FCC Test Report

(Class II Permissive Change)

Product Name	802.11 b/g/n PCIe Module
Model No	NGP1024
FCC ID.	HZB-NGP1024

Applicant	Proxim Wireless Corporation
Address	47633 Westinghouse Drive, Fremont City, California, United States 94539

Date of Receipt	Jun. 29, 2015
Issue Date	Aug. 25, 2015
Report No.	1570041R-RFUSP25V00
Report Version	V1.0

ilac-MRA TAF Testing Laboratory 3023

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF or any agency of the government.

Test Report

Issue Date: Aug. 25, 2015
Report No.: 1570041R-RFUSP25V00

Product Name	802.11 b/g/n PCIe Module
Applicant	Proxim Wireless Corporation
Address	47633 Westinghouse Drive, Fremont City, California, United States 94539
Manufacturer	Compex Systems Pte Ltd.
Model No.	NGP1024
EUT Rated Voltage	DC 3.3V
Host voltage	AC 120V/60Hz
Trade Name	Proxim
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2014 ANSI C63.4: 2014, ANSI C63.10: 2013 KDB 558074 D01 DTS Meas Guidance v03r03
Test Result	Complied

Documented By : Joanne Lin

(Senior Adm. Specialist / Joanne Lin)

Tested By : Nova Chu

(Engineer / Nova Chu)

Approved By :

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	802.11 b/g/n PCIe Module
Trade Name	Proxim
Model No.	NGP1024
FCC ID.	HZB-NGP1024
Frequency Range	802.11b/g/n-20MHz:2412-2462MHz,802.11n-40MHz:2422-2452MHz
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7
Data Speed	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps, 802.11n: up to 300Mbps
Type of Modulation	802.11b:DSSS, DBPSK, DQPSK, CCK 802.11g/n: OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Dipole Antenna、Omni Antenna、Panel Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain	Note
1	SmartAnt	N/A	Dipole	4.5dBi for 2.4GHz	Original Antenna
2	Kunshan Wavelink	N/A	Dipole	2.0dBi for 2.4GHz	Original Antenna
3	Compex Systems	N/A	Panel	14dBi for 2.4GHz	Original Antenna
4	Compex Systems	N/A	Panel	6.5dBi for 2.4GHz	Original Antenna
5	Compex Systems	N/A	Panel	11dBi for 2.4GHz	Original Antenna
7	Smartant	USI05-220170	Dipole	2.5dBi for 2.4 GHz	New Antenna
8	Mars	MA-WO25-9	Omni	10dBi for 2.4 GHz	New Antenna
9	Mars	MA-WA25-20	Panel	20dBi for 2.4 GHz	New Antenna

Note: The antenna of EUT conforms to FCC 15.203.

802.11b/g/n-20MHz Center Frequency of Each Channel:

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

802.11n-40MHz (2.4G Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 03:	2422 MHz	Channel 04:	2427 MHz	Channel 05:	2432 MHz	Channel 06:	2437 MHz
Channel 07:	2442 MHz	Channel 08:	2447 MHz	Channel 09:	2452 MHz		

Note:

1. This device is a 802.11 b/g/n PCIe Module with a built-in 2.4GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps、802.11g is 6Mbps、802.11n(20M-BW) is 14.4Mbps and, 802.11n(40M-BW) is 30Mbps).
4. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (802.11b is chain A、802.11g is chain A)
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
6. This is to request a Class II permissive change for FCC ID: HZB-NGP1024 originally granted on 08/10/2015.
   The major change filed under this application is:
   Change #1: Addition three new antennas:
   The Dipole antenna type is the same, the antenna gain is lesser than the original application.
   The Panel antenna type is the same, the antenna gain is higher than the original application.
   The Omni antenna type is different than the original application.
   Change #2: Reduce the Output Power through firmware.
7. Only the Panel and Omni antenna was tested and recorded in this report.

Test Mode :	Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna
	Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna
	Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna
	Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna
	Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna
	Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna
	Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna
	Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna

1.2. Operational Description

The EUT is a 802.11 b/g/n PCIe Module with a built-in 2.4GHz WLAN transceiver. This device provided four kinds of transmitting speed 1, 2, 5.5 and 11Mbps and the device of RF carrier is DBPSK, DQPSK and CCK (IEEE 802.11b). The device provided of eight kinds of transmitting speed 6, 9, 12, 18, 24, 36, 48 and 54Mbps the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11g).

The device provided of eight kinds of transmitting speed 14.4,28.9,43.3,57.8,86.7,115.6,130 and 144.4Mbps in 802.11n(20M-BW) mode and 30,60,90,120,180,240,270 and 300 Mbps(40M-BW) the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11n), the IEEE 802.11n is Multiple In, Multiple Out" (MIMO) technology.

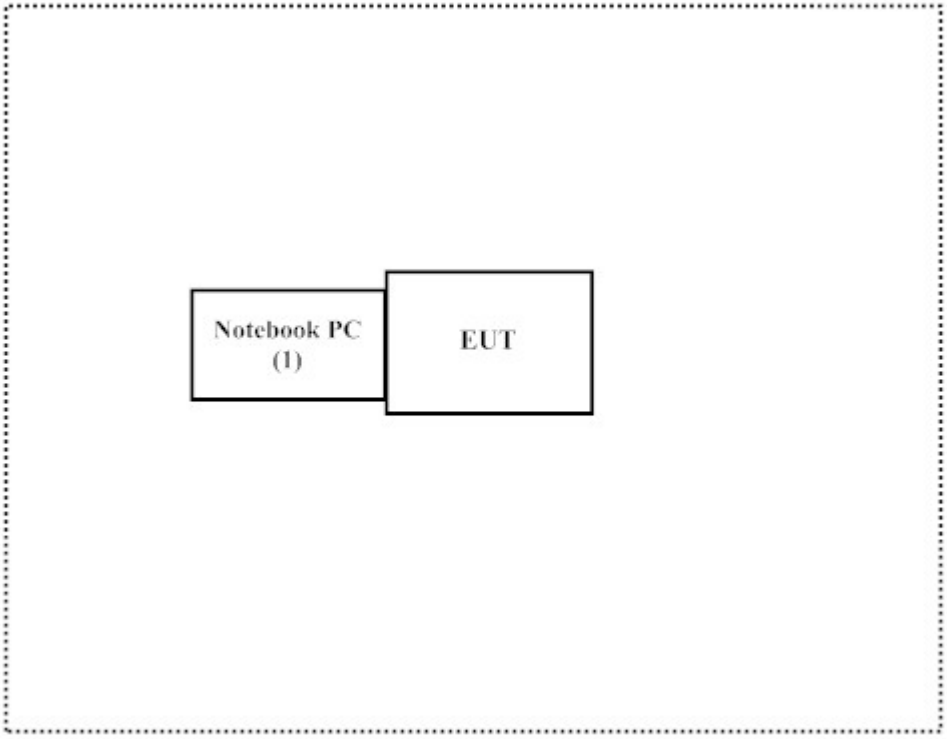
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m

Signal Cable Type	Signal cable Description
N/A	

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown on 1.4
(2) Execute software “ART Anwi 1.4” on the EUT.
(3) Configure the test mode, the test channel, and the data rate.
(4) Press “OK” to start the continuous Transmit.
(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site: http://www.quietek.com/chinese/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site: http://www.quietek.com/

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Site Name: Quietek Corporation
Site Address: No.5-22, Ruishukeng,
Linkou Dist. New Taipei City 24451,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

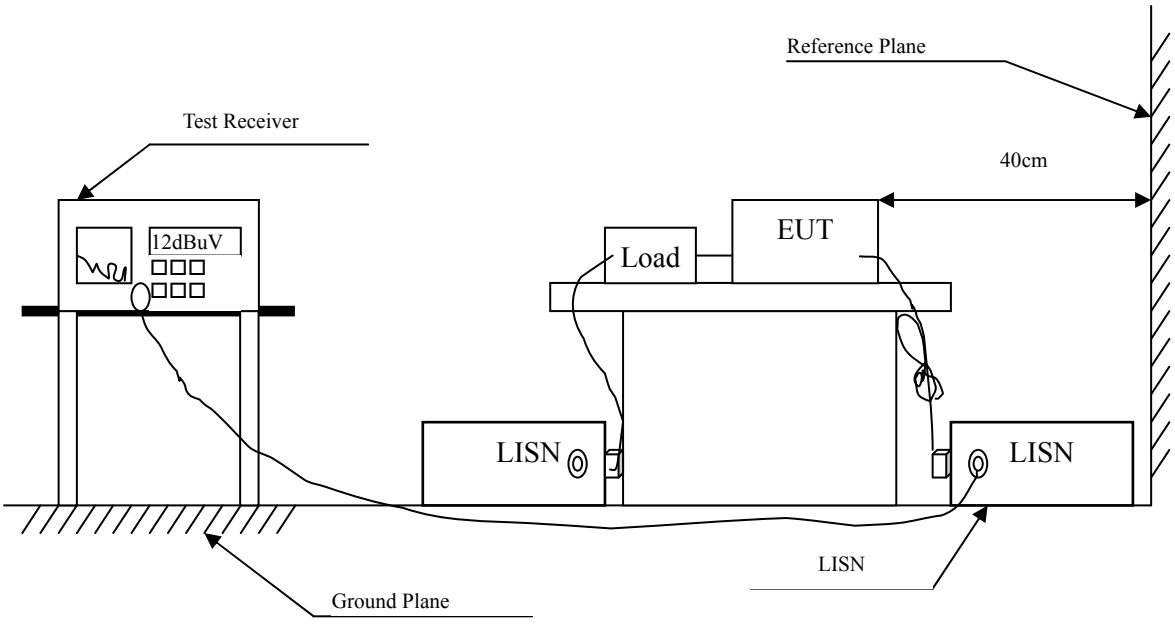
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2014	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2015	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2015	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar., 2015	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2015	
	No.1 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBμV) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : 802.11 b/g/n PCIe Module
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
Line 1					
Quasi-Peak					
0.158	9.747	41.120	50.867	-14.904	65.771
0.177	9.742	34.300	44.042	-21.187	65.229
0.205	9.739	32.760	42.499	-21.930	64.429
0.474	9.751	25.240	34.991	-21.752	56.743
0.689	9.761	24.890	34.651	-21.349	56.000
3.002	9.858	23.040	32.898	-23.102	56.000
Average					
0.158	9.747	18.270	28.017	-27.754	55.771
0.177	9.742	25.660	35.402	-19.827	55.229
0.205	9.739	26.230	35.969	-18.460	54.429
0.474	9.751	21.130	30.881	-15.862	46.743
0.689	9.761	12.890	22.651	-23.349	46.000
3.002	9.858	10.780	20.638	-25.362	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : 802.11 b/g/n PCIe Module
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
Line 2					
Quasi-Peak					
0.158	9.747	41.140	50.887	-14.884	65.771
0.205	9.749	32.880	42.629	-21.800	64.429
0.255	9.751	26.270	36.021	-26.979	63.000
0.720	9.769	23.170	32.940	-23.060	56.000
2.873	9.850	22.640	32.490	-23.510	56.000
16.400	10.030	23.190	33.220	-26.780	60.000
Average					
0.158	9.747	34.410	44.157	-11.614	55.771
0.205	9.749	12.890	22.639	-31.790	54.429
0.255	9.751	17.810	27.561	-25.439	53.000
0.720	9.769	8.560	18.330	-27.670	46.000
2.873	9.850	9.060	18.910	-27.090	46.000
16.400	10.030	18.660	28.690	-21.310	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : 802.11 b/g/n PCIe Module
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
Line 1					
Quasi-Peak					
0.162	9.746	41.260	51.006	-14.651	65.657
0.216	9.739	31.060	40.799	-23.315	64.114
0.255	9.741	26.190	35.931	-27.069	63.000
0.470	9.751	24.610	34.361	-22.496	56.857
0.744	9.763	22.090	31.853	-24.147	56.000
3.002	9.858	22.730	32.588	-23.412	56.000
Average					
0.162	9.746	25.870	35.616	-20.041	55.657
0.216	9.739	22.100	31.839	-22.275	54.114
0.255	9.741	15.570	25.311	-27.689	53.000
0.470	9.751	14.900	24.651	-22.206	46.857
0.744	9.763	8.560	18.323	-27.677	46.000
3.002	9.858	12.130	21.988	-24.012	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : 802.11 b/g/n PCIe Module
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
Line 2					
Quasi-Peak					
0.158	9.747	41.100	50.847	-14.924	65.771
0.197	9.749	31.950	41.699	-22.958	64.657
0.220	9.750	28.780	38.530	-25.470	64.000
0.259	9.751	26.090	35.841	-27.045	62.886
0.658	9.759	24.590	34.349	-21.651	56.000
0.841	9.778	19.720	29.498	-26.502	56.000
Average					
0.158	9.747	33.490	43.237	-12.534	55.771
0.197	9.749	23.850	33.599	-21.058	54.657
0.220	9.750	2.580	12.330	-41.670	54.000
0.259	9.751	9.390	19.141	-33.745	52.886
0.658	9.759	10.100	19.859	-26.141	46.000
0.841	9.778	8.520	18.298	-27.702	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Maximum Conducted Power

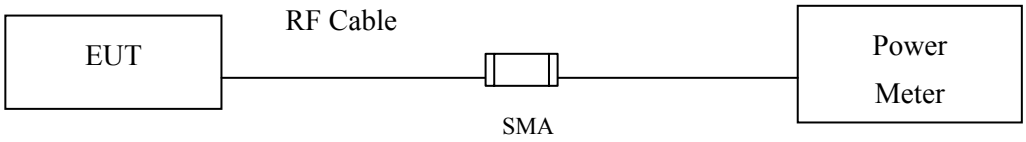
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2015
X	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2015
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup



3.3. Limits

The maximum average power shall be less 1 Watt. (Section 15.247 (b)(3))

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 D01 DTS Meas Guidance v03r02 section 9.1.2 PKPM1 Peak power meter method.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Maximum Conducted Power

Product : 802.11 b/g/n PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	13.07	--	--	--	16.27	<26dBm	Pass
06	2437	13.61	13.53	13.47	13.39	16.39	<26dBm	Pass
11	2462	13.54	--	--	--	16.31	<26dBm	Pass

Note:
1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[10dBi-6dBi]=26 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	12.93	--	--	--	14.54	<26dBm	Pass
06	2437	12.78	12.71	12.63	12.54	14.54	<26dBm	Pass
11	2462	13.36	--	--	--	15.02	<26dBm	Pass

Note:
1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[10dBi-6dBi]=26 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Product : 802.11 b/g/n PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	14.69	--	--	--	--	--	--	--	24.71	<26dBm	Pass
06	2437	15.31	15.24	15.18	15.11	15.04	14.97	14.89	14.82	25.87	<26dBm	Pass
11	2462	14.45	--	--	--	--	--	--	--	24.32	<26dBm	Pass

Note:
1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[10dBi-6dBi]=26 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	14.32	--	--	--	--	--	--	--	22.63	<26dBm	Pass
06	2437	14.49	14.41	14.33	14.27	14.19	14.13	14.07	13.99	23.09	<26dBm	Pass
11	2462	14.42	--	--	--	--	--	--	--	22.81	<26dBm	Pass

Note:
1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[10dBi-6dBi]=26 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Product : 802.11 b/g/n PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
01	2412	9.51	--	--	--	--	--	--	--	19.79
06	2437	10.01	9.94	9.86	9.79	9.72	9.63	9.56	9.49	20.79
11	2462	10.33	--	--	--	--	--	--	--	20.29

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
01	2412	10.43	--	--	--	--	--	--	--	20.71
06	2437	9.44	9.37	9.31	9.24	9.17	9.08	8.99	8.91	20.12
11	2462	10.78	--	--	--	--	--	--	--	21.28

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	14.4	19.79	20.71	23.28	<26dBm	Pass
6	2437	14.4	20.79	20.12	23.48	<26dBm	Pass
11	2462	14.4	20.29	21.28	23.82	<26dBm	Pass

Note:
1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[10dBi-6dBi]=26 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Product : 802.11 b/g/n PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
3	2422	8.79	--	--	--	--	--	--	--	20.17
6	2437	8.62	8.53	8.48	8.39	8.31	8.24	8.15	8.07	19.87
9	2452	7.74	--	--	--	--	--	--	--	18.67

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
3	2422	8.87	--	--	--	--	--	--	--	19.72
6	2437	8.31	8.23	8.17	8.1	8.03	7.95	7.89	7.81	19.33
9	2452	7.43	--	--	--	--	--	--	--	18.65

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
3	2422	30	20.17	19.72	22.96	<26dBm	Pass
6	2437	30	19.87	19.33	22.62	<26dBm	Pass
9	2452	30	18.67	18.65	21.67	<26dBm	Pass

Note:

1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[10dBi-6dBi]=26 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Product : 802.11 b/g/n PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	13.05	--	--	--	15.89	<26dBm	Pass
06	2437	13.04	12.96	12.89	12.82	16.29	<26dBm	Pass
11	2462	12.65	--	--	--	15.44	<26dBm	Pass

Note:
1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[(20dBi- 6dBi) /3]= 26 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	12.44	--	--	--	14.42	<26dBm	Pass
06	2437	12.84	12.78	12.71	12.63	14.51	<26dBm	Pass
11	2462	12.57	--	--	--	14.46	<26dBm	Pass

Note:
1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[(20dBi- 6dBi) /3]= 26 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

Product : 802.11 b/g/n PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	6.31	--	--	--	--	--	--	--	16.21	<26dBm	Pass
06	2437	5.98	5.91	5.83	5.76	5.68	5.89	5.82	5.74	16.32	<26dBm	Pass
11	2462	5.27	--	--	--	--	--	--	--	15.89	<26dBm	Pass

Note:
1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[(20dBi- 6dBi) /3]= 26 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	6.29	--	--	--	--	--	--	--	15.88	<26dBm	Pass
06	2437	5.82	5.74	5.68	5.61	5.53	5.47	5.39	5.32	14.58	<26dBm	Pass
11	2462	3.61	--	--	--	--	--	--	--	12.88	<26dBm	Pass

Note:
1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[(20dBi- 6dBi) /3]= 26 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

Product : 802.11 b/g/n PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
01	2412	5.23	--	--	--	--	--	--	--	15.72
06	2437	5.16	5.08	4.99	4.91	4.83	4.75	4.68	4.61	15.78
11	2462	4.61	--	--	--	--	--	--	--	15.21

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
01	2412	6.13	--	--	--	--	--	--	--	16.56
06	2437	5.08	5.01	4.93	4.87	4.81	4.73	4.67	4.59	15.84
11	2462	2.74	--	--	--	--	--	--	--	12.97

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	14.4	15.72	16.56	19.17	<26dBm	Pass
6	2437	14.4	15.78	15.84	18.82	<26dBm	Pass
11	2462	14.4	15.21	12.97	17.24	<26dBm	Pass

Note:

1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[(20dBi- 6dBi) /3]= 26 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

Product : 802.11 b/g/n PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
3	2422	2.48	--	--	--	--	--	--	--	13.81
6	2437	2.28	2.21	2.13	2.07	1.99	1.91	1.83	1.75	13.87
9	2452	0.26	--	--	--	--	--	--	--	11.76

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
3	2422	2.02	--	--	--	--	--	--	--	12.22
6	2437	2.35	2.29	2.21	2.15	2.09	2.01	1.93	1.84	13.03
9	2452	-0.74	--	--	--	--	--	--	--	9.08

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
3	2422	30	13.81	12.22	16.10	<26dBm	Pass
6	2437	30	13.87	13.03	16.48	<26dBm	Pass
9	2452	30	11.76	9.08	13.63	<26dBm	Pass

Note:

1. Peak Power Output Value =Reading value on power meter + cable loss
2. Required Limit= 30dBm-[(20dBi- 6dBi) /3]= 26 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the radiated emission test:

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Magnetic Loop Antenna	Teseq	HLA6121/ 37133	Sep., 2014
	X	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	Jun., 2015
	X	EMI Test Receiver	R&S	ESCS 30/838251/ 001	Jun., 2015
	X	Coaxial Cable	QTK(Arnist)	RG 214/ LC003-RG	Jun., 2015
	X	Coaxial signal switch	Arnist	MP59B/ 6200798682	Jun., 2015

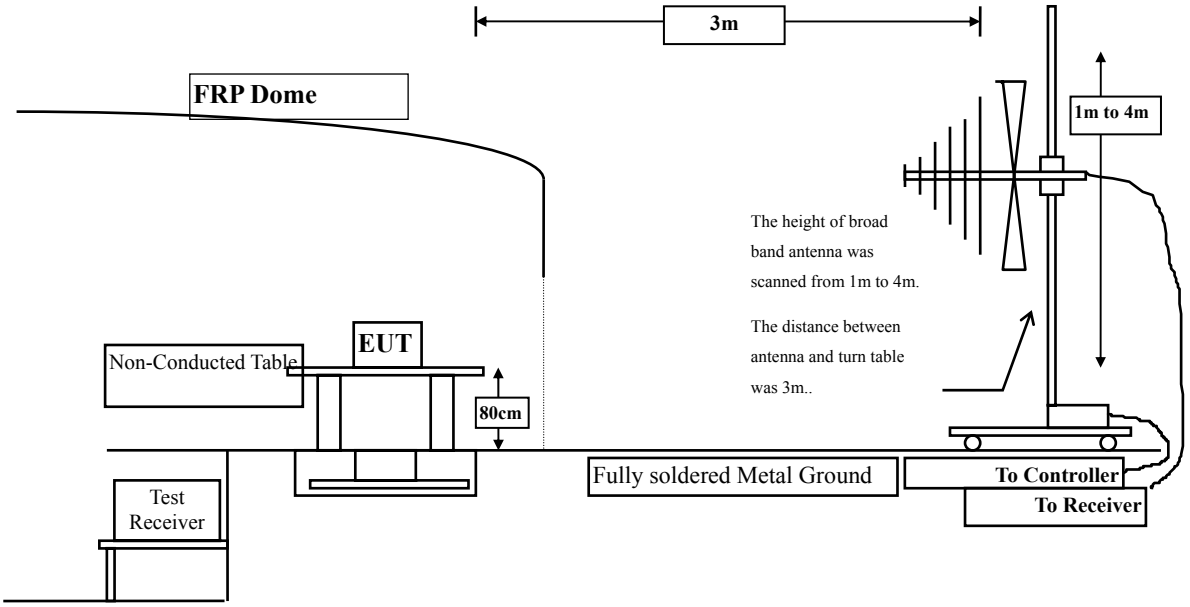
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒CB # 8	X	Spectrum Analyzer	R&S	FSP40/ 100339	Oct, 2014
	X	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar, 2015
	X	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan, 2015
	X	Horn Antenna	TRC	AH-0801/95051	Aug, 2015
	X	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan, 2015
	X	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul, 2015
	X	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul, 2015

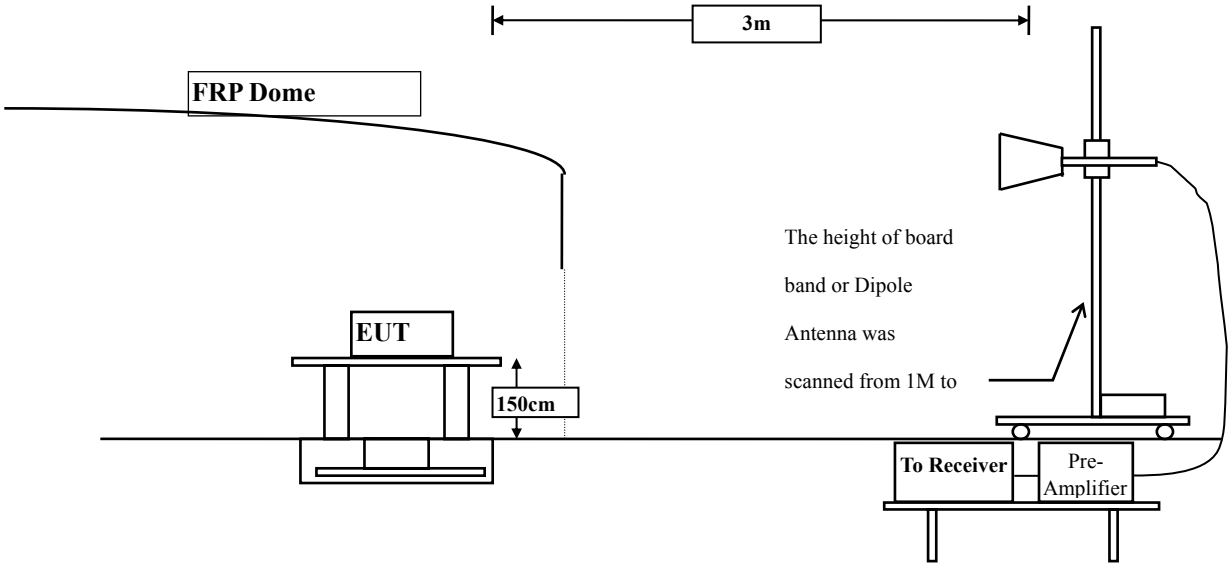
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 30dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dBμV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground,when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4824.000	2.428	44.190	46.619	-27.381	74.000
7236.000	9.177	40.650	49.827	-24.173	74.000
9648.000	10.019	45.460	55.480	-18.520	74.000
Average					
Detector:					
9648.000	10.019	41.100	51.120	-2.880	54.000
Vertical					
Peak Detector:					
4824.000	2.836	44.130	46.967	-27.033	74.000
7236.000	9.676	40.750	50.426	-23.574	74.000
9648.000	10.556	46.890	57.447	-16.553	74.000
Average					
Detector:					
9648.000	10.556	42.980	53.537	-0.463	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4874.000	2.076	42.090	44.167	-29.833	74.000
7311.000	9.512	40.130	49.642	-24.358	74.000
9748.000	9.630	44.320	53.950	-20.050	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	2.532	42.160	44.692	-29.308	74.000
7311.000	10.089	40.220	50.309	-23.691	74.000
9748.000	10.266	46.560	56.827	-17.173	74.000
Average Detector:					
9748.000	10.266	42.550	52.817	-1.183	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.191	42.150	44.341	-29.659	74.000
7386.000	10.373	39.300	49.674	-24.326	74.000
9848.000	9.964	43.130	53.094	-20.906	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	42.240	45.045	-28.955	74.000
7386.000	11.180	39.800	50.980	-23.020	74.000
9848.000	10.801	44.840	55.641	-18.359	74.000
Average					
Detector:					
9848.000	10.801	42.110	52.911	-1.089	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4824.000	2.428	42.260	44.689	-29.311	74.000
7236.000	9.177	40.000	49.177	-24.823	74.000
9648.000	10.019	43.730	53.750	-20.250	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	2.836	43.070	45.907	-28.093	74.000
7236.000	9.676	41.140	50.816	-23.184	74.000
9648.000	10.556	45.830	56.387	-17.613	74.000
Average Detector:					
9648.000	10.556	40.880	51.437	-2.563	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4874.000	2.076	42.110	44.187	-29.813	74.000
7311.000	9.512	40.200	49.712	-24.288	74.000
9748.000	9.630	48.160	57.790	-16.210	74.000
Average					
Detector:					
9748.000	9.630	29.710	39.340	-14.660	54.000
Vertical					
Peak Detector:					
4874.000	2.532	42.140	44.672	-29.328	74.000
7311.000	10.089	40.540	50.629	-23.371	74.000
9748.000	10.266	48.390	58.657	-15.343	74.000
Average					
Detector:					
9748.000	10.266	30.100	40.367	-13.633	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.191	41.240	43.431	-30.569	74.000
7386.000	10.373	38.700	49.074	-24.926	74.000
9848.000	9.964	42.190	52.154	-21.846	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	41.670	44.475	-29.525	74.000
7386.000	11.180	39.650	50.830	-23.170	74.000
9848.000	10.801	45.210	56.011	-17.989	74.000
Average					
Detector:					
9848.000	10.801	28.740	39.541	-14.459	54.000

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4824.000	2.428	42.340	44.769	-29.231	74.000
7236.000	9.177	39.710	48.887	-25.113	74.000
9648.000	10.019	41.620	51.640	-22.360	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	2.836	42.200	45.037	-28.963	74.000
7236.000	9.676	41.300	50.976	-23.024	74.000
9648.000	10.556	43.160	53.717	-20.283	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
4874.000	2.076	41.960	44.037	-29.963	74.000
7311.000	9.512	39.310	48.822	-25.178	74.000
9748.000	9.630	40.230	49.860	-24.140	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	2.532	41.910	44.442	-29.558	74.000
7311.000	10.089	39.970	50.059	-23.941	74.000
9748.000	10.266	41.300	51.567	-22.433	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.191	42.050	44.241	-29.759	74.000
7386.000	10.373	40.230	50.604	-23.396	74.000
9848.000	9.964	41.400	51.364	-22.636	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	42.940	45.745	-28.255	74.000
7386.000	11.180	40.520	51.700	-22.300	74.000
9848.000	10.801	42.620	53.421	-20.579	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2422MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4844.000	2.280	42.090	44.371	-29.629	74.000
7266.000	9.106	40.100	49.206	-24.794	74.000
9688.000	9.663	41.400	51.063	-22.937	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4844.000	2.707	42.150	44.858	-29.142	74.000
7266.000	9.626	41.700	51.326	-22.674	74.000
9688.000	10.284	42.570	52.854	-21.146	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
4874.000	2.076	41.970	44.047	-29.953	74.000
7311.000	9.512	40.780	50.292	-23.708	74.000
9748.000	9.630	40.540	50.170	-23.830	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	2.532	41.910	44.442	-29.558	74.000
7311.000	10.089	40.950	51.039	-22.961	74.000
9748.000	10.266	40.940	51.207	-22.793	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2452 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4904.000	2.000	41.470	43.471	-30.529	74.000
7356.000	10.308	40.200	50.508	-23.492	74.000
9808.000	9.850	41.960	51.810	-22.190	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4904.000	2.513	41.920	44.434	-29.566	74.000
7356.000	11.022	40.330	51.352	-22.648	74.000
9808.000	10.512	41.990	52.502	-21.498	74.000
Average					
Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4824.000	2.428	42.450	44.879	-29.121	74.000
7236.000	9.177	40.050	49.227	-24.773	74.000
9648.000	10.019	45.930	55.950	-18.050	74.000
Average					
Detector:					
9648.000	10.019	41.190	51.210	-2.790	54.000
Vertical					
Peak Detector:					
4824.000	2.836	43.610	46.447	-27.553	74.000
7236.000	9.676	40.860	50.536	-23.464	74.000
9648.000	10.556	46.970	57.527	-16.473	74.000
Average					
Detector:					
9648.000	10.556	43.120	53.677	-0.323	54.000

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4874.000	2.076	41.850	43.927	-30.073	74.000
7311.000	9.512	39.320	48.832	-25.168	74.000
9748.000	9.630	42.660	52.290	-21.710	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	2.532	42.500	45.032	-28.968	74.000
7311.000	10.089	41.770	51.859	-22.141	74.000
9748.000	10.266	46.240	56.507	-17.493	74.000
Average Detector:					
9748.000	10.266	42.780	53.047	-0.953	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.191	41.520	43.711	-30.289	74.000
7386.000	10.373	40.240	50.614	-23.386	74.000
9848.000	9.964	42.000	51.964	-22.036	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	42.130	44.935	-29.065	74.000
7386.000	11.180	40.690	51.870	-22.130	74.000
9848.000	10.801	45.300	56.101	-17.899	74.000
Average					
Detector:					
9848.000	10.801	42.420	53.221	-0.779	54.000

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4824.000	2.428	41.550	43.979	-30.021	74.000
7236.000	9.177	40.820	49.997	-24.003	74.000
9648.000	10.019	41.190	51.210	-22.790	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4824.000	2.836	42.070	44.907	-29.093	74.000
7236.000	9.676	40.990	50.666	-23.334	74.000
9648.000	10.556	41.190	51.747	-22.253	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4874.000	2.076	42.040	44.117	-29.883	74.000
7311.000	9.512	40.420	49.932	-24.068	74.000
9748.000	9.630	40.450	50.080	-23.920	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	2.532	41.560	44.092	-29.908	74.000
7311.000	10.089	41.670	51.759	-22.241	74.000
9748.000	10.266	41.760	52.027	-21.973	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
4924.000	2.191	42.830	45.021	-28.979	74.000
7386.000	10.373	38.750	49.124	-24.876	74.000
9848.000	9.964	41.310	51.274	-22.726	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4924.000	2.805	42.380	45.185	-28.815	74.000
7386.000	11.180	38.750	49.930	-24.070	74.000
9848.000	10.801	41.690	52.491	-21.509	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4824.000	2.428	43.720	46.149	-27.851	74.000
7236.000	9.177	38.710	47.887	-26.113	74.000
9648.000	10.019	41.770	51.790	-22.210	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	2.836	41.440	44.277	-29.723	74.000
7236.000	9.676	41.780	51.456	-22.544	74.000
9648.000	10.556	41.790	52.347	-21.653	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal Peak Detector:					
4874.000	2.076	43.800	45.877	-28.123	74.000
7311.000	9.512	39.710	49.222	-24.778	74.000
9748.000	9.630	42.190	51.820	-22.180	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	2.532	42.590	45.122	-28.878	74.000
7311.000	10.089	41.780	51.869	-22.131	74.000
9748.000	10.266	42.220	52.487	-21.513	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.191	42.970	45.161	-28.839	74.000
7386.000	10.373	39.710	50.084	-23.916	74.000
9848.000	9.964	41.260	51.224	-22.776	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	41.480	44.285	-29.715	74.000
7386.000	11.180	41.460	52.640	-21.360	74.000
9848.000	10.801	41.540	52.341	-21.659	74.000
Average					
Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2422MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4844.000	2.280	42.350	44.631	-29.369	74.000
7266.000	9.626	39.750	49.376	-24.624	74.000
9688.000	10.284	42.479	52.763	-21.237	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4844.000	2.707	43.570	46.278	-27.722	74.000
7266.000	9.626	42.400	52.026	-21.974	74.000
9688.000	10.284	43.160	53.444	-20.556	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
4874.000	2.076	42.680	44.757	-29.243	74.000
7311.000	9.512	42.160	51.672	-22.328	74.000
9748.000	9.630	42.690	52.320	-21.680	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	2.532	43.850	46.382	-27.618	74.000
7311.000	10.089	42.540	52.629	-21.371	74.000
9748.000	10.266	43.620	53.887	-20.113	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2452 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4904.000	2.000	42.820	44.821	-29.179	74.000
7356.000	10.308	39.990	50.298	-23.702	74.000
9808.000	9.850	42.390	52.240	-21.760	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4904.000	2.506	42.670	45.176	-28.824	74.000
7356.000	11.022	41.650	52.672	-21.328	74.000
9808.000	10.512	43.100	53.612	-20.388	74.000
Average					
Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : 802.11 b/g/n PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
94.020	-8.189	43.191	35.001	-8.499	43.500
330.700	-4.492	42.056	37.564	-8.436	46.000
468.440	1.195	34.784	35.979	-10.021	46.000
606.180	4.666	30.836	35.502	-10.498	46.000
728.400	3.452	32.159	35.611	-10.389	46.000
920.460	6.467	29.637	36.104	-9.896	46.000
Vertical					
82.380	-5.215	40.563	35.348	-4.652	40.000
202.660	-7.739	46.555	38.816	-4.684	43.500
338.460	-4.265	41.347	37.082	-8.918	46.000
507.240	-0.471	38.506	38.035	-7.965	46.000
703.180	0.139	33.146	33.284	-12.716	46.000
965.080	7.932	27.965	35.897	-18.103	54.000

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : 802.11 b/g/n PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
142.520	-10.427	48.202	37.775	-5.725	43.500
330.700	-4.492	42.056	37.564	-8.436	46.000
468.440	1.195	34.784	35.979	-10.021	46.000
606.180	4.666	30.836	35.502	-10.498	46.000
728.400	3.452	32.159	35.611	-10.389	46.000
920.460	6.467	29.637	36.104	-9.896	46.000
Vertical					
132.820	-4.440	40.375	35.935	-7.565	43.500
330.700	-4.912	42.056	37.144	-8.856	46.000
507.240	-0.471	38.506	38.035	-7.965	46.000
703.180	0.139	33.146	33.284	-12.716	46.000
815.700	3.221	28.812	32.033	-13.967	46.000
943.740	6.592	28.263	34.856	-11.144	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : 802.11 b/g/n PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
175.500	-10.017	49.342	39.324	-4.176	43.500
338.460	-3.925	41.347	37.422	-8.578	46.000
507.240	0.759	38.506	39.265	-6.735	46.000
606.180	4.666	30.836	35.502	-10.498	46.000
728.400	3.452	32.159	35.611	-10.389	46.000
901.060	5.591	32.854	38.445	-7.555	46.000
Vertical					
105.660	-0.253	39.151	38.898	-4.602	43.500
202.660	-7.739	46.555	38.816	-4.684	43.500
406.360	-6.660	39.695	33.035	-12.965	46.000
507.240	-0.471	38.506	38.035	-7.965	46.000
749.740	2.510	39.396	41.906	-4.094	46.000
965.080	7.932	27.965	35.897	-18.103	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : 802.11 b/g/n PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
117.300	-9.196	47.333	38.137	-5.363	43.500
272.500	-5.359	42.144	36.785	-9.215	46.000
330.700	-4.492	42.056	37.564	-8.436	46.000
507.240	0.759	38.506	39.265	-6.735	46.000
728.400	3.452	32.159	35.611	-10.389	46.000
901.060	5.591	32.854	38.445	-7.555	46.000
Vertical					
107.600	-0.318	39.374	39.056	-4.444	43.500
202.660	-7.739	46.555	38.816	-4.684	43.500
338.460	-4.265	41.347	37.082	-8.918	46.000
507.240	-0.471	38.506	38.035	-7.965	46.000
728.400	-0.188	32.159	31.971	-14.029	46.000
965.080	7.932	27.965	35.897	-18.103	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : 802.11 b/g/n PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
30.000	-0.150	36.026	35.876	-4.124	40.000
150.280	-7.870	42.391	34.521	-8.979	43.500
270.560	-5.638	40.231	34.593	-11.407	46.000
485.900	1.316	32.665	33.981	-12.019	46.000
606.180	4.196	33.919	38.115	-7.885	46.000
930.160	7.530	22.704	30.234	-15.766	46.000
Vertical					
82.380	-4.523	29.727	25.204	-14.796	40.000
177.440	-1.248	25.946	24.698	-18.802	43.500
377.260	0.647	28.026	28.673	-17.327	46.000
617.820	0.958	25.124	26.082	-19.918	46.000
815.700	2.931	24.404	27.335	-18.665	46.000
965.080	3.832	25.226	29.058	-24.942	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : 802.11 b/g/n PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
39.700	-3.625	33.298	29.673	-10.327	40.000
142.520	-7.627	31.855	24.228	-19.272	43.500
375.320	0.918	37.135	38.053	-7.947	46.000
530.520	3.062	32.392	35.454	-10.546	46.000
829.280	7.376	23.763	31.139	-14.861	46.000
984.480	8.098	25.578	33.676	-20.324	54.000
Vertical					
43.580	-10.919	43.675	32.756	-7.244	40.000
181.320	-1.910	36.173	34.263	-9.237	43.500
239.520	-6.138	46.697	40.559	-5.441	46.000
617.820	0.958	25.335	26.293	-19.707	46.000
697.360	0.691	30.736	31.427	-14.573	46.000
945.680	3.300	27.536	30.836	-15.164	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : 802.11 b/g/n PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
39.700	-3.625	32.257	28.632	-11.368	40.000
161.920	-10.074	26.289	16.215	-27.285	43.500
346.220	-1.347	29.096	27.749	-18.251	46.000
546.040	4.386	22.976	27.362	-18.638	46.000
829.280	7.376	23.743	31.119	-14.881	46.000
986.420	8.189	25.998	34.187	-19.813	54.000
Vertical					
43.580	-10.919	40.526	29.607	-10.393	40.000
177.440	-1.248	24.463	23.215	-20.285	43.500
346.220	-0.527	26.453	25.926	-20.074	46.000
520.820	1.078	24.063	25.140	-20.860	46.000
697.360	0.691	28.961	29.652	-16.348	46.000
926.280	3.342	26.096	29.438	-16.562	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : 802.11 b/g/n PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
39.700	-3.625	31.410	27.785	-12.215	40.000
348.160	-1.320	29.896	28.576	-17.424	46.000
468.440	3.544	23.494	27.038	-18.962	46.000
604.240	4.289	23.089	27.379	-18.621	46.000
850.620	6.773	24.101	30.874	-15.126	46.000
951.500	6.993	25.412	32.405	-13.595	46.000
Vertical					
43.580	-10.919	40.493	29.574	-10.426	40.000
158.040	-5.172	28.487	23.315	-20.185	43.500
352.040	-1.292	26.138	24.846	-21.154	46.000
544.100	1.503	24.049	25.552	-20.448	46.000
780.780	2.769	25.316	28.085	-17.915	46.000
953.440	3.015	30.238	33.253	-12.747	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF Antenna conducted test

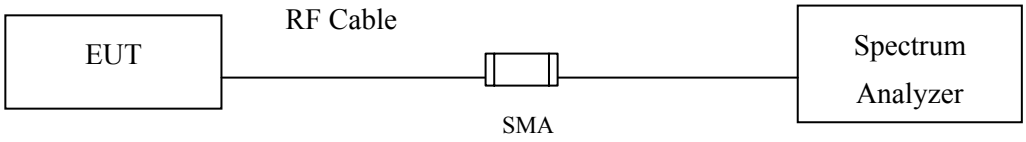
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

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 30 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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

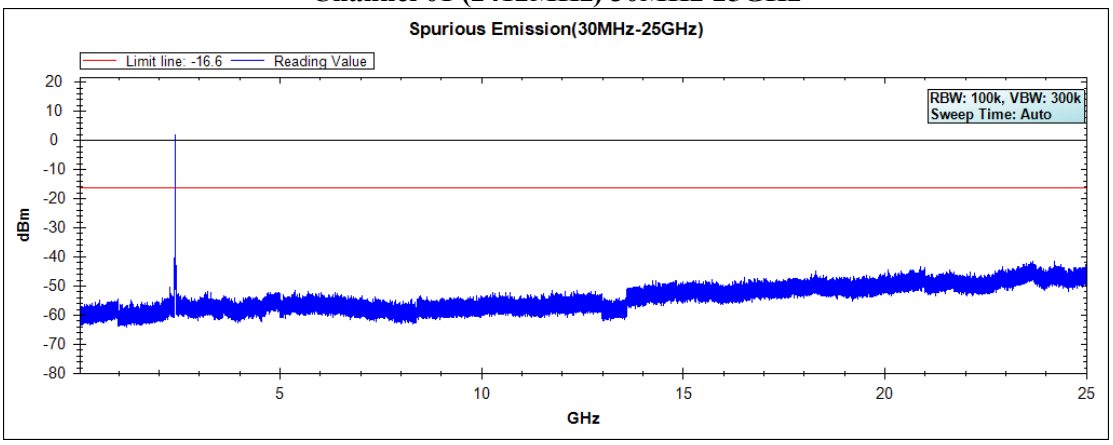
5.5. Uncertainty

The measurement uncertainty
Conducted is defined as ± 1.27dB

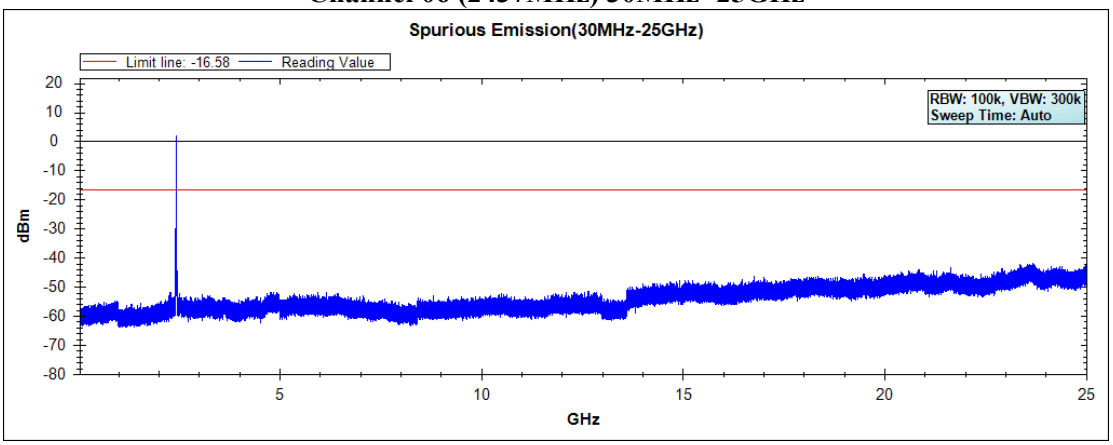
5.6. Test Result of RF antenna conducted test

Product : 802.11 b/g/n PCIe Module
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna

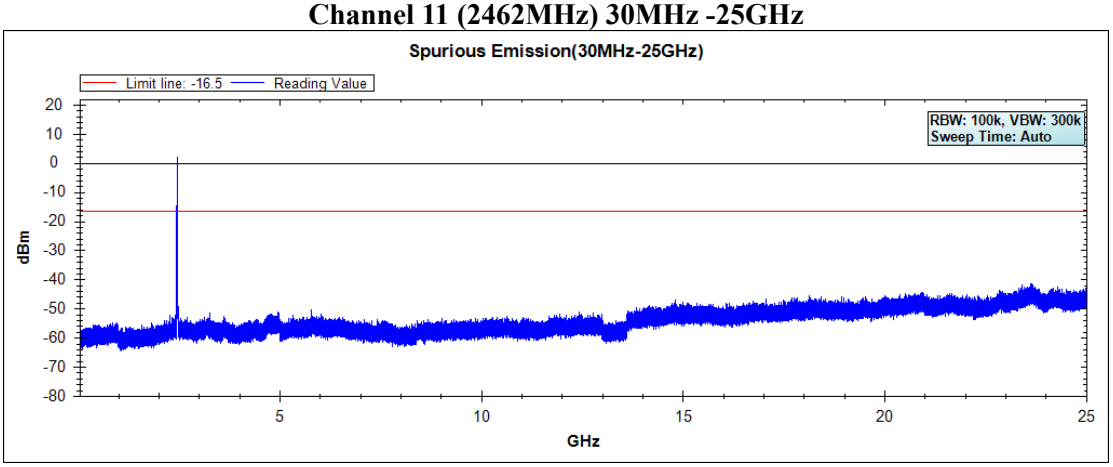
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz -25GHz



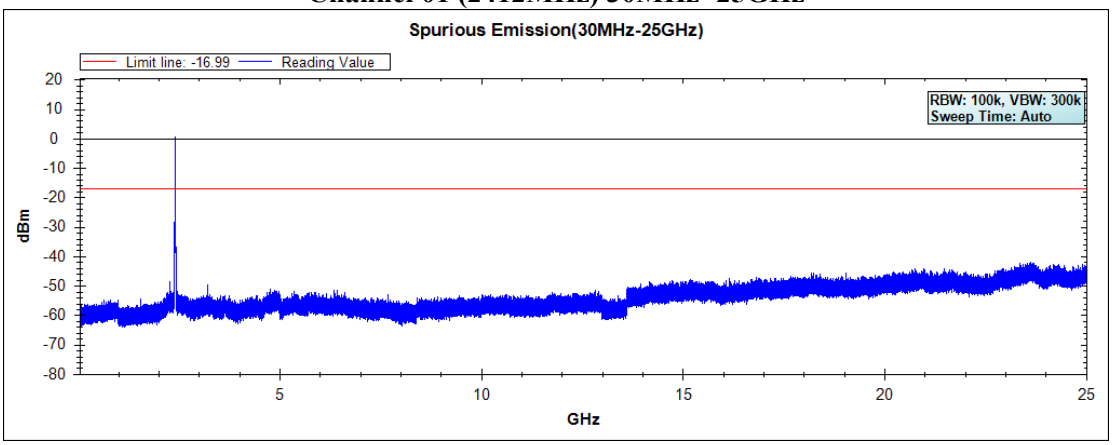
Channel 11 (2462MHz) 30MHz -25GHz



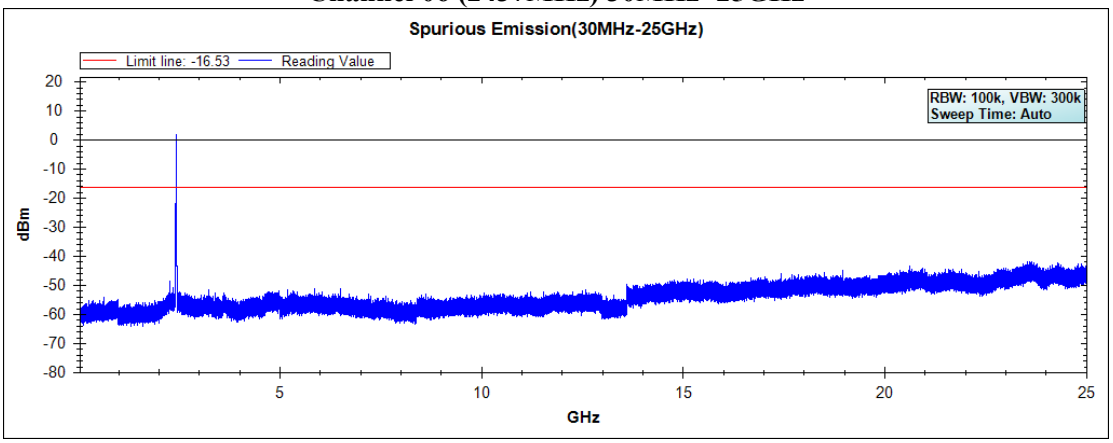
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : 802.11 b/g/n PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna

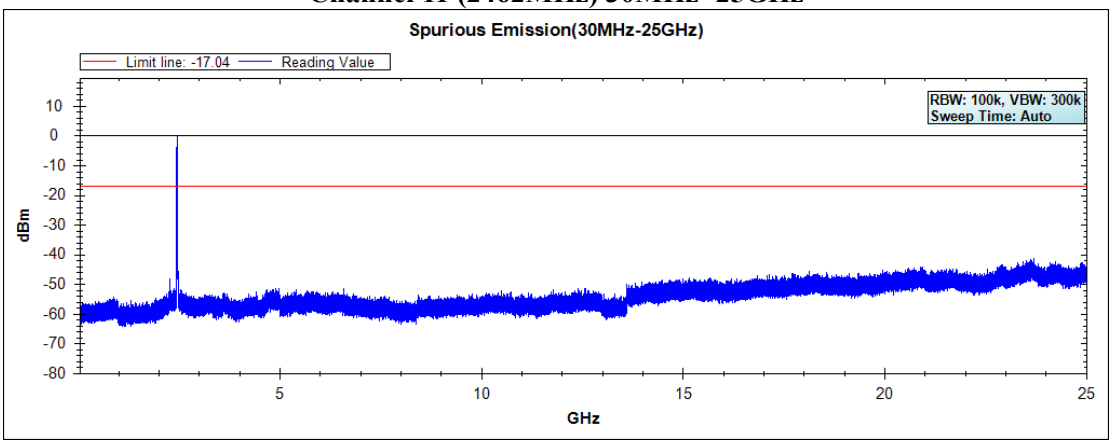
Channel 01 (2412MHz) 30MHz -25GHz



Channel 06 (2437MHz) 30MHz -25GHz



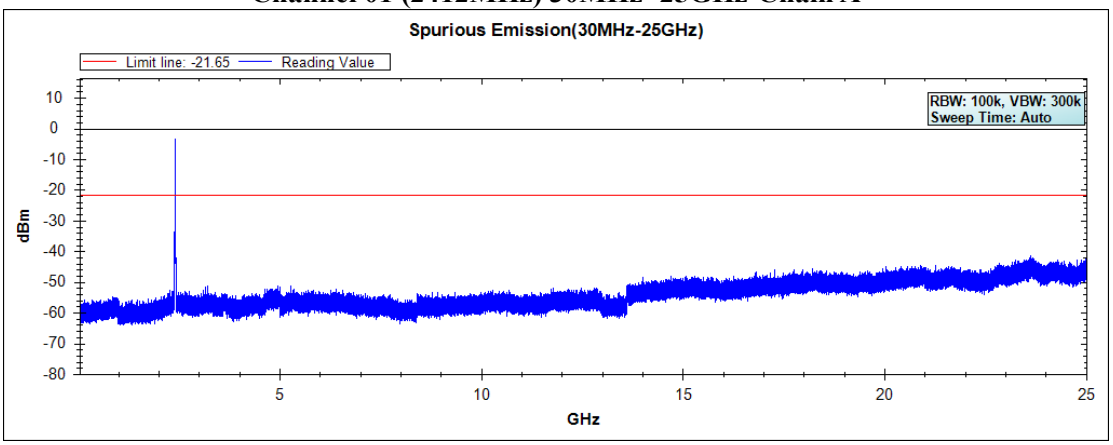
Channel 11 (2462MHz) 30MHz -25GHz



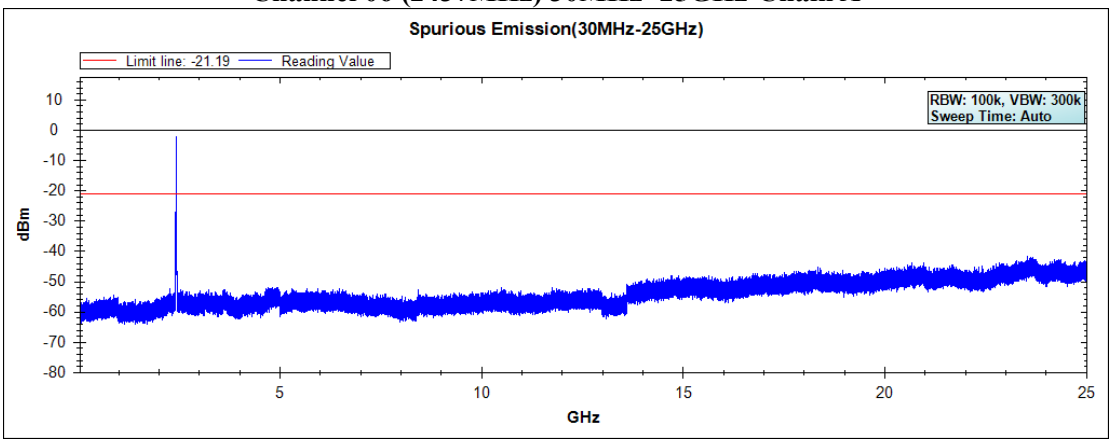
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : 802.11 b/g/n PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna

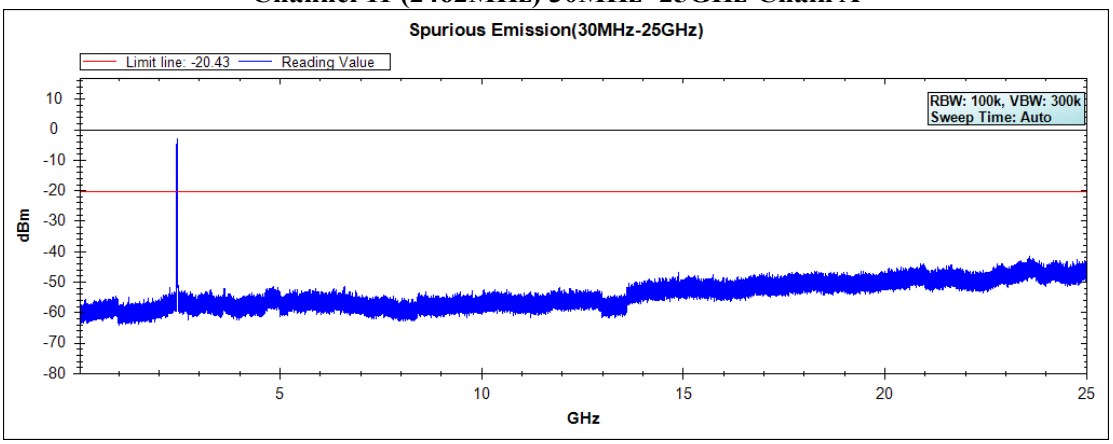
Channel 01 (2412MHz) 30MHz -25GHz-Chain A



Channel 06 (2437MHz) 30MHz -25GHz-Chain A

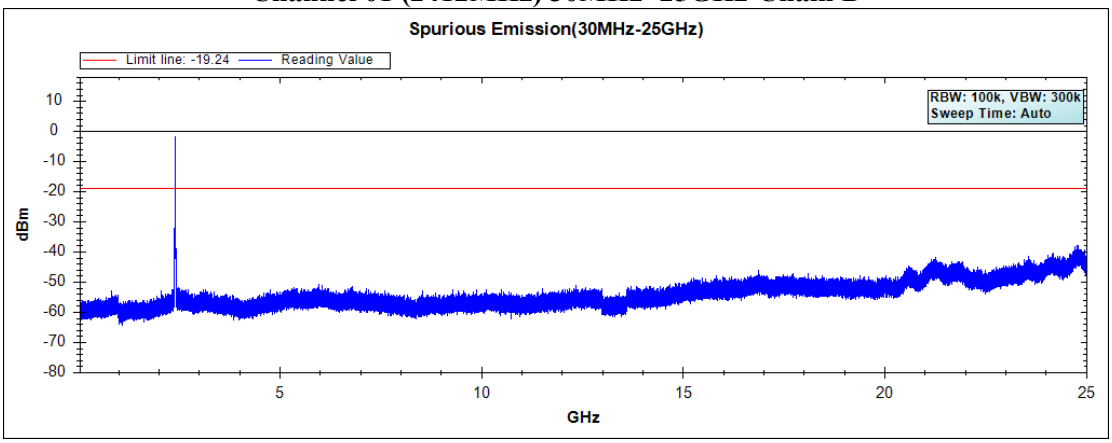


Channel 11 (2462MHz) 30MHz -25GHz-Chain A

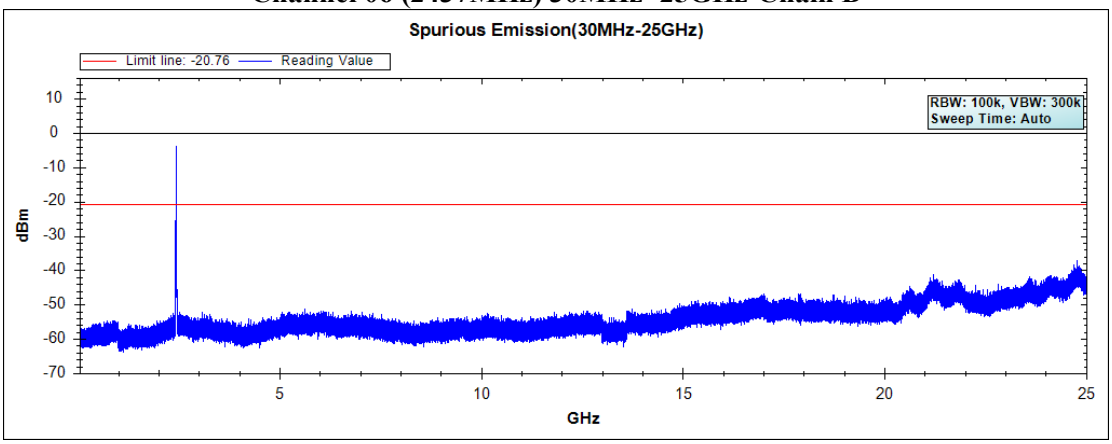


Note: The above test pattern is synthesized by multiple of the frequency range.

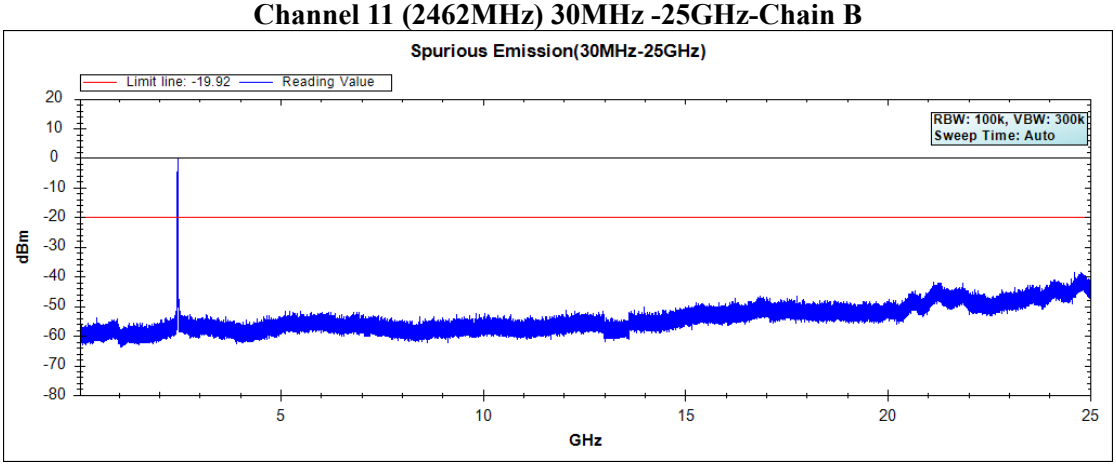
Channel 01 (2412MHz) 30MHz -25GHz-Chain B



Channel 06 (2437MHz) 30MHz -25GHz-Chain B



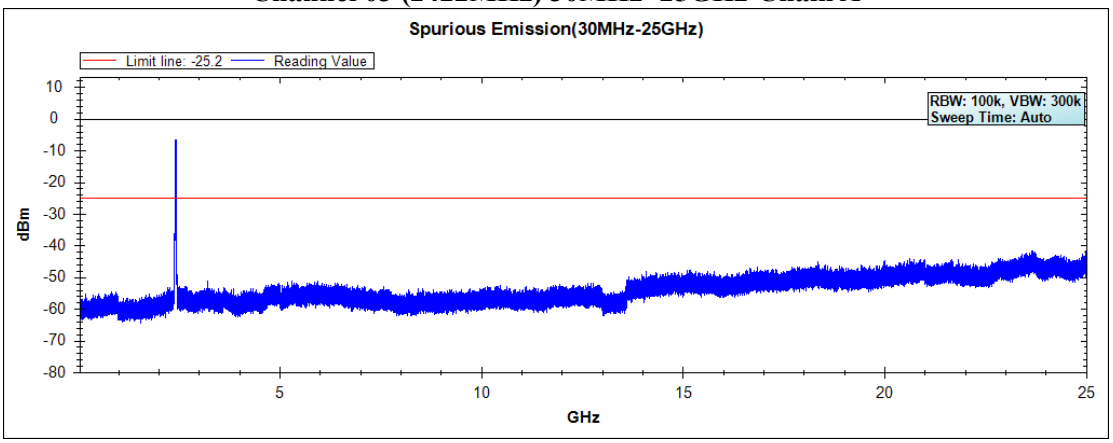
Channel 11 (2462MHz) 30MHz -25GHz-Chain B



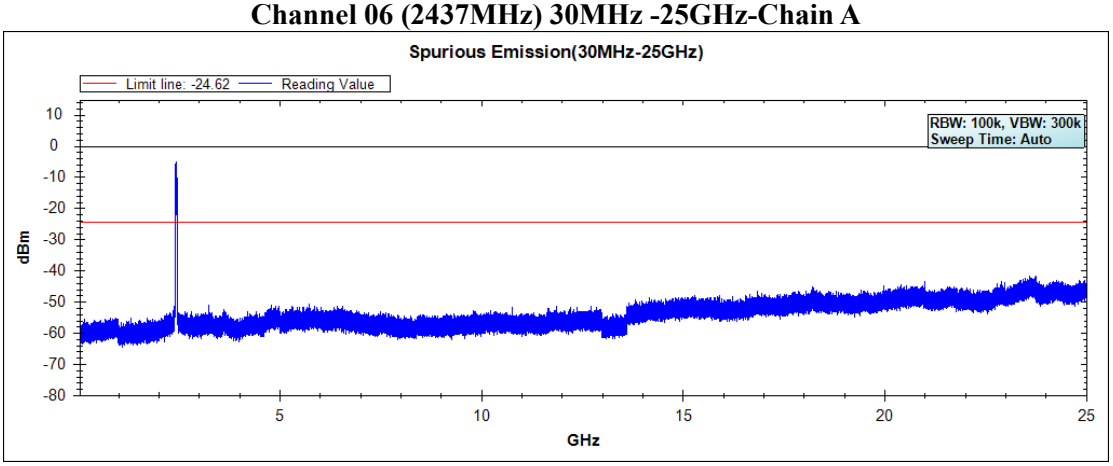
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : 802.11 b/g/n PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna

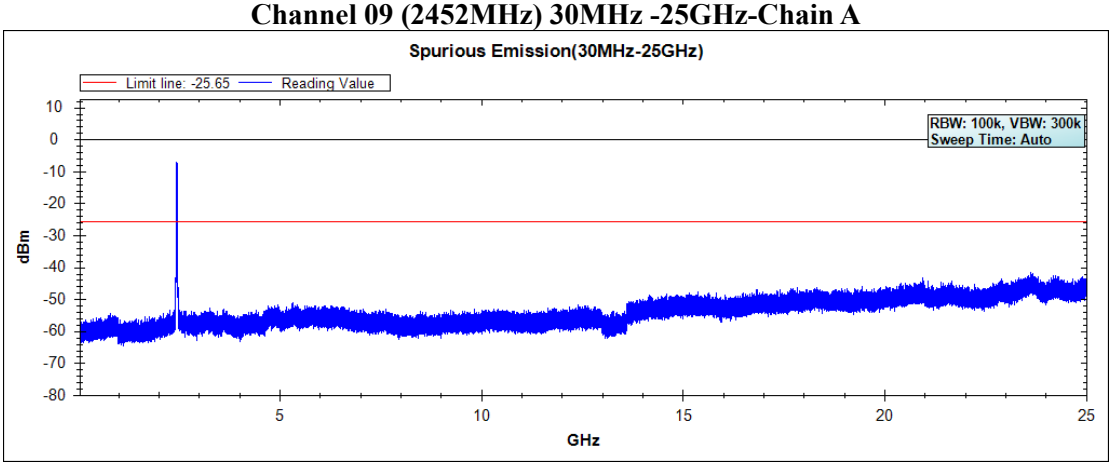
Channel 03 (2422MHz) 30MHz -25GHz-Chain A



Channel 06 (2437MHz) 30MHz -25GHz-Chain A

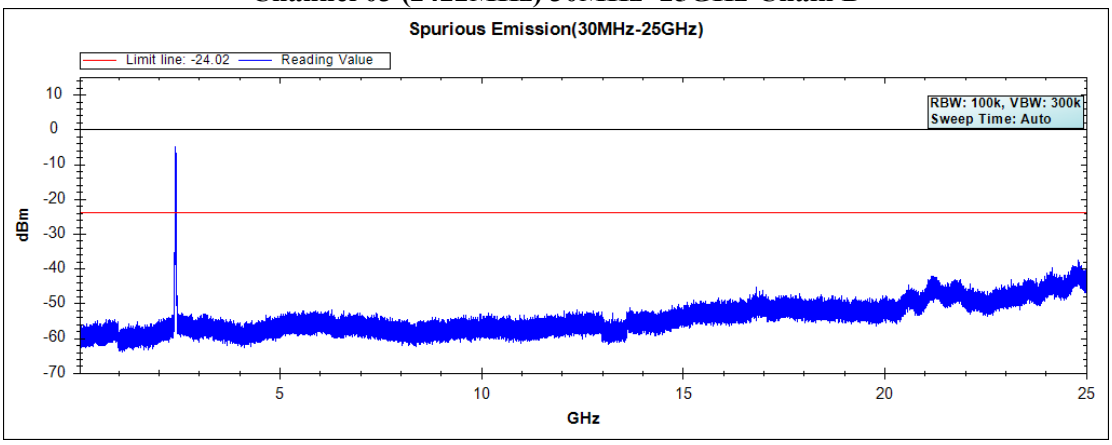


Channel 09 (2452MHz) 30MHz -25GHz-Chain A

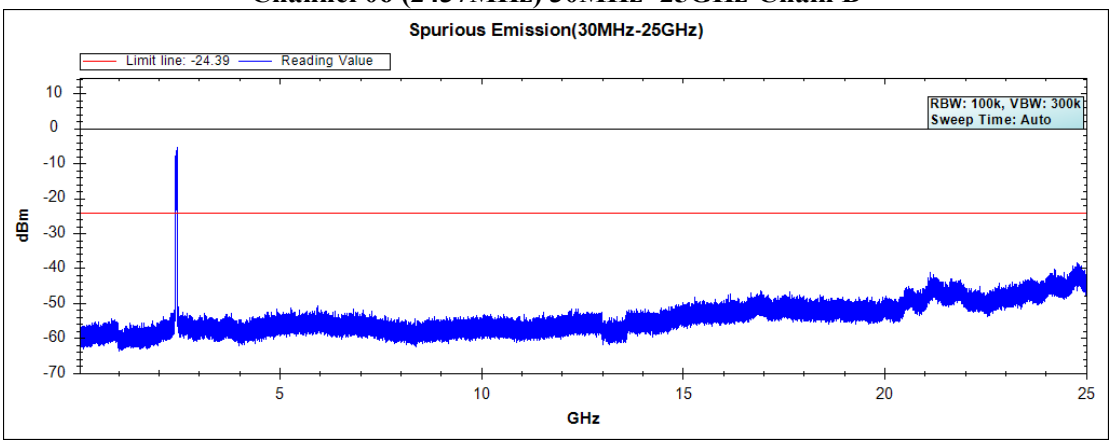


Note: The above test pattern is synthesized by multiple of the frequency range.

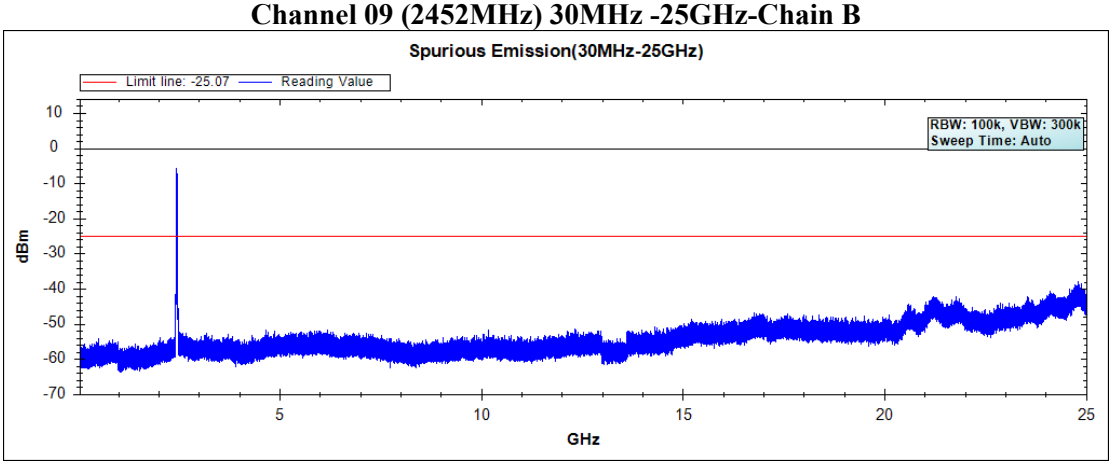
Channel 03 (2422MHz) 30MHz -25GHz-Chain B



Channel 06 (2437MHz) 30MHz -25GHz-Chain B



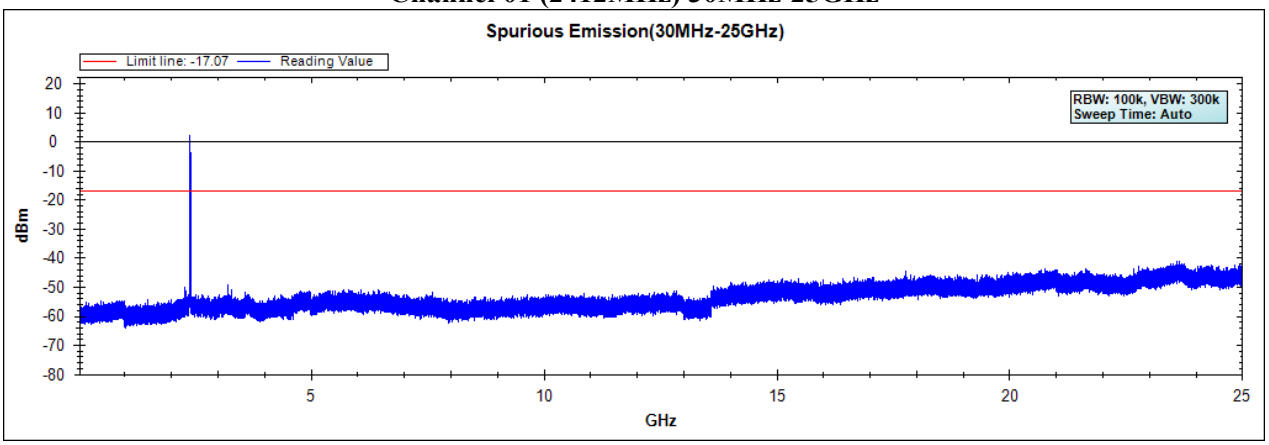
Channel 09 (2452MHz) 30MHz -25GHz-Chain B



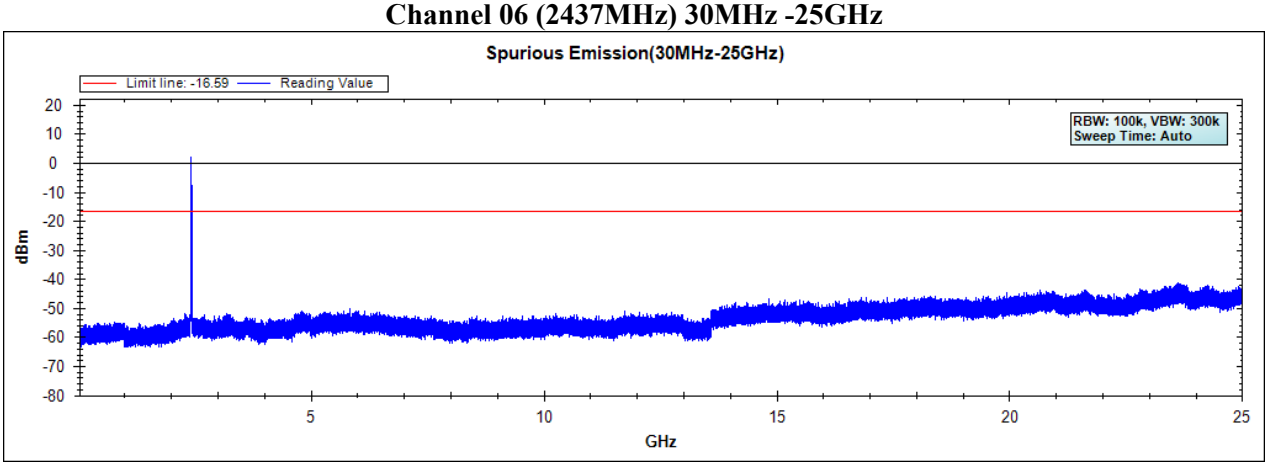
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : 802.11 b/g/n PCIe Module
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna

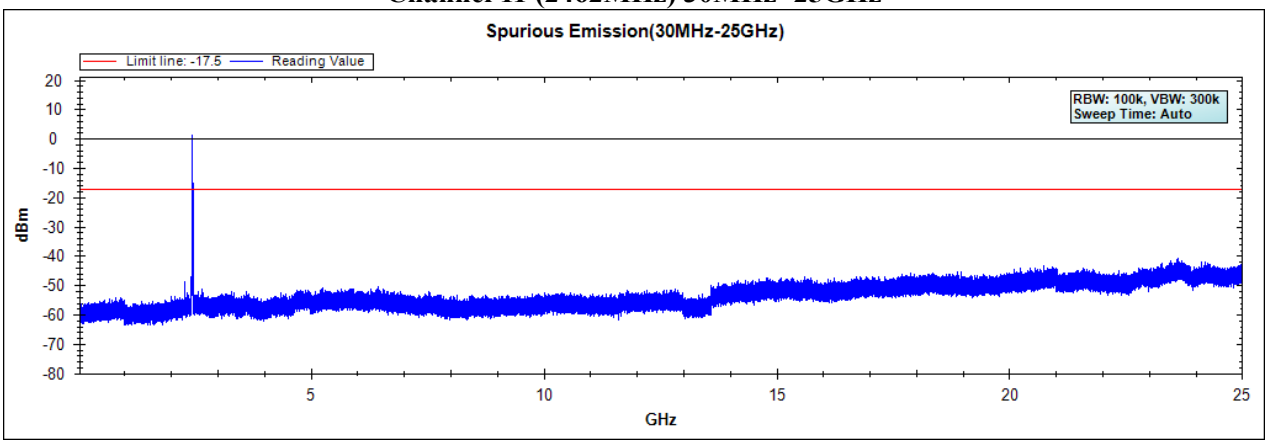
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz -25GHz



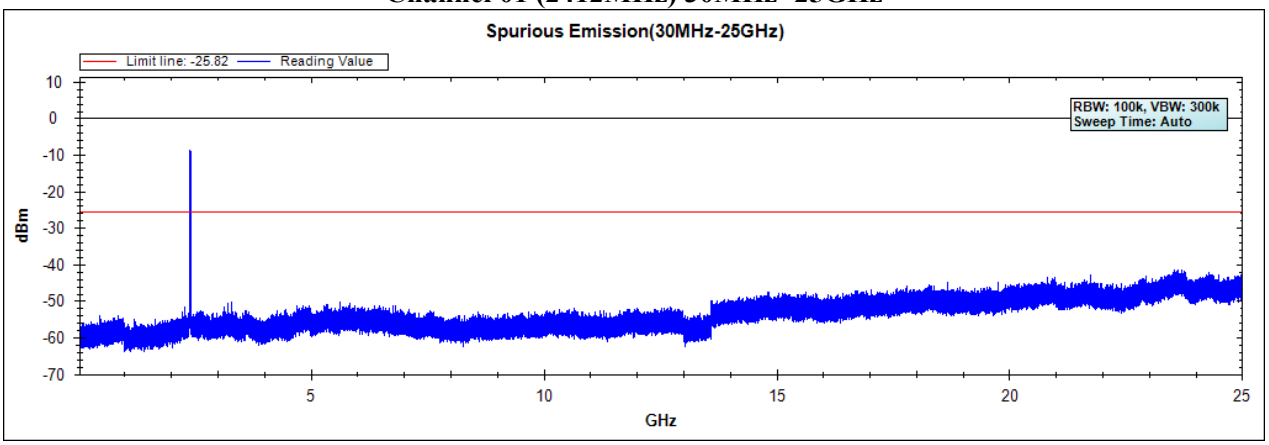
Channel 11 (2462MHz) 30MHz -25GHz



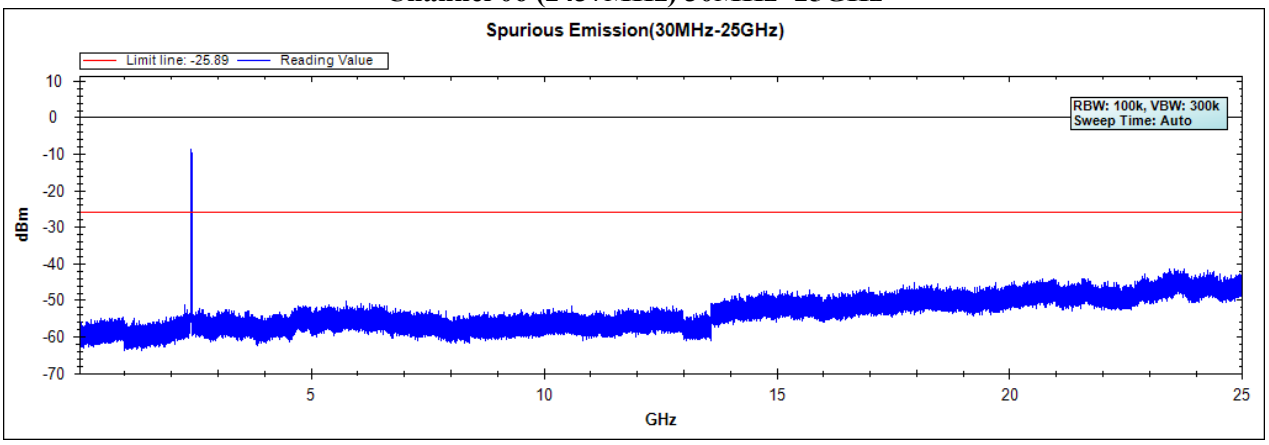
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : 802.11 b/g/n PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna

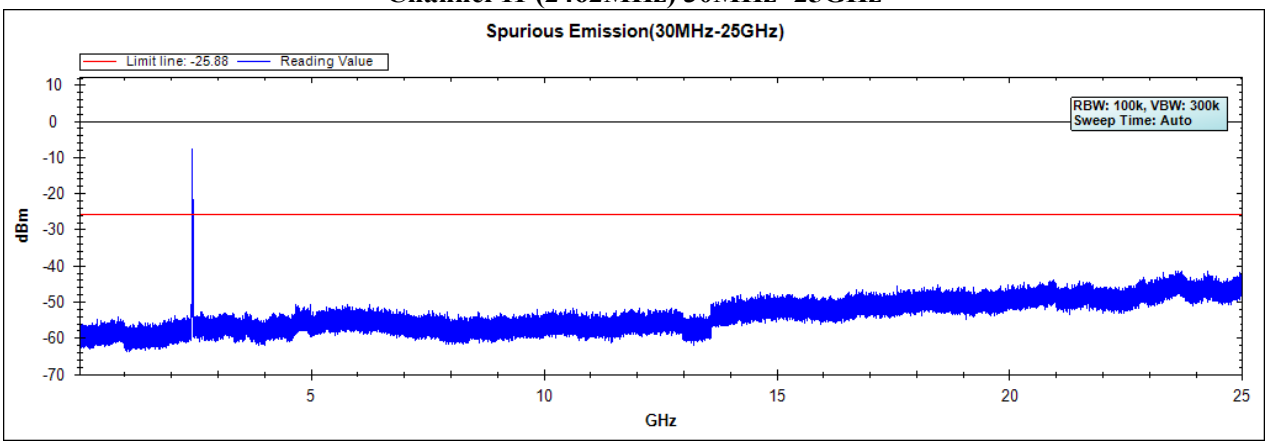
Channel 01 (2412MHz) 30MHz -25GHz



Channel 06 (2437MHz) 30MHz -25GHz



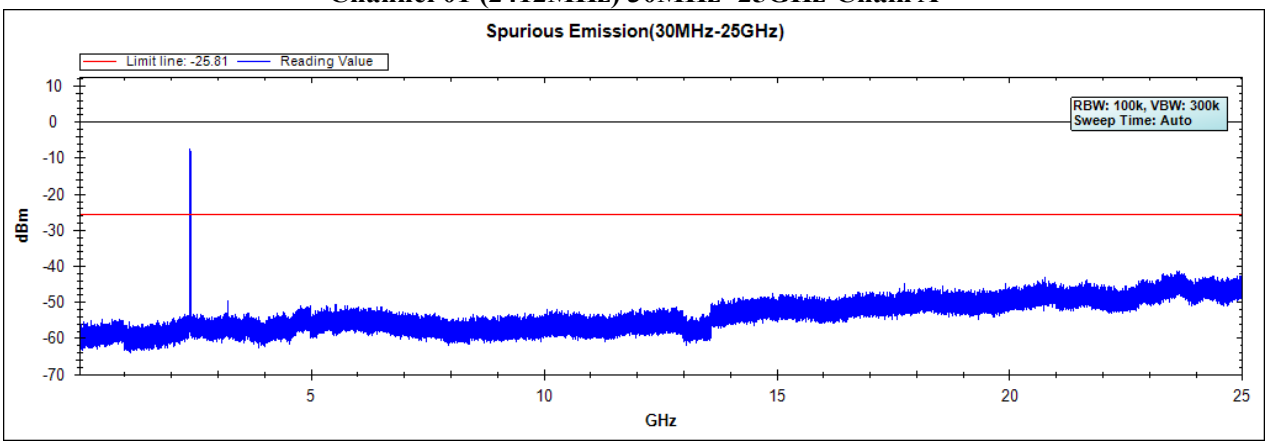
Channel 11 (2462MHz) 30MHz -25GHz



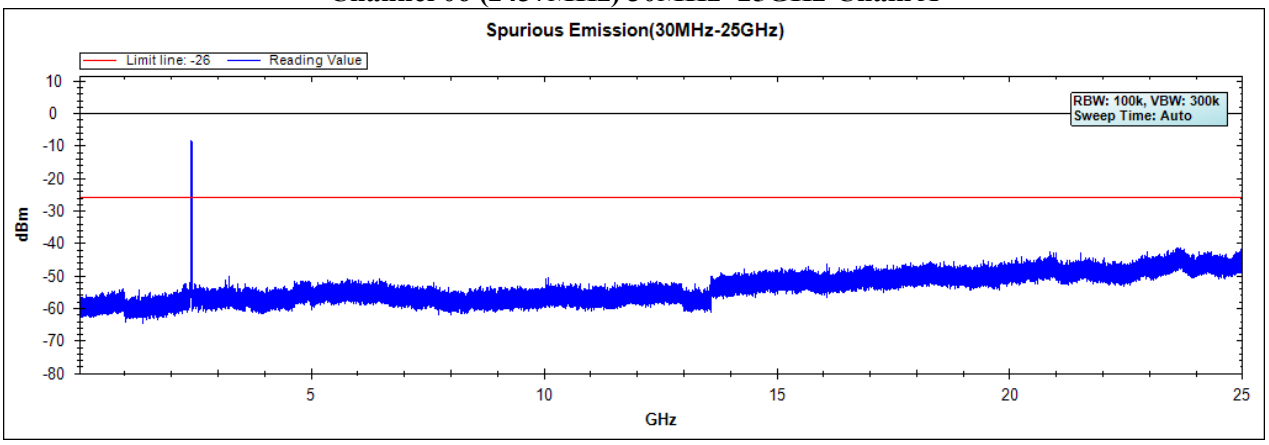
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : 802.11 b/g/n PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna

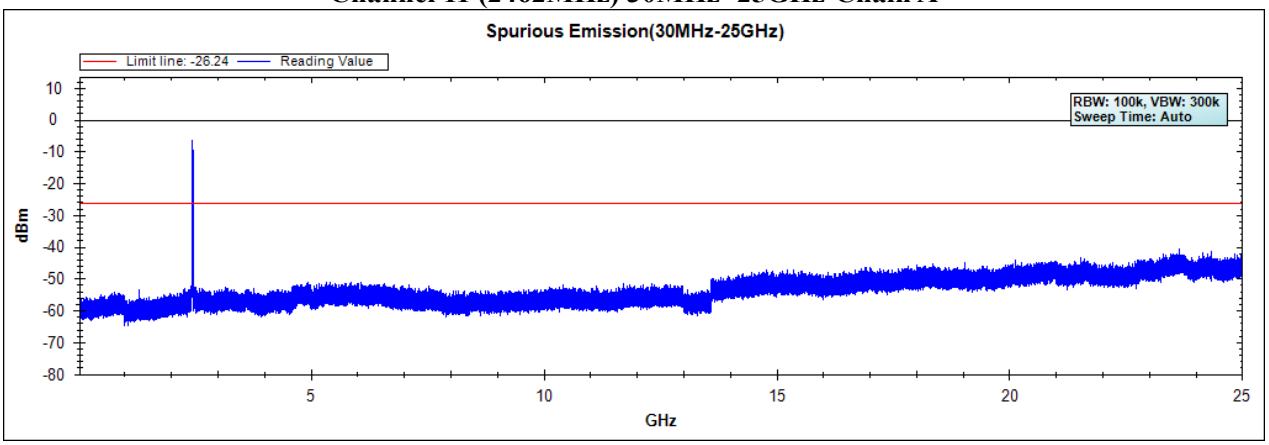
Channel 01 (2412MHz) 30MHz -25GHz-Chain A



Channel 06 (2437MHz) 30MHz -25GHz-Chain A

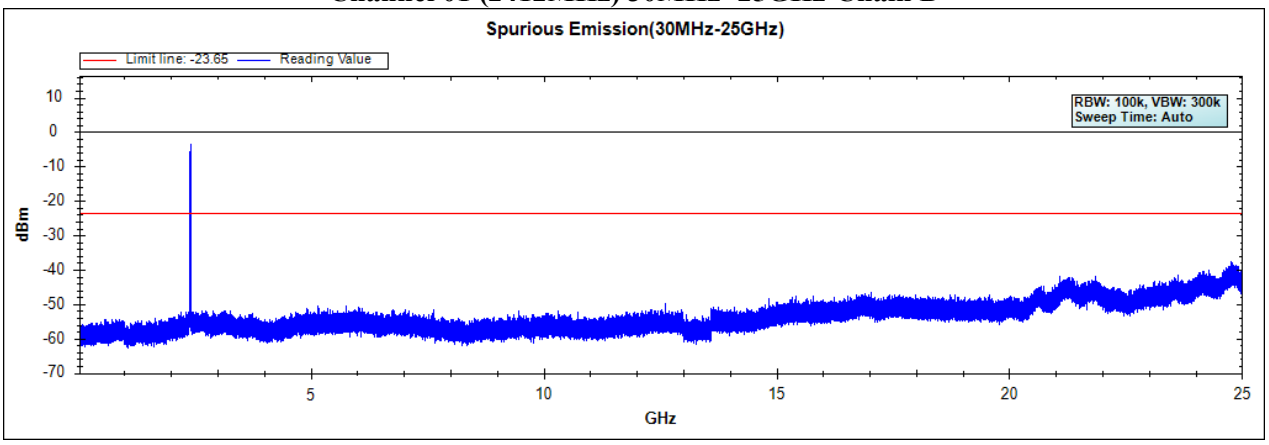


Channel 11 (2462MHz) 30MHz -25GHz-Chain A

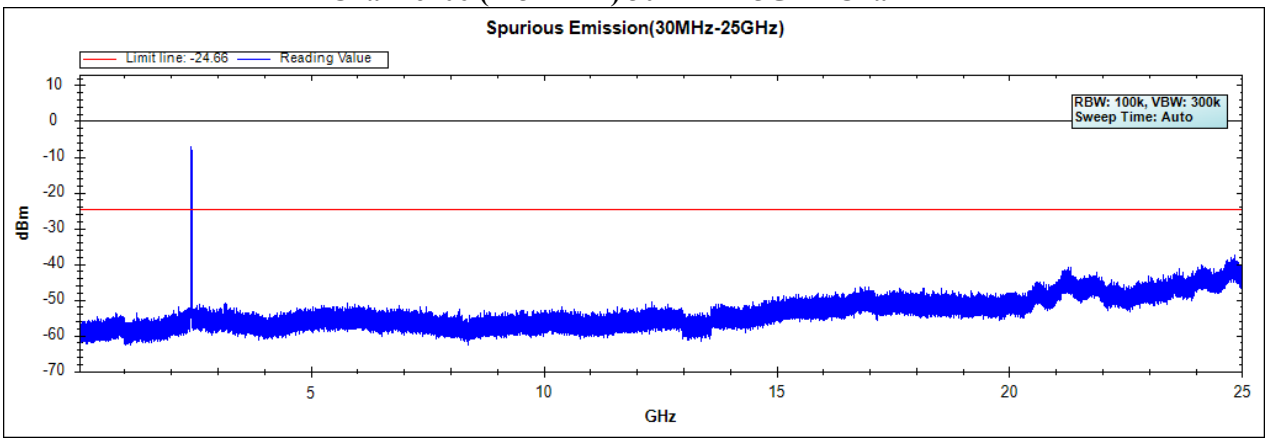


Note: The above test pattern is synthesized by multiple of the frequency range.

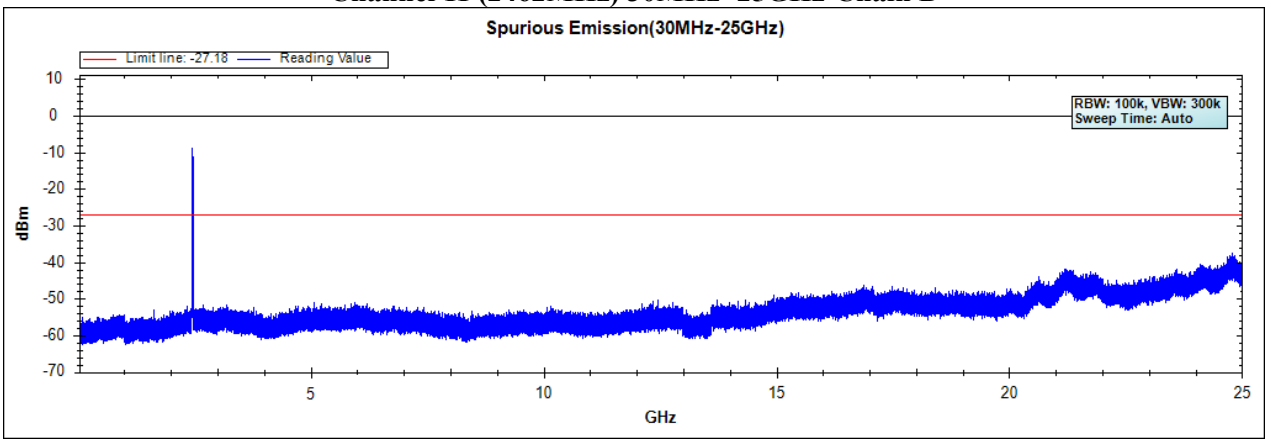
Channel 01 (2412MHz) 30MHz -25GHz-Chain B



Channel 06 (2437MHz) 30MHz -25GHz-Chain B



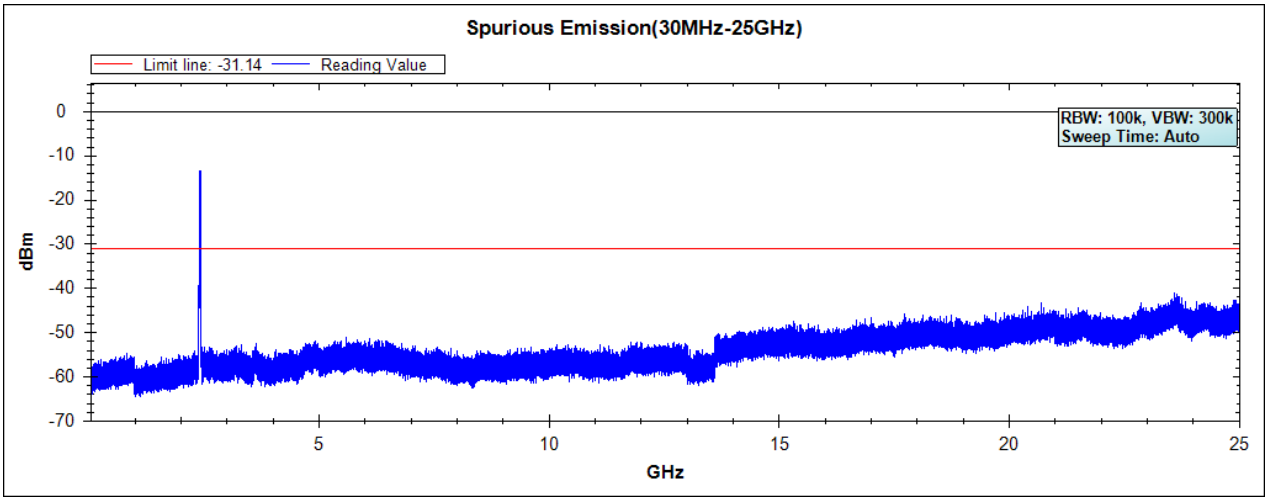
Channel 11 (2462MHz) 30MHz -25GHz-Chain B



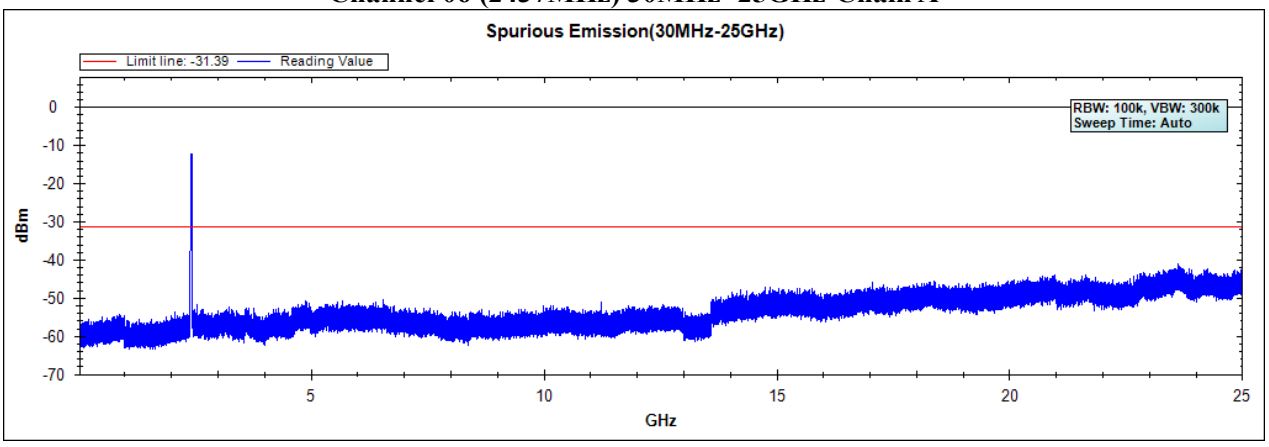
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : 802.11 b/g/n PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna

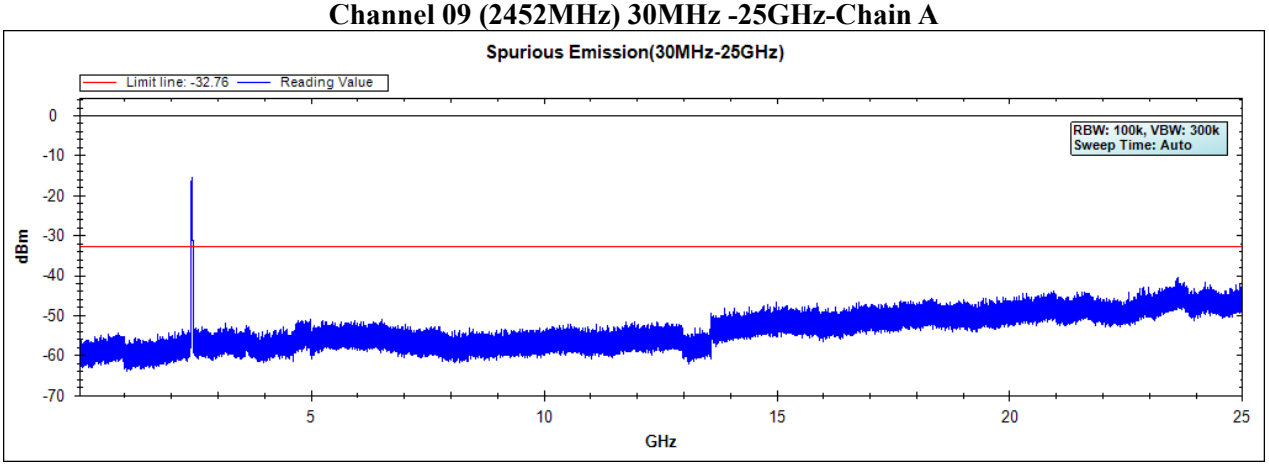
Channel 03 (2422MHz) 30MHz -25GHz-Chain A



Channel 06 (2437MHz) 30MHz -25GHz-Chain A

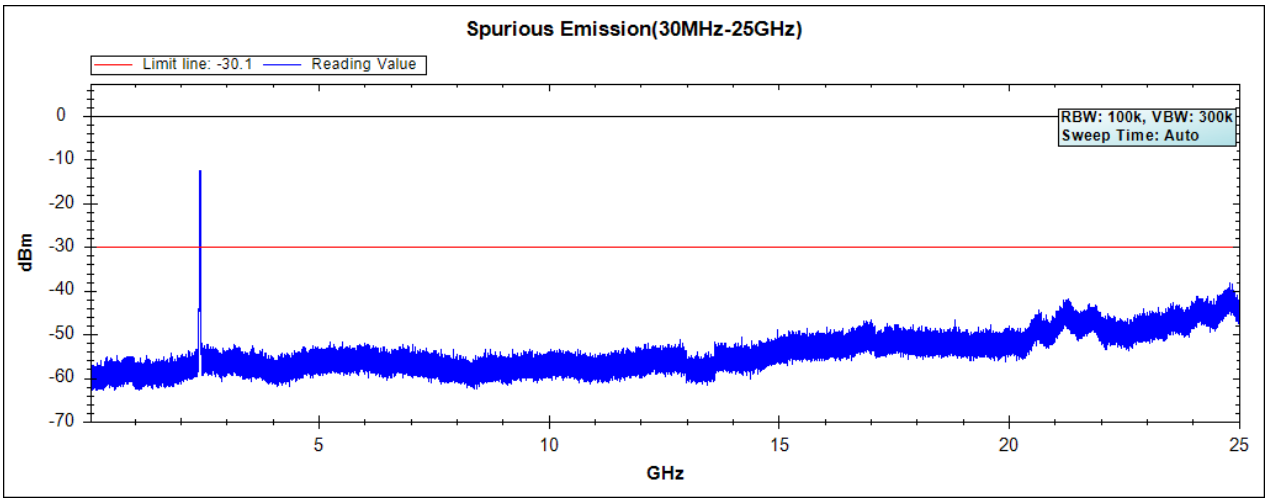


Channel 09 (2452MHz) 30MHz -25GHz-Chain A

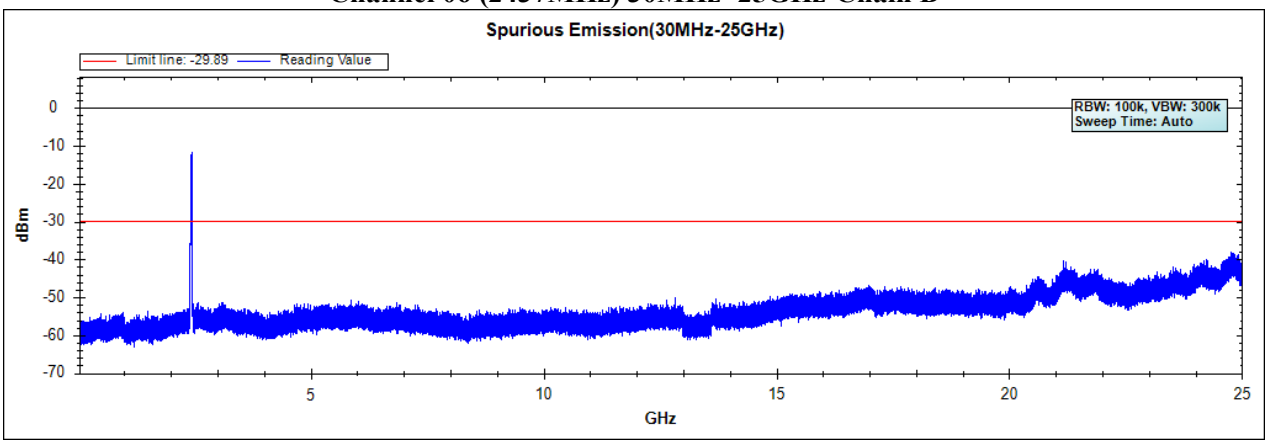


Note: The above test pattern is synthesized by multiple of the frequency range.

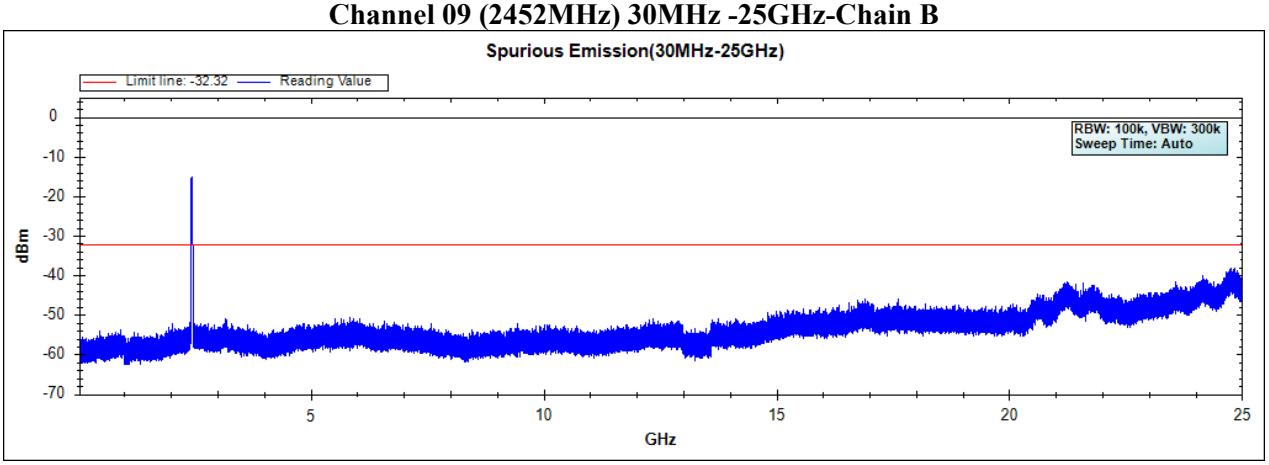
Channel 03 (2422MHz) 30MHz -25GHz-Chain B



Channel 06 (2437MHz) 30MHz -25GHz-Chain B



Channel 09 (2452MHz) 30MHz -25GHz-Chain B



Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

6.1. Test Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

RF Radiated Measurement:

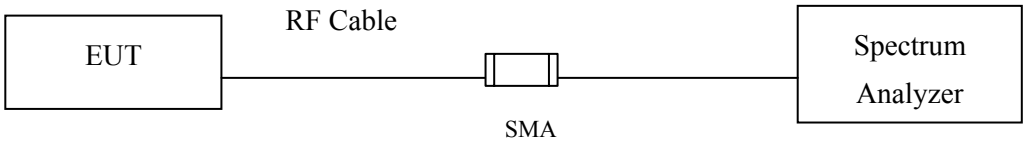
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒CB # 8	X	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	X	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	X	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan., 2015
	X	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	X	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan., 2015
	X	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	X	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul., 2015

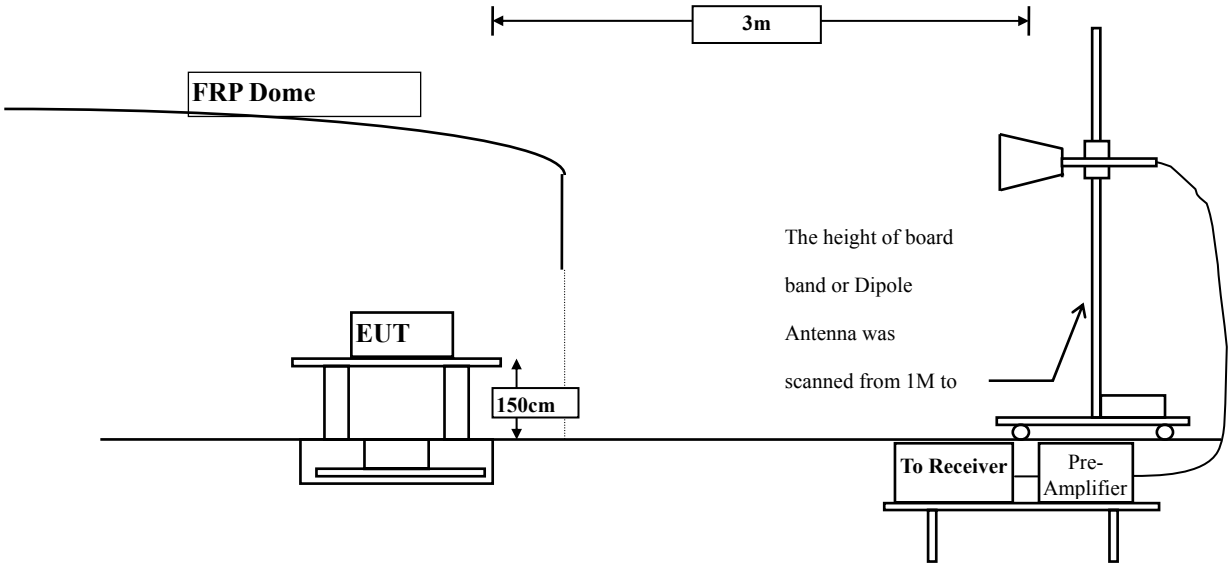
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 30dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2349.420	31.349	28.277	59.627	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	25.293	56.802	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	28.205	59.766	--	--	--
01 (Peak)	2411.014	31.630	61.053	92.684	--	--	--
01 (Average)	2390.000	31.509	13.594	45.103	74.00	54.00	Pass
01 (Average)	2400.000	31.561	16.112	47.673	--	--	--
01 (Average)	2411.304	31.633	57.278	88.911	--	--	--

Figure Channel 01: Horizontal (Peak)

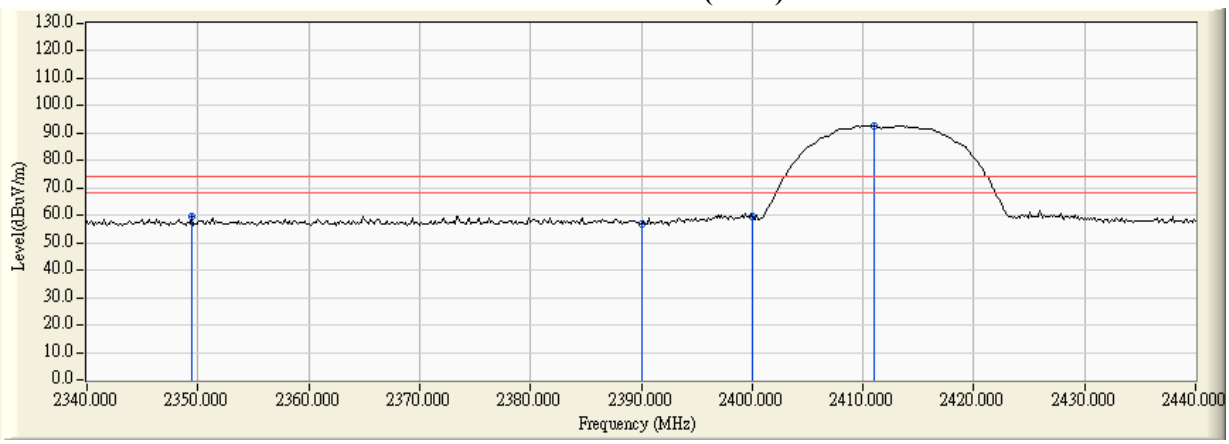
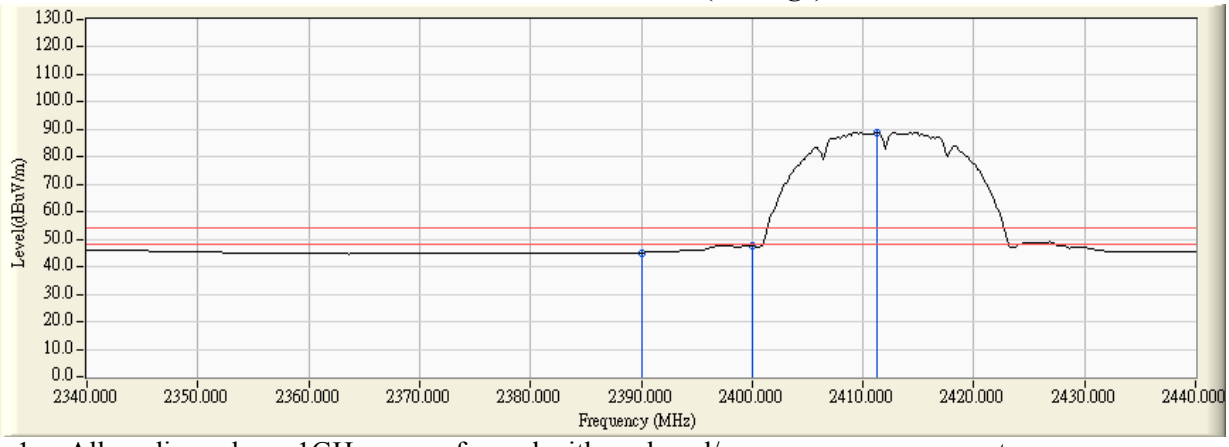


Figure Channel 01: Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna (2412MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2386.522	30.931	32.071	63.002	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	30.238	61.153	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	41.521	72.433	--	--	--
01 (Peak)	2410.870	30.942	81.365	112.307	--	--	--
01 (Average)	2386.232	30.933	21.307	52.240	74.00	54.00	Pass
01 (Average)	2390.000	30.915	18.316	49.231	74.00	54.00	Pass
01 (Average)	2400.000	30.912	35.699	66.611	--	--	--
01 (Average)	2411.304	30.945	78.044	108.989	--	--	--

Figure Channel 01: Vertical (Peak)

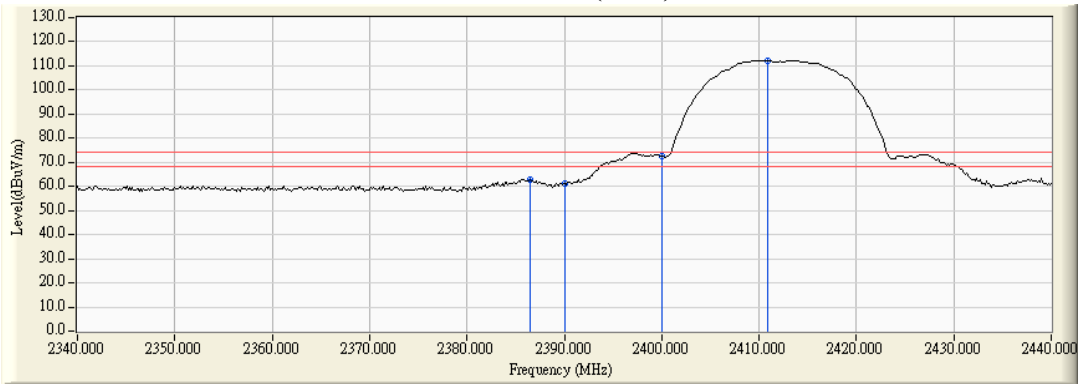
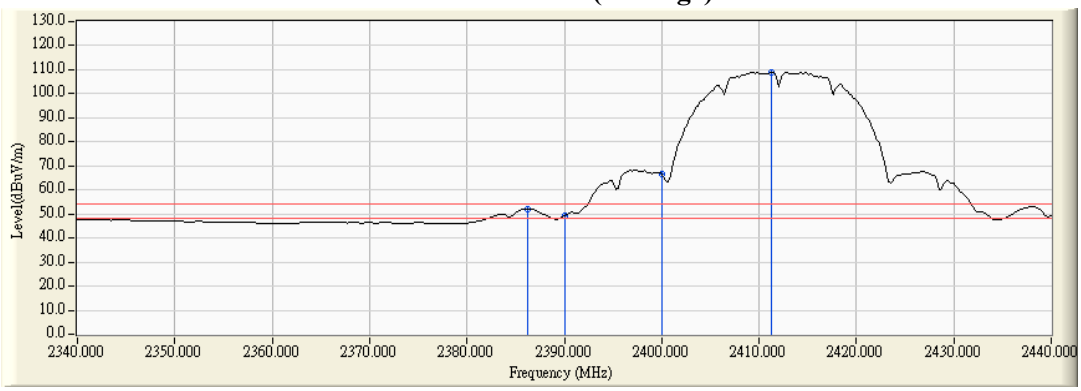


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2463.065	32.028	60.770	92.797	--	--	--
11 (Peak)	2483.500	32.182	26.196	58.378	74.00	54.00	Pass
11 (Average)	2462.775	32.025	57.571	89.596	--	--	--
11 (Average)	2483.500	32.182	14.025	46.207	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

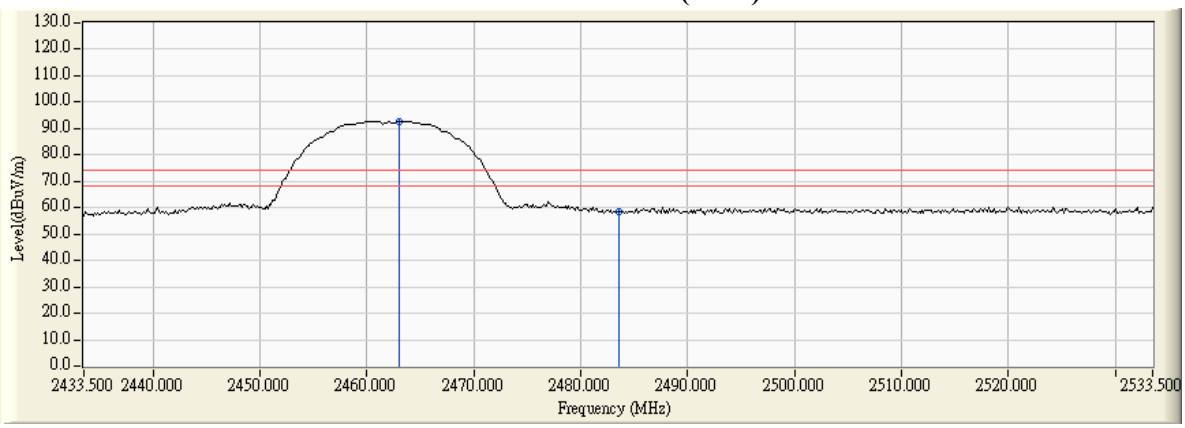
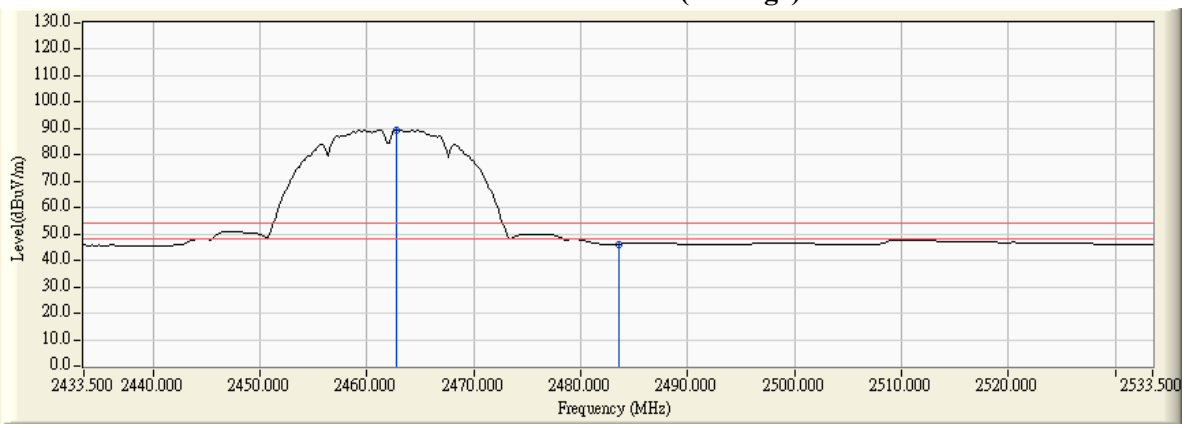


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna (2462MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2463.065	31.298	81.465	112.763	--	--	--
11 (Peak)	2483.500	31.435	30.404	61.839	74.00	54.00	Pass
11 (Peak)	2489.007	31.473	32.957	64.429	74.00	54.00	Pass
11 (Average)	2462.775	31.295	78.308	109.604	--	--	--
11 (Average)	2483.500	31.435	18.080	49.515	74.00	54.00	Pass
11 (Average)	2487.848	31.465	21.132	52.597	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

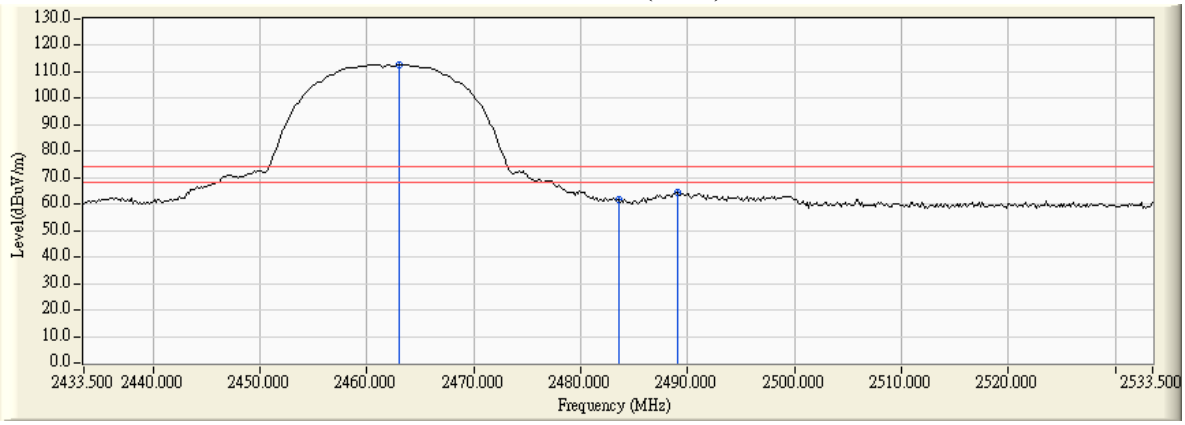
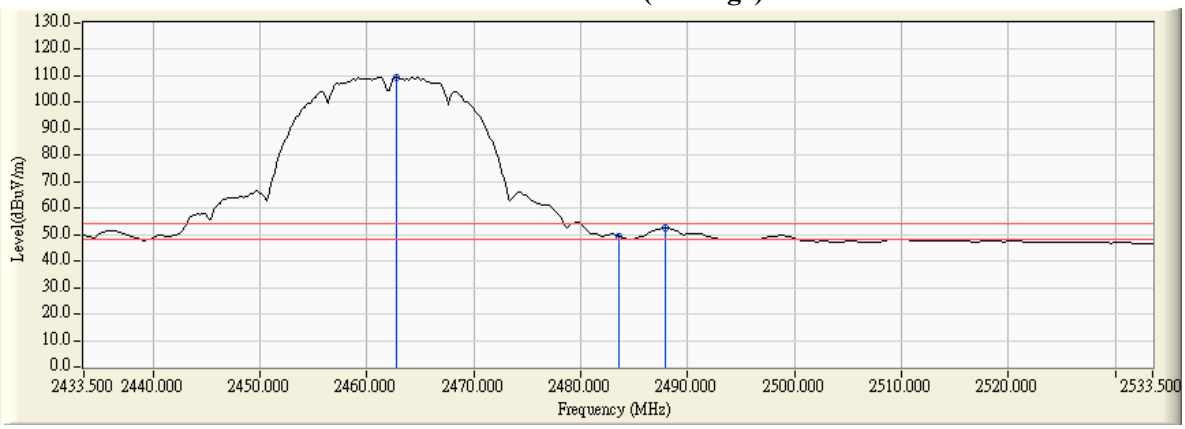


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2375.797	31.453	28.136	59.590	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	26.344	57.853	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	43.521	75.082	--	--	--
01 (Peak)	2416.087	31.670	63.525	95.195	--	--	--
01(Average)	2390.000	31.509	13.798	45.307	74.00	54.00	Pass
01(Average)	2400.000	31.561	18.165	49.726	--	--	--
01(Average)	2418.406	31.687	52.000	83.687	--	--	--

Figure Channel 01: Horizontal (Peak)

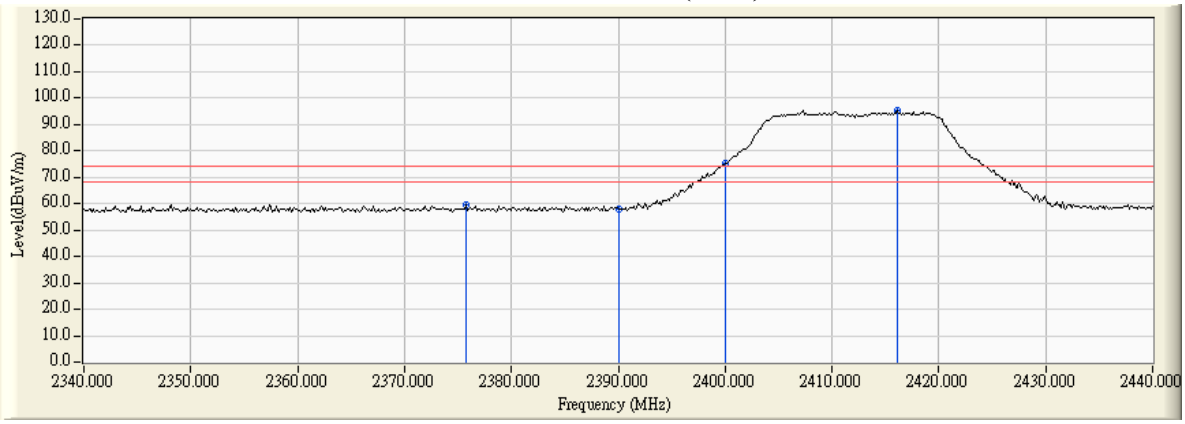
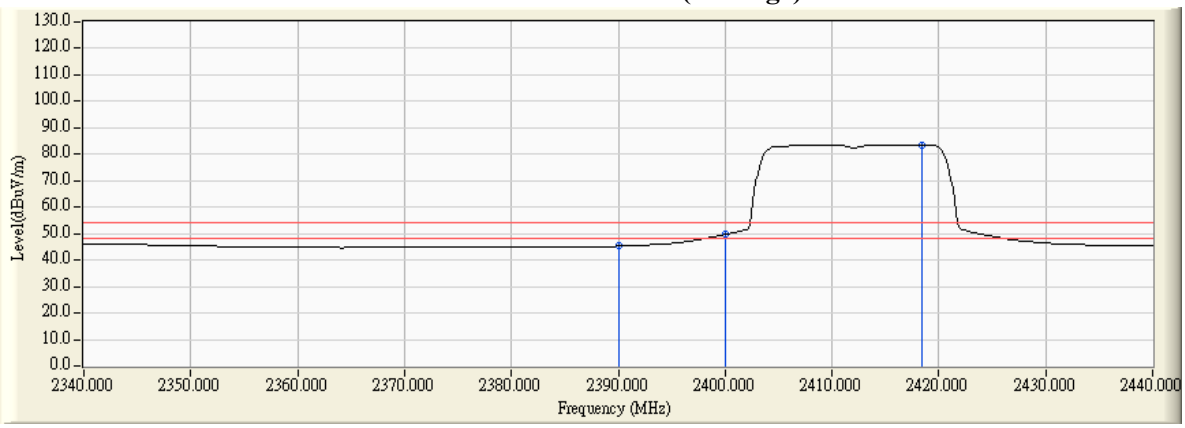


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna (2412MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	30.915	40.427	71.342	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	64.674	95.586	--	--	--
01 (Peak)	2415.072	30.970	84.799	115.769	--	--	--
01 (Average)	2390.000	30.915	22.431	53.346	74.00	54.00	Pass
01 (Average)	2400.000	30.912	34.653	65.565	--	--	--
01 (Average)	2408.261	30.936	72.653	103.588	--	--	--

Figure Channel 01: Vertical (Peak)

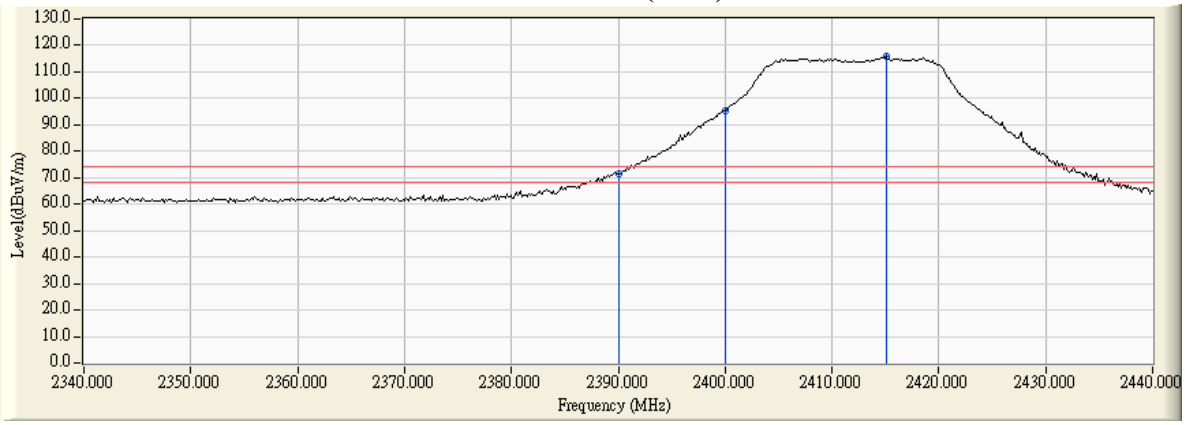
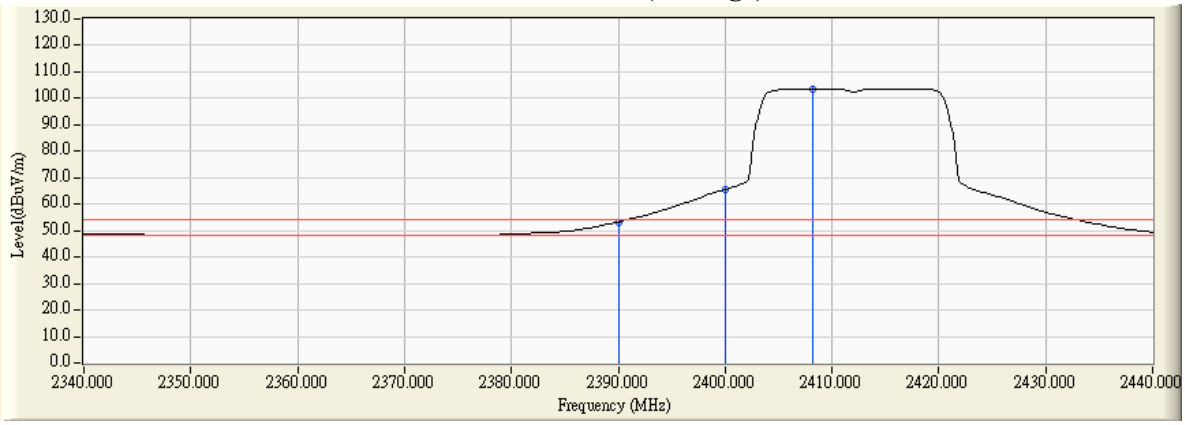


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2468.428	32.068	63.448	95.516	--	--	--
11 (Peak)	2483.500	32.182	26.618	58.800	74.00	54.00	Pass
11 (Peak)	2490.601	32.235	28.251	60.487	74.00	54.00	Pass
11 (Average)	2463.065	32.028	52.439	84.466	--	--	--
11 (Average)	2483.500	32.182	14.182	46.364	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

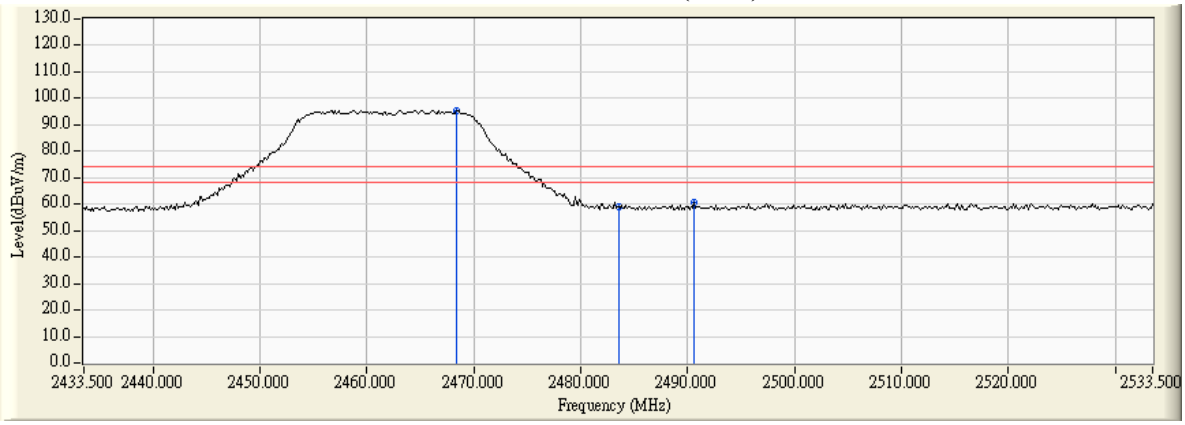
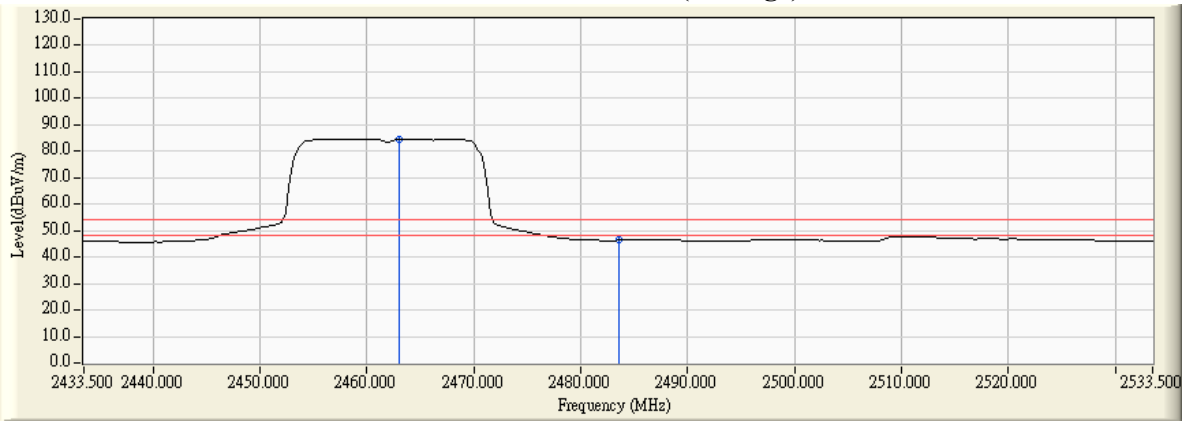


Figure Channel 11: Horizontal (Average)



Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna (2462MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
11 (Peak)	2464.804	31.309	83.880	115.189	--	--	--
11 (Peak)	2483.500	31.435	38.150	69.585	74.00	54.00	Pass
11 (Peak)	2484.225	31.440	39.994	71.434	74.00	54.00	Pass
11 (Average)	2460.312	31.278	71.811	103.090	--	--	--
11 (Average)	2483.500	31.435	21.522	52.957	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

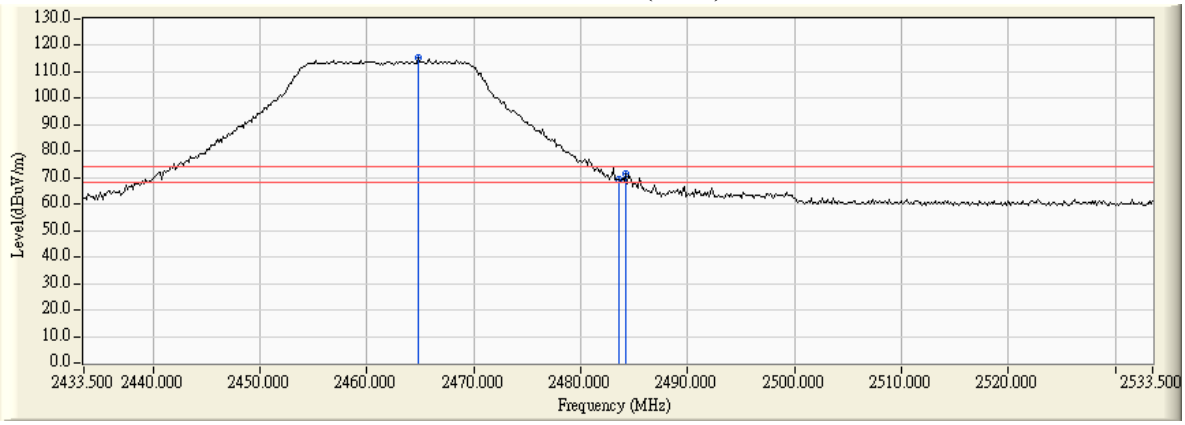
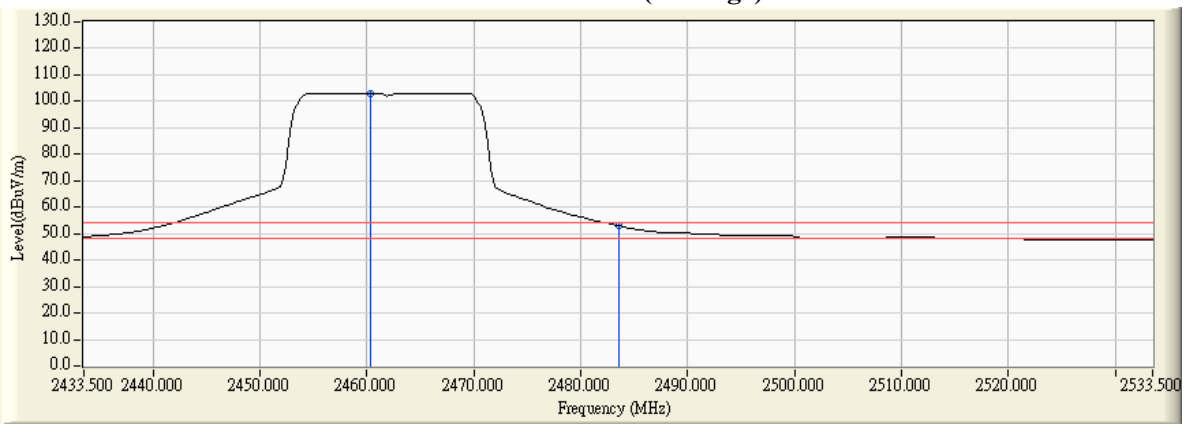


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2362.754	31.402	27.952	59.354	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	25.953	57.462	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	43.774	75.335	--	--	--
01 (Peak)	2405.072	31.593	64.754	96.347	--	--	--
01 (Average)	2390.000	31.509	13.753	45.262	74.00	54.00	Pass
01 (Average)	2400.000	31.561	18.348	49.909	--	--	--
01 (Average)	2409.275	31.619	51.821	83.441	--	--	--

Figure Channel 01: Horizontal (Peak)

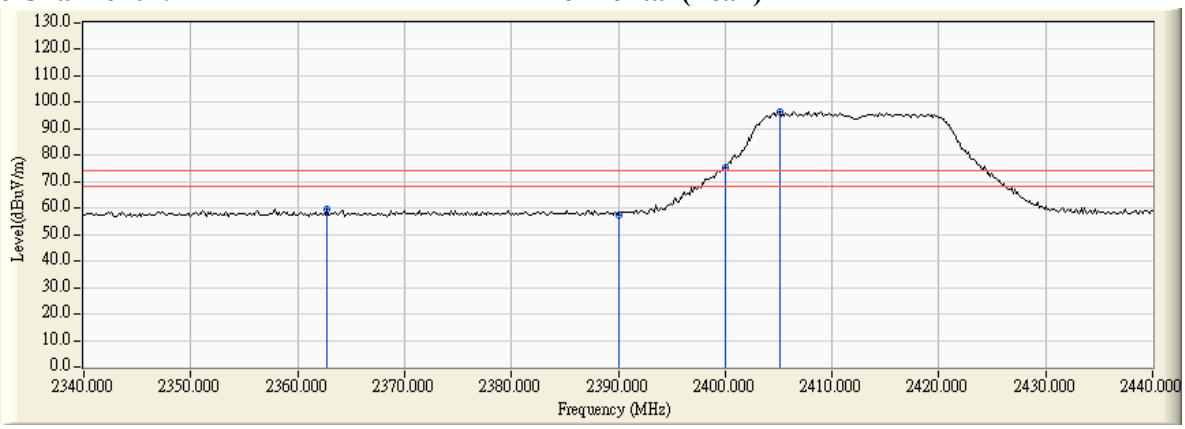
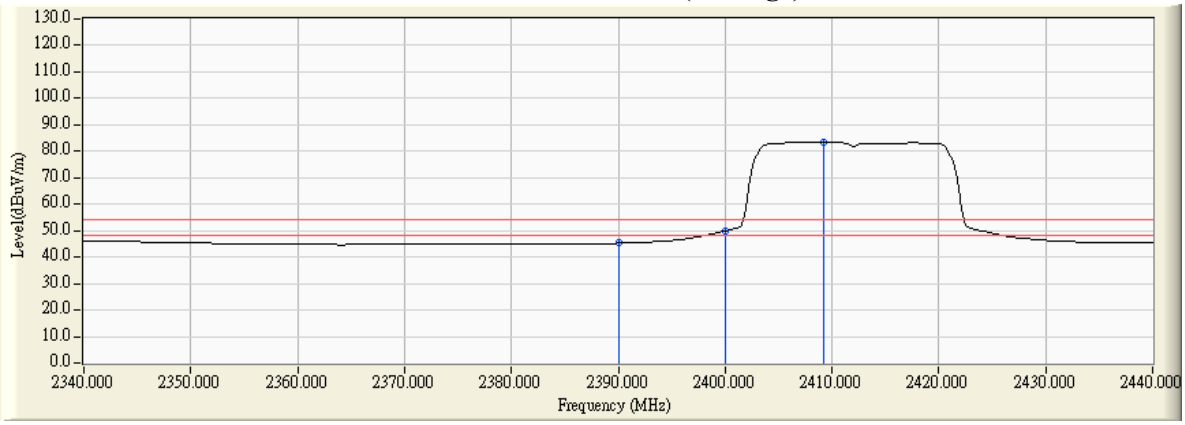


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna (2412MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2389.275	30.919	41.524	72.443	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	40.042	70.957	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	64.065	94.977	--	--	--
01 (Peak)	2418.116	30.991	85.393	116.384	--	--	--
01 (Average)	2390.000	30.915	22.275	53.190	74.00	54.00	Pass
01 (Average)	2400.000	30.912	33.918	64.830	--	--	--
01 (Average)	2418.116	30.991	71.653	102.644	--	--	--

Figure Channel 01: Vertical (Peak)

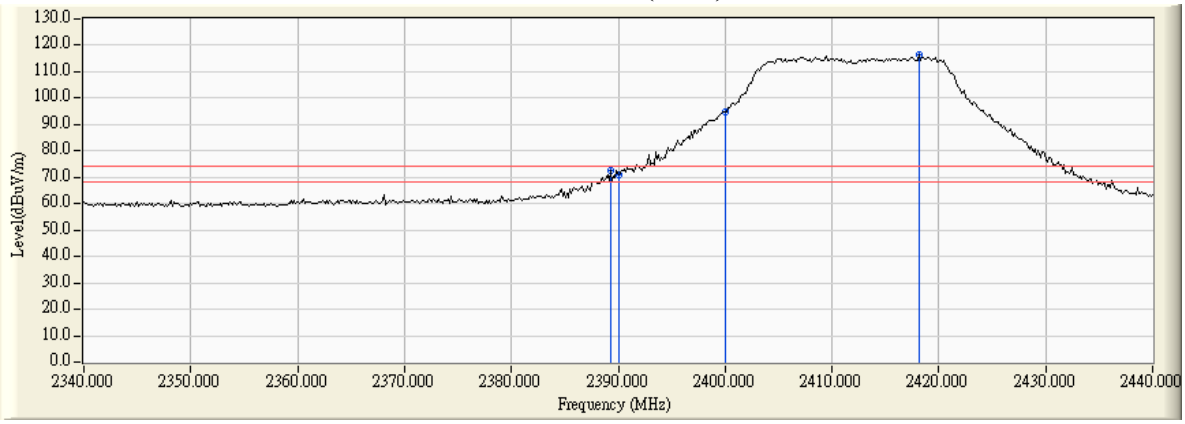
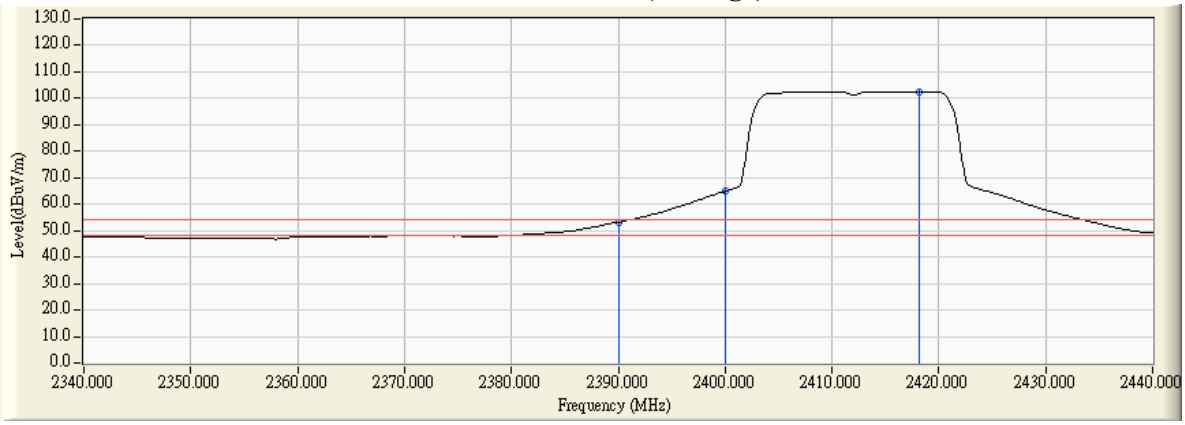


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2454.370	31.961	65.302	97.264	--	--	--
11 (Peak)	2483.500	32.182	27.067	59.249	74.00	54.00	Pass
11 (Peak)	2485.819	32.199	28.345	60.545	74.00	54.00	Pass
11 (Average)	2457.703	31.987	51.809	83.796	--	--	--
11 (Average)	2483.500	32.182	14.177	46.359	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

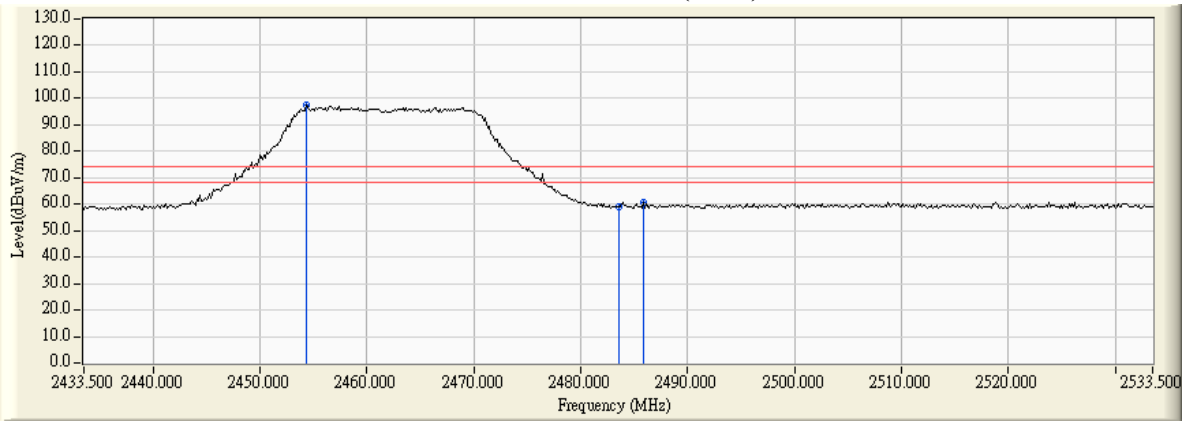
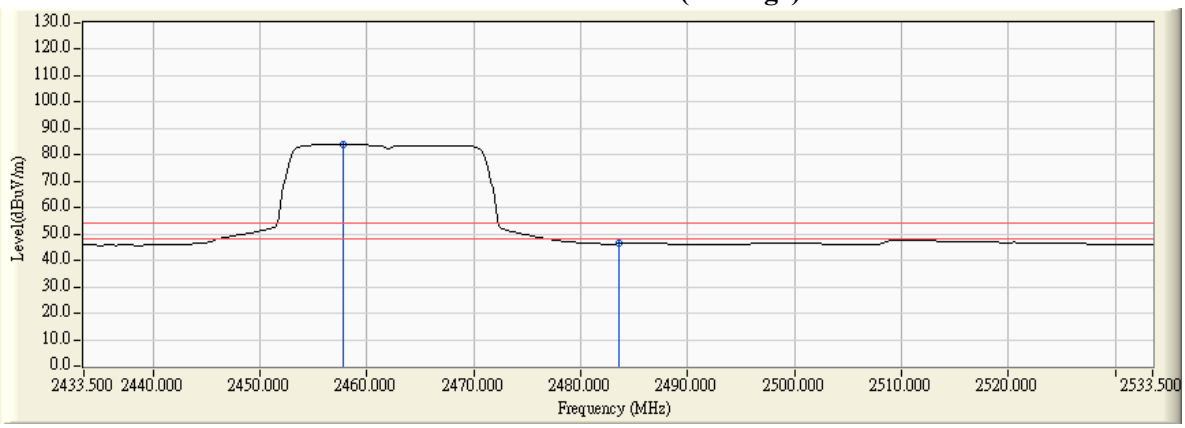


Figure Channel 11: Horizontal (Average)



Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna (2462MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2467.703	31.329	83.325	114.654	--	--	--
11 (Peak)	2483.500	31.435	38.691	70.126	74.00	54.00	Pass
11 (Average)	2469.297	31.339	70.061	101.400	--	--	--
11 (Average)	2483.500	31.435	21.156	52.591	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

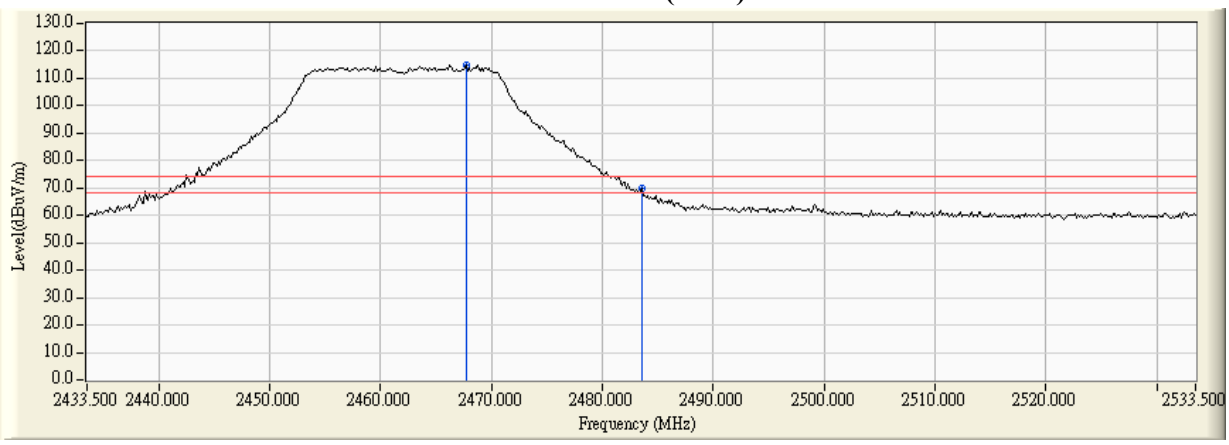
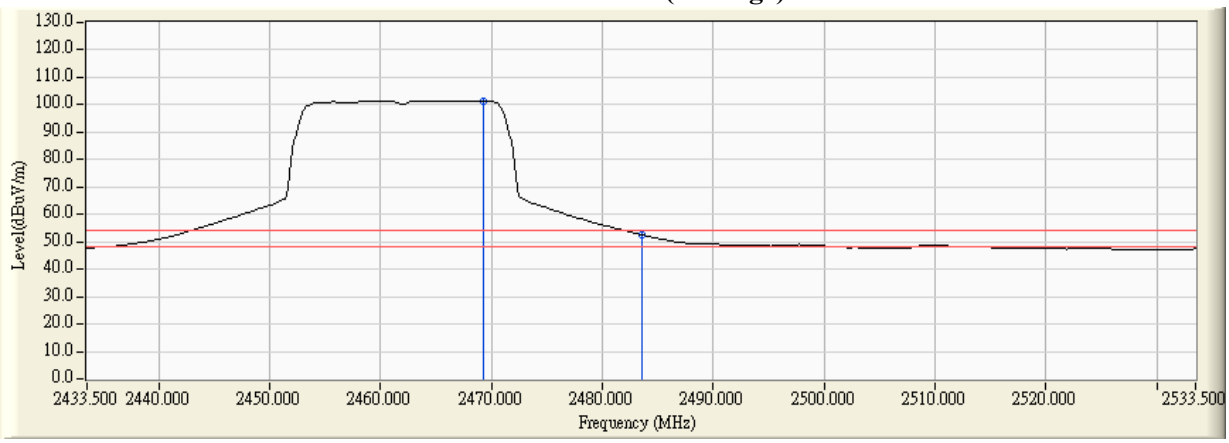


Figure Channel 11: Vertical (Average)



Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2422MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
03 (Peak)	2384.493	31.488	27.668	59.156	74.00	54.00	Pass
03 (Peak)	2390.000	31.509	25.696	57.205	74.00	54.00	Pass
03 (Peak)	2400.000	31.561	36.679	68.240	--	--	--
03 (Peak)	2417.826	31.684	57.254	88.937	--	--	--
03 (Average)	2390.000	31.509	13.832	45.341	74.00	54.00	Pass
03 (Average)	2400.000	31.561	15.901	47.462	--	--	--
03 (Average)	2409.420	31.621	44.100	75.721	--	--	--

Figure Channel 03: Horizontal (Peak)

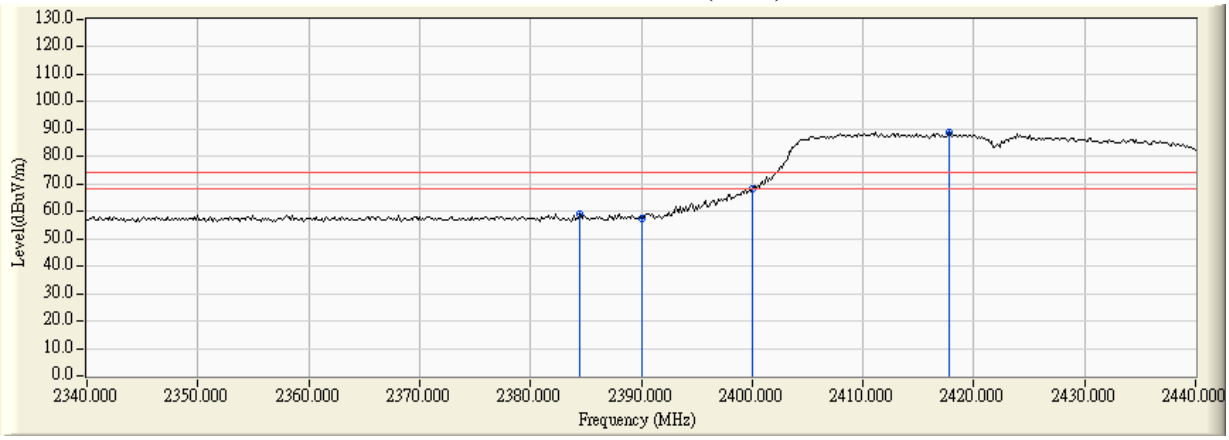
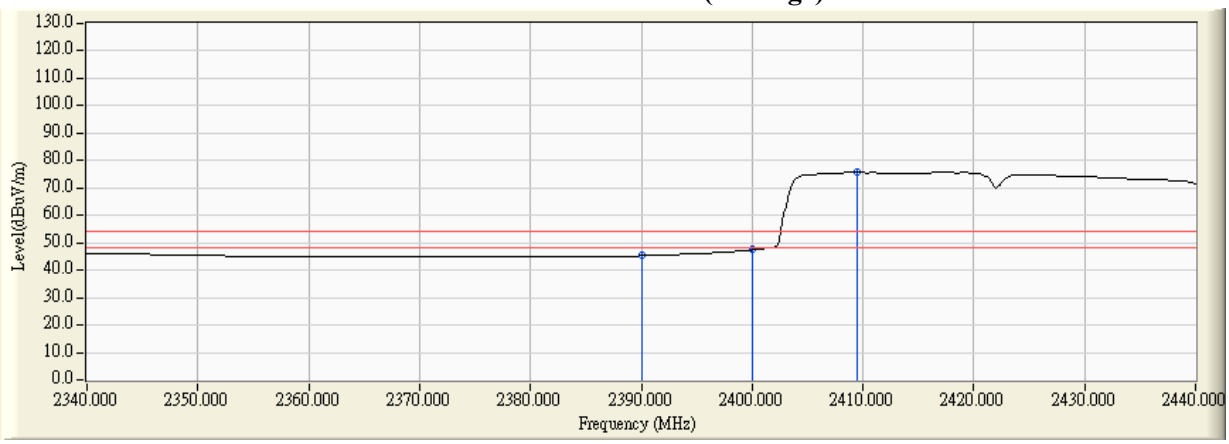


Figure Channel 03: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2422MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
03 (Peak)	2390.000	30.915	42.004	72.919	74.00	54.00	Pass
03 (Peak)	2400.000	30.912	56.925	87.837	--	--	--
03 (Peak)	2412.174	30.951	77.663	108.613	--	--	--
03 (Average)	2390.000	30.915	22.173	53.088	74.00	54.00	Pass
03 (Average)	2400.000	30.912	27.898	58.810	--	--	--
03 (Average)	2413.623	30.960	63.574	94.534	--	--	--

Figure Channel 03: Vertical (Peak)

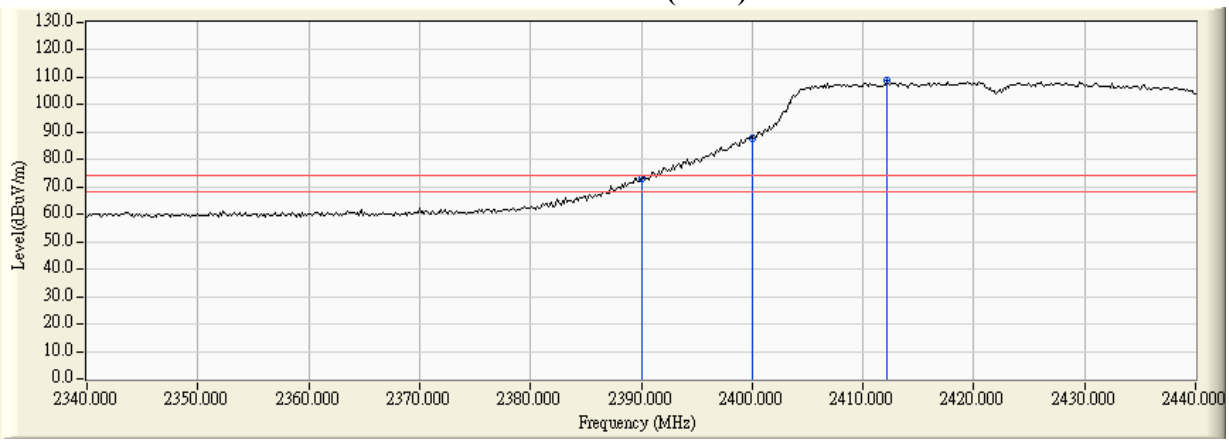
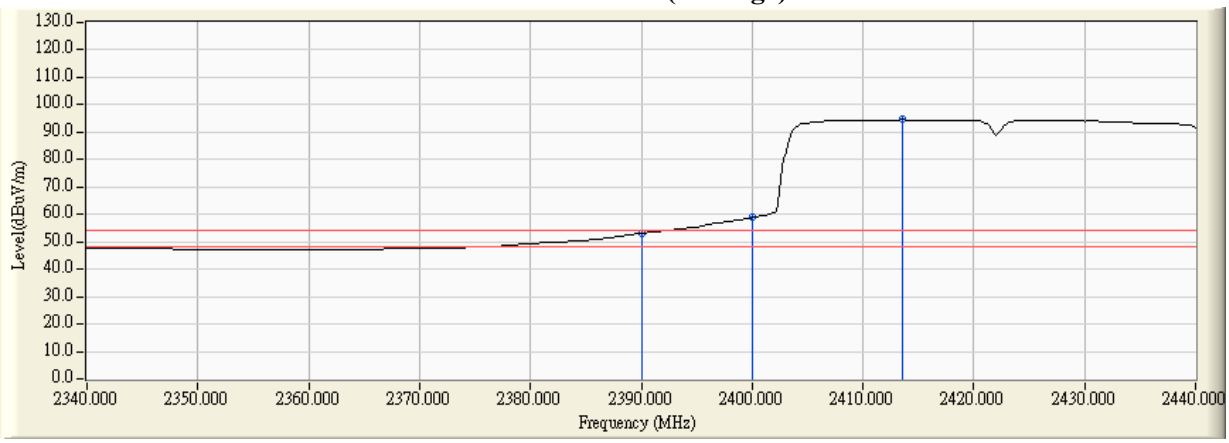


Figure Channel 03: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2452MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
09 (Peak)	2460.601	32.009	57.321	89.330	--	--	--
09 (Peak)	2483.500	32.182	27.672	59.854	74.00	54.00	Pass
09 (Average)	2456.543	31.977	44.144	76.122	--	--	--
09 (Average)	2483.500	32.182	14.297	46.479	74.00	54.00	Pass

Figure Channel 09: Horizontal (Peak)

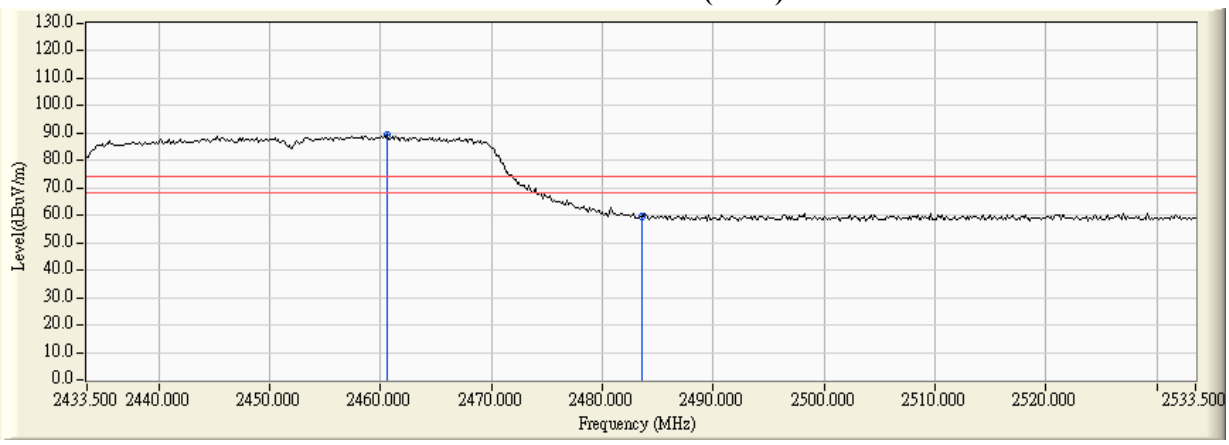
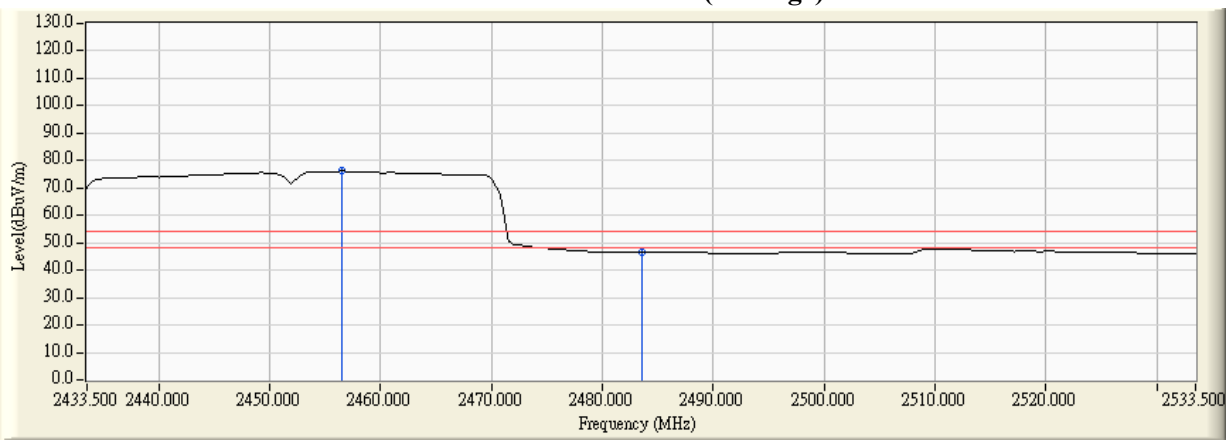


Figure Channel 09: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2452MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
09 (Peak)	2457.558	31.260	75.524	106.784	--	--	--
09 (Peak)	2483.500	31.435	40.641	72.076	74.00	54.00	Pass
09 (Average)	2460.891	31.283	62.103	93.386	--	--	--
09 (Average)	2483.500	31.435	21.662	53.097	74.00	54.00	Pass

Figure Channel 09: Vertical (Peak)

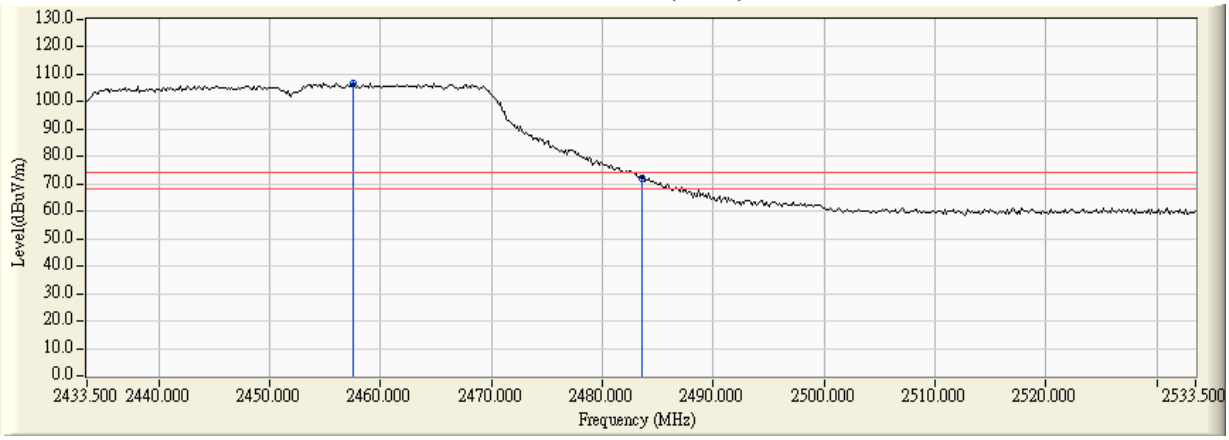
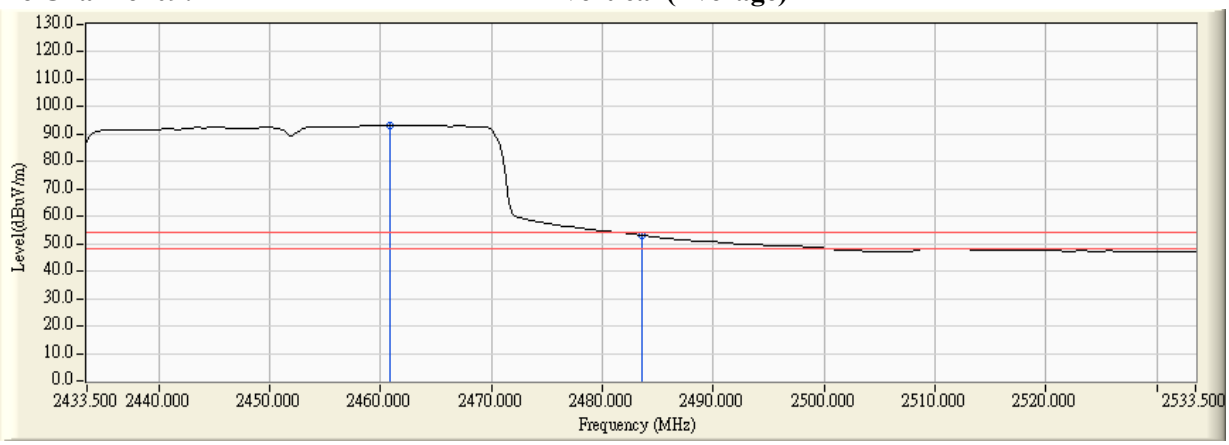


Figure Channel 09: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	31.509	33.830	65.339	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	47.376	78.937	--	--	--
01 (Peak)	2411.014	31.630	86.757	118.388	--	--	--
01 (Average)	2386.232	31.494	21.349	52.843	74.00	54.00	Pass
01 (Average)	2390.000	31.509	21.108	52.617	74.00	54.00	Pass
01 (Average)	2400.000	31.561	40.366	71.927	--	--	--
01 (Average)	2412.754	31.644	83.415	115.059	--	--	--

Figure Channel 01: Horizontal (Peak)

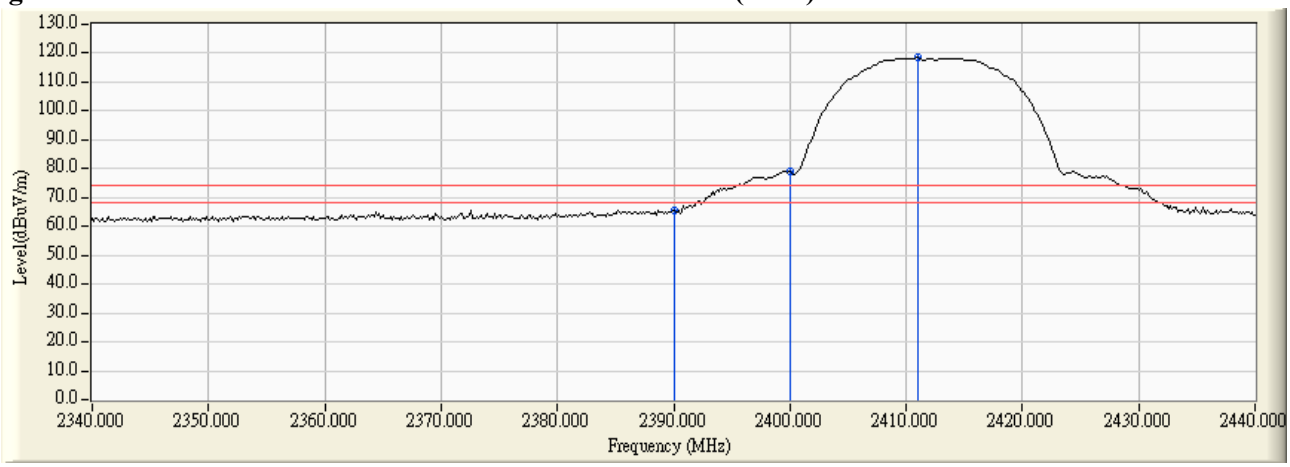
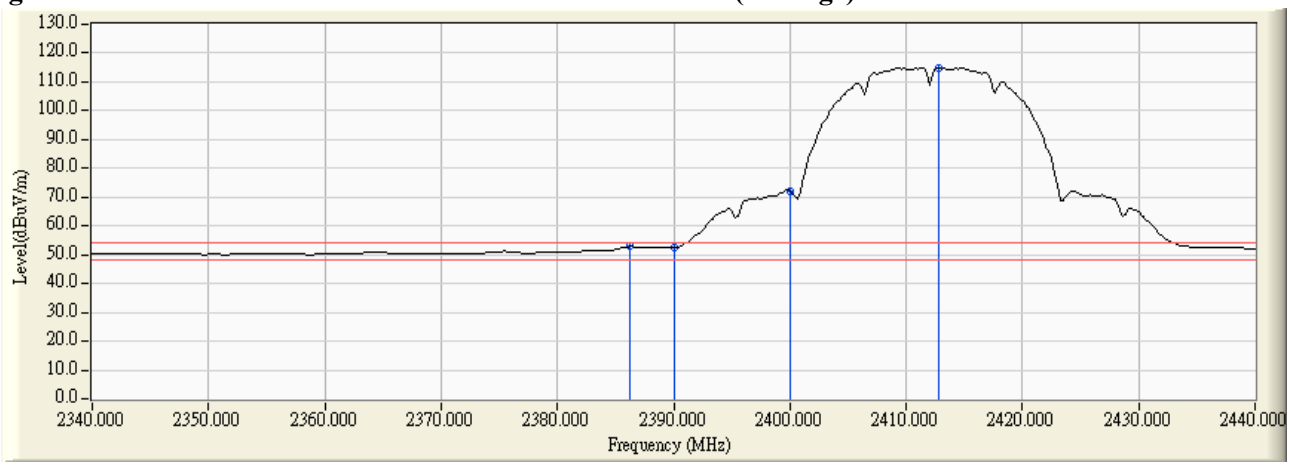


Figure Channel 01: Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna (2412MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2380.580	30.960	28.565	59.524	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	26.484	57.399	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	27.508	58.420	--	--	--
01 (Peak)	2411.014	30.942	57.912	88.855	--	--	--
01 (Average)	2390.000	30.915	13.514	44.429	74.00	54.00	Pass
01 (Average)	2400.000	30.912	14.870	45.782	--	--	--
01 (Average)	2411.304	30.945	54.399	85.344	--	--	--

Figure Channel 01: Vertical (Peak)

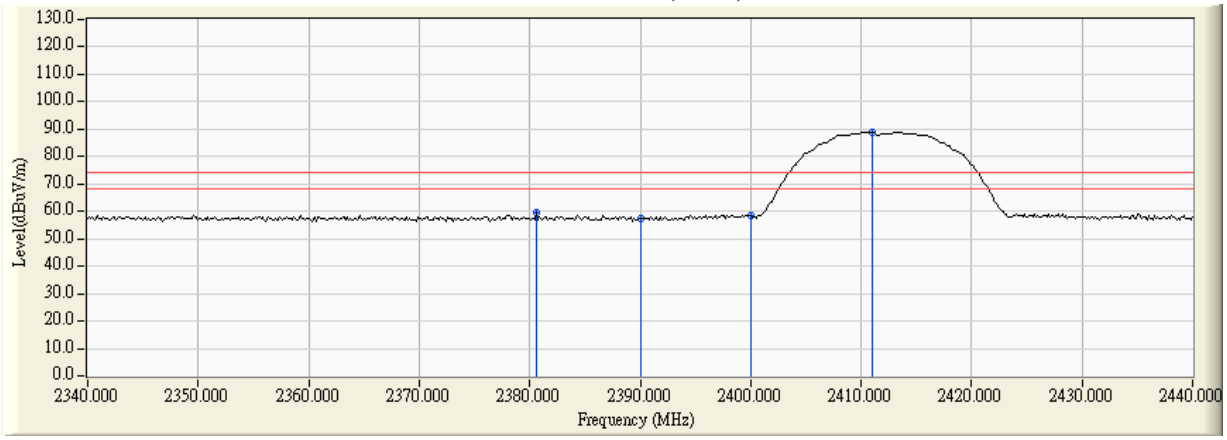
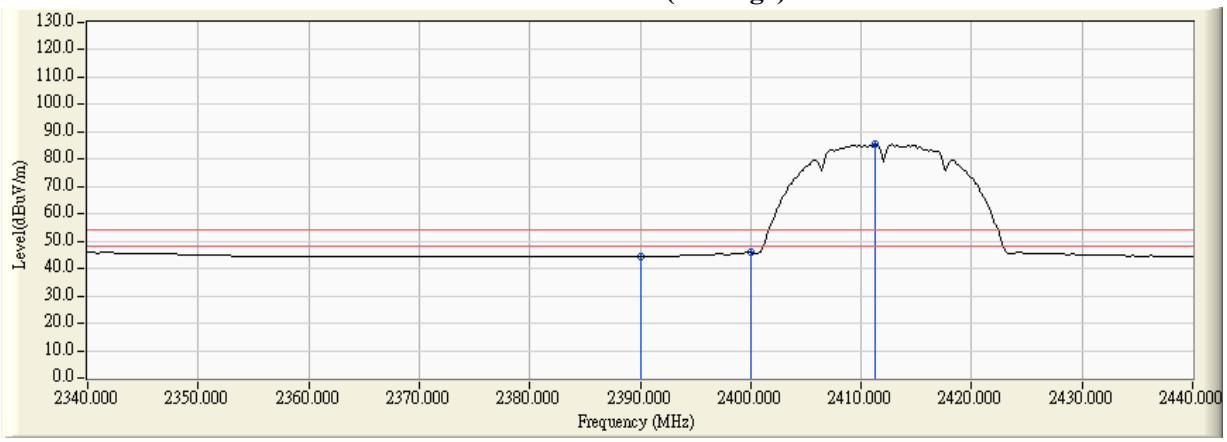


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2463.065	32.028	86.677	118.704	--	--	--
11 (Peak)	2483.500	32.182	31.957	64.139	74.00	54.00	Pass
11 (Peak)	2488.862	32.223	34.943	67.166	74.00	54.00	Pass
11 (Average)	2462.775	32.025	83.223	115.248	--	--	--
11 (Average)	2483.500	32.182	19.373	51.555	74.00	54.00	Pass
11 (Average)	2499.007	32.271	20.586	52.857	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

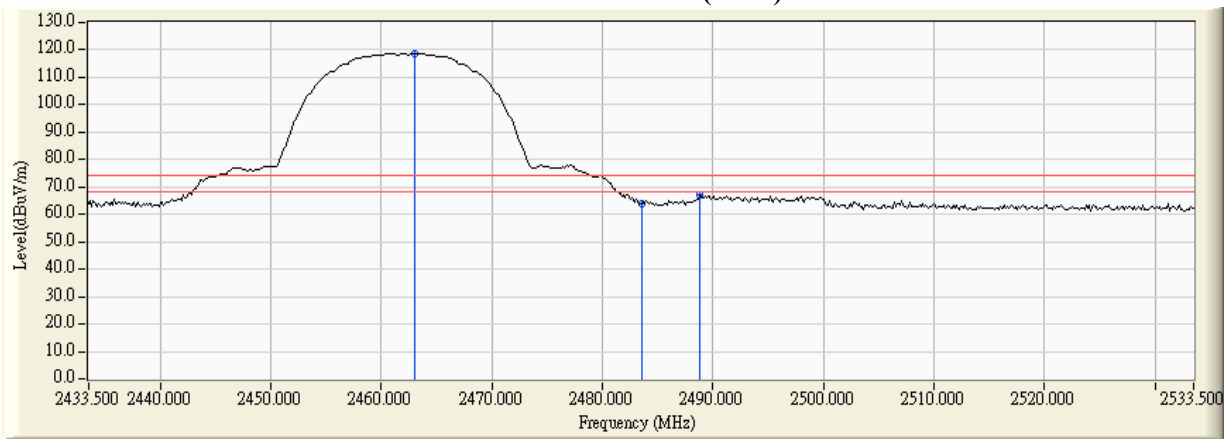
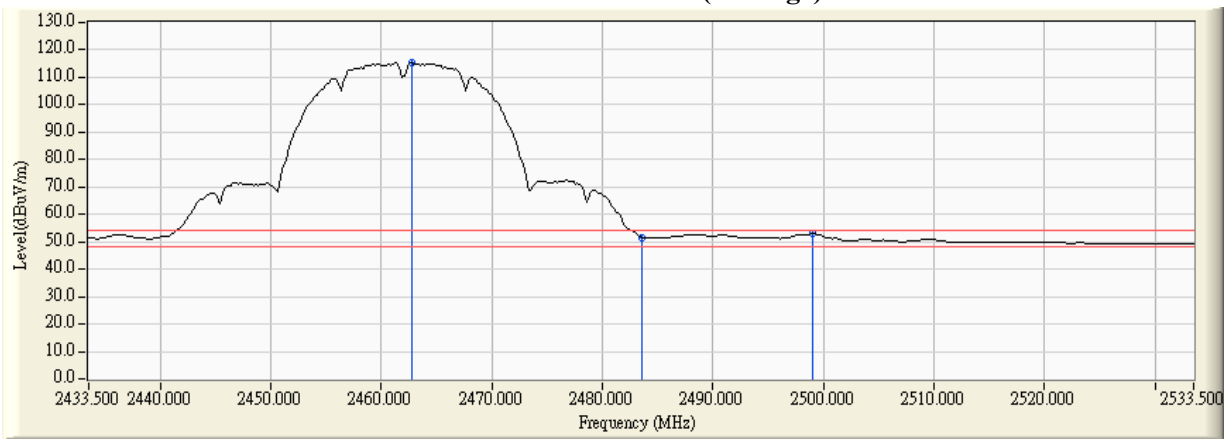


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna (2462MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2463.065	31.298	56.800	88.098	--	--	--
11 (Peak)	2483.500	31.435	26.263	57.698	74.00	54.00	Pass
11 (Average)	2462.775	31.295	53.466	84.762	--	--	--
11 (Average)	2483.500	31.435	13.883	45.318	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

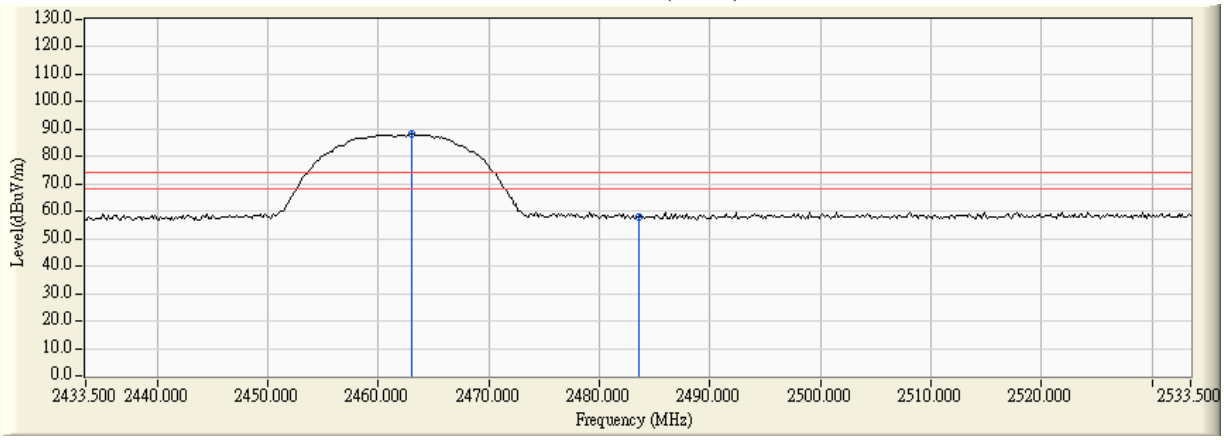
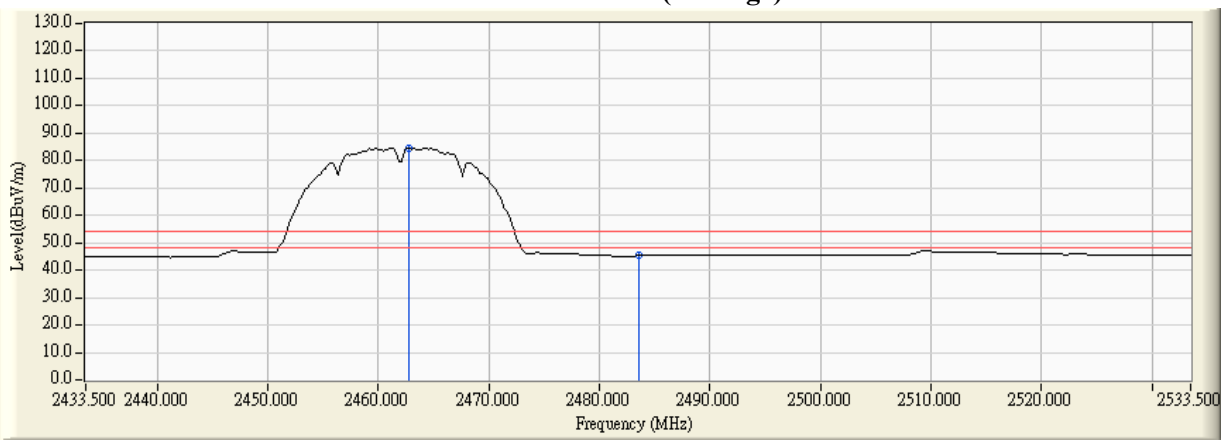


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	31.509	36.594	68.103	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	63.806	95.367	--	--	--
01 (Peak)	2416.087	31.670	83.999	115.669	--	--	--
01(Average)	2390.000	31.509	21.237	52.746	74.00	54.00	Pass
01(Average)	2400.000	31.561	33.810	65.371	--	--	--
01(Average)	2417.246	31.678	72.372	104.050	--	--	--

Figure Channel 01: Horizontal (Peak)

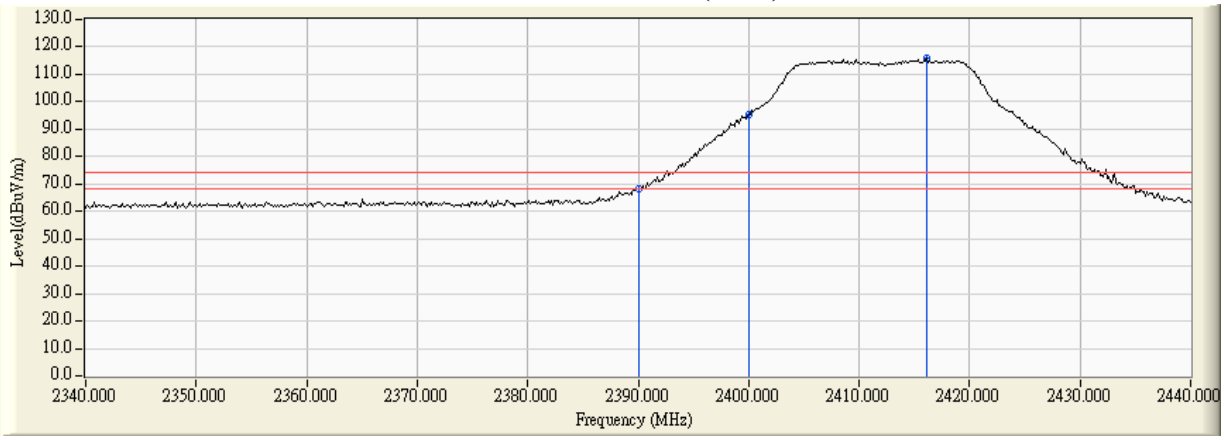
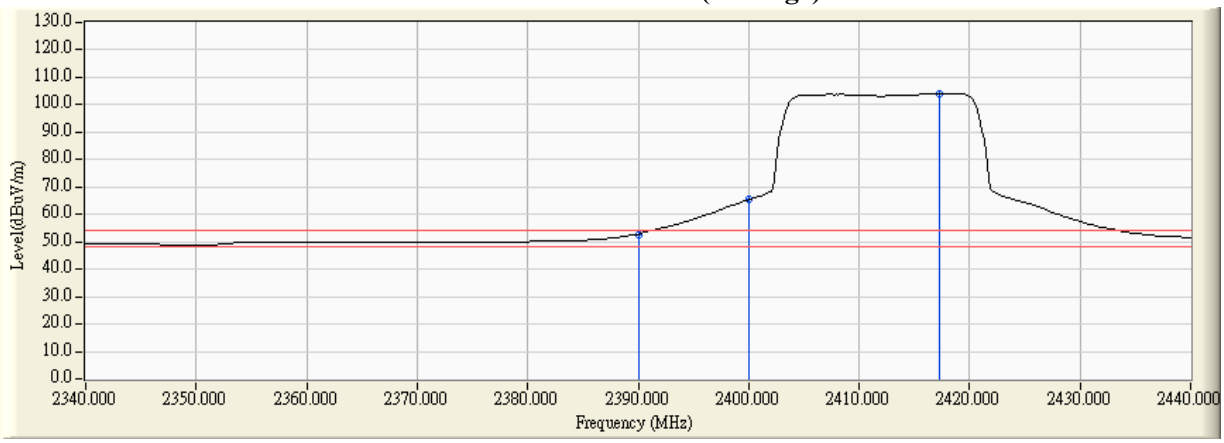


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna (2412MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2345.942	31.120	28.200	59.320	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	25.983	56.898	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	34.576	65.488	--	--	--
01 (Peak)	2407.536	30.932	54.577	85.510	--	--	--
01 (Average)	2390.000	30.915	13.449	44.364	74.00	54.00	Pass
01 (Average)	2400.000	30.912	15.045	45.957	--	--	--
01 (Average)	2408.406	30.936	42.885	73.820	--	--	--

Figure Channel 01: Vertical (Peak)

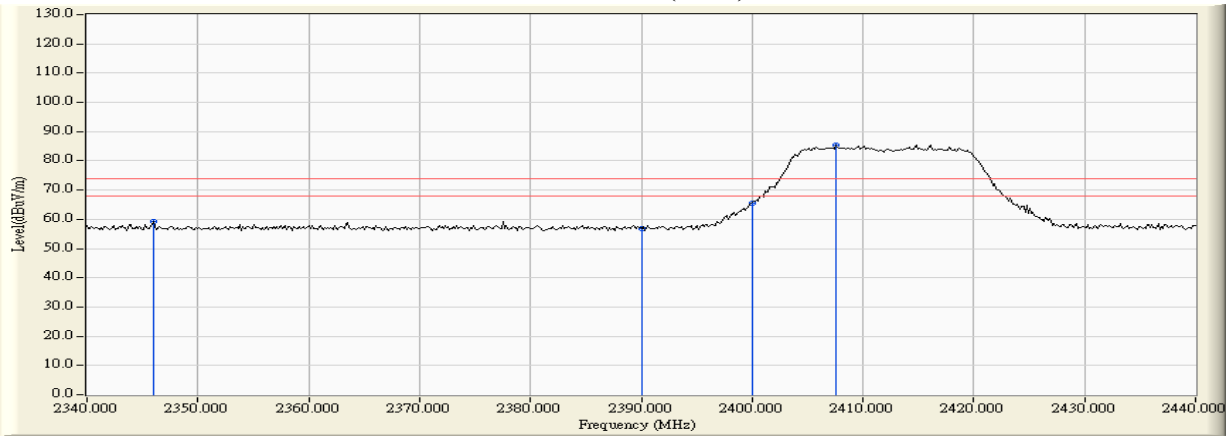
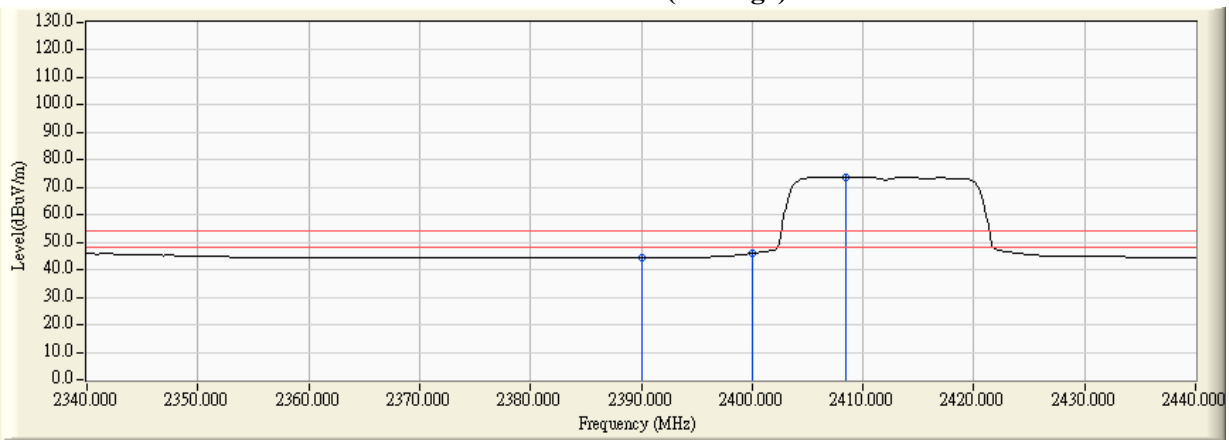


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2464.804	32.040	83.380	115.421	--	--	--
11 (Peak)	2483.500	32.182	37.630	69.812	74.00	54.00	Pass
11 (Average)	2463.065	32.028	71.552	103.579	--	--	--
11 (Average)	2483.500	32.182	20.640	52.822	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

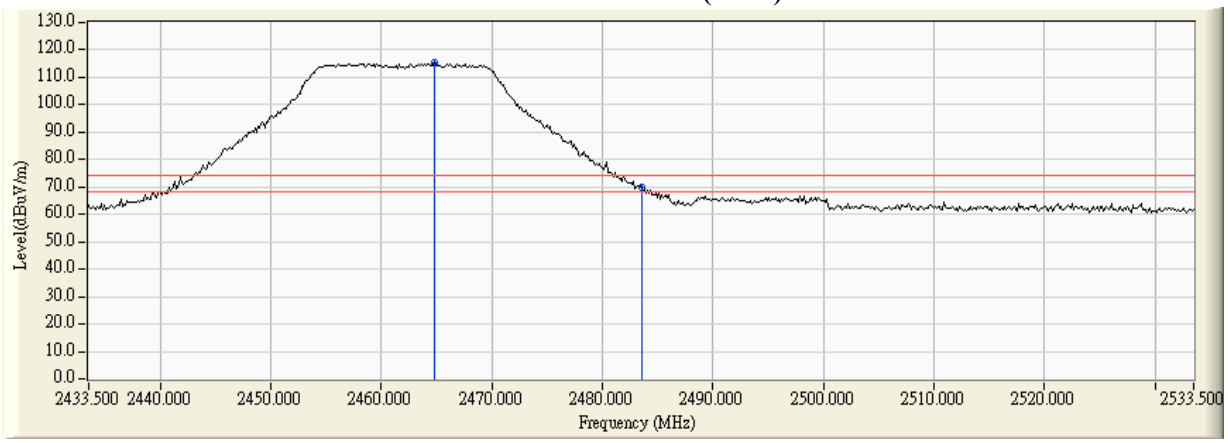
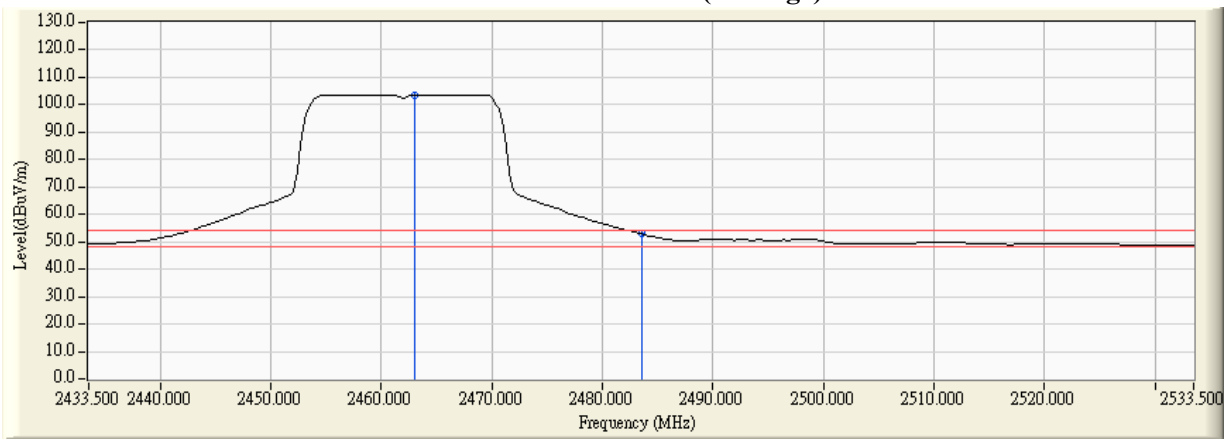


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna (2462MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
11 (Peak)	2464.804	31.309	53.863	85.172	--	--	--
11 (Peak)	2483.500	31.435	26.365	57.800	74.00	54.00	Pass
11 (Average)	2463.500	31.300	41.841	73.141	--	--	--
11 (Average)	2483.500	31.435	13.924	45.359	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

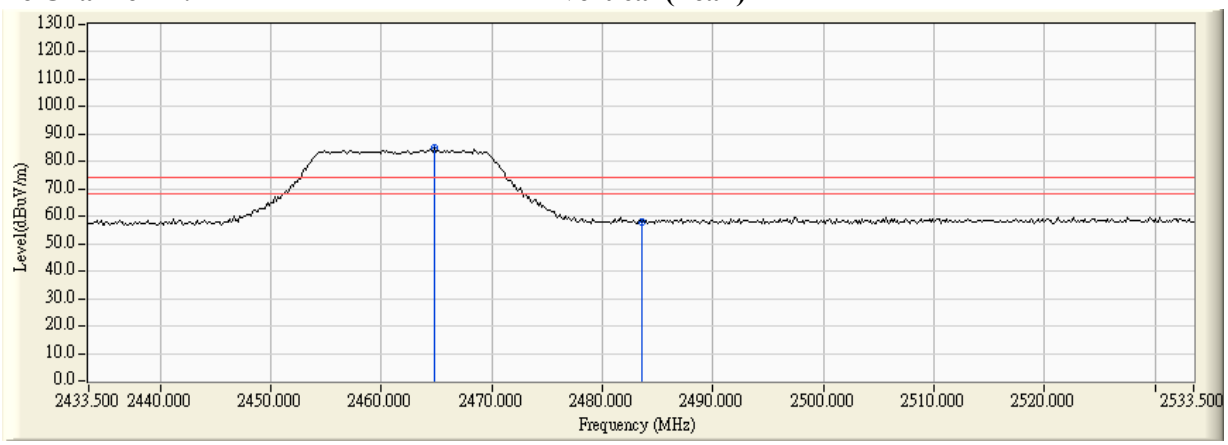
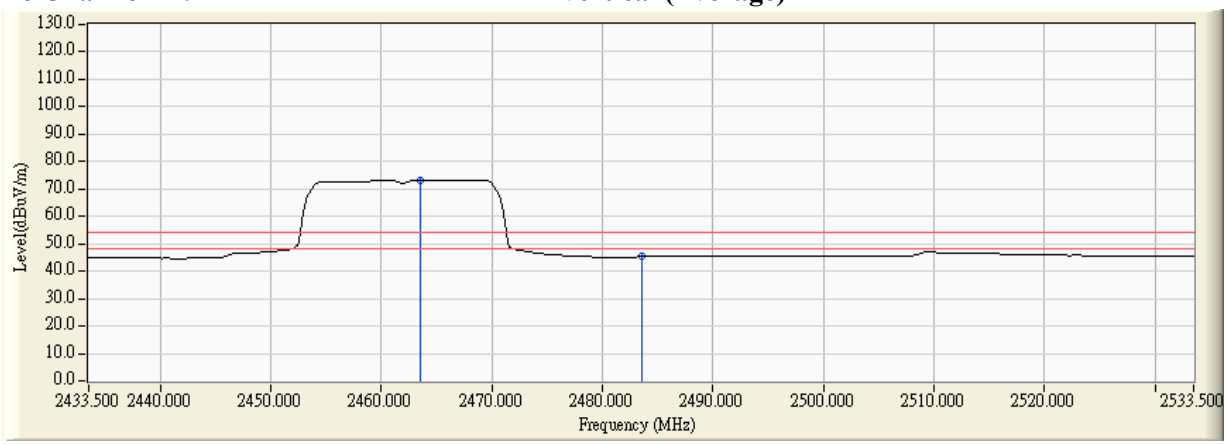


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	31.509	35.646	67.155	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	63.074	94.635	--	--	--
01 (Peak)	2409.420	31.621	84.501	116.122	--	--	--
01 (Average)	2390.000	31.509	20.913	52.422	74.00	54.00	Pass
01 (Average)	2400.000	31.561	33.056	64.617	--	--	--
01 (Average)	2417.681	31.683	70.595	102.277	--	--	--

Figure Channel 01: Horizontal (Peak)

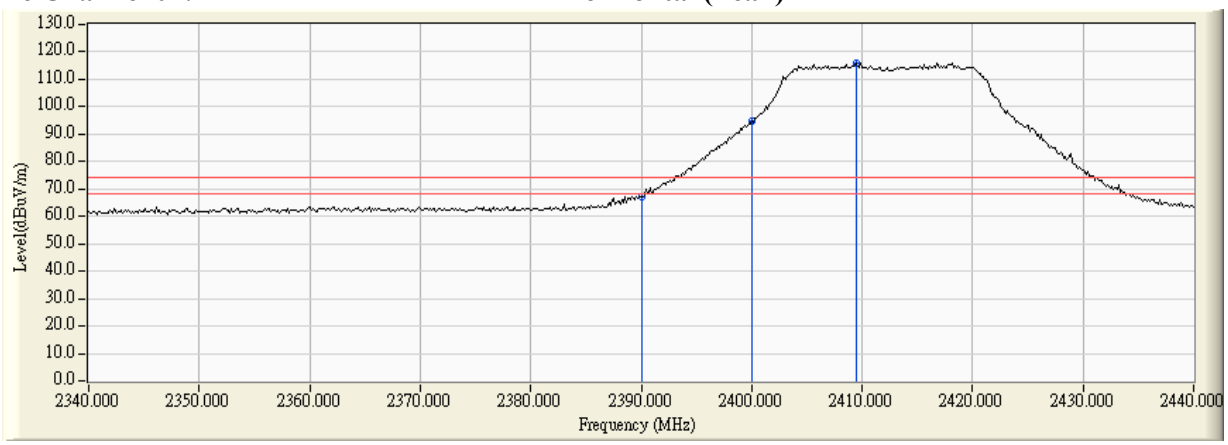
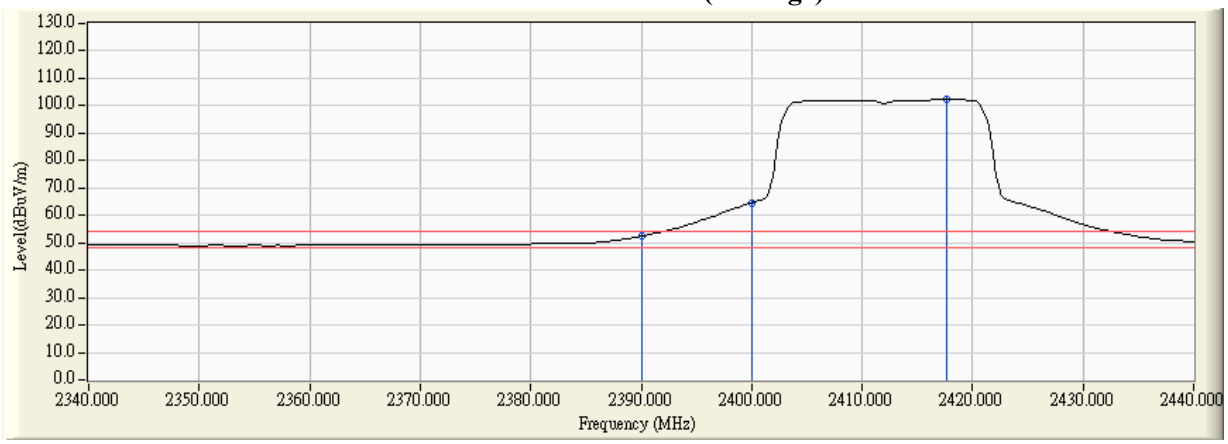


Figure Channel 01: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna (2412MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	30.915	36.419	67.334	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	62.883	93.795	--	--	--
01 (Peak)	2418.841	30.995	83.415	114.411	--	--	--
01 (Average)	2390.000	30.915	20.268	51.183	74.00	54.00	Pass
01 (Average)	2400.000	30.912	32.791	63.703	--	--	--
01 (Average)	2418.986	30.996	70.375	101.372	--	--	--

Figure Channel 01: Vertical (Peak)

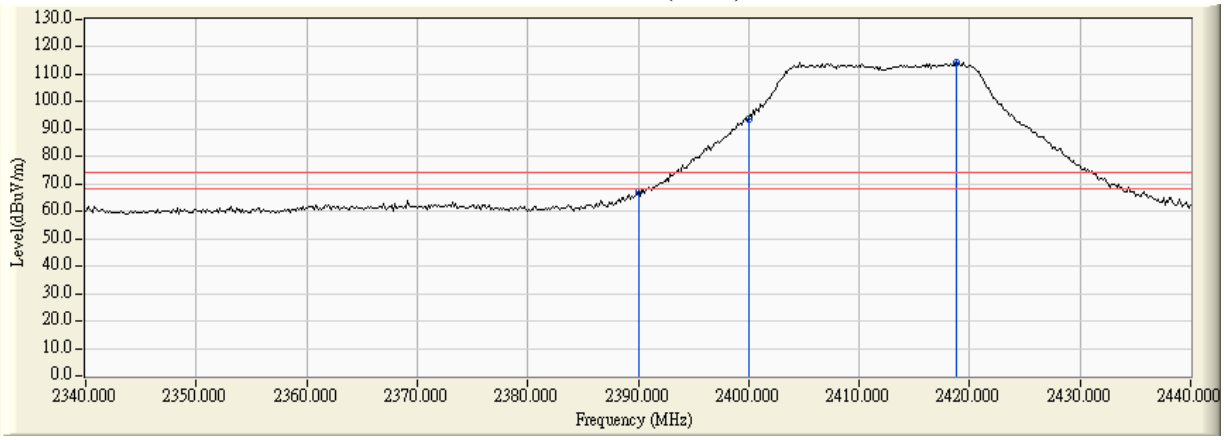
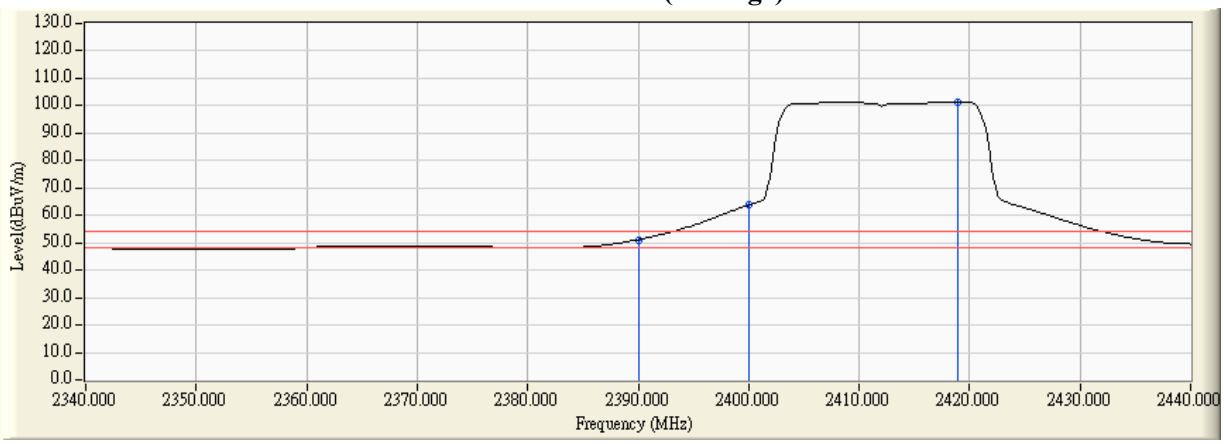


Figure Channel 01: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2465.819	32.048	83.714	115.762	--	--	--
11 (Peak)	2483.500	32.182	37.689	69.871	74.00	54.00	Pass
11 (Average)	2468.862	32.071	70.119	102.190	--	--	--
11 (Average)	2483.500	32.182	20.384	52.566	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

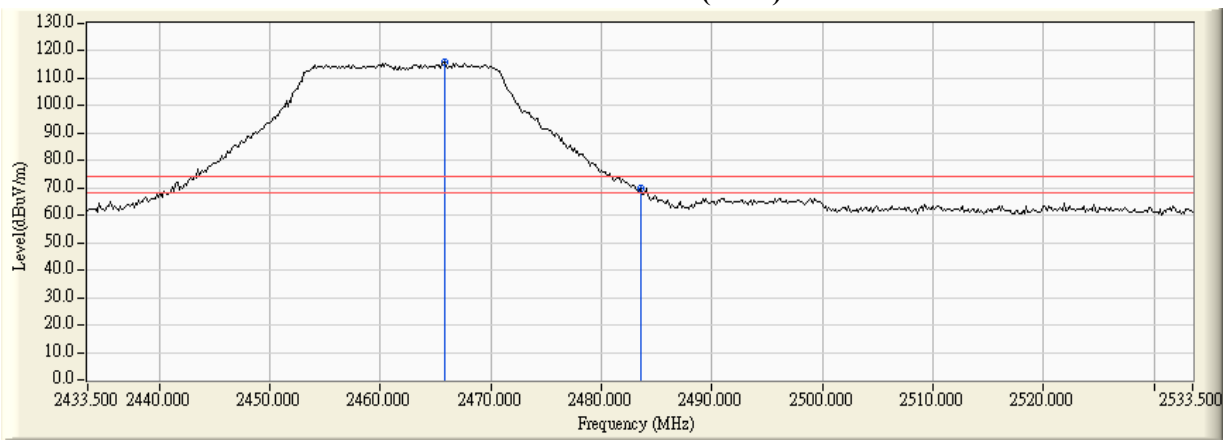
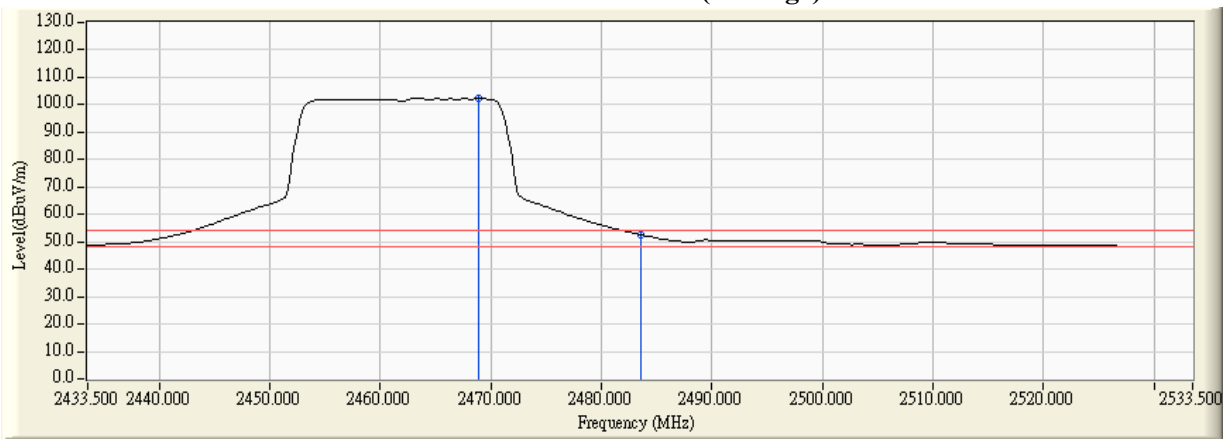


Figure Channel 11: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna (2462MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
11 (Peak)	2463.065	31.298	81.020	112.318	--	--	--
11 (Peak)	2483.500	31.435	34.141	65.576	74.00	54.00	Pass
11 (Average)	2469.152	31.338	67.689	99.028	--	--	--
11 (Average)	2483.500	31.435	18.065	49.500	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

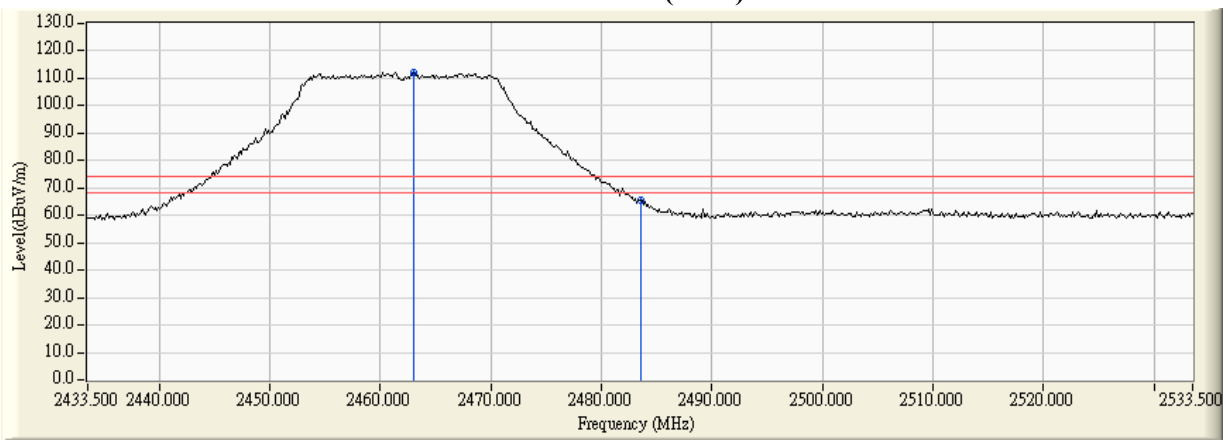
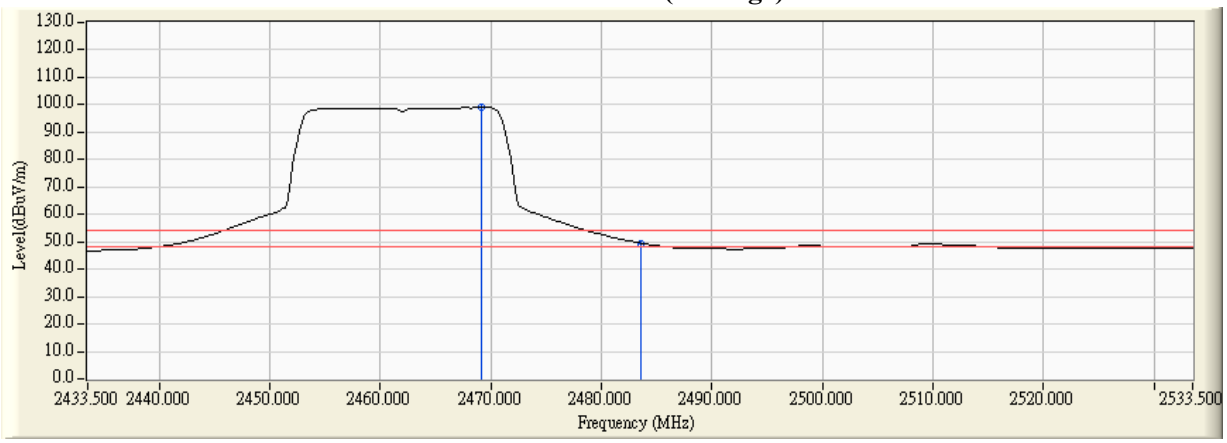


Figure Channel 11: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2422MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
03 (Peak)	2389.710	31.508	42.062	73.570	74.00	54.00	Pass
03 (Peak)	2390.000	31.509	41.275	72.784	74.00	54.00	Pass
03 (Peak)	2400.000	31.561	57.524	89.085	--	--	--
03 (Peak)	2438.551	31.841	79.152	110.993	--	--	--
03 (Average)	2390.000	31.509	21.566	53.075	74.00	54.00	Pass
03 (Average)	2400.000	31.561	27.870	59.431	--	--	--
03 (Average)	2425.362	31.741	64.438	96.179	--	--	--

Figure Channel 03: Horizontal (Peak)

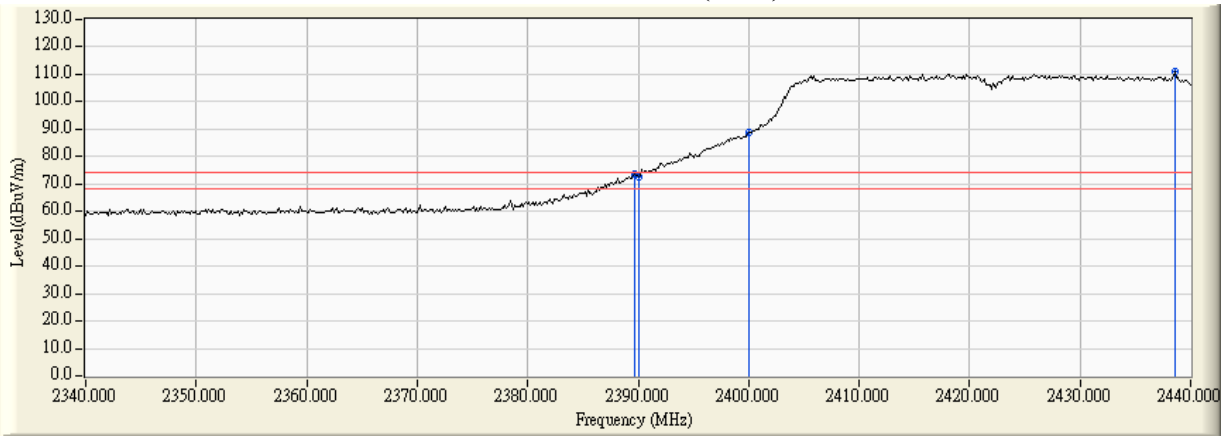
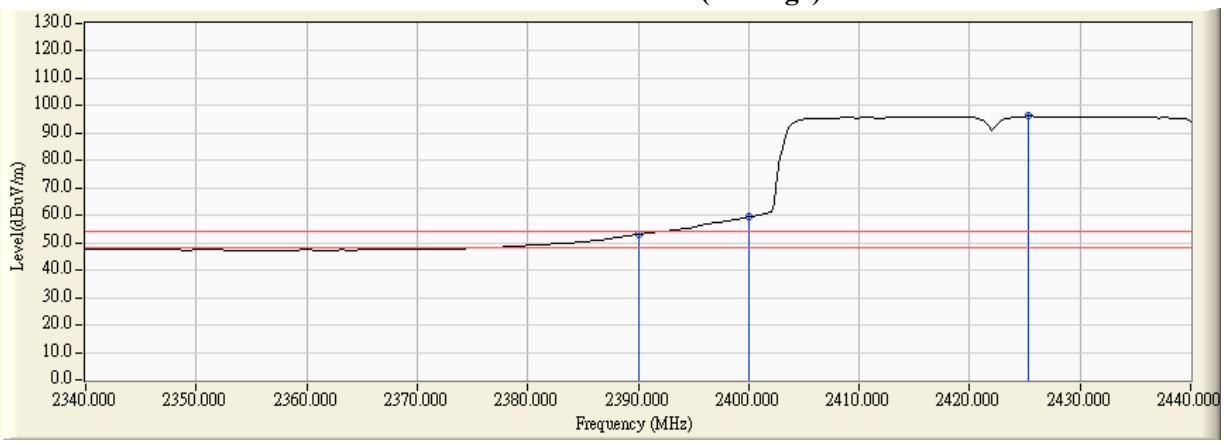


Figure Channel 03: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2422MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
03 (Peak)	2390.000	30.915	40.780	71.695	74.00	54.00	Pass
03 (Peak)	2400.000	30.912	56.826	87.738	--	--	--
03 (Peak)	2427.536	31.055	77.273	108.328	--	--	--
03 (Average)	2390.000	30.915	20.354	51.269	74.00	54.00	Pass
03 (Average)	2400.000	30.912	26.392	57.304	--	--	--
03 (Average)	2436.522	31.116	63.423	94.539	--	--	--

Figure Channel 03: Vertical (Peak)

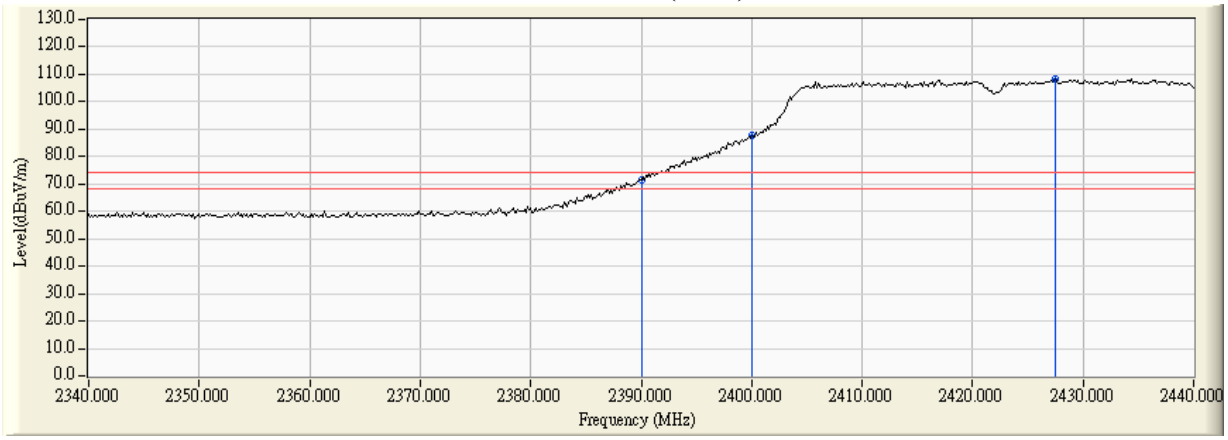
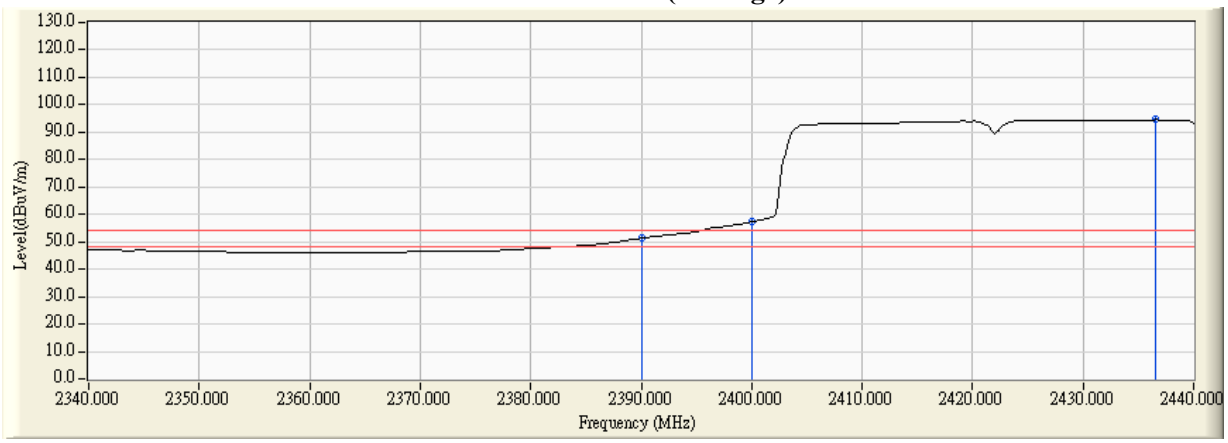


Figure Channel 03: Vertical (Average)



Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2452MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
09 (Peak)	2442.051	31.867	76.718	108.586	--	--	--
09 (Peak)	2483.500	32.182	40.278	72.460	74.00	54.00	Pass
09 (Average)	2455.384	31.970	61.914	93.883	--	--	--
09 (Average)	2483.500	32.182	20.828	53.010	74.00	54.00	Pass

Figure Channel 09: Horizontal (Peak)

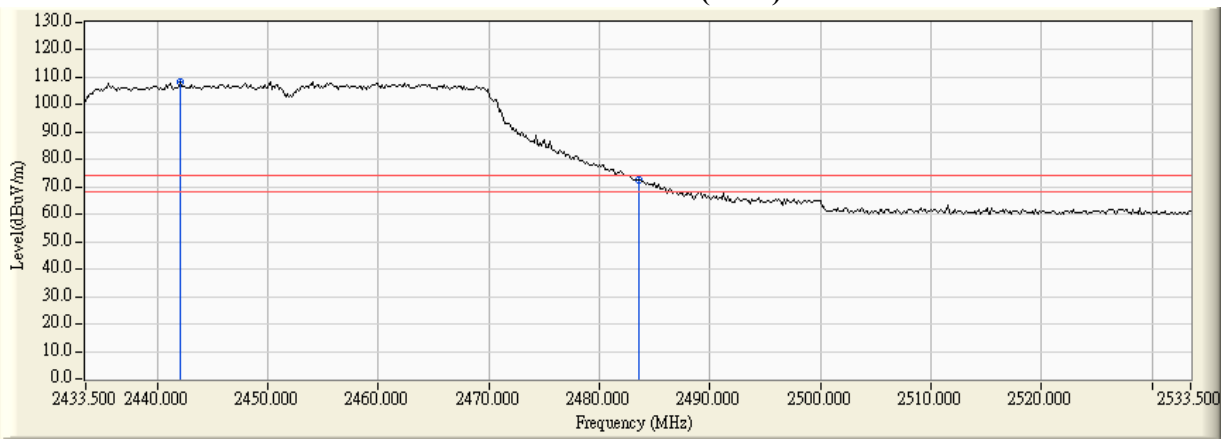
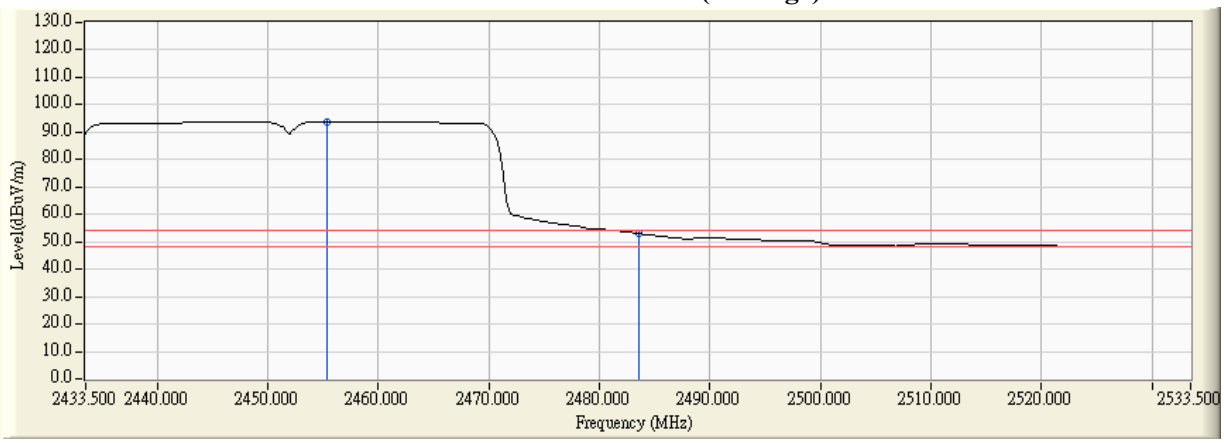


Figure Channel 09: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : 802.11 b/g/n PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2452MHz)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
09 (Peak)	2462.486	31.294	74.641	105.935	--	--	--
09 (Peak)	2483.500	31.435	39.142	70.577	74.00	54.00	Pass
09 (Average)	2460.312	31.278	60.723	92.002	--	--	--
09 (Average)	2483.500	31.435	19.996	51.431	74.00	54.00	Pass

Figure Channel 09: Vertical (Peak)

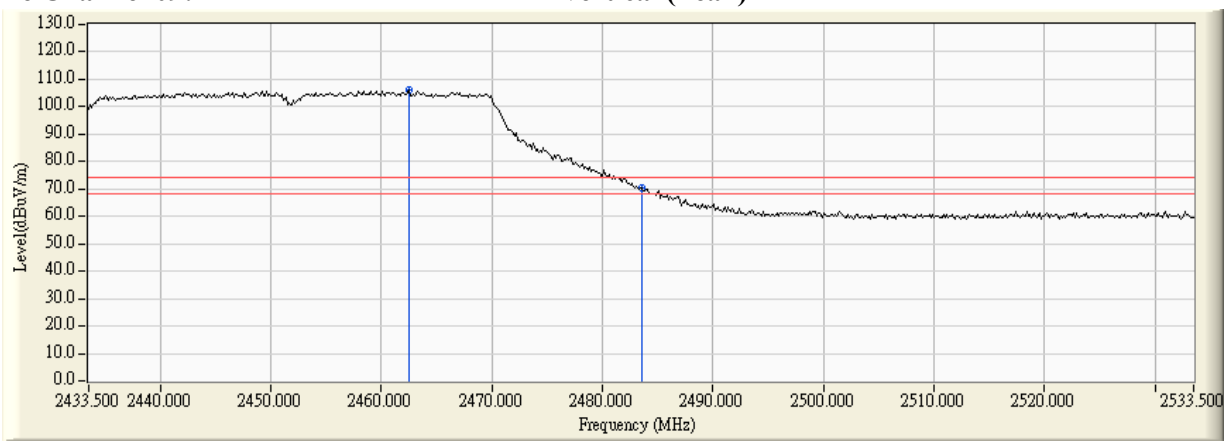
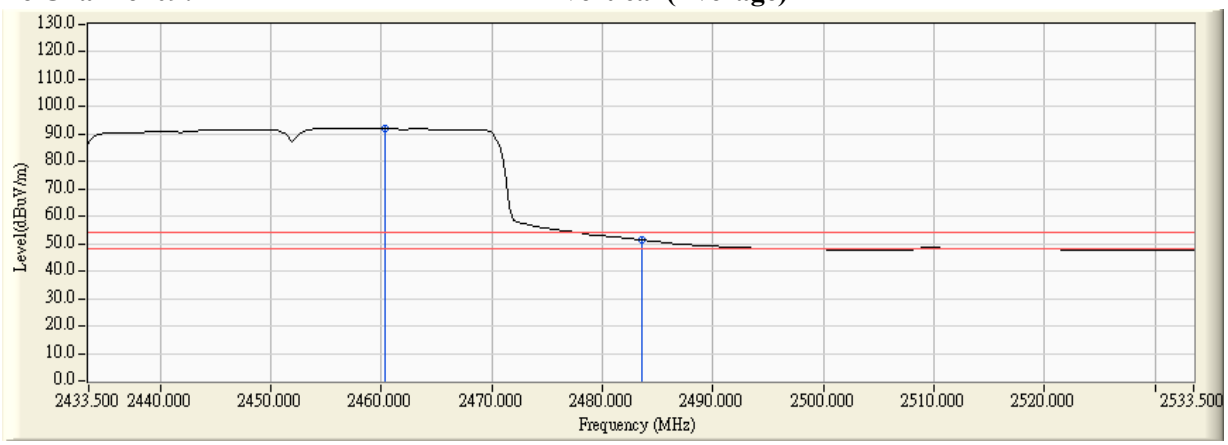


Figure Channel 09: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Occupied Bandwidth

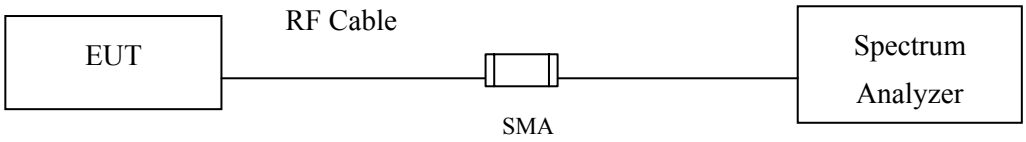
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 1-5% of the emission bandwidth, VBW≥3*RBW

7.5. Uncertainty

± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : 802.11 b/g/n PCIe Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412.00	12200	>500	Pass
06	2437.00	12200	>500	Pass
11	2462.00	12200	>500	Pass

Figure Channel 01:

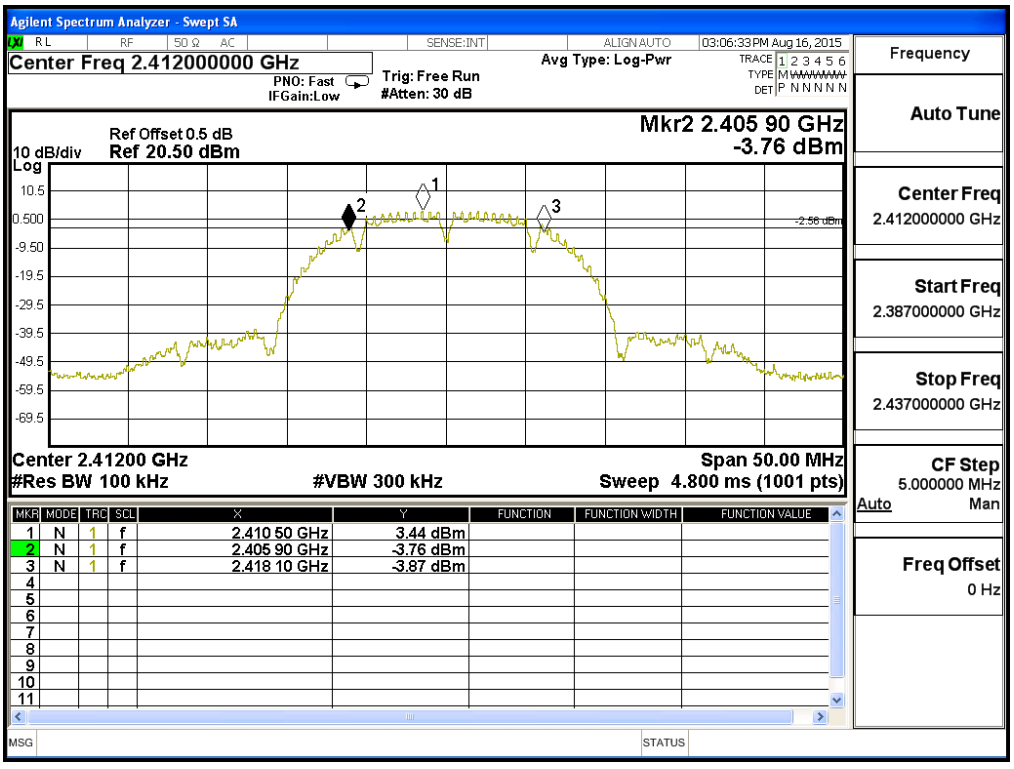


Figure Channel 06:

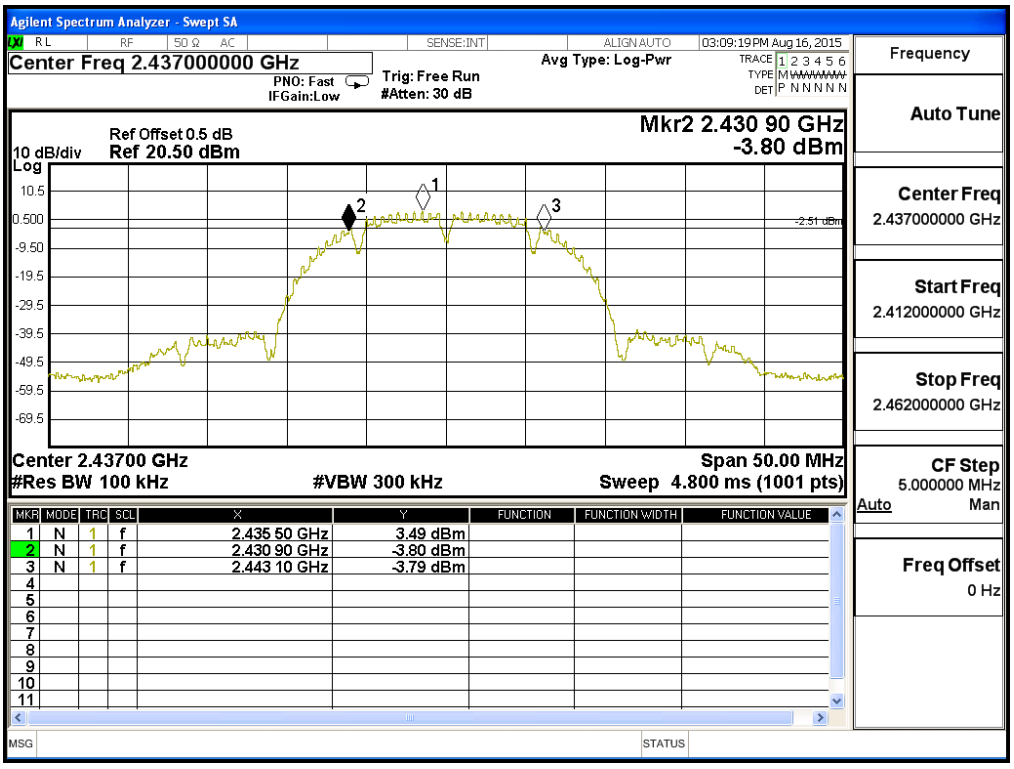
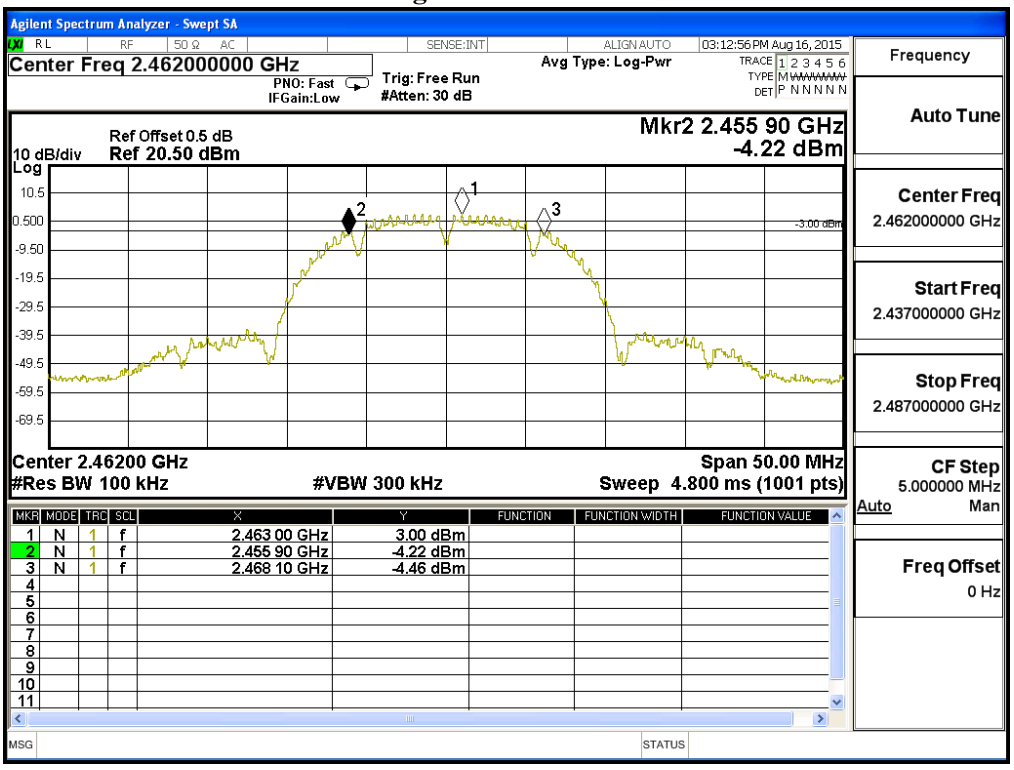


Figure Channel 11:



Product : 802.11 b/g/n PCIe Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412.00	16500	>500	Pass
06	2437.00	16500	>500	Pass
11	2462.00	16500	>500	Pass

Figure Channel 01:

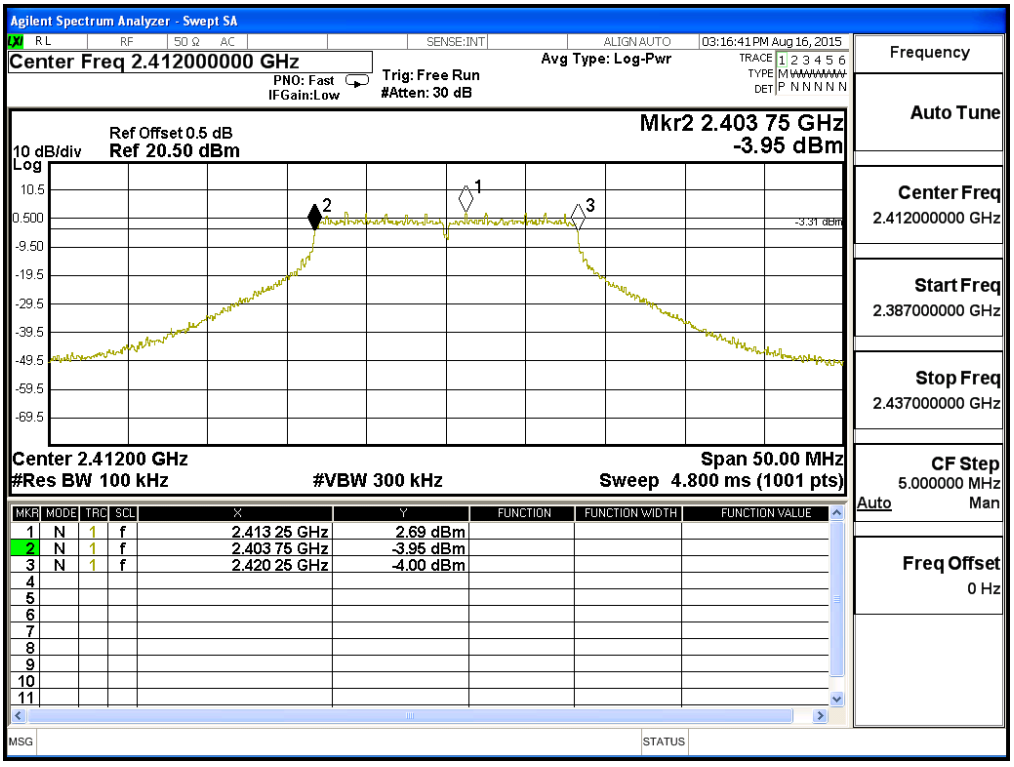


Figure Channel 06:

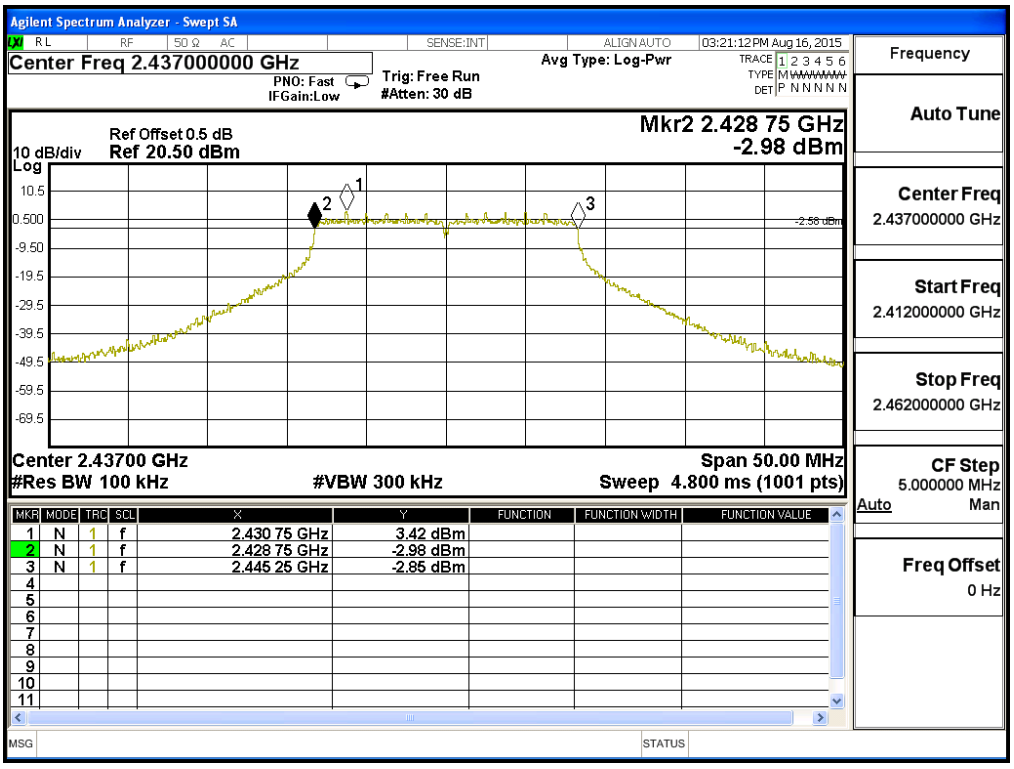
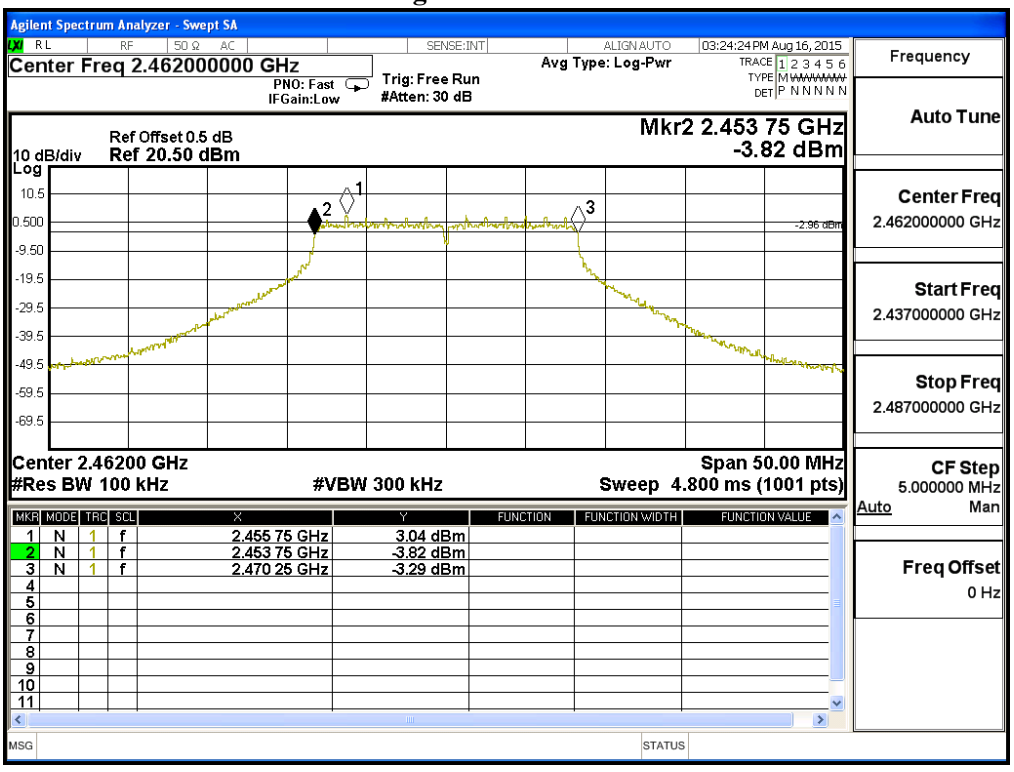


Figure Channel 11:



Product : 802.11 b/g/n PCIe Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna

Channel No.	Chain	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	A	2412.00	17850	>500	Pass
06	A	2437.00	17800	>500	Pass
11	A	2462.00	17800	>500	Pass
01	B	2412.00	17750	>500	Pass
06	B	2437.00	17800	>500	Pass
11	B	2462.00	17750	>500	Pass

Figure Channel 01: (Chain A)

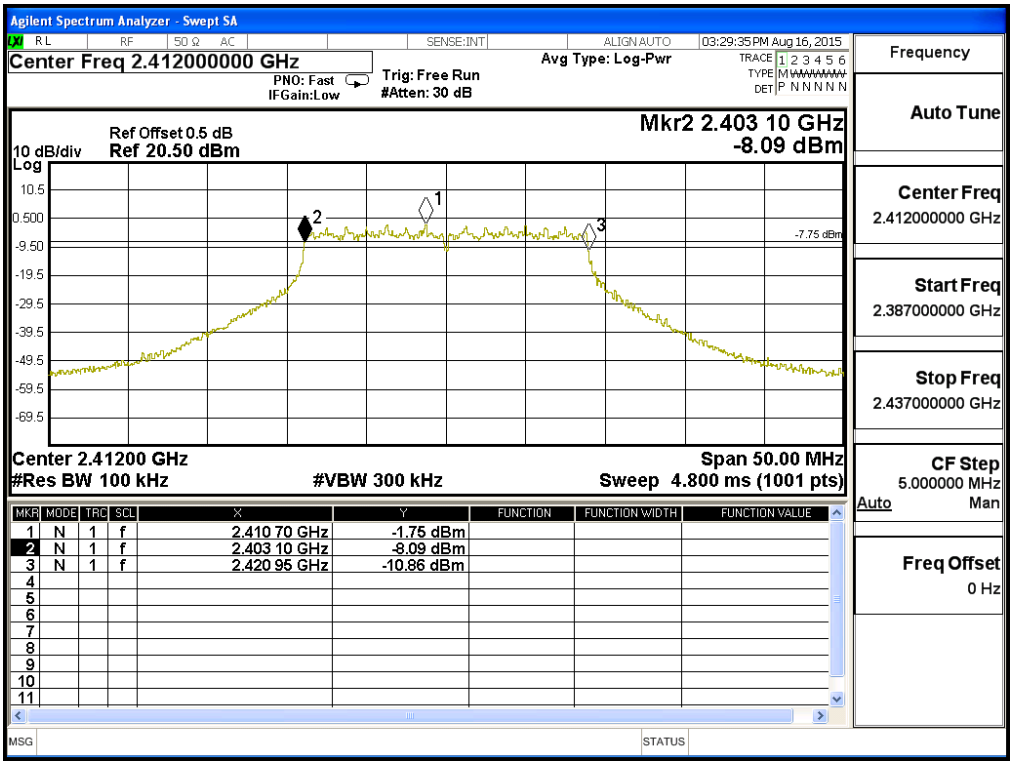


Figure Channel 06: (Chain A)

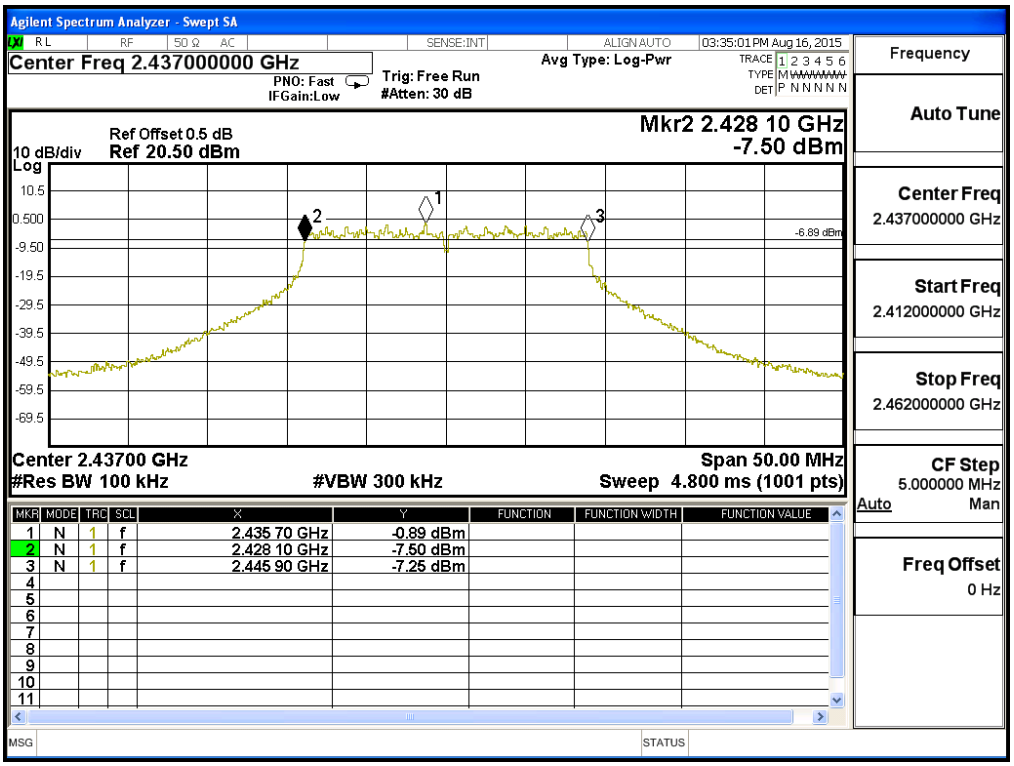


Figure Channel 11: (Chain A)

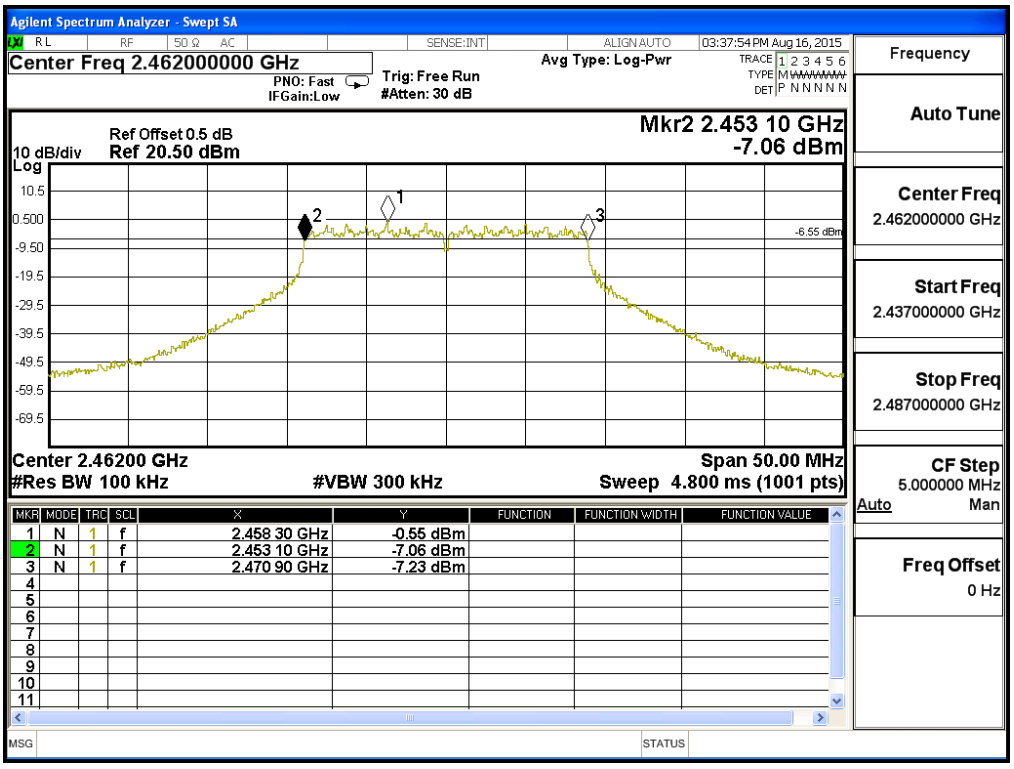


Figure Channel 01: (Chain B)

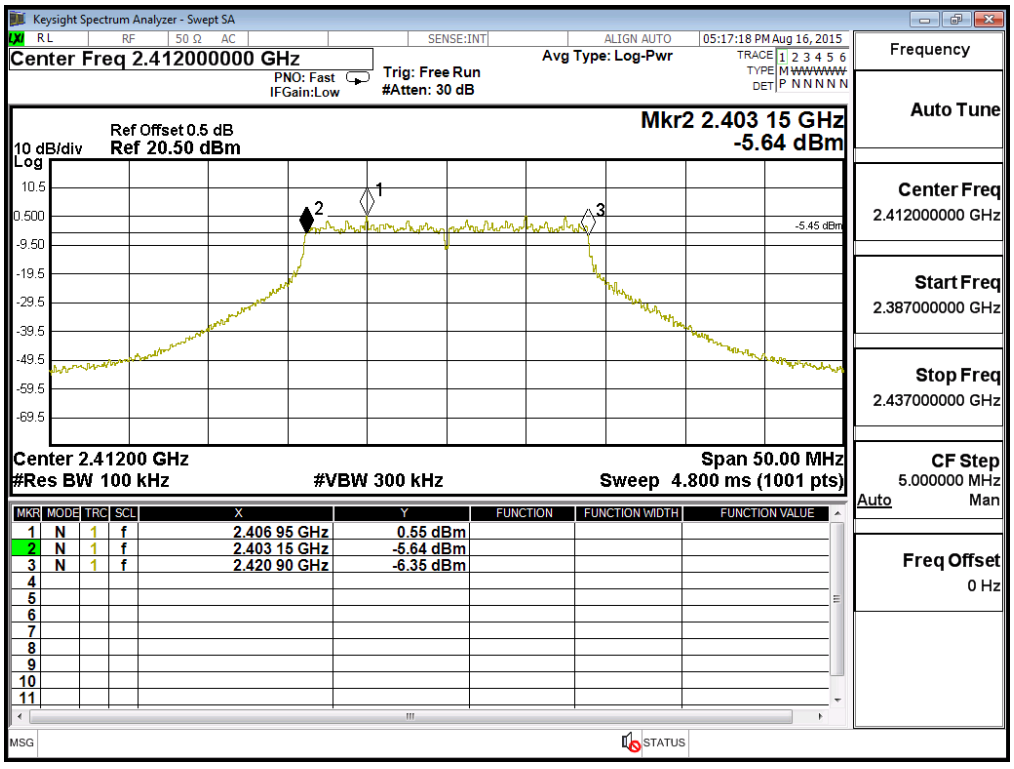


Figure Channel 06: (Chain B)

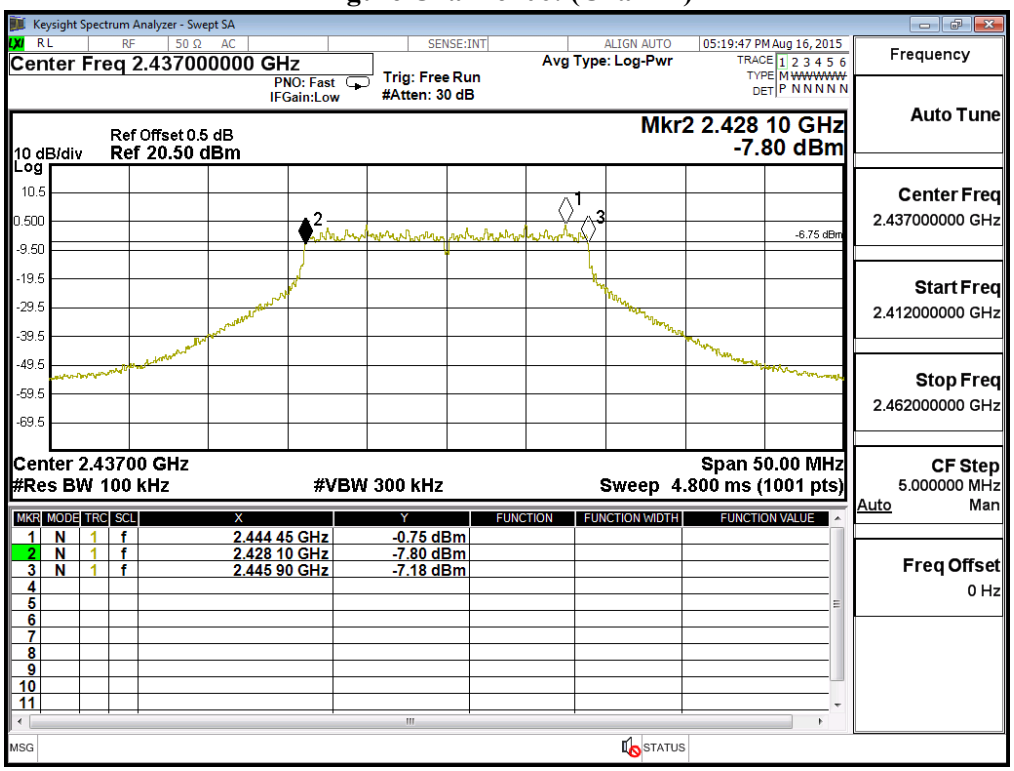
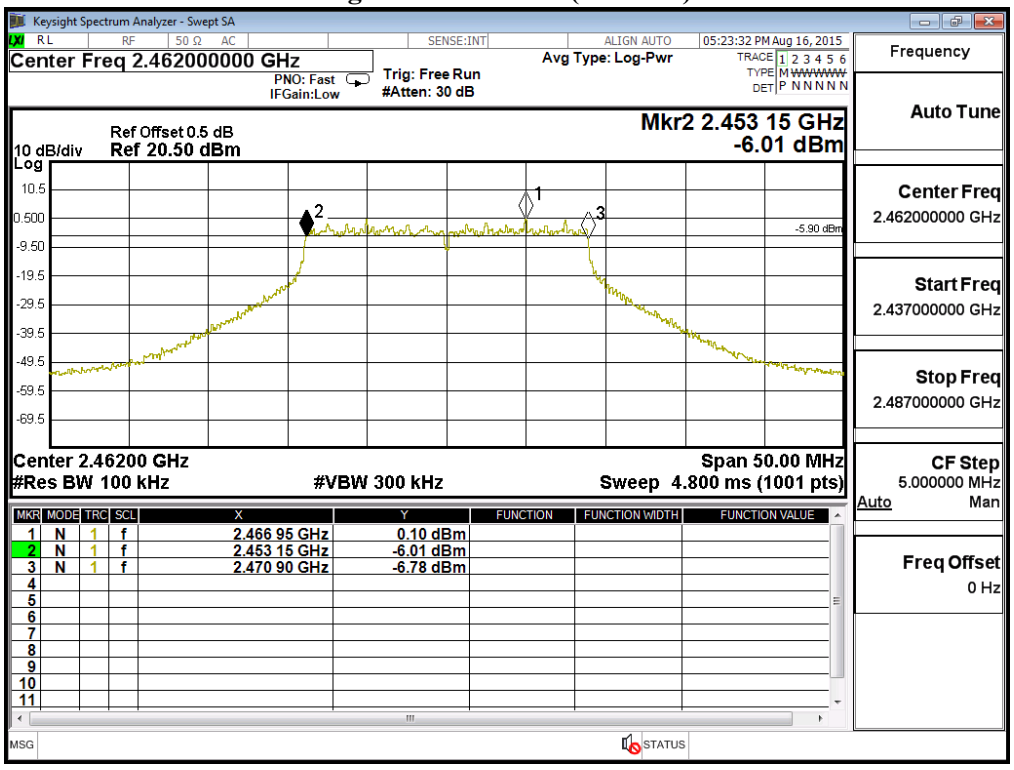


Figure Channel 11: (Chain B)



Product : 802.11 b/g/n PCIe Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna

Channel No.	Chain	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
3	A	2422.00	36300	>500	Pass
6	A	2437.00	36000	>500	Pass
9	A	2452.00	36000	>500	Pass
3	B	2422.00	36300	>500	Pass
6	B	2437.00	36200	>500	Pass
9	B	2452.00	36200	>500	Pass

Figure Channel 3: (Chain A)

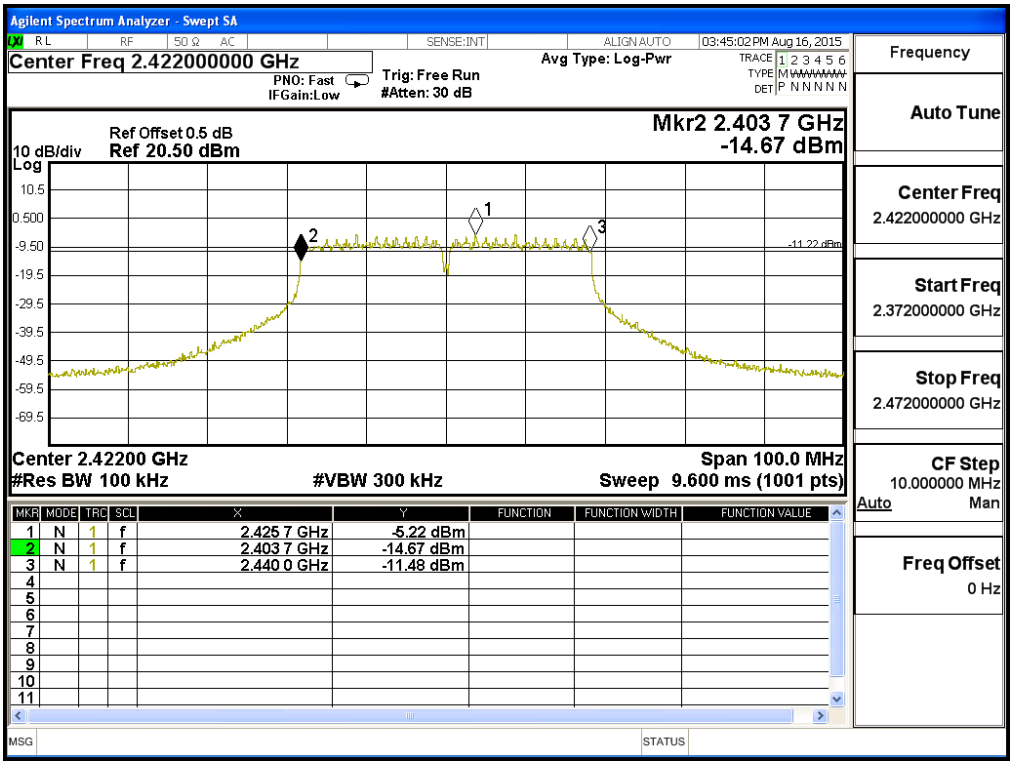


Figure Channel 6: (Chain A)

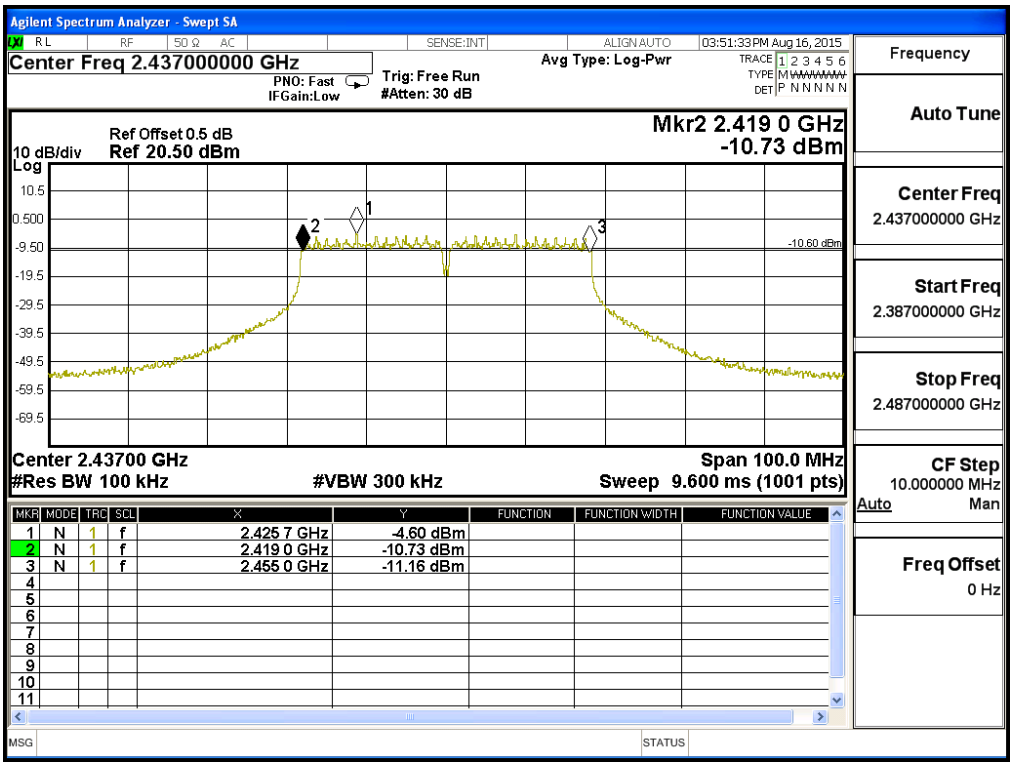


Figure Channel 9: (Chain A)

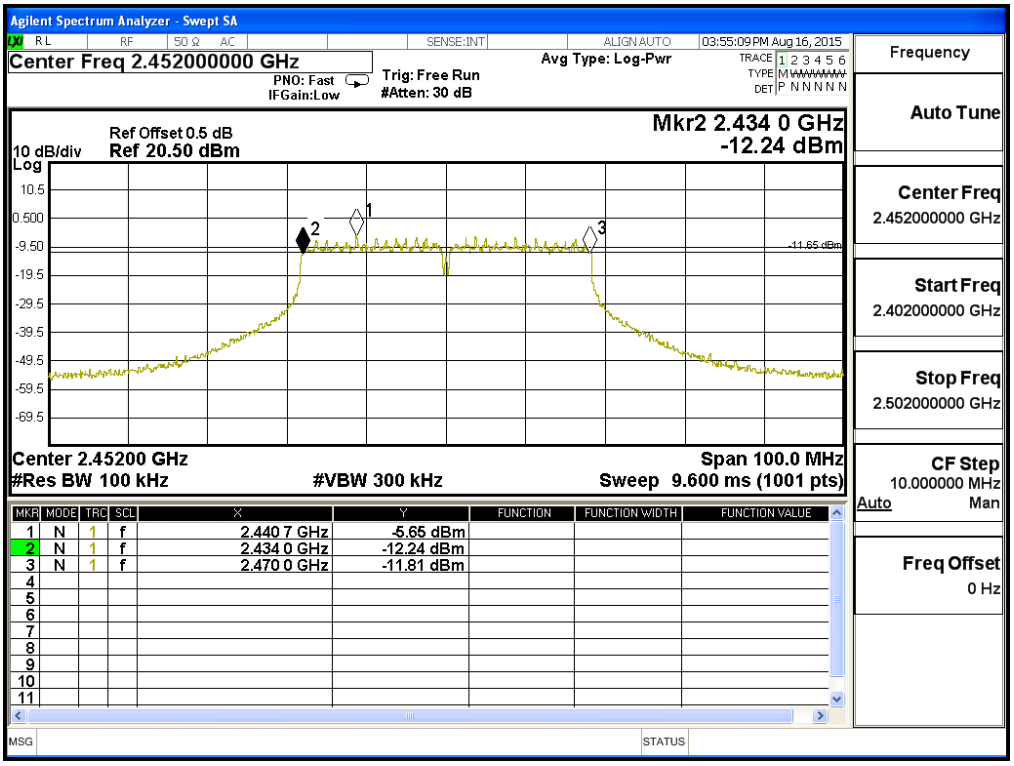


Figure Channel 3: (Chain B)

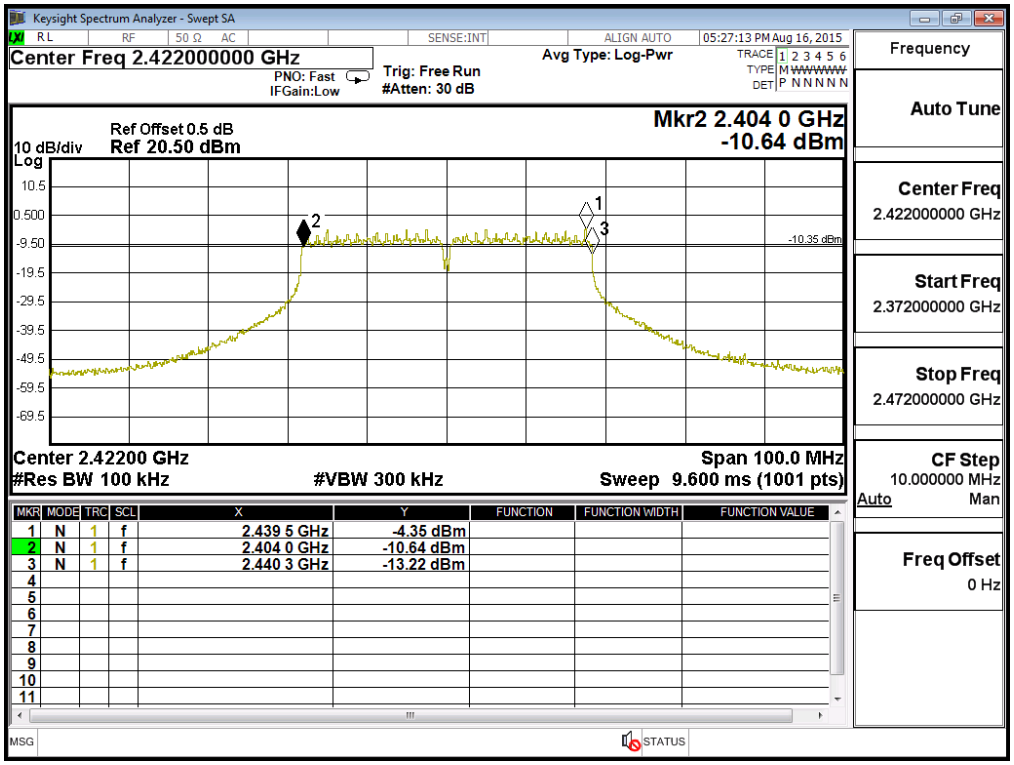


Figure Channel 6: (Chain B)

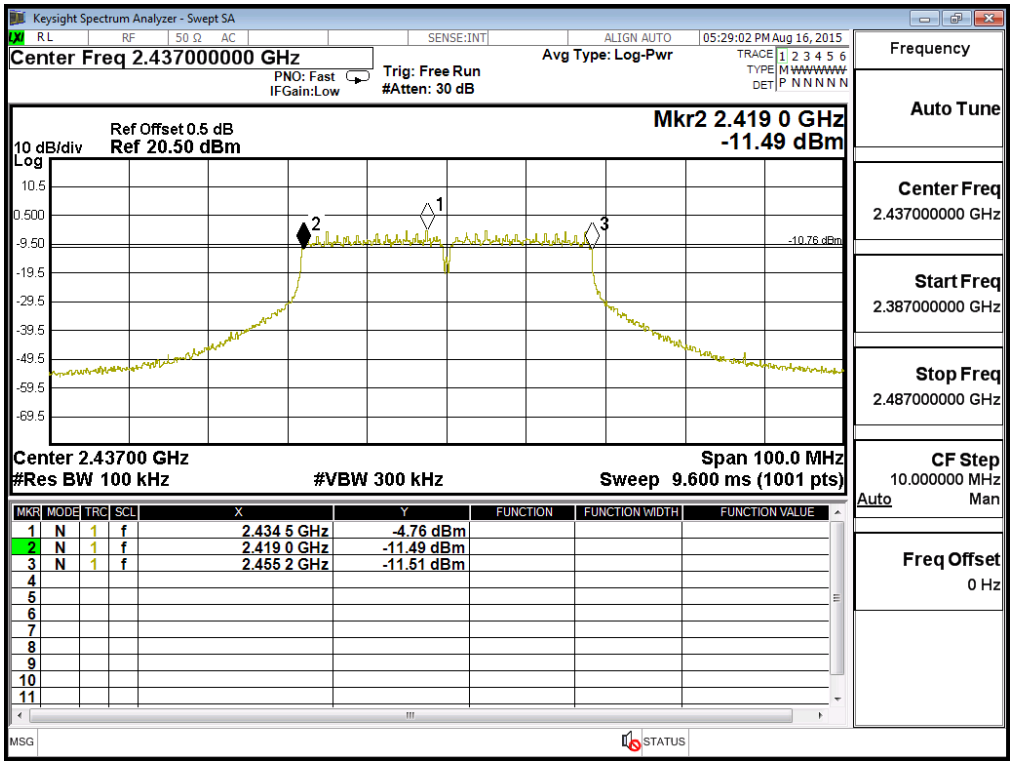
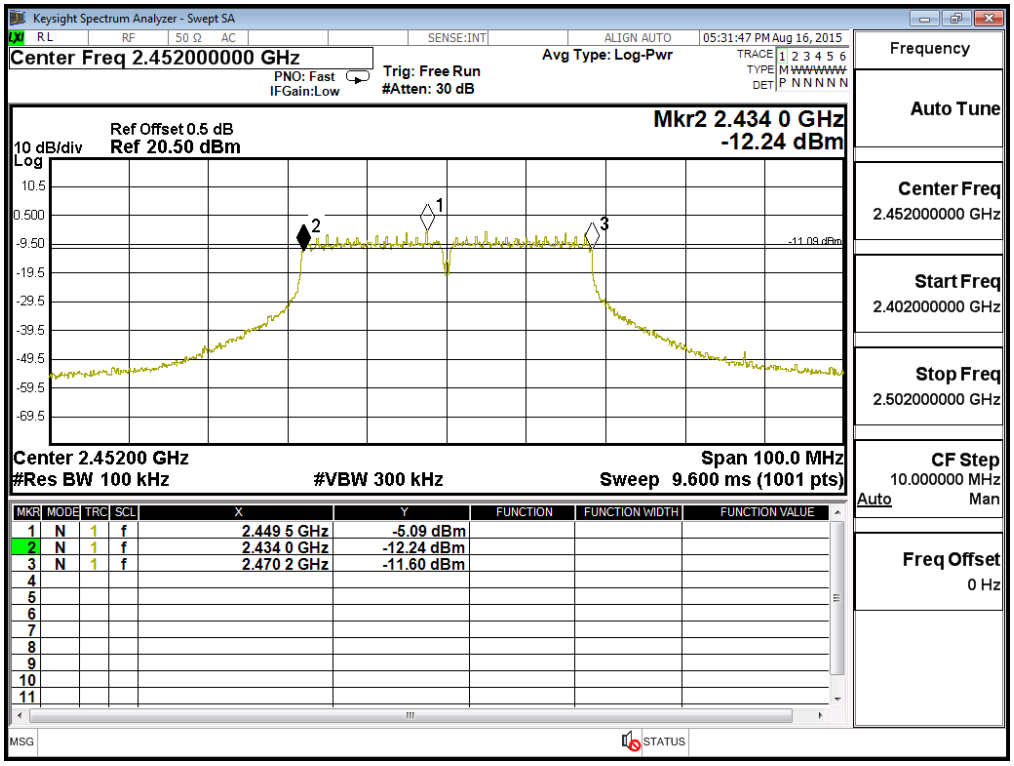


Figure Channel 9: (Chain B)



Product : 802.11 b/g/n PCIe Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412.00	12200	>500	Pass
06	2437.00	12200	>500	Pass
11	2462.00	12650	>500	Pass

Figure Channel 01:

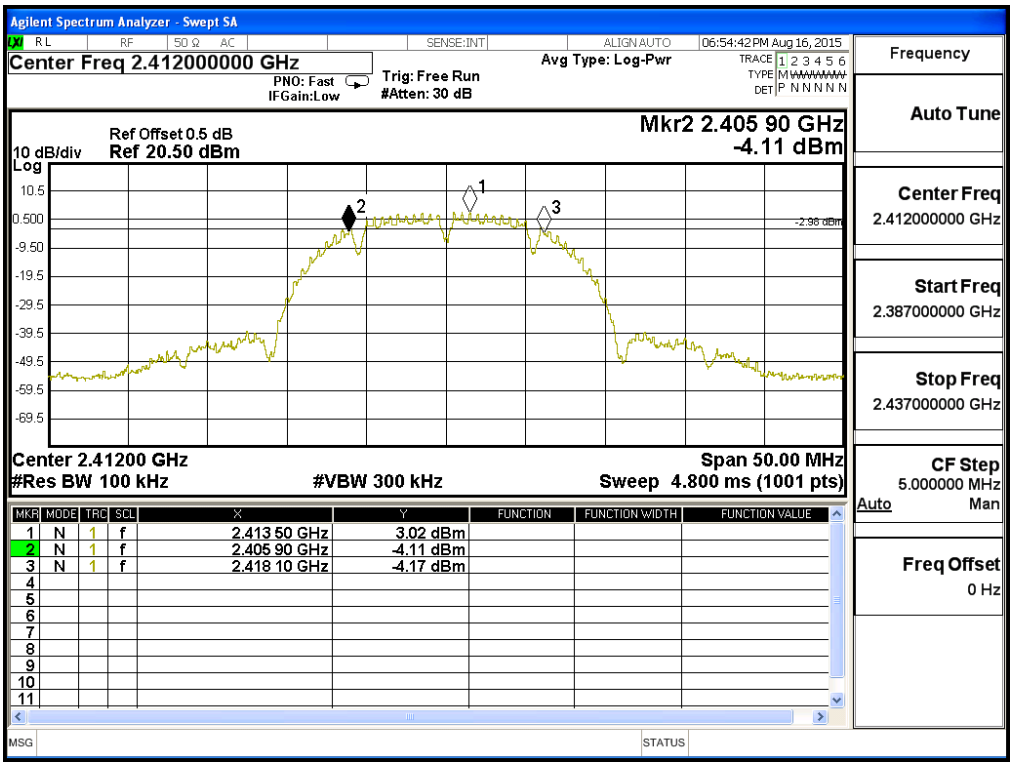


Figure Channel 06:

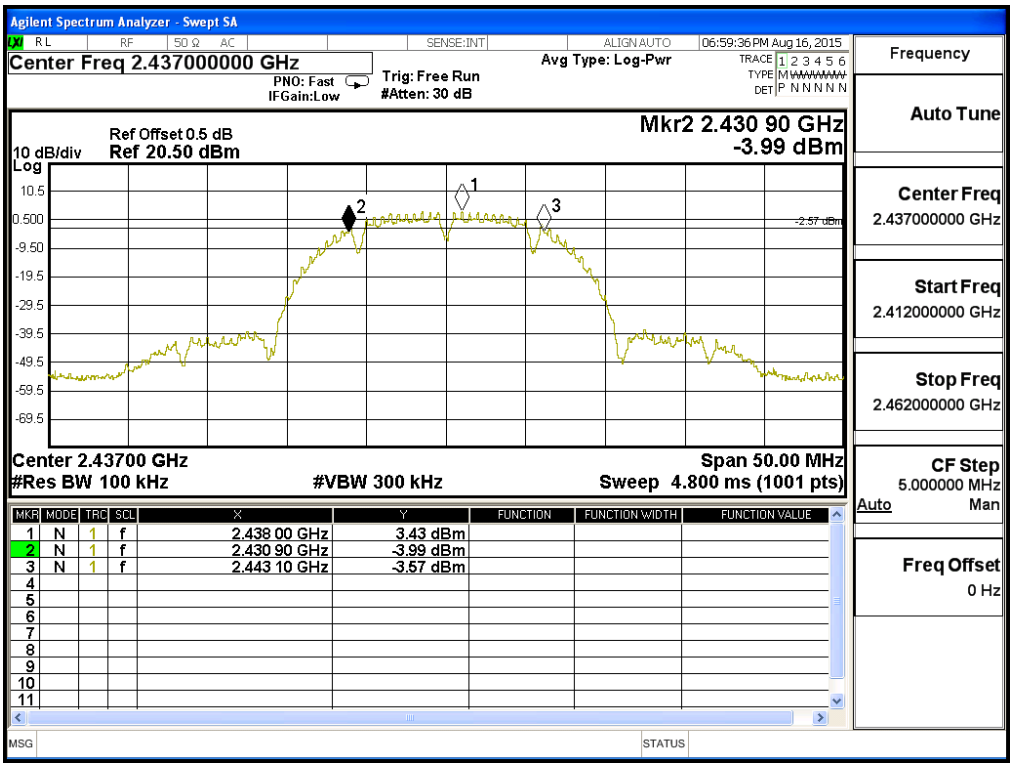
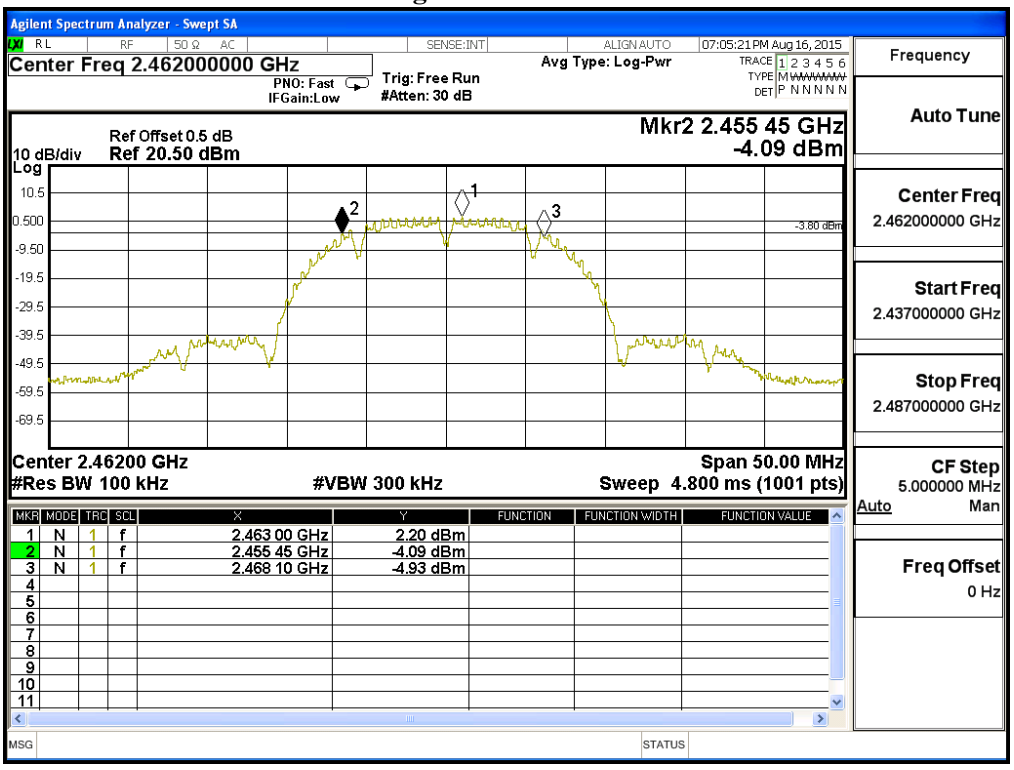


Figure Channel 11:



Product : 802.11 b/g/n PCIe Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412.00	16450	>500	Pass
06	2437.00	16500	>500	Pass
11	2462.00	16500	>500	Pass

Figure Channel 01:

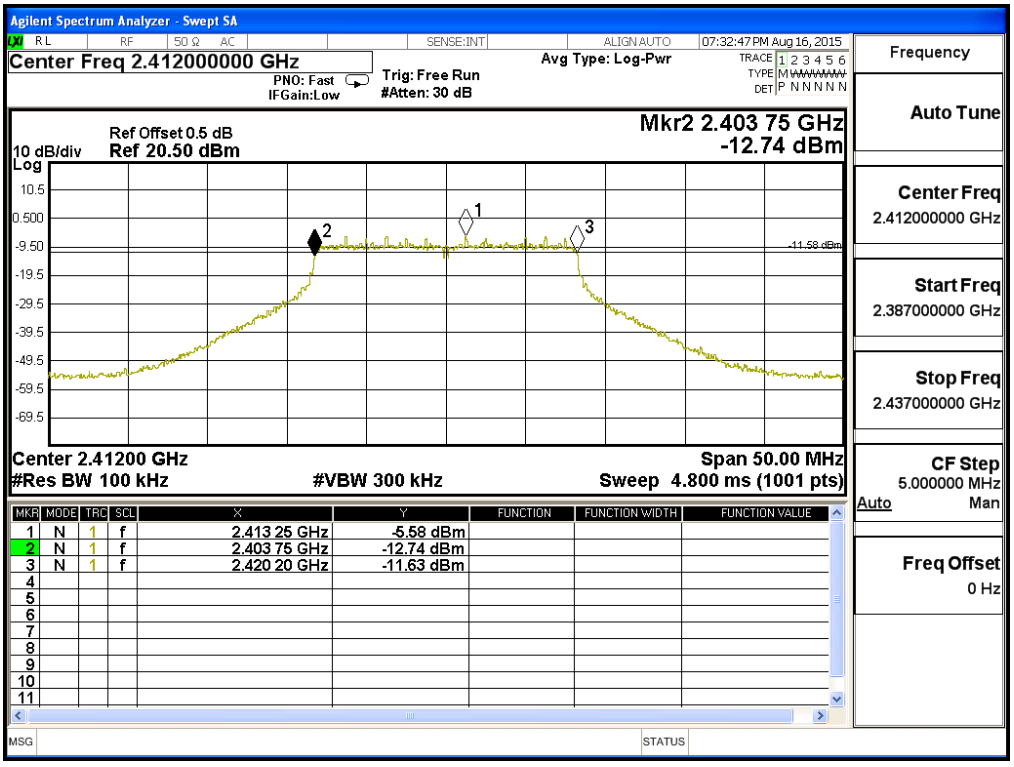


Figure Channel 06:

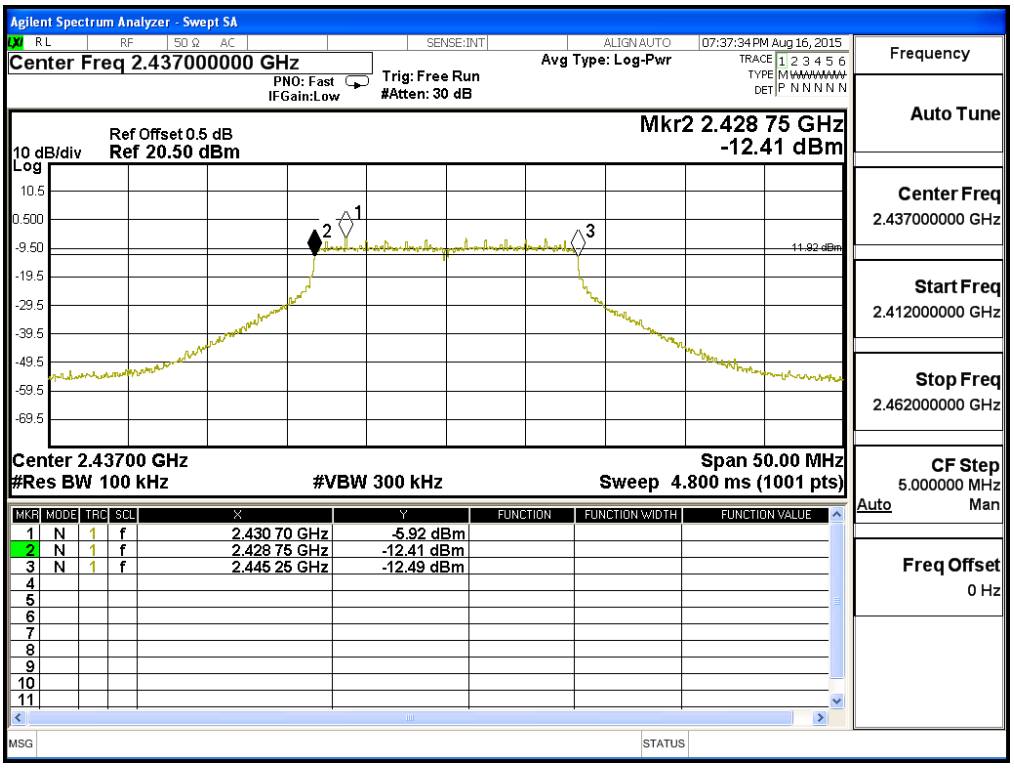
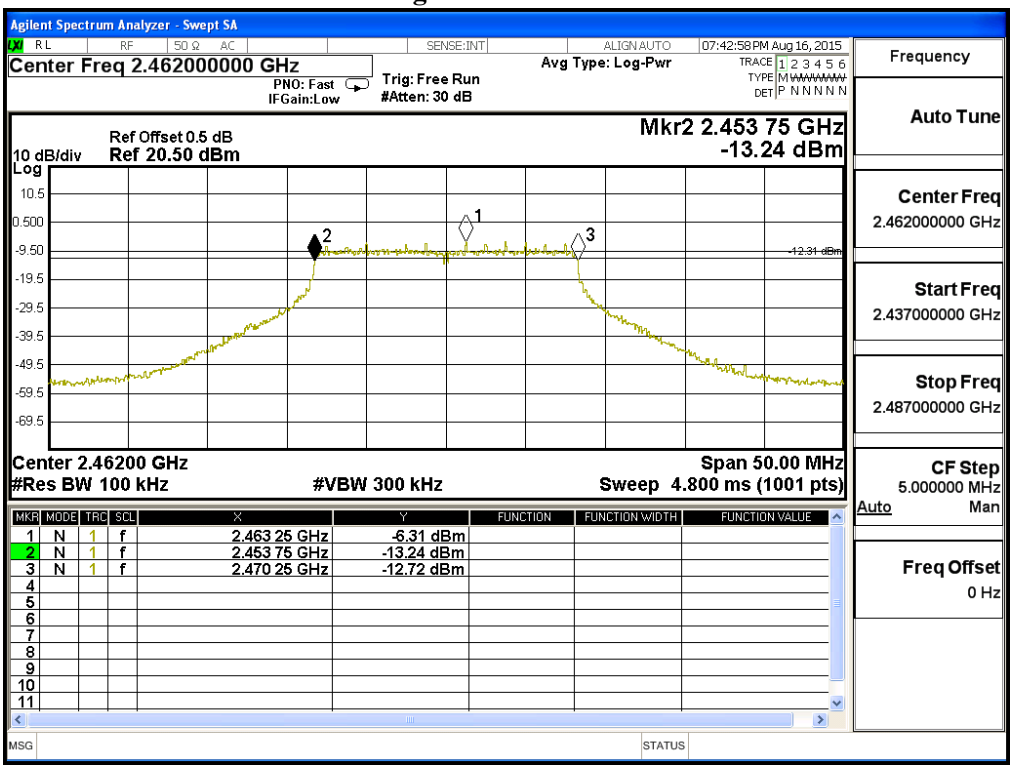


Figure Channel 11:



Product : 802.11 b/g/n PCIe Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna

Channel No.	Chain	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	A	2412.00	17800	>500	Pass
06	A	2437.00	17900	>500	Pass
11	A	2462.00	17750	>500	Pass
01	B	2412.00	17750	>500	Pass
06	B	2437.00	17700	>500	Pass
11	B	2462.00	17750	>500	Pass

Figure Channel 01: (Chain A)

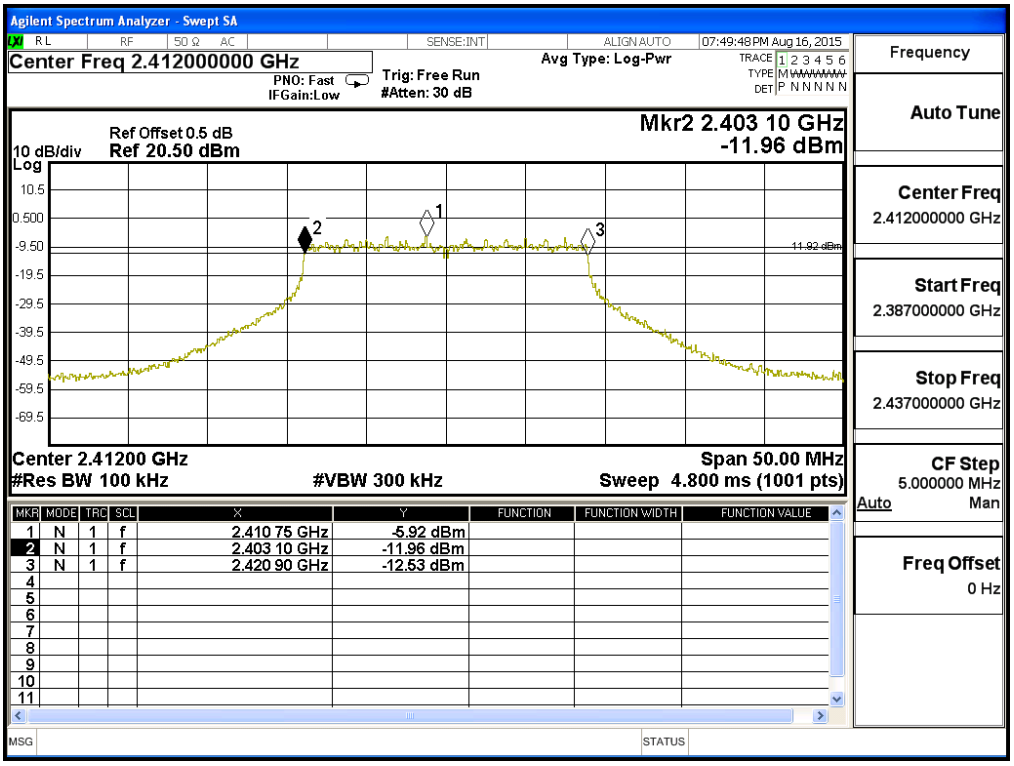


Figure Channel 06: (Chain A)

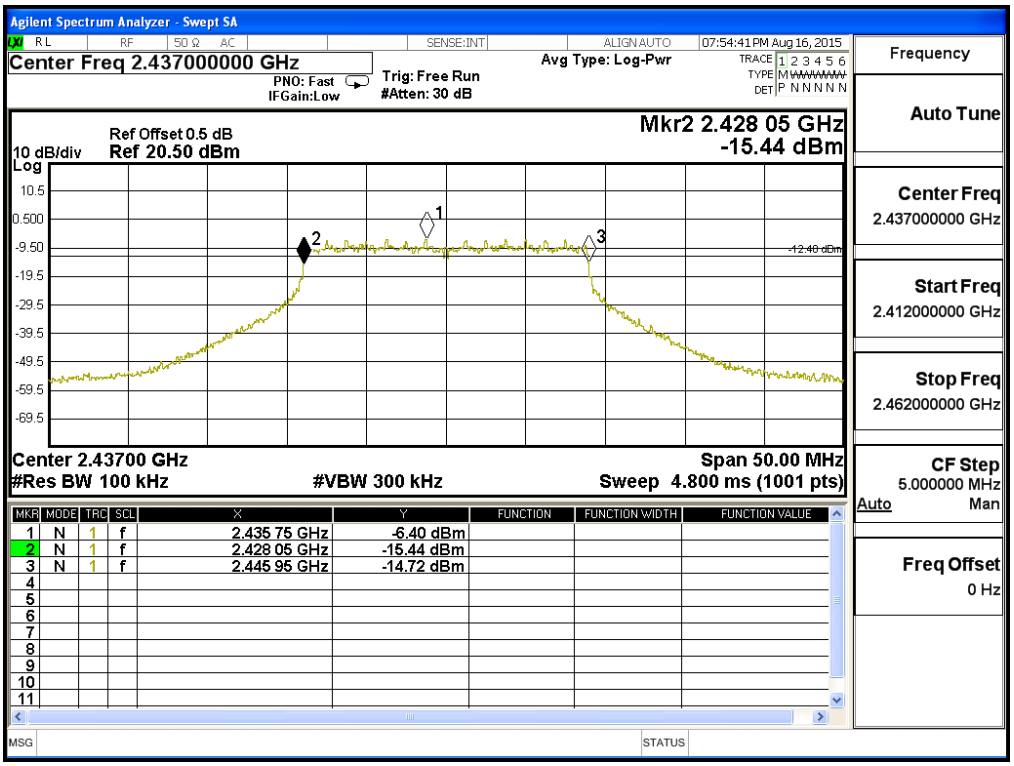


Figure Channel 11: (Chain A)

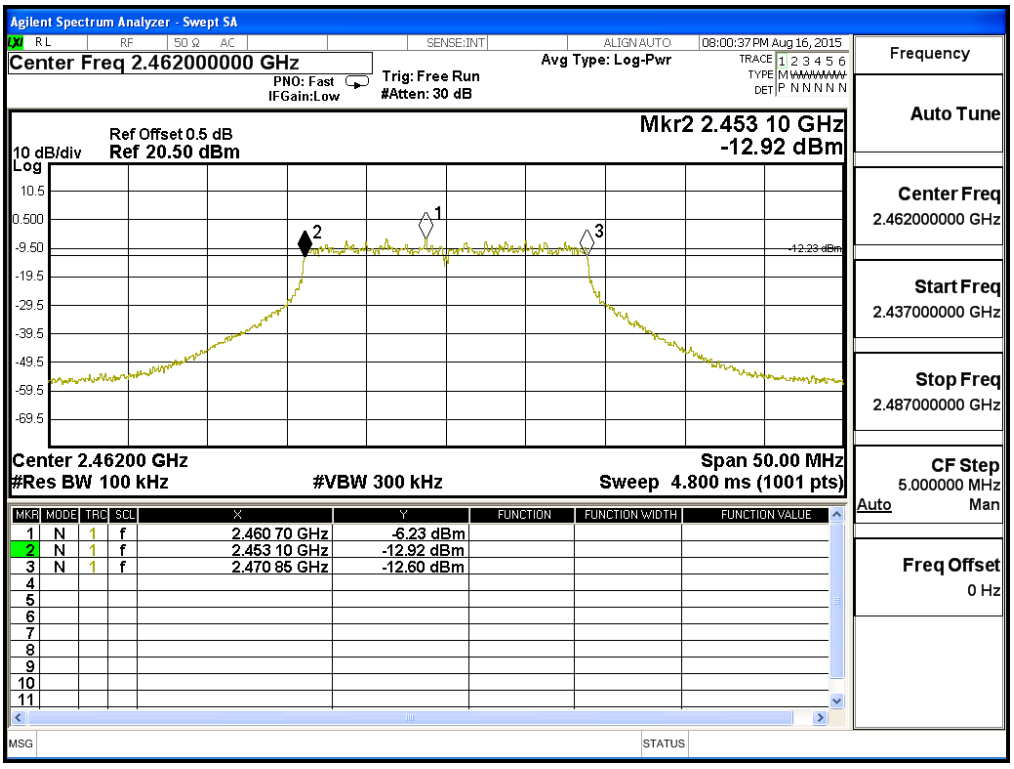


Figure Channel 01: (Chain B)

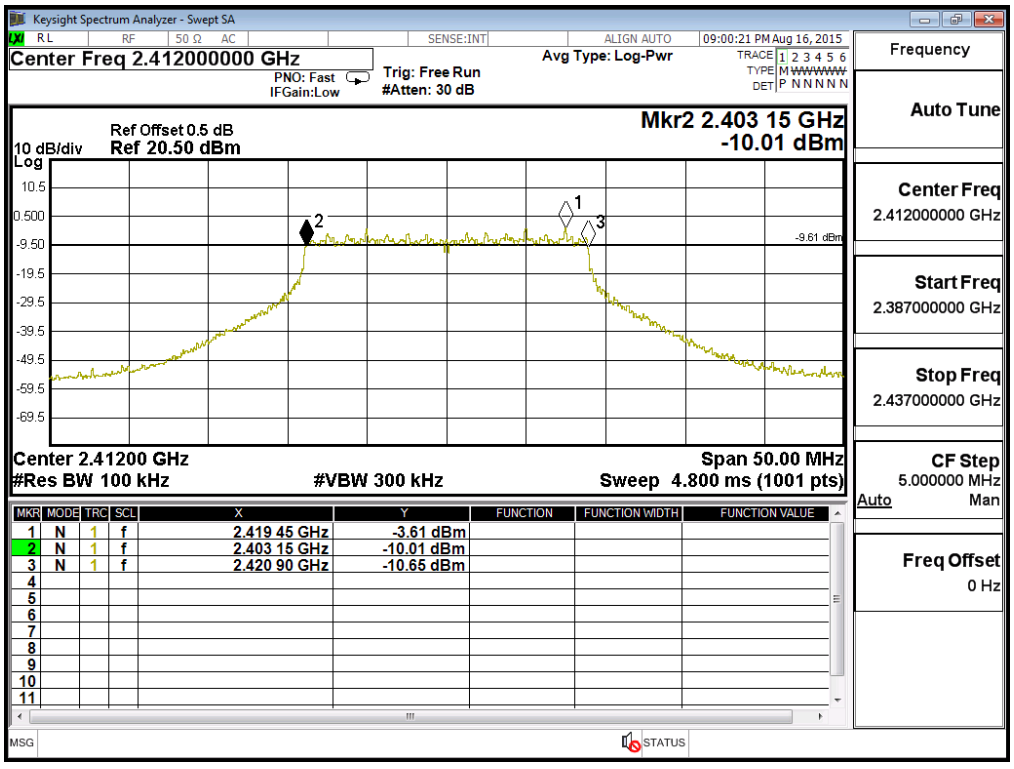


Figure Channel 06: (Chain B)

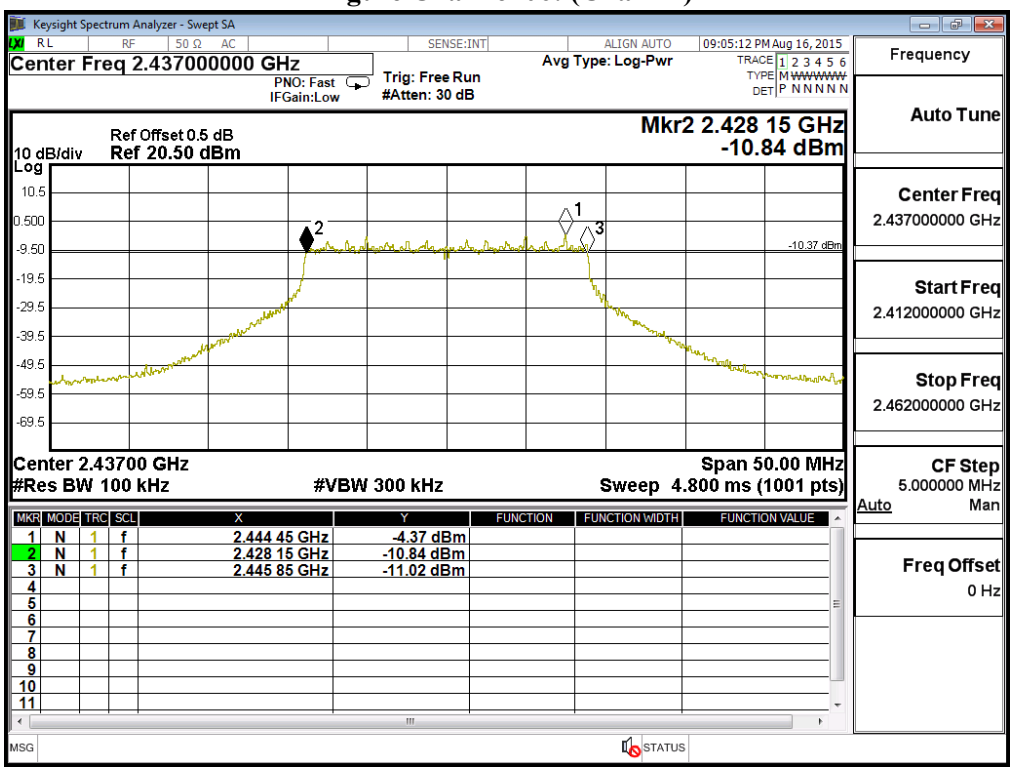
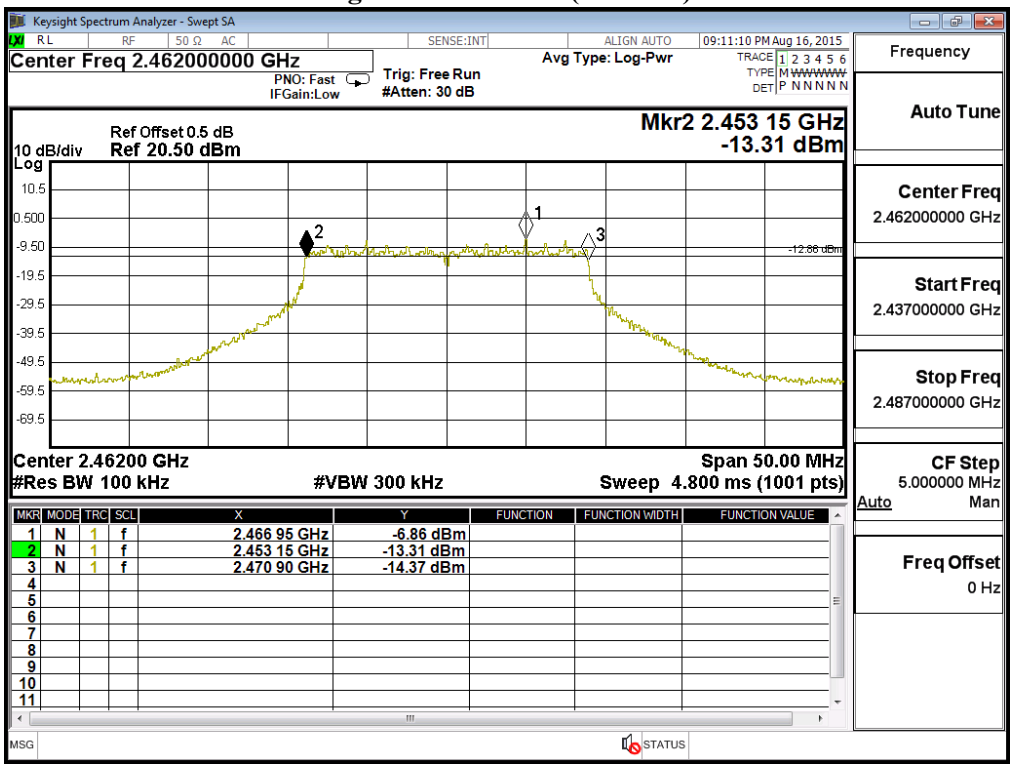


Figure Channel 11: (Chain B)



Product : 802.11 b/g/n PCIe Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna

Channel No.	Chain	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
3	A	2422.00	36500	>500	Pass
6	A	2437.00	36600	>500	Pass
9	A	2452.00	36200	>500	Pass
3	B	2422.00	36000	>500	Pass
6	B	2437.00	36000	>500	Pass
9	B	2452.00	36000	>500	Pass

Figure Channel 3: (Chain A)

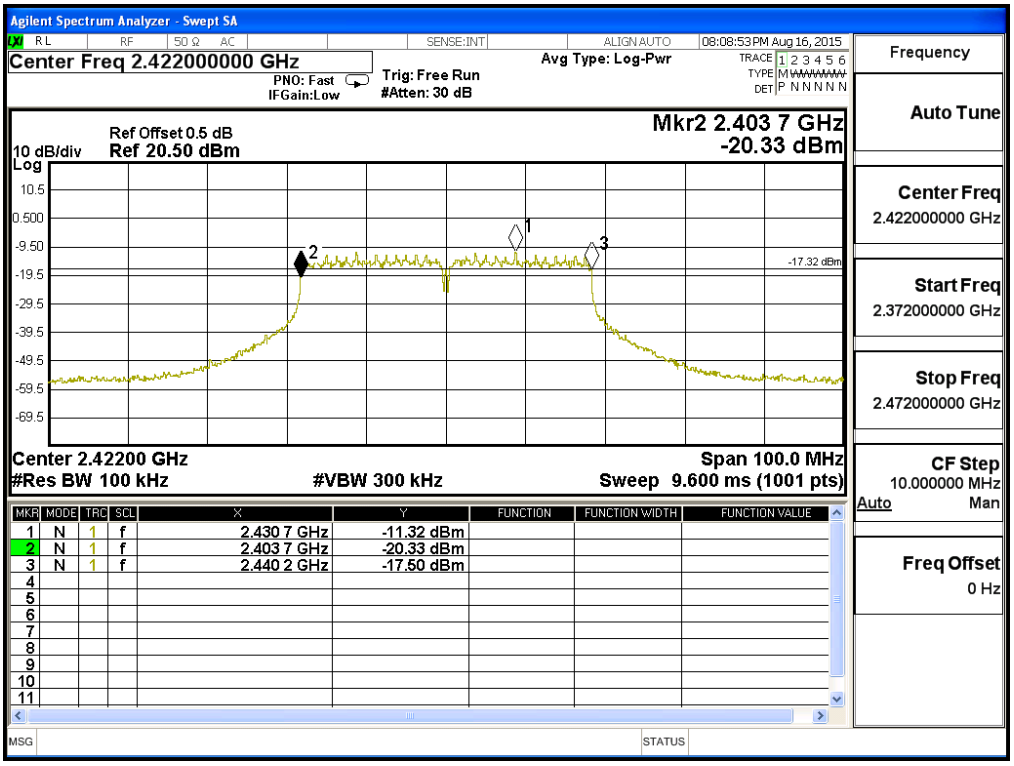


Figure Channel 6: (Chain A)

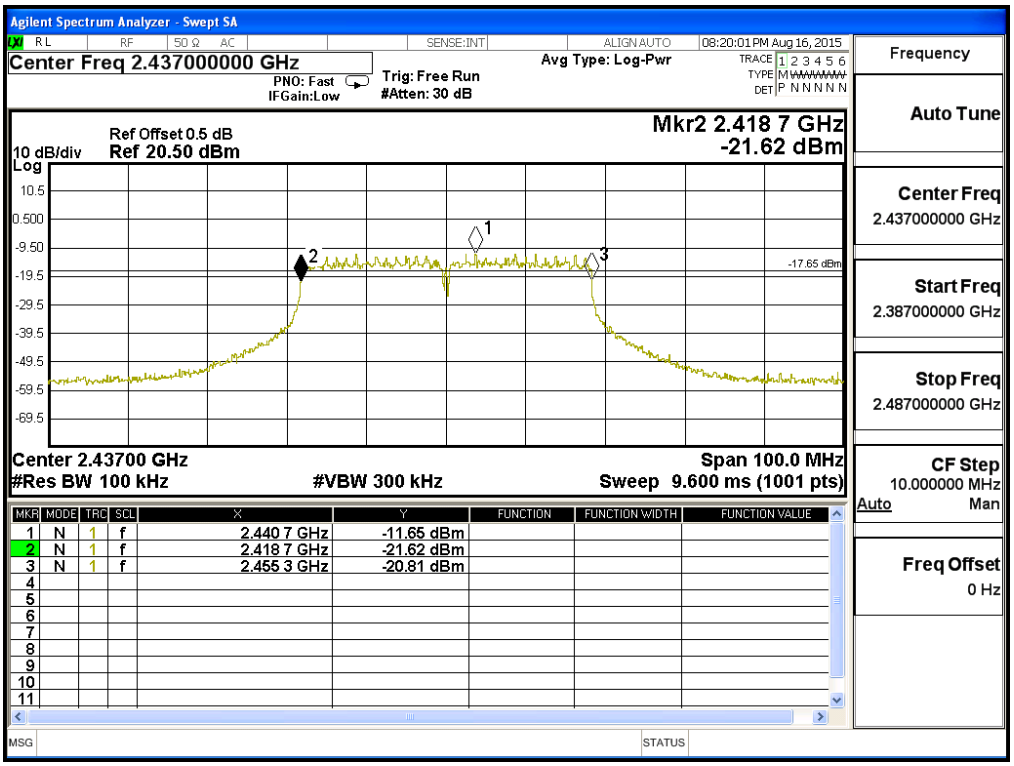


Figure Channel 9: (Chain A)

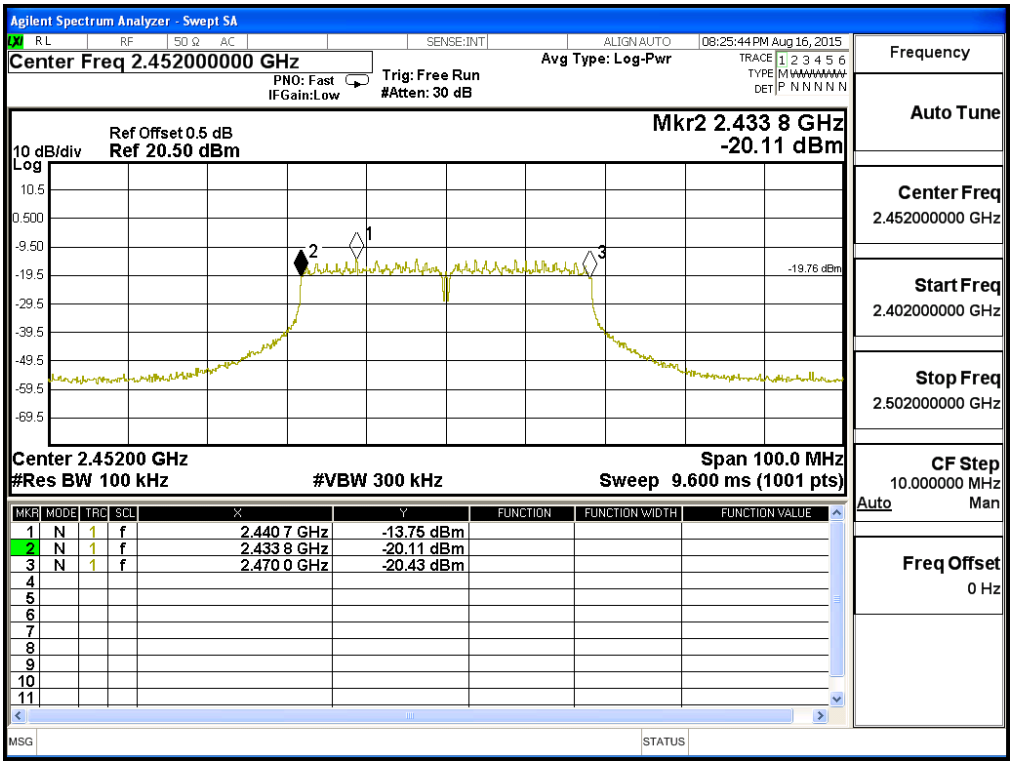


Figure Channel 3: (Chain B)

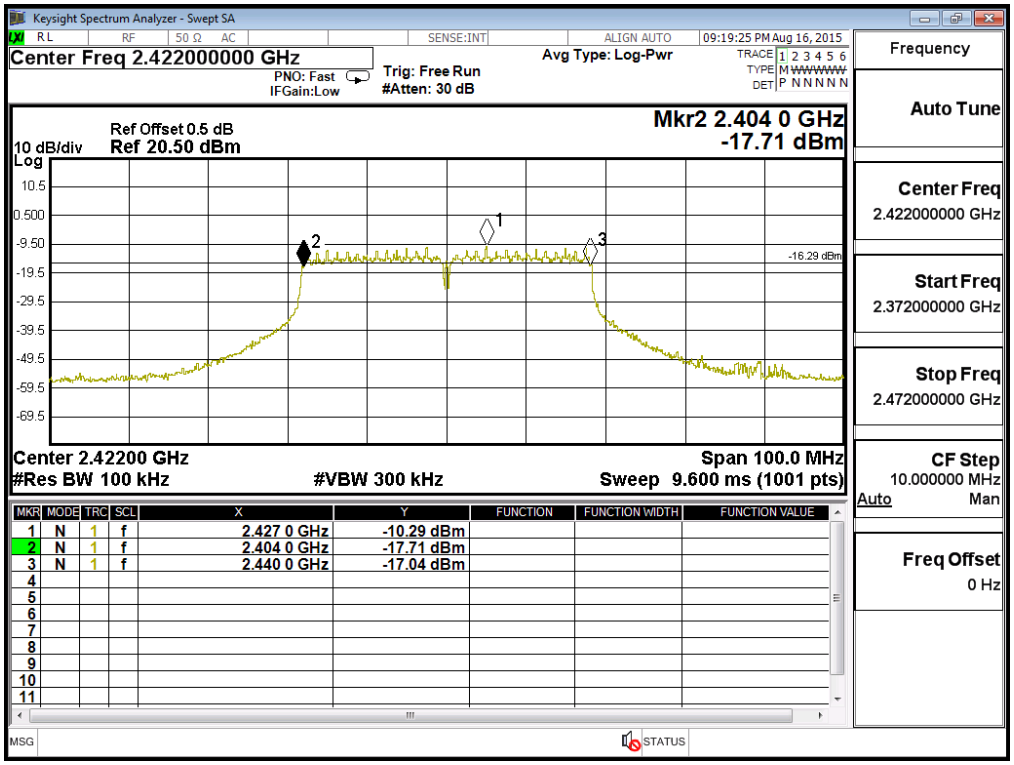


Figure Channel 6: (Chain B)

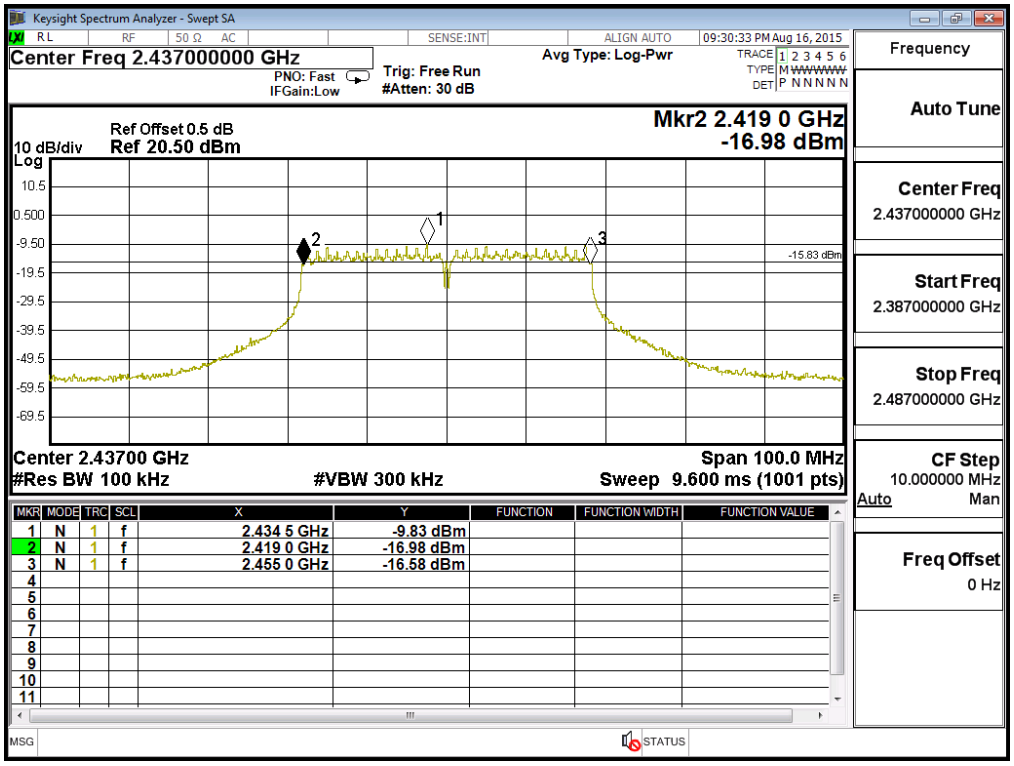
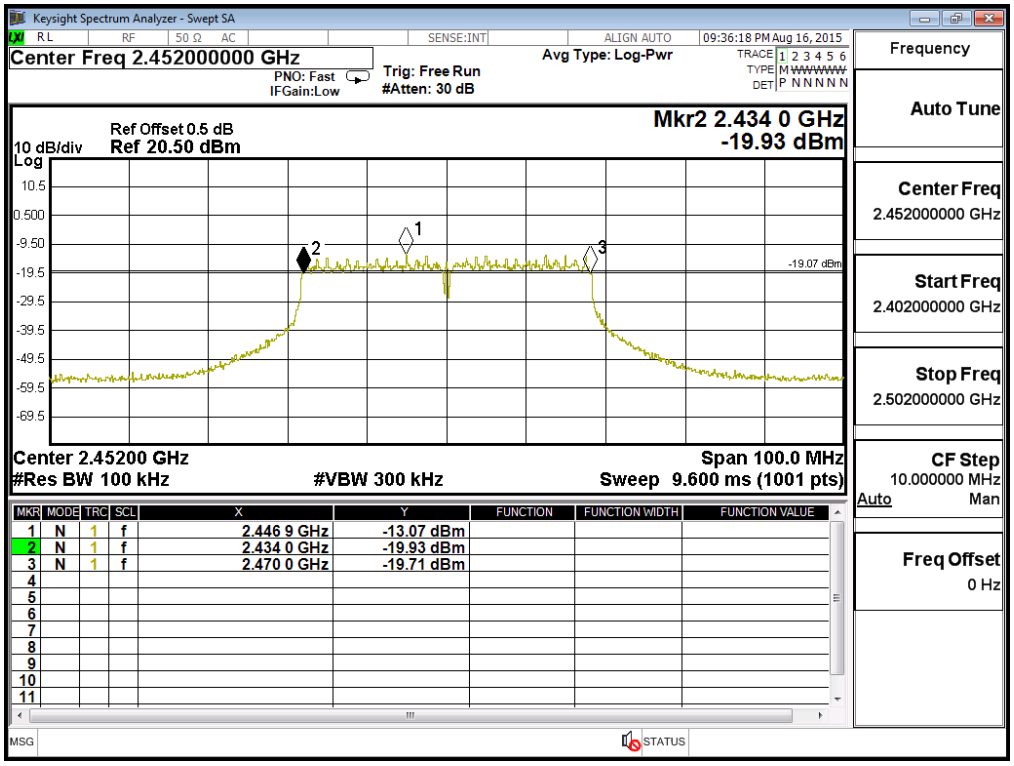


Figure Channel 9: (Chain B)



8. Power Density

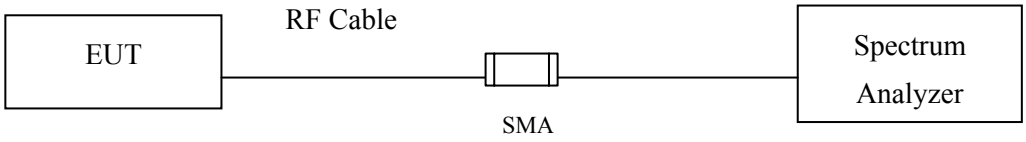
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

± 1.27 dB

8.6. Test Result of Power Density

Product : 802.11 b/g/n PCIe Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	3.400	< 4dBm	Pass
06	2437	3.420	< 4dBm	Pass
11	2462	3.500	< 4dBm	Pass

Note:

1. Required Limit= 8dBm-[10dBi- 6dBi] =4 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Figure Channel 01:

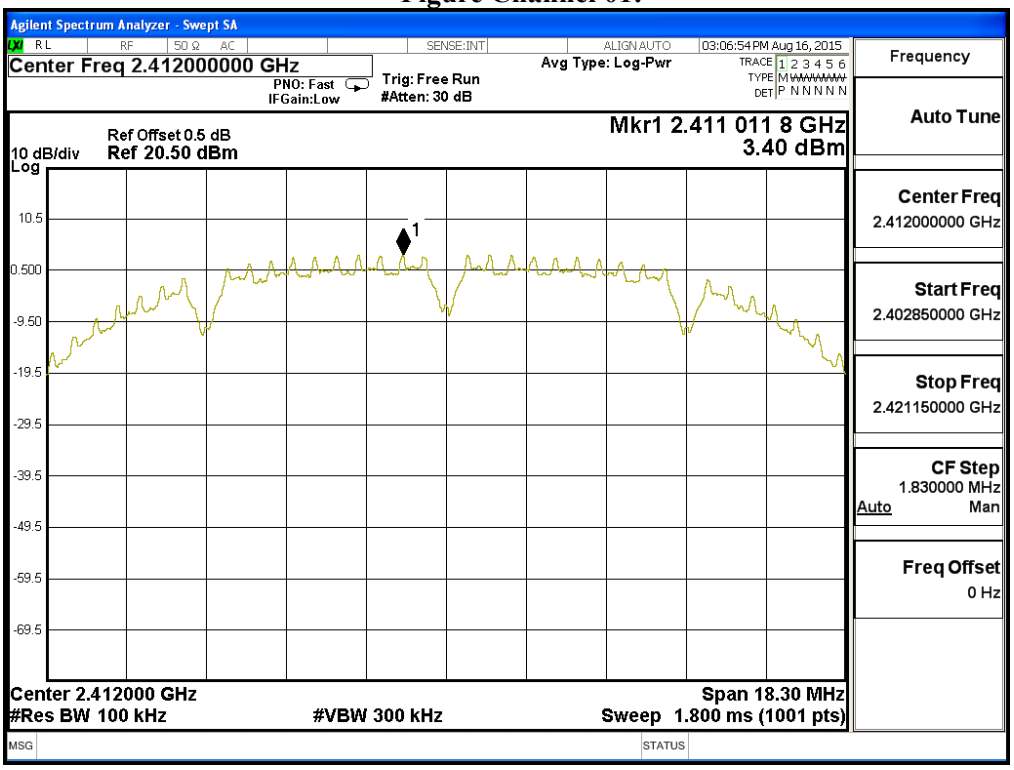


Figure Channel 06:

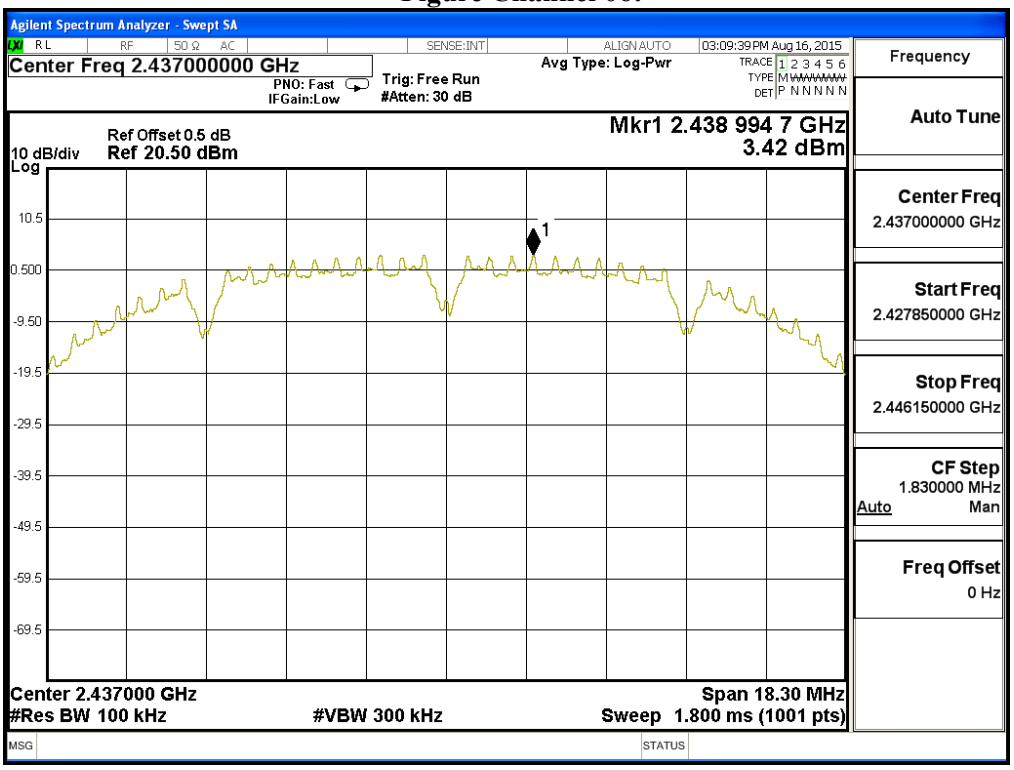
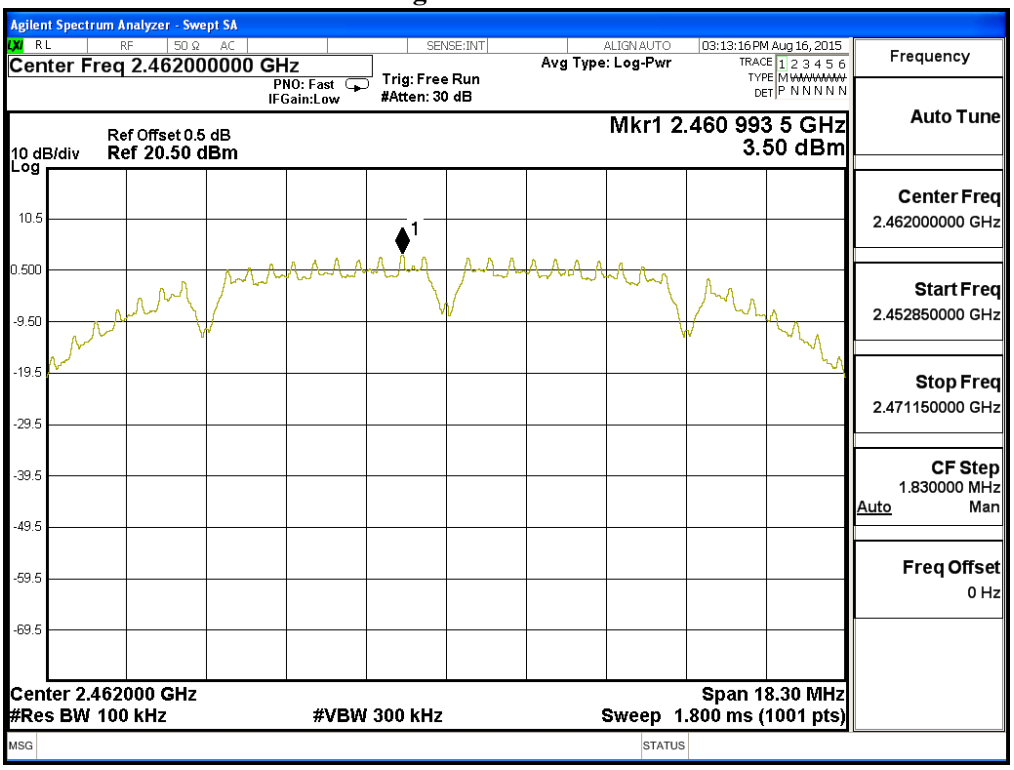


Figure Channel 11:



Product : 802.11 b/g/n PCIe Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	3.010	< 4dBm	Pass
06	2437	3.470	< 4dBm	Pass
11	2462	2.960	< 4dBm	Pass

Note:

1. Required Limit= 8dBm-[10dBi- 6dBi] =4 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Figure Channel 01:

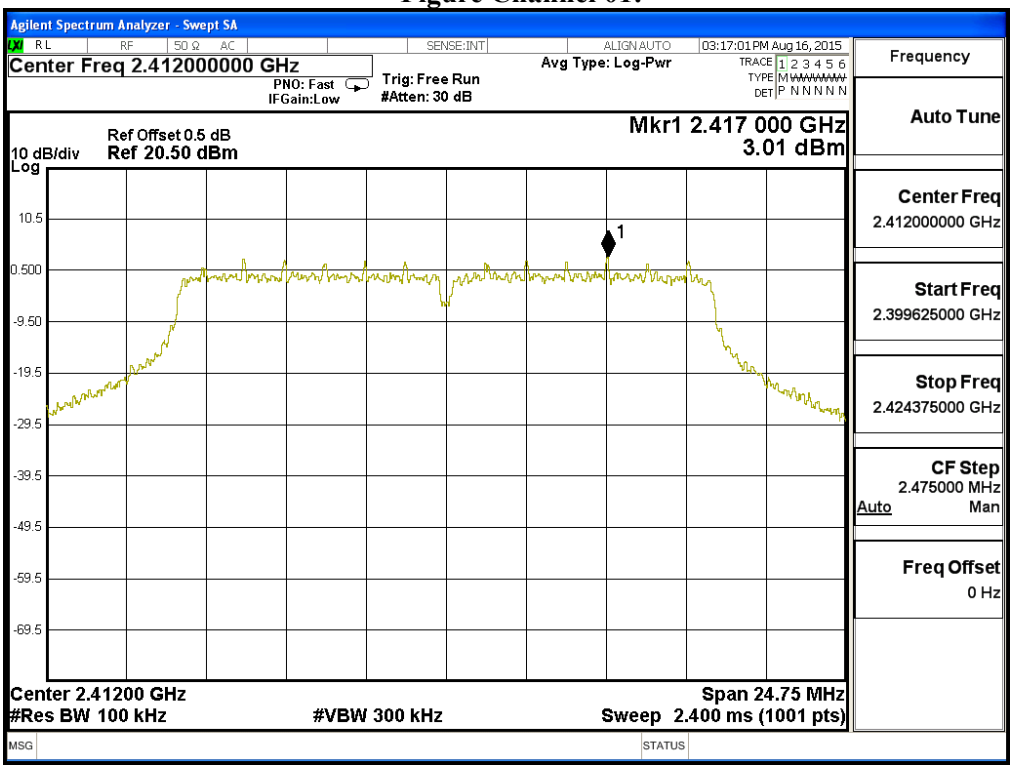


Figure Channel 06:

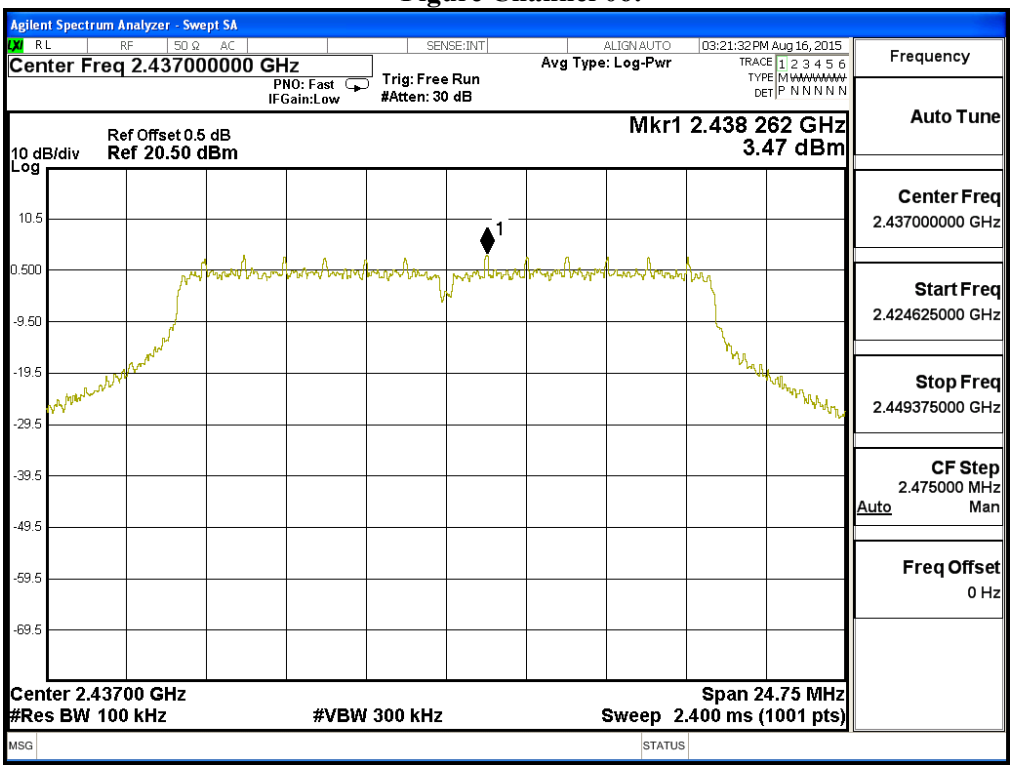
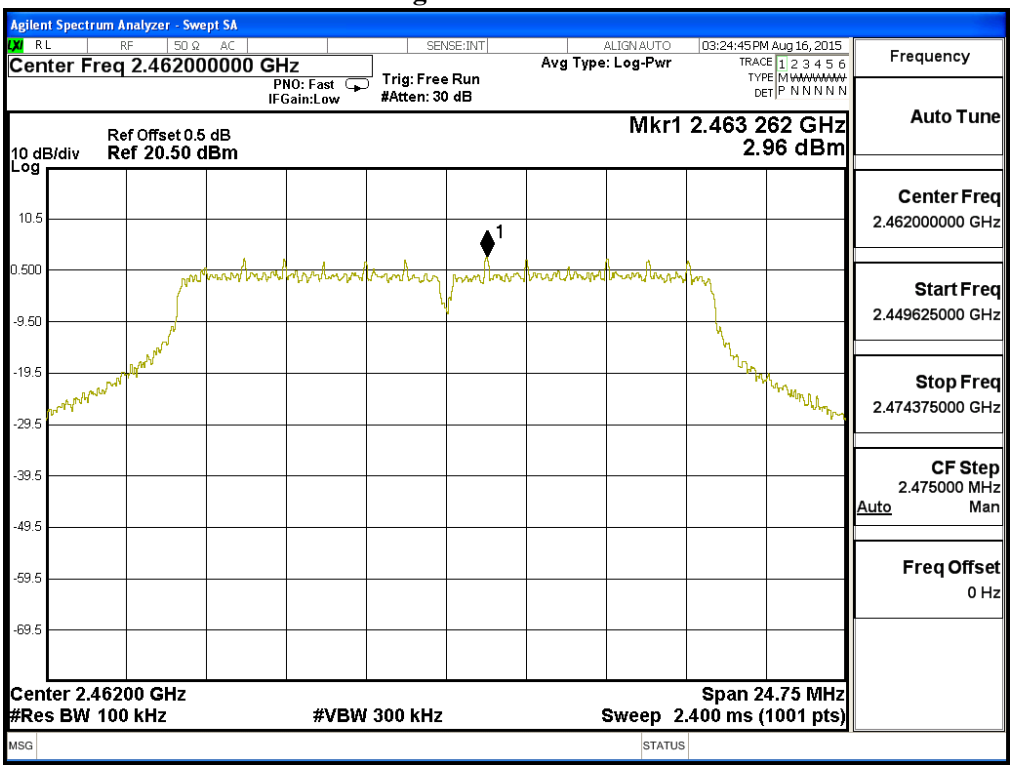


Figure Channel 11:



Product : 802.11 b/g/n PCIe Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Omni Antenna

Channel No.	Chain	Frequency (MHz)	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit (dBm)	Result
01	A	2412	-1.650	1.360	< 4dBm	Pass
	B		0.760	3.770	< 4dBm	Pass
06	A	2437	-1.190	1.820	< 4dBm	Pass
	B		-0.760	2.250	< 4dBm	Pass
11	A	2462	-0.430	2.580	< 4dBm	Pass
	B		0.080	3.090	< 4dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

2. Required Limit= 8dBm-[10dBi- 6dBi] =4 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Figure Channel 01: (Chain A)

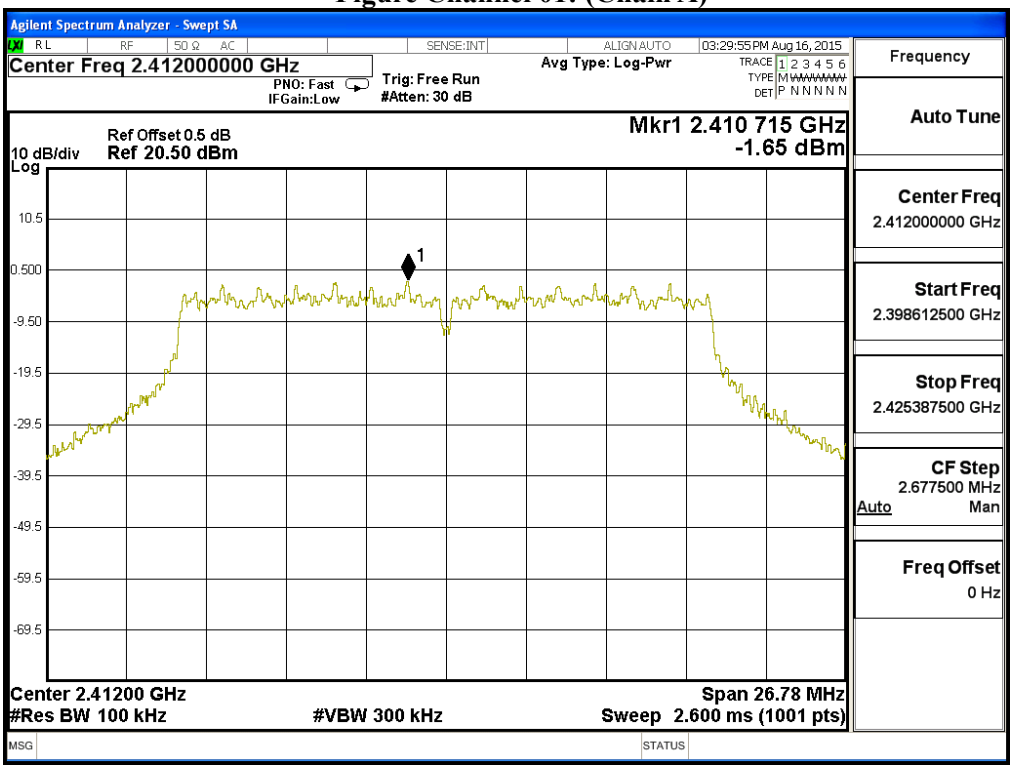


Figure Channel 06: (Chain A)

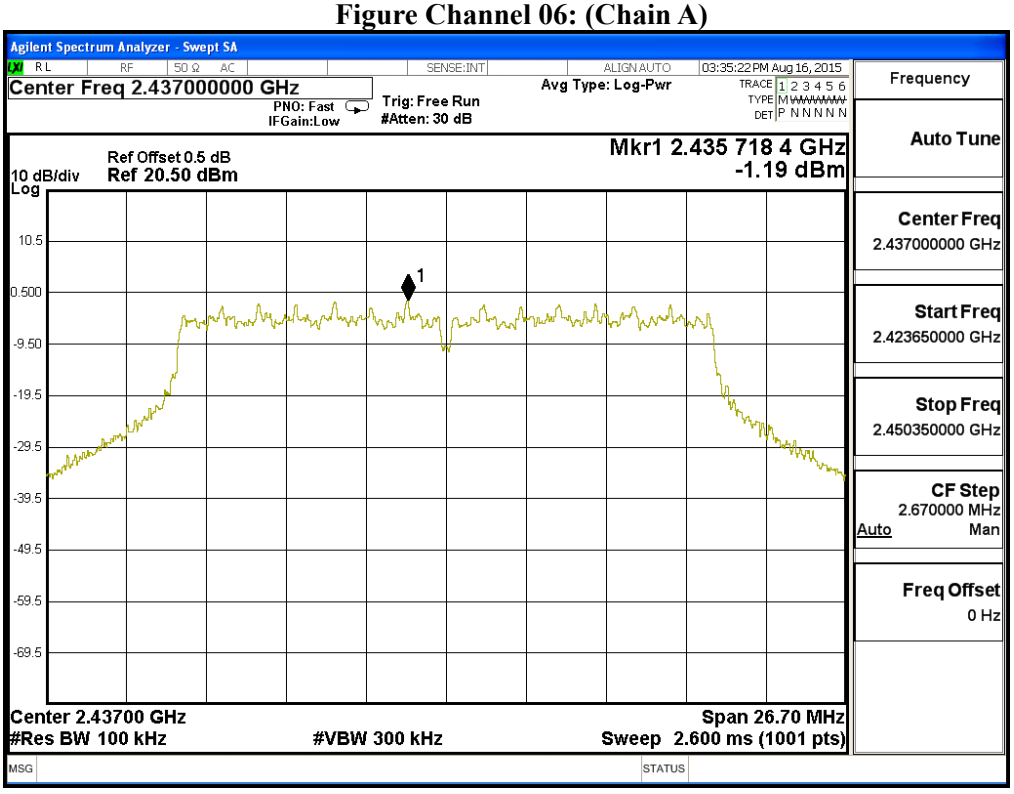


Figure Channel 11: (Chain A)

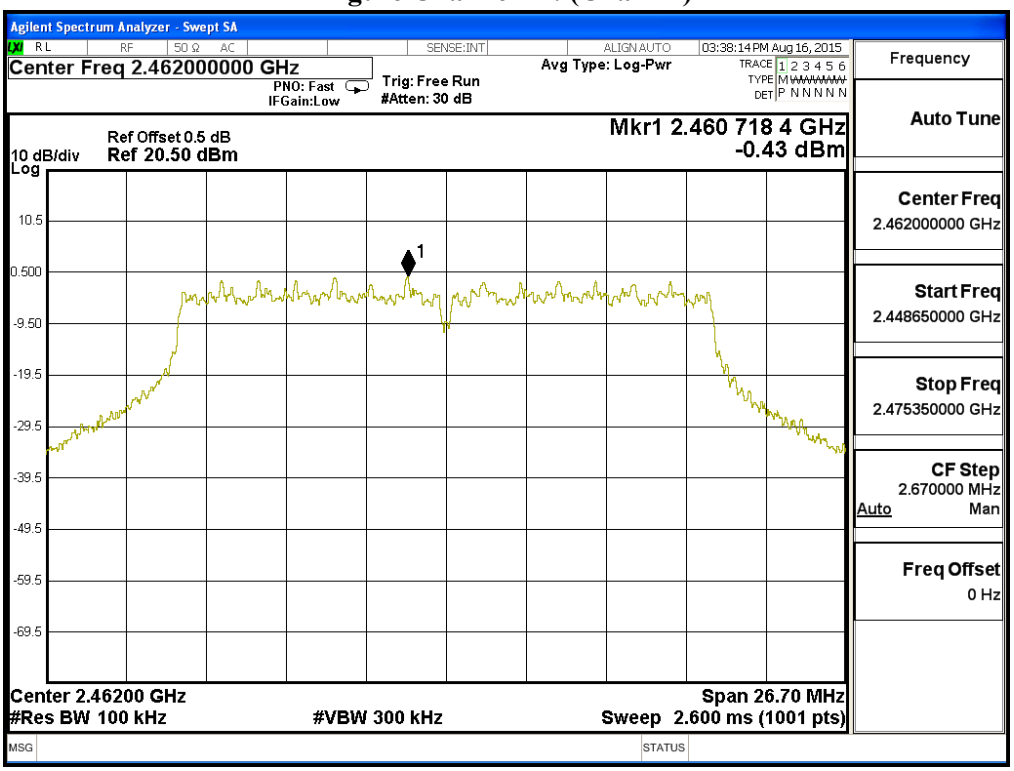


Figure Channel 01: (Chain B)

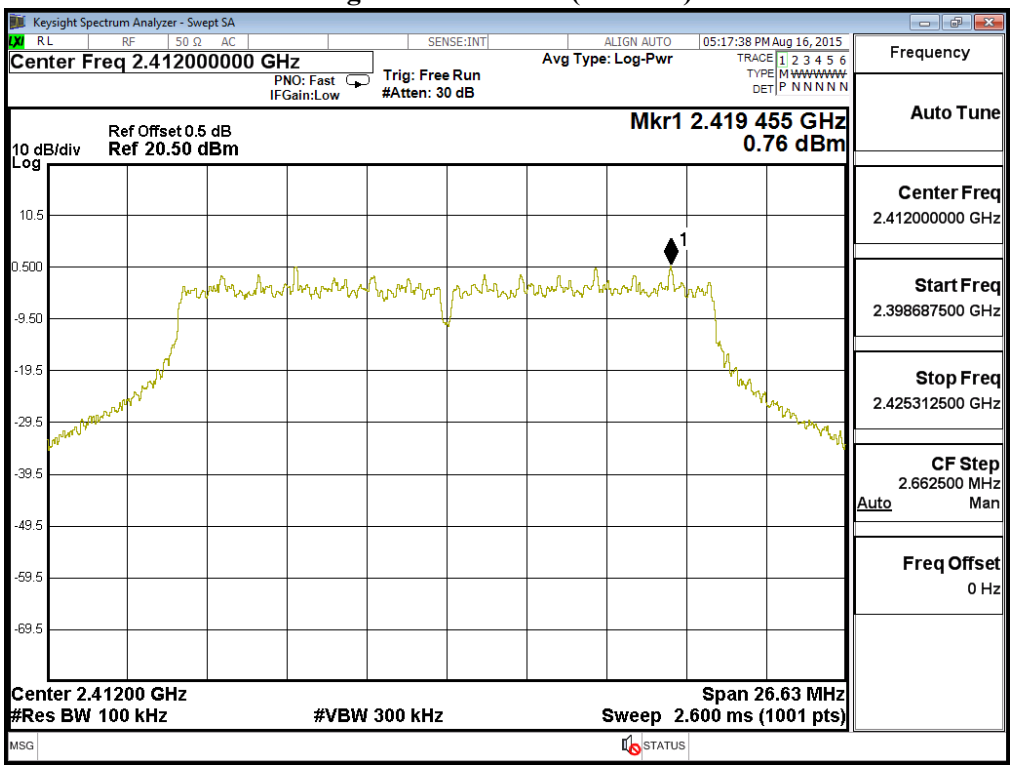


Figure Channel 06: (Chain B)

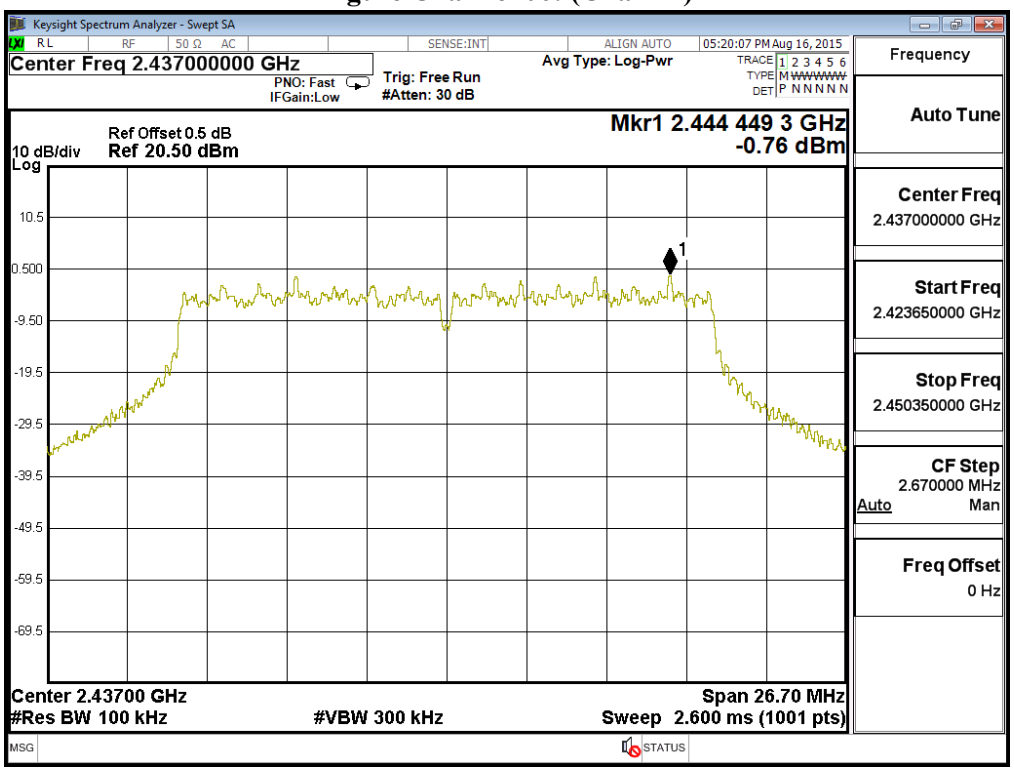
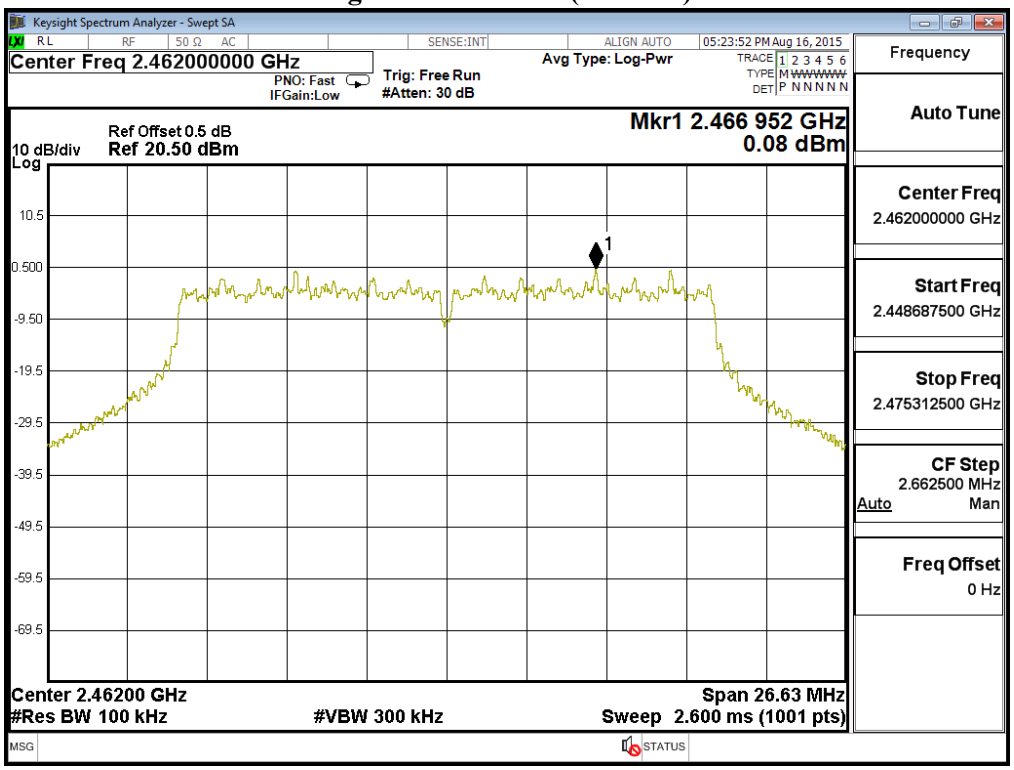


Figure Channel 11: (Chain B)



Product : 802.11 b/g/n PCIe Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna

Channel No.	Chain	Frequency (MHz)	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit (dBm)	Result
03	A	2422	-5.200	-2.190	< 4dBm	Pass
	B		-4.020	-1.010	< 4dBm	Pass
06	A	2437	-4.620	-1.610	< 4dBm	Pass
	B		-4.390	-1.380	< 4dBm	Pass
09	A	2452	-5.650	-2.640	< 4dBm	Pass
	B		-5.070	-2.060	< 4dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

2. Required Limit= 8dBm-[10dBi- 6dBi] =4 dBm for compliance to FCC 47CFR 15.247(b) (4) requirements.

Figure Channel 03: (Chain A)

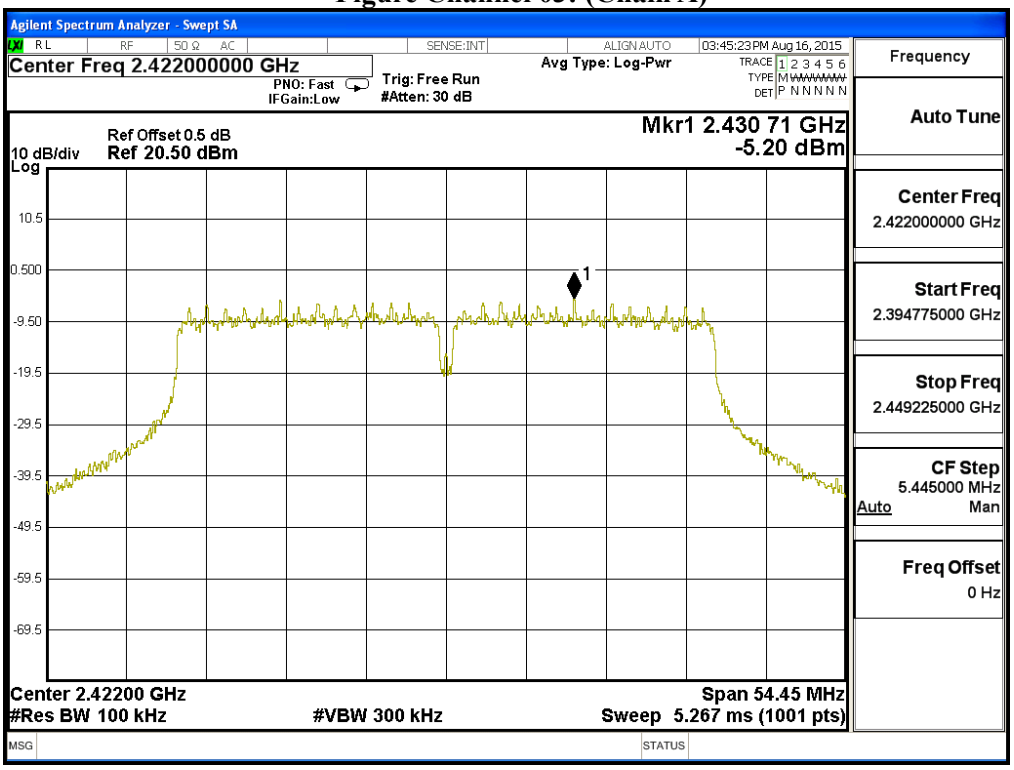


Figure Channel 06: (Chain A)

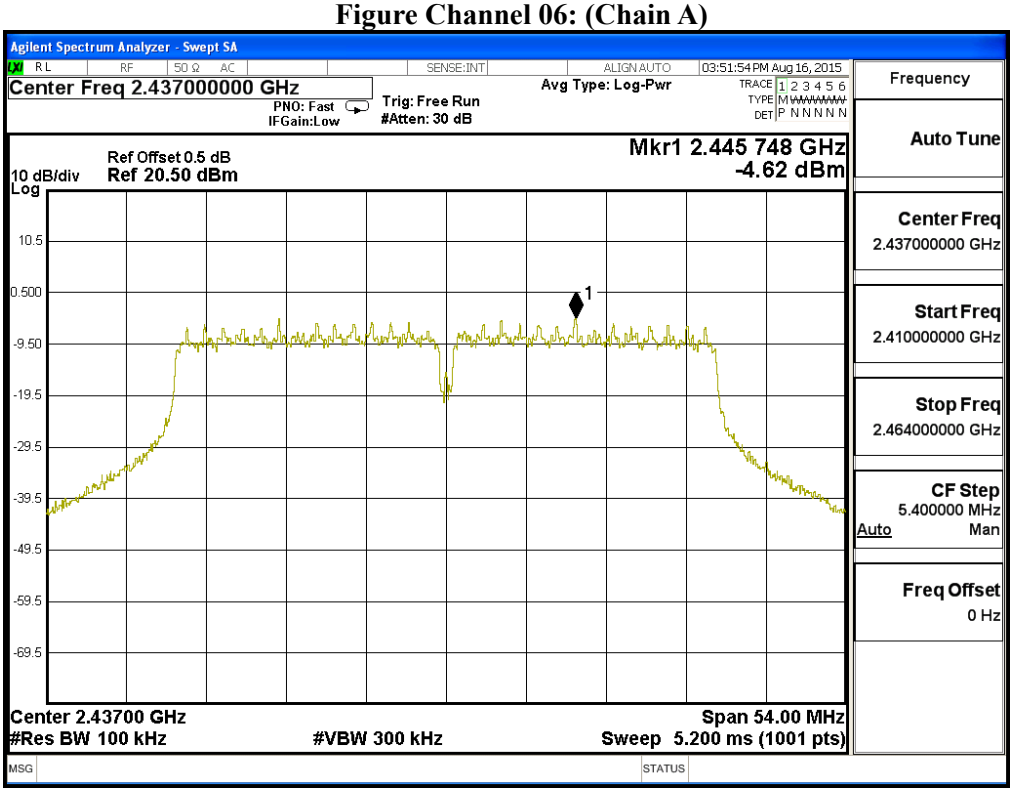


Figure Channel 09: (Chain A)

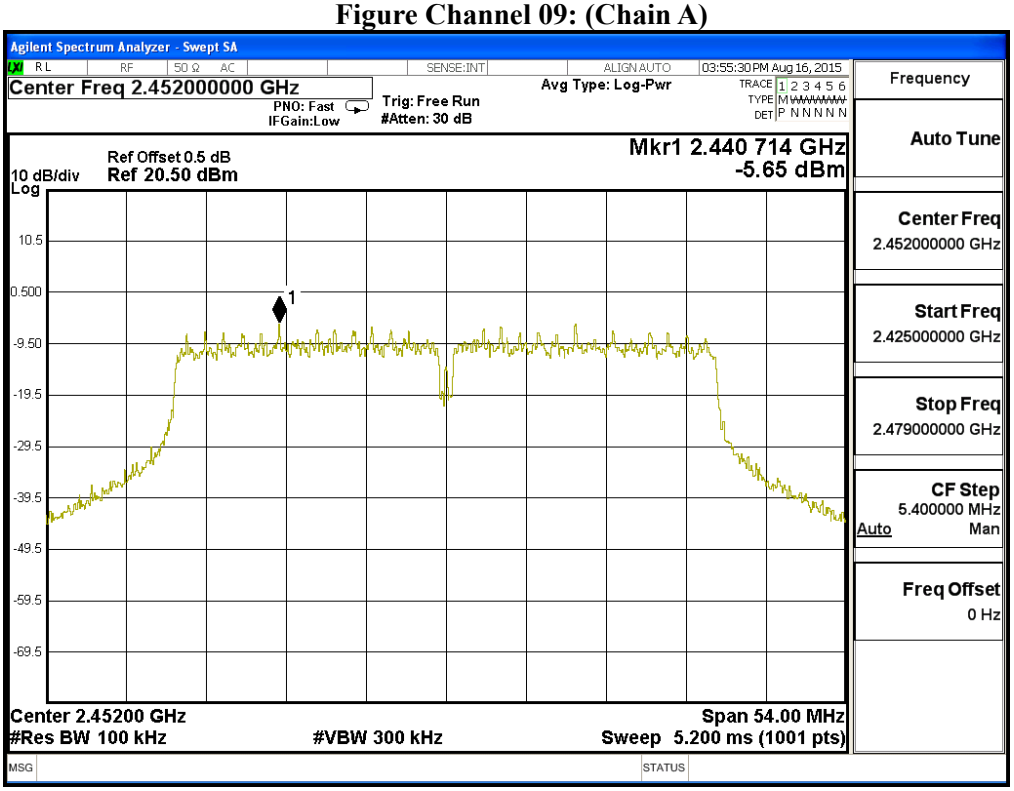


Figure Channel 03: (Chain B)

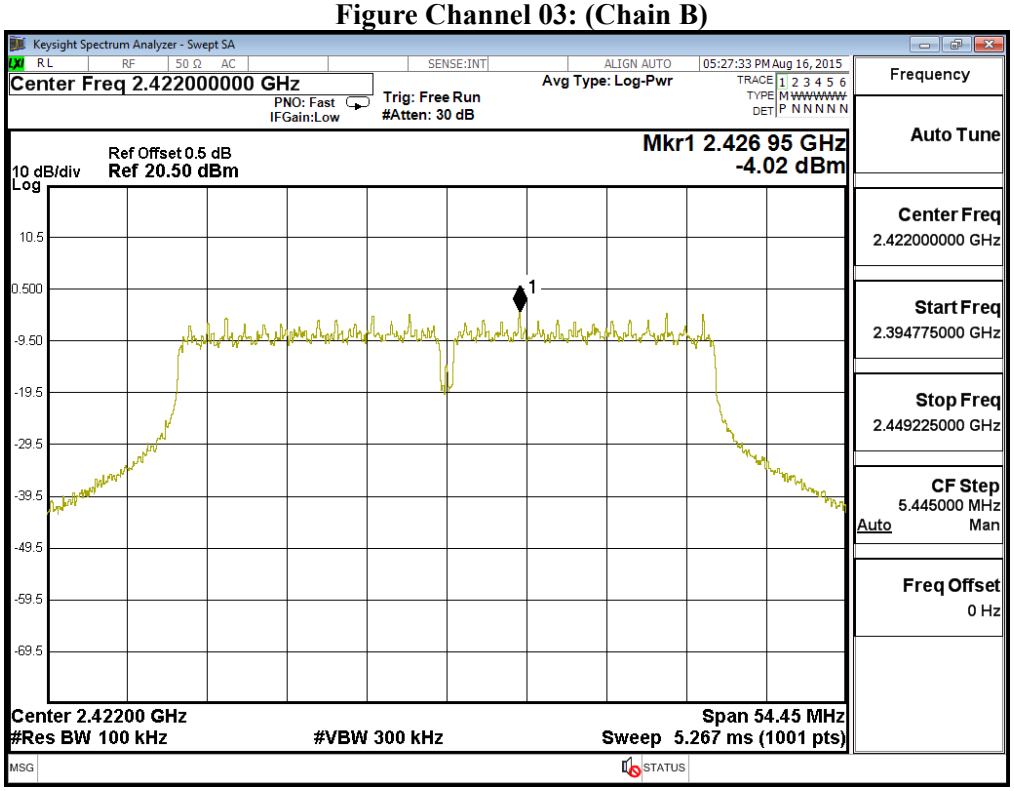


Figure Channel 06: (Chain B)

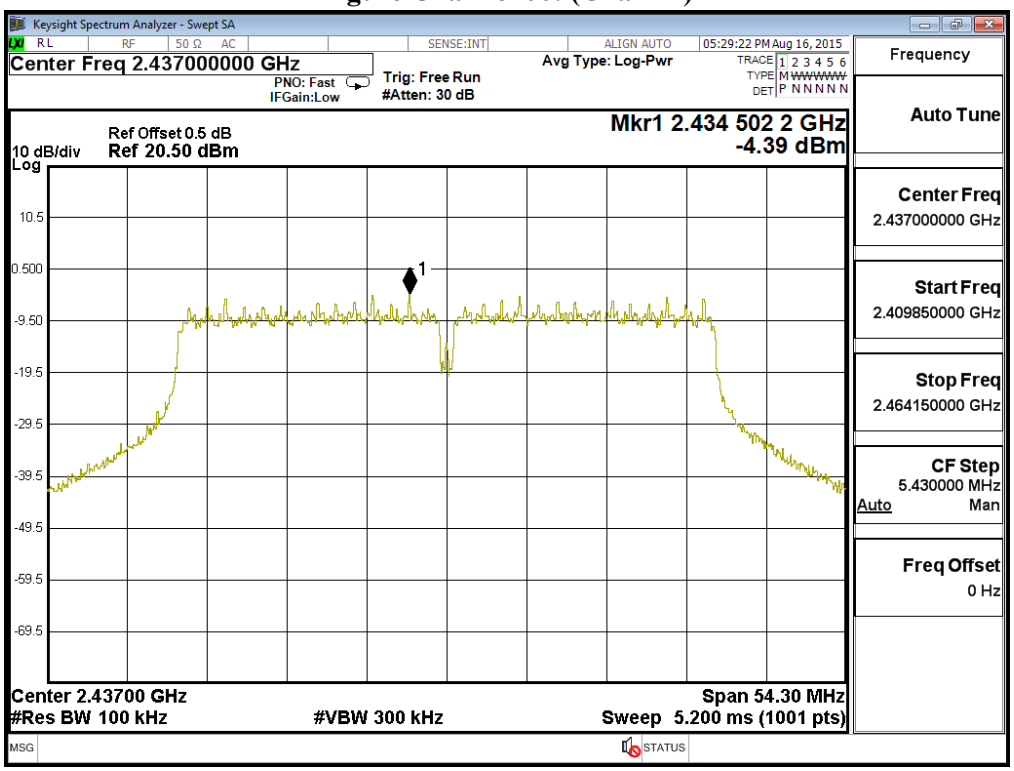
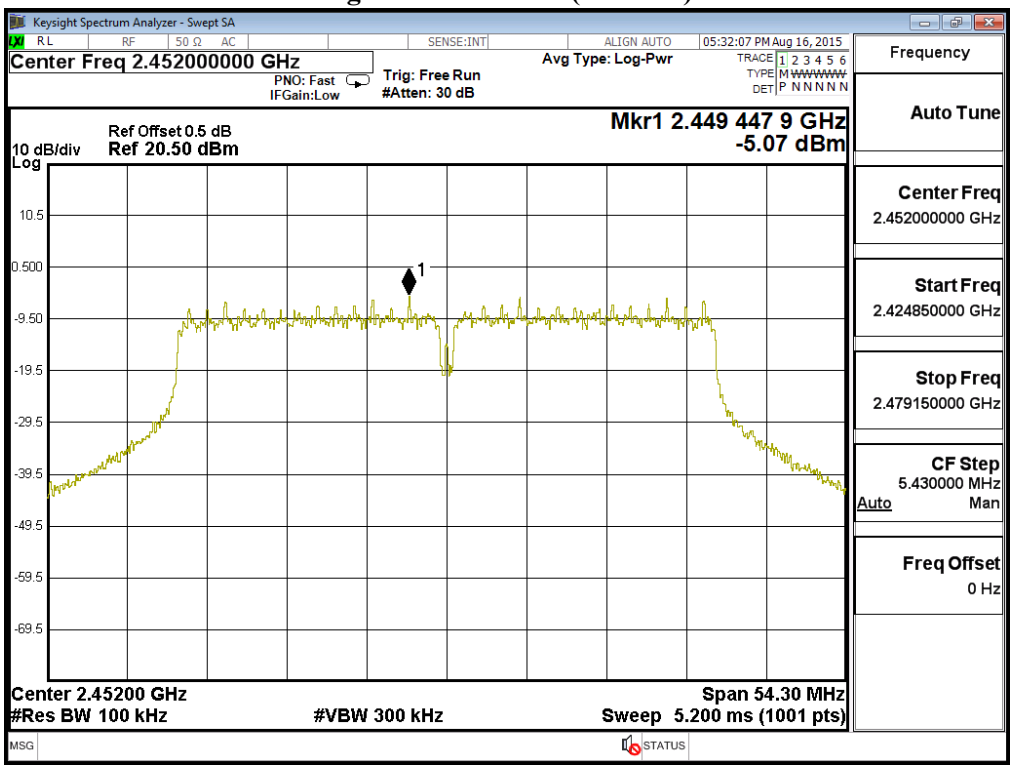


Figure Channel 09: (Chain B)



Product : 802.11 b/g/n PCIe Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)_Panel Antenna

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	2.930	< 4dBm	Pass
06	2437	3.410	< 4dBm	Pass
11	2462	2.490	< 4dBm	Pass

Note:

1. Required Limit= 8dBm-[(20dBi -6dBi) /3] =4 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

Figure Channel 01:

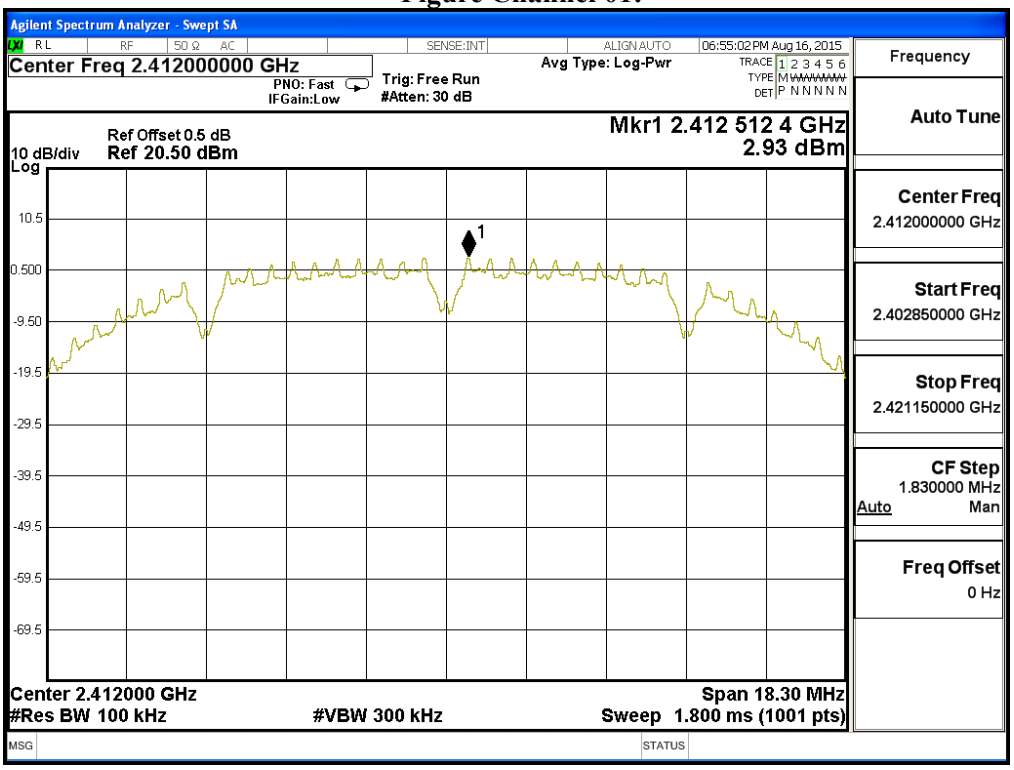


Figure Channel 06:

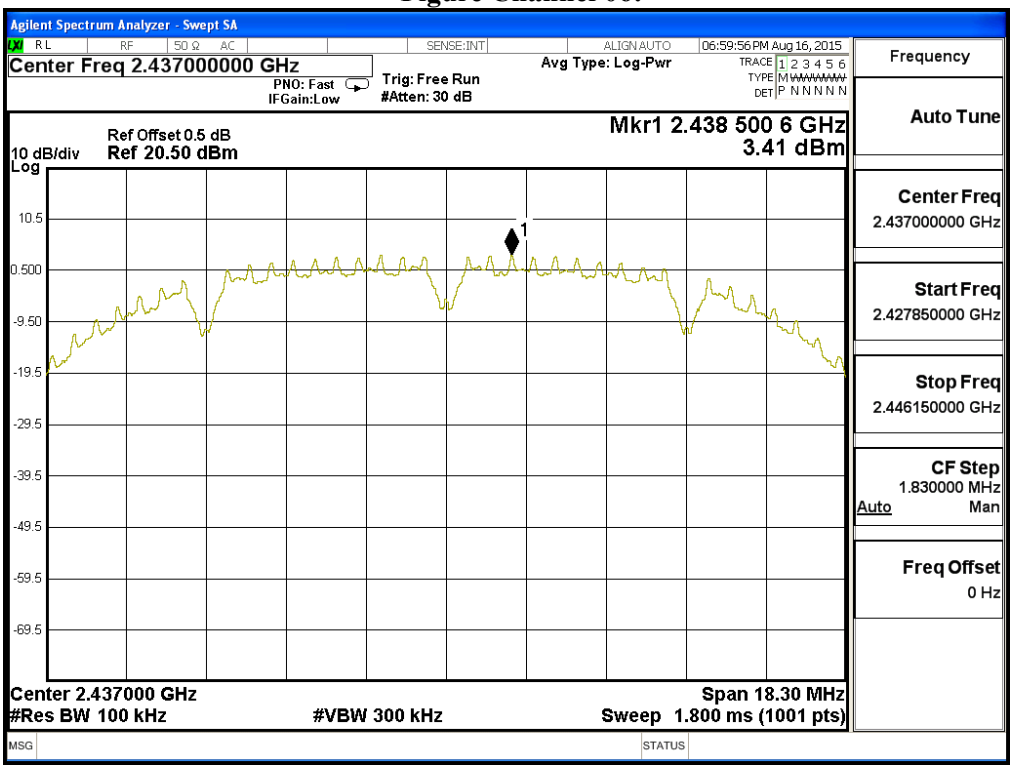
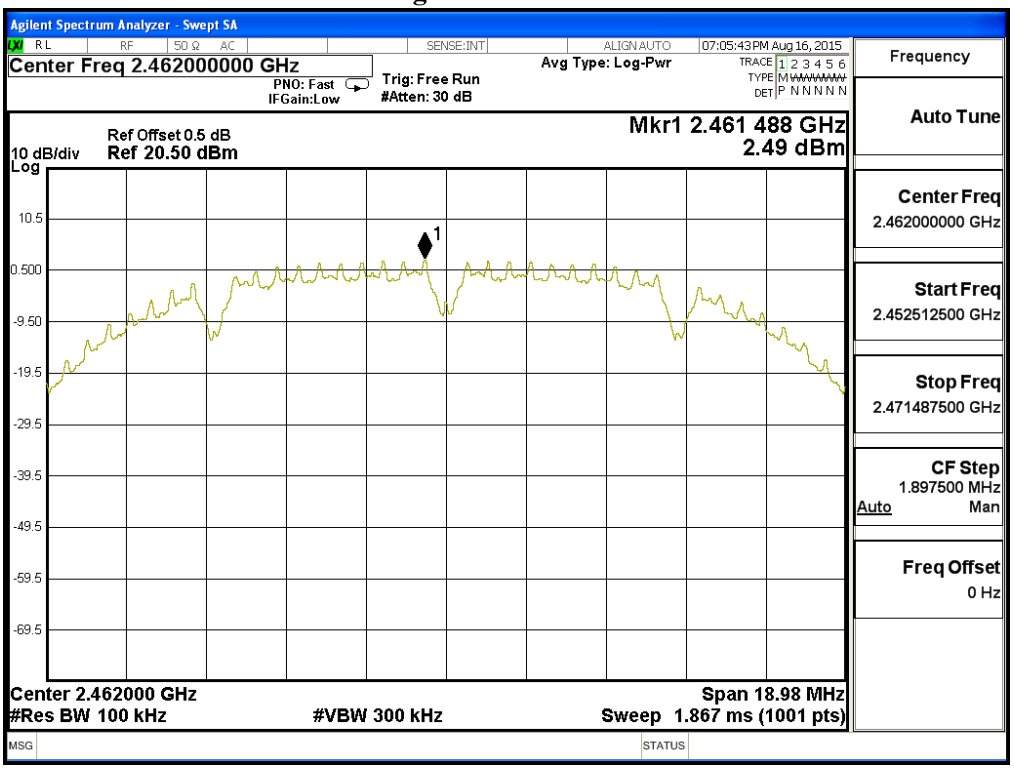


Figure Channel 11:



Product : 802.11 b/g/n PCIe Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)_Panel Antenna

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	-5.820	< 4dBm	Pass
06	2437	-5.890	< 4dBm	Pass
11	2462	-5.880	< 4dBm	Pass

Note:

1. Required Limit= 8dBm-[(20dBi -6dBi) /3] =4 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

Figure Channel 01:

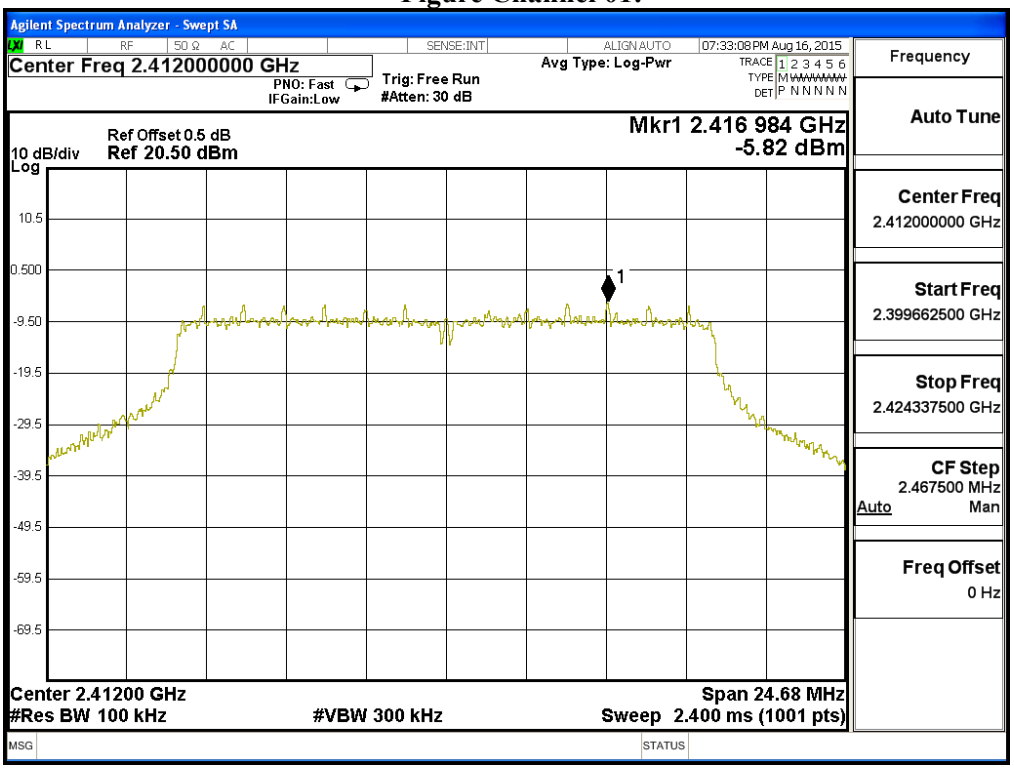


Figure Channel 06:

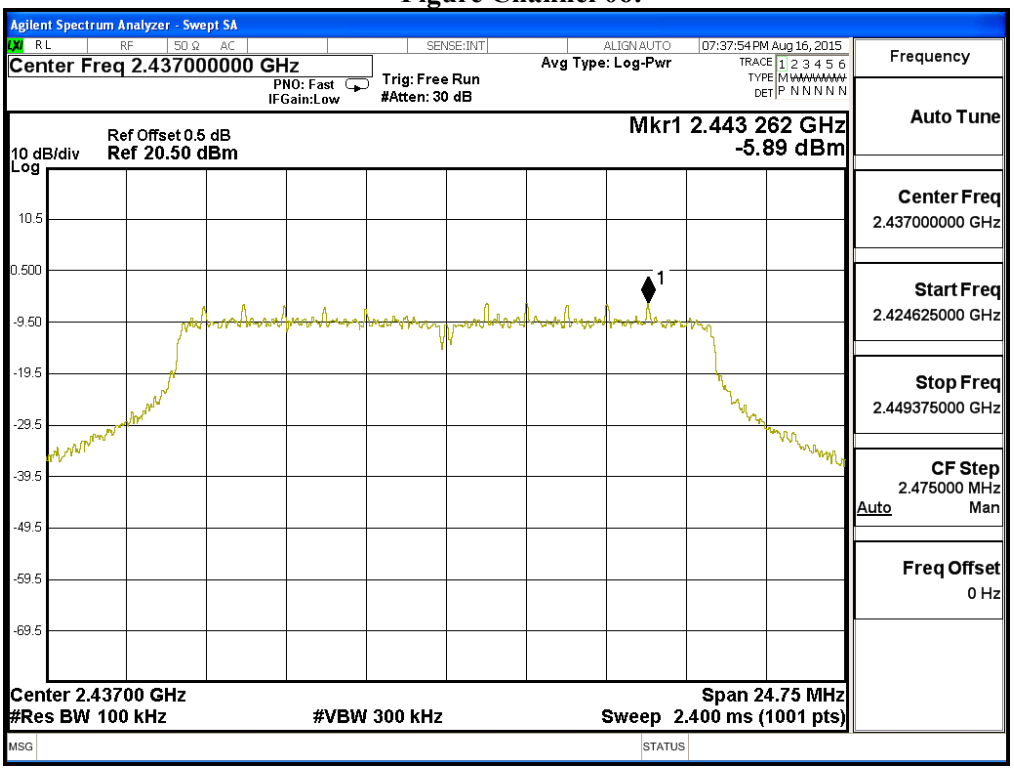
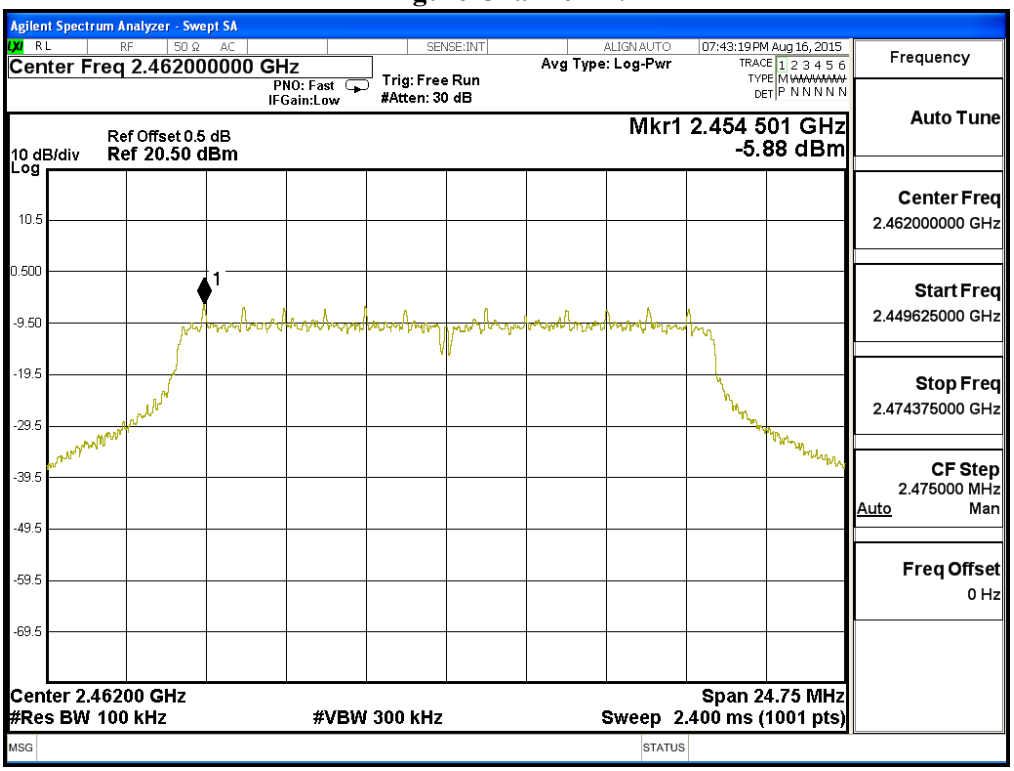


Figure Channel 11:



Product : 802.11 b/g/n PCIe Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)_Panel Antenna

Channel No.	Chain	Frequency (MHz)	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit (dBm)	Result
01	A	2412	-5.810	-2.800	< 4dBm	Pass
	B		-3.650	-0.640	< 4dBm	Pass
06	A	2437	-6.000	-2.990	< 4dBm	Pass
	B		-4.660	-1.650	< 4dBm	Pass
11	A	2462	-6.240	-3.230	< 4dBm	Pass
	B		-7.180	-4.170	< 4dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

2. Required Limit= 8dBm-[(20dBi -6dBi) /3] =4 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

Figure Channel 01: (Chain A)

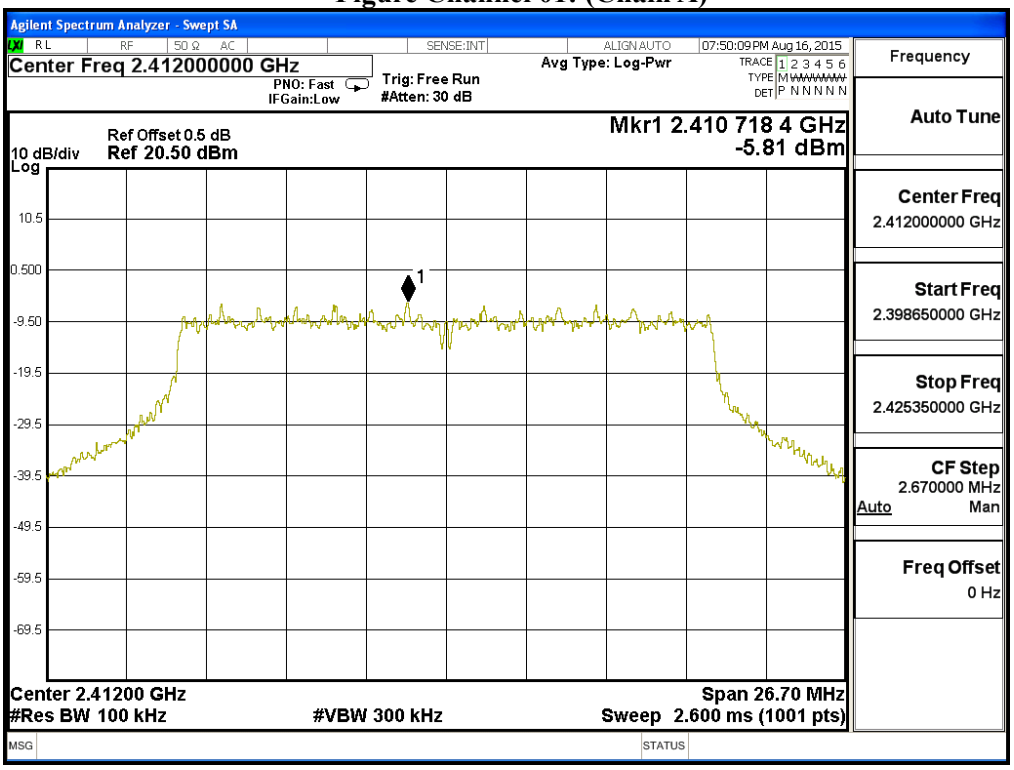


Figure Channel 06: (Chain A)

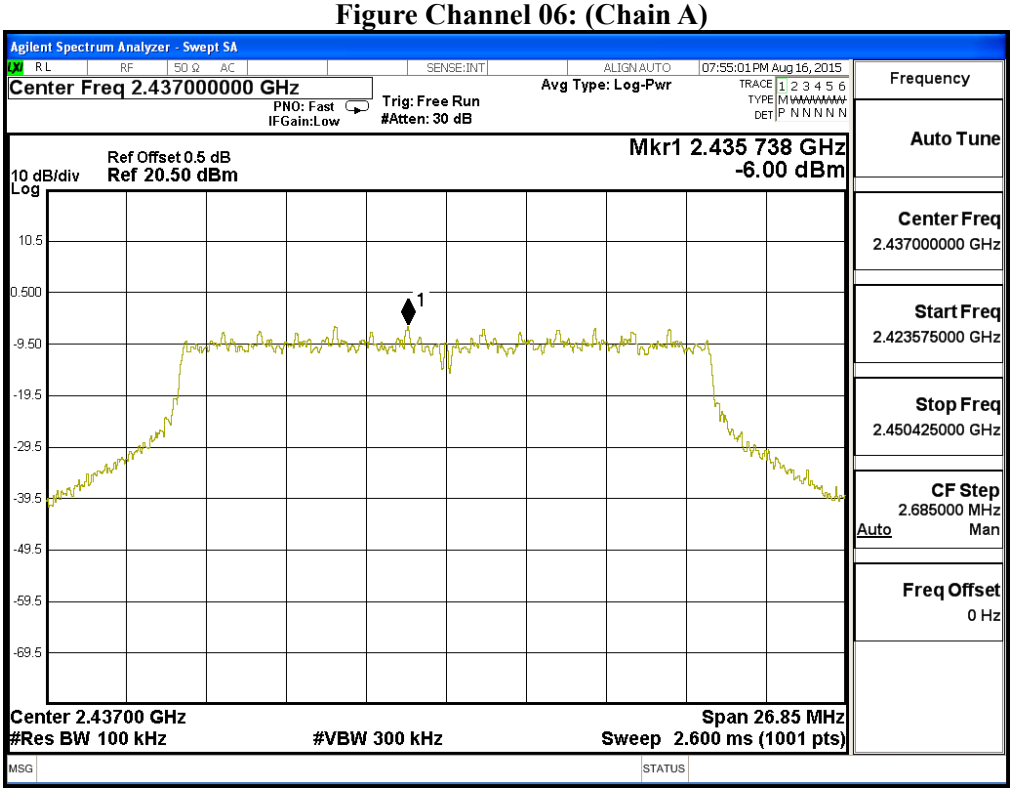


Figure Channel 11: (Chain A)

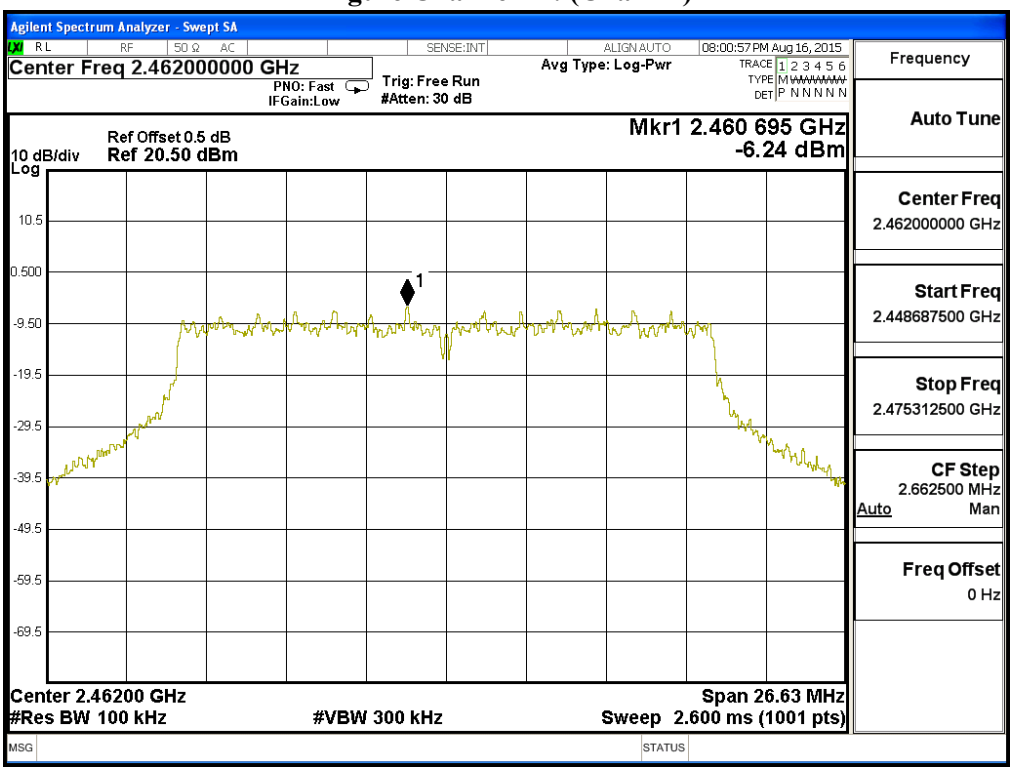


Figure Channel 01: (Chain B)

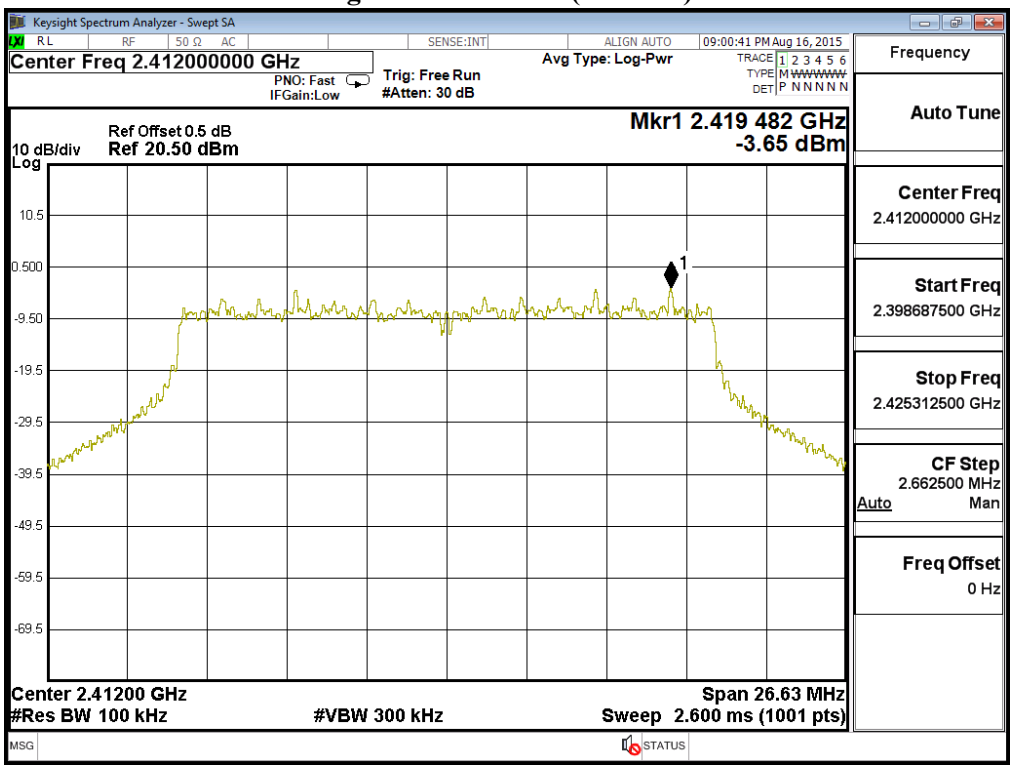


Figure Channel 06: (Chain B)

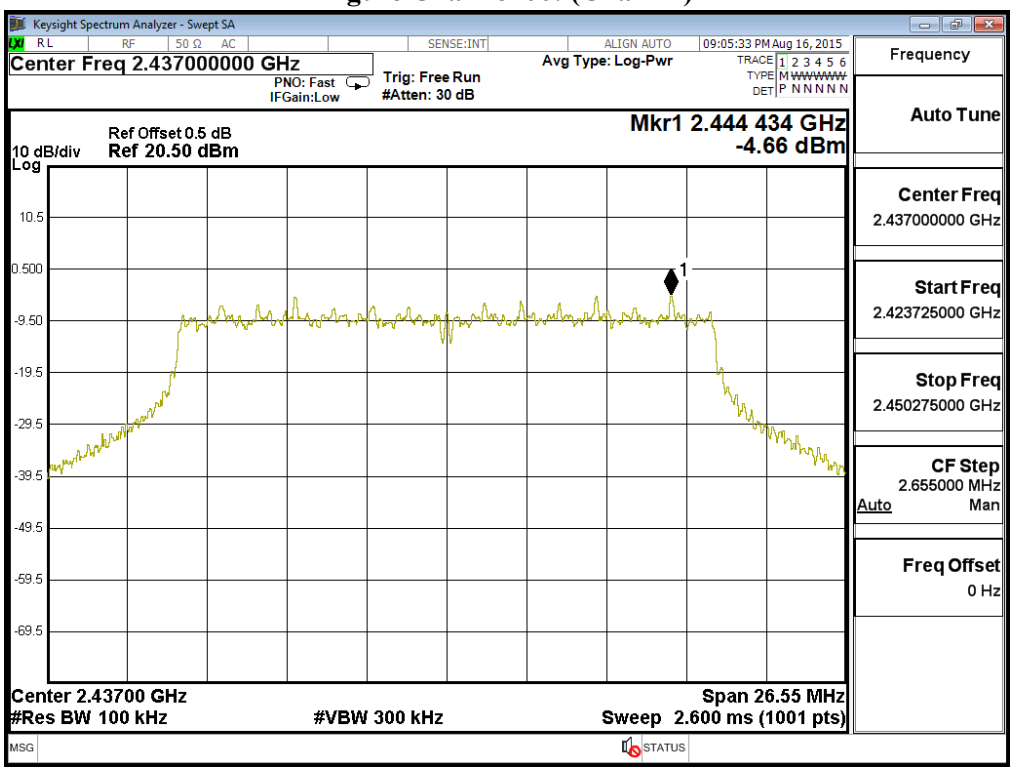
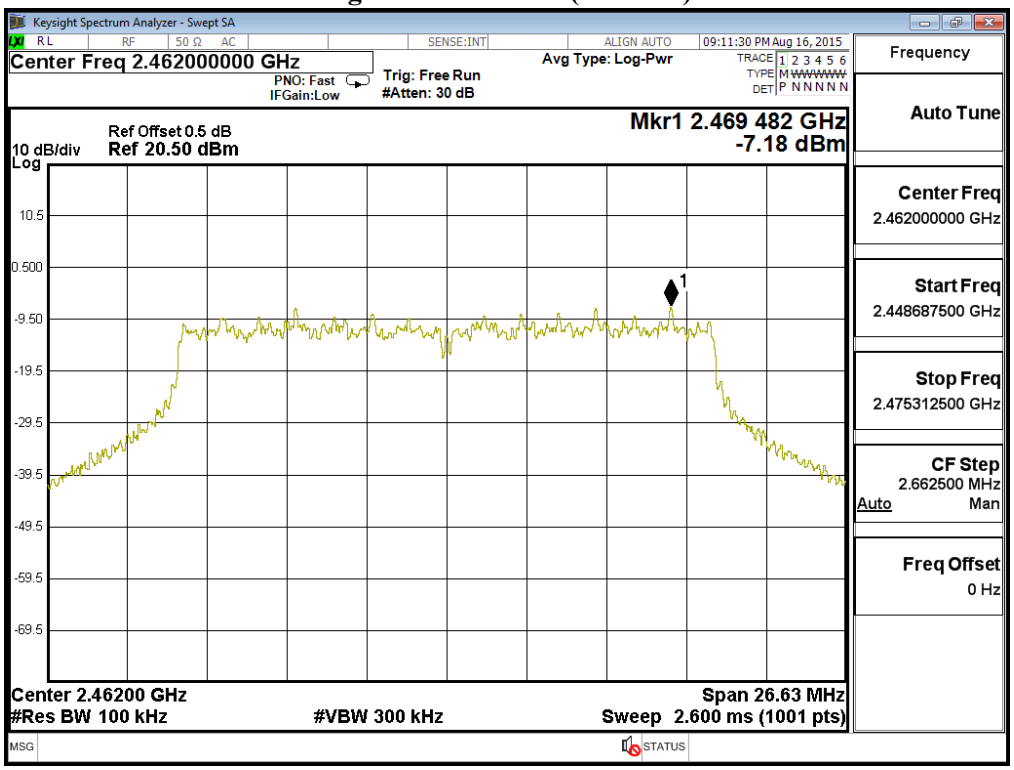


Figure Channel 11: (Chain B)



Product : 802.11 b/g/n PCIe Module
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna

Channel No.	Chain	Frequency (MHz)	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)1	Limit (dBm)	Result
03	A	2422	-11.140	-8.130	< 4dBm	Pass
	B		-10.100	-7.090	< 4dBm	Pass
06	A	2437	-11.390	-8.380	< 4dBm	Pass
	B		-9.890	-6.880	< 4dBm	Pass
09	A	2452	-12.760	-9.750	< 4dBm	Pass
	B		-12.320	-9.310	< 4dBm	Pass

Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

2. Required Limit= 8dBm-[(20dBi -6dBi) /3] =4 dBm for compliance to FCC 47CFR 15.247(c) requirements.(fixed point to point operation)

Figure Channel 03: (Chain A)

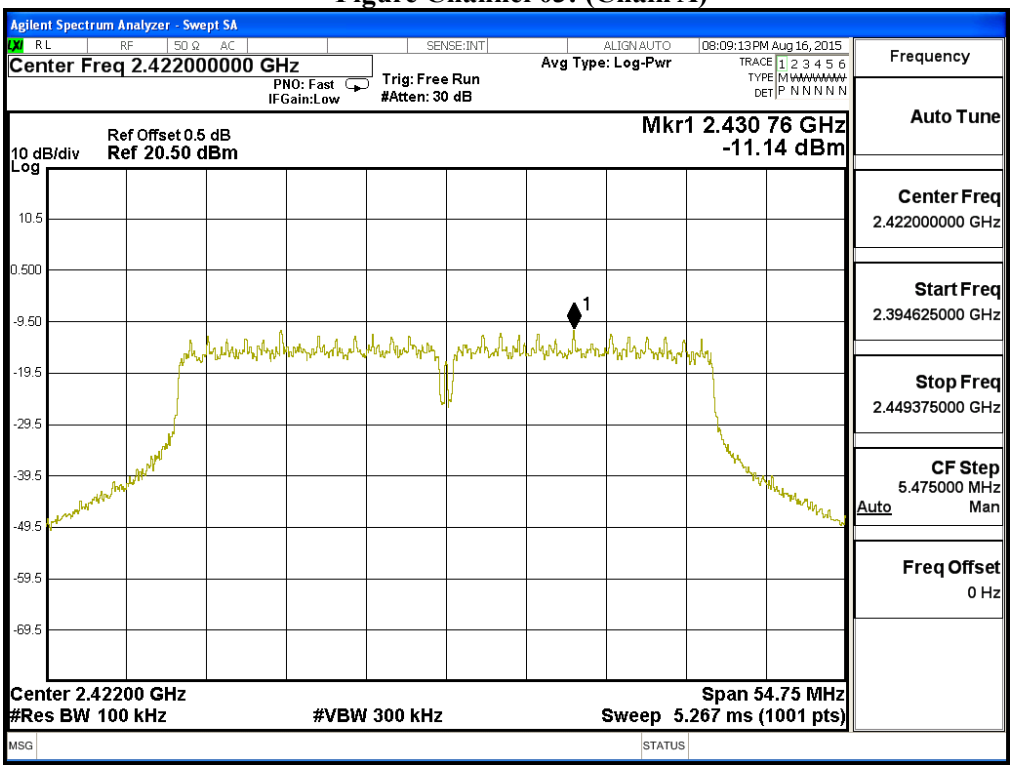


Figure Channel 06: (Chain A)

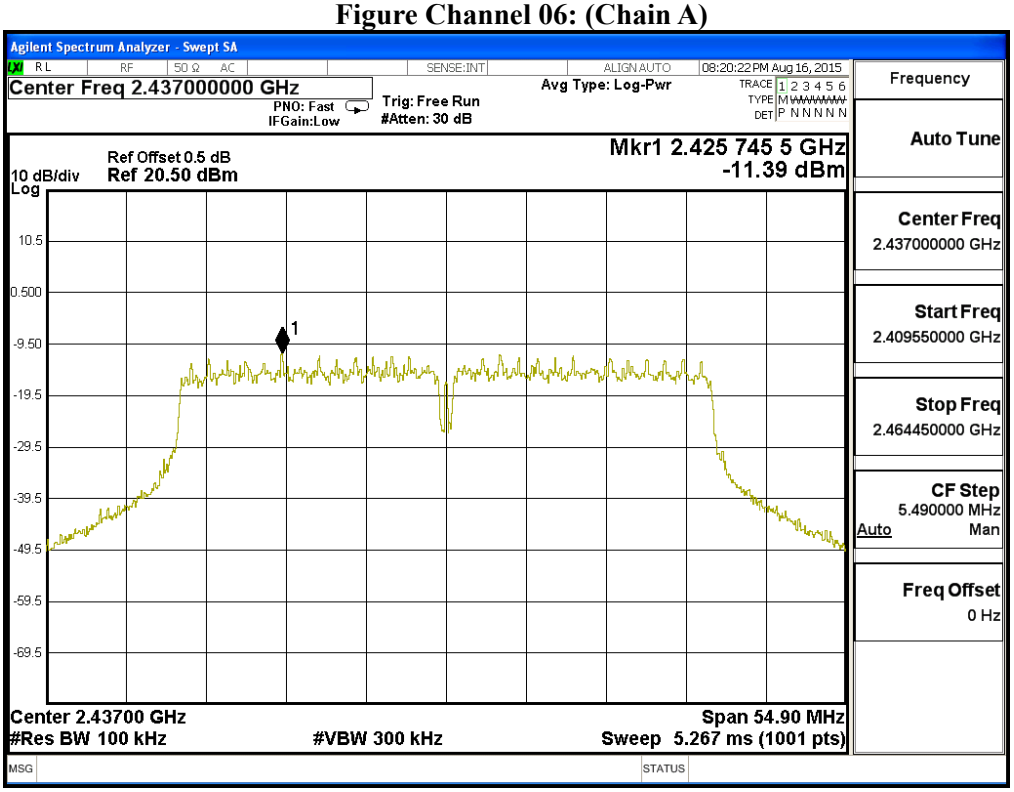


Figure Channel 09: (Chain A)

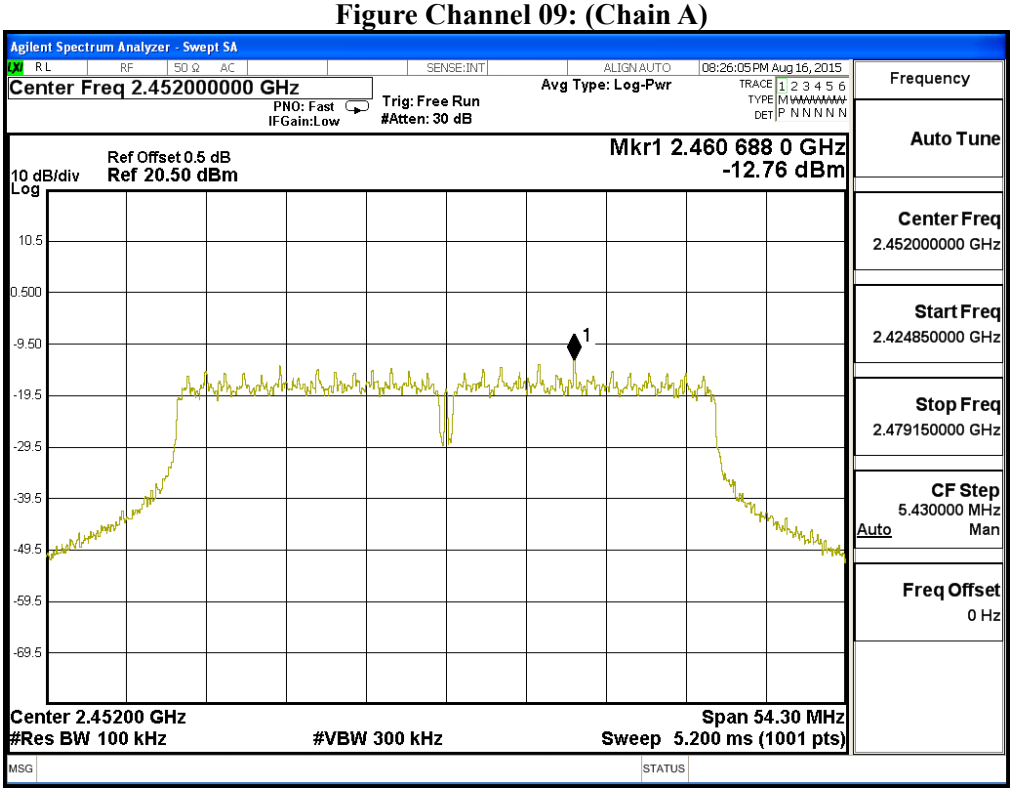


Figure Channel 03: (Chain B)

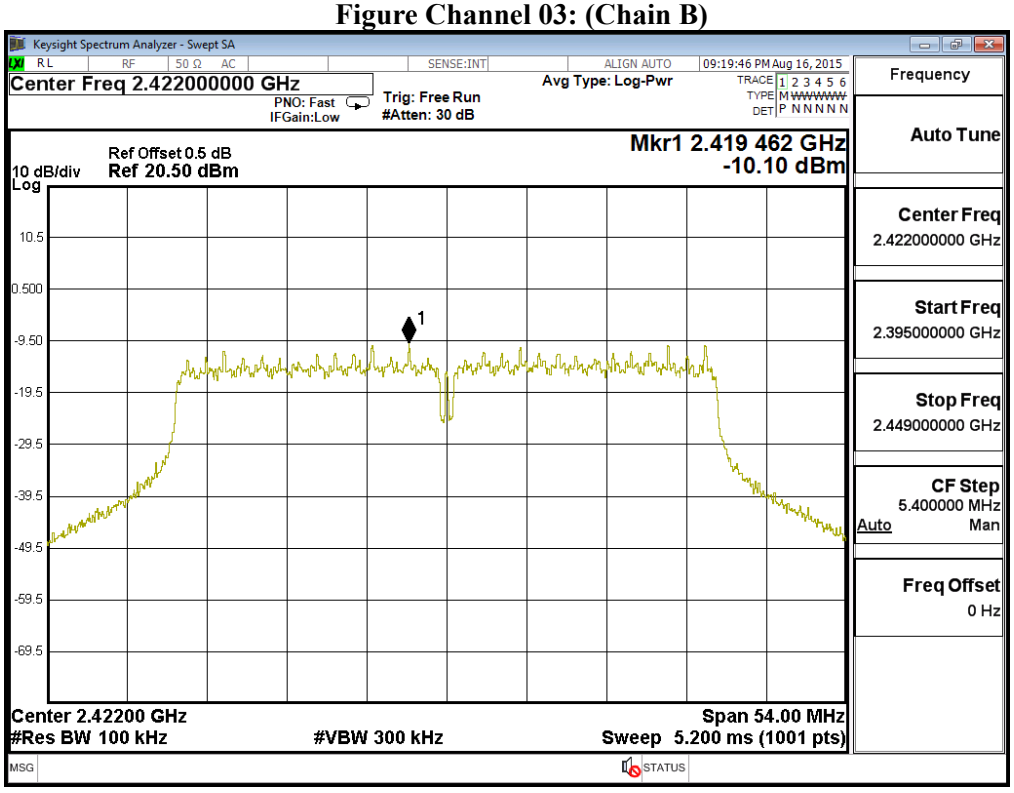


Figure Channel 06: (Chain B)

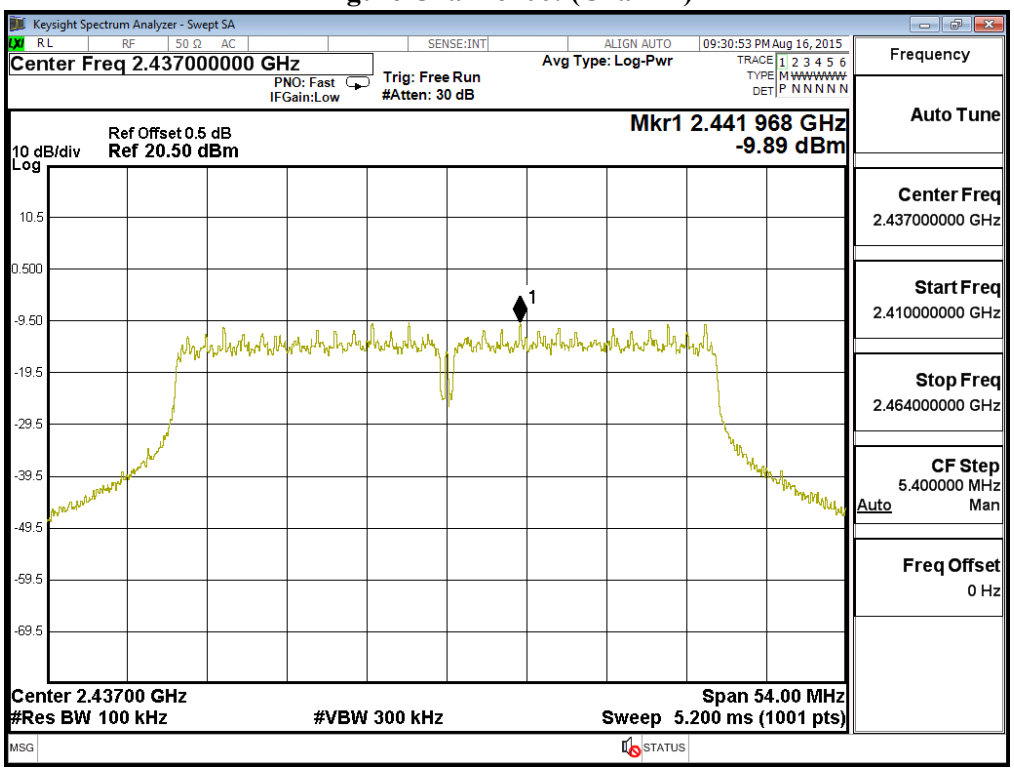
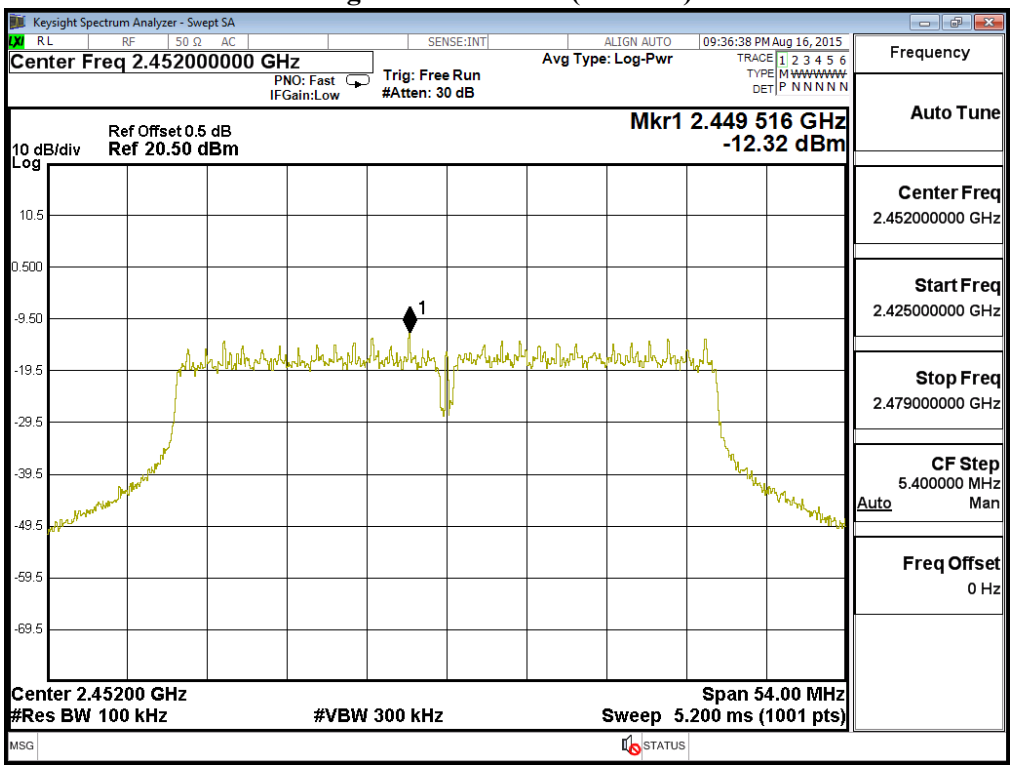


Figure Channel 09: (Chain B)



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs