APPLICATION FOR CERTIFICATION
On Behalf of
Zhuhai FTZ Oplink Communications, Inc.
WiFi Smart Plug
Model No. : WPS1201
FCC ID : OS3WPS01

Prepared for : Zhuhai FTZ Oplink Communications, Inc.
#29, #30 Lianfeng Avenue, Free Trade Zone,
Zhuhai City, Guangdong Province, 519030
China

Prepared by : AUDIX Technology Corporation
EMC Department
No. 53-11, Dingfu, Linkou Dist.,
New Taipei City 244, Taiwan

Tel : (02) 2609-9301, 2609-2133
Fax: (02) 2609-9303

File Number	:	C1M1309239
Report Number	:	EM-F1020779
Date of Test	:	Oct. 16 ~ 18, 2013
Date of Report	:	Oct. 21, 2013

TABLE OF CONTENTS

TEST REPORT CERTIFICATION

Applicant	:	Zhuhai FTZ Oplink Communications, Inc.
Manufacturer	:	Dongguan Quan Sheng Electric Co., Ltd.
EUT Description	:	WiFi Smart Plug
FCC ID	:	**OS3WPS01**
	(A) Model No.	: WPS1201
	(B) Serial No.	: N/A
	(C) Power Supply	: AC 120V/60Hz
	(D) Test Voltage	: AC 120V/60Hz

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C, Oct 2012
ANSI C63.4:2003

(FCC 47 CFR Part 15C, §15.205 and §15.207 and §15.209 and §15.247)

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C limit.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the requirements of FCC standards.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test: Oct. 16 ~ 18, 2013 Date of Report: Oct. 21, 2013

Producer: Tina Huang
(Tina Huang/Administrator)

Signatory: Ben Cheng
(Ben Cheng/Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product	WiFi Smart Plug
Model Number	WPS1201
Serial Number	N/A
Applicant	Zhuhai FTZ Oplink Communications, Inc. #29, #30 Lianfeng Avenue, Free Trade Zone, Zhuhai City, Guangdong Province, 519030 China
Manufacturer	Dongguan Quan Sheng Electric Co., Ltd. Chu-Tang 2nd Industrial Park Hou-Chieh Town Dongguan Guangdong 523963 China.
FCC ID	OS3WPS01
Fundamental Range	802.11b: 2412MHz ~ 2462MHz
Frequency Channel	11 channels
Radio Technology	DSSS Modulation (DBPSK/DQPSK/CCK)
Data Transfer Rate	1/2/5.5/11Mbps
Antenna Gain	-1.13dBi
Antenna Type	PCB Antenna
Date of Receipt of Sample	Sep. 25, 2013
Date of Test	Oct. 16 ~ 18, 2013

1.2. Data Rate Relative to Output Power

802.11b			
Channel	Modulation	Date Rate(Mbps)	Power(dBm)
1	DBPSK	1	18.74
1	DQPSK	2	18.32
1	CCK	5.5	18.28
1	CCK	11	17.92

1.3. Test Configuration for Each Test Item

Test Item	802.11b
	Data Rate for Test(Mbps)
6dB Bandwidth	1
Peak Power Spectral Density	1
Peak Output Power	1
Band Edge	1

1.4. Tested Supporting System Details

1.4.1. NOTEBOOK PC

Model Number	:	ZL5
Serial Number	:	LXA550597854918A27EM01
FCC ID	:	By DoC
BSMI ID	:	R33142
Brand	:	acer
D-Sub Cable	:	Shielded, Detachable, 1.5m
AC Adapter	:	LITEON, M/N PA-1650-02 DC Cord: Non-Shielded, Undetachable, 1.8m
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.4.2. POWER SOCKET

Model Number	:	N/A
Serial Number	:	N/A
Manufacturer	:	AUDIX
Power Cable	:	Non-Shielded, Detachable, 1.8m (3 Pin)

1.4.3. JIG BOARD

Model Number	:	N/A
Serial Number	:	N/A
Manufacturer	:	Power tech
Bus Cable	:	Non-Shielded, Detachable, 0.1m
Power Cable	:	Non-Shielded, Detachable, 1.0m

1.4.4. TRANSFORMER

Model Number	:	N/A
Serial Number	:	N/A
Power Cable	:	Non-Shielded, Detachable, 0.15m

1.5. Description of Test Facility

Name of Firm	:	**AUDIX Technology Corporation** **EMC Department** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Location & Facility (C8/AC)	:	**No. 8 Shielded Room** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan **Semi-Anechoic Chamber** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan May 11, 2012 File on Federal Communication Commission Registration Number: 90993
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724

1.6. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	±1.73dB
Radiation Test (Distance: 3m)	30MHz~300MHz	± 2.91dB
	300MHz~1000MHz	± 2.74dB
	Above 1GHz	± 5.02dB

Remark：Uncertainty = $ku_c(y)$

Test Item	Uncertainty
6dB Bandwidth	± 0.05kHz
Maximum peak output power	± 0.33dBm
Band edges	± 0.13dB
Power spectral density	± 0.13dB
Emission Limitations	± 0.13dB

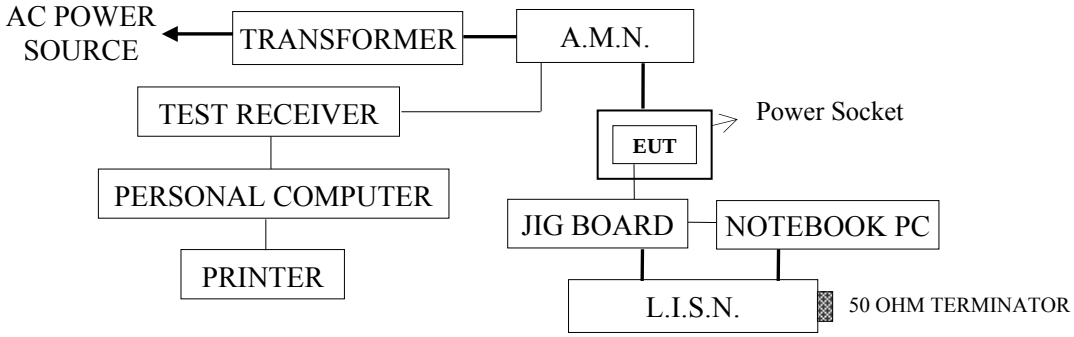
2. CONDUCTED EMISSION MEASUREMET

2.1. Test Equipment

The following test equipment was used during the conducted emission measurement：
(No. 8 Shielded Room)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCS30	100265	Aug. 22, 13’	Aug. 21, 14’
2.	A.M.N.	R&S	ESH2-Z5	100366	Mar. 19, 13’	Mar. 18, 14’
3.	L.I.S.N.	Kyoritsu	KNW-407	8-881-13	Jan. 21, 13’	Jan. 30, 14’

2.2. Block Diagram of Test Setup



EUT: WIFI SMART PLUG

: POWER LINE : SIGNAL LINE

2.3. Powerline Conducted Emission Limit §15.207, Class B]

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark 1.: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
2.: The lower limit applies at the band edges.

2.4. Operating Condition of EUT

2.4.1. Setup the EUT and simulator as shown on 2.2.

2.4.2. Turn on the power of all equipment.

2.4.3. The Notebook PC was running test software "UTF-8 Teraterm pro" to set EUT (WiFi Smart Plug) on transmitting and receiving during all testing.

2.5. Test Procedure

The EUT (link Notebook PC) was placed on the table which was above the ground by 80cm and Notebook PC's adapter power cord connected to the AC mains through an Artificial Mains Network (A.M.N.). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)
Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions simulators of the interface cables should be manipulated according to ANSI C63.4-2003 regulation during conducted measurement.

The bandwidth of the R&S Test Receiver ESCS30 was set at 9kHz.

The frequency range from 150kHz to 30MHz was checked.

All the final readings from Test Receiver were measured with the Quasi-Peak detector and Average detector. Remark: If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

2.6. Conducted Emission Measurement Results

PASSED.
(All the emissions not reported below are too low against the prescribed limits.)

EUT was performed during this section testing and all the test results are attached in next pages.

EUT：WiFi Smart Plug M/N：WPS1201

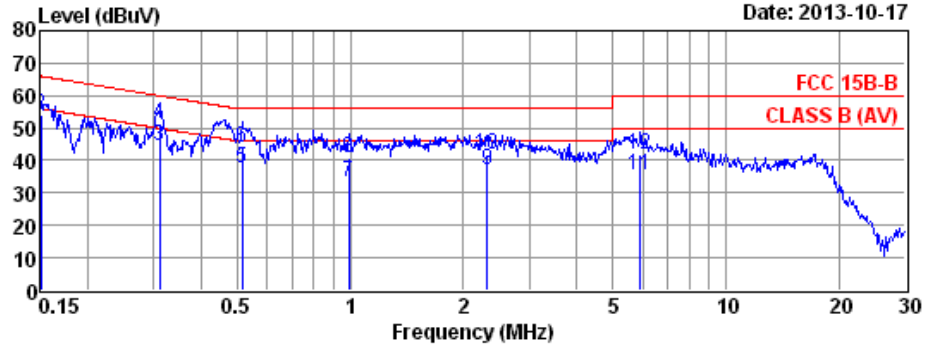
Test Date：Oct. 17, 2013 Temperature：25℃ Humidity：58%

The details are as follows：

Mode	Reference Test Data	
	Neutral	Line
1.	# 2	# 1

AUDIX TECHNOLOGY Corp. EMC Department
No.53-11, Dingfu, Linkou Dist.,New Taipei City
24442, Taiwan R.O.C.
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:emc@audixtech.com

Data: 2 File: D:\test data\REPORT\2013\C1M1310XXX\C1M1309239-C-D.EM6 (4)



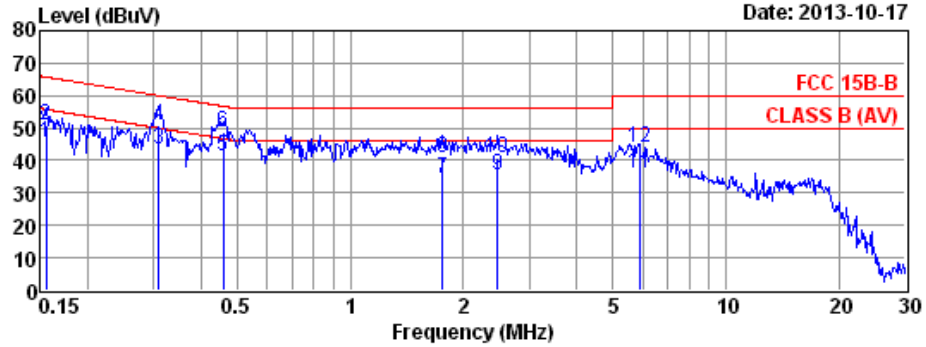
Site no. : No.8 Shielded Room Data no. : 2
Dis. / Ant. : ESH2-Z5 366 Ant. pol. : NEUTRAL
Limit : FCC 15B-B
Env. / Ins. : 25*C / 58% ESCS (265) Engineer : Jack_Wu
EUT : WPS1201
Power Rating : 120Vac/60Hz
Test Mode : Operating

	Freq. (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.150	0.21	0.04	46.97	47.22	55.99	8.77	Average
2	0.150	0.21	0.04	53.58	53.83	65.99	12.16	QP
3	0.312	0.22	0.04	44.44	44.70	49.93	5.23	Average
4	0.312	0.22	0.04	51.36	51.62	59.93	8.31	QP
5	0.516	0.23	0.04	37.32	37.59	46.00	8.41	Average
6	0.516	0.23	0.04	43.86	44.13	56.00	11.87	QP
7	0.989	0.24	0.05	32.95	33.24	46.00	12.76	Average
8	0.989	0.24	0.05	40.25	40.54	56.00	15.46	QP
9	2.309	0.28	0.09	36.49	36.86	46.00	9.14	Average
10	2.309	0.28	0.09	41.74	42.11	56.00	13.89	QP
11	5.898	0.34	0.15	35.09	35.58	50.00	14.42	Average
12	5.898	0.34	0.15	41.29	41.78	60.00	18.22	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

AUDIX TECHNOLOGY Corp. EMC Department
No.53-11, Dingfu, Linkou Dist.,New Taipei City
24442, Taiwan R.O.C.
Tel:+886-2-26092133 Fax:+886-2-26099303
Email:emc@audixtech.com

Data: 1 File: D:\test data\REPORT\2013\C1M1310XXX\C1M1309239-C-D.EM6 (4)



Site no. : No.8 Shielded Room
Dis. / Ant. : ESH2-Z5 366
Limit : FCC 15B-B
Env. / Ins. : 25*C / 58% ESCS (265)
EUT : WPS1201
Power Rating : 120Vac/60Hz
Test Mode : Operating

Data no. : 1
Ant. pol. : LINE
Engineer : Jack_Wu

	Freq. (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.155	0.11	0.04	45.16	45.31	55.74	10.43	Average
2	0.155	0.11	0.04	50.70	50.85	65.74	14.89	QP
3	0.310	0.12	0.04	43.47	43.63	49.98	6.35	Average
4	0.310	0.12	0.04	50.63	50.79	59.98	9.19	QP
5	0.459	0.12	0.04	41.26	41.42	46.71	5.29	Average
6	0.459	0.12	0.04	48.75	48.91	56.71	7.80	QP
7	1.762	0.16	0.07	34.07	34.30	46.00	11.70	Average
8	1.762	0.16	0.07	40.65	40.88	56.00	15.12	QP
9	2.461	0.18	0.09	35.09	35.36	46.00	10.64	Average
10	2.461	0.18	0.09	40.72	40.99	56.00	15.01	QP
11	5.867	0.21	0.15	35.81	36.17	50.00	13.83	Average
12	5.867	0.21	0.15	43.47	43.83	60.00	16.17	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

3.1.1. For Frequency Range 30MHz~1000MHz (at Semi-Anechoic Chamber)

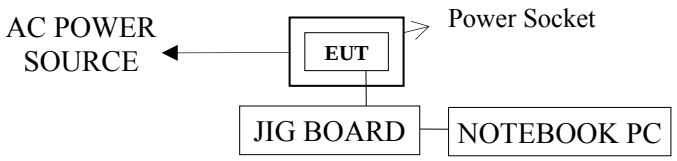
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 18, 13’	Aug. 17, 14’
2	Test Receiver	R & S	ESCS30	100338	Jul. 01, 13’	Jun. 30, 14’
3	Amplifier	HP	8447D	2944A06305	Feb. 19, 13’	Feb. 18, 14’
4	Log Periodic Antenna	Schwarzbeck	UHALP 9108-A	0810	Mar. 02, 13’	Mar. 01, 14’
5	Biconical Antenna	CHASE	VBA6106A	1264	Mar. 02, 13’	Mar. 01, 14’

3.1.2. For Frequency Above 1GHz (at Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 18, 13’	Aug. 17, 14’
2	Test Receiver	R & S	ESCS30	100338	Jul. 01, 13’	Jun. 30, 14’
3	Pre-Amplifier	HP	8449B	3008A02676	Mar. 01, 13’	Feb. 28, 14’
4	2.4GHz Notch Filter	K&L	7NSL10-2441.5E130.5-00	1	Jun. 13, 13’	Jun. 12, 14’
5	3GHz High Pass Filter	Microware Circuits	H3G018G1	484796	Jun. 13, 13’	Jun. 12, 14’
6	5GHz Notch Filter	Microware Circuits	N0258771	459776	Jan. 05, 13’	Jan. 03, 14’
7	Horn Antenna	EMCO	3115	9112-3775	May 07, 13’	May 06, 14’
8	Horn Antenna	EMCO	3116	2653	Oct. 11, 13’	Oct. 10, 14’

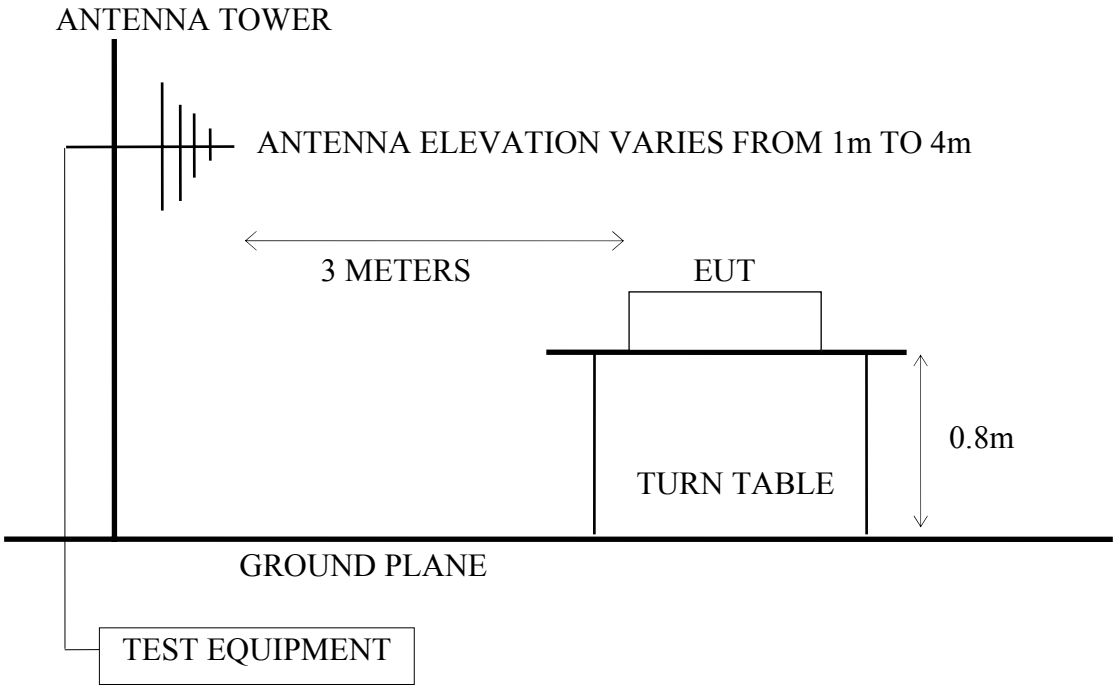
3.2. Test Setup

3.2.1. Block Diagram of connection between EUT and simulators

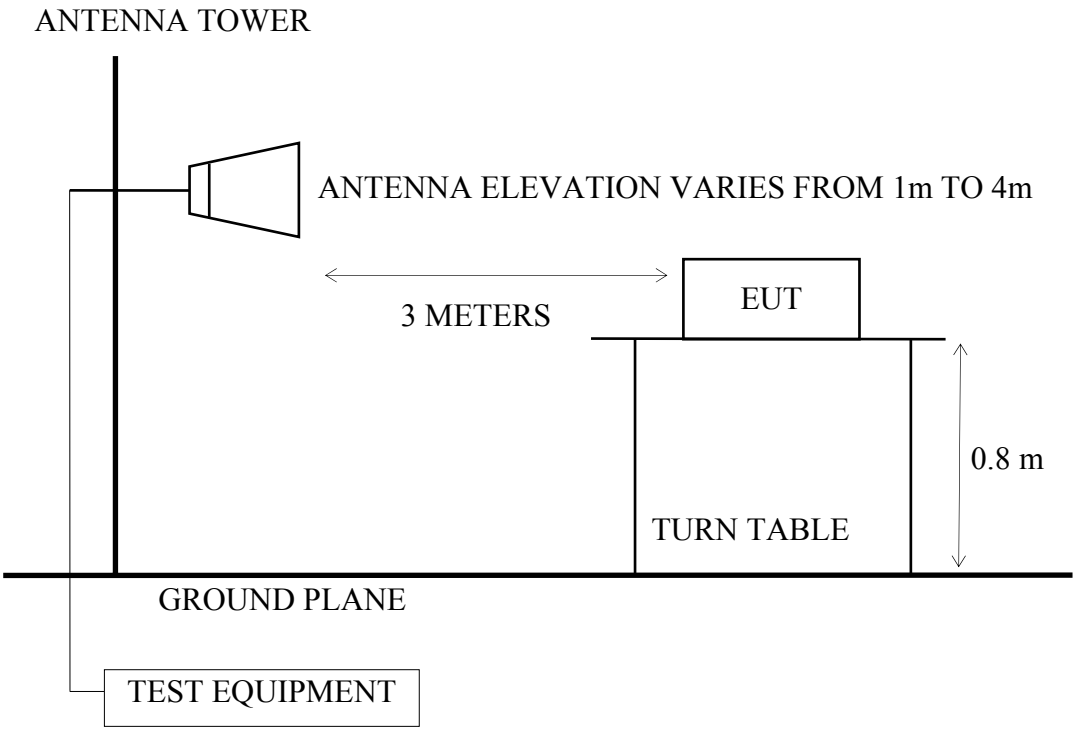


EUT: WIFI SMART PLUG

3.2.2. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



3.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



3.3. Radiated Emission Limits (§15.209)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS	
		μV/m	dBμV/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark：(1) Emission level (dBμV/m) = 20 log Emission level (μV/m)
(2) The tighter limit applies at the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
(4) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a).
(5) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35(b) and Part 15.205(b) & Part 15.209(e) and Part 15.207(c).

3.4. Operating Condition of EUT

3.4.1. Set up the EUT (WiFi Smart Plug) via Notebook PC and simulator as shown on 3.2.

3.4.2. To turn on the power of all equipments.

3.4.3. The EUT was set the Notebook PC using test program “UTF-8 Teraterm pro”.

3.4.4. The EUT supports 802.11b mode, we performed high, middle, low channels for spurious emission and listed test data in this report.

3.5. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna such as calibrated biconical and log-periodical antenna or horn antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4-2003 regulation.

The bandwidth of the R&S Test Receiver was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth and video bandwidth of test spectrum analyzer is 1MHz for peak detection (PK) at frequency above 1GHz.

The resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 10Hz for average detection (AV) at frequency above 1GHz.

The frequency range from 30MHz to 25GHz (Up to 10^{th} harmonics from fundamental frequency) was checked. 30MHz to 1000MHz was measured with Peak detector. Pursuant to ANSI 4.2.2, peak detector is an alternate option for frequency from 30MHz to 1000MHz.

Above 1GHz was measured with peak and average detector. For frequency from 1GHz to 25GHz, we checked it in 1 meter distance and with a shorter cable 2 meter instead of original's. There is no signal exist.

Pursuant to ANSI C63.4 8.3.1.2, when peak value complies with the average limit, we didn't perform measurement in average detector.

3.6. Test Results

PASSED.
(All emissions not reported below are too low against the prescribed limits.)

EUT：WiFi Smart Plug M/N：WPS1201

Test Date：Oct. 09, 2013 Temperature：24℃ Humidity：40%

For Frequency Range 30MHz~1000MHz:
The EUT with following test modes were performed during this section testing and all the test results are listed in section 3.6.1.

Mode	Type of Network	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1.	802.11b	CH 1	2412MHz	Transmit	# 2	# 1
2.		CH 6	2437MHz		# 1	# 2
3.		CH 11	2462MHz		# 2	# 1

* Above all final readings were measured with Peak detector.

Frequency above 1GHz:
The EUT with following test modes were performed during this section testing and all the test results are listed in section 3.6.2.

Mode	Type of Network	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1.	802.11b	CH 1	2412MHz	Transmit	--(Note4)	(Note4)
2.		CH 6	2437MHz		--(Note3)	# 7
2.		CH 11	2462MHz		--(Note3)	# 7

Note: 1. Above all final readings were measured with Peak detector.
2. For measurements above 4GHz to 5.5GHz, the peak measured value complies with the average limit, it is unnecessary to perform an average measurement. (According to ANSI C63.4-2003 section 8.3.1.2)
3. There is no signal be found at horizontal polarization above 1GHz.
4. There is no signal be found at above 1GHz.
5. The emissions (up to 25GHz) not reported are too low to be measured.

For Restricted Bands:
The EUT was tested in restricted bands and all the test results are listed in section 3.6.3. (The restricted bands defined in part 15.205(a))

Mode	Type of Network	Channel	Frequency	Test Mode	Reference Test Data	
					Horizontal	Vertical
1.	802.11b	CH 1	2412MHz	Transmit	# 3, # 4	# 1, # 2
2.		CH 11	2462MHz		# 5, # 6	# 7, # 8

3.6.1. For 30-1000MHz Frequency Range Measurement Results

802.11b, Transmit, Frequency: 2412MHz

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : FCC PART 15C
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2412(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	35.82	16.42	1.20	9.24	26.86	40.00	13.14	Peak
2	112.45	12.25	2.20	20.71	35.16	43.50	8.34	Peak
3	149.31	11.25	2.60	22.86	36.71	43.50	6.79	Peak
4	166.77	10.15	2.70	23.36	36.21	43.50	7.29	Peak
5	580.96	18.81	6.30	3.87	28.98	46.00	17.02	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : FCC PART 15C
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2412(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	35.82	16.42	1.20	19.27	36.89	40.00	3.11	Peak
2	54.25	8.38	1.50	27.00	36.88	40.00	3.12	Peak
3	104.69	11.75	2.15	24.66	38.56	43.50	4.94	Peak
4	476.20	17.46	6.00	4.82	28.28	46.00	17.72	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

802.11b, Transmit, Frequency: 2437MHz

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : FCC PART 15C
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : Tx2437(802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	116.33	12.33	2.30	18.56	33.19	43.50	10.31	Peak
2	163.86	10.30	2.70	25.14	38.14	43.50	5.36	Peak
3	323.91	14.57	4.14	14.61	33.32	46.00	12.68	Peak
4	379.20	16.01	4.60	11.88	32.49	46.00	13.51	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : FCC PART 15C
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : Tx2437(802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	53.28	8.61	1.50	27.38	37.49	40.00	2.51	Peak
2	112.45	12.25	2.20	21.71	36.16	43.50	7.34	Peak
3	163.86	10.30	2.70	20.47	33.47	43.50	10.03	Peak
4	479.11	17.50	6.00	7.77	31.27	46.00	14.73	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

802.11b, Transmit, Frequency: 2462MHz

Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : HORIZONTAL
Limit : FCC PART 15C
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2462(802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	163.86	10.30	2.70	24.65	37.65	43.50	5.85	Peak
2	321.97	14.52	4.20	14.71	33.43	46.00	12.57	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m CBL6112D 33821 Ant. pol. : VERTICAL
Limit : FCC PART 15C
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2462(802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	53.28	8.61	1.50	26.87	36.98	40.00	3.02	Peak
2	111.48	12.24	2.20	21.12	35.56	43.50	7.94	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

3.6.2. Above 1GHz Frequency Range Measurement Results

802.11b, Transmit, Frequency: 2437MHz

Site no. : Audix NO.1 Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART15C(1G-AV)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : Tx2437(802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	4924.00	33.28	9.13	8.77	51.18	54.00	2.82	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

802.11b, Transmit, Frequency: 2462MHz

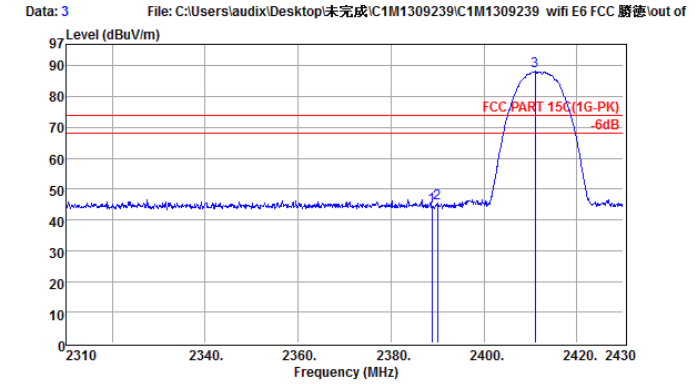
Site no. : Audix NO.1 Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART15C(1G-AV)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2462(802.11b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	4924.00	33.28	9.13	9.34	51.75	54.00	2.25	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

3.6.3. Restricted Bands Measurement Results

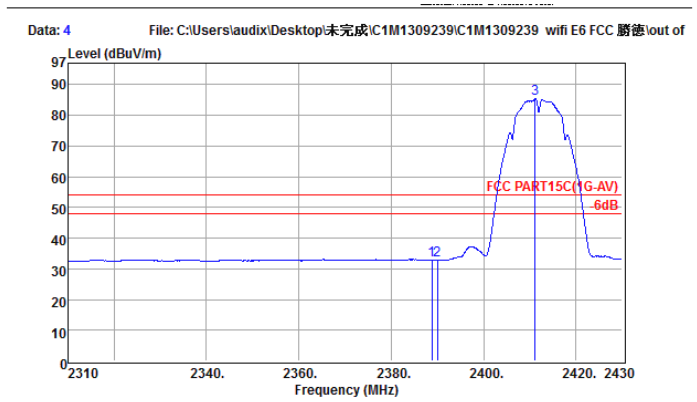
Date of Test：	Oct. 18, 2013	Temperature：	23℃
EUT：	WiFi Smart Plug	Humidity：	62%
Test Mode：	802.11b, Transmit, Channel: 01, Frequency: 2412MHz		



Site no. : Audix NO.1 Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C(1G-PK)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2412(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.84	28.47	6.34	9.54	44.35	74.00	29.65	Peak
2	2390.04	28.47	6.34	10.65	45.46	74.00	28.54	Peak
3	2411.04	28.51	6.36	53.30	88.17	74.00	-14.17	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

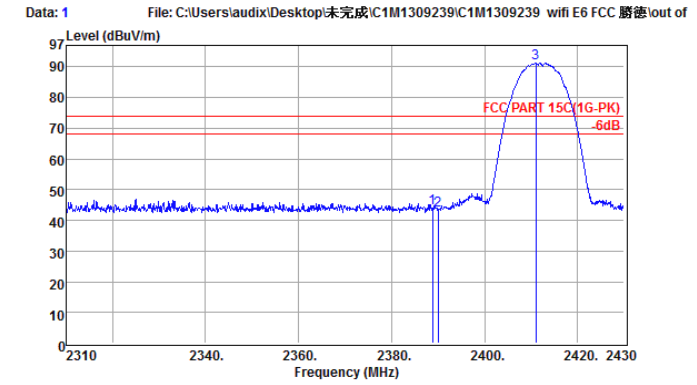


Site no. : Audix NO.1 Chamber Data no. : 4
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PART15C(1G-AV)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2412(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.84	28.47	6.34	-1.95	32.86	54.00	21.14	Average
2	2390.04	28.47	6.34	-1.93	32.88	54.00	21.12	Average
3	2411.16	28.51	6.36	50.48	85.35	54.00	-31.35	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

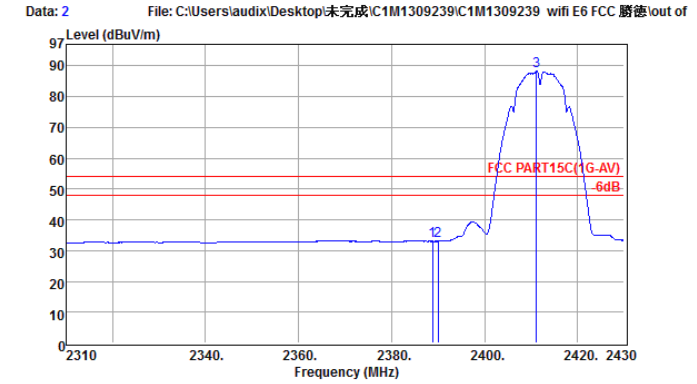
Date of Test：	Oct. 18, 2013	Temperature：	23℃
EUT：	WiFi Smart Plug	Humidity：	62%
Test Mode：	802.11b, Transmit, Channel: 01, Frequency: 2412MHz		



Site no. : Audix NO.1 Chamber Data no. : 1
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART 15C(1G-PK)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2412(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.84	28.47	6.34	9.21	44.02	74.00	29.98	Peak
2	2390.04	28.47	6.34	8.29	43.10	74.00	30.90	Peak
3	2411.04	28.51	6.36	56.34	91.21	74.00	-17.21	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

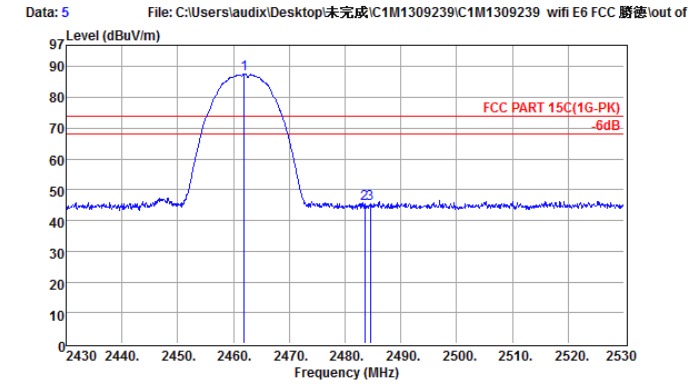


Site no. : Audix NO.1 Chamber Data no. : 2
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART15C(1G-AV)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2412(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2388.84	28.47	6.34	-1.81	33.00	54.00	21.00	Average
2	2390.04	28.47	6.34	-1.79	33.02	54.00	20.98	Average
3	2411.16	28.51	6.36	53.44	88.31	54.00	-34.31	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

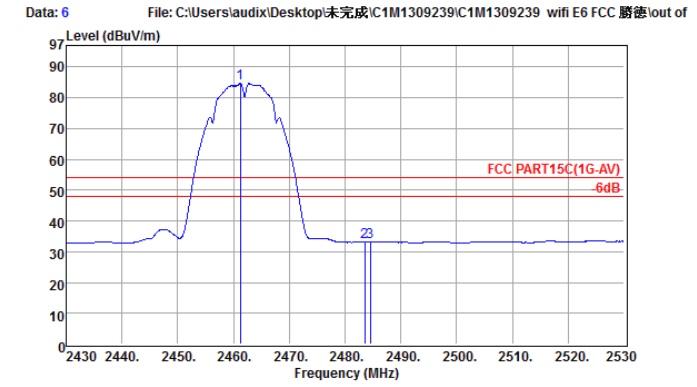
Date of Test：	Oct. 18, 2013	Temperature：	23℃
EUT：	WiFi Smart Plug	Humidity：	62%
Test Mode：	802.11b, Transmit, Channel: 11, Frequency: 2462MHz		



Site no. : Audix NO.1 Chamber Data no. : 5
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C(1G-PK)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2462(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2461.90	28.62	6.42	52.65	87.69	74.00	-13.69	Peak
2	2483.50	28.66	6.45	10.32	45.43	74.00	28.57	Peak
3	2484.50	28.66	6.45	10.44	45.55	74.00	28.45	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

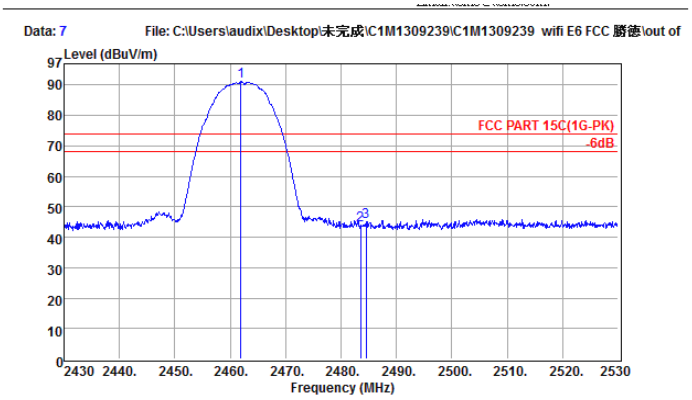


Site no. : Audix NO.1 Chamber Data no. : 6
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PART15C(1G-AV)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2462(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2461.20	28.62	6.42	49.62	84.66	54.00	-30.66	Average
2	2483.50	28.66	6.45	-1.88	33.23	54.00	20.77	Average
3	2484.50	28.66	6.45	-1.84	33.27	54.00	20.73	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

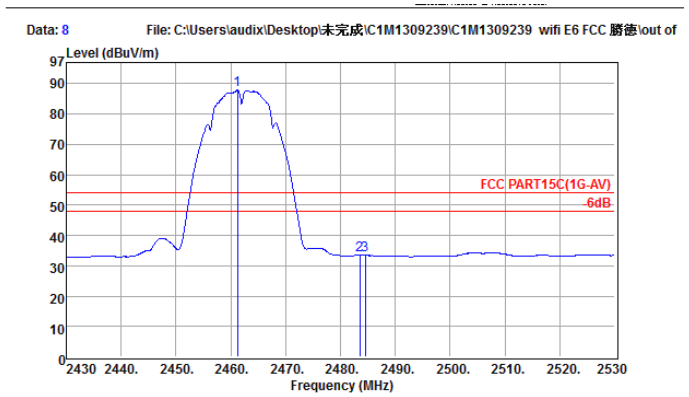
Date of Test：	Oct. 18, 2013	Temperature：	23℃
EUT：	WiFi Smart Plug	Humidity：	62%
Test Mode：	802.11b, Transmit, Channel: 11, Frequency: 2462MHz		



Site no. : Audix NO.1 Chamber Data no. : 7
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART 15C(1G-PK)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2462(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2461.90	28.62	6.42	56.06	91.10	74.00	-17.10	Peak
2	2483.50	28.66	6.45	8.73	43.84	74.00	30.16	Peak
3	2484.50	28.66	6.45	9.91	45.02	74.00	28.98	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : Audix NO.1 Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART15C(1G-AV)
Env. / Ins. : 23*C/42% N9030A(140) Engineer : Jianlun_hung
EUT : WPS1201
Power Rating : AC120V/60Hz
Test Mode : TX2462(802.11 b)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Remark
1	2461.20	28.62	6.42	52.31	87.35	54.00	-33.35	Average
2	2483.50	28.66	6.45	-1.67	33.44	54.00	20.56	Average
3	2484.50	28.66	6.45	-1.67	33.44	54.00	20.56	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

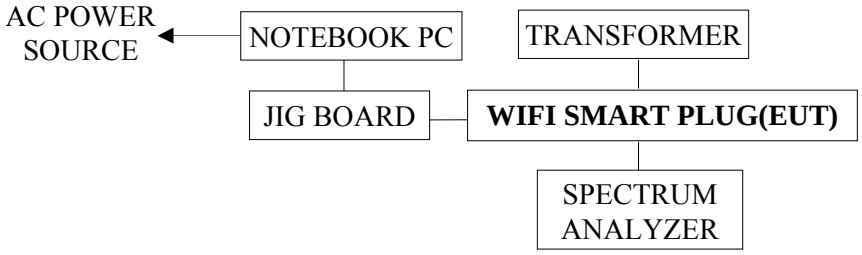
4. 6dB BANDWIDTH MEASUREMENT

4.1. Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	Jul. 30, 13'	Jul. 29, 14'

4.2. Block Diagram of Test Setup



4.3. Specification Limits [§15.247(a)(2)]

The minimum 6dB bandwidth shall be at least 500kHz.

4.4. Operating Condition of EUT

The test program "UTF-8 Teraterm pro" was used to enable the EUT to transmit data at different channel frequency individually.

4.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 1.5% EBW, VBW≥3xRBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.
The measurement guideline was according to KDB 558074 D01 V03.

4.6. Test Results

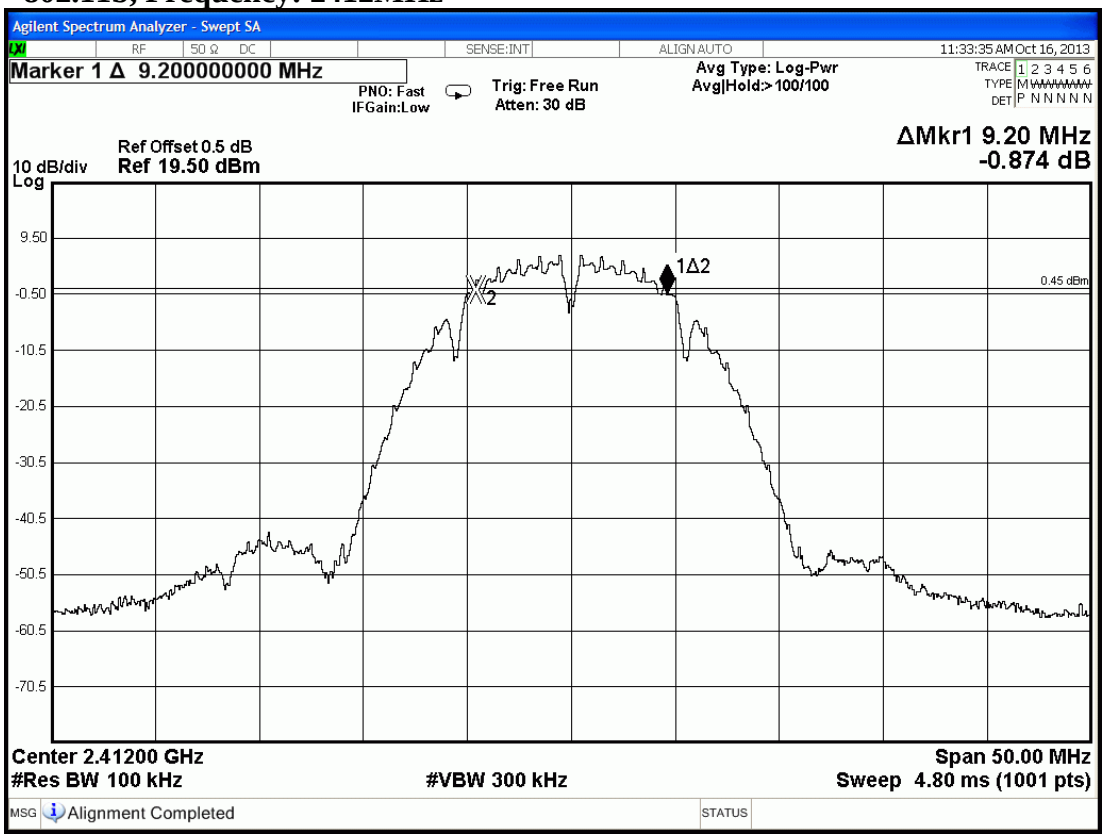
PASSED. All the test results are attached in next pages.

Test Date : Oct. 16, 2013 Temperature : 26℃ Humidity : 50%

Mode	Type of Network	Channel	Frequency	**6dB Bandwidth (MHz)**
1	802.11b	CH 1	2412MHz	**9.20**
2		CH 6	2437MHz	**9.20**
3		CH 11	2462MHz	**9.20**

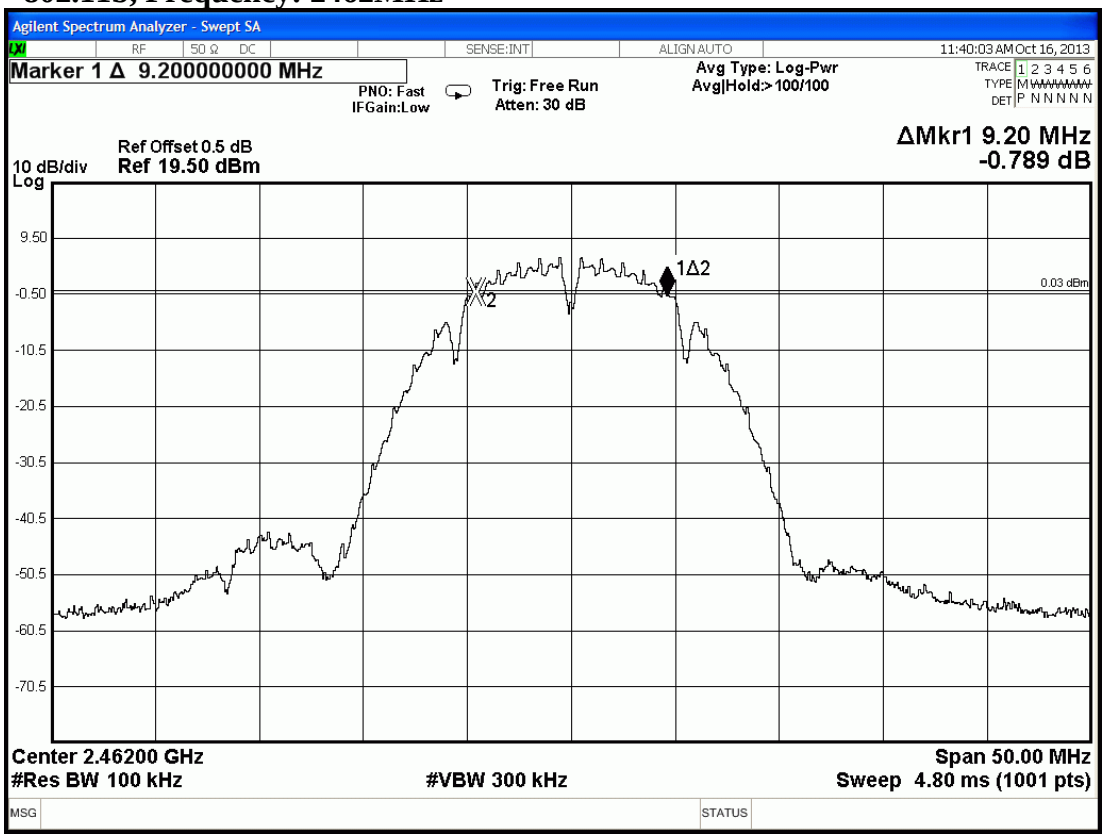
[Limit: least 500kHz]

802.11b, Frequency: 2412MHz



802.11b, Frequency: 2437MHz

802.11b, Frequency: 2462MHz



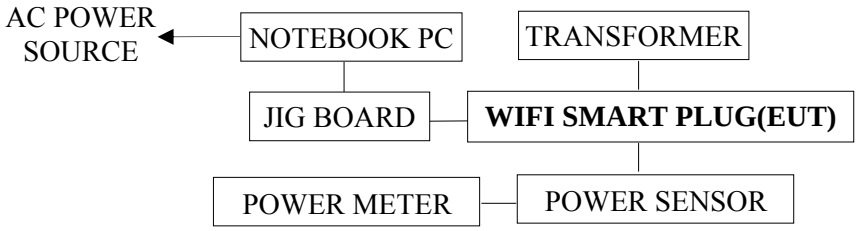
5. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

5.1. Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Power Meter	Anritsu	ML2495A	1145008	Oct. 30, 12'	Oct. 29, 13'
2.	Power Sensor	Anritsu	MA2411B	1126096	Oct. 30, 12'	Oct. 29, 13'

5.2. Block Diagram of Test Setup



5.3. Specification Limits (§15.247(b)-(3))

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5MHz is : 1Watt. (30dBm)

5.4. Operating Condition of EUT

The test program "UTF-8 Teraterm pro" was used to enable the EUT to transmit data at different channel frequency individually.

5.5. Test Procedure

The transmitter output was connected to the power sensor and record the reading of power meter.

The measurement guideline was according to KDB 558074 D01 V03.

5.6. Test Results

PASSED. All the test results are listed below.

Test Date : Oct. 16, 2013 Temperature : 26℃ Humidity : 50%

Mode	Type of Network	Channel	Frequency	**Peak Output Power (dBm)**
1	802.11b	CH 1	2412MHz	**18.74**
2		CH 6	2437MHz	**18.30**
3		CH 11	2462MHz	**18.33**

[Limit: 1Watt. (30dBm)]

6. EMISSION LIMITATIONS MEASUREMENT

Pursuant to KDB 558074 D01 V03 that emission levels below limits specified in 15.209 would not be required.

7. BAND EDGES MEASUREMENT

7.1. Test Equipment

The following test equipment was used during the band edges measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	Jul. 30, 13'	Jul. 29, 14'

7.2. Block Diagram of Test Setup

The same as section.4.2.

7.3. Specification Limits [§15.247(c)]

The highest level should be at least 20 dB below reference level as measured in section 8.6.

7.4. Operating Condition of EUT

The test program "UTF-8 Teraterm pro" was used to enable the EUT to transmit data at different channel frequency individually.

7.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. Set both RBW=100 kHz and VBW to 300kHz with suitable frequency span including 100kHz bandwidth from band edge.

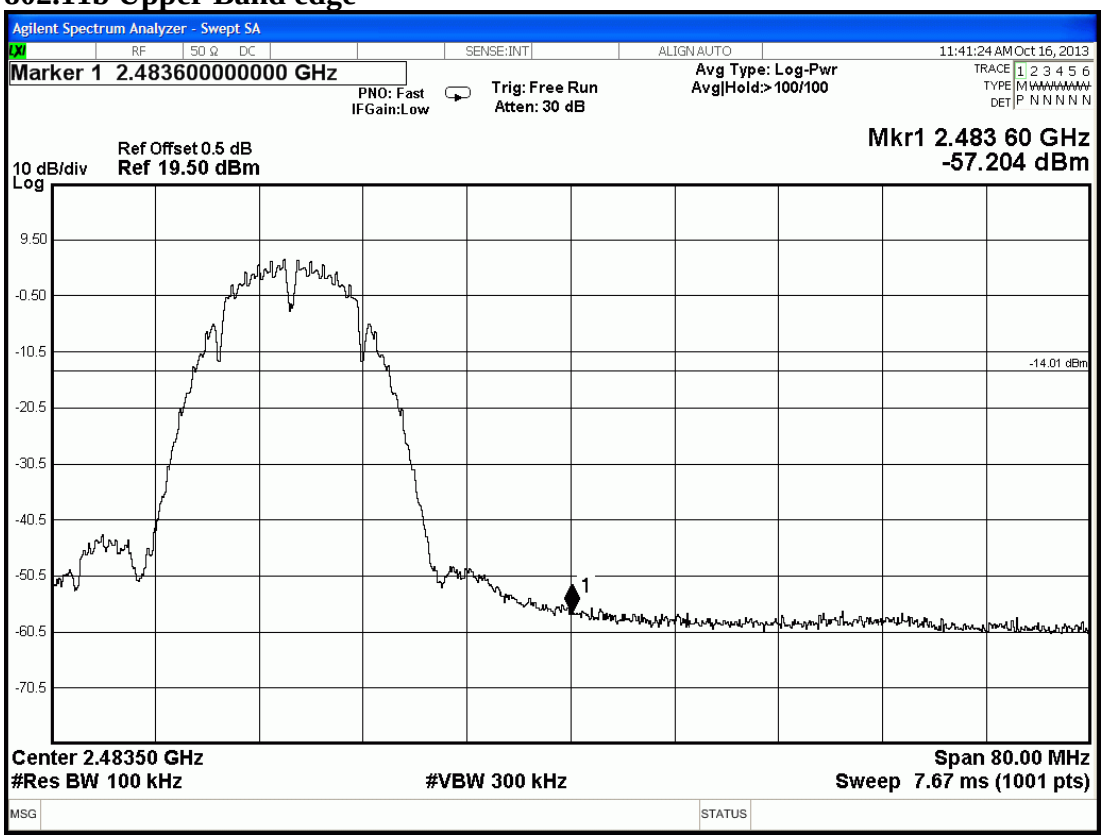
The measurement guideline was according to KDB 558074 D01 V03.

7.6. Test Results

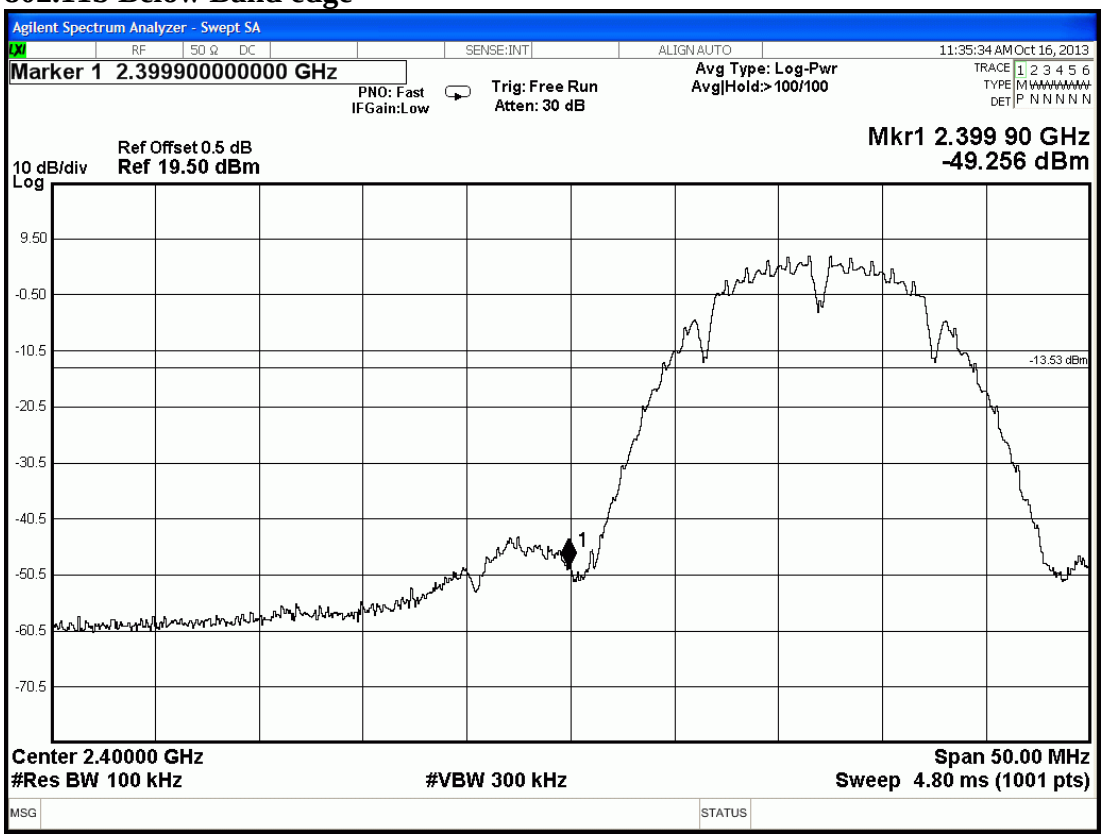
PASSED. All the test results are attached in next pages.

Test Date : Oct. 16, 2013 Temperature : 26℃ Humidity : 50%

802.11b Upper Band edge



802.11b Below Band edge



8. POWER SPECTRAL DENSITY MEASUREMENT

8.1. Test Equipment

The following test equipment was used during the power spectral density measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	Jul. 30, 13'	Jul. 29, 14'

8.2. Block Diagram of Test Setup

The same as section.4.2.

8.3. Specification Limits [§15.247(d)]

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band.

8.4. Operating Condition of EUT

The test program "UTF-8 Teraterm pro" was used to enable the EUT to transmit data at different channel frequency individually.

8.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using 100kHz RBW and ≥300kHz VBW, set sweep time = Auto.

The measurement guideline was according to KDB 558074 D01 V03.

8.6. Test Results

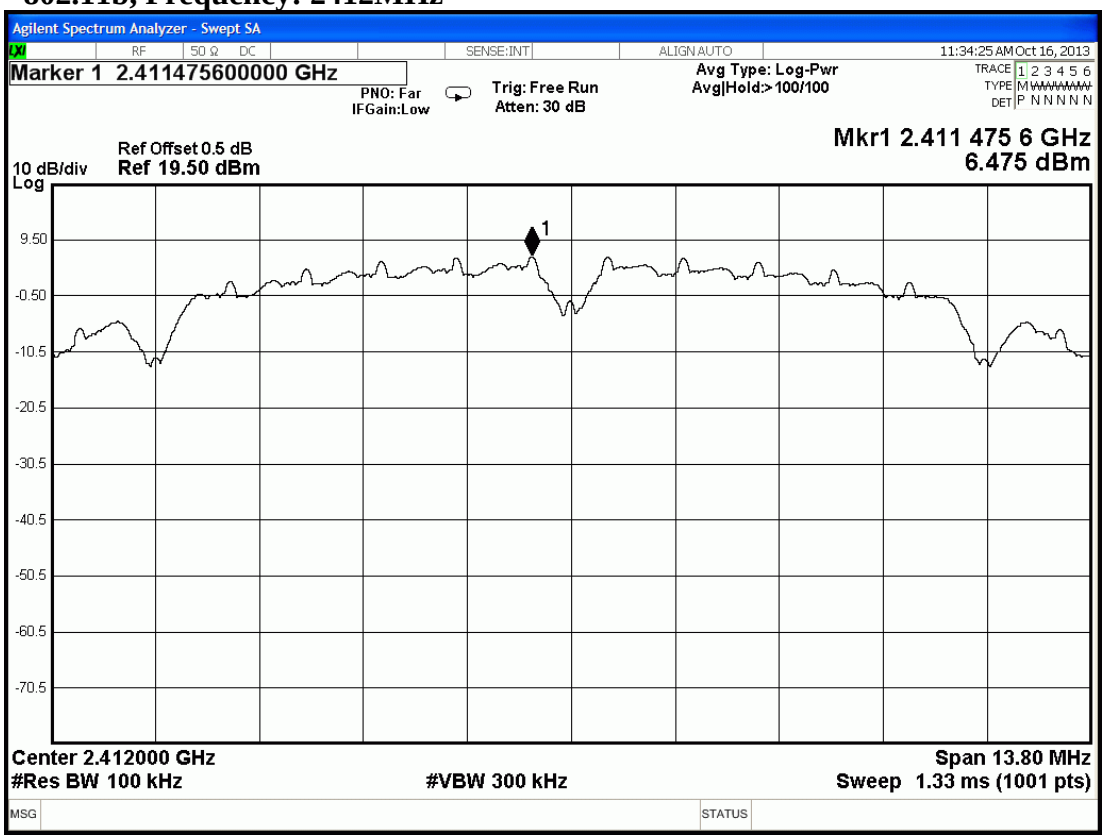
PASSED. All the test results are attached in next pages.

Test Date : Oct. 16, 2013 Temperature : 26℃ Humidity : 50%

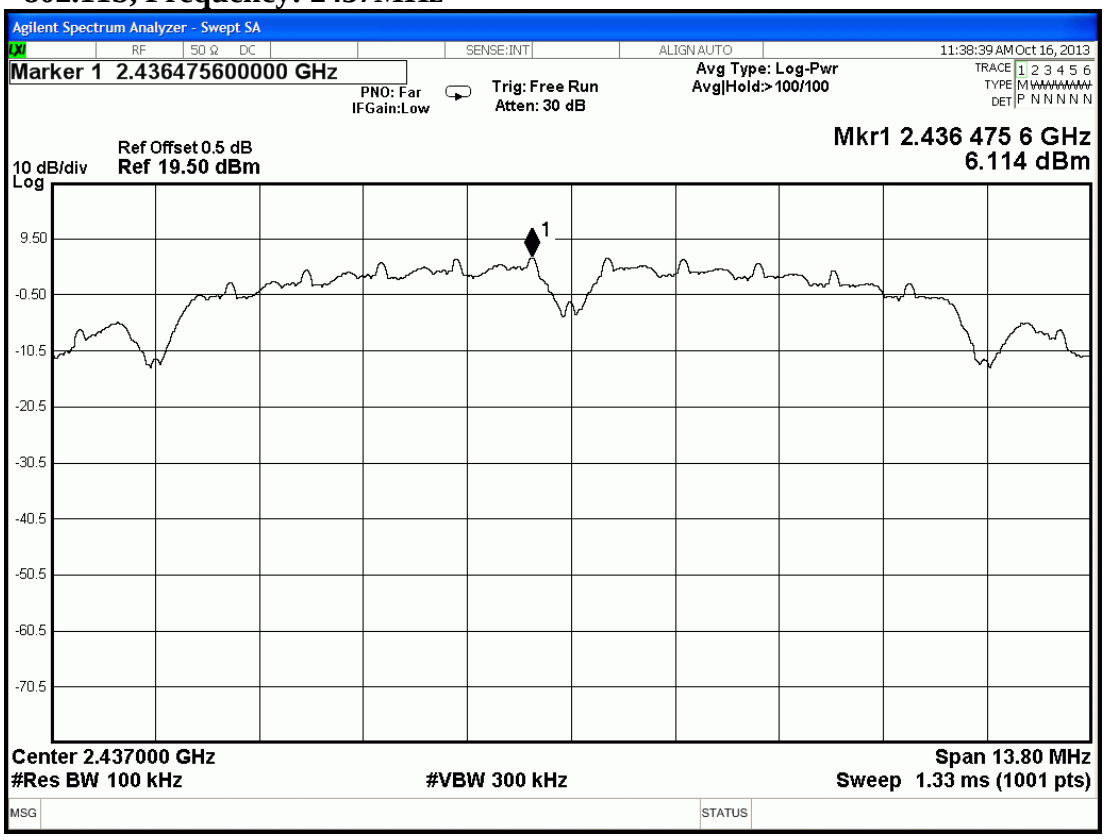
Mode	Type of Network	Channel	Frequency	**Power Spectral Density (dBm)**
1	802.11b	CH 1	2412MHz	**6.475**
2		CH 6	2437MHz	**6.114**
3		CH 11	2462MHz	**5.990**

[Limit: 8dBm]

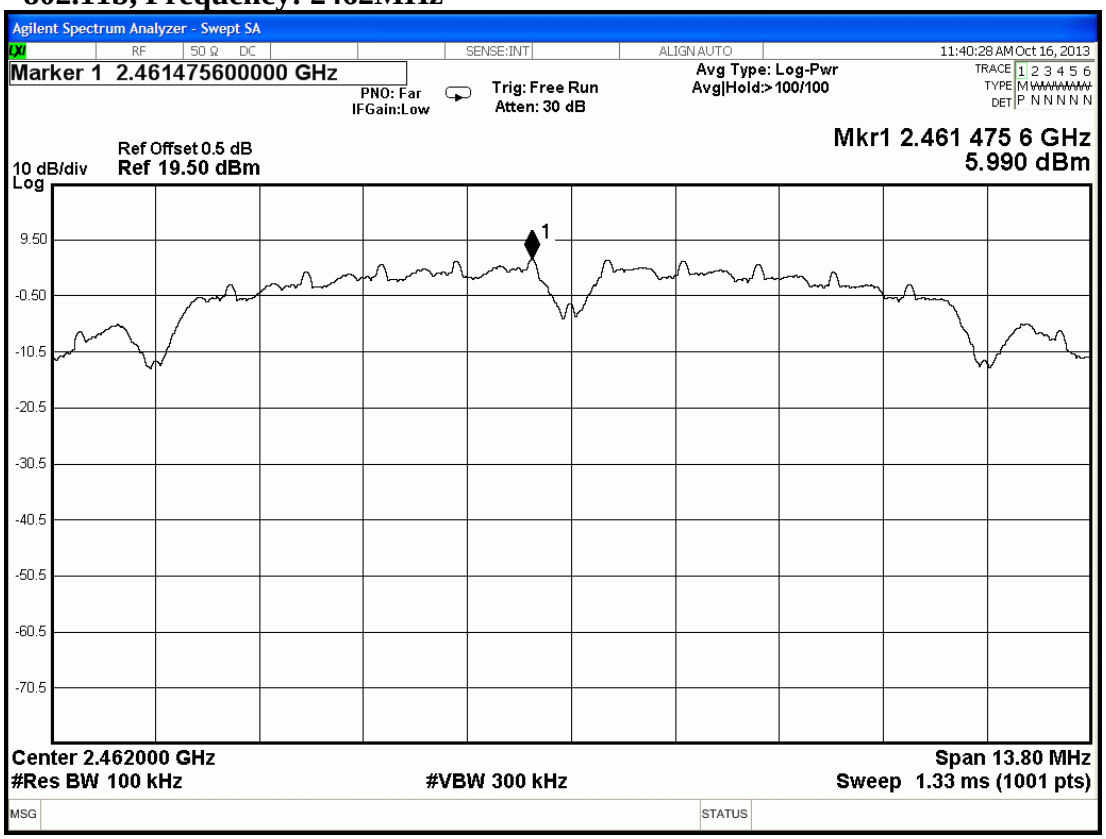
802.11b, Frequency: 2412MHz



802.11b, Frequency: 2437MHz



802.11b, Frequency: 2462MHz



9. DEVIATION TO TEST SPECIFICATIONS

【NONE】

10. PHOTOGRAPHS

10.1. Photos of Conducted Disturbance Measurement

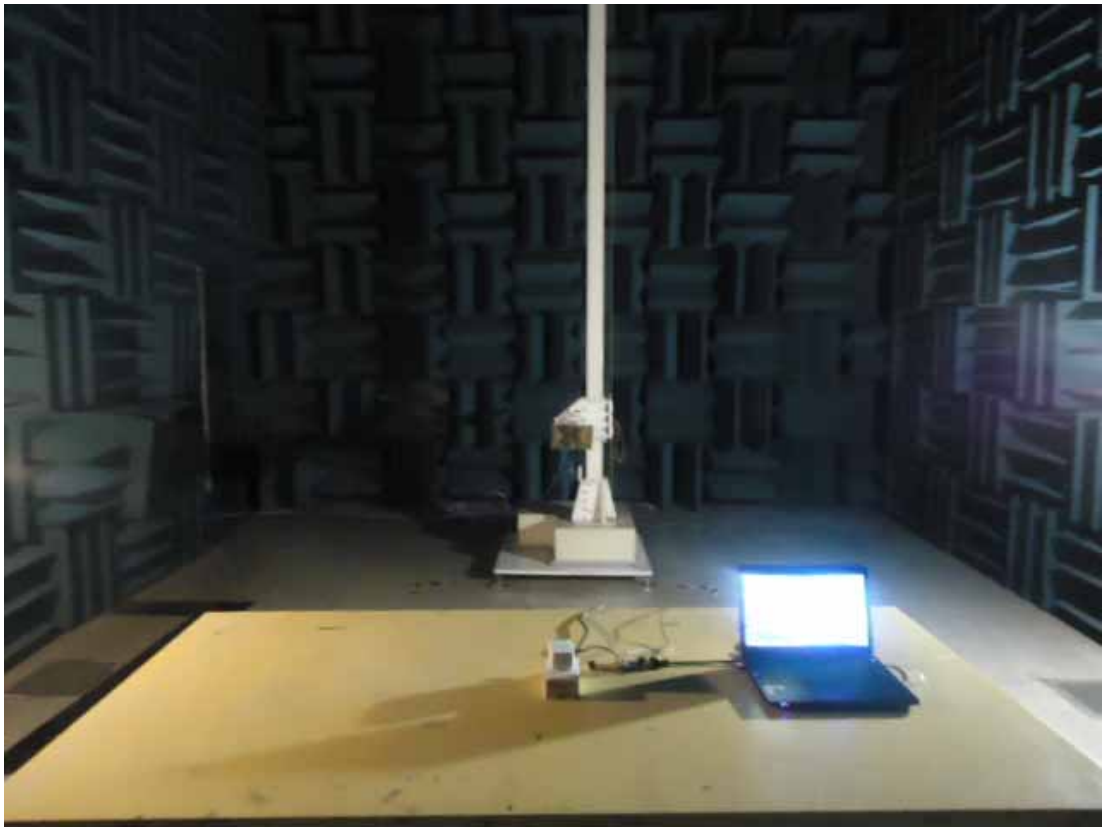
FRONT VIEW OF CONDUCTED MEASUREMENT

BACK VIEW OF CONDUCTED MEASUREMENT

10.2.Photos of Radiated Measurement at Semi-Anechoic Chamber

10.2.1.Frequency Range 30MHz-1GHz

10.2.2. Frequency Range Above 1GHz



10.3.Photo of Section RF Conducted Measurement