



NVLAP LAB CODE 200707-0



FCC PART 15.249

MEASUREMENT AND TEST REPORT

For

Aeon Labs LLC

121 Buckingham Drive, Unit 36,

Santa Claras, CA 95051, USA

FCC ID: XBADSB09104

Report Type: Original Report	Product Type: Home Energy Meter
Test Engineer: <u>Vicent Kang</u>	<i>Vicent Kang</i>
Report Number: <u>RSZ10020902</u>	
Report Date: <u>2010-05-07</u>	
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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. (Shenzhen). 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 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 *Aeon Labs LLC* 's product, model: *DSB09104-ZWUS (FCC ID: XBADSB09104)*, or the "EUT" as referred to in this report is a *Home Energy Meter* which measures approximately: 12.0 cm L x 6.8 cm W x 3.7 cm H, rated input voltage: DC 4×1.5V AA battery or 5V from PC.

**All measurement and test data in this report was gathered from production sample serial number: 1002023 (Assigned by BACL, Shenzhen). The EUT was received on 2010-02-09.*

Objective

This Type approval report is prepared on behalf of *Aeon Labs LLC* 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 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).



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.

Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	Motherboard	OWC297	CN-OWC297-70821-564-00NI	DoC
DELL	Power	NPS-250KB D	CN-0H2678-17972-56E-80BM	DoC
Seagate	Hard Disk	ST340014A	5JXK3GXE	DoC
DELL	3.5' Floppy	N/A	CN-0N8893-69802-54Q-02P0	DoC
Lite-ON	CD-Rom	LTN-489S	N/A	DoC
ProMOS	Memory	V826632K24SATG-C0	0525-K1933700	N/A
Intel	CPU	Celeron D-2533	N/A	N/A
Intel	Ethernet	PRO 10/100 VE	N/A	DoC

Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
DELL	PC	DELL 170L	CN-0TC670-70821-560-F4Q6	DoC
DELL	Keyboard	SK-8110	CN07N244-71616-56A-1B1E	DoC
DELL	Mouse	M071KC	520027907	DoC
DELL	LCD Monitor	1505FP	CN-OY4287-71618-574-GBSH	DoC
HP	Laser Jet5L	C3941A	JPTVOB2337	DoC
ECOM	Modem	EM-56DEV	6588D51200013	DoC

External I/O Cable

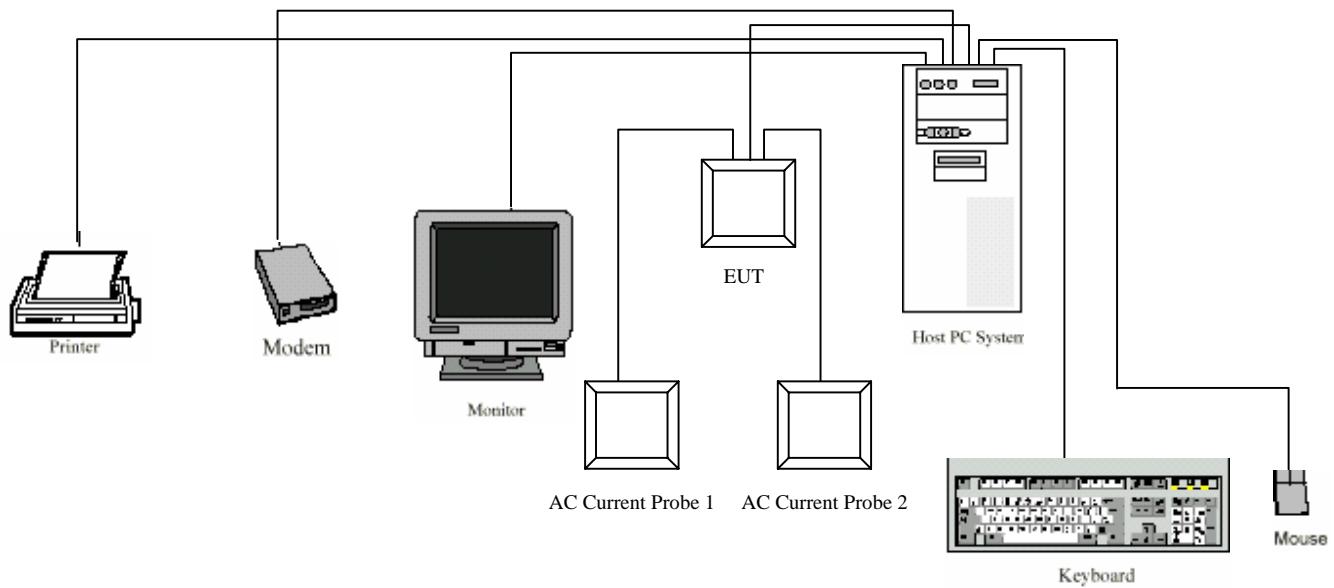
Cable Description	Length (M)	From/Port	To
Shielded Detachable K/B Cable	1.50	K/B Port / Host	K/B
Shielded Detachable Mouse Cable	1.50	PS/2 Port / Host	Mouse
Shielded Detachable VGA Cable	1.50	VGA Port / Host	Monitor
Shielded Detachable Printer Cable	1.2	Parallel Port / Host	Printer
Shielded Detachable Serial Cable	1.2	Serial Port / Host	Modem
Unshielded Detachable Cable	2.0	AC Current Probe	EUT

Configuration of Test Setup

Powered by battery mode:

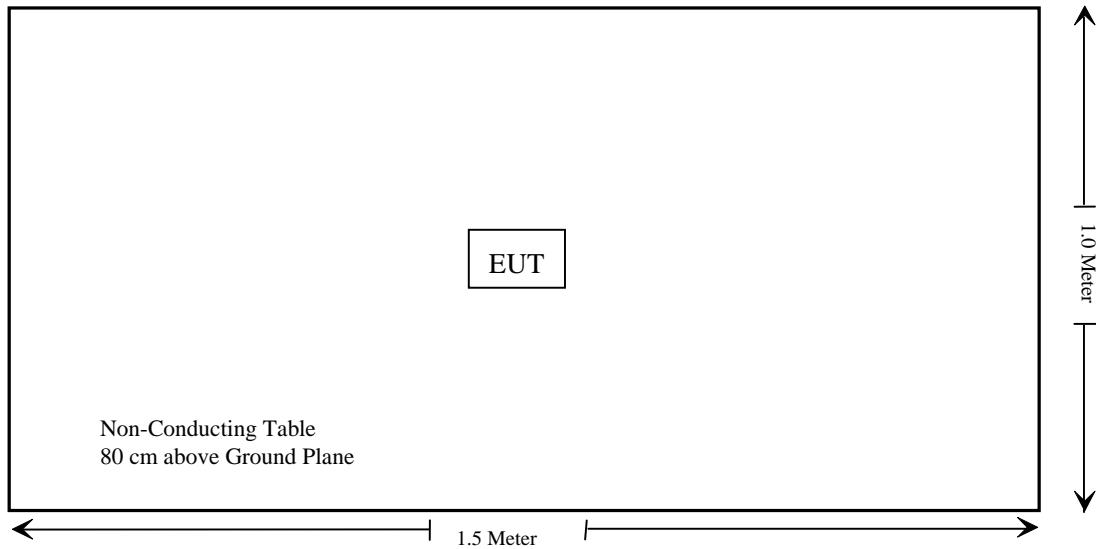


Powered by PC mode:

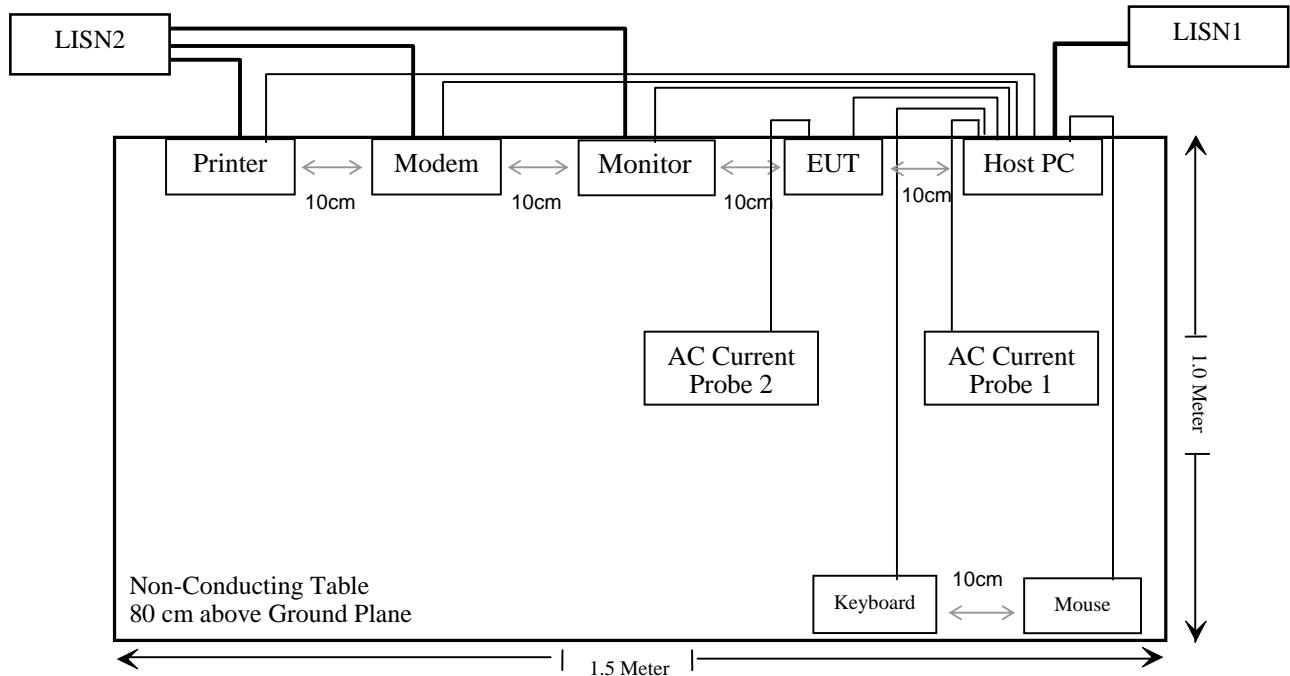


Block Diagram of Test Setup

Powered by battery mode:



Powered by PC mode:



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), 15.249(a), §15.249(c)	Radiated Emissions	Compliant
§15.249(d)	Out of Band Emissions	Compliant
§15.215(c)	20 dB Occupied Bandwidth	Compliant

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

For intentional device, according to FCC §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 a printed antenna on PCB, which in accordance to section 15.203, is considered sufficient to comply with the provisions of this section, the maximum antenna gain is -2 dBi.

Result: Compliant.

Please refer to the EUT photos.

FCC §15.207(a) - CONDUCTED EMISSIONS

Applicable Standard

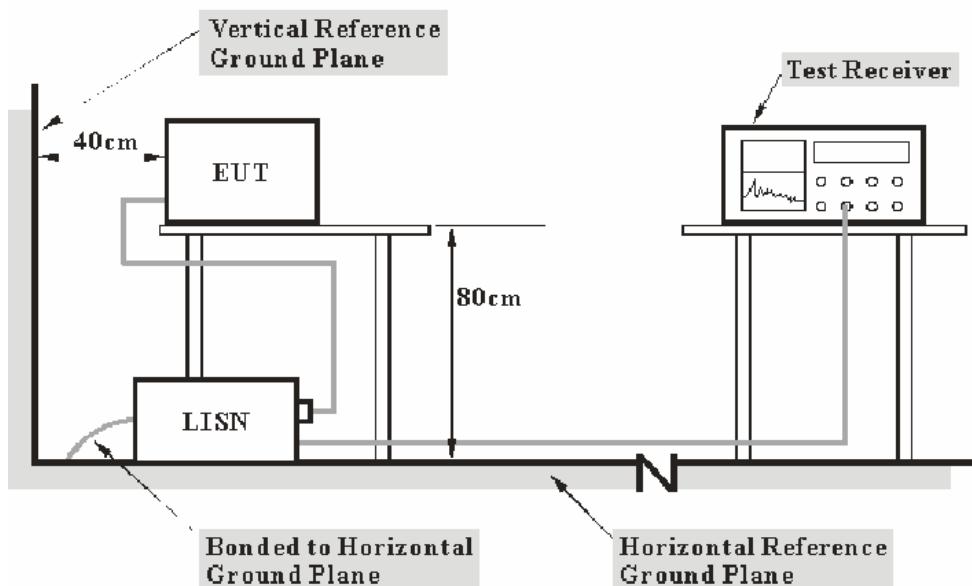
FCC §15.207,

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 15.207 limits.

The spacing between the peripherals was 10 cm.

The Host 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:

Frequency Range	IF B/W
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	2009-04-28	2010-04-27
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 15.249, and 15.207, with the worst margin reading of:

17.70 dB at 0.240 MHz in the **Line** conductor mode

12.69 dB at 0.240 MHz in the **Neutral** conductor mode

Test Data

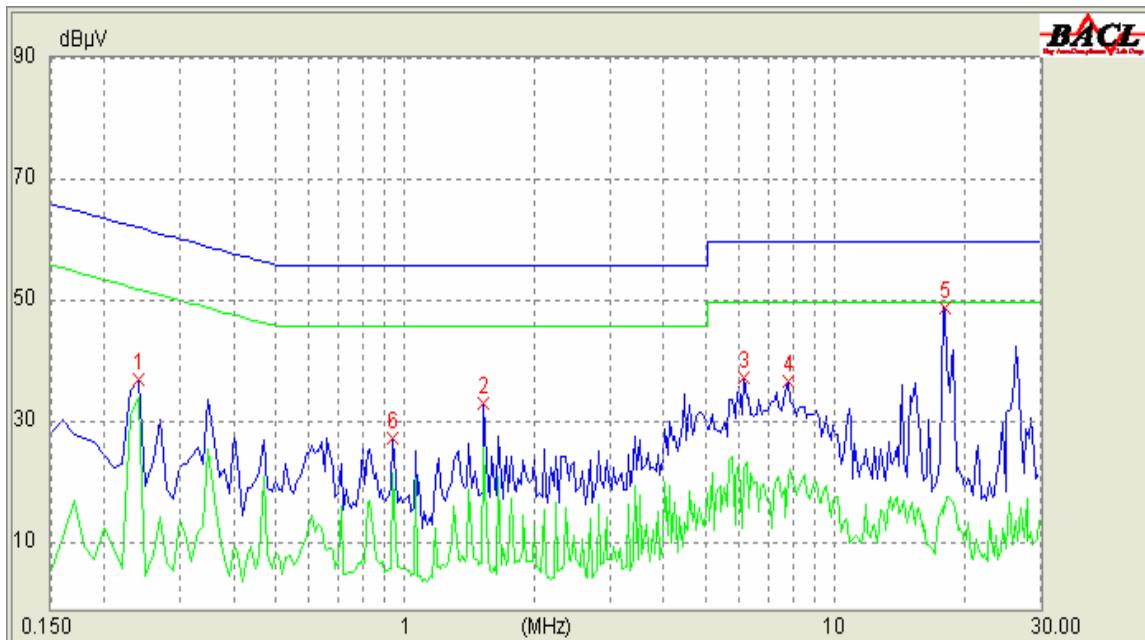
Environmental Conditions

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

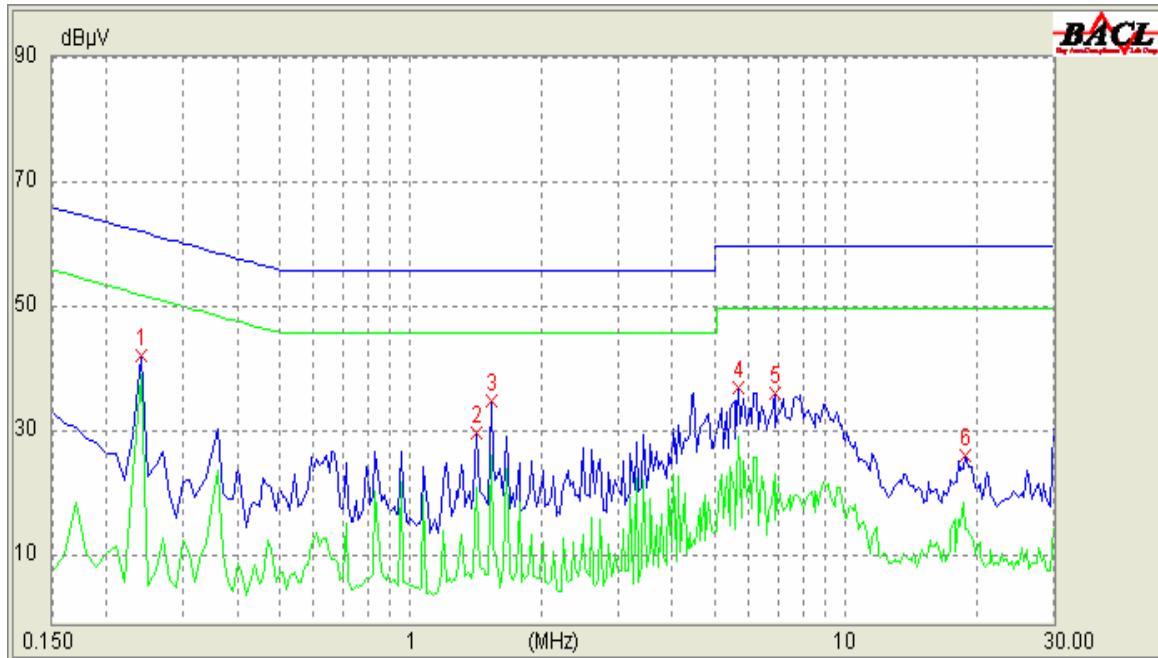
* The testing was performed by Vicent Kang on 2010-03-11.

Test Mode: Transmitting (powered by PC, worse case)

120 V/60 Hz, Line:



Conducted Emission			FCC Part 15.207		
Frequency (MHz)	Correction Factor (dB)	Cord. Result (dBµV)	Limit (dBµV)	Margin (dB)	Remark (PK/AV/QP)
0.240	10.10	34.45	52.15	17.70	AV
1.530	10.10	26.35	46.00	19.65	AV
1.530	10.10	32.57	56.00	23.43	QP
0.940	10.10	21.96	46.00	24.04	AV
0.240	10.10	35.35	62.15	26.80	QP
6.130	10.20	22.94	50.00	27.06	AV
7.780	10.20	21.18	50.00	28.82	AV
0.940	10.10	25.94	56.00	30.06	QP
6.130	10.20	28.26	60.00	31.74	QP
17.920	10.30	15.48	50.00	34.52	AV
7.800	10.20	24.22	60.00	35.78	QP
18.000	10.30	15.87	60.00	44.13	QP

120 V/60 Hz, Neutral:

Conducted Emission			FCC Part 15.207		
Frequency (MHz)	Correction Factor (dB)	Cord. Result (dBµV)	Limit (dBµV)	Margin (dB)	Remark (PK/AV/QP)
0.240	10.10	39.46	52.15	12.69	AV
1.540	10.10	26.46	46.00	19.54	AV
5.690	10.20	29.45	50.00	20.55	AV
1.420	10.10	21.40	46.00	24.60	AV
0.240	10.10	37.37	62.15	24.78	QP
6.870	10.20	23.44	50.00	26.56	AV
1.540	10.10	25.60	56.00	30.40	QP
1.420	10.10	25.47	56.00	30.53	QP
18.920	10.30	14.94	50.00	35.06	AV
6.870	10.20	24.61	60.00	35.39	QP
18.920	10.30	22.61	60.00	37.39	QP
5.690	10.20	21.18	60.00	38.82	QP

FCC §15.205(a), §15.209(a) & §15.249 - RADIATED EMISSIONS**Applicable Standard**

As per FCC §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 FCC §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:

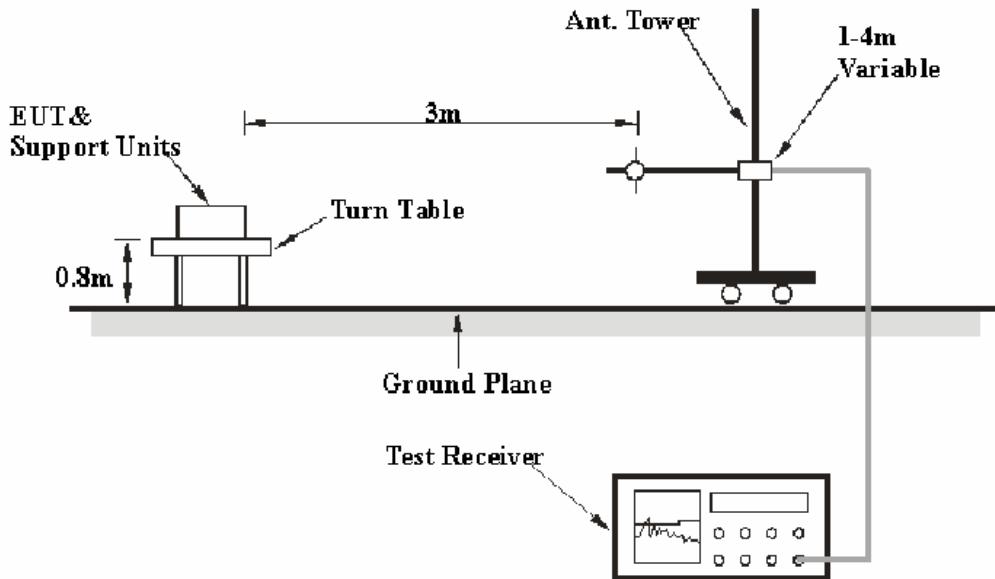
RBW = 100 kHz/VBW = 300 kHz/Sweep = Auto

Above 1000 MHz:

Peak: RBW = 1MHz/VBW = 1MHz/Sweep = Auto

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 and FCC 15.249 limits.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2009-08-02	2010-08-01
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2009-11-24	2010-11-23
Sunol Sciences	Bilog Antenna	JB1	A040904-2	2009-05-05	2010-05-04
HP	Amplifier	8449B	3008A00277	2009-09-12	2010-09-11
Sunol Sciences	Horn Antenna	DRH-118	A052604	2009-05-05	2010-05-04
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2009-07-08	2010-07-07

*** 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 meter, 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 & 15.249, with the worst margin reading of:

Below 1 GHz:

6.7 dB at 60.715500 MHz in the **Horizontal** polarization (908.40MHz)
6.7 dB at 60.725400 MHz in the **Horizontal** polarization (908.42MHz)

Above 1 GHz:

16.84 dB at 1816.80 MHz in the **Horizontal** polarization (908.40MHz)
12.36 dB at 1816.84 MHz in the **Vertical** polarization (908.42MHz)

Test Data

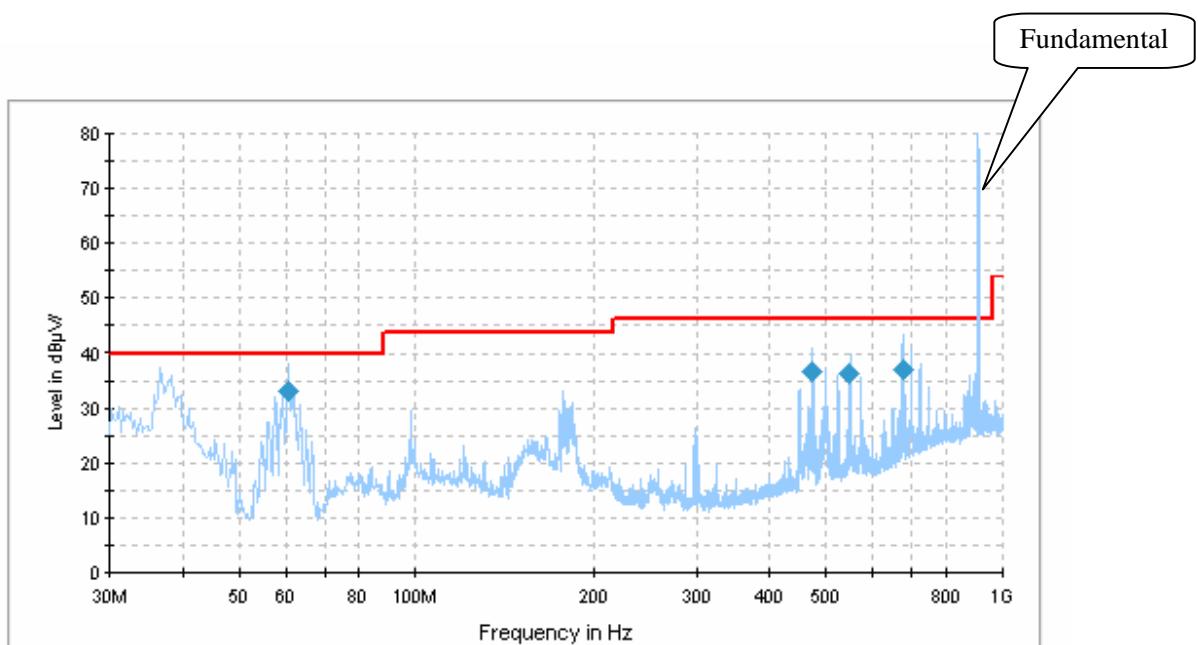
Environmental Conditions

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

The testing was performed by Vicent Kang on 2010-02-22 to 2010-04-30.

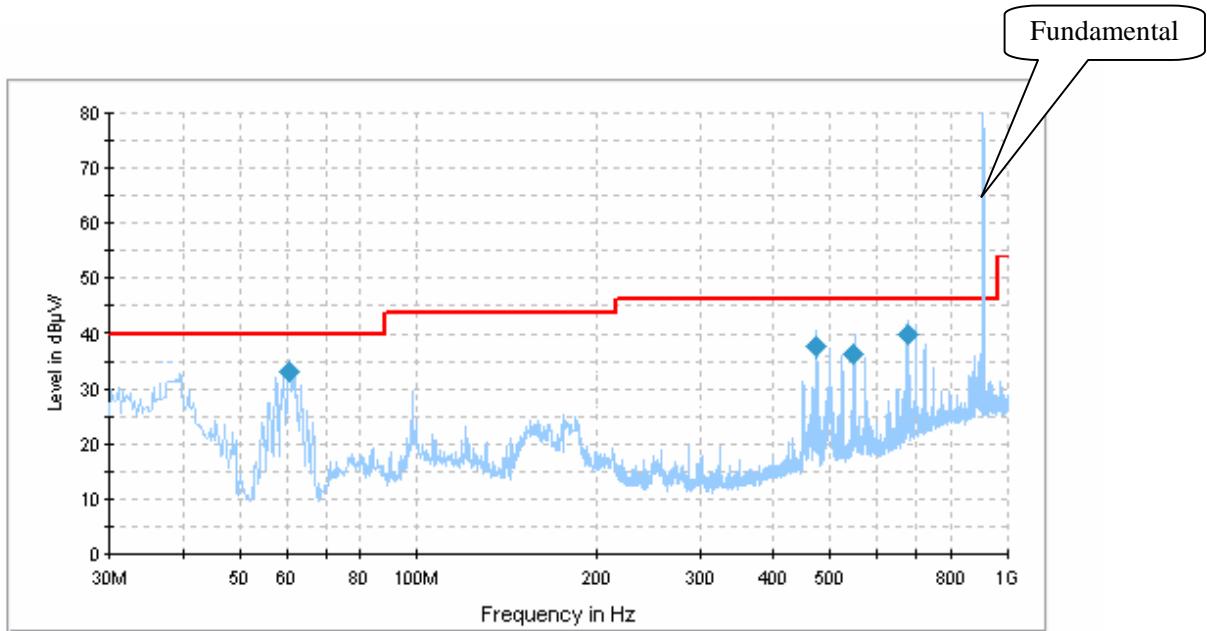
30-1000 MHz:

Test Mode: Transmitting (908.40 MHz)



Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dB μ V/m)	Margin (dB)
60.715500	33.3	361.0	H	0.0	-19.9	40.0	6.7
674.592500	37.2	104.0	H	60.0	-5.5	46.0	8.8
473.622250	36.9	307.0	V	8.0	-0.2	46.0	9.1
548.140500	36.5	205.0	H	321.0	-0.3	46.0	9.5

Test Mode: Transmitting (908.42 MHz)



Frequency (MHz)	Corrected Amplitude (dB μ V/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dB μ V/m)	Margin (dB)
60.725400	33.3	361.0	H	0.0	-19.9	40.0	6.7
674.587500	39.1	104.0	H	60.0	-5.5	46.0	6.9
473.615250	37.3	307.0	V	8.0	-0.2	46.0	8.7
548.141500	36.3	205.0	H	321.0	-0.3	46.0	9.7

Above 1 GHz:

Freq. (MHz)	Reading (dB μ V/m)	Detector PK/AV	Direction Degree	Test Antenna			Cable Loss (dB)	Amp. Gain (dB)	Cord. Amp. (dB μ V/m)	FCC 15.249 & 15.209		
				Height (M)	Polar (H/V)	Loss (dB)				Limit (dB μ V/m)	Margin (dB)	Note
F = 908.40 MHz												
1816.80	37.07	AV	176	1.0	H	28.30	5.99	34.20	37.16	54	16.84	harmonic
1816.80	35.77	AV	59	1.1	V	28.80	5.99	34.20	36.36	54	17.64	harmonic
1617.23	33.84	AV	175	1.0	V	27.80	5.62	34.40	32.86	54	21.14	Spurious
1392.79	33.85	AV	246	1.2	H	26.70	5.37	34.60	31.32	54	22.68	Spurious
1164.32	34.25	AV	249	2.0	H	25.90	4.78	34.80	30.13	54	23.87	Spurious
1128.26	34.54	AV	268	2.0	V	24.80	4.78	34.80	29.32	54	24.68	Spurious
1816.80	48.72	PK	59	1.1	V	28.80	5.99	34.20	49.31	74	24.69	harmonic
1617.23	49.41	PK	175	1.0	V	27.80	5.62	34.40	48.43	74	25.57	Spurious
1816.80	48.27	PK	176	1.0	H	28.30	5.99	34.20	48.36	74	25.64	harmonic
1392.79	47.64	PK	246	1.2	H	26.70	5.37	34.60	45.11	74	28.89	Spurious
1128.26	49.76	PK	268	2.0	V	24.80	4.78	34.80	44.54	74	29.46	Spurious
1164.32	48.36	PK	249	2.0	H	25.90	4.78	34.80	44.24	74	29.76	Spurious
F = 908.42 MHz												
1816.84	41.05	AV	59	1.1	V	28.80	5.99	34.20	41.64	54	12.36	Harmonic
1816.84	40.07	AV	176	1.0	H	28.30	5.99	34.20	40.16	54	13.84	Harmonic
1816.84	46.76	PK	59	1.1	V	28.80	5.99	34.20	47.35	74	26.65	Harmonic
1595.19	27.16	AV	175	1.0	V	27.80	5.60	34.40	26.16	54	27.84	Spurious
1816.84	45.22	PK	176	1.0	H	28.30	5.99	34.20	45.31	74	28.69	Harmonic
1610.22	26.14	AV	246	1.2	H	27.80	5.61	34.40	25.15	54	28.85	Spurious
1610.22	38.13	PK	246	1.2	H	27.80	5.61	34.40	37.14	74	36.86	Spurious
1595.19	37.89	PK	175	1.0	V	27.80	5.60	34.40	36.89	74	37.11	Spurious

Field Strength of Fundamental

Freq. (MHz)	Reading (dB μ V/m)	Detector PK/AV	Direction Degree	Test Antenna			Cable Loss (dB)	Amp. Gain (dB)	Cord. Amp. (dB μ V/m)	FCC 15.249 & 15.209		
				Height (M)	Polar (H/V)	Loss (dB)				Limit (dB μ V/m)	Margin (dB)	Note
908.40	90.23	QP	127	1.0	H	20.40	3.92	25.55	89.00	94.0	5.00	Fund.
908.42	90.05	QP	127	1.0	H	20.40	3.92	25.55	88.82	94.0	5.18	Fund.

Note: Duty cycle is 100%.

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.

Test Procedure

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 meter, 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.

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

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 1000MHz:

Peak: RBW = 1MHz / VBW = 3MHz / Sweep = Auto

Average: RBW = 1MHz / VBW = 10Hz / Sweep = Auto

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2009-11-24	2010-11-23
HP	Amplifier	8449B	3008A00277	2009-09-12	2010-09-11
Sunol Sciences	Horn Antenna	DRH-118	A052604	2009-05-05	2010-05-04

* **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 Vicent Kang on 2010-03-09 to 2010-04-29.

Test Result: Compliant

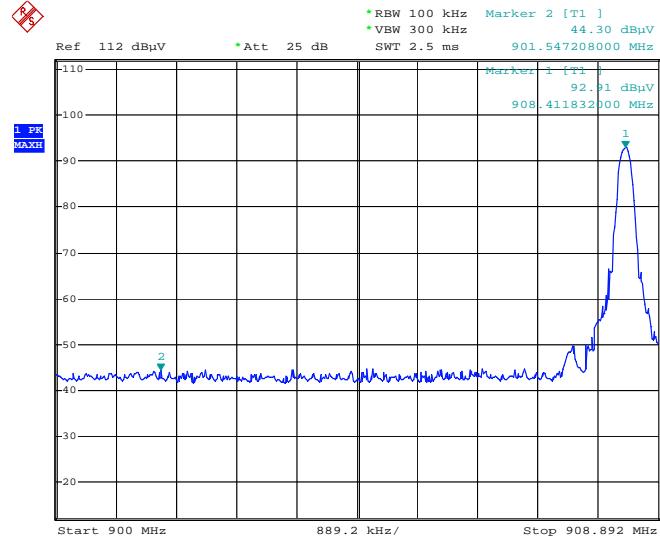
Please refer to the following table and plots.

Test Mode: Transmitting

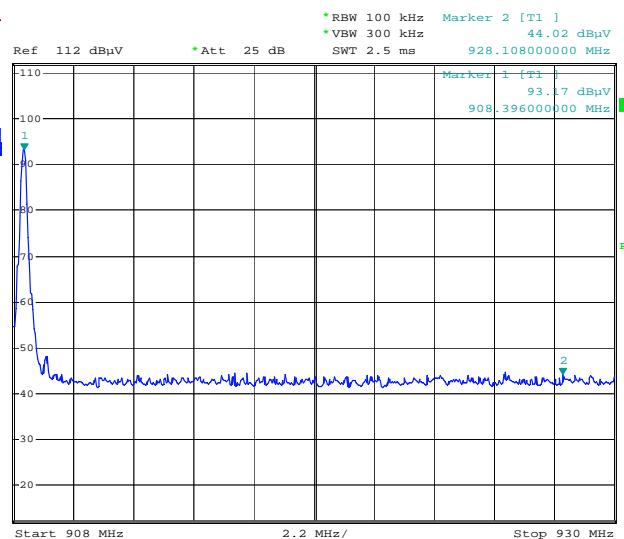
Freq. (MHz)	S.A. Reading (dB μ V/m)	Detector PK/AV	Direction Degree	Test Antenna			Cable Loss (dB)	Pre- Amp. Gain (dB)	Cord. Amp. (dB μ V/m)	FCC 15.209	
				Height (M)	Polar (H/V)	Loss (dB)				Limit (dB μ V/m)	Margin (dB)
908.40 MHz											
901.547208	44.30	PK	145	1.1	H	20.40	3.88	25.55	43.03	46	10.97
928.108000	44.02	PK	256	1.0	V	20.40	3.92	25.58	42.76	46	11.24
908.42 MHz											
901.244288	36.75	PK	145	1.1	H	20.40	3.88	25.55	35.48	46	10.52
929.912000	35.83	PK	256	1.0	V	20.40	3.92	25.58	34.57	46	11.43

Note: The peak field strength is below the Quasi-peak field strength limit, so the Quasi-peak measurement need not.

Left Side (908.40 MHz)



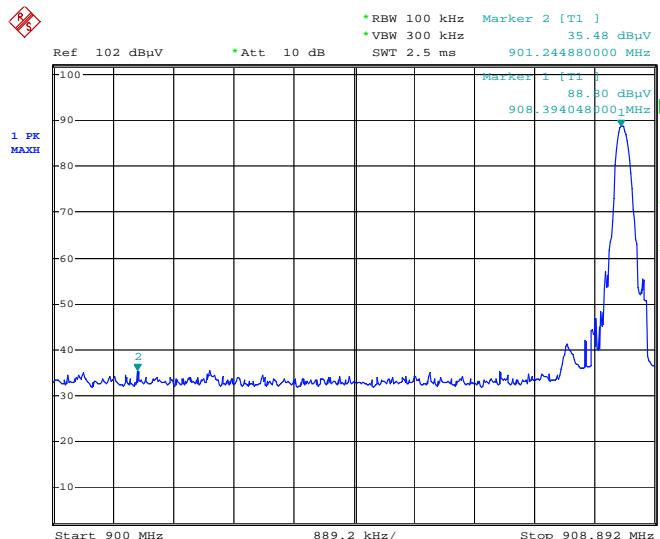
Right Side (908.40 MHz)



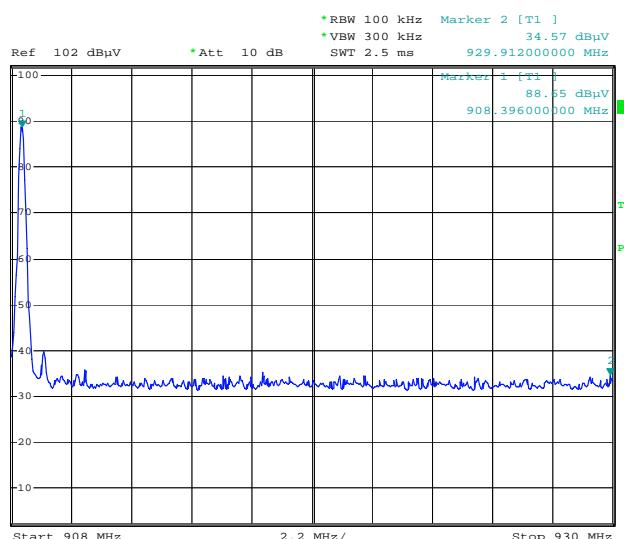
Date: 9.MAR.2010 10:48:19

Date: 9.MAR.2010 10:47:18

Left Side (908.42 MHz)



Right Side (908.42 MHz)



Date: 29.APR.2010 20:33:11

Date: 29.APR.2010 20:34:59

FCC §15.215(c) – 20 dB OCCUPIED BANDWIDTH

Applicable Standard

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in FCC §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	100224	2009-11-24	2010-11-23
HP	Amplifier	8449B	3008A00277	2009-09-12	2010-09-11
Sunol Sciences	Horn Antenna	DRH-118	A052604	2009-05-05	2010-05-04

* **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

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

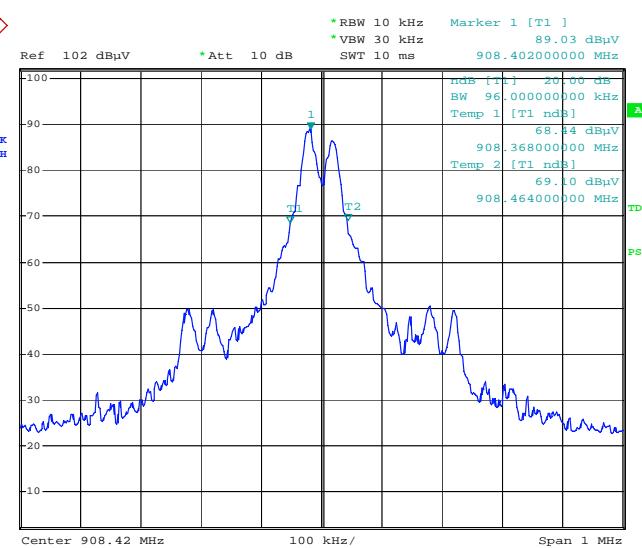
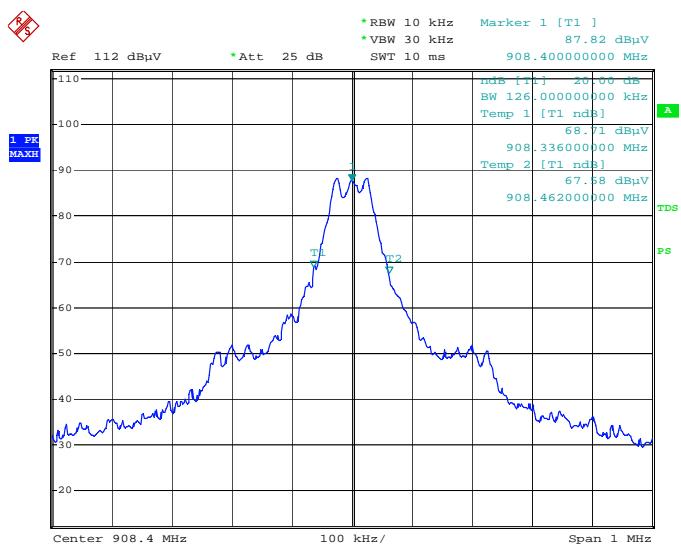
Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

The testing was performed by Vicent Kang on 2010-03-09 to 2010-04-29.

Test Mode: Transmitting

Please refer to the plot and tabular data sheet attached.

Channel Frequency (MHz)	20 dB Occupied Bandwidth (MHz)
908.40	0.126
908.42	0.096

F = 908.40 MHz**F = 908.42 MHz**

Date: 9.MAR.2010 10:41:32

Date: 29.APR.2010 20:30:42

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