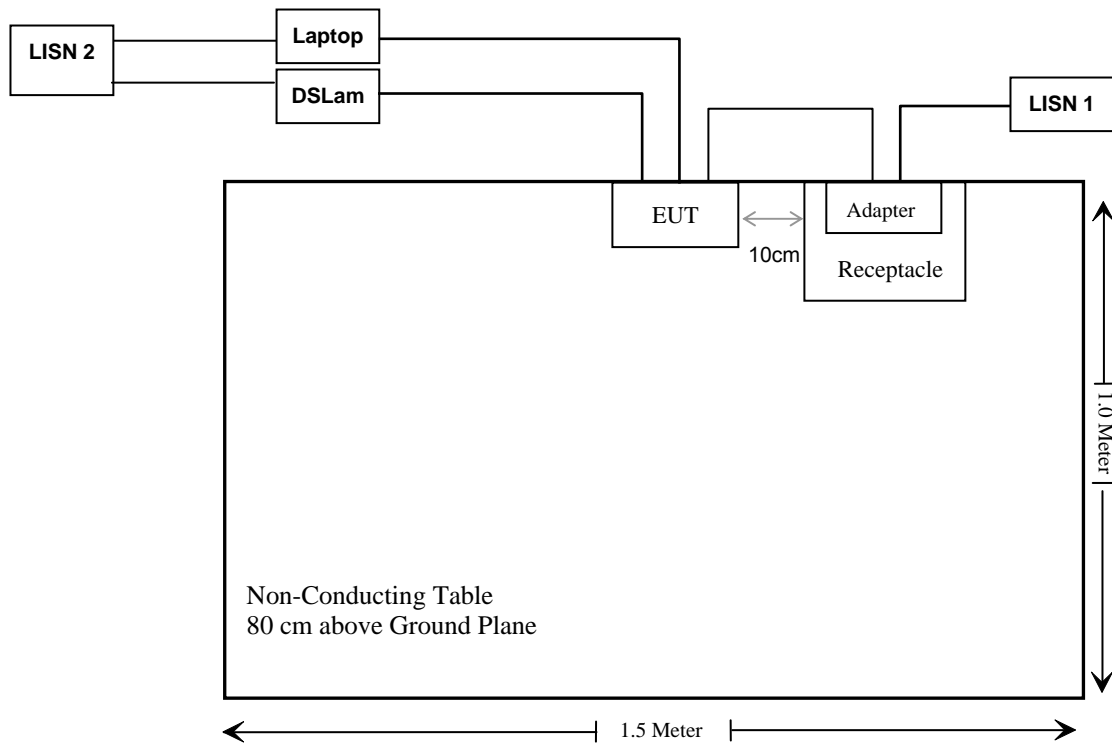
External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded detachable Power Line	1.5	Adapter	EUT

Configuration of Test Setup



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 Spurious Emissions	Compliance

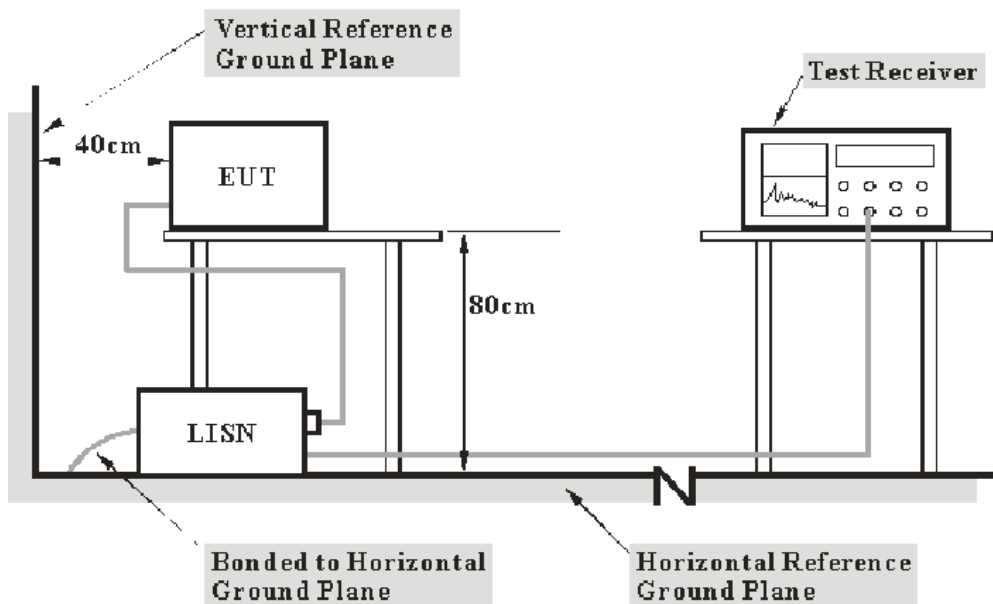
FCC §15.107 – AC LINE CONDUCTED EMISSIONS

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 NIS 81, 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.

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 limits.

The spacing between the peripherals was 10 cm.

The adapter of EUT 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:

<i>Frequency Range</i>	<i>IF B/W</i>
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
SCHAFFNER	CDN	CDN T400	16913	2010-11-24	2011-11-24

* **Statement of Traceability:** Bay Area Compliance Laboratory Corp. (Shenzhen) 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 of EUT was connected to the outlet of the first LISN, the other support equipment were connected to 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 Class B, with the worst margin reading of:

14.33 dB at 1.520 MHz in the **Line** conductor mode for Adapter 1

5.56 dB at 0.150 MHz in the **Neutral** conductor mode for Adapter 2

Test Data

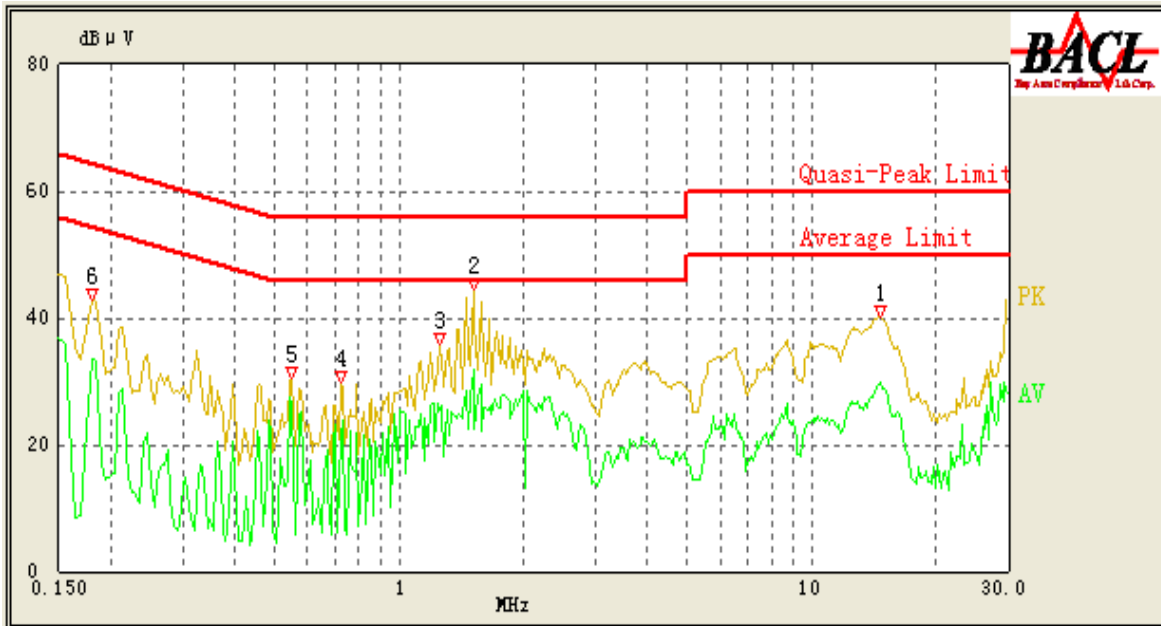
Environmental Conditions

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

The testing was performed by Eric Zhang on 2011-07-29.

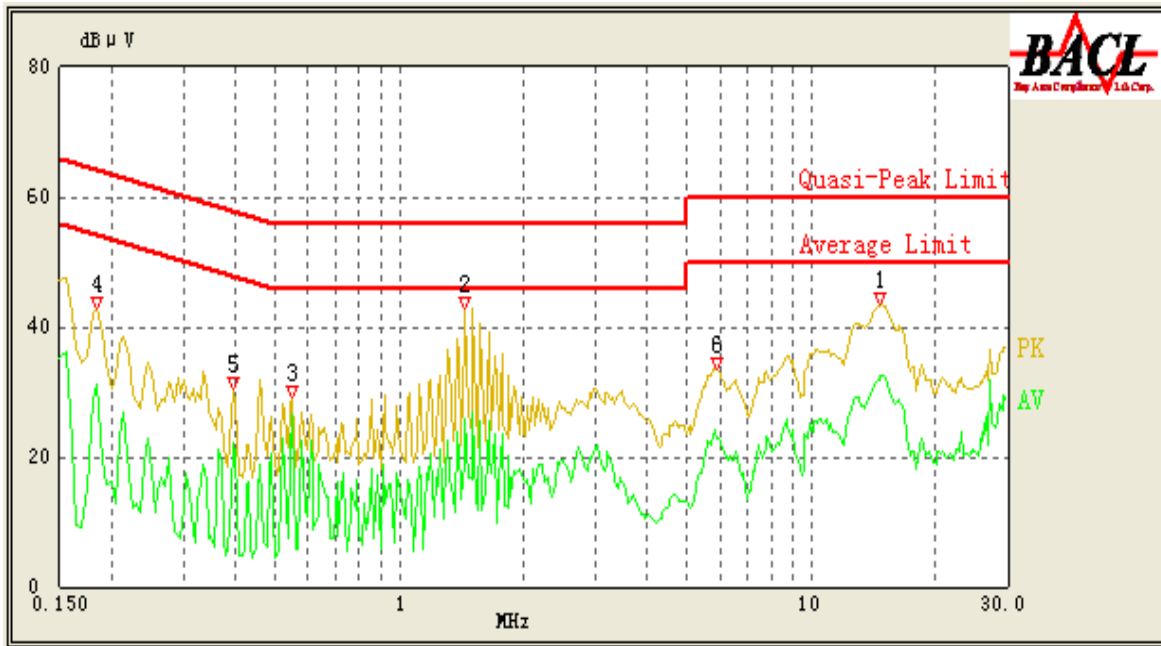
Test Mode: Operating (Adapter 1)

120V, 60 Hz Line:



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	Corrected Factor (dB)	Cord. Result (dBμV)	Limit (dBμV)	Margin (dB)	Remark (PK/ QP/Ave)
1.520	31.67	10.10	46.00	14.33	Ave
1.515	37.61	10.10	56.00	18.39	QP
0.550	26.40	10.10	46.00	19.60	Ave
14.595	29.70	10.10	50.00	20.30	Ave
1.250	25.46	10.10	46.00	20.54	Ave
0.180	33.58	10.10	55.14	21.56	Ave
14.655	36.71	10.10	60.00	23.29	QP
0.180	40.89	10.10	65.14	24.25	QP
0.725	21.64	10.10	46.00	24.36	Ave
0.550	28.22	10.10	56.00	27.78	QP
1.250	28.14	10.10	56.00	27.86	QP
0.725	27.05	10.10	56.00	28.95	QP

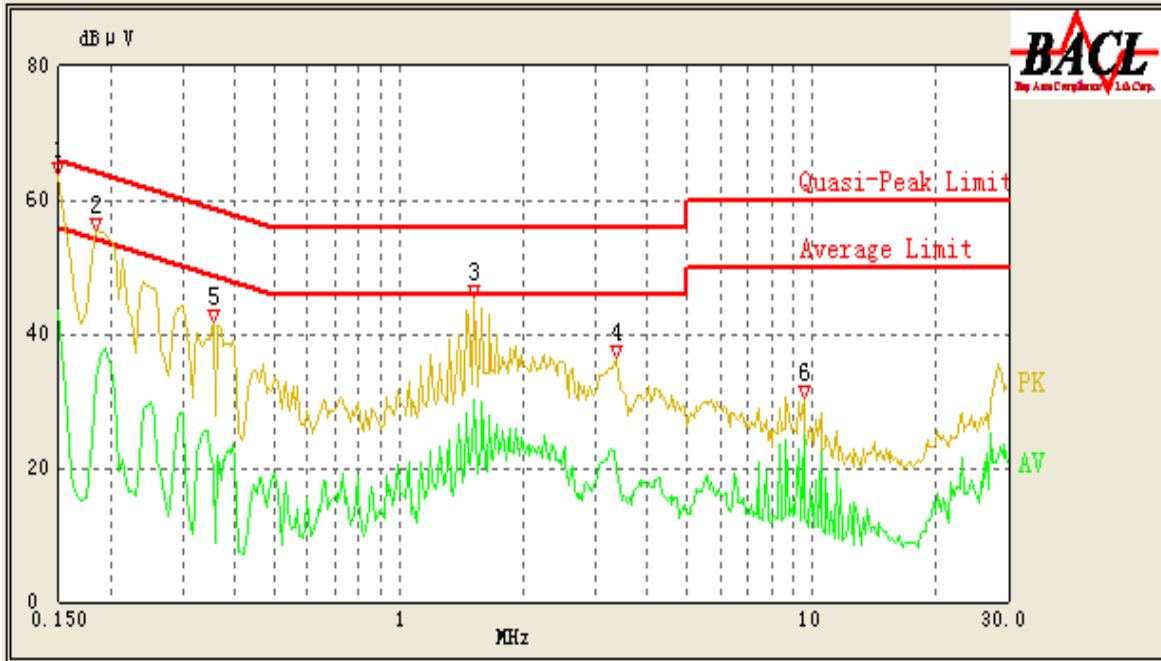
120V, 60 Hz Neutral:



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	Corrected Factor (dB)	Cord. Result (dBμV)	Limit (dBμV)	Margin (dB)	Remark (PK/ QP/Ave)
14.715	32.40	10.10	50.00	17.60	Ave
0.550	26.40	10.10	46.00	19.60	Ave
14.700	40.35	10.10	60.00	19.65	QP
1.445	25.77	10.10	46.00	20.23	Ave
0.185	31.01	10.10	55.00	23.99	Ave
0.185	39.76	10.10	65.00	25.24	QP
1.445	30.58	10.10	56.00	25.42	QP
0.395	22.02	10.10	49.00	26.98	Ave
5.885	22.74	10.10	50.00	27.26	Ave
0.550	26.68	10.10	56.00	29.32	QP
0.395	26.77	10.10	59.00	32.23	QP
5.910	26.58	10.10	60.00	33.42	QP

Test Mode: Operating (Adapter 2)

120V, 60 Hz Line:



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	Corrected Factor (dB)	Cord. Result (dBµV)	Limit (dBµV)	Margin (dB)	Remark (PK/ QP/Ave)
0.150	59.27	10.10	66.00	6.73	QP
0.150	43.58	10.10	56.00	12.42	Ave
0.185	51.36	10.10	65.00	13.64	QP
1.525	42.16	10.10	56.00	13.84	QP
1.525	30.32	10.10	46.00	15.68	Ave
0.185	33.13	10.10	55.00	21.87	Ave
3.345	22.60	10.10	46.00	23.40	Ave
0.355	36.51	10.10	60.14	23.63	QP
9.595	24.70	10.10	50.00	25.30	Ave
3.360	29.83	10.10	56.00	26.17	QP
0.355	20.05	10.10	50.14	30.09	Ave
9.595	26.03	10.10	60.00	33.97	QP

120V, 60 Hz Neutral:



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	Corrected Factor (dB)	Cord. Result (dBµV)	Limit (dBµV)	Margin (dB)	Remark (PK/ QP/Ave)
0.150	60.44	10.10	66.00	5.56	QP
0.150	46.83	10.10	56.00	9.17	Ave
0.190	53.20	10.10	64.86	11.66	QP
1.525	41.02	10.10	56.00	14.98	QP
1.525	27.42	10.10	46.00	18.58	Ave
0.230	43.09	10.10	63.71	20.62	QP
0.190	30.84	10.10	54.86	24.02	Ave
9.600	25.57	10.10	50.00	24.43	Ave
0.325	26.28	10.10	51.00	24.72	Ave
0.325	35.67	10.10	61.00	25.33	QP
0.230	25.48	10.10	53.71	28.23	Ave
9.595	28.11	10.10	60.00	31.89	QP

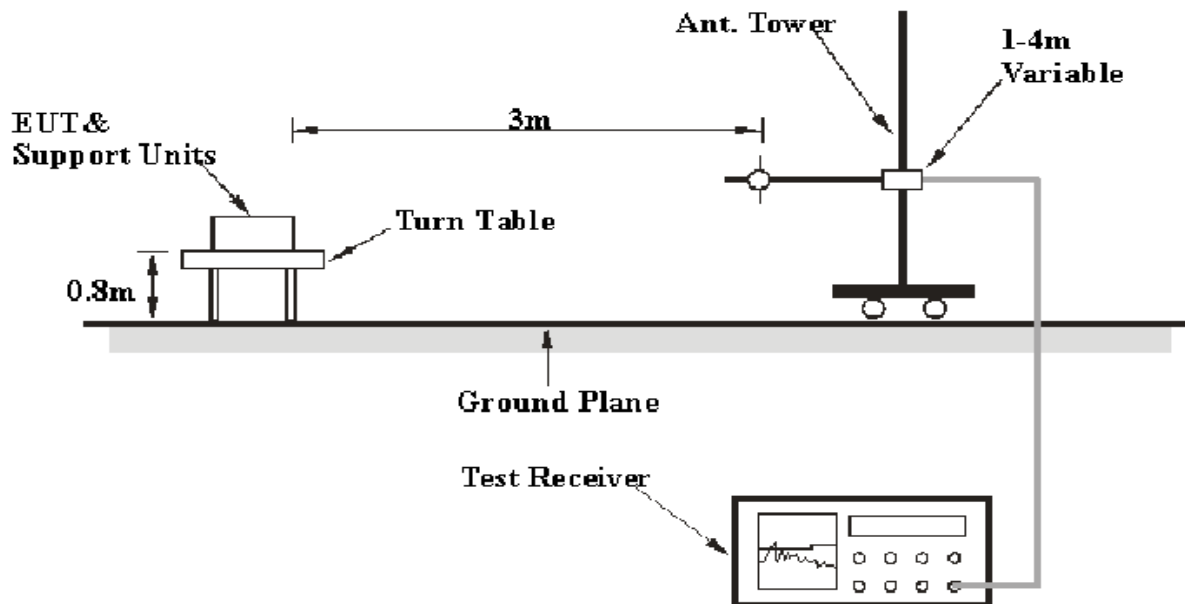
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

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 NIS 81, 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.

EUT Setup



The radiated emission tests were performed in the 3 meters chamber B test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part 15.109 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 of EUT was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 2 GHz.

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

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-24	2012-11-23
HP	Amplifier	HP8447E	1937A01046	2010-08-02	2011-08-02
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-05-04	2012-05-04

* **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.

Test Procedure

During the radiated emissions test, the adapter of EUT and the other support equipment were connected to the 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 30MHz to 1GHz.

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 Part 15 Class B, with the worst margin reading of:

0.2 dB at 625.002000 MHz in the **Vertical** polarization for Adapter 1

1.8 dB at 625.002750 MHz in the **Vertical** polarization for Adapter 2

Test Data

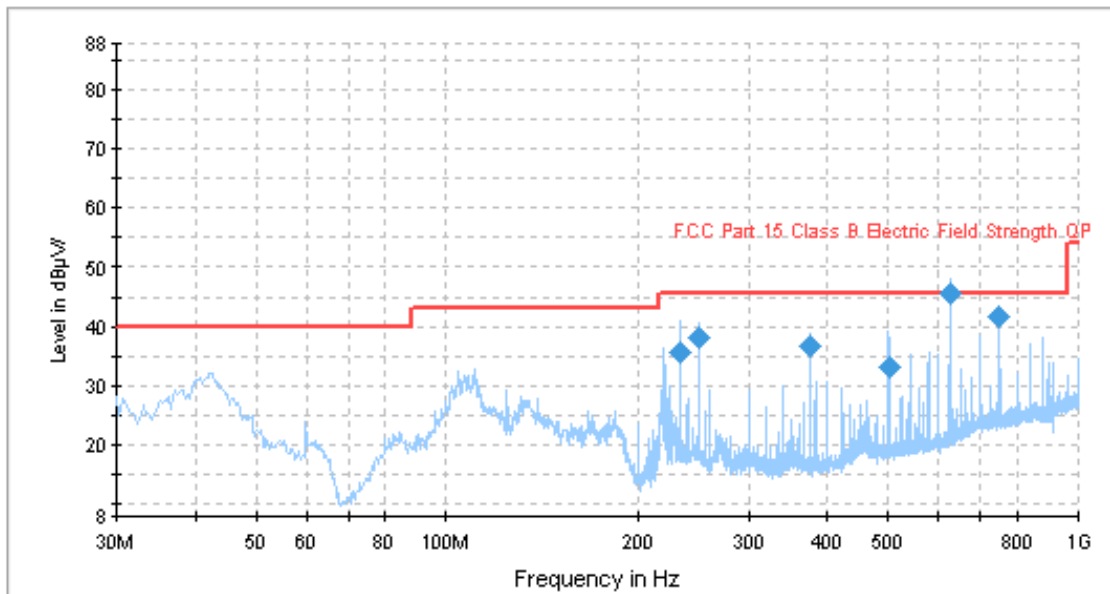
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Eric Zhang on 2011-07-29.

Test Mode: Operating (Adapter 1)

Auto Test(FCC 15 Class B)

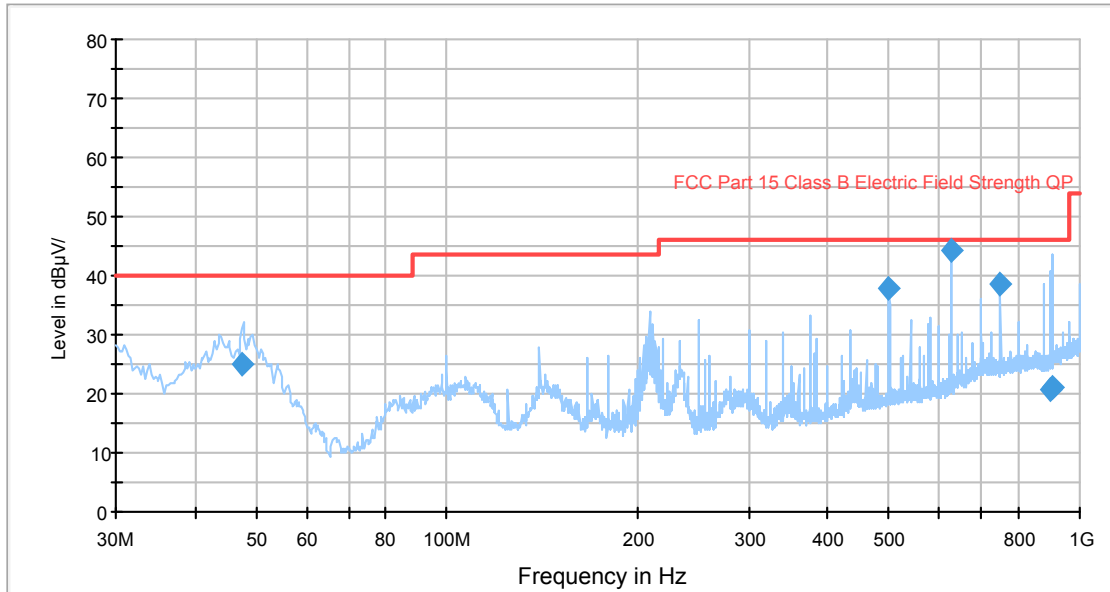


Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (Degree)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
625.002000	45.8	99.0	V	326.0	-5.7	46.0	0.2*
750.000750	41.8	99.0	V	95.0	-2.4	46.0	4.2
249.220750	38.3	286.0	H	20.0	-13.5	46.0	7.7
375.212500	36.8	203.0	H	349.0	-10.5	46.0	9.2
233.467500	35.9	369.0	H	301.0	-13.8	46.0	10.1
500.979500	33.3	301.0	H	326.0	-8.4	46.0	12.7

Note: *Within measurement uncertainty.

Test Mode: Operating (Adapter 2)

Auto Test(FCC 15 Class B)



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (Degree)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
625.002750	44.2	102.0	V	274.0	-5.7	46.0	1.8*
750.008500	38.5	99.0	H	343.0	-2.4	46.0	7.5
499.984750	38.0	120.0	V	155.0	-8.4	46.0	8.0
47.466250	24.9	103.0	V	228.0	-16.2	40.0	15.1
906.896500	21.2	318.0	H	303.0	-0.6	46.0	24.8
894.970500	20.8	400.0	H	291.0	-1.0	46.0	25.2

Note: *Within measurement uncertainty.

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