



FCC PART 15B

MEASUREMENT AND TEST REPORT

For

Xiamen Elane Electronics Co., Ltd.

4th Floor, #10 of Ai-De Air Industry Park, Gaoqi South 12th Road,
Xiamen, Fujian, China

FCC ID: XEWSDCPRN

Report Type: Original Report	Product Type: Model P1 Printer
Test Engineer: <u>Grace Xi</u> <i>Grace . Xi</i>	
Report Number: <u>RXM10122451</u>	
Report Date: <u>2011-01-12</u>	
Lisa Zhu	
Reviewed By: <u>EMC Engineer</u> 	
Prepared By: 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	

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*, NIST, 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
OBJECTIVE.....	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST FACILITY	3
SYSTEM TEST CONFIGURATION.....	5
JUSTIFICATION	5
EUT EXERCISE SOFTWARE	5
EQUIPMENT MODIFICATIONS	5
LOCAL SUPPORT EQUIPMENT LIST AND DETAILS	5
EXTERNAL I/O CABLE.....	5
CONFIGURATION OF TEST SETUP	6
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS.....	7
FCC §15.107 – AC LINE CONDUCTED EMISSIONS.....	8
MEASUREMENT UNCERTAINTY.....	8
EUT SETUP	8
EMI TEST RECEIVER SETUP.....	9
TEST EQUIPMENT LIST AND DETAILS.....	9
TEST PROCEDURE	9
TEST RESULTS SUMMARY	9
TEST DATA	9
FCC §15.109 - RADIATED SPURIOUS EMISSIONS	12
MEASUREMENT UNCERTAINTY.....	12
EUT SETUP	12
EMI TEST RECEIVER SETUP.....	13
TEST EQUIPMENT LIST AND DETAILS.....	13
TEST PROCEDURE	13
CORRECTED AMPLITUDE & MARGIN CALCULATION	13
TEST RESULTS SUMMARY	14
TEST DATA	14

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Xiamen Elane Electronics Co., Ltd.*'s product, model number: *Model P1 Printer (FCC ID: XEWSDCPRN)* or the "EUT" as referred to in this report is a *Stamps.com Model P1 Printer*, which measures approximately 20.0 cm (L) x 10.0 cm (W) x 11.0 cm (H). Input voltage: DC 7.5 V adapter. The highest operating frequency is 12 MHz.

Adapter information: Switching Adapter
Model: PS301AHFK3000U;
Input: AC 100-240V 50-60 Hz 0.8A;
Output: DC 7.5 V 3000 mA

** All measurement and test data in this report was gathered from production sample serial number: 1012011 (Assigned by BACL, Shenzhen). The EUT was received on 2010-12-24.*

Objective

This Type approval report is prepared on behalf of *Xiamen Elane Electronics 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.

Related Submittal(s)/Grant(s)

N/A

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 a National Institute of Standards and Technology (NIST) accredited laboratory, under the 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.

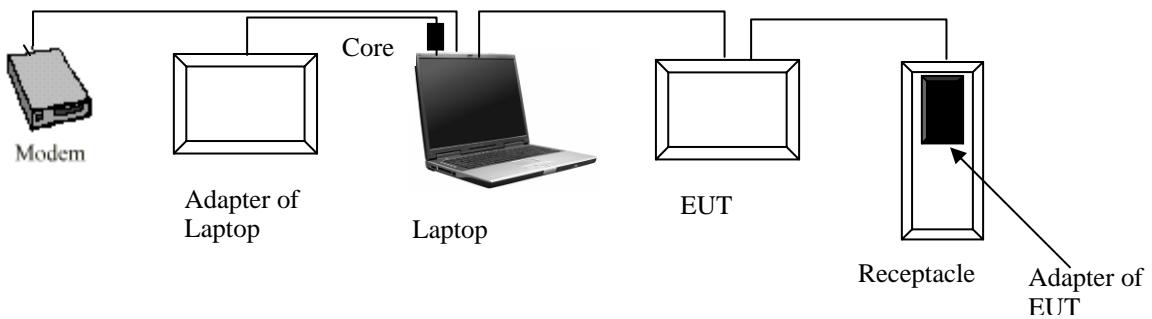
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	Laptop	PP01L	59804A00	DOC
SAST	Modem	AEM-2100	0293	DOC

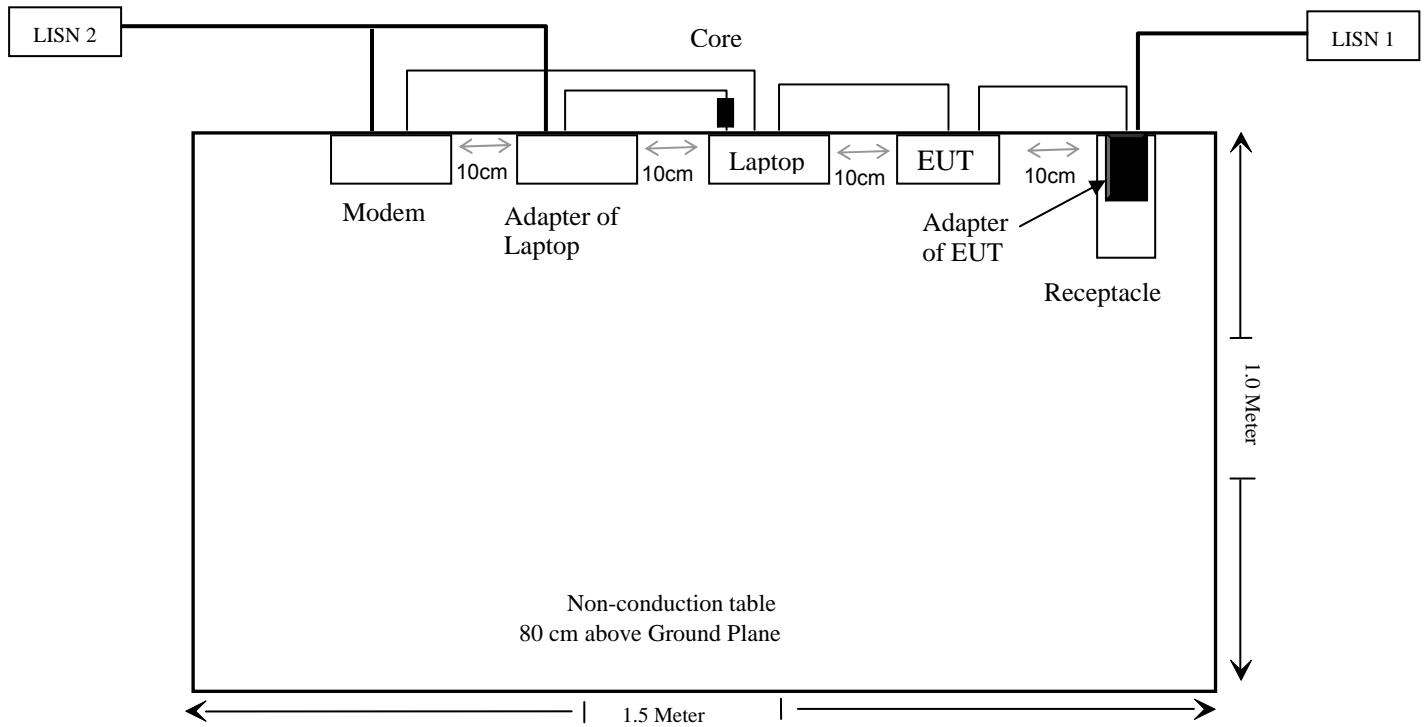
External I/O Cable

Cable Description	Length (m)	From/Port	To
Unshielded Undetachable AC power Cable	1.0	Adapter	AC Mains
Unshielded Undetachable DC Cable with a Core	0.5	Laptop	Adapter of Laptop
Shielded Undetachable USB Cable	0.8	EUT	Laptop
Shielded Detachable Serial Cable	1.2	Host /Serial Port	Modem

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

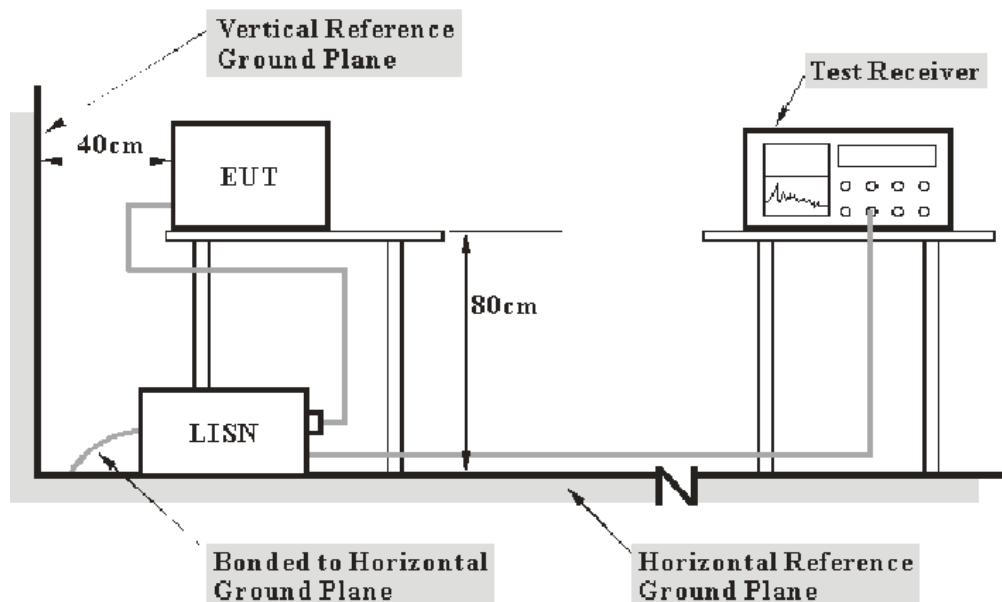
FCC §15.107 – AC LINE CONDUCTED EMISSIONS

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. (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 of EUT 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	2010-03-03	2011-03-02
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2010-03-09	2011-03-08

* **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, the adapter of EUT was connected to the outlet of the first LISN; 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 15.107, with the worst margin reading of:

19.09 dB at 0.200 MHz in the Neutral conductor mode

Test Data

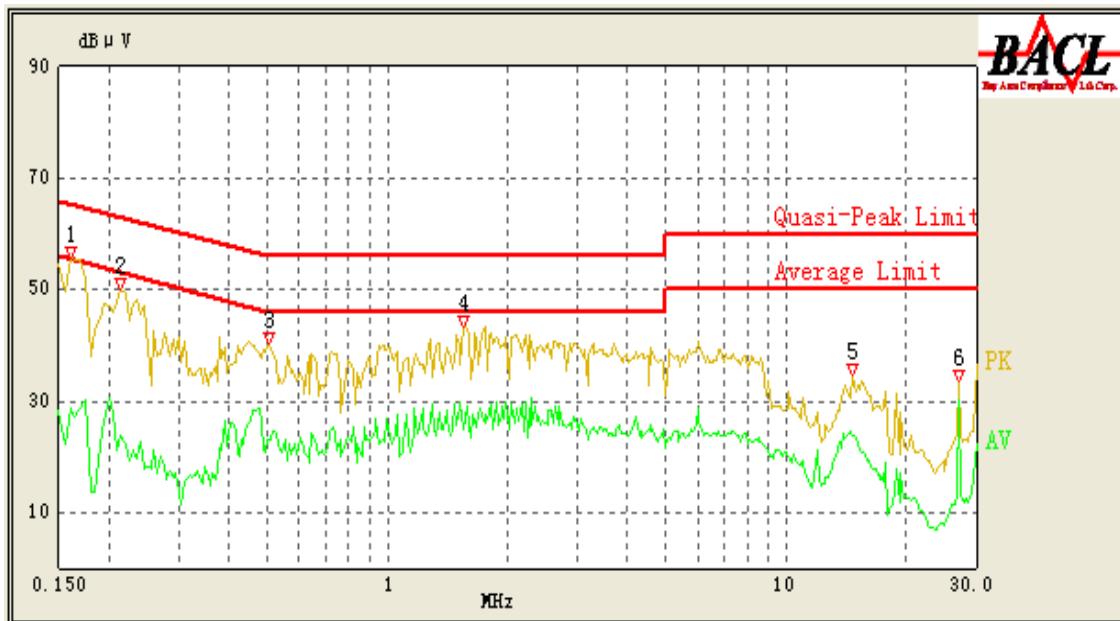
Environmental Conditions

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

The testing was performed by Grace Xi on 2011-01-05.

Test Mode: Running

120V/60 Hz, Line:



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	Corrected Result (dB μ V)	Corrected Factor (dB)	Limit (dB μ V)	Margin (dB)	Remark (PK/QP/Ave)
27.120	30.11	10.13	50.00	19.89	Ave
1.555	24.94	10.16	46.00	21.06	Ave
0.505	23.03	10.20	46.00	22.97	Ave
14.605	24.51	10.14	50.00	25.49	Ave
0.160	28.84	10.09	55.71	26.87	Ave
1.555	26.88	10.16	56.00	29.12	QP
27.120	30.16	10.13	60.00	29.84	QP
0.215	23.93	10.06	54.14	30.21	Ave
0.505	25.13	10.20	56.00	30.87	QP
0.160	33.76	10.09	65.71	31.95	QP
14.605	26.55	10.15	60.00	33.45	QP
0.215	29.19	10.06	64.14	34.95	QP

120V/60 Hz, Neutral



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	Corrected Result (dB μ V)	Corrected Factor (dB)	Limit (dB μ V)	Margin (dB)	Remark (PK/QP/Ave)
0.200	35.48	10.07	54.57	19.09	Ave
1.050	25.85	10.11	46.00	20.15	Ave
5.995	28.82	10.10	50.00	21.18	Ave
0.200	42.09	10.07	64.57	22.48	QP
18.005	37.18	10.18	60.00	22.82	QP
18.005	24.44	10.18	50.00	25.56	Ave
1.050	30.29	10.11	56.00	25.71	QP
5.995	32.26	10.10	60.00	27.74	QP
7.405	32.03	10.10	60.00	27.97	QP
30.000	30.84	10.10	60.00	29.16	QP
30.000	20.27	10.10	50.00	29.73	Ave
7.405	19.14	10.10	50.00	30.86	Ave

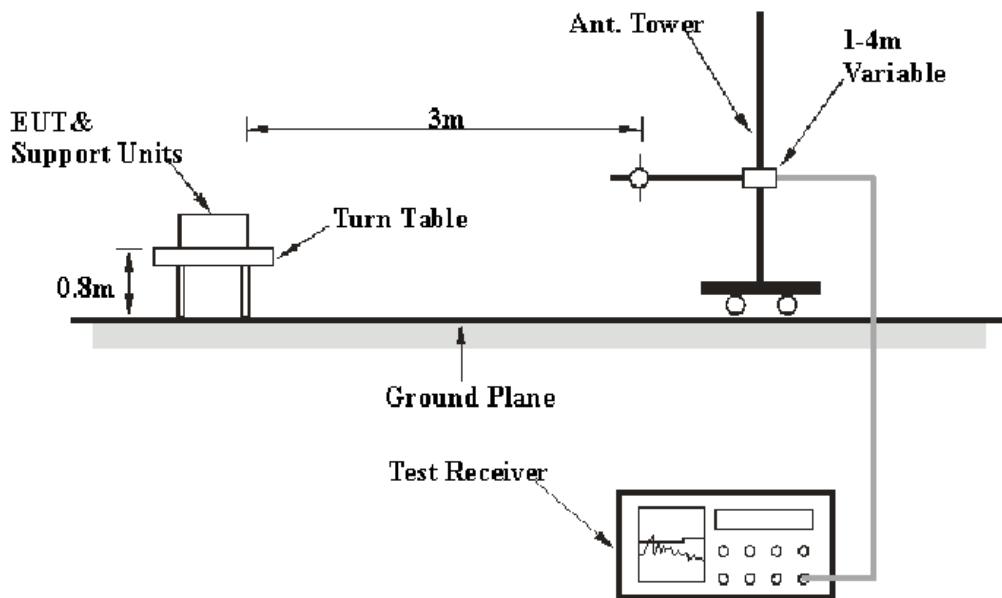
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

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. (k=2, 95% level of confidence)

EUT Setup



The radiated emission tests were performed in the 3 meters chamber B test site, using the setup accordance with the ANSI C63.4-2009. 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 of EUT 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>Frequency</i>	<i>RB/W</i>	<i>VB/W</i>	<i>IF B/W</i>	<i>Detection</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
HP	Amplifier	HP8447E	1937A01046	2010-08-02	2011-08-02
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-24	2011-11-24
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2010-07-05	2011-07-04

* **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.

Test Procedure

During the radiated emissions, the adapter of EUT and other support equipments were connected to the AC outlet floor.

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.

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 7 dB means the emission is 7 dB 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:

14.5 dB at 721.073750 MHz in the **Vertical** polarization

Test Data

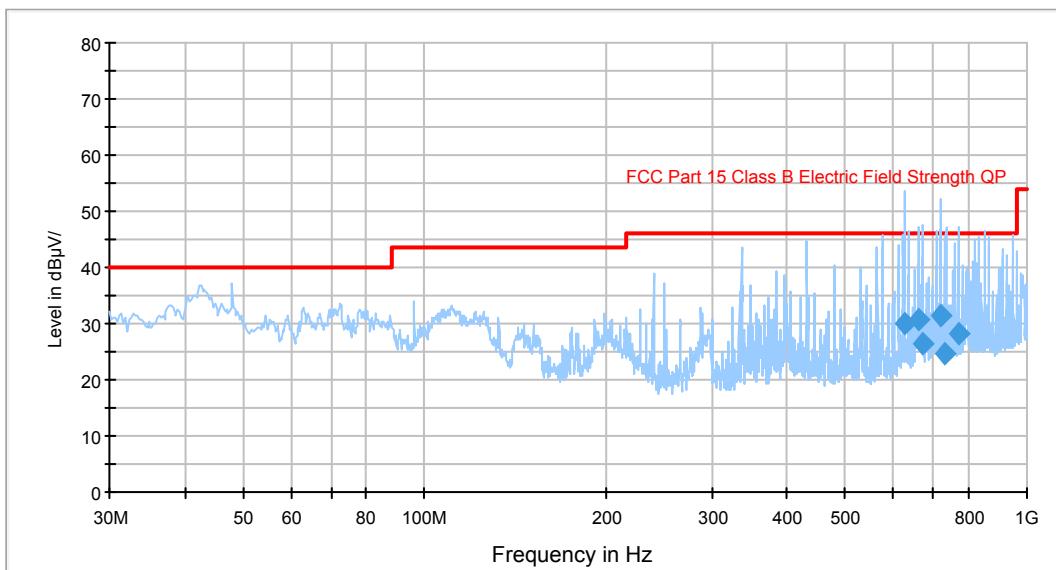
Environmental Conditions

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

The testing was performed by Grace Xi on 2011-01-08.

Test Mode: Runing

Auto Test(FCC 15 Class B)



Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (Degree)	Correction Factor (dB)	Limit (dB μ V/m)	Margin (dB)
721.073750	31.5	100.0	V	289.0	-2.8	46.0	14.5
661.156000	30.5	100.0	V	110.0	-4.4	46.0	15.5
624.989000	30.1	101.0	V	345.0	-5.7	46.0	15.9
769.104500	28.2	100.0	V	206.0	-2.2	46.0	17.8
673.182250	26.4	100.0	V	349.0	-4.0	46.0	19.6
733.269500	24.8	100.0	V	118.0	-2.6	46.0	21.2

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