

FCC PART 15.247

TEST REPORT

For

SHUOYING INDUSTRIAL'(SHENZHEN)'CO.,'LTD.

*****NO.1 Shuoying Rd., Hebei Industry Area, Dalang, Longhua Town, Baoan,Shenzhen,'China

FCC ID: XJN- PA0709X

Report Type: Original Report	Product Type: Mobile Internet Devices
Test Engineer: Ares Liu <i>Ares Liu</i>	
Report Number: R2DG131012001-00D	
Report Date: 2013-10-28	
Reviewed By: Jerry Zhang EMC Manager <i>Jerry Zhang</i>	
Test Laboratory: Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn	

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*, or any agency of the Federal Government.

* This report may contain data that are not covered by the NVLAP accreditation and shall be marked with an asterisk "★" (Rev.2), This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

TABLE OF CONTENTS

GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
RELATED SUBMITTAL(S)/GRANT(S).....	4
TEST METHODOLOGY	4
TEST FACILITY	5
SYSTEM TEST CONFIGURATION.....	6
DESCRIPTION OF TEST CONFIGURATION	6
EUT EXERCISE SOFTWARE	6
EQUIPMENT MODIFICATIONS	6
SUPPORT EQUIPMENT LIST AND DETAILS	8
EXTERNAL I/O CABLE.....	8
BLOCK DIAGRAM OF TEST SETUP	8
SUMMARY OF TEST RESULTS	9
FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE	10
APPLICABLE STANDARD	10
FCC §15.203 - ANTENNA REQUIREMENT.....	11
APPLICABLE STANDARD	11
ANTENNA CONNECTOR CONSTRUCTION	11
FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS	12
APPLICABLE STANDARD	12
MEASUREMENT UNCERTAINTY.....	12
EUT SETUP.....	13
EMI TEST RECEIVER SETUP.....	13
TEST PROCEDURE	13
TEST EQUIPMENT LIST AND DETAILS.....	14
CORRECTED AMPLITUDE & MARGIN CALCULATION	14
TEST RESULTS SUMMARY	14
TEST RESULTS SUMMARY	14
TEST DATA	15
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS.....	17
APPLICABLE STANDARD	17
MEASUREMENT UNCERTAINTY.....	17
EUT SETUP.....	17
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	18
TEST PROCEDURE	18
CORRECTED AMPLITUDE & MARGIN CALCULATION	19
TEST EQUIPMENT LIST AND DETAILS.....	19
TEST RESULTS SUMMARY	19
TEST DATA	19
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH.....	23
APPLICABLE STANDARD	23
TEST PROCEDURE	23
TEST EQUIPMENT LIST AND DETAILS.....	23
TEST DATA	23

FCC §15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER	26
APPLICABLE STANDARD	26
TEST PROCEDURE	26
TEST EQUIPMENT LIST AND DETAILS.....	26
TEST DATA	26
FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE.....	29
APPLICABLE STANDARD	29
TEST PROCEDURE	29
TEST EQUIPMENT LIST AND DETAILS.....	29
TEST DATA	29
FCC §15.247(e) - POWER SPECTRAL DENSITY	31
APPLICABLE STANDARD	31
TEST PROCEDURE	31
TEST EQUIPMENT LIST AND DETAILS.....	31
TEST DATA	31
DECLARATION LETTER	34

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *SHUOYING INDUSTRIAL(SHENZHEN)CO.,LTD.*'s product, model number: *PA0709 (FCC ID: XJN-PA0709X)* (the "EUT") in this report was a *Mobile Internet Devices*, which was measured approximately: 18.6cm (L) x 11.6 cm (W) x 0.9 cm (H), rated input voltage: DC 3.7 V from lithium battery or DC 5V from adapter.

Adapter information:

Model: THX-050250KD

Input: AC 100-240V, 50/60Hz, 0.65A MAX

Output: DC 5V, 2.5A

Note: The serial product model PA0709, VTA0705 all the models are electrically identical, only their difference is model name, and we select model PA0709 for the testing in this report, which was explained in the attached declaration letter.

** All measurement and test data in this report was gathered from production sample serial number: 131012001 (Assigned by BACL.Dongguan). The EUT was received on 2013-10-12.*

Objective

This report is prepared on behalf of *SHUOYING INDUSTRIAL(SHENZHEN)CO.,LTD.* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and C of the Federal Communication Commission's rules.

The tests were performed in order to determine the compliance of the EUT with FCC Part 15-Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

FCC Part 15B JBP submissions with FCC ID: *XJN- PA0709X*

FCC Part15C DSS submissions with FCC ID: *XJN- PA0709X for Bluetooth BDR, EDR mode.*

FCC Part15C DTS submissions with FCC ID: *XJN- PA0709X for wifi.*

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 emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan). 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. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) 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 February 02, 2012. 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.: 273710. 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. (Dongguan) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 500069-0).



The current scope of accreditations can be found at <http://ts.nist.gov/standards/scopes/5000690.htm>

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a test mode.

For Bluetooth LE mode, 40 channels are provided for testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404
...
...
..	...	38	2478
19	2440	39	2480

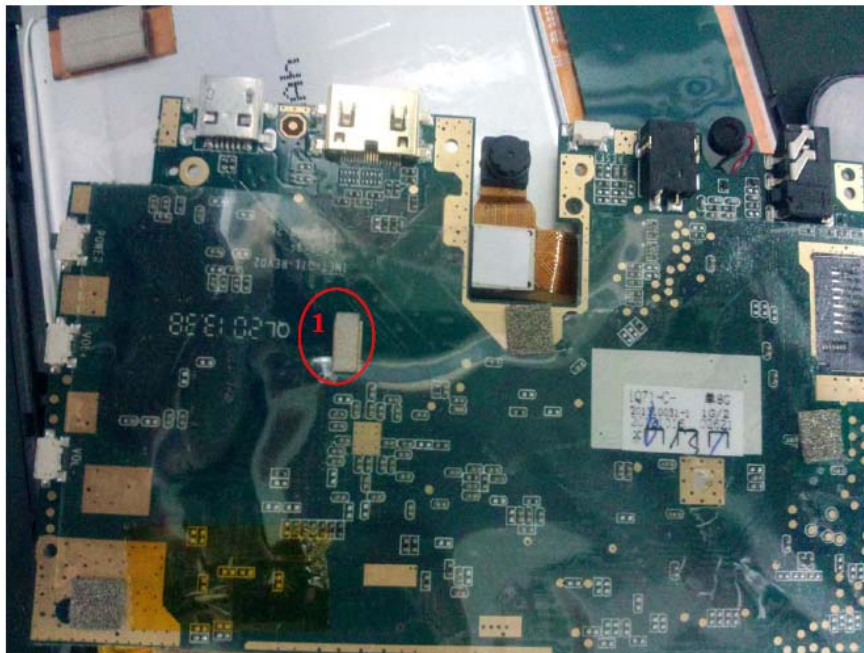
EUT was tested with channel 0, 19 and 39.

EUT Exercise Software

N/A

Equipment Modifications

1. Stick to the green oil with conductive foam on the main board, and ensure good contact with the screen after the shell conductive (the following figure).



2. Stick to conductive foam , and ensure good contact with the rear cover conductive(the following figure).



3. Add a magnetic ferrite core, in the end of the USB cable and winding (the following figure).

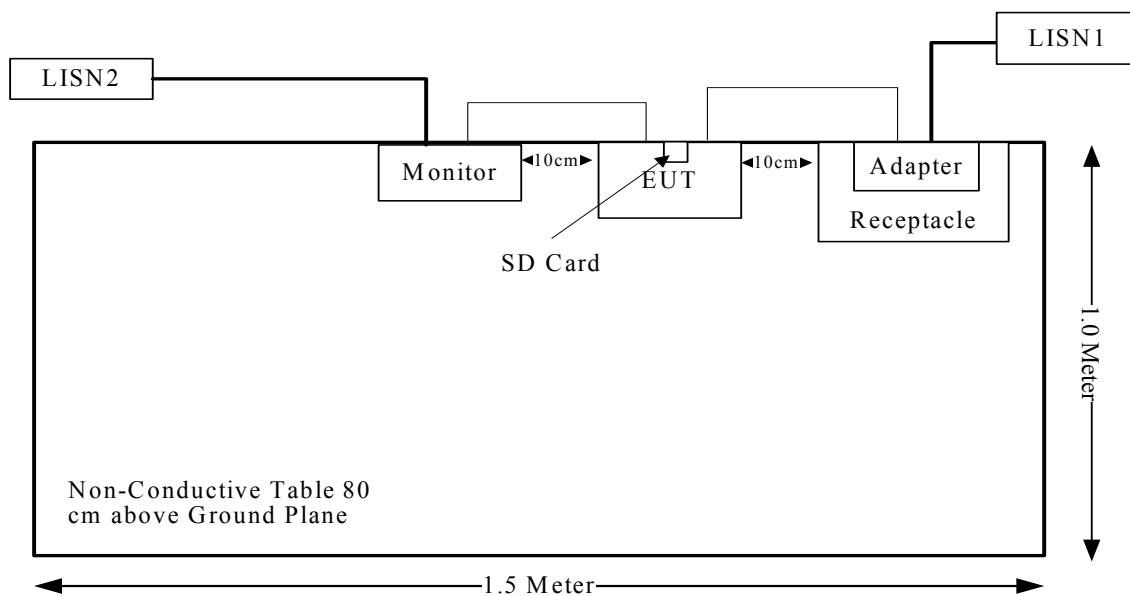


Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
SAMSUNG	LCD Monitor	S22C330H	ZXDCHTHD10149991K
Kinston	Micro SD Card	4G	N/A

External I/O Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Shielded Detachable HDMI Cable	yes	no	1.5	HDMI Port of Monitor	EUT
DC Power Cable	no	no	0.7	Adapter	EUT

Block Diagram of Test Setup

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 (i) & §1.1310 & §2.1093	RF EXPOSURE	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Compliance
§15.247(d)	Spurious Emissions at Antenna Port	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliance
§15.247(b)(3)	Maximum Peak Output Power	Compliance
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance
§15.247(e)	Power Spectral Density	Compliance

FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

According to §15.247(i) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D01 Mobile Portable RF Exposure V05 Appendix A, SAR can be exempted if the output power is less than the SAR exclusion threshold:

For $f=2450\text{MHz}$, the output power is less 10mW at distance of 5mm.

Measurement Result

Peak conducted output power= 1.57 dBm

Antenna gain =2.0 dBi

SAR exclusion threshold 10 mW (10'dBm) >1.57'dBm

So the SAR evaluation is not necessary.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

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 with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
 - b. Antenna must use a unique type of connector to attach to the EUT.
- Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Connector Construction

The EUT has an internal antenna, which was permanently attached to the EUT, and the maximum gain is 2.0'dBi, please refer to the internal photos.

Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS**Applicable Standard**

FCC§15.207

Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cisp} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cisp} of Table 1, then:

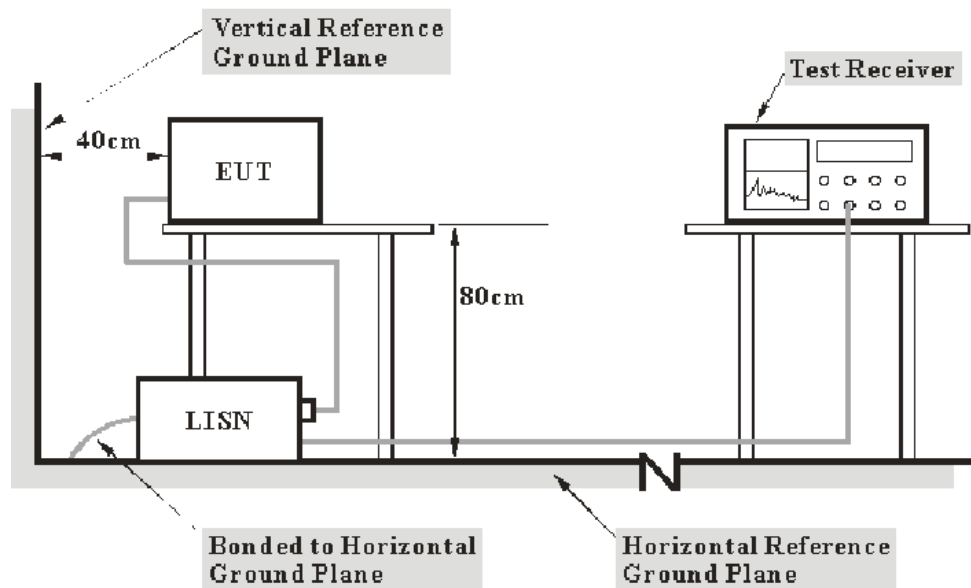
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cisp})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cisp})$, exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cisp}

Measurement	U_{cisp}
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 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 spacing between the peripherals was 10 cm.

The adapter 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 Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of 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
R&S	EMI TEST RECEIVER	ESCS 30	830245/006	2012-11-29	2013-11-28
R&S	Two-line V-network	ENV216	3560.6550.12	2013-2-18	2014-2-17
R&S	L.I.S.N	ESH3-Z5	100113	2012-11-29	2013-11-28
BACL	Test Software	BACL-EMC	V1.0-2010	N/A	N/A

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

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

V_C (cord. Reading): corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF : voltage division factor of AMN

C_f : Correction Factor

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum 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, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

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:

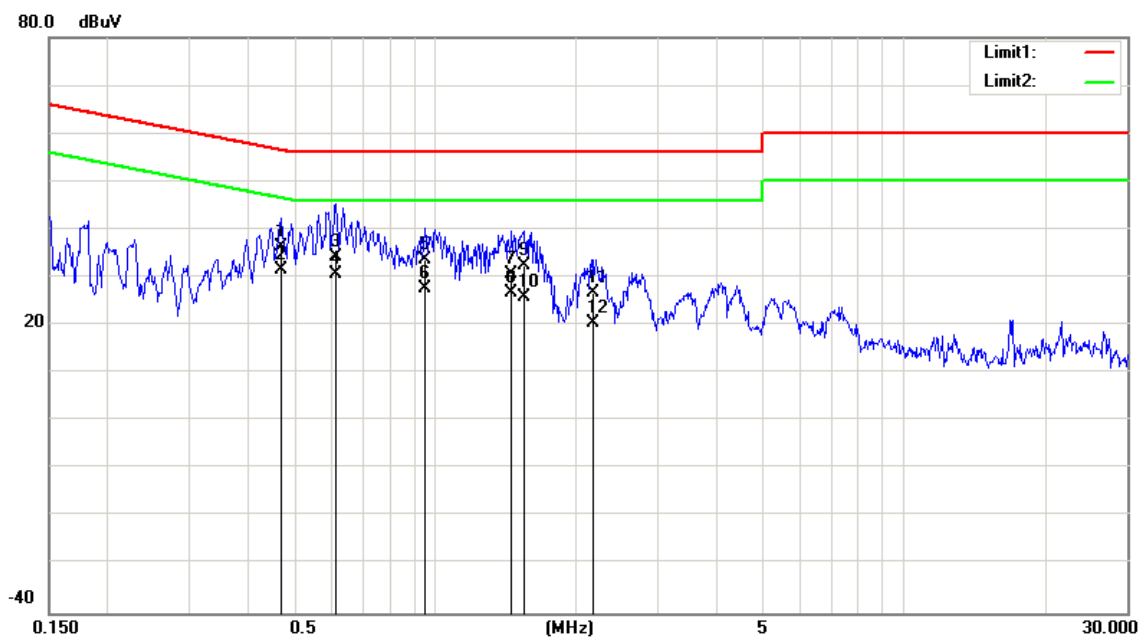
15.04 dB at 0.4686 MHz in the **Line** conducted mode.

Test Data**Environmental Conditions**

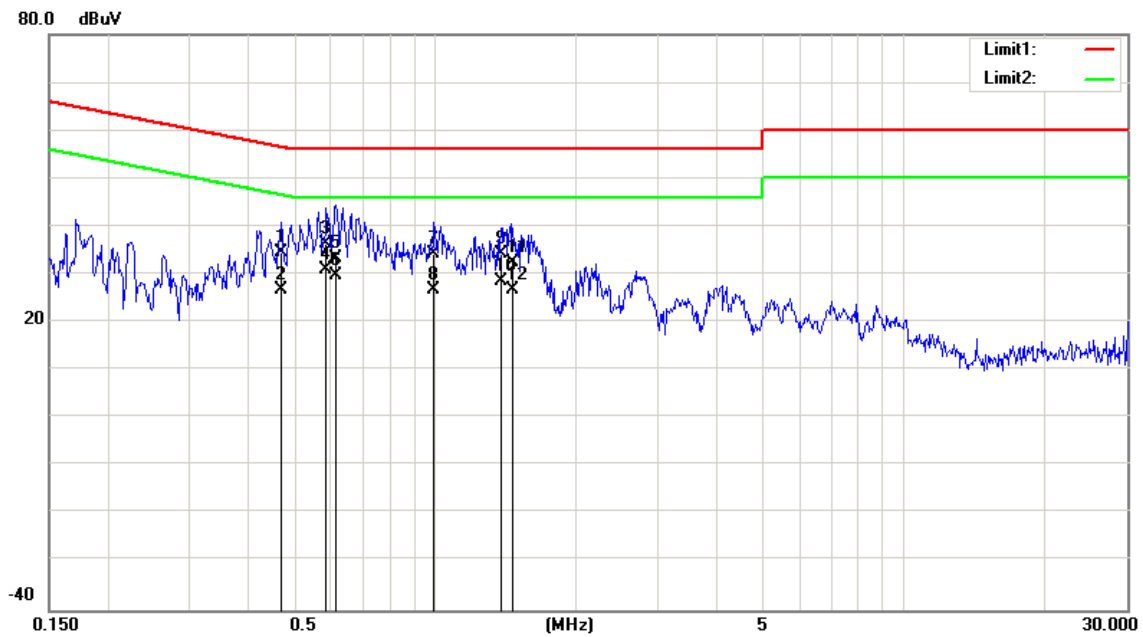
Temperature:	27.6°C
Relative Humidity:	48 %
ATM Pressure:	100.8 kPa

The testing was performed by Ares Liu on 2013-10-15.

Test Mode: Transmitting

AC 120V/60 Hz, Line

Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/ QP/Ave.)
0.4686	26.83	9.67	56.54	20.04	QP
0.4686	21.83	9.67	46.54	15.04	AV
0.6140	24.63	9.67	56.00	21.70	QP
0.6140	21.03	9.67	46.00	15.30	AV
0.9481	23.92	9.68	56.00	22.40	QP
0.9481	18.12	9.68	46.00	18.20	AV
1.4562	21.12	9.68	56.00	25.20	QP
1.4562	17.22	9.68	46.00	19.10	AV
1.5518	22.82	9.68	56.00	23.50	QP
1.5518	16.12	9.68	46.00	20.20	AV
2.1783	17.22	9.68	56.00	29.10	QP
2.1783	10.72	9.68	46.00	25.60	AV

AC 120V/60 Hz, Neutral

Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/ QP/Ave.)
0.4686	24.83	9.67	56.54	22.04	QP
0.4686	17.23	9.67	46.54	19.64	AV
0.5854	26.83	9.67	56.00	19.50	QP
0.5854	21.23	9.67	46.00	15.10	AV
0.6140	23.73	9.67	56.00	22.60	QP
0.6140	20.13	9.67	46.00	16.20	AV
0.9944	24.41	9.69	56.00	21.90	QP
0.9944	17.01	9.69	46.00	19.30	AV
1.3810	24.41	9.69	56.00	21.90	QP
1.3810	19.01	9.69	46.00	17.30	AV
1.4640	22.71	9.69	56.00	23.60	QP
1.4640	17.21	9.69	46.00	19.10	AV

FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cisp} of Table 2, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cisp} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cisp})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cisp})$, exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:

30M~200MHz: 5.0 dB

200M~1GHz: 6.2 dB

1G~6GHz: 4.45 dB

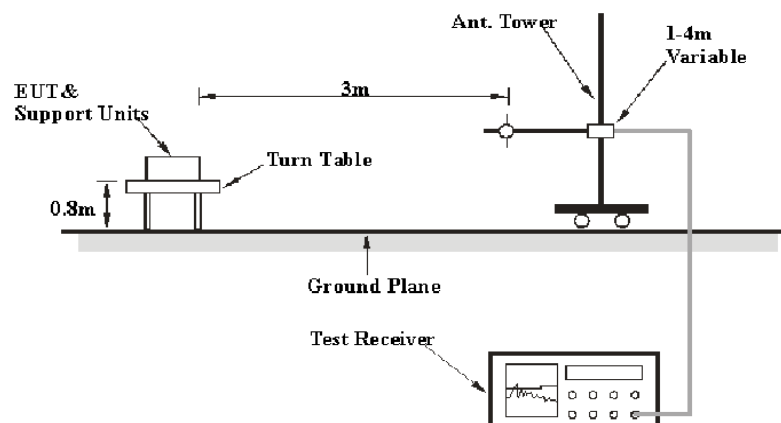
6G~18GHz: 5.23 dB

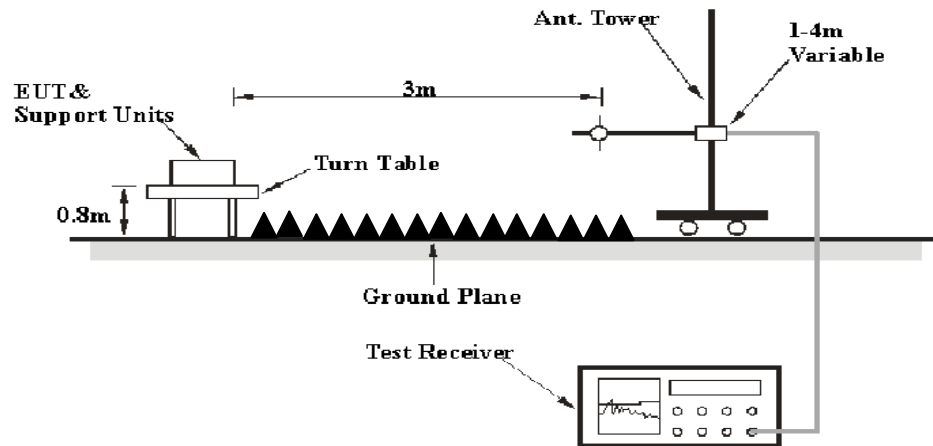
Table 2 – Values of U_{cisp}

Measurement	U_{cisp}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1GHz:



Above 1GHz:

The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209, and FCC 15.247 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 120 VAC/60 Hz power source.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

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

Test Procedure

During the radiated emissions, the adapter was connected to the AC floor outlet and the other support equipments were connected to the second AC floor outlet. #

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

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI TEST RECEIVER	ESCI	100224	2013-5-6	2014-5-5
Sunol Sciences	Antenna	JB3	A060611-1	2011-9-6	2014-9-5
HP	AMPLIFIER	8447E	2434A02181	N/A	N/A
R&S	Spectrum analyzer	FSEM	DE31388	2013-5-7	2014-5-6
ETS-Lindgren	horn antenna	3115	000 527 35	2012-9-6	2015-9-5
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	N/A	N/A

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

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Section 15.205, 15.209 and 15.247, with the worst margin reading of:

6.10 dB at 2483.5 MHz in the Vertical polarization

Test Data

Environmental Conditions

Temperature:	26.5°C
Relative Humidity:	45 %
ATM Pressure:	101 kPa

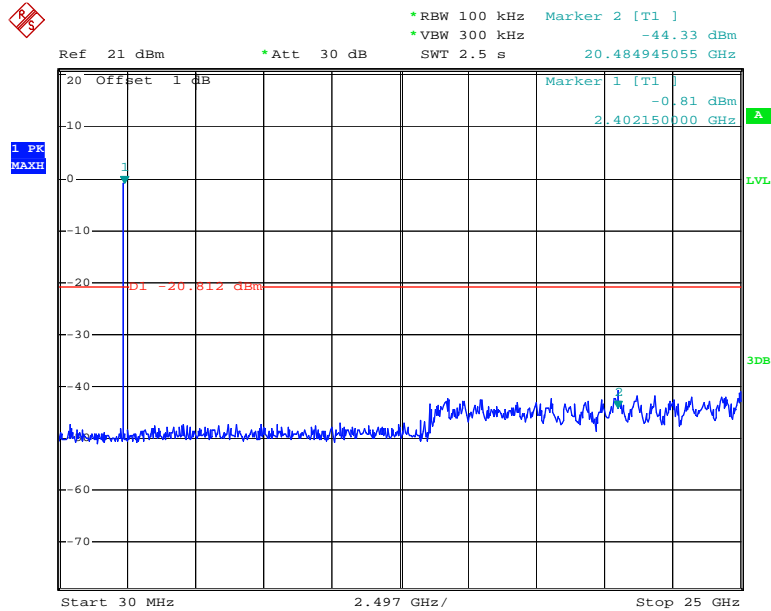
* The testing was performed by Ares Liu on 2013-10-23.

Mode: Transmitting

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
Low Channel: 2402 MHz									
2402	64.85	PK	V	25.65	3.90	0.00	94.40	N/A	N/A
2402	40.32	AV	V	25.65	3.90	0.00	69.87	N/A	N/A
2402	62.59	PK	H	25.65	3.90	0.00	92.14	N/A	N/A
2402	38.94	AV	H	25.65	3.90	0.00	68.49	N/A	N/A
2390	27.36	PK	V	25.61	3.84	0.00	56.81	74.00	17.19
2390	15.3	AV	V	25.61	3.84	0.00	44.75	54.00	9.25
4804	45.37	PK	V	30.59	4.67	27.26	53.37	74.00	20.63
4804	32.57	AV	V	30.59	4.67	27.26	40.57	54.00	13.43
7206	45.69	PK	V	34.09	6.50	26.30	59.98	74.00	14.02
7206	33.24	AV	V	34.09	6.50	26.30	47.53	54.00	6.47
9608	32.26	PK	V	35.96	8.75	26.22	50.75	74.00	23.25
9608	20.3	AV	V	35.96	8.75	26.22	38.79	54.00	15.21
1605	40.1	PK	V	23.81	3.18	26.90	40.19	74.00	33.81
1605	20.39	AV	V	23.81	3.18	26.90	20.48	54.00	33.52
325	30.5	QP	V	14.61	2.16	21.58	25.69	46.00	20.31
Middle Channel: 2440 MHz									
2440	65.32	PK	H	25.74	3.99	0.00	95.05	N/A	N/A
2440	41.36	AV	H	25.74	3.99	0.00	71.09	N/A	N/A
2440	64.25	PK	V	25.74	3.99	0.00	93.98	N/A	N/A
2440	40.17	AV	V	25.74	3.99	0.00	69.90	N/A	N/A
4880	43.26	PK	V	30.79	4.75	27.26	51.54	74.00	22.46
4880	33.2	AV	V	30.79	4.75	27.26	41.48	54.00	12.52
7320	43.6	PK	V	34.37	6.72	26.53	58.16	74.00	15.84
7320	30.1	AV	V	34.37	6.72	26.53	44.66	54.00	9.34
9760	32.45	PK	V	36.32	8.58	25.63	51.72	74.00	22.28
9760	20.09	AV	V	36.32	8.58	25.63	39.36	54.00	14.64
1839	40.73	PK	V	24.28	3.61	27.04	41.58	74.00	32.42
1839	20.58	AV	V	24.28	3.61	27.04	21.43	54.00	32.57
1611	40.2	PK	V	23.82	3.18	26.90	40.30	74.00	33.70
1611	20.11	AV	V	23.82	3.18	26.90	20.21	54.00	33.79
325	30.2	QP	V	14.61	2.16	21.58	25.39	46.00	20.61
High Channel: 2480 MHz									
2480	64.32	PK	H	25.85	3.82	0.00	93.99	N/A	N/A
2480	50.2	AV	H	25.85	3.82	0.00	79.87	N/A	N/A
2480	63.21	PK	V	25.85	3.82	0.00	92.88	N/A	N/A
2480	48.69	AV	V	25.85	3.82	0.00	78.36	N/A	N/A
2483.5	33.21	PK	V	25.86	3.80	0.00	62.87	74.00	11.13
2483.5	18.24	AV	V	25.86	3.80	0.00	47.90	54.00	6.10
4960	46.35	PK	V	31.00	4.70	27.27	54.78	74.00	19.22
4960	34.25	AV	V	31.00	4.70	27.27	42.68	54.00	11.32
7440	33.58	PK	V	34.66	6.95	26.56	48.63	74.00	25.37
7440	21.1	AV	V	34.66	6.95	26.56	36.15	54.00	17.85
9920	32.23	PK	V	36.71	8.41	25.50	51.85	74.00	22.15
9920	20.16	AV	V	36.71	8.41	25.50	39.78	54.00	14.22
1627	39.36	PK	V	23.85	3.17	26.91	39.47	74.00	34.53
1627	21.4	AV	V	23.85	3.17	26.91	21.51	54.00	32.49
325	31.4	QP	V	14.61	2.16	21.58	26.59	46.00	19.41

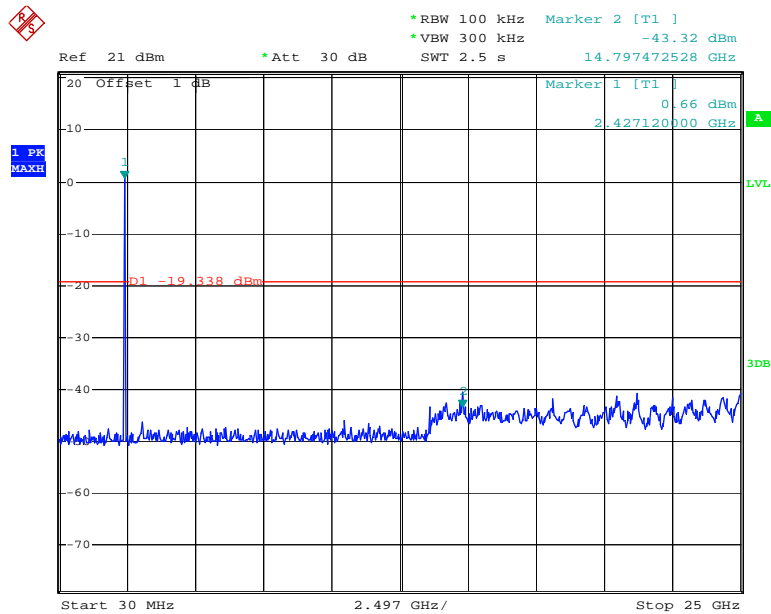
Conducted Spurious Emissions at Antenna Port

Low Channel



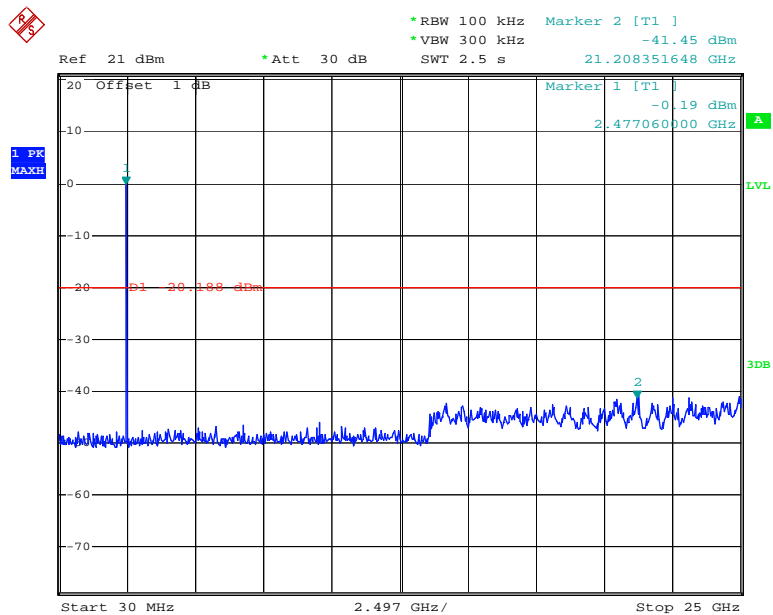
Date: 23.OCT.2013 21:12:05

Middle Channel



Date: 23.OCT.2013 21:21:54

High Channel



Date: 23.OCT.2013 21:22:40

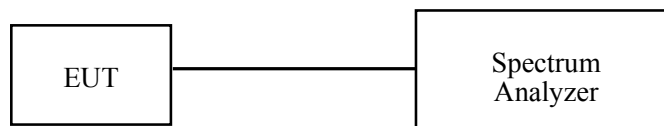
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

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 were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum analyzer	ESPI	100337	2012-11-10	2013-11-9

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

Test Data

Environmental Conditions

Temperature:	26.5 °C
Relative Humidity:	45 %
ATM Pressure:	101kPa

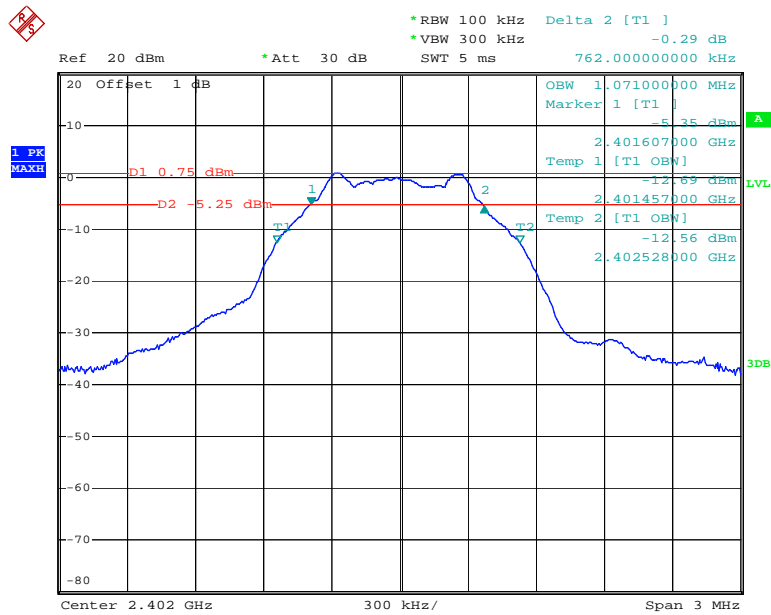
The testing was performed by Ares Liu on 2013-10-23.

Test Result: Pass.

Please refer to the following tables and plots.

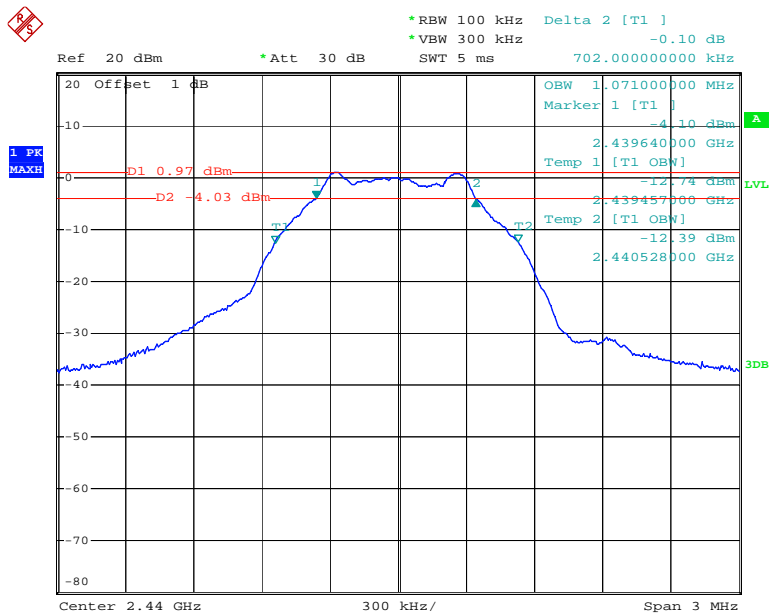
Channel	Frequency	6 dB Bandwidth	Limit
	(MHz)	(MHz)	(kHz)
Low	2402	762	> 500
Middle	2440	702	> 500
High	2480	720	> 500

Low Channel



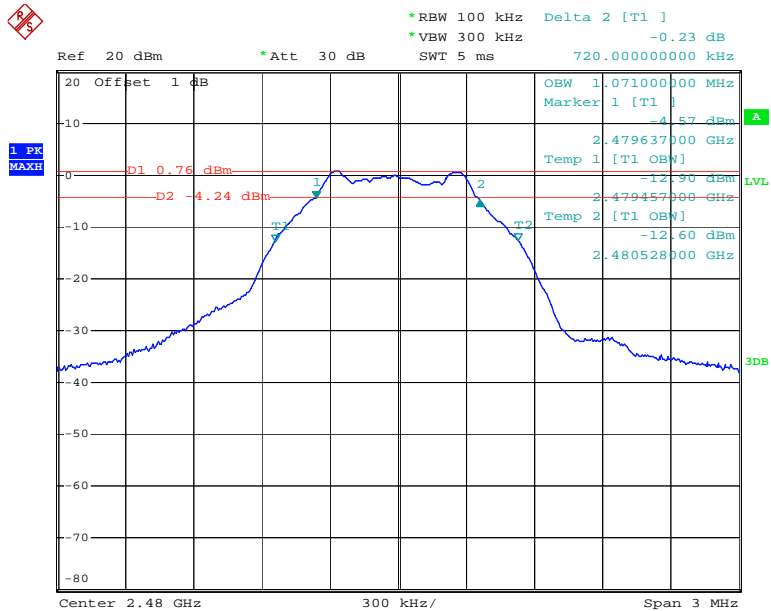
Date: 23.OCT.2013 21:45:39

Middle Channel



Date: 23.OCT.2013 21:52:02

High Channel



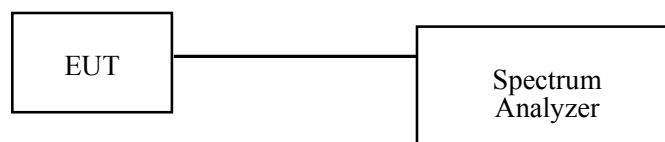
Date: 23.OCT.2013 21:53:05

FCC §15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER**Applicable Standard**

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to an Spectrum Analyzer.
3. Add a correction factor to the display.

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum analyzer	ESPI	100337	2012-11-10	2013-11-9

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

Test Data**Environmental Conditions**

Temperature:	26.5° C
Relative Humidity:	45 %
ATM Pressure:	101 kPa

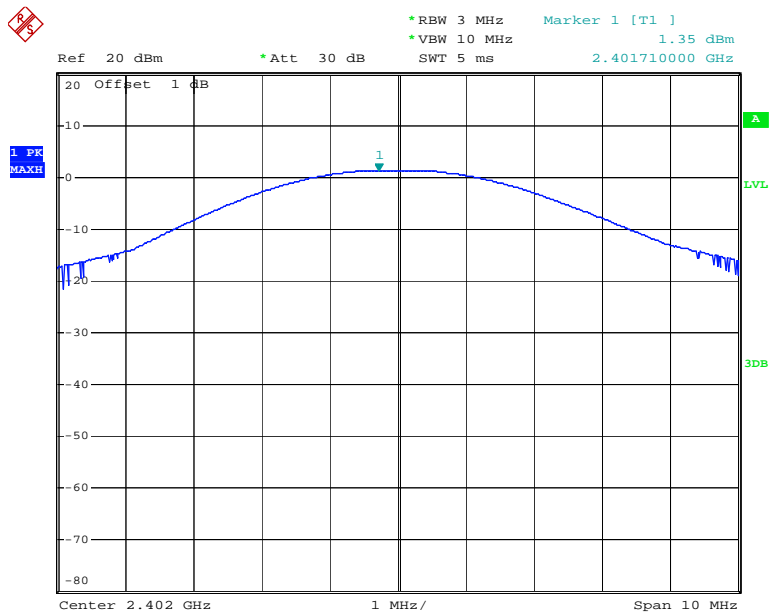
The testing was performed by Ares Liu on 2013-10-23.

Test Mode: Transmitting

Channel	Frequency	Conducted Output Power	Limit	Result
	(MHz)	(dBm)	(dBm)	
Low	2402	1.35	30	PASS
Middle	2440	1.57	30	PASS
High	2480	1.29	30	PASS

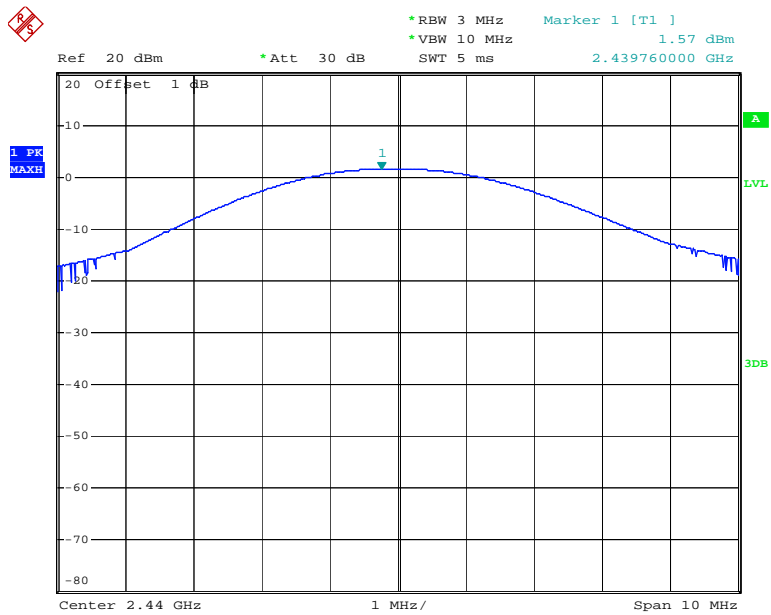
Please refer to the following plots

RF Output Power, Low Channel



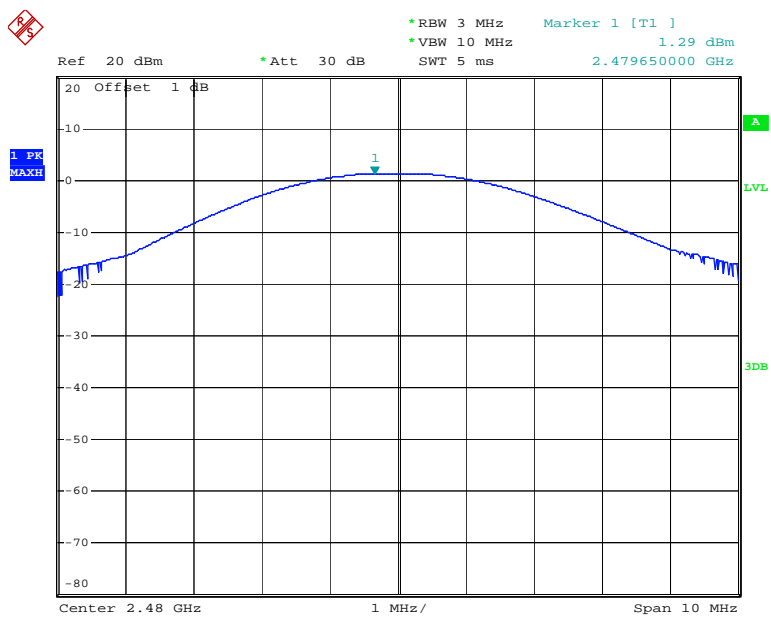
Date: 23.OCT.2013 21:46:33

RF Output Power, Middle Channel



Date: 23.OCT.2013 21:50:18

RF Output Power, High Channel



Date: 23.OCT.2013 21:50:39

FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

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 its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum analyzer	ESPI	100337	2012-11-10	2013-11-9

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

Test Data

Environmental Conditions

Temperature:	26.5 °C
Relative Humidity:	45 %
ATM Pressure:	101 kPa

The testing was performed by Ares Liu on 2013-10-23.

Test Result: Compliance

Please refer to following plots.

Ref 21 dBm * Att 30 dB * RBW 100 kHz Marker 4 [T1] -40.52 dBm * VBW 300 kHz 2.399892607 GHz SWT 5 ms

20 Offset 1 dB

1 PK MAXH

Marker 1 [T1] 2.399892607 GHz 0.86 dBm

Marker 2 [T1] 2.401735000 GHz -50.34 dBm

Marker 3 [T1] 2.400000000 GHz -39.29 dBm

D1 -19.143 dBm

F1 F2

Start 2.38 GHz 2.25 MHz/ Stop 2.4025 GHz

Date: 23.OCT.2013 21:12:18

[illegible]

Date: 23.OCT.2013 21:22:53

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

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 was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. According to KDB 558074 D01 DTS Meas Guidance v02, set the RBW = 3 kHz, VBW = 10 kHz, Set the span to 1.5 times the DTS channel bandwidth.
4. Use the peak marker function to determine the maximum power level in any 3 kHz band segment within the fundamental EBW.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum analyzer	ESPI	100337	2012-11-10	2013-11-9

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

Test Data

Environmental Conditions

Temperature:	26.5° C
Relative Humidity:	45 %
ATM Pressure:	101 kPa

The testing was performed by Ares Liu on 2013-10-23.

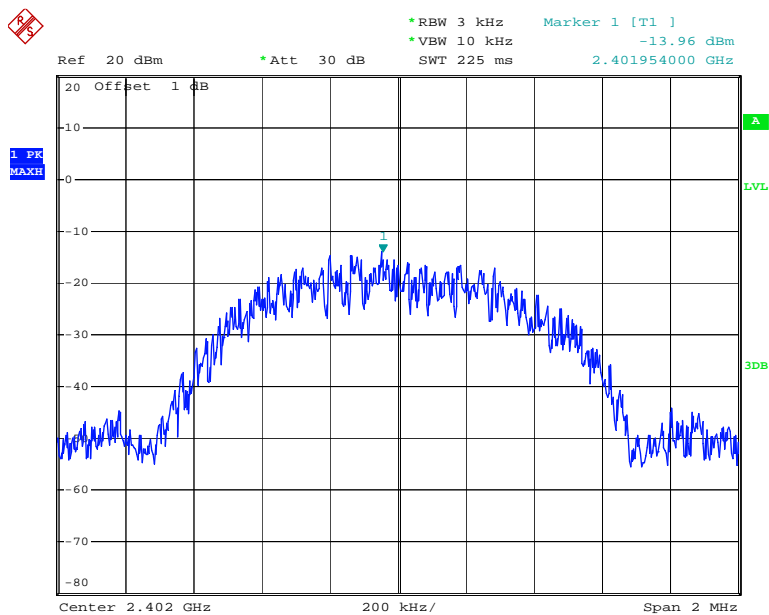
Test Mode: Transmitting

Test Result: Pass

Channel	Frequency	PSD	Limit	Result
	MHz	(dBm/3kHz)	(dBm/3kHz)	
Low	2402	-13.96	8	PASS
Middle	2440	-13.95	8	PASS
High	2480	-14.07	8	PASS

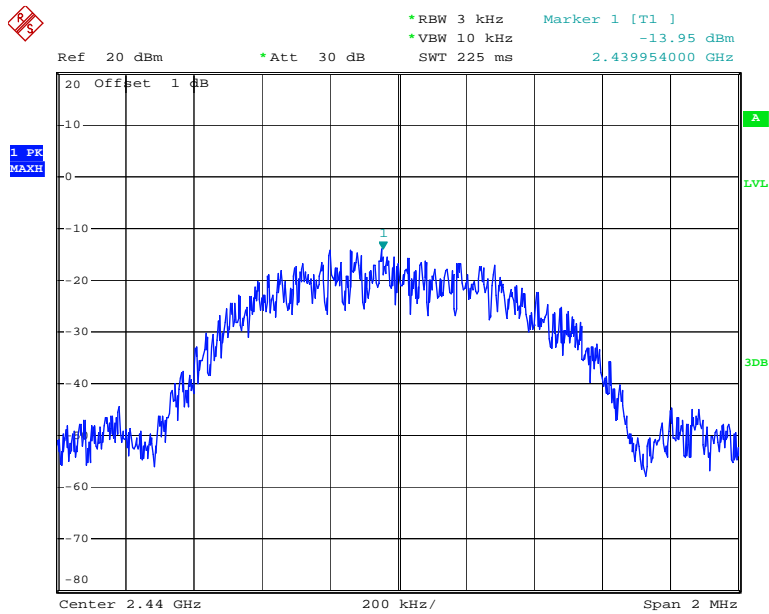
Please refer to the following plots

Power Spectral Density, Low Channel



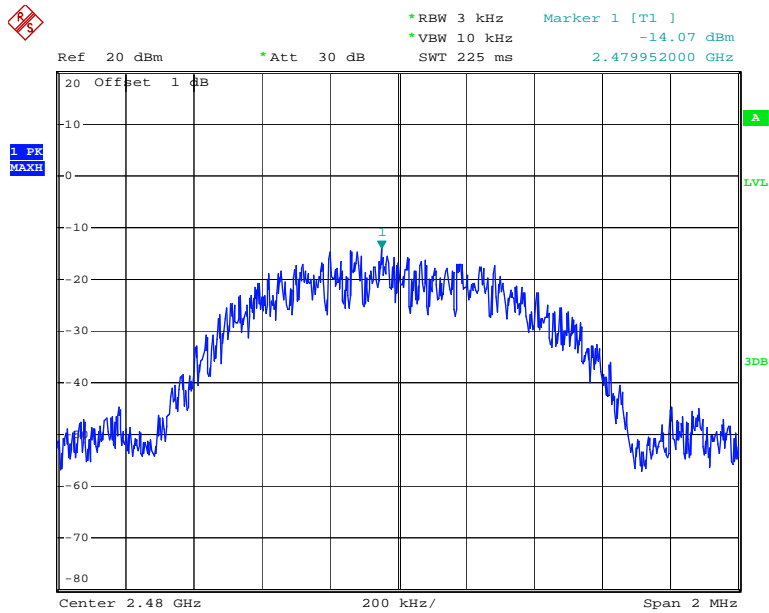
Date: 23.OCT.2013 21:48:36

Power Spectral Density, Middle Channel



Date: 23.OCT.2013 21:49:15

Power Spectral Density, High Channel



Date: 23.OCT.2013 21:49:37

DECLARATION LETTER



SHUOYING INDUSTRIAL(SHENZHEN)CO.,LTD.

Add: No.1 Shuoying Rd., Hebei Industry Area, Dalang, Longhua Town, Baoan, Shenzhen, China.

Tel: 0755-28177777

Fax: 0755-28177111

DECLARATION OF SIMILARITY

October 12, 2013

To:

Bay Area Compliance Laboratories Corp.(Dongguan)

No.69 Pulong Village Puxihu Industry Zone Tangxia, Dongguan, China

Tel: +86 769 86858888 ext. 8115 Fax: +86 769 86858891

<http://www.baclcorp.com>

Dear Sir or Madam:

We, SHUOYING INDUSTRIAL(SHENZHEN)CO.,LTD., hereby declare that our product: Mobile Internet Devices, models: VTA0705 is electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics as PA0709, And it was tested by BACL, the results of which are featured in BACL project: R2DG131012001.

A description of the differences between the tested model and those that are declared similar areas follows:

Models: PA0709, VTA0705. The only difference is the model name.

Please contact me should there be need for any additional clarification or information.

Best Regards,

Signature: *Weihua lei*

Weihua lei, Product Manager

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