

FCC Test Report

Product Name	802.11 ac PCIe Module
Model No	NGP1058
FCC ID	HZB-NGP1058W

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

Date of Receipt	June 29, 2015
Issued Date	Sep. 14, 2015
Report No.	1570043R-RFUSP63V00
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 of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of QuieTek Corporation.

Test Report

Issued Date: Sep. 14, 2015 Report No.: 1570043R-RFUSP63V00



Product Name	802.11 ac PCIe Module
Applicant	Proxim Wireless Corporation
Address	47633 Westinghouse Drive, Fremont City, California, United States 94539
Manufacturer	Compex Systems Pte Ltd
Model No.	NGP1058
FCC ID.	HZB-NGP1058W
EUT Rated Voltage	DC 5V, 1.5A
HOST voltage	AC 120V/60Hz
Trade Name	Proxim
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2014
	ANSI C63.4: 2014, ANSI C63.10: 2013
	789033 D02 General UNII Test Procedures New Rules v01
Test Result	Complied

Documented By :

:

:

Gente Chang

(Senior Adm. Specialist / Genie Chang)

Tested By

formin Tan

(Engineer / Benjamin Pan)

Approved By

(Director / Vincent Lin)

TABLE OF CONTENTS

Description Page 1. 1.1. 1.2. 1.3. 1.4. Configuration of tested System9 1.5. 1.6. 2. 2.1. 2.2. 2.3. 2.4. 2.5. 2.6. Maximun conducted output power......23 3. 3.1. 3.2. 3.3. 3.4. 3.5. 3.6. 4. Peak Power Spectral Density......56 4.1. 4.2. 4.3. 4.4. 4.5. 4.6. 5. Test Equipment......123 5.1. 5.2. Test Setup124 5.3. 5.4. 5.5. Test Result of Radiated Emission......127 5.6. 6. 6.1. 6.2. 6.3. 6.4. 6.5. 6.6. 7.

7.1.	Test Equipment	
7.2.	Test Setup	
7.3.	Limits	
7.4.	Test Procedure	
7.5.	Uncertainty	
7.6.	Test Result of Frequency Stability	
8.	Maximum e.i.r.p at any elevation angle above 30 degrees	
9.	EMI Reduction Method During Compliance Testing	
Attachment 1:	EUT Test Photographs	

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	802.11 ac PCIe Module
Trade Name	Proxim
FCC ID.	HZB-NGP1058W
Model No.	NGP1058
Frequency Range	802.11a/n-20MHz: 5180-5240MHz
	802.11n-40MHz: 5190-5230MHz
	802.11ac-80MHz: 5210
Number of Channels	802.11a/n-20MHz: 4, n-40MHz: 2; 802.11ac-80MHz: 1
Data Speed	802.11a: 6 - 54Mbps
	802.11n: up to 300Mbps
	802.11ac-80MHz: up to 866.7MHz
Channel Control	Auto
Type of Modulation	802.11a/n:OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna Type	Dipole / Grid DISH / Omni / Panel / Sector
Antenna Gain	Refer to the table "Antenna List"
Contain Module	Atheros / QCA9882

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1.	Mars	MA-WA55-30	External Antenna (Panel)	30dBi for 5.15~5.25GHz
2.	Mars	MA-WB55-20	External Antenna (Sector)	20dBi for 5.15~5.25GHz
3	Andrew	PX3F-52-N7A	External Antenna (Grid DISH)	33.5dBi for 5.15~5.25GHz
4	Smartant	SAA08-220570	External Antenna (Omni)	10dBi for 5.15~5.25GHz
5	Proxim	N/A	External Antenna (Dipole)	5dBi for 5.15~5.25GHz

Note: The antenna of EUT is conform to FCC 15.203



802.11a/n-20MHz Center Working Frequency of Each Channel:

ChannelFrequencyChannelFrequencyChannelFrequencyChannelChannel 36:5180 MHzChannel 40:5200 MHzChannel 44:5220 MHzChannel 48:5240 MHz

802.11n-40MHz Center Working Frequency of Each Channel:

Channel Frequency Channel Frequency

Channel 38: 5190 MHz Channel 46: 5230 MHz

802.11ac-80MHz Center Working Frequency of Each Channel:

ChannelFrequencyChannel 42:5210 MHz

- 1. This device is an 802.11 ac PCIe Module with a built-in 802.11a/n/ac WLAN transceiver.
- 2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
- Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps \$\circ\$ 802.11n(20M-BW) is 14.4Mbps \$\circ\$ 802.11n(40M-BW) is 30Mbps and 802.11ac(80M-BW) is 65 Mbps)
- 4. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.
- 5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna)
	Mode 2: Transmit (802.11n-20BW 14.4Mbps)(5G Band)(Dipole Antenna)
	Mode 3: Transmit (802.11n-40BW 30Mbps)(5G Band)(Dipole Antenna)
	Mode 4: Transmit (802.11ac-80BW-65Mbps)(5G Band)(Dipole Antenna)
	Mode 5: Transmit (802.11a_6Mbps)(Grid DISH Antenna)
	Mode 6: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Grid DISH Antenna)
	Mode 7: Transmit (802.11n-40BW_30Mbps)(5G Band)(Grid DISH Antenna)
	Mode 8: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Grid DISH Antenna)
	Mode 9: Transmit (802.11a_6Mbps)(Omni Antenna)
	Mode 10: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Omni Antenna)
	Mode 11: Transmit (802.11n-40BW_30Mbps)(5G Band)(Omni Antenna)
	Mode 12: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Omni Antenna)
	Mode 13: Transmit (802.11a_6Mbps)(Panel Antenna)
	Mode 14: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Panel Antenna)
	Mode 15: Transmit (802.11n-40BW_30Mbps)(5G Band)(Panel Antenna)
	Mode 16: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Panel Antenna)
	Mode 17: Transmit (802.11a_6Mbps)(Sector Antenna)
	Mode 18: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Sector Antenna)
	Mode 19: Transmit (802.11n-40BW_30Mbps)(5G Band)(Sector Antenna)
	Mode 20: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Sector Antenna)



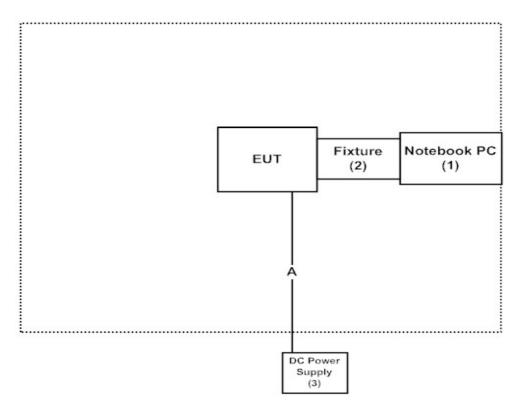
1.3. Tested System Datails

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

Pro	duct	Manufacturer	Model No.	Serial No.	Power Cord
(1)	Notebook PC	DELL	PP18L	36119001664	Non-Shielded, 0.8m
(2)	Fixture	Proxin	N/A	N/A	N/A
(3)	DC Power Supply	Gwinstek	SPD-3606	N/A	N/A

Signal Cable Type		Signal cable Description
А	DC Power Cable	Non-Shielded, 1.8m

1.4. Configuration of tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown on 1.4
- (2) Execute "Art2-GUI V2.3" program on the EUT.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Start the continuous transmission.
- (5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : <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 :

http://www.quietek.com/

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

Site Name:	Quietek Corporation
Site Address:	No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
	Lin-Kou Shiang, Taipei,
	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

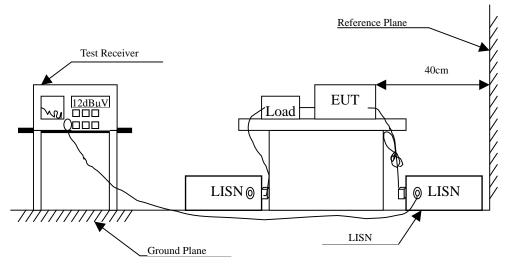
2.1. Test Equipment

	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	AV			
0.15 - 0.50	66-56	56-46			
0.50-5.0	56	46			
5.0 - 30	60	50			

Remarks : In the above table, the tighter limit applies at the band edges.

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 C63.10:2013 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product	:	802.11 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 4: Transmit (802.11ac-80BW-65Mbps)(5G Band)(Dipole Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.162	9.790	49.590	59.380	-6.277	65.657
0.193	9.790	44.770	54.560	-10.211	64.771
0.248	9.790	36.530	46.320	-16.880	63.200
0.306	9.790	30.110	39.900	-21.643	61.543
0.662	9.790	34.680	44.470	-11.530	56.000
0.689	9.790	29.810	39.600	-16.400	56.000
Average					
0.162	9.790	35.800	45.590	-10.067	55.657
0.193	9.790	31.440	41.230	-13.541	54.771
0.248	9.790	23.060	32.850	-20.350	53.200
0.306	9.790	16.530	26.320	-25.223	51.543
0.662	9.790	25.410	35.200	-10.800	46.000
0.689	9.790	20.520	30.310	-15.690	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 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 4: Transmit (802.11ac-80BW-65Mbps)(5G Band)(Dipole Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.166	9.770	47.070	56.840	-8.703	65.543
0.197	9.770	43.030	52.800	-11.857	64.657
0.228	9.770	38.990	48.760	-15.011	63.771
0.275	9.770	32.520	42.290	-20.139	62.429
0.334	9.770	25.360	35.130	-25.613	60.743
0.666	9.770	26.900	36.670	-19.330	56.000
Average					
0.166	9.770	32.600	42.370	-13.173	55.543
0.197	9.770	29.730	39.500	-15.157	54.657
0.228	9.770	25.700	35.470	-18.301	53.771
0.275	9.770	20.130	29.900	-22.529	52.429
0.334	9.770	12.540	22.310	-28.433	50.743
0.666	9.770	18.890	28.660	-17.340	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 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 8: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Grid DISH Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.173	9.790	48.300	58.090	-7.253	65.343
0.189	9.790	43.900	53.690	-11.196	64.886
0.216	9.790	41.510	51.300	-12.814	64.114
0.248	9.790	36.530	46.320	-16.880	63.200
0.306	9.790	29.670	39.460	-22.083	61.543
0.662	9.790	26.020	35.810	-20.190	56.000
Average					
0.173	9.790	36.020	45.810	-9.533	55.343
0.189	9.790	28.840	38.630	-16.256	54.886
0.216	9.790	28.920	38.710	-15.404	54.114
0.248	9.790	23.450	33.240	-19.960	53.200
0.306	9.790	16.740	26.530	-25.013	51.543
0.662	9.790	14.620	24.410	-21.590	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 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 8: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Grid DISH Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.158	9.770	48.430	58.200	-7.571	65.771
0.166	9.770	49.550	59.320	-6.223	65.543
0.197	9.770	43.090	52.860	-11.797	64.657
0.236	9.770	37.180	46.950	-16.593	63.543
0.275	9.770	32.050	41.820	-20.609	62.429
0.709	9.773	27.880	37.653	-18.347	56.000
Average					
0.158	9.770	34.910	44.680	-11.091	55.771
0.166	9.770	37.380	47.150	-8.393	55.543
0.197	9.770	29.170	38.940	-15.717	54.657
0.236	9.770	24.350	34.120	-19.423	53.543
0.275	9.770	20.050	29.820	-22.609	52.429
0.709	9.773	19.550	29.323	-16.677	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 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 12: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Omni Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.162	9.790	47.800	57.590	-8.067	65.657
0.173	9.790	48.320	58.110	-7.233	65.343
0.216	9.790	41.810	51.600	-12.514	64.114
0.275	9.790	32.170	41.960	-20.469	62.429
0.314	9.790	27.740	37.530	-23.784	61.314
0.673	9.790	26.420	36.210	-19.790	56.000
Average					
0.162	9.790	33.130	42.920	-12.737	55.657
0.173	9.790	35.650	45.440	-9.903	55.343
0.216	9.790	28.970	38.760	-15.354	54.114
0.275	9.790	19.890	29.680	-22.749	52.429
0.314	9.790	15.080	24.870	-26.444	51.314
0.673	9.790	15.270	25.060	-20.940	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 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 12: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Omni Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.166	9.770	49.590	59.360	-6.183	65.543
0.205	9.770	42.910	52.680	-11.749	64.429
0.224	9.770	37.840	47.610	-16.276	63.886
0.287	9.770	31.830	41.600	-20.486	62.086
0.330	9.770	26.170	35.940	-24.917	60.857
0.713	9.775	26.100	35.875	-20.125	56.000
Average					
0.166	9.770	37.540	47.310	-8.233	55.543
0.205	9.770	30.120	39.890	-14.539	54.429
0.224	9.770	24.320	34.090	-19.796	53.886
0.287	9.770	19.180	28.950	-23.136	52.086
0.330	9.770	13.600	23.370	-27.487	50.857
0.713	9.775	16.250	26.025	-19.975	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 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 16: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Panel Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.166	9.790	47.960	57.750	-7.793	65.543
0.205	9.790	42.080	51.870	-12.559	64.429
0.259	9.790	35.840	45.630	-17.256	62.886
0.298	9.790	30.330	40.120	-21.651	61.771
0.709	9.790	28.450	38.240	-17.760	56.000
0.736	9.790	24.050	33.840	-22.160	56.000
Average					
0.166	9.790	34.480	44.270	-11.273	55.543
0.205	9.790	27.920	37.710	-16.719	54.429
0.259	9.790	23.500	33.290	-19.596	52.886
0.298	9.790	17.860	27.650	-24.121	51.771
0.709	9.790	20.380	30.170	-15.830	46.000
0.736	9.790	15.360	25.150	-20.850	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 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 16: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Panel Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.162	9.770	49.420	59.190	-6.467	65.657
0.205	9.770	42.750	52.520	-11.909	64.429
0.236	9.770	36.810	46.580	-16.963	63.543
0.283	9.770	32.300	42.070	-20.130	62.200
0.322	9.770	27.270	37.040	-24.046	61.086
0.713	9.775	28.110	37.885	-18.115	56.000
Average					
0.162	9.770	37.380	47.150	-8.507	55.657
0.205	9.770	30.200	39.970	-14.459	54.429
0.236	9.770	24.220	33.990	-19.553	53.543
0.283	9.770	19.510	29.280	-22.920	52.200
0.322	9.770	14.410	24.180	-26.906	51.086
0.713	9.775	17.620	27.395	-18.605	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 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 20: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Sector Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.166	9.790	47.960	57.750	-7.793	65.543
0.205	9.790	42.080	51.870	-12.559	64.429
0.259	9.790	35.840	45.630	-17.256	62.886
0.298	9.790	30.330	40.120	-21.651	61.771
0.709	9.790	28.450	38.240	-17.760	56.000
0.736	9.790	24.050	33.840	-22.160	56.000
Average					
0.166	9.790	34.480	44.270	-11.273	55.543
0.205	9.790	27.920	37.710	-16.719	54.429
0.259	9.790	23.500	33.290	-19.596	52.886
0.298	9.790	17.860	27.650	-24.121	51.771
0.709	9.790	20.380	30.170	-15.830	46.000
0.736	9.790	15.360	25.150	-20.850	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 ac PCIe Module
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 20: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Sector Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.162	9.770	49.420	59.190	-6.467	65.657
0.205	9.770	42.750	52.520	-11.909	64.429
0.236	9.770	36.810	46.580	-16.963	63.543
0.283	9.770	32.300	42.070	-20.130	62.200
0.322	9.770	27.270	37.040	-24.046	61.086
0.713	9.775	28.110	37.885	-18.115	56.000
Average					
0.162	9.770	37.380	47.150	-8.507	55.657
0.205	9.770	30.200	39.970	-14.459	54.429
0.236	9.770	24.220	33.990	-19.553	53.543
0.283	9.770	19.510	29.280	-22.920	52.200
0.322	9.770	14.410	24.180	-26.906	51.086
0.713	9.775	17.620	27.395	-18.605	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. Maximun conducted output power

3.1. Test Equipment

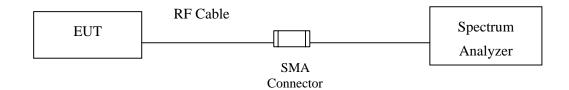
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2015
Х	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2015
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015
Note	2:			

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

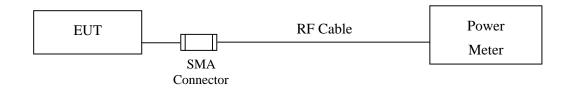
2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup

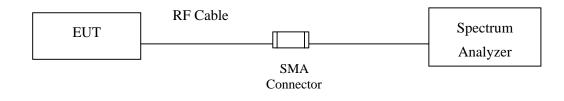
26dBc Occupied Bandwidth



Conduction Power Measurement (for 802.11an)



Conduction Power Measurement (for 802.11ac)



3.3. Limits

3.3.1. For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

- 3.3.2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- 3.3.3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any

corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

3.4. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was measured with an average power meter employing a video bandwidth greater the 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

802.11an (BW \leq 40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter) <u>Note: the power meter have a video bandwidth that is greater than or equal to the measurement</u> <u>bandwidth, (Anritsu/MA2411B video bandwidth: 65MHz)</u>

802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).

When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D01 section F) procedure is used for measurements.

3.5. Uncertainty

± 1.27 dB



3.6. Test Result of Maximum conducted output power

Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna)

CHAIN A

Cable	Cable loss=1dB		Maximum conducted output power								
Channel No. Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit		
36	5180	12.46	12.31	12.18	12.04	11.9	11.77	11.71	11.59	<30dBm	
44	5220	12.05								<30dBm	
48	5240	12.28								<30dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable	Cable loss=1dB		Maximum conducted output power								
Channel No. Frequency (Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit	
36	5180	12.14	12	11.88	11.75	11.59	11.49	11.4	11.35	<30dBm	
44	5220	11.95						-		<30dBm	
48	5240	11.97								<30dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+ B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
36	5180	12.46	12.14	15.31	30
44	5220	12.40	11.95	15.01	30
48	5240	12.28	11.97	15.14	30

- 1. Power Output Value =Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 14.4Mbps)(5G Band)(Dipole Antenna)

Cable	Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit	
36	5180	12.45	12.27	12.11	11.95	11.77	11.61	11.54	11.46	<30dBm	
44	5220	11.82								<30dBm	
48	5240	12.05								<30dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Cable loss=1dB			Maximum conducted output power								
Channel No.	Frequency (MHz)	14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit	
36	5180	12.14	11.98	11.82	11.66	11.51	11.37	11.25	11.15	<30dBm	
44	5220	11.75								<30dBm	
48	5240	11.97								<30dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+ B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
36	5180	12.45	12.14	15.31	30
44	5220	11.82	11.75	14.80	30
48	5240	12.05	11.97	15.02	30

- 1. Power Output Value =Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 30Mbps)(5G Band)(Dipole Antenna)

Cable loss=1dB		Maximum conducted output power								
Channel No. Free										
	Frequency (MHz)	30	60	90	120	180	240	270	300	Required Limit
38	5190	11.82								<30dBm
46	5230	12.29	12.16	12.01	11.84	11.7	11.55	11.38	11.35	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	30	60	90	120	180	240	270	300	Required Limit
38	5190	11.63								<30dBm
46	5230	12.02	11.87	11.73	11.54	11.3	11.08	10.93	10.8	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement: (CHAIN A+ B)

Channel	Frequency	Chain A	Chain B	Output	Output Power
Number		Power	Power	Power	Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
38	5190	11.82	11.63	14.74	30
46	5230	12.29	12.02	15.17	30

Note:

1. Power Output Value =Reading value on average power meter + cable loss

2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



:	802.11 ac PCIe Module
:	Maximum conducted output power
:	No.3 OATS
:	Mode 4: Transmit (802.11ac-80BW-65Mbps)(5G Band)(Dipole Antenna)
	: :

Chain A

Cable lo	oss=1dB	Maximum conducted output power										
Channel Ma	Frequency	Data Rate (Mbps)										
Channel No	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	11.02	10.98	10.92	10.87	10.81	10.78	10.71	10.69	10.61	10.54	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Chain B

Cable loss=1dB					Max	kimum c	onducte	d output	power			
Channel Ma	Frequency	Data Rate (Mbps)										Required
Channel No	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	11.26	11.2	11.14	11.11	11.05	10.98	10.92	10.87	10.81	10.74	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

Channel No	Frequency Range	26dB Bandwidth	Chain A Power	Chain B Power	Output Power	Output Power Limit	Result
	(MHz)	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	
42	5210	76.082	11.02	11.26	14.15	30	Pass

- 1. Power Output Value = Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



26dBc Occupied Bandwidth:

Channel 42 – Chain A

	ectrum Analyzer - Occup			-			-		
Center F	RF 50Ω req 5.210000		- Tr	SENSE:INT nter Freq: 5.2100 g: Free Run tten: 30 dB		ALIGN AUTO	Radio Dev		Frequency
10 dB/div	Ref Offset 1 Ref 21.00								
Log 11.0 1.00			where we have the	materia and a second and a second second	enterte-oranna tere	1			Center Freq 5.210000000 GHz
-9.00 -19.0 -29.0		www.waterbol				White washing			-
-39.0 -49.0	in the second	-					With the second state of t	the location of the second	
-69.0	24 045								
Center 5 #Res BW				#VBW 3 MI	lz			n 200 MHz eep 1 ms	CF Step 20.000000 MHz
Occu	pied Bandw			Total F	Power	17.3	2 dBm		<u>Auto</u> Man
		76.08	2 MHz						Freq Offset
Trans	mit Freq Erro	r 9	4.834 kHz	OBW F	Power	99	0.00 %		0 Hz
x dB E	Bandwidth	9	94.56 MHz	x dB		-26.	00 dB		
MSG						STATU	5		

26dBc Occupied Bandwidth:

Channel 42 – Chain B

Keysight Sp	RF 50 Ω	AC		SENSE:INT	-	ALIGN AUTO	12:59:21 P	Aug 12, 2015	
	req 5.210000		Trig: F	r Freq: 5.2100 Free Run h: 30 dB	00000 GHz Avg Hol		Radio Std: None Frequency Radio Device: BTS		
10 dB/div	Ref Offset 1 Ref 21.00								
Log 11.0 1.00			the low of the state of the sta	May no marked more	-top- the man				Center Freq 5.210000000 GHz
-9.00 -19.0		- subal				hun i			
-29.0	Barran Station of Street Street	ander				Www.w.	Hinter Marian	ne heada ha	
-49.0 -59.0 -69.0 -69.0								1	1
Center 5 #Res BW			#	VBW 3 MH	Iz			200 MHz ep 1 ms	CF Step 20.000000 MHz
Occu	pied Bandw	ridth	and a	Total F	ower	17.4	dBm		<u>Auto</u> Man
		76.101	MHz					- 11	Freq Offset
Trans	mit Freq Erro	r 56.75	54 kHz	OBW F	ower	99	.00 %		0 Hz
x dB E	Bandwidth	98.1	6 MHz	x dB		-26.	00 dB		
MSG						STATU	5		



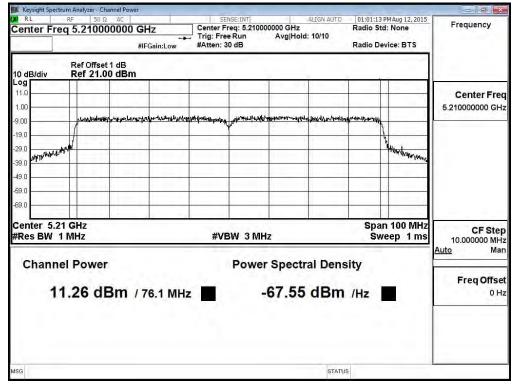
Maximum conducted output power:

	ectrum Analyzer - C		1	1 22						- 2 🕺
Center F	RF 50 Freq 5.2100	00000 GH	IZ Gain:Low			0000 GHz Avg Hold	ALIGN AUTO	Radio St	PM Aug 07, 2015 td: None evice: BTS	Frequency
10 dB/div Log	Ref Offse Ref 21.	et1dB 00dBm			_					
11.0										Center Free 5.210000000 GH
-9.00 -19.0 -29.0		Cit of the states of the states	aleo di refiti e constanto di al	1*************************************	ar we may be shown	den ⁿ anya kana di kata	arry Habirrory	-A-M. Barbary		
-29.0 -39.0	ngi Tur								White and the state of the stat	
-59.0										
Center 5 #Res BW				#VE	BW 3MH	z			n 100 MHz veep 1 ms	CF Step 10.000000 MH
Chan	nel Powe	r			Power	Spectr	al Dens	sity		<u>Auto</u> Mar
	11.02 d	Bm / 7	6.08 MH:	z	-	67.79	dBm	/Hz		Freq Offse 0 H:
MSG							STATU	8		

Channel 42 – Chain A

Maximum conducted output power:

Channel 42 – Chain B





Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 5: Transmit (802.11a_6Mbps)(Grid DISH Antenna)

Cable	loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit	
36	5180	13.38								<19.5dBm	
44	5220	14.37								<19.5dBm	
48	5240	14.66	14.52	14.34	14.15	14.02	13.99	13.94	13.87	<19.5dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable	loss=1dB		Maximum conducted output power									
Channel No.	Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit		
36	5180	12.77								<19.5dBm		
44	5220	14.45	14.31	14.15	13.96	13.82	13.78	13.72	13.63	<19.5dBm		
48	5240	14.28								<19.5dBm		

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+ B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
36	5180	13.38	12.77	16.10	19.5
44	5220	14.37	14.45	17.42	19.5
48	5240	14.66	14.28	17.48	19.5

- 1. Power Output Value = Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 6: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Grid DISH Antenna)

Cable	Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit	
36	5180	12.69								<19.5dBm	
44	5220	14.21	14.06	13.97	13.78	13.59	13.47	13.42	13.38	<19.5dBm	
48	5240	13.96								<19.5dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Cable	Maximum conducted output power									
Channel No.										
	Frequency (MHz)	14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit
36	5180	12.75								<19.5dBm
44	5220	13.94	13.88	13.75	13.64	13.52	13.38	13.23	13.11	<19.5dBm
48	5240	13.72								<19.5dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+ B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
36	5180	12.69	12.75	15.73	19.5
44	5220	14.21	13.94	17.09	19.5
48	5240	13.96	13.72	16.85	19.5

- 1. Power Output Value =Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 7: Transmit (802.11n-40BW_30Mbps)(5G Band)(Grid DISH Antenna)

Cable loss=1dB		Maximum conducted output power										
	Frequency (MHz)											
Channel No.		30	60	90	120	180	240	270	300	Required Limit		
38	5190	10.79								<19.5dBm		
46	5230	13.97	13.85	13.72	13.59	13.45	13.33	13.22	13.08	<19.5dBm		

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable	Cable loss=1dB		Maximum conducted output power									
	Frequency (MHz)											
Channel No.		30	60	90	120	180	240	270	300	Required Limit		
38	5190	10.93								<19.5dBm		
46	5230	13.54	13.42	13.28	13.16	13.05	13.01	12.92	12.86	<19.5dBm		

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement: (CHAIN A+ B)

(CHAILAT D)							
Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)		
38	5190	10.79	10.93	13.87	19.5		
46	5230	13.97	13.54	16.77	19.5		

Note:

1. Power Output Value =Reading value on average power meter + cable loss

2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 8: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Grid DISH Antenna)

Chain A

Cable lo	Cable loss=1dB Maximum conducted output power											
Channel Na	Frequency	Data Rate (Mbps)										Required
Channel No	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	1.52	1.45	1.39	1.33	1.29	1.25	1.19	1.14	1.09	1.01	<19.5dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Chain B

Cable lo	ss=1dB	Maximum conducted output power										
Channel No	Frequency	Data Rate (Mbps)										Required
	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	2.5	2.45	2.43	2.39	2.31	2.28	2.22	2.18	2.12	1.99	<19.5dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

Channel No	Frequency Range	26dB Bandwidth	Chain A Chain B Power Power		Output Power	Output Power Limit	Result	
	(MHz)	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)		
42	5210	76.232	1.52	2.50	5.05	19.5	Pass	

- 1. Power Output Value = Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



26dBc Occupied Bandwidth:

Channel 42 – Chain A

	pectrum Analyzer - Occupied	BW						-	
22 RL RF 50 9 AC Center Freq 5.210000000 GHz #IFGain:Low		Trig: I	SENSE:UNT ALIGN AUTO Center Freq: 5.210000000 GHz Trig: Free Run Avg[Hold: 10/10 #Atten: 30 dB Avg[Hold: 10/10 #Atten: 30 dB				MAug 06, 2015 : None rice: BTS	Frequency	
10 dB/div	Ref Offset 1 dE Ref 21.00 dE								1
Log 11.0 1.00									Center Freq 5.210000000 GHz
-9.00 -19.0		Jum	even march land		r fredere transformer				
-29.0 -39.0	1 Martin	when the				Marcharte Carding	What have a stranged of the		
-59.0	a prostly bouch of the art						- Andrewskinger for	analise or or of the second	
-69.0 Center 5	21 GHz		-				Span	200 MHz	
	Res BW 1 MHz #VBW 3 MHz Sweep 1 ms								CF Step 20.000000 MHz
Occu	Occupied Bandwidth			Total Power			dBm	<u>Auto</u> Man	
	7	6.338 N	ИНz						Freq Offset
Trans	Transmit Freq Error 180.8		8 kHz	Hz OBW Power		99.00 %			0 Hz
x dB E	x dB Bandwidth 93.		2 MHz	MHz xdB		-26.00 dB			
MSG						STATU	s		

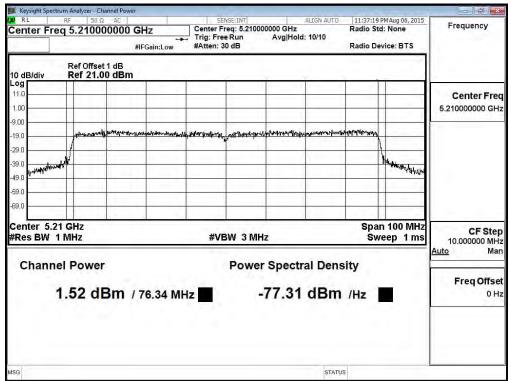
26dBc Occupied Bandwidth:

Channel 42 – Chain B

	um Analyzer - Occup						-		
XI RF 50 Ω AC SENSEINT ALIGN AUTO [04:18:40 PM Aug 12, 2015 Center Freq 5.210000000 GHz Radio Std: None Trig: Free Run Avg Hold: 10/10 Radio Device: BTS								Frequency	
Ref Offset 1 dB 10 dB/div Ref 21.00 dBm									1
Log 11.0 1.00									Center Freq 5.210000000 GHz
-9.00 -19.0 -29.0		ſ	an and the second s	and some for a second	and the second				-
-39.0 -49.0 -49.0	1.00	All Haddenbergar &				have seen and have	Programmer and balling	Maranda ayata	
-59.0									
	Center 5.21 GHz Span 200 MHz Res BW 1 MHz #VBW 3 MHz Sweep 1 ms								CF Step 20.000000 MHz
Occupied Bandwidth							dBm	<u>Auto</u> Man	
76.232 MHz Transmit Freg Error 93.699 kHz				OBW Power			9.00 %		Freq Offset 0 Hz
			4.69 MHz	x dB			.00 dB		
MSG						STATU	s		



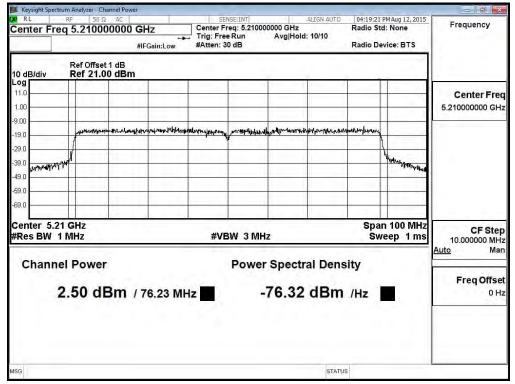
Maximum conducted output power:



Channel 42 – Chain A

Maximum conducted output power:

Channel 42 – Chain B





Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 9: Transmit (802.11a_6Mbps)(Omni Antenna)

Cable	Cable loss=1dB			Maximum conducted output power							
Channel No. Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit		
36	5180	18.96								<26dBm	
44	5220	20.12								<26dBm	
48	5240	20.21	20.1	19.95	19.78	19.6	19.52	19.38	19.26	<26dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable	Cable loss=1dB		Maximum conducted output power								
Channel No. Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit		
36	5180	18.98								<26dBm	
44	5220	20.62								<26dBm	
48	5240	20.74	20.55	20.43	20.29	20.15	19.92	19.79	19.65	<26dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
36	5180	18.96	18.98	21.98	26
44	5220	20.12	20.62	23.39	26
48	5240	20.21	20.74	23.49	26

- 1. Power Output Value = Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 10: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Omni Antenna)

Cable	Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit	
36	5180	18.76								<26dBm	
44	5220	20.32	20.2	20.09	19.97	19.86	19.75	19.66	19.57	<26dBm	
48	5240	20.29								<26dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit
36	5180	18.83								<26dBm
44	5220	20.47	20.35	20.24	20.11	20.04	19.89	19.83	19.69	<26dBm
48	5240	20.36								<26dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+ B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
36	5180	18.76	18.83	21.81	26
44	5220	20.32	20.47	23.41	26
48	5240	20.29	20.36	23.34	26

- 1. Power Output Value =Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 11: Transmit (802.11n-40BW_30Mbps)(5G Band)(Omni Antenna)

Cable	Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	30	60	90	120	180	240	270	300	Required Limit
38	5190	17.61								<26dBm
46	5230	20.45	20.3	20.19	20.05	19.96	19.83	19.74	19.69	<26dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	30	60	90	120	180	240	270	300	Required Limit
38	5190	17.48								<26dBm
46	5230	19.85	19.73	19.6	19.47	19.35	19.24	19.11	19.06	<26dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement: (CHAIN A+ B)

Channel	Frequency	Chain A	Chain B	Output	Output Power
Number		Power	Power	Power	Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
38	5190	17.61	17.48	20.56	26
46	5230	20.45	19.85	23.17	26

Note:

1. Power Output Value =Reading value on average power meter + cable loss

2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 12: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Omni Antenna)

Chain A

Cable lo	ss=1dB		Maximum conducted output power									
Channel Ma	Frequency		Data Rate (Mbps)							Required		
Channel No	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	9.99	9.91	9.84	9.76	9.69	9.63	9.59	9.52	9.48	9.44	<26dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Chain B

Cable lo	ss=1dB		Maximum conducted output power									
Channal Na	Frequency		Data Rate (Mbps)						Required			
Channel No	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	10.08	10.01	9.95	9.87	9.78	9.72	9.68	9.64	9.62	9.58	<26dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

Channel No	Frequency26dBRangeBandwidth		Chain A Power	Chain B Power	Output Power	Output Power Limit	Result
	(MHz)	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	
42	5210	75.889	9.99	10.08	13.05	26	Pass

- 1. Power Output Value = Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



26dBc Occupied Bandwidth:

Channel 42 – Chain A

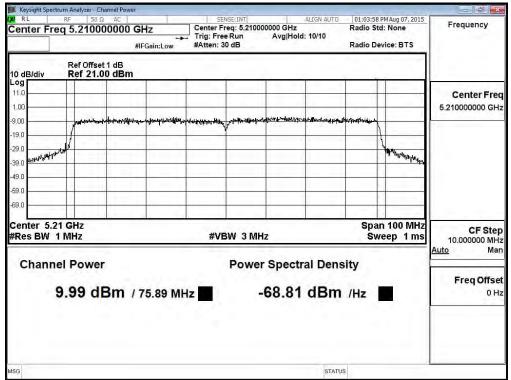
	pied BW									
			Center Trig: Fr	Freq: 5.21000 ee Run			Radio Std	None	Frequency	
			. u all'hi vien	a)	mantatura				Center Freq 5.210000000 GHz	
				¥						
	And the second second					"Weathortowly	William when a second			
melangenterin				-			·www	Munanathatiologian		
21 CH2							Enan	200 MH-		
1 MHz			#\	в змн	Iz				CF Step 20.000000 MHz Auto Man	
oied Bandv		00 MI	1-	Total P	ower	16.3	dBm		Auto Mari	
nit Freq Erro				OBW P	ower	99	.00 %		Freq Offset 0 Hz	
andwidth		93.33 M	IHz	x dB		-26.	00 dB			
						STATU	5			
	Ref Offset 1 Ref 21.000	req 5.21000000 GH #FC Ref Offset 1 dB Ref 21.00 dBm 21 GHz 1 MHz Died Bandwidth 75.8 nit Freq Error	Ref Offset 1 dB Ref 21.00 dBm Ref Offset 1 dB Image: Comparison of the second	Ref 0ffset 1 dB Ref 21.00 dBm Ref 21.00 dBm	RF S0 Ω AC SENSE.INT req 5.210000000 GHz Center Freq S.2100 Treg: Free Run #IFGain:Low #Atten: 30 dB Ref Offset 1 dB Ref 21.00 dBm weiner freq S.2100 dBm weiner freq S.2100	Ref 30 0.2 AC Center Freq: 5.210000000 GHz #IFGain:Low Trig: Free Run AvglHo #IFGain:Low #Atten: 30 dB Ref Offset 1 dB Ref 21.00 dBm Atten: 40 dB Ref 21.00 dBm Atten: 40 dB Ref 21.00 dBm AvglHo Atten: 40 dB Ref 21.00 dBm Ref 21.00 dBm AvglHo AvglHo Trig: Free Run Ref 21.00 dBm AvglHo Ref 21.00 dBm AvglHo AvglHo AvglHo AvglHo AvglHo Ref 21.00 dBm AvglHo AvglHo AvglHo	Ref S0 (2) AC SENSE:INT ALTON AUTO Trig: Free Xun Avg[Hold: 10/10 #IFGein:Low Ref Offset 1 dB Ref 21.00 dBm Auton Avg[Hold: 10/10 Auton Avg[Hold: 10/10 #IFGein:Low Ref Offset 1 dB Ref 21.00 dBm Auton Avg[Hold: 10/10 Avg[Hold: 10/10 Auton Avg[Hold: 10/10 Auton Avg[Hold: 10/10 Ref Offset 1 dB Ref 21.00 dBm Auton Avg[Hold: 10/10 Avg[Hold: 10/10 Avg[Hold: 10/10 Avg[Hold: 10/10 Auton Avg[Hold: 10/10 <td colspan<="" td=""><td>RF S0 0 AC SENSE:INT ALIGN AUTO 01:02:05P req 5.210000000 GHz Trig: Free Run Avg Hold: 10/10 Radio Std #IFGain:Low #IFGain:Low #Atten: 30 dB Avg Hold: 10/10 Radio Dev Ref Offset 1 dB Ref 21.00 dBm Image: Sense State State</td><td>Ref S0 (2) AC SENSE:INT ALIGN AUTO D1:02:05 PMAug 07, 2015 reg 5.210000000 GHz Trig: Free Run Avg[Hold: 10/10 Radio Std: None #IFGain:Low #Free Run Avg[Hold: 10/10 Radio Std: None Ref Offset 1 dB Ref 21.00 dBm Image: Automatic au</td></td>	<td>RF S0 0 AC SENSE:INT ALIGN AUTO 01:02:05P req 5.210000000 GHz Trig: Free Run Avg Hold: 10/10 Radio Std #IFGain:Low #IFGain:Low #Atten: 30 dB Avg Hold: 10/10 Radio Dev Ref Offset 1 dB Ref 21.00 dBm Image: Sense State State</td> <td>Ref S0 (2) AC SENSE:INT ALIGN AUTO D1:02:05 PMAug 07, 2015 reg 5.210000000 GHz Trig: Free Run Avg[Hold: 10/10 Radio Std: None #IFGain:Low #Free Run Avg[Hold: 10/10 Radio Std: None Ref Offset 1 dB Ref 21.00 dBm Image: Automatic au</td>	RF S0 0 AC SENSE:INT ALIGN AUTO 01:02:05P req 5.210000000 GHz Trig: Free Run Avg Hold: 10/10 Radio Std #IFGain:Low #IFGain:Low #Atten: 30 dB Avg Hold: 10/10 Radio Dev Ref Offset 1 dB Ref 21.00 dBm Image: Sense State	Ref S0 (2) AC SENSE:INT ALIGN AUTO D1:02:05 PMAug 07, 2015 reg 5.210000000 GHz Trig: Free Run Avg[Hold: 10/10 Radio Std: None #IFGain:Low #Free Run Avg[Hold: 10/10 Radio Std: None Ref Offset 1 dB Ref 21.00 dBm Image: Automatic au

26dBc Occupied Bandwidth:

RF 50 Ω	AC OLO			NSE:INT	0000 CH-	ALIGN AUTO		M Aug 12, 2015	Frequency
eq 5.21000			Trig: Free	e Run		1: 10/10	indiana cana		
			-8	2					Center Freq 5,210000000 GHz
		and marker	maning larmany	-	and the second s				
	. Ser March					M.M.			
لى ال	ar delar dente		1.11			And Street	Maria .		
andra and a start and a start of the start o				1		12 31	Mar Marine	the state of the second	
_			-						
								<u></u>	
21 GHz 1 MHz			#VE	SW 3MH	z				CF Step 20.000000 MHz
ied Band	width	Y		Total P	ower	16.3	dBm	1.0	<u>Auto</u> Man
		64 MH	łz						Freq Offset
it Freq Err	or	74.933 k	Hz	OBW P	ower	99	.00 %		0 Hz
ndwidth		92.06 M	Hz	x dB		-26.	00 dB		
						STATUS			
	Ref Offset Ref 21.00	eq 5.210000000 GH #FG Ref Offset 1 dB Ref 21.00 dBm 21.00 dBm 21.0	eq 5.21000000 GHz #IFGain:Low Ref Offset 1 dB Ref 21.00 dBm	eq 5.21000000 GHz #IFGein:Low Ref Offset 1 dB Ref 21.00 dBm Center Fi Trig: Free #Atten: 3 Center Fi Trig: Free #Atten: 3 Center Fi Trig: Free #Atten: 3 Center Fi Trig: Free #Atten: 3 Center Fi #Atten: 3 Center Fi # # Center Fi # # Center Fi # # Center Fi # Center Fi # Center Fi # # Center Fi # Center Fi # Ce	eq 5.21000000 GHz #IFGain:Low Center Freq: 5.21000 Trig: Free Run #Atten: 30 dB Ref 21.00 dBm Center Freq: 5.21000 Trig: Free Run #Atten: 30 dB Participation Center Freq: 5.21000 Trig: Free Run #Atten: 30 dB Participation Trig: Free Run #Atten: 30 dB Participation Trig: Free Run #Atten: 30 dB Participation Trig: Free Run #Atten: 30 dB Participation Partici	eq 5.210000000 GHz Center Freq: 5.210000000 GHz #IFGain:Low Trig: Free Run Avg/Hole #Ref Offset 1 dB #Atten: 30 dB Avg/Hole Ref 21.00 dBm	Eq 5.21000000 GHz Center Freq: 5.21000000 GHz #IFGain:Low Trig: Free Run Ref Offset 1 dB Ref 21.00 dBm Image: Section of the sec	Eq. 5.210000000 GHz Center Freq: 5.210000000 GHz Radio Std #IFGain:Low #Atten: 30 dB Avg/Hold: 10/10 Ref Offset 1 dB Image: Space Sp	eq 5.210000000 GHz Center Freq: 5.210000000 GHz Radio Std: None #IFGain:Low #Atten: 30 dB Avg Hold: 10/10 Radio Device: BTS Ref Offset 1 dB

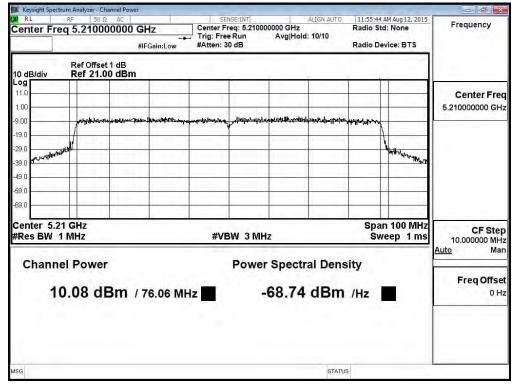


Maximum conducted output power:



Channel 42 – Chain A

Maximum conducted output power:





Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 13: Transmit (802.11a_6Mbps)(Panel Antenna)

Cable loss=1dB		Maximum conducted output power								
				Γ	Data Rat	e (Mbps	s)			
Channel No.	Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit
36	5180	12.97								<23dBm
44	5220	13.1								<23dBm
48	5240	13.25	13.09	12.96	12.81	12.65	12.52	12.35	12.24	<23dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable	Cable loss=1dB		Maximum conducted output power								
	Channel No. Frequency (MHz)			D	ata Rat	e (Mbps	s)				
Channel No.			9	12	18	24	36	48	54	Required Limit	
36	5180	12.77								<23dBm	
44	5220	13.02								<23dBm	
48	5240	13.05	12.91	12.74	12.6	12.44	12.3	12.14	11.97	<23dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
36	5180	12.97	12.77	15.88	23
44	5220	13.10	13.02	16.07	23
48	5240	13.25	13.05	16.16	23

- 1. Power Output Value = Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 14: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Panel Antenna)

Cable	Cable loss=1dB		Maximum conducted output power								
				D	ata Rat	e (Mbps	s)				
Channel No.	Channel No. Frequency (MHz)		28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit	
36	5180	12.73								<23dBm	
44	5220	13.11								<23dBm	
48	5240	13.12	12.93	12.82	12.7	12.56	12.49	12.39	12.29	<23dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Cable loss=1dB		Maximum conducted output power									
				Γ	Data Rat	e (Mbps	s)				
Channel No.	Frequency (MHz)	14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit	
36	5180	12.78								<23dBm	
44	5220	12.63								<23dBm	
48	5240	13.05	12.88	12.77	12.65	12.52	12.37	12.31	12.24	<23dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+ B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
				. ,	
36	5180	12.73	12.78	15.77	23
44	5220	13.11	12.63	15.89	23
48	5240	13.12	13.05	16.10	23

- 1. Power Output Value =Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 15: Transmit (802.11n-40BW_30Mbps)(5G Band)(Panel Antenna)

Cable loss=1dB		Maximum conducted output power									
Channel No.	Frequency (MHz)	30	60	90	120	180	240	270	300	Required Limit	
38	5190	10.26								<23dBm	
46	5230	13.32	13.22	13.09	12.96	12.85	12.72	12.64	12.5	<23dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	30	60	90	120	180	240	270	300	Required Limit
38	5190	10.42								<23dBm
46	5230	12.98	12.89	12.81	12.68	12.55	12.41	12.32	12.21	<23dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement: (CHAIN A+ B)

(CHAI(A D))					
Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
38	5190	10.26	10.42	13.35	23
46	5230	13.32	12.98	16.16	23

Note:

1. Power Output Value =Reading value on average power meter + cable loss

2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 16: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Panel Antenna)

Chain A

Cable lo	ss=1dB	Maximum conducted output power										
	Frequency		Data Rate (Mbps)									
Channel No	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	2.45	2.45 2.41 2.37 2.33 2.29 2.24 2.18 2.13 2.08 1.96							<23dBm		

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Chain B

Cable lo	ss=1dB		Maximum conducted output power									
Channal Na	Frequency		Data Rate (Mbps)									
Channel No	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	3.33	3.33 3.28 3.22 3.17 3.12 3.06 3.01 2.98 2.92 2.86							<23dBm		

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

Channel No	Frequency Range	26dB Bandwidth	Chain A Power	Chain B Power	Output Power	Output Power Limit	Result
	(MHz)	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	
42	5210	76.237	2.45	3.33	5.92	23	Pass

- 1. Power Output Value = Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



26dBc Occupied Bandwidth:

Channel 42 – Chain A

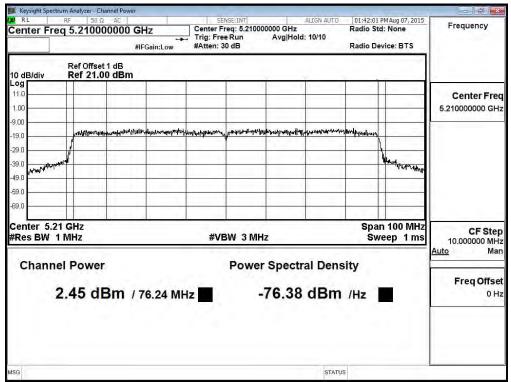
	ectrum Analyzer - Occupied BV	V	-					
Center F	RF 50Ω AC req 5.210000000	T	SENSE(INT Senter Freq: 5.21000 Trig: Free Run Atten: 30 dB	00000 GHz Avg Hold	ALIGN AUTO	Radio Std		Frequency
10 dB/div	Ref Offset 1 dB Ref 21.00 dBn	n						_
Log 11.0 1.00								Center Freq 5.210000000 GHz
-9.00 -19.0 -29.0		All	and the state of t	an a	No.1			
-39.0 -49.0 	ale - approximation of the second				·~ Uthouse	M Jong valgering	alogicity is given a	
-69.0						- 7 ~		
Center 5 #Res BW			#VBW 3 MH			n 200 MHz eep 1 ms	CF Step 20.000000 MHz	
Occu	pied Bandwidt		Total P	ower	8.58	3 dBm		<u>Auto</u> Man
Trans	/ C mit Freq Error	86.676 kHz 86.676 kHz		ower	99	0.00 %		Freq Offset 0 Hz
x dB E	x dB Bandwidth 97.99 M		x dB		-26.	00 dB		
MSG					STATU	5		

26dBc Occupied Bandwidth:

	rum Analyzer - Occ								-	
Center Fre	RL RF 50.0.2 AC SENSE:INT ALIGN AUTO 04:42:48 PM Aug 07, 2015 Center Freq 5.210000000 GHz Center Freq: 5.210000000 GHz Radio Std: None #IFGain:Low #Atten: 30 dB Avg Hold: 10/10 Radio Device: BTS								Frequency	
10 dB/div	Ref Offset Ref 21.00									1
Log 11.0 1.00										Center Freq 5.210000000 GHz
-9.00 -19.0 -29.0		advalit decomments					an and an and an and and and and and and			
-39.0 -49.0 ******** -59.0	n	# ^{K1}						Whitemarkers	welses, part of the second	
-69.0 Center 5.2 #Res BW 1				#	VBW 3MH	łz			n 200 MHz /eep 1 ms	CF Step 20.000000 MHz
Occupi	ed Band				Total Power 9.4					<u>Auto</u> Mar
76.396 MH2 Transmit Freq Error 67.431 kH							9.00 %		Freq Offset 0 Hz	
x dB Ba	x dB Bandwidth 99.30 l		MHz x dB			-26.00 dB				
MSG							STATU	s		

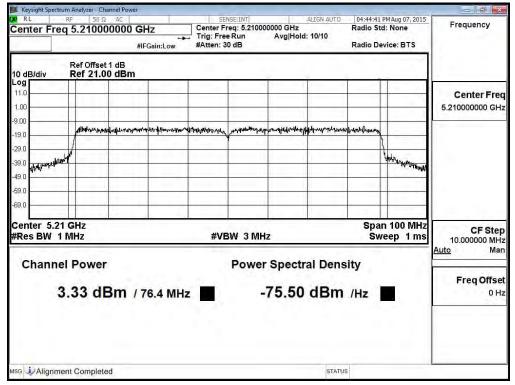


Maximum conducted output power:



Channel 42 – Chain A

Maximum conducted output power:





Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 17: Transmit (802.11a_6Mbps)(Sector Antenna)

Cable	Maximum conducted output power									
Channel No.	Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit
		Measurement Level (dBm)								
36	5180	11.57								<30dBm
44	5220	18.58								<30dBm
48	5240	18.74	18.59	18.46	18.32	18.18	18.05	17.99	17.87	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable	Maximum conducted output power									
Channel No.	Frequency (MHz)	6	9	12	18	24	36	48	54	Required Limit
		Measurement Level (dBm)								
36	5180	11.41								<30dBm
44	5220	18.5								<30dBm
48	5240	18.59	18.45	18.33	18.2	18.04	17.94	17.85	17.8	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+ B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
36	5180	11.57	11.41	14.50	30
44	5220	18.58	18.50	21.55	30
48	5240	18.74	18.59	21.68	30

- 1. Power Output Value = Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 18: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Sector Antenna)

Cable	Maximum conducted output power									
	Frequency (MHz)									
Channel No.		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit
36	5180	11.24								<30dBm
44	5220	18.59								<30dBm
48	5240	18.71	18.53	18.37	18.21	18.03	17.87	17.8	17.72	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Cable	Maximum conducted output power									
Channel No.	Frequency (MHz)	14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	Required Limit
		Measurement Level (dBm)								
36	5180	11.29								<30dBm
44	5220	18.34								<30dBm
48	5240	18.37	18.21	18.05	17.89	17.74	17.6	17.48	17.38	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

(CHAIN A+ B)

Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
36	5180	11.24	11.29	14.28	30
44	5220	18.59	18.34	21.48	30
48	5240	18.71	18.37	21.55	30

- 1. Power Output Value =Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 19: Transmit (802.11n-40BW_30Mbps)(5G Band)(Sector Antenna)

Cable	Cable loss=1dB			ım cond	lucted o	utput po	ower			
		-								
Channel No.	Frequency (MHz)	30	60	90	120	180	240	270	300	Required Limit
38	5190	9.29								<30dBm
46	5230	18.98	18.85	18.7	18.53	18.39	18.24	18.07	18.04	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

CHAIN B

Cable	Cable loss=1dB		Maximum conducted output power								
			-								
Channel No.	Frequency (MHz)	30	60	90	120	180	240	270	300	Required Limit	
				Measurement Level (dBm)							
38	5190	9.43								<30dBm	
46	5230	18.46	18.31	18.17	17.98	17.74	17.52	17.37	17.24	<30dBm	

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement: (CHAIN A+ B)

(CHAILAT D)					
Channel Number	Frequency	Chain A Power	Chain B Power	Output Power	Output Power Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)
38	5190	9.29	9.43	12.37	30
46	5230	18.98	18.46	21.74	30

Note:

1. Power Output Value = Reading value on average power meter + cable loss

2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



Product	:	802.11 ac PCIe Module
Test Item	:	Maximum conducted output power
Test Site	:	No.3 OATS
Test Mode	:	Mode 20: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Sector Antenna)

Chain A

Cable lo			May	kimum c	onducte	d output	power					
Channel Ma	Frequency	Data Rate (Mbps)										Required
Channel No	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	1.67	1.64	1.6	1.58	1.54	1.49	1.42	1.34	1.29	1.21	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Chain B

Cable lo	ss=1dB		Maximum conducted output power									
Channal Na	Frequency	Data Rate (Mbps)										Required
Channel No	(MHz)	VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	Limit
42	5210	2.27	2.22	2.18	2.15	2.11	2.07	2.04	1.99	1.91	1.88	<30dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

Channel No	Frequency Range	26dB Bandwidth	Chain A Power	Chain B Power	Output Power	Output Power Limit	Result
	(MHz)	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	
42	5210	75.924	1.67	2.27	4.99	30	Pass

- 1. Power Output Value = Reading value on average power meter + cable loss
- 2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))



26dBc Occupied Bandwidth:

Channel 42 – Chain A

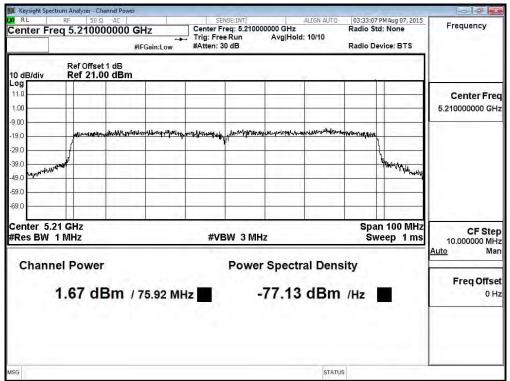
	pectrum Analyzer - Occupie						-		
Center F	RF 50Ω A Freq 5.2100000		Trig: F	SENSE:INT r Freq: 5.21000 Free Run h: 30 dB	0000 GHz Avg Hol	ALIGN AUTO	03:31:14 P Radio Std Radio Dev		Frequency
10 dB/div	Ref Offset 1 d Ref 21.00 d								
Log 11.0 1.00									Center Freq 5.210000000 GHz
-9.00 -19.0			marine man rations	we fundamental power	Jerton Unipe t				
-29.0 -39.0	news.	marment				Wange main			
-49.0 - 49.0	and a gran destration from						horden and the loss of	a har and the second	
-69.0									
Center # #Res BW			#	VBW 3 МН	z			200 MHz eep 1 ms	CF Step 20.000000 MHz
Occu	pied Bandwi		100	Total P	ower	7.73	dBm		<u>Auto</u> Man
		75.924	MHZ						Freq Offset
Trans	mit Freq Error	103.	00 kHz	OBW P	ower	99	.00 %		0 Hz
x dB l	Bandwidth	91.4	15 MHz	x dB		-26.	00 dB		
MSG						STATU	5		

26dBc Occupied Bandwidth:

	ectrum Analyzer - Occupi								
Center Fi	RF 50 Ω req 5.2100000	AC 000 GHz #IFGain:Lo	Trig: I	SENSE:INT r Freq: 5.21000 Free Run h: 30 dB	MAug 07, 2015 : None rice: BTS	Frequency			
10 dB/div	Ref Offset 1 o Ref 21.00 o								
Log 11.0 1.00									Center Freq 5.210000000 GHz
-9.00 -19.0 -29.0		ľ	an man and the second		and the second second				
-39.0 -49.0 1414-1-1-1	himmer the stranger of the state	Hand Carles and Carles				A CONTRACTOR	and window		
-59.0									
Center 5. #Res BW			#	VBW ЗМН	z			200 MHz ep 1 ms	CF Step 20.000000 MHz
Occu	pied Bandw		. del .	Total P	ower	8.41	dBm		<u>Auto</u> Man
		76.275	MHz						Freq Offset
Transr	nit Freq Error	r 69.6	97 kHz	OBW P	ower	99	.00 %		0 Hz
x dB B	andwidth	93.4	BO MHz	x dB		-26.	00 dB		
MSG						STATUS	5		

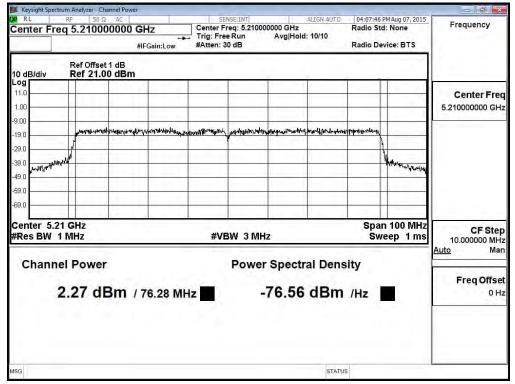


Maximum conducted output power:



Channel 42 – Chain A

Maximum conducted output power:



4. Peak Power Spectral Density

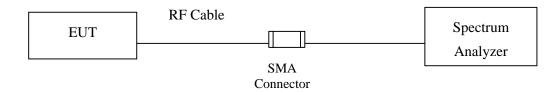
4.1. Test Equipment

	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.

4.2. Test Setup



4.3. Limits

(1) For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the

equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. (**iv**) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.+

- (2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- (3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

4.4. Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

The Peak Power Spectral Density using KDB 789033 section F) procedure, Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer.

SA-1 method is selected to run the test.

For the band 5.725-5.85 GHz, Scale the observed power level to an equivalent value in 500 kHz by adjusting (increase) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log (500 \text{ kHz}/100 \text{ kHz}) = 6.98 \text{ dB}.$

4.5. Uncertainty

± 1.27 dB



4.6. Test Result of Peak Power Spectral Density

Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
26	5100	А	1.605	4.615	17	Pass
36	5180	В	1.090	4.100	17	Pass
4.4	5220	А	1.132	4.142	17	Pass
44	5220	В	0.639	3.649	17	Pass
40	5240	А	0.587	3.597	17	Pass
48	5240	В	0.592	3.602	17	Pass

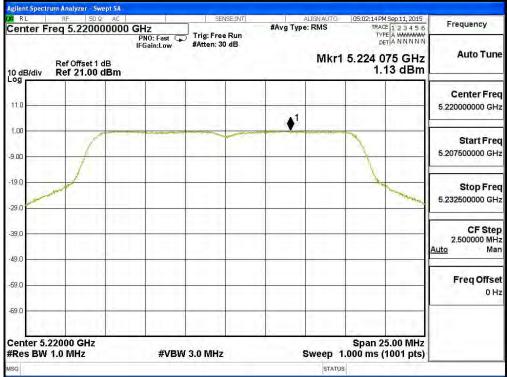
Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.



				, 	nannei 3			at 54	alyzer - Swe	the state of the	ailant Sna
Frequency	36 PM Sep 11, 2015 TRACE 1 2 3 4 5 6	TRA	ALIGNAUTO pe: RMS	#/		1.		AC 0000 G		RF	RL
Auto Tun	TYPE A WWWWW DET A NNNN 5 650 GHz 1.61 dBm	Mkr1 5.185 650 GH:			Trig: Free Run #Atten: 30 dB		PN0: Fast IFGain:Low Ref Offset 1 dB 0 dB/div Ref 21.00 dBm 9g				
Center Fre 5.180000000 GH	-										11.0
Start Fre 5.167500000 GH		1	• ¹		~				-		1,00 9.00
Stop Fre 5.192500000 GH	-	1							ł	and the second se	19.0 29.0 29.0
CF Stej 2.500000 MH Auto Ma											19.0
Freq Offse 0 H											59.0
	n 25.00 MHz	Span							0 GHz	5.1800	enter :
	is (1001 pts)	.000 ms	Sweep 1		MHz	N 3.	#VBW		MHz	V 1.0 I	Res Bl

Channel 36 – Chain A

Channel 44 – Chain A





RL	rum Analyzer - Swo RF 50 Ω	AC		SEN	ISE:INT		ALIGNAUTO	05:02:46 PM	Sep 11, 2015	
Center F	req 5.24000	0000 GH	Z 10: Fast 😱	Trig: Free	Run	#Avg Type		TRACE	123456 A WWWWW A NNNN	Frequency
0 dB/div	Ref Offset 1 c Ref 21.00 c	#Atten: 30	dB		Mkr1 5.227 600 GH 0.59 dBr			Auto Tune		
11.0				_						Center Free 5.240000000 GH
.00										Start Fre 5.227500000 GH
9.0 <u> </u>	I - Manager and - manager									Stop Fre 5.252500000 GH
9.0		- And	Mark Market	-						CF Ste 2.500000 MH Auto Ma
9.0				- Andre	the man party and	- starman	an line and	venduers	neð menneð fræð meg	Freq Offse 0 H
i9.0 ———										
	24000 GHz 1.0 MHz)*	#VBW	3.0 MHz		1	Sweep 1	Span 25 .000 ms (1	5.00 MHz 001 pts)	
sg					-		STATUS			L

Channel 48 – Chain A

Channel 36 – Chain B

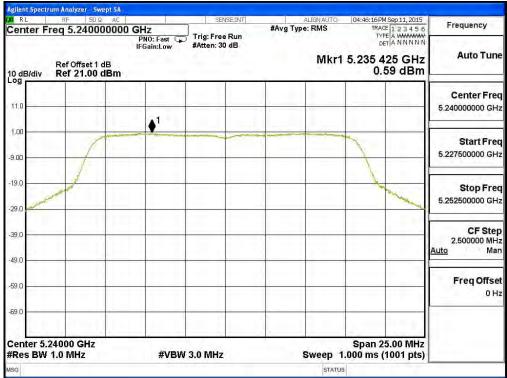




Agilent Spectru	m Analyzer - Swep	ot SA	Ch		4 – Chain I			
RL	RF 50 Ω	AC	11	SENSEIINT	ALIGN #Avg Type: RM		2 PM Sep 11, 2015 RACE 1 2 3 4 5 6	Frequency
Center Freq 5.220000000 GHz PNO: Fast IFGain:Low Ref Offset 1 dB 10 dB/div Ref 21.00 dBm				Free Run n: 30 dB	1.1.2.14	түре DET Mkr1 5.212 92 0.6		Auto Tune
11.0				-				Center Free 5.220000000 GH:
1.00 9.00	1	♦ ¹		-		1		Start Free 5.207500000 GH:
19.0 29.0)	the second	Stop Free 5.232500000 GH
39.0 49.0								CF Stej 2.500000 MH <u>Auto</u> Ma
59.0								Freq Offse 0 H
69.0								
Center 5.2 Res BW 1		#	VBW 3.0 N	1Hz	Swe	Spar ep 1.000 m	a 25.00 MHz s (1001 pts)	
ISG						STATUS		

Channel 44 – Chain B

Channel 48 – Chain B





:	802.11 ac PCIe Module
:	Peak Power Spectral Density
:	No.3 OATS
:	Mode 2: Transmit (802.11n-20BW 14.4Mbps)(5G Band)(Dipole Antenna)
	: :

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
26	5180	А	1.118	4.128	17	Pass
36		В	0.796	3.806	17	Pass
4.4	5220	А	0.818	3.828	17	Pass
44	5220	В	-0.014	2.996	17	Pass
40	5240	А	1.094	4.104	17	Pass
48		В	0.231	3.241	17	Pass

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



	Chumer	36 – Chain A		
	SENSE:INT	ALIGNAŬTO	05:09:58 PM Sep 11, 2015	Frequency
) GHz PNO: Fast 🖵 IFGain:Low	Trig: Free Run #Atten: 30 dB	201 C 191	TYPE A WAAAWAW DET A N N N N N	Auto Tune
				Center Free 5.180000000 GH;
				Start Free 5.167500000 GH
			and the second s	Stop Free 5.192500000 GH
				CF Stej 2.500000 MH <u>Auto</u> Ma
				Freq Offse 0 H
#\/D\M	3.0 MH7	Sween	Span 25.00 MHz	
		PNO: Fast Trig: Free Run	Avg Type: RMS PRO: Fast Trig: Free Run #Atten: 30 dB Mkr1	PRO: Fast PRO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB #Avg Type: RMS TYPE 12 3 4 5 6 TYPE 12 5 6

Channel 36 – Chain A

Channel 44 – Chain A

				-								
							alyzer - Swept SA	ilent Spectrum i				
Estatistication	PM Sep 11, 2015		ALIGN AUTO		SENSEINT			RL				
Frequency	RACE 123456 TYPE A WWWWW	PNO: Fast C Trig: Free Run Type A WARMAN					enter Fred					
Auto Tune	850 GHz).82 dBm	5.223 8	Mkr1		#Atten: 30 dB	IFGain:Low	IFGain:Low Ref Offset 1 dB 0 dB/div Ref 21.00 dBm					
Center Free		1						9				
5.220000000 GH:				● ¹				1.0				
Start Free 5.207500000 GH2		1					1	00				
Stop Free 5.232500000 GH;	here and a second						1	9.0				
CF Step 2.500000 MH; <u>Auto</u> Mar								9.0				
Freq Offse 0 Hi								9.0				
				1				9.0				
	25.00 MHz s (1001 pts)	Span 2 .000 ms (Sweep 1		3.0 MHz	#VBW		enter 5.220 Res BW 1.0				
			STATUS					a				



	nalyzer - Swept SA			1 48 – Chain A		
	F 50Ω AC		SENSE:INT	ALIGNAUTO #Avg Type: RMS	05:11:25 PM Sep 11, 2015 TRACE 1 2 3 4 5 6	Frequency
Re	5.24000000 of Offset 1 dB of 21.00 dBm	UGHZ PNO: Fast G IFGain:Low	Trig: Free Run #Atten: 30 dB		5.233 700 GHz 1.09 dBm	Auto Tune
11.0						Center Fred 5.240000000 GHz
		1				
9.00	1					Start Fred 5.227500000 GHz
19.0	1					Stop Frec 5.252500000 GH;
39,0						CF Step 2.500000 MH: Auto Mar
49.0 59.0						Freq Offse 0 H:
69.0						
Center 5.240 #Res BW 1.0		#VB\	N 3.0 MHz	Sweep 1	Span 25.00 MHz 1.000 ms (1001 pts)	
ASG	014.001	2.000		STATU		

Channel 48 – Chain A

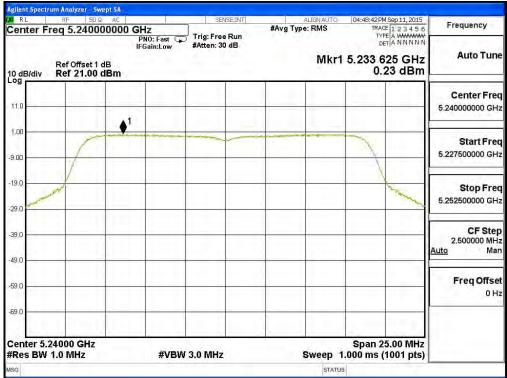
Channel 36 – Chain B

📈 RL 🛛 RF 50 Q AC		SENSE:INT	ALIGNAUTO	04:47:01PM Sep 11, 2015		
Center Freq 5.1800000	0 GHz PNO: Fast 😱	Trig: Free Run	#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WANAAAAA	Frequency	
Ref Offset 1 dB 10 dB/div Ref 21.00 dBm	IFGain:Low	#Atten: 30 dB	Mkr1	DEFIANNNN Mkr1 5.181 425 GHz 0.80 dBm		
11.0					Center Free 5.180000000 GH:	
9.00		• ¹			Start Free 5.167500000 GH	
19.0				and the second s	Stop Free 5.192500000 GH	
39.0					CF Stej 2.500000 MH <u>Auto</u> Ma	
-59.0					Freq Offse 0 H	
-69.0						
Center 5.18000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz	Sweep 1	Span 25.00 MHz .000 ms (1001 pts)		
ASG			STATU	1	L	



lgilent Spect M RL	rum Analyzer - Swept RF 50 Ω		SENSE:INT	ALIGNAUTO	04:47:58 PM Sep 11, 2015	-
Center F	req 5.220000	PNO: Fast	Trig: Free Run	#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WAAAAAA DET A N N N N N	Frequency
0 dB/div	Ref Offset 1 dB Ref 21.00 dE		v [™] #Atten: 30 dB	Mkr1	5.213 975 GHz -0.01 dBm	Auto Tune
11.0						Center Free 5.220000000 GH
1.00).00	1	↓ ¹	and the second sec			Start Fre 5.207500000 GH
29.0	and the second				the amount	Stop Free 5.232500000 GH
39.0 49.0						CF Step 2.500000 MH <u>Auto</u> Ma
59.0						Freq Offse 0 H
69.0					2 P.	
	.22000 GHz 1.0 MHz	#V	BW 3.0 MHz	Sweep '	Span 25.00 MHz 1.000 ms (1001 pts)	
SG	and a second second	cul.		STATU		I

Channel 44 – Chain B



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 30Mbps)(5G Band)(Dipole Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result				
20	5190	А	-2.276	0.734	17	Pass				
38		5190	5190	5190	5190	5190	В	-2.653	0.357	17
10	5230	А	-1.644	1.366	17	Pass				
46		В	-2.246	0.764	17	Pass				

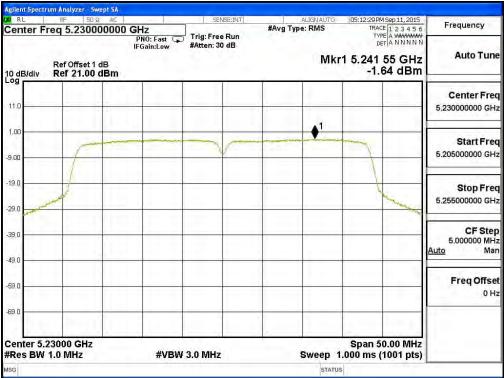
Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.



	rum Analyzer - Swept SA							
	05:12:00 PM Sep 11, 2015	ALIGN AUTO	1	SENSE:INT		RF 50 Ω AC	a RL	
Frequency	TRACE 1 2 3 4 5 6 TYPE A WAAAWAY DET A N N N N N	pe: RMS	#Avg T	Trig: Free Run	PNO: Fast	enter F		
Auto Tur	^{детја NNNNN} 1 5.195 10 GHz -2.28 dBm	Mkr1		#Atten: 30 dB	IFGain:Low	0 dB/div		
Center Fre 5.190000000 GH							11.0	
			A1				1.00	
Start Fre 5.165000000 GH	the second se	manylalur	-		-	1	9.00	
Stop Fre 5.215000000 GH	howard						19.0	
CF Ste 5.000000 MH <u>Auto</u> Ma							19.0	
Freq Offse 0 H							i9.0	
	,						69.0	
	Span 50.00 MHz 000 ms (1001 pts)	Sweep 1.	1	3.0 MHz	#VBW	000 GHz 0 MHz	enter 5. Res BW	
L		STATUS					ISG	

Channel 38 – Chain A

Channel 46 – Chain A

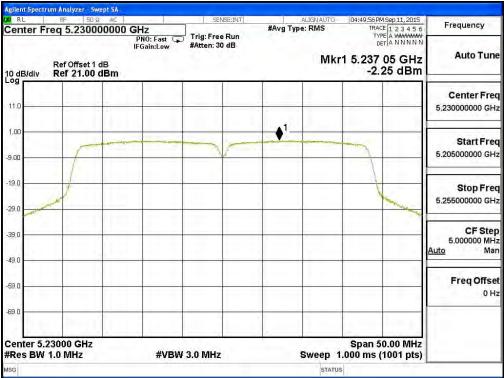




		liaili D	Channel					
Frequency	04:49:18 PM Sep 11, 2015	ALIGNAUTO	1.00	SENSE:INT		Ω AC		RL
Frequency	TRACE 1 2 3 4 5 6 TYPE A WWWWWW DET A N N N N N	pe: RMS	#Avg	Trig: Free Run #Atten: 30 dB	GHz PNO: Fast 🖵 IFGain:Low	00000	eq 5.1900	enter F
Auto Tun	1 5.198 90 GHz -2.65 dBm	Mkr1		watten. 30 db	IFGain:Low	0 dB/div		
Center Fre	1.1.1						-	
5.190000000 GI								11.0
Start Fre 5.165000000 GH	~							
	1		-	V				9.00
Stop Fre 5.215000000 GH								9.0
CF Ste 5.000000 MH								9.0
Auto Ma							1.0004	19.0
Freq Offso			-					59.0
01			_					i9.0
	Span 50.00 MHz		4. A.			4).+	9000 GHz	enter 5
	.000 ms (1001 pts)	Sweep 1.		3.0 MHz	#VBW			Res BW
		STATUS						SG

Channel 38 – Chain B

Channel 46 – Chain B



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11ac-80BW-65Mbps)(5G Band)(Dipole Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
10	5010	А	-6.090	-3.080	17	Pass
42	5210	В	-6.322	-3.312	17	Pass

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



		II A	- (hannel 42		- Swept SA	trum Analyzer - S	evsight Spectr	
Frequency	12:20:40 PM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWWW	ALIGN AUTO		SENSERINT	GHz PNO: Fast	0 Ω AC	RF 50	RL	
Auto Tun		IFGain:Low #Atten: 30 dB DET A NNNN Ref Officer 1 dB Mkr1 5.233 3 GHz							
Center Fre 5.210000000 GH									
Start Fre 5.16000000 GH		1			al-an-anti-			1	
Stop Fre 5.26000000 GH									
CF Ste 10.000000 MH Auto Ma	and a second							and the second	
Freq Offset									
	Span 100.0 MHz 00 ms (1001 pts)	Sweep 1.		3.0 MHz	#VBW	Z	1000 GHz .0 MHz	nter 5.21 es BW 1.	
		STATUS							

Channel 42 – Chain A

					ectrum Analyzer - Swept SA			
Frequency Auto Tur	01:00:52 PM Aug 12, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N	#Avg Type: RMS	SENSE(INT	00000 GHz	RF 50 Ω AC req 5.21000000	Center F		
	Ref Offset 1 dB Mkr1 5.199 1 GHz 10 dB/div Ref 21.00 dBm -6.32 dBm							
Center Fre 5.210000000 GH						-og 11.0		
Start Fre 5.160000000 GH		an a	1	•		9.00		
Stop Fre 5.26000000 GH						29.0		
CF Stej 10.000000 MH Auto Ma	and the second s					39.0		
Freq Offset 0 Hz				· · ·		59.0		
	Span 100.0 MHz		3.0 MHz	#/m/	21000 GHz	Center 5.		
	.000 ms (1001 pts)	Sweep 1	3.U IVINZ	#VBVV	1.0 10172	FRES BW		



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 5: Transmit (802.11a_6Mbps)(Grid DISH Antenna)

Channel	Frequency		PPSD	Total	Required	
Number	(MHz)	Chain	(dBm)	PPSD	Limit	Result
Nulliber	(MITZ)		(dBill)	(dBm)1	(dBm)	
26	5100	А	0.907	3.917	6.5	Pass
36	5180	В	1.851	4.861	6.5	Pass
	5220	А	2.678	5.688	6.5	Pass
44	5220	В	2.737	5.747	6.5	Pass
40	5240	А	2.664	5.674	6.5	Pass
48	5240	В	2.611	5.621	6.5	Pass

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



	Channel 36 – Chain A									
			1 2 2 2 2 2 2 2 2		Spectrum Analyzer - Swept SA					
Frequency	11:28:39 PM Aug 06, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N	ALIGN AUTO #Avg Type: RMS	SENSE:INT Trig: Free Run #Atten: 30 dB		RF 50 Ω AC Freq 5.18000000	Center F				
Auto Tun	5.175 000 GHz 0.91 dBm	Ref Officet 1 dB Mkr1 5.175 000 GHz								
Center Free 5.180000000 GH				1		-og 11.0				
Start Free 5.167500000 GH:						9.00				
Stop Free 5.192500000 GH						19.0				
CF Step 2.500000 MH Auto Mar						39.0				
Freq Offse 0 H						49.0 59.0				
						69.0				
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	5.18000 GHz N 1.0 MHz					
		STATUS				ASG				

Channel 36 – Chain A

Channel 44 – Chain A

Frequency	02:25:06 AM Aug 14, 2015	ALIGN AUTO		SENSE(INT		RF 50 Ω AC	RL		
	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	be:RMS	#Avg	Trig: Free Run #Atten: 30 dB	O GHZ PNO: Fast C IFGain:Low	q 5.22000000	Center Fro		
Auto Tun	Ref Offset 1 dB Mkr1 5.224 150 GHz 10 dB/div Ref 21.00 dBm 2.68 dBm								
Center Fre 5.22000000 GH							-og 11.0		
Start Fre 5.207500000 GH							1.00 9.00		
Stop Fre 5.232500000 GH	A second second					and the second s	29.0		
CF Ste 2.500000 MH Auto Ma							39.0		
Freq Offso 0 H			4				59.0		
							69.0		
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1		3.0 MHz	#VBI		Center 5.2 Res BW 1		
		STATUS					ISG		



- 2 -			Chain A			zer - Swent SA	pectrum Analyzer	Keysight Sr	
	02:26:29 AM Aug 14, 2015	0 1	ALIGN AUTO	SENSELINT	1	50 Ω AC		RL	
Frequency	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN		#Avg Type: RMS	rig: Free Run Atten: 30 dB	HZ NO: Fast ♀ Gain:Low	40000000 G	req 5.240	Center F	
Auto Tur	Ref Offset 1 dB Mkr1 5.245 400 GHz 10 dB/div Ref 21.00 dBm 2.66 dBm								
Center Fre 5.240000000 GH							THE	og	
			♦ ¹					11.0	
Start Fre 5.227500000 GH	1						/	9.00	
Stop Fre 5.252500000 GH	and the second second						and work	29.0	
CF Ste 2.500000 MH <u>Auto</u> Ma								39.0	
Freq Offse 0 H		_						59.0	
								69.0	
	Span 25.00 MHz 00 ms (1001 pts)	1.00	Sweep	0 MHz	#VBW		.24000 GH (1.0 MHz		
		- 1	STAT			·	- see prototopy	ASG	

Channel 48 – Chain A

Channel 36 – Chain B

				(A)		- P
	12:08:07 AM Aug 07, 2015	ALIGN AUTO	SENSE(INT		RF 50 Ω AC	RL RL
Frequency	TRACE 1 2 3 4 5 6	#Avg Type: RMS	The second second	0000 GHz	req 5.18000000	
T- 35 G.	TYPE A WWWW DET A NNNNN		Trig: Free Run #Atten: 30 dB	PNO: Fast 😱 IFGain:Low		
Auto Tun	5.185 975 GHz 1.85 dBm	Mkr1	Č. J. J.		Ref Offset 1 dB Ref 21.00 dBm	10 dB/div
Center Fre						
5.180000000 GH		-1				11.0
1 T 1000000		↓ ¹				1.00
Start Fre	X					
5.167500000 GH	1				1	9.00
Stop Free 5.192500000 GH					1 de la compañía de l	-19.0
	Martin Construction					-29.0
0.5.01						20.0
CF Ste 2.500000 MH						-39.0
<u>Auto</u> Ma						-49.0
Freq Offse			_			
0 H						-59.0
						-69.0
	Span 25.00 MHz .000 ms (1001 pts)	Sween 1	3.0 MHz	#VBW	18000 GHz 1.0 MHz	Center 5. #Res BW
		STATUS				ASG



		– Chain B	Channel 44			
		1	1		ectrum Analyzer - Swept SA	
Frequency	03:07:01 AM Aug 14, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N	ALIGN AUTO #Avg Type: RMS	SENSE(INT	PNO: Fast	RF 50 Ω AC req 5.220000000	Center F
Auto Tun	5.225 275 GHz	Mkr1	#Atten: 30 dB	IFGain:Low	Ref Offset 1 dB	-
	2.74 dBm			(*	Ref 21.00 dBm	0 dB/div
Center Free					fill the	
5.220000000 GH		♦1				11.0
Start Free 5.207500000 GH						9.00
Stop Free 5.232500000 GH						29.0
CF Step 2.500000 MH Auto Mar						39.0
Freq Offse 0 H			_			59.0
						69.0
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	22000 GHz 1.0 MHz	Center 5. #Res BW
		STATUS		_		ASG

Ref Offset 1 dB Mkr1 5.236 825 GHz 10 dB/div Ref Offset 1 dB 10 dB/div Ref 21.00 dBm 1						ectrum Analyzer - Swept SA	
Ref Offset 1 dB Mkr1 5.236 825 GHz Auto T 0 dB/div Ref 21.00 dBm 2.61 dBm Center F 0 dB/div 1	Frequency	TRACE 1 2 3 4 5 6		Trig: Free Run	000 GHz		
III.0 IIII.0 III.0 III.0 <t< td=""><td>Auto Tur</td><td>5.236 825 GHz</td><td>Mkr1</td><td>#Atten: 30 dB</td><td>IFGain:Low</td><td></td><td></td></t<>	Auto Tur	5.236 825 GHz	Mkr1	#Atten: 30 dB	IFGain:Low		
1.00	Center Fre 5.240000000 Gi				1		
230 5.252500000 390 CF S 490 Auto 590 Freq Of 690 Span 25.00 MHz	Start Fro 5.227500000 GI					1	
49.0 2.500000 59.0 59.0 69.	Stop Fro 5.252500000 Gi	- Andrew					arran in
59.0 59.0	CF Ste 2.500000 MI <u>Auto</u> Mi						
center 5.24000 GHz Span 25.00 MHz	Freq Offs 01						
		.000 ms (1001 pts)		3.0 MHz	#VBW		#Res BW



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 6: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Grid DISH Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
26	5180	А	0.693	3.703	6.5	Pass
36		В	1.676	4.686	6.5	Pass
4.4	5220	А	1.163	4.173	6.5	Pass
44		В	2.340	5.350	6.5	Pass
40	5240	А	1.100	4.110	6.5	Pass
48		5240	В	2.065	5.075	6.5



			alli A	30 - CI	Channel				
	The Constitution	-			1	4		trum Analyzer - Sv	
Frequency	99 PM Aug 06, 2015 RACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N	TRAC	ERMS	#Avg Typ	SENSE(INT	PNO: Fast	000000	RF 50 S eq 5.1800	enter Fr
Auto Tun	075 GHz		Mkr1	-	#Atten: 30 dB	IFGain:Low	0.00	Ref Offset 1	
	0.69 dBm		a syc s a s					Ref 21.00	0 dB/div
Center Fre 5.180000000 GH								1	11.0
									1.00
Start Fre 5.167500000 G⊦	\	1						1	9.00
Stop Fre 5.192500000 GH	A second							-	19.0
CF Ste 2.500000 MH <u>Auto</u> Ma									39.0
								-	49.0
Freq Offse 0 ⊢									59.0
-				1			1	10.000	69.0
	n 25.00 MHz s (1001 pts)	Span 2 .000 ms (Sweep 1	1	3.0 MHz	#VBW	0	8000 GHz 1.0 MHz	enter 5.1 Res BW
		1	STATUS					<u>e na server a s</u>	SG

Channel 36 – Chain A

Channel 44 – Chain A

- 6				vept SA	pectrum Analyzer - Swept				
Frequency	11:42:31 PM Aug 06, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO #Avg Type: RMS	SENSE(INT			Center Fi			
T. 3. C.	DET A WWWW		Trig: Free Run #Atten: 30 dB	PNO: Fast 😱 IFGain:Low	Center Freq 5.220000000 GHz PNO: Fast G IFGain:Low				
Auto Tun	5.213 450 GHz 1.16 dBm	Mkr1			Ref Offset 1 dB Ref 21.00 dB	10 dB/div			
Center Fre 5.220000000 GH						11.0			
5.22000000 GH									
Start Fre 5.207500000 GH					1	9.00			
Stop Fre 5.232500000 GH	and the second second					19.0 29.0			
CF Ste 2.500000 MH Auto Ma						19.0			
Freq Offso 0 F				-		9.0			
						69.0			
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	.22000 GHz				
-		STATUS			100 pr 11 - 10 - 10 - 10 - 10 - 10 - 10 - 10	ISG			



		Chumr	Channel			5
	1:45:28 PM Aug 06, 2015	ALIGN AUTO	SENSE(INT		ectrum Analyzer - Swept SA RF 50 Ω AC	Keysight Spec
Frequency	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N	Type: RMS	Trig: Free Run #Atten: 30 dB	PNO: Fast	req 5.24000000	
Auto Tun	235 050 GHz 1.10 dBm	Mkr1	#Atten: 30 db	IFGain:Low	Ref Offset 1 dB	
	1.10 0.611			1	Ref 21.00 dBm	0 dB/div
Center Fre 5.240000000 GH				1		11.0
Start Fre 5.227500000 GH	1					9.00
Stop Fre 5.252500000 GH	And a					19.0 29.0
CF Ste 2.500000 MH Auto Ma						39.0
Freq Offs 0 F						19.0 59.0
						69.0
	Span 25.00 MHz 0 ms (1001 pts)	Sweep 1.	.0 MHz	#VBW :	24000 GHz 1.0 MHz	Center 5.2 Res BW 1
		STATUS				ISG

Channel 48 – Chain A

Channel 36 – Chain B

Keysight Spectrum Analyzer - S R L RF 50	Ω AC	SENSE(INT	ALIGN AUTO	12:18:59 AM Aug 07, 2015	Frequency
nter Freq 5.1800	PNO: Fast	Trig: Free Run	#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	
	IFGain:Low	#Atten: 30 dB			A
Ref Offset 1 B/div Ref 21.00		1. S.	Mkr	1 5.184 475 GHz 1.68 dBm	
				1.1.1	Center Fre
0	-x	-	- <u> </u>		5.180000000 GH
0			↓ 1		1
					Start Fre
				X	5.167500000 GH
D				And and a second	Stop Fre
	-		141 1	-	5.192500000 GH
				1100	CF Ste
					2.500000 MH
0					<u>Auto</u> Ma
					Freq Offse
) <u> </u>		-			0 H
1				in the lateral	
nter 5.18000 GHz		1		Span 25.00 MHz	
es BW 1.0 MHz	#VB	V 3.0 MHz	Sweep	1.000 ms (1001 pts)	
			STATU	JS	



		chain B		Channe		and EA	rum Analyzer - Swe	Variabit Com
Frequency	12:21:21 AM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	ALIGN AUTO pe: RMS	#Avg	SENSE(INT	1 Z NO: Fast ⊊ Gain:Low	AC 0000 GH	RF 50 Ω eq 5.22000	RL
Auto Tune	5.225 825 GHz 2.34 dBm	Mkr1		tten: 30 dB	Gain:Low	IB	Ref Offset 1 d Ref 21.00 d	I0 dB/div
Center Free 5.220000000 GH								11.0
Start Free 5.207500000 GH							1	1.00 9.00
Stop Free 5.232500000 GH		_						19.0 29.0
CF Step 2.500000 MH Auto Ma								39.0
Freq Offse 0 H								49.0 59.0
	Span 25.00 MHz						2000 CH2	69.0
-	.000 ms (1001 pts)	Sweep 1		MHz	#VBW			Res BW

Frequency	12:23:58 AM Aug 07, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO #Avg Type: RMS	SENSE:INT	AC 0000 GHz	RF 50 Ω req 5.240000	RL Center Fr
1 De Cu	DET A WWWW		Trig: Free Run #Atten: 30 dB	PNO: Fast G		
Auto Tun	5.234 125 GHz 2.07 dBm	Mkr1	6		Ref Offset 1 dB Ref 21.00 dB	10 dB/div
Center Fre 5.240000000 GH				▲ ¹		11.0
Start Fre 5.227500000 GH					1	9.00
Stop Fre 5.252500000 GH	and and a strength					19.0 .29.0
CF Ste 2.500000 MH Auto Ma						39.0
Freq Offse 0 ⊦						59.0
						69.0
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBV	24000 GHz 1.0 MHz	Center 5.2 #Res BW
		STATUS	and the second se		362) 3123 64V	ISG

Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 7: Transmit (802.11n-40BW_30Mbps)(5G Band)(Grid DISH Antenna)

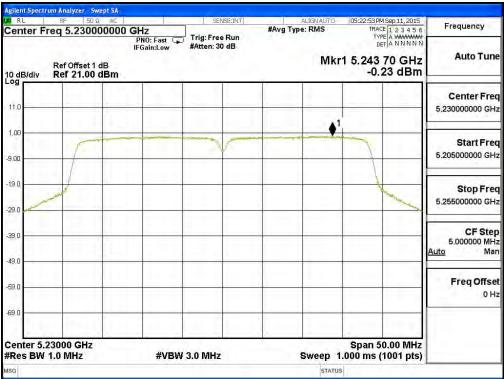
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
20	5190	А	-4.355	-1.345	6.5	Pass
38		В	-3.450	-0.440	6.5	Pass
16	5220	А	-0.226	2.784	6.5	Pass
46	5230	В	-1.297	1.713	6.5	Pass



	Channel 38 – Chain A					
ight Spectrum Analyzer - Swept SA			1			
RF 50 Ω AC er Freq 5.190000000 GHz PNO: Fi	SENSECINT Trig: Free Run	ALIGN AUTO #Avg Type: RMS	11:48:29 PM Aug 06, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Frequency		
IFGain:L				Auto Tun		
Ref Offset 1 dB div Ref 21.00 dBm	1.00	Mkr	1 5.203 75 GHz -4.36 dBm	Autorun		
				Center Fre		
				5.190000000 GH		
		• • • • • •		Start Fre 5.165000000 GH		
			the second se			
				Stop Fre		
			have	5.215000000 GH		
				CF Ste		
				5.000000 MH <u>Auto</u> Ma		
				1		
				Freq Offse 0 H		
				1 h		
er 5.19000 GHz BW 1.0 MHz #	VBW 3.0 MHz	Sween 1	Span 50.00 MHz .000 ms (1001 pts)	6		
		STATUS	1			

Channel 38 – Chain A

Channel 46 – Chain A

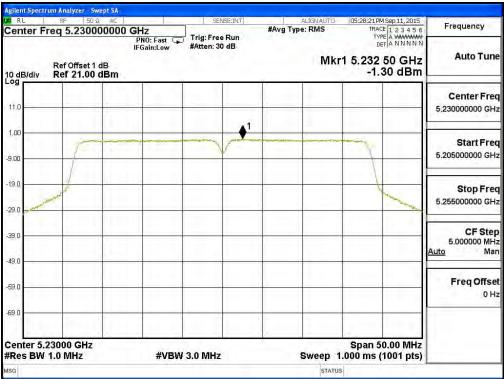




	And the second second second						ectrum Analyzer - Si	
Frequency	12:32:01 AM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	ALIGN AUTO Type: RMS	#Avg	SENSERINT	GHz PNO: Fast	0Ω AC 0000000 G	RF 50 9 req 5.1900	enter F
Auto Tun	and the second se			#Atten: 30 dB	IFGain:Low	Í		_
Auto Fui	1 5.195 75 GHz -3.45 dBm	MKr		in shi	100		Ref Offset 1 Ref 21.00	0 dB/div
Center Fre								
5.19000000 GI				-	*			11.0
Start Fre 5.165000000 GH Stop Fre 5.215000000 GH			•1-			1		1.00
			-				T	9.00
	· _ !- · · ·							19.0
	han					114.	m	<u>ji</u> L I
	and the second s					1.		29.0
CF Ste 5.000000 MH			-				-	19.0
<u>Auto</u> Ma		_	_			-	_	49.0
Freq Offs						1.14.	-	59.0
0 H								
							1	59.0 ———
	Span 50.00 MHz .000 ms (1001 pts)	Sweep 1		3.0 MHz	#VBW	z	19000 GHz 1.0 MHz	enter 5. Res BW
		STATUS						SG

Channel 38 – Chain B

Channel 46 – Chain B



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 8: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Grid DISH Antenna)

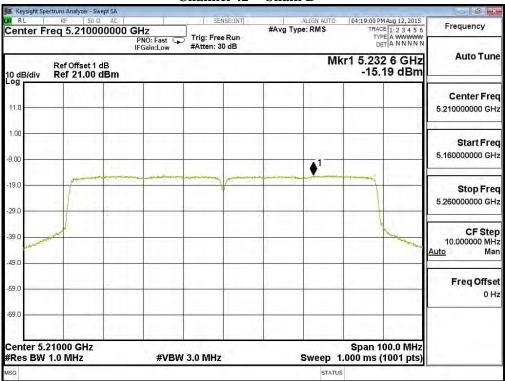
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
10	5210	А	-15.793	-12.783	6.5	Pass
42	5210	В	-15.188	-12.178	6.5	Pass



			hannel 42 -		ctrum Analyzer - Swept SA	Keyright Sp
Frequency	11:36:57 PM Aug 06, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	ALIGN AUTO #Avg Type: RMS	SENSECINT	AC	RF 50 Ω AC req 5.210000000	RL
Auto Tur	r1 5.224 0 GHz -15.79 dBm	Mk	#Atten: 30 dB		Ref Offset 1 dB Ref 21.00 dBm	0 dB/div
Center Free 5.210000000 GH						11.0
Start Fre 5.16000000 GH		•1				1.00
Stop Free 5.260000000 GH:		and the second				19.0
CF Ste 10.000000 MH Auto Ma	and the second				-	19.0 19.0
Freq Offset 0 Hz						i9.0
	Span 100.0 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	21000 GHz 1.0 MHz	69.0 Center 5.2 #Res BW
	· · · · · · · · · · · · · · · · · · ·	STATUS			119 11112	ISG

Channel 42 – Chain A

Channel 42 – Chain B





Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 9: Transmit (802.11a_6Mbps)(Omni Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
26	7100	А	7.821	10.831	13	Pass
36	5180	В	7.541	10.551	13	Pass
	5220	А	9.305	12.315	13	Pass
44	5220	В	9.084	12.094	13	Pass
40	5240	А	9.254	12.264	13	Pass
48	5240	В	9.130	12.140	13	Pass



			Channel 3	6 – Chain A		
Keysight Sp	RF 50 Ω AC		- another south			
	RF 50 Ω AC Freq 5.1800000	00 GHz PNO: Fast	SENSE(INT	ALIGN AUTO #Avg Type: RMS	12:51:25 PM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	Frequency
-	Ref Offset 1 dB	IFGain:Low	#Atten: 30 dB	Mkr	5.183 700 GHz	Auto Tune
0 dB/div	Ref 21.00 dBm	<u>ا ا ا</u>		1	7.82 dBm	
	10.00	11111		•1	and the fig	Center Fred
11.0	- marine	(e an			The second secon	5.180000000 GHz
1.00	1				1	Start Fred
9.00					1	5.167500000 GH
19.0	Parties And Martin				and the second	Stop Fre
29.0						5.192500000 GH
29.0				· · · · · · · · · · · · · · · · · · ·		CF Step
39.0					· · · · · · · · · · · · · · · · · · ·	2.500000 MH Auto Mar
49.0	_					Auto Mar
-59.0			· · · · · · · · · · · · · · · · · · ·			Freq Offse
ca a					· · · · · · · · · ·	0 H:
69.0	- 1 1				· · · · · · · · · · · · · · · · · · ·	
	18000 GHz	#\/B\M	3.0 MHz	Sween	Span 25.00 MHz 1.000 ms (1001 pts)	
ISG	1.0 191(12	#4044	3.V IVITIZ	SWEEP		
04				aixio	9	

Channel 36 – Chain A

Channel 44 – Chain A

	International Action						ectrum Analyzer -	
Frequency	02:51:13 AM Aug 14, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO	#Avg Typ	SENSE(INT	GHz	50 Ω AC 20000000 G		Center Fi
Auto True	TYPE A WWWW DET A N N N N N			Trig: Free Run #Atten: 30 dB	PNO: Fast 😱 IFGain:Low			
Auto Tur	5.224 025 GHz 9.31 dBm	Mkr1	1	Č., 1	19		Ref Offset Ref 21.0	0 dB/div
Center Fre 5.220000000 GH			A1				TIM	-03
	· · · · ·	h. p	- In	and the second s				11.0
Start Fre 5.207500000 GI	1							1.00
								9.00
Stop Fre 5.232500000 GH	and an and and					1,141	work of the	19.0
								29.0
CF Ste							11	
2.500000 MH Auto Ma								39.0
								49.0
Freq Offs 0 F								59.0
								69.0
	Span 25.00 MHz .000 ms (1001 pts)	Sween 1		3.0 MHz	#\/P\M		22000 GHz	Center 5.2
	· · · · · · · · · · · · · · · · · · ·	STATUS		0.0 191112	#*0**	6	1.9 191112	ISG



		- Chann A	Channel 48			
			-		ectrum Analyzer - Swept SA	
Frequency	02:52:35 AM Aug 14, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N	ALIGN AUTO #Avg Type: RMS	SENSERINT		RF 50 Ω AC req 5.240000000	Center F
Auto Tun			#Atten: 30 dB	IFGain:Low		_
Auto Tuli	5.244 850 GHz 9.25 dBm	Mkr1			Ref Offset 1 dB Ref 21.00 dBm	10 dB/div
Center Free		A1		511.5	115115	
5.240000000 GH		and a formation of the second s			-	11.0
Start Free 5.227500000 GH						9.00
Stop Fre	and the second s					19.0
3.20200000 611		*				29.0
CF Step 2.500000 MH Auto Ma						39.0
E 0/	1					49.0
Freq Offse 0 H						59.0
						-69.0
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	24000 GHz 1.0 MHz	Center 5. Res BW
		STATUS				ASG

Channel 48 – Chain A

Channel 36 – Chain B

	ectrum Analyzer - Swept SA					
Center F	RF 50 Ω AC req 5.18000000	0 GHz PNO: Fast	Trig: Free Run	ALIGN AUTO #Avg Type: RMS	11:40:37 AM Aug 12, 2015 TRACE 1 2 3 4 5 6 TVPE A WWWW DET A N N N N N	Frequency
10 dB/div	Ref Offset 1 dB Ref 21.00 dBm	IFGain:Low	#Atten: 30 dB	Mkr1	5.185 050 GHz 7.54 dBm	and a second second
11.0				11		Center Fre 5.180000000 GH
9.00						Start Fre 5.167500000 GH
19.0 29.0					the second secon	Stop Fre 5.192500000 GH
39.0						CF Ste 2.500000 MH Auto Ma
59.0						Freq Offs 0 F
69.0						
Center 5. #Res BW	18000 GHz 1.0 MHz	#VB	W 3.0 MHz	Sweep '	Span 25.00 MHz 1.000 ms (1001 pts)	_
ISG				STATU	s	



			Channel 44		wept SA	ectrum Analyzer - Si	Keysight Spe
Frequency	03:25:49 AM Aug 14, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO	SENSERINT	GH7	D AC	RF 50 9	RL
-	TYPE A WWWW DET A NNNNN		Trig: Free Run #Atten: 30 dB	PNO: Fast 😱 IFGain:Low	P	00 0.2200	Senter 11
Auto Tun	5.213 500 GHz 9.08 dBm	Mkr1				Ref Offset 1 Ref 21.00	10 dB/div
Center Fre	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						og
5.220000000 GH	×					1	11.0
Start Fre	1						1.00
5.207500000 GH	1						9.00
Stop Fre	manage					and the state of t	19.0
5.232500000 GH			-				29.0
CF Ste					11211		
2.500000 MH Auto Ma							39.0
						_	49.0
Freq Offse 0 H							59.0
							69.0
				1.1.1.1			
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW		22000 GHz 1.0 MHz	Center 5.2 #Res BW
	5	STATUS					ISG

Channel 44 – Chain B

Channel 48 – Chain B

			Cilui	/namer 40				
			1	1 2 2 2 2 2			ctrum Analyzer - Sw	
Frequency	03:27:11 AM Aug 14, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO	#Avg Ty	SENSE:INT	SUL		RF 50 Ω	RL
	TYPE A WWWWW	be: RIVIS	#Avg iy	Trig: Free Run	enter Freq 5.240000000 GHz			
The state of the	DETANNNN			#Atten: 30 dB	IFGain:Low	0		
Auto Tun	5.243 225 GHz	Mkr1				15		1000
	9.13 dBm						Ref Offset 1 of Ref 21.00 of	10 dB/div
		1	1		1		1100 1	og
Center Fre			41				1 1 1	
5.240000000 GH			•		-			11.0
The severe severe	The second se				and the second second		-	
							1	1.00
Start Fre					1 11 +1	1		
5.227500000 GH					1.12	+ : :	1	-9.00
a service and the service of the							AN COLOR	-9.00
-	There and the low car						Jan Joseph and	mathe
Stop Fre			1					19.0
5.252500000 GI								
		1						-29.0
05.04								
CF Ste 2.500000 MH		-						39.0
Auto Ma								
								49.0
	ſ							
Freq Offs					-			59.0
01								
								69.0
	· · · · · · · · · · · · · · · · · · ·		1					05.0
								1.1
	Span 25.00 MHz			Stand Law 1	1.1.1		4000 GHz	Center 5.2
	.000 ms (1001 pts)	Sweep 1.		3.0 MHz	#VBW			Res BW 1
	· · · · · · · · · · · · · · · · · · ·	STATUS					and a second second	ASG
		5						16



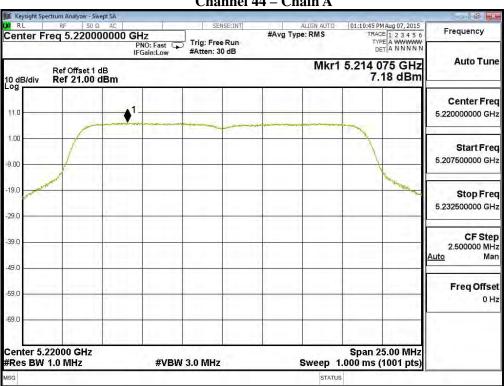
Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 10: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Omni Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
26	5180	А	7.466	10.476	13	Pass
36		В	7.148	10.158	13	Pass
	5220	А	7.180	10.190	13	Pass
44	5220	В	9.106	11.762	13	Pass
40		А	7.043	10.053	13	Pass
48	5240	В	8.966	11.761	13	Pass



		lain A	30 – C.	Channel						
- 2	01-07-00 01 4 07-0015	ALIGN AUTO		SENSEIINT			ctrum Analyzer - Sv RF 50 C	Keysight Spe		
Frequency	01:07:28 PM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N		#Avg Ty	Trig: Free Run #Atten: 30 dB	ter Freq 5.180000000 GHz PNO: Fast					
Auto Tun	5.175 375 GHz 7.47 dBm	Mkr1		#Atten: 30 dB	IFGain:Low	IFGain:Low				
	7.47 dbm		1	-		dBm	Ref 21.00	0 dB/div		
Center Fre 5.180000000 GH					1		i h 🖱 t	11.0		
1 March 199				- marine manual	an the first on Star fit		-			
Start Fre 5.167500000 GH								9.00		
Stop Fre	Marrie Married						and the second se	19.0		
5.192500000 GH				_				-29.0		
CF Ste 2.500000 MH Auto Ma						1		39.0		
						1		49.0		
Freq Offse 0 H								59.0		
								69.0		
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1.	ł	3.0 MHz	#VBW		8000 GHz 1.0 MHz	Center 5.4 #Res BW		
		STATUS						ISG		

Channel 36 Chain A

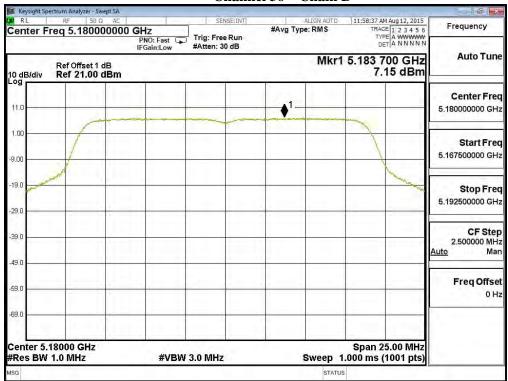




	A REAL PROPERTY AND A REAL					vept SA	ctrum Analyzer - Sw	Keysight Sp
Frequency	01:14:37 PM Aug 07, 2015 TRACE 1 2 3 4 5 6	LIGN AUTO	#Avg Ty	SENSE(INT	SHz		RF 50 G	enter F
	TYPE A WWWW DET A NNNNN			Trig: Free Run #Atten: 30 dB	PNO: Fast 😱 IFGain:Low	P		
Auto Tur	5.234 675 GHz 7.04 dBm	Mkr1			-2-		Ref Offset 1 Ref 21.00	0 dB/div
Center Fre							TIM	og
5.240000000 GH			her warden and the second s	man and	♦ ¹	•		11.0
04-45-	1						1	.00
Start Fre 5.227500000 GH							1	.00
Stop Fre	No. of the second secon						- Martin Contraction	9.0
5.252500000 GH								19.0
CF Ste			_					9.0
2.500000 MH Auto Ma							I	
								9.0
Freq Offs 0 F								9.0
							_	9.0
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1.		3.0 MHz	#VBW		24000 GHz 1.0 MHz	
-		STATUS						G

Channel 48 – Chain A

Channel 36 – Chain B





igilent Speci	rum Analyzer - Swept SA RP 50 Q AC		SENSE:INT	ALIGNAUTO	05:32:15 PM Sep 11, 2015	
	reg 5.22000000	0 GHz		#Avg Type: RMS	TRACE 1 2 3 4 5 6	Frequency
10 dB/div	Ref Offset 1 dB Ref 21.00 dBm	PNO: Fast 🦕 IFGain:Low	┘ Trig: Free Run #Atten: 30 dB	Mkr1	5.222 150 GHz 8.75 dBm	Auto Tune
11.0				1		Center Fred 5.220000000 GH;
1.00 9.00						Start Free 5.207500000 GH:
19.0						Stop Free 5.232500000 GH;
19.0						CF Stej 2.500000 MH <u>Auto</u> Ma
59.0						Freq Offse 0 H
69.0						
	.22000 GHz 1.0 MHz	#VBW	3.0 MHz	Sweep *	Span 25.00 MHz 1.000 ms (1001 pts)	
ISG			0	STATU	s	L



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 11: Transmit (802.11n-40BW_30Mbps)(5G Band)(Omni Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result	
20	5100	А	2.660	5.670	13	Pass	
38	5190	5190	В	2.727	5.737	13	Pass
10	5220	А	6.214	9.224	13	Pass	
46	5230	В	5.179	8.189	13	Pass	



			hain A	50 –	mer	Ulla				
		and the second			_				ctrum Analyzer - S	
Frequency	PM Aug 07, 2015 ACE 1 2 3 4 5 6 YPE A WWWWW DET A N N N N N	TRAC	ALIGN AUTO	#Av		Trig: Free	PNO: Fast	Ω AC	RF 50 req 5.1900	enter F
Auto Tun	3 40 GHz	1 5.193	Mkr	-	dB	#Atten: 30	IFGain:Low		Ref Offset 1	
	.00 0011	Ζ.	1	1			r) dBm	Ref 21.00	0 dB/div
Center Fre 5.190000000 GH				1						11.0
Start Fre 5.16500000 GH		1							1	9.00
Stop Fre 5.215000000 GH	1	l							man	29.0
CF Stej 5.000000 MH Auto Ma										39.0
Freq Offse 0 H										49.0 <u></u>
	1			1						69.0
	50.00 MHz (1001 pts)	Span 5 .000 ms (Sweep 1			3.0 MHz	#VBW		9000 GHz 1.0 MHz	Center 5. Res BW
		1	STATUS							ISG

Channel 38 – Chain A

Channel 46 – Chain A

				ectrum Analyzer - Swept SA		
Frequency	02:56:02 AM Aug 14, 2015	ALIGN AUTO #Avg Type: RMS	SENSERINT	RF 50 Ω AC	X RL	
	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	#Avg Type: RWIS	Trig: Free Run #Atten: 30 dB			
Auto Tun	1 5.240 95 GHz 7.88 dBm	Mkr		Ref Offset 1 dB Ref 21.00 dBm	10 dB/div	
Center Free 5.230000000 GH		↓ ¹			11.0	
Start Free 5.205000000 GH			A. //		9.00	
Stop Free 5.255000000 GH	Non and the second seco				29.0	
CF Ste 5.000000 MH <u>Auto</u> Ma					39.0	
Freq Offse 0 H			_		59.0	
					-69.0	
	Span 50.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	23000 GHz 1.0 MHz #VBW	Center 5.2 #Res BW	
		STATUS			MSG	



		пр	$b = C \Pi$	Channel						
	and the second				1		ectrum Analyzer			
Frequency	2:09:46 PM Aug 12, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	IN AUTO	#Avg Type	SENSE:INT	PNO: Fast	50 Ω AC 900000000 C		enter F		
Auto Tun	5.201 55 GHz 2.73 dBm	Mkr1		#Atten: 30 dB	IFGain:Low	IFGain:Low Ref Offset 1 dB 0 dB/div Ref 21.00 dBm				
Center Fre 5.190000000 GH								og 11.0		
Start Fre 5.16500000 GH	1	● ¹		V		and the second second	1	1.00		
Stop Fre 5.215000000 GH								19.0		
CF Ste 5.000000 MH Auto Ma								9.0		
Freq Offs 0 H								9.0 9.0		
	Span 50.00 MHz					Hz	19000 GH	enter 5.		
-	0 ms (1001 pts)	status	S	3.0 MHz	#VBW		1.0 MHz			

Channel 38 – Chain B

Channel 46 – Chain B



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 12: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Omni Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
10	5210	А	-7.210	-4.200	13	Pass
42	5210	В	-7.510	-4.500	13	Pass



		Chain A	hannel 42 -			8
	01:03:36 PM Aug 07, 2015	ALIGN AUTO	SENSE(INT		ectrum Analyzer - Swept SA RF 50 Ω AC	Keysight Sp
Frequency	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	#Avg Type: RMS	Trig: Free Run #Atten: 30 dB		req 5.21000000	
Auto Tun	r1 5.223 8 GHz -7.21 dBm	Mk	#Atten: 30 dB		Ref Offset 1 dB Ref 21.00 dBm	0 dB/div
Center Fre 5.210000000 GH						.og
Start Fre 5.16000000 GH		▶ ¹				9.00
Stop Fre 5.26000000 GH						19.0
CF Ste 10.000000 MH <u>Auto</u> Ma	and the second s					39.0
Freq Offse 0 H						19.0 59.0
	Span 100.0 MHz				21000 GHz	
_	.000 ms (1001 pts)		3.0 MHz	#VBW	1.0 MHz	#Res BW
-	.000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW		

Channel 42 – Chain A

					ectrum Analyzer - Swept SA	
Frequency	11:55:23 AM Aug 12, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW	ALIGN AUTO #Avg Type: RMS	SENSERINT	AC DOOD GHz PNO: Fast	RF 50 Ω AC	Center F
Auto Tune	cr1 5.196 1 GHz -7.51 dBm	M	#Atten: 30 dB	IFGain:Low	Ref Offset 1 dB Ref 21.00 dBm	10 dB/div
Center Free 5.210000000 GH						11.0
Start Free 5.160000000 GH				↓ ¹	-	9.00
Stop Free 5.26000000 GH						29.0
CF Step 10.000000 MH Auto Ma						39.0
Freq Offse 0 H		:				59.0
	Span 100.0 MHz .000 ms (1001 pts)	Ewoon 1	3.0 MHz	#\/P\//	21000 GHz	Center 5.
-		status	J.V IVITIZ	#4044	1.0 191112	ASG



D 1 (
Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 13: Transmit (802.11a_6Mbps)(Panel Antenna)

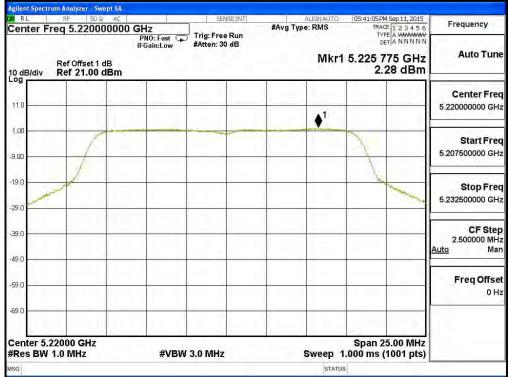
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
26	5100	А	1.977	4.987	10	Pass
36	5180	В	2.590	5.600	10	Pass
4.4	5220	А	1.276	4.286	10	Pass
44	5220	В	2.280	5.290	10	Pass
49	5240	А	1.582	4.592	10	Pass
48	5240	В	2.210	5.220	10	Pass



				Channel 36				
		101 00 00		L creation and			RF 50	
Frequency	00 PM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	TR	g Type: RMS	SENSE:INT	PNO: Fast		req 5.1800	
Auto Tune				Atten: 30 dB	FGain:Low	-1		_
AutoTune	5 725 GHz 1.98 dBm		Mkr1				Ref Offset 1 Ref 21.00	I0 dB/div
Center Free			310.00				1.1	-og
5.18000000 GH								11.0
5.18000000 64.								
Start Fred 5.167500000 GH:		1					1	1.00
5.167500000 GF	<u>\</u>	1					1	9.00
Stop Free 5.192500000 GH	Sal and a second		_	-			and the second se	-19.0
CF Step 2.500000 MH								39.0
Auto Mar							_	49.0
Freq Offse						114.		
0 H:		1				1.1.1		-59.0
								69.0
	n 25.00 MHz ns (1001 pts)	Span I.000 ms	Sweep 1	0 MHz	#VBW	z	18000 GHz 1.0 MHz	
			STATUS					ISG

Channel 36 – Chain A

Channel 44 – Chain A





					nannel 48		or SA	m Analyzer - Swej	gilent Spectru
Frequency	PM Sep 11, 2015 ACE 1 2 3 4 5 6	TRA	ALIGNAUTO	#Avg Ty	SENSE:INT	,	AC	RF 50Ω eq 5.24000	RL
Auto Tun	TYPE A WARMAN DET A N N N N N			Trig: Free Run #Atten: 30 dB	PNO East I		Ref Offset 1 dl Ref 21.00 dl		
Center Fre 5,240000000 GH									11.0
0.2400000000011								t n te t	
Start Fre 5.227500000 GH		1						1	9.00
Stop Fre 5.252500000 GH	- and the second	1						-	29.0
CF Ste 2.500000 MH <u>Auto</u> Ma									39,0
	-	•	-	1					49.0
Freq Offse 0 H				1.1					59.0
				1 10					69.0
	25.00 MHz (1001 pts)	Span 2 .000 ms (Sweep 1		.0 MHz	#VBW		4000 GHz 1.0 MHz	Center 5.2 Res BW 1
			STATUS						SG

Channel 48 – Chain A

Channel 36 – Chain B

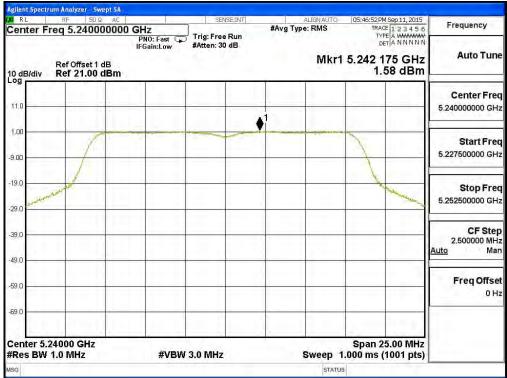
					ectrum Analyzer - Swept SA	
Frequency	04:34:39 PM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	ALIGN AUTO #Avg Type: RMS	Trig: Free Run	0 GHz PNO: Fast	RF 50 Ω AC	Center F
Auto Tun	5.185 125 GHz 2.59 dBm	Mkr1	#Atten: 30 dB	IFGain:Low	Ref Offset 1 dB Ref 21.00 dBm	10 dB/div
Center Fre 5.180000000 GH		1				11.0
Start Fre 5.167500000 GH		an e far Unit Stear Affant				1.00 9.00
Stop Fre 5.192500000 GH	and the second second				and the second sec	.19.0 .29.0
CF Ste 2.500000 MH Auto Ma						39.0
Freq Offso 0 H						59.0
	Span 25.00 MHz				18000 GHz	-69.0
	.000 ms (1001 pts)	Sweep 1	/ 3.0 MHz	#VBV	1.0 MHz	#Res BW



Agilent Spect	rum Analyzer - Swept S RF 50 Ω Au		SENSE:INT	ALIGNAU	TO DEVICION D	M Sep 11, 2015	
	req 5.2200000	00 GHz		#Avg Type: RMS	TRAC	CE 123456	Frequency
10 dB/div	Ref Offset 1 dB Ref 21.00 dBn	PNO: Fast 🥌 IFGain:Low	Trig: Free Run #Atten: 30 dB	МІ	kr1 5.222 9	PE A WARAWA ET A NNNNN 900 GHz 28 dBm	Auto Tune
11.0							Center Free 5.220000000 GH
				↓ ¹	in in		5.220000000 GH.
9.00					1		Start Free 5.207500000 GH:
19.0	-				1	marca and	Stop Free 5.232500000 GH
39,0							CF Stej 2.500000 MH <u>Auto</u> Ma
59.0							Freq Offset 0 Hz
69.0				1			
	22000 GHz 1.0 MHz	#VBW	3.0 MHz	Swee	Span 2 0 1.000 ms (25.00 MHz (1001 pts)	
ISG				ST	ATUS		

Channel 44 – Chain B

Channel 48 – Chain B





Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 14: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Panel Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
26	5100	А	1.043	4.053	10	Pass
36	5180	В	2.120	5.130	10	Pass
4.4	5220	А	1.130	4.140	10	Pass
44	5220	В	1.696	4.706	10	Pass
4.9	5240	А	1.279	4.289	10	Pass
48	5240	В	1.848	4.858	10	Pass



			SA		
	51 TON 11 TO	and the second second		ectrum Analyzer - Swept S RF 50 Ω A	Keysight Spectri
04:39:30 AM Aug 14, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN N	ALIGN AUTO Avg Type: RMS Avg Hold:>100/100	SENSE:INT Trig: Free Run #Atten: 30 dB	PNO: Fast 😱		enter Fre
5.175 275 GHz 1.043 dBm	Mkr1	WAREN. OF UD		Ref Offset 1 dB Ref 21.00 dBr	
					.og
			∮ ¹		1.00
	an far an	and an and a second s			9.00
and the second				www.	19.0 29.0
					39.0
					19.0
					9.0
Span 25.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz*	#VBW	18000 GHz 1.0 MHz	enter 5.18 Res BW 1.
	TRACE 2 3 4 TYPE A WWW DET A NNNI 5.175 275 GH 1.043 dBi	Avg Type: RMS Avg Hold:>100/100 TYPE A WWW DET A NNNI Mkr1 5.175 275 GH 1.043 dB	Avg Type: RMS Avg Type: RMS AvgIHold:>100/100 TPACE 12.3.4 Mkr1 5.175 275 GF 1.043 dB	100 GHz Trig: Free Run Avg Type: RMS TRACE 1 2 3 4 PNO: Fast Trig: Free Run AvgHold:>100/100 TRACE 1 2 3 4 MKr1 5.175 275 GF 1.043 dBi 1 1 1.043 dBi 1 1.043 dBi	q 5.180000000 GHz PN0: Fast IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: RMS Avg/Hold:>100/100 TRACE 1 2 3 4 TYPE 1 2 3 4 Avg/Hold:>100/100 Ref Offset 1 dB Ref 21.00 dBm Mkr1 5.175 275 GF 1.043 dBi

Channel 36 – Chain A

Channel 44 – Chain A

		Channel			
lgilent Spectrum Analyzer - Swept S					
RL RF 50Ω A		SENSE:INT	ALIGNAUTO	05:42:16 PM Sep 11, 2015	Frequency
Center Freq 5.2200000	00 GHz PNO: Fast 😱 IFGain:Low	Trig: Free Run #Atten: 30 dB	#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WANNAN DET A N N N N N	Frequency
Ref Offset 1 dB 10 dB/div Ref 21.00 dBn - 99		#Atten: 30 dB	Auto Tune		
og					Center Free
11.0					5.220000000 GH
	1				5.22000000 611
1.00				~	Start Fre
9.00				1	5.207500000 GH
				V	
19.0				lana	Stop Fre
29.0					5.232500000 GH
					CF Ste
39.0				1	2.500000 MH
49.0					<u>Auto</u> Ma
					Freq Offse
59.0					0 H
69.0					-
2 2.4th (1991) (1	11 11 1			2 1100 1100	
Center 5.22000 GHz #Res BW 1.0 MHz	#\/B\//	3.0 MHz	Sween 1	Span 25.00 MHz .000 ms (1001 pts)	
	#VDVV	J.V 19172	10.10 10 10		
ISG			STATU	5	



		- Chain A	inner 4					
Frequency	05:42:50 PM Sep 11, 2015	ALIGNAUTO	E:INT	SE		nalyzer - Swept SA RF 50 Q AC	L R	
Auto Tun	#Avg Type: RMS TYPE A WANNAN DETA NNNNN Mkr1 5.235 300 GHz 1.85 dBm			Trig: Fre #Atten: 3	GHZ PNO: Fast 😱 IFGain:Low	Ref Offset 1 dB		
Center Free 5.240000000 GH					↓ ¹			
Start Free 5.227500000 GH:						1		
Stop Free 5.252500000 GH	and and					/	mond	
CF Stej 2.500000 MH Auto Ma				3				
Freq Offse 0 H								
	Span 25.00 MHz						ter 5.2400	
	.000 ms (1001 pts)	Sweep 1. STATUS	-	3.0 MHz	#VBW	MHz	s BW 1.0	

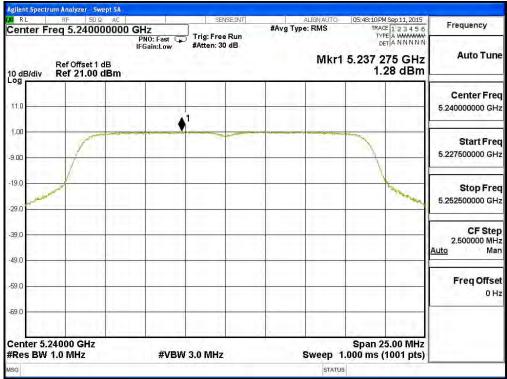
Channel 48 – Chain A

Channel 36 – Chain B

					ectrum Analyzer - Swept SA			
Frequency	04:47:17 PM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	ALIGN AUTO #Avg Type: RMS	SENSE(INT		RF 50 Ω A0 req 5.1800000	enter F		
Auto Tur	Ref Offset 1 dB Mkr1 5.184 450 GHz 2.12 dBm 2.12 dBm							
Center Fre 5.180000000 GH		4 1				-og 11.0		
Start Fre 5.167500000 GH						9.00		
Stop Fre 5.192500000 GH					-	19.0		
CF Ste 2.500000 Mi Auto Ma						49.0		
Freq Offs 0 F						59.0		
	Span 25.00 MHz				18000 GHz			
	.000 ms (1001 pts)	Sweep 1	/ 3.0 MHz	#VBI	1.0 MHz	Res BW		



	SENSE:INT	ALIGNAUTO		Frequency
OGHz PNO: Fast	Trig: Free Run	#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WANAWAY DET A N N N N N	Frequency
IFGain:Low	#Atten: 30 dB	Mkr		Auto Tune
				Center Free
		1		5.220000000 GH;
				Start Free 5.207500000 GH
				Stop Free 5.232500000 GH
				CF Step 2.500000 MH <u>Auto</u> Mar
				Freq Offse
				0 H
#VBW	3.0 MHz	Sweep	Span 25.00 MHz 1.000 ms (1001 pts)	
			#Atten: 30 dB. Mkr	Mkr1 5.222 525 GHz 1.13 dBm



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 15: Transmit (802.11n-40BW_30Mbps)(5G Band)(Panel Antenna)

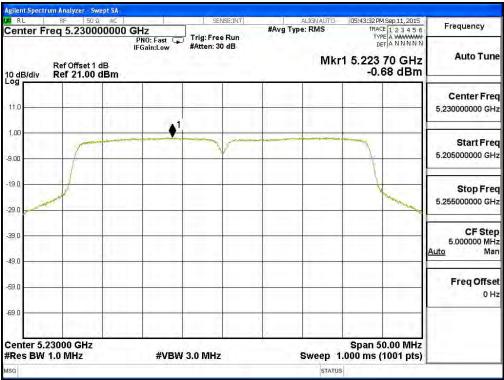
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
20	5100	А	-3.959	-0.949	10	Pass
38	5190	В	-3.320	-0.310	10	Pass
10	5220	А	-1.509	1.501	10	Pass
46	5230	В	-0.676	2.334	10	Pass



			Channel	56 – Chain A		
Keysight Spectru	um Analyzer - Swept SA					
KI RL	RF 50 Ω AC		SENSERINT	ALIGN AUTO	01:56:28 PM Aug 07, 2015	Frequenci
Center Free	q 5.190000000 G	Hz	27 Saure 2 1	#Avg Type: RMS	TRACE 1 2 3 4 5 6	Frequency
	-	PNO: Fast 😱 FGain:Low	Trig: Free Run #Atten: 30 dB		DET A WWWWW	A CONTRACTOR OF
	Ref Offset 1 dB Ref 21.00 dBm			Mkr	1 5.193 90 GHz -3.96 dBm	Auto Tune
	1. 3. 11.2.1	100				Center Fre
11.0						5.19000000 GH
1.00				1		19
1			manine man			Start Free
9.00						5.165000000 GH
19.0	1					Stop Free
-29.0					the second secon	5.215000000 GH
20.0 formation					and a second	OF Oto
39.0		_				CF Step 5.000000 MH
						Auto Ma
49.0						
	· · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·		Freq Offse
-59.0						0 H
69.0						1
	Provide the second					
Center 5.19 Res BW 1.0		#VBW	3.0 MHz	Sween 1	Span 50.00 MHz .000 ms (1001 pts)	
ASG	5		A. A	STATUS		
15G	A	1000		STATUS		

Channel 38 – Chain A

Channel 46 – Chain A

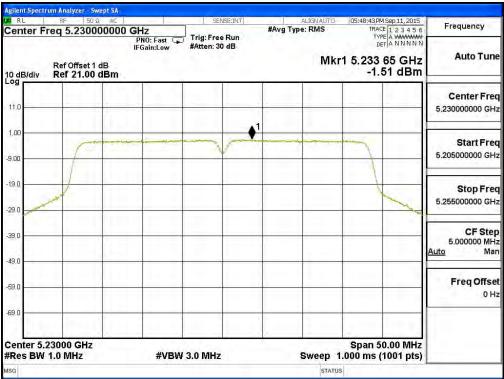




				t SA	ectrum Analyzer - Swept SA	Keysight Sp
Frequency	04:56:31 PM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	ALIGN AUTO Avg Type: RMS	SENSE:INT		RF 50 Ω AC req 5.190000000	enter F
Auto Tun	1 5.197 35 GHz -3.32 dBm	Mkr	#Atten: 30 dB		Ref Offset 1 dB Ref 21.00 dBm	0 dB/div
Center Fre 5.19000000 GH						-og 11.0
Start Fre 5.16500000 GH	~	•1		al mat <u>opp</u> al tables		1.00 3.00
Stop Fre 5.215000000 GH						19.0
CF Ste 5.000000 MH Auto Ma						39.0
Freq Offse 0 ⊦			-			19.0 19.0
	Span 50.00 MHz				19000 GHz	
	.000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	1.0 MHz	Res BW

Channel 38 – Chain B

Channel 46 – Chain B



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 16: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Panel Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
10	5210	А	-14.890	-11.880	10	Pass
42	5210	В	-14.390	-11.380	10	Pass



- 2 2		Chann A	hannel 42 –		ectrum Analyzer - Swept SA	Revision Co.
Frequency	01:41:40 PM Aug 07, 2015	ALIGN AUTO	SENSE(INT		RF 50 Ω AC	RL
	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN	#Avg Type: RMS	Trig: Free Run #Atten: 30 dB	00 GHz PNO: Fast IFGain:Low	req 5.21000000	Center F
Auto Tun	r1 5.235 2 GHz -14.89 dBm	Mk		n	Ref Offset 1 dB Ref 21.00 dBm	0 dB/div
Center Fre 5.210000000 GH			-			11.0
Start Fre 5.16000000 GH						9.00
Stop Fre 5.26000000 GH				and a second		19.0
CF Ste 10.000000 MH Auto Ma	1				- Marine Internet	39.0
Freq Offse 0 H						19.0 59.0
						69.0
	Span 100.0 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	21000 GHz 1.0 MHz	Center 5.3 #Res BW
	5	STATUS				ASG

Channel 42 – Chain A

Channel 42 – Chain B





Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 17: Transmit (802.11a_6Mbps)(Sector Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
26	5100	А	0.326	3.336	17	Pass
36	5180	В	0.080	3.090	17	Pass
4.4	5220	А	7.680	10.690	17	Pass
44	5220	В	7.183	10.193	17	Pass
40	5240	А	7.750	10.760	17	Pass
48	5240	В	7.321	10.331	17	Pass

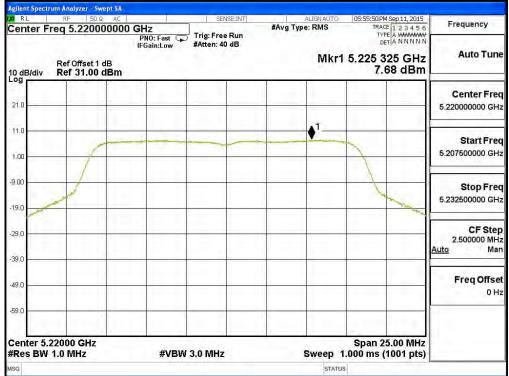
Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.



				0 0	Channel 3			
		- Carl			1		ectrum Analyzer - Swept SA	
Frequency	MAug 07, 2015 DE 1 2 3 4 5 6 PE A WWWW ET A N N N N	TRAC	ALIGN AUTO ype: RMS	#Avg	SENSERINT Trig: Free Run #Atten: 30 dB	000000 GHz PNO: Fast	RF 50 Ω AC Freq 5.18000000	Center F
Auto Tune	225 GHz	5.183 2	Mkr1		#Atten: 30 dB		Ref Offset 1 dB	
	33 dBm	0.	_			dBm	Ref 21.00 dBm	10 dB/div
Center Free 5,18000000 GH	1			1				11.0
Christian i bei er d				•1				
Start Fred 5.167500000 GH:		1						-9.00
Stop Free 5.192500000 GH:	A Manyon with room of	1					- And a start of the start of t	-19.0
CF Step 2.500000 MH: Auto Mar								.39.0
								49.0
Freq Offse 0 H:								-59.0
				-				69.0
	5.00 MHz (1001 pts)	Span 2 .000 ms (Sweep 1		3.0 MHz	#VBW	18000 GHz 1.0 MHz	
		1	STATUS					ASG

Channel 36 – Chain A

Channel 44 – Chain A





		П	- Chan	nannel 48				
	05:56:28 PM Sep 11, 2015	ALIGNAUTO	1	SENSE:INT		- Swept SA 50 Ω AC	um Analyzer - RF 5	Agilent Spect
Frequency	TRACE 1 2 3 4 5 6		#Avg Typ		GHz	0000000		
Auto Tune	5.243 425 GHz 7.75 dBm	Mkr1		Trig: Free Run #Atten: 40 dB	PNO: Fast 🦕 IFGain:Low	et 1 dB	Ref Offset Ref 31.0	10 dB/div
Center Free 5.240000000 GH								21.0
			A1	 i i i i i 	1.11	1111	1.0.4	11.0
Start Free 5.227500000 GH	1	- Concernation	-			1	1	1.00
Stop Free 5.252500000 GH							- And	9.00
CF Step 2.500000 MH Auto Mar	- Andrew							29.0
								39.0
Freq Offse 0 H							-	49.0
			1					-59.0
	Span 25.00 MHz 000 ms (1001 pts)	Sweep 1.		3.0 MHz	#VBW	łz	24000 GHz 1.0 MHz	Center 5. #Res BW
		STATUS						ASG

Channel 48 – Chain A

Channel 36 – Chain B

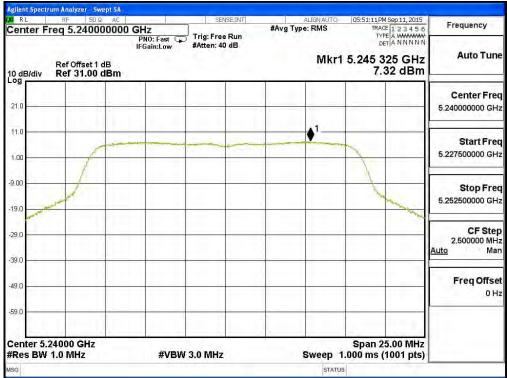
Encourse	05:03:08 AM Aug 14, 2015	GN AUTO		SENSE:INT		50 Ω AC	L RF				
Frequency	TRACE 1 2 3 4 5 6	.og-Pwr	Avg Type	Trig: Free Run	GHz	180000000	nter Freq 5				
T	TYPE A WWWW DET A NNNN			#Atten: 30 dB	PNO: Fast G						
Auto Tur	Ref Offset 1 dB Mkr1 5.183 750 GHz 0 dB/div Ref 21.00 dBm 0.08 dBm 0.08 dBm										
Center Fre 5.18000000 GH	1.11111					ALC: N	0				
5.18000000 Gr			A 1								
Start Fre 5.167500000 GH		and the second		and the second	Second an address of	1					
Stop Fre 5.192500000 GH	1					/					
CF Ste 2.500000 MH <u>Auto</u> Ma											
Freq Offs 0 F							,				
							j				
	Span 25.00 MHz 000 ms (1001 pts)	veen 1		3.0 MHz	#VBW		nter 5.18000 es BW 1.0 M				
	too no (roor pto)	STATUS		515 MILE							



RL	rum Analyzer - Swept SA RF 50 Ω AC		SENSE:INT	ALIGN AUTO	05:50:38 PM Sep 11, 2015	
	req 5.22000000	0 GHz		#Avg Type: RMS	TRACE 1 2 3 4 5 6	Frequency
0 dB/div	Ref Offset 1 dB Ref 31.00 dBm	PNO: Fast 🧊 IFGain:Low	^J Trig: Free Run #Atten: 40 dB	Mkr	TYPE A WARWAR DET A NNNNN I 5.225 300 GHz 7.18 dBm	Auto Tune
						Center Free
21.0						5.220000000 GH
1.0				↓ ¹		Start Fre
1.00	1				1	5.207500000 GH
.00	1				1	Stop Fre
19.0		1.1.1.1			and the second second second	5.232500000 GH
29.0					And I	CF Ste
						2.500000 MH Auto Ma
9.0						
49.0		_				Freq Offse 0 H
59.0						
enter 5	.22000 GHz				Span 25.00 MHz	
	1.0 MHz	#VBW	3.0 MHz	Sweep	1.000 ms (1001 pts)	
SG				STATU	IS	

Channel 44 – Chain B

Channel 48 – Chain B





Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 18: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Sector Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
26	5100	А	-0.098	2.912	17	Pass
36	5180	В	-0.270	2.740	17	Pass
4.4	5220	А	6.750	9.760	17	Pass
44	5220	В	6.978	9.988	17	Pass
40	5240	А	6.840	9.850	17	Pass
48	5240	В	6.948	9.958	17	Pass

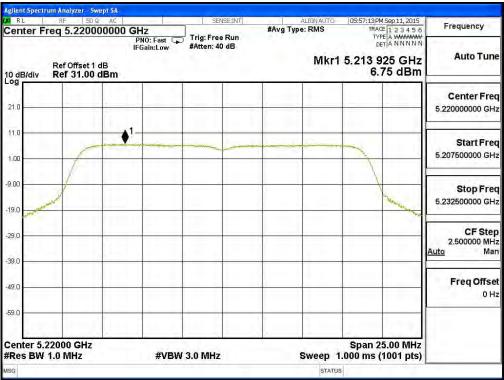
Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.



	Channel 36 – Chain A										
	Aug 07, 2015	02.20.52.0	ALIGN AUTO		cracitat	1		ectrum Analyzer - Sw RF 50 G	Keysight Sp		
Frequency	Aug 07, 2015 E 1 2 3 4 5 6 E A WWWW T A N N N N N	TRAC		#Avg Ty	SENSERINT Trig: Free Run #Atten: 30 dB	GHz PNO: Fast 😱 IFGain:Low	00000 G	req 5.1800			
Auto Tun	Ref Offset 1 dB 06/div Ref 21.00 dBm -0.10 dBm -0.10 dBm										
Center Fre			1 = 1	-	-1-		1.5		.og		
5.180000000 GH							41		11.0		
Start Fre 5.167500000 GH		1		an and a state of the state of				1 mars	9.00		
Stop Fre 5.192500000 GH	have a former	1						week -	19.0		
CF Ste 2.500000 MH Auto Ma									39.0		
Freq Offso 0 H									19.0 59.0		
			1						69.0		
	5.00 MHz 1001 pts)	Span 2 000 ms (Sweep 1	-	.0 MHz	#VBW		18000 GHz 1.0 MHz	Center 5. Res BW		
-		1000 100 100 100 100 100 100 100 100 10	STATUS			and find the		3 × 4 31.27 0 22	ISG		

Channel 36 – Chain A

Channel 44 – Chain A





		Chan A	Channel				
Frequency	05:57:40 PM Sep 11, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO	SENSE:INT	CUE	50 Q AC	Spectrum Analy RF	XI RL
Auto Tun	5.233 950 GHz 6.84 dBm	Mkr1 5.233		Center Freq 5.240000000 GHz PNO: Fast IFGain:Low Ref Offset 1 dB IO dB/div Ref 31.00 dBm			
Center Free 5.240000000 GH				_			21.0 —
Start Free 5.227500000 GH	~			,1	-		11.0
Stop Free 5.252500000 GH						- Andrewsking	9.00
CF Stej 2.500000 MH Auto Ma							29.0
Freq Offse 0 H							49.0 —
		1					-59.0
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1.	3.0 MHz	#VBW		er 5.24000 BW 1.0 MI	
		STATUS					ASG

Channel 48 – Chain A

Channel 36 – Chain B

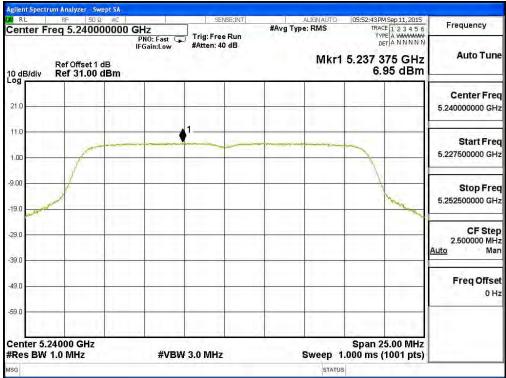
Frequency	05:02:33 AM Aug 14, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO Avg Type: Log-Pwr	SENSE(INT)	50 Ω AC		XI L
	TYPE A WWWW DET A NNNNN	Avg Type. Log-Fwi	Trig: Free Run #Atten: 30 dB	5.180000000 GHz PNO: Fast G IFGain:Low	iter Freq 5.180	ente
Auto Tur	5.184 625 GHz -0.27 dBm	Mkr1		Offset 1 dB f 21.00 dBm	B/div Ref 21.0	IO dB/c
Center Fre 5.180000000 GH					1.11	11.0
Start Fre 5.167500000 GH		••••••••••••••••••••••••••••••••••••••			1	1.00 — 9.00 —
Stop Fre 5.192500000 GF					- and the second second	19.0 — 29.0 /
CF Ste 2.500000 Mł <u>Auto</u> Ma						39.0 — 49.0 —
Freq Offs 0 F					·	59.0 —
						69.0 —
	Span 25.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz		nter 5.18000 GH: s BW 1.0 MHz	
		STATUS				ISG



XI RL	RF 50 Ω			SENSE:INT				Sep 11, 2015	Frequency	
Center Fr	eq 5.220000	000 GHz PNO: Fa IFGain:L		ree Run 1: 40 dB	#Avg Type: F	IMS	TRACE TYPE DE	123456 A WWWWW A N N N N N	Trequency	
0 dB/div	Ref Offset 1 dB Ref 31.00 dB			Mkr1 5.213 87 6.9			75 GHz 98 dBm	Auto Tune		
								1.1	Center Free	
21.0									5.220000000 GH:	
11.0	1.1	• ¹							Start Free	
1.00	1						1		5.207500000 GH	
9.00	1						1		Stop Fre	
19.0	and the second se							and the second s	5.232500000 GH	
29.0									CF Ste	
		1211							2.500000 MH <u>Auto</u> Ma	
19.0										
49.0				-					Freq Offse 0 H	
59.0	-			-						
enter 5.2	2000 GHz				· ·		Span 25	5.00 MHz		
Res BW		1	VBW 3.0 M	Hz	SW			1001 pts)		

Channel 44 – Chain B

Channel 48 – Chain B



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 19: Transmit (802.11n-40BW_30Mbps)(5G Band)(Sector Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result							
20	5100	А	-4.850	-1.840	17	Pass							
38	5190	5190	5190	5190	5190	5190	5190	5190	В	-4.377	-1.367	17	Pass
1.5	5220	А	5.030	8.040	17	Pass							
46	5230	В	4.302	7.312	17	Pass							

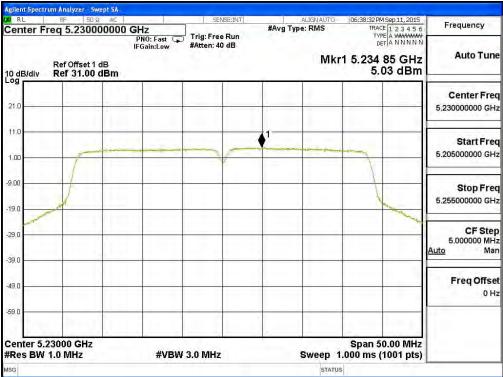
Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.



					ctrum Analyzer - Swept SA	
Frequency	03:46:11 PM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	ALIGN AUTO #Avg Type: RMS	SENSERINT		RF 50 Ω AC req 5.190000000	enter F
Auto Tur			#Atten: 30 dB	IFGain:Low		
Auto Tur	1 5.200 40 GHz -4.85 dBm	Mkr			Ref Offset 1 dB Ref 21.00 dBm	0 dB/div
Center Fre				1211 121		, og
5.190000000 GH						11.0
Start Fre		1				1.00
5.165000000 GH				W	T	9.00
Stop Fre						19.0
5.215000000 GH	h	_			- and	29.0
CF Ste						19.0
5.000000 MH Auto Ma						
						19.0
Freq Offs 0 F						59.0
						i9.0
	Span 50.00 MHz .000 ms (1001 pts)	Swoon 4	3.0 MHz	#\/5\/	19000 GHz	center 5.*
		sweep 1	3.0 19182	#VBW		SG SG

Channel 38 – Chain A

Channel 46 – Chain A

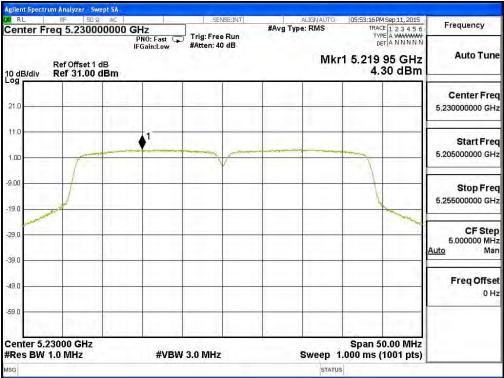




		1	1 2000000	1	trum Analyzer - Swept SA	
Frequency	04:21:10 PM Aug 07, 2015 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	ALIGN AUTO Avg Type: RMS	SENSE:INT	GHz PNO: Fast	RF 50 Ω AC eq 5.190000000	enter Fr
Auto Tun	and the second sec		#Atten: 30 dB	IFGain:Low		
Auto Tuli	1 5.193 65 GHz -4.38 dBm	Mkr		1.1	Ref Offset 1 dB Ref 21.00 dBm	0 dB/div
Center Fre						.09
5.190000000 GH						11.0
Start Fre						1.00
5.165000000 GH	-				for the second second	9.00
Stop Fre				14		19.0
5.215000000 GH	herman			-	- Marine	29.0
CF Ste	and the second					25.0
5.000000 MH Auto Ma					-	39.0
						49.0
Freq Offse 0 H						59.0
						69.0
	Span 50.00 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	9000 GHz I.0 MHz	enter 5.1 Res BW
		STATUS				SG

Channel 38 – Chain B

Channel 46 – Chain B



Product	:	802.11 ac PCIe Module
Test Item	:	Peak Power Spectral Density
Test Site	:	No.3 OATS
Test Mode	:	Mode 20: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Sector Antenna)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)1	Required Limit (dBm)	Result
10	5010	А	-15.700	-12.690	17	Pass
42	5210	В	-15.430	-12.420	17	Pass

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



			hannel 42 –		Spectrum Analyzer - Swept S	Kouright Sr
Frequency	03:32:46 PM Aug 07, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO	SENSERINT	AC		RL
E. 3. 615	DET A NNNN		Trig: Free Run #Atten: 30 dB	PNO: Fast IFGain:Low	Freq 5.210000	senter r
Auto Tun	r1 5.232 3 GHz -15.70 dBm	Mk			Ref Offset 1 dB Ref 21.00 dBr	0 dB/div
Center Fre		1.1			THEFT	
5.210000000 GH						11.0
Start Fre						1.00
5.160000000 GH		● ¹				9.00
Stop Fre		and the state of the			1 meren and and and and and and and and and an	19.0
5.26000000 GH					-	29.0
CF Ste	MA					39.0
10.000000 M⊢ <u>Auto</u> Ma	mon the second					49.0
Freq Offse						
0+						59.0
						69.0
	Span 100.0 MHz .000 ms (1001 pts)	Sweep 1	3.0 MHz	#VBW	5.21000 GHz V 1.0 MHz	
		STATUS			2 - 182 (2 5 1 27 27 2) -	ASG

Channel 42 – Chain A

Channel 42 – Chain B





5. Radiated Emission

5.1. 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	Х	Magnetic Loop Antenna	Teseq	HLA6121/37133	Sep, 2014
	Х	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	Jun, 2015
	X 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

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
CB # 8	Х	Spectrum Analyzer	R&S	FSP40/ 100339	Oct, 2014
	**		ETS-Lindgren	3117/ 35205	Mar, 2015
			Schwarzbeck	BBHA9170/209	Jan, 2015
			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

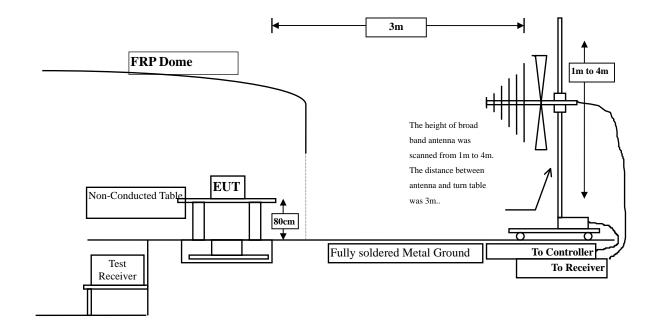
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

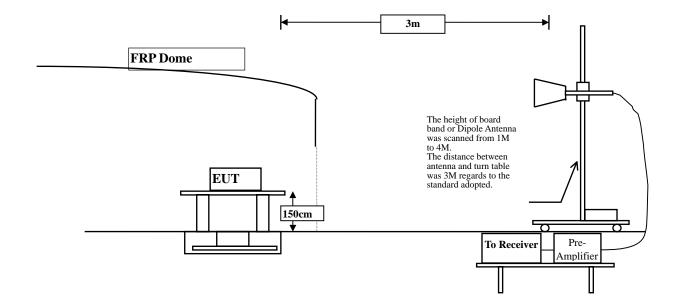


5.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz





5.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB 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				
	(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 μ V/m) = 20 log E field strength (uV/m)

5.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 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.

5.5. Uncertainty

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

5.6. Test Result of Radiated Emission

Product	:	802.11 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna) (5180MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	12.930	33.920	46.850	-27.150	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10360.000	13.724	33.580	47.304	-26.696	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna) (5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	13.322	34.850	48.172	-25.828	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	14.245	42.170	56.415	-17.585	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	14.245	27.000	41.245	-12.755	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna) (5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	13.693	33.990	47.684	-26.316	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	14.620	41.900	56.521	-17.479	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	14.620	26.900	41.521	-12.479	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 14.4Mbps)(5G Band)(Dipole Antenna)
		(5180MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
10360.000	12.930	33.090	46.020	-27.980	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10360.000	13.724	34.270	47.994	-26.006	74.000
15540.000	*	*	*	*	74.000

15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 14.4Mbps)(5G Band)(Dipole Antenna)
		(5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	13.322	33.850	47.172	-26.828	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	14.245	38.880	53.125	-20.875	74.000
15660.000	*	*	*	*	74.000

*	*	*	*	*	*
Average Detector:					
26100.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
15660.000	*	*	*	*	74.000

- 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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11n-20BW 14.4Mbps)(5G Band)(Dipole Antenna)
		(5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	13.693	33.510	47.204	-26.796	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	14.620	39.500	54.121	-19.879	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	14.620	22.810	37.431	-16.569	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 30Mbps)(5G Band)(Dipole Antenna)
		(5190MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10380.000	13.796	32.980	46.776	-27.224	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					

Vertical

Peak Detector:

10380.000	13.796	33.080	46.876	-27.124	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n-40BW 30Mbps)(5G Band)(Dipole Antenna)
		(5230MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10460.000	13.508	33.460	46.968	-27.032	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10460.000	14.433	37.470	51.903	-22.097	74.000
15600.000	*	*	*	*	74 000

15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11ac-80BW-65Mbps)(5G Band)(Dipole Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10420.000	13.135	33.270	46.405	-27.595	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10420.000	14.057	33.320	47.377	-26.623	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	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 ac PCIe Module						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 5	: Mode 5: Transmit (802.11a_6Mbps)(Grid DISH Antenna) (5180MHz)					
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	dBµV/m	dB	dBµV/m		
Horizontal							
Peak Detector:							
10360.000	12.930	33.430	46.360	-27.640	74.000		
15540.000	*	*	*	*	74.000		
20720.000	*	*	*	*	74.000		
25900.000	*	*	*	*	74.000		
31080.000	*	*	*	*	74.000		
36260.000	*	*	*	*	74.000		
Average Detector:							
*	*	*	*	*	*		
Vertical							
Peak Detector:							
10360.000	13.724	33.890	47.614	-26.386	74.000		
15540.000	*	*	*	*	74.000		
20720.000	*	*	*	*	74.000		
25900.000	*	*	*	*	74.000		
31080.000	*	*	*	*	74.000		
36260.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 5: Transmit (802.11a_6Mbps)(Grid DISH Antenna) (5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	13.322	33.400	46.722	-27.278	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	14.245	40.230	54.475	-19.525	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	14.245	23.860	38.105	-15.895	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 5: Transmit (802.11a_6Mbps)(Grid DISH Antenna) (5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	13.693	41.700	55.394	-18.606	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	13.693	25.060	38.754	-15.246	54.000
Vertical					
Peak Detector:					
10480.000	14.620	40.450	55.071	-18.929	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	14.620	24.210	38.831	-15.169	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 6: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Grid DISH Antenna)
		(5180MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	12.930	33.080	46.010	-27.990	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10360.000	13.724	33.400	47.124	-26.876	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 6: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Grid DISH Antenna)
		(5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	13.322	33.320	46.642	-27.358	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	14.245	33.090	47.335	-26.665	74.000

10440.000	14.243	55.090	47.555	-20.005	/4.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 6: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Grid DISH Antenna)
		(5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	13.693	33.970	47.664	-26.336	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	14.620	33.730	48.351	-25.649	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 7: Transmit (802.11n-40BW_30Mbps)(5G Band)(Grid DISH Antenna)
		(5190MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10380.000	12.939	33.110	46.049	-27.951	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10380.000	13.796	33.380	47.176	-26.824	74.000

10380.000	13.796	33.380	47.176	-26.824	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 7: Transmit (802.11n-40BW_30Mbps)(5G Band)(Grid DISH Antenna)
		(5230MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10460.000	13.508	33.430	46.938	-27.062	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10460.000	14.433	33.770	48.203	-25.797	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000

20920.000	*	*	*	*	74.000
	*	*	*	*	74.000
26150.000	т Т	т Т	T.	~	/4.000
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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 8: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Grid DISH Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10420.000	13.135	32.810	45.945	-28.055	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10420.000	14.057	33.420	47.477	-26.523	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	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.v

Product	: 802.11 ac PCIe Module						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 9: Transmit (802.11a_6Mbps)(Omni Antenna) (5180MHz)						
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBµV	dBµV/m	dB	dBµV/m		
Horizontal							
Peak Detector:							
10360.000	12.930	33.760	46.690	-27.310	74.000		
15540.000	*	*	*	*	74.000		
20720.000	*	*	*	*	74.000		
25900.000	*	*	*	*	74.000		
31080.000	*	*	*	*	74.000		
36260.000	*	*	*	*	74.000		
Average Detector:							
*	*	*	*	*	*		
Vertical							
Peak Detector:							
10360.000	13.724	34.210	47.934	-26.066	74.000		
15540.000	*	*	*	*	74.000		
20720.000	*	*	*	*	74.000		
25900.000	*	*	*	*	74.000		
31080.000	*	*	*	*	74.000		
36260.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 9: Transmit (802.11a_6Mbps)(Omni Antenna) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	13.322	34.340	47.662	-26.338	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	14.245	36.200	50.445	-23.555	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 9: Transmit (802.11a_6Mbps)(Omni Antenna) (5240MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	13.693	33.900	47.594	-26.406	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	14.620	33.230	47.851	-26.149	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 10: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Omni Antenna)
		(5180MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
10360.000	12.930	33.380	46.310	-27.690	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10360.000	13.724	33.280	47.004	-26.996	74.000
15540.000	*	*	*	*	74.000

15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 10: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Omni Antenna)
		(5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	13.322	32.990	46.312	-27.688	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	14.245	32.720	46.965	-27.035	74.000

10440.000	14.245	32.720	46.965	-27.035	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 10: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Omni Antenna)
		(5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	13.693	33.300	46.994	-27.006	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	14.620	33.630	48.251	-25.749	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 11: Transmit (802.11n-40BW_30Mbps)(5G Band)(Omni Antenna)
		(5190MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	12.930	32.850	45.780	-28.220	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vortical					

Vertical

Peak Detector:

10380.000	13.796	32.770	46.566	-27.434	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	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

*



Product	:	802.11 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 11: Transmit (802.11n-40BW_30Mbps)(5G Band)(Omni Antenna)
		(5230MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10460.000	13.508	33.300	46.808	-27.192	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10460.000	14.433	33.200	47.633	-26.367	74.000
15690.000	*	*	*	*	74.000

26150.000	*	*	*	
Average				
Detector:				
*	*	*	*	

*

Note:

20920.000

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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 12: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Omni Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10420.000	13.135	33.150	46.285	-27.715	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10420.000	14.057	32.880	46.937	-27.063	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	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 ac PCIe Module					
Test Item	: Harmonic Radiated Emission Data					
Test Site	: No.3 OATS					
Test Mode	: Mode 1	3: Transmit (802.1	1a_6Mbps)(Panel Ar	ntenna) (5180MH	[z)	
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector:						
10360.000	12.930	33.680	46.610	-27.390	74.000	
15540.000	*	*	*	*	74.000	
20720.000	*	*	*	*	74.000	
25900.000	*	*	*	*	74.000	
31080.000	*	*	*	*	74.000	
36260.000	*	*	*	*	74.000	
Average						
Detector:						
*	*	*	*	*	*	
Vertical						
Peak Detector:						
10360.000	13.724	33.770	47.494	-26.506	74.000	
15540.000	*	*	*	*	74.000	
20720.000	*	*	*	*	74.000	
25900.000	*	*	*	*	74.000	
31080.000	*	*	*	*	74.000	
36260.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 13: Transmit (802.11a_6Mbps)(Panel Antenna) (5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
10440.000	13.322	33.380	46.702	-27.298	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10440.000	14.245	39.320	53.565	-20.435	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 13: Transmit (802.11a_6Mbps)(Panel Antenna) (5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	13.693	33.500	47.194	-26.806	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	14.620	34.750	49.371	-24.629	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 14: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Panel Antenna)
		(5180MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	12.930	34.420	47.350	-26.650	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10360.000	13.724	33.380	47.104	-26.896	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000

Average
Detector:

25900.000

* * * * *

*

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.

*

*

74.000

*

- 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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 14: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Panel Antenna)
		(5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	13.322	33.390	46.712	-27.288	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					

10440.000	14.245	36.400	50.645	-23.355	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 14: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Panel Antenna)
		(5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	13.693	33.420	47.114	-26.886	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10480.000	14.620	33.630	48.251	-25.749	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 15: Transmit (802.11n-40BW_30Mbps)(5G Band)(Panel Antenna)
		(5190MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10380.000	12.939	33.220	46.159	-27.841	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vartical					

Vertical

Peak Detector:

10380.000	13.796	33.760	47.556	-26.444	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 15: Transmit (802.11n-40BW_30Mbps)(5G Band)(Panel Antenna)
		(5230MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10460.000	13.508	33.230	46.738	-27.262	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10460.000	14.433	34.800	49.233	-24.767	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000

20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 16: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Panel Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10420.000	13.135	33.190	46.325	-27.675	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10420.000	14.057	32.750	46.807	-27.193	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	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 ac PCIe Module							
Test Item	: Harmor	nic Radiated Emiss	sion Data					
Test Site	: No.3 OATS							
Test Mode	: Mode 17: Transmit (802.11a_6Mbps)(Sector Antenna) (5180MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
requency	Factor	Level	Level	Margin	LIIIIIt			
MHz	dB			dB	$d\mathbf{D} \mathbf{u} \mathbf{V} / \mathbf{m}$			
	dВ	dBµV	dBµV/m	dВ	dBµV/m			
Horizontal								
Peak Detector:								
10360.000	12.930	33.280	46.210	-27.790	74.000			
15540.000	*	*	*	*	74.000			
20720.000	*	*	*	*	74.000			
25900.000	*	*	*	*	74.000			
31080.000	*	*	*	*	74.000			
36260.000	*	*	*	*	74.000			
Average Detector:								
*	*	*	*	*	*			
Vertical								
Peak Detector:								
10360.000	13.724	33.300	47.024	-26.976	74.000			
15540.000	*	*	*	*	74.000			
20720.000	*	*	*	*	74.000			
25900.000	*	*	*	*	74.000			
31080.000	*	*	*	*	74.000			
36260.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 17: Transmit (802.11a_6Mbps)(Sector Antenna) (5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	13.322	43.930	57.252	-16.748	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	13.322	27.550	40.872	-13.128	54.000
Vertical					
Peak Detector:					
10440.000	14.245	43.640	57.885	-16.115	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	14.245	27.260	41.505	-12.495	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 17: Transmit (802.11a_6Mbps)(Sector Antenna) (5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	$dB\mu V/m$
Horizontal					
Peak Detector:					
10480.000	13.693	43.450	57.144	-16.856	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	13.693	26.810	40.504	-13.496	54.000
Vertical					
Peak Detector:					
10480.000	14.620	40.790	55.411	-18.589	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	14.620	24.840	39.461	-14.539	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 18: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Sector Antenna)
		(5180MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	12.930	33.310	46.240	-27.760	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10360.000	13.724	33.290	47.014	-26.986	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000

Detector:					
*	*	*	*	*	*

Average

- 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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 18: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Sector Antenna)
		(5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	13.322	43.670	56.992	-17.008	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	13.322	27.640	40.962	-13.038	54.000
Vertical					
Peak Detector:					
10440.000	14.245	41.690	55.935	-18.065	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	14.245	25.350	39.595	-14.405	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 18: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Sector Antenna)
		(5240MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	13.693	42.460	56.154	-17.846	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	13.693	25.250	38.944	-15.056	54.000
Vertical					
Peak Detector:					
10480.000	14.620	40.350	54.971	-19.029	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	14.620	23.990	38.611	-15.389	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 19: Transmit (802.11n-40BW_30Mbps)(5G Band)(Sector Antenna)
		(5190MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10380.000	12.939	33.360	46.299	-27.701	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vartical					

Vertical

Peak Detector:

10380.000	13.796	33.290	47.086	-26.914	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 19: Transmit (802.11n-40BW_30Mbps)(5G Band)(Sector Antenna)
		(5230MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector:					
10460.000	13.508	40.710	54.218	-19.782	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average					
Detector:					
10460.000	13.508	24.870	38.378	-15.622	54.000
Vertical					
Peak Detector:					
10460.000	14.433	39.170	53.603	-20.397	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	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 ac PCIe Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 20: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Sector Antenna)
		(5210MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10420.000	13.135	33.270	46.405	-27.595	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10420.000	14.057	33.040	47.097	-26.903	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna) (5220MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m	
Horizontal						
Peak Detector						
193.720	12.266	47.060	36.817	-6.683	43.500	
324.510	17.771	42.690	38.172	-7.828	46.000	
408.890	22.300	38.833	38.953	-7.047	46.000	
518.280	25.212	34.094	37.296	-8.704	46.000	
716.630	25.476	35.761	39.568	-6.432	46.000	
899.120	27.147	30.801	36.518	-9.482	46.000	
Vertical						
Peak Detector						
65.810	10.152	43.847	31.419	-8.581	40.000	
260.690	17.536	42.160	37.293	-8.707	46.000	
325.420	19.270	42.638	39.618	-6.382	46.000	
518.240	22.647	34.200	34.836	-11.164	46.000	
715.170	20.088	37.508	35.924	-10.076	46.000	
898.930	23.006	28.595	30.172	-15.828	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 Test Item Test Site Test Mode	: General : No.3 O	: Transmit (802.11)	n n-20BW 14.4Mbps)(5G Band)(Dipole	Antenna)
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
98.790	-9.998	47.912	37.914	-5.586	43.500
227.380	-8.992	44.785	35.793	-10.207	46.000
402.810	0.916	35.563	36.479	-9.521	46.000
584.530	3.265	32.561	35.826	-10.174	46.000
762.620	5.124	30.497	35.621	-10.379	46.000
969.450	7.371	24.797	32.168	-21.832	54.000
Vertical Peak Detector					
66.710	-12.434	46.518	34.083	-5.917	40.000
227.530	-6.184	44.702	38.517	-7.483	46.000
388.290	-0.721	38.654	37.934	-8.066	46.000
520.180	0.995	38.266	39.261	-6.739	46.000
699.140	0.035	34.350	34.386	-11.614	46.000
899.050	1.621	29.808	31.429	-14.571	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 3: Transmit (802.11n-40BW 30Mbps)(5G Band)(Dipole Antenna) (5190MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m	
Horizontal						
Peak Detector						
98.680	-10.010	48.277	38.267	-5.233	43.500	
200.910	-9.875	41.741	31.866	-11.634	43.500	
322.430	-4.542	43.715	39.172	-6.828	46.000	
516.720	3.199	33.229	36.428	-9.572	46.000	
724.590	3.835	33.684	37.519	-8.481	46.000	
891.170	6.314	25.737	32.051	-13.949	46.000	
Vertical Peak Detector						
99.210	-6.184	43.130	36.946	-6.554	43.500	
194.720	-5.671	43.488	37.817	-5.683	43.500	
322.960	-3.610	42.793	39.183	-6.817	46.000	
516.430	0.278	34.262	34.539	-11.461	46.000	
713.680	-1.481	36.105	34.624	-11.376	46.000	
899.430	1.747	29.725	31.472	-14.528	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 4: Transmit (802.11ac-80BW-65Mbps)(5G Band)(Dipole Antenna) (5210MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
98.170	-10.067	47.980	37.914	-5.586	43.500	
227.430	-8.969	45.701	36.731	-9.269	46.000	
326.710	-4.500	42.687	38.187	-7.813	46.000	
583.940	3.292	32.349	35.642	-10.358	46.000	
777.290	5.168	34.691	39.859	-6.141	46.000	
926.620	6.901	25.617	32.518	-13.482	46.000	
Vertical Peak Detector						
96.120	-6.803	40.982	34.179	-9.321	43.500	
195.470	-5.678	43.604	37.926	-5.574	43.500	
325.710	-2.966	42.684	39.718	-6.282	46.000	
519.380	0.861	38.380	39.241	-6.759	46.000	
780.260	2.756	34.827	37.583	-8.417	46.000	
899.540	1.782	31.080	32.862	-13.138	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 5: Transmit (802.11a_6Mbps)(Grid DISH Antenna) (5220MHz) 				
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
195.430	-10.477	48.650	38.172	-5.328	43.500
257.640	-5.430	39.957	34.528	-11.472	46.000
396.890	0.784	36.043	36.827	-9.173	46.000
583.910	3.294	32.092	35.386	-10.614	46.000
715.270	3.797	37.621	41.419	-4.581	46.000
912.520	6.454	30.187	36.641	-9.359	46.000
Vertical Peak Detector					
67.510	-12.431	45.129	32.698	-7.302	40.000
261.340	-4.888	43.317	38.429	-7.571	46.000
394.720	-1.697	36.403	34.706	-11.294	46.000
517.960	0.581	37.582	38.163	-7.837	46.000
700.890	-0.470	37.750	37.281	-8.719	46.000
960.170	3.183	25.633	28.817	-25.183	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.
- 8. No emission found between lowest internal used/generated frequency to 30MHz.

Product	: 802.11 ac PCIe Module					
Test Item	: General Radiated Emission					
Test Site	: No.3 OATS					
Test Mode	: Mode 6: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Grid DISH Antenna)					
	(5220MH	lz)				
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
98.470	-10.033	45.964	35.931	-7.569	43.500	
257.840	-5.431	43.114	37.683	-8.317	46.000	
358.140	-0.637	36.135	35.497	-10.503	46.000	
518.310	3.202	34.092	37.294	-8.706	46.000	
700.620	2.803	36.709	39.512	-6.488	46.000	
916.980	6.519	29.307	35.826	-10.174	46.000	
Vertical						
Peak Detector						
71.340	-10.972	41.156	30.184	-9.816	40.000	
258.790	-4.908	43.326	38.419	-7.581	46.000	
398.560	-2.364	37.647	35.283	-10.717	46.000	
520.170	0.994	34.838	35.832	-10.168	46.000	
700.820	-0.455	36.146	35.691	-10.309	46.000	
969.410	3.917	26.611	30.528	-23.472	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 Test Item Test Site Test Mode	: General : No.3 OA	Transmit (802.11	n n-40BW_30Mbps)(5	G Band)(Grid DI	SH Antenna)
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level	-	
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
66.310	-13.287	46.466	33.179	-6.821	40.000
192.740	-10.048	45.486	35.438	-8.062	43.500
409.480	0.010	37.802	37.812	-8.188	46.000
584.630	3.261	31.325	34.586	-11.414	46.000
794.890	6.387	31.884	38.271	-7.729	46.000
915.220	6.410	29.524	35.934	-10.066	46.000
Vertical Peak Detector					
66.170	-12.432	45.273	32.841	-7.159	40.000
258.410	-4.927	43.852	38.924	-7.076	46.000
398.930	-2.441	36.848	34.406	-11.594	46.000
518.860	0.758	39.538	40.297	-5.703	46.000
665.720	-0.958	36.641	35.683	-10.317	46.000
899.640	1.814	29.698	31.512	-14.488	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 8: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Grid DISH Antenna) (5210MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m	
Horizontal						
Peak Detector						
192.730	-10.046	45.959	35.913	-7.587	43.500	
260.290	-5.457	43.038	37.581	-8.419	46.000	
403.810	0.906	37.731	38.637	-7.363	46.000	
584.240	3.279	31.113	34.392	-11.608	46.000	
718.560	3.817	34.452	38.269	-7.731	46.000	
925.420	6.684	29.130	35.814	-10.186	46.000	
Vertical Peak Detector						
65.710	-12.424	45.531	33.108	-6.892	40.000	
291.930	-5.268	44.528	39.260	-6.740	46.000	
398.410	-2.338	36.962	34.624	-11.376	46.000	
518.480	0.684	37.845	38.529	-7.471	46.000	
793.520	2.673	33.143	35.816	-10.184	46.000	
928.170	3.632	26.749	30.381	-15.619	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 Test Item Test Site Test Mode	: General : No.3 OA		n a_6Mbps)(Omni Ante	enna) (5220MHz)
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
67.520	-13.958	42.652	28.694	-11.306	40.000
257.930	-5.432	43.904	38.472	-7.528	46.000
388.170	1.071	38.846	39.917	-6.083	46.000
518.380	3.202	37.961	41.163	-4.837	46.000
712.610	3.791	34.738	38.529	-7.471	46.000
984.790	8.143	25.138	33.281	-20.719	54.000
Vertical					
Peak Detector					
98.710	-6.280	43.772	37.492	-6.008	43.500
257.930	-4.953	44.669	39.716	-6.284	46.000
394.560	-1.659	39.343	37.684	-8.316	46.000
518.280	0.644	36.887	37.531	-8.469	46.000
747.420	1.597	36.582	38.179	-7.821	46.000
898.170	1.294	31.988	33.283	-12.717	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 Test Item Test Site Test Mode	: General : No.3 OA	0: Transmit (802.1	n 1n-20BW_14.4Mbps)(5G Band)(Omn	i Antenna)
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level	-	
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
99.840	-9.873	45.290	35.417	-8.083	43.500
258.790	-5.440	43.273	37.834	-8.166	46.000
357.420	-0.846	40.026	39.179	-6.821	46.000
518.610	3.202	34.479	37.681	-8.319	46.000
712.530	3.791	34.607	38.398	-7.602	46.000
968.270	7.328	27.194	34.521	-19.479	54.000
Vertical Peak Detector					
98.570	-6.307	44.798	38.491	-5.009	43.500
257.810	-4.959	43.136	38.176	-7.824	46.000
400.430	-2.835	38.702	35.867	-10.133	46.000
518.390	0.666	36.952	37.618	-8.382	46.000
777.120	2.126	33.794	35.920	-10.080	46.000
948.240	3.210	27.033	30.243	-15.757	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 11: Transmit (802.11n-40BW_30Mbps)(5G Band)(Omni Antenna) (5190MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
98.620	-10.016	45.629	35.612	-7.888	43.500	
321.490	-4.557	37.504	32.948	-13.052	46.000	
518.340	3.202	35.279	38.481	-7.519	46.000	
712.910	3.792	34.737	38.529	-7.471	46.000	
798.530	6.410	29.387	35.797	-10.203	46.000	
968.760	7.347	26.947	34.294	-19.706	54.000	
Vertical						
Peak Detector						
98.630	-6.295	42.822	36.527	-6.973	43.500	
257.910	-4.954	43.891	38.937	-7.063	46.000	
388.290	-0.721	35.338	34.618	-11.382	46.000	
518.170	0.623	30.860	31.483	-14.517	46.000	
798.420	2.627	30.565	33.192	-12.808	46.000	
968.380	3.917	25.923	29.841	-24.159	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.



 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 12: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Omni Antenna) (5210MHz) 					
Correct	Reading	Measurement	Margin	Limit	
Factor	Level	Level			
dB	dBµV	dBµV/m	dB	dBµV/m	
-10.370	44.889	34.519	-8.981	43.500	
1.034	40.242	41.276	-4.724	46.000	
3.202	35.519	38.721	-7.279	46.000	
3.791	36.823	40.614	-5.386	46.000	
6.282	32.100	38.382	-7.618	46.000	
7.902	25.285	33.187	-20.813	54.000	
-11.318	46.990	35.672	-4.328	40.000	
-5.675	42.589	36.914	-6.586	43.500	
-3.203	42.359	39.157	-6.843	46.000	
0.686	31.797	32.483	-13.517	46.000	
2.053	32.778	34.831	-11.169	46.000	
3.220	29.076	32.296	-13.704	46.000	
	: General F : No.3 OA : Mode 12: (5210MH Correct Factor dB -10.370 1.034 3.202 3.791 6.282 7.902 -11.318 -5.675 -3.203 0.686 2.053	 General Radiated Emission No.3 OATS Mode 12: Transmit (802.1 (5210MHz)) Correct Reading Factor Level dB dBµV -10.370 44.889 1.034 40.242 3.202 35.519 3.791 36.823 6.282 32.100 7.902 25.285 -11.318 46.990 -5.675 42.589 -3.203 42.359 0.686 31.797 2.053 32.778 	 General Radiated Emission No.3 OATS Mode 12: Transmit (802.11ac-80BW_65Mbps) (5210MHz) Correct Reading Measurement Factor Level Level dB dBμV dBμV/m -10.370 44.889 34.519 1.034 40.242 41.276 3.202 35.519 38.721 3.791 36.823 40.614 6.282 32.100 38.382 7.902 25.285 33.187 -11.318 46.990 35.672 -5.675 42.589 36.914 -3.203 42.359 39.157 0.686 31.797 32.483 2.053 32.778 34.831 	: General Radiated Emission : No.3 OATS : Mode 12: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Omni (5210MHz) Correct Reading Measurement Margin Factor Level Level dB dBµV dBµV/m dB -10.370 44.889 34.519 -8.981 1.034 40.242 41.276 -4.724 3.202 35.519 38.721 -7.279 3.791 36.823 40.614 -5.386 6.282 32.100 38.382 -7.618 7.902 25.285 33.187 -20.813 -11.318 46.990 35.672 -4.328 -5.675 42.589 36.914 -6.586 -3.203 42.359 39.157 -6.843 0.686 31.797 32.483 -13.517 2.053 32.778 34.831 -11.169	

- 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 Test Item Test Site Test Mode	: General : No.3 OA		n 1a_6Mbps)(Panel An	tenna) (5220MH	z)
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
98.690	-10.009	45.732	35.723	-7.777	43.500
297.930	-4.758	42.319	37.561	-8.439	46.000
518.460	3.202	35.095	38.297	-7.703	46.000
683.120	2.815	31.999	34.814	-11.186	46.000
795.380	6.388	35.231	41.619	-4.381	46.000
970.210	7.374	26.811	34.186	-19.814	54.000
Vertical					
Peak Detector					
98.620	-6.297	44.469	38.172	-5.328	43.500
194.290	-5.668	43.305	37.637	-5.863	43.500
390.410	-0.751	37.571	36.819	-9.181	46.000
617.840	0.953	32.640	33.593	-12.407	46.000
795.760	2.644	35.654	38.298	-7.702	46.000
919.380	2.833	29.593	32.426	-13.574	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 Test Item Test Site Test Mode	: General : No.3 OA	4: Transmit (802.1	n 1n-20BW_14.4Mbps)(5G Band)(Pane	l Antenna)
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level	-	
MHz	dB	dBµV	$dB\mu V/m$	dB	dBµV/m
Horizontal					
Peak Detector					
197.840	-10.134	44.651	34.517	-8.983	43.500
388.160	1.071	36.768	37.839	-8.161	46.000
527.380	3.098	33.320	36.418	-9.582	46.000
689.410	3.610	34.562	38.172	-7.828	46.000
780.590	5.248	32.735	37.983	-8.017	46.000
985.270	8.212	26.414	34.626	-19.374	54.000
Vertical					
Peak Detector					
98.720	-6.278	43.092	36.814	-6.686	43.500
257.930	-4.953	43.646	38.693	-7.307	46.000
390.280	-0.748	39.185	38.438	-7.562	46.000
518.410	0.670	39.502	40.172	-5.828	46.000
689.650	2.298	34.627	36.926	-9.074	46.000
841.390	2.309	32.450	34.759	-11.241	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 15: Transmit (802.11n-40BW_30Mbps)(5G Band)(Panel Antenna) (5190MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
98.930	-9.982	43.130	33.148	-10.352	43.500	
259.170	-5.443	46.075	40.631	-5.369	46.000	
388.260	1.066	40.517	41.583	-4.417	46.000	
598.810	3.509	33.415	36.924	-9.076	46.000	
777.490	5.168	33.324	38.492	-7.508	46.000	
983.720	7.932	26.884	34.816	-19.184	54.000	
Vertical						
Peak Detector	6.215	42.027	25 710	7 700	12 500	
98.530	-6.315	42.027	35.712	-7.788	43.500	
198.720	-5.707	44.642	38.934	-4.566	43.500	
292.140	-5.238	42.667	37.429	-8.571	46.000	
520.390	1.022	30.564	31.586	-14.414	46.000	
781.590	2.765	29.127	31.891	-14.109	46.000	
966.810	3.886	25.293	29.178	-24.822	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 16: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Panel Antenna) (5210MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
98.610	-10.017	44.834	34.816	-8.684	43.500	
258.730	-5.439	43.568	38.129	-7.871	46.000	
389.170	1.024	38.557	39.581	-6.419	46.000	
518.490	3.202	35.162	38.364	-7.636	46.000	
712.380	3.790	36.838	40.628	-5.372	46.000	
912.540	6.453	26.489	32.942	-13.058	46.000	
Vertical						
Peak Detector						
53.790	-11.508	46.129	34.621	-5.379	40.000	
257.630	-4.969	45.263	40.294	-5.706	46.000	
390.270	-0.747	40.563	39.816	-6.184	46.000	
681.950	1.644	33.545	35.189	-10.811	46.000	
812.160	2.856	32.618	35.473	-10.527	46.000	
962.490	3.494	28.884	32.378	-21.622	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 Test Item Test Site Test Mode	: General : No.3 OA		n 1a_6Mbps)(Sector Ai	ntenna) (5220MH	Iz)
Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
59.430	-11.914	43.431	31.517	-8.483	40.000
225.680	-9.749	44.377	34.628	-11.372	46.000
326.170	-4.506	41.348	36.842	-9.158	46.000
516.810	3.199	34.975	38.174	-7.826	46.000
715.290	3.797	37.993	41.791	-4.209	46.000
899.520	5.759	32.154	37.913	-8.087	46.000
Vertical					
Peak Detector					
77.120	-6.248	38.763	32.514	-7.486	40.000
194.580	-5.671	44.298	38.628	-4.872	43.500
385.260	-0.503	34.877	34.374	-11.626	46.000
518.930	0.773	34.504	35.276	-10.724	46.000
780.490	2.762	35.087	37.849	-8.151	46.000
899.610	1.805	32.377	34.181	-11.819	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 18: Transmit (802.11n-20BW_14.4Mbps)(5G Band)(Sector Antenna) (5220MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
57.690	-11.857	45.029	33.172	-6.828	40.000	
203.760	-10.376	42.960	32.584	-10.916	43.500	
388.120	1.073	34.346	35.419	-10.581	46.000	
518.370	3.202	38.091	41.293	-4.707	46.000	
712.510	3.791	36.035	39.826	-6.174	46.000	
899.840	5.792	29.849	35.641	-10.359	46.000	
Vertical Peak Detector						
69.480	-12.424	46.236	33.812	-6.188	40.000	
260.270	-4.861	43.124	38.263	-7.737	46.000	
518.720	0.731	36.458	37.189	-8.811	46.000	
682.190	1.693	33.856	35.548	-10.452	46.000	
780.580	2.764	33.727	36.491	-9.509	46.000	
899.360	1.725	32.352	34.076	-11.924	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 19: Transmit (802.11n-40BW_30Mbps)(5G Band)(Sector Antenna) (5190MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
65.170	-12.707	43.628	30.921	-9.079	40.000	
195.720	-10.480	42.070	31.589	-11.911	43.500	
357.510	-0.820	38.992	38.172	-7.828	46.000	
580.490	3.489	29.775	33.264	-12.736	46.000	
780.930	5.268	33.349	38.618	-7.382	46.000	
899.840	5.792	32.701	38.493	-7.507	46.000	
Vertical Peak Detector						
61.720	-11.720	45.139	33.419	-6.581	40.000	
187.380	-5.608	38.395	32.786	-10.714	43.500	
291.930	-5.268	44.440	39.172	-6.828	46.000	
518.290	0.646	38.196	38.842	-7.158	46.000	
615.410	1.583	31.378	32.961	-13.039	46.000	
844.690	2.456	29.237	31.694	-14.306	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 Test Item Test Site Test Mode	 802.11 ac PCIe Module General Radiated Emission No.3 OATS Mode 20: Transmit (802.11ac-80BW_65Mbps)(5G Band)(Sector Antenna) (5210MHz) 					
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBµV	dBµV/m	dB	dBµV/m	
Horizontal						
Peak Detector						
59.070	-11.900	44.072	32.172	-7.828	40.000	
192.890	-10.081	43.376	33.296	-10.204	43.500	
390.710	0.967	37.852	38.819	-7.181	46.000	
518.340	3.202	35.359	38.561	-7.439	46.000	
719.120	3.819	35.264	39.084	-6.916	46.000	
914.860	6.410	31.516	37.926	-8.074	46.000	
Vertical						
Peak Detector						
79.810	-5.051	38.581	33.529	-6.471	40.000	
195.420	-5.677	42.495	36.817	-6.683	43.500	
393.680	-1.449	39.622	38.172	-7.828	46.000	
518.190	0.627	37.664	38.291	-7.709	46.000	
715.540	-1.537	38.123	36.586	-9.414	46.000	
913.760	-0.608	32.081	31.473	-14.527	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.

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		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
	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:

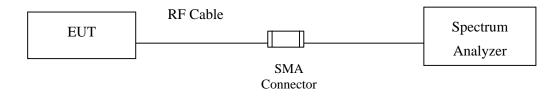
: 1. All instruments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

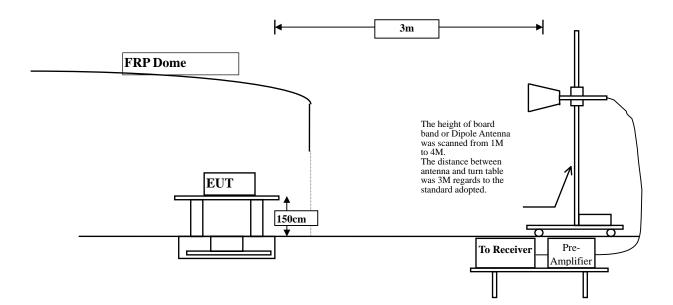


6.2. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:





6.3. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15	FCC Part 15 Subpart C Paragraph 15.209 Limits										
Frequency MHz	uV/m @3m	dBµV/m@3m									
30-88	100	40									
88-216	150	43.5									
216-960	200	46									
Above 960	500	54									

Remarks : 1. RF Voltage $(dB\mu V) = 20 \log RF$ Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

6.4. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 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 can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

6.5. Uncertainty

- ± 3.8 dB below 1GHz
- \pm 3.9 dB above 1GHz



6.6. Test Result of Band Edge

Product	:	802.11 ac PCIe Module
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna)-Channel 36

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
36 (Peak)	5150.000	35.135	32.353	67.488	83.54	63.540	Pass
36 (Peak)	5185.072	34.938	78.683	113.621			
36 (Average)	5150.000	35.135	17.288	52.423	83.54	63.540	Pass
36 (Average)	5185.507	34.935	66.806	101.741			Pass

Figure Channel 36:

Horizontal (Peak)

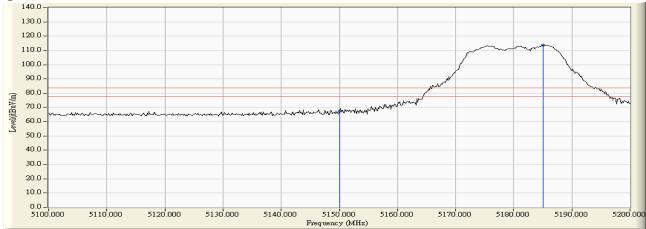


Figure Channel 36:

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. The antenna distance is 1m, average limit is 54dBuV + 9.54dB = 63.54dBuV, peak limit is 74dBuV + 9.54dB = 83.54dBuV.
- 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 ac PCIe Module
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna)-Channel 36

RF Radiated Measurement (Vertical):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Average Limit	Result
Channel No.	(MHz)	(dB)	(dBµV)	(dBµV/m)	$(dB\mu V/m)$	$(dB\mu V/m)$	Result
36 (Peak)	5149.855	37.054	45.364	82.419	83.54	63.540	Pass
36 (Peak)	5150.000	37.055	44.445	81.500	83.54	63.540	Pass
36 (Peak)	5183.913	37.077	91.258	128.334			
36 (Average)	5150.000	37.055	20.791	57.846	83.54	63.540	Pass
36 (Average)	5183.913	37.077	78.735	115.811			

Figure Channel 36:

Vertical (Peak)



Figure Channel 36:

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. The antenna distance is 1m, average limit is 54dBuV + 9.54dB = 63.54dBuV, peak limit is 74dBuV + 9.54dB = 83.54dBuV.
- 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 ac PCIe Module
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna)-Channel 48

Chain A

Test Frequency	Measurement Level (20dB BW)	Limit	Result
(MHz)	(MHz)	(MHz)	
5240	5249.70	<5250	PASS

NOTE: Accordance with 15.215 requirement.

	A REAL PROPERTY AND A REAL			1 m 1 m			nalyzer - Swe			
Frequency	01:55:28 AM Aug 14, 2015 TRACE 1 2 3 4 5 6	ALIGN AUTO		SENSE(I)		AC CU	50 Ω	RF	_	R
	DET P NNNN	Type. Log-t wi		Trig: Free Rui #Atten: 30 dB	NO: Fast 😱 Sain:Low	0000 GH	0.24000	-req a	iter	-er
Auto Tur	2 5.249 70 GHz -6.59 dBm	Mkr					Offset 1 c		B/div	10 d
Center Fre		1	Y1,	and the	1.1.1		21.00 0	- Nor		-og
5,24000000 GH		.2			r		· · · · · · · ·			1.00
0.240000000 01	-5.52 dBm	The second secon			and and				1	9.00
		MANNA MIL				- ANNINGANDER	1.22	- 1.1	1	
Start Fre		andry					1.17			19.0
5.215000000 GH	Without and						monumber	www.		29.0
	- Simple alter alter		_						- John	39.0
Otop Er									(<u> </u>	49.0
Stop Fre 5.265000000 GH									n	59.0
5.205000000 Gr							_	-		69.0
CF Ste	Span 50.00 MHz	Sector and the	_				0 GHz			
5.000000 Mł Auto Ma	00.0 ms (1001 pts)	#Sweep 50		1.0 MHz	#VBW		kHz	100	es BV	#Re
<u>Auto</u> Wa	FUNCTION VALUE	FUNCTION WIDTH	FUNCTION	Y		х		RC SCL		
				14.48 dBm -6.59 dBm		5.242 5		1 f	N	1
Freq Offs										3
01	Ξ.									4
										6
										8
										9
							-			11
				m						
		STATUS								SG



Product	:	802.11 ac PCIe Module
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antanna)-Channel 48

Chain B

Test Frequency	Measurement Level (20dB BW)	Limit	Result
(MHz)	(MHz)	(MHz)	
5240	5248.45	<5250	PASS

NOTE: Accordance with 15.215 requirement.

	t Spect		yzer - Swe								
RL RL	Fre	RF	50 Q	AC 0000 GH	17	SENSE:		ALIGN AUTO	03:46:17 AM Aug TRACE 1		Frequency
Conter		-q 0.2	-+000	P	NO: Fast C Gain:Low	Trig: Free Ru #Atten: 30 df	in		TYPE M4	NNNNN	
10 dB/di			fset 1 d 1.00 d					Mkr	2 5.249 45 -5.68		Auto Tun
11.0				1. 19	aled	a family backer of	und and find				Center Fre
1.00								2			5.240000000 GH
9.00	_		_		antin			10mm		-4.83 dBm	1 2 4 1 1 2 2 4 1 4 1 4 1 4 1 4 1 4 1 4
19.0	-			tal monthly				- Instruction			1
		-	Junant	n ^{ona}				M	mould	- j	Start Fre
-29.0 MUN	My W	MANANAN	womanh						wanted man too	Al-Mandapa	5.215000000 GH
49.0		1.11		-							
-49.0											Stop Fre
					1.22						5.265000000 GH
-69.0		112									
Center #Res B					#VB	W 1.0 MHz		#Sweep 5	Span 50.00 00.0 ms (100	1 pts)	CF Ste 5.000000 MH
MKR MODI	E TRC	SCL		x		Y	FUNCTION	FUNCTION WIDTH	FUNCTION VA	LUE	<u>Auto</u> Ma
1 N 2 N	1	f		5.245 0		15.168 dBm -5.68 dBm					
3				0.245 4	IS GITZ	-0.00 UBIII					Freq Offs
4										E	01
6		_									
8											
9											
11										+	
< <u> </u>		_				- m		1	1	· ·	
SG								STATU	5		