

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



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.

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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 :

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Tested By

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(Director / Vincent Lin)

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

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:

Prod	uct	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	РРТ	N/A	Non-Shielded, 0.8m
Sign	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

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

Ambient conditions in the laboratory:

The related certificate for our laboratories about the test site and management system can be downloaded from

QuieTek Corporation's Web Site: <u>http://www.quietek.com/chinese/about/certificates.aspx?bval=5</u> The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site: <u>http://www.quietek.com/</u>

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 : <u>service@quietek.com</u>					

FCC Accreditation Number: TW1014

2. Conducted Emission

2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark				
Х	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2014					
Х	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2015	Peripherals				
Х	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2015	EUT				
	DC LISN	Schwarzbeck	8226 / 176	Mar., 2015	EUT				
Х	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	Limits					
MHz	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

 $\pm 2.26 \text{ dB}$

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	rrect Reading Meas		Margin	Limit
	Factor	Level	Level		
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 P	802.11 b/g/n PCIe Module									
Test Item :	Conducted Em	Conducted Emission Test									
Power Line :	Line 2										
Test Mode :	Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Omin Antenna (2437MHz)										
Frequency	Correct	Reading	Measurement	Margin	Limit						
	Factor	Level	Level								
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						

- 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 P	802.11 b/g/n PCIe Module										
Test Item :	Conducted Em	Conducted Emission Test										
Power Line :	Line : Line 1											
Test Mode :	: Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2437MHz)											
Frequency	Correct	Reading	Measurement	Margin	Limit							
	Factor	Level	Level									
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							

- 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 Em	Conducted Emission Test										
Power Line :	: Line 2											
Test Mode :	: Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)_Panel Antenna (2437MHz)											
Frequency	Correct	Reading	Measurement	Margin	Limit							
	Factor	Level	Level									
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							

- 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.	
Х	Power Meter	Anritsu	ML2495A/6K00003357	May, 2015	_
Х	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

 $\pm 1.27 \text{ dB}$

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	Average Power For different Data Rate (Mbps)				Peak Power	Required	Result
	(MHz)	1	2	5.5	11	1	Limit	Result
		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	Average Power For different Data Rate (Mbps)				Peak Power	Required	Docult
	(MHz)	1	2	5.5	11	1	Limit	Kesult
			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.

Р	roduct	:	802.11 b/g/n PCIe Module
Т	est Item	:	Maximum Conducted Power
Т	est Site	:	No.3 OATS
Т	est Mode	:	Mode 2: Transmit (802.11g 6Mbps) Omni Antenna

.

Chain A

			F									
Channel No	(MHz)	6	9	12	18	24	36	48	54	6	Required Limit	Result
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

				Peak								
	Frequency		F	for diffe	erent Da	ata Rate	e (Mbps	5)		Power	Required	
Channel No	(MHz)	6	9	12	18	24	36	48	54	6	Limit	Result
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

- 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

	Frequency (MHz)		Average Power								
			For different Data Rate (Mbps)								
Channel No		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

			Average Power								
	Frequency (MHz)		For different Data Rate (Mbps)								
Channel No		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	Data Rata	Chain A Power	Chain B Power	Chain A+B Power	Limit	Result
	(MHz)	(Mbps)	(dBm)	(dBm)	(dBm)	(dBm)	
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

	Frequency (MHz)		Average Power								
			For different Data Rate (Mbps)								
Channel No		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

			Average Power								
	Frequency (MHz)		For different Data Rate (Mbps)								
Channel No		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	Data Rata	Chain A Power	Chain B Power	Chain A+B Power	Limit	Result
	(MHz)	(Mbps)	(dBm)	(dBm)	(dBm)	(dBm)	
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

Channel No	Frequency	For d	Average ifferent Da	e Power ata Rate (N	lbps)	Peak Power	Required	Pogult
	(MHz)	1	2	5.5	11	1	Limit	Kesult
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	For d	Average ifferent Da	e Power ata Rate (N	Ibps)	Peak Power	Required	Recult
	(MHz)	1	2	5.5	11	1	Limit	Kesuit
			Measur					
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

			T	1.00	Peak							
Channel No	Frequency (MHz)	6	9	for diffe	18	ata Rate	36 (Mbps	s) 48	54	Power 6	· Required Limit	Result
			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)

Cha	in	B	

	Energy of an		Average PowerPeakFor different Data Rate (Mbps)Power									
Channel No	(MHz)	6	9	12	18	24	36	48	54	6	Limit	Result
				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

	Frequency (MHz)		Average Power								
Channel No			For different Data Rate (Mbps)								
		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

			Average Power									
Channel No	Frequency		F	or diffe	erent Da	ata Rate	e (Mbps	s)		Power		
	(MHz)	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	Data Rata	Chain A Power	Chain B Power	Chain A+B Power	Limit	Result
	(MHz)	(Mbps)	(dBm)	(dBm)	(dBm)	(dBm)	
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
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- 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

			Average Power								
	Fraguanay		For different Data Rate (Mbps)								
Channel No	(MHz)	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

			Average Power									
	Fraguanay		F	or diffe	erent Da	ata Rate	e (Mbps	5)		Power		
Channel No	(MHz)	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	Data Rata	Chain A Power	Chain B Power	Chain A+B Power	Limit	Result
	(MHz)	(Mbps)	(dBm)	(dBm)	(dBm)	(dBm)	
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	3 X Magnetic Loop Antenna		Teseq	HLA6121/ 37133	Sep., 2014
	Х	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	Jun., 2015
	Х	EMI Test Receiver	R&S	ESCS 30/838251/ 001	Jun., 2015
	Х	Coaxial Cable	QTK(Arnist)	RG 214/ LC003-RG	Jun., 2015
	Х	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	Х	Spectrum Analyzer	R&S	FSP40/ 100339	Oct, 2014
	Х	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar, 2015
	X Horn Antenna		Schwarzbeck	BBHA9170/209	Jan, 2015
X Horn Antenna T		TRC	AH-0801/95051	Aug, 2015	
	Х	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan, 2015
	Х	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul, 2015
	Χ	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	Measurement distance				
11112	(microvolts/meter)	(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 $(dB\mu V/m) = 20 \log E$ 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	e : Mode 1: Transmit (802.11b 1Mbps)_Omni Antenna (2412MHz)								
Frequency		Correct	Reading	Measurement	Margin	Limit			
		Factor	Level	Level					
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			

- 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: T	ransmit (802.11	b 1Mbps)_Omni Ant	enna (2437 MHz))		
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
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		

- 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 1:7	Fransmit (802.11	b 1Mbps)_Omni Ant	enna (2462 MHz))		
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	$dB\mu V/m$	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		

- 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 (802.11	g 6Mbps)_Omni Ant	enna (2412MHz)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
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		

- 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	: Harmon	Harmonic Radiated Emission Data					
Test Site	: No.3 OA	ATS					
Test Mode	: Mode 2:	: Mode 2: Transmit (802.11g 6Mbps)_Omni Antenna (2437 MHz)					
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
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		

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- 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 t | /g/n PCIe Modul | e | | | | |
|-----------------------|-----------------------------------|------------------|-------------------|----------------|--------|--|--|
| Test Item | : Harmonic Radiated Emission Data | | | | | | |
| Test Site | Test Site : No.3 OATS | | | | | | |
| Test Mode | : Mode 2: | Transmit (802.11 | g 6Mbps)_Omni Ant | enna (2462 MHz |) | | |
| | | | | | | | |
| Frequency | Correct | Reading | Measurement | Margin | Limit | | |
| | Factor | Level | Level | | | | |
| 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 | | |
| | | | | | | | |

- 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	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
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:					

- 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.

74.000

74.000

74.000

Horizont	al						
MHz		dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$	
		Factor	Level	Level			
Frequenc	у	Correct	Reading	Measurement	Margin	Limit	
Test Mode	:	Mode 4: Transmit	- 802.11n-20BW	_14.4Mbps(2.4G Ba	nd)_Omni Anteni	na (2437 MHz)	
Test Site	:	No.3 OATS	No.3 OATS				
Test Item	:	Harmonic Radiate	Harmonic Radiated Emission Data				
Product	:	802.11 b/g/n PCIe Module					

44.037

48.822

49.860

-29.963

-25.178

-24.140

41.960

39.310

40.230

--

Peak Detector: 4874.000

7311.000

9748.000

Average Detector:

2.076

9.512

9.630

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:

- 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	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	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:					

- 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 P	CIe Module					
Test Item :	Harmonic Rad	Harmonic Radiated Emission Data					
Test Site :	No.3 OATS						
Test Mode :	Mode 5: Transi	nit - 802.11n-40B	W_30Mbps(2.4G Ba	nd)_Omin Anteni	na (2422MHz)		
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	$dB\mu V/m$	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:							

- 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 P	CIe Module			
Test Item	:	Harmonic Rad	liated Emission Da	ata		
Test Site	:	No.3 OATS				
Test Mode	:	Mode 5: Trans	smit - 802.11n-40E	W_30Mbps(2.4G Ba	nd)_Omin Anten	na (2437 MHz)
Frequency		Correct	Reading	Measurement	Margin	Limit
		Factor	Level	Level		
MHz		dB	dBµV	$dB\mu V/m$	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:						

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- 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 P	CIe Module					
Test Item :	Harmonic Rad	Harmonic Radiated Emission Data					
Test Site :	No.3 OATS						
Test Mode :	Mode 5: Trans	mit - 802.11n-40E	3W_30Mbps(2.4G Ba	nd)_Omin Anten	na (2452 MHz)		
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	$dB\mu V/m$	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:							

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- 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: T	ransmit (802.11b	1Mbps)_Panel Anten	na (2412MHz)		
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Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
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	

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- 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 Modul	e					
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 1:	Transmit (802.11	b 1Mbps)_Panel Ant	enna (2437 MHz))			
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
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			

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- 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 OA	ГS						
Test Mode	: Mode 1:	Transmit (802.11	b 1Mbps)_Panel Ante	enna (2462 MHz))			
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$			
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			

- 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 (802.11	lg 6Mbps)_Panel Ant	enna (2412MHz)				
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
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:

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- 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 OA	TS					
Test Mode	: Mode 2:	Transmit (802.11	g 6Mbps)_Panel Ante	enna (2437 MHz))		
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
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:							

- 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	: Harmonio	e Radiated Emiss	sion Data				
Test Site	: No.3 OA	ГS					
Test Mode	: Mode 2: 7	Transmit (802.11	g 6Mbps)_Panel Ante	enna (2462 MHz))		
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$		
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:							

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Note:

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- 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.

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

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
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:					

- 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 Radia	ted Emission Dat	a			
Test Site :	No.3 OATS					
Test Mode :	Mode 4: Transm	nit - 802.11n-20BV	W_14.4Mbps(2.4G B	and)_Panel Anter	nna (2437 MHz)	
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$	
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:						

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- 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.

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

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	$dB\mu V/m$
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:					

- 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	802.11 b/g/n PCIe Module							
Test Item	: Ha	Harmonic Radiated Emission Data							
Test Site	: No	No.3 OATS							
Test Mode	: Mo	de 5: Trans	mit - 802.11r	n-40BW_30M	bps(2.4G I	Band)_I	Panel Ant	tenna (24	22MHz)
Frequency	(Correct	Readin	g Meas	surement	ľ	Margin		Limit
]	Factor	Level	L	Level				
MHz		dB	dBµV	dB	βμV/m		dB	(dBμV/m
Horizontal									
Peak Detector:									
4844.000		2.280	42.350) 44	4.631	-	29.369		74.000
7266.000		9.626	39.750) 49	9.376	-	24.624		74.000
9688.000	1	10.284	42.479) 52	2.763	-	21.237		74.000
Average									
Detector:									
Vertical									
Peak Detector:									
4844.000		2.707	43.570) 40	6.278	-	27.722		74.000
7266.000		9.626	42.400) 52	2.026	-	21.974		74.000
9688.000	1	10.284	43.160) 53	3.444	-	20.556		74.000
Average									
Detector:									

- 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 Radia	ated Emission Dat	a				
Test Site :	No.3 OATS						
Test Mode :	Mode 5: Transn	nit - 802.11n-40B	W_30Mbps(2.4G Ban	d)_Panel Antenn	a (2437 MHz)		
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$		
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							
1874 000	2 532	13 850	16 382	27.618	74 000		
48/4.000	2.332	43.830	40.382	-27.018	74.000		
/311.000	10.089	42.540	52.629	-21.371	/4.000		
9748.000	10.266	43.620	53.887	-20.113	74.000		
Average							
Detector:							

=

- 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 P	802.11 b/g/n PCIe Module							
Test Item :	Harmonic Rad	Harmonic Radiated Emission Data							
Test Site :	No.3 OATS	No.3 OATS							
Test Mode :	Mode 5: Trans	mit - 802.11n-40E	30Mbps(2.4G Ba	nd)_Panel Anten	na (2452 MHz)				
Frequency	Correct	Reading	Measurement	Margin	Limit				
	Factor	Level	Level						
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$				
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:									

- 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: Tra	ansmit (802.11b 1N	Ibps)_Omni Antenna	(2437MHz)			
Frequency		Correct	Reading	Measurement	Margin	Limit		
		Factor	Level	Level				
MHz		dB	dBµV	$dB\mu V/m$	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		

- 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	5					
Test Mode	:	Mode 2: Tr	ransmit (802.11g 6M	bps)_Omni Antenna	a (2437MHz)			
Frequency		Correct	Reading	Measurement	Margin	Limit		
		Factor	Level	Level				
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		

- 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.

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

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	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

- 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	General Radiated Emission Data				
Test Site	:	No.3 OATS					
Test Mode	:	Mode 5: Transmit	- 802.11n-40BW	/_30Mbps(2.4G Ban	d)_Omin Antenna (2437 MHz)	
Frequency		Correct	Reading	Measurement	Margin	Limit	
		Factor	Level	Level			

MHz	dB	dBµV	$dB\mu V/m$	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

- 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/r	PCIe Module						
Test Item	: General Rac	General Radiated Emission Data						
Test Site	: No.3 OATS	No.3 OATS						
Test Mode	: Mode 1: Tra	nsmit (802.11b 11	Mbps)_Panel Antenna	(2437MHz)				
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$			
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			

- 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	5				
Test Mode	:	Mode 2: Tr	ansmit (802.11g 6M	bps)_Panel Antenna	(2437MHz)		
Frequency		Correct	Reading	Measurement	Margin	Limit	
		Factor	Level	Level			
MHz		dB	dBµV	$dB\mu V/m$	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	

- 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	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	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

- 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	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	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

- 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.
Х	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2015
Х	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 ± 1.27 dB

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 11 (2462MHz) 30MHz - 25GHz





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









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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
Test Mode	•	Mode 4. Transmit - $802.1111-20B \text{ w}_14.4\text{Mops}(2.40 \text{ Band})_011111 \text{ A}$

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







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





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 11 (2462MHz) 30MHz -25GHz




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 11 (2462MHz) 30MHz -25GHz



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



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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 11 (2462MHz) 30MHz -25GHz-Chain A Spurious Emission(30MHz-25GHz) ing Value line: -26.24 10 RBW: 100k, VBW: 300k Sweep Time: Auto 0 -10 -20 -30 dBm -40 -50 -60 -70 -80 5 10 15 20 25 GHz

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



-60 -70



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







GHz

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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







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



Channel 03 (2422MHz) 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
Х	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		Equipmont	Monufacturar	Model No /Seriel No	Lost Col
Test Site		Equipment	Manufacturer	Niddel INO./Sellal INO.	Last Cal.
⊠CB # 8	Х	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	Х	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	Х	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan., 2015
	Х	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	Х	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan., 2015
	Х	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	Х	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	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	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:



Figure Channel 01:

Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto. 2.
- Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto. 3.
- "*", means this data is the worst emission level. 4.
- Measurement Level = Reading Level + Correct Factor. 5.
- The average measurement was not performed when the peak measured data under the limit of average 6. 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)

Channel No	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	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)





Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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)

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)





Horizontal (Average)



- 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.

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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):

Channal No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	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)





- 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)

Channel Ma	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	(dBµV/m)	$(dB\mu V/m)$	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			



Horizontal (Peak)





- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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)

Channel Ma	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	(dBµV/m)	$(dB\mu V/m)$	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)



- 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Regult
Channel NO.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	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)





- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	
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)









- 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.
- The average measurement was not performed when the peak measured data under the limit of average 6. 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	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			





- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: $RBW = \hat{1}MHz$, $VBW = \hat{3}MHz$, 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)		
DE Dadiatad Maaguwamant (Vartical).				

Channal Na	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	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)



- 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	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)





Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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.



ni Antenna (2462MHz)
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Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	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)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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.



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

Channal Ma	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	(dBµV/m)	$(dB\mu V/m)$	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)









- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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)





Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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)

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)









- 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)

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)





Vertical (Average)



- 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)

Channal Na	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	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)





Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	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			



Vertical (Peak)





Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	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)



- 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
	(MHz)	(dB)	(dBµV)	(dBµV/m)	(dBµV/m)	$(dB\mu V/m)$	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)





Vertical (Average)



- 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)

Channal Ma	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	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)





- 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)

Channal Ma	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	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			





Vertical (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, 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)

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)









- 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)

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)





Vertical (Average)



- 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Docult
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	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)





- 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)

Channal Ma	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	$(dB\mu V/m)$	$(dB\mu V/m)$	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)





Vertical (Average)



- 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
	(MHz)	(dB)	(dBµV)	$(dB\mu V/m)$	(dBµV/m)	$(dB\mu V/m)$	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)





Horizontal (Average)



- 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)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
	(MHz)	(dB)	(dBµV)	(dBµV/m)	(dBµV/m)	$(dB\mu V/m)$	
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)





Vertical (Average)



- 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):

Channal No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	(dBµV/m)	$(dB\mu V/m)$	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)









- 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			



Vertical (Peak)







- 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.
- "*", means this data is the worst emission level. 4.
- 5. Measurement Level = Reading Level + Correct Factor.
- The average measurement was not performed when the peak measured data under the limit of average 6. 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):

Channal No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Dogult
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	(dBµV/m)	$(dB\mu V/m)$	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)









- 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)





Vertical (Average)



- 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
Х	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

 $\pm \, 150 Hz$

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:

Agilent S	pectru	m An	alyzer - Swe	ept SA									
Cente	er Fr	RF eq 2	50 Ω 2.41200	AC 00000 GH	z	SEI		Avg T	ALIG ype: Lo	NAUTO 9 g-Pwr	03:06:33 PM TRAC	4 Aug 16, 2015 E 1 2 3 4 5 6	Frequency
10 dB/d	div	Ref Rei	Offset 0.5	odB 1Bm	NO: Fast ⊆ Gain:Low	#Atten: 3	0 dB			Mkr	2 2.405 -3.	90 GHz 76 dBm	Auto Tune
10.5 - 0.500 - -9.50 -					- www.	2 minuted	paston					-2.56 dBm	Center Freq 2.412000000 GHz
-19.5 — -29.5 — -39.5 —			and full	mannel	A CONTRACTOR OF					pr D W. wey for	WA ANA		Start Freq 2.387000000 GHz
-49.5 -59.5	ro-Marina	ماموريم.	-**** V								- W	whenner	Stop Freq 2.437000000 GHz
Cente #Res	r 2.4 BW 1	120 100	0 GHz kHz		#VB\	N 300 kHz			Sw	eep 4.	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz
M35 M0 1 N 2 N 3 N 4 5 6 7 8 9 10 11 <				× 2.410 5 2.405 9 2.418 1	0 GHz 0 GHz 0 GHz	¥ 3.44 dl 3.76 dl 3.87 dl	3m 3m 3m 3m	UNCTION	FUNCTIO		FUNCTIO		Freq Offset
MSG										STATUS	;		L



Agilent Spectrum Analyzer - Swept SA RL :09:19 PM Aug 16, 2015 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N N ALIGNAUTO Avg Type: Log-Pwr Frequency Center Freq 2.437000000 GHz Trig: Free Run #Atten: 30 dB PNO: Fast 😱 IFGain:Low Auto Tune Mkr2 2.430 90 GHz -3.80 dBm Ref Offset 0.5 dB Ref 20.50 dBm 10 dB/div Log Center Freq 10.5 **∳**² ∆3 2.437000000 GHz .500 U -9.50 19.5 Start Freq -29.5 2.412000000 GHz 39.5 μu 49.5 Stop Freq -59.5 2.462000000 GHz -69.9 Center 2.43700 GHz #Res BW 100 kHz Span 50.00 MHz CF Step 5.000000 MHz Man Sweep 4.800 ms (1001 pts) #VBW 300 kHz Auto MKR MODE TRC SCL FUNCTION FUNCTION WIDTH FUNCTION VALUE 3.49 dBm -3.80 dBm -3.79 dBm 1 N 1 f 2 N 1 f 3 N 1 f 2.435 50 GHz 2.430 90 GHz 2.443 10 GHz Freq Offset 0 Hz 6 8 10 11 > STATUS

Figure Channel 06:

Figure Channel 11:

Agilent Spect	rum Analyzer - S	wept SA								
Center F	RF 50	Ω AC D00000 GH	z		BE:INT	Avg Type	ALIGNAUTO : Log-Pwr	03:12:56 Pf TRAC	4 Aug 16, 2015 E 1 2 3 4 5 6	Frequency
10 dB/div	Ref Offset	0.5 dB 0.5 dB	IO: Fast ∟ Jain:Low	#Atten: 30	dB		Mkr	2 2.455 -4.:	90 GHz 22 dBm	Auto Tune
10.5 0.500			2 John V	winner (1 Junny	3			-3.00 dBm	Center Freq 2.462000000 GHz
-19.5 -29.5 -39.5		marin (V. Y	, provenue	hly		Start Freq 2.437000000 GHz
-49.5 -59.5 -69.5	-man and particular by	V						W WAR	all and the man	Stop Freq 2.487000000 GHz
Center 2 #Res BW	.46200 GHz 100 kHz	~	#VBW	/ 300 kHz	511		Sweep 4	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz <u>Auto</u> Man
1 N 2 N 3 N 4 5 6 7 7 8		2.463 00 2.455 90 2.468 10) GHz) GHz) GHz	3.00 dB -4.22 dB -4.46 dB	m m m			FUNCTI		Freq Offset 0 Hz
9 10 11 <				1111			STATUS	5		



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:

Agiler	nt Spectr	um An	alyzer - Sw	/ept SA								
w⊓ Cer	ter F	RF req	50 ຊ 2.4120	2 AC 00000 GH	Ηz	SEI	NSE:INT	Avg Typ	ALIGNAUTO e: Log-Pwr	03:16:41 Pf	M Aug 16, 2015 E 1 2 3 4 5 6	Frequency
	D	Rei	Offset 0.	P IF	NO: Fast G Gain:Low	#Atten: 3	0 dB		75 GHz	Auto Tune		
10 a 10.5 0.500 -9.50		ĸe	1 20.50			-	- 1 	markent 3			-3:31 abm	Center Freq 2.412000000 GHz
-19.5 -29.5 -39.5			Stor Manual	- Norwith West Market	AND THE REAL PROPERTY OF THE P				Wite Walk and	and the second and the second	4 .	Start Freq 2.387000000 GHz
-49.5 -59.5 -69.5			<u> </u>								NUMBER OF DESIGN	Stop Freq 2.437000000 GHz
Cer #Re	ter 2. s BW	4120 100	0 GHz kHz		#VB\	V 300 kHz			Sweep 4	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11 (× 2.413 2 2.403 7 2.420 2	25 GHz 25 GHz 25 GHz	¥ 2.69 dl 3.95 dl -4.00 dl				FUNCTI		Freq Offset 0 Hz
MSG									STATUS	;	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	



				-						
Agilent Spect	rum Analyzer - Sv	wept SA								
LXIRL	RF 50 9	Ω AC		SENS	BE:INT		ALIGN AUTO	03:21:12 PM	4 Aug 16, 2015	Erequency
Center F	req 2.4370	00000 GHz		T	D	Avg Type	e: Log-Pwr	TRAC	E123456	Frequency
		PNO	:Fast 🖵	#Atten: 30	kun dB			DI		
		irdai	II.LUW	WINCON. OU	40					Auto Tune
	Ref Offset 0).5 dB					Mkr	2 2.428	75 GHz	Auto Fulle
10 dB/div	Ref 20.50	dBm						-2.9	98 dBm	
Log										
10.5						. 2				Center Freq
0.500				-	alahala	³			-2.58 dBm	2.437000000 GHz
0.50			1	, v		Y				
-9.50			V			L.				
-19.5		- AND - COM				فرر	n.			Start From
.29.5		and the North Contraction					manena			StartFrey
20.0		Jul Wards					and the second sec	Mrs.		2.412000000 GHz
-39.5	a alexadiant							Why we	N	
-49.5 And and the	University of the second se							1 900	Wildow Madow	
59.5										Stop Freq
-35.5										2.462000000 GHz
-69.5										
Center 2	43700 GHz							Span 5	0.00 MHz	CF Step
#Res BW	100 KHZ		#VBW	300 KHZ			Sweep 4	.800 ms (1001 pts)	5.000000 MHz
MKR MODE 1	RC SCL	×		Y	FUN	TION FUR	NCTION WIDTH	FUNCTIO	IN VALUE	<u>Auto</u> Man
1 N	1 f	2.430 75 0	GHz	3.42 dB	m					
2 N	1 f	2.428 75 (GHz	-2.98 dB	m					F a a Of a a b
3 N	1 f	2.445 25 (GHZ	-2.85 dB	m					FreqOffset
5										0 Hz
6										
7										
8										
10										
11									~	
<									>	
MSG							STATUS	5		
								1		

Figure Channel 06:

Figure Channel 11:



Pass

Pass

Pass

Pass

>500

>500

>500

>500

11

01

06

11

А

В

В

В

Product	:	802.11 b/g	g/n PCIe Module								
Test Item	:	Occupied	Bandwidth Data								
Test Site : No.3 OATS											
Test Mode	:	Mode 4: 7	Fransmit - 802.11n	-20BW_14.4Mbps(2.4G	Band)_Omni Anten	na					
Channal	No	Chain	Frequency	Measurement Level	Required Limit	Dogult					
Channel	NO.	Chain	(MHz)	(kHz)	(kHz)	Result					
01		А	2412.00	17850	>500	Pass					
06		А	2437.00	17800	>500	Pass					

17800

17750

17800

17750

2462.00

2412.00

2437.00

2462.00



Agilon	t Spor	trum	Ana	luzor - Swo	ot SA								
Cen	ter	Fre	RF q 2	50 Ω .41200	AC	Hz PNO: East	Trig: Fre	NSE:INT	Avg Ty	ALIGN AUTO /pe: Log-Pwr	03:29:35 PI TRA TY	M Aug 16, 2015 ^{CE} 1 2 3 4 5 6 PE M WWWWW	Frequency
10.1		F	Ref	Offset 0.5	dB	-Gain:Low	#Atten: \$	0 dB		Mkı	10 GHz	Auto Tune	
10 ai 10.5 0.500 -9.50		P	(er	20.50 0		2- • Markey	Mulus Mark	1 mort way	nn with why	0 3		-7.75 dBm	Center Freq 2.412000000 GHz
-19.5 -29.5 -39.5					and and the state	Mar Carl				hy hy hy and hy	u.v.		Start Fred 2.387000000 GHz
-49.5 -59.5 -69.5	hyevorr'	Theres		And have							- Andrew -	ilou uh han an a	Stop Frec 2.437000000 GHz
Cen #Re	ter 2 s BV	2.41 N 10	20()0) GHz (Hz		#VI	300 kH	2	UNCTION	Sweep 4	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MH Auto Mar
1 2 3 4 5 6	N N N	1 1 1	f f f		2.410 2.403 2.420	70 GHz 10 GHz 95 GHz	-1.75 c -8.09 c -10.86 d	Bm Bm Bm					Freq Offse 0 H:
7 8 9 10 11							III						
MSG										STATU	s		Ľ.

Figure Channel 01: (Chain A)

Figure Channel 06: (Chain A)

Agilent Sp	pectrum	Analyzer - Sw	ept SA								
wµ RL Cente	r Frec	RF 50 Ω 1 2.43700	AC 00000 GH	z	SEI		Avg Type	ALIGNAUTO : Log-Pwr	03:35:01PM TRAC	Aug 16, 2015	Frequency
10 dB/d	R liv R	ef Offset 0.9	o dB	NU: Fast 🕞 Gain:Low	#Atten: 3	0 dB		Mkr	□ 2 2.428 -7.5	10 GHz	Auto Tune
10.5				2- 	nohurne 1	work where the	-			-6.89 dBm	Center Freq 2.437000000 GHz
-19.5 — -29.5 — -39.5 —		1 And States	and and a second designed					Survey My reaction for	Marchate		Start Freq 2.412000000 GHz
-49.5 -59.5 -69.5	for all all a	ni per allari								and an and a second	Stop Freq 2.462000000 GHz
Center #Res E	r 2.437 BW 10	00 GHz 0 kHz		#VBW	/ 300 kHz			Sweep 4	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz
MX3 M01 1 N 2 N 3 N 4 5 6 7 8 9 10 11 <			× 2.435 71 2.428 11 2.445 91	0 GHz 0 GHz 0 GHz 0 GHz	→ -7.50 d -7.25 d	Sm Sm Sm Sm Sm Sm Sm Sm Sm Sm			FUNCTIO		Freq Offset 0 Hz
MSG								STATUS	3		



Agilen	it Spec	ctrum	Ana	ılyzer - Swe	pt SA								
<mark>ыл</mark> к Cen	ter	Fre	RF q 2	50 Ω 2.46200	AC 0000 GH	lz	SE		Avg Typ	ALIGNAUTO e: Log-Pwr	03:37:54 Pf TRAC	M Aug 16, 2015 CE 1 2 3 4 5 6 PE M MANANANA	Frequency
					P IF(NO: Fast G Gain:Low	#Atten: 3	D dB			D		Auto Tune
10 d	B/div		Ref Ref	Offset 0.5 20.50 c	dB IBm					Mkr	2 2.453 -7.	10 GHz 06 dBm	
Log 10.5													Center Freq
0.500						2 mm	Mangha	monter	mont	3		-6.55 dBm	2.462000000 GHz
-9.50 -19.5										u.			
-29.5					لسماليني السماليني	<i>r</i>				When a way way and			Start Freq 2.437000000 GHz
-39.5				and the for the forther	Record					~	and the Route of the second		
-49.5	(hoten	-m-7.9	140400									whelewhore	Stop Freq
-69.5													2.487000000 GHz
Cen	ter 2	2.46	20	0 GHz							Span 5	0.00 MHz	CF Step
#Re	SBU		UU I Sei	KHZ	×	#VB(N 300 KHZ	FI	INCTION FI	Sweep 4	.800 ms (5.000000 MHz <u>Auto</u> Man
1	N N	1	f		2.458 3	0 GHz 0 GHz	-0.55 d -7.06 d	3m 3m					
3	N	1	f		2.470 9	0 GHz	-7.23 d	Зm					Freq Offset
5 6 7		_	_										
8			_										
10 11												~	
< MSG										STATU	3	>	

Figure Channel 11: (Chain A)

Figure Channel 01: (Chain B)





Keysight Sr	pectrum Analyzer - 1	Swept SA	-			· · ·		,		
Center F	RF 50 req 2.4370	Ω AC	Ηz	SEN	SE:INT	Avg Type	ALIGN AUTO	05:19:47 Pr TRAC	MAug 16, 2015 E 1 2 3 4 5 6	Frequency
10 dB/div	Ref Offset	P IF 0.5 dB) dBm	NO: Fast G Gain:Low	#Atten: 30	dB		Mkr	2 2.428 -7.8	10 GHz 80 dBm	Auto Tune
10.5 0.500			2 Multi	Mapleshowing	mhunun	1 Annaly3			-6.75 dBm	Center Freq 2.437000000 GHz
-19.5 -29.5 -39.5		Nor an and the second	ver				Willing Harden Barry Barry			Start Freq 2.412000000 GHz
-49.5 -59.5 -69.5	nyenered to make in the other							"Nathrodge Bally	and the second sec	Stop Freq 2.462000000 GHz
Center 2 #Res BW	.43700 GHz / 100 kHz	×	#VBV	V 300 kHz	EUN		Sweep 4	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz <u>Auto</u> Man
1 N 2 N 3 N 4 5 6 7 8 9 9 10		2.444 4 2.428 1 2.445 9	15 GHz 10 GHz 10 GHz	-0.75 dE -7.80 dE -7.18 dE	3m 3m 3m					Freq Offset 0 Hz
11 · MSG				III			I STATUS	•	• •	

Figure Channel 06: (Chain B)

Figure Channel 11: (Chain B)



Product	:	802.11 b/g	g/n PCIe Module										
Test Item	:	Occupied	Occupied Bandwidth Data										
Test Site	:	No.3 OAT	ſS										
Test Mode	:	Mode 5: T	Transmit - 802.11n	-40BW_30Mbps(2.4G B	and)_Omin Antenna	ı							
Channel No. Cha		Chain	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result							

Chamier 100.	Chuin	(MHz)	(kHz)	(kHz)	itebuit
3	А	2422.00	36300	>500	Pass
6	А	2437.00	36000	>500	Pass
9	А	2452.00	36000	>500	Pass
3	В	2422.00	36300	>500	Pass
6	В	2437.00	36200	>500	Pass
9	В	2452.00	36200	>500	Pass



Agilent S	Spectru	im Ana	alvzer - Swe	nt SA								
Cente	er Fr	RF eq 2	50 Ω 2.42200	AC 0000 GH PI	Z 10: Fast G	SEN	Run	Avg Typ	ALIGNAUTO e: Log-Pwr	03:45:02 PI TRAC TY	M Aug 16, 2015 CE 1 2 3 4 5 6 PE M WWWWWW	Frequency
		Ref	Offset 0.5	IFG idB	ain:Low	#Atten: 30) dB		Mk	r2 2.40	3 7 GHz	Auto Tune
10 dB/ Log	div	Ref	20.50 c	Bm				1	1	-14.	67 dBm	
10.5 — 0.500 —							1		-			Center Freq 2.422000000 GHz
-9.50					€ ²	MARAda	hunkhan	manna	3		-11.22 dBm	
-19.5 — -29.5 —					/							Start Freq 2.372000000 GHz
-39.5 -	anna	لمستألمتهم	بىلىلىلىمىيى مەللىمارىر	druger b					and the second	Managara and a second	miliantumiteur	Stop Freq
-69.5 -												2.472000000 GHz
L Cente #Res	er 2.4 BW	220 100	0 GHz kHz		#VBV	V 300 kHz			Sweep 9	Span 1 .600 ms (00.0 MHz 1001 pts)	CF Step 10.000000 MHz Auto Man
MKR MO	DDE TR	C SCL		× 2.425	7 GHz	≚ -5.22 dE	FUN 3m	CTION FU	NCTION WIDTH	FUNCTIO	DN VALUE	<u>Auto</u> Mar
2 N 3 N 4 5	N 1 N 1	f		2.403	7 GHz D GHz	-14.67 dE -11.48 dE	3m 3m				=	Freq Offset 0 Hz
6 7 8 9		-										
10 11 <						Ш.,						
MSG									STATUS	3		L

Figure Channel 3: (Chain A)

Figure Channel 6: (Chain A)

Agilent Spec	ctrum Analy	zer - Swep	ot SA								
(x/ RL Center	RF Freq 2.4	50 Ω 437000	AC 0000 GH	z	SEI		Avg Type	ALIGN AUTO :: Log-Pwr	03:51:33Pf TRAC	Aug 16, 2015	Frequency
	Ref 0	ffset 0.5		10: Fast 🕞 Gain:Low	#Atten: 30	dB		Mk	r2 2.41	9 0 GHz 73 dBm	Auto Tune
10 aB)aiv 10.5 0.500 -9.50		20.50 a		2 Alaran	1 Marchar	adalahatal	-			-10.60 dBm	Center Freq 2.437000000 GHz
-19.5 -29.5 -39.5			Server Barberton Martin					Repression of the second			Start Freq 2.387000000 GHz
-49.5 -59.5 -69.5	North March	a) Organization							- Alerthan	47Pmail.orf142.r444	Stop Freq 2.487000000 GHz
Center 2 #Res B\	2.43700 N 100 ki	GHz Hz		#VBW	/ 300 kHz		:	Sweep 9	Span 1 .600 ms (00.0 MHz 1001 pts)	CF Step 10.000000 MHz
MKE MODE 1 N 2 N 3 N 4 5 6 7 8 9 10 11	TRC SCL 1 f 1 f 1 f 1 f		× 2.425 7 2.419 (2.455 (7 GHz 0 GHz 0 GHz	-4.60 dl -10.73 di -11.16 dl	Sm 3m 3m 3m 			FUNCTIO		Freq Offset 0 Hz
MSG								STATUS			



Aeilen	t Snec	trum	Ana	lvzer - Swe	nt SA									
Cen	ter	Fred	RF q 2	50 Ω .45200	AC 0000 GH P	Hz NO: Fast	Trig: Fre	NSE:INT	Avg	ALIG Type: Lo	NAUTO 9 g-Pwr	03:55:09 PM TRAC TYI	1 Aug 16, 2015 1 2 3 4 5 6 1 MWWWWW	Frequency
		F	Ref	Offset 0.5	lF	Gain:Low	#Atten: 3	0 dB			Mk	r2 2.434	0 GHz	Auto Tune
10 dE Log	3/div	F	lef	20.50 c	Bm							-12.:	24 dBm	
10.5 0.500							01			- 3				Center Freq 2.452000000 GHz
-9.50						1	y a share a share	ant and	مسكسيه الدغيت ويعا				-11.65 dBm	
-29.5										1				Start Freq 2.402000000 GHz
-39.5 -49.5					and the second						- Marker	Wag A		
-59.5	/want	ul _e npla	umi										hter and an and an and an	Stop Freq 2.50200000 GHz
-69.5	tor 2	0 4 5	200									Snan 1	00.0 MHz	
#Re	s BV	V 10	200 10 F	Hz		#VE	3W 300 kHz			Sw	eep 9.	600 ms (1001 pts)	CF Step 10.000000 MHz Auto Man
MKR 1	MODE N	TRC 1	f f		× 2.440	7 GHz	-5.65 d	Bm Bm	UNCTION	FUNCTIO	IN WIDTH	FUNCTIO	IN VALUE	
3	Ň	1	f		2.470	0 GHz	-11.81 d	Bm						Freq Offset 0 Hz
6 7													=	
8 9 10														
11 <													×	
MSG											STATUS			

Figure Channel 9: (Chain A)

Figure Channel 3: (Chain B)

🊺 Keysight S	Spectrum A	nalyzer - Swe	pt SA								
Center	RF Freq 2	50 Ω 2.42200	AC 0000 GH	z	SEI		Avg Type	ALIGN AUTO	05:27:13 P	M Aug 16, 2015	Frequency
10 dB/div	Ref Ref	Offset 0.5 20.50 d	dB IBm	ain:Low	#Atten: 3	0 dB		M	ہو (r2 2.40 -10.0	4 0 GHz 64 dBm	Auto Tune
10.5 0.500				2 Aulana	متزاله المعاليين	MALL HAR	1 nlAshal	3		-10.35 dBm	Center Freq 2.422000000 GHz
-19.5 -29.5 -39.5				}				March March March			Start Freq 2.372000000 GHz
-49.5 -59.5 -69.5	warman	and the second s								arflyattary ar staff	Stop Freq 2.472000000 GHz
Center 2 #Res BV	2.4220 N 100	0 GHz kHz		#VBW	/ 300 kHz	I		Sweep 9	Span 1 0.600 ms (00.0 MHz 1001 pts)	CF Step 10.000000 MHz
MKR MODE 1 N 2 N 3 N 4 5 6 7 8 9 10 11	TRC SCL 1 f 1 f 1 f - - - - - - - - - - - -		× 2.439 { 2.404 (2.440 ;	5 GHz 0 GHz 3 GHz	Y -4.35 dl -10.64 dl -13.22 dl	Bm Bm Bm Bm		ICTION WIDTH	FUNCTION		Freq Offset 0 Hz
MSG								I o statu	s	•	



🍺 К	eysight Sp	pectrum a	Analyzer - Swe	ept SA								
<mark>ω.</mark> Cer	nter F	req (50 Ω 2.43700	AC 0000 GH	z	SEI	NSE:INT	Avg Type	ALIGN AUTO E: Log-Pwr	05:29:02 PI TRAC	M Aug 16, 2015 E 1 2 3 4 5 6	Frequency
_				Pi IFC	NO: Fast ⊂ Gain:Low	#Atten: 3	e Run 0 dB		Mk	r2 2 /10		Auto Tune
10 c	B/div	Ref Re	Offset 0.5 f 20.50 d	dB IBm						-11.	49 dBm	
10.6	5											Center Freq
0.500)					La te de de de de de de	يداريه	and a hard	3		-10.76 dBm	2.437000000 GHz
-19.5	5											Start From
-29.6	5 			and Mark	/			<u> </u>	mhr.			2.387000000 GHz
-39.5	5		المعالية	and Warmer &					M.M.	Witness of		
-59.5	mann	- Spalare	ANNO							- walked	Marrian Martin	Stop Freq
-69.5	5											2.487000000 GH2
Cer #Re	nter 2 es BW	.4370 / 100	0 GHz kHz	I	#VBV	V 300 kHz	1		Sweep 9	Span 1 .600 ms (00.0 MHz 1001 pts)	CF Step 10.000000 MHz
MKR 1	MODE T	RC SCL		X 2 434 I		Y	FUI	NCTION FUN	ICTION WIDTH	FUNCTION	ON VALUE	<u>Auto</u> Man
2 3	N	1 f 1 f		2.419	0 GHz 2 GHz	-11.49 di -11.51 di	3m 3m					Freq Offset
4											=	0 Hz
6 7 8		_										
9 10		-										
11						Ш						
MSG									K STATUS			

Figure Channel 6: (Chain B)

Figure Channel 9: (Chain B)

🊺 Ke	eysight	Spect	rum A	Analyzer - Swe	pt SA								
<mark>w</mark> ℝ Cer	nter	Fre	RF q 2	50 Ω 2.45200	AC 0000 GH	z	SEI		Avg Typ	ALIGN AUTO	05:31:47 P TRAC	M Aug 16, 2015	Frequency
10 d	B/div	,	Ref Ref	Offset 0.5 7 20.50 d	dB IBm	NO: Fast ⊆ Gain:Low	#Atten: 3	0 dB		M	(r2 2.43 -12.	4 0 GHz 24 dBm	Auto Tune
Log 10.6 0.500	5))					2 2 1 1 1 1 1 1		يتوجف المولك والموالي	, and a start of	3		-11.09.dBm	Center Freq 2.452000000 GHz
-19.5 -29.5 -39.5	; ; ;									Mark Broad			Start Freq 2.402000000 GHz
-49.5 -59.5 -69.5	; ;	4JIA	Munder	server and							the sound free	angan al an an alla	Stop Freq 2.502000000 GHz
Cer #Re	nter es Bl	2.4: W 1	520 00	0 GHz kHz		#VBV	V 300 kHz			Sweep 9	Span 1 .600 ms (00.0 MHz 1001 pts)	CF Step 10.000000 MHz Auto Man
MKR 1 2 3 4 5 6 7 7 8 9 10 11	MODE N N		SCL f f		× 2.449 2.434 2.470	5 GHz 0 GHz 2 GHz	Y -5.09 di -12.24 di -11.60 di	50 50 50 50 50 50 50 50 50 50 50 50 50 5		UNCTION WIDTH	FUNCTI	DN VALUE	Freq Offset
MSG											6		<u> </u>



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:

Agilen	t Spec	trum /	nalyzer - Sv	wept SA								
Cen	ter F	Freo	3F 50 9 2.4120	2 AC	łz	SEN	JSE:INT	Avg Type	ALIGN AUTO : Log-Pwr	06:54:42 PM TRAC	4 Aug 16, 2015 CE 1 2 3 4 5 6	Frequency
10 di	B/div	R R	ef Offset 0 ef 20.50	1.5 dB	10: Fast ∟ Gain:Low	#Atten: 30) dB		Mkr	2 2.405 -4.	90 GHz 11 dBm	Auto Tune
Log 10.5 0.500 -9.50							- 1 Juliana	3			-2:96 dBm	Center Freq 2.412000000 GHz
-19.5 -29.5 -39.5				- and alling					y	4		Start Freq 2.387000000 GHz
-49.5 -59.5 -69.5		مريوايس	from the ball of								ever gave manet	Stop Freq 2.437000000 GHz
Cen #Re	ter 2 s BW	2.412 V 100	00 GHz 0 kHz	X	#VBW	/ 300 kHz	FUN		Sweep 4.	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6	N N N		F F	2.413 5 2.405 9 2.418 1	J GHZ O GHZ O GHZ	3.02 dE -4.11 dE -4.17 dE	3m 3m 3m					Freq Offset 0 Hz
7 8 9 10 11		+										
MSG									STATUS	5		



								_								
Agiler	it Spec	ctrum	Ana	lyzer - Swe	pt SA			OFNES	TA LTC		AL LOT 1 A		00,0000	1.0		
Cen	ter	Free	q 2	2.43700	0000 GH	IZ 10: Fast (Trig:	Free Ru	un	Avg Ty	pe: Log-	•Pwr	TRAC TYI	1 Aug 16, 2015 E 1 2 3 4 5 (E MWWWWW		Frequency
_					IFO	Gain:Low	#Atte	n: 30 dE	3		r	Mkr	0 2 4 2 0		1	Auto Tune
10 d	B/div	F	Ref Ref	Offset 0.5 20.50 c	dB IBm						I	VINI2	-3.9	99 dBm		
Log 10.5									,1							Center Freg
0.500							2 	Jug N	/ A-la <u>nne</u> t	. ⊘³—				-2.57 dBn	2.	437000000 GHz
-9.50						Man	V	_¥_		Van						
-19.5						r ^r				٠,	4					Start Freq
-29.5						v									2.	412000000 GHz
-39.5				mm	www.						1	hun a	Mun			
-49.5 -59.5	der.	www.	al a	/# \							-		- × ~	Margareton		Stop Freq
-69.5															2.	462000000 GHz
		. 40	704	0.011-									0	0.00 0411		
#Re	s B	2.43 N 10	200 00 I	kHz		#VB	W 300 K	Hz			Swee	ep 4.	span ə 800 ms (0.00 MH2 1001 pts)		CF Step 5.000000 MHz
MKR	MODE	TRC	SCL		×		Y		FUN	CTION F	UNCTION \	WIDTH	FUNCTIO)N VALUE	Aut	<u>o</u> Man
1	N N	1	f f		2.438 0	D GHz D GHz	<u>3.4</u> -3.9	<u>3 dBm</u> 9 dBm								
3	Ν	1	f		2.443 10) GHz	-3.5	<u>7 dBm</u>								Freq Offset
5 6		_														0 112
7																
9 10																
11							_ 1111							~		
MSG												STATUS				

Figure Channel 06:

Figure Channel 11:

Agilent	t Spect	rum Ar	alyzer - Swo	ept SA								
Cent	ter F	RF req	50 Ω 2.46200	AC 00000 GH	z	SEN		Avg Type	ALIGNAUTO e: Log-Pwr	07:05:21 Pf TRAC	M Aug 16, 2015 E 1 2 3 4 5 6	Frequency
10 dE	3/div	Re Re	f Offset 0.5	o dB dBm	10: Fast ⊆ Gain:Low	#Atten: 30	dB		Mkr	2 2.455 -4.1	45 GHz 09 dBm	Auto Tune
Log 10.5 0.500 -9.50					2 vange	MUUMMM	And the second second	3			-3.80 dBm	Center Freq 2.462000000 GHz
-19.5 -29.5 -39.5			and pro	mm	A CONTRACT				muse	ha he a		Start Freq 2.437000000 GHz
-49.5 -59.5 -69.5	na frontañ	man	pour V V	¥						- Y	W. level to Newsport	Stop Freq 2.487000000 GHz
Cent #Res	ter 2. s BW	4620 100	00 GHz kHz		#VBV	/ 300 kHz			Sweep 4	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz Auto Man
1 2 3 4 5 6	N N N	1 f 1 f 1 f		2.463 0 2.455 4 2.468 1	D GHz 5 GHz D GHz	2.20 dE -4.09 dE -4.93 dE	3m 3m 3m			FUNCTI		Freq Offset 0 Hz
7 8 9 10 11												
MSG									STATUS	3		



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:

Agilen	t Spectri	um An	alyzer - Swe	pt SA								
Cen	ter Fr	RF eq	50 Ω 2.41200	AC 0000 GH	Hz	SEI		Avg Typ	ALIGN AUTO e: Log-Pwr	07:32:47 P	M Aug 16, 2015	Frequency
10 d	3/div	Ref Re	Offset 0.5	dB IBm	NO: Fast Gain:Low	#Atten: 3	0 dB		Mkr	2 2.403 -12.	75 GHz 74 dBm	Auto Tune
Log 10.5 0.500 -9.50					¢ ²	nt and made	1				-11.58 dBm	Center Freq 2.412000000 GHz
-19.5 -29.5 -39.5				and the second	N-NT-				Sand and a star and a star			Start Freq 2.387000000 GHz
-49.5 -59.5 -69.5	honnak	مىمى	- Martin Carlos and Ca							The all and a second second	^{لار} میں معرفی میں میں میں میں میں میں میں میں میں می	Stop Freq 2.437000000 GHz
Cen #Re	ter 2.4 s BW	120 100	0 GHz kHz		#VB	W 300 kHz			Sweep 4	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz Auto Man
1 2 3 4 5 6 7 8 9 10 11 <				× 2.413 2 2.403 7 2.420 2	25 GHz 26 GHz 20 GHz	¥ -5.58 dl -12.74 dl -11.63 dl	Bm 3m 3m 3m		NCTION WIDTH			Freq Offset 0 Hz
MSG									STATU	S		



Agiler	t Spect	rum Ar	alvzer - Swe	ant SA								
и <mark>ж</mark> к Cer	ter F	RI req	50 Ω 2.43700	AC 00000 GH P	IZ N0: Fast ⊂	SE	NSE:INT	Avg Ty	ALIGNAUTO De: Log-Pwr	07:37:34P TRA TY	M Aug 16, 2015 CE 1 2 3 4 5 6 PE M WWWWWW	Frequency
		Re	f Offset 0 !	IFO	Gain:Low	#Atten: 3	0 dB		Mkr	2 2.428	75 GHz	Auto Tune
10 d Log	B/div	Re	f 20.50 (dBm		T				-12.	41 dBm	
10.5												Center Freq
0.500									:			2.437000000 GHz
-9.50					- Pind-	d-ador dog dog	front-o-Analle	-hadred of the			11.92 dBm	
-19.5					مهم			- h	n.			Start Freq
-29.5				- Wester					and and and and			2.412000000 GHz
-49.5			an white	and the					~~~	Un yound .		
-59.5	madur	المتعريل	Waller								an-lahow bother	Stop Freq
-69.5												2.462000000 GHz
Cer	ter 2.	.4370	0 GHz							Span 5	0.00 MHz	CF Step
#Re	s BW	100	kHz		#VBV	/ 300 kHz			Sweep 4	.800 ms (1001 pts)	5.000000 MHz
MKR 1	MODE T	RC SC 1 f		× 2 430 7	0 GHz	-5.92 d	FU Bm	NCTION FI	JNCTION WIDTH	FUNCTI	DN VALUE	Auto
2	N	1 f 1 f		2.428 7	5 GHz	-12.41 d	3m 3m					Freg Offset
4				2.110 2	0.0112	12.40 4						0 Hz
6												
8												
10 11												
<			1		1	Ш	1	1		•	<u>></u>	
MSG									STATU	Б		

Figure Channel 06:

Figure Channel 11:



Pass

Pass

Pass

Pass

>500

>500

>500

>500

11

01

06

11

А

В

В

В

F	Product	:	802.11 b/g	g/n PCIe Module			
ſ	Test Item	:	Occupied	Bandwidth Data			
ſ	Test Site	:	No.3 OAT	TS			
ſ	Test Mode	:	Mode 4: 7	Transmit - 802.11n	-20BW_14.4Mbps(2.4G	Band)_Panel Anten	na
	Channel N	No.	Chain	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
	01		А	2412.00	17800	>500	Pass
	06		А	2437.00	17900	>500	Pass

17750

17750

17700

17750

2462.00

2412.00

2437.00

2462.00



Agilen	t Spec	trum	Ana	lyzer - Swe	pt SA								
Cen	ter	Fre	RF q 2	50 Ω 2.41200	AC 0000 GH	Hz	SE	NSE:INT	Avg Ty	ALIGNAUTO pe: Log-Pwr	07:49:48P TRA TY	M Aug 16, 2015 CE 1 2 3 4 5 6 PE M WWWWW	Frequency
				0.00	iF	Gain:Low	#Atten: 3	0 dB		Mk	r2 2.403	10 GHz	Auto Tune
10 di	3/div		Ref	20.50 d	aB Bm	1					-11.	96 dBm	
10.5													Center Freq
0.500						A 2			/	3			2.412000000 GHz
-9.50						- Arthy	لتهيد الديه الديه المريد		and and you have	/		11.92 dBm	
-29.5						Jack Contraction				W.			Start Freq
-39.5					all					Marria Marriel	n.		2.387000000 GHz
-49.5	- alicent	الوبريان	m	Mary Carlow May							My mar and	monorphylandel	Stop Fred
-59.5													2.437000000 GHz
-69.5													
Cen #Re:	ter 2 s BV	2.41 № 11	200 00	0 GHz kHz		#VE	3W 300 kHz			Sweep	Span 5 4.800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz
MKR	MODE	TRC	SCL		Х		Y	F	UNCTION	UNCTION WIDTH	H FUNCTI	ON VALUE	<u>Auto</u> Man
1	N N	1	f f		2.410 7 2.403 1	75 GHz I0 GHz	-5.92 d -11.96 d	3m 3m					
3	N	1	f		2.420 9	90 GHz	-12.53 d	3m					Freq Offset
5 6 7													
8								_					
10								_					
<	-						1111	-	I		1		
MSG										STAT	US		

Figure Channel 01: (Chain A)

Figure Channel 06: (Chain A)

Agilent Spectr	rum Analyzer - Swe	ept SA						
<mark>⊯</mark> RL Center F	RF 50 Ω req 2.43700	AC 00000 GHz	SENSE:I	NT Avg Type	ALIGN AUTO : Log-Pwr	07:54:41PM TRACE	Aug 16, 2015	Frequency
10 dD/diu	Ref Offset 0.5	PNO: Fast IFGain:Low	#Atten: 30 dB		Mkr2	2 2.428 (-15 4	5 GHz	Auto Tune
10.5 0.500			1 مىتىر، كى ئى رامىرونى	ساسام ایرانیانی ک			-12:40 ciDm	Center Freq 2.437000000 GHz
-19.5 -29.5 -39.5		Arman alarman and			Worker Marker			Start Freq 2.412000000 GHz
-49.5 -59.5 -69.5	mar and a state of the state of					All way realized and	meron Am	Stop Freq 2.462000000 GHz
Center 2. #Res BW	43700 GHz 100 kHz	#VE	300 kHz	S	Sweep 4.	Span 50 800 ms (1	.00 MHz 001 pts)	CF Step 5.000000 MHz
MXS MODE TI 1 N 1 2 N 1 3 N 1 4 - - 5 - - 6 - - 7 - - 8 - - 9 - - 10 - - 11 - -	RC SCL I f I f I f I f I f I f I f I f I f I f I f I f	X 2.435 75 GHz 2.428 05 GHz 2.445 95 GHz	-6.40 dBm -15.44 dBm -14.72 dBm	FUNCTION FUN		FUNCTION	VALUE	Freq Offset 0 Hz
MSG					STATUS			



Agilen	it Spec	strum	Ana	ılyzer - Swe	pt SA								
الا) Cen	ter	Fre	RF q 2	50 Ω 2.46200	AC 0000 GH	łz	SE	NSE:INT	Avg Typ	ALIGNAUTO e: Log-Pwr	08:00:37 PM TRAC	4 Aug 16, 2015 ^{2E} 1 2 3 4 5 6	Frequency
_					P IF(NO: Fast ⊊ Gain:Low	Trig: Free #Atten: 30	e Run 0 dB		Mkr	2 2.453		Auto Tune
10 d	B/div		Ref Ref	Offset 0.5 20.50 d	dB IBm						-12.	92 dBm	
10.5													Center Freq
0.500						•2				3			2.462000000 GHz
-9.50			_			- Construction	the state of the s	mont with	and the base him and	-		-12.23 dBm	
-19.5 no c						1			1	u			Start Freq
-29.5					all and a start of the start of					and when the			2.437000000 GHz
-49.5				In the work of the second	and the second se					Ja	Margare and and		
-59.5	*****	nhaithe										man sent balan	2 48700000 GHz
-69.5													
Cen #Re	ter 2 s BV	2.46 N 11	20	0 GHz kHz		#VBV	V 300 kHz			Sweep 4	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step
MKB	MODE	TRC	SCL		×		Y	FU	NCTION FL	NCTION WIDTH	FUNCTIO	IN VALUE	Auto Man
1	NN	1	f		2.460 7	0 GHz 0 GHz	-6.23 dl	3m 3m					
3	N	1	f		2.470 8	5 GHz	-12.60 d	Bm					Freq Offset
5		_	_										0 Hz
7		_	_										
9 10		_	_										
11												~	
MSG										STATUS	3		[L]

Figure Channel 11: (Chain A)

Figure Channel 01: (Chain B)





🔟 Kevs	siaht Sr	pectrum	Analyzer - Swe	ept SA				,		,		
Cent	er F	- req	^{F 50 Ω}	AC 00000 GH	Ηz	SE	NSE:INT	Avg Type	ALIGN AUTO : Log-Pwr	09:05:12 P	MAug 16, 2015 E 1 2 3 4 5 6	Frequency
10 dB	l/div	Re Re	ef Offset 0.5 ef 20.50 (P IF 5 dB dBm	NO: Fast (Gain:Low	#Atten: 3	e Run 60 dB		Mkr	2 2.428 -10.	15 GHz 84 dBm	Auto Tune
Log 10.5 - 0.500 - -9.50 =					¢ ² ~	g plante al rada	and the second				-10.37 dBm	Center Freq 2.437000000 GHz
-19.5 -29.5 -39.5 -				Auroration and the second					Marken and and			Start Freq 2.412000000 GHz
-49.5 -59.5 -69.5	, Angerta	mlerry ^{en}	ustrane and							- What all and a	๛๛๛๛๚๛๚๛๚	Stop Freq 2.462000000 GHz
Cent #Res	er 2 8 BW	.437 / 100	00 GHz) kHz	×	#VB	W 300 kHz			Sweep 4	Span 5 .800 ms (0.00 MHz 1001 pts)	CF Step 5.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8	N N	1 f 1 f		2.444 4 2.428 1 2.445 8	5 GHz 5 GHz 5 GHz	-4.37 d -10.84 d -11.02 d	Bm Bm Bm				E	Freq Offset 0 Hz
9 10 11 • •						III			K STATUS	5		

Figure Channel 06: (Chain B)

Figure Channel 11: (Chain B)



F	Product	:	802.11 b/g	g/n PCIe Module			
ſ	Fest Item	:	Occupied	Bandwidth Data			
ſ	Test Site	:	No.3 OAT	ſS			
l	fest Mode	:	Mode 5: 7	Fransmit - 802.11n	-40BW_30Mbps(2.4G B	and)_Panel Antenna	l
	Channel N	No.	Chain	Frequency (MHz)	Measurement Level	Required Limit	Res

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



Agilen	it Spectr	um An	alyzer - Swe	ept SA									
Cen	ter Fi	req 2	50 Ω 2.42200	AC 10000 GH PI	lz NO: Fast ⊂	Trig: Free	NSE:INT	Avg	ALIGN Type: Log	iauto g-Pwr	08:08:53 Pf TRAC TY	M Aug 16, 2015 CE 1 2 3 4 5 6 PE MWWWWW	Frequency
		Ref	Offset 0.5	iFC dB	Gain:Low	#Atten: 3	0 dB			Mk	r2 2.40	3 7 GHz 33 dBm	Auto Tune
10 di Log 10.5 0.500	Bidiv	Rei	r 20.50 C					_1			-20.		Center Fred 2.422000000 GH;
-9.50 -19.5 -29.5 -39.5					\$ ²	hur han	math have	hada and a				-17.32 dBm	Start Free 2.372000000 GH:
-49.5 -59.5 -69.5	س المعدر ميد	1	and a frank and the second	and the second second						and	When the second	hathanapagi	Stop Fred 2.472000000 GH
Cen #Re	ter 2.4 s BW	4220 100	0 GHz kHz	×	#VB\	V 300 kHz		INCTION	Swe	ep 9.	Span 1 .600 ms (00.0 MHz 1001 pts)	CF Ste 10.000000 MH <u>Auto</u> Ma
1 2 3 4 5 6	N 1 N 1 N 1	f f f		2.430 2.403 2.440	7 GHz 7 GHz 2 GHz	-11.32 dl -20.33 dl -17.50 dl	3m 3m 3m						Freq Offse
7 8 9 10 11												v	
MSG										STATUS	;		

Figure Channel 3: (Chain A)

Figure Channel 6: (Chain A)

Agilent Spectr	rum Analyzer - Swe	ept SA							
KAIRL Center F	RF 50 Ω req 2.43700	AC 00000 GHz	Tria: Fi		Avg Type	ALIGN AUTO :: Log-Pwr	08:20:01 PM TRAC	E 1 2 3 4 5 6	Frequency
10 dD/diu	Ref Offset 0.5	PNO: I IFGain:	Fast (Fa	30 dB		Mk	r2 2.418	3 7 GHz	Auto Tune
									Center Freq 2.437000000 GHz
-19.5 -29.5 -39.5			2 und name	a mhlandall	Muhando i	W Contract		-17.65 dBm	Start Freq 2.387000000 GHz
-49.5 -59.5 -69.5	nollow you have a logon	And the Andrew				"Moderate	and the second sec	bulationsprotection	Stop Freq 2.487000000 GHz
Center 2. #Res BW	43700 GHz 100 kHz		#VBW 300 kH	z		Sweep 9	Span 1 .600 ms (00.0 MHz 1001 pts)	CF Step 10.000000 MHz Auto Man
MKE MODE T 1 N 1 2 N 1 3 N 1 4 5 6 7 8 9 10 11 1	RC SCL	× 2.440 7 G 2.418 7 G 2.455 3 G	Hz -11.65 Hz -21.62 Hz -20.81	dBm dBm dBm dBm	NCTION FUN		FUNCTIO	N VALUE	Freq Offset 0 Hz
MSG						STATUS	6		



RL IPF SO 2 AC SENSEINT AUXAUTO D08:26:440 Mug16;20:5 Frequency PROCE 12:34:50 Trig: Free Run IFGain:Low Avg Type: Log-Pwr TROCE 12:34:50 Frequency 0 BB/div Ref Offset0.5 dB Mkr2 2:433 8 GHz Center Fr 2.45200000 GHz Center Fr 0 BB/div Ref 20:50 dBm -20.11 dBm -20.11 dBm -20.20000 GHz Center Fr 0 40 -20:00 GHz	Agilent Spe	ectrum /	Analyzer - 1	Swept SA								
IFGaint.ow #Atten: 30 dB Mkr2 2.433 8 GHz 0 Ref Offset 0.5 dB -20.11 dBm 0.5 -20.11 dBm -20.11 dBm 0.6 2 1 0.7 -20.11 dBm 0.8 -1976dm 0.9 -1976dm 1.9 -1976dm 1.9 <td>RL Center</td> <td>Frec</td> <td>RF 50 2.452</td> <td>Ω AC 000000 G</td> <td>iHz PNO: Fast C</td> <td>SEP Trig: Free</td> <td>Run</td> <td>Avg Ty</td> <td>ALIGNAUTO /pe: Log-Pwr</td> <td>08:25:44P TRA TY</td> <td>M Aug 16, 2015 CE 1 2 3 4 5 6 PE M WWWWW</td> <td>Frequency</td>	RL Center	Frec	RF 50 2.452	Ω AC 000000 G	i Hz PNO: Fast C	SEP Trig: Free	Run	Avg Ty	ALIGNAUTO /pe: Log-Pwr	08:25:44P TRA TY	M Aug 16, 2015 CE 1 2 3 4 5 6 PE M WWWWW	Frequency
0 dB/div Ref 20.50 dBm -20.11 dBm 0 dB/div Ref 20.50 dBm -19.76 dBm 9 dB/div Ref 20.50 dBm -19.76 dBm 10 dI hot dam Ref 20.11 dBm		R	ef Offset	0.5 dB	FGain:Low	#Atten: 30) dB		3 8 GHz	Auto Tuno		
0.5 0	10 dB/di	v R	ef 20.5	0 dBm	-					-20.	11 dBm	
300 1 2 1 3 .1976 den 2.45200000 G 95 2.45200000 G 3 .1976 den Start Fr 2.40200000 G 95 95 9	10.5											Center Fre
100 2 1 3 .1976 dbn 9.5 2 1 3 .1976 dbn 9.5 3 1 1976 dbn 2.40200000 G 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.6 9.6 9.6 9.6 9.7 1 1 1 1 1 1 1 <).500 —											2.452000000 GH
9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5	9.50					<u>}</u> ¹			0.3			1
9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5	19.5				- Auch	Jow when when a	relich	Autor Mary	()		-19.76 dBm	Otort Fra
9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5	29.5						·		<u> </u>			2 40200000 CH
9.5 9.5 9.5 9.5 9.5 9.5 9.5 9.5	39.5				1				<u> </u>			2.40200000 GP
9.5 Image: stand of the section of t	49.5			- Warden M	*				marcherer			
9.5 2.50200000 G enter 2.45200 GHz Span 100.0 MHz Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (1001 pts) 38 1 1 1 2 1 2 1 1 1 2 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 3 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 3 1 1 1 2 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 1 1 3 1 4 1 </td <td>59.5</td> <td>the street</td> <td>hunder</td> <td>a hour -</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Merenaleran</td> <td>haterulla</td> <td>Stop Fre</td>	59.5	the street	hunder	a hour -						Merenaleran	haterulla	Stop Fre
Enter 2.45200 GHz Span 100.0 MHz Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (1001 pts) Minore Tree Sect X Function Function wight Function wight N 1 f 2.440 7 GHz -13.75 dBm Function wight Function wight <td>69.5</td> <td></td> <td>2.502000000 GH</td>	69.5											2.502000000 GH
enter 2.45200 GHz Span 100.0 MHz CF Ster Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (1001 pts) Auto Res BW 100 kHz 10.00000 MZ 10.00000 MZ Auto Matter Ster Res BW 100 kHz 10.1375 dBm FUNCTION FUNCTION FUNCTION VALUE Auto Matter Ster N 1 f 2.440 7 GHz -20.43 dBm OI Freq Offs OI 3 N 1 f 2.470 0 GHz -20.43 dBm OI Freq Offs OI 6 0 0 0 OI OI OI OI												
SR MODE TEC SC X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE Auto M 1 N 1 f 2.440.7 GHz -13.75 dBm FUNCTION WIDTH FUNCTION VALUE Auto M 2 N 1 f 2.433.8 GHz -20.11 dBm	Center #Res B	2.452 W 10	200 GHz 0 kHz	2	#VB	W 300 kHz			Sweep 9	Span 1 9.600 ms (00.0 MHz (1001 pts)	CF Ste 10.000000 MH
1 N 1 f 2.440 7 GHz -13.75 dBm 2 N 1 f 2.433 8 GHz -20.11 dBm	MKR MODE	TRC S	CL	×		Y	FU	INCTION	FUNCTION WIDTH	I FUNCTI	ON VALUE	Auto Ma
I I ZAGO O GHZ ZO.11 GBm Freq Offs Freq Offs 0 4 - - - - - - 0 - 0 - 0 - - - 0 - - - - - - 0 - - - - - 0 - - - - - - - 0 - - - - - - - - - - - - - 0 - - - - - - 0 - - - - - - - 0 - - - - - - 0 - - - - - - 0 - - - 0 - - - 0 - - - 0 - - - 0 -	1 N	1	f	2.44	0 7 GHz	-13.75 dE	3m					
	3 N	1	F	2.40	0 0 GHz	-20.43 dE	3m					Freq Offs
	5										=	01
	6											
	8											
	9 10											
a status	11										~	
JUNIO DI NICO	SG								STATI	JS		

Figure Channel 9: (Chain A)

Figure Channel 3: (Chain B)

🊺 Key	/sight S	Spectr	'um A	nalyzer - Swe	ept SA								
Cent	ter	Fre	RF q 2	50 Ω 2.42200	AC	lz		NSE:INT	Avg Ty	ALIGN AUTO	09:19:25 P TRAC TY	M Aug 16, 2015 CE 1 2 3 4 5 6 PE M WWWWW	Frequency
10 dE	3/div	,	Ref Ref	Offset 0.5 20.50 c	if dB jBm	NU: Fast Gain:Low	#Atten: \$	30 dB		М	⊳ kr2 2.40 -17.	4 0 GHz 71 dBm	Auto Tune
Log 10.5 0.500						•2		1		.3			Center Freq 2.422000000 GHz
-19.5 -29.5 -39.5								 	harder and the second s	>-		-16.29 dBm	Start Freq 2.372000000 GHz
-49.5 -59.5 -69.5	a son a shi	Managel	Nau	al and a second s							eline Harmerel Myrel	Mpanan	Stop Freq 2.472000000 GHz
Cent #Res	ter 2 s BV	2.42 N 1	20	0 GHz kHz		#VE	300 kHz			Sweep	Span 1 9.600 ms (00.0 MHz 1001 pts)	CF Step 10.000000 MHz Auto Man
MXX 1 1 2 3 4 5 6 7 7 8 9 10 11	MODE N N	TRC 1 1 1	SCL f f		× 2.427 2.404 2.440	0 GHz 0 GHz 0 GHz	Y -10.29 d -17.71 d -17.04 d	Bm Bm Bm Bm		JNCTION WIDTH			Freq Offset 0 Hz
MSG											JS		



🍺 Key	sight Spe	ectrum /	Analyzer - Swe	pt SA								
Cen	ter F	RF req 2	50 Ω 2.43700	AC 0000 GH	z	SE	NSE:INT	Avg Type	ALIGN AUTO e: Log-Pwr	09:30:33 P	MAug 16, 2015 CE 1 2 3 4 5 6	Frequency
		Ref	Offset 0.5	PI IFC	NO:Fast ⊂ Gain:Low	#Atten: 3	e Run 0 dB		Mk	r2 2.41		Auto Tune
10 de Log 10.5	3/div	Re	f 20.50 d	Bm						-16.9	98 dBm	Center Freq
0.500 -9.50					\$2 	1 Narahaladadada	J.M. Laleson	munhal?	3		-15.83 dBm	2.437000000 GHz
-19.5 -29.5 -39.5]		ľ		1			Start Freq 2.387000000 GHz
-49.5 -59.5	menham	er nyrdend	-	and the designed and the second se					March North	mar and have	and manufacture	Stop Freq
-69.5 Cen	ter 2 /	4370	0 GH7							Snan 1	00.0 MHz	CESten
#Re:	S BW	100 100	kHz	X	#VB	N 300 kHz Y	FUN		Sweep 9	.600 ms (1001 pts)	10.000000 MHz Auto Man
1 2 3 4 5 6	N 1 N 1 N 1	f f		2.434 2.419 2.455	5 GHz 0 GHz 0 GHz	-9.83 dl -16.98 dl -16.58 dl	Bm Bm Bm				E	Freq Offset 0 Hz
7 8 9 10 11												
MSG										5	•	

Figure Channel 6: (Chain B)

Figure Channel 9: (Chain B)

🊺 Ke	ysight	Spect	rum A	Analyzer - Swe	pt SA								- 6 ×
<mark>גא</mark> ו ℝ Cen	L nter	Fre	RF ≥q2	50 Ω 2.45200	AC 0000 GH	z	SEI	NSE:INT	Avg Ty	ALIGN AUTO	09:36:18 P	M Aug 16, 2015 CE 1 2 3 4 5 6	Frequency
10 d	B/div	,	Ref Ref	Offset 0.5 f 20.50 d	dB IBm	NO:Fast ⊂ Gain:Low	Atten: 3	0 dB		M	kr2 2.43 -19.	4 0 GHz 93 dBm	Auto Tune
Log 10.5 0.500 -9.50						- 2							Center Freq 2.452000000 GHz
-19.5 -29.5 -39.5							- Michaelandea	, metral la Martinal	<u></u>			-19.07 dBm	Start Freq 2.402000000 GHz
-49.5 -59.5 -69.5	high	nh-ar	***	LENdregeneret	Alter Alexander					0.4444	and mental for the	- Jonny on the Cases	Stop Freq 2.502000000 GHz
Cen #Re	nter Is Bi	2.4∜ № 1	520 00	0 GHz kHz		#VB	W 300 kHz			Sweep	Span 1 9.600 ms (00.0 MHz (1001 pts)	CF Step 10.000000 MHz <u>Auto</u> Man
1 2 3 4 5 6 7 8 9 10 11					X 2.446 2.434 2.470	9 GHz 0 GHz 0 GHz	* -19.93 di -19.71 di	FU 3m 3m 3m			H FUNCT		Freq Offset 0 Hz
MSG										I ostat	US		

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
Х	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

 $\pm 1.27 \ dB$

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.

Agilen	t Spectrum A	nalyzer - Swo	ept SA								
Cen	ter Frea	50 Ω 2.41200	AC	lz		JSE:INT	Avg Type	LIGNAUTO	03:06:54 PM TRAC	Aug 16, 2015 E 1 2 3 4 5 6	Frequency
			PI IF(NO: Fast 🖵 Gain:Low	Trig: Free #Atten: 30	e Run) dB			TYF DE		Auto Tune
10 dE	Re 3/div R e	of Offset 0.5 ef 20.50 c	dB IBM					WK r 1 2.	411 01 ⁻ 3.4	40 dBm	
10.5					1						Center Freq 2.412000000 GHz
0.500 -9.50		m	Juli	<u>A_AA.</u> A.	- Aur	A.A.	A.A.A.A	AN	M	A.	Start Freq 2.402850000 GHz
-19.5	A. J.									· V.V	Stop Freq 2.421150000 GHz
-39.5 -49.5											CF Step 1.830000 MHz <u>Auto</u> Man
-59.5											Freq Offset 0 Hz
-69.5											
Cent #Res	ter 2.4120 s BW 100	000 GHz kHz		#VBW	300 kHz			Sweep 1	Span 1 800 ms (8.30 MHz 1001 pts)	
MSG								STATUS			

Figure Channel 01:



					5		annei	00.			
Agiler	it Spectru	ım Analyzer - Swe	ept SA								
LXI R	L	RF 50 Ω	AC		SEM	ISE:INT		ALIGN AUTO	03:09:39 PM	4 Aug 16, 2015	_
Cer	ter Fr	eq 2.43700	00000 GH	z]	_	Avg Type	: Log-Pwr	TRAC	E 1 2 3 4 5 6	Frequency
			PI	10: Fast 🖵	Trig: Free	Run			DE		
			IFU	ain:Low	#Atten. st	uD					
		Ref Offset 0.5	dB					Mkr1 2	2.438 994	4 7 GHz	Auto Tune
10 d	B/div	Ref 20.50 d	lBm						3.4	42 dBm	
Log											
											Center Freq
10.5							. 1				2.437000000 GHz
							♦ '				
0.500			0 & A.	AAAA	A AA	A.A.A.	Å A A A	AAA			
		. 0-1	June		- }	1			Mr.		Start Freq
0.50		all h	1		V	V			γ	Λ.	2.427850000 GHz
-9.50	a . A		1						W		
	0									J.A	
-19.5	1 9									V	Stop Fred
											2 446150000 GHz
-29.5											2.440130000 6112
39.5											CF Step
-35.5											1.830000 MHz
											<u>Auto</u> Man
-49.5											
											F
-59.5											FreqOffset
											0 Hz
-69.5											
-05.0											
Cen	ter 2.4	37000 GHz	1				1		Span 1	8.30 MHz	
#Re	s BW '	100 kHz		#VBW	300 kHz		:	Sweep 1	1.800 ms (1001 pts)	
MEG								OTATI	·		
MaG								STATU	3		

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.

Agilen	t Spectrum	Analyzer - Sw	ept SA		SEN	ISEITNT		ALIGN ALITO	03:17:01 PM	1 Aug 16 2015	
Cen	ter Fre	q 2.41200	00000 GH		Tria: Free	Run	Avg Type	: Log-Pwr	TRAC	E 1 2 3 4 5 6 E MWWWWW	Frequency
			IF(Gain:Low	#Atten: 30	dB			DE		
10 dE	Ref Offset 0.5 dB MKr1 2.417 000 GHZ dB/div Ref 20.50 dBm 3.01 dBm										
3											Center Freq
10.5								1			2.412000000 GHz
0.500			man	montioned	A A A A A A A A A A A A A A A A A A A	som mon	man	humphon	A Palida		
		1						n in erste			Start Freq 2 399625000 GHz
-9.50		N							L.		
-19.5	4	and harden							Vur of	hn -	Stop Freq
-29.5	where Walker	-								Mary Marin	2.424375000 GHz
-20.0											
-39.5											CF Step 2.475000 MHz
-49.5											<u>Auto</u> Man
											Freq Offset
-59.5											0 Hz
-69.5											
Cent #Box	ter 2.41	200 GHz		#\/B\M	200 643			Swoon (Span 2	4.75 MHz	
MSG				#VDVV	300 Kr12			SWEEP A	s.400 ms (1001 pts)	

Figure Channel 01:



					5		iumer	001			
Agiler	it Spectri	um Analyzer - Swo	ept SA								
lxi r	L	RF 50 Ω	AC		SEN	ISE:INT		ALIGN AUTO	03:21:32 PM	4 Aug 16, 2015	Fraguanay
Cer	iter Fr	eq 2.43700	00000 GH	12 NO: Fast 😱 Gain:Low	Trig: Free #Atten: 30	Run dB	Avg Typ∈	: Log-Pwr	TRAC TYP DE	Е 123456 РЕМ ИЖИМИИ ТРИNNNN	Frequency
10 d	B/div	Ref Offset 0.5 Ref 20.50 c	dB IBM					Mkr1	2.438 2 3.4	262 GHz 47 dBm	Auto Tune
10.5						1					Center Freq 2.437000000 GHz
0.500 -9.50		- North	wood have	montin	- And	malina	Here and Andrews	bandra	u lwu		Start Freq 2.424625000 GHz
-19.5	a Marley	www.and							Mun	Marthe	Stop Freq
-29.5	IY. Y									, _{Albe}	CF Step
-39.5											2.475000 MHz <u>Auto</u> Man
-59.5											Freq Offset 0 Hz
-69.5											
Cen #Re	ter 2.4 s BW	3700 GHz 100 kHz	1	#VBW	300 kHz			Sweep 2	Span 2 2.400 ms (4.75 MHz 1001 pts)	
MSG								STATU	Б		

Figure Channel 06:

Figure Channel 11:

Agiler	nt Spectru	m Analyzer - S	wept SA								
(X) R Cer	ter Fr	RF 50 eq 2.4620	Ω AC 000000 GH	lz	SEN		Avg Type	ALIGNAUTO : Log-Pwr	03:24:45 PM TRAC	Aug 16, 2015	Frequency
10 d	PN0: Fast IFGain:Low Ing. Free Kan Det PNNNNN Ref Offset 0.5 dB #Atten: 30 dB Mkr1 2.463 262 GHz 10 dB/div Ref 20.50 dBm 2.96 dBm								Auto Tune		
10.5						▲1					Center Freq 2.462000000 GHz
0.500 -9.50		N	n man man	montenad	hintry	pmlmm	mmmm	brondhurn	- my		Start Freq 2.449625000 GHz
-19.5	profynul fan	July and the second							M. M.	La Mary La Mary	Stop Freq 2.474375000 GHz
-39.5											CF Step 2.475000 MHz <u>Auto</u> Man
-49.5 -59.5											Freq Offset 0 Hz
-69.5											
Cen #Re	ter 2.4 s BW 1	6200 GHz 100 kHz		#VBW	300 kHz			Sweep 2	Span 2 .400 ms (4.75 MHz 1001 pts)	
WSG								STATUS	`		

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	А	2412	-1.650	1.360	< 4dBm	Pass
	В	2412	0.760	3.770	< 4dBm	Pass
06	А	2427	-1.190	1.820	< 4dBm	Pass
	В	2437	-0.760	2.250	< 4dBm	Pass
11	А	2462	-0.430	2.580	< 4dBm	Pass
	В	2462	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.



					5 un e e	manne	A 011 (Cinain			
Agiler	nt Spectru	ım Analyzer - Sw	ept SA								
LXI R	L	RF 50 Ω	AC		SEN	JSE:INT		ALIGN AUTO	03:29:55 PN	1 Aug 16, 2015	
Cer	ter Fr	eg 2.41200	00000 GH	7			Avg Type	e: Log-Pwr	TRAC	E123456	Frequency
			P	NO: Fast 😱	Trig: Free	Run			TYP		
	IFGain:Low #Atten: 30 dB										
	Mkr1 2.410 715 GHz									Auto Tune	
40 -	Ref Offset 0.5 dB 10 dB/div Bef 20 50 dBm -1 65 dBm										
Loa	Bialy	Rei 20.30	ивш								
											Center Freq
10.5											2.412000000 GHz
0.500					≬ 1						
0.000				а Л.	A 8		n o t	o 1			Start Fred
		pr1		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	WWW WWW	www. www	more more	WWW WWW	m		
-9.50						J					2.398612500 GHZ
10.5		س ل							1.		
-15.0		_m							* h ₁₀		Stop Freq
		11-1N1							- MV		2.425387500 GHz
-29.5		m ^m								чы vu	
	WNW -									martin	
	· ·									- N	CF Step
-39.5											2.677500 MHz
											Auto Man
-49.5											
											Freg Offset
-59.5											0 H2
											0112
-69.5											
Con	tor 2 4	1200 CH-	1	1		1	1	1	Snap 2	6 70 MH-	
#Do	c B1M			#\/D\^	300 64-			Cwoon S	600 mc /	1001 nto	
"Re	3 044			#VDVV	JUO KIIZ			aweep z		ioo i pisj	
MSG								STATU	5		
								1	1		

Figure Channel 01: (Chain A)

Figure Channel 06: (Chain A)

Agiler	nt Spectru	m Analyzer - Sv	vept SA								
ιxvi ℝ Cer	ter Fr	RF 50 S	2 AC	łz		NSE:INT	Avg Type	ALIGN AUTO : Log-Pwr	03:35:22 PM TRAC	4 Aug 16, 2015 E 1 2 3 4 5 6	Frequency
10 d	B/div	Ref Offset 0 Ref 20.50	5 dB dBm	NO: Fast 🕞 Gain:Low	#Atten: 30	dB		Mkr1 2	2.435 711 -1.	8 4 GHz 19 dBm	Auto Tune
Log 10.5					. 1						Center Freq 2.437000000 GHz
0.500 -9.50			www.	alanhar	why	purhan	numant	www	~		Start Freq 2.423650000 GHz
-19.5	5.5.0k.00	and the first of the second							- U.	Who w	Stop Freq 2.450350000 GHz
-39.5	analyte.									لىلىغ ^ى رى .	CF Step 2.670000 MHz <u>Auto</u> Man
-49.5											Freq Offset 0 Hz
-69.5									0	0.70 MU-	
Cen #Re	s BW 1	3700 GHZ 100 kHz		#VBW	1 300 kHz			Sweep	Span 2 2.600 ms (6.70 MHz 1001 pts)	
MSG								STATU	15		


				0					,		
Agiler	nt Spectri	um Analyzer - !	Swept SA								
LXI R	L	RF 50	Ω AC		SEM	VSE:INT		ALIGN AUTO	03:38:14 PM	4 Aug 16, 2015	Fraguanay
Cen	iter Fr	eq 2.462	000000 G	Hz	Taker		Avg Type	e: Log-Pwr	TRAC	E 1 2 3 4 5 6	Frequency
			l I	NO: Fast 🖵	#Atten: 30	e Run NAB			DI		
			Ir	Gamerow	Withcom: 04				400 74		Auto Tune
		Ref Offset	0.5 dB					WKr1 2	.460 /1	8 4 GHZ	
10 di	B/div	Ref 20.50) dBm						-0.	43 dBm	
Log											
											Center Freq
10.5											2.462000000 GHz
					-						
0.700					♦'						
0.500			An An	A. A.	a An	. A. N	A. A.	10.1			Start From
		- I I	Warder Ward His	Mr. W. A. M.	www "Wi	Mr. mur	WW YANYY	New Mrdage	h,m{		Startiney
-9.50										-	2.448650000 GHz
		1									
-19.5		1							79		
10.0		N							nun		Stop Freq
		AN AN							ŭγ	When a	2.475350000 GHz
-29.5	JUM N	ÚK.								Mar .	
	s-fl"									- www	
-39.5											CF Step
											2.670000 MHz
40 E											<u>Auto</u> Man
-45.0											
											Fred Offset
-59.5							+		+		
											0 HZ
-69.5											
Cen	ter 2.4	6200 GH7							Span 2	6.70 MHz	
#Re	s BW	100 kHz		#VBW	300 kHz		:	Sweep 2	2.600 ms (1001 pts)	
								OTATIN			
MSG								STATU	5		

Figure Channel 11: (Chain A)

Figure Channel 01: (Chain B)

🊺 Ke	ysight Spect	trum Analyzer	- Swept SA								
<mark>ΩN</mark> R Cer	L Iter Fre	^{RF} 5 eq 2.412	0 Ω AC 0000000 G	Hz	SEI		Avg Type	ALIGN AUTO : Log-Pwr	05:17:38 PI TRAC	HAug 16, 2015	Frequency
10 d	B/div	Ref Offset Ref 20.5	0.5 dB 0 dBm	'NO: Fast ⊆ Gain:Low	#Atten: 3	0 dB		Mkr1	2.419 4 0.	55 GHz 76 dBm	Auto Tune
10.5									1		Center Freq 2.412000000 GHz
0.500 -9.50			mounder	nhunh	Nurman	mhad	howhy	walkap			Start Freq 2.398687500 GHz
-19.5 -29.5	- Inter Ungerster	Mana							h h	With the Ver	Stop Freq 2.425312500 GHz
-39.5	Lup -									-jt	CF Step 2.662500 MHz <u>Auto</u> Man
-59.5											Freq Offset 0 Hz
-69.5 Cen	ter 2.4	1200 GH	2	#\/D\\	200 kHz				Span 2	6.63 MHz	
#ке мsg	5 15 17 1	UU KMZ		#vBW	300 KHZ			Sweep 2	s.ouu ms (1001 pts)	

				,				ept SA	um Analyzer - Swe	ysight Spectr	🊺 Ke
Frequency	HAug 16, 2015	05:20:07 PI TRAC	ALIGN AUTO : Log-Pwr	Avg Type	ISE:INT	SEI	z	AC 0000 GH	RF 50 Ω q 2.43700	∟ nter Fre	Cen
Auto Tune	9 3 GHz 76 dBm	.444 449 -0.	Mkr1 2) dB	#Atten: 3	NO: Fast ⊆∟ Gain:Low	dB IBm	Ref Offset 0.5 Ref 20.50 d	B/div	10 di
Center Freq 2.437000000 GHz			•1								10.5
Start Freq 2.423650000 GHz		14	www.ly	mm	mm	hond	Murina	Nwhw	M		0.500 -9.50
Stop Freq 2.450350000 GHz	Wythe DWills a s	Jo North							Westerner	adawa	-19.5 -29.5
CF Step 2.670000 MHz <u>Auto</u> Man										d for a lar	-39.5 -49.5
Freq Offset 0 Hz											-59.5
	6.70 MHz 1001 pts)	Span 2 .600 ms (Sweep 2			300 kHz	#VBW		700 GHz	ter 2.43	-69.5 Cen #Re:
[]			STATUS								MSG

Figure Channel 06: (Chain B)

Figure Channel 11: (Chain B)

🊺 Ke	ysight Spect	trum Analyzer - Sw	rept SA								
Cen	L Iter Fre	RF 50 G	AC 00000 GH	lz	SEI		Avg Type	ALIGN AUTO :: Log-Pwr	05:23:52 P	M Aug 16, 2015	Frequency
10 di	3/div	Ref Offset 0. Ref 20.50	PI IFC 5 dB d Bm	NO: Fast ⊆ _⊫ Gain:Low	#Atten: 3	0 dB		Mkr	1 2.466 9 0.	952 GHz 08 dBm	Auto Tune
10.5								1			Center Freq 2.462000000 GHz
0.500 -9.50		M	mann	Maria	hurtry	mohn	mound	hard	hom		Start Freq 2.448687500 GHz
-19.5 -29.5	white	and and a							h	Mu Jarah was	Stop Freq 2.475312500 GHz
-39.5	יאת יי 									, , , , , , , , , , , , , , , , , , ,	CF Step 2.662500 MHz <u>Auto</u> Man
-59.5											Freq Offset 0 Hz
-69.5 Cen #Re:	ter 2.40 s BW 1	6200 GHz 00 kHz		#VBW	300 kHz			Sweep	Span 2 2,600 ms (6.63 MHz	
MSG	• •								us		L

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
02	А	2422	-5.200	-2.190	< 4dBm	Pass
03	В	2422	-4.020	-1.010	< 4dBm	Pass
0.6	А	2427	-4.620	-1.610	< 4dBm	Pass
06	В	2437	-4.390	-1.380	< 4dBm	Pass
00	А	2452	-5.650	-2.640	< 4dBm	Pass
09	В	2452	-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.

Agilen	t Spectru	m Analyzer - Swe	pt SA				, i i i i i i i i i i i i i i i i i i i		,		
Cen	ter Fr	RF 50 Ω eq 2.42200	AC 0000 GH		SEN		Avg Type	ALIGNAUTO : Log-Pwr	03:45:23 PM TRAC TYI	4 Aug 16, 2015 CE 1 2 3 4 5 6 PE MWWWWW	Frequency
10 dE	3/div	Ref Offset 0.5 Ref 20.50 c	dB IBm	Gain:Low	#Atten: 30) dB		Mk	⊓ r1 2.430 -5.	71 GHz 20 dBm	Auto Tune
10.5											Center Freq 2.422000000 GHz
0.500 -9.50		ر مالي	l, physical and	uhalyhyhy	the dealine	mahulyu	1- مەكەلمەلبەلم	h. Marchada	phaly -		Start Freq 2.394775000 GHz
-19.5		and a second									Stop Freq 2.449225000 GHz
-39.5	haw haw	phyloca							<u>ارم</u>	Mar Marker M Marker Marker Marker Marker Marker	CF Step 5.445000 MHz <u>Auto</u> Man
-49.5											Freq Offset 0 Hz
-69.5 Cen	ter 2 4	2200 GHz							Snan 5	4 45 MHz	
#Re:	s BW 1	00 kHz		#VBW	300 kHz		:	Sweep :	5.267 ms (1001 pts)	

Figure Channel 03: (Chain A)

Figure Channel 06: (Chain A)

Agiler	it Spectru	m Analyzer - Sw	ept SA								
(XI R Cen	ter Fr	RF 50 Ω eq 2.43700	AC 00000	lz	SEN		Avg Type	ALIGNAUTO : Log-Pwr	03:51:54 Pf TRAC	M Aug 16, 2015 CE 1 2 3 4 5 6 PE M MAAAAAAAA	Frequency
10 di	3/div	Ref Offset 0.5 Ref 20.50 (o dB dBm	NU: Fast Le Gain:Low	#Atten: 30) dB		Mkr1	2.445 7 -4.	48 GHz 62 dBm	Auto Tune
10.5											Center Freq 2.437000000 GHz
0.500 -9.50		rhw	la barbarbarbarb	your and a sector of the secto	horring	mpluh	rt of all all all	alzahanzalea	lurlu.		Start Freq 2.410000000 GHz
-19.5									hu h		Stop Freq 2.464000000 GHz
-39.5	Whend	Aler Alert							***	When the strange with	CF Step 5.400000 MHz <u>Auto</u> Man
-49.5 -59.5											Freq Offset 0 Hz
-69.5											
Cen #Re	ter 2.4: s BW 1	3700 GHz 00 kHz		#VBW	300 kHz		:	Sweep 5	Span 5 .200 ms (4.00 MHz (1001 pts)	
MSG								STATUS	6		



Agilent Spectrum Analyzer - Swept SA SelSE:INT ALIGNAUTO 03:55:30 PM Aug 16, 2015 Value RL RF 50 Q AC SEISE:INT ALIGNAUTO 03:55:30 PM Aug 16, 2015 Center Freq 2.452000000 GHz Trig: Free Run IFGain:Low Avg Type: Log-Pwr #Atten: 30 dB TRACE [12:3:4:5:6 TYPE [MWWWWW DET [P NNNN DET [P NNNN DET [P NNNN Ref Offset 0.5 dB Mkr1 2.440 714 GHz 5:6:5 dP 5:6:5 dP	Frequency Auto Tune
Mg RL RF 50 Ω AC SENSE:INT ALIGNAUTO 03:55:30 PM Aug 16, 2015 Center Freq 2.452000000 GHz Trig: Free Run IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Type: Log-Pwr Trace [12 3 4 5 6] PN0: Fast IFGain:Low Trig: Free Run #Atten: 30 dB Mkr1 2.440 714 GHz GHZ Ref Offset 0.5 dB 5 6 5 dPm 5 6 5 dPm	Frequency Auto Tune
Center Freq 2.452000000 GHz Trig: Free Run Avg Type: Log-Pwr TRACE 1/2 3 4 5 6 PN0: Fast IFGain:Low Trig: Free Run #Atten: 30 dB DET P Ref Offset 0.5 dB Mkr1 2.440 714 GHz	Auto Tune
PNO: Fast Trig: Free Run IFGain:Low #Atten: 30 dB DET P NNNN Ref Offset 0.5 dB S C d	Auto Tune
Ref Offset 0.5 dB	Auto Tune
Ref Offset 0.5 dB Mkr1 2.440 714 GHz	Auto Lune
Reconsector and 5.65 dBm	
-0.00 UDIII	
	Contor From
10.5	Center Freq
10.5	2.452000000 GHz
0.500	
	Start Freq
	2 425000000 GHz
	2.42000000000112
.19.5	
	Stop Freq
	2.479000000 GHz
-29.5	
39.5 the manual sector and the secto	CF Step
Were Were	5.400000 MHz
	<u>Auto</u> Man
-49.5	
.59.5	Freq Offset
	0 Hz
-69.5	
Center 2.45200 GHz Span 54.00 MHz	
#Res BW 100 kHz #VBW 300 kHz Sweep 5.200 ms (1001 pts)	
MSG STATUS	

Figure Channel 09: (Chain A)

Figure Channel 03: (Chain B)

🊺 Keysight	t Spectrum Analyzer - Sw	ept SA								
Center	RF 50 Ω Freq 2.42200	AC 00000 GH	lz	SEI		Avg Type	ALIGN AUTO	05:27:33 PI TRAC	M Aug 16, 2015	Frequency
10 dB/div	Ref Offset 0.5	odB Bm	NO: Fast 🕞	#Atten: 3	0 dB		Mk	r1 2.426 -4.	95 GHz 02 dBm	Auto Tune
10.5										Center Freq 2.422000000 GHz
0.500 -9.50	, h,	م مولوملوم	pro Ladricha	h, hylenn	Mallada	1	holdydy	rhydry		Start Freq 2.394775000 GHz
-19.5	لي الم				J					Stop Freq 2.449225000 GHz
-39.5 freehold	andinkowska								L'UG WWWWWWW	CF Step 5.445000 MHz <u>Auto</u> Man
-49.5										Freq Offset 0 Hz
-69.5										
Center #Res Bl	2.42200 GHz W 100 kHz		#VBW	300 kHz		:	Sweep :	Span 5 5.267 ms (4.45 MHz 1001 pts)	



							pt SA	n Analyzer - Swe	/sight Spectru	🊺 Ke
Frequency	05:29:22 PM Aug 16, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO pe: Log-Pwr	Avg Typ	NSE:INT	SEI	z	AC 0000 GH	RF <u>50 Ω</u> 2.43700	ter Frec	Køl R Cer
Auto Tune	434 502 2 GHz -4.39 dBm	Mkr1 2		odB	#Atten: 3	NO: Fast 🖵 Gain:Low	dB Bm	ef Offset 0.5 ef 20.50 d	R 3/div R	10 d
Center Freq 2.437000000 GHz										Log 10.5
Start Freq 2.409850000 GHz	Aula	ndushadayilyd	Jelyalughya	molud	hall han	un Mapharta	h. I. wales the de	J. Mark		0.500 -9.50
Stop Freq 2.464150000 GHz				¥	ŗ			- And Market		-19.5 -29.5
CF Step 5.430000 MHz <u>Auto</u> Man	- Weddwedd wedd wedd wedd wedd wedd wedd								-United and the second	-39.5
Freq Offset 0 Hz										-59.5
	Span 54.30 MHz 200 ms (1001 pts)	Sweep 5.			300 kHz	#VBW		00 GHz kHz	ter 2.437 s BW 10	-69.5 Cen #Re
										MSG

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)

Agilent Spe	ctrum Analyzer - Swe	ept SA					
L <mark>XI</mark> RL	RF 50 Ω	AC	SENSE:II	NT /	ALIGNAUTO 06:5	5:02 PM Aug 16, 2015	Frequency
Center	Freq 2.41200	10000 GHz PNO: Fast IFGain:Low	Trig: Free Ru #Atten: 30 dB	Avg lype n	: Log-Pwr	TYPE MWWWWWW DET P N N N N N	
10 dB/div	Ref Offset 0.5 Ref 20.50 c	dB IBm			Mkr1 2.412	512 4 GHz 2.93 dBm	Auto Tune
10.5) ¹			Center Freq 2.412000000 GHz
0.500 -9.50	m	marchand			A.M.	MAN	Start Freq 2.402850000 GHz
-19.5 <mark>/\/</mark>							Stop Freq 2.421150000 GHz
-39.5							CF Step 1.830000 MHz <u>Auto</u> Man
-59.5							Freq Offset 0 Hz
-69.5							
Center : #Res B\	2.412000 GHz N 100 kHz	#VI	BW 300 kHz		Sp Sweep 1.800	an 18.30 MHz ms (1001 pts)	
MSG					STATUS		

Figure Channel 01:



					- 15		annei	00.			
Agiler	it Spectru	m Analyzer - Swe	ept SA								
lxi R	L	RF 50 Ω	AC		SEN	ISE:INT		ALIGN AUTO	06:59:56 PM	4 Aug 16, 2015	E
Cen	ter Fr	eq 2.43700	00000 GH	z]	_	Avg Type	e: Log-Pwr	TRAC	E123456	Frequency
			P	10: Fast 🖵	Trig: Free	Run			DE		
			IFC	ain:Low	#Atten. St						
		Ref Offset 0.5	dB					Mkr1 2	2.438 500	0 6 GHz	Auto Tune
10 dl	3/div	Ref 20.50 c	lBm						3.4	41 dBm	
Log											
											Center Freq
10.5	-								-		2.437000000 GHz
						•	1				
0.500				ΑΛΛΛ	AAA	NA A	ΛΛΛΛ	A			
0.000		A A	m			1		mun	A. 0		Start Fred
		and	1		ν	V		1	1 mu	a	2 427850000 CH7
-9.50	. ^		1						Ŵ	The second se	2.427850000 GHZ
	1º									M.	
-19.5	10								_	<u>ک</u>	Stop From
											StopFreq
20.6											2.446150000 GHz
-23.0											
											CE Sten
-39.5											1 830000 MHz
											Auto Man
-49.5											
-69.6											Freq Offset
-00.0											0 Hz
-69.5											
_	L						I		<u> </u>		
Cen	ter 2.4	37000 GHz						_	Span 1	8.30 MHz	
#Re	s BW 1	I UU KHZ		#VBW	300 KHZ			sweep	1.800 ms (1001 pts)	
MSG								STATU	IS		

Figure Channel 06:

Figure Channel 11:

Agiler	it Spectru	m Analyzer - Swo	ept SA								
<mark>⊯</mark> R Cen	ter Fr	RF 50 Ω eq 2.46200	AC	lz	SEN		Avg Type	LIGN AUTO	07:05:43 PM TRAC	Aug 16, 2015	Frequency
10 di	3/div	Ref Offset 0.5 Ref 20.50 c	idB IBm	NU: Fast L	#Atten: 30) dB		Mkr1	2.461 4 2.4	88 GHz 49 dBm	Auto Tune
10.5					▲1						Center Freq 2.462000000 GHz
0.500 -9.50		Martin	m		white	Ma	hhhh	M	M	M .	Start Freq 2.452512500 GHz
-19.5 -29.5										N.V.	Stop Freq 2.471487500 GHz
-39.5											CF Step 1.897500 MHz <u>Auto</u> Man
-59.5											Freq Offset 0 Hz
-69.5 Cen	ter 2.4	62000 GHz		#V/B14/	300 kHz			Sween 1	Span 1	8.98 MHz	
MSG				# 6 1 9 6	500 MIZ		<u> </u>	STATUS		1001 pt3)	



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)

Agilen	t Spectrum /	Analyzer - Swe	ept SA								
Cen	ter Frec	RF 50 Ω 1 2.41200	AC	lz	SEN		Avg Type	ALIGNAUTO : Log-Pwr	07:33:08 PM TRAC	Aug 16, 2015 E 1 2 3 4 5 6	Frequency
10 dE	R 3/div R	ef Offset 0.5 ef 20.50 c	dB IBm	NO: Fast 🕞 Gain:Low	#Atten: 30	dB		Mkr1	2.416 9 -5.	84 GHz 82 dBm	Auto Tune
Log 10.5											Center Freq 2.412000000 GHz
0.500 -9.50		ford	hayadayaad	Jane Jangeral	her from	Josephane	alfrança Aseen	1 H-1	hung		Start Freq 2.399662500 GHz
-19.5 -29.5	แม่เราะ	mederal							- WWW	^{ννγα} τα λ	Stop Freq 2.424337500 GHz
-39.5 -49.5	MLMM									and the second s	CF Step 2.467500 MHz <u>Auto</u> Man
-59.5											Freq Offset 0 Hz
-69.5 Cent #Res	ter 2.412 s BW 10	200 GHz 0 kHz		#VBW	300 kHz			Sweep 2	Span 2 2.400 ms (4.68 MHz 1001 pts)	
MSG								STATU	s		[<u> </u>

	Figure	Channel 01:



					8						
Agiler	nt Spectru	ım Analyzer - S	wept SA								
l,XI R	L	RF 50	Ω AC		SEN	VSE:INT		ALIGN AUTO	07:37:54 PM	1 Aug 16, 2015	_
Cer	iter Fr	eq 2.4370	00000 G	Hz PNO: Fast 🖵 Gain:Low	Trig: Free #Atten: 30	e Run) dB	Avg Type	e: Log-Pwr	TRAC TYP DE	E 1 2 3 4 5 6 PE MWWWWW T P N N N N N	Frequency
10 d	B/div	Ref Offset 0 Ref 20.50	.5 dB dBm					Mkr1	2.443 2 -5.	62 GHz 89 dBm	Auto Tune
10.5											Center Freq 2.437000000 GHz
0.500			N A			n_	Л	1			Start Freq
-9.50 -19.5			ht have the second s	Upwers Urwa nd	Wash of the Con	V	hanged horegoine	llowydd 40 yw			Stop Freq
-29.5	مل ۲۰۸۰ اس	w all all							Wern	www.	2.449375000 GHz
-39.5 -49.5										, ind	CF Step 2.475000 MHz <u>Auto</u> Man
-59.5											Freq Offset 0 Hz
-69.5											
Cen #Re	ter 2.4 s BW 1	3700 GHz 100 kHz		#VBW	300 kHz			Sweep 2	Span 2 2.400 ms (4.75 MHz 1001 pts)	
MSG								STATU	S		

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
0.1	А	2412	-5.810	-2.800	< 4dBm	Pass
01	В	2412	-3.650	-0.640	< 4dBm	Pass
06	А	2427	-6.000	-2.990	< 4dBm	Pass
06	В	2437	-4.660	-1.650	< 4dBm	Pass
11	А	2462	-6.240	-3.230	< 4dBm	Pass
11	В	2462	-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)



					Sure C	manne	1011(main	· •)		
Agilen	t Spectru	m Analyzer - Swe	ept SA								
IXI RI	L	RF 50 Ω	AC		SEM	VSE:INT		ALIGN AUTO	07:50:09 PM	4 Aug 16, 2015	
Cen	ter Fre	ea 2.41200	00000 G	Hz			Avg Type	: Log-Pwr	TRAC	E123456	Frequency
				NO: Fast 😱	Trig: Free	Run			TY		
			IF	Gain:Low	#Atten: 30	dB			DI		
								Mkr1 2	2,410 71	84 GHz	Auto Tune
40 45	7/41	Ref Unset U.t	a B m						-5	81 dBm	
Loa	5/017	Rei 20.30 (•.	01 a.D	
											Center Freq
10.5									-		2.412000000 GHz
0.500											
0.000					▲ ¹						Start Fred
			4 n	n . In		Å		A .			0.200650000 CU-
-9.50		<u>fr4</u> y	al al and a start of the start	ورجعا ارهري والعربي ا	1 and Working	Merriller	᠔᠊ᢕᢩᡘᢁᡗ᠂ ᢣᠭᢑ᠈᠊ᡵᠮᢣ	ᢢᡐᡊᡃᠯᡘ᠇ᡐᢥ	ww.		2.398650000 GHZ
) V						
-19.5											
-10.0		ſ							۹.		Stop Freq
		. N ⁴							n _a		2.425350000 GHz
-29.5		J.JV							Y Ven		
		e								WY.	
20.7	Mar NOV									White the	CF Step
-39.5										1.0	2.670000 MHz
											Auto Man
-49.5											
50 F											Freq Offset
-59.5											0 Hz
											01.12
-69.5											
							1				
							1				
Cen	ter 2.4	1200 GHz							Snan 2	6 70 MHz	
#Re	s BM 1	00 kHz		#VBM	300 kHz			Sween '	2 600 ms (1001 nts)	
nice.		VV 1012		<i></i>	000 KHZ			oncep .	2.000 1113 (1001 ptaj	
MSG								STATU	IS		

Figure Channel 01: (Chain A)

Figure Channel 06: (Chain A)

Agiler	nt Spectru	m Analyzer - Sw	rept SA								
w∥ Cer	ter Fr	RF 50 ۵ eq 2.4370	AC 00000 G	-Iz	SEN		Avg Type	ALIGNAUTO :: Log-Pwr	07:55:01 P	M Aug 16, 2015	Frequency
10 di	B/div	Ref Offset 0. Ref 20.50	F F 5 dB dBm	NO: Fast 🕞 Gain:Low	#Atten: 30) dB		Mkr	1 2.435 7 -6.	38 GHz 00 dBm	Auto Tune
10.5											Center Freq 2.437000000 GHz
0.500 -9.50		J.r.	^{whyly} way	Anna	1 Away Voor	1 martine	montagesho	www.www	mw ~1		Start Freq 2.423575000 GHz
-19.5 -29.5		marent				Y			hulph	<u></u>	Stop Freq 2.450425000 GHz
-39.5 -49.5	and the second sec	~~ [*]								WWW. Contractor	CF Step 2.685000 MHz <u>Auto</u> Man
-59.5											Freq Offset 0 Hz
-69.5 Cen	ter 2 A	3700 GHz							Snan 2	6 85 MHz	
#Re	s BW 1	100 kHz		#VBW	300 kHz		:	Sweep	2.600 ms ((1001 pts)	



Agilent Spectrum Analyzer - Swept SA Action Auton Mailyzer - Swept SA VM RL RF 50 Ω AC SENSE:INT ALIGNAUTO 08:00:57 PM Aug 16, 2015 F Center Freq 2.462000000 GHz Avg Type: Log-Pwr TRACE 12.3.4.5.6 F PN0: Fast Trig: Free Run Trept MWWWWWW F Information Best Officiation F #Atten: 30 dB Mkr1 2.460 695 GHz	requency
Mg RL RF 50 Ω AC SENSE:INT ALIGNAUTO 08:00:57 PM Aug 16, 2015 F Center Freq 2.462000000 GHz Trig: Free Run Avg Type: Log-Pwr TRACE 12 3 4 5 6 Trig: Free Run Trig: F	requency
Center Freq 2.462000000 GHz PNO: Fast IFGain:Low Free Run #Atten: 30 dB Mkr1 2.460 695 GHz	requency
PNO: Fast PICE RUN IFGain:Low #Atten: 30 dB DET PNNNN Mkr1 2.460 695 GHz	
Bes Office to 5 dB Mkr1 2.460 695 GHz	
Bet Officit 0.5 dB Mkr1 2.460 695 GHz	
	Auto Turie
10 dB/div Ref 20.50 dBm -6.24 dBm -6.24 dBm	
	Center Frea
10.5	2000000 CH7
2.40	52000000 0112
0.500	04
Ⅰ Ⅰ	StartFreq
9.50 to and the the the stand of the stand o	48687500 GHz
-19.5 h	Stop Freq
	75312500 GHz
-29.5	0012000 0112
"Muluka	CF Step
-39.5 pp	2.662500 MHz
Auto	Man
-49.5	
	Freq Offset
-59.5	- 0 Hz
-69.5	
Center 2.46200 GHz Span 26.63 MHz	
#Res BW 100 kHz #VBW 300 kHz Sweep 2.600 ms (1001 pts)	
MSG STATUS	

Figure Channel 11: (Chain A)

Figure Channel 01: (Chain B)

🇾 Ke	ysight Spec	trum Analyzer - Sw	rept SA								
Cen	ter Fr	RF 50 Ω eq 2.41200	AC 00000 GH	lz	SEN		Avg Type	ALIGN AUTO	09:00:41 Pf TRAC	HAug 16, 2015	Frequency
10 di	3/div	Ref Offset 0.0 Ref 20.50 (5 dB d Bm	NO: Fast Gain:Low	#Atten: 3	0 dB		Mkr1	2.419 4 -3.	82 GHz 65 dBm	Auto Tune
10.5											Center Freq 2.412000000 GHz
0.500 -9.50			an Man Maria	Alm	Marting	man And a	hand	when	1		Start Freq 2.398687500 GHz
-19.5 -29.5		awhow why have							h h	Maria	Stop Freq 2.425312500 GHz
-39.5	N. W. W. W. W.									- northertony	CF Step 2.662500 MHz <u>Auto</u> Man
-49.5											Freq Offset 0 Hz
-69.5 Cen	ter 2 A	1200 GH7							Snap 2	6 63 MHz	
ж #Re	s BW 1	00 kHz		#VBW	300 kHz		:	Sweep 2	2.600 ms (1001 pts)	



🍺 Keysight Sp	ectrum Analyzer - Swe	ept SA							
Center F	RF 50 Ω req 2.43700	AC 0000 GH	z	SEN	NSE:INT	Avg Type	ALIGN AUTO : Log-Pwr	09:05:33 PM Aug 16, 20 TRACE 1 2 3 4	Frequency
	Ref Offset 0.5	PN IFG	IO: Fast ⊂⊊ Sain:Low	#Atten: 3	0 dB		Mkr1	2.444 434 GH	Auto Tune
10 dB/div Log	Ref 20.50 c	IBm						-4.00 0B	Center Freq 2.437000000 GHz
-9.50	M	Maryaland	Lynn, o	Governand	portrod	Louing A	brown		Start Freq 2.423725000 GHz
-19.5	hull want							hun	Stop Freq 2.450275000 GHz
-39.5	P ²							"hvylu	CF Step 2.655000 MHz <u>Auto</u> Man
-59.5									Freq Offset 0 Hz
-69.5 Center 2. #Res BW	43700 GHz 100 kHz		#VBW	300 kHz			Sweep 2	Span 26.55 Mi .600 ms (1001 pt	1z s)

Figure Channel 06: (Chain B)

Figure Channel 11: (Chain B)



:	802.11 b/g/n PCIe Module
:	Power Density Data
:	No.3 OATS
:	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
02	А	2.422	-11.140	-8.130	< 4dBm	Pass
03	В	2422	-10.100	-7.090	< 4dBm	Pass
0.6	А	2427	-11.390	-8.380	< 4dBm	Pass
06	В	2437	-9.890	-6.880	< 4dBm	Pass
00	А	2452	-12.760	-9.750	< 4dBm	Pass
09	В	2452	-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)



Ref Stopertum Analyzer Auto Tume Auto						,ure e	manne	1 001 ((Jinanii I	-)		
MR Image: Solution of the sense introl Automation of the sense introl Automation of the sense introl Frequency Center Freq 2.422000000 Frequency PNO: Fast if Free Run if Gain:Low Trig: Free Run if Gain:Low Avg Type: Log-Pwr Trace [12:3:4:5:6] Auto Tune 10 dB/div Ref Offset 0.5 dB Mkr1 2.430 76 GHZ -11.14 dBm Auto Tune 10 dB/div Ref 20.50 dBm -11.14 dBm -11.14 dBm -24200000 GHZ -24200000 GHZ 10 dB/div Ref 0ffset 0.5 dB 0.000 frequency -11.14 dBm -11.14 dBm 10 dB/div Ref 0ffset 0.5 dB 0.000 frequency -11.14 dBm -11.14 dBm 10 dB/div Ref 20.50 dBm -11.14 dBm -11.14 dBm -11.14 dBm 10 dB/div Auto Auto Auto Auto Auto Auto Auto Auto	Agilen	t Spectru	m Analyzer - Swe	ept SA								
Center Freq 2.42200000 GHz PH0: Fast 10 dB/div Ref 20.50 dBm Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Type: Log-Pwr Prefuency Trig: Free Run Per P NNNNN Auto Tune 10 dB/div 90 Ref Offset 0.5 dB Ref 20.50 dBm Mkr1 2.430 76 GHz -11.14 dBm Auto Tune 105 Image: State of the stat	LXI RL	-	RF 50 Ω	AC		SEM	ISE:INT		ALIGN AUTO	08:09:13 PM	4 Aug 16, 2015	
PNO: Fast Trig: Free Run Mkr1 2.430 76 GHz Auto Tune 10 dB/div Ref Offset 0.5 dB -11.14 dBm -11.14 dBm -2.42000000 GHz 10.5 -	Cen	ter Fr	eq 2.42200	0000 GH	z]		Avg Type	: Log-Pwr	TRAC	E123456	Frequency
Ref Offset 0.5 dB Mkr1 2.430 76 GHz Auto Tune 10 dB/div Ref 20.50 dBm -11.14 dBm Center Free 0.50			•	P IFI	NO: Fast 😱 Gain:Low	⁴ Trig: Free #Atten: 30	eRun)dB			D		
10.0 11.0 11.0 11.0 10.0	40 .15		Ref Offset 0.5	dB					Mkr	1 2.430 -11	76 GHz 14 dBm	Auto Tune
10.5 Image: Center Free 2.42200000 GHz 0.500 Image: Center Free 2.42200000 GHz 9.50 Image: Center Free 2.42200000 GHz 9.50 Image: Center Free 2.394625000 GHz 9.50 Image: Center Free 2.449375000 GHz 9.50 Image: Center Free 2.449375000 GHz 9.50 Image: Center Free 2.449375000 GHz 9.50 Image: Center Free 1mage: Center Free 9.50 Image: Center Free	Log	siaiv	Rei 20.50 0	ыш				1			I4 GDIII	
10.5 Image: Content Precedent of the content of th												Contor From
10.3 1 2.42200000 GHz 9.50 1 1 9.50 1 1 9.50 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 19.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 1 10.5 1 10.5 <	10.5											CenterFreq
0.500 0 <td>10.5</td> <td></td> <td>2.422000000 GHz</td>	10.5											2.422000000 GHz
0.500 1 <td></td>												
9.50 1	0.500											
9.60 0								. 1				Start Freq
19.5 19.6 19.6 10.6	-9.50							♦'				2.394625000 GHz
-19.5 -29.5 -39.5 <td< td=""><td></td><td></td><td></td><td>the Best of</td><td>L. L. C.</td><td>L. A. Bara</td><td></td><td>A. A. A.</td><td>A 8. A A 6</td><td></td><td></td><td></td></td<>				the Best of	L. L. C.	L. A. Bara		A. A. A.	A 8. A A 6			
Stop Free -29.5 -29.5 -39.5 -29.6 -39.5 -29.6 -39.5 -29.6 -49.5 -29.7 -69.5 -29.6 -69.5 -29.6 -69.5 -29.7 -69.5 -29.7 -69.5 -29.7 -69.5 -29.7 -69.5 -29.7 -69.5 -29.7 -69.5 -29.7 -79.7 -29.7 -79.7 -29.7 -79.7 -29.7 -79.7 -29.7			AD MAN	P. P. M. P.	Holeson and a bar and a second	י רייטאי אוויי איאטיי	MANANA	N MANNA MAN	የ የሰባ የሆኑ የሰብ የ	WW		
-29.5 2.44937500 GHz -39.5	-19.5											Stop Freq
-29.5 -29.5						Ų	4					2 449375000 GHz
.33.6	-29.5											
-39.5 -39.5			كلحن									
3.3.3 3.4.10 5.475000 MHz 49.5 4.1.5 4.1.5 5.9.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 69.5 4.1.5 4.1.5 60.5 5.267 ms (1001 pts) 4.1.5	39.5		and M							M.		CF Step
.49.5	-55.5		Jon							v [.]	Without	5.475000 MHz
-49.5		a marker a									Mun .	<u>Auto</u> Man
-59.5	-49.5	r									~~~~	
-69.5												
-69.5 -69.5 Center 2.42200 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.267 ms (1001 pts) MSG	-59.5											FreqOffset
-69.5 Center 2.42200 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.267 ms (1001 pts)												0 Hz
Solution Span 54.75 MHz Center 2.42200 GHz Span 54.75 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.267 ms (1001 pts)	60 F											
Center 2.42200 GHz #Res BW 100 kHz #Res BW 100 kHz #XBW 300 kHz	-09.5											
Center 2.42200 GHz Span 54.75 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.267 ms (1001 pts)												
Span 54.75 MHZ Span 54.75 MHZ #Res BW 100 kHz #VBW 300 kHz Sweep 5.267 ms (1001 pts)	Con	tor 1.4	2200 CH-	1				I		Cnor f	4 76 MALI-	
#RCS BVV 100 Km2 #VDVV 500 Km2 Sweep 5.207 ms (1001 pts) Msg status	HP or	$\sim DM/4$			#\/D\M	200 64-			Swoon 6	opan o	4.7 J MINZ	
MSG STATUS	#Res				#VOVV	300 KHZ			sweep o	.207 115	roor pisj	
	MSG								STATUS			

Figure Channel 03: (Chain A)

Figure Channel 06: (Chain A)

Agilen	t Spectrum	Analyzer - Sw	ept SA								
Cen	ter Fre	RF 50 Ω q 2.4370(AC 00000		SEN	Run	Avg Type	LIGNAUTO	08:20:22 PM TRAC	Aug 16, 2015 E 1 2 3 4 5 6 E MWWWWW	Frequency
10 dE	F B/div F	Ref Offset 0.9 Ref 20.50 (o dB d B m	NU: Fast Ly Gain:Low	#Atten: 30) dB		Mkr1 2	2.425 74 -11.	5 5 GHz 39 dBm	Auto Tune
10.5											Center Freq 2.437000000 GHz
0.500 -9.50			h da N da J	1	aladh the we	atauli Arab	M. als do wa	<u>л</u> .н. л.д.	0		Start Freq 2.409550000 GHz
-19.5 -29.5		jally	\ ₩ ₩ ₩	ան չկու չվես է։ ։ Ս	Carlon Marine M	1 	AL AL WARD IN	, Mr. w. M. M			Stop Freq 2.464450000 GHz
-39.5	- harristand	and and the second second							No. Contraction	My yluwylly	CF Step 5.490000 MHz <u>Auto</u> Man
-49.5										Y	Freq Offset 0 Hz
-69.5											
Cent #Res	ter 2.43 s BW 10	700 GHz)0 kHz		#VBW	300 kHz		:	Sweep (5 Span 5.267 ms (4.90 MHz 1001 pts)	
MSG								STATU	s		

Agilen	t Spectrun	n Analyzer - Swo	ept SA				, ,						
w ⊓ Cen	ter Fre	RF 50 Ω eq 2.45200	AC 00000 GH	lz	SEN		Avg Type	ALIGN AUTO :: Log-Pwr	08:26:05 PM TRAC TYE	Aug 16, 2015 E 1 2 3 4 5 6	Frequency		
10 dE	IF Gain:Low #Atten: 30 dB Det I ^P NNNN Ref Offset 0.5 dB Mkr1 2.460 688 0 GHz 0 dB/div Ref 20.50 dBm -12.76 dBm												
10.5											Center Freq 2.452000000 GHz		
0.500 -9.50											Start Freq 2.424850000 GHz		
-19.5 -29.5		rhy	hpholodyd	n.Kowlydrocho	Japah Anthe	Mondylad	when when y	My Andready			Stop Freq 2.479150000 GHz		
-39.5		wood and the Wood							hy any	Mul Hulled	CF Step 5.430000 MHz <u>Auto</u> Man		
-59.5										1.104	Freq Offset 0 Hz		
-69.5 Cent #Res	ter 2.45 s BW 1	5200 GHz 00 kHz		#VBW	300 kHz		<u> </u>	Sweep 5	Span 5 .200 ms (4.30 MHz 1001 pts)			
MSG	•							STATUS			[]		

Figure Channel 09: (Chain A)

Figure Channel 03: (Chain B)





〕 Key	sight Spect	rum Analyzer - Sw	ept SA				```		,		
Cen	ter Fre	RF 50 Ω	AC		SEN	NSE:INT	Avg Type	ALIGN AUTO : Log-Pwr	09:30:53 PI TRAC	Aug 16, 2015	Frequency
		D.605-407	P IF	NO: Fast 🖵 Gain:Low	Trig: Free #Atten: 3	e Run 0 dB		Mkr1	2.441 9		Auto Tune
10 dE	3/div	Ref 20.50 (iBm						-9.	89 dBm	
10.5											Center Freq 2.437000000 GHz
0.500 -9.50					≜ ≜ c t a		1	La Lle	. J.		Start Freq 2.410000000 GHz
-19.5 -29.5		, where	laollw14n14Nb	ly ^{ch} wl ^{de} ry ^{dle} ry ^{dle} ry ^{de} wl		, n ^{orm} tral Society of 1	VIJAN UNIU INTO INTO INTAAN	an a			Stop Freq 2.464000000 GHz
-39.5	p.m./	or the second where							Whyther	and the second s	CF Step 5.400000 MHz <u>Auto</u> Man
-49.5											Freq Offset 0 Hz
-69.5											
Cent #Res	ter 2.43 s BW 1	3700 GHz 00 kHz	1	#VBW	300 kHz	1		ˈ Sweep 5	Span 5 .200 ms (4.00 MHz 1001 pts)	
MSG									6		

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