



NVLAP LAB CODE 200707-0



FCC PART 15.249

MEASUREMENT AND TEST REPORT

For

Chongqing Jinshan Science & Technology (Group) Co., Ltd.

No.18, Nishang Road, LiangLu Industrial City, Yubei District,

Chongqing, P.R. China

FCC ID: XE8CJSMEW-II
Model: JS-MEW- II

Report Type: Original Report	Product Type: USB Wireless Monitor & Controller
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Report Number: RSC09121451	
Report Date: 2010-01-22	
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* This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "*" (Rev.2)

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Chongqing Jinshan Science & Technology (Group) Co., Ltd.* 's product, model *JS-MEW- II* (FCC ID: *XE8CJSMEW-II*), or the "EUT" as referred to in this report is a *USB wireless monitor & controller* which measures approximately 8.2 cm L x 3.3 cm W x 1.3 cm H, rated input voltage: PC 5V.

Product information:

Parameters	Specifications	
	Transmitting	Receiving
Modulation	GFSK	GFSK
Frequency Range	2450~2468 MHz	
Transmission Power	≤ 0 dBm	

Transmission Channel (10CH)	Frequency (MHz)
1	2450
2	2452
3	2454
4	2456
5	2458
6	2460
7	2462
8	2464
9	2466
10	2468

* All measurement and test data in this report was gathered from production sample serial number: 0912006 (Assigned by *BACL, Shenzhen*). The EUT was received on 2009-12-14.

Objective

This Type approval report is prepared on behalf of *Chongqing Jinshan Science & Technology (Group) Co., Ltd.* in accordance with Part 2, Subpart J, and Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209, 15.109 and 15.249 rules.

Related Submittal(s)/Grant(s)

No Related Submittals.

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 radiated and conducted emissions measurement was performed at 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 November 21, 2007. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

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).



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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 typical fashion (as normally used by a typical user).

Equipment Modifications

No modifications were made to the unit tested.

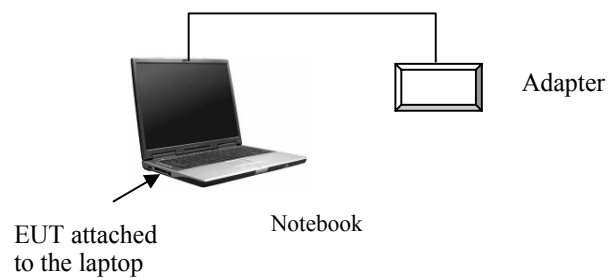
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
IBM	Notebook	T400	GTVQC-2KWCD-VXM8V-KPRM9-KKVDB	DOC

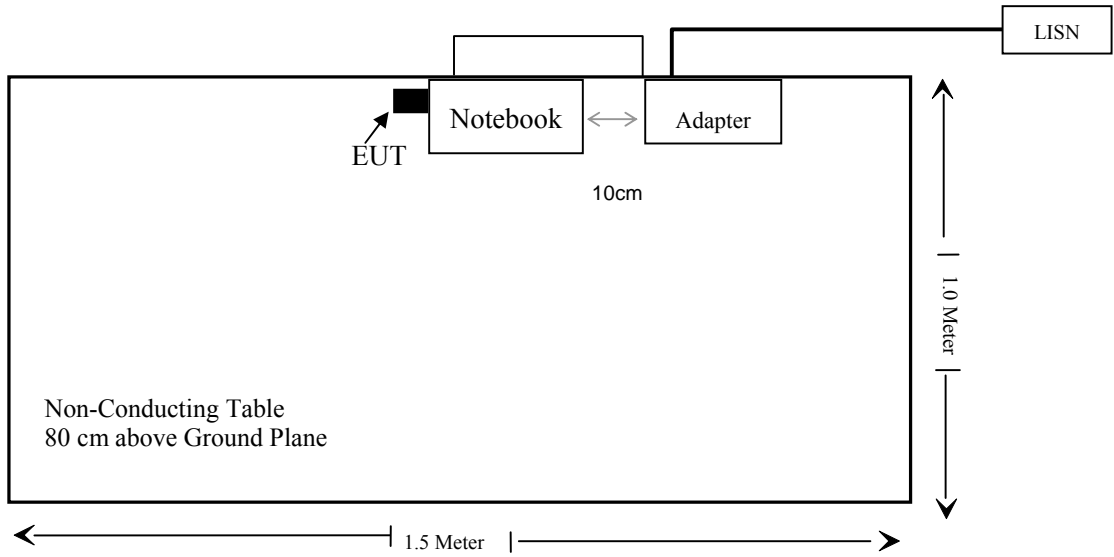
External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded Detachable AC Cable	1.5	AC Mains/AC Port	Adapter
Unshielded Undetachable AC Cable	1.0	AC Mains/DC Port	Notebook

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliant
§15.207(a)	Conduction Emissions	Compliant
§15.205(a), §15.209(a), §15.109, 15.249(a), §15.249(c), §15.35	Radiated Emissions	Compliant
§15.249(d)	Out of Band Emissions	Compliant

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used.

Antenna Connector Construction

The EUT has an integral component antenna on PCB, which in accordance to section 15.203, is considered sufficient to comply with the provisions of this section. The antenna gain is 0 dBi.

Result: Compliant.

Please refer to the EUT internal photos.

FCC §15.207 (a) - CONDUCTED EMISSIONS

Applicable Standard

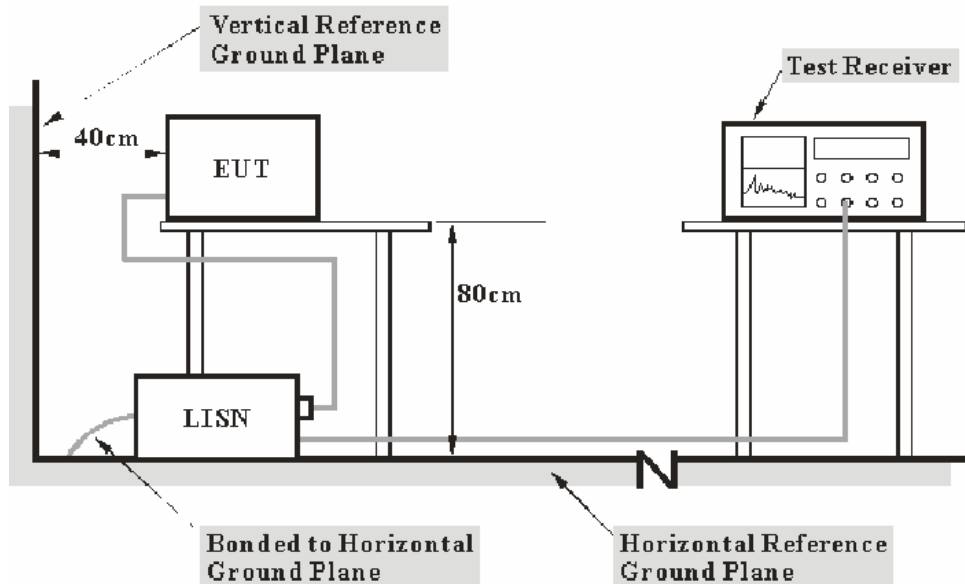
CFR47 §15.207

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 Laboratory 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 C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 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 120V/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	ESCI	100035	2009-11-24	2010-11-24
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2009-04-28	2010-04-27

* **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

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 15.207, with the worst margin reading of:

12.65 dB at 0.360 MHz in the **Line** conductor mode
6.93 dB at 0.360 MHz in the **Neutral** conductor mode

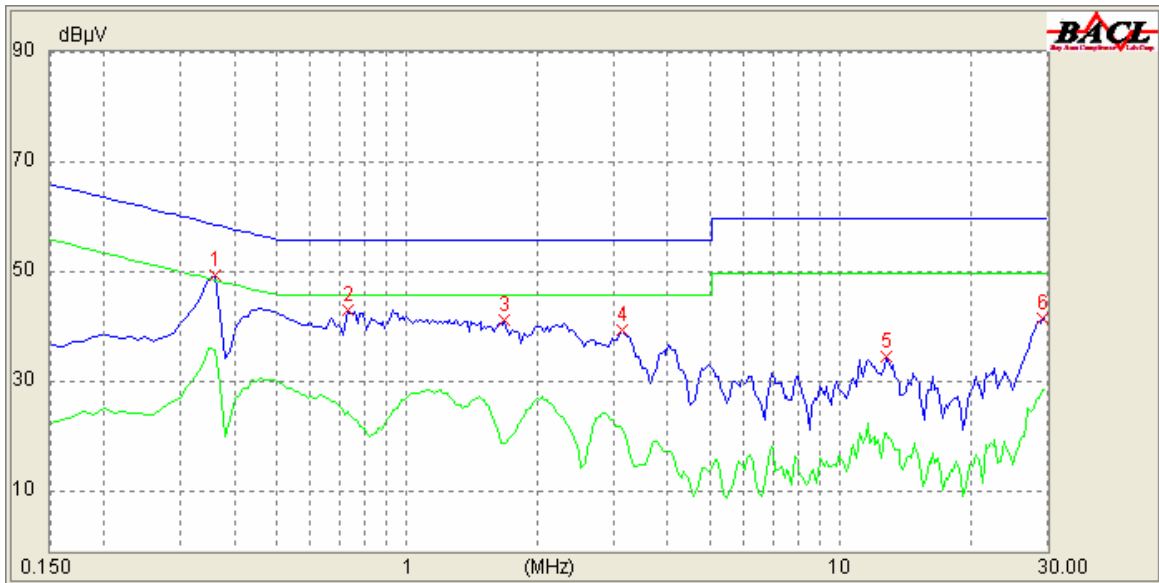
Test Data

Environmental Conditions

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

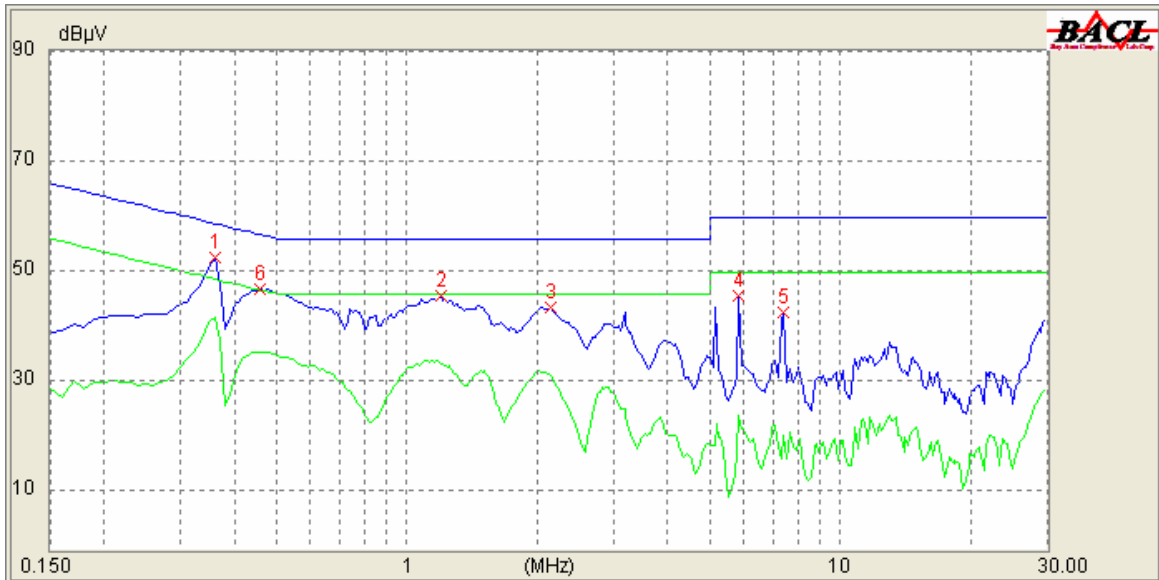
* *The testing was performed by Weir Zhong on 2010-01-15.*

120 V/60 Hz, Line



Conducted Emissions			FCC Part 15.207		
Frequency (MHz)	Correction Factor (dB)	Cord. Reading (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector (PK/AV/QP)
0.360	10.10	36.09	48.74	12.65	AV
0.360	10.10	45.93	58.74	12.81	QP
0.730	10.10	35.72	56.00	20.28	QP
0.730	10.10	25.09	46.00	20.91	AV
29.360	10.30	28.94	50.00	21.06	AV
1.680	10.10	32.62	56.00	23.38	QP
3.130	10.10	21.94	46.00	24.06	AV
29.420	10.30	34.87	60.00	25.13	QP
3.150	10.10	30.81	56.00	25.19	QP
1.680	10.10	19.50	46.00	26.50	AV
12.810	10.30	31.61	60.00	28.39	QP
12.810	10.30	21.29	50.00	28.71	AV

120 V/60 Hz, Neutral:



Conducted Emissions			FCC Part 15.207		
Frequency (MHz)	Correction Factor (dB)	Cord. Reading (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector (PK/AV/QP)
0.360	10.10	41.81	48.74	6.93	AV
0.360	10.10	49.98	58.74	8.76	QP
0.460	10.10	35.65	46.76	11.11	AV
1.200	10.10	33.59	46.00	12.41	AV
0.460	10.10	44.12	56.76	12.64	QP
1.200	10.10	41.92	56.00	14.08	QP
2.150	10.10	31.21	46.00	14.79	AV
2.150	10.10	39.81	56.00	16.19	QP
5.850	10.20	24.17	50.00	25.83	AV
7.380	10.20	20.58	50.00	29.42	AV
5.850	10.20	28.05	60.00	31.95	QP
7.380	10.20	23.78	60.00	36.22	QP

FCC §15.205, §15.209, §15.109 & §15.249 - RADIATED EMISSIONS

Applicable Standard

As per §15.249 (a), except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

As per §15.249 (c), Field strength limits are specified at a distance of 3 meters.

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

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.

Test Equipment Setup

The spectrum analyzer or receiver is set as:

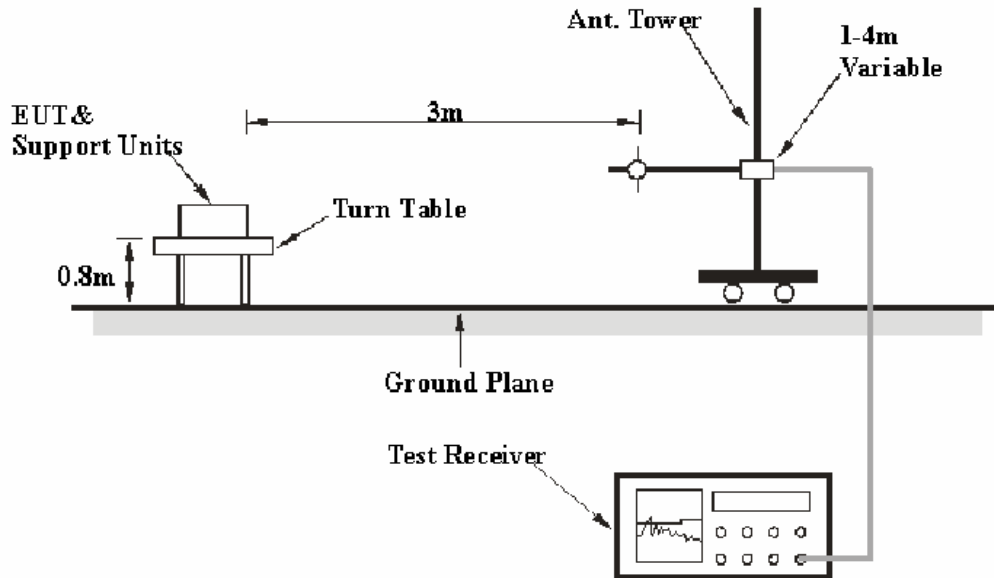
Below 1000 MHz:

Quasi-Peak: RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000 MHz:

- (1) Peak: RBW = 1MHz/VBW = 1MHz/Sweep = Auto
- (2) Average: RBW = 1MHz/VBW = 10Hz/Sweep = Auto

EUT Setup



The radiated emission and out of band emission tests were performed in the 3 meters chamber B, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209, FCC 15.109 and FCC 15.249 limits.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2009-11-15	2010-11-15
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2009-11-24	2010-11-24
Sunol Sciences	Bilog Antenna	JB1	A040904-2	2009-04-12	2010-04-12
HP	Amplifier	8449B	3008A00277	2009-09-29	2010-09-29
Sunol Sciences	Horn Antenna	DRH-118	A052604	2009-09-25	2010-09-25
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2009-08-28	2010-08-27

* **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.

Test Procedure

For the radiated emissions test, the EUT, and all support equipment power cords was connected to the AC floor outlet.

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

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 mete, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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 15.209, 15.109 & 15.249, with the worst margin reading of:

Below 1 GHz:

Transmitting: 7.9 dB at 32.186020 MHz in the Vertical polarization.
Receiving: 6.5 dB at 40.220250 MHz in the Vertical polarization

Above 1 GHz:

Transmitting: 7.76 dB at 4900 MHz in the Horizontal polarization, low channel
Transmitting: 7.58 dB at 4916 MHz in the Vertical polarization, middle channel
Transmitting: 7.60 dB at 4936 MHz in the Vertical polarization, high channel
Receiving: 23.88 dB at 1948.15 MHz in the Horizontal polarization

Test Data

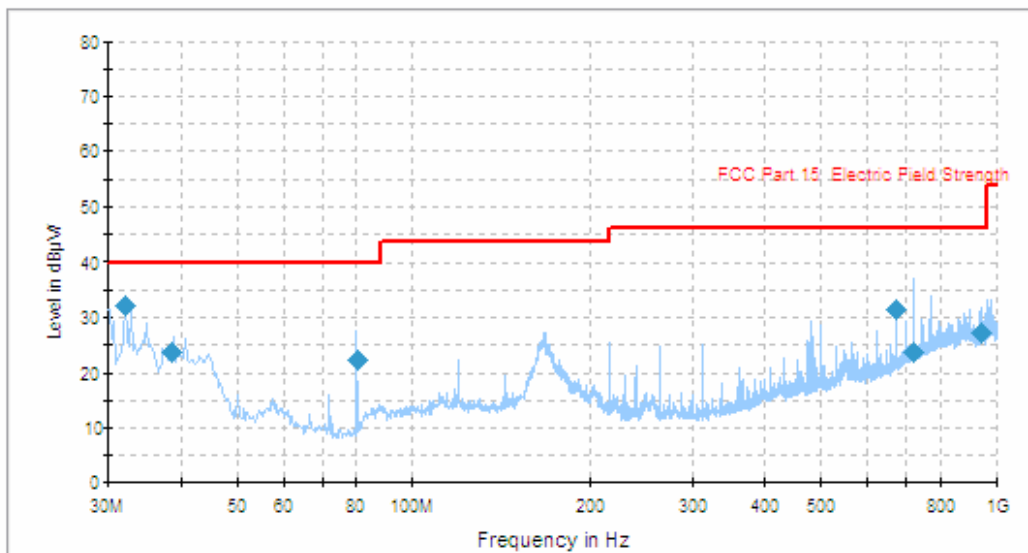
Environmental Conditions

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

The testing was performed by Weir Zhong on 2010-01-17.

Test Mode: Transmitting

Below 1 GHz:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (degree)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
32.186020	32.1	120.0	V	32.0	-12.4	40.0	7.9
672.014750	31.6	392.0	H	68.0	-5.6	46.0	14.4
38.561750	23.6	101.0	V	28.0	-12.4	40.0	16.4
80.477750	22.3	116.0	V	298.0	-20.1	40.0	17.7
937.148500	27.1	131.0	H	21.0	-0.7	46.0	17.9
719.857000	23.6	209.0	H	50.0	-4.0	46.0	22.4

Above 1 GHz:

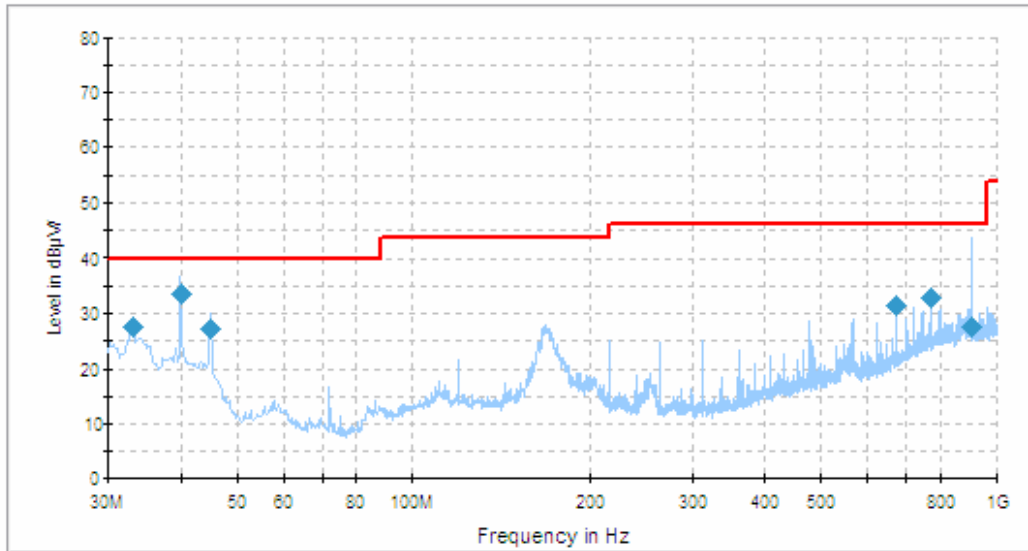
Frequency (MHz)	S.A. Reading (dB μ V/m)	Detector (PK/AV)	Turntable Degree	Test Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dB μ V/m)	FCC 15.249/15.209		
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dB μ V/m)	Margin (dB)	Comment
Low Channel (2450 MHz)												
4900	36.08	AV	360	1.8	H	36.3	7.56	33.7	46.24	54	7.76	harmonic
7350	31.33	AV	0	1.5	H	39.2	9.12	33.6	46.05	54	7.95	harmonic
4900	36.24	AV	250	1.1	V	35.0	7.56	33.7	45.10	54	8.90	harmonic
7350	31.55	AV	26	1.0	V	38.0	9.12	33.6	45.07	54	8.93	harmonic
4900	50.05	PK	360	1.8	H	36.3	7.56	33.7	60.21	74	13.79	harmonic
7350	46.56	PK	26	1.0	V	38.0	9.12	33.6	60.08	74	13.92	harmonic
7350	45.01	PK	0	1.5	H	39.2	9.12	33.6	59.73	74	14.27	harmonic
4900	50.62	PK	250	1.1	V	35.0	7.56	33.7	59.48	74	14.52	harmonic
2450	66.28	AV	248	1.2	V	30.3	7.90	33.9	70.58	94	23.42	Fund.
2450	63.14	AV	303	1.8	H	30.9	7.90	33.9	68.04	94	25.96	Fund.
2450	81.90	PK	248	1.2	V	30.3	7.90	33.9	86.20	114	27.80	Fund.
2450	79.10	PK	303	1.8	H	30.9	7.90	33.9	84.00	114	30.00	Fund.
Middle channel (2458 MHz)												
4916	37.56	AV	250	1.7	V	35	7.56	33.7	46.42	54	7.58	harmonic
7374	31.33	AV	360	1.1	H	39.2	9.12	33.6	46.05	54	7.95	harmonic
4916	35.06	AV	0	1.1	H	36.3	7.56	33.7	45.22	54	8.78	harmonic
7374	31.55	AV	26	1.5	V	38.0	9.12	33.6	45.07	54	8.93	harmonic
4916	51.80	PK	250	1.7	V	35.0	7.56	33.7	60.66	74	13.34	harmonic
7374	46.56	PK	26	1.5	V	38.0	9.12	33.6	60.08	74	13.92	harmonic
4916	49.58	PK	0	1.1	H	36.3	7.56	33.7	59.74	74	14.26	harmonic
7374	45.01	PK	360	1.1	H	39.2	9.12	33.6	59.73	74	14.27	harmonic
2458	66.47	AV	247	1.6	V	30.3	7.9	33.9	70.77	94	23.23	Fund.
2458	65.86	AV	352	1.2	H	30.9	7.9	33.9	70.76	94	23.24	Fund.
2458	82.32	PK	247	1.6	V	30.3	7.9	33.9	86.62	114	27.38	Fund.
2458	81.53	PK	352	1.2	H	30.9	7.9	33.9	86.43	114	27.57	Fund.
High channel (2468 MHz)												
4936	37.14	AV	250	1.6	V	35.4	7.56	33.7	46.40	54	7.60	harmonic
7404	31.05	AV	61	2.0	H	39.4	9.17	33.6	46.02	54	7.98	harmonic
4936	35.24	AV	295	1.3	H	36.6	7.56	33.7	45.70	54	8.30	harmonic
7404	31.03	AV	18	2.0	V	38.1	9.17	33.6	44.70	54	9.30	harmonic
4936	51.11	PK	250	1.6	V	35.4	7.56	33.7	60.37	74	13.63	harmonic
7404	45.10	PK	61	2.0	H	39.4	9.17	33.6	60.07	74	13.93	harmonic
4936	49.13	PK	295	1.3	H	36.6	7.56	33.7	59.59	74	14.41	harmonic
7404	43.47	PK	18	2.0	V	38.1	9.17	33.6	57.14	74	16.86	harmonic
2468	66.17	AV	249	1.5	V	30.3	7.9	33.9	70.47	94	23.53	Fund.
2468	64.24	AV	353	1.2	H	30.9	7.9	33.9	69.14	94	24.86	Fund.
2468	82.13	PK	249	1.5	V	30.3	7.9	33.9	86.43	114	27.57	Fund.
2468	80.19	PK	353	1.2	H	30.9	7.9	33.9	85.09	114	28.91	Fund.

Radiation emission in restricted band

Frequency (MHz)	S.A. Reading (dB μ V/m)	Detector (PK/AV)	Turntable Degree	Test Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dB μ V/m)	FCC 15.249/15.209		
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dB μ V/m)	Margin (dB)	Comment
Out of left side band (2310~2390 MHz)												
2318.97	31.70	AV	360	1.0	H	30.3	6.51	33.9	34.61	54	19.39	spurious
2318.97	31.65	AV	30	1.0	V	30.0	6.51	33.9	34.26	54	19.74	spurious
2318.97	47.71	PK	360	1.0	H	30.3	6.51	33.9	50.62	74	23.38	spurious
2318.97	47.13	PK	30	1.0	V	30.0	6.51	33.9	49.74	74	24.26	spurious
Out of right side band (2483.5~2500 MHz)												
2498.52	33.36	AV	303	1.2	H	31.50	8.09	33.9	39.05	54	14.95	spurious
2485.79	31.52	AV	250	1.0	V	30.60	8.09	33.9	36.31	54	17.69	spurious
2498.52	48.56	PK	303	1.2	H	31.50	8.09	33.9	54.25	74	19.75	spurious
2485.79	46.81	PK	250	1.0	V	30.60	8.09	33.9	51.60	74	22.40	spurious

Test Mode: Receiving (Worse Case)

Below 1 GHz:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
40.220250	33.5	101.0	V	158.0	-13.4	40.0	6.5
33.229500	27.8	101.0	V	135.0	-8.5	40.0	12.2
44.926250	27.2	101.0	V	7.0	-16.3	40.0	12.8
768.003250	32.8	282.0	H	44.0	-2.3	46.0	13.2
671.985750	31.6	230.0	H	48.0	-5.6	46.0	14.6
905.898750	27.8	246.0	H	211.0	-0.5	46.0	18.2

Above 1 GHz:

Frequency (MHz)	S.A. Reading (dBµV/m)	Detector (PK/AV)	Turntable Degree	Test Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBµV/m)	FCC 15.109		
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBµV/m)	Margin (dB)	Comment
1948.15	31.40	AV	360	1.5	H	28.30	4.72	34.3	30.12	54	23.88	Spurious
1948.15	31.36	AV	271	1.2	V	28.10	4.72	34.3	29.88	54	24.12	Spurious
1948.15	47.55	PK	360	1.5	H	28.30	4.72	34.3	46.27	74	27.73	Spurious
1948.15	47.55	PK	271	1.2	V	28.10	4.72	34.3	46.07	74	27.93	Spurious
1076.10	32.10	AV	37	1.4	H	25.20	3.50	35.0	25.80	54	28.20	Spurious
1076.10	31.30	AV	175	1.0	V	23.90	3.50	35.0	23.70	54	30.30	Spurious
1076.10	48.71	PK	37	1.4	H	25.20	3.50	35.0	42.41	74	31.59	Spurious
1076.10	47.27	PK	175	1.0	V	23.90	3.50	35.0	39.67	74	34.33	Spurious

FCC §15.249(d) – OUT OF BAND EMISSIONS

Applicable Standard

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

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.

Test Equipment Setup

The spectrum analyzer or receiver is set as:

Above 1000 MHz:

- (1) Peak: RBW = 1MHz/VBW = 1MHz/Sweep = Auto
- (2) Average: RBW = 1MHz/VBW = 10Hz/Sweep = Auto

Test Procedure

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 mete, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission at the band edge. The receiving antenna should be changed the polarization both of horizontal and vertical.

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2009-11-24	2010-11-24
HP	Amplifier	8447E	1937A01046	2009-08-02	2010-08-02
A.H. System	Horn Antenna	SAS-200/571	135	2009-05-17	2010-05-17

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) Corp. attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.2 kPa

*The testing was performed by Weir Zhong on 2010-01-17.

Test Result: Compliant

Please refer to the following table.

Test Mode: Transmitting

Frequency (MHz)	S.A. Reading (dB μ V/m)	Detector (PK/AV)	Turntable Degree	Test Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dB μ V/m)	FCC 15.249/15.209	
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dB μ V/m)	Margin (dB)
Out of left side band											
2399.90	36.94	AV	46	1.0	V	30.3	7.9	33.9	41.24	54	12.76
2399.90	36.10	AV	273	1.5	H	30.9	7.9	33.9	41.00	54	13.00
2399.90	47.32	PK	46	1.0	V	30.3	7.9	33.9	51.62	74	22.38
2399.90	46.12	PK	273	1.5	H	30.9	7.9	33.9	51.02	74	22.98
Out of right side band											
2483.60	36.57	AV	223	1	V	30.4	8.0	33.9	41.07	54	12.93
2483.60	35.41	AV	360	2.0	H	31.1	8.0	33.9	40.61	54	13.39
2483.60	46.93	PK	223	1.1	V	30.4	8.0	33.9	51.43	74	22.57
2483.60	45.82	PK	360	2.0	H	31.1	8.0	33.9	51.02	74	22.98

FCC §15.215(c) – 20 dB BANDWIDTH

Standard Applicable

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2009-11-24	2010-11-24
HP	Amplifier	8449B	3008A00277	2009-09-12	2010-09-11
Sunol Sciences	Horn Antenna	DRH-118	A052604	2009-09-25	2010-09-25

* **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

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that indicated 20dB bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Data

Environmental Conditions

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

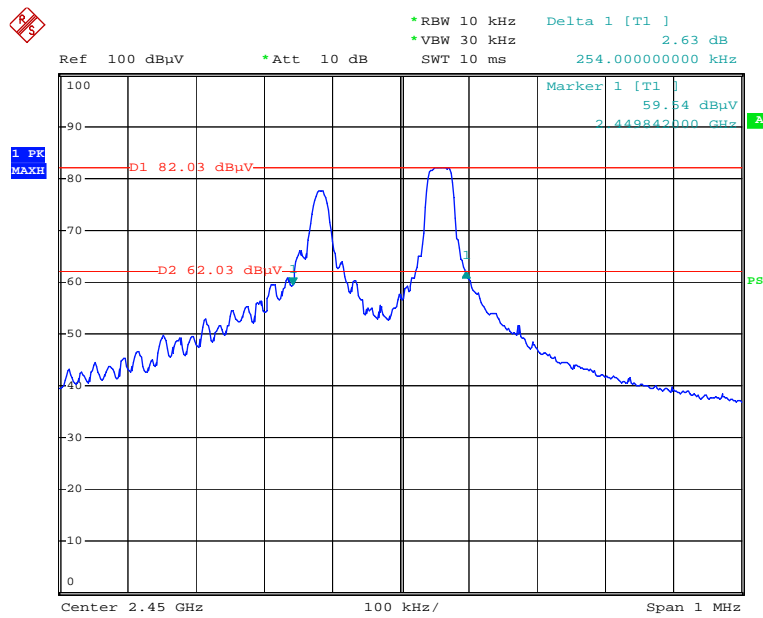
The testing was performed by Weir Zhong on 2010-01-16.

Test Mode: Transmitting

Pleas refer to the plot and tabular data sheet attached.

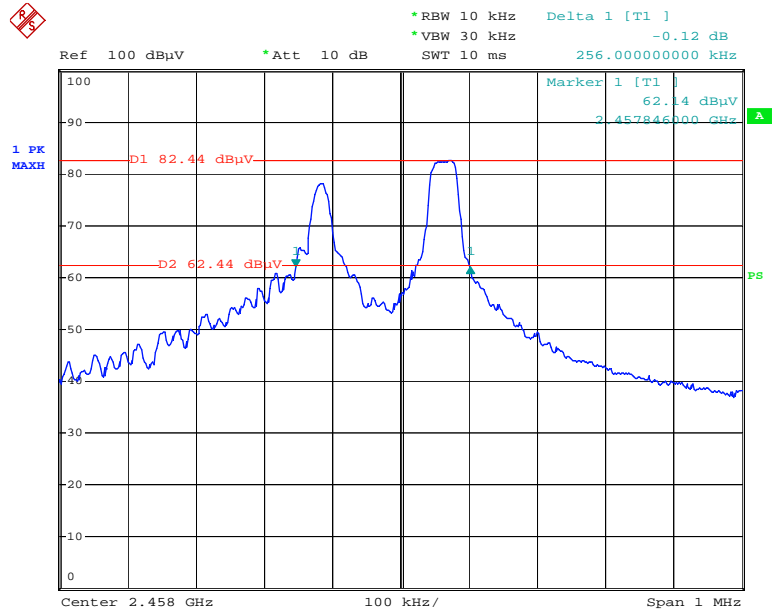
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)
Low	2450	254
Mid	2458	256
High	2468	262

Low Channel



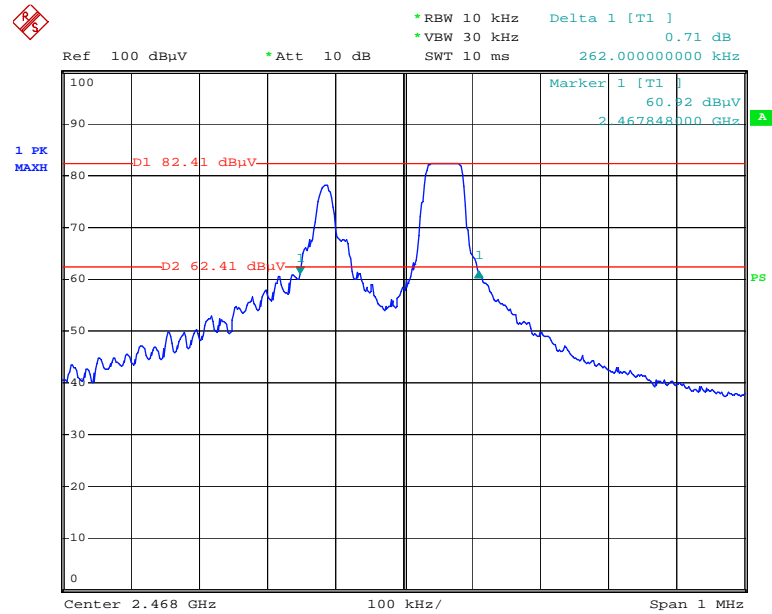
Date: 16.JAN.2010 14:20:51

Middle Channel



Date: 16.JAN.2010 13:46:20

High Channel



Date: 16.JAN.2010 13:54:43

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