



FCC PART 15B, CLASS B

MEASUREMENT AND TEST REPORT

For

Shenzhen YIDONG Technology Co., Ltd.

Floor 1-5, Building B, Area B, Yuanfen Industrial Zone,
Dalang, Bao'an District, Shenzhen, China

FCC ID: LU7-PLT8223GX

Report Type: Original Report	Product Type: Tablet PC
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Report Number: <u>RSZ130926004-00A</u>	
Report Date: <u>2013-11-12</u>	
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Note: This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Shenzhen YIDONG Technology Co., Ltd.*'s product, model number: *PLT8223GX (FCC ID: LU7-PLT8223GX)* or the "EUT" as referred to in this report was a *Tablet PC*, which was measured approximately: 20.0 cm (L) x 15.4 cm (W) x 1.2 cm (H), rated input voltage: DC 3.7V rechargeable battery and DC 5V charging from adapter. The highest operating frequency is 1.2 GHz.

Adapter 1 information: Switching power adapter

Model: STC-A515B-D

Input: DC 100-240V, 50/60Hz 0.3A

Output: DC 5V, 1.5A

Adapter 2 information: Switching power adapter

Model: WRP2U-050150C

Input: DC 100-240V, 50/60Hz 0.4A max

Output: DC 5V, 1.5A

Note: The product Tablet PC, model PLT8223GX and EMR2884, they are electrically identical and the difference between them are only the model number and printing & shell color. Model PLT8223GX was selected for fully testing, which was explained in the attached product similarity declaration letter provided and guaranteed by applicant.

** All measurement and test data in this report was gathered from production sample serial number: 1309097 (Assigned by the BACL, Shenzhen). The EUT supplied by the applicant was received on 2013-09-26.*

Objective

This report is prepared on behalf of *Shenzhen YIDONG Technology 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 the compliance of EUT with FCC Part 15B, Class B.

Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS (Wi-Fi) submissions with FCC ID: LU7-PLT8223GX.

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.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

EUT Exercise Software

“Burn test4.0” exercise software was used.

Equipment Modifications

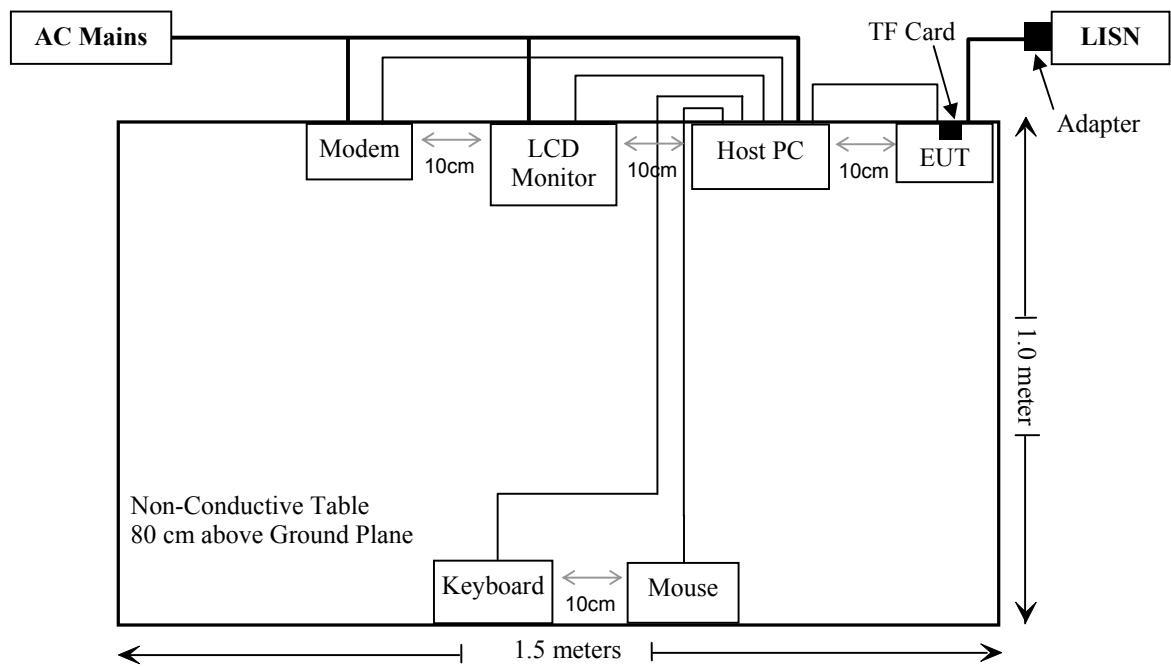
No modification was made to the EUT tested.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	PC	VOSTRO 220S	127BP2X
DELL	LCD Monitor	E178WFPC	CN-OWY564-64180-7C4-2SQH
DELL	Keyboard	L100	CNORH656658907BL05DC
DELL	Mouse	MOC5UO	G1900NKD
SAST	Modem	AEM-2100	0293
Kingston	TF Card	4G	N/A

External I/O Cable

Cable Description	Length (m)	From/Port	To
Shielding Detachable USB Cable	1.5	Host PC	Mouse
Shielding Detachable Serial Cable	1.2	Host PC	Modem
Shielding Detachable K/B Cable	1.5	Host PC	Keyboard
Shielding Detachable VGA Cable	1.5	Host PC	LCD Monitor
Shielding Detachable USB Cable	1.0	EUT	Host PC
Unshielded Undetachable Adapter Cable	1.0	EUT	Adapter

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 Emissions	Compliance

FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Applicable Standard

According to FCC §15.107

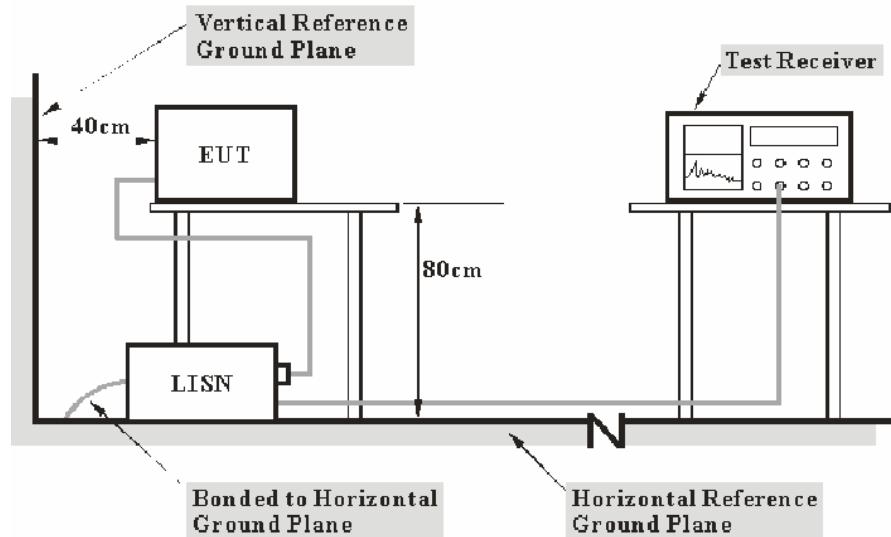
Measurement Uncertainty

Input quantities to be considered for conducted disturbance measurements maybe receiver reading, attenuation of the connection between AMN/ISN and receiver, AMN/ISN voltage division factor, AMN/ISN VDF frequency interpolation and receiver related input quantities, etc.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of conducted disturbance test at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown as below. And the uncertainty will not be taken into consideration for the test data recorded in the report

Port	Measurement uncertainty
AC Mains	3.26 dB (k=2, 95% level of confidence)
CAT 3	3.70 dB (k=2, 95% level of confidence)
CAT 5	3.86 dB (k=2, 95% level of confidence)
CAT 6	4.64 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 measurement procedure of EUT setup is according with ANSI C63.4-2009. The related limit was specified in FCC Part 15.107 Class B.

The spacing between the peripherals was 10 cm.

The adapter was connected to an AC 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:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emissions, the adapter was connected to the first LISN, the other relevant equipments 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2013-06-17	2014-06-17
Rohde & Schwarz	LISN	ENV216	3560.6650.12-101613-Yb	2013-05-07	2014-05-07
Rohde & Schwarz	Transient limitor	ESH3Z2	DE25985	2013-08-09	2014-08-09
Rohde & Schwarz	CE Test software	EMC 32	V8.53	-	-

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Pulse Limiter Attenuation. The basic equation is as follows:

$$\text{Correction Factor} = \text{LISN VDF} + \text{Cable Loss} + \text{Pulse Limiter Attenuation}$$

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 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 recorded data in following table, with the worst margin reading of:

0.7 dB at 27.122000 MHz in the **Line** conducted mode (Adapter 1 Power Supply)

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cisp}$$

in BACL, $U_{(Lm)}$ is less than U_{cisp} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

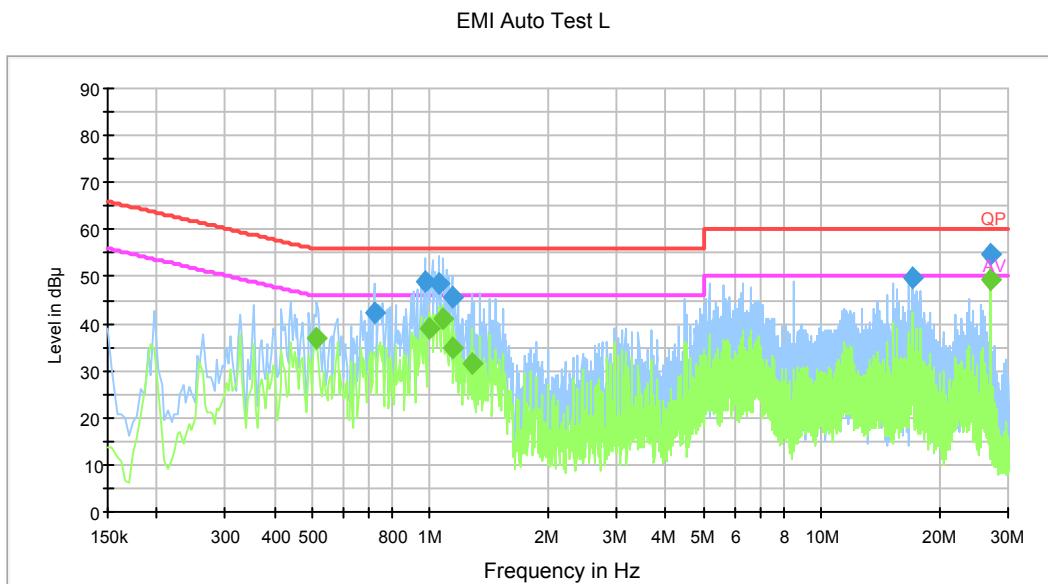
Temperature:	24 °C
Relative Humidity:	56 %
ATM Pressure:	100.1 kPa

The testing was performed by Rocky Kang on 2013-11-12.

EUT operation mode: Downloading & Charging

Adapter 1 Power Supply:

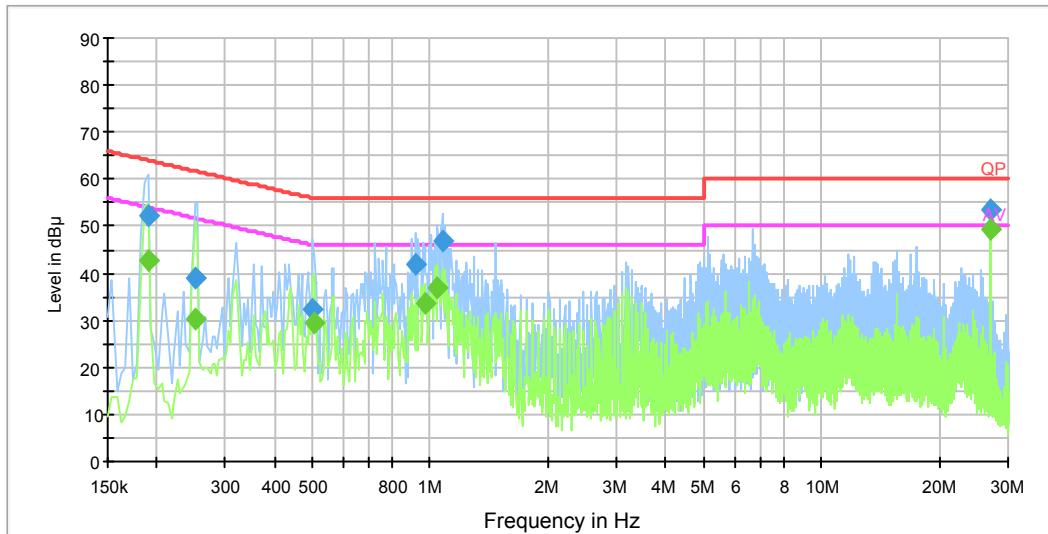
AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dB μ V)	Correction Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK/QP/Ave.)
0.514000	36.9	19.5	46.0	9.1	Ave.
0.718000	42.5	19.5	56.0	13.5	QP
0.970000	49.0	19.5	56.0	7.0	QP
0.994000	39.0	19.5	46.0	7.0	Ave.
1.054000	48.5	19.5	56.0	7.5	QP
1.074000	41.0	19.5	46.0	5.0	Ave.
1.138000	45.5	19.5	56.0	10.5	QP.
1.138000	35.0	19.5	46.0	11.0	Ave.
1.274000	31.6	19.5	46.0	14.4	Ave.
17.090000	49.6	20.0	60.0	10.4	QP
27.122000	54.7	20.3	60.0	5.3	QP
27.122000	49.3	20.3	50.0	0.7*	Ave.

AC 120V/60 Hz, Neutral

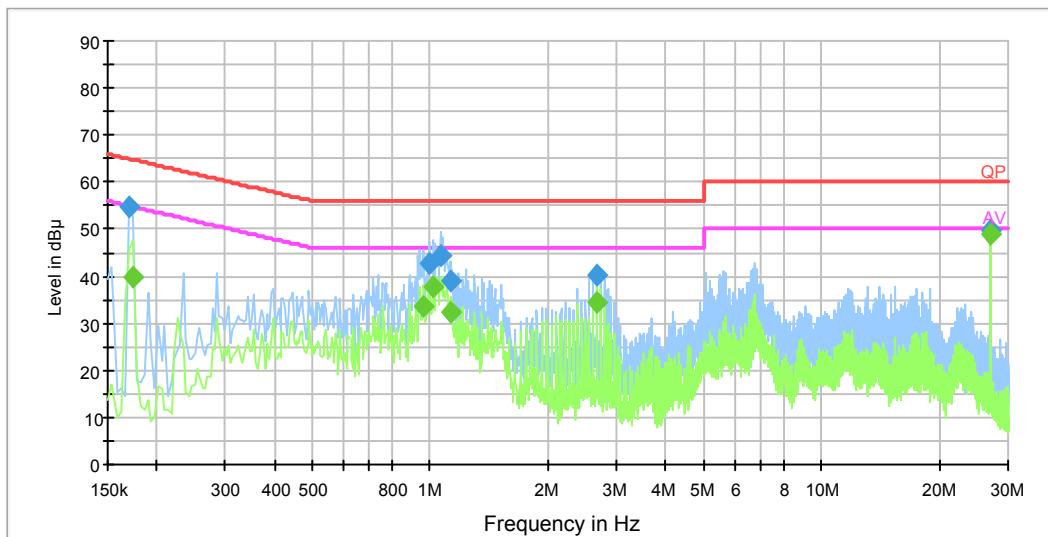
EMI Auto Test N



Frequency (MHz)	Corrected Amplitude (dB μ V)	Correction Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK/ QP/Ave.)
0.190000	52.3	19.5	64.0	11.7	QP
0.190000	42.9	19.5	54.0	11.2	Ave.
0.250000	39.0	19.5	61.8	22.7	QP
0.250000	30.2	19.5	51.8	21.6	Ave.
0.502000	32.2	19.5	56.0	23.8	QP
0.506000	29.4	19.5	46.0	16.6	Ave.
0.918000	42.0	19.5	56.0	14.0	QP.
0.970000	33.7	19.5	46.0	12.3	Ave.
1.046000	36.7	19.5	46.0	9.3	Ave.
1.074000	46.9	19.5	56.0	9.1	QP
27.122000	53.6	20.4	60.0	6.4	QP
27.122000	49.3	20.4	50.0	0.7*	Ave.

Adapter 2 Power Supply:**AC 120V / 60Hz – Line**

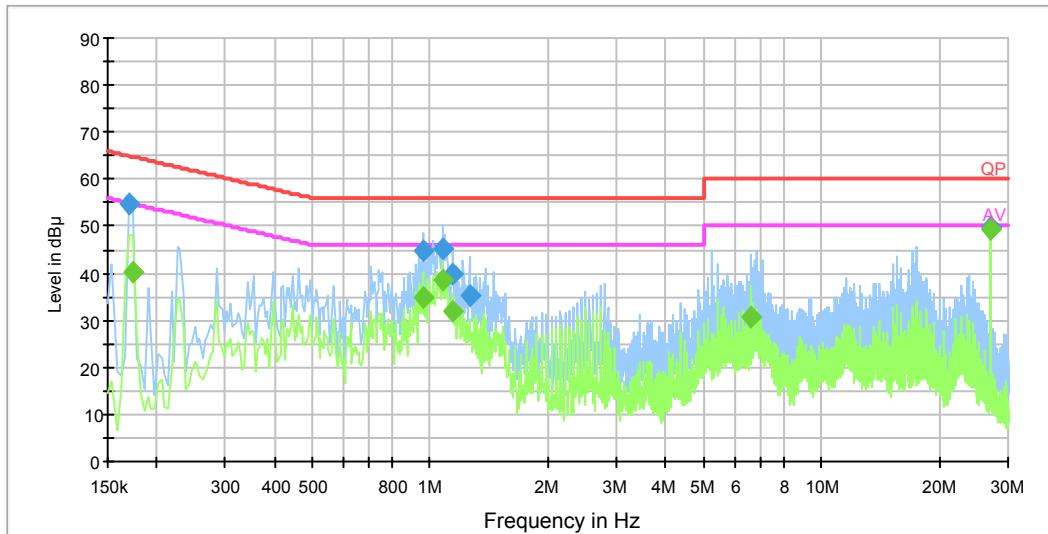
EMI Auto Test L



Frequency (MHz)	Corrected Amplitude (dB μ V)	Corrected Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK /QP/Ave.)
0.170000	54.8	19.5	65.0	10.2	QP
0.174000	39.7	19.5	54.8	15.1	Ave.
0.966000	33.6	19.5	46.0	12.4	Ave.
0.998000	42.5	19.5	56.0	13.5	QP
1.022000	37.8	19.5	46.0	8.2	Ave.
1.062000	44.2	19.5	56.0	11.8	QP.
1.126000	39.2	19.5	56.0	16.8	QP
1.134000	32.2	19.5	46.0	13.8	Ave.
2.670000	40.1	19.5	56.0	15.9	QP
2.670000	34.5	19.5	46.0	11.5	Ave.
27.118000	49.6	20.3	60.0	10.4	QP
27.122000	49.0	20.3	50.0	1.0*	Ave.

AC 120V / 60Hz – Neutral:

EMI Auto Test N



Frequency (MHz)	Corrected Amplitude (dB μ V)	Corrected Factor (dB)	Limit (dB μ V)	Margin (dB)	Detector (PK / QP/Ave.)
0.170000	54.7	19.5	65.0	10.2	QP
0.174000	40.2	19.5	54.8	14.6	Ave.
0.962000	44.8	19.5	56.0	11.2	QP
0.962000	34.8	19.5	46.0	11.2	Ave.
1.078000	45.2	19.5	56.0	10.8	QP.
1.078000	38.7	19.5	46.0	7.3	Ave.
1.142000	39.9	19.5	56.0	16.1	QP
1.142000	31.9	19.5	46.0	14.1	Ave.
1.262000	35.1	19.5	56.0	20.9	QP
6.614000	30.8	19.8	50.0	19.2	Ave.
27.118000	49.8	20.4	60.0	10.2	QP
27.118000	49.2	20.4	50.0	0.8*	Ave.

*within measurement uncertainty!

FCC §15.109 - RADIATED EMISSIONS

Applicable Standard

According to FCC §15.109

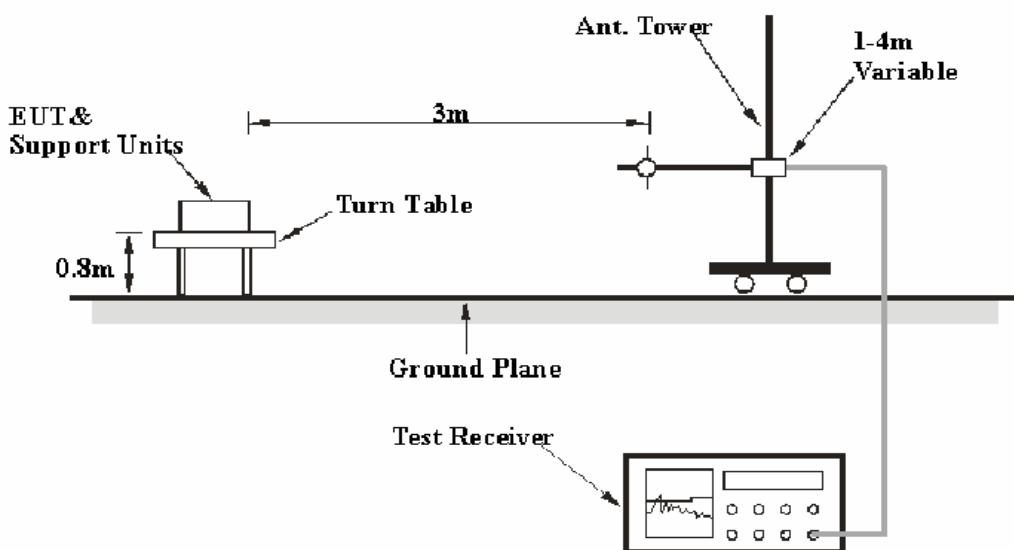
Measurement Uncertainty

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 CISPR 16-4-2:2011, the expended combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown in below table. And the uncertainty will not be taken into consideration for the test data recorded in the report

Frequency	Polarity	Measurement uncertainty
30MHz~200MHz	Horizontal	4.62 dB (k=2, 95% level of confidence)
	Vertical	4.54 dB (k=2, 95% level of confidence)
200MHz~1GHz	Horizontal	4.84 dB (k=2, 95% level of confidence)
	Vertical	5.91 dB (k=2, 95% level of confidence)
1 GHz~6 GHz	Horizontal/Vertical	4.68 dB (k=2, 95% level of confidence)
Above 6 GHz	Horizontal/Vertical	4.92 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 was connected to an AC 120V/60 Hz power source.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 6 GHz.

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

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

During the radiated emissions, the adapter, host PC, monitor and modem 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 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	8447E	1937A01046	2013-09-30	2014-09-30
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2013-09-17	2014-09-17
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2014-11-27
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2013-04-03	2014-04-03
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2014-11-30
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2012-11-24	2013-11-23

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

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:

$$\text{Correction Factor} = \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

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, with the worst margin reading of:

0.3 dB at 41.39 MHz in the Vertical polarization (Adapter 2 Power Supply)

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cisp}$$

in BACL, $U_{(Lm)}$ is less than U_{cisp} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	56 %
ATM Pressure:	100.1 kPa

The testing was performed by Rocky Kang on 2013-10-12 and 2013-11-12.

EUT operation mode: Downloading & Charging

1) 30 MHz ~ 1 GHz

Adapter 1 Power Supply:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dB μ V/m)	FCC Part 15.109	
	Reading (dB μ V)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dB μ V/m)	Margin (dB)
32.57	46.3	QP	133	1.0	V	-7.9	38.4	40.0	1.6*
40.77	50.8	QP	277	1.0	V	-13.9	36.9	40.0	3.1*
42.14	53.7	QP	297	1.0	V	-14.9	38.8	40.0	1.2*
135.96	51.7	QP	152	1.0	V	-12.5	39.2	43.5	4.3*
165.97	46.7	QP	74	2.1	H	-13.6	33.1	43.5	10.4
240.20	34.0	QP	0	1.1	V	-13.5	20.5	46.0	25.5

Adapter 2 Power Supply:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dB μ V/m)	FCC Part 15.109	
	Reading (dB μ V)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dB μ V/m)	Margin (dB)
33.56	39.6	QP	326	1.0	V	-8.7	30.9	40.0	9.1
41.39	54.0	QP	130	1.0	V	-14.3	39.7	40.0	0.3*
135.47	50.0	QP	171	1.0	V	-12.4	37.6	43.5	5.9
165.37	50.1	QP	113	2.0	H	-13.6	36.5	43.5	7.0
644.76	27.8	QP	200	1.8	H	-4.3	23.5	46.0	22.5
719.98	47.6	QP	186	1.1	V	-3.3	44.3	46.0	1.7*

2) 1 GHz ~ 6 GHz

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dB μ V/m)	FCC Part 15.109	
	Reading (dB μ V)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dB μ V/m)	Margin (dB)
1231.3	47.66	PK	335	1.5	H	0.16	47.82	74	26.18
1231.3	38.45	Ave.	335	1.5	H	0.16	38.61	54	15.39
1642.2	41.24	PK	201	1.3	V	1.77	43.01	74	30.99
1642.2	30.73	Ave.	201	1.3	V	1.77	32.50	54	21.50

*within measurement uncertainty!

PRODUCT SIMILARITY DECLARATION LETTER

Shenzhen YIDONG Technology Co., Ltd.
Floor 1-5, Building B, Area B, Yuanfen Industrial Zone, Dalang, Bao'an District, Shenzhen, China
Tel: 0755-82507136 Fax: 0755-82507126

Declaration Letter of Product Similarity

To whom it may concern:

We, **Shenzhen YIDONG Technology Co., Ltd.** declared that our product Tablet PC have two models: **PLT8223GX** and **EMR2884**, FCC ID.: **LU7-PLT8223GX**, they were identical inside, since the electrical circuit design, layout, components used and internal wiring were identical for the above items, with only difference being the **printing&shell color**.

PLT8223GX was tested by BACL.

Sincerely yours

Signature:



Guoquan Li
Project Manager
2013-9-28

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