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FCC ID: SOV8300 IC ID: 5511A-8300

Report No.: FCCIC10-RTE082001

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# TEST REPORT

Application No.: FCC&IC10-RTE07206RF

Applicant: ARCHOS S.A.

Address of Applicant: 12 Rue Ampere ZI 91430 Igny, France

**FCC ID**: SOV8300 **IC ID**: 5511A-8300

**Fundamental Carrier** 

Frequency: 2.412GHz to 2.462GHz

**Equipment Under Test (EUT):** 

EUT Name: A43 Internet Tablet

Item No.: 8300

Serial No.: Not supplied by client

Standards: FCC PART 15 Subpart C: 2008

RSS-210 Issue 7 July 2007 RSS-Gen Issue 2 July 2007

Date of Receipt: 20 July. 2010

**Date of Test**: 22 July. 2010 to 15 August. 2010

Date of Issue: 20 August. 2010

Test Result : PASS\*

Authorized Signature:

Kavin Yu Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of EBO Technology Approvals or testing done by EBO Technology Approvals in connection with, distribution or use of the product described in this report must be approved by EBO Technology Approvals in writing. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



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## 1 Test Summary

Test	Test Requirement	Standard Paragraph	Result	
	FCC PART 15:2008	Section 15.207	DACC	
Conducted Emissions	RSS-Gen:2007	Section 7.2.2	PASS	
	FCC PART 15:2008	Section 15.205/15.209		
Radiated Emissions	RSS-210:2007 RSS-Gen:2007	A 8.5 Secion 7.2.3	PASS	
Maximum Peak Output	FCC PART 15:2008	Section 15.247 (b)	DACC	
Power	RSS-210:2007	A 8.4(2)	PASS	
	FCC PART 15:2008	Section 15.247 (a2)	DACC	
6dB Occupied Bandwidth	RSS-210:2007	A 8.2(a)	PASS	
99% Occupied Bandwidth	RSS-Gen:2007	Section 4.6	PASS	
Band Edges and Conducted	FCC PART 15:2008	Section 15.247(d)	PASS	
Spurious Emissions	RSS-210:2007	A 8.5	PASS	
Power Spectral Density	FCC PART 15:2008	Section 15.247 (e)	PASS	
Measurement	RSS-210:2007	A 8.2(b)	PASS	
Antenna requirement	FCC PART 15:2008	Section 15.247 (b)	PASS	
RF Exposure Compliance	FCC PART 15:2008	15.247(b)(4)& 1) c) D01 Mobile Portable RF Exposure v04	PASS	
Requirement	RSS-102:2010	Section 2.5.1		

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### 3 General Information

#### 3.1 Client Information

Applicant: ARCHOS S.A.

Address of Applicant: 12 Rue Ampere ZI 91430 Igny, France

#### 3.2 General Description of E.U.T.

Equipment Under Test: Wireless Data Transmission (WiFi)

Trade Name: ARCHOS

Type Designation: A43 Internet tablet

Model Number: 8300

Standards: IEEE802.11b/g/n

Type of modulation(802.11b): DSSS(DBPSK,DQPSK,CCK)

Type of modulation(802.11g): OFDM (BPSK,QPSK,16QAM,64QAM)

Type of modulation(802.11n) OFDM (BPSK,QPSK,16QAM,64QAM)

Max Data Rate: 11Mbps(802.11b),54Mbps(802.11g), 65Mbps(802.11n)

Conducted Power: 11.94dBm(802.11b), 9.22dBm(802.11g), 11.47dBm(802.11n),

Number of Channels: 11

Operation Frequency: 2412 ~2462MHz

Antenna Designation: PCB Antenna

Antenna Gain: 0dBi

Power Supply: Lithium polymer battery 3.7V(The new battery be used during

testing)

Date of Test: July 22,, 2010 to August 15, 2010

Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		

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Note:

Regards to the frequency band over 10MHz, the lowest, middle and highest frequency of channel were selected to perform the test, and then shown on this report.

So the there channel as follow:

Lowest channel: 2412MHz Middle channel: 2437MHz Highest channel: 2462 MHz

#### 3.3 Test Supporting System Details

Equipment Name	Model No.	Manufacturer	FCC Status
PC	M2700	Lenovo	DOC
Monitor	TFT1780PS	AOV	DOC
Printer	LaserJet P2014	HP	DOC
Keyboard	JME7053	Lenovo	DOC
Mouse	N/A	Lenovo	DOC

#### 3.4 Test Location

All tests were sub-contracted to:

ATC Lab Co., Ltd (Guangdong, China).

205#, Yingfeng Building, Ronggu Rd, Foshan, Guangdong, China (528305)

Phone:0757-23612690 Fax:0757-23612537

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#### 3.5 Test Facility

FCC-Registration No.: 415467

ATC Lab Co., Ltd (Guangdong, China) EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 415467. Listing date October 10, 2008.

IC-Registration No.: 7949A

The 3m Alternate Test Site of ATC Lab Co., Ltd (Guangdong, China) has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7949A on Oct. 29th, 2008.

#### 3.6 Measurement Uncertainty

of +/- 3×10<sup>-9</sup> for 6dB and 99% Bandwidth Measurement

of +/- 0.8 dB for Peak Output Power Measurement

of +/- 0.8 dB for Band Edge RF Conducted Measurement

of +/- 0.8 dB for Spurious RF Conducted Emission Measurement

of +/- 0.8 dB for Power Density

of +/- 4.5 dB for Radiated Emissions

of +/- 2.3 dB for Conducted Emissions

#### 3.7 Other Information Requested by the Customer

None

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## 4 Equipment Used during Test

Conducted Em	ission				
No.	Test Equipment	Manufacturer	Mo del No.	Serial No.	Cal. Due Date
GAL-EMC002	Shielding Room	ETS	N/A	N/A	2011-05-18
GAL-EMC003	Receiver	SCHAFFNER	SMR4503	11725	2011-07-08
GAL-EMC005	Line impedance stabilization network	EMCO	4825/2	1161	2011-07-08
GAL-EMC098	Line impedance stabilization network	EMCO	3810/2	2516	2011-07-08
RF in Chambe	1				,
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Due Date
GAL-EMC001	Semi-anechoic Chamber	ETS	N/A	N/A	2011-05-25
GAL-EMC003	Receiver	SCHAFFNER	SMR4503	11725	2011-07-08
GAL-EMC007	Double-ridged Wave guide horn	ETS	3115	6587	2011-08-02
GAL-EMC008	Microwave system amplifier (0.5G-26.5G)	Agilent	83017A	MY39500438	2011-07-08
GAL-EMC017	Biconilog Antenna	ETS	3142C	00042672	2010-09-26
GAL-EMC055	Band-pass Filter	Micro-Tronic	BRM50702	S/N-030	2010-11-09
GAL-EMC056	Spectrum Analyzer 9KHz-30GHz	R&S	FSP30	100755	2010-11-02
GAL-EMC075	Double-ridged Wave guide horn	ETS	3160	00052486	2011-08-02
RF Conducted					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Due Date
GAL-EMC056	Spectrum Analyzer 9KHz-30GHz	R&S	FSP30	100755	2010-11-02
GAL-EMC099	ATC-Lab	N/A	N/A	N/A	2010-11-02

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### 5 Test Results

#### 5.1 Conducted Emissions

Test Requirement: FCC Part15 B Section 15.207

RSS-Gen Section 7.2.2

Test Method: ANSI C63.4:2003 Frequency Range: 150KHz to 30MHz

Class/Severity: Class B

**Detector:** Peak for pre-scan (9 kHz resolution bandwidth)

**Test Mode:** Normal operation mode (PC Active with the EUT under WIFI mode)

Test Voltage: 120Vac,60Hz
Test Date: 22 July. 2010

Temperature:  $24^{\circ}C$  Humidity: 54%

Limit: a) Except as shown in paragraphs (b) and (c) of this section, for an

intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu\text{H}/50$  ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit

applies at the boundary between the frequency ranges

Frequency of Emission (MHz)	Conducted Limit (dBuV)		
	Quasi-peak	Average	
0.15-0.5	66 to 56 *	56 to 46 *	
0.5-5	56	46	
5-30	60	50	

<sup>\*</sup> Decreases with the logarithm of the frequency.

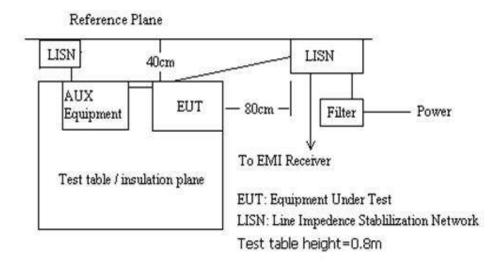
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#### 5.1.1 Test Setup



#### 5.1.2Test Procesure

The Device was conneted to the artifical main network via PC( refer to section 3.3 for details), And test the EUT with actived in WIFI transmit mode.

#### 5.1.3Measurement Data

Measure the maximised peak emissions from the EUT for both the Live and Neutral Lines. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Frequency (MHz)	Line	Measured QP (dBuV)	QP Limit (dBuV)	Measured AV (dBuV)	AV Limit (dBuV)	Over Limit QP	Over Limit AV
0.1650	L	40.90	65.13	12.30	55.13	-24.23	-42.83
0.2650	L	29.30	61.23	13.40	51.23	-31.93	-37.83
0.3600	L	26.20	58.71	17.20	48.71	-32.51	-31.51
2.1800	L	23.10	56.00	15.90	46.00	-32.90	-30.10
7.7500	L	26.60	60.00	17.40	50.00	-33.40	-32.60
10.6100	L	28.10	60.00	21.10	50.00	-31.90	-28.90
0.1500	N	44.30	65.92	29.30	55.92	-21.62	-26.62
0.2150	N	35.00	62.95	15.80	52.95	-27.95	-37.15
2.1850	N	24.40	56.00	23.00	46.00	-31.60	-23.00
7.8650	Ν	28.80	60.00	23.70	50.00	-31.20	-26.30
8.2300	N	29.20	60.00	23.40	50.00	-30.80	-26.60
10.7800	N	30.50	60.00	25.20	50.00	-29.50	-24.80

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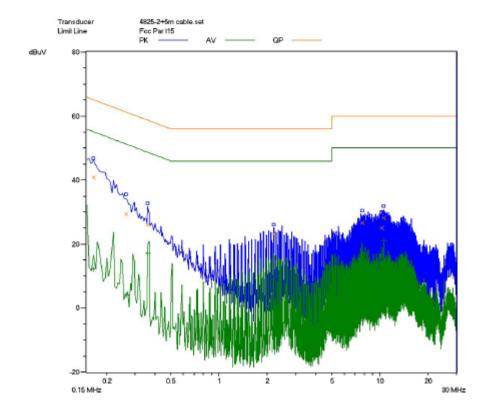


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#### **Live Line**

Type		A43	
Frequency Rang	ge(s)		Range 1
Start Frequency			150 kHz
Stop Frequency			30 MHz
Step Frequency	/		5 kHz
Attenuator			Auto
Detector	(Pre)		AV CISPR
IF Bandwidth	(Pre)		9 kHz
Measure Time	(Pre)		10 ms
Detector	(Final)		QP
IF Bandwidth	(Final)		9 kHz
Measure Time	(Final)		1 s
Sub Ranges	(Final)		20



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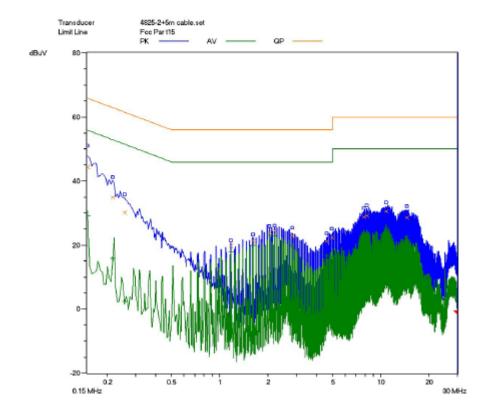


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#### **Nuetral Line**

Туре		A43	
Frequency Rang	o(s)		Range 1
Start Frequency			150 kHz
Stop Frequency			30 MHz
Step Frequency			5 kHz
Attenuator			Auto
Detector	(Pre)		AV CISPR
IF Bandwidth	(Pre)		9 kHz
Measure Time	(Pre)		10 ms
Detector	(Final)		QP
IF Bandwidth	(Final)		9 kHz
Measure Time	(Final)		1 s
Sub Ranges	(Final)		20



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#### 5.2 Radiated Emissions

FCC Part15 C Section 15.247,15.209 and 15.205 **Test Requirement:** 

RSS-210 A 8.5 and RSS-Gen Section 7.2.3

**Test Method:** ANSI C63.4:2003 30MHz to 25GHz Frequency Range:

QP Detector (RBW=120 kHz, VBW=300kHz) for 30 to 1000 MHz RE testing **Receiver Setup:** 

Peak Detector(RBW=1MHz,VBW=3MHz) for 1 to 25 GHz RE Peak value testing

Peak Detector(RBW=1MHz, VBW=10Hz) for 1 to 25 GHz RE AV value testing

Test Mode: WIFI transmit and receiver mode

**Test Date:** 22 July. 2010 to 30 July. 2010

Temperature: 23℃~25℃ 50%~56% **Humidity:** 

Limit: The field strength of radiated emissions from unintentional radiators at a distance

of 3 meters shall not exceed the following values:

Frequency of Emission	Field Strength		
(MHz)	(microvolts/meter)	dB (μV/m)	
30 - 88	100	40(QP)	
88 - 216	150	43.5(QP)	
216 - 960	200	46(QP)	
960-1000	500	54(QP)	
Above 1000	500	54(AV)	
		74(PK)	

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#### 5.2.1 Test Setup

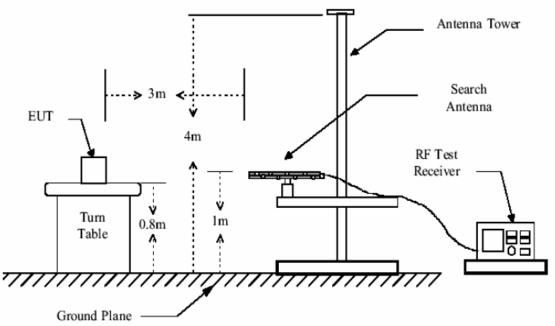


Figure 1: 30MHz to 1GHz radiated emissions test setup

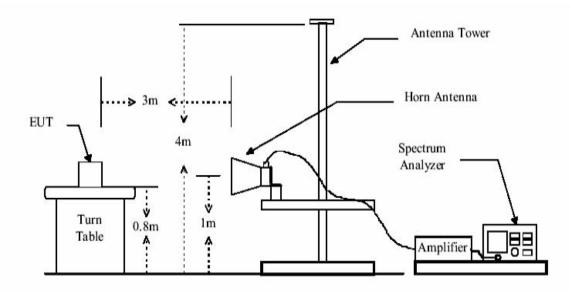


Figure 2: Above 1GHz radiated emissions test setup

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#### **5.2.2Test Prosesure**

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until all frequency measured were complete.

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain

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#### 5.2.3Measurement Data

#### Radiated Emission below 1GHz

WIFI with receiving modes

Frequency	Antenna	Reading	Ant./CL/	Measured	QP Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
	-		(dB)	(dBuV/m)			
Below 1GHz	Н	_	_	_	_	Less than	Pass
Below 1GHz	V	-		_		-30	Pass

Set the WIFI model, pre-scan all channels of the WIFI with transmitting, and found out the 802.11b transmitting mode, channel 11which it is worse case.

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	QP Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
36.720	Н	-3.57	18.77	15.20	40.00	-24.80	Pass
280.960	Н	6.40	14.10	20.50	43.50	-23.00	Pass
498.320	Н	-6.60	19.20	12.60	46.00	-33.40	Pass
594.640	Н	-5.80	20.90	15.10	46.00	-30.90	Pass
626.000	Н	-3.60	22.20	18.60	46.00	-27.40	Pass
824.800	Н	-4.92	24.52	19.60	46.00	-26.40	Pass
35.920	V	-3.17	18.77	15.60	40.00	-24.40	Pass
290.230	V	5.68	14.12	19.80	43.50	-23.70	Pass
475.580	V	-6.80	19.20	12.40	46.00	-33.60	Pass
619.600	V	-3.60	22.20	18.60	46.00	-27.40	Pass
806.080	V	-5.12	24.52	19.40	46.00	-26.60	Pass
957.280	V	-4.10	26.00	21.90	46.00	-24.10	Pass

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#### **Radiated Emission Above 1GHz**

Set the WIFI model, pre-scan all channels of the WIFI receiving modes, and found out the 802.11b receiving modes, channel 11 which it is worse case.

#### Peak Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	PK Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
2462.000	Н	38.36	-0.54	37.82	74.00	-36.18	Pass
-	-	-	-	-	-	-	-
1	-	-	1	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
2462.000	V	39.50	-0.54	38.96	74.00	-35.04	Pass
-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
•	-	-	-	-	-	-	-

Average Measurement

verage incast	41 01110110						
Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
2462.000	Н	30.12	-0.54	29.58	54.00	-24.42	Pass
-	ı	-	1	-	1	-	-
-	-	-	-	-	-	-	-
-	ı	-	1	-	1	-	-
-	-	-	1	-	-	-	-
-	ı	-	ı	-	-	-	-
2462.000	V	29.35	-0.54	28.81	54.00	-25.19	Pass
-	-	-	-	-	-	-	-
-	ı	-	1	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Pre-scan all kind of data rate in WIFI with transmitting, and found the worse case which it is 11Mbps of 802.11b mode ,54Mbps of 802.11g mode and 65Mbps of 802.11n with transmitting.

Transmitting mode (802.11b lowest channel=2412MHz)

#### **Peak Measurement**

Frequency	Antenna	Reading	Ant./CL/	Measured	PK Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1068.000	Н	44.29	-5.10	39.19	74.00	-34.81	Pass
4824.000	Н	40.75	6.10	46.85	74.00	-27.15	Pass
7236.000	Н	40.67	11.80	52.47	74.00	-21.53	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	1	-	-
1078.000	V	45.60	-5.10	40.50	74.00	-33.50	Pass
4824.000	V	40.54	6.10	46.64	74.00	-27.36	Pass
7236.000	V	42.44	11.80	54.24	74.00	-19.76	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1068.000	Н	31.56	-5.10	26.46	54.00	-27.54	Pass
4824.000	Н	30.42	6.10	36.52	54.00	-17.48	Pass
7236.000	Н	28.46	11.80	40.26	54.00	-13.74	Pass
_	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1078.000	V	32.47	-5.10	27.37	54.00	-26.63	Pass
4824.000	V	29.84	6.10	35.94	54.00	-18.06	Pass
7236.000	V	29.60	11.80	41.40	54.00	-12.60	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11b middle channel=2437MHz)

#### **Peak Measurement**

Frequency	Antenna	Reading	Ant./CL/	Measured	PK Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1102.000	Н	43.72	-5.10	45.13	74.00	-28.87	Pass
4874.000	Н	40.65	6.10	41.10	74.00	-32.90	Pass
7311.000	Н	41.28	11.92	41.21	74.00	-32.79	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1223.000	V	44.94	-4.90	40.04	74.00	-33.96	Pass
4874.000	V	41.82	6.10	47.92	74.00	-26.08	Pass
7311.000	V	41.93	11.92	53.85	74.00	-20.15	Pass
_	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
		-					
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1102.000	Н	30.14	-5.10	25.04	54.00	-28.96	Pass
4874.000	Н	29.80	6.10	35.90	54.00	-18.10	Pass
7311.000	Н	27.68	11.92	39.60	54.00	-14.40	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	1	-	-
1223.000	V	31.24	-4.90	26.34	54.00	-27.66	Pass
4874.000	V	29.70	6.10	35.80	54.00	-18.20	Pass
7311.000	V	28.60	11.92	40.52	54.00	-13.48	Pass
-	-	-	-	-	-	_	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11b highest channel=2462MHz)

#### **Peak Measurement**

Frequency	Antenna	Reading	Ant./CL/	Measured	PK Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1105.000	Н	44.62	-5.10	39.52	74.00	-34.48	Pass
4924.000	Н	40.66	6.10	46.76	74.00	-27.24	Pass
7386.000	Н	41.39	12.10	53.49	74.00	-20.51	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1348.000	V	44.31	-4.70	39.61	74.00	-34.39	Pass
4924.000	V	40.82	6.10	46.92	74.00	-27.08	Pass
7386.000	V	40.66	12.10	52.76	74.00	-21.24	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1105.000	Н	29.65	-5.10	24.55	54.00	-29.45	Pass
4924.000	Н	28.74	6.10	34.84	54.00	-19.16	Pass
7386.000	Н	26.44	12.10	38.54	54.00	-15.46	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1348.000	V	30.51	-4.70	25.81	54.00	-28.19	Pass
4924.000	V	27.80	6.10	33.90	54.00	-20.10	Pass
7386.000	V	26.80	12.10	38.90	54.00	-15.10	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11g lowest channel=2412MHz)

#### **Peak Measurement**

Frequency	Antenna	Reading	Ant./CL/	Measured	PK Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1117.000	Н	46.25	-5.10	41.15	74.00	-32.85	Pass
4824.000	Н	42.43	6.10	48.53	74.00	-25.47	Pass
7236.000	Н	41.04	11.80	52.84	74.00	-21.16	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1377.000	V	44.68	-4.70	39.98	74.00	-34.02	Pass
4824.000	V	40.42	6.10	46.52	74.00	-27.48	Pass
7236.000	V	40.37	11.80	52.17	74.00	-21.83	Pass
-	-	-	-	-	ı	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
		-					
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1117.000	Н	31.96	-5.10	26.86	54.00	-27.14	Pass
4824.000	Н	30.12	6.10	36.22	54.00	-17.78	Pass
7236.000	Н	27.86	11.80	39.66	54.00	-14.34	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1377.000	V	30.62	-4.70	25.92	54.00	-28.08	Pass
4824.000	V	29.88	6.10	35.98	54.00	-18.02	Pass
7236.000	V	25.78	11.80	37.58	54.00	-16.42	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11g middle channel=2437MHz)

#### **Peak Measurement**

Frequency	Antenna	Reading	Ant./CL/	Measured	PK Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1078.000	Н	46.07	-5.10	40.97	74.00	-33.03	Pass
4874.000	Н	40.92	6.10	47.02	74.00	-26.98	Pass
7311.000	Н	42.13	11.92	54.05	74.00	-19.95	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1272.000	V	44.16	-4.90	39.26	74.00	-34.74	Pass
4874.000	V	40.75	6.10	46.85	74.00	-27.15	Pass
7311.000	V	42.33	11.92	54.25	74.00	-19.75	Pass
-	-	-	-	-	ı	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1078.000	Н	32.14	-5.10	27.04	54.00	-26.96	Pass
4874.000	Η	28.46	6.10	34.56	54.00	-19.44	Pass
7311.000	Н	26.35	11.92	38.27	54.00	-15.73	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1272.000	V	29.88	-4.90	24.98	54.00	-29.02	Pass
4874.000	V	28.64	6.10	34.74	54.00	-19.26	Pass
7311.000	V	26.30	11.92	38.22	54.00	-15.78	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11g highest channel=2462MHz)

#### **Peak Measurement**

Frequency	Antenna	Reading	Ant./CL/	Measured	PEAK Limit	Over		
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail	
			(dB)	(dBuV/m)				
1110.000	Н	45.54	-5.10	40.44	74.00	-33.56	Pass	
4924.000	Н	41.95	6.10	48.05	74.00	-25.95	Pass	
7386.000	Н	41.06	12.10	53.16	74.00	-20.84	Pass	
-	-	-	-	-	1	-	-	
-	-	-	-	-	-	-	-	
-	-		-	-	-	1	-	-
1076.000	V	45.15	-5.20	39.95	74.00	-34.05	Pass	
4924.000	V	41.28	6.10	47.38	74.00	-26.62	Pass	
7386.000	V	40.71	12.10	52.81	74.00	-21.19	Pass	
-	-	-	-	-	1	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	

Average Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1110.000	Н	27.68	-5.10	22.58	54.00	-31.42	Pass
4924.000	Н	28.14	6.10	34.24	54.00	-19.76	Pass
7386.000	Н	27.36	12.10	39.46	54.00	-14.54	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1076.000	V	28.88	-5.20	23.68	54.00	-30.32	Pass
4924.000	V	26.50	6.10	32.60	54.00	-21.40	Pass
7386.000	V	27.26	12.10	39.36	54.00	-14.64	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11n lowest channel=2412MHz)

#### **Peak Measurement**

Frequency	Antenna	Reading	Ant./CL/	Measured	PEAK Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1102.000	Н	44.42	-5.10	39.32	74.00	-34.68	Pass
4824.000	Η	40.69	6.10	46.79	74.00	-27.21	Pass
7236.000	Н	41.39	11.80	53.19	74.00	-20.81	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-		-	-	-	-	-
1102.000	V	44.84	-5.10	39.74	74.00	-34.26	Pass
4824.000	V	40.91	6.10	47.01	74.00	-26.99	Pass
7236.000	V	41.01	11.80	52.81	74.00	-21.19	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1102.000	Н	28.68	-5.10	23.58	54.00	-30.42	Pass
4824.000	Н	26.41	6.10	32.51	54.00	-21.49	Pass
7236.000	Н	27.56	11.80	39.36	54.00	-14.64	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1102.000	V	28.97	-5.10	23.87	54.00	-30.13	Pass
4824.000	V	27.14	6.10	33.24	54.00	-20.76	Pass
7236.000	V	26.30	11.80	38.10	54.00	-15.90	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11n middle channel=2437MHz)

#### **Peak Measurement**

Frequency	Antenna	Reading	Ant./CL/	Measured	PEAK Limit	Over		
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail	
			(dB)	(dBuV/m)				
1238.000	Н	44.68	-4.90	39.78	74.00	-34.22	Pass	
4874.000	Н	40.18	6.10	46.28	74.00	-27.72	Pass	
7311.000	Н	41.71	11.92	53.63	74.00	-20.37	Pass	
-	-	-	-	-	1	-	-	
-	-	-	-	-	-	-	-	
-	-		-	-	-	-	-	-
1136.000	V	44.79	-5.10	39.69	74.00	-34.31	Pass	
4874.000	V	40.21	6.10	46.31	74.00	-27.69	Pass	
7311.000	V	41.50	11.92	53.42	74.00	-20.58	Pass	
-	-	-	-	-	_	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	

Average Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1238.000	Н	29.05	-4.90	24.15	54.00	-29.85	Pass
4874.000	Н	26.77	6.10	32.87	54.00	-21.13	Pass
7311.000	Н	26.43	11.92	38.35	54.00	-15.65	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1136.000	V	28.80	-5.10	23.70	54.00	-30.30	Pass
4874.000	V	27.04	6.10	33.14	54.00	-20.86	Pass
7311.000	V	26.59	11.92	38.51	54.00	-15.49	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11n highest channel=2462MHz)

#### **Peak Measurement**

Frequency	Antenna	Reading	Ant./CL/	Measured	PEAK Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1374.000	Н	45.00	-4.80	40.20	74.00	-33.80	Pass
4924.000	Н	41.91	6.10	48.01	74.00	-25.99	Pass
7386.000	Н	41.65	12.10	53.75	74.00	-20.25	Pass
-	-	-	-	-	1	-	-
-	ı	-	ı	-	ı	ı	-
-	-		-	-	1	-	-
1207.000	V	45.21	-5.00	40.21	74.00	-33.79	Pass
4924.000	V	40.94	6.10	47.04	74.00	-26.96	Pass
7386.000	V	40.99	12.10	53.09	74.00	-20.91	Pass
-	-	-	-	-	1	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency	Antenna	Reading	Ant./CL/	Measured	AV Limit	Over	
(MHz)	Polarity	(dBuV/m)	Amp.CF	Level	(dBuV/m)	Limit(dB)	Pass /Fail
			(dB)	(dBuV/m)			
1374.000	Н	28.40	-4.80	23.60	54.00	-30.40	Pass
4924.000	Н	26.58	6.10	32.68	54.00	-21.32	Pass
7386.000	Н	26.41	12.10	38.51	54.00	-15.49	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1207.000	V	28.10	-5.00	23.10	54.00	-30.90	Pass
4924.000	V	27.24	6.10	33.34	54.00	-20.66	Pass
7386.000	V	26.53	12.10	38.63	54.00	-15.37	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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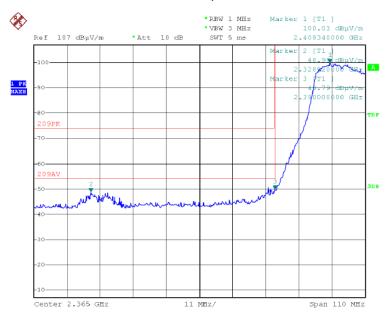
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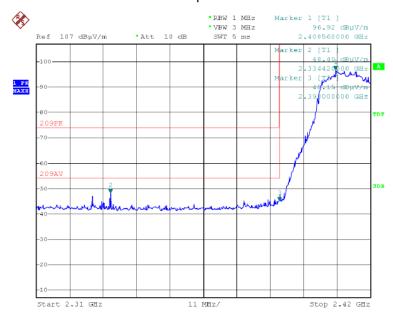
#### **Band Edge and Restriced band (Radiated measurement)**

Set the WIFI mode, pre-scan all channels of the WIFI, and found the 802.11n mode which it is worse case. Transmitting with 802.11n mode (Lowest channel=2412MHz)

Peak Measurement in Horizontal polarization



#### Peak Measurement in Vertical polarization



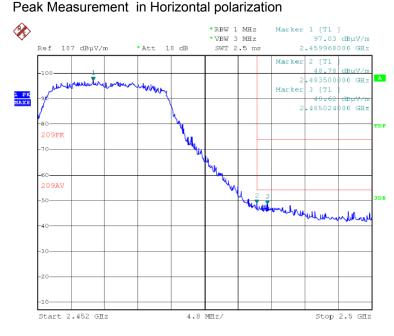
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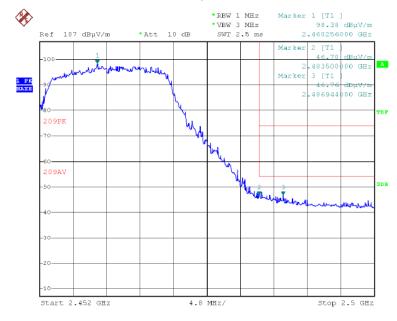
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# Transmitting with 801.11n mode (Highest channel=2462MHz)



#### Peak Measurement in Vertical polarization



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#### Remark 1:

No any other emissions level which are attenuated less than 20dB below the limit According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part. Hence there no other emissions have been reported.

#### Remark 2:

- 1). As shown in Section, for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.
- 2). The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.
- 3) Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates and antenna ports, and found the EUT worse case mode: 802.11b (11MHz), 802.11g (54MHz), 802.11n (65MHz)
- 4) For this intentional radiator operates below 25 GHz. The spectrum shall be investigated to the tenth harmonic of the highest fundamental frequency. And above the 4th harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 4th harmonic.

Remark 3: Section 15.205 Restricted bands of operation.

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	12.51975 - 12.52025 167.72 - 173.2		36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41	322 - 335.4		

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions,or comply with 15.209 limits.

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#### 5.3 Maximun Peak Output Power

**Test Requirement:** FCC 15.247(b)

RSS-210 A 8.4(2)

**Test Method:** ANSI C63.4:2003 and KDB558074.

Method of Measurement: The EUT was setup to ANSI C63.4, 2003, tested to DTS test

procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR

15.247 requirements.

**Select test data rate:** 11Mbps(802.11b) & 54Mbps(802.11g) & 65Mbps(802.11n)

**Detector:** RBW=1 MHz, VBW=3 MHz (Peak detector)

Test Mode: WIFI transmitting mode

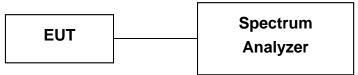
**Power Supply:** Lithium polymer battery 3.7V (The new battery be used during testing)

Test Date: 03 August. 2010

Temperature:  $25^{\circ}\text{C}$  Humidity: 53%

Limit: The Limit of Maximum Peak Output Power Measurement is 30dBm.

#### 5.3.1Test Setup



#### 5.3.2Test Procedure

Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps, 802.11g 6/9/12/18/24/36/48/54Mbps and 802.11n 6.5/13/19.5/26/39/52/58.5/65Mbps ). Following channel(s) was (were) selected for the final test as listed below.

802.11b 11Mbps, 802.11g 54Mbps and 802.11n 65Mbps

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#### 5.3.3Measurement Data

For EUT communicating with 802.11b Mode

٠.	OI LOT COMMINATION	of Lot confinding with 602.11b Mode											
	Chanel	Peak Output	Cable Loss	Power	Limit	Over Limit							
	Frequency	Power(dBm)	(dB)	level(dBm)	(dBm)	(dB)							
	(GHz)												
	2.412	11.27	0.5	11.77	30.00	-18.23							
	2.437	11.10	0.5	11.60	30.00	-18.40							
	2.462	11.44	0.5	11.94	30.00	-18.06							

For EUT communicating with 802.11g Mode

-	of Eo T continuating with coz. Fig Mode						
	Chanel	Peak Output	Cable Loss	Power	Limit	Over Limit	
	Frequency	Power(dBm)	(dB)	level(dBm)	(dBm)	(dB)	
	(GHz)						
L	-						
L	2.412	8.72	0.5	9.22	30.00	-20.78	
Γ	2.437	7.59	0.5	8.09	30.00	-21.91	
	2.462	8.30	0.5	8.80	30.00	-21.20	

For EUT communicating with 802.11n Mode

	of Eo 1 confinial floating with coz. i in wede						
	Chanel	Peak Output	Cable Loss	Power	Limit	Over Limit	
	Frequency	Power(dBm)	(dB)	level(dBm)	(dBm)	(dB)	
	(GHz)						
┝			_				
	2.412	7.80	0.5	8.30	30.00	-21.70	
	2.437	8.89	0.5	9.39	30.00	-20.61	
	2.462	8.73	0.5	9.23	30.00	-20.77	

Test result: The unit does meet the requirements.

Test result plot as follows:

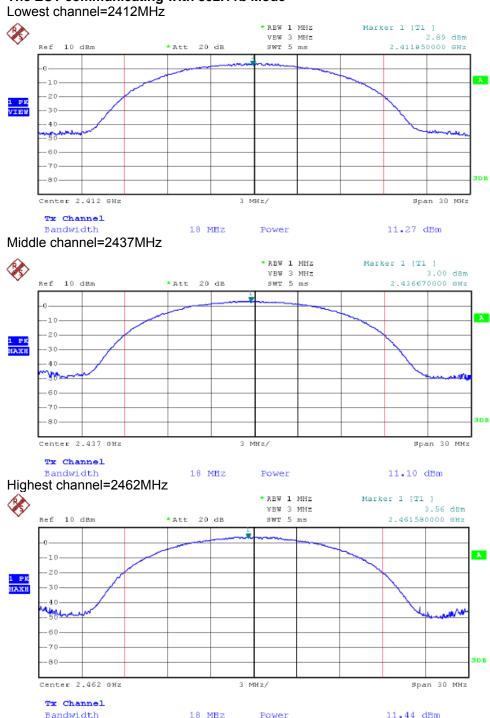
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### The EUT communicating with 802.11b Mode



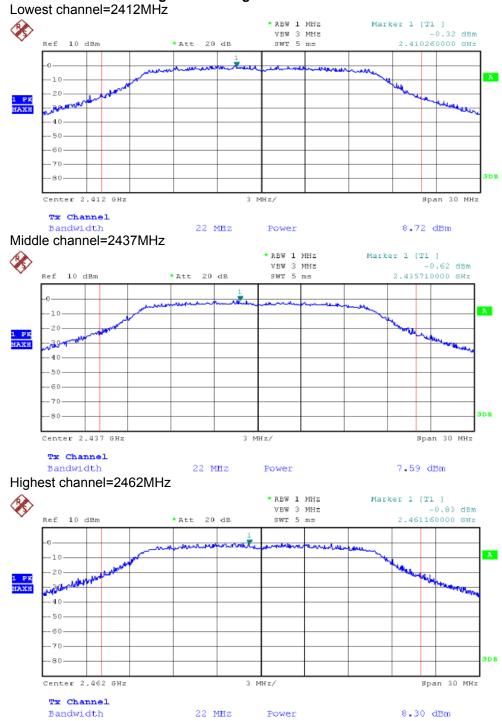
FCC ID: SOV 8300 IC ID: 5511A-8300



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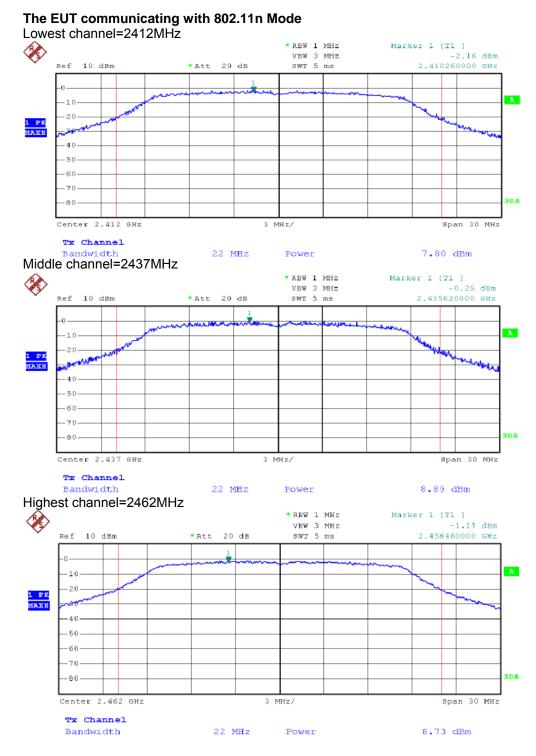


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#### 5.4 6dB Occupied Bandwidth

**Test Requirement:** FCC 15.247(b)

RSS-210 A 8.2(a)

**Test Method:** ANSI C63.4:2003 and KDB558074.

Method of Measurement: The transmitter output was connected to the spectrum analyzer through

an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer. The 6 dB bandwidth isdefined as the total spectrum the power of which is higher than peak power minus 6 dB. Analyzer andthe attached plot were taken. The EUT was setup to ANSI C63.4, 2003, tested to DTS test procedure Oct 2002 KDB558074 for

compliance with FCC 47CFR 15.247 requirements.

**Select test data rate:** 11Mbps(802.11b) & 54Mbps(802.11g) & 65Mbps(802.11n)

**Detector:** RBW=100kHz,VBW=300 kHz (Peak detector)

Test Mode: WIFI transmitting mode

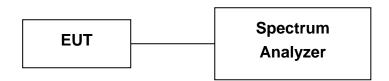
Test Date: 06 August. 2010

Temperature: 23°C

Humidity: 52%

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

#### 5.4.1 Test Setup



#### 5.4.2Test Procedure

Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps, 802.11g

6/9/12/18/24/36/48/54Mbps and 802.11n 6.5/13/19.5/26/39/52/58.5/65Mbps ). Following channel(s) was (were) selected for the final test as listed below.

802.11b 11Mbps, 802.11g 54Mbps and 802.11n 65Mbps

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#### 5.4.3 Measurement Data

For EUT communicating with 802.11b Mode

1 of 201 communicating with 602.115 wede					
Chanel Frequency (GHz)	6 dB Bandwidth (MHz)	Minimun Limit (MHz)	Pass/Fail		
2.412	9.88	0.5	Pass		
2.437	9.44	0.5	Pass		
2.462	10.04	0.5	Pass		

For EUT communicating with 802.11g Mode

TOT LOT COMMISSION	j mar eez. i ig mede			
Chanel Frequency (GHz)	6 dB Bandwidth (MHz)	Minimun Limit (MHz)	Pass/Fail	
2.412	16.36	0.5	Pass	
2.437	16.36	0.5	Pass	
2.462	16.40	0.5	Pass	

For EUT communicating with 802.11n Mode

	ga. eeeae			
Chanel Frequency (GHz)	6 dB Bandwidth (MHz)	Minimun Limit (MHz)	Pass/Fail	
2.412	16.88	0.5	Pass	
2.437	16.36	0.5	Pass	
2.462	16.40	0.5	Pass	

Test result: The unit does meet the requirements.

Test result plot as follows:

FCC ID: SOV 8300 IC ID: 5511A-8300



Span 20 MHz

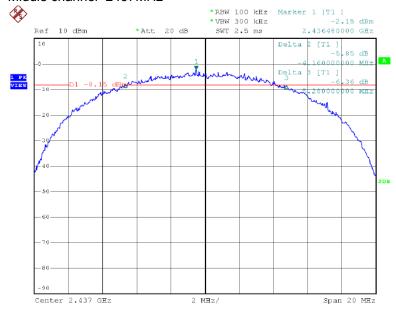
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### The EUT communicating with 802.11b Mode

#### Middle channel=2437MHz

Center 2.412 GHz



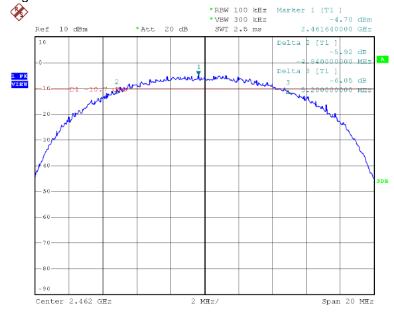
FCC ID: SOV 8300 IC ID: 5511A-8300



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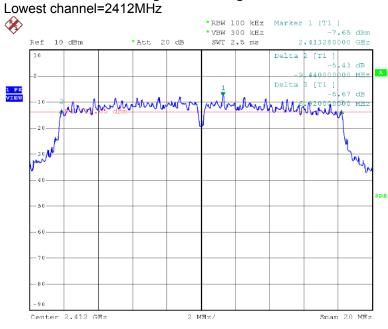




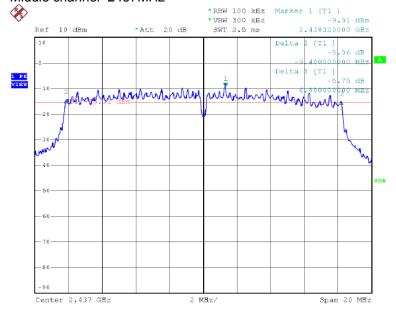
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### The EUT communicating with 802.11g Mode



#### Middle channel=2437MHz

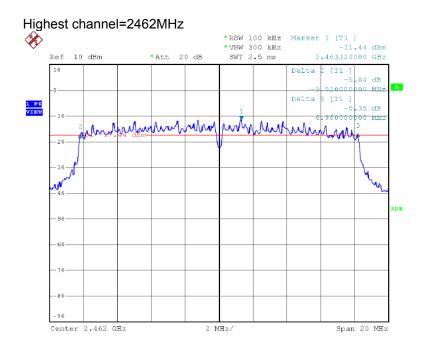


FCC ID: SOV 8300 IC ID: 5511A-8300



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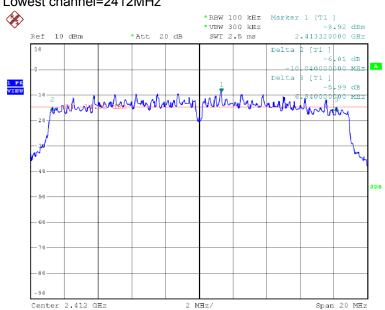




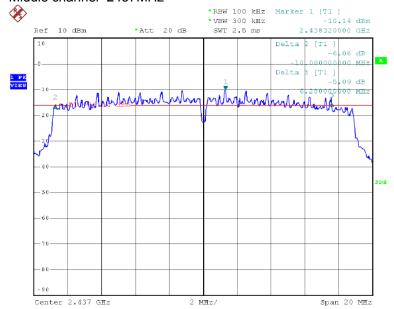
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# The EUT communicating with 802.11n Mode Lowest channel=2412MHz



#### Middle channel=2437MHz

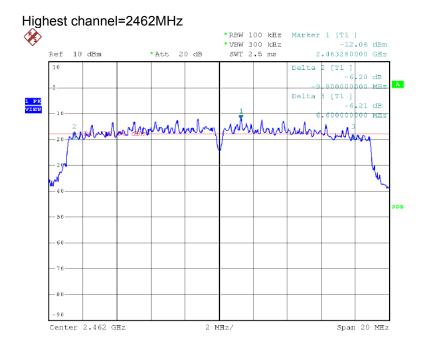


FCC ID: SOV 8300 IC ID: 5511A-8300



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#### 5.5 99% Occupied Bandwidth

Test Requirement: RSS-Gen Section 4.6.1

Test Method: ANSI C63.4:2003

**Select test data rate:** 11Mbps(802.11b) & 54Mbps(802.11g) & 65Mbps(802.11n)

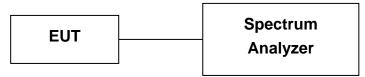
**Detector:** RBW=100kHz,VBW=300 kHz (Peak detector)

Test Mode: WIFI transmitting mode

Test Date: 06 August. 2010

Temperature:  $23^{\circ}\text{C}$ Humidity: 52%Limit: N/A

#### 5.5.1 Test Setup



#### 5.5.2Test Procedure

Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps, 802.11g 6/9/12/18/24/36/48/54Mbps and 802.11n 6.5/13/19.5/26/39/52/58.5/65Mbps ). Following channel(s) was (were) selected for the final test as listed below. 802.11b 11Mbps , 802.11g 54Mbps and 802.11n 65Mbps



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#### 5.5.3 Measurement Data

Chanel Frequency	99% Occupy Bandwidth(MHz)				
(GHz)	802.11b	802.11g	802.11n		
2.412	14.36	16.36	17.52		
2.437	14.36	16.40	17.60		
2.462	14.36	16.40	17.52		

Test result: The unit does meet the requirements.

Test result plot as follows:

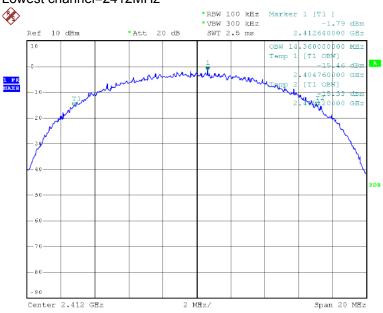


Report No.: FCCIC10-RTE082001

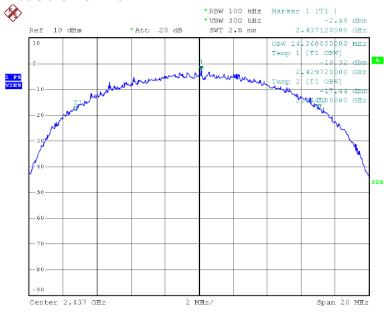
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### The EUT communicating with 802.11b Mode

Lowest channel=2412MHz



#### Middle channel=2437MHz



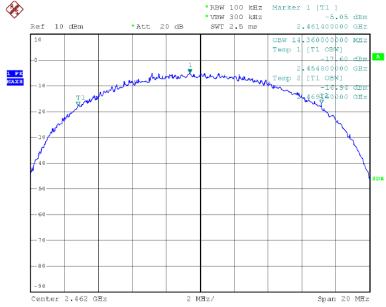
FCC ID: SOV 8300 IC ID: 5511A-8300



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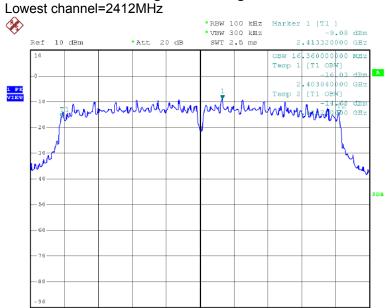


Span 20 MHz

Report No.: FCCIC10-RTE082001

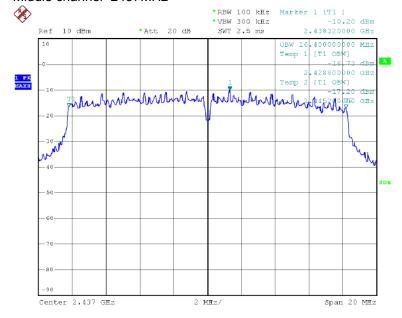
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### The EUT communicating with 802.11g Mode



#### Middle channel=2437MHz

Center 2.412 GHz

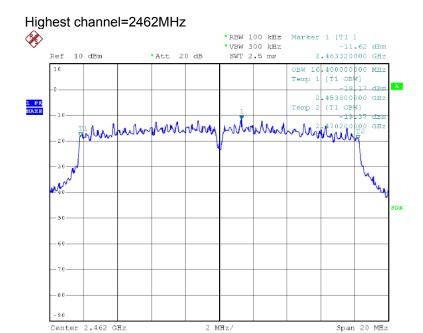


FCC ID: SOV 8300 IC ID: 5511A-8300



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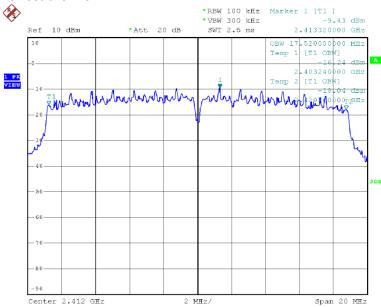


Report No.: FCCIC10-RTE082001

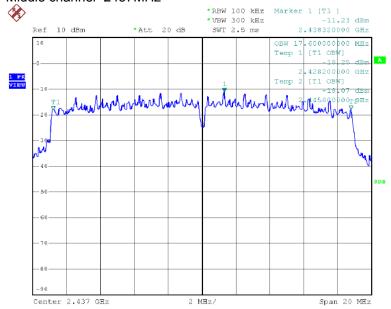
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### The EUT communicating with 802.11n Mode

Lowest channel=2412MHz



#### Middle channel=2437MHz



FCC ID: SOV 8300 IC ID: 5511A-8300



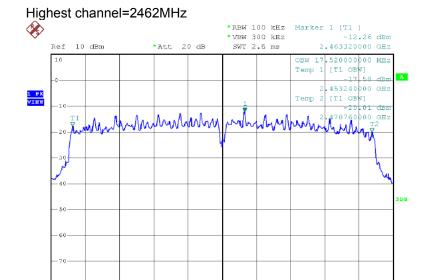
Center 2.462 GHz

# Shenzhen EBO Technology Co., Ltd.

Span 20 MHz

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#### 5.6 Band Edges and Conducted Spurious Emissions Measurement

**Test Requirement:** FCC Part15 C Section 15.247(d)

RSS-210 A 8.5

Test Method: ANSI C63.4; FCC Part15 C Section 15.247:

KDB Publication No. 558074 for DTS

**Select test data rate:** 11Mbps(802.11b) & 54Mbps(802.11g) & 65Mbps(802.11n)

**Detector:** RBW=100kHz,VBW=300 KHz (Peak detector)

Test Mode: WIFI transmitting mode

Test Date: 12 August. 2010

Temperature: 25°C Humidity: 57%

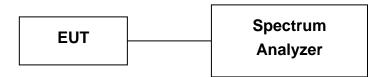
Limit: In any 100 kHz bandwidth outside the frequency band in which the

spread spectrum 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.

#### 5.6.1 Test Setup



#### 5.6.2Test Procedure

Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps, 802.11g 6/9/12/18/24/36/48/54Mbps and 802.11n 6.5/13/19.5/26/39/52/58.5/65Mbps ) . Following channel(s) was (were) selected for the final test as listed below. 802.11b 11Mbps , 802.11g 54Mbps and 802.11n 65Mbps

#### 5.6.3 Measurement Data

Test result: The unit does meet the requirements.

Test result plot as follows:

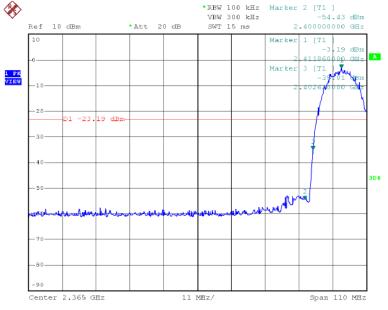
FCC ID: SOV 8300 IC ID: 5511A-8300

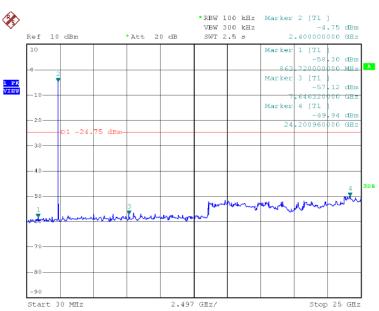


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#### Transmitting mode in lowest channel=2412MHz (802.11b)





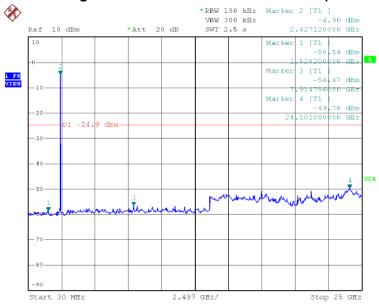
FCC ID: SOV 8300 IC ID: 5511A-8300



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#### Transmitting mode in middle channel=2437MHz (802.11b)

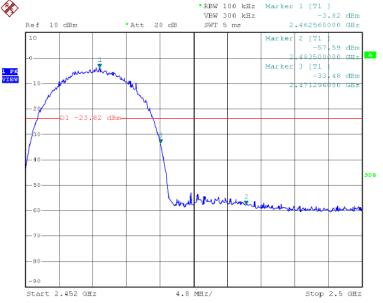


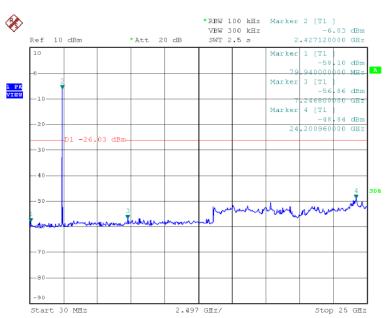


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#### Transmitting mode in highest channel=2462MHz (802.11b)





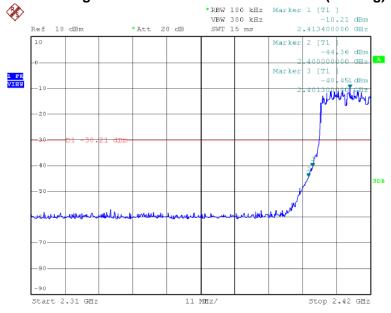
FCC ID: SOV 8300 IC ID: 5511A-8300

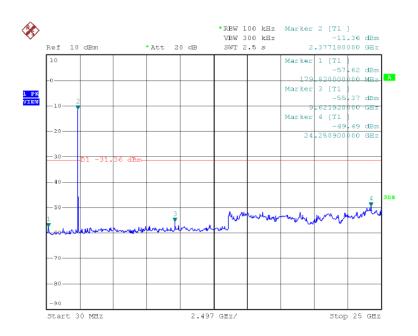


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#### Transmitting mode in lowest channel=2412MHz (802.11g)





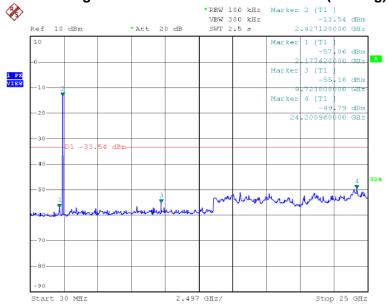
FCC ID: SOV 8300 IC ID: 5511A-8300



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#### Transmitting mode in middle channel=2437MHz (802.11g)

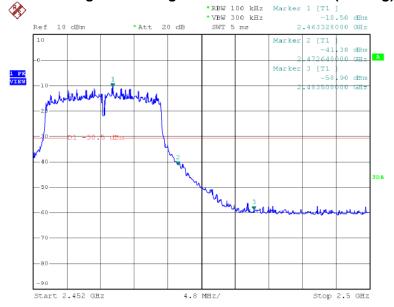


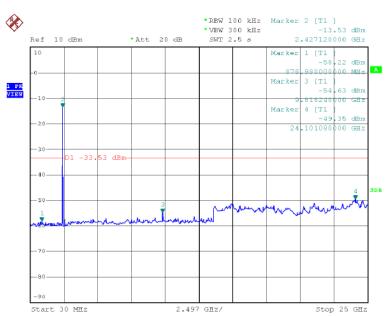


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#### Transmitting mode in highest channel=2462MHz (802.11g)





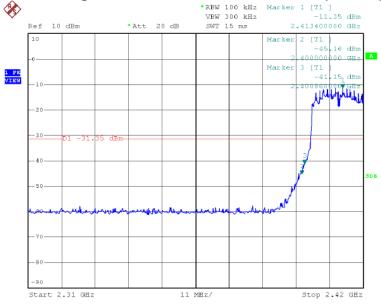
FCC ID: SOV 8300 IC ID: 5511A-8300

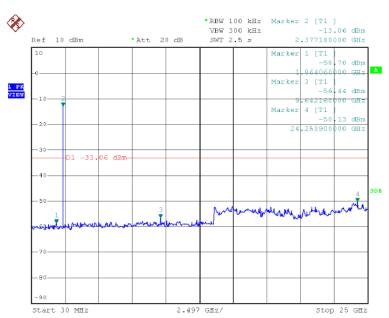


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#### Transmitting mode in lowest channel=2412MHz (802.11n)





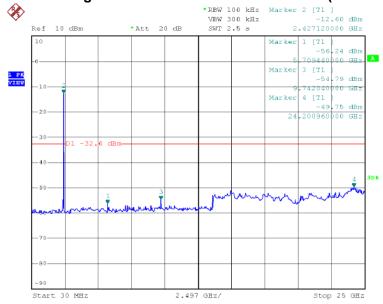
FCC ID: SOV 8300 IC ID: 5511A-8300



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#### Transmitting mode in middle channel=2437MHz (802.11n)

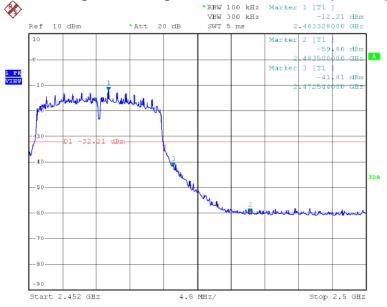


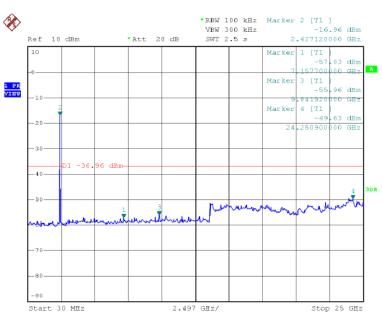


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#### Transmitting mode in highest channel=2462MHz (802.11n)





FCC ID: SOV 8300 IC ID: 5511A-8300



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#### 5.7 Power Spectral Density Measurement

Test Requirement: FCC Part15 C Section 15.247(d)

RSS-210 A 8.2(b)

Test Method: ANSI C63.4; FCC Part15 C Section 15.247:

KDB Publication No. 558074 for DTS

**Select test data rate:** 11Mbps(802.11b) & 54Mbps(802.11g) & 65Mbps(802.11n)

**Detector:** RBW=3KHz,VBW=10 KHz (Peak detector)

Test Mode: WIFI transmitting mode

Test Date: 15 August. 2010

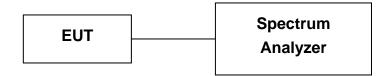
Temperature:  $24^{\circ}$ C Humidity: 56%

**Limit:** the peak 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

#### 5.7.1 Test Setup



#### 5.7.2Test Procedure

Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates (802.11b 1/2/5.5/11Mbps, 802.11g 6/9/12/18/24/36/48/54Mbps and 802.11n 6.5/13/19.5/26/39/52/58.5/65Mbps ). Following channel(s) was (were) selected for the final test as listed below. 802.11b 11Mbps , 802.11g 54Mbps and 802.11n 65Mbps

FCC ID: SOV 8300 IC ID: 5511A-8300



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#### 5.7.3 Measurement Data

For EUT communicating with 802.11b Mode

Г.	For Eon confinitionicating with 802.1 1b Mode								
	Chanel	Power	Cable Loss	Power	Limit	Over Limit			
	Frequency	Spectral	(dB)	Spectral	(dBm)	(dB)			
	(GHz)	Density		Density level					
	. ,	(dBm)		(dBm)					
	2.412	-15.08	0.5	-14.58	8.00	-22.58			
	2.437	-16.68	0.5	-16.18	8.00	-24.18			
	2.462	-16.05	0.5	-15.55	8.00	-23.55			

For EUT communicating with 802.11g Mode

ſ	Chanel	Power	Cable Loss	Power	Limit	Over Limit
	Frequency	Spectral	(dB)	Spectral	(dBm)	(dB)
	(GHz)	Density		Density level		
		(dBm)		(dBm)		
I	2.412	-23.91	0.5	-23.41	8.00	-31.41
	2.437	-25.07	0.5	-24.57	8.00	-32.57
	2.462	-26.10	0.5	-25.60	8.00	-33.60

For EUT communicating with 802.11n Mode

٠,	of Eon communicating with 662.1 m Mode								
	Chanel	Power	Cable Loss	Power	Limit	Over Limit			
	Frequency (GHz)	Spectral Density (dBm)	(dB)	Spectral Density level (dBm)	(dBm)	(dB)			
	2.412	-26.11	0.5	-25.61	8.00	-33.61			
	2.437	-24.43	0.5	-23.93	8.00	-31.93			
	2.462	-26.95	0.5	-26.45	8.00	-34.45			

Test result: The unit does meet the FCC requirements.

Test result plot as follows:

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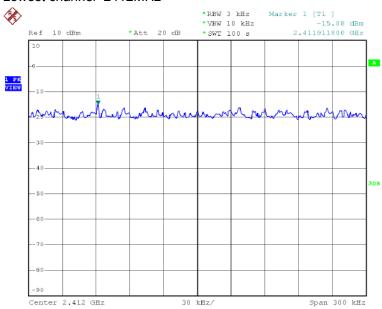


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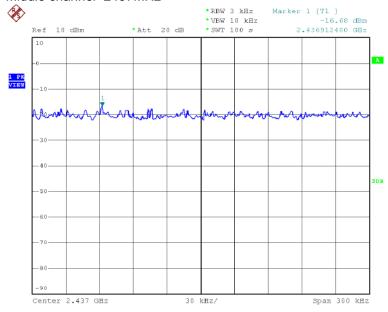
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### The EUT communicating with 802.11b Mode

Lowest channel=2412MHz



#### Middle channel=2437MHz



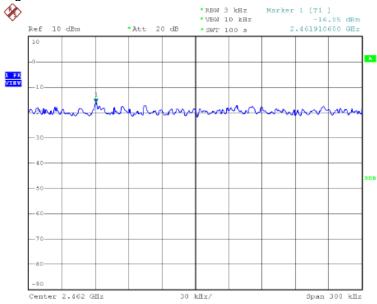
FCC ID: SOV 8300 IC ID: 5511A-8300



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#### Highest channel=2462MHz

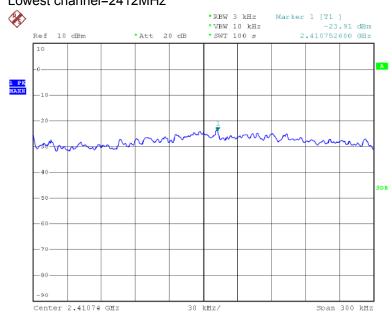




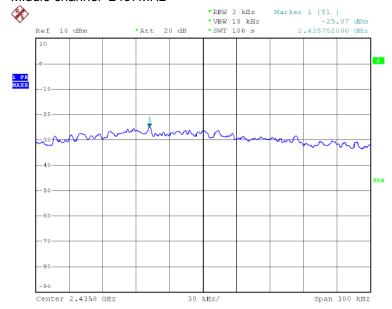
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# The EUT communicating with 802.11g Mode Lowest channel=2412MHz



#### Middle channel=2437MHz



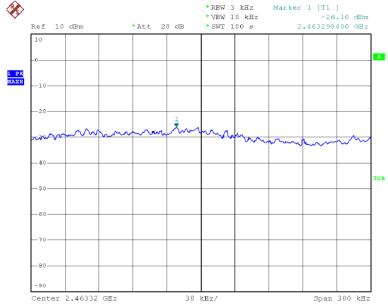
FCC ID: SOV 8300 IC ID: 5511A-8300



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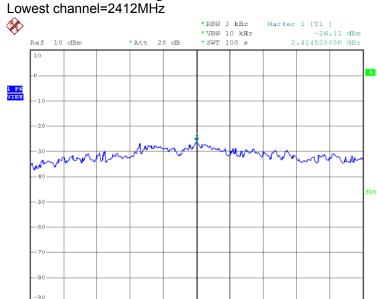




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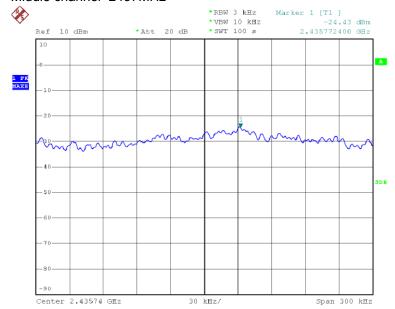
# The EUT communicating with 802.11n Mode



30 kHz/

#### Middle channel=2437MHz

Center 2.41452 GHz



FCC ID: SOV 8300 IC ID: 5511A-8300

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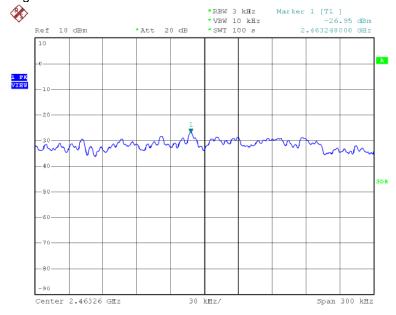
Span 300 kHz



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#### Highest channel=2462MHz





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#### 5.8 Antenna Requirement

#### **EUT Antenna**

#### Standard requirement

15.203 requirement:

For intentional device. 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.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz bands that are used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

#### **EUT Antenna**

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.



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### 5.9 RF Exposure Compliance

#### Standard requirement

15.247(b)(4) requirement:

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section. if transmitting antennas of directional gain greater than 6 dBi are used. the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1). (b)(2). and (b)(3) of this section. as appropriate. by the amount in dB that the directional gain of the antenna exceeds 6 dBi. RSS-102 Section 2.5.1 requirement:

above 2.2 GHz and up to 3 GHz inclusively, and with output power (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is less than or equal to 20 mW for general public use and 100 mW for controlled use;

#### **EUT RF Exposure**

The Max Conducted Peak Output Power is **11.94dBm(15.63mW)** in the Highest channel (2.462GHz); The best case gain of the antenna is 0dBi.

calculate the EIRP test result:

EIRP= 15.63mW (1)

SAR requirement:

S = 60 / f(GHz) = 60/2.462 = 24.37 mW ② ;

① < 20mW < ②.

So the SAR report is not required.