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FCC ID: SOVAN9G3
Report No.: FCC12-RTE031902
Page: 1 of 71

TEST REPORT

Application No.: FCC12-RTE030102RF
Applicant: ARCHOS S.A.
Address of Applicant: 12 Rue Ampere 91430 Igny, France
FCC ID: SOVAN9G3
Fundamental Carrier Frequency : 2.412GHz to 2.462GHz
Equipment Under Test (EUT):
EUT Name: Home Tablet
Item No.: AN9G3
Serial No.: Not supplied by client
Standards: FCC PART 15 Subpart C: 2010
Date of Receipt: March 01, 2012
Date of Test: March 04, 2012 to March 16, 2012
Date of Issue: March 19, 2012

Test Result :	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

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.

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1 Test Summary

Test	Test Requirement	Standard Paragraph	Result
Conducted Emissions	FCC PART 15:2010	Section 15.207	PASS
Radiated Emissions	FCC PART 15:2010	Section 15.205/15.209	PASS
Maximum Peak Output Power	FCC PART 15:2010	Section 15.247 (b)	PASS
6dB Occupied Bandwidth	FCC PART 15:2010	Section 15.247 (a2)	PASS
Band Edges and Conducted Spurious Emissions	FCC PART 15:2010	Section 15.247(d)	PASS
Power Spectral Density Measurement	FCC PART 15:2010	Section 15.247 (e)	PASS
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

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3 General Information

3.1 Client Information

Applicant:	ARCHOS S.A.
Address of Applicant:	12 Rue Ampere 91430 Igny, France
Manufacturer:	ARCHOS S.A.
Address of Manufacturer:	12 Rue Ampere 91430 Igny, France
Factory:	Shenzhen Chao Ming Industrial.Co.,Ltd
Address of Factory:	Block 3,Yu Jing Tai Industrial Area,Huaxing Road,Da Lang,Long hua,Bao'an District, Shenzhen, China

3.2 General Description of E.U.T.

Equipment Under Test:	Wireless Data Transmission (WiFi)
Trade Name:	ARNOVA
Type Designation:	Home Tablet
Model Number:	AN9G3
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), 135Mbps(802.11n)
Conducted Power:	10.99dBm(802.11b), 9.28dBm(802.11g), 8.29dBm(802.11n-H20), 8.21 dBm(802.11n-H40)
Number of Channels:	IEEE802.11b/g/n-H20:11 IEEE802.11n-H40:7
Operation Frequency:	IEEE802.11b/g/n-H20: 2412 ~2462MHz IEEE802.11n-H40: 2422 ~2452MHz
Antenna Designation:	Integral
Antenna Gain:	0 dBi
	AC Adaptor Model: HNO090200X
Power Supply:	Input:AC 100-240V 50/60Hz 0.6A Output:DC 9.0V 2.0A
Date of Test:	March 04, 2012 to March 16, 2012

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IEEE802.11 b/g/n-H20					
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		
IEEE802.11 n-H40					
Channel	Frequency(MHz)	Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2422	04	2437	07	2452
02	2427	05	2442		
03	2432	06	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:

IEEE802.11 b/g/n-H20

Lowest channel: 2412MHz

Middle channel: 2437MHz

Highest channel: 2462 MHz

IEEE802.11 n-H40

Lowest channel: 2422MHz

Middle channel: 2437MHz

Highest channel: 2452 MHz

3.3 Test Supporting System Details

Equipment Name	Model No.	Manufacturer	FCC Status
Notebook Computer	X121e	Lenovo	DOC
Monitor	TFT1780PS	AOV	DOC
Keyboard	JME7053	Lenovo	DOC
Mouse	N/A	Lenovo	DOC

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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

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 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.

3.6 .Measurement Uncertainty

of +/- 3×10^{-9} for 6dB 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 Emission					
No.	Test Equipment	Manufacturer	Mo del No.	Serial No.	Cal. Due Date
GAL-EMC002	Shielding Room	ETS	N/A	N/A	2012-05-18
GAL-EMC003	Receiver	SCHAFFNER	SMR4503	11725	2012-07-08
GAL-EMC005	Line impedance stabilization network	EMCO	4825/2	1161	2012-07-08
GAL-EMC098	Line impedance stabilization network	EMCO	3810/2	2516	2012-07-08
RF in Chamber					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Due Date
GAL-EMC001	Semi-anechoic Chamber	ETS	N/A	N/A	2012-05-25
GAL-EMC003	Receiver	SCHAFFNER	SMR4503	11725	2012-07-08
GAL-EMC007	Double-ridged Wave guide horn	ETS	3115	6587	2012-08-02
GAL-EMC008	Microwave system amplifier (0.5G-26.5G)	Agilent	83017A	MY39500438	2012-07-08
GAL-EMC017	Biconilog Antenna	ETS	3142C	00042672	2012-09-26
GAL-EMC055	Band-pass Filter	Micro-Tronic	BRM50702	S/N-030	2012-11-21
GAL-EMC056	Spectrum Analyzer 9KHz-30GHz	R&S	FSP30	100755	2012-11-21
GAL-EMC075	Double-ridged Wave guide horn	ETS	3160	00052486	2012-08-02
RF Conducted					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Due Date
GAL-EMC056	Spectrum Analyzer 9KHz-30GHz	R&S	FSP30	100755	2012-11-21
GAL-EMC100	ATC—Lab	N/A	N/A	N/A	2012-11-21

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5 Test Results

5.1 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
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 keeping TX mode
Test Voltage:	120Vac,60Hz
Test Date:	04 March. 2012
Temperature:	23°C
Humidity:	57%
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 μ 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.

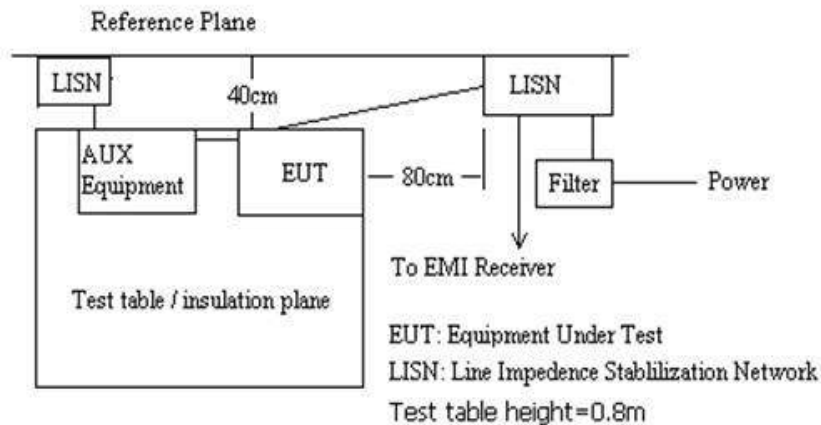
Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

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5.1.1 Test Setup



5.1.2 Test Procedure

The Device was conneted to the artifical main network via AC adapter, And test the EUT with actived in WIFI transmit mode.

5.1.3 Measurement 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.

PC Active with the EUT in transmit mode

Frequency (MHz)	Line	Measured QP (dBuV)	QP Limit (dBuV)	Measured AV (dBuV)	AV Limit (dBuV)	Over Limit QP	Over Limit AV
0.1750	L	44.90	64.65	19.50	54.65	-19.75	-35.15
0.2550	L	47.00	61.55	25.70	51.55	-14.55	-25.85
0.5150	L	41.90	56.00	24.60	46.00	-14.10	-21.40
0.6850	L	40.40	56.00	23.40	46.00	-15.60	-22.60
0.7500	L	39.80	56.00	23.20	46.00	-16.20	-22.80
1.9850	L	38.80	56.00	27.40	46.00	-17.20	-18.60
0.1750	N	53.30	64.65	27.10	54.65	-11.35	-27.55
0.2050	N	51.90	63.34	22.80	53.34	-11.44	-30.54
0.2600	N	49.30	61.39	20.50	51.39	-12.09	-30.89
0.4850	N	45.30	56.25	28.90	46.25	-10.95	-17.35
0.6850	N	41.40	56.00	25.60	46.00	-14.60	-20.40
1.1200	N	38.90	56.00	26.10	46.00	-17.10	-19.90

Test result: The unit does meet the requirements.

Test result plot as follows:

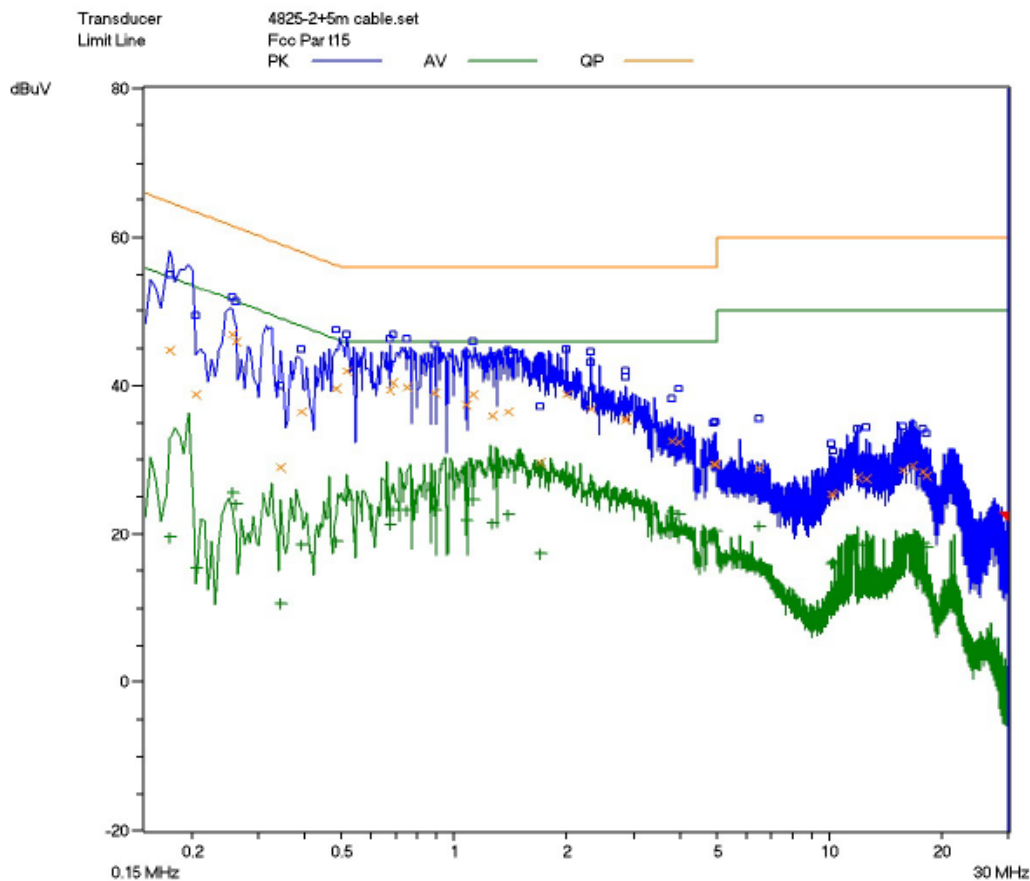
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Live Line

Title	CE L
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



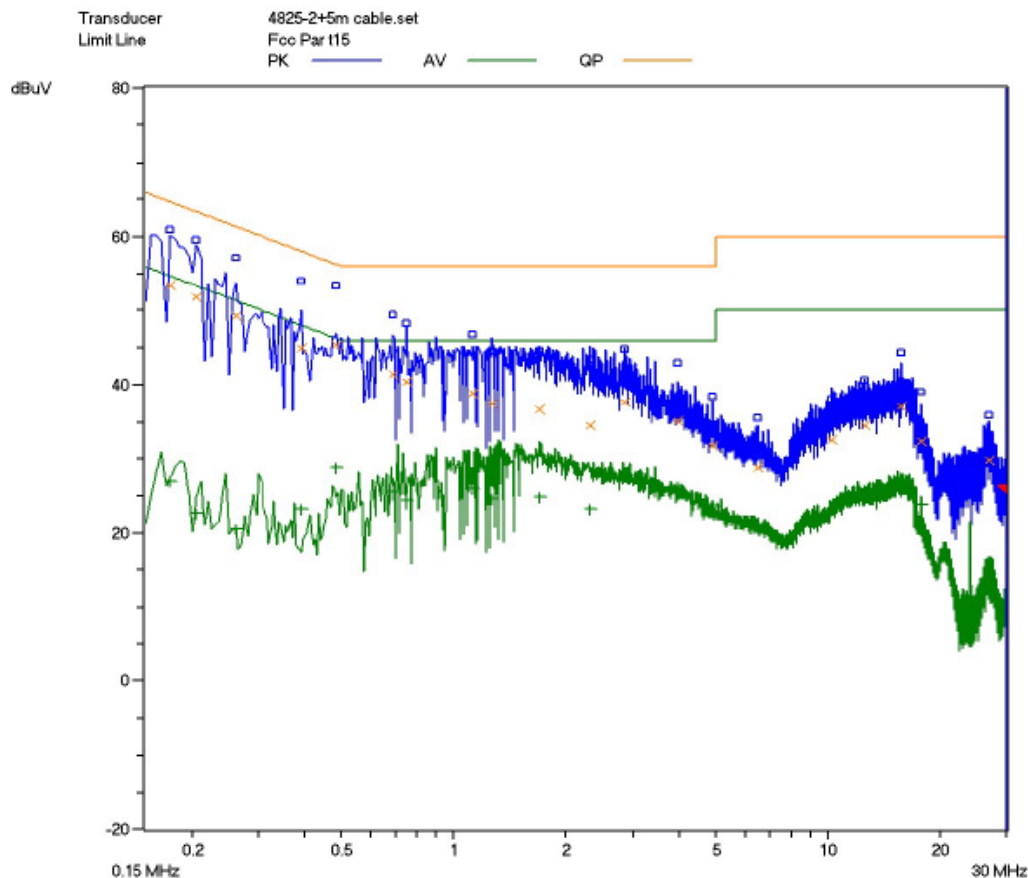
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Nuetral Line

Title	CE N
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



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5.2 Radiated Emissions

Test Requirement:	FCC Part15 C Section 15.247,15.209 and 15.205
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 keeping TX mode
Test Voltage:	120Vac,60Hz
Test Date:	04 March. 2012 to 07 March. 2012
Temperature:	23℃~24℃
Humidity:	52%~58%
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 (MHz)	Field Strength	
	(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

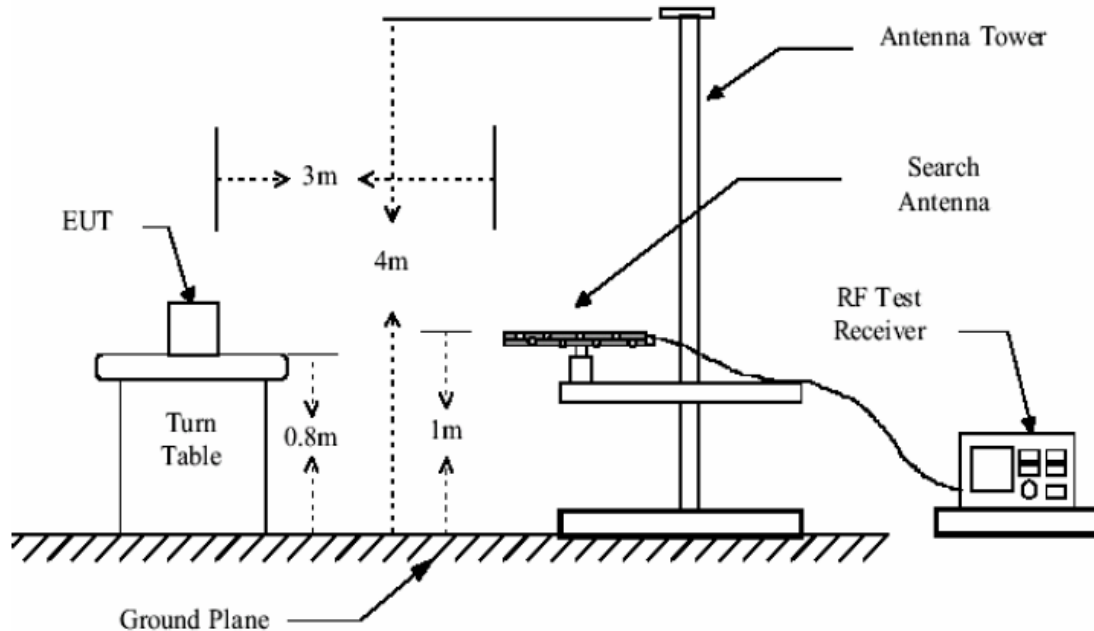


Figure1: 30MHz to 1GHz radiated emissions test setup

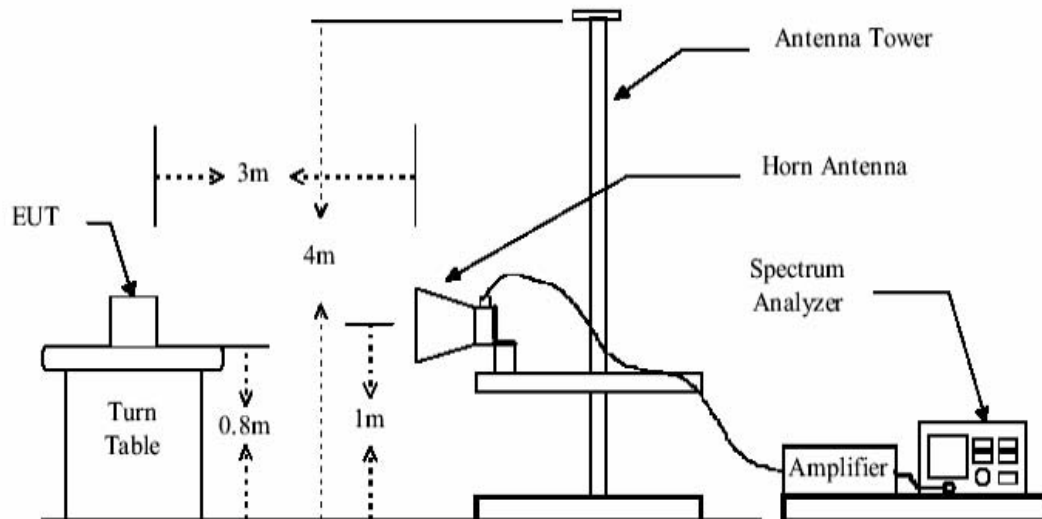


Figure 2: Above 1GHz radiated emissions test setup

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5.2.2 Test Procedure

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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5.2.3 Measurement 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.

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
34.130	H	9.10	18.30	27.40	40.00	-12.60	Pass
150.270	H	10.70	8.20	18.90	43.50	-24.60	Pass
281.300	H	12.10	14.30	26.40	46.00	-19.60	Pass
313.680	H	10.50	14.90	25.40	46.00	-20.60	Pass
400.000	H	20.10	16.70	36.80	46.00	-9.20	Pass
864.500	H	4.90	23.70	28.60	46.00	-17.40	Pass
32.520	V	13.14	17.60	30.74	40.00	-9.26	Pass
39.460	V	13.93	17.60	31.53	40.00	-8.47	Pass
45.200	V	15.00	13.70	28.70	40.00	-11.30	Pass
400.000	V	18.80	16.70	35.50	46.00	-10.50	Pass
512.250	V	8.90	19.10	28.00	46.00	-18.00	Pass
793.240	V	8.00	22.20	30.20	46.00	-15.80	Pass

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**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,65Mbps of 802.11n-H20 and 135Mbps of 802.11n-H40 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
4824.000	H	43.25	6.10	49.35	74.00	-24.65	Pass
7236.000	H	45.29	11.80	57.09	74.00	-16.91	Pass
9648.000	H	42.69	14.37	57.06	74.00	-16.94	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4824.000	V	43.36	6.10	49.46	74.00	-24.54	Pass
7236.000	V	44.27	11.80	56.07	74.00	-17.93	Pass
9648.000	V	44.19	14.37	58.56	74.00	-15.44	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
4824.000	H	32.55	6.10	38.65	54.00	-15.35	Pass
7236.000	H	32.48	11.80	44.28	54.00	-9.72	Pass
9648.000	H	32.10	14.37	46.47	54.00	-7.53	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4824.000	V	32.69	6.10	38.79	54.00	-15.21	Pass
7236.000	V	33.67	11.80	45.47	54.00	-8.53	Pass
9648.000	V	31.20	14.37	45.57	54.00	-8.43	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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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
4874.000	H	43.28	6.10	49.38	74.00	-24.62	Pass
7311.000	H	45.10	11.92	57.02	74.00	-16.98	Pass
9748.000	H	43.12	14.37	57.49	74.00	-16.51	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4874.000	V	44.89	6.10	50.99	74.00	-23.01	Pass
7311.000	V	4.20	11.92	16.12	74.00	-57.88	Pass
9748.000	V	43.68	14.37	58.05	74.00	-15.95	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
4874.000	H	32.06	6.10	38.16	54.00	-15.84	Pass
7311.000	H	32.08	11.92	44.00	54.00	-10.00	Pass
9748.000	H	30.28	14.37	44.65	54.00	-9.35	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4874.000	V	31.48	6.10	37.58	54.00	-16.42	Pass
7311.000	V	31.25	11.92	43.17	54.00	-10.83	Pass
9748.000	V	30.40	14.37	44.77	54.00	-9.23	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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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
4924.000	H	45.32	6.10	51.42	74.00	-22.58	Pass
7386.000	H	44.19	12.10	56.29	74.00	-17.71	Pass
9848.000	H	43.10	14.37	57.47	74.00	-16.53	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4924.000	V	44.58	6.10	50.68	74.00	-23.32	Pass
7386.000	V	44.01	12.10	56.11	74.00	-17.89	Pass
9848.000	V	43.23	14.37	57.60	74.00	-16.40	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
4924.000	H	33.20	6.10	39.30	54.00	-14.70	Pass
7386.000	H	32.15	12.10	44.25	54.00	-9.75	Pass
9848.000	H	30.18	14.37	44.55	54.00	-9.45	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4924.000	V	32.33	6.10	38.43	54.00	-15.57	Pass
7386.000	V	31.79	12.10	43.89	54.00	-10.11	Pass
9848.000	V	30.02	14.37	44.39	54.00	-9.61	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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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
4824.000	H	43.87	6.10	49.97	74.00	-24.03	Pass
7236.000	H	44.16	11.80	55.96	74.00	-18.04	Pass
9648.000	H	42.06	14.37	56.43	74.00	-17.57	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4824.000	V	43.89	6.10	49.99	74.00	-24.01	Pass
7236.000	V	44.75	11.80	56.55	74.00	-17.45	Pass
9648.000	V	43.28	14.37	57.65	74.00	-16.35	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
4824.000	H	32.17	6.10	38.27	54.00	-15.73	Pass
7236.000	H	31.04	11.80	42.84	54.00	-11.16	Pass
9648.000	H	30.29	14.37	44.66	54.00	-9.34	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4824.000	V	31.09	6.10	37.19	54.00	-16.81	Pass
7236.000	V	31.14	11.80	42.94	54.00	-11.06	Pass
9648.000	V	29.86	14.37	44.23	54.00	-9.77	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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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
4874.000	H	45.28	6.10	51.38	74.00	-22.62	Pass
7311.000	H	43.21	11.92	55.13	74.00	-18.87	Pass
9748.000	H	42.07	14.37	56.44	74.00	-17.56	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4874.000	V	44.82	6.10	50.92	74.00	-23.08	Pass
7311.000	V	44.01	11.92	55.93	74.00	-18.07	Pass
9748.000	V	42.63	14.37	57.00	74.00	-17.00	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
4874.000	H	31.25	6.10	37.35	54.00	-16.65	Pass
7311.000	H	32.10	11.92	44.02	54.00	-9.98	Pass
9748.000	H	30.06	14.37	44.43	54.00	-9.57	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4874.000	V	31.69	6.10	37.79	54.00	-16.21	Pass
7311.000	V	32.46	11.92	44.38	54.00	-9.62	Pass
9748.000	V	29.78	14.37	44.15	54.00	-9.85	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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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)	PK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
4924.000	H	43.69	6.10	49.79	74.00	-24.21	Pass
7386.000	H	44.26	12.10	56.36	74.00	-17.64	Pass
9848.000	H	43.15	14.37	57.52	74.00	-16.48	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4924.000	V	44.27	6.10	50.37	74.00	-23.63	Pass
7386.000	V	42.13	12.10	54.23	74.00	-19.77	Pass
9848.000	V	42.18	14.37	56.55	74.00	-17.45	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
4924.000	H	32.14	6.10	38.24	54.00	-15.76	Pass
7386.000	H	31.22	12.10	43.32	54.00	-10.68	Pass
9848.000	H	30.08	14.37	44.45	54.00	-9.55	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4924.000	V	32.33	6.10	38.43	54.00	-15.57	Pass
7386.000	V	32.04	12.10	44.14	54.00	-9.86	Pass
9848.000	V	30.10	14.37	44.47	54.00	-9.53	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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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)	PK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
4824.000	H	44.50	6.10	50.60	74.00	-23.40	Pass
7236.000	H	43.28	11.80	55.08	74.00	-18.92	Pass
9648.000	H	43.20	14.37	57.57	74.00	-16.43	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4824.000	V	44.17	6.10	50.27	74.00	-23.73	Pass
7236.000	V	42.36	11.80	54.16	74.00	-19.84	Pass
9648.000	V	42.58	14.37	56.95	74.00	-17.05	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
4824.000	H	32.55	6.10	38.65	54.00	-15.35	Pass
7236.000	H	31.46	11.80	43.26	54.00	-10.74	Pass
9648.000	H	30.98	14.37	45.35	54.00	-8.65	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4824.000	V	33.16	6.10	39.26	54.00	-14.74	Pass
7236.000	V	31.27	11.80	43.07	54.00	-10.93	Pass
9648.000	V	30.68	14.37	45.05	54.00	-8.95	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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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)	PK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
4874.000	H	45.12	6.10	51.22	74.00	-22.78	Pass
7311.000	H	44.13	11.92	56.05	74.00	-17.95	Pass
9748.000	H	42.87	14.37	57.24	74.00	-16.76	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4874.000	V	45.33	6.10	51.43	74.00	-22.57	Pass
7311.000	V	44.27	11.92	56.19	74.00	-17.81	Pass
9748.000	V	43.03	14.37	57.40	74.00	-16.60	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
4874.000	H	32.45	6.10	38.55	54.00	-15.45	Pass
7311.000	H	32.33	11.92	44.25	54.00	-9.75	Pass
9748.000	H	30.19	14.37	44.56	54.00	-9.44	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4874.000	V	32.75	6.10	38.85	54.00	-15.15	Pass
7311.000	V	32.19	11.92	44.11	54.00	-9.89	Pass
9748.000	V	30.02	14.37	44.39	54.00	-9.61	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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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)	PK Limit (dBuV/m)	Over Limit(dB)	Pass /Fail
4924.000	H	43.25	6.10	49.35	74.00	-24.65	Pass
7386.000	H	44.12	12.10	56.22	74.00	-17.78	Pass
9848.000	H	43.26	14.37	57.63	74.00	-16.37	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4924.000	V	45.63	6.10	51.73	74.00	-22.27	Pass
7386.000	V	44.25	12.10	56.35	74.00	-17.65	Pass
9848.000	V	42.61	14.37	56.98	74.00	-17.02	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
4924.000	H	35.24	6.10	41.34	54.00	-12.66	Pass
7386.000	H	33.26	12.10	45.36	54.00	-8.64	Pass
9848.000	H	30.29	14.37	44.66	54.00	-9.34	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4924.000	V	35.63	6.10	41.73	54.00	-12.27	Pass
7386.000	V	32.18	12.10	44.28	54.00	-9.72	Pass
9848.000	V	30.12	14.37	44.49	54.00	-9.51	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11n-H40 lowest channel=2422MHz)

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
4844.000	H	43.26	6.10	49.36	74.00	-24.64	Pass
7266.000	H	43.96	11.80	55.76	74.00	-18.24	Pass
9688.000	H	42.10	14.37	56.47	74.00	-17.53	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4844.000	V	43.40	6.10	49.50	74.00	-24.50	Pass
7266.000	V	42.88	11.80	54.68	74.00	-19.32	Pass
9688.000	V	41.73	14.37	56.10	74.00	-17.90	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
4844.000	H	33.62	6.10	39.72	54.00	-14.28	Pass
7266.000	H	33.86	11.80	45.66	54.00	-8.34	Pass
9688.000	H	30.47	14.37	44.84	54.00	-9.16	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4844.000	V	35.29	6.10	41.39	54.00	-12.61	Pass
7266.000	V	33.42	11.80	45.22	54.00	-8.78	Pass
9688.000	V	30.03	14.37	44.40	54.00	-9.60	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11n-H40 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
4874.000	H	43.62	6.10	49.72	74.00	-24.28	Pass
7311.000	H	44.25	11.92	56.17	74.00	-17.83	Pass
9748.000	H	42.86	14.37	57.23	74.00	-16.77	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4874.000	V	43.12	6.10	49.22	74.00	-24.78	Pass
7311.000	V	42.81	11.92	54.73	74.00	-19.27	Pass
9748.000	V	43.66	14.37	58.03	74.00	-15.97	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
4874.000	H	32.69	6.10	38.79	54.00	-15.21	Pass
7311.000	H	32.14	11.92	44.06	54.00	-9.94	Pass
9748.000	H	29.73	14.37	44.10	54.00	-9.90	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4874.000	V	32.35	6.10	38.45	54.00	-15.55	Pass
7311.000	V	32.46	11.92	44.38	54.00	-9.62	Pass
9748.000	V	30.39	14.37	44.76	54.00	-9.24	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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Transmitting mode (802.11n-H40 highest channel=2452MHz)

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
4904.000	H	45.32	6.10	51.42	74.00	-22.58	Pass
7356.000	H	44.28	12.10	56.38	74.00	-17.62	Pass
9808.000	H	43.69	14.37	58.06	74.00	-15.94	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4904.000	V	45.01	6.10	51.11	74.00	-22.89	Pass
7356.000	V	43.69	12.10	55.79	74.00	-18.21	Pass
9808.000	V	43.15	14.37	57.52	74.00	-16.48	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
4904.000	H	34.82	6.10	40.92	54.00	-13.08	Pass
7356.000	H	33.21	12.10	45.31	54.00	-8.69	Pass
9808.000	H	29.86	14.37	44.23	54.00	-9.77	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4904.000	V	33.27	6.10	39.37	54.00	-14.63	Pass
7356.000	V	33.68	12.10	45.78	54.00	-8.22	Pass
9808.000	V	30.46	14.37	44.83	54.00	-9.17	Pass
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

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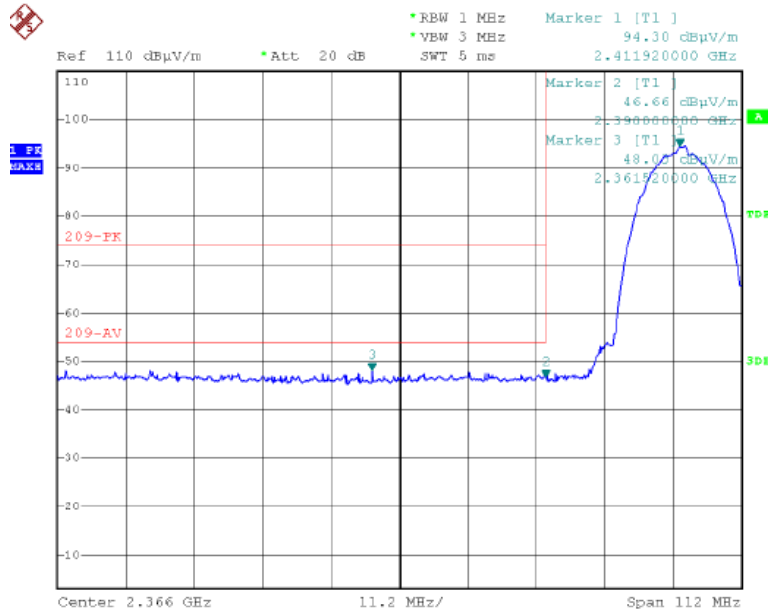


Band Edge and Restrictred band (Radiated measurement)

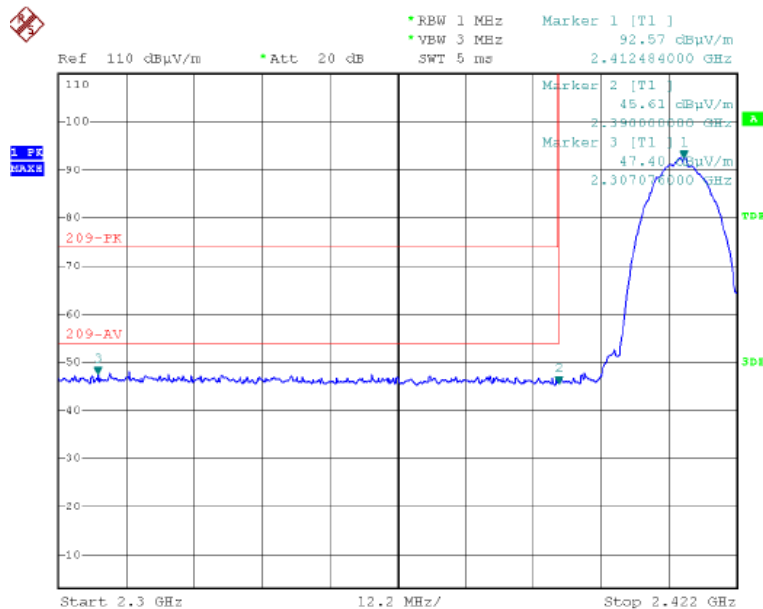
Set the WIFI mode, pre-scan all channels of all WIFI modulation mode, and found the 802.11b mode in lowest and highest channels which they were worse case.

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

Peak Measurement in Horizontal polarization



Peak Measurement in Vertical polarization

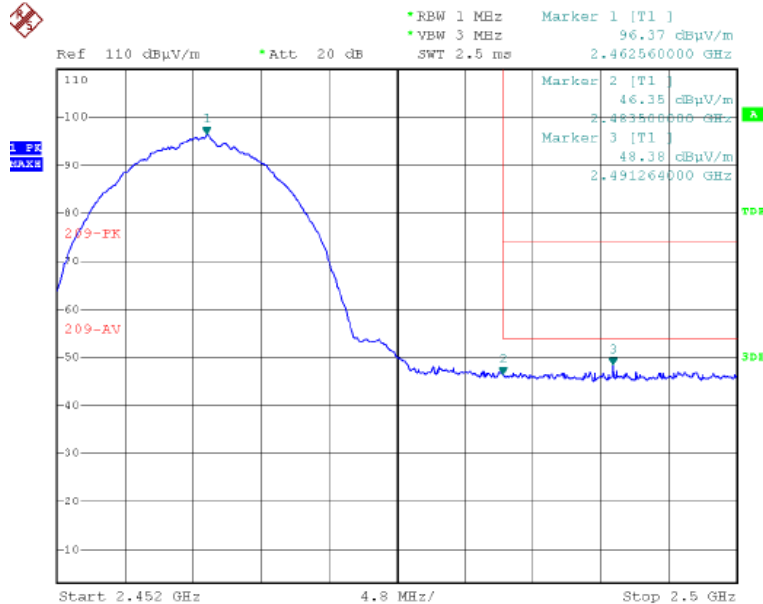


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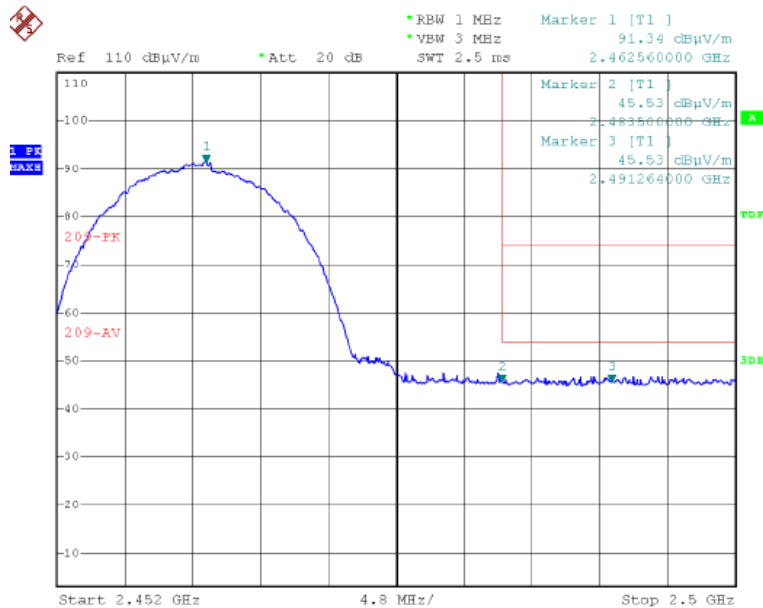
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Transmitting with 801.11b mode (Highest channel=2462MHz)

Peak Measurement in Horizontal polarization



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
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.

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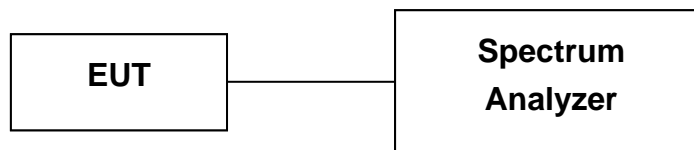
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5.3 Maximun Peak Output Power

Test Requirement:	FCC 15.247(b)
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-H20) &135Mbps(802.11n-H40)
Detector:	RBW=1 MHz, VBW=3 MHz (Peak detector)
Test Mode:	WIFI transmitting mode
Test Voltage:	Pretest the EUT with voltage $120 \pm 15\%$ Vac,60Hz;and found out at 120Vac,60Hz is the worst case.
Test Date:	12 March, 2012
Temperature:	24°C
Humidity:	54%
Limit:	The Limit of Maximum Peak Output Power Measurement is 30dBm.

5.3.1 Test Setup



5.3.2 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, 802.11n-H20 6.5/13/19.5/26/39/52/58.5/65Mbps and 802.11n-H40 13.5/27/40.5/54/81/108/121.5/135Mbps). Following channel(s) was (were) selected for the final test as listed below: 802.11b 11Mbps , 802.11g 54Mbps , 802.11n-H20 65Mbps, 802.11n-H40 135Mbps

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**5.3.3 Measurement 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	10.49	0.5	10.99	30.00	-19.01
2.437	10.10	0.5	10.60	30.00	-19.40
2.462	10.41	0.5	10.91	30.00	-19.09

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	8.12	0.5	8.62	30.00	-21.38
2.437	7.79	0.5	8.29	30.00	-21.71
2.462	8.78	0.5	9.28	30.00	-20.72

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	7.54	0.5	8.04	30.00	-21.96
2.437	7.79	0.5	8.29	30.00	-21.71
2.462	7.56	0.5	8.06	30.00	-21.94

For EUT communicating with 802.11n-H40 Mode

Chanel Frequency (GHz)	Peak Output Power(dBm)	Cable Loss (dB)	Power level(dBm)	Limit (dBm)	Over Limit (dB)
2.422	7.71	0.5	8.21	30.00	-21.79
2.437	7.20	0.5	7.70	30.00	-22.30
2.452	7.20	0.5	7.70	30.00	-22.30

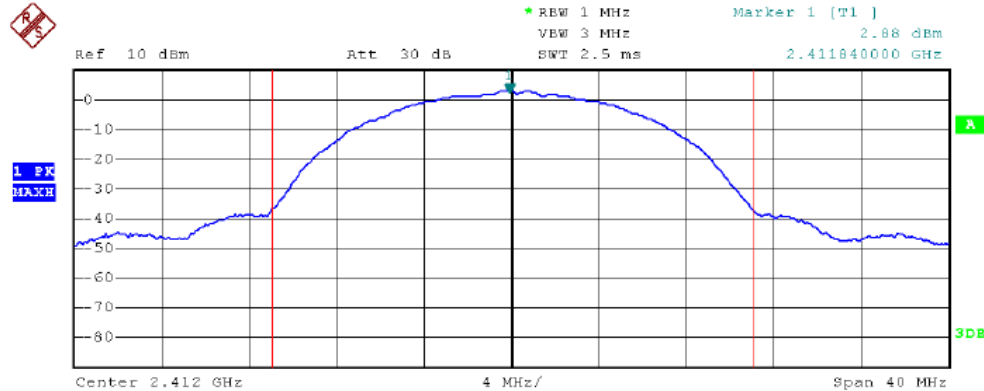
Test result: The unit does meet the requirements.**Test result plot as follows:****FCC ID: SOVAN9G3**

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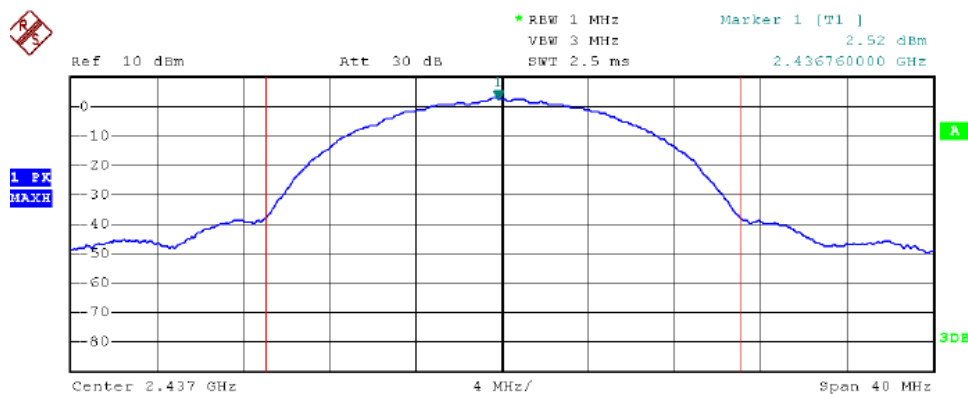


The EUT communicating with 802.11b Mode

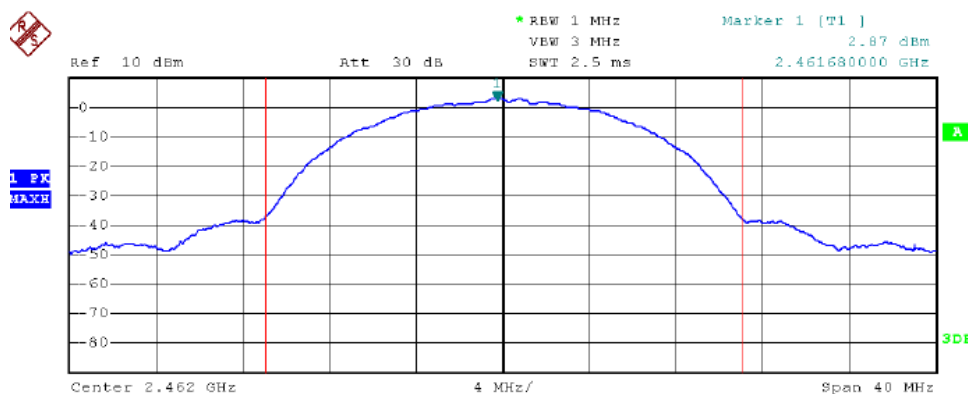
Lowest channel=2412MHz



Middle channel=2437MHz



Highest channel=2462MHz



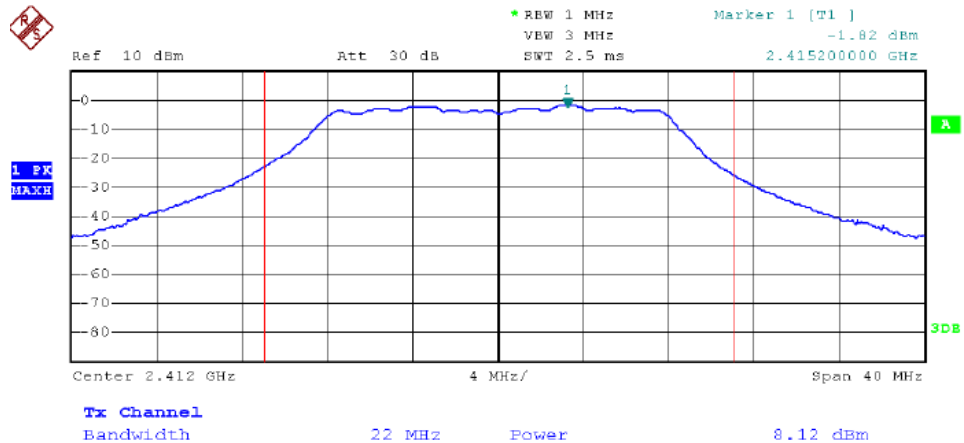
FCC ID: SOVAN9G3

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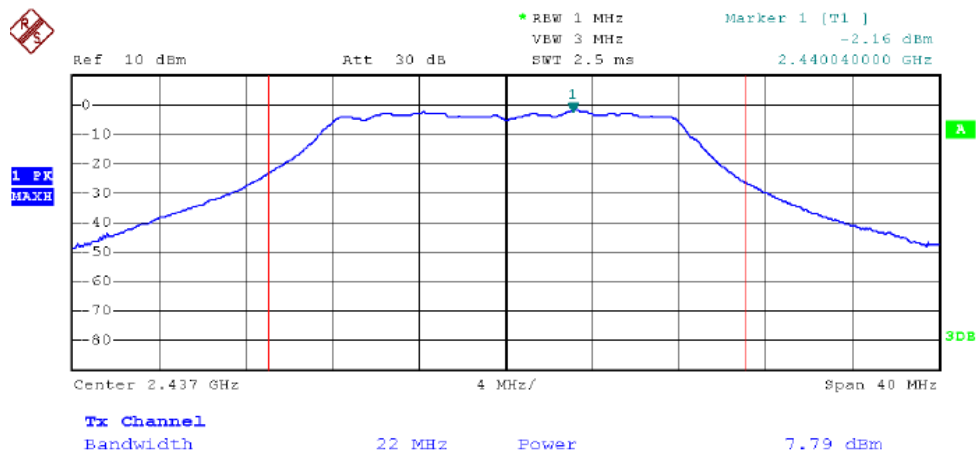


The EUT communicating with 802.11g Mode

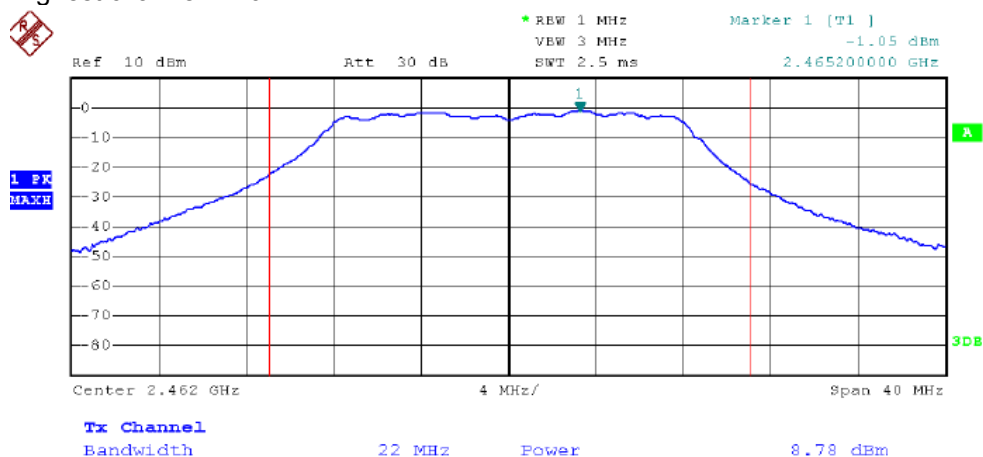
Lowest channel=2412MHz



Middle channel=2437MHz



Highest channel=2462MHz

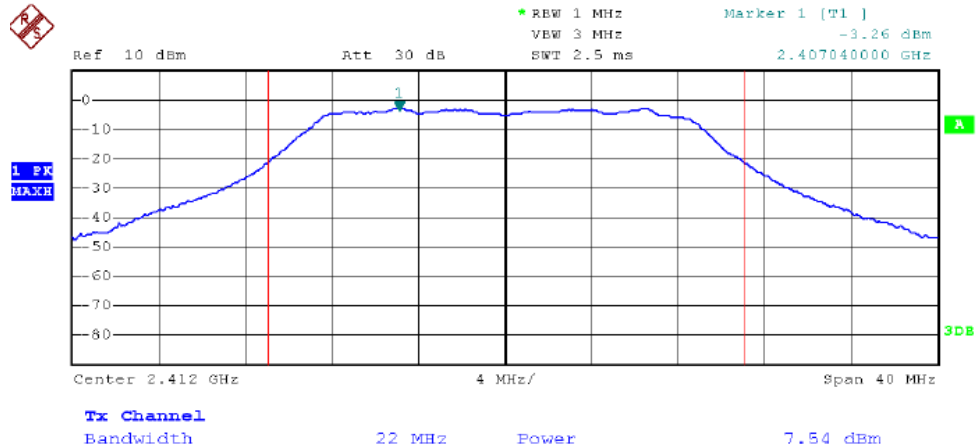


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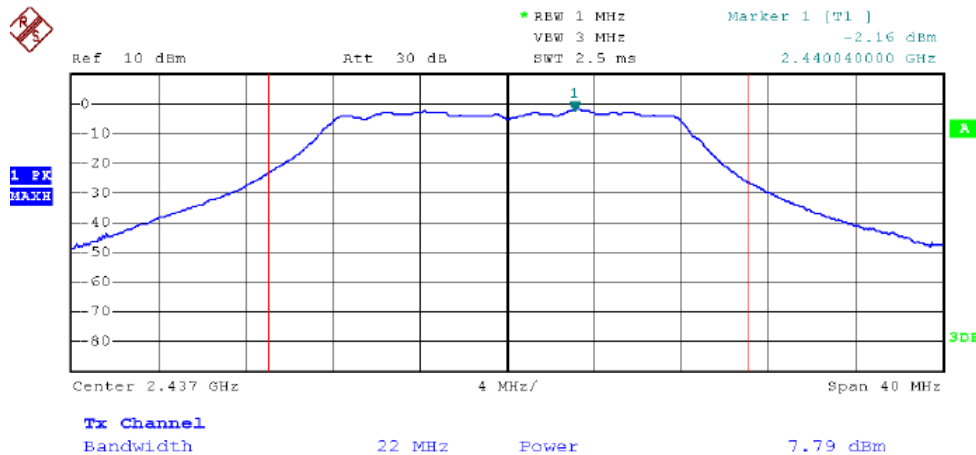
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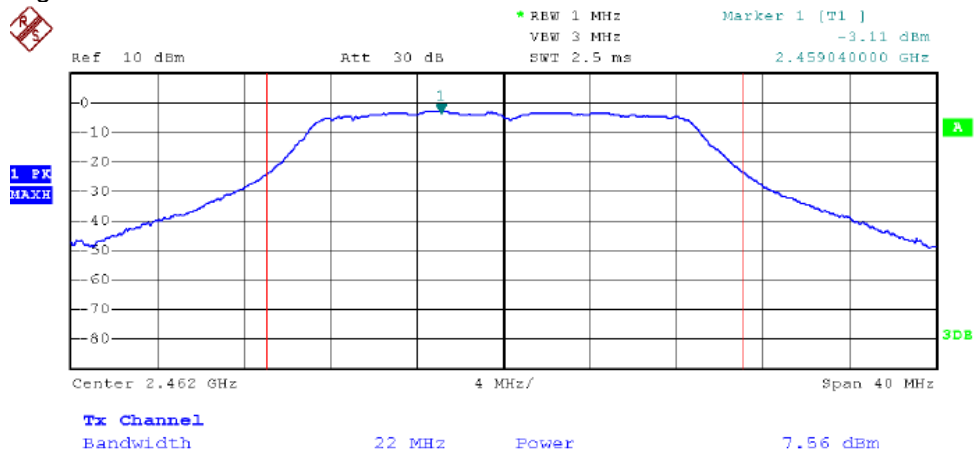
The EUT communicating with 802.11n-H20 Mode
Lowest channel=2412MHz



Middle channel=2437MHz



Highest channel=2462MHz

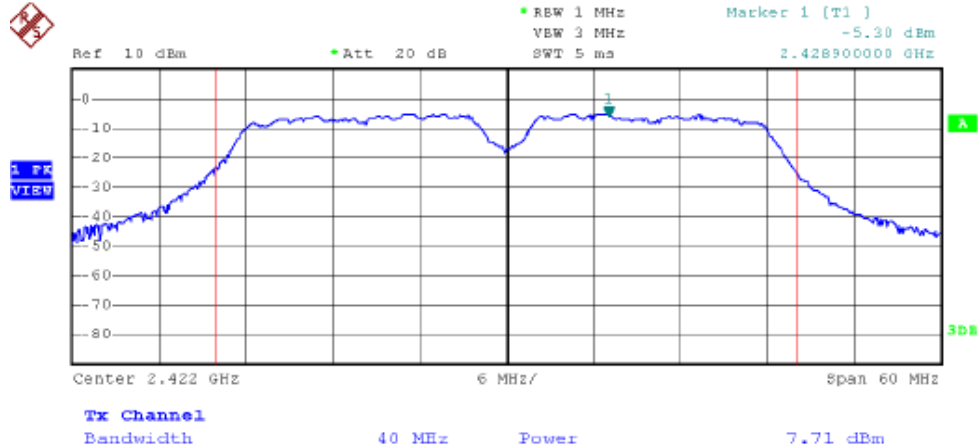


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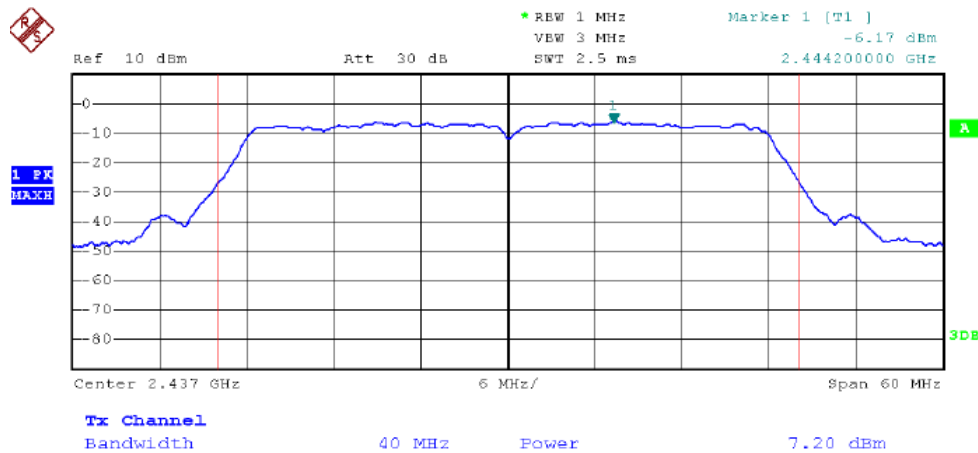
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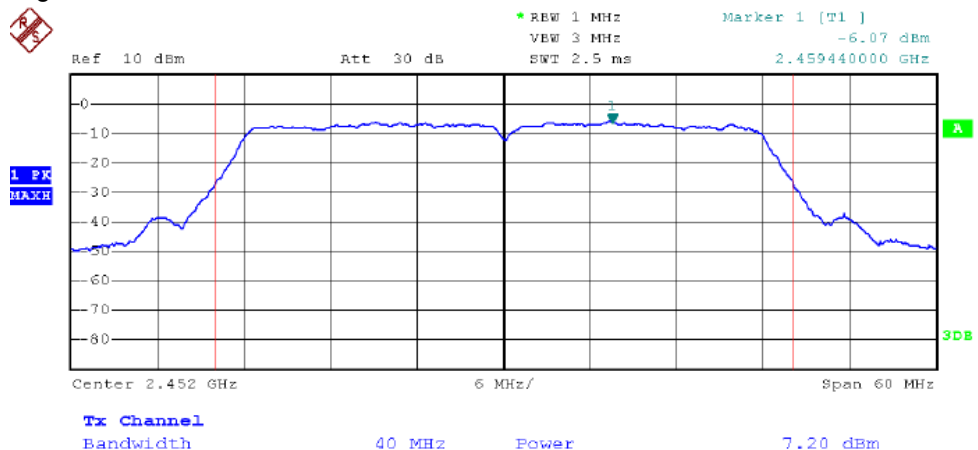
The EUT communicating with 802.11n-H40 Mode
Lowest channel=2422MHz



Middle channel=2437MHz



Highest channel=2452MHz



FCC ID: SOVAN9G3

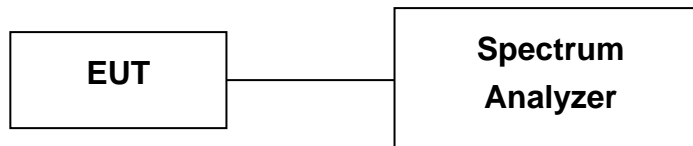
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5.4 6dB Occupied Bandwidth

Test Requirement:	FCC 15.247(b),
Test Method:	ANSI C63.4:2003 and KDB 558074 D01.
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 is defined as the total spectrum the power of which is higher than peak power minus 6 dB. Analyzer and the attached plot were taken. The EUT was setup to ANSI C63.4, 2003, tested to DTS test procedure of 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) & 135Mbps(802.11n-H40)
Detector:	RBW= 1-5 % of the emission bandwidth (EBW) (VBW) $\geq 3 \times$ RBW (Peak detector)
Test Mode:	WIFI transmitting mode
Test Voltage:	120Vac, 60Hz
Test Date:	13 March, 2012
Temperature:	25°C
Humidity:	54%
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, 802.11g6/9/12/18/24/36/48/54Mbps, 802.11n-H20 6.5/13/19.5/26/39/52/58.5/65Mbps and 802.11n-H40 13.5/27/40.5/54/81/108/121.5/135Mbps). Following channel(s) was (were) selected for the final test as listed below:

802.11b 11Mbps , 802.11g 54Mbps , 802.11n-H20 65Mbps, 802.11n-H40 135Mbps

FCC ID: SOVAN9G3



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	10.44	0.5	Pass
2.437	10.50	0.5	Pass
2.462	10.50	0.5	Pass

For EUT communicating with 802.11g Mode

Chanel Frequency (GHz)	6 dB Bandwidth (MHz)	Minimun Limit (MHz)	Pass/Fail
2.412	16.56	0.5	Pass
2.437	16.56	0.5	Pass
2.462	16.56	0.5	Pass

For EUT communicating with 802.11n-H20Mode

Chanel Frequency (GHz)	6 dB Bandwidth (MHz)	Minimun Limit (MHz)	Pass/Fail
2.412	16.56	0.5	Pass
2.437	16.56	0.5	Pass
2.462	16.56	0.5	Pass

For EUT communicating with 802.11n-H40 Mode

Chanel Frequency (GHz)	6 dB Bandwidth (MHz)	Minimun Limit (MHz)	Pass/Fail
2.422	36.20	0.5	Pass
2.437	36.32	0.5	Pass
2.452	36.36	0.5	Pass

Test result: The unit does meet the requirements.

FCC ID: SOVAN9G3

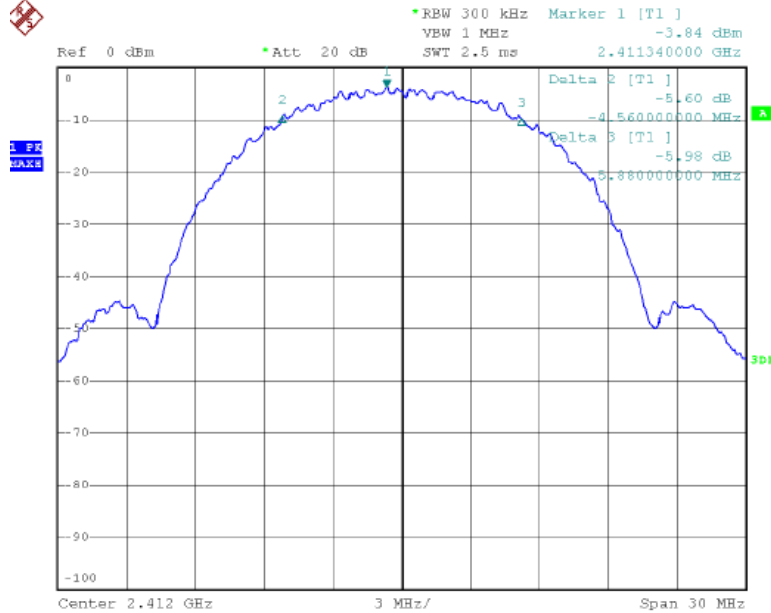
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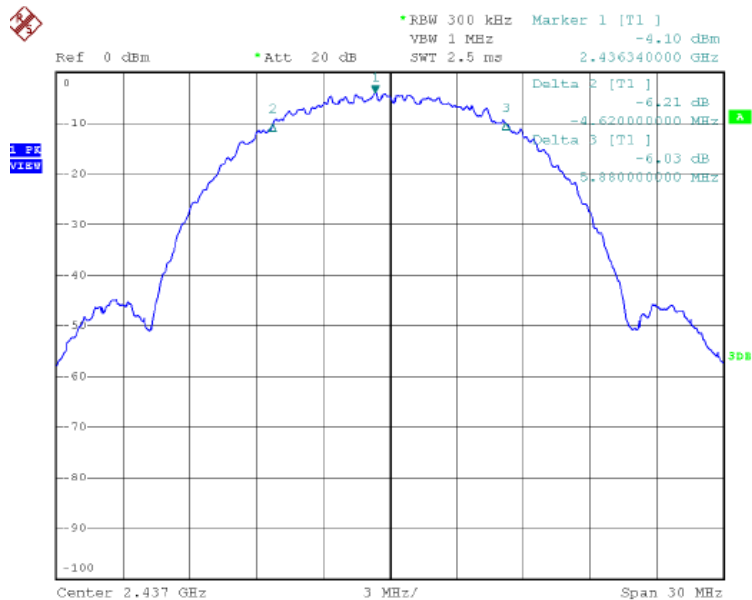
Test result plot as follows:

The EUT communicating with 802.11b Mode

Lowest channel=2412MHz



Middle channel=2437MHz

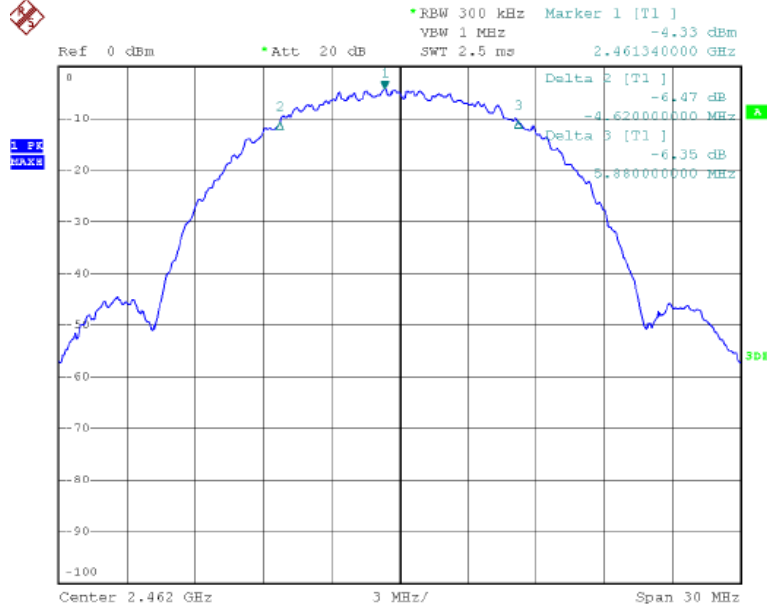


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Highest channel=2462MHz



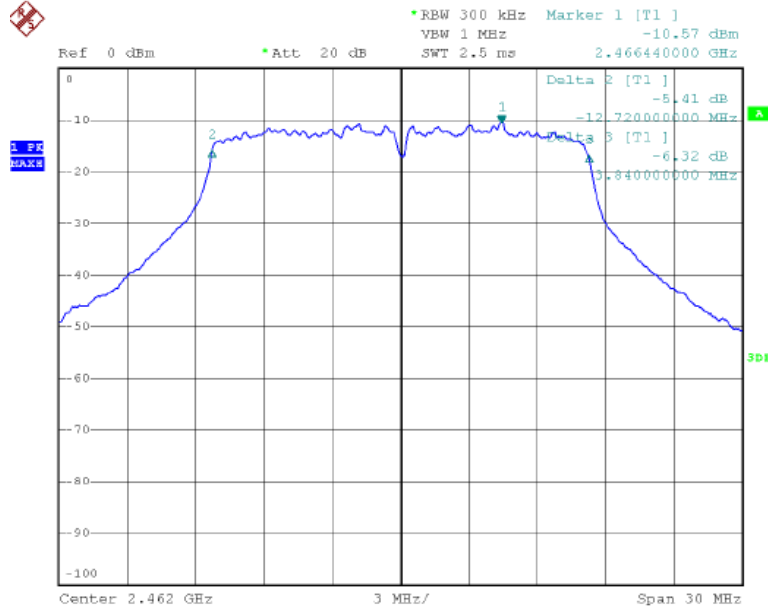
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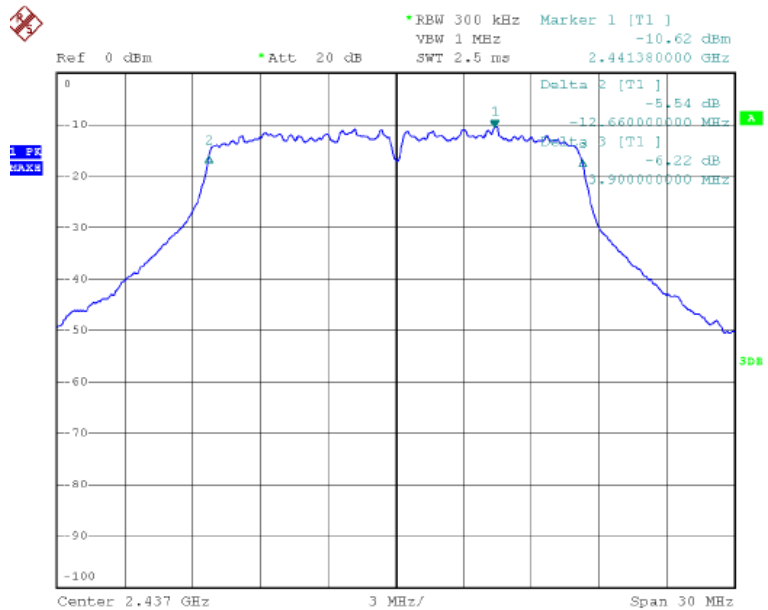


The EUT communicating with 802.11g Mode

Lowest channel=2412MHz



Middle channel=2437MHz

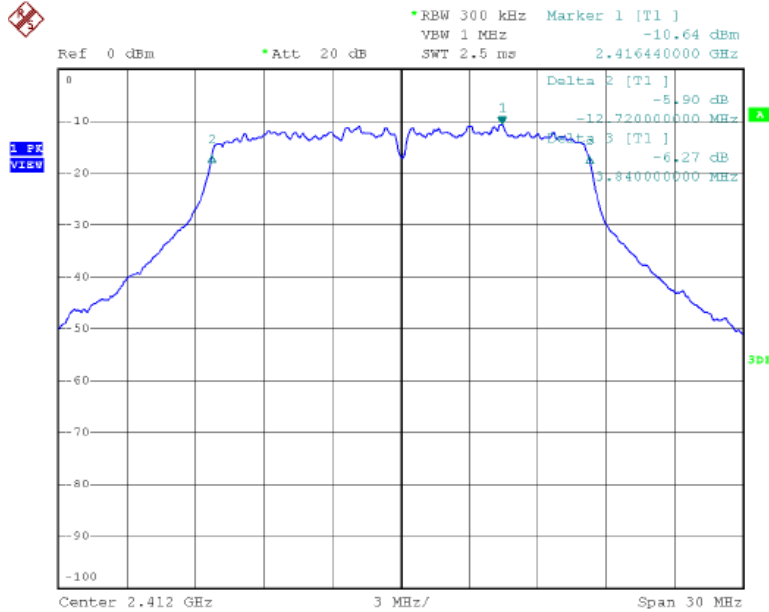


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Highest channel=2462MHz



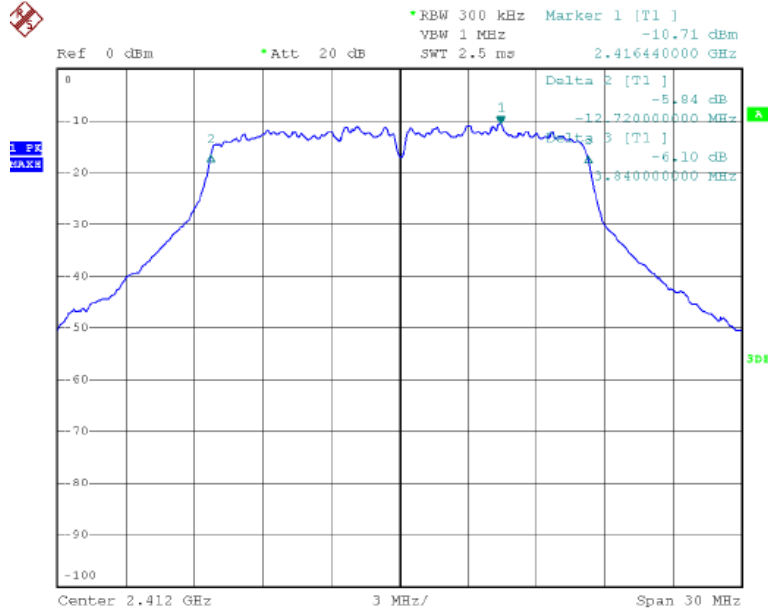
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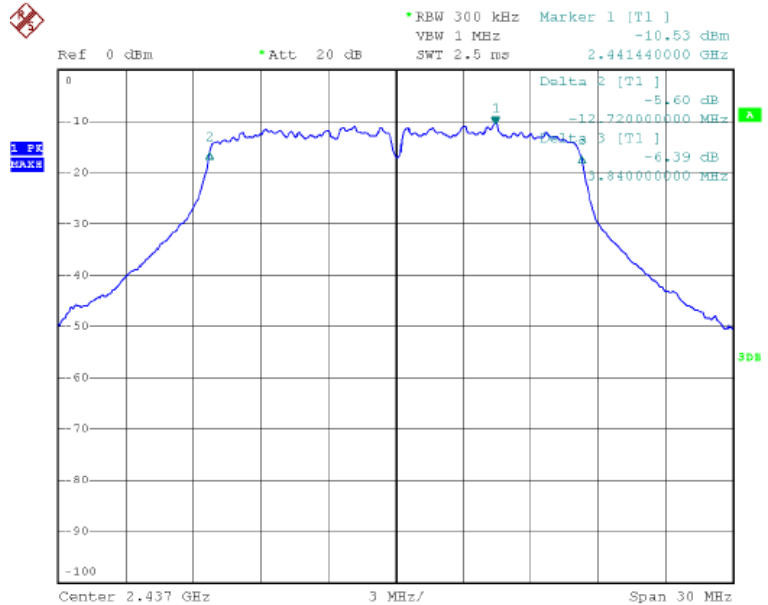


The EUT communicating with 802.11n-H20 Mode

Lowest channel=2412MHz



Middle channel=2437MHz



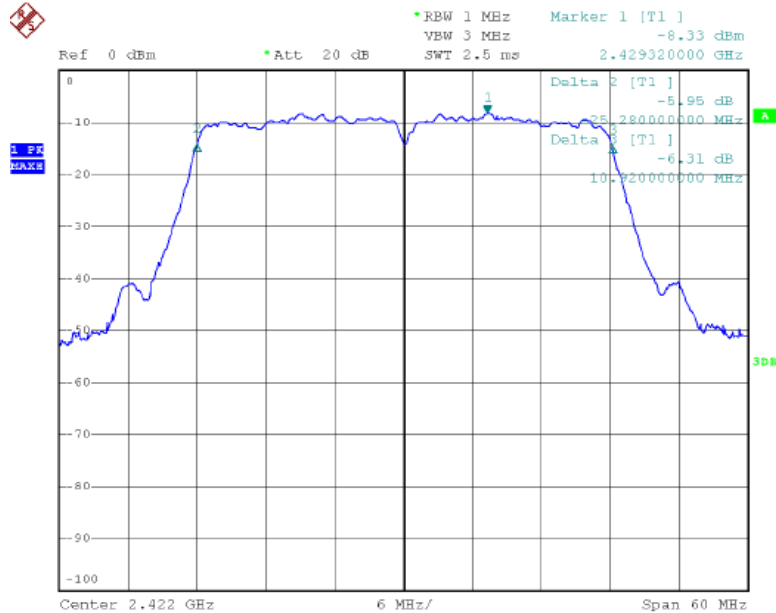
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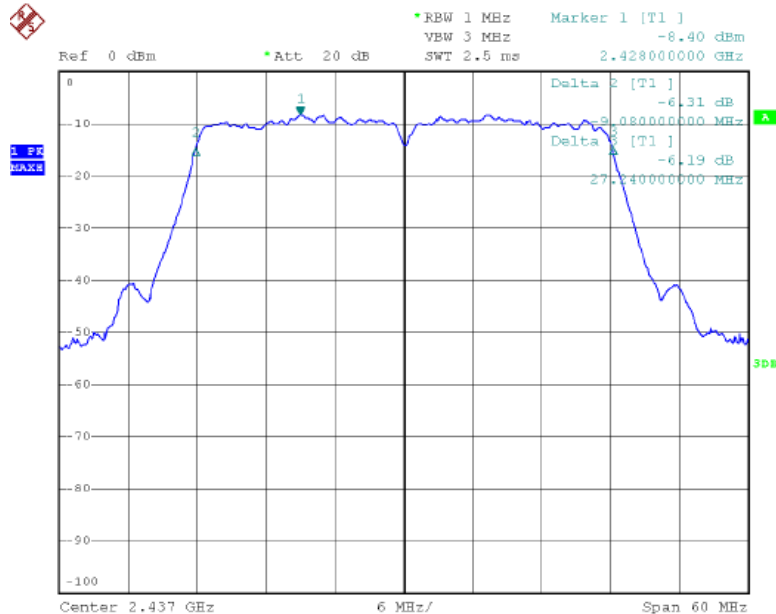


The EUT communicating with 802.11n-H40 Mode

Lowest channel=2422MHz



Middle channel=2437MHz



FCC ID: SOVAN9G3

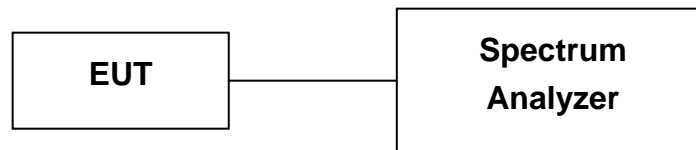
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5.5 Band Edges and Conducted Spurious Emissions Measurement

Test Requirement:	FCC Part15 C Section 15.247(d),
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) &135Mbps(802.11n-H40)
Detector:	RBW=100kHz,VBW=300 KHz (Peak detector)
Test Mode:	WIFI transmitting mode
Test Voltage:	120Vac,60Hz
Test Date:	13 March, 2012
Temperature:	24°C
Humidity:	52%
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.

5.5.1 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, 802.11g6/9/12/18/24/36/48/54Mbps,802.11n-H20 6.5/13/19.5/26/39/52/58.5/65Mbps and 802.11n-H40 13.5/27/40.5/54/81/108/121.5/135Mbps). Following channel(s) was (were) selected for the final test as listed below:
802.11b 11Mbps , 802.11g 54Mbps , 802.11n-H20 65Mbps, 802.11n-H40 135Mbps

5.5.3 Measurement Data

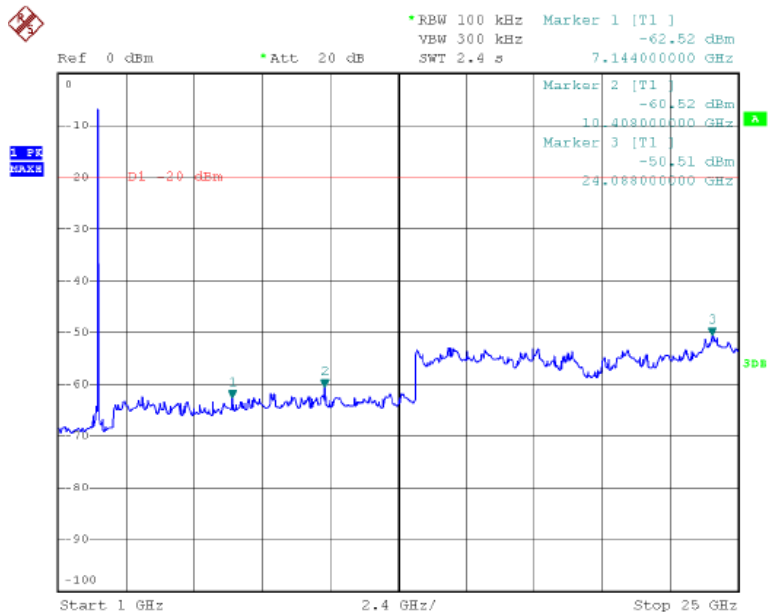
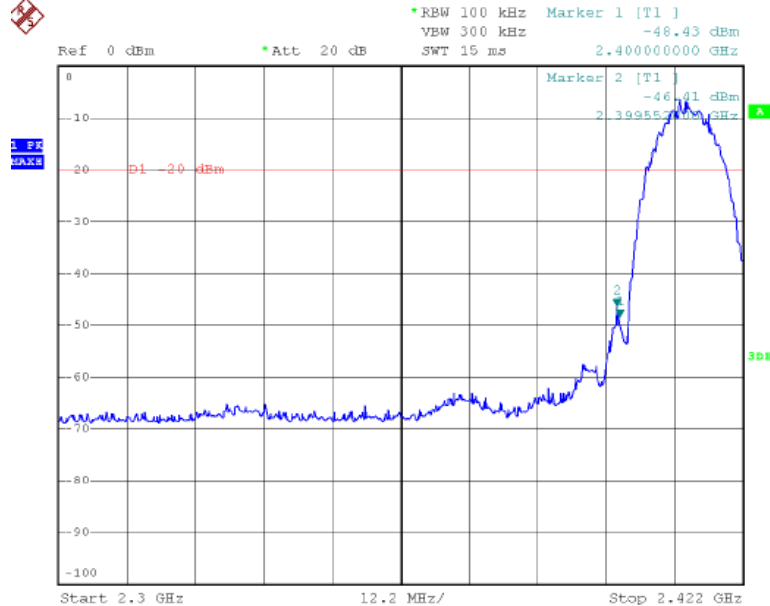
Test result: The unit does meet the requirements.

Test result plot as follows:

FCC ID: SOVAN9G3



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

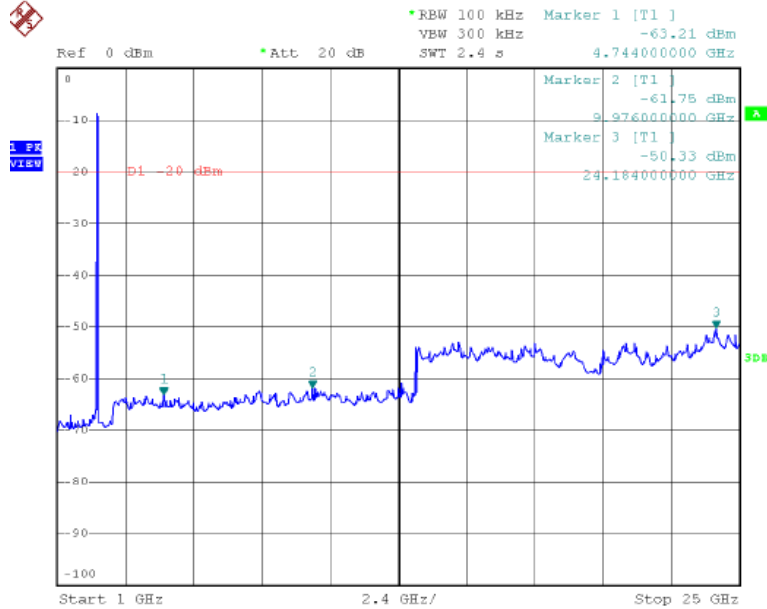


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Transmitting mode in middle channel=2437MHz (802.11b)

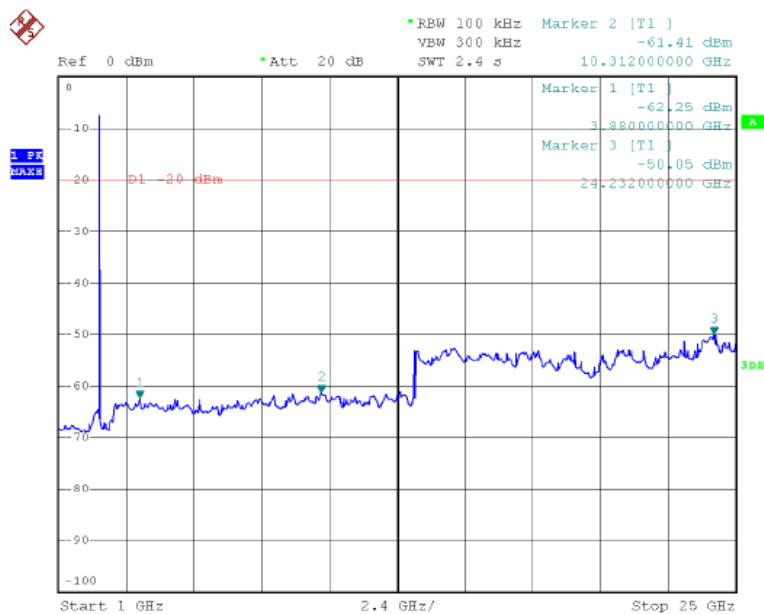
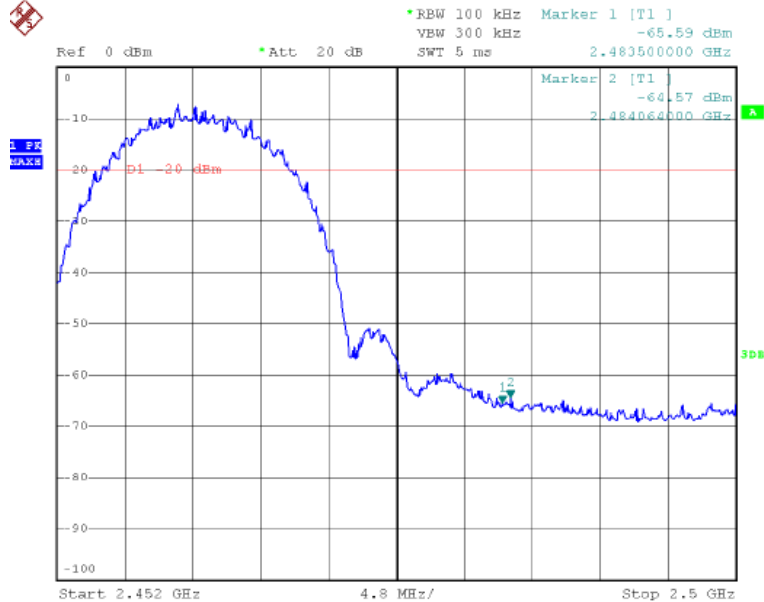


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Transmitting mode in highest channel=2462MHz (802.11b)

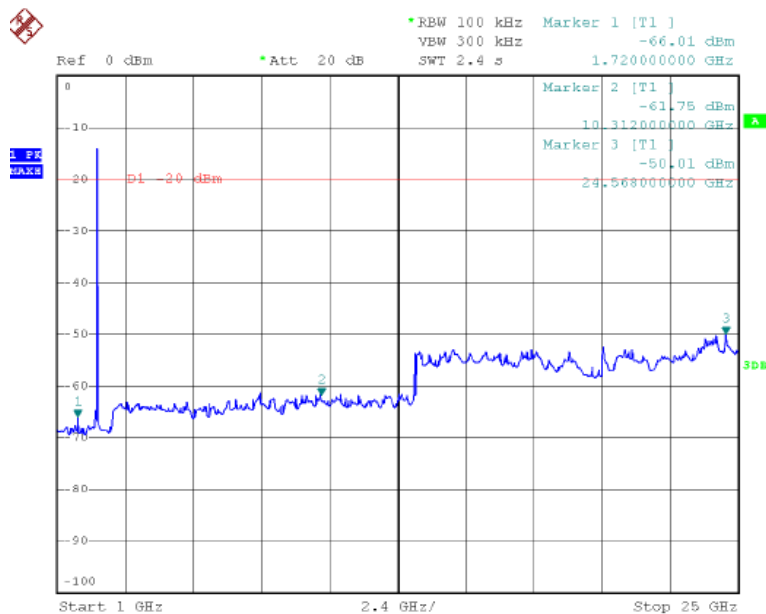
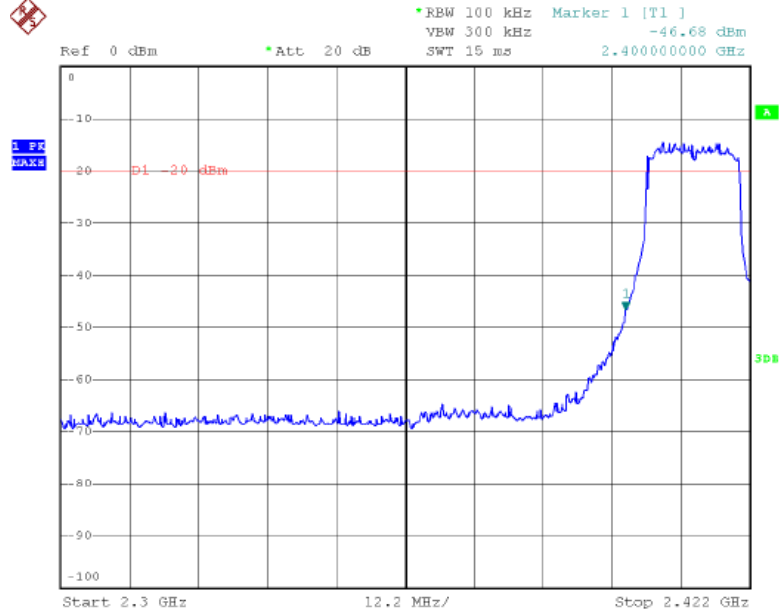


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Transmitting mode in lowest channel=2412MHz (802.11g)

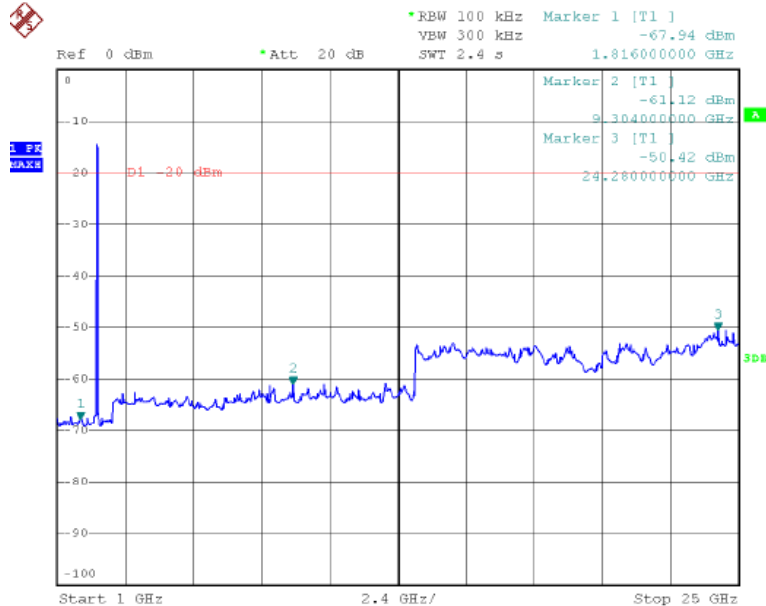


FCC ID: SOVAN9G3

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

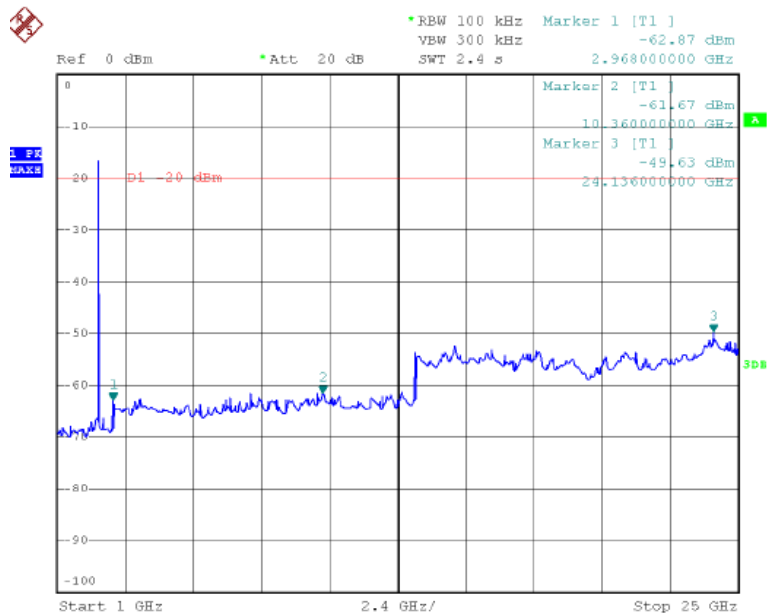
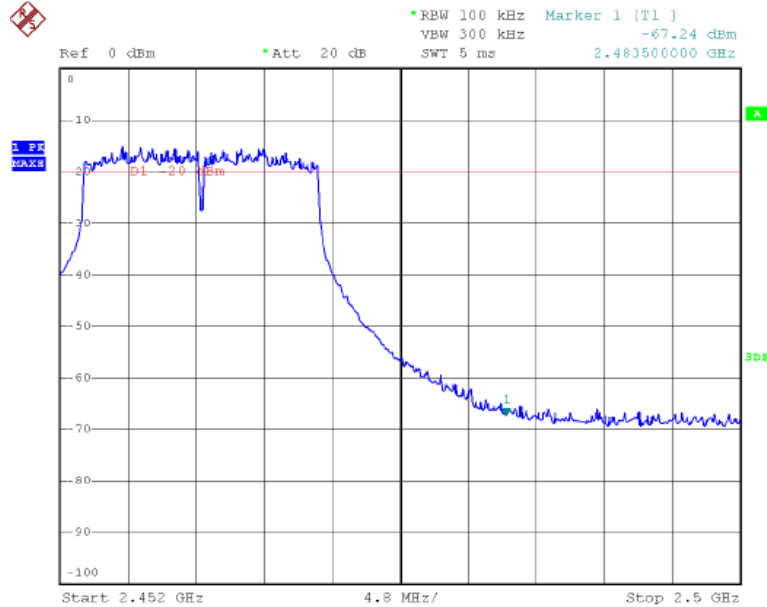


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Transmitting mode in highest channel=2462MHz (802.11g)

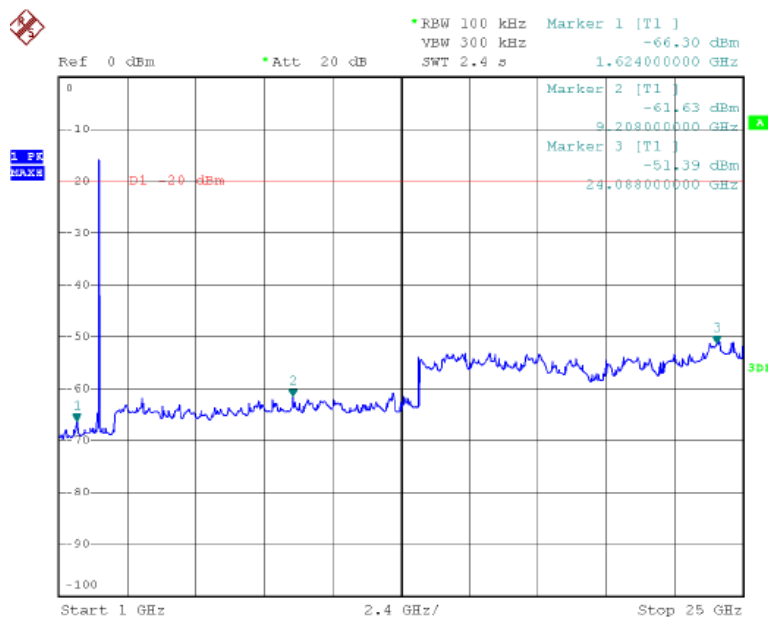
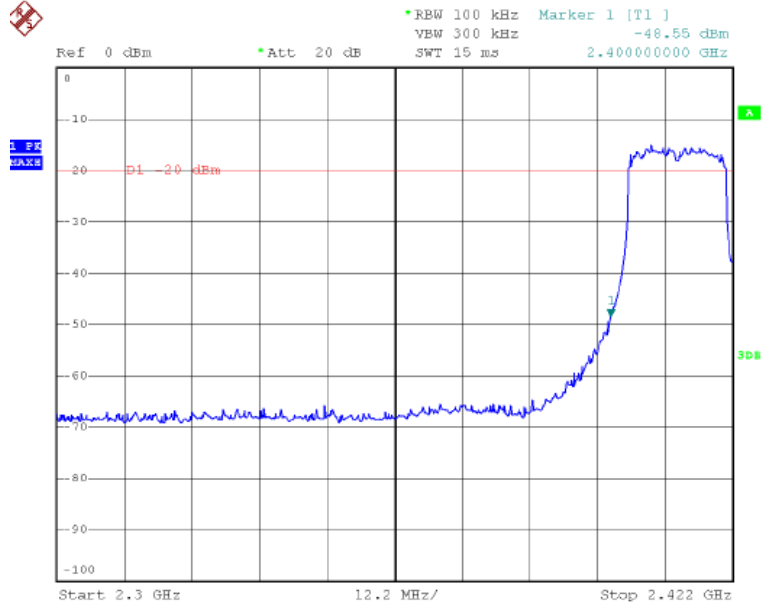


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Transmitting mode in lowest channel=2412MHz (802.11n-H20)

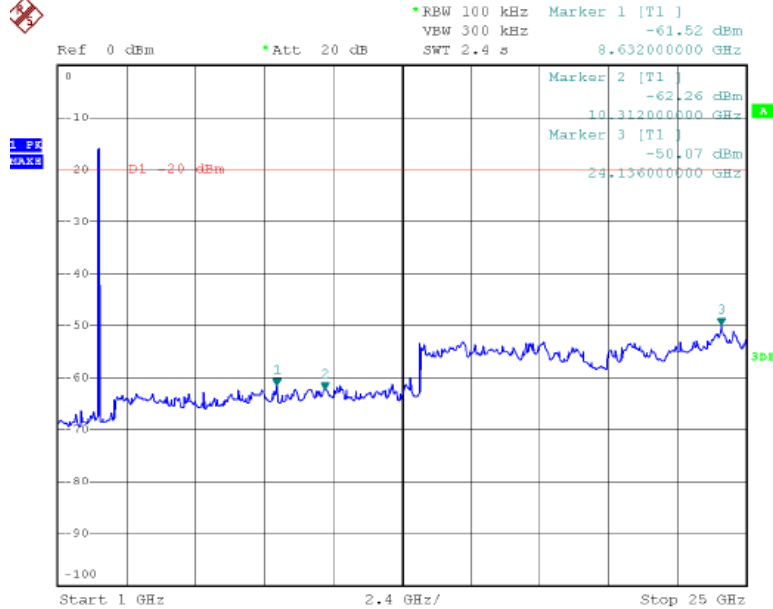


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Transmitting mode in middle channel=2437MHz (802.11n-H20)

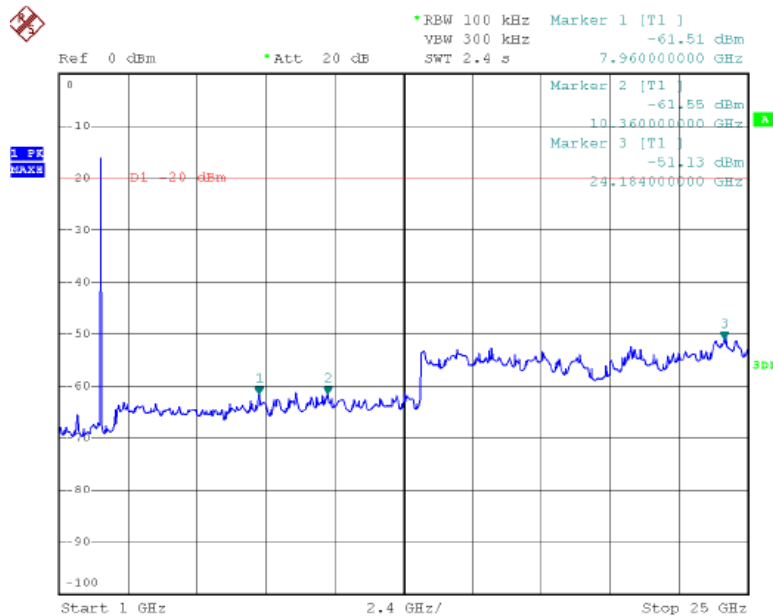
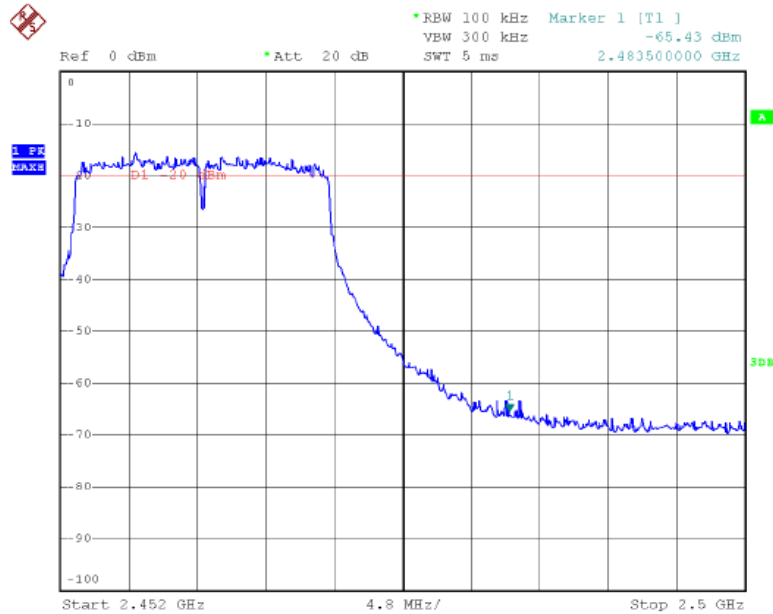


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Transmitting mode in highest channel=2462MHz (802.11n-H20)

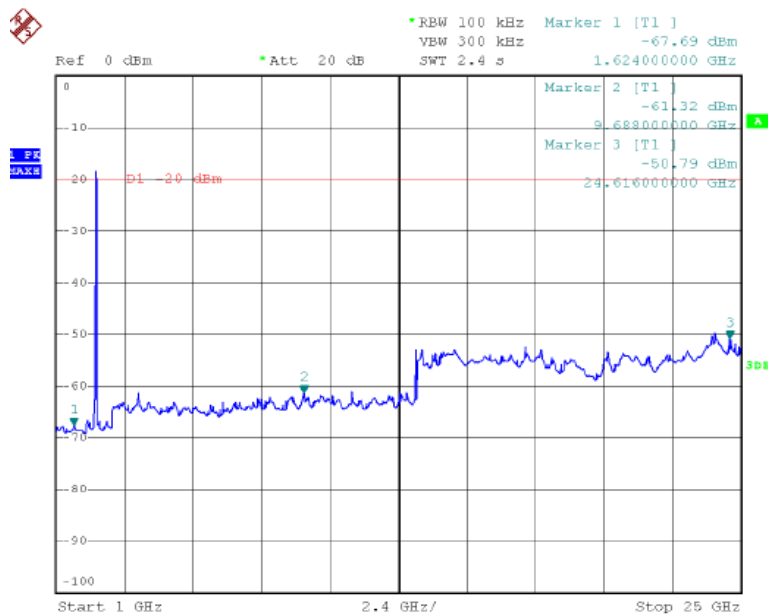
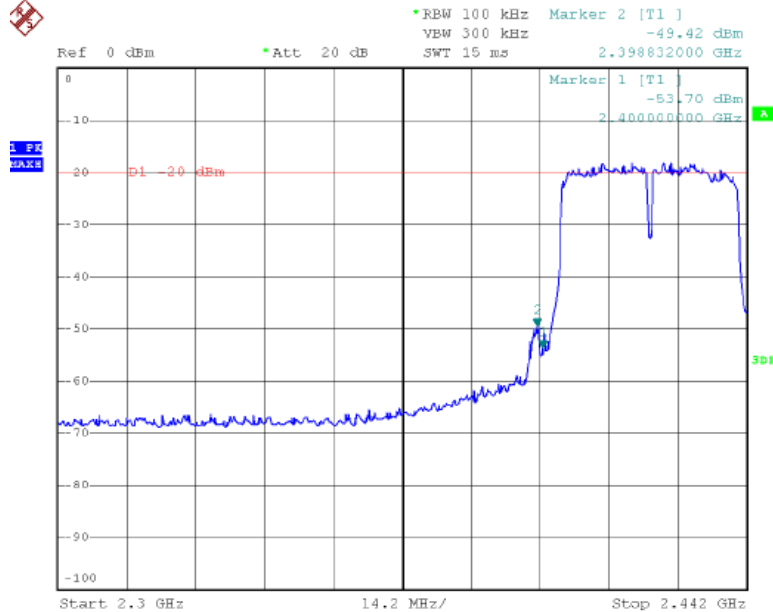


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Transmitting mode in lowest channel=2422MHz (802.11n-H40)

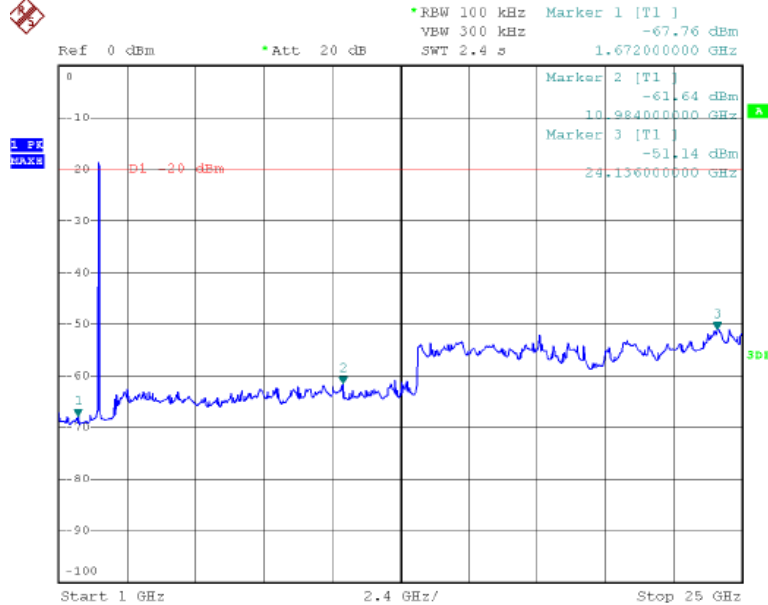


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Transmitting mode in middle channel=2437MHz (802.11n-H40)

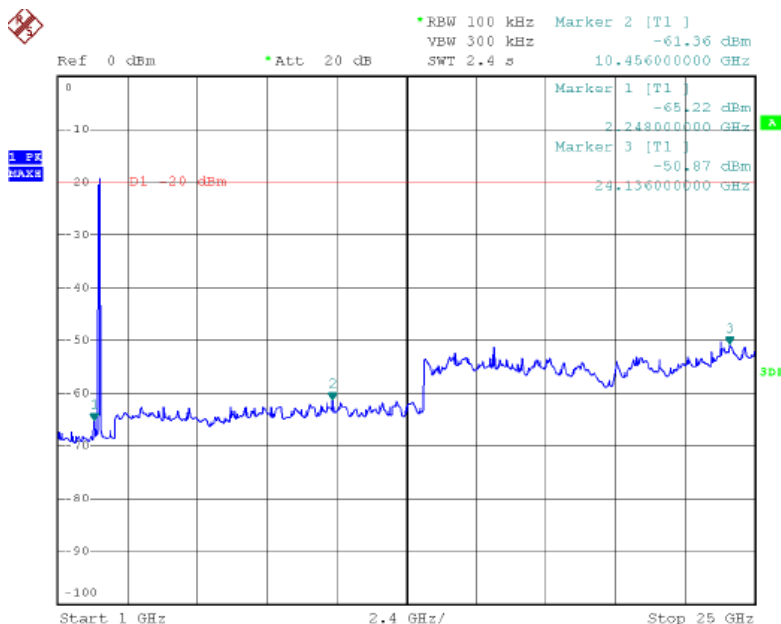
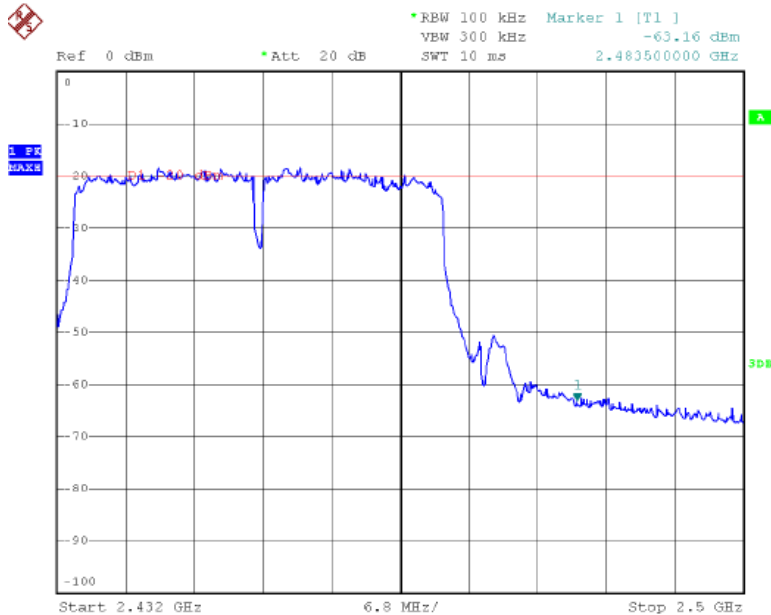


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Transmitting mode in highest channel=2452MHz (802.11n-H40)



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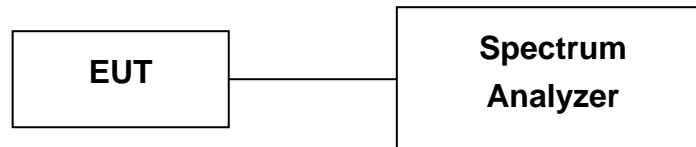
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5.6 Power Spectral Density Measurement

Test Requirement:	FCC Part15 C Section 15.247(d),
Test Method:	ANSI C63.4; FCC Part15 C Section 15.247: KDB Publication No. 558074 D01 for DTS
Select test data rate:	11Mbps(802.11b) & 54Mbps(802.11g) & 65Mbps(802.11n-H20) &135Mbps(802.11n-H40)
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:	19 March, 2012
Temperature:	24℃
Humidity:	55%
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

5.6.1 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, 802.11g6/9/12/18/24/36/48/54Mbps,802.11n-H20 6.5/13/19.5/26/39/52/58.5/65Mbps and 802.11n-H40 13.5/27/40.5/54/81/108/121.5/135Mbps). Following channel(s) was (were) selected for the final test as listed below:

802.11b 11Mbps , 802.11g 54Mbps , 802.11n-H20 65Mbps, 802.11n-H40 135Mbps

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**5.6.3 Measurement Data**

For EUT communicating with 802.11b Mode

Chanel Frequency (GHz)	Power Spectral Density Reading Level (dBm)	Cable Loss (dB)	Power Spectral Density level (dBm)	Limit (dBm)	Over Limit (dB)
2.412	-5.46	0.5	-20.16	8.00	-28.16
2.437	-5.65	0.5	-20.35	8.00	-28.35
2.462	-6.11	0.5	-20.81	8.00	-28.81

For EUT communicating with 802.11g Mode

Chanel Frequency (GHz)	Power Spectral Density Reading Level (dBm)	Cable Loss (dB)	Power Spectral Density level (dBm)	Limit (dBm)	Over Limit (dB)
2.412	-13.06	0.5	-27.76	8.00	-35.76
2.437	-13.11	0.5	-27.81	8.00	-35.81
2.462	-13.58	0.5	-28.28	8.00	-36.28

For EUT communicating with 802.11n-H20 Mode

Chanel Frequency (GHz)	Power Spectral Density Reading Level (dBm)	Cable Loss (dB)	Power Spectral Density level (dBm)	Limit (dBm)	Over Limit (dB)
2.412	-13.74	0.5	-28.44	8.00	-36.44
2.437	-13.75	0.5	-28.45	8.00	-36.45
2.462	-14.13	0.5	-28.83	8.00	-36.83

For EUT communicating with 802.11n-H40 Mode

Chanel Frequency (GHz)	Power Spectral Density Reading Level (dBm)	Cable Loss (dB)	Power Spectral Density level (dBm)	Limit (dBm)	Over Limit (dB)
2.422	-16.71	0.5	-31.41	8.00	-39.41
2.437	-17.33	0.5	-32.03	8.00	-40.03
2.452	-17.31	0.5	-32.01	8.00	-40.01

Power Spectral Density level= Power Spectral Density Reading level+ Cable Loss+BWCF

BWCF = 10log (3 kHz/100kHz = -15.2 dB.

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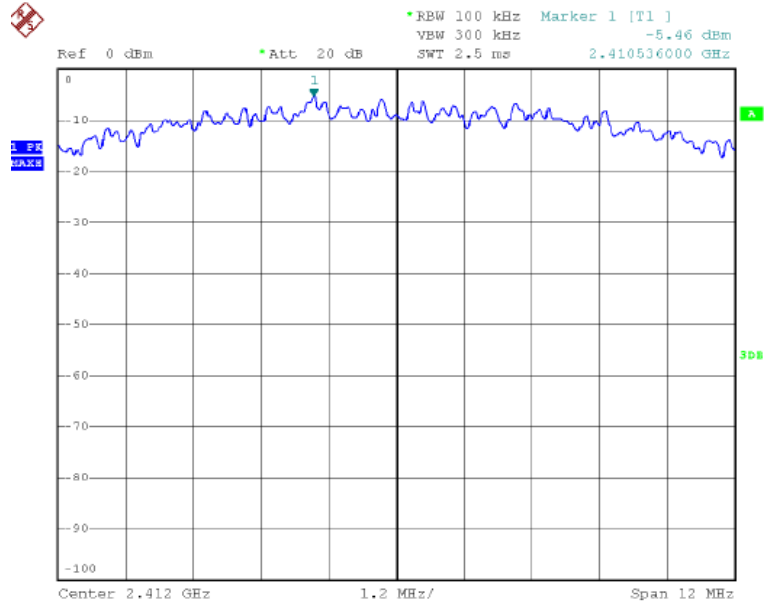


Test result: The unit does meet the FCC requirements.

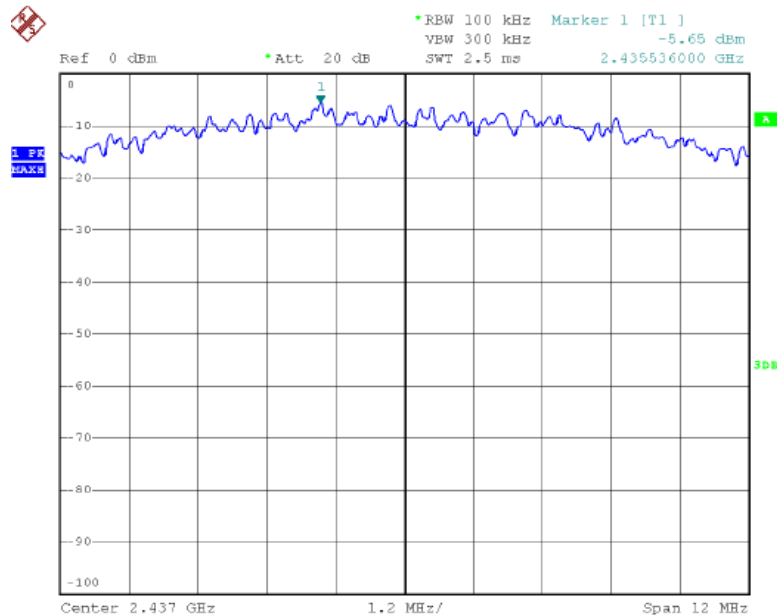
Test result plot as follows:

The EUT communicating with 802.11b Mode

Lowest channel=2412MHz



Middle channel=2437MHz

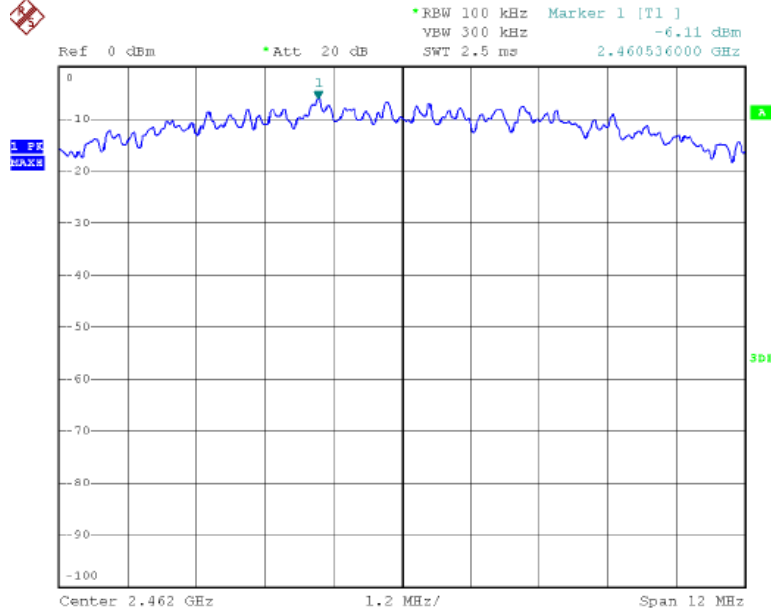


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Highest channel=2462MHz



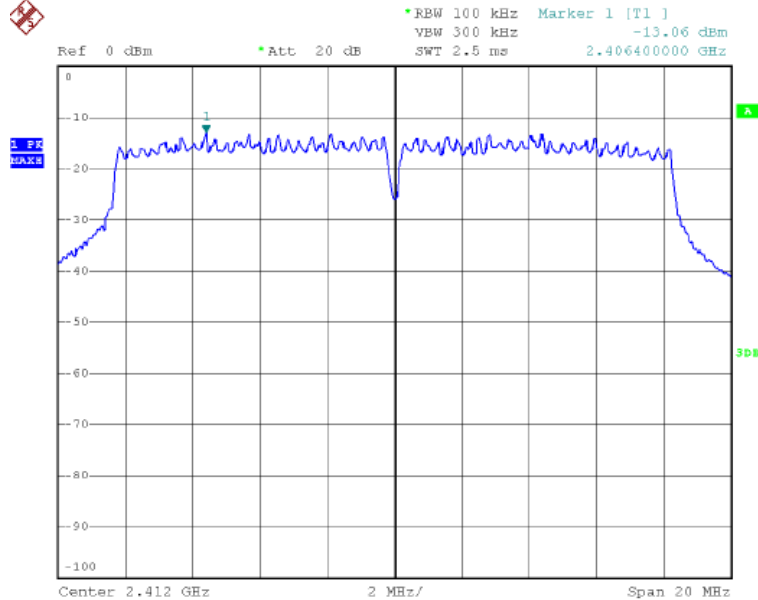
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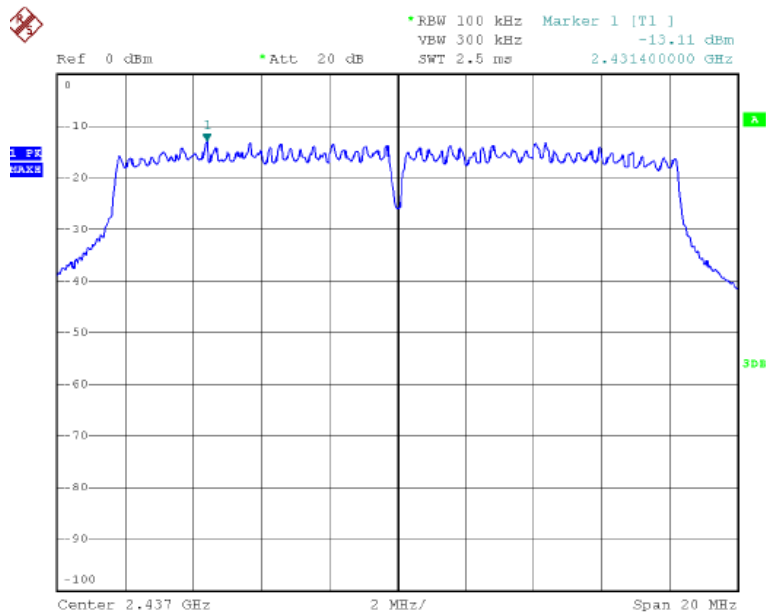


The EUT communicating with 802.11g Mode

Lowest channel=2412MHz



Middle channel=2437MHz

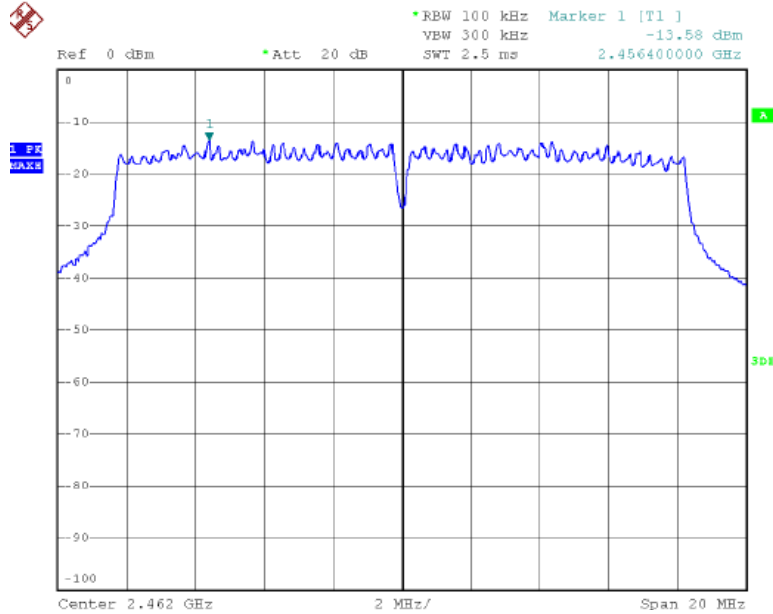


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Highest channel=2462MHz

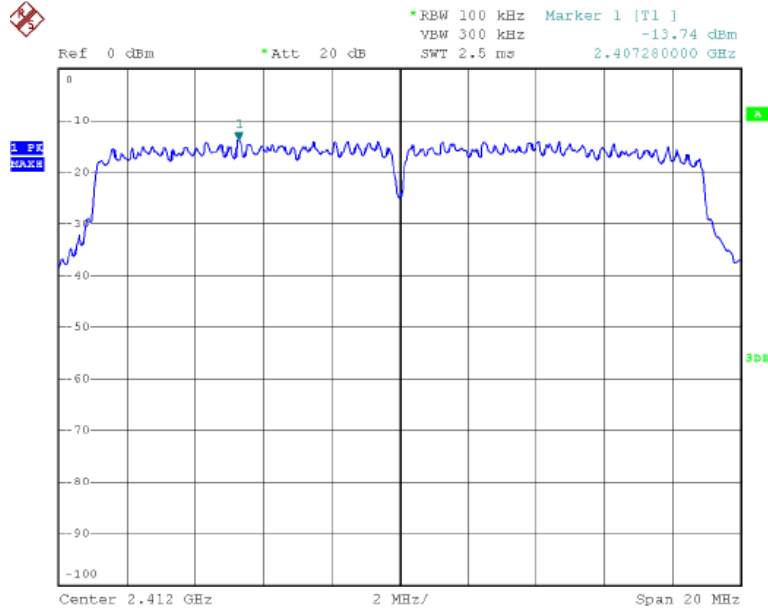


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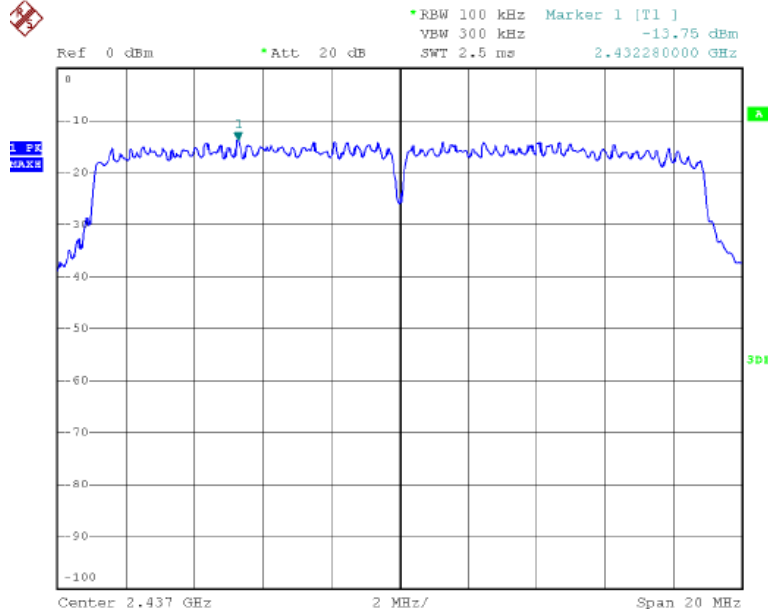
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The EUT communicating with 802.11n-H20 Mode
Lowest channel=2412MHz



Middle channel=2437MHz

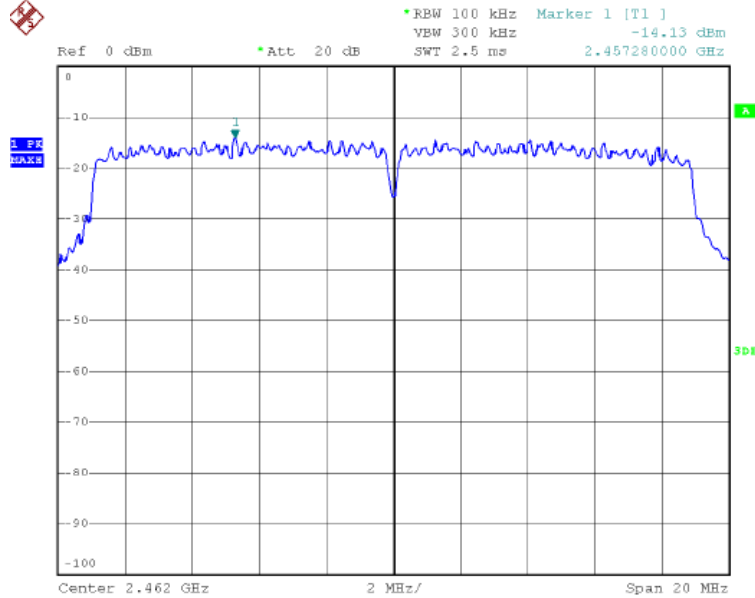


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Highest channel=2462MHz

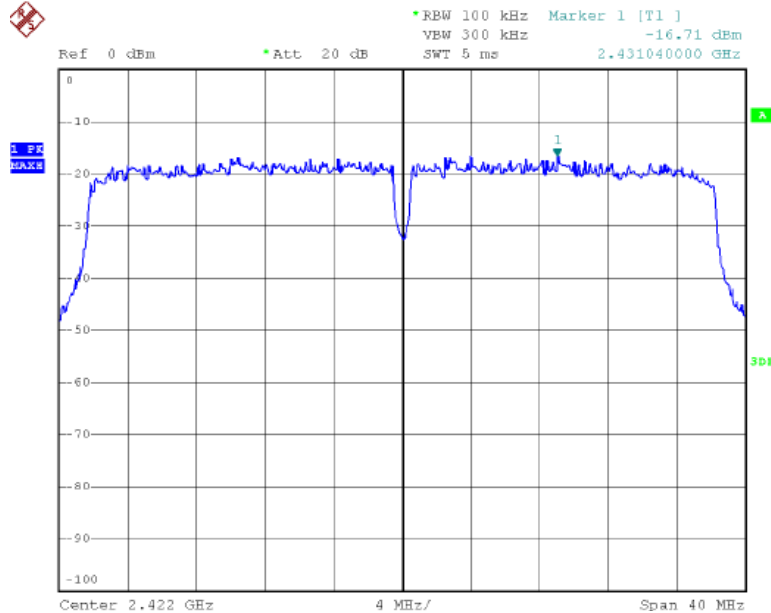


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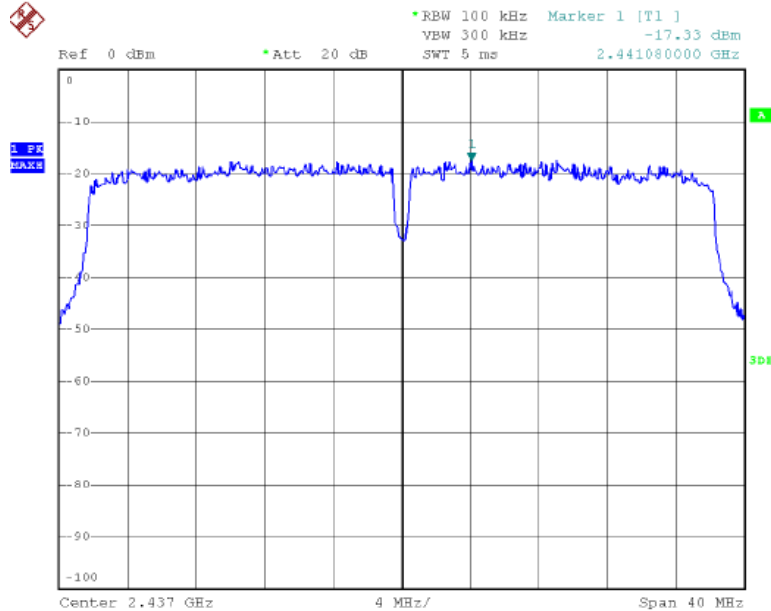
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The EUT communicating with 802.11n-H40 Mode
Lowest channel=2422MHz



Middle channel=2437MHz

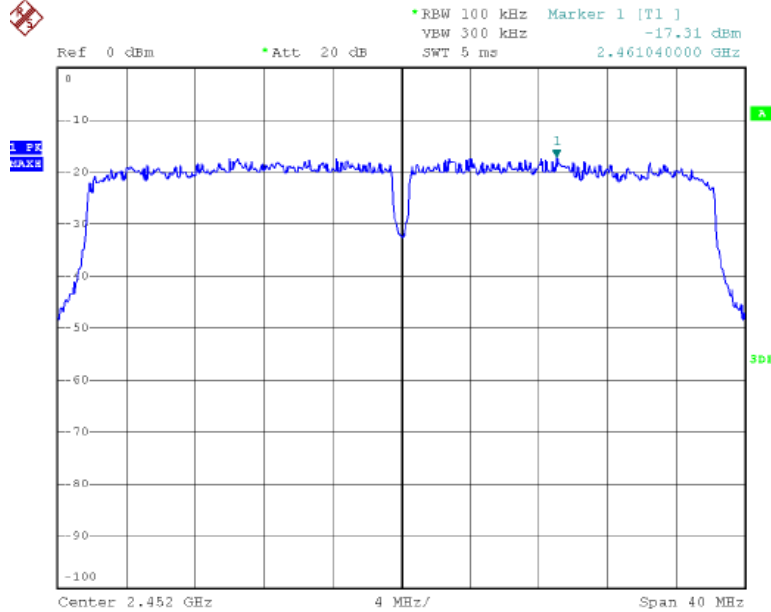


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Highest channel=2452MHz



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5.7 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 EUT and no consideration of replacement. The best case gain of the antenna is 0dBi.

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5.8 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.

EUT RF Exposure

The Max Conducted Peak Output Power is 10.99dBm in the Lowest channel (2.412GHz);

The best case gain of the antenna is 0dBi.

calculate the EIRP test result:

$$\text{EIRP} = (10.99 + 0.0) \text{dBm} = 12.56 \text{mW} \text{ ①}$$

SAR requirement:

$$S = 60 / f(\text{GHz}) = 60 / 2.412 = 24.88 \text{ mW} \text{ ②} ;$$

$$\text{①} < \text{②}.$$

So the SAR report is not required.

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