Shenzhen EBO Technology Co., Ltd.

1-4F, Huafeng Science Park, *Xin'an Sixth Road*, 82th District, Bao'an, Shenzhen, China.
Telephone：86-755-83187996,
Fax: 86-755-22639141

TEST REPORT

Application No.:	FCC&IC12-RTE091802RF
Applicant:	ARCHOS S.A.
Address of Applicant:	12 Rue Ampere 91430 Igny, France
FCC ID:	SOV1097
IC ID:	5511A-1097
Fundamental Carrier Frequency :	2.412GHz to 2.462GHz
Equipment Under Test (EUT):	
EUT Name:	A97XS Internet Tablet
Item No.:	1097
Serial No.:	Not supplied by client
Standards:	FCC PART 15 Subpart C: 2010
	RSS-210 Issue 8 2010
	RSS-GEN Issue 3 2010
Date of Receipt:	18 September,2012
Date of Test:	22 September,2012 to 27 October,2012
Date of Issue:	31 October,2012
Test Result :	**PASS***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Kavin Yu
Manager

1 Test Summary

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

2 Contents

3 General Information

3.1 Client Information

Applicant:	ARCHOS S.A.
Address of Applicant:	12 Rue Ampere 91430 Igny, France

3.2 General Description of E.U.T.

Equipment Under Test:	Wireless Data Transmission (WiFi)
Trade Name:	ARCHOS
Type Designation:	A97XS Internet tablet
Model Number:	1097
Standards:	IEEE802.11b/g/n(H20)
Type of modulation(802.11b):	DSSS(DBPSK,DQPSK,CCK)
Type of modulation(802.11g):	OFDM (BPSK,QPSK,16QAM,64QAM)
Type of modulation(802.11n(H20))	OFDM (BPSK,QPSK,16QAM,64QAM)
Max Data Rate:	11Mbps(802.11b),54Mbps(802.11g), 65Mbps(802.11n(H20))
Conducted Power:	10.94dBm(802.11b), 7.67dBm(802.11g), 6.92dBm(802.11n(H20))
Number of Channels:	11
Operation Frequency:	2412 ~2462MHz
Antenna Designation:	Internal Antenna
Antenna Gain:	0dBi
Power Supply:	AC/DC Adapter Model 1#:KSAS0100500200D5 Input:AC 100-240V 50/60Hz 0.4A Output:DC 5.0V 2.0A Model 2#:HNC050200X Input:AC 100-240V 50/60Hz 0.35A Output:DC 5.0V 2.0A
Date of Test:	September 22, 2012 to October 27, 2012

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		

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 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

3.4 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 December 01, 2011

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 May. 25th, 2011.

3.5 Measurement Uncertainty

of +/- 3×10^{-9} 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

3.6 Other Information Requested by the Customer

None

4 Equipment Used during Test

Conducted Emission

No.	Test Equipment	Manufacturer	Mo del No.	Serial No.	Cal. Due Date
GAL-EMC002	Shielding Room	ETS	N/A	N/A	2013-05-18
GAL-EMC003	Receiver	SCHAFFNER	SMR4503	11725	2013-07-08
GAL-EMC005	Line impedance stabilization network	EMCO	4825/2	1161	2013-07-08
GAL-EMC098	Line impedance stabilization network	EMCO	3810/2	2516	2013-07-08

RF in Chamber

No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Due Date
GAL-EMC001	Semi-anechoic Chamber	ETS	N/A	N/A	2013-05-25
GAL-EMC003	Receiver	SCHAFFNER	SMR4503	11725	2013-07-08
GAL-EMC007	Double-ridged Wave guide horn	ETS	3115	6587	2013-08-02
GAL-EMC008	Microwave system amplifier (0.5G-26.5G)	Agilent	83017A	MY39500438	2013-07-08
GAL-EMC017	Biconilog Antenna	ETS	3142C	00042672	2013-09-26
GAL-EMC055	Band-pass Filter	Micro-Tronic	BRM50702	S/N-030	2012-11-09
GAL-EMC056	Spectrum Analyzer 9KHz-30GHz	R&S	FSP30	100755	2012-11-02
GAL-EMC075	Double-ridged Wave guide horn	ETS	3160	00052486	2013-08-02

RF Conducted

No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Due Date
GAL-EMC056	Spectrum Analyzer 9KHz-30GHz	R&S	FSP30	100755	2012-11-02
GAL-EMC099	ATC－Lab	N/A	N/A	N/A	2012-11-02

5 Test Results

5.1 Conducted Emissions

Test Requirement: FCC Part15 C 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: WIFI mode

Test Voltage: 120Vac,60Hz

Test Date: 22 September,2012 to 27 October,2012

Temperature: 24°C

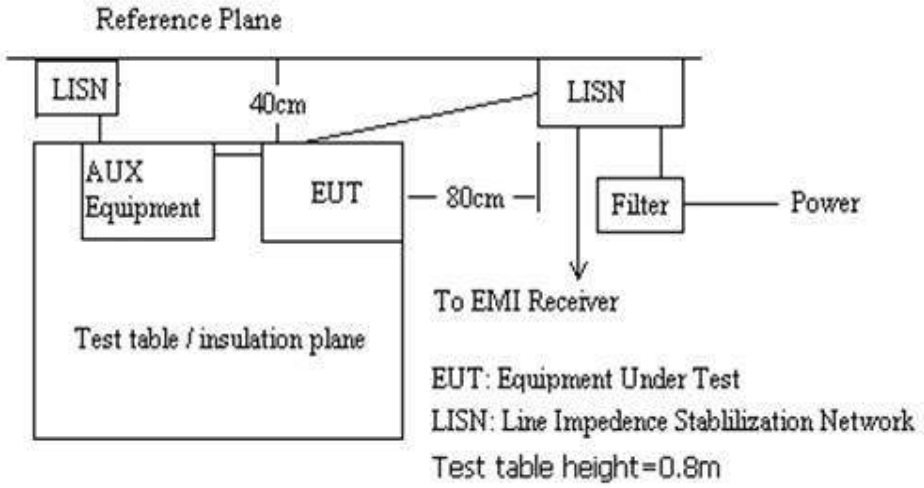
Humidity: 52%

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 μH/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

* Decreases with the logarithm of the frequency.

5.1.1 Test Setup



5.1.2 Test Procesure

The Device was conneted to the artifical main network, 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.

Adapter model		KSAS0100500200D5					
Frequency (MHz)	Line	Measured QP	QP Limit (dBuV)	Measured AV	AV Limit (dBuV)	Over Limit QP	Over Limit AV
0.1900	L	50.60	63.97	41.80	53.97	-13.37	-12.17
0.2900	L	52.30	60.49	36.20	50.49	-8.19	-14.29
0.3850	L	42.50	58.15	29.50	48.15	-15.65	-18.65
0.6500	L	41.70	56.00	27.10	46.00	-14.30	-18.90
16.7200	L	39.60	60.00	29.10	50.00	-20.40	-20.90
17.7800	L	38.40	60.00	27.70	50.00	-21.60	-22.30
0.5300	N	35.20	56.00	24.50	46.00	-20.80	-21.50
0.7050	N	35.90	56.00	22.70	46.00	-20.10	-23.30
0.9650	N	37.00	56.00	22.30	46.00	-19.00	-23.70
7.9200	N	36.30	60.00	23.60	50.00	-23.70	-26.40
13.4850	N	38.40	60.00	28.90	50.00	-21.60	-21.10
16.6700	N	41.80	60.00	28.30	50.00	-18.20	-21.70

Adapter model		HNC050200X					
Frequency (MHz)	Line	Measured QP	QP Limit (dBuV)	Measured AV	AV Limit (dBuV)	Over Limit QP	Over Limit AV
0.1600	L	59.50	65.39	46.50	55.39	-5.89	-8.89
0.2850	L	37.90	60.63	24.40	50.63	-22.73	-26.23
0.6450	L	37.80	56.00	20.10	46.00	-18.20	-25.90
0.8450	L	36.00	56.00	21.30	46.00	-20.00	-24.70
1.6050	L	36.60	56.00	23.00	46.00	-19.40	-23.00
10.3950	L	37.40	60.00	21.60	50.00	-22.60	-28.40
0.1600	N	53.00	65.39	39.40	55.39	-12.39	-15.99
0.4350	N	40.10	57.15	31.10	47.15	-17.05	-16.05
0.6750	N	41.20	56.00	31.50	46.00	-14.80	-14.50
1.4650	N	44.70	56.00	34.80	46.00	-11.30	-11.20
2.3750	N	42.50	56.00	37.60	46.00	-13.50	-8.40
10.0900	N	37.20	60.00	20.00	50.00	-22.80	-30.00

Test result: The unit does meet the requirements.

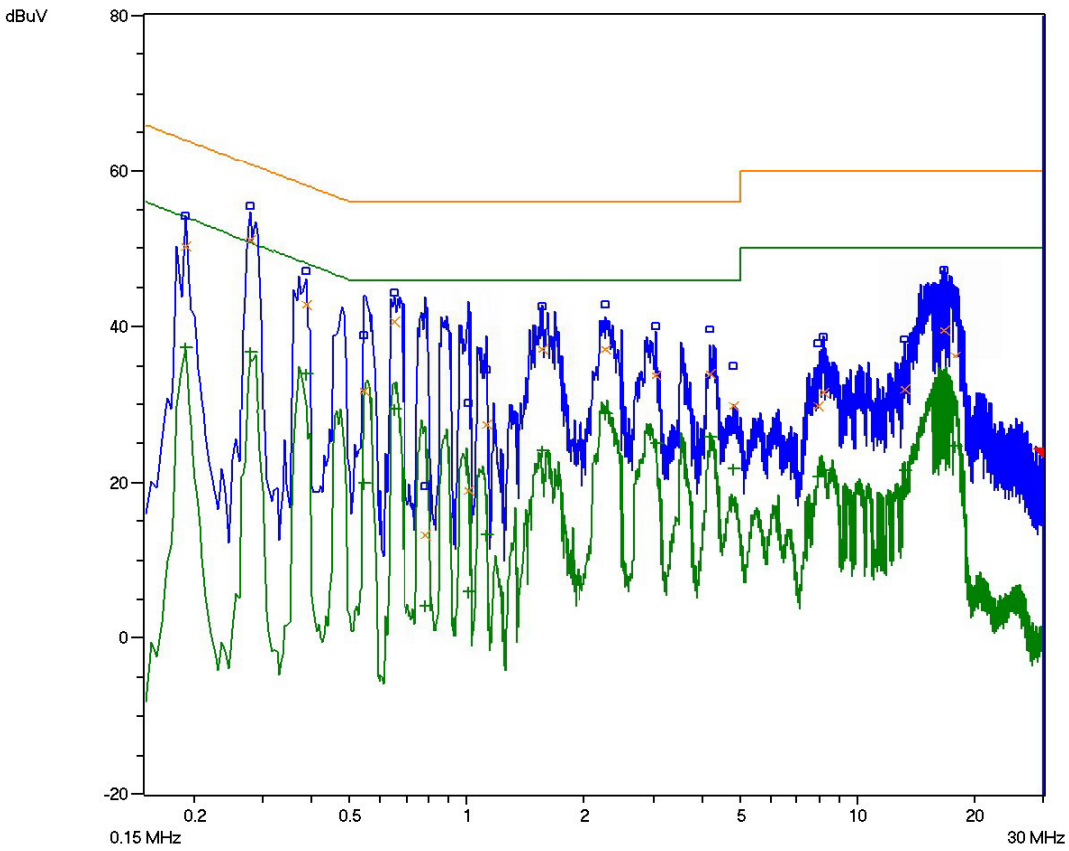
Test result plot as follows:

Scan Graph of adapter KSAS0100500200D5

Live Line

Title		CE L
EUT / Ser.No.		A97XS
Condition		120Vac,60Hz
Frequency Range(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

Transducer 4825-2+5m cable.set
Limit Line Fcc Par t15
PK AV QP

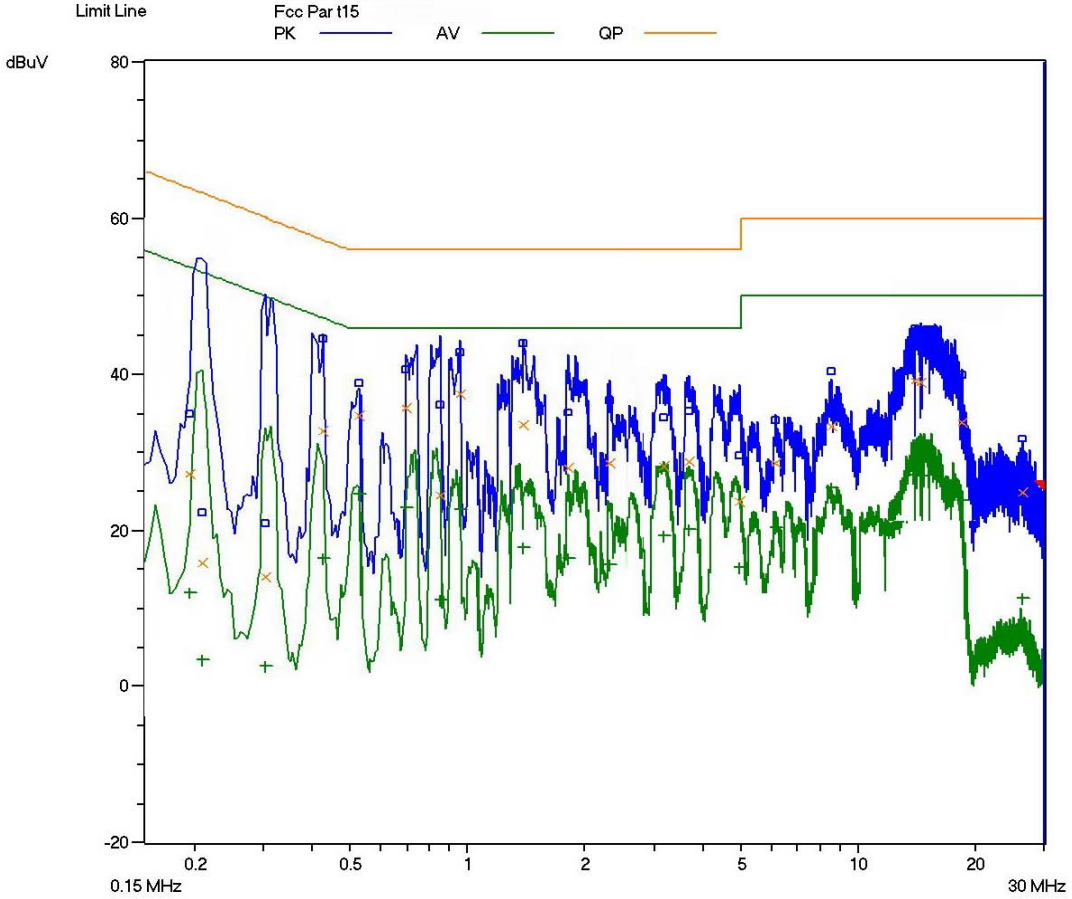


Nuetral Line

Title		CE N
EUT / Ser.No.		A97XS
Condition		120Vac,60Hz

Frequency Range(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

Transducer	4825-2+5m cable.set
Limit Line	Fcc Par t15

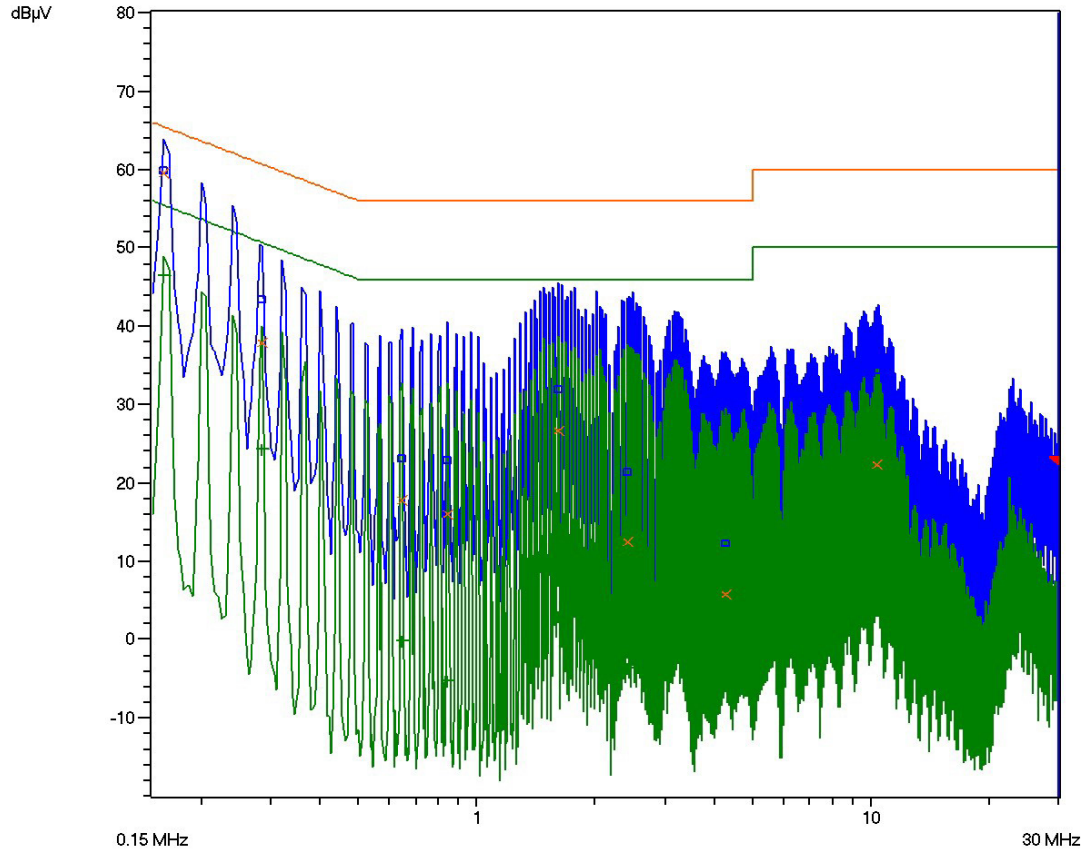


Scan Graph of adapter HNC050200X

Live Line

EUT / Ser.No.		A97XS
Manufacturer		Archos
Condition		120Vac,60Hz
Frequency Range(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)	10

Transducer LISN_5m cable.trd
Limit Line FCC Part 15
PK AV QP

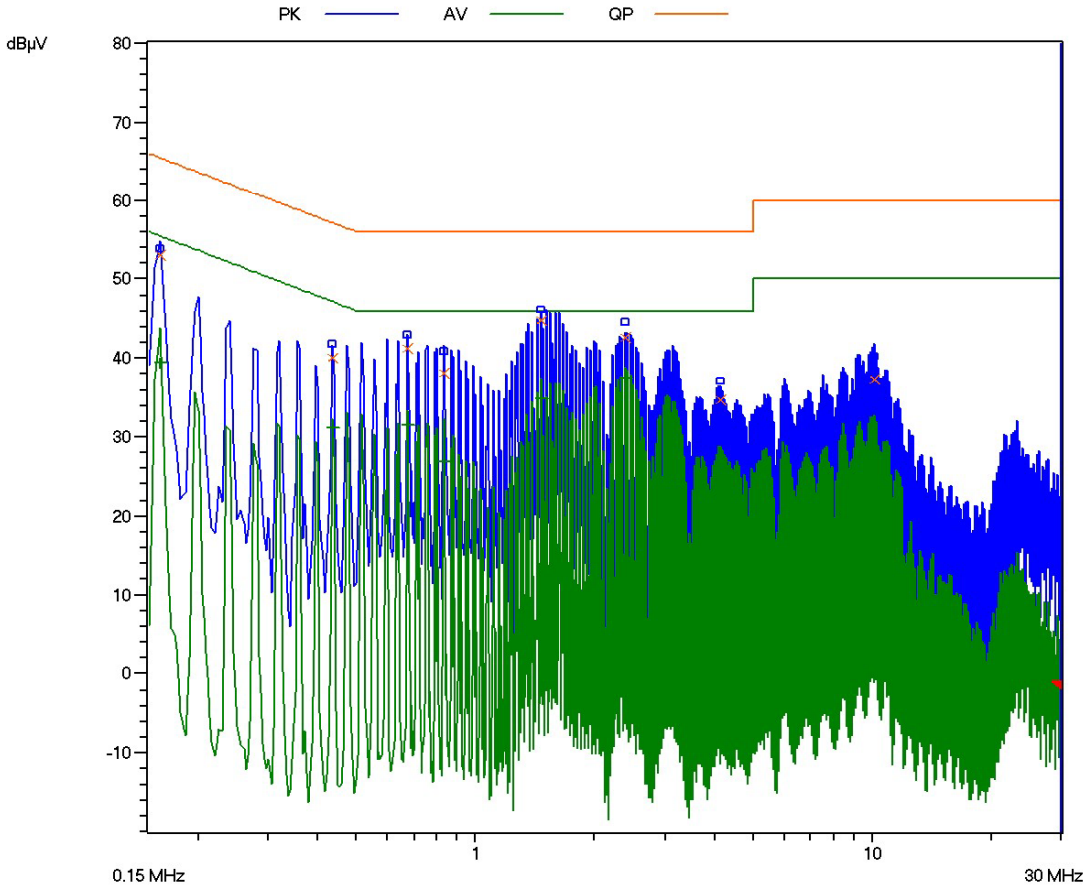


Nuetral Line

EUT / Ser.No.		A97XS
Manufacturer		Archos
Condition		120Vac,60Hz

Frequency Range(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)	10

Transducer	LISN_5m cable.trd
Limit Line	FCC Part 15



5.2 Radiated Emissions

Test Requirement: FCC Part15 C Section 15.247,15.209 and 15.205
RSS-210 A 8.5 and RSS-GEN Section 7.2.3

Test Method: ANSI C63.4:2003

Frequency Range: 30MHz to 25GHz

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

Test Voltage: 120Vac,60Hz

Test Date: 22 September,2012 to 27 October,2012

Temperature: 24℃~26℃

Humidity: 52%~59%

Limit: The field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Test Procedure: Prescan on three orthogonal axes with the EUT and show the worst case measured results in the report.

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)

5.2.1 Test Setup

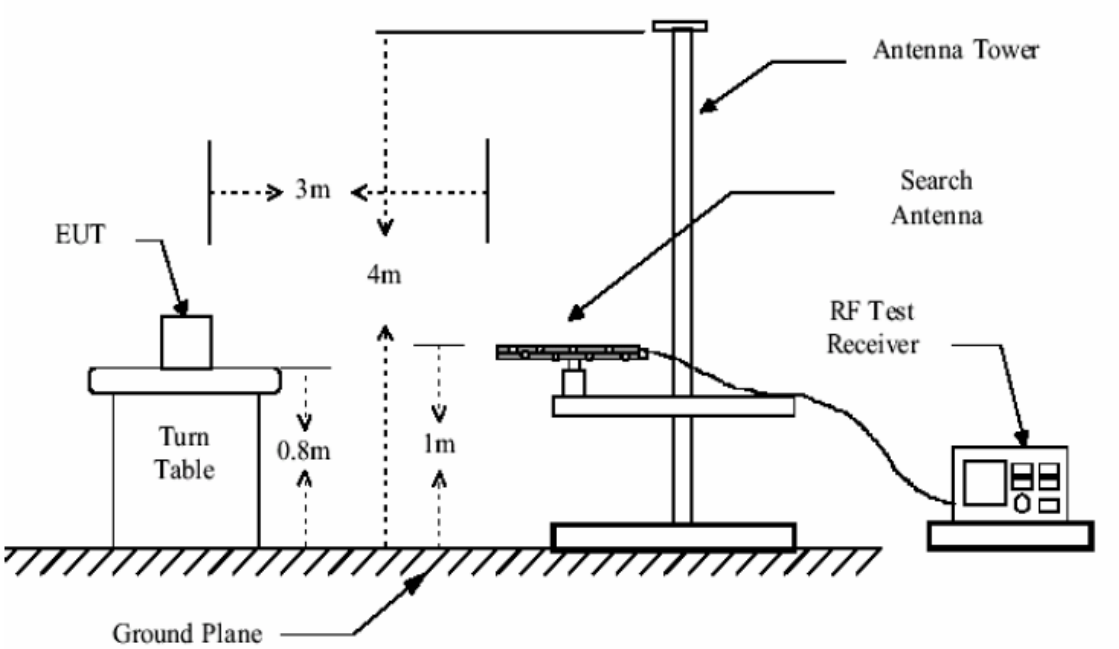


Figure1: 30MHz to 1GHz radiated emissions test setup

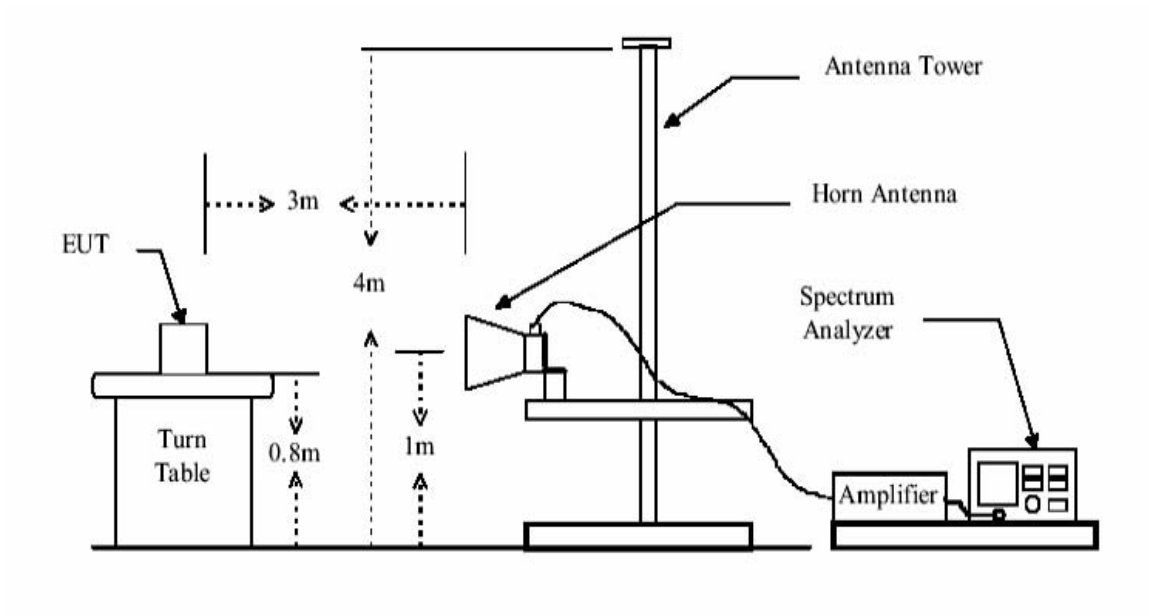


Figure 2: Above 1GHz radiated emissions test setup

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
AF = Antenna Factor	

5.2.3Measurement Data

Radiated Emission below 1GHz

Set the WIFI model, pre-scan all channels of the WIFI with transmitting, and found out the 802.11b transmitting mode, channel 01 which it is the worst case.

Adapter model		KSAS0100500200D5					
Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF	Measured Level	QP Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
31.120	H	9.60	16.20	25.80	40.00	-14.20	Pass
35.920	H	8.90	16.70	25.60	40.00	-14.40	Pass
43.760	H	7.00	15.80	22.80	40.00	-17.20	Pass
100.560	H	13.50	8.40	21.90	43.50	-21.60	Pass
144.480	H	12.70	9.00	21.70	43.50	-21.80	Pass
617.040	H	1.00	20.90	21.90	46.00	-24.10	Pass
34.800	V	12.10	16.70	28.80	40.00	-11.20	Pass
36.400	V	12.90	16.70	29.60	40.00	-10.40	Pass
100.320	V	18.00	8.40	26.40	43.50	-17.10	Pass
372.080	V	9.60	15.20	24.80	46.00	-21.20	Pass
495.360	V	11.90	18.90	30.80	46.00	-15.20	Pass
522.600	V	12.70	19.10	31.80	46.00	-14.20	Pass

Adapter model		HNC050200X					
Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF	Measured Level	QP Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
33.260	H	9.90	16.40	26.30	40.00	-13.70	Pass
36.180	H	11.10	16.70	27.80	40.00	-12.20	Pass
80.200	H	18.50	6.10	24.60	40.00	-15.40	Pass
100.620	H	11.85	8.40	20.25	43.50	-23.25	Pass
152.300	H	14.26	9.50	23.76	43.50	-19.74	Pass
594.200	H	4.00	20.90	24.90	46.00	-21.10	Pass
32.560	V	11.40	16.10	27.50	40.00	-12.50	Pass
36.200	V	13.41	16.70	30.11	40.00	-9.89	Pass
100.640	V	19.45	8.40	27.85	43.50	-15.65	Pass
322.300	V	14.13	15.20	29.33	46.00	-16.67	Pass
456.800	V	13.75	18.40	32.15	46.00	-13.85	Pass
519.370	V	16.66	19.10	35.76	46.00	-10.24	Pass

Radiated Emission Above 1GHz

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(H20) with transmitting.

Transmitting mode (802.11b lowest channel=2412MHz)

Peak Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	PK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1078.000	H	53.16	-5.10	48.06	74.00	-25.94	Pass
4824.000	H	44.01	6.10	50.11	74.00	-23.89	Pass
7236.000	H	40.33	11.80	52.13	74.00	-21.87	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1036.000	V	52.18	-5.10	47.08	74.00	-26.92	Pass
4824.000	V	43.85	6.10	49.95	74.00	-24.05	Pass
7236.000	V	40.12	11.80	51.92	74.00	-22.08	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	AV Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1078.000	H	34.33	-5.10	29.23	54.00	-24.77	Pass
4824.000	H	34.16	6.10	40.26	54.00	-13.74	Pass
7236.000	H	30.33	11.80	42.13	54.00	-11.87	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1036.000	V	33.54	-5.10	28.44	54.00	-25.56	Pass
4824.000	V	29.31	6.10	35.41	54.00	-18.59	Pass
7236.000	V	29.78	11.80	41.58	54.00	-12.42	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Transmitting mode (802.11b middle channel=2437MHz)

Peak Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	PK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1045.000	H	54.12	-5.10	49.02	74.00	-24.98	Pass
4874.000	H	42.69	6.10	48.79	74.00	-25.21	Pass
7311.000	H	39.88	11.92	51.80	74.00	-22.20	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1045.000	V	53.03	-5.10	47.93	74.00	-26.07	Pass
4874.000	V	43.69	6.10	49.79	74.00	-24.21	Pass
7311.000	V	40.21	11.92	52.13	74.00	-21.87	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	AV Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1045.000	H	35.22	-5.10	30.12	54.00	-23.88	Pass
4874.000	H	28.55	6.10	34.65	54.00	-19.35	Pass
7311.000	H	29.06	11.92	40.98	54.00	-13.02	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1045.000	V	34.68	-5.10	29.58	54.00	-24.42	Pass
4874.000	V	28.13	6.10	34.23	54.00	-19.77	Pass
7311.000	V	30.29	11.92	42.21	54.00	-11.79	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Transmitting mode (802.11b highest channel=2462MHz)

Peak Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	PK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1086.000	H	53.26	-5.10	48.16	74.00	-25.84	Pass
4924.000	H	45.88	6.10	51.98	74.00	-22.02	Pass
7386.000	H	40.26	12.10	52.36	74.00	-21.64	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1086.000	V	52.68	-5.10	47.58	74.00	-26.42	Pass
4924.000	V	48.33	6.10	54.43	74.00	-19.57	Pass
7386.000	V	41.85	12.10	53.95	74.00	-20.05	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	AV Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1086.000	H	34.28	-5.10	29.18	54.00	-24.82	Pass
4924.000	H	29.33	6.10	35.43	54.00	-18.57	Pass
7386.000	H	30.13	12.10	42.23	54.00	-11.77	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1086.000	V	34.05	-5.10	28.95	54.00	-25.05	Pass
4924.000	V	30.02	6.10	36.12	54.00	-17.88	Pass
7386.000	V	29.88	12.10	41.98	54.00	-12.02	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Transmitting mode (802.11g lowest channel=2412MHz)

Peak Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	PK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1036.000	H	56.33	-5.10	51.23	74.00	-22.77	Pass
4824.000	H	42.26	6.10	48.36	74.00	-25.64	Pass
7236.000	H	40.25	11.80	52.05	74.00	-21.95	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1036.000	V	57.69	-5.10	52.59	74.00	-21.41	Pass
4824.000	V	42.33	6.10	48.43	74.00	-25.57	Pass
7236.000	V	40.16	11.80	51.96	74.00	-22.04	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	AV Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1036.000	H	35.03	-5.10	29.93	54.00	-24.07	Pass
4824.000	H	29.88	6.10	35.98	54.00	-18.02	Pass
7236.000	H	29.76	11.80	41.56	54.00	-12.44	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1036.000	V	36.12	-5.10	31.02	54.00	-22.98	Pass
4824.000	V	30.33	6.10	36.43	54.00	-17.57	Pass
7236.000	V	30.03	11.80	41.83	54.00	-12.17	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Transmitting mode (802.11g middle channel=2437MHz)

Peak Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	PK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1076.000	H	53.26	-5.10	48.16	74.00	-25.84	Pass
4874.000	H	44.63	6.10	50.73	74.00	-23.27	Pass
7311.000	H	40.36	11.92	52.28	74.00	-21.72	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1065.000	V	54.27	-5.10	49.17	74.00	-24.83	Pass
4874.000	V	43.69	6.10	49.79	74.00	-24.21	Pass
7311.000	V	41.02	11.92	52.94	74.00	-21.06	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	AV Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1076.000	H	34.33	-5.10	29.23	54.00	-24.77	Pass
4874.000	H	28.54	6.10	34.64	54.00	-19.36	Pass
7311.000	H	29.16	11.92	41.08	54.00	-12.92	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1065.000	V	35.17	-5.10	30.07	54.00	-23.93	Pass
4874.000	V	29.36	6.10	35.46	54.00	-18.54	Pass
7311.000	V	30.11	11.92	42.03	54.00	-11.97	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Transmitting mode (802.11g highest channel=2462MHz)

Peak Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	PEAK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1082.000	H	53.36	-5.10	48.26	74.00	-25.74	Pass
4924.000	H	44.25	6.10	50.35	74.00	-23.65	Pass
7386.000	H	41.33	12.10	53.43	74.00	-20.57	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1082.000	V	54.26	-5.10	49.16	74.00	-24.84	Pass
4924.000	V	44.02	6.10	50.12	74.00	-23.88	Pass
7386.000	V	40.89	12.10	52.99	74.00	-21.01	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	AV Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1082.000	H	34.63	-5.10	29.53	54.00	-24.47	Pass
4924.000	H	29.28	6.10	35.38	54.00	-18.62	Pass
7386.000	H	29.66	12.10	41.76	54.00	-12.24	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1082.000	V	36.33	-5.10	31.23	54.00	-22.77	Pass
4924.000	V	30.14	6.10	36.24	54.00	-17.76	Pass
7386.000	V	30.10	12.10	42.20	54.00	-11.80	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Transmitting mode (802.11n(H20) lowest channel=2412MHz)

Peak Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	PEAK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1037.000	H	54.31	-5.10	49.21	74.00	-24.79	Pass
4824.000	H	43.69	6.10	49.79	74.00	-24.21	Pass
7236.000	H	40.11	11.80	51.91	74.00	-22.09	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1037.000	V	54.93	-5.10	49.83	74.00	-24.17	Pass
4824.000	V	44.31	6.10	50.41	74.00	-23.59	Pass
7236.000	V	40.25	11.80	52.05	74.00	-21.95	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	AV Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1037.000	H	34.26	-5.10	29.16	54.00	-24.84	Pass
4824.000	H	29.83	6.10	35.93	54.00	-18.07	Pass
7236.000	H	29.64	11.80	41.44	54.00	-12.56	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1037.000	V	35.73	-5.10	30.63	54.00	-23.37	Pass
4824.000	V	29.96	6.10	36.06	54.00	-17.94	Pass
7236.000	V	30.02	11.80	41.82	54.00	-12.18	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Transmitting mode (802.11n(H20) middle channel=2437MHz)

Peak Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	PEAK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1069.000	H	54.26	-5.10	49.16	74.00	-24.84	Pass
4874.000	H	43.59	6.10	49.69	74.00	-24.31	Pass
7311.000	H	41.33	11.92	53.25	74.00	-20.75	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1069.000	V	54.69	-5.10	49.59	74.00	-24.41	Pass
4874.000	V	44.21	6.10	50.31	74.00	-23.69	Pass
7311.000	V	41.37	11.92	53.26	74.00	-20.74	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	AV Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1069.000	H	34.59	-5.10	29.49	54.00	-24.51	Pass
4874.000	H	30.03	6.10	36.13	54.00	-17.87	Pass
7311.000	H	30.67	11.92	42.59	54.00	-11.41	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1069.000	V	36.21	-5.10	31.11	54.00	-22.89	Pass
4874.000	V	30.23	6.10	36.33	54.00	-17.67	Pass
7311.000	V	30.52	11.92	42.44	54.00	-11.56	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Transmitting mode (802.11n(H20) highest channel=2462MHz)

Peak Measurement

Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	PEAK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1054.000	H	55.20	-5.10	50.10	74.00	-23.90	Pass
4924.000	H	45.72	6.10	51.82	74.00	-22.18	Pass
7386.000	H	40.13	12.10	52.23	74.00	-21.77	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1054.000	V	56.32	-5.10	51.22	74.00	-22.78	Pass
4924.000	V	46.36	6.10	52.46	74.00	-21.54	Pass
7386.000	V	40.28	12.10	52.38	74.00	-21.62	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Average Measurement

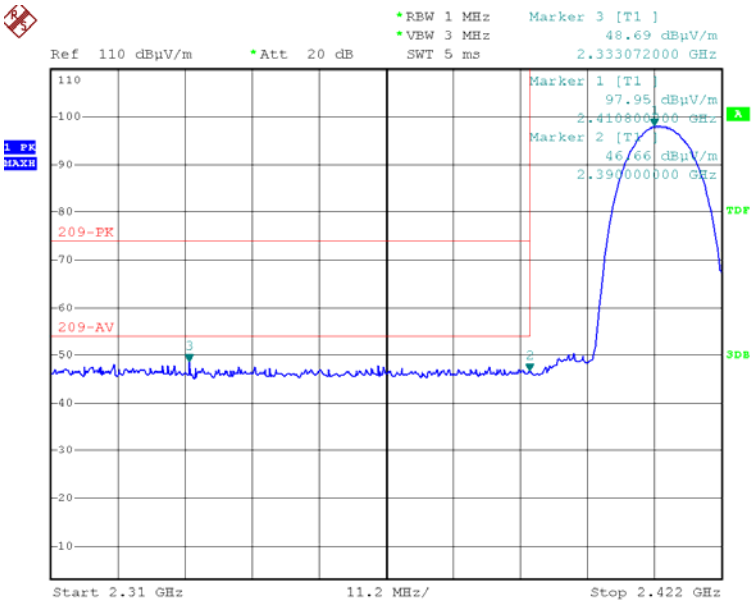
Frequency (MHz)	Antenna Polarity	Reading (dBuV/m)	Ant./CL/ Amp.CF (dB)	Measured Level (dBuV/m)	AV Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
1054.000	H	34.25	-5.10	29.15	54.00	-24.85	Pass
4924.000	H	30.12	6.10	36.22	54.00	-17.78	Pass
7386.000	H	30.06	12.10	42.16	54.00	-11.84	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
1054.000	V	35.68	-5.10	30.58	54.00	-23.42	Pass
4924.000	V	30.14	6.10	36.24	54.00	-17.76	Pass
7386.000	V	29.86	12.10	41.96	54.00	-12.04	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Band Edge and Restriced band (Radiated measurement)

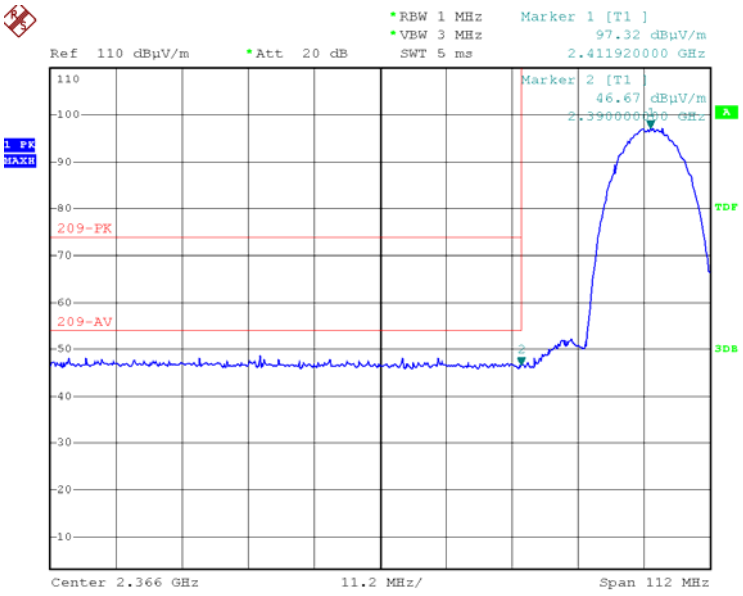
Set the WIFI mode, pre-scan lowest,middle and highest channels with all the modulations of WIFI, and found the 802.11b mode in lowest and highest channel which they were worse case.

Transmitting with 802.11b mode (Lowest channel=2412MHz)

Peak Measurement in Horizontal polarization

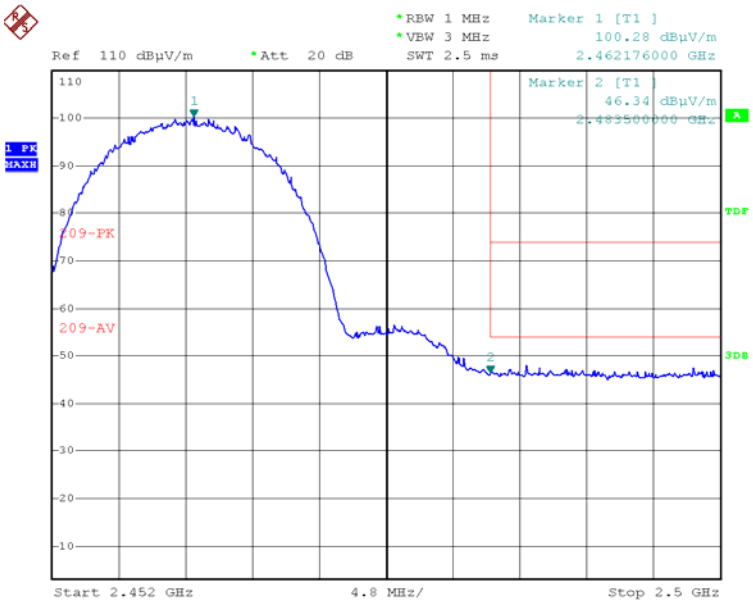


Peak Measurement in Vertical polarization

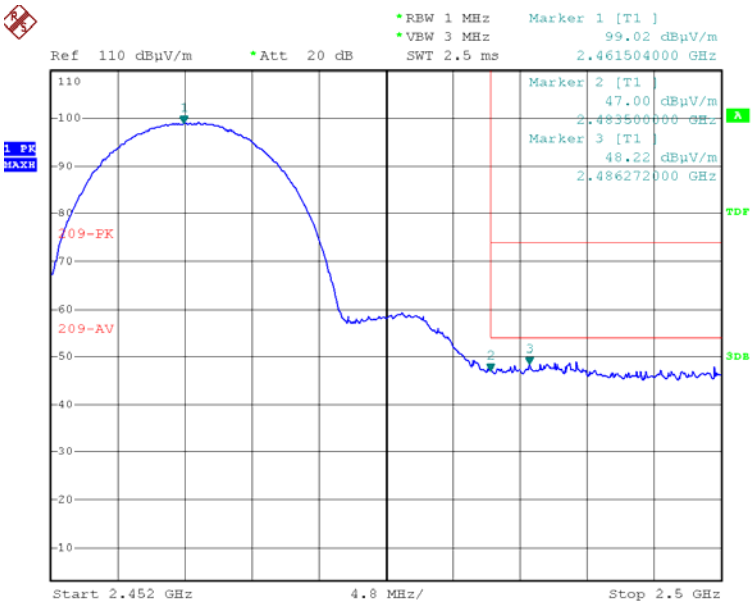


Transmitting with 802.11b mode (Highest channel=2462MHz)

Peak Measurement in Horizontal polarization



Peak Measurement in Vertical polarization



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(H20) (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.

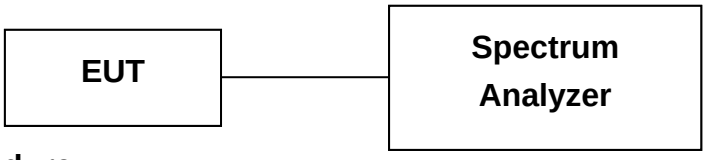
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 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	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	([2])
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.

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 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Select test data rate:	11Mbps(802.11b) & 54Mbps(802.11g) & 65Mbps(802.11n(H20))
Detector:	RBW=1 MHz, VBW=3 MHz (Peak detector)
Test Mode:	WIFI transmitting mode
Test Voltage:	Pretest the EUT with voltage 120 ± 15%Vac,60Hz;and found out at 120Vac,60Hz is the worst case.
Test Date:	15 October,2012
Temperature:	25°C
Humidity:	52%
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(H20) 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 , 802.11n(H20) 65Mbps

5.3.3Measurement Data

For EUT communicating with 802.11b Mode

Chanel Frequency (GHz)	Peak Output Power(dBm)	Cable Loss (dB)	Power level(dBm)	Limit (dBm)	Over Limit (dB)
2.412	9.94	1.0	10.94	30.00	-19.06
2.437	9.22	1.0	10.22	30.00	-19.78
2.462	9.15	1.0	10.15	30.00	-19.85

For EUT communicating with 802.11g Mode

Chanel Frequency (GHz)	Peak Output Power(dBm)	Cable Loss (dB)	Power level(dBm)	Limit (dBm)	Over Limit (dB)
2.412	5.99	1.0	6.99	30.00	-23.01
2.437	6.67	1.0	7.67	30.00	-22.33
2.462	5.96	1.0	6.96	30.00	-23.04

For EUT communicating with 802.11n(H20) Mode

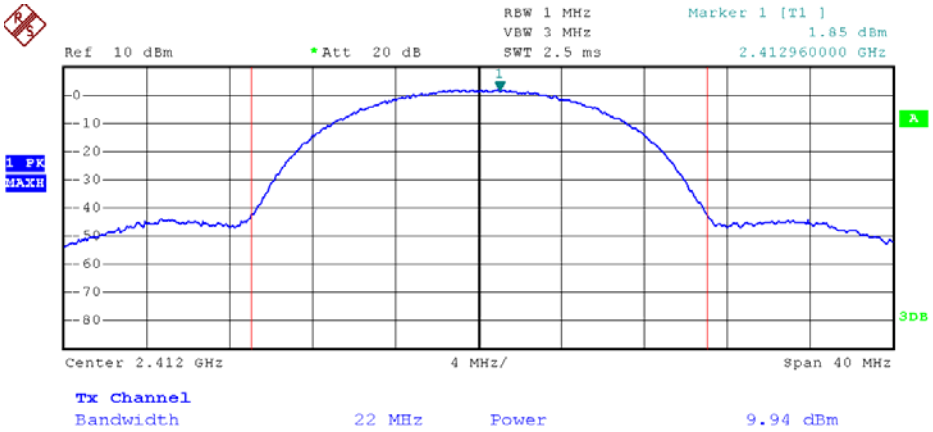
Chanel Frequency (GHz)	Peak Output Power(dBm)	Cable Loss (dB)	Power level(dBm)	Limit (dBm)	Over Limit (dB)
2.412	5.92	1.0	6.92	30.00	-23.08
2.437	5.87	1.0	6.87	30.00	-23.13
2.462	5.64	1.0	6.64	30.00	-23.36

Test result: The unit does meet the requirements.

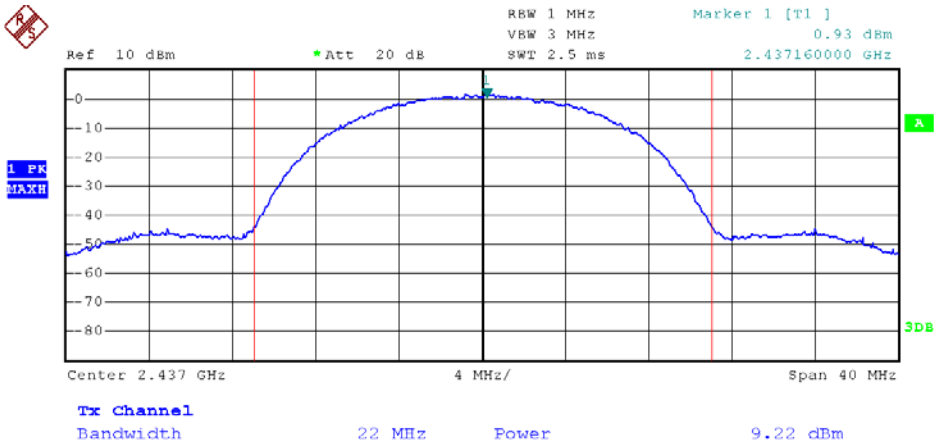
Test result plot as follows:

The EUT communicating with 802.11b Mode

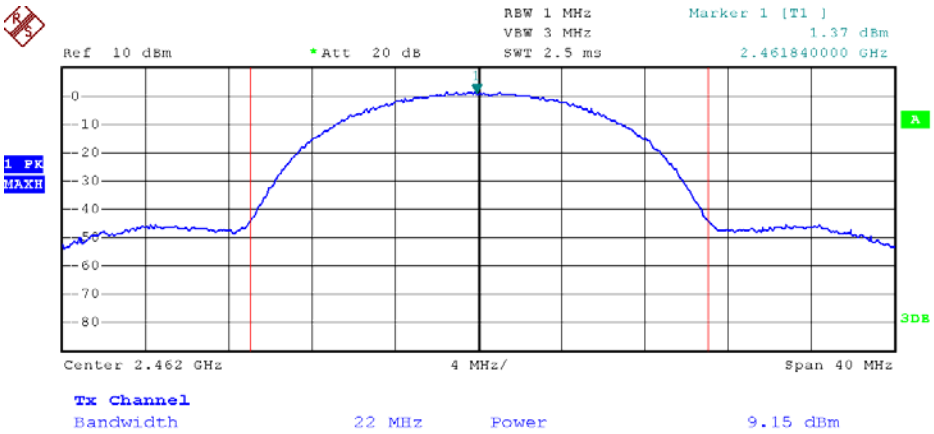
Lowest channel=2412MHz



Middle channel=2437MHz

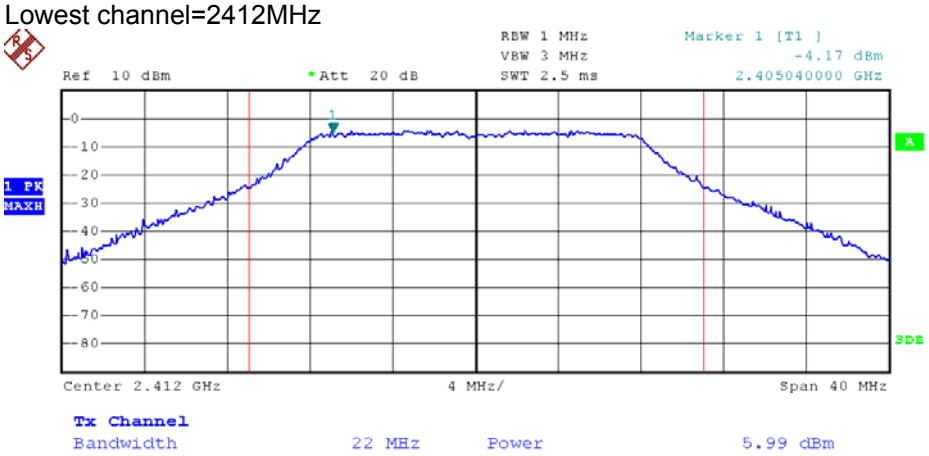


Highest channel=2462MHz

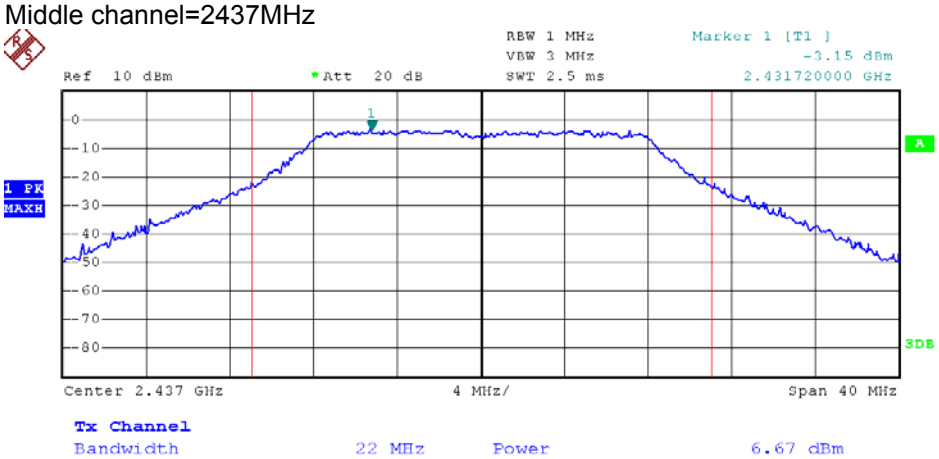


The EUT communicating with 802.11g Mode

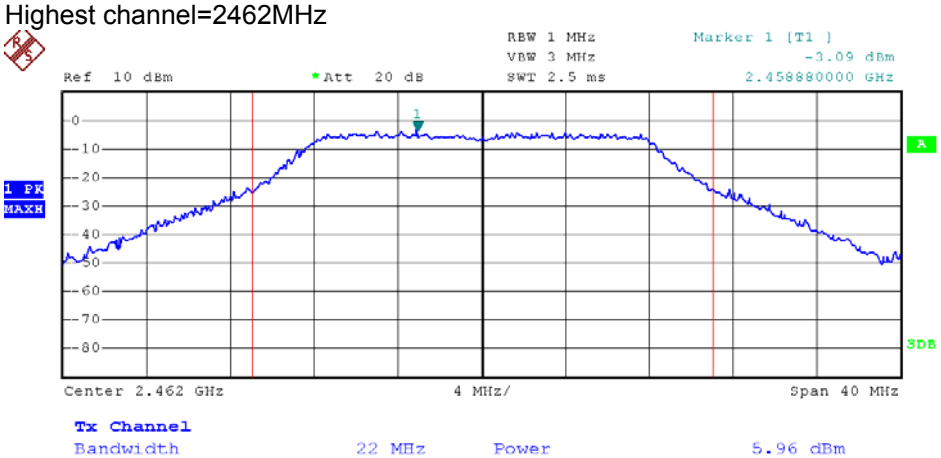
Lowest channel=2412MHz



Middle channel=2437MHz

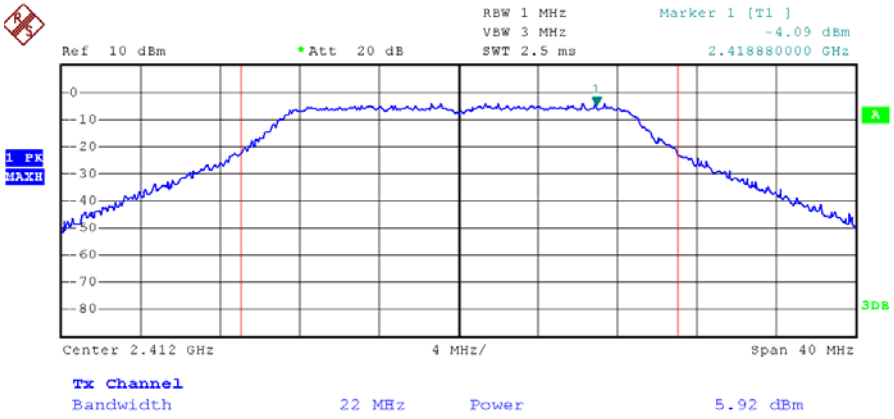


Highest channel=2462MHz

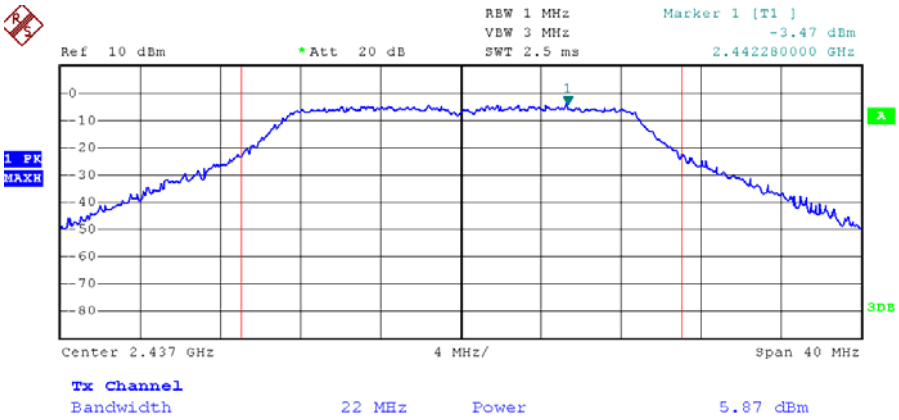


The EUT communicating with 802.11n(H20) Mode

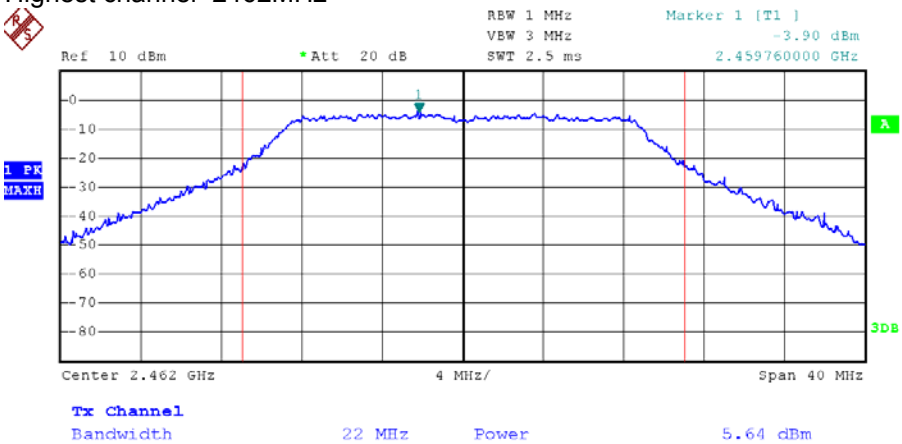
Lowest channel=2412MHz



Middle channel=2437MHz



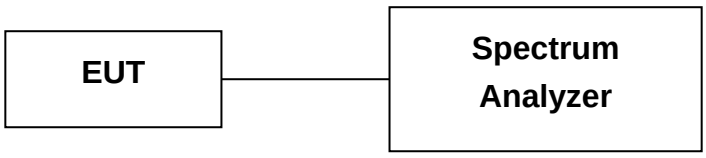
Highest channel=2462MHz



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 procedureof Oct 2002 KDB558074 for compliance with FCC 47CFR 15.247 requirements.
Select test data rate:	11Mbps(802.11b) & 54Mbps(802.11g) & 65Mbps(802.11n(H20))
Detector:	RBW= 1-5 % of the emission bandwidth (EBW) (VBW)≥3×RBW(Peak detector)
Test Mode:	WIFI transmitting mode
Test Voltage:	120Vac,60Hz
Test Date:	15 October,2012
Temperature:	25°C
Humidity:	52%
Limit:	The minimum 6 dB bandwidth shall be at least 500 kHz.

5.4.1 Test Setup



5.4.2 Test 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(H20) 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(H20) 65Mbps

5.4.3 Measurement Data

For EUT communicating with 802.11b Mode

Chanel Frequency (GHz)	6 dB Bandwidth (MHz)	Minimun Limit (MHz)	Pass/Fail
2.412	10.24	0.5	Pass
2.437	10.40	0.5	Pass
2.462	9.80	0.5	Pass

For EUT communicating with 802.11g Mode

Chanel Frequency (GHz)	6 dB Bandwidth (MHz)	Minimun Limit (MHz)	Pass/Fail
2.412	16.48	0.5	Pass
2.437	16.52	0.5	Pass
2.462	16.48	0.5	Pass

For EUT communicating with 802.11n(H20) Mode

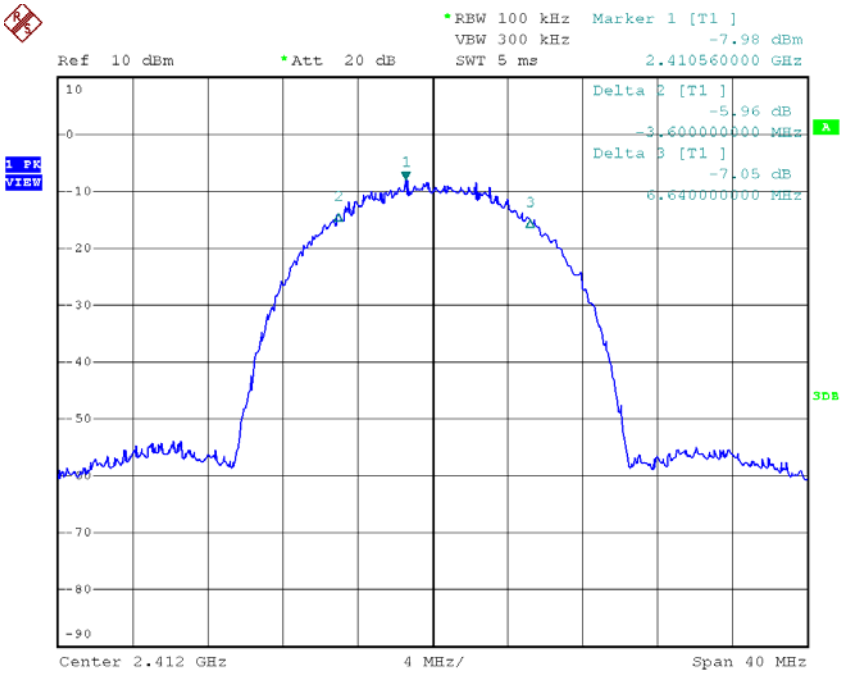
Chanel Frequency (GHz)	6 dB Bandwidth (MHz)	Minimun Limit (MHz)	Pass/Fail
2.412	17.68	0.5	Pass
2.437	17.68	0.5	Pass
2.462	17.76	0.5	Pass

Test result: The unit does meet the requirements.

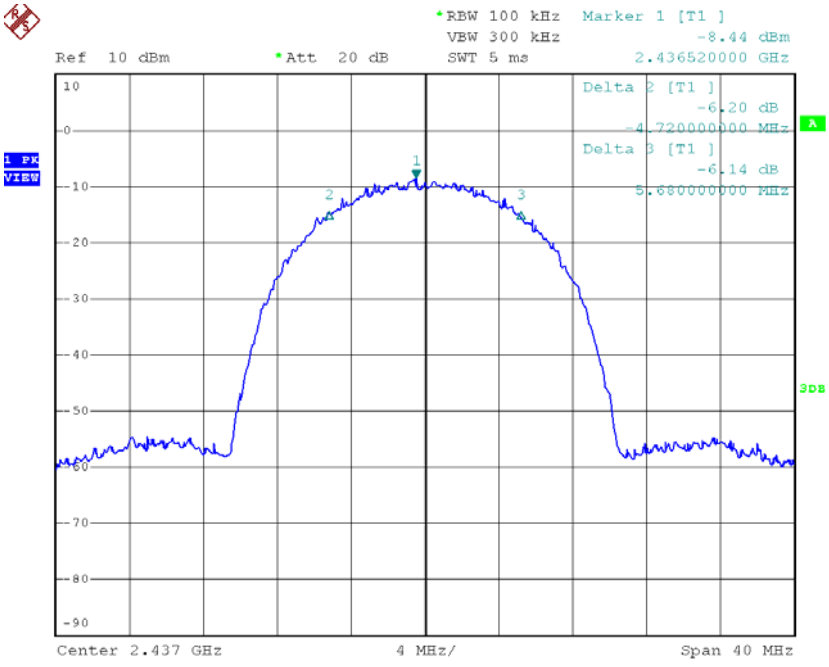
Test result plot as follows:

The EUT communicating with 802.11b Mode

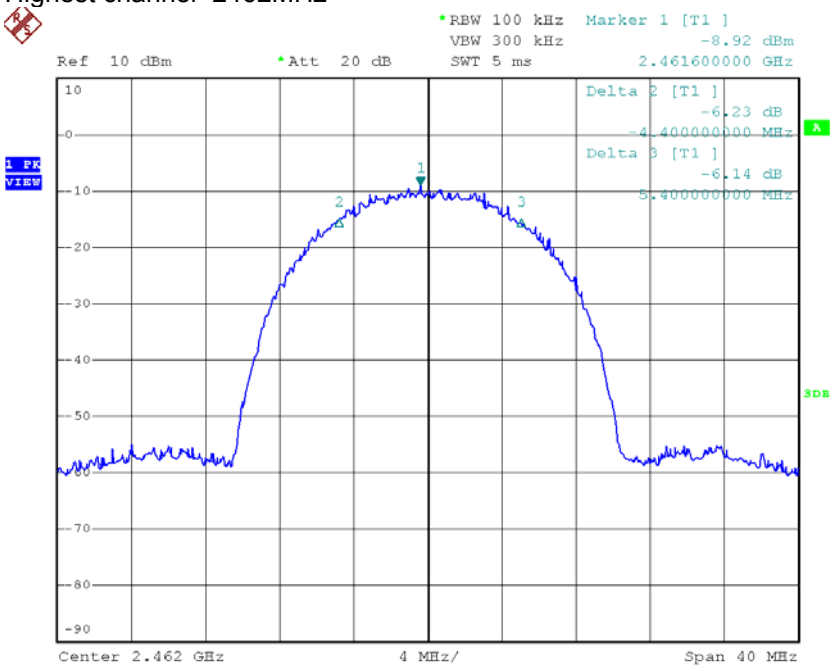
Lowest channel=2412MHz



Middle channel=2437MHz

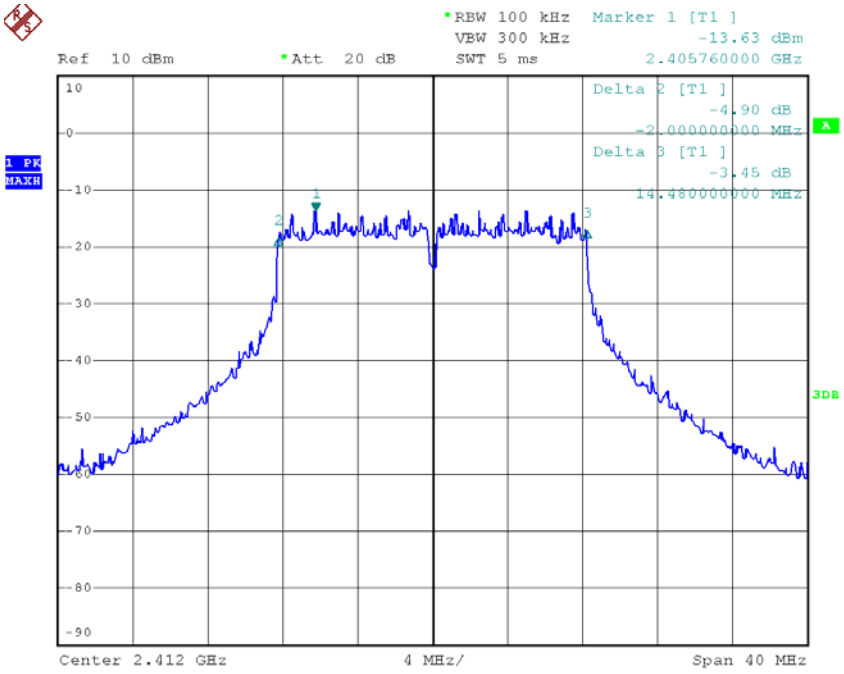


Highest channel=2462MHz

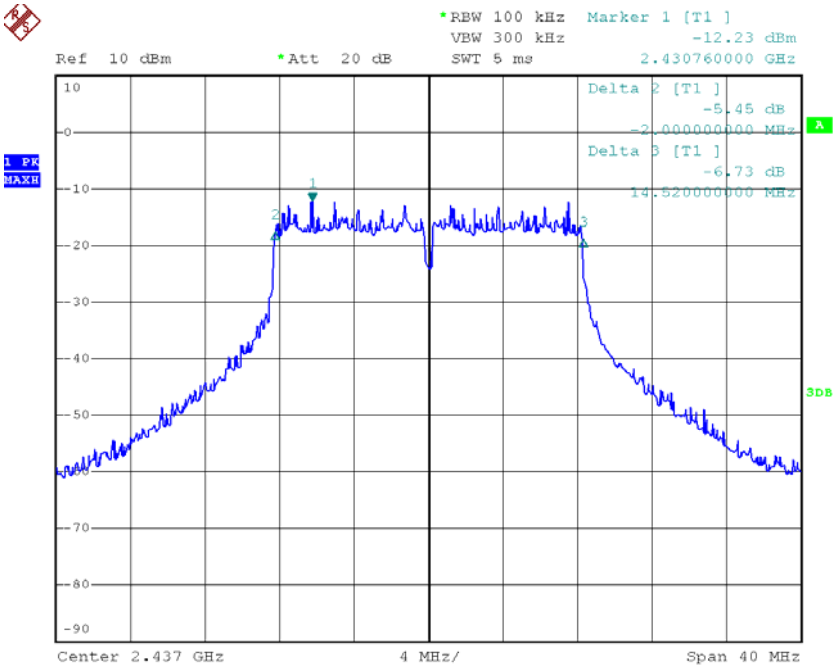


The EUT communicating with 802.11g Mode

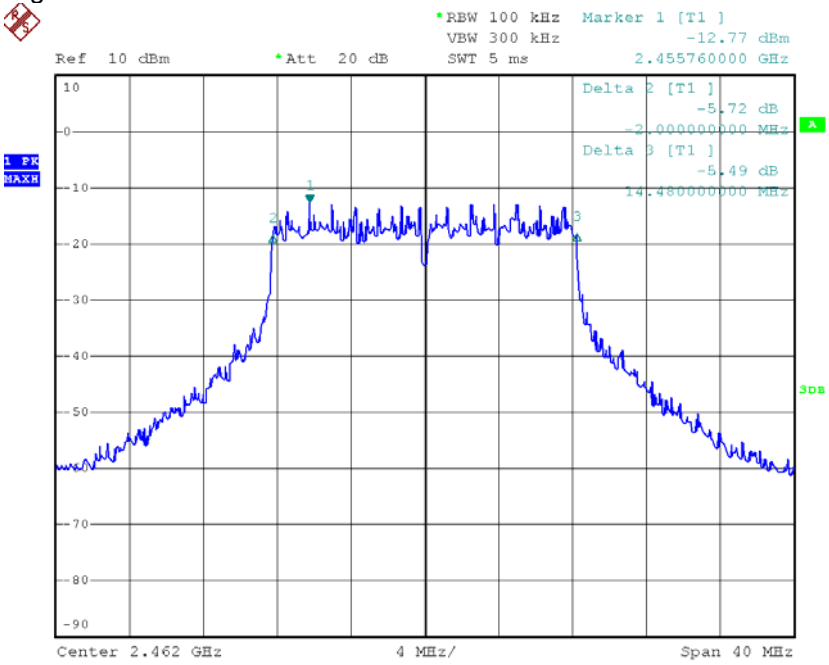
Lowest channel=2412MHz



Middle channel=2437MHz

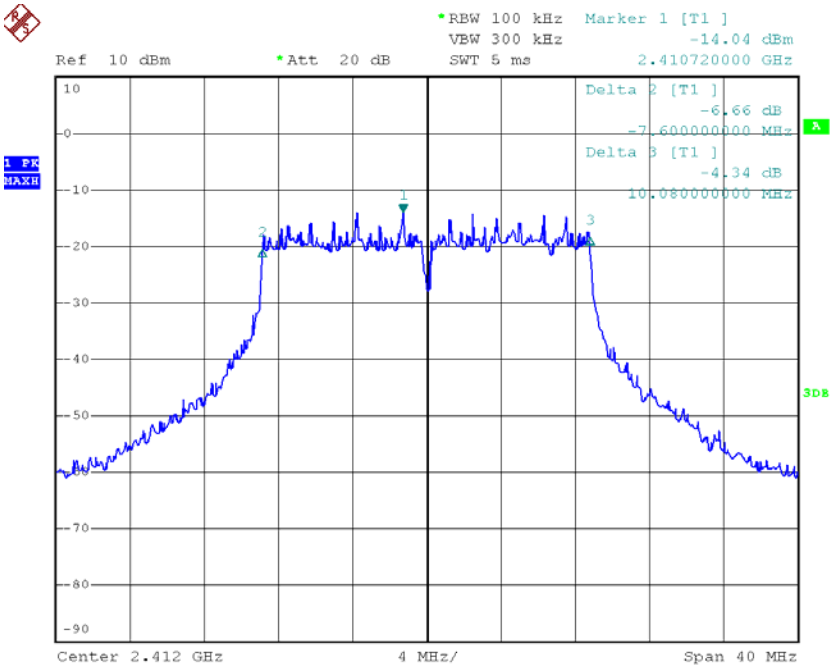


Highest channel=2462MHz

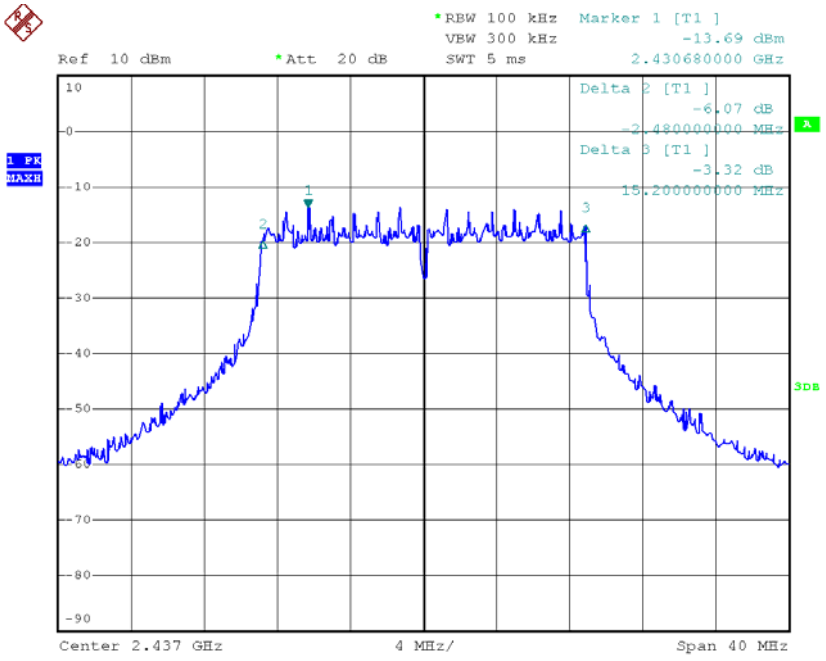


The EUT communicating with 802.11n(H20) Mode

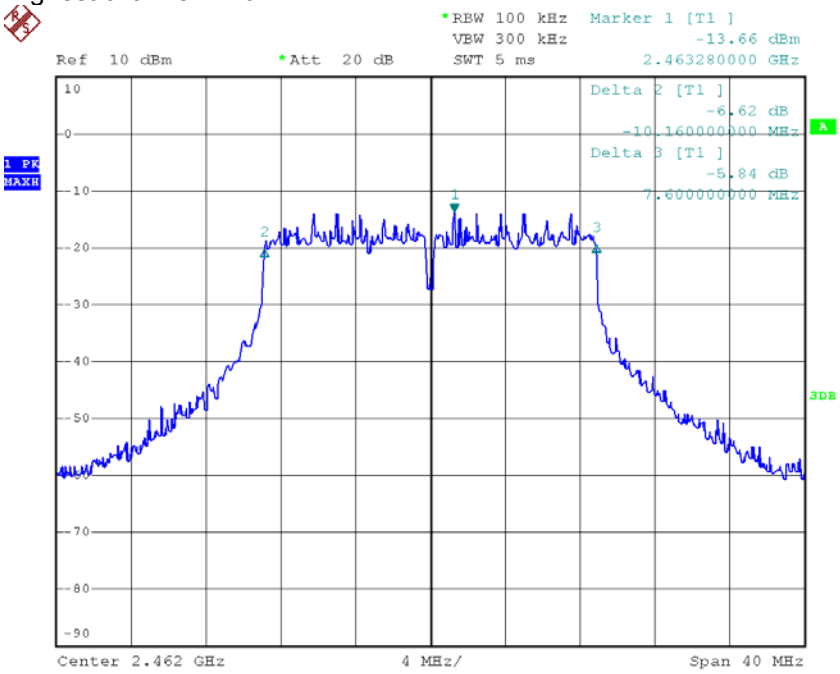
Lowest channel=2412MHz



Middle channel=2437MHz



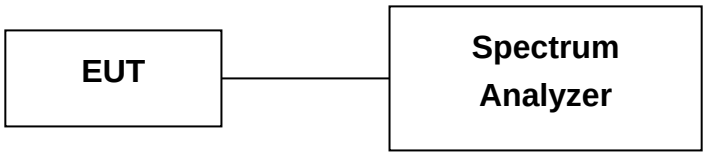
Highest channel=2462MHz



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(H20))
Detector:	RBW=300kHz,VBW=1MHz (Peak detector)
Test Mode:	WIFI transmitting mode
Test Voltage:	120Vac,60Hz
Test Date:	15 October,2012
Temperature:	25°C
Humidity:	52%
Limit:	N/A

5.5.1 Test Setup



5.5.2 Test 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(H20) 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(H20) 65Mbps

5.5.3 Measurement Data

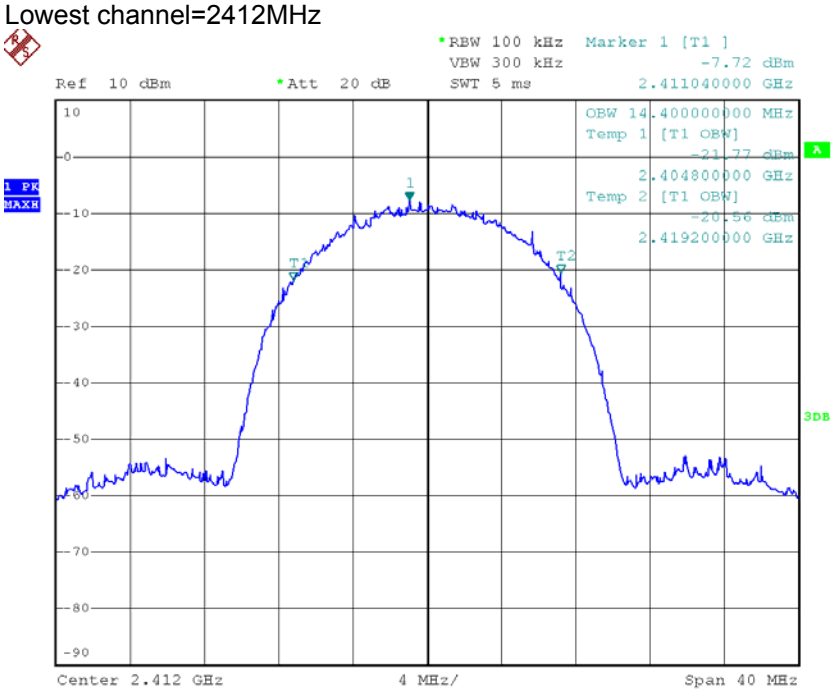
Chanel Frequency (GHz)	99% Occupy Bandwidth(MHz)		
	802.11b	802.11g	802.11n(H20)
2.412	14.40	16.48	17.76
2.437	14.40	16.48	17.68
2.462	14.40	16.48	17.76

Test result: The unit does meet the requirements.

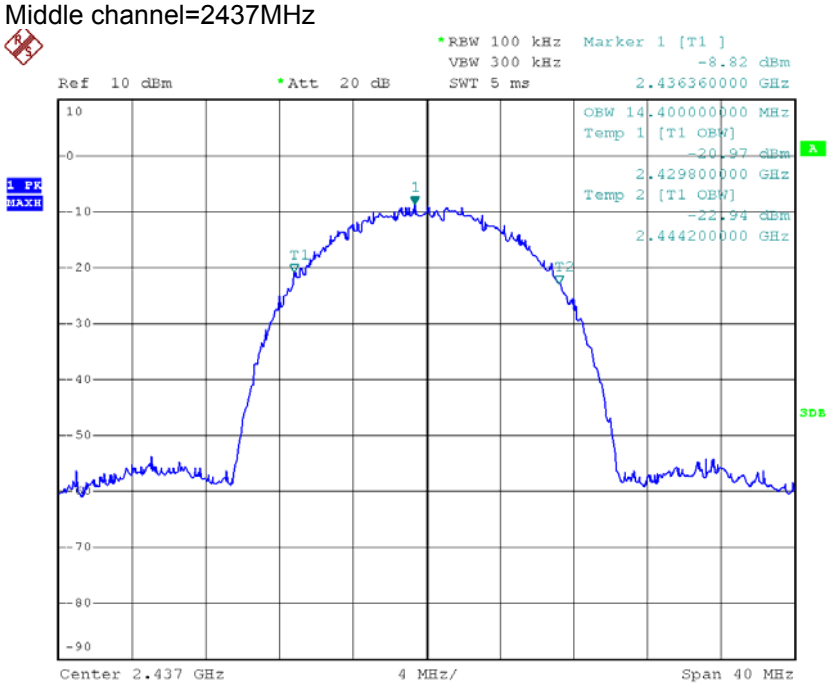
Test result plot as follows:

The EUT communicating with 802.11b Mode

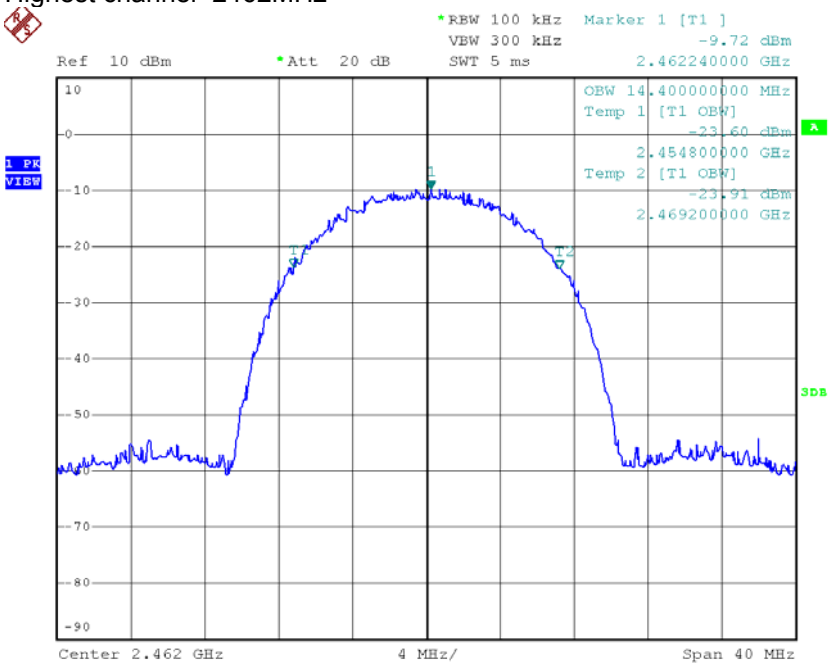
Lowest channel=2412MHz



Middle channel=2437MHz

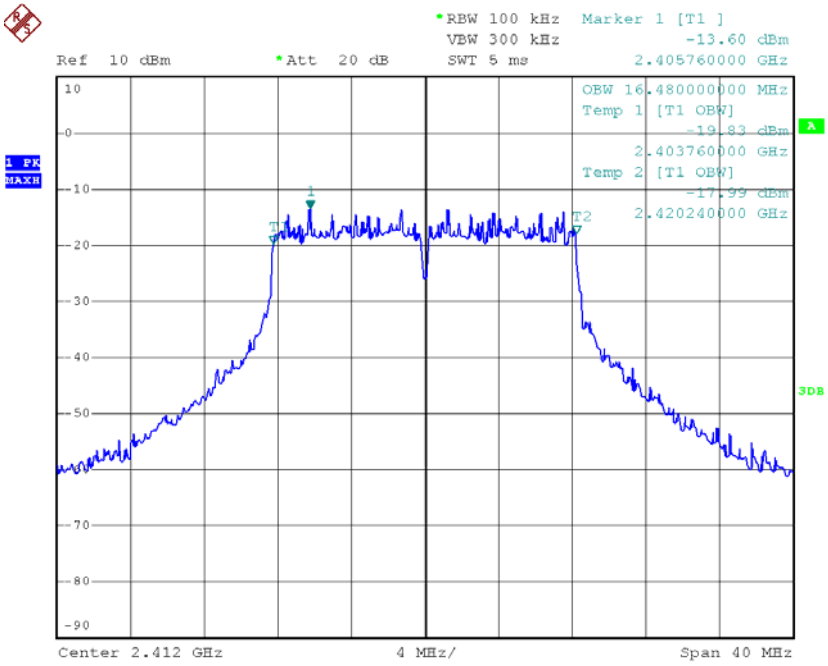


Highest channel=2462MHz

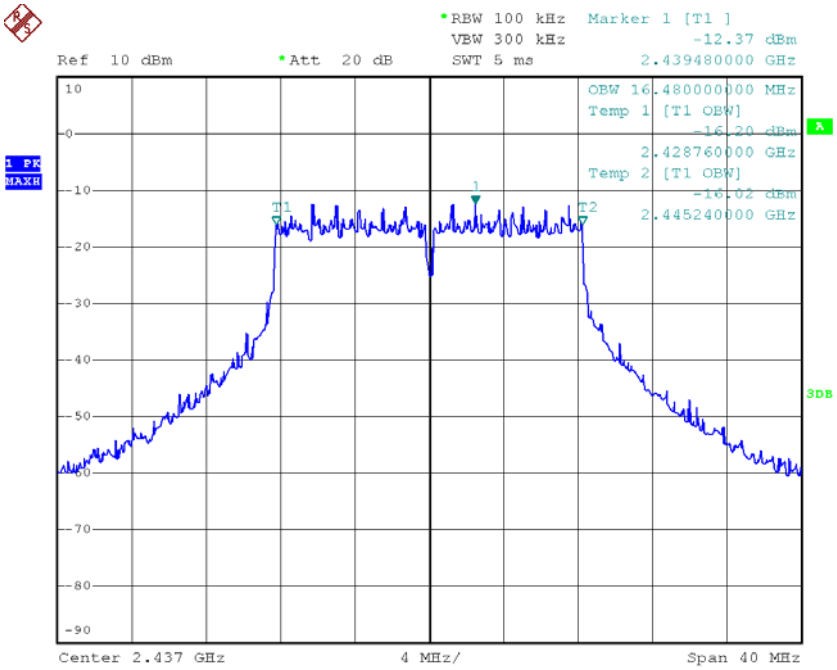


The EUT communicating with 802.11g Mode

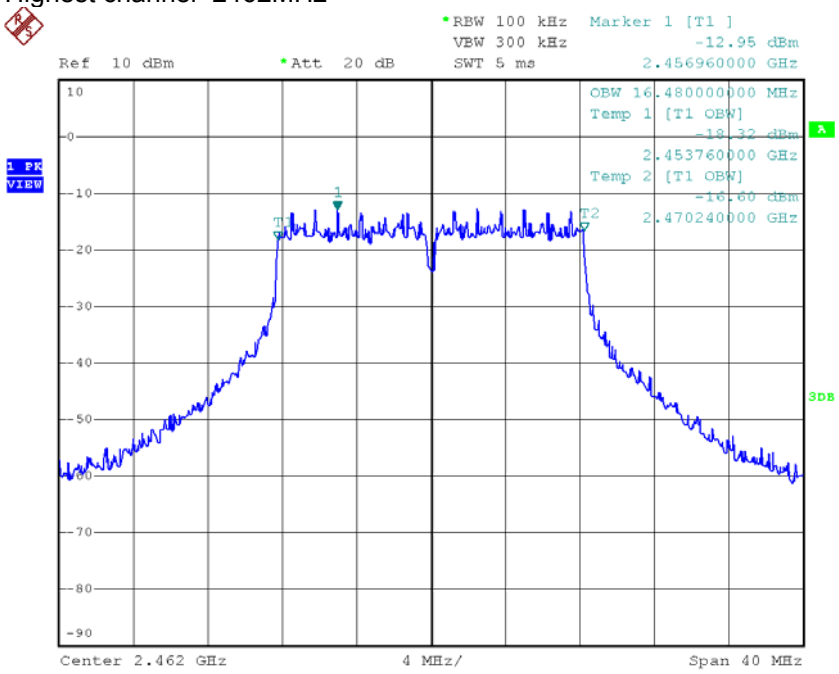
Lowest channel=2412MHz



Middle channel=2437MHz

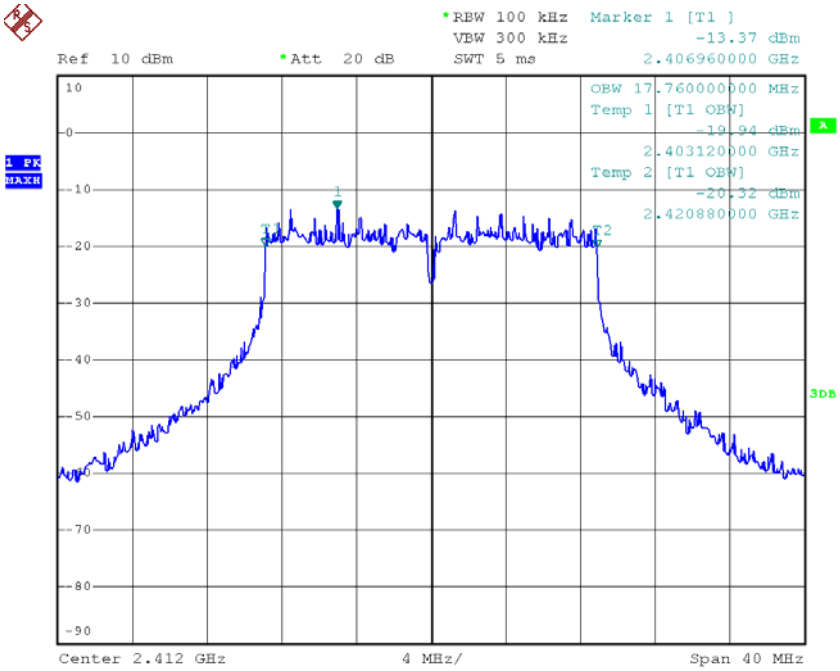


Highest channel=2462MHz

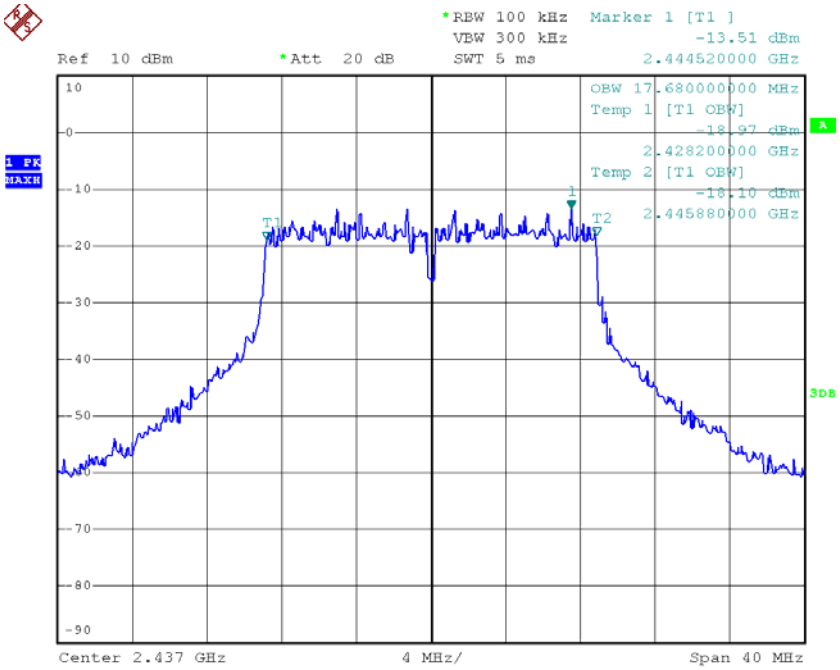


The EUT communicating with 802.11n(H20) Mode

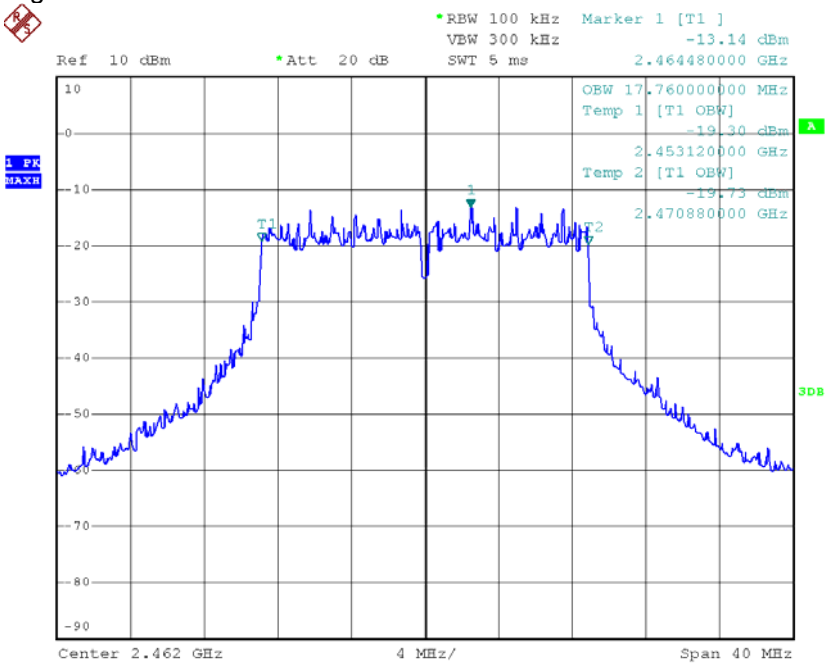
Lowest channel=2412MHz



Middle channel=2437MHz



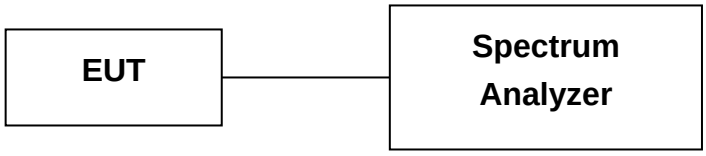
Highest channel=2462MHz



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(H20))
Detector:	RBW=100kHz,VBW=300 KHz (Peak detector)
Test Mode:	WIFI transmitting mode
Test Voltage:	120Vac,60Hz
Test Date:	27 October,2012
Temperature:	25°C
Humidity:	51%
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



5.6.2 Test 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(H20) 6.5/13/19.5/26/39/52/58.5/65Mbps) . Following channel(s) was (were) selected for the final test as listed below:

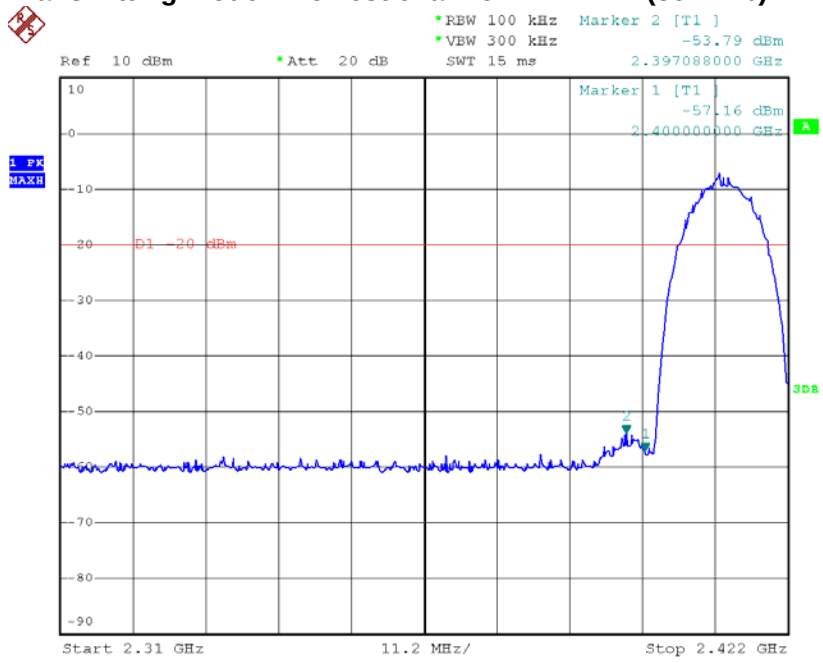
802.11b 11Mbps , 802.11g 54Mbps and 802.11n(H20) 65Mbps

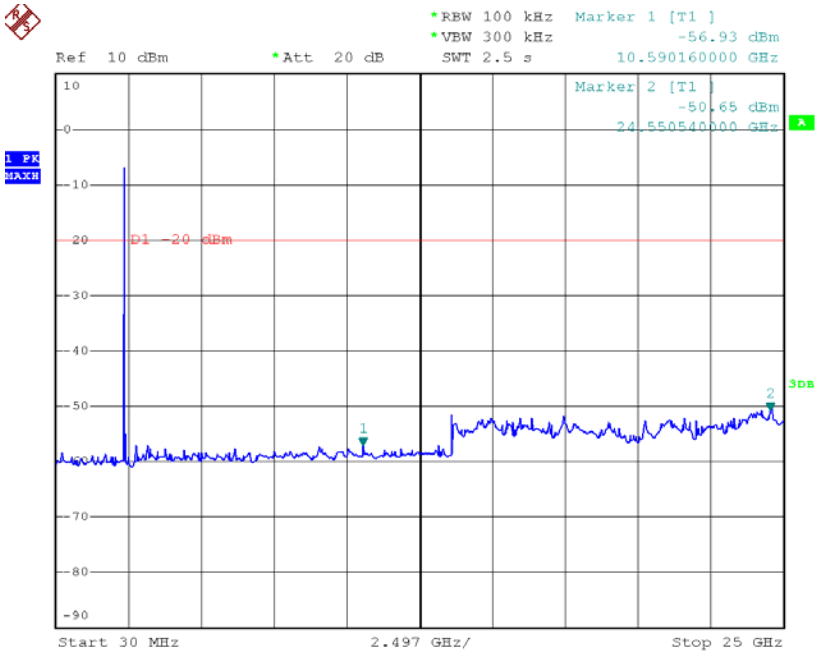
5.6.3 Measurement Data

Test result: The unit does meet the requirements.

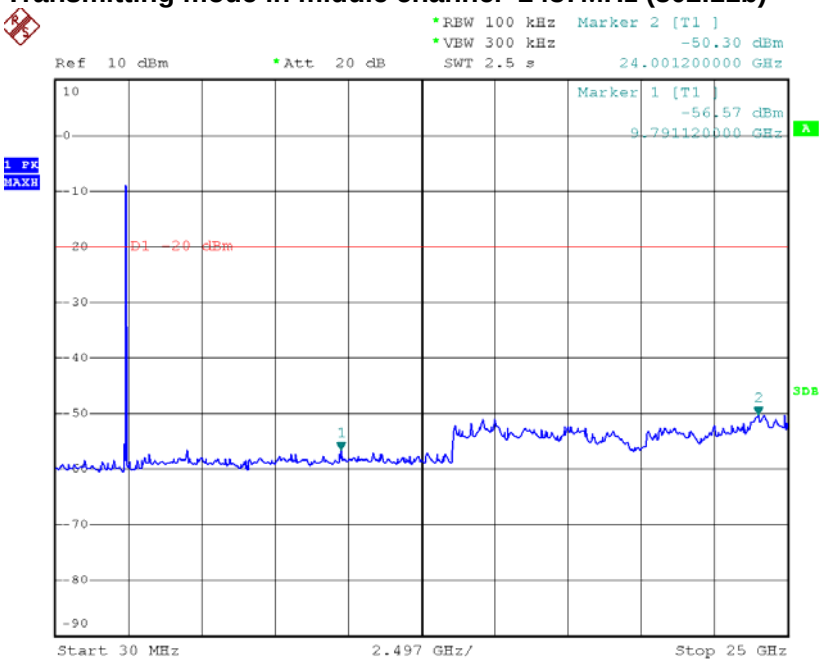
Test result plot as follows:

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

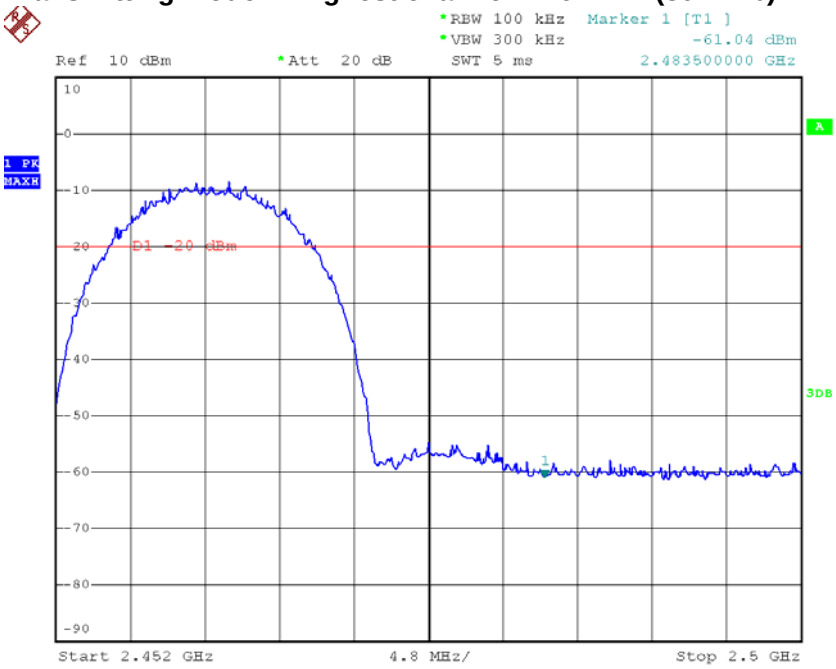


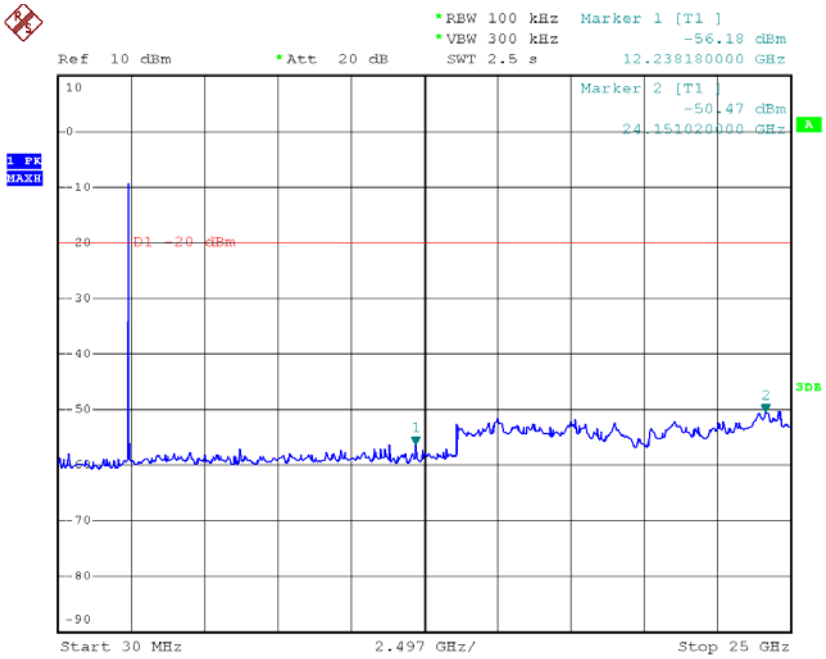


Transmitting mode in middle channel=2437MHz (802.11b)

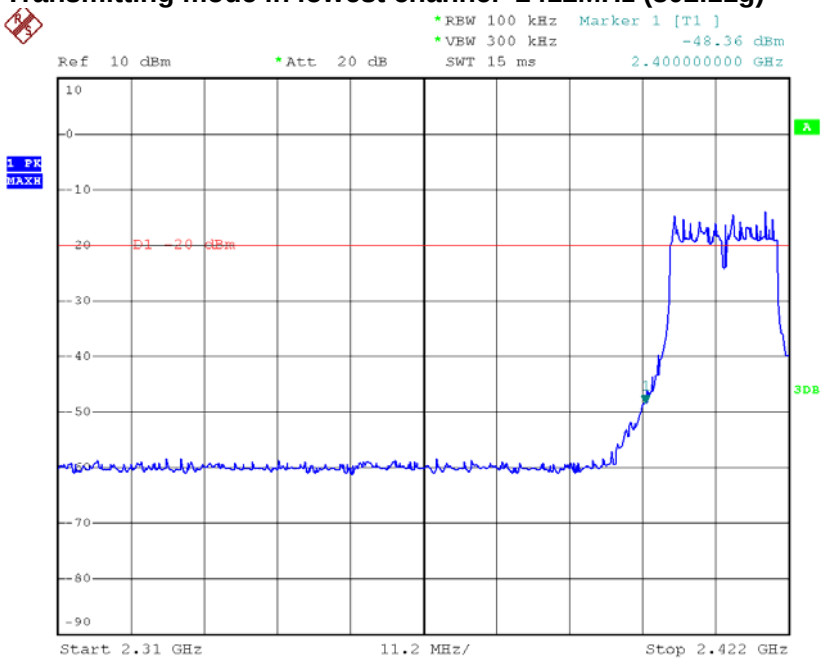


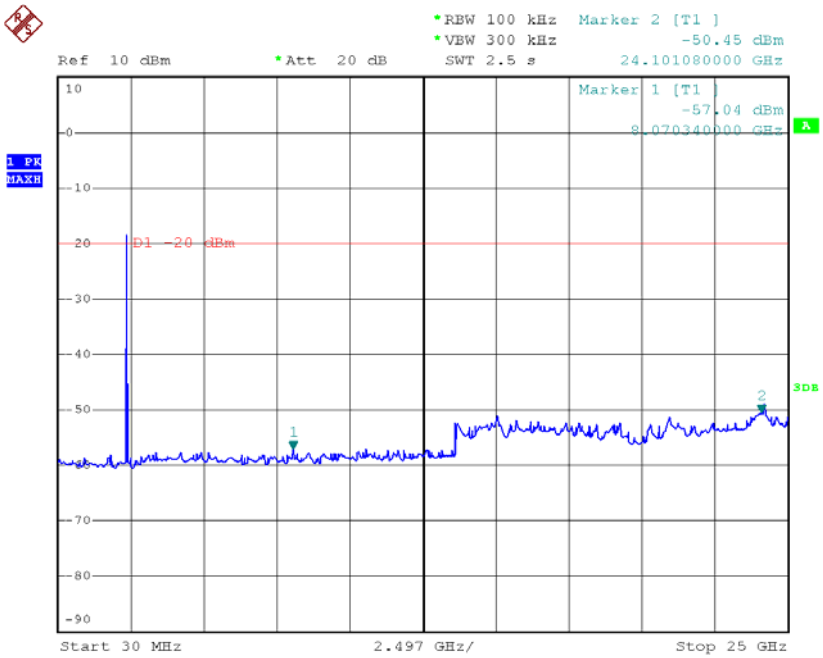
Transmitting mode in highest channel=2462MHz (802.11b)



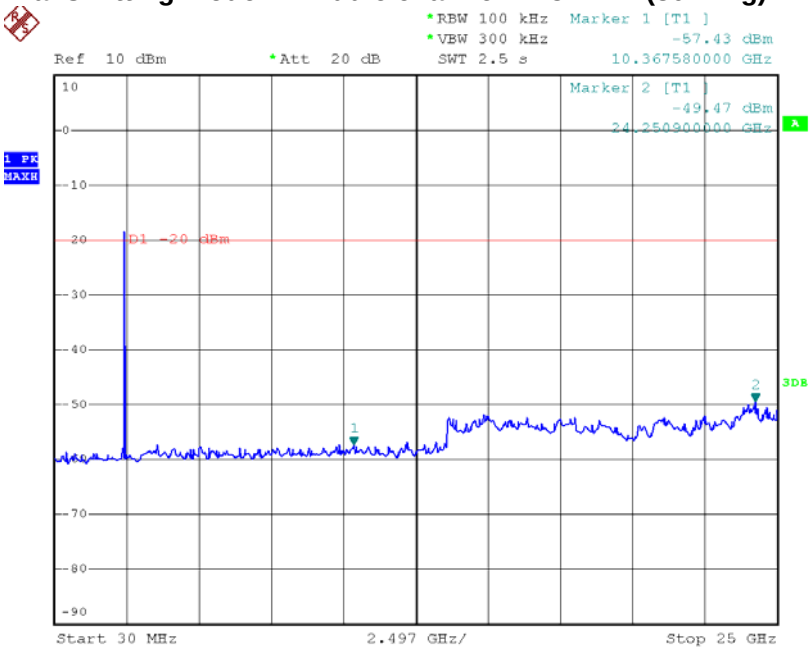


Transmitting mode in lowest channel=2412MHz (802.11g)

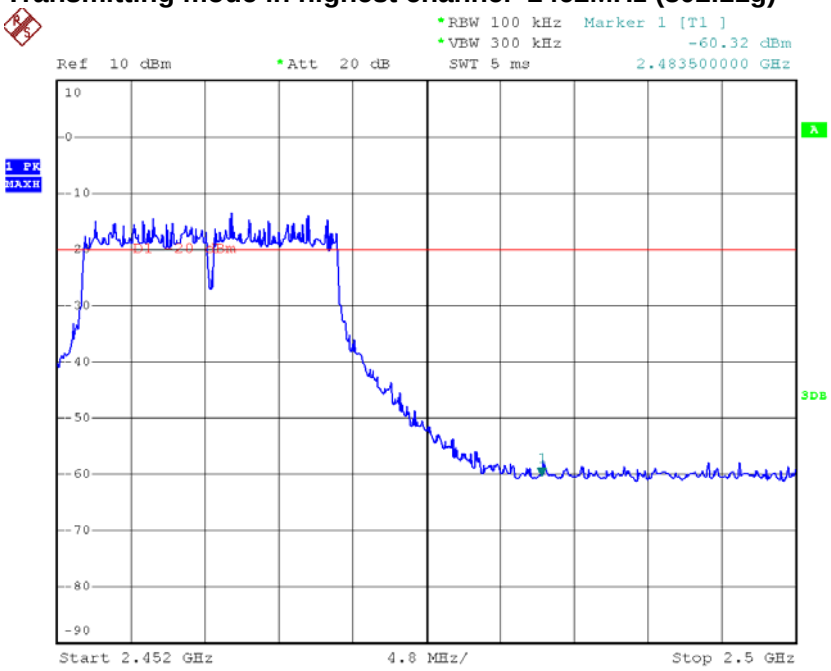


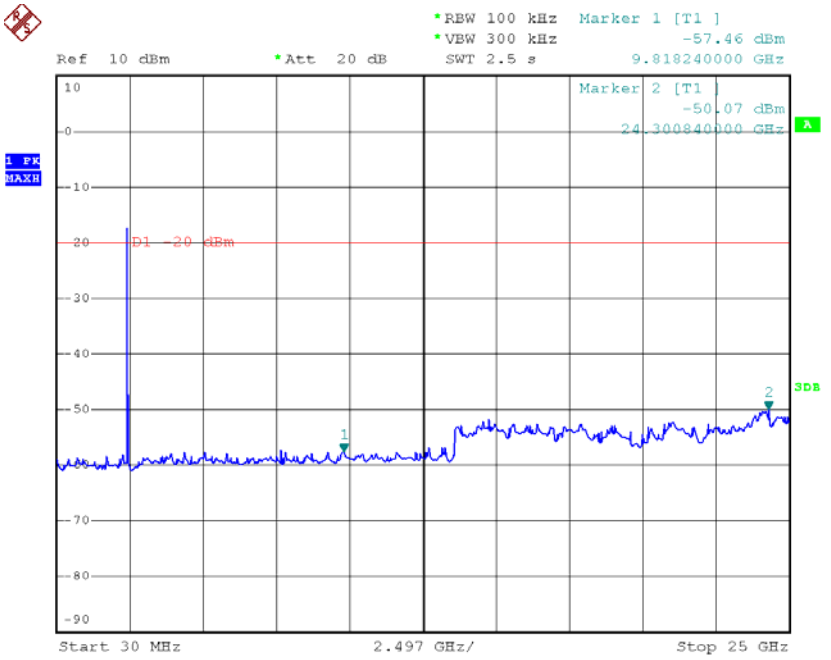


Transmitting mode in middle channel=2437MHz (802.11g)

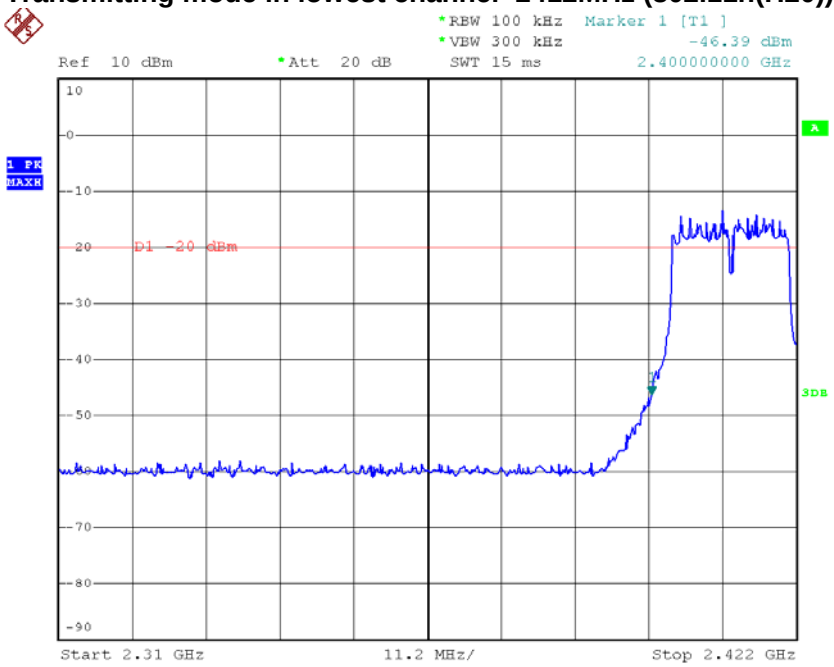


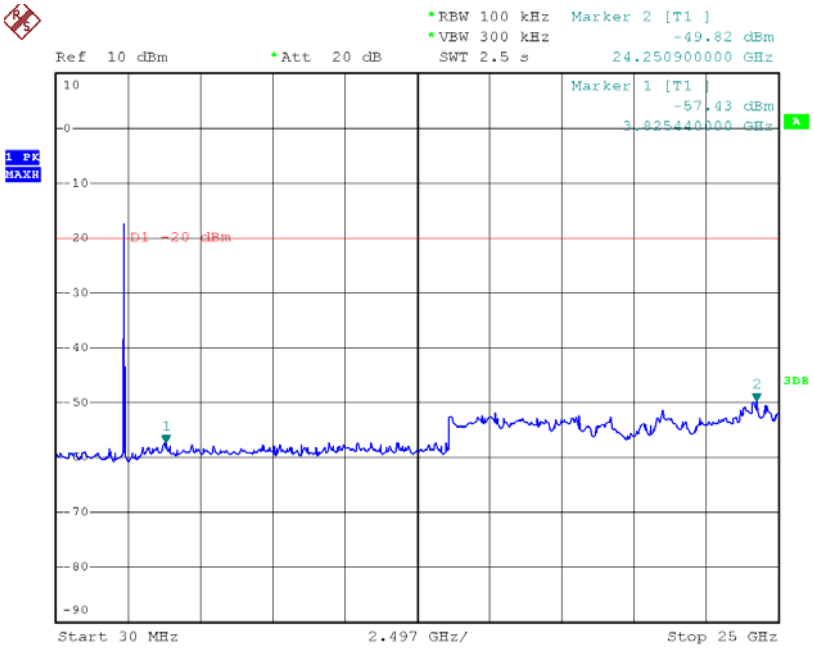
Transmitting mode in highest channel=2462MHz (802.11g)



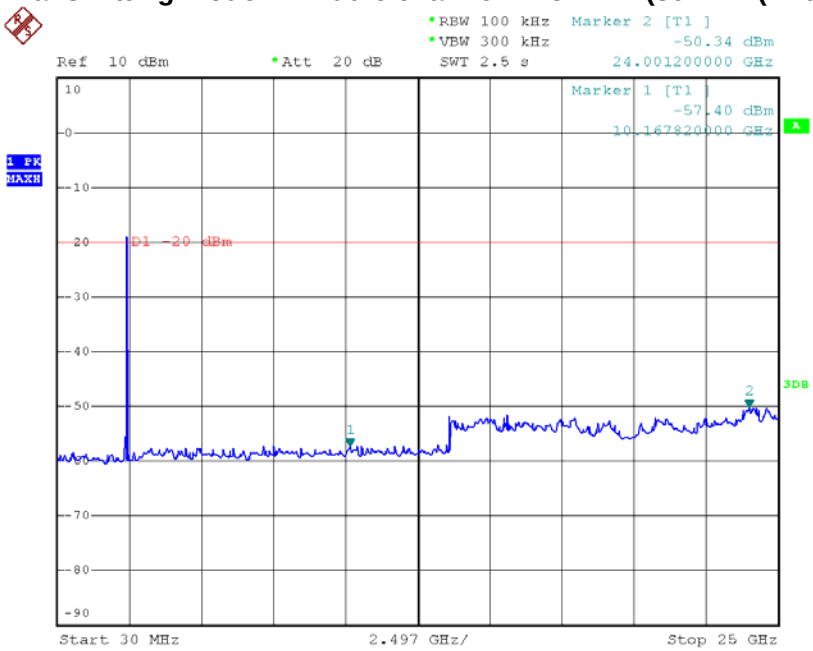


Transmitting mode in lowest channel=2412MHz (802.11n(H20))

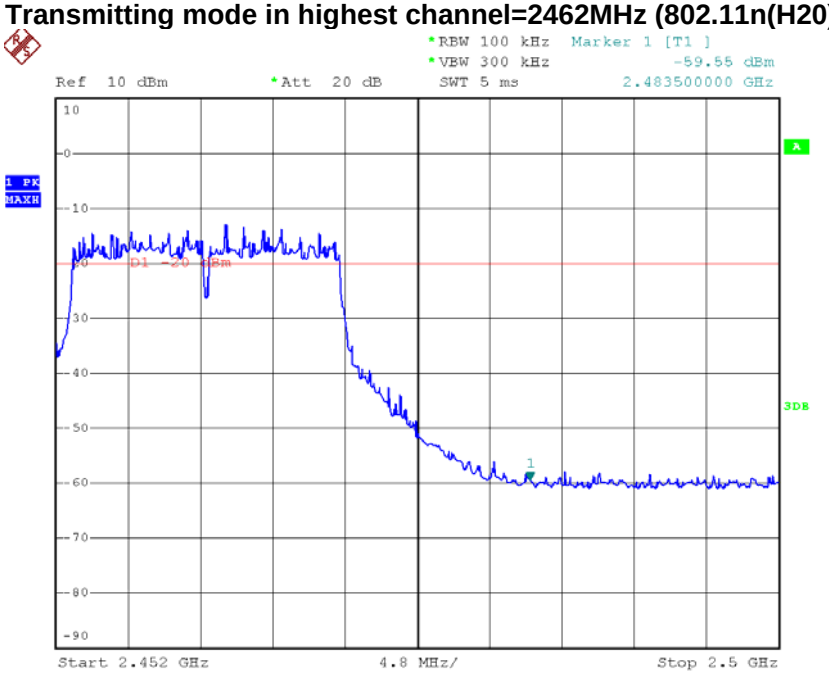


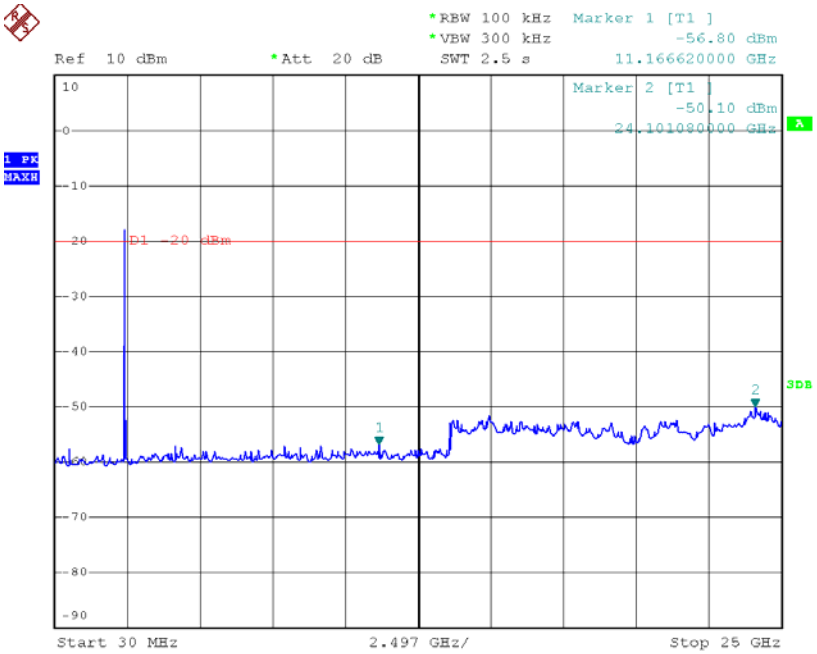


Transmitting mode in middle channel=2437MHz (802.11n(H20))



Transmitting mode in highest channel=2462MHz (802.11n(H20))

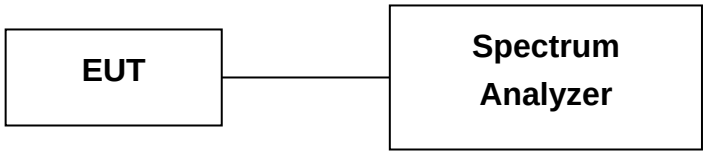




5.7 Power Spectral Density Measurement

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(H20))
Detector:	RBW=100KHz,VBW=300KHz (Peak detector) Span =5-30 % greater than the EBW
Test Mode:	WIFI transmitting mode
Test Voltage:	120Vac,60Hz
Test Date:	27 October,2012
Temperature:	25℃
Humidity:	51%
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



5.7.2 Test 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(H20) 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(H20) 65Mbps

5.7.3 Measurement Data

For EUT communicating with 802.11b Mode

Chanel Frequency (GHz)	Power Spectral Density (dBm)	Cable Loss (dB)	Power Spectral Density level (dBm)	Limit (dBm)	Over Limit (dB)
2.412	-18.30	1.0	-17.30	8.00	-25.30
2.437	-19.46	1.0	-18.46	8.00	-26.46
2.462	-20.96	1.0	-19.96	8.00	-27.96

For EUT communicating with 802.11g Mode

Chanel Frequency (GHz)	Power Spectral Density (dBm)	Cable Loss (dB)	Power Spectral Density level (dBm)	Limit (dBm)	Over Limit (dB)
2.412	-28.10	1.0	-27.10	8.00	-35.10
2.437	-28.71	1.0	-27.71	8.00	-35.71
2.462	-29.36	1.0	-28.36	8.00	-36.36

For EUT communicating with 802.11n(H20) Mode

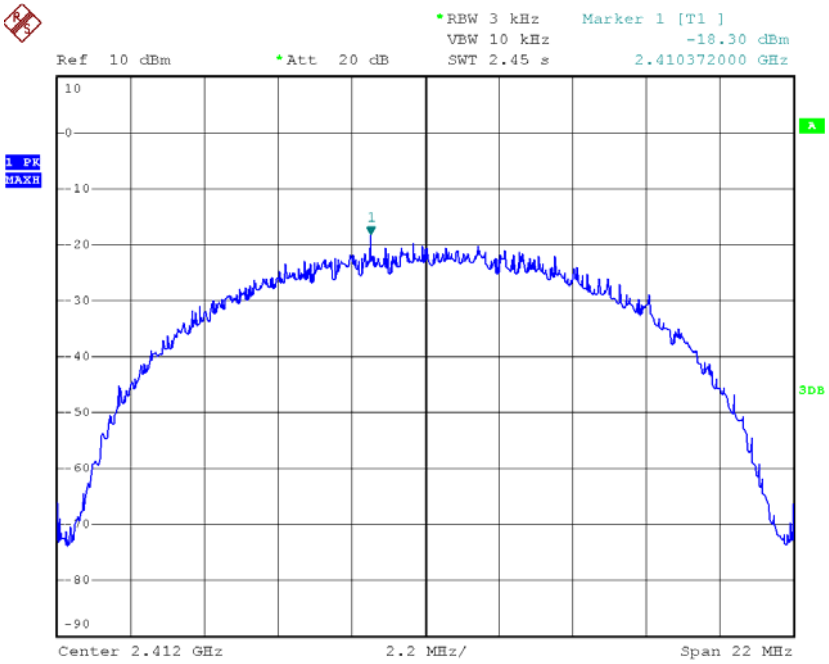
Chanel Frequency (GHz)	Power Spectral Density (dBm)	Cable Loss (dB)	Power Spectral Density level (dBm)	Limit (dBm)	Over Limit (dB)
2.412	-29.76	1.0	-28.76	8.00	-36.76
2.437	-29.55	1.0	-28.55	8.00	-36.55
2.462	-29.53	1.0	-28.53	8.00	-36.53

Test result: The unit does meet the FCC requirements.

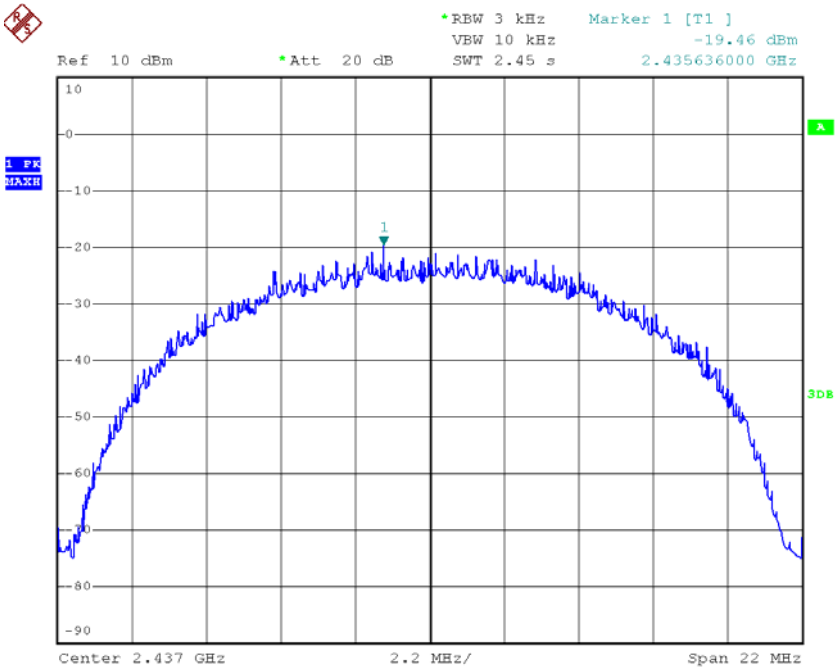
Test result plot as follows:

The EUT communicating with 802.11b Mode

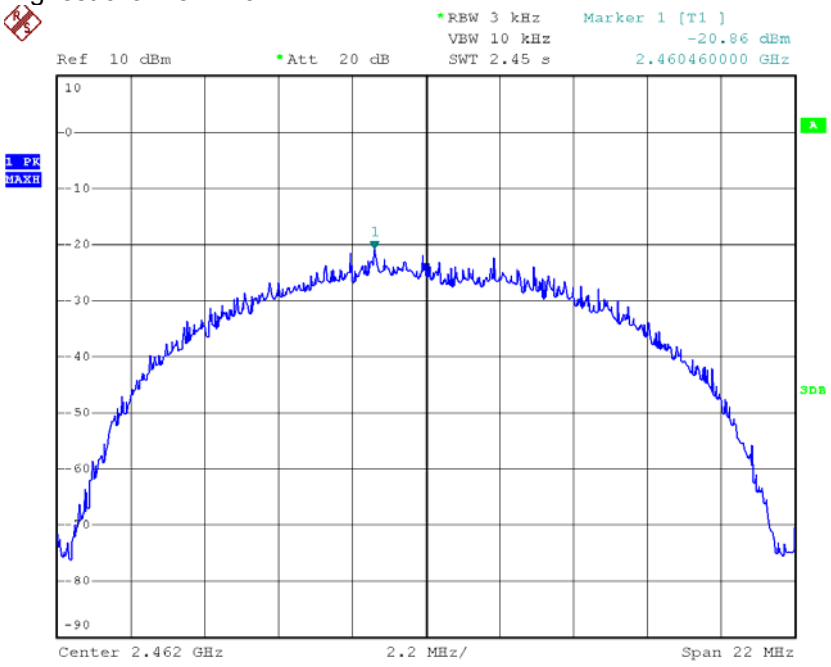
Lowest channel=2412MHz



Middle channel=2437MHz

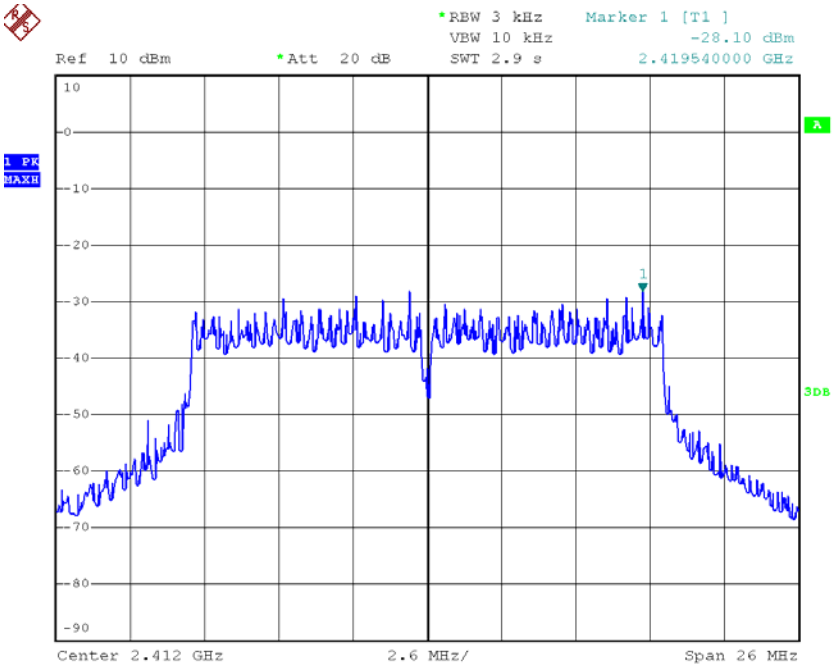


Highest channel=2462MHz

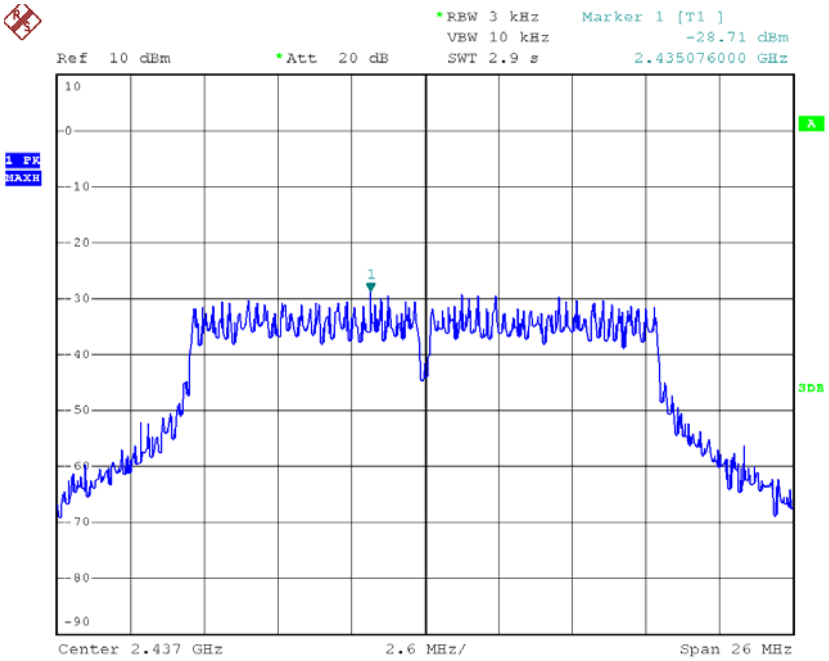


The EUT communicating with 802.11g Mode

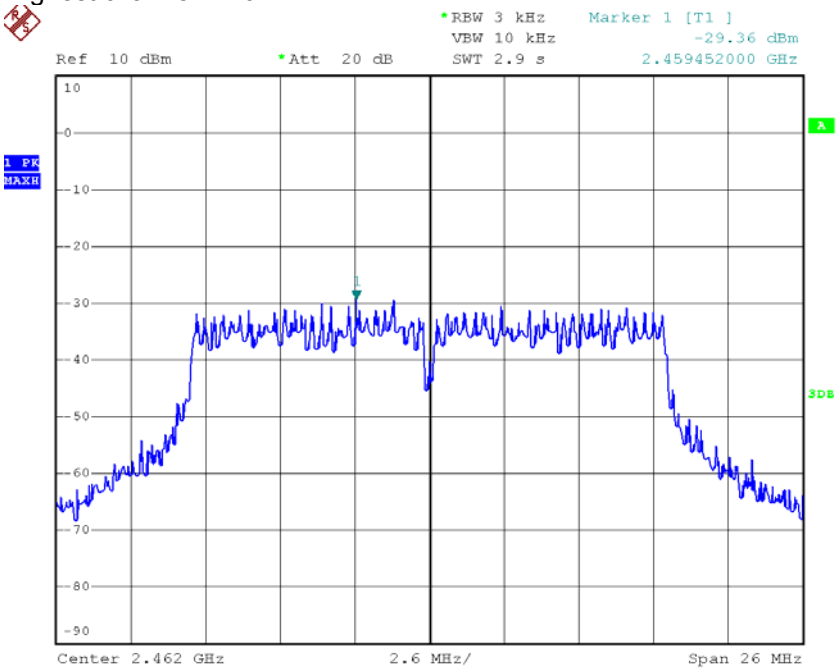
Lowest channel=2412MHz



Middle channel=2437MHz

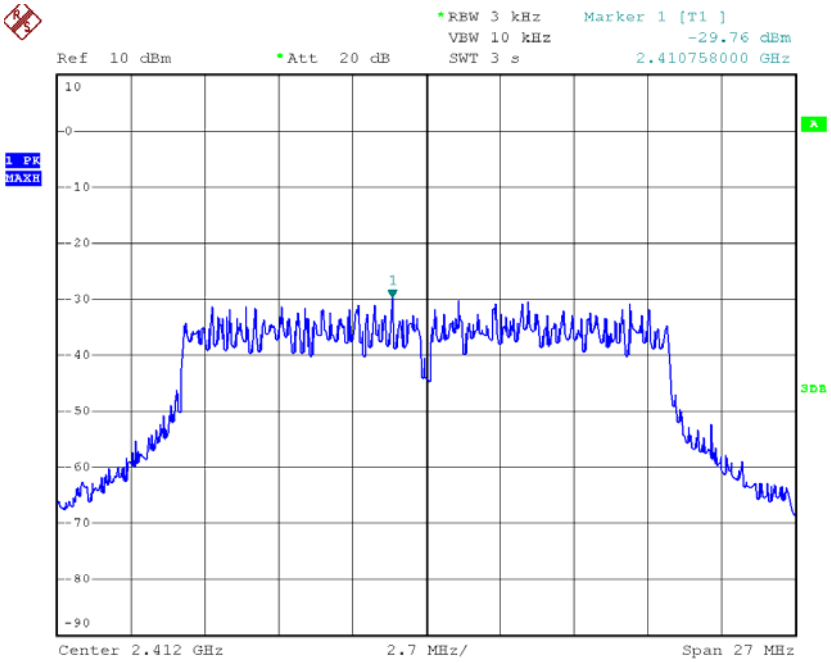


Highest channel=2462MHz

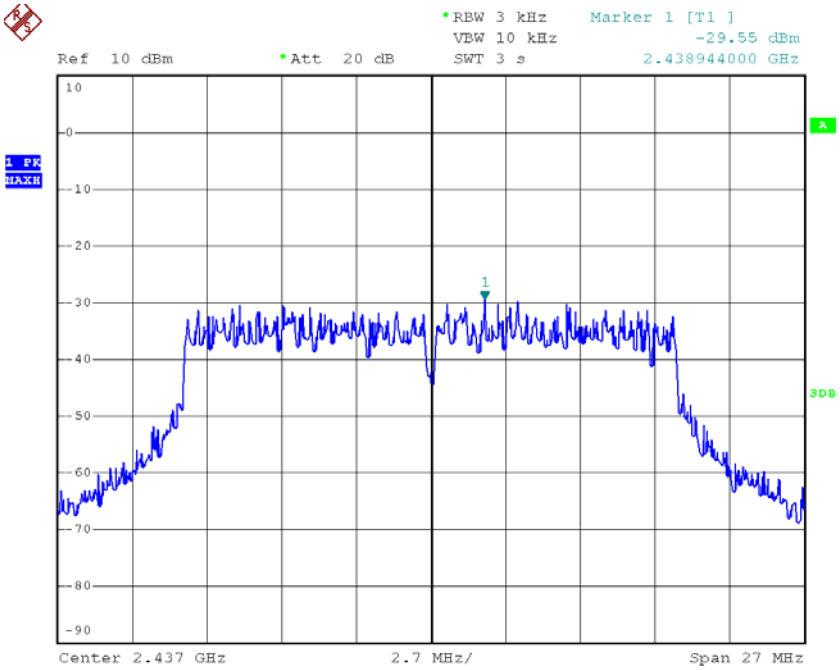


The EUT communicating with 802.11n(H20) Mode

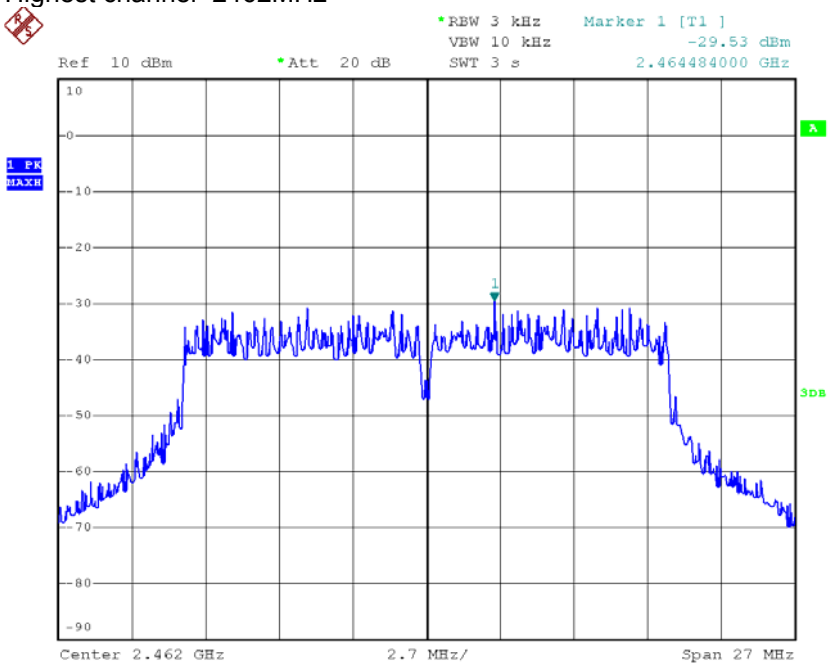
Lowest channel=2412MHz



Middle channel=2437MHz



Highest channel=2462MHz



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 an integral antenna inside EUTand no consideration of replacement. The best case gain of the antenna is 0dBi.

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 10.94dBm in the lowest channel (2.412GHz);

The best case gain of the antenna is 0dBi.

calculate the EIRP test result:

EIRP=10.94dBm=12.42mW ①

SAR requirement:

S= 60 / f(GHz) = 60/2.412 = 24.87 mW ② ;

① < 20mW < ②.

So the SAR report is not required.