

FCC PART 15 CLASS B
MEASUREMENT AND TEST REPORT

For

Coby Communications Ltd.

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Kwun Tong Kowloon, Hong Kong

FCC ID: S7IMID7120

Report Type: Original Report	Product Type: Mobile Internet Device
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Report Number: RDG110927003-00	
Report Date: 2011-12-02	
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* This report contains 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 *Coby Communications Ltd.*'s product, model number: *MID7120 (FCC ID: S7IMID7120)* (the "EUT") in this report was a *Mobile Internet Device*, which was measured approximately: 19.9 cm (L) x 12.1 cm (W) x 1.0 cm (H), rated input voltage: DC 3.7V battery and DC 5V adapter for charging. The highest Operating Frequency is 720MHz.

Adapter Information: SWITCHING ADAPTER

Model: ADS-18C-06 0512GPCU;

Input: 100-240V~50/60Hz max. 0.6A;

Output: 5V 2.4A

** All measurement and test data in this report was gathered from production sample serial number: 1108102 (Assigned by BACL, Shenzhen). The EUT was received on 2011-09-27.*

Objective

This report is prepared on behalf of *Coby Communications 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 the compliance of EUT with FCC Part 15 Class B.

Related Submittal(s)/Grant(s)

FCC Part 15.247 submissions with FCC ID: S7IMID7120

Test Facility

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

Description of Test Configuration

The system was configured for testing in a typical mode which is provided by manufacture.

Test mode 1: Downloading Mode

Test mode 2: Media playing Mode

Test mode 3: HDMI output Mode

EUT Exercise Software

No exercise software

Equipment Modifications

Modification was made to the unit tested.

Detail information please refers to the EUT internal photo.

Local Support Equipment List and Details

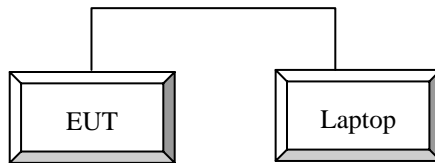
Manufacturer	Description	Model	Serial Number
ACER	Laptop	TravelMate 530	85RF831
SAMSUNG	Display	225MS	CR22HV2P401073M
DELL	Laptop	Inspiron 2100	DDCY21475D

External I/O Cable

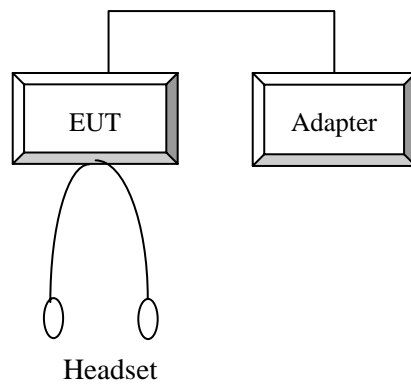
Cable Description	Length (m)	From/Port	To
Shielded Detachable HDMI Cable	1.5	HDMI Port	EUT
Unshielded Detachable Power Cable with a core	1.5	Adapter	EUT
Shielded Detachable USB Cable with a core	1.0	Laptop	EUT

Configuration of Test Setup

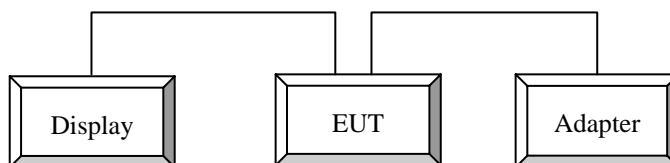
Downloading Mode:



Playing Mode:

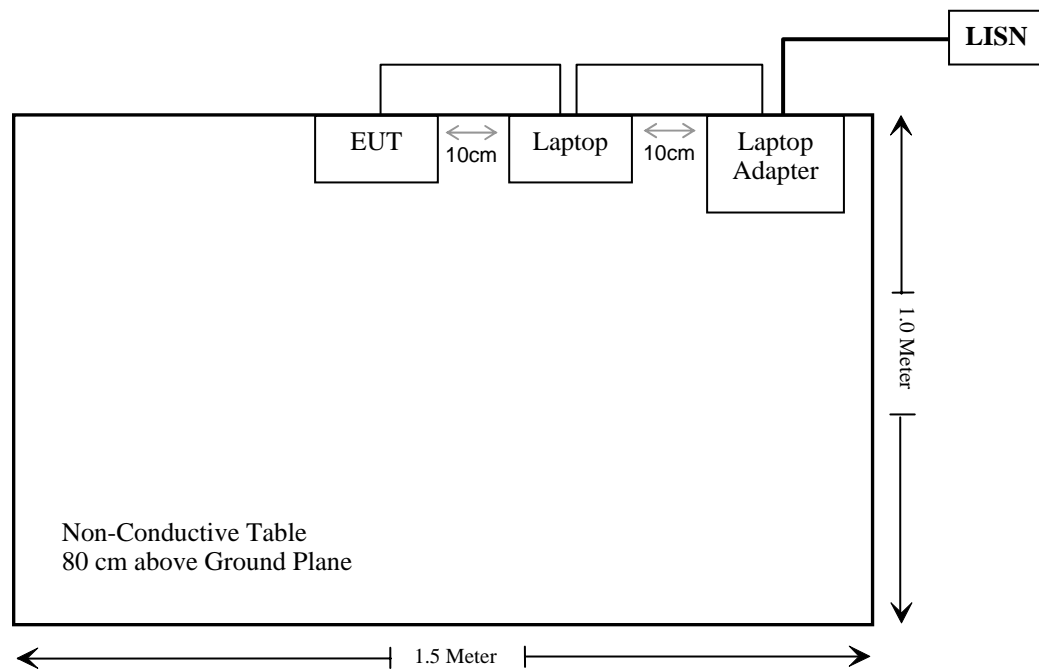


HDMI Mode:

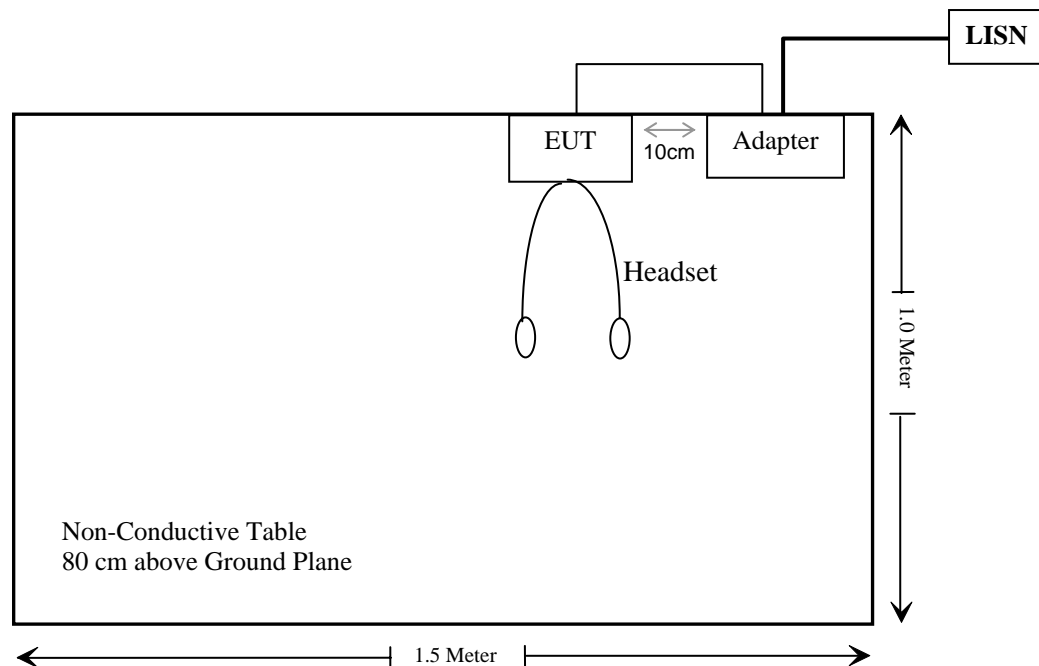


Block Diagram of Test Setup

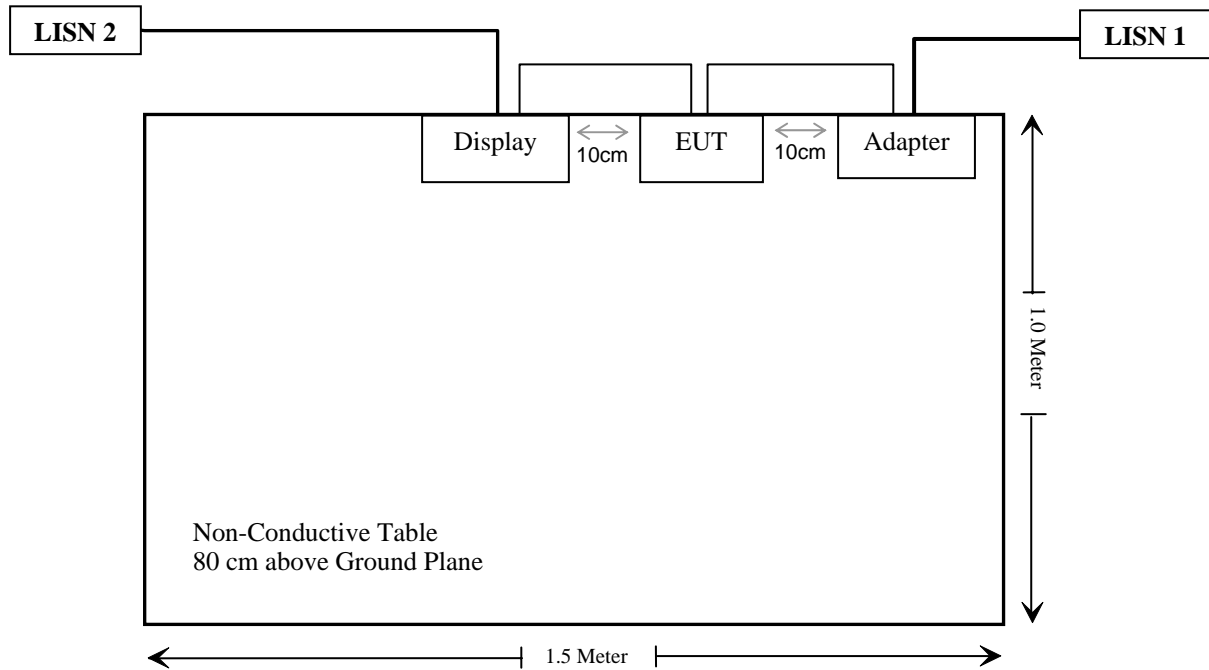
Downloading Mode:



Playing Mode:



HDMI Mode:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance

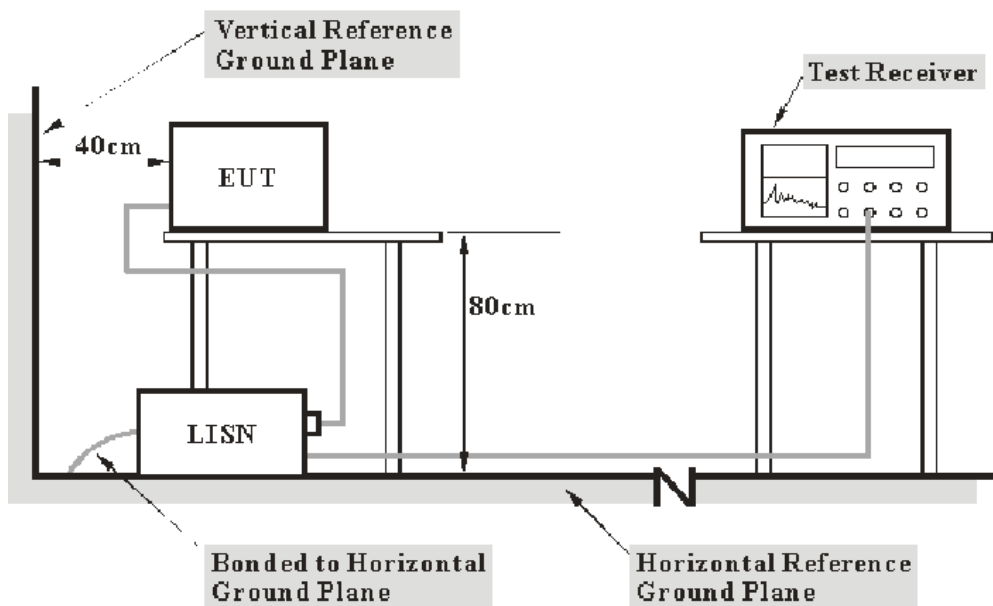
FCC §15.107 – AC LINE CONDUCTED EMISSIONS

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 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 laptop was connected to a 120 VAC/60 Hz power source for downloading mode.

The adapter of EUT was connected to a 120V/60Hz AC power source for playing and HDMI mode.

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

* **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, for downloading mode, the adapter of laptop was connected to the outlet of the LISN. For playing and HDMI mode, the adapter of EUT was connected to the outlet of the 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:

15.72 dB at 0.160 MHz in the Neutral conducted mode

Test Data

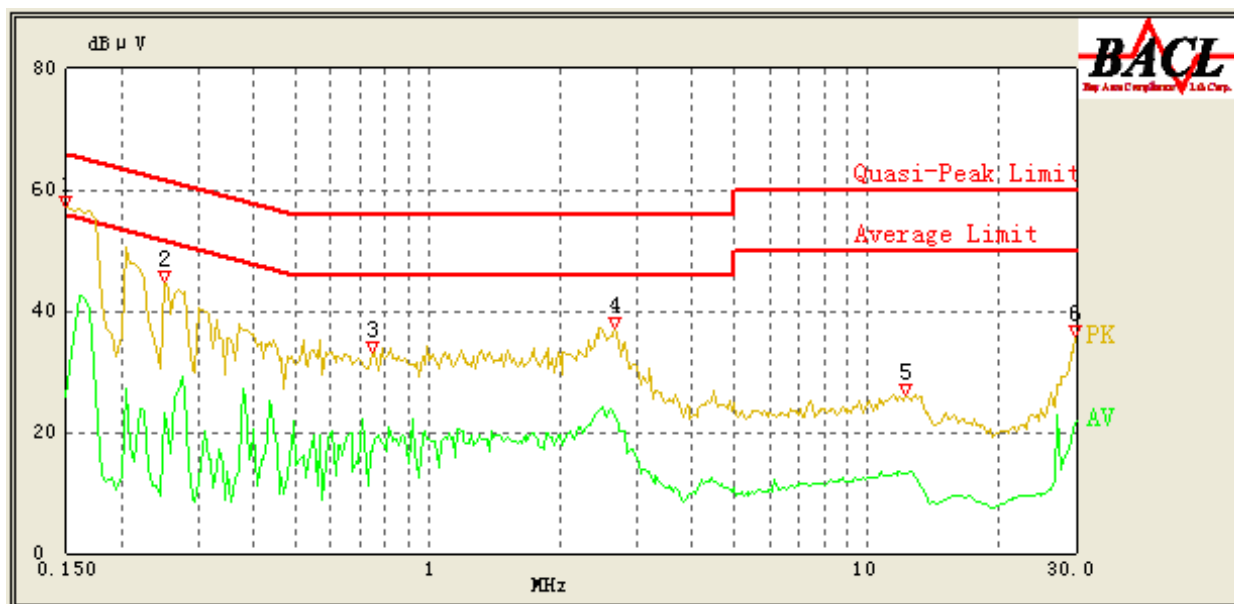
Environmental Conditions

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

The testing was performed by Jim Huang on 2011-10-18.

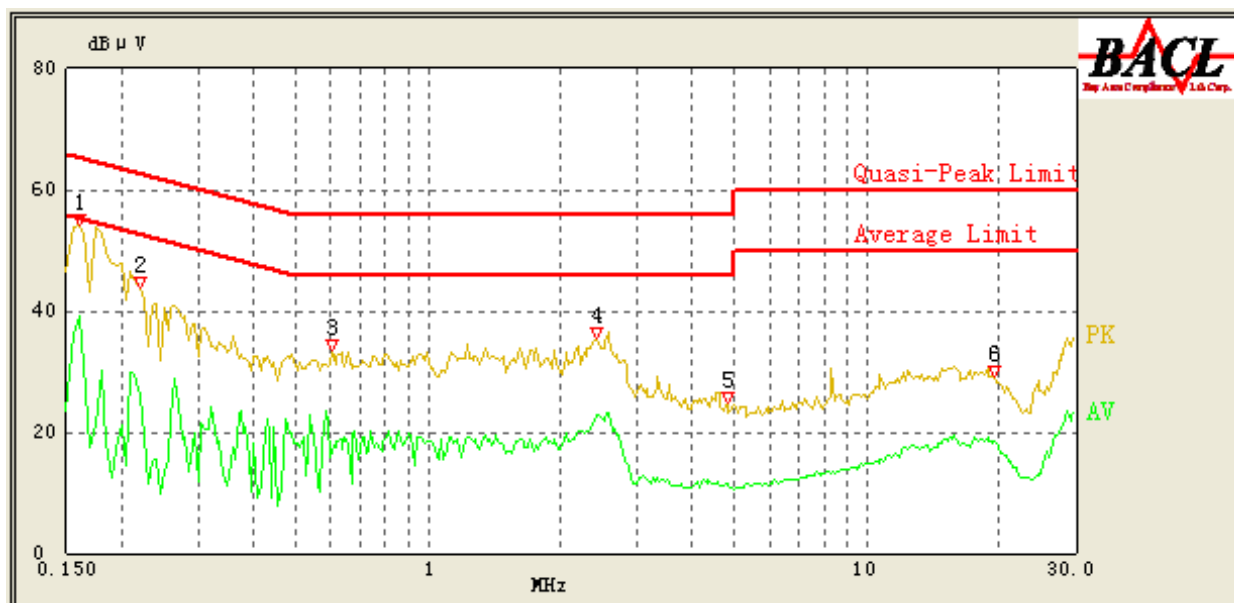
Test Mode 1: Downloading (worst case)

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/ QP/Ave.)
0.150	49.43	10.10	66.00	16.57	QP
2.680	22.28	10.10	46.00	23.72	Ave
29.805	35.30	10.10	60.00	24.70	QP
0.750	29.75	10.10	56.00	26.25	QP
0.250	36.66	10.10	63.14	26.48	QP
30.000	22.11	10.10	50.00	27.89	Ave
2.660	27.79	10.10	56.00	28.21	QP
0.750	16.93	10.10	46.00	29.07	Ave
0.250	23.28	10.10	53.14	29.86	Ave
0.150	25.70	10.10	56.00	30.30	Ave
12.330	13.22	10.10	50.00	36.78	Ave
12.275	18.57	10.10	60.00	41.43	QP

AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/ QP/Ave.)
0.160	49.99	10.10	65.71	15.72	QP
0.160	39.30	10.10	55.71	16.41	Ave
2.420	22.92	10.10	46.00	23.08	Ave
0.220	40.68	10.10	64.00	23.32	QP
2.410	28.18	10.10	56.00	27.82	QP
0.220	26.08	10.10	54.00	27.92	Ave
0.610	17.78	10.10	46.00	28.22	Ave
0.605	26.47	10.10	56.00	29.53	QP
19.415	18.52	10.10	50.00	31.48	Ave
4.805	11.48	10.10	46.00	34.52	Ave
4.800	16.22	10.10	56.00	39.78	QP
19.430	20.12	10.10	60.00	39.88	QP

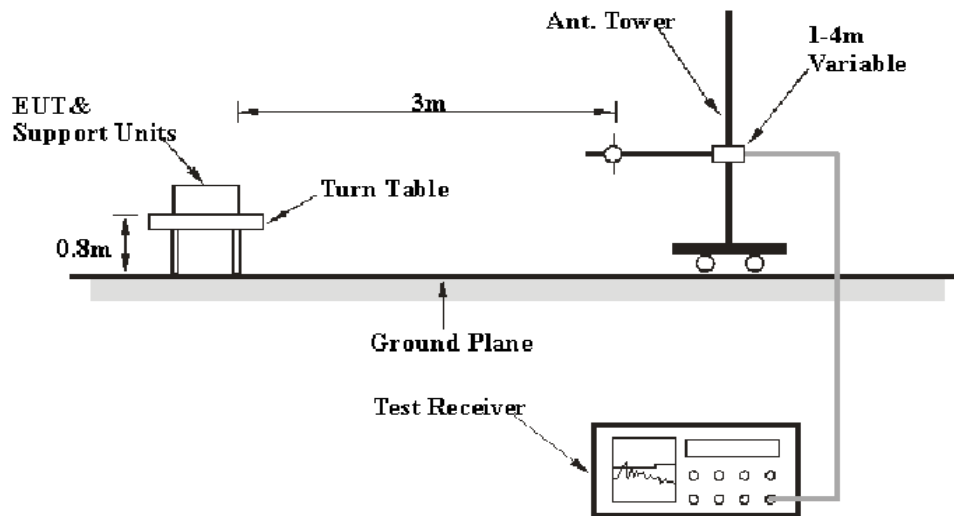
FCC §15.109 - RADIATED EMISSIONS

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 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 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 laptop was connected to a 120 VAC/60 Hz power source for downloading mode.

The adapter of EUT was connected to a 120V/60Hz AC power source for playing and HDMI mode.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 5000 MHz.

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

<i>Frequency Range</i>	<i>RBW</i>	<i>Video B/W</i>	<i>Detector</i>
30MHz – 1000 MHz	100 kHz	300 kHz	QP
Above 1 GHz	1MHz	3 MHz	Peak
Above 1 GHz	1MHz	10 Hz	AV

Test Procedure

During the radiated emissions test, for downloading mode, the adapter of laptop was connected to AC floor outlet. For playing and HDMI mode, the adapter of EUT 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.

All data was recorded in the Quasi-peak detection mode from 30 MHz to 1 GHz, Peak and average detection mode above 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	HP8447E	1937A01046	2011-08-02	2012-08-02
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-07-05	2012-07-04
Rohde&Schwarz	Signal Analyzer	FSIQ26	609358	2011-07-08	2012-07-08
SUPER ULTRA	Pre-amplifier	ZVA-213+	N/A	2011-09-12	2012-09-11
SUNOL SCIENCES	Horn Antenna	DRH-118	A052604	2011-05-05	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.

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 §15.109 Class B, with the worst margin reading of:

3.6 dB at 742.503750 MHz in the **Horizontal** polarization

Test Data

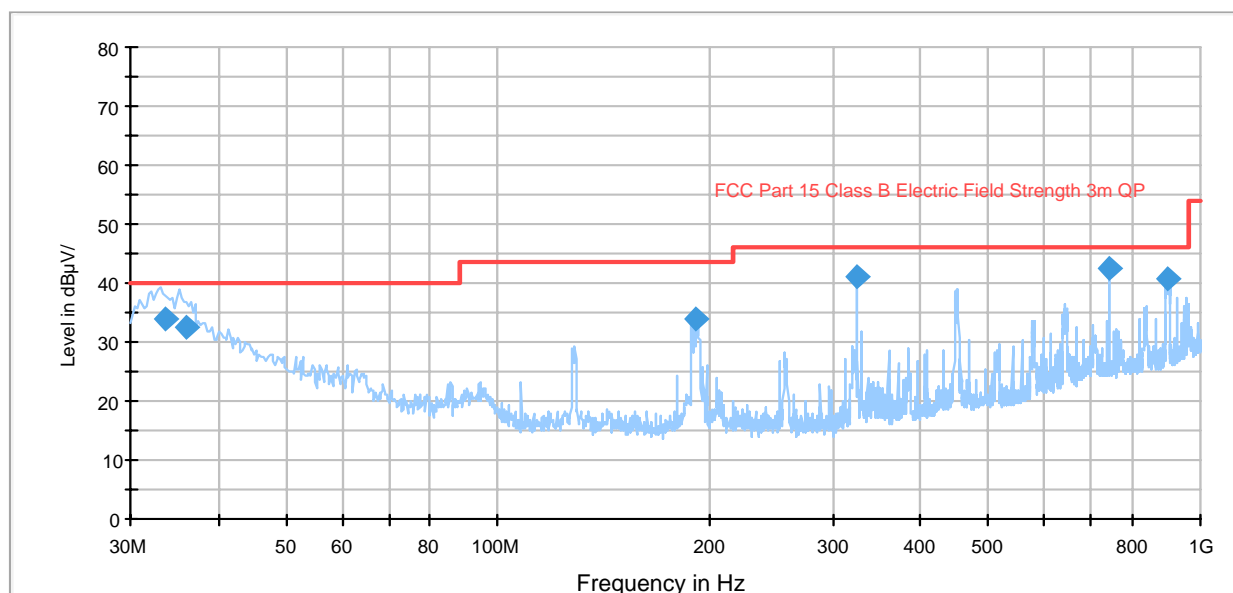
Environmental Conditions

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

The testing was performed by Jim Huang on 2011-11-06.

Test Mode: Mode 1 & Mode 2 & Mode 3 are scanned, and Mode 1 is worst case as below

1) Below 1 GHz:



Frequency (MHz)	Corrected Amplitude (dBμV/m)	Test Antenna		Turntable Position (degree)	Correction Factor (dB)	Limit (dBμV/m)	Margin (dB)
		Height (cm)	Polarity (H/V)				
742.503750	42.4	156.0	H	248.0	-2.5	46.0	3.6*
324.016250	41.2	117.0	H	2.0	-11.7	46.0	4.8
895.852000	40.7	192.0	H	228.0	-1.0	46.0	5.3
33.601500	34.0	103.0	V	148.0	-7.9	40.0	6.0
35.918000	32.4	102.0	V	25.0	-9.4	40.0	7.6
191.639500	33.9	102.0	V	276.0	-14.7	43.5	9.6

*Within measurement uncertainty.

2) 1~5 GHz:

Indicated		Detector (PK/Ave.)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.109			
Frequency (MHz)	S.A. Reading (dBμV)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Comment
/	/	/	/	/	/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/	/	/	/	/	/

Note: For above 1GHz, all emissions are below 15 dB of the limit were not recorded.

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