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	Apr. 27, 2015
Issue Date	Aug. 18, 2015
Report No.	1570043R-RFUSP70V00
Report Version	V1.0

Testing Laboratory
3023

Test Report

Issue Date: Aug. 18, 2015
Report No.: 1570043R-RFUSP70V00

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
EUT Rated Voltage	DC 5V, 1.5A
Voltage of Host	AC 120V/60Hz
Trade Name	Proxim
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2013 ANSI C63.4: 2014, ANSI C63.10: 2013 KDB 558074 D01 DTS Meas Guidance v03r03
Test Result	Complied

Documented By : Genie Chang

(Senior Adm. Specialist / Genie Chang)

Tested By : Benjamin Pan

(Engineer / Benjamin Pan)

Approved By :

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	802.11 ac PCIe Module
Trade Name	Proxim
Model No.	NGP1058
FCC ID.	HZB-NGP1058W
Frequency Range	802.11a/n-20MHz:5745-5825MHz ,802.11n-40MHz:5755-5795MHz 802.11ac-80MHz: 5780MHz
Number of Channels	802.11a/n-20MHz: 5, n-40MHz: 2 802.11ac-80MHz: 2
Data Speed	802.11a: 6-54Mbps, 802.11n: up to 300Mbps, 802.11ac: up to 866.7Mbps
Channel separation	802.11a/n-20MHz: 20MHz, 802.11n-40MHz: 40MHz, 802.11ac-80MHz: 80MHz
Type of Modulation	802.11a/n: OFDM, BPSK, QPSK, 16QAM, 64QAM, 256AM
Antenna Type	Dipole / Grid DISH / Omni / Panel / Sector
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Contain Module	Atheros / QCA9882

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1.	Mars	MA-WA55-30	External Antenna (Panel)	30dBi for 5.725~5.850GHz
2.	Mars	MA-WB55-20	External Antenna (Sector)	20dBi for 5.725~5.850GHz
3	Andrew	PX3F-52-N7A	External Antenna (Grid DISH)	33.5dBi for 5.725~5.850GHz
4	Smartant	SAA08-220570	External Antenna (Omni)	10dBi for 5.725~5.850GHz
5	Proxim	N/A	External Antenna (Dipole)	5dBi for 5.725~5.850GHz

Note: The antenna of EUT is conform to FCC 15.203

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 149:	5745 MHz	Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz
Channel 165:	5825 MHz						

802.11n-40MHz (5G Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency
Channel 151:	5755 MHz	Channel 159:	5795 MHz

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

Channel	Frequency
Channel 1:	5780 MHz

Note:

1. This device is an 802.11 ac PCIe Module with a built-in 5GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps、802.11n(20M-BW) is 14.4Mbps、802.11n(40M-BW) is 30Mbps and 802.11ac(80M-BW) is 65 Mbps).
4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11a/n/ac transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode:	Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna)
	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)

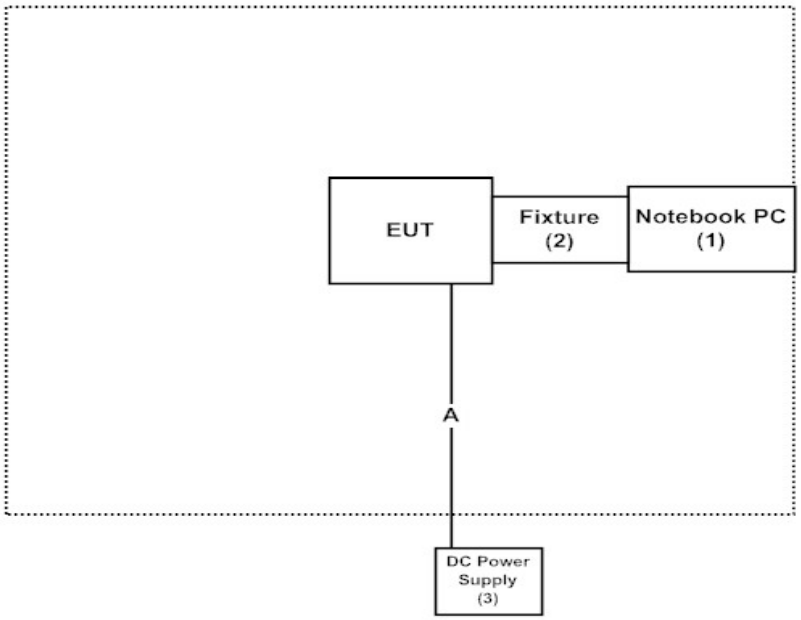
1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
(1)	Notebook PC	DELL	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
A	DC Power Cable	Non-Shielded, 1.8m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4.
(2) Execute “Art2-GUI V2.3” program on the Notebook PC.
(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 : http://www.quietek.com/chinese/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

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

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

FCC Accreditation Number: TW1014

2. Conducted Emission

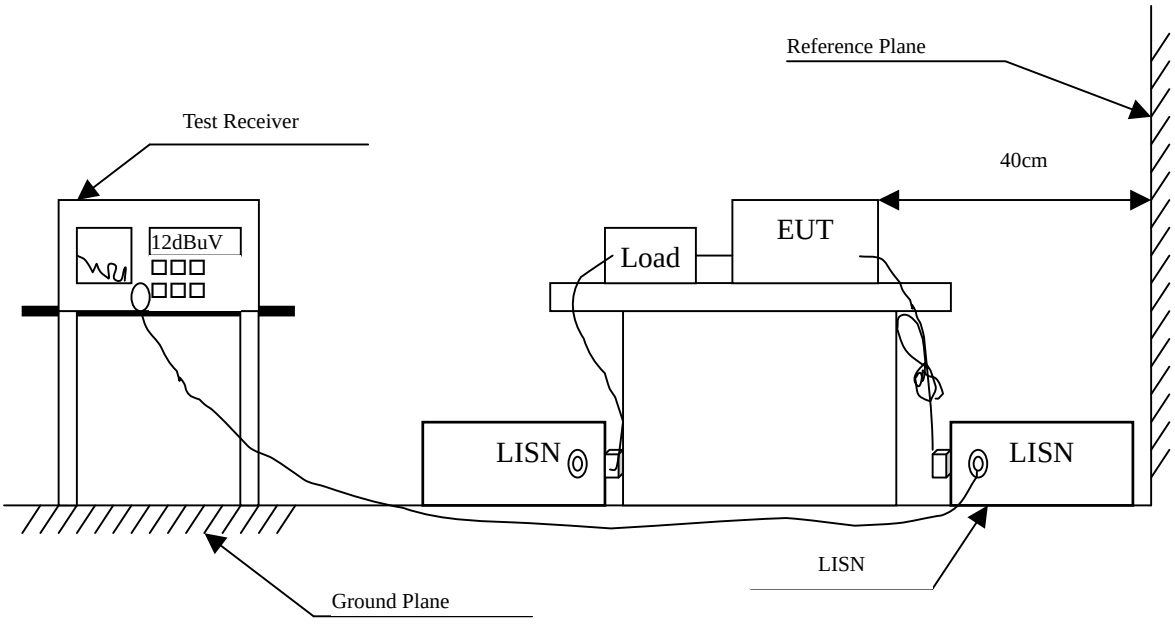
2.1. Test Equipment

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

Note:

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

2.2. Test Setup



2.3. Limits

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

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.154	9.790	49.100	58.890	-6.996	65.886
0.177	9.790	46.250	56.040	-9.189	65.229
0.252	9.790	36.310	46.100	-16.986	63.086
0.267	9.790	33.440	43.230	-19.427	62.657
0.326	9.790	26.930	36.720	-24.251	60.971
0.701	9.790	28.190	37.980	-18.020	56.000
Average					
0.154	9.790	33.130	42.920	-12.966	55.886
0.177	9.790	33.050	42.840	-12.389	55.229
0.252	9.790	23.950	33.740	-19.346	53.086
0.267	9.790	21.650	31.440	-21.217	52.657
0.326	9.790	12.540	22.330	-28.641	50.971
0.701	9.790	16.420	26.210	-19.790	46.000

Note:

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

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.162	9.770	49.320	59.090	-6.567	65.657
0.205	9.770	42.790	52.560	-11.869	64.429
0.248	9.770	37.180	46.950	-16.250	63.200
0.283	9.770	32.170	41.940	-20.260	62.200
0.341	9.770	24.580	34.350	-26.193	60.543
0.673	9.770	27.400	37.170	-18.830	56.000
Average					
0.162	9.770	37.310	47.080	-8.577	55.657
0.205	9.770	30.160	39.930	-14.499	54.429
0.248	9.770	24.930	34.700	-18.500	53.200
0.283	9.770	19.260	29.030	-23.170	52.200
0.341	9.770	11.680	21.450	-29.093	50.543
0.673	9.770	15.950	25.720	-20.280	46.000

Note:

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

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
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

Note:

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

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
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

Note:

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

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.166	9.697	18.780	28.477	-37.066	65.543
0.509	9.713	26.880	36.593	-19.407	56.000
0.838	9.728	14.870	24.598	-31.402	56.000
5.627	9.840	10.030	19.870	-40.130	60.000
10.330	9.880	12.530	22.410	-37.590	60.000
15.963	9.900	17.530	27.430	-32.570	60.000
Average					
0.166	9.697	3.850	13.547	-41.996	55.543
0.509	9.713	13.980	23.693	-22.307	46.000
0.838	9.728	1.370	11.098	-34.902	46.000
5.627	9.840	1.630	11.470	-38.530	50.000
10.330	9.880	5.000	14.880	-35.120	50.000
15.963	9.900	9.810	19.710	-30.290	50.000

Note:

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

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.185	9.678	16.990	26.668	-38.332	65.000
0.505	9.693	26.260	35.953	-20.047	56.000
0.877	9.719	13.970	23.689	-32.311	56.000
2.220	9.790	10.640	20.430	-35.570	56.000
8.697	9.870	15.440	25.310	-34.690	60.000
16.466	9.970	20.890	30.860	-29.140	60.000
Average					
0.185	9.678	1.010	10.688	-44.312	55.000
0.505	9.693	9.800	19.493	-26.507	46.000
0.877	9.719	0.110	9.829	-36.171	46.000
2.220	9.790	-1.860	7.930	-38.070	46.000
8.697	9.870	4.610	14.480	-35.520	50.000
16.466	9.970	8.410	18.380	-31.620	50.000

Note:

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

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.185	9.719	39.110	48.829	-16.171	65.000
0.240	9.680	36.880	46.560	-16.869	63.429
0.302	9.650	34.470	44.120	-17.537	61.657
0.361	9.650	24.800	34.450	-25.521	59.971
4.072	9.700	19.850	29.550	-26.450	56.000
19.080	9.950	16.390	26.340	-33.660	60.000
Average					
0.185	9.719	22.790	32.509	-22.491	55.000
0.240	9.680	29.010	38.690	-14.739	53.429
0.302	9.650	32.310	41.960	-9.697	51.657
0.361	9.650	17.980	27.630	-22.341	49.971
4.072	9.700	6.310	16.010	-29.990	46.000
19.080	9.950	9.080	19.030	-30.970	50.000

Note:

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

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.181	9.732	42.250	51.982	-13.132	65.114
0.244	9.689	35.930	45.619	-17.695	63.314
0.302	9.660	33.900	43.560	-18.097	61.657
0.603	9.648	18.120	27.768	-28.232	56.000
4.498	9.700	18.430	28.130	-27.870	56.000
19.447	10.040	13.740	23.780	-36.220	60.000
Average					
0.181	9.732	30.210	39.942	-15.172	55.114
0.244	9.689	14.380	24.069	-29.245	53.314
0.302	9.660	30.220	39.880	-11.777	51.657
0.603	9.648	6.710	16.358	-29.642	46.000
4.498	9.700	2.230	11.930	-34.070	46.000
19.447	10.040	9.060	19.100	-30.900	50.000

Note:

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

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.173	9.697	45.710	55.407	-9.936	65.343
0.228	9.700	35.900	45.600	-18.171	63.771
0.283	9.702	27.440	37.142	-25.058	62.200
0.478	9.711	31.100	40.811	-15.818	56.629
1.287	9.758	22.750	32.508	-23.492	56.000
4.115	9.820	26.130	35.950	-20.050	56.000
Average					
0.173	9.697	34.590	44.287	-11.056	55.343
0.228	9.700	22.430	32.130	-21.641	53.771
0.283	9.702	11.750	21.452	-30.748	52.200
0.478	9.711	24.040	33.751	-12.878	46.629
1.287	9.758	13.840	23.598	-22.402	46.000
4.115	9.820	16.240	26.060	-19.940	46.000

Note:

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

Product : 802.11 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) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.181	9.678	45.040	54.718	-10.396	65.114
0.244	9.681	35.930	45.611	-17.703	63.314
0.369	9.686	32.060	41.746	-17.997	59.743
0.463	9.691	34.330	44.021	-13.036	57.057
1.611	9.763	19.490	29.253	-26.747	56.000
3.795	9.810	25.860	35.670	-20.330	56.000
Average					
0.181	9.678	37.250	46.928	-8.186	55.114
0.244	9.681	24.500	34.181	-19.133	53.314
0.369	9.686	21.020	30.706	-19.037	49.743
0.463	9.691	26.940	36.631	-10.426	47.057
1.611	9.763	7.150	16.913	-29.087	46.000
3.795	9.810	16.560	26.370	-19.630	46.000

Note:

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

3. Maximum Conducted Power

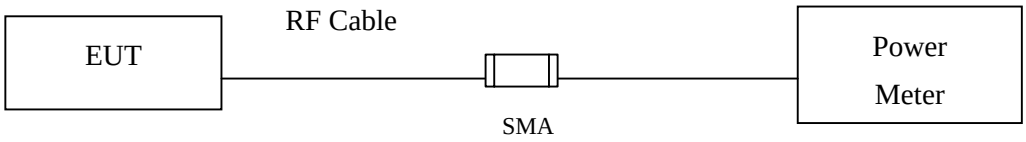
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2015
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2014
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

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

3.2. Test Setup



3.3. Limits

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

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 section 9.1.3 PKPM1 Peak power meter method.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Maximum Conducted Power

Product : 802.11 ac PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	26.22	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	26.31	26.12	26	25.84	25.67	25.52	25.44	25.37	<30dBm	Pass
165	5825	26.21	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	24.89	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	24.94	24.82	24.76	24.62	24.47	24.23	24.14	23.95	<30dBm	Pass
165	5825	24.87	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	6	26.22	24.89	28.62	<30dBm	Pass
157	5785	6	26.31	24.94	28.69	<30dBm	Pass
165	5825	6	26.21	24.87	28.60	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : 802.11 ac PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	26.13	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	26.15	26.01	25.88	25.69	25.54	25.41	25.28	25.19	<30dBm	Pass
165	5825	26.06	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	24.79	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	24.83	24.69	24.57	24.48	24.37	24.22	24.16	24.04	<30dBm	Pass
165	5825	24.72	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	HT0	26.13	24.79	28.52	<30dBm	Pass
157	5785	HT0	26.15	24.83	28.55	<30dBm	Pass
165	5825	HT0	26.06	24.72	28.45	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : 802.11 ac PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	26.22	-	-	-	-	-	-	-	<30dBm	Pass
159	5795	26.39	26.27	26.11	26.04	25.91	25.77	25.57	25.41	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	24.76	-	-	-	-	-	-	-	<30dBm	Pass
159	5795	25.39	26.01	25.74	25.32	25.1	24.69	24.24	23.89	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	HT0	26.22	24.76	28.56	<30dBm	Pass
159	5795	HT0	26.39	25.39	28.93	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : 802.11 ac PCIe Module
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
1	5780	26.30	26.28	26.24	26.22	26.2	26.15	26.12	26.04	25.94	25.87	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
1	5780	25.91	25.86	25.82	25.79	26.75	25.7	25.67	25.64	25.59	25.55	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	5780	VHT0	26.30	25.91	29.12	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 156: CHAIN A

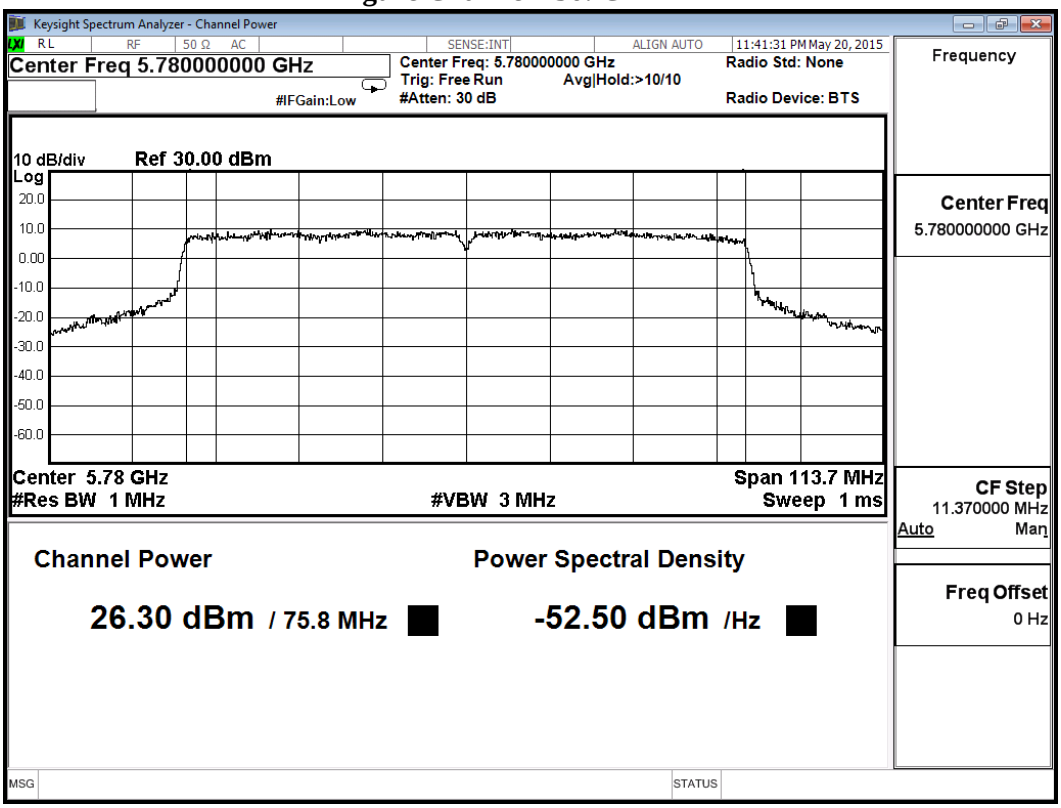
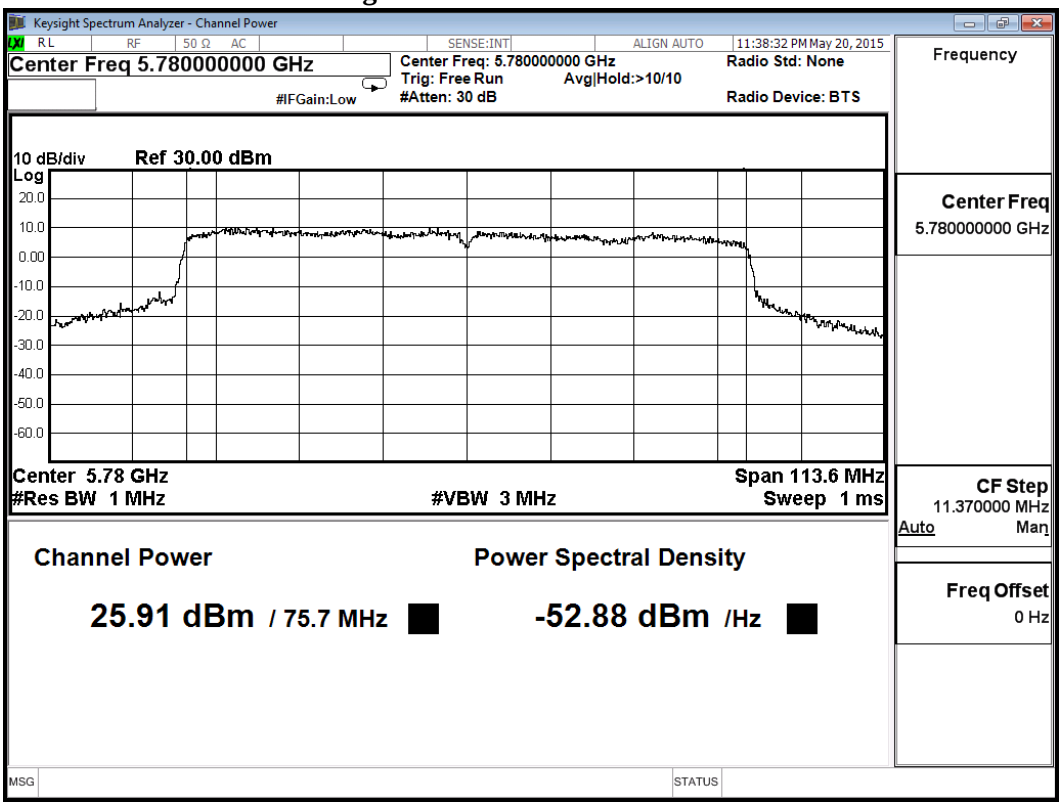


Figure Channel 156: CHAIN B



Product : 802.11 ac PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11a_6Mbps(Grid DISH Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	16.23	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	15.19	15.11	15.02	14.92	14.81	14.65	14.51	14.39	<30dBm	Pass
165	5825	19.25	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	16.53	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	15.17	15.04	14.97	14.82	14.64	14.52	14.43	14.37	<30dBm	Pass
165	5825	19.25	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	23.85	16.23	16.53	19.39	<30dBm	Pass
157	5785	23.85	15.19	15.17	18.19	<30dBm	Pass
165	5825	23.85	19.25	19.25	22.26	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	15.71	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	15.54	15.44	15.31	15.22	15.02	14.99	14.82	14.72	<30dBm	Pass
165	5825	18.43	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	16.28	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	15.56	15.47	15.33	15.21	15.12	15.02	14.83	14.77	<30dBm	Pass
165	5825	18.61	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	HT0	15.71	16.28	19.01	<30dBm	Pass
157	5785	HT0	15.54	15.56	18.56	<30dBm	Pass
165	5825	HT0	18.43	18.61	21.53	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	21.08	-	-	-	-	-	-	-	<30dBm	Pass
159	5795	17.73	17.55	17.51	17.48	17.42	17.31	17.25	17.13	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	20.54	-	-	-	-	-	-	-	<30dBm	Pass
159	5795	18.31	18.11	17.98	17.74	17.52	17.31	17.02	16.87	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	HT0	21.08	20.54	23.83	<30dBm	Pass
159	5795	HT0	17.73	18.31	21.04	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
1	5780	19.89	19.85	19.82	19.78	19.75	19.71	19.66	19.61	19.58	19.55	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
1	5780	20.11	20.06	20.05	20	19.97	19.93	19.86	19.81	19.77	19.73	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	5780	VHT0	19.89	20.11	23.01	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 156: CHAIN A

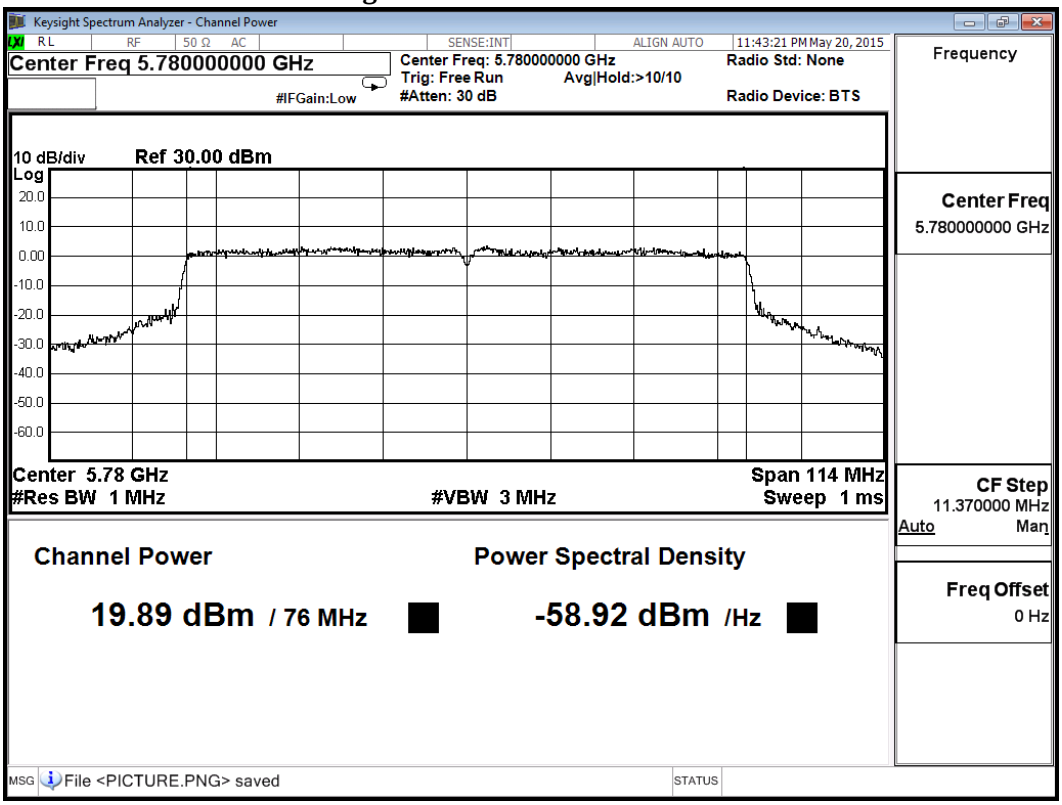
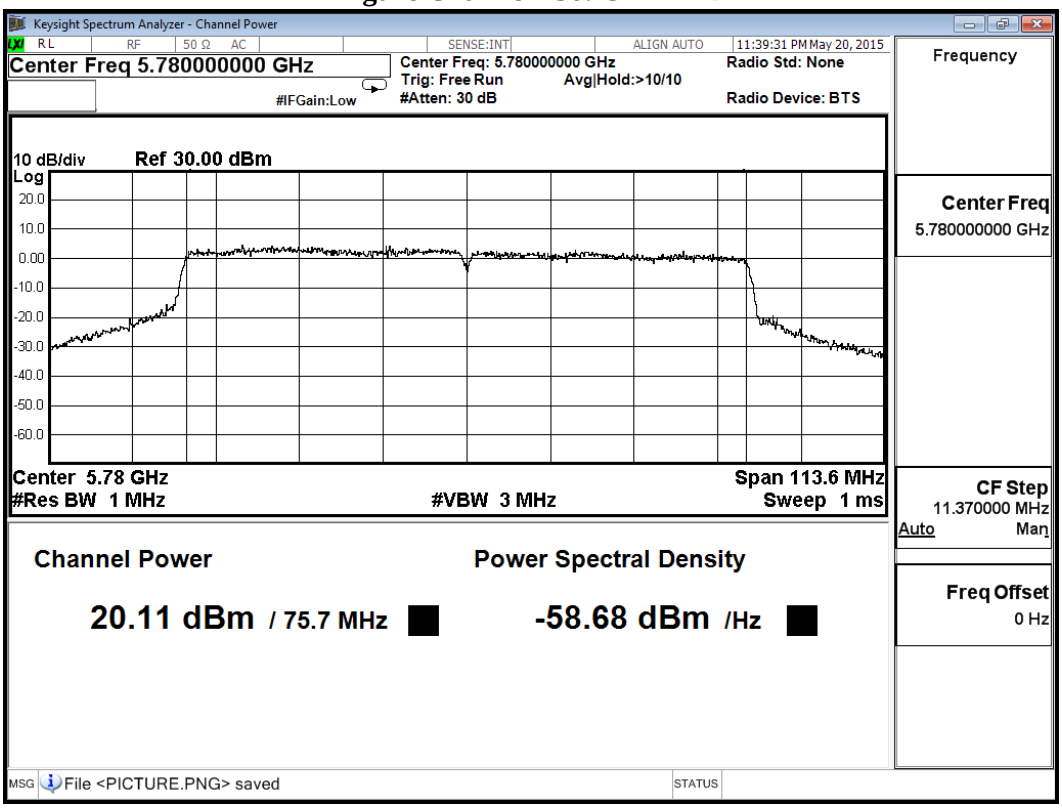


Figure Channel 156: CHAIN B



Product : 802.11 ac PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 9: Transmit - 802.11a_6Mbps(Omni Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	23.07	-	-	-	-	-	-	-	<26dBm	Pass
157	5785	23.23	23.12	22.97	22.86	22.82	22.74	22.68	22.66	<26dBm	Pass
165	5825	22.99	-	-	-	-	-	-	-	<26dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	22.58	-	-	-	-	-	-	-	<26dBm	Pass
157	5785	22.62	22.54	22.33	22.16	22.05	21.88	21.72	21.61	<26dBm	Pass
165	5825	22.57	-	-	-	-	-	-	-	<26dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	6	23.07	22.58	25.84	<26dBm	Pass
157	5785	6	23.23	22.62	25.95	<26dBm	Pass
165	5825	6	22.99	22.57	25.80	<26dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	23.25	-	-	-	-	-	-	-	<26dBm	Pass
157	5785	23.08	22.99	22.87	22.74	22.63	22.54	22.42	22.35	<26dBm	Pass
165	5825	23.02	-	-	-	-	-	-	-	<26dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	22.66	-	-	-	-	-	-	-	<26dBm	Pass
157	5785	22.77	22.68	22.56	22.48	22.41	22.35	22.17	22.05	<26dBm	Pass
165	5825	22.77	-	-	-	-	-	-	-	<26dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	HT0	23.25	22.66	25.98	<26dBm	Pass
157	5785	HT0	23.08	22.77	25.94	<26dBm	Pass
165	5825	HT0	23.02	22.77	25.91	<26dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	23.07	-	-	-	-	-	-	-	<26dBm	Pass
159	5795	23.16	23.03	22.94	22.75	22.67	22.59	22.48	22.4	<26dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	22.53	-	-	-	-	-	-	-	<26dBm	Pass
159	5795	22.79	22.67	22.54	22.49	22.46	22.34	22.18	22.04	<26dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	HT0	23.07	22.53	25.82	<26dBm	Pass
159	5795	HT0	23.16	22.79	25.99	<26dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
156	22.19	22.14	22.09	22.06	22.01	21.99	21.94	21.89	21.85	21.81	27.51	<26dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
1	5780	22.1	22.07	22.04	22.02	22.01	21.98	21.94	21.92	21.89	21.83	<26dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	5780	VHT0	22.19	22.10	25.16	<26dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 156: CHAIN A

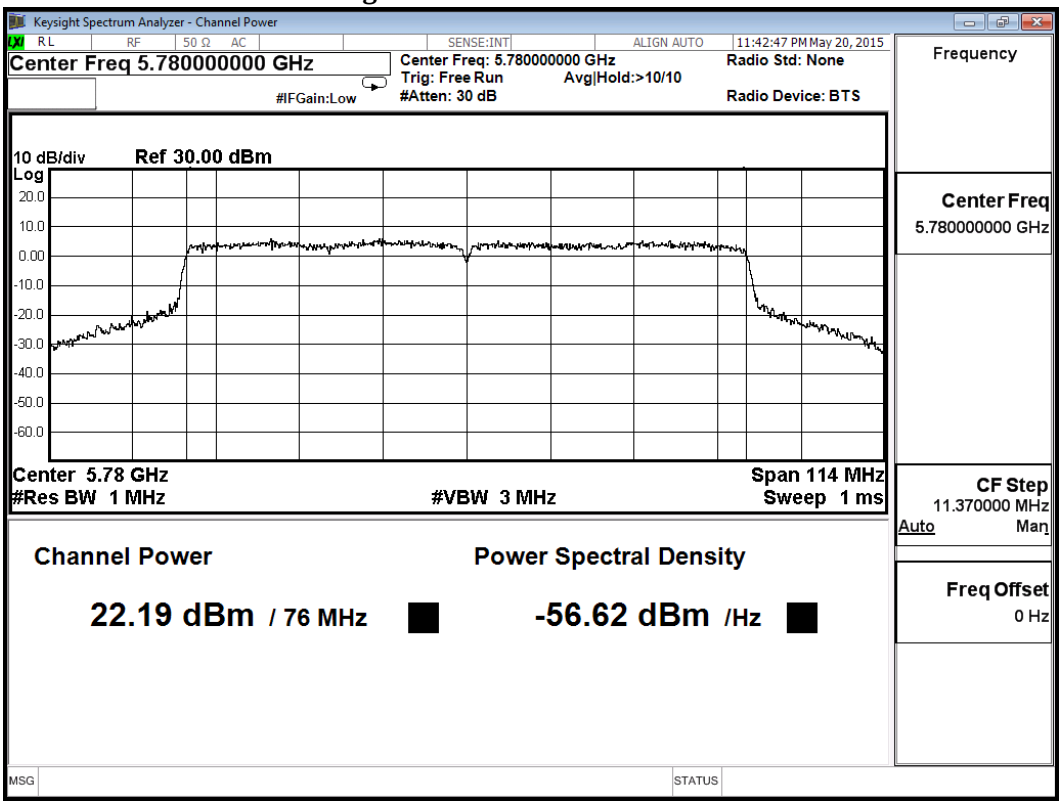
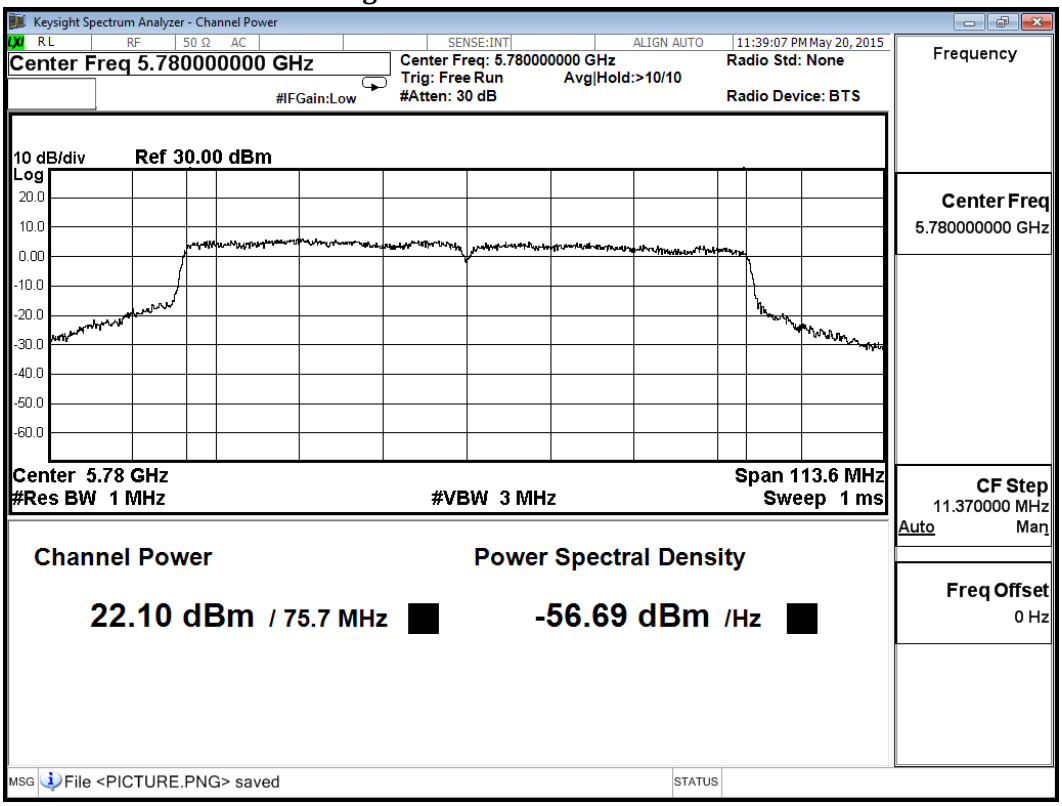


Figure Channel 156: CHAIN B



Product : 802.11 ac PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 13: Transmit - 802.11a_6Mbps(Panel Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	26.22	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	26.31	26.12	26	25.84	25.67	25.52	25.44	25.37	<30dBm	Pass
165	5825	26.21	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	24.89	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	24.94	24.82	24.76	24.62	24.47	24.23	24.14	23.95	<30dBm	Pass
165	5825	24.87	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	6	26.22	24.89	28.62	<30dBm	Pass
157	5785	6	26.31	24.94	28.69	<30dBm	Pass
165	5825	6	26.21	24.87	28.60	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	26.13	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	26.15	26.01	25.88	25.69	25.54	25.41	25.28	25.19	<30dBm	Pass
165	5825	26.06	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	24.79	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	24.83	24.69	24.57	24.48	24.37	24.22	24.16	24.04	<30dBm	Pass
165	5825	24.72	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	HT0	26.13	24.79	28.52	<30dBm	Pass
157	5785	HT0	26.15	24.83	28.55	<30dBm	Pass
165	5825	HT0	26.06	24.72	28.45	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	26.22	-	-	-	-	-	-	-	<30dBm	Pass
159	5795	26.39	26.27	26.11	26.04	25.91	25.77	25.57	25.41	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	24.76	-	-	-	-	-	-	-	<30dBm	Pass
159	5795	25.39	26.01	25.74	25.32	25.1	24.69	24.24	23.89	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	HT0	26.22	24.76	28.56	<30dBm	Pass
159	5795	HT0	26.39	25.39	28.93	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
1	5780	26.30	26.28	26.24	26.22	26.2	26.15	26.12	26.04	25.94	25.87	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
1	5780	25.91	25.86	25.82	25.79	26.75	25.7	25.67	25.64	25.59	25.55	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	5780	VHT0	26.30	25.91	29.12	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 156: CHAIN A

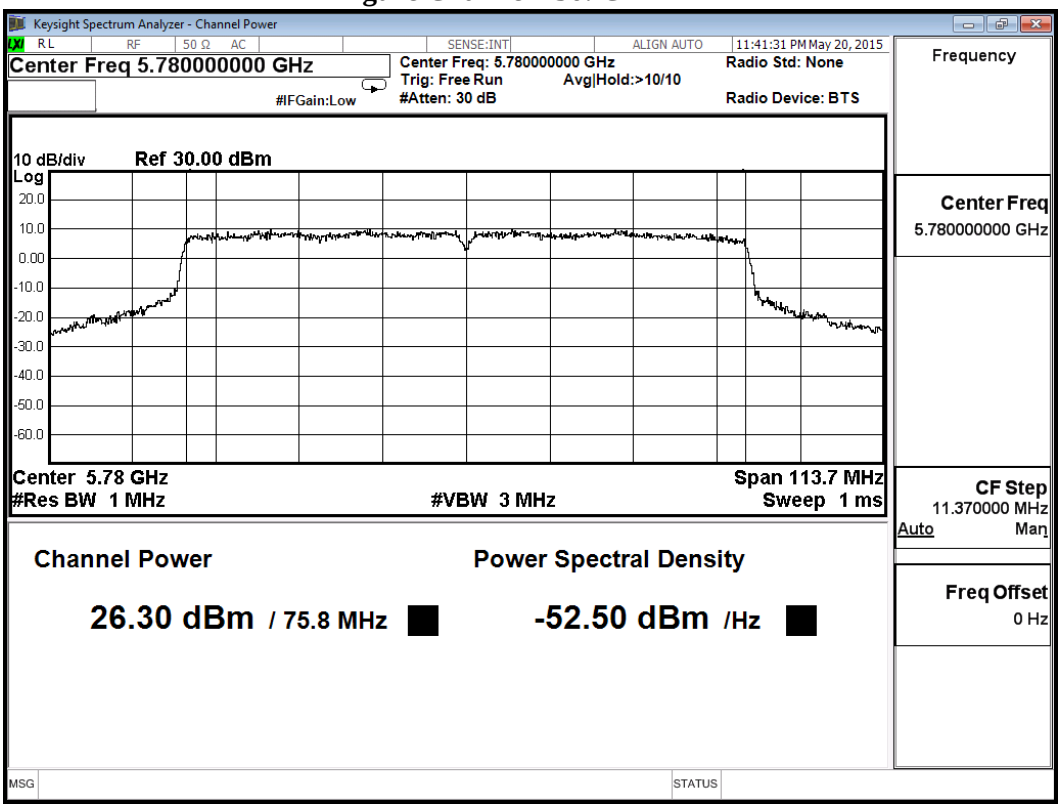
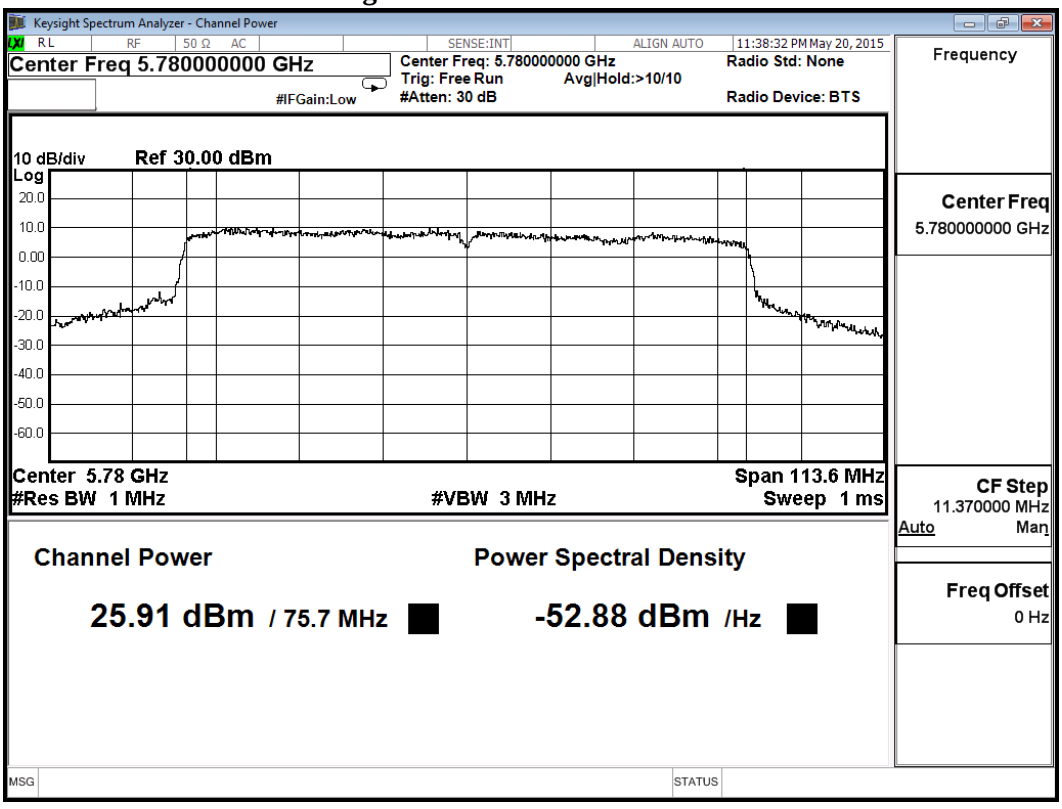


Figure Channel 156: CHAIN B



Product : 802.11 ac PCIe Module
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 17: Transmit - 802.11a_6Mbps(Sector Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	26.22	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	26.31	26.12	26	25.84	25.67	25.52	25.44	25.37	<30dBm	Pass
165	5825	26.21	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	24.89	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	24.94	24.82	24.76	24.62	24.47	24.23	24.14	23.95	<30dBm	Pass
165	5825	24.87	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	6	26.22	24.89	28.62	<30dBm	Pass
157	5785	6	26.31	24.94	28.69	<30dBm	Pass
165	5825	6	26.21	24.87	28.60	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	26.13	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	26.15	26.01	25.88	25.69	25.54	25.41	25.28	25.19	<30dBm	Pass
165	5825	26.06	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
149	5745	24.79	-	-	-	-	-	-	-	<30dBm	Pass
157	5785	24.83	24.69	24.57	24.48	24.37	24.22	24.16	24.04	<30dBm	Pass
165	5825	24.72	-	-	-	-	-	-	-	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	HT0	26.13	24.79	28.52	<30dBm	Pass
157	5785	HT0	26.15	24.83	28.55	<30dBm	Pass
165	5825	HT0	26.06	24.72	28.45	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	26.22	-	-	-	-	-	-	-	<30dBm	Pass
159	5795	26.39	26.27	26.11	26.04	25.91	25.77	25.57	25.41	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7		
		Measurement Level (dBm)									
151	5755	24.76	-	-	-	-	-	-	-	<30dBm	Pass
159	5795	25.39	26.01	25.74	25.32	25.1	24.69	24.24	23.89	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	HT0	26.22	24.76	28.56	<30dBm	Pass
159	5795	HT0	26.39	25.39	28.93	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
1	5780	26.30	26.28	26.24	26.22	26.2	26.15	26.12	26.04	25.94	25.87	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)										Required Limit	Result
		VHT0	VHT1	VHT2	VHT3	VHT4	VHT5	VHT6	VHT7	VHT8	VHT9		
		Measurement Level (dBm)											
1	5780	25.91	25.86	25.82	25.79	26.75	25.7	25.67	25.64	25.59	25.55	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	5780	VHT0	26.30	25.91	29.12	<30dBm	Pass

Note: Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 156: CHAIN A

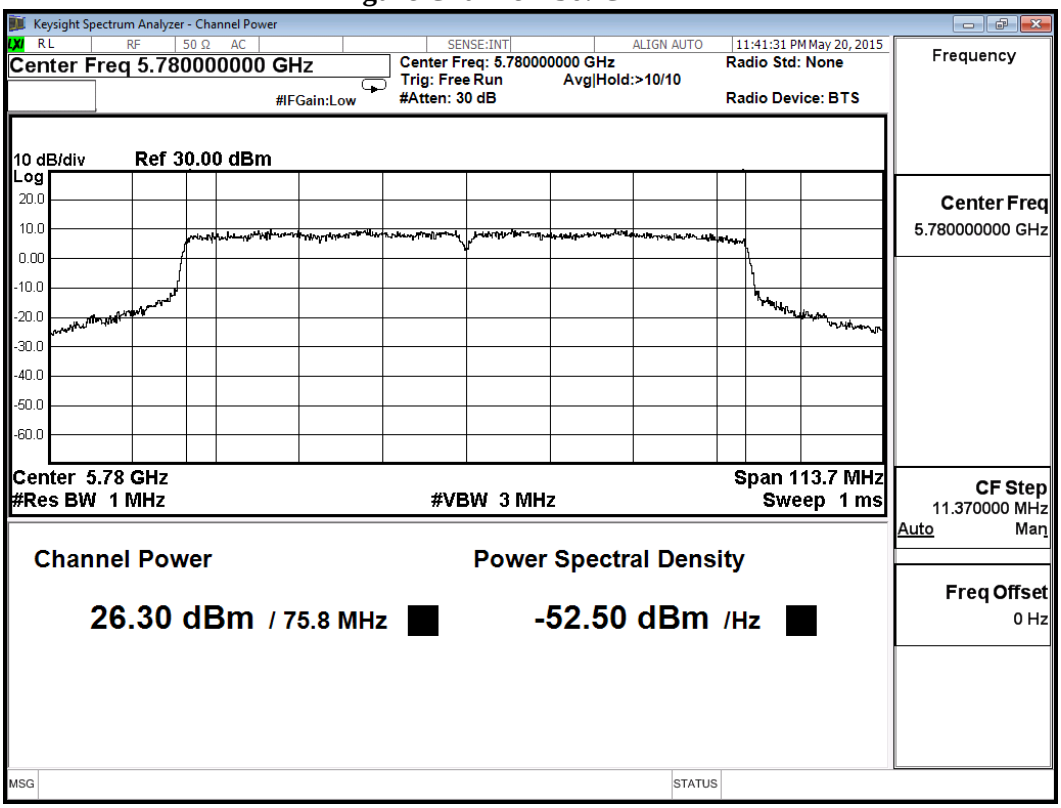
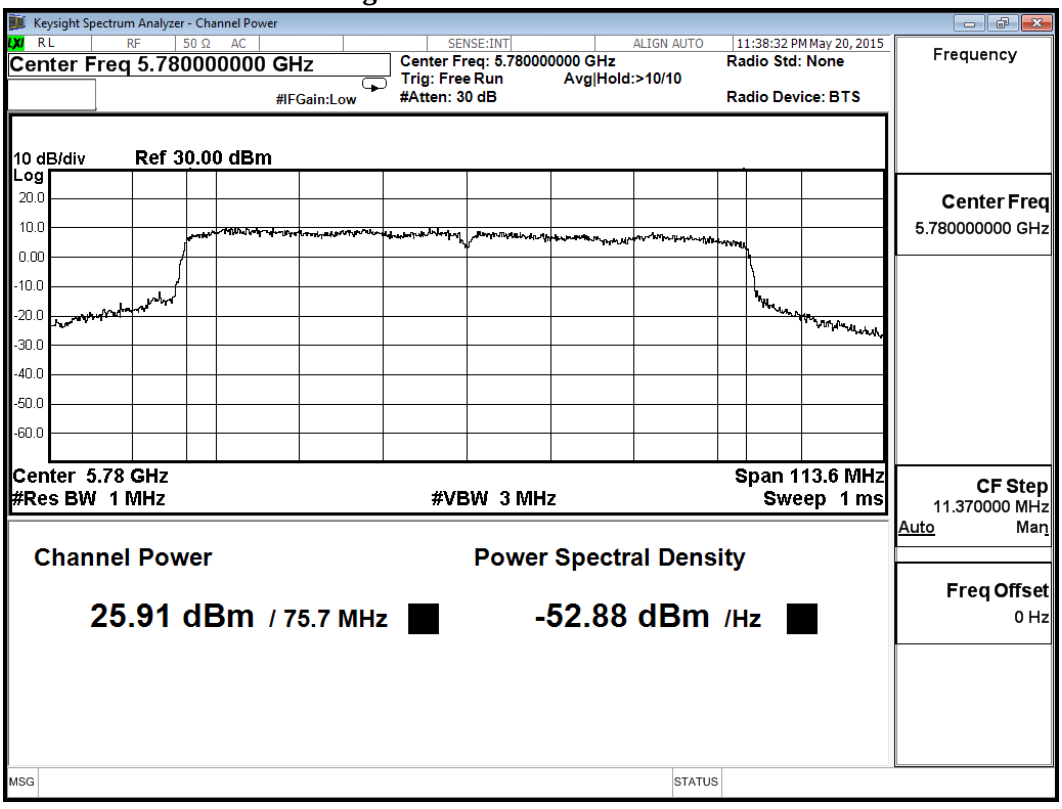


Figure Channel 156: CHAIN B



4. Radiated Emission

4.1. Test Equipment

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

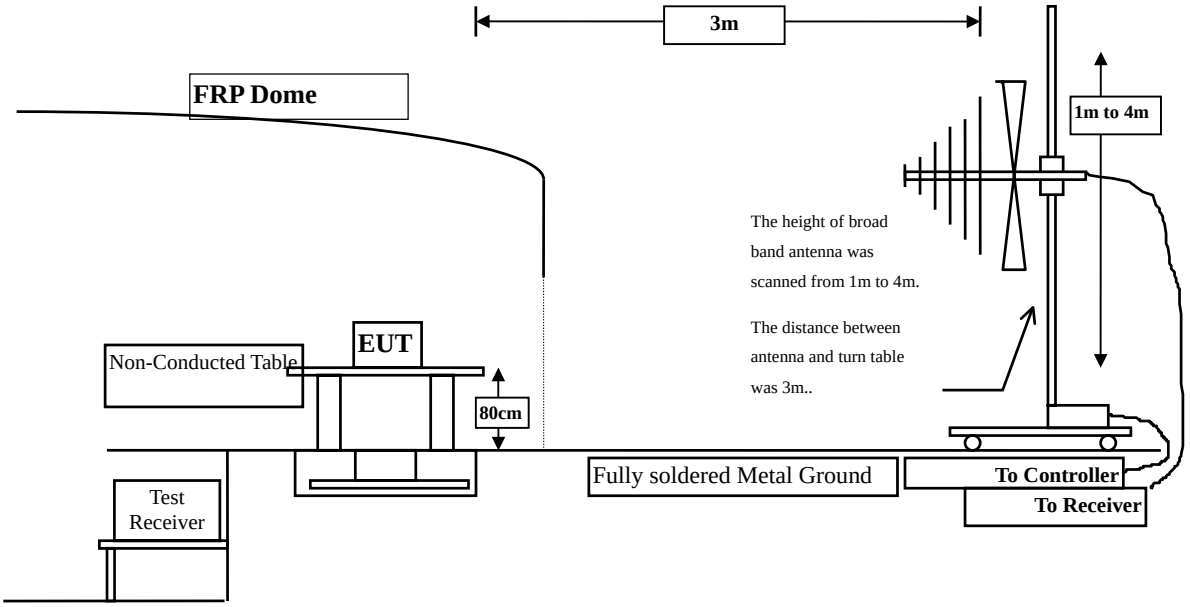
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2014
	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2015
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2014
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2015
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2015
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2015
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

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

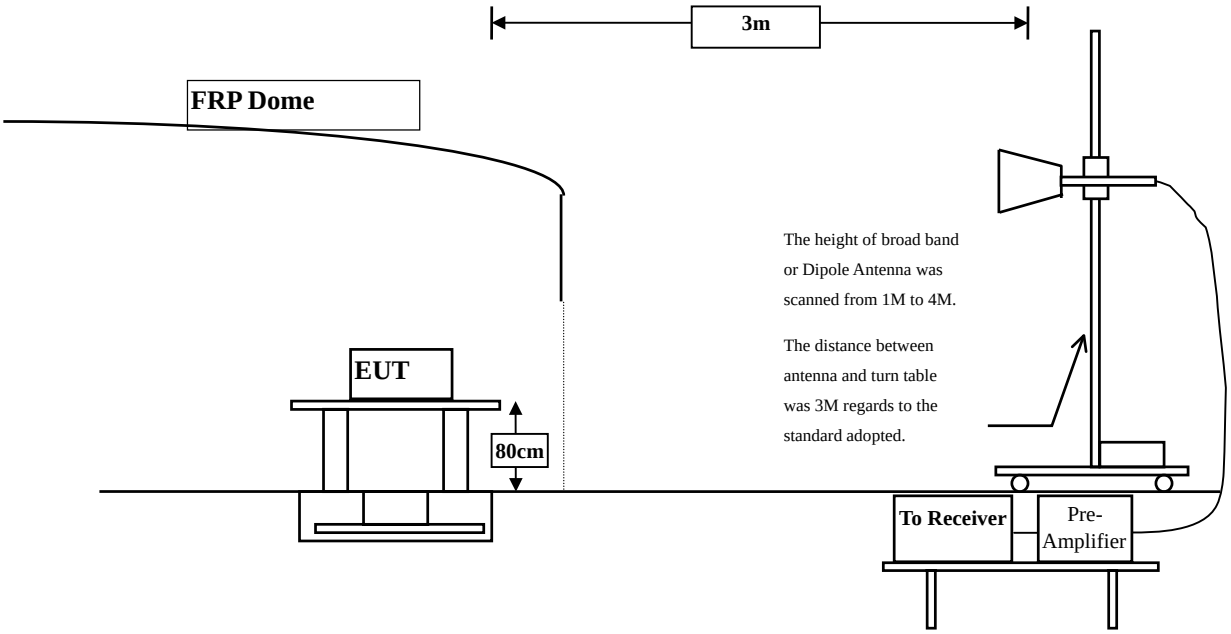
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

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

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

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.
The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.
Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.
The measurement is divided into the Preliminary Measurement and the Final Measurement.
The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.
The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.
The measurement frequency range form 9KHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

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

4.6. Test Result of Radiated Emission

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna) (5745 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11490.000	14.326	39.524	53.849	-20.151	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11490.000	15.842	45.574	61.415	-12.585	74.000
Average Detector:					
11490.000	15.842	31.758	47.599	-6.401	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	14.849	39.010	53.859	-20.141	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11570.000	16.215	46.944	63.158	-10.842	74.000
Average Detector:					
11570.000	16.215	33.112	49.326	-4.674	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	13.179	39.593	52.772	-21.228	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11650.000	14.634	45.329	59.963	-14.037	74.000
Average Detector:					
11650.000	14.634	30.290	44.924	-9.076	54.000

Note:

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

Product : 802.11 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) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	14.326	38.891	53.216	-20.784	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11490.000	15.842	46.913	62.754	-11.246	74.000
Average					
Detector:					
11490.000	15.842	32.511	48.352	-5.648	54.000

Note:

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

Product : 802.11 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) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	14.849	38.601	53.450	-20.550	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11570.000	16.215	48.703	64.917	-9.083	74.000
Average Detector:					
11570.000	16.215	33.934	50.148	-3.852	54.000

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

Product : 802.11 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) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	13.179	39.947	53.126	-20.874	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11650.000	14.634	43.408	58.042	-15.958	74.000
Average Detector:					
11650.000	14.634	30.521	45.155	-8.845	54.000

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

Product : 802.11 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) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	14.402	39.288	53.690	-20.310	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11510.000	15.894	44.222	60.116	-13.884	74.000
Average					
Detector:					
11510.000	15.894	28.747	44.641	-9.359	54.000

Note:

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

Product : 802.11 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) (5795 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11590.000	15.138	38.203	53.341	-20.659	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11590.000	16.461	43.017	59.478	-14.522	74.000
Average Detector:					
11590.000	16.461	29.508	45.969	-8.031	54.000

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

Product : 802.11 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) (5780 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11560.000	14.701	39.031	53.732	-20.268	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11560.000	16.088	36.978	53.066	-20.934	74.000
Average Detector:					
--					

Note:

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

Product : 802.11 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) (5745 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
6128.000	5.416	59.820	65.236	-8.764	74.000
11490.000	14.326	51.610	65.935	-8.065	74.000
Average Detector:					
6128.000	5.416	47.040	52.456	-1.544	54.000
11490.000	14.326	38.490	52.815	-1.185	54.000
Vertical Peak Detector:					
6076.000	3.779	59.110	62.889	-11.111	74.000
11490.000	15.842	52.910	68.751	-5.249	74.000
Average Detector:					
6076.000	3.779	46.170	49.949	-4.051	54.000
11490.000	15.842	36.890	52.731	-1.269	54.000

Note:

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

Product : 802.11 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) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
6110.000	5.500	64.490	69.989	-4.011	74.000
11570.000	14.849	48.520	63.369	-10.631	74.000
Average Detector:					
6110.000	5.500	47.410	52.909	-1.091	54.000
11570.000	14.849	35.530	50.379	-3.621	54.000
Vertical Peak Detector:					
6150.000	4.290	61.150	65.440	-8.560	74.000
11570.000	16.215	49.750	65.964	-8.036	74.000
Average Detector:					
6150.000	4.290	47.770	52.060	-1.940	54.000
11570.000	16.215	36.290	52.504	-1.496	54.000

Note:

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

Product : 802.11 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) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
6150.000	5.313	66.080	71.393	-2.607	74.000
11650.000	13.179	50.420	63.599	-10.401	74.000
Average Detector:					
6150.000	5.313	47.720	53.033	-0.967	54.000
11650.000	13.179	36.020	49.199	-4.801	54.000
Vertical Peak Detector:					
6150.000	4.290	64.180	68.470	-5.530	74.000
11650.000	14.634	51.750	66.384	-7.616	74.000
Average Detector:					
6150.000	4.290	47.850	52.140	-1.860	54.000
11650.000	14.634	37.870	52.504	-1.496	54.000

Note:

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

Product : 802.11 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) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6097.000	5.534	58.350	63.884	-10.116	74.000
11490.000	14.326	48.990	63.315	-10.685	74.000
Average					
Detector:					
6080.000	5.466	43.420	48.886	-5.114	54.000
11570.000	14.849	38.060	52.909	-1.091	54.000
Vertical					
Peak Detector:					
6072.000	3.762	61.890	65.651	-8.349	74.000
11490.000	15.842	51.050	66.891	-7.109	74.000
Average					
Detector:					
6128.000	4.112	48.680	52.792	-1.208	54.000
11490.000	15.842	36.780	52.621	-1.379	54.000

Note:

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

Product : 802.11 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) (5785 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
6096.000	5.530	61.980	67.510	-6.490	74.000
11570.000	14.849	50.570	65.419	-8.581	74.000
Average Detector:					
6097.000	5.534	47.360	52.894	-1.106	54.000
11570.000	14.849	34.750	49.599	-4.401	54.000
Vertical Peak Detector:					
6110.000	3.965	60.820	64.785	-9.215	74.000
11570.000	16.215	51.730	67.944	-6.056	74.000
Average Detector:					
6110.000	3.965	47.870	51.835	-2.165	54.000
11570.000	16.215	36.240	52.454	-1.546	54.000

Note:

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

Product : 802.11 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) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
6151.000	5.309	64.230	69.539	-4.461	74.000
11650.000	13.179	51.270	64.449	-9.551	74.000
Average Detector:					
6151.000	5.309	47.709	53.018	-0.982	54.000
11650.000	13.179	35.440	48.619	-5.381	54.000
Vertical Peak Detector:					
6150.000	4.290	62.550	66.840	-7.160	74.000
11650.000	14.634	52.720	67.354	-6.646	74.000
Average Detector:					
6150.000	4.290	48.650	52.940	-1.060	54.000
11650.000	14.634	37.770	52.404	-1.596	54.000

Note:

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

Product : 802.11 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) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6090.000	5.507	62.460	67.966	-6.034	74.000
11510.000	14.402	52.110	66.512	-7.488	74.000
Average					
Detector:					
6090.000	5.507	47.400	52.906	-1.094	54.000
11510.000	14.402	37.360	51.762	-2.238	54.000
Vertical					
Peak Detector:					
6071.000	3.757	62.280	66.037	-7.963	74.000
11510.000	15.894	52.840	68.734	-5.266	74.000
Average					
Detector:					
6071.000	3.757	49.282	53.039	-0.961	54.000
11510.000	15.894	36.430	52.324	-1.676	54.000

Note:

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

Product : 802.11 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) (5795 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
6097.000	5.534	64.200	69.734	-4.266	74.000
11590.000	15.138	48.630	63.768	-10.232	74.000
Average Detector:					
6097.000	5.534	47.290	52.824	-1.176	54.000
11590.000	15.138	33.940	49.078	-4.922	54.000
Vertical Peak Detector:					
6120.000	4.047	63.170	67.217	-6.783	74.000
11590.000	16.461	50.410	66.871	-7.129	74.000
Average Detector:					
6120.000	4.047	47.080	51.127	-2.873	54.000
11590.000	16.461	36.210	52.671	-1.329	54.000

Note:

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

Product : 802.11 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) (5780 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
6071.000	5.428	61.400	66.829	-7.171	74.000
11560.000	14.701	49.190	63.891	-10.109	74.000
Average Detector:					
6071.000	5.428	46.380	51.809	-2.191	54.000
11560.000	14.701	32.930	47.631	-6.369	54.000
Vertical Peak Detector:					
6153.000	4.310	65.190	69.500	-4.500	74.000
11560.000	16.088	52.710	68.798	-5.202	74.000
Average Detector:					
6153.000	4.310	48.760	53.070	-0.930	54.000
11560.000	16.088	36.570	52.658	-1.342	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 9: Transmit - 802.11a_6Mbps(Omni Antenna) (5745 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11490.000	14.326	38.290	52.615	-21.385	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11490.000	15.842	43.446	59.287	-14.713	74.000
Average Detector:					
11490.000	15.842	28.905	44.746	-9.254	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 9: Transmit - 802.11a_6Mbps(Omni Antenna) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	14.849	38.290	53.139	-20.861	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11570.000	16.215	43.546	59.760	-14.240	74.000
Average					
Detector:					
11570.000	16.215	29.008	45.222	-8.778	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 9: Transmit - 802.11a_6Mbps(Omni Antenna) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	13.179	38.696	51.875	-22.125	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11650.000	14.634	43.578	58.212	-15.788	74.000
Average Detector:					
11650.000	14.634	28.590	43.224	-10.776	54.000

Note:

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

Product : 802.11 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) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	14.326	38.274	52.599	-21.401	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11490.000	15.842	43.472	59.313	-14.687	74.000
Average					
Detector:					
11490.000	15.842	28.423	44.264	-9.736	54.000

Note:

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

Product : 802.11 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) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	14.849	38.272	53.121	-20.879	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11570.000	16.215	43.318	59.532	-14.468	74.000
Average Detector:					
11570.000	16.215	28.242	44.456	-9.544	54.000

Note:

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

Product : 802.11 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) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	13.179	37.899	51.078	-22.922	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11650.000	14.634	43.240	57.874	-16.126	74.000
Average Detector:					
11650.000	14.634	28.219	42.853	-11.147	54.000

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

Product : 802.11 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) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	15.894	37.882	53.776	-20.224	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11510.000	15.894	42.177	58.071	-15.929	74.000
Average					
Detector:					
11510.000	15.894	27.124	43.018	-10.982	54.000

Note:

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

Product : 802.11 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) (5795 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11590.000	15.138	38.595	53.733	-20.267	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11590.000	16.461	41.155	57.616	-16.384	74.000
Average Detector:					
11590.000	16.461	25.938	42.399	-11.601	54.000

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

Product : 802.11 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) (5780 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11560.000	14.701	37.770	52.471	-21.529	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11560.000	16.088	39.990	56.078	-17.922	74.000
Average Detector:					
11560.000	16.088	25.030	41.118	-12.882	54.000

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 13: Transmit - 802.11a_6Mbps(Panel Antenna) (5745 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6071.000	5.428	63.030	68.459	-5.541	74.000
11490.000	46.318	42.930	57.255	-16.745	74.000
Average					
Detector:					
6071.000	5.428	47.600	53.029	-0.971	54.000
11490.000	14.326	28.640	42.965	-11.035	54.000
Vertical					
Peak Detector:					
6072.000	3.762	64.630	68.391	-5.609	74.000
11490.000	15.842	50.360	66.201	-7.799	74.000
Average					
Detector:					
6072.000	3.762	49.190	52.951	-1.049	54.000
11490.000	15.842	34.890	50.731	-3.269	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 13: Transmit - 802.11a_6Mbps(Panel Antenna) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6094.000	5.522	62.710	68.232	-5.768	74.000
11570.000	14.849	51.680	66.529	-7.471	74.000
Average					
Detector:					
6094.000	5.522	47.350	52.872	-1.128	54.000
11570.000	14.849	36.780	51.629	-2.371	54.000
Vertical					
Peak Detector:					
6110.000	3.965	64.350	68.315	-5.685	74.000
11570.000	16.215	46.980	63.194	-10.806	74.000
Average					
Detector:					
6110.000	3.965	49.130	53.095	-0.905	54.000
11570.000	16.215	32.170	48.384	-5.616	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 13: Transmit - 802.11a_6Mbps(Panel Antenna) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6149.000	5.319	64.070	69.388	-4.612	74.000
11650.000	13.179	46.770	59.949	-14.051	74.000
Average					
Detector:					
6149.000	5.319	47.490	52.808	-1.192	54.000
11650.000	13.179	32.030	45.209	-8.791	54.000
Vertical					
Peak Detector:					
6139.000	4.202	65.770	69.972	-4.028	74.000
11650.000	14.634	44.690	59.324	-14.676	74.000
Average					
Detector:					
6139.000	4.202	48.790	52.992	-1.008	54.000
11650.000	14.634	30.870	45.504	-8.496	54.000

Note:

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

Product : 802.11 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) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6071.000	5.428	61.730	67.159	-6.841	74.000
11490.000	14.326	48.370	62.695	-11.305	74.000
Average					
Detector:					
6071.000	5.428	47.430	52.859	-1.141	54.000
11490.000	14.326	30.890	45.215	-8.785	54.000
Vertical					
Peak Detector:					
6071.000	3.757	65.200	68.957	-5.043	74.000
11490.000	15.842	47.890	63.731	-10.269	74.000
Average					
Detector:					
6071.000	3.757	49.240	52.997	-1.003	54.000
11490.000	15.842	33.720	49.561	-4.439	54.000

Note:

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

Product : 802.11 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) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
6111.000	5.494	64.920	70.415	-3.585	74.000
11570.000	14.849	49.550	64.399	-9.601	74.000
Average Detector:					
6111.000	5.494	47.560	53.055	-0.945	54.000
11570.000	14.849	38.270	53.119	-0.881	54.000
Vertical Peak Detector:					
6098.000	3.875	63.860	67.735	-6.265	74.000
11570.000	16.215	45.860	62.074	-11.926	74.000
Average Detector:					
6098.000	3.875	48.850	52.725	-1.275	54.000
11570.000	16.215	31.690	47.904	-6.096	54.000

Note:

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

Product : 802.11 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) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
6149.000	5.319	65.010	70.328	-3.672	74.000
11650.000	13.179	45.150	58.329	-15.671	74.000
Average Detector:					
6150.000	5.313	47.710	53.023	-0.977	54.000
11650.000	13.179	30.510	43.689	-10.311	54.000
Vertical Peak Detector:					
6139.000	4.202	63.700	67.902	-6.098	74.000
11650.000	14.634	46.010	60.644	-13.356	74.000
Average Detector:					
6139.000	4.202	48.570	52.772	-1.228	54.000
11650.000	14.634	31.770	46.404	-7.596	54.000

Note:

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

Product : 802.11 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) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6071.000	5.428	62.930	68.359	-5.641	74.000
11510.000	14.402	48.510	62.912	-11.088	74.000
Average					
Detector:					
6071.000	5.428	47.420	52.849	-1.151	54.000
11510.000	14.402	32.060	46.462	-7.538	54.000
Vertical					
Peak Detector:					
6083.000	3.810	64.310	68.120	-5.880	74.000
11510.000	15.894	44.250	60.144	-13.856	74.000
Average					
Detector:					
6083.000	3.810	49.120	52.930	-1.070	54.000
11510.000	15.894	29.960	45.854	-8.146	54.000

Note:

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

Product : 802.11 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) (5795 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
6129.000	5.412	62.450	67.862	-6.138	74.000
11590.000	15.138	49.770	64.908	-9.092	74.000
Average Detector:					
6129.000	5.412	47.350	52.762	-1.238	54.000
11590.000	15.138	33.360	48.498	-5.502	54.000
Vertical Peak Detector:					
6121.000	4.055	63.820	67.875	-6.125	74.000
11590.000	16.461	41.830	58.291	-15.709	74.000
Average Detector:					
6121.000	4.055	48.840	52.895	-1.105	54.000
11590.000	16.461	27.480	43.941	-10.059	54.000

Note:

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

Product : 802.11 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) (5780 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
6071.000	5.428	63.170	68.599	-5.401	74.000
11560.000	14.701	47.770	62.471	-11.529	74.000
Average Detector:					
6071.000	5.428	47.380	52.809	-1.191	54.000
11560.000	14.701	33.170	47.871	-6.129	54.000
Vertical Peak Detector:					
6082.000	3.806	66.290	70.095	-3.905	74.000
11560.000	16.088	42.110	58.198	-15.802	74.000
Average Detector:					
6082.000	3.806	49.060	52.865	-1.135	54.000
11560.000	16.088	26.880	42.968	-11.032	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 17: Transmit - 802.11a_6Mbps(Sector Antenna) (5745 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6070.000	5.425	56.200	61.625	-12.375	74.000
11490.000	14.326	48.310	62.635	-11.365	74.000
Average					
Detector:					
6070.000	5.425	43.040	48.465	-5.535	54.000
11490.000	14.326	33.620	47.945	-6.055	54.000
Vertical					
Peak Detector:					
6059.000	3.708	59.810	63.518	-10.482	74.000
11490.000	15.842	43.710	59.551	-14.449	74.000
Average					
Detector:					
6059.000	3.708	47.390	51.098	-2.902	54.000
11490.000	15.842	29.480	45.321	-8.679	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 17: Transmit - 802.11a_6Mbps(Sector Antenna) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
6112.000	5.490	58.670	64.160	-9.840	74.000
11570.000	14.849	45.820	60.669	-13.331	74.000
Average Detector:					
6112.000	5.490	45.900	51.390	-2.610	54.000
11570.000	14.849	31.760	46.609	-7.391	54.000
Vertical Peak Detector:					
6111.000	3.973	62.670	66.643	-7.357	74.000
11570.000	16.215	46.800	63.014	-10.986	74.000
Average Detector:					
6111.000	3.973	49.300	53.273	-0.727	54.000
11570.000	16.215	31.760	47.974	-6.026	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 17: Transmit - 802.11a_6Mbps(Sector Antenna) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
6138.000	5.371	62.280	67.650	-6.350	74.000
11650.000	13.179	47.050	60.229	-13.771	74.000
Average Detector:					
6138.000	5.371	48.110	53.480	-0.520	54.000
11650.000	13.179	29.900	43.079	-10.921	54.000
Vertical Peak Detector:					
6150.000	4.290	63.400	67.690	-6.310	74.000
11650.000	14.634	47.060	61.694	-12.306	74.000
Average Detector:					
6150.000	4.290	49.220	53.510	-0.490	54.000
11650.000	14.634	32.290	46.924	-7.076	54.000

Note:

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

Product : 802.11 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) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6060.000	5.387	56.790	62.177	-11.823	74.000
11490.000	14.326	49.260	63.585	-10.415	74.000
Average					
Detector:					
6060.000	5.387	43.820	49.207	-4.793	54.000
11490.000	14.326	34.690	49.015	-4.985	54.000
Vertical					
Peak Detector:					
6071.000	3.757	60.940	64.697	-9.303	74.000
11490.000	15.842	44.370	60.211	-13.789	74.000
Average					
Detector:					
6071.000	3.757	47.690	51.447	-2.553	54.000
11490.000	15.842	31.040	46.881	-7.119	54.000

Note:

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

Product : 802.11 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) (5785 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
6170.000	5.176	58.410	63.586	-10.414	74.000
11570.000	14.849	46.210	61.059	-12.941	74.000
Average Detector:					
6111.000	3.973	45.700	49.673	-4.327	54.000
11570.000	14.849	31.880	46.729	-7.271	54.000
Vertical Peak Detector:					
6111.000	3.973	60.080	64.053	-9.947	74.000
11570.000	16.215	44.860	61.074	-12.926	74.000
Average Detector:					
6111.000	3.973	47.620	51.593	-2.407	54.000
11570.000	16.215	31.020	47.234	-6.766	54.000

Note:

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

Product : 802.11 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) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
6150.000	5.313	60.260	65.573	-8.427	74.000
11650.000	13.179	43.670	56.849	-17.151	74.000
Average Detector:					
6150.000	5.313	46.270	51.583	-2.417	54.000
11650.000	13.179	29.290	42.469	-11.531	54.000
Vertical Peak Detector:					
6149.000	4.282	59.510	63.792	-10.208	74.000
11650.000	14.634	43.340	57.974	-16.026	74.000
Average Detector:					
6149.000	4.282	46.330	50.612	-3.388	54.000
11650.000	14.634	29.780	44.414	-9.586	54.000

Note:

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

Product : 802.11 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) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
6071.000	5.428	56.190	61.619	-12.381	74.000
11510.000	14.402	43.920	58.322	-15.678	74.000
Average					
Detector:					
6071.000	5.428	42.050	47.479	-6.521	54.000
11510.000	14.402	29.450	43.852	-10.148	54.000
Vertical					
Peak Detector:					
6072.000	3.762	56.140	59.901	-14.099	74.000
11510.000	15.894	42.580	58.474	-15.526	74.000
Average					
Detector:					
6072.000	3.762	42.220	45.981	-8.019	54.000
11510.000	15.894	28.000	43.894	-10.106	54.000

Note:

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

Product : 802.11 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) (5795 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
6124.000	5.435	57.390	62.825	-11.175	74.000
11590.000	15.138	42.940	58.078	-15.922	74.000
Average Detector:					
6124.000	5.435	43.580	49.015	-4.985	54.000
11590.000	15.138	27.470	42.608	-11.392	54.000
Vertical Peak Detector:					
6121.000	4.055	58.900	62.955	-11.045	74.000
11590.000	16.461	41.950	58.411	-15.589	74.000
Average Detector:					
6121.000	4.055	44.560	48.615	-5.385	54.000
11590.000	16.461	28.010	44.471	-9.529	54.000

Note:

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

Product : 802.11 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) (5780 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
6124.000	5.435	59.470	64.905	-9.095	74.000
11560.000	14.701	43.330	58.031	-15.969	74.000
Average Detector:					
6124.000	5.435	43.710	49.145	-4.855	54.000
11560.000	14.701	27.860	42.561	-11.439	54.000
Vertical Peak Detector:					
6072.000	3.762	58.040	61.801	-12.199	74.000
11560.000	16.088	42.800	58.888	-15.112	74.000
Average Detector:					
6072.000	3.762	42.330	46.091	-7.909	54.000
11560.000	16.088	26.910	42.998	-11.002	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
194.900	-10.473	46.951	36.478	-7.022	43.500
323.910	-4.531	42.976	38.445	-7.555	46.000
406.360	0.628	38.814	39.443	-6.557	46.000
517.910	3.201	33.176	36.377	-9.623	46.000
714.820	3.801	36.563	40.364	-5.636	46.000
776.900	5.167	33.696	38.863	-7.137	46.000
Vertical					
64.920	-12.387	43.026	30.639	-9.361	40.000
259.890	-4.855	42.874	38.019	-7.981	46.000
324.880	-3.120	43.238	40.118	-5.882	46.000
517.910	0.571	33.176	33.747	-12.253	46.000
714.820	-1.629	36.563	34.934	-11.066	46.000
900.090	1.958	27.957	29.915	-16.085	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
99.840	-9.873	48.468	38.595	-4.905	43.500
226.910	-9.203	45.362	36.159	-9.841	46.000
403.450	0.917	35.009	35.926	-10.074	46.000
583.870	3.296	31.474	34.770	-11.230	46.000
746.830	3.911	32.920	36.831	-9.169	46.000
970.900	7.347	24.071	31.418	-22.582	54.000
Vertical					
65.890	-12.431	47.352	34.921	-5.079	40.000
226.910	-6.213	45.362	39.149	-6.851	46.000
387.930	-0.717	38.584	37.867	-8.133	46.000
518.880	0.763	38.032	38.795	-7.205	46.000
700.270	-0.342	33.894	33.552	-12.448	46.000
900.090	1.958	28.722	30.680	-15.320	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
99.840	-9.873	48.780	38.907	-4.593	43.500
323.910	-4.531	43.405	38.874	-7.126	46.000
404.420	0.889	35.775	36.664	-9.336	46.000
517.910	3.201	32.362	35.563	-10.437	46.000
725.490	3.838	32.881	36.718	-9.282	46.000
889.420	6.654	24.902	31.556	-14.444	46.000
Vertical					
193.930	-5.664	44.260	38.596	-4.904	43.500
323.910	-3.341	43.405	40.064	-5.936	46.000
388.900	-0.726	37.298	36.572	-9.428	46.000
517.910	0.571	33.365	33.936	-12.064	46.000
714.820	-1.629	35.838	34.209	-11.791	46.000
900.090	1.958	28.589	30.547	-15.453	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Dipole Antenna) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
99.840	-9.873	48.714	38.841	-4.659	43.500
226.910	-9.203	45.332	36.129	-9.871	46.000
324.880	-4.510	43.534	39.024	-6.976	46.000
584.840	3.251	33.389	36.640	-9.360	46.000
776.900	5.167	35.437	40.604	-5.396	46.000
927.250	7.030	26.145	33.175	-12.825	46.000
Vertical					
194.900	-5.673	44.256	38.583	-4.917	43.500
324.880	-3.120	44.112	40.992	-5.008	46.000
518.880	0.763	38.236	38.999	-7.001	46.000
584.840	-2.229	33.389	31.160	-14.840	46.000
779.810	2.745	34.617	37.362	-8.638	46.000
805.030	3.583	30.312	33.895	-12.105	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11a_6Mbps(Grid DISH Antenna) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
194.900	-10.473	48.076	37.603	-5.897	43.500
323.910	-4.531	40.897	36.366	-9.634	46.000
397.630	0.826	39.457	40.283	-5.717	46.000
584.840	3.251	31.364	34.615	-11.385	46.000
714.820	3.801	37.007	40.808	-5.192	46.000
914.640	6.410	29.041	35.451	-10.549	46.000
Vertical					
66.860	-12.435	45.065	32.630	-7.370	40.000
259.890	-4.855	42.711	37.856	-8.144	46.000
518.880	0.763	36.802	37.565	-8.435	46.000
702.210	-0.587	37.478	36.891	-9.109	46.000
794.360	2.657	32.234	34.891	-11.109	46.000
961.200	3.310	24.582	27.892	-26.108	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Grid DISH Antenna) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
194.900	-10.473	46.195	35.722	-7.778	43.500
258.920	-5.440	43.739	38.299	-7.701	46.000
356.890	-1.000	37.560	36.560	-9.440	46.000
517.910	3.201	35.023	38.224	-7.776	46.000
701.240	2.759	37.011	39.770	-6.230	46.000
916.580	6.470	28.906	35.376	-10.624	46.000
Vertical					
58.130	-11.204	39.921	28.717	-11.283	40.000
259.890	-4.855	42.756	37.901	-8.099	46.000
519.850	0.954	35.862	36.816	-9.184	46.000
701.240	-0.541	37.011	36.470	-9.530	46.000
778.840	2.580	35.253	37.833	-8.167	46.000
970.900	2.967	26.217	29.184	-24.816	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band)(Grid DISH Antenna) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
65.890	-13.051	45.530	32.479	-7.521	40.000
193.930	-10.284	45.119	34.835	-8.665	43.500
407.330	0.433	37.961	38.394	-7.606	46.000
584.840	3.251	30.715	33.966	-12.034	46.000
796.300	6.389	31.275	37.664	-8.336	46.000
914.640	6.410	29.696	36.106	-9.894	46.000
Vertical					
65.890	-12.431	45.530	33.099	-6.901	40.000
259.890	-4.855	43.365	38.510	-7.490	46.000
517.910	0.571	40.670	41.241	-4.759	46.000
666.320	-0.951	35.946	34.995	-11.005	46.000
779.810	2.745	32.695	35.440	-10.560	46.000
900.090	1.958	28.711	30.669	-15.331	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 8: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Grid DISH Antenna) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
193.930	-10.284	47.100	36.816	-6.684	43.500
259.890	-5.455	42.134	36.679	-9.321	46.000
405.390	0.794	38.015	38.809	-7.191	46.000
582.900	3.351	30.501	33.852	-12.148	46.000
720.640	3.826	35.410	39.236	-6.764	46.000
926.280	6.832	28.325	35.157	-10.843	46.000
Vertical					
64.920	-12.387	44.710	32.323	-7.677	40.000
292.870	-5.136	44.004	38.868	-7.132	46.000
517.910	0.571	38.311	38.882	-7.118	46.000
697.360	0.691	31.685	32.376	-13.624	46.000
794.360	2.657	32.234	34.891	-11.109	46.000
930.160	3.830	25.104	28.934	-17.066	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 9: Transmit - 802.11a_6Mbps(Omni Antenna) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
66.860	-13.595	41.046	27.451	-12.549	40.000
258.920	-5.440	44.520	39.080	-6.920	46.000
387.930	1.083	39.276	40.359	-5.641	46.000
517.910	3.201	39.028	42.229	-3.771	46.000
711.910	3.788	35.442	39.230	-6.770	46.000
985.450	8.238	24.621	32.859	-21.141	54.000
Vertical					
99.840	-6.063	44.136	38.073	-5.427	43.500
258.920	-4.900	45.490	40.590	-5.410	46.000
299.660	-4.061	41.077	37.016	-8.984	46.000
517.910	0.571	36.468	37.039	-8.961	46.000
746.830	1.491	35.898	37.389	-8.611	46.000
897.180	0.937	31.945	32.882	-13.118	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 10: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Omni Antenna) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
99.840	-9.873	44.869	34.996	-8.504	43.500
259.890	-5.455	43.592	38.137	-7.863	46.000
356.890	-1.000	40.573	39.573	-6.427	46.000
517.910	3.201	35.235	38.436	-7.564	46.000
711.910	3.788	35.479	39.267	-6.733	46.000
970.900	7.347	26.715	34.062	-19.938	54.000
Vertical					
99.840	-6.063	44.869	38.806	-4.694	43.500
258.920	-4.900	44.053	39.153	-6.847	46.000
387.930	-0.717	36.870	36.153	-9.847	46.000
517.910	0.571	36.068	36.639	-9.361	46.000
776.900	2.067	33.220	35.287	-10.713	46.000
947.620	3.231	26.313	29.544	-16.456	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 11: Transmit - 802.11n-40BW_30Mbps(5G Band)(Omni Antenna) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
99.840	-9.873	44.869	34.996	-8.504	43.500
322.940	-4.536	36.088	31.553	-14.447	46.000
405.390	0.794	36.785	37.579	-8.421	46.000
517.910	3.201	36.068	39.269	-6.731	46.000
711.910	3.788	35.479	39.267	-6.733	46.000
970.900	7.347	26.715	34.062	-19.938	54.000
Vertical					
99.840	-6.063	41.998	35.935	-7.565	43.500
258.920	-4.900	44.733	39.833	-6.167	46.000
387.930	-0.717	35.082	34.365	-11.635	46.000
517.910	0.571	30.388	30.959	-15.041	46.000
612.970	1.872	28.271	30.143	-15.857	46.000
967.990	3.907	23.436	27.343	-26.657	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 12: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Omni Antenna) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
193.930	-10.284	44.141	33.857	-9.643	43.500
389.870	0.998	41.135	42.132	-3.868	46.000
517.910	3.201	36.316	39.517	-6.483	46.000
711.910	3.788	37.272	41.060	-4.940	46.000
809.880	6.266	31.426	37.692	-8.308	46.000
984.480	8.098	24.321	32.419	-21.581	54.000
Vertical					
60.070	-11.386	47.062	35.676	-4.324	40.000
199.750	-5.717	42.072	36.355	-7.145	43.500
323.910	-3.341	41.938	38.597	-7.403	46.000
517.910	0.571	31.246	31.817	-14.183	46.000
776.900	2.067	32.136	34.203	-11.797	46.000
951.500	3.083	26.323	29.406	-16.594	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 13: Transmit - 802.11a_6Mbps(Panel Antenna) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
99.840	-9.873	44.948	35.075	-8.425	43.500
298.690	-4.764	41.506	36.742	-9.258	46.000
517.910	3.201	36.231	39.432	-6.568	46.000
711.910	3.788	35.625	39.413	-6.587	46.000
794.360	6.387	35.770	42.157	-3.843	46.000
971.870	7.268	26.653	33.921	-20.079	54.000
Vertical					
99.840	-6.063	44.948	38.885	-4.615	43.500
193.930	-5.664	42.706	37.042	-6.458	43.500
389.870	-0.732	37.851	37.118	-8.882	46.000
616.850	1.216	30.826	32.042	-13.958	46.000
794.360	2.657	35.770	38.427	-7.573	46.000
969.930	3.896	25.648	29.544	-24.456	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 14: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Panel Antenna) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
198.780	-9.958	43.749	33.791	-9.709	43.500
387.930	1.083	37.159	38.242	-7.758	46.000
612.970	3.262	28.360	31.622	-14.378	46.000
688.630	3.478	34.231	37.708	-8.292	46.000
779.810	5.205	33.327	38.532	-7.468	46.000
984.480	8.098	26.144	34.242	-19.758	54.000
Vertical					
99.840	-6.063	42.154	36.091	-7.409	43.500
258.920	-4.900	44.430	39.530	-6.470	46.000
389.870	-0.732	39.618	38.885	-7.115	46.000
517.910	0.571	39.278	39.849	-6.151	46.000
688.630	2.298	34.231	36.528	-9.472	46.000
779.810	2.745	33.327	36.072	-9.928	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 15: Transmit - 802.11n-40BW_30Mbps(5G Band)(Panel Antenna) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
99.840	-9.873	42.354	32.481	-11.019	43.500
258.920	-5.440	46.225	40.785	-5.215	46.000
387.930	1.083	41.376	42.459	-3.541	46.000
714.820	3.801	34.516	38.317	-7.683	46.000
776.900	5.167	33.661	38.828	-7.172	46.000
984.480	8.098	26.144	34.242	-19.758	54.000
Vertical					
99.840	-6.063	41.433	35.370	-8.130	43.500
199.750	-5.717	45.197	39.480	-4.020	43.500
291.900	-5.272	43.604	38.332	-7.668	46.000
519.850	0.954	28.521	29.475	-16.525	46.000
779.810	2.745	25.844	28.589	-17.411	46.000
967.020	3.889	22.447	26.336	-27.664	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 16: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Panel Antenna) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
99.840	-9.873	45.208	35.335	-8.165	43.500
259.890	-5.455	43.016	37.561	-8.439	46.000
388.900	1.034	38.824	39.858	-6.142	46.000
519.850	3.204	35.858	39.062	-6.938	46.000
711.910	3.788	37.272	41.060	-4.940	46.000
986.420	8.189	25.658	33.847	-20.153	54.000
Vertical					
54.250	-11.277	44.988	33.712	-6.288	40.000
258.920	-4.900	44.559	39.659	-6.341	46.000
389.870	-0.732	41.135	40.402	-5.598	46.000
682.810	1.817	32.925	34.742	-11.258	46.000
809.880	3.026	31.426	34.452	-11.548	46.000
964.110	3.722	25.654	29.376	-24.624	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 17: Transmit - 802.11a_6Mbps(Sector Antenna) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
60.070	-11.936	42.080	30.144	-9.856	40.000
226.910	-9.203	43.086	33.883	-12.117	46.000
324.880	-4.510	40.391	35.881	-10.119	46.000
517.910	3.201	34.739	37.940	-8.060	46.000
714.820	3.801	38.112	41.913	-4.087	46.000
900.090	5.818	31.546	37.364	-8.636	46.000
Vertical					
76.560	-6.510	38.356	31.846	-8.154	40.000
193.930	-5.664	44.922	39.258	-4.242	43.500
517.910	0.571	34.739	35.310	-10.690	46.000
779.810	2.745	35.352	38.097	-7.903	46.000
900.090	1.958	31.546	33.504	-12.496	46.000
970.900	2.967	25.977	28.944	-25.056	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 18: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Sector Antenna) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
62.010	-12.187	44.918	32.731	-7.269	40.000
289.960	-5.470	33.419	27.949	-18.051	46.000
387.930	1.083	33.760	34.843	-11.157	46.000
517.910	3.201	38.358	41.559	-4.441	46.000
711.910	3.788	36.324	40.112	-5.888	46.000
900.090	5.818	30.214	36.032	-9.968	46.000
Vertical					
76.560	-6.510	41.421	34.911	-5.089	40.000
259.890	-4.855	42.542	37.687	-8.313	46.000
517.910	0.571	38.358	38.929	-7.071	46.000
681.840	1.622	34.483	36.105	-9.895	46.000
779.810	2.745	34.180	36.925	-9.075	46.000
900.090	1.958	31.993	33.951	-12.049	46.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 19: Transmit - 802.11n-40BW_30Mbps(5G Band)(Sector Antenna) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
64.920	-12.587	44.220	31.633	-8.367	40.000
194.900	-10.473	41.330	30.857	-12.643	43.500
356.890	-1.000	39.447	38.447	-7.553	46.000
581.930	3.408	29.407	32.815	-13.185	46.000
779.810	5.205	34.180	39.385	-6.615	46.000
900.090	5.818	31.993	37.811	-8.189	46.000
Vertical					
62.010	-11.777	45.822	34.045	-5.955	40.000
292.870	-5.136	45.167	40.031	-5.969	46.000
517.910	0.571	37.112	37.683	-8.317	46.000
614.910	1.701	31.692	33.393	-12.607	46.000
843.830	2.420	28.449	30.869	-15.131	46.000
965.080	3.832	23.958	27.790	-26.210	54.000

Note:

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

Product : 802.11 ac PCIe Module
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 20: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Sector Antenna) (5780MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
58.130	-11.874	43.114	31.240	-8.760	40.000
193.930	-10.284	42.867	32.583	-10.917	43.500
389.870	0.998	38.885	39.882	-6.118	46.000
517.910	3.201	35.723	38.924	-7.076	46.000
718.700	3.818	35.728	39.546	-6.454	46.000
915.610	6.410	30.283	36.693	-9.307	46.000
Vertical					
82.380	-4.523	38.595	34.072	-5.928	40.000
194.900	-5.673	42.834	37.161	-6.339	43.500
392.780	-1.210	39.822	38.612	-7.388	46.000
517.910	0.571	38.833	39.404	-6.596	46.000
714.820	-1.629	37.581	35.952	-10.048	46.000
912.700	-0.170	30.436	30.266	-15.734	46.000

Note:

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

5. RF Antenna conducted test

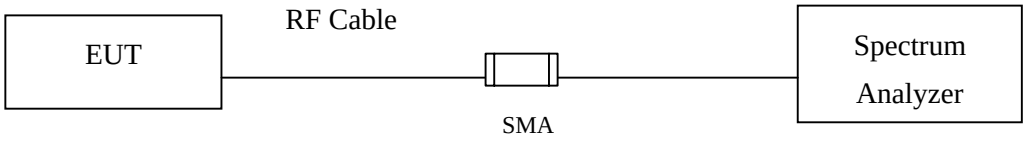
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

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

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

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

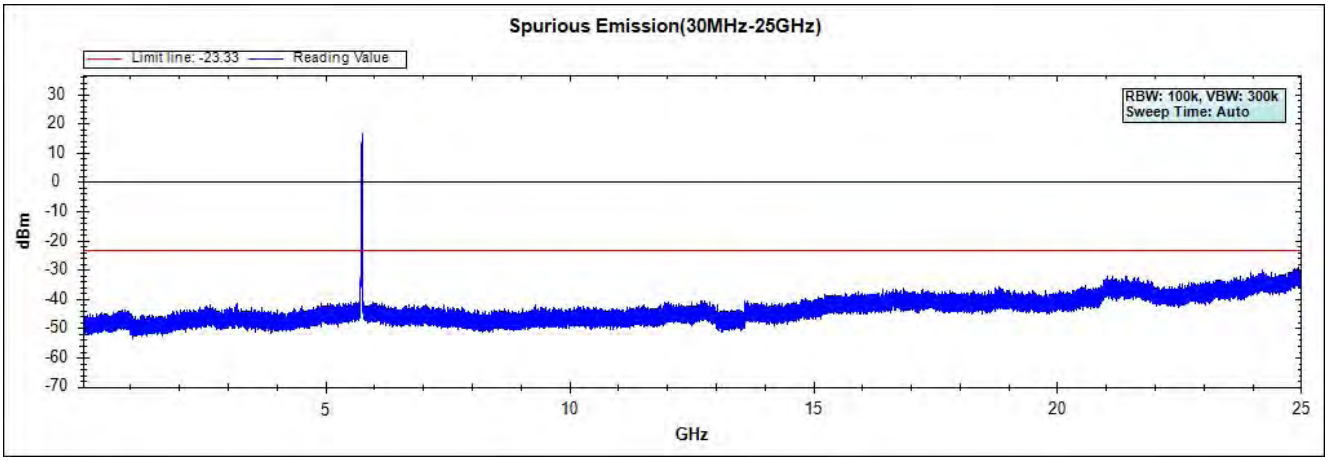
5.5. Uncertainty

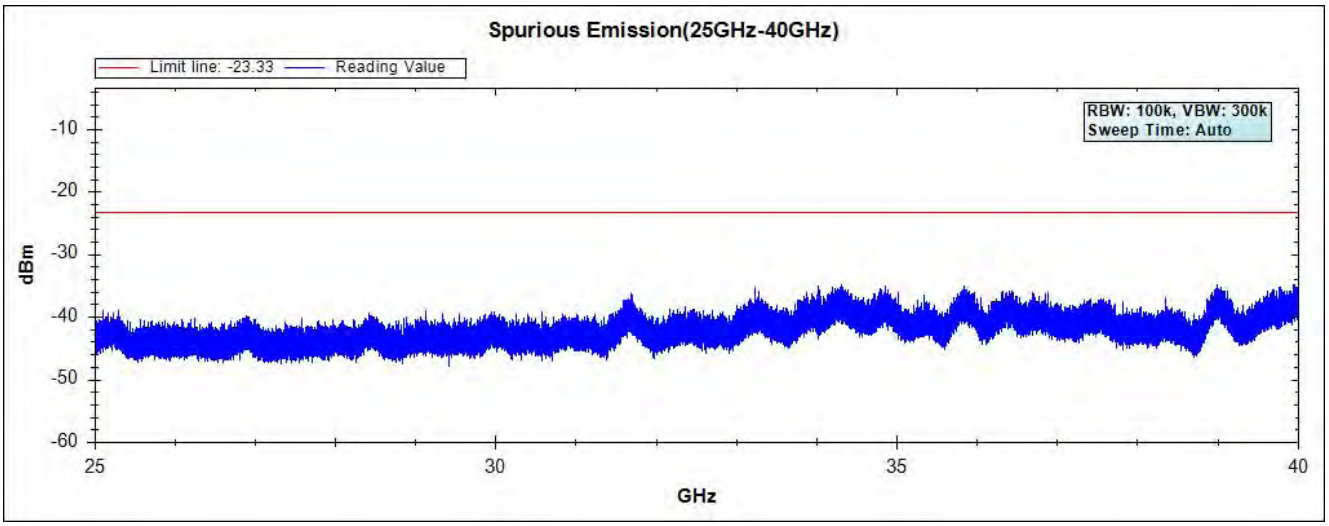
The measurement uncertainty
Conducted is defined as ± 1.27dB

5.6. Test Result of RF antenna conducted test

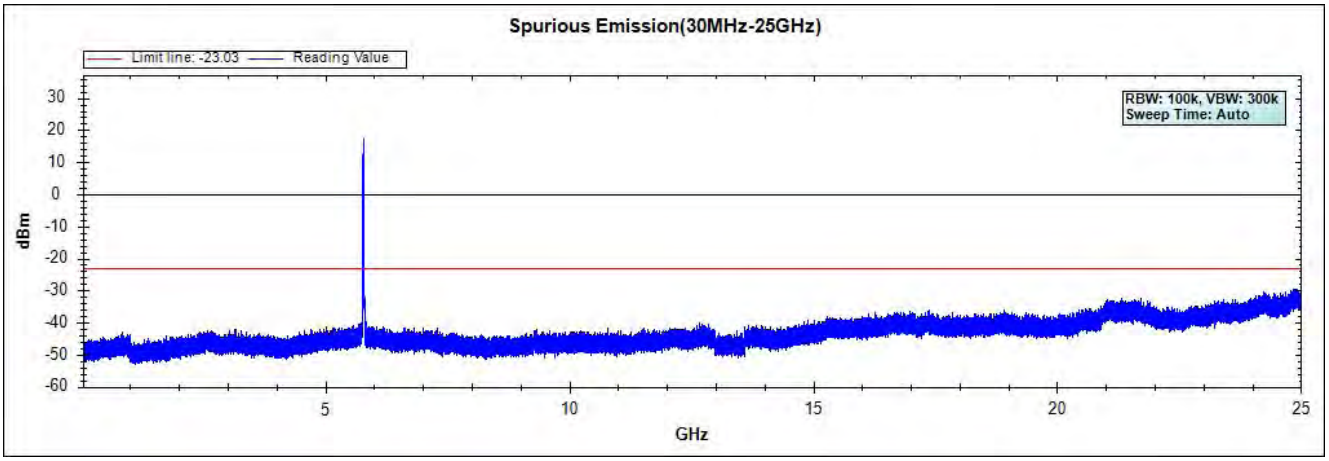
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna)

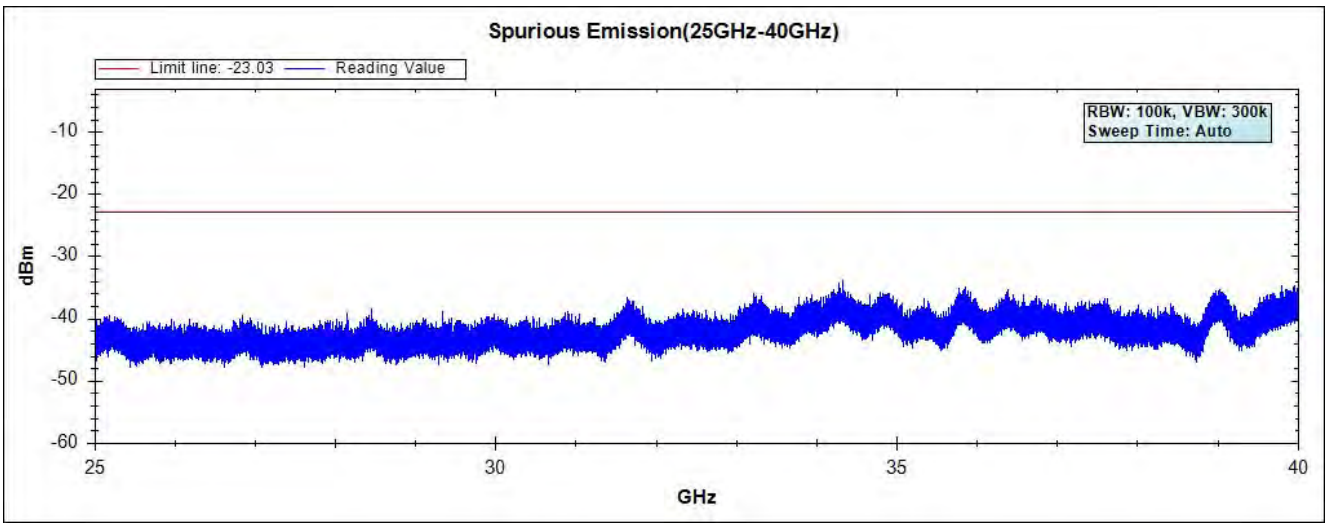
Channel 149 (5745MHz) 30MHz -40GHz-Chain A



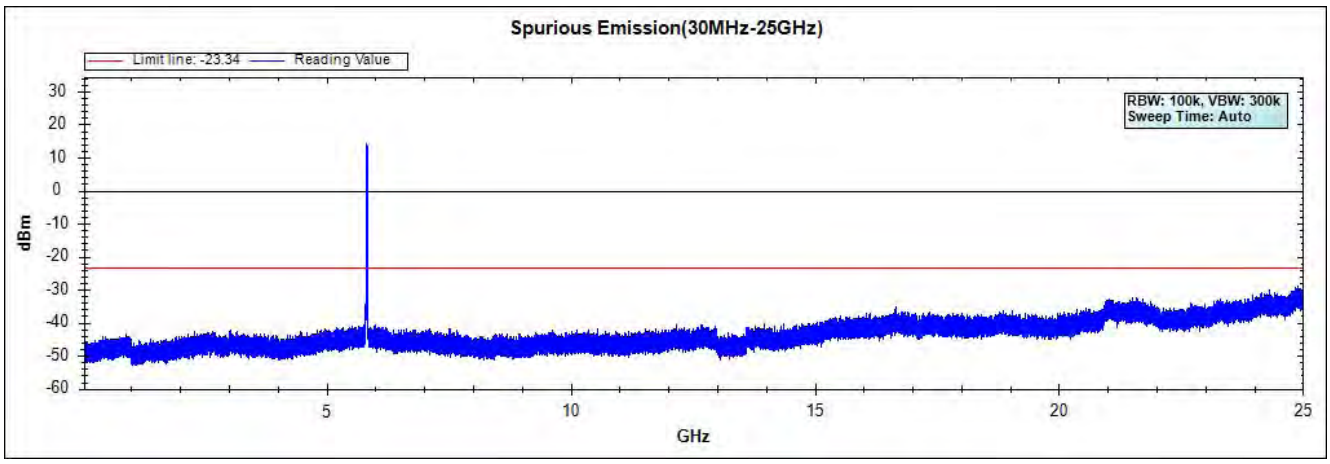


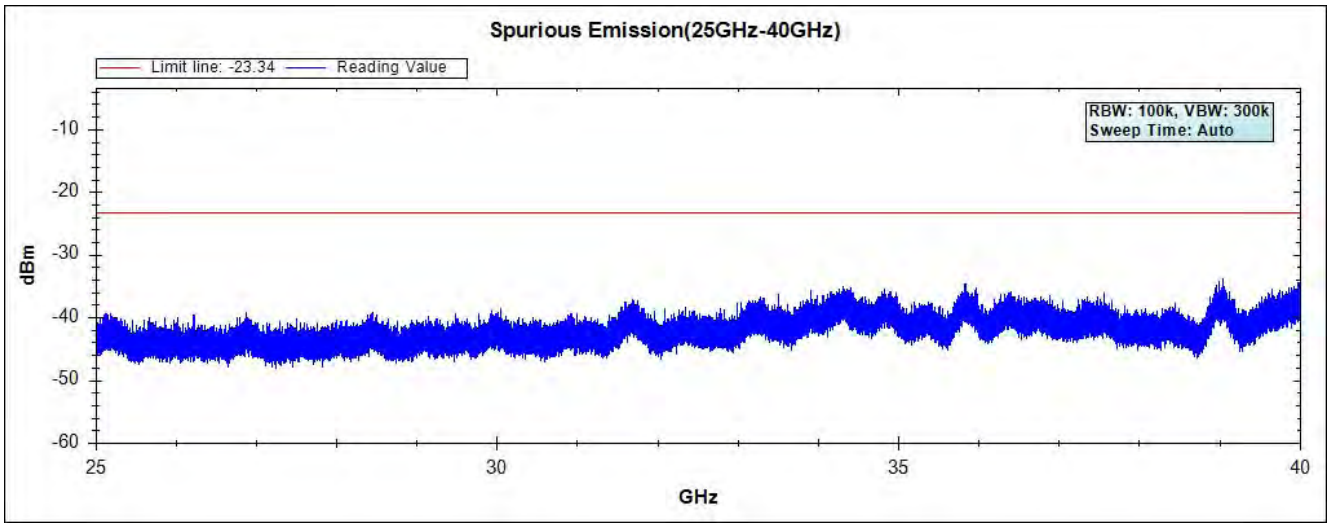
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



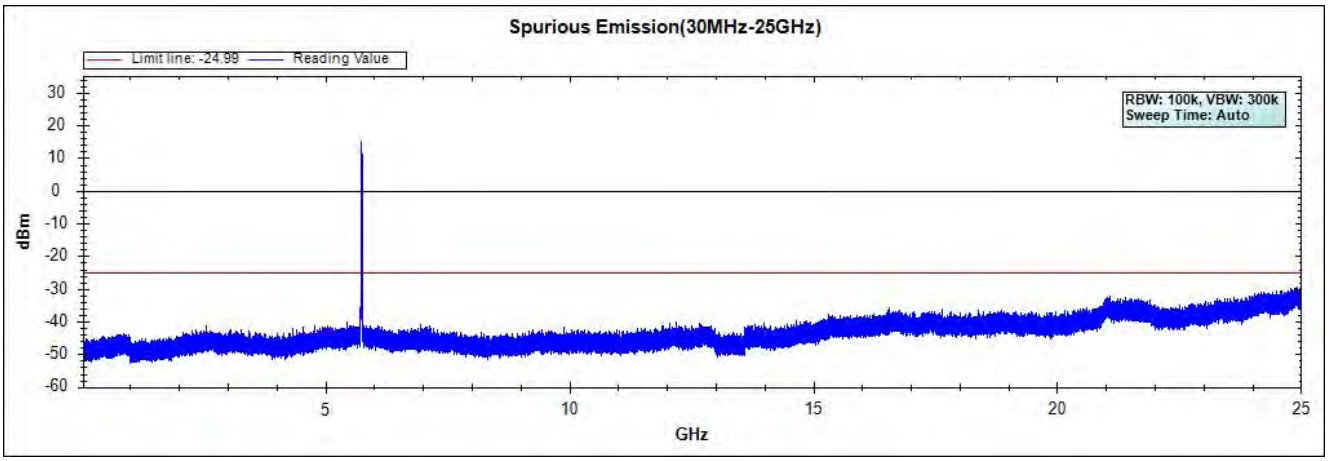


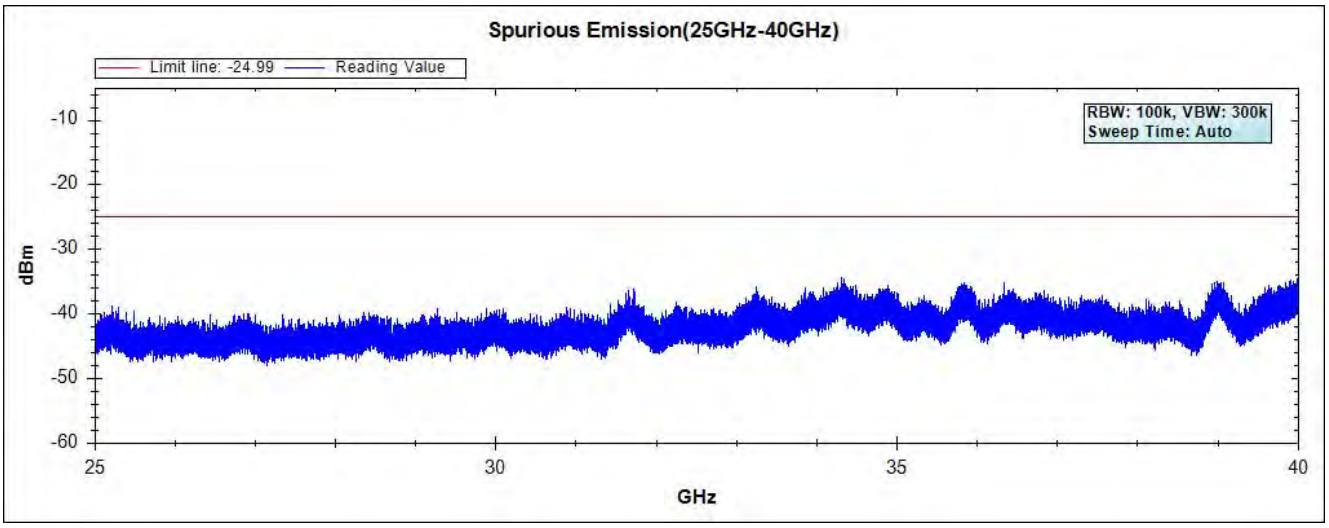
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



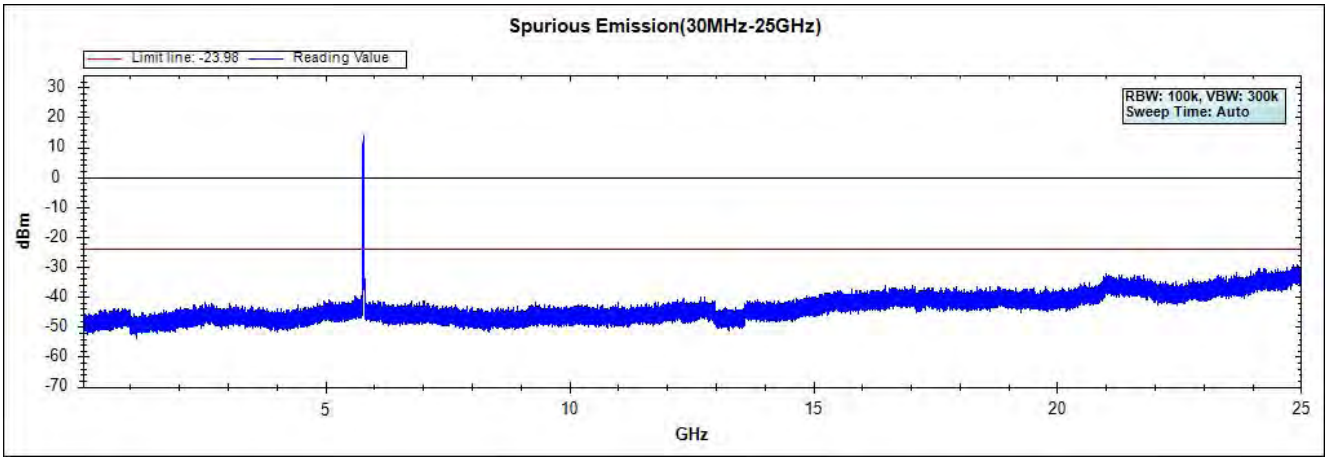


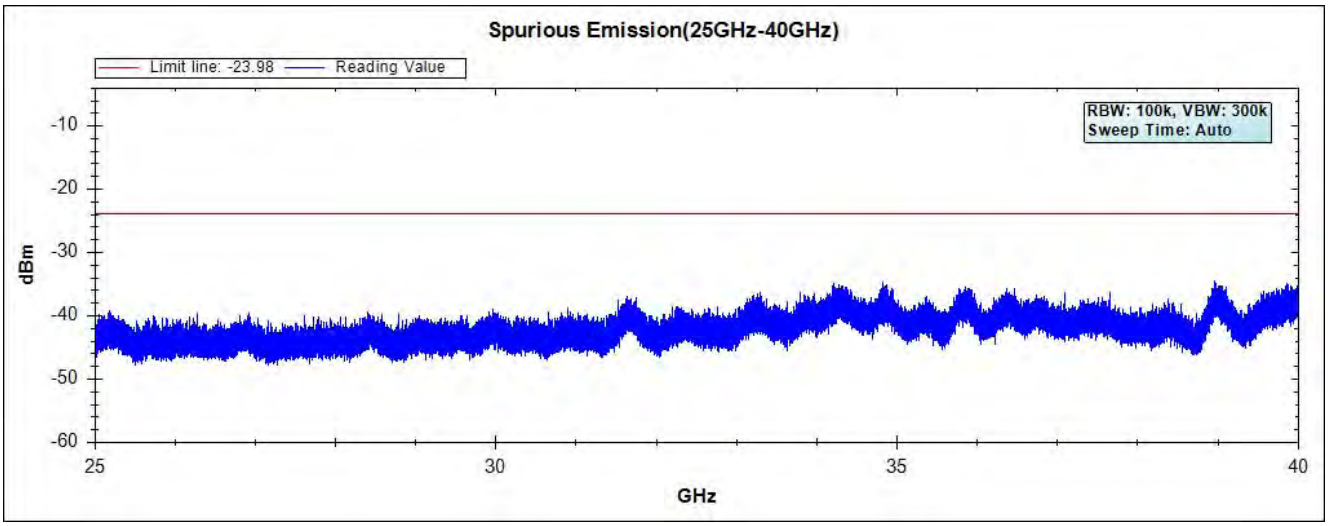
Channel 149 (5745MHz) 30MHz -40GHz-Chain B



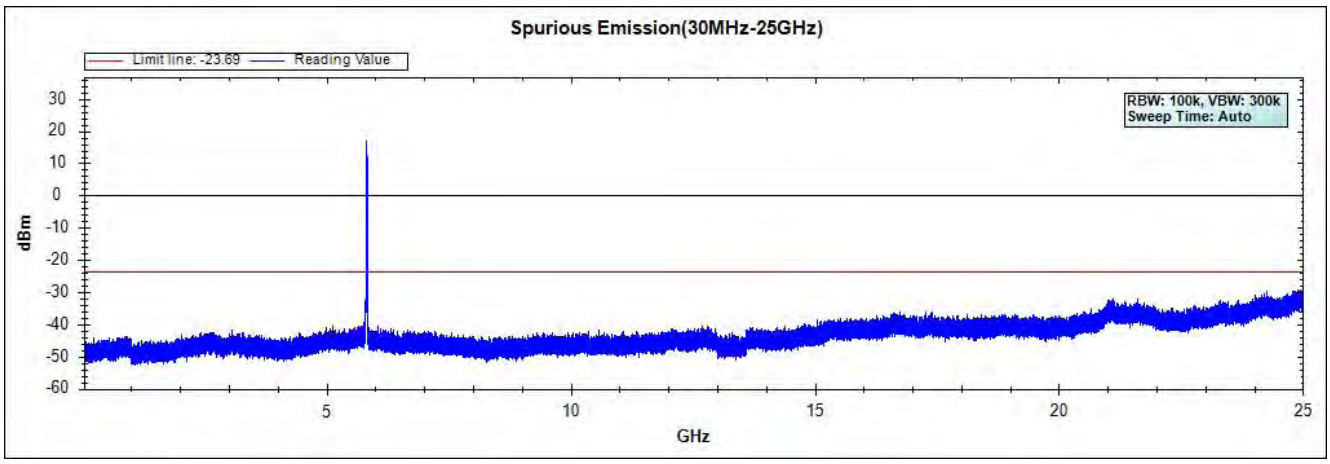


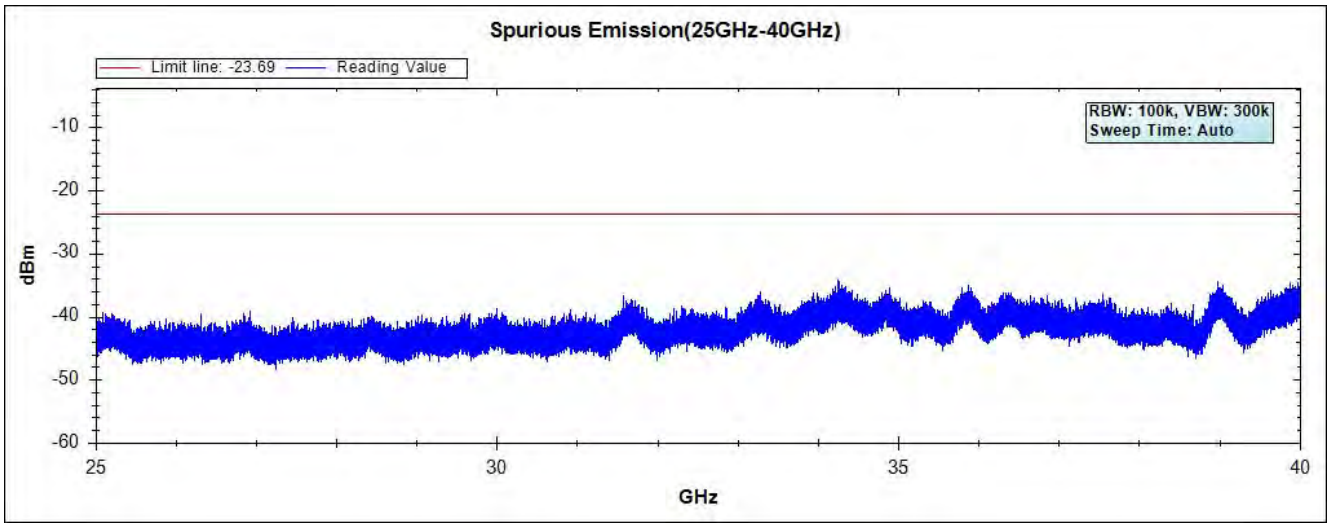
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





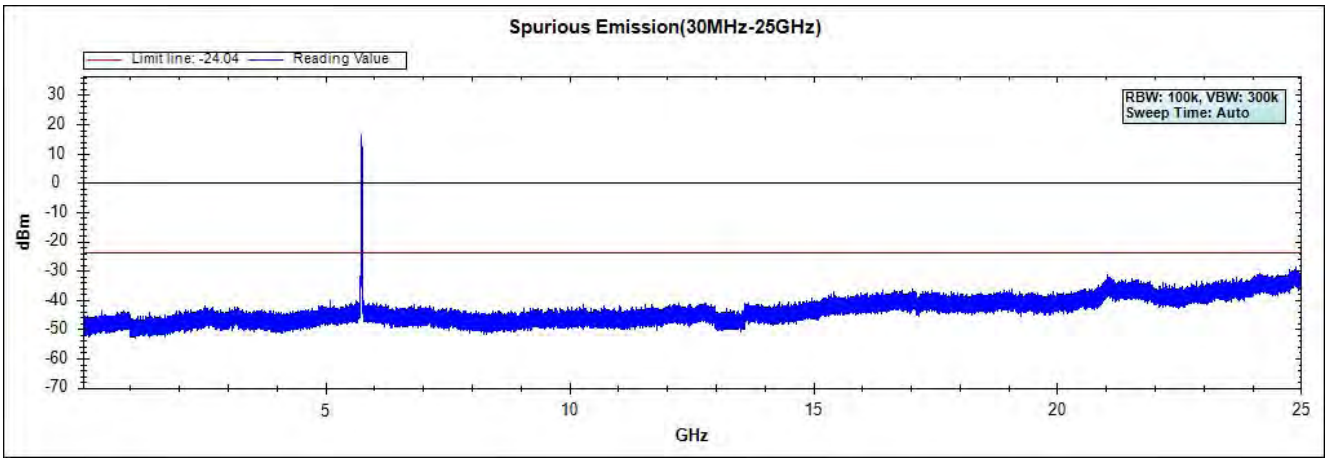
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

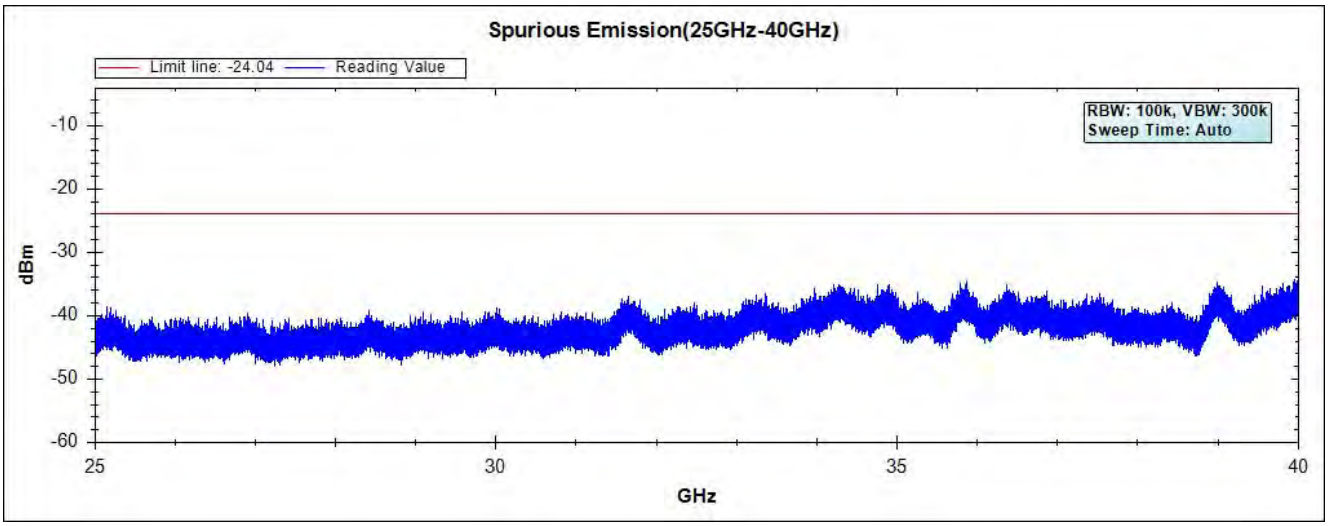




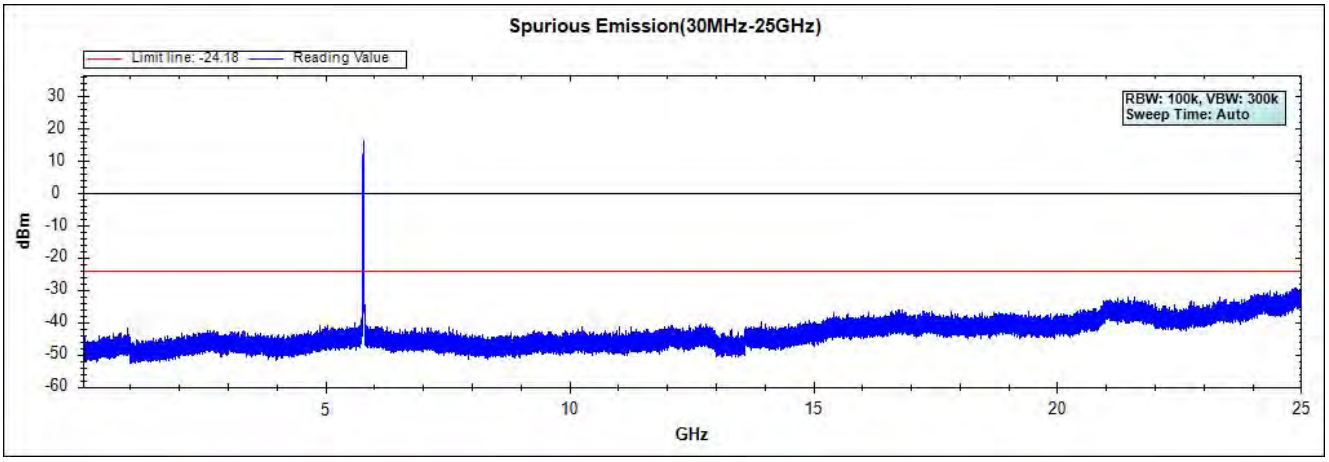
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)

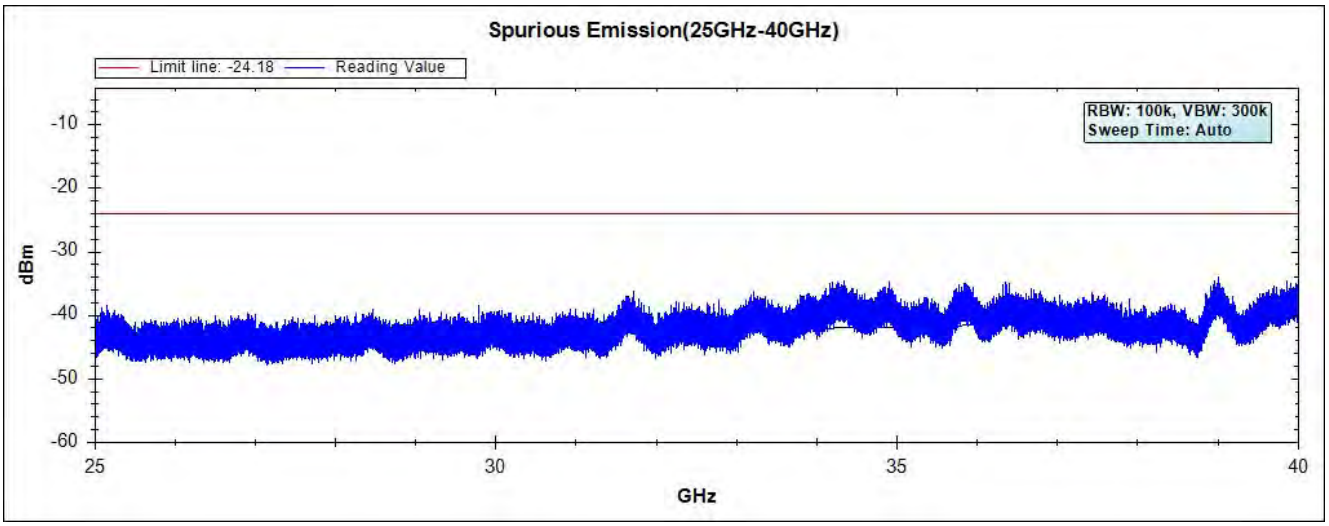
Channel 49 (5745MHz) 30MHz -40GHz-Chain A



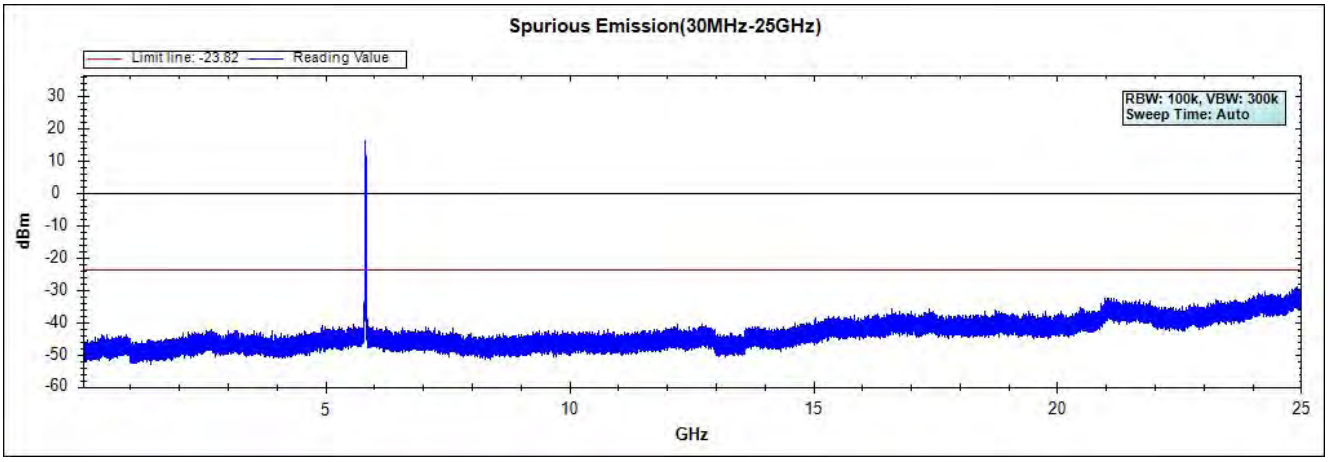


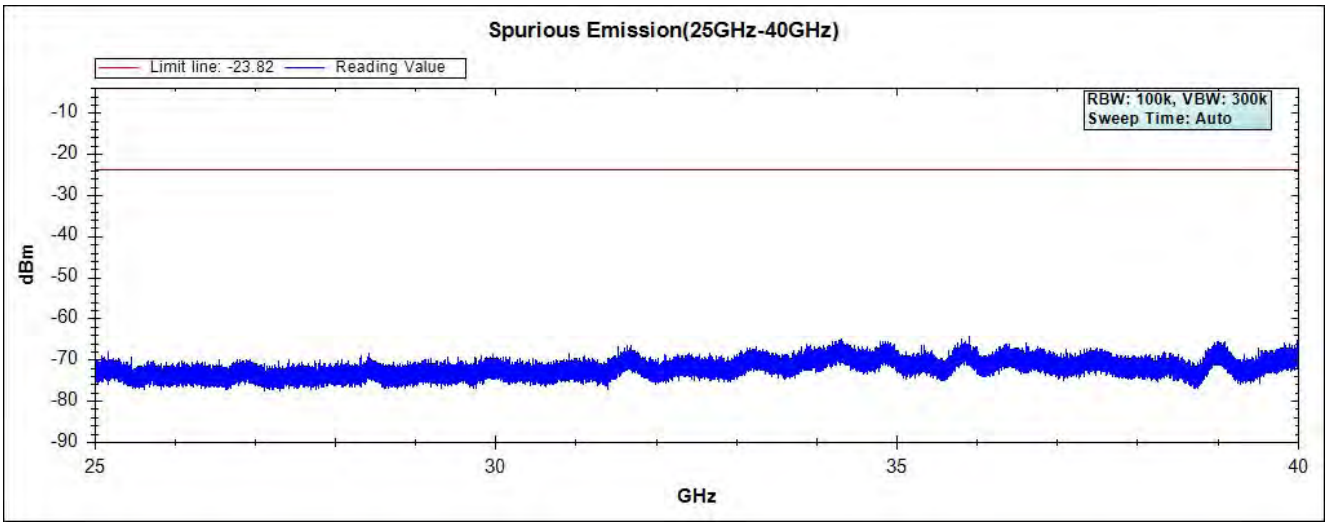
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



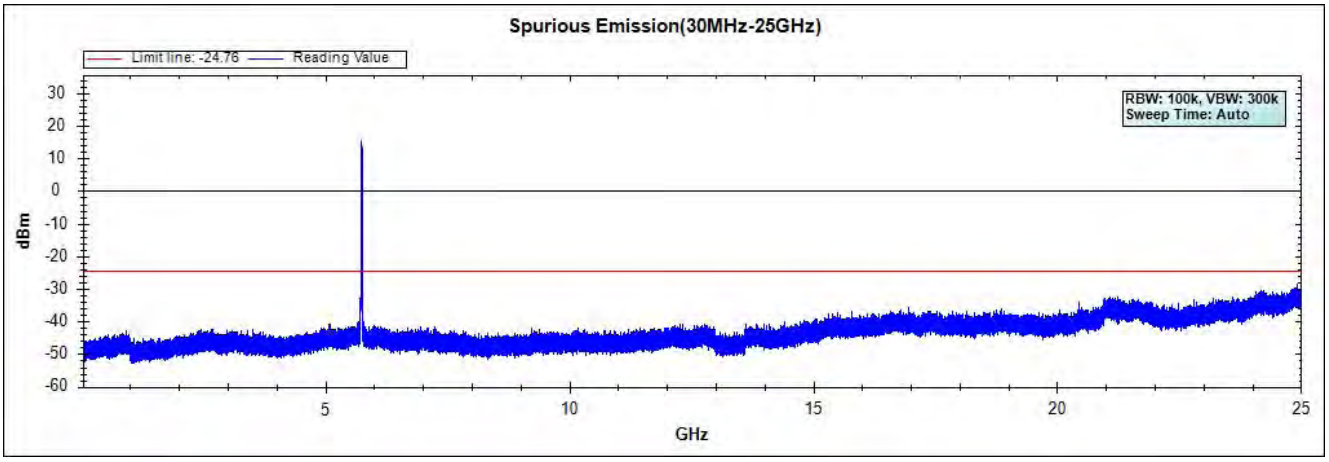


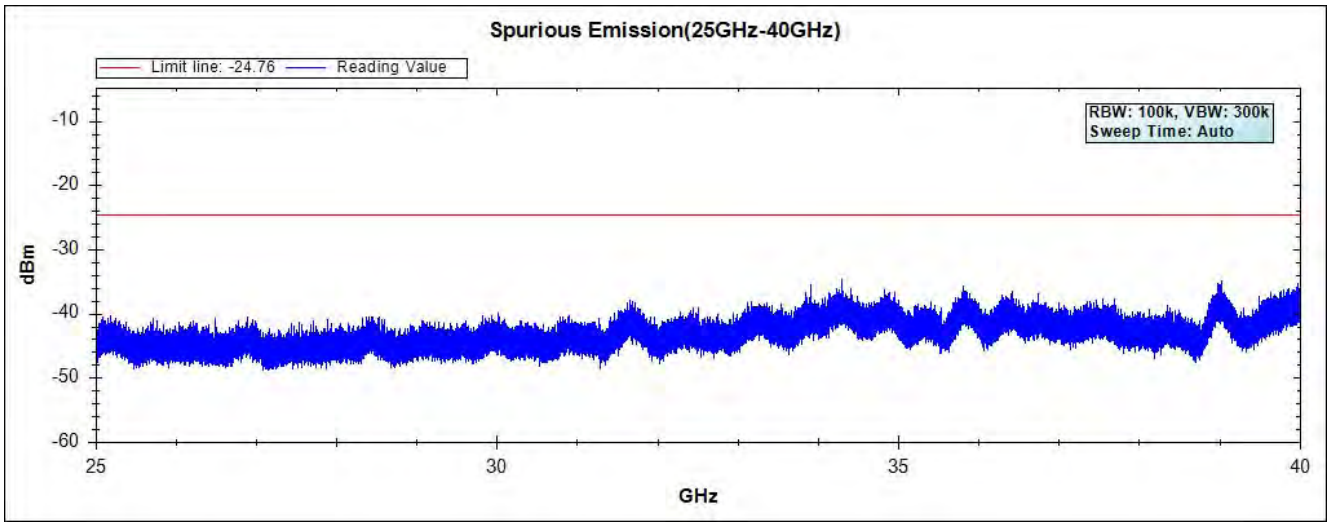
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



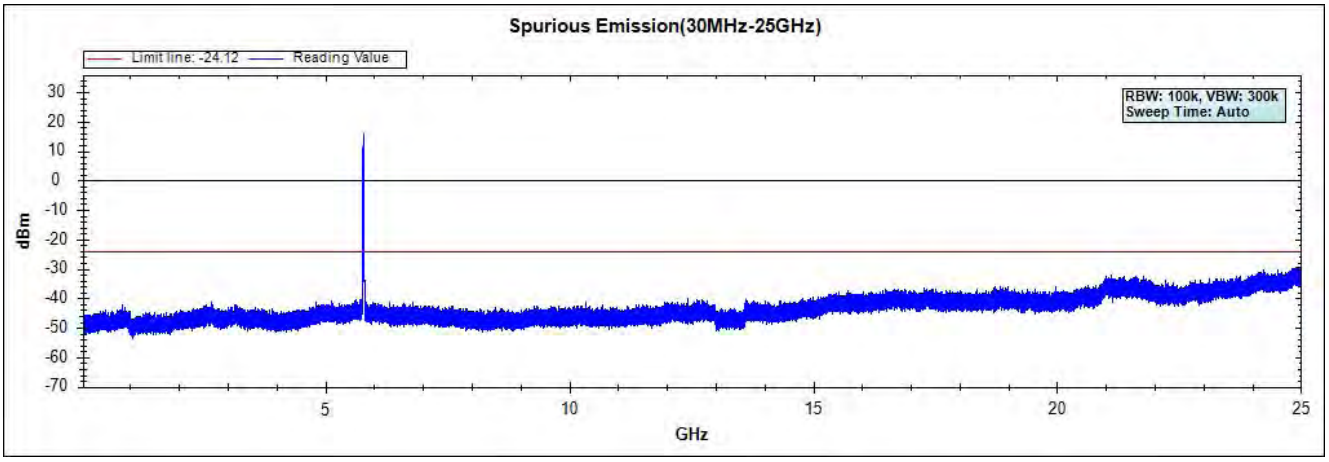


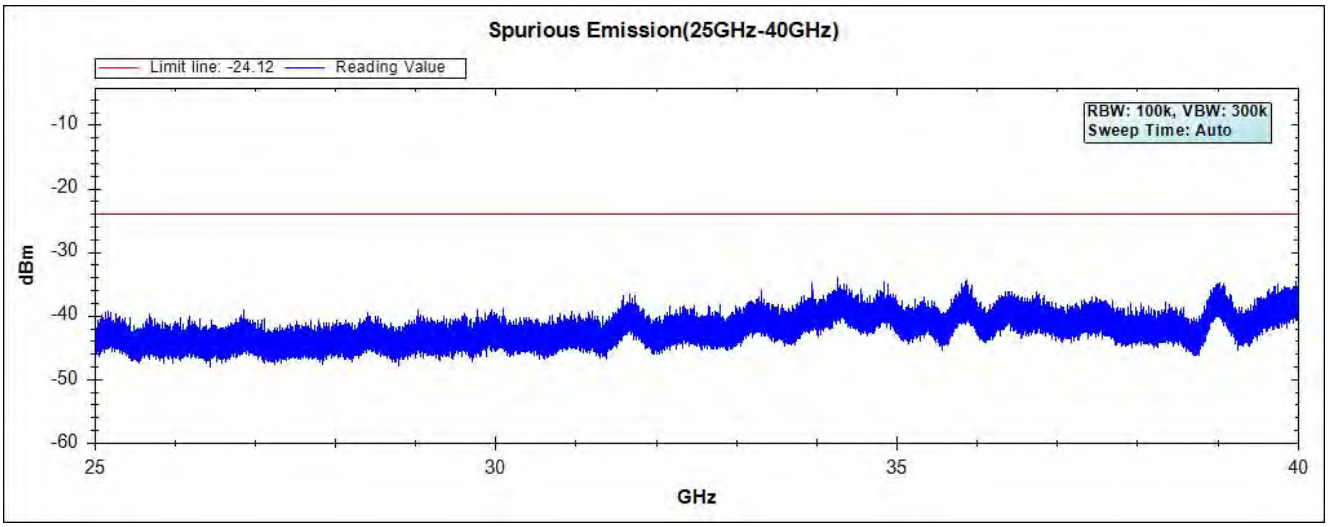
Channel 49 (5745MHz) 30MHz -40GHz-Chain B



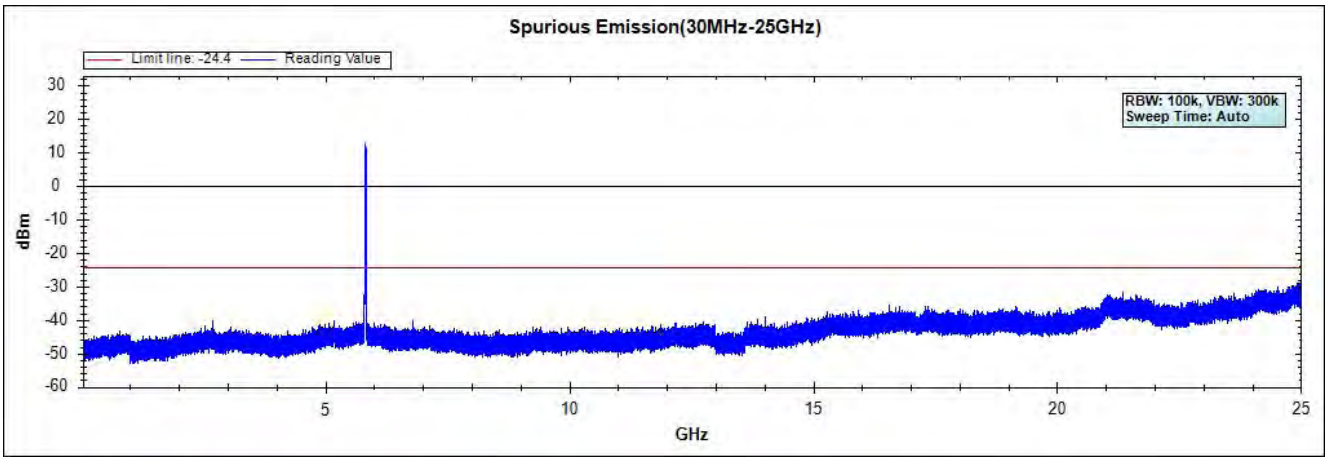


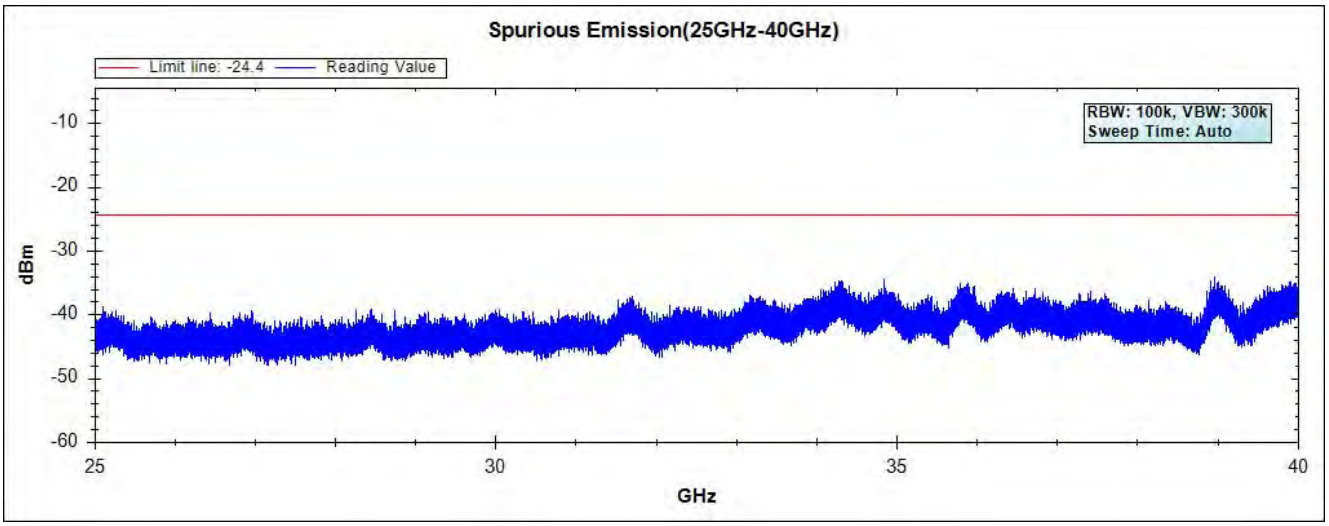
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





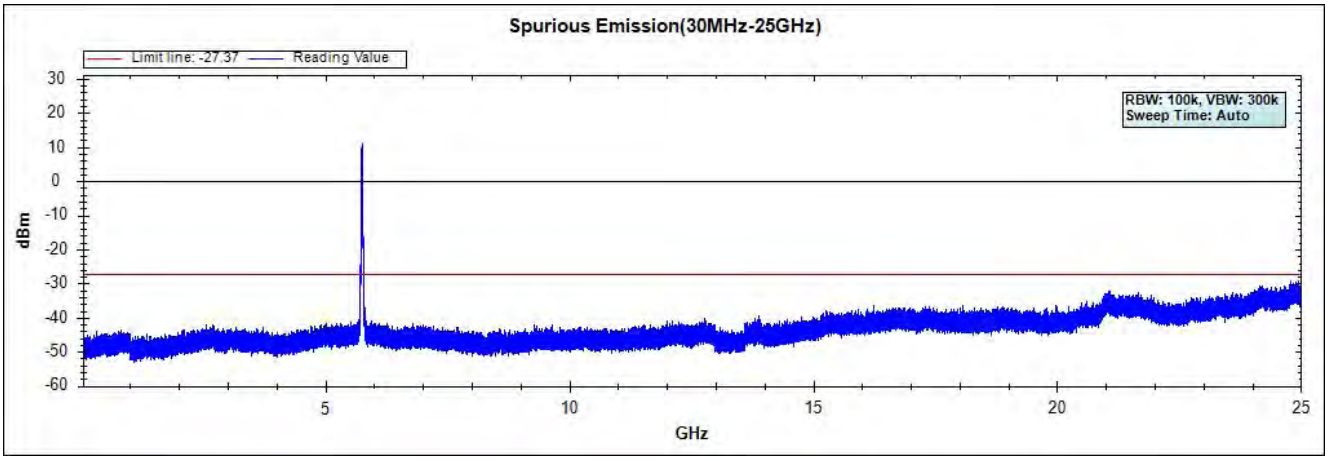
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

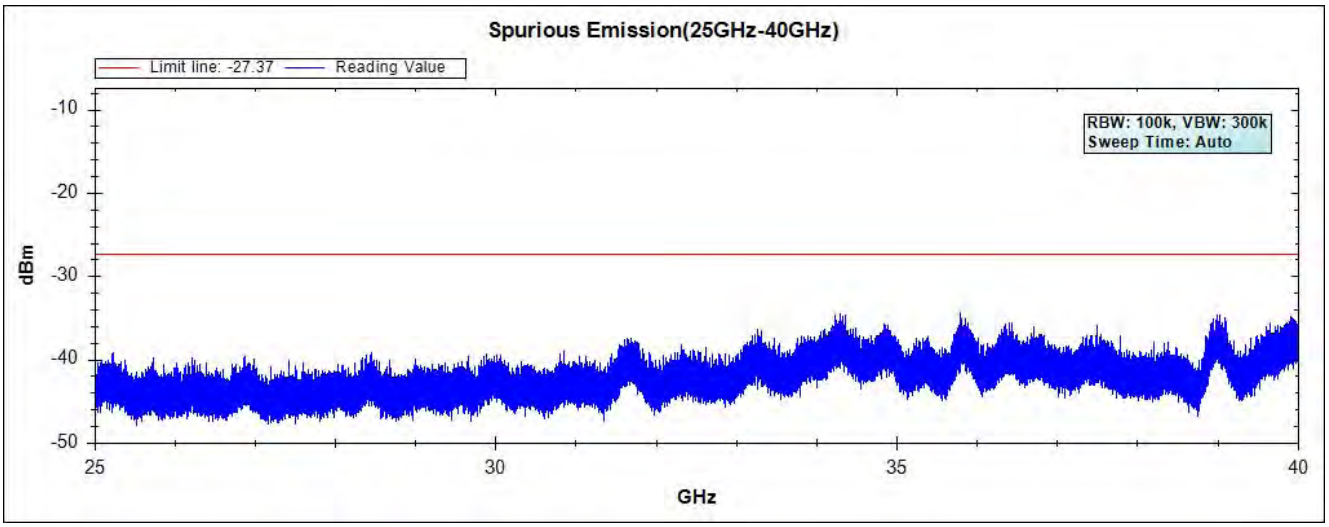




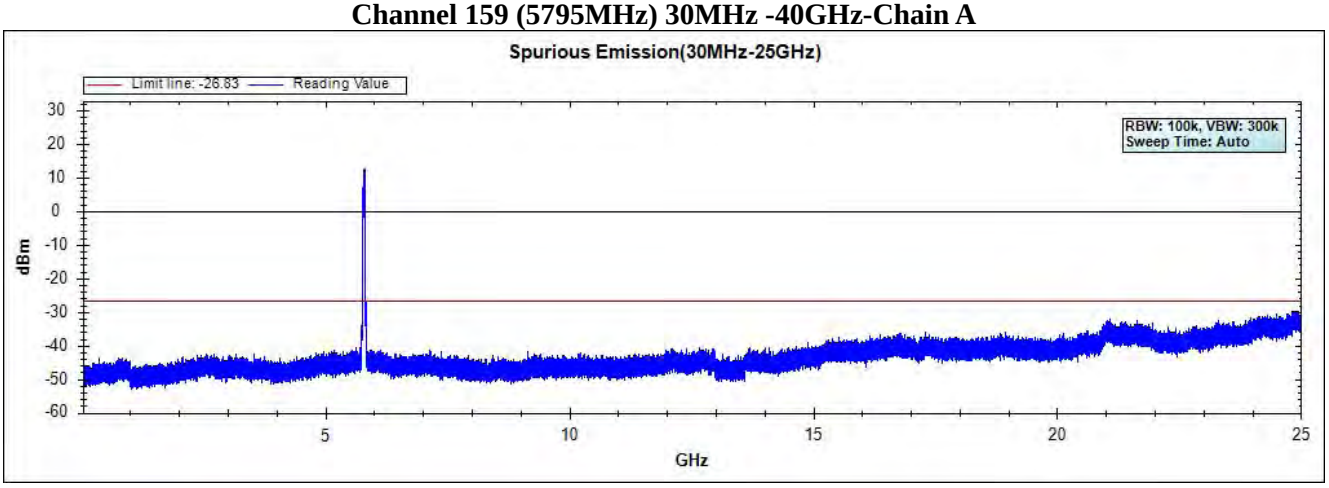
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)

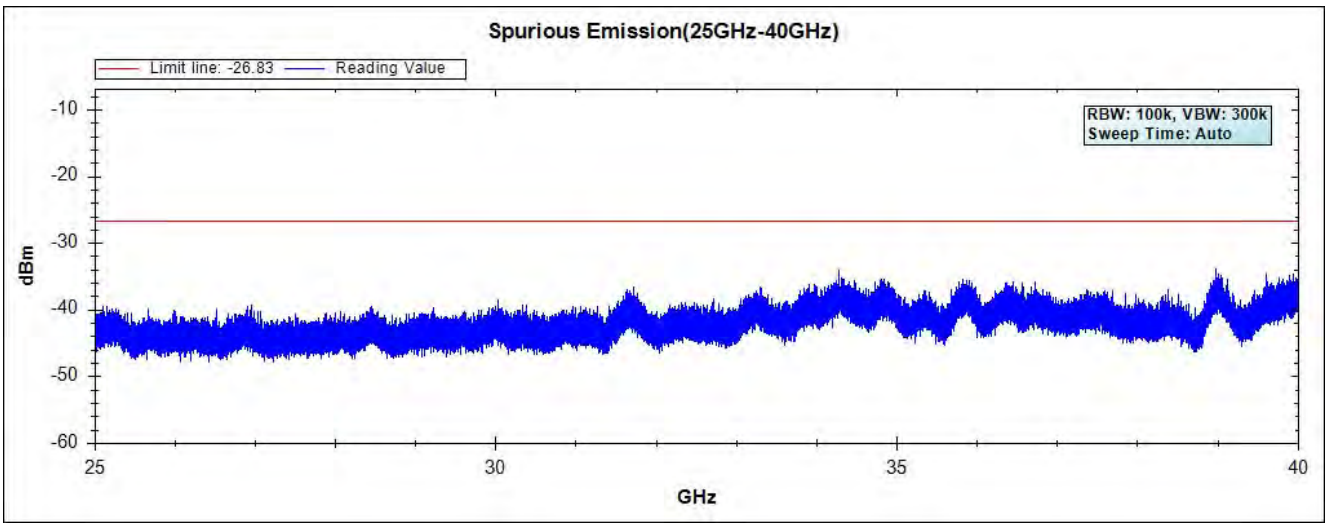
Channel 151 (5755MHz) 30MHz -40GHz-Chain A



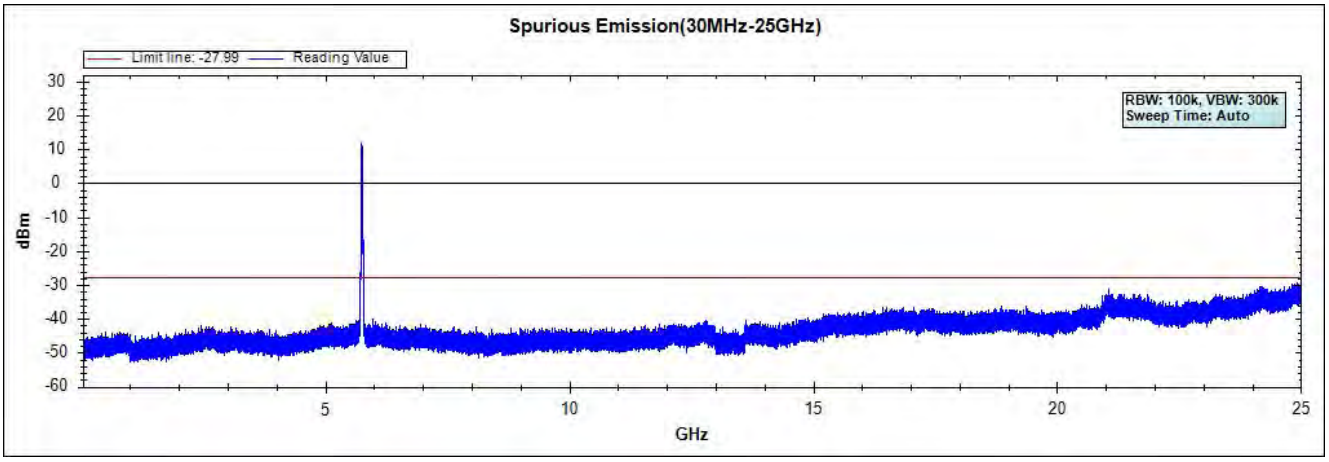


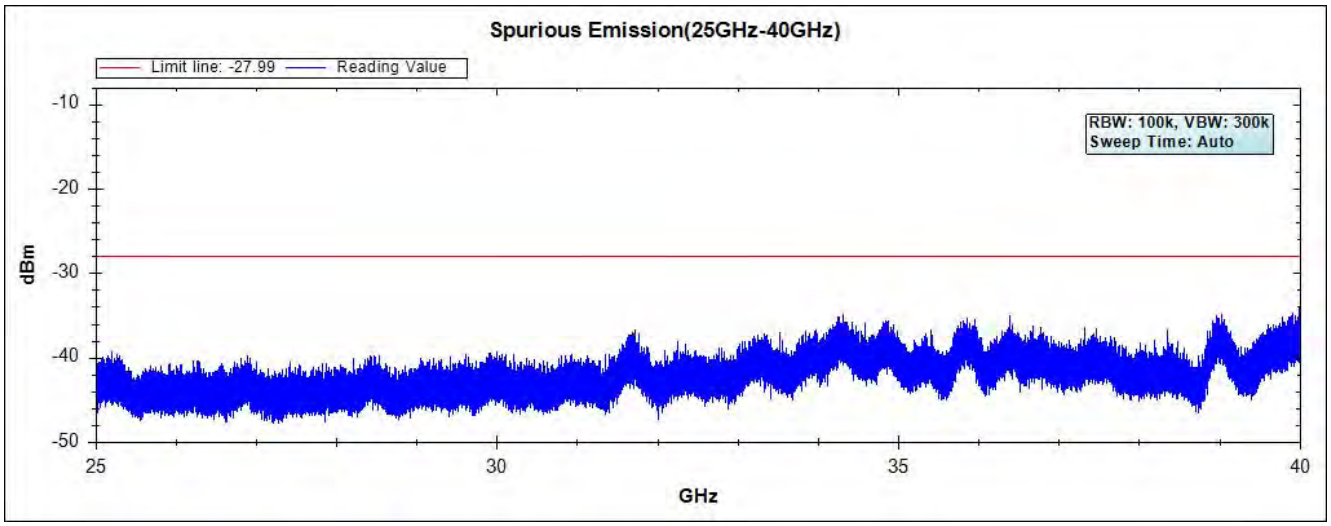
Channel 159 (5795MHz) 30MHz -40GHz-Chain A



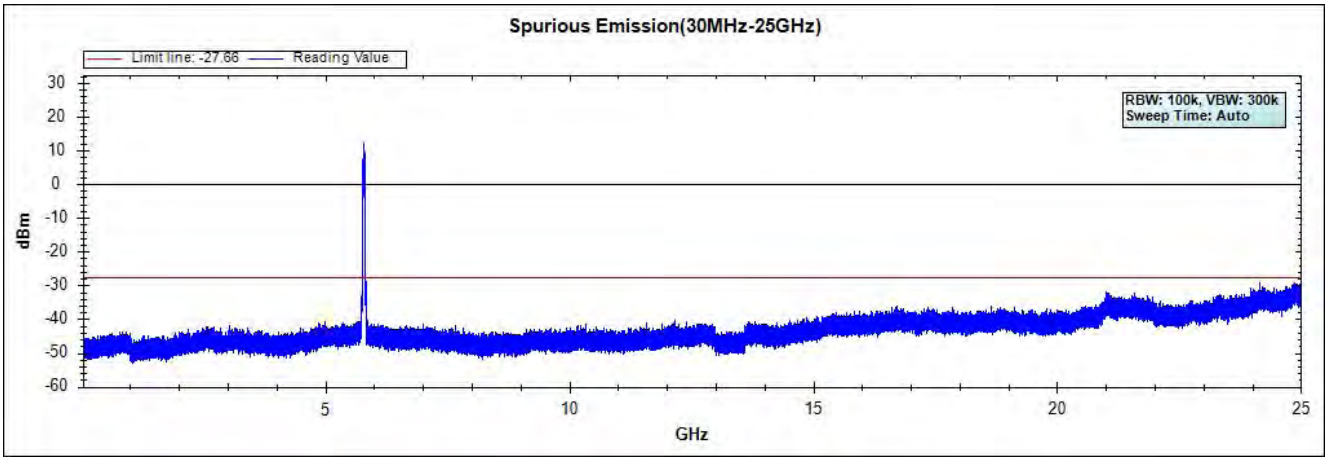


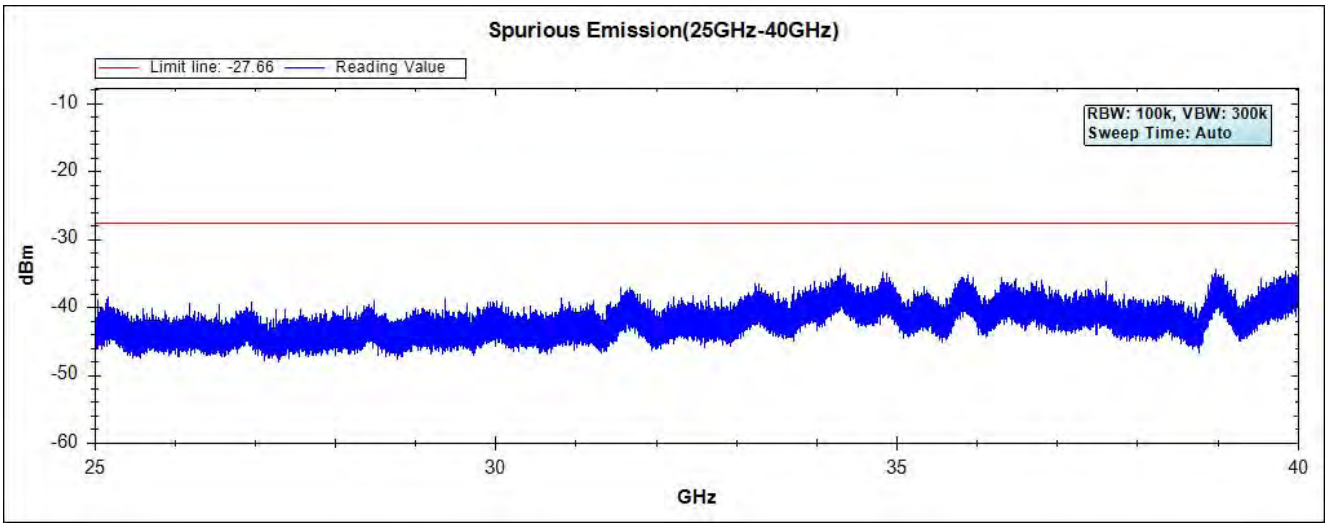
Channel 151 (5755MHz) 30MHz -40GHz-Chain B





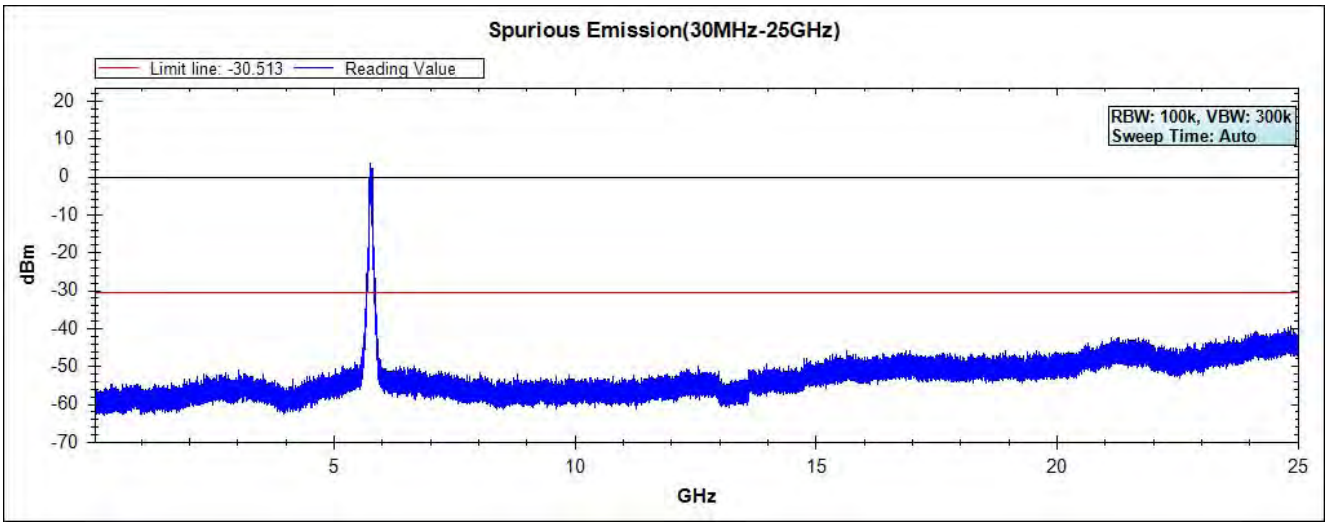
Channel 159 (5795MHz) 30MHz -40GHz-Chain B

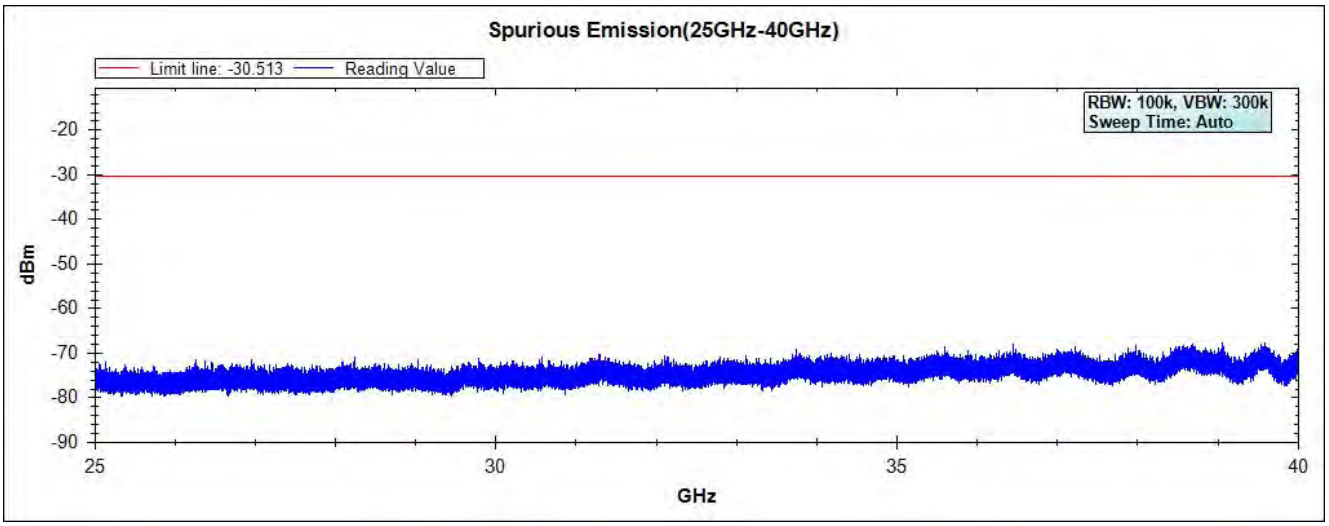




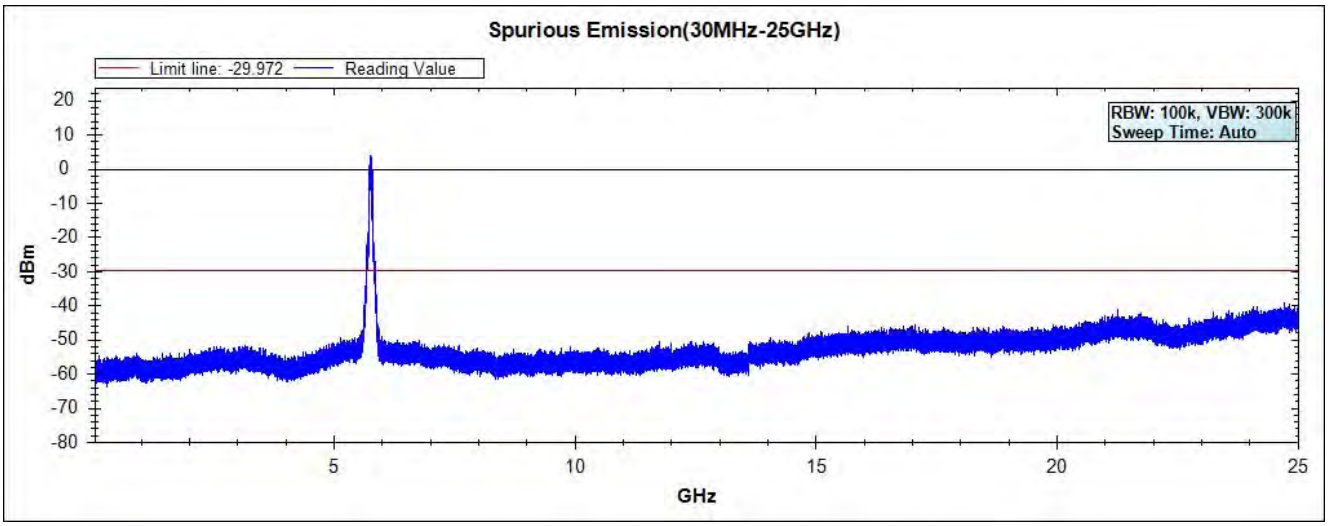
Product	:	802.11 ac PCIe Module
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Dipole Antenna)

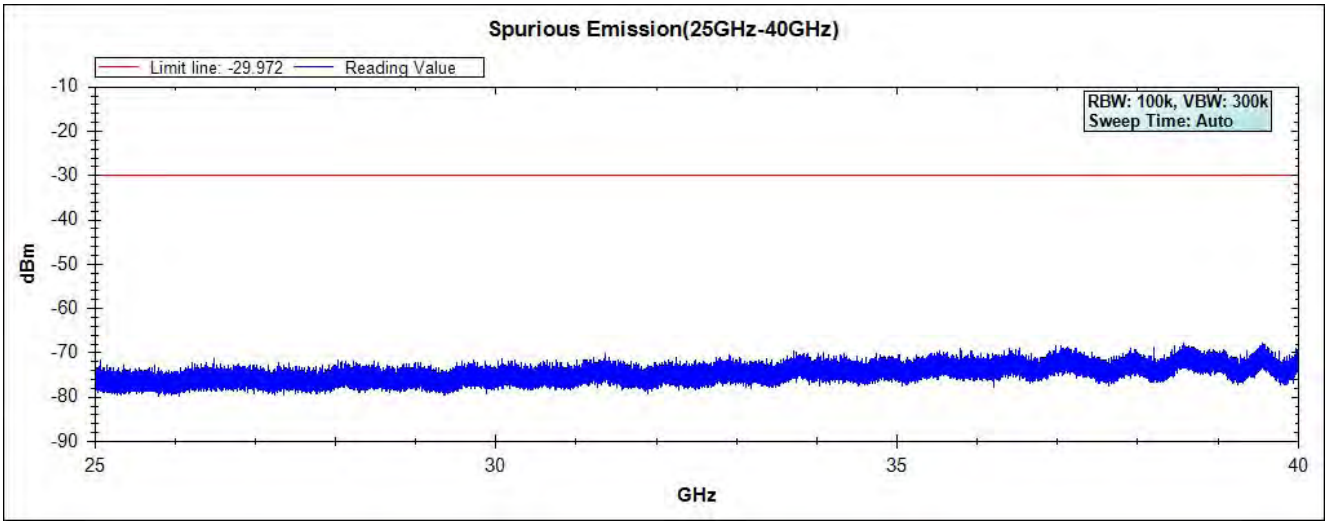
Channel 1 (5780MHz) 30MHz -40GHz- Chaia A





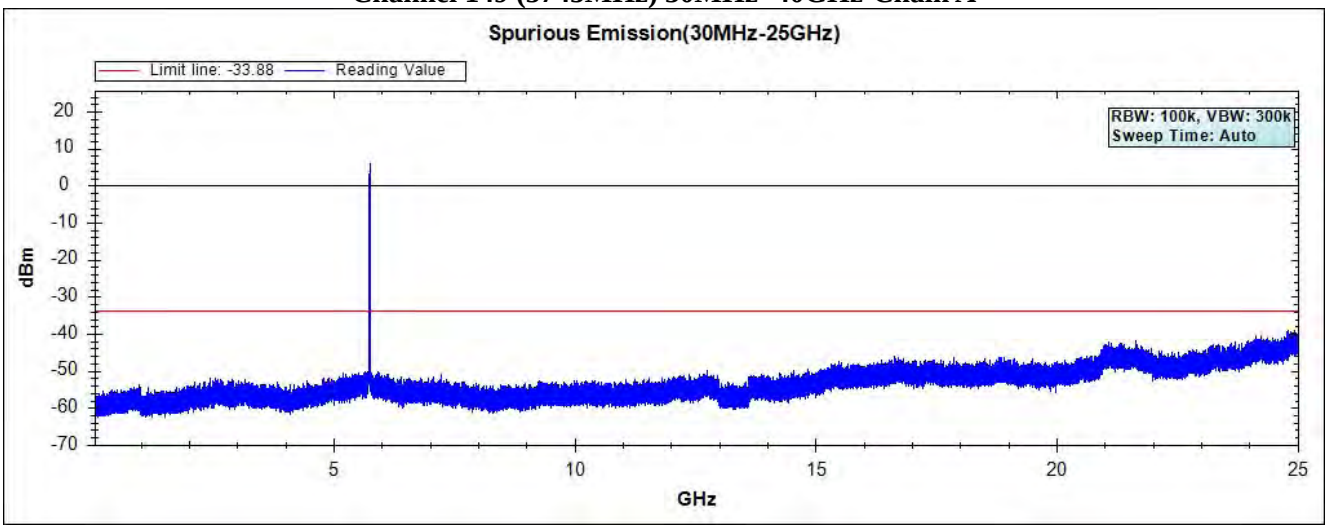
Channel 1 (5780MHz) 30MHz -40GHz- Chaia B

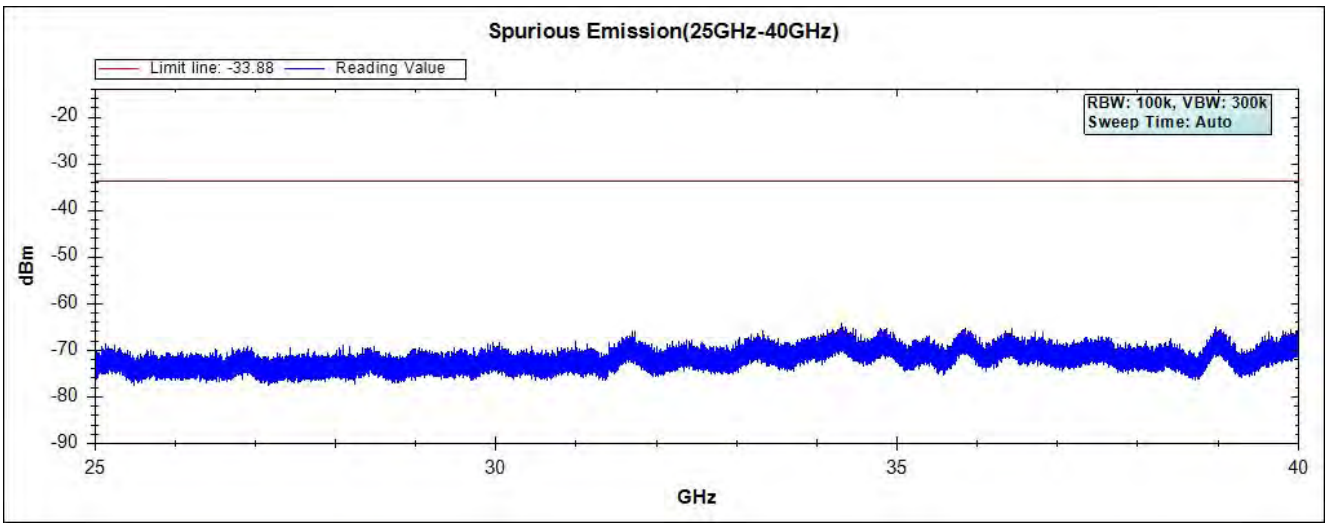




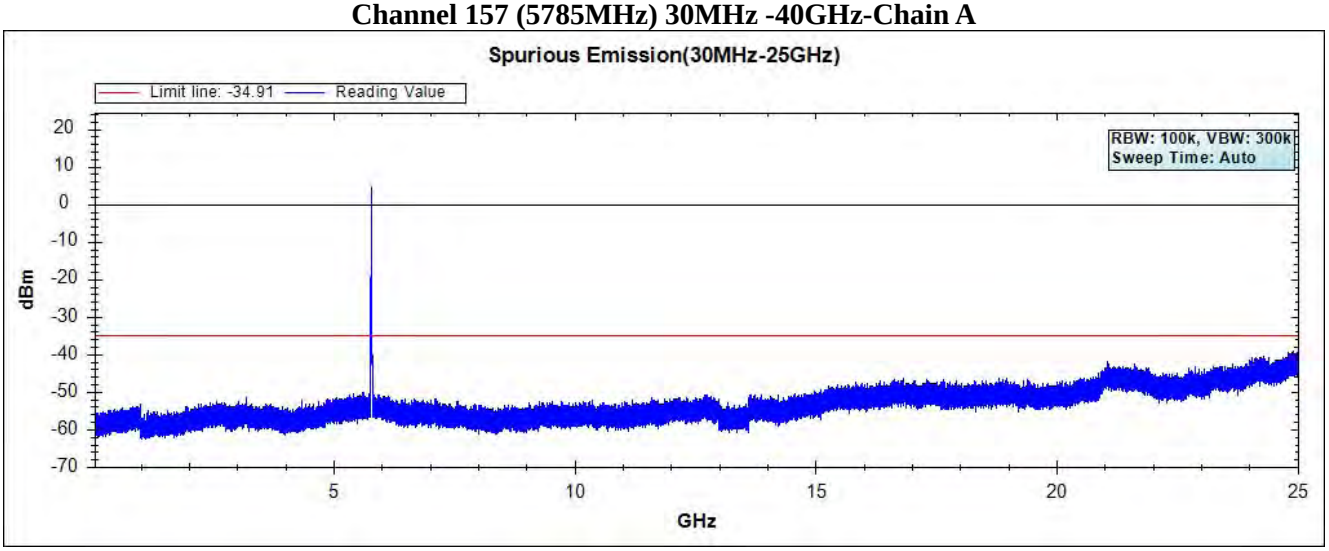
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11a_6Mbps(Grid DISH Antenna)

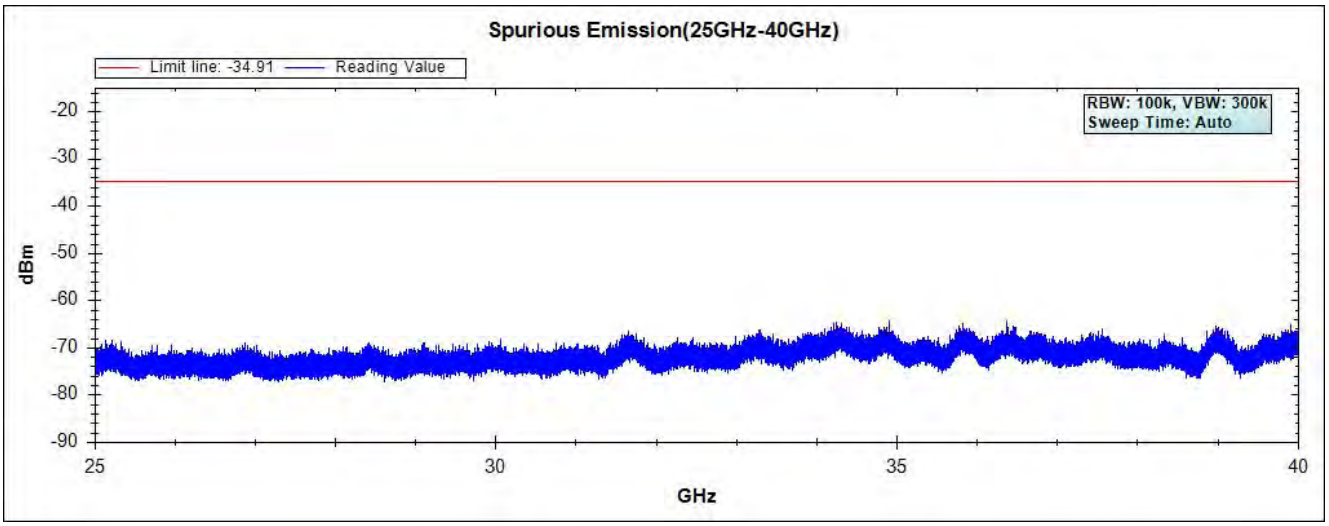
Channel 149 (5745MHz) 30MHz -40GHz-Chain A



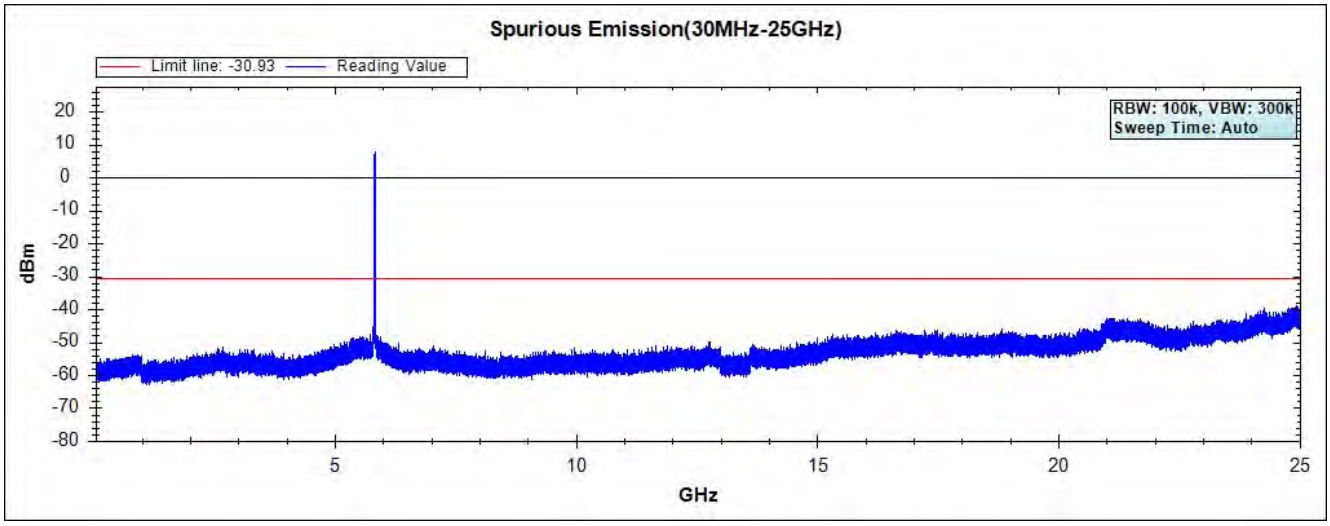


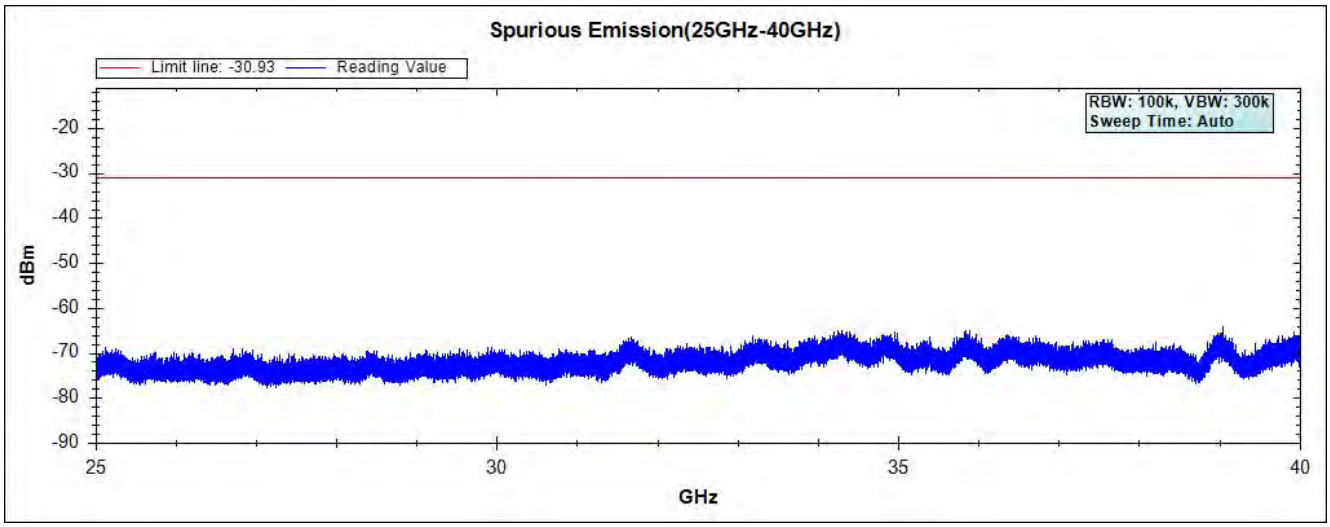
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



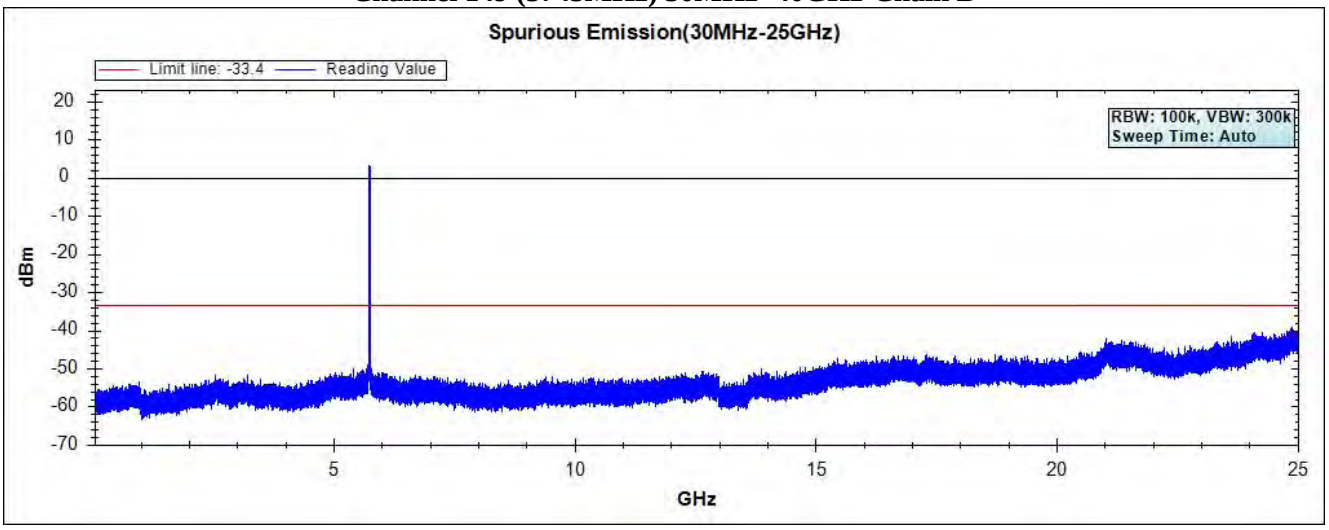


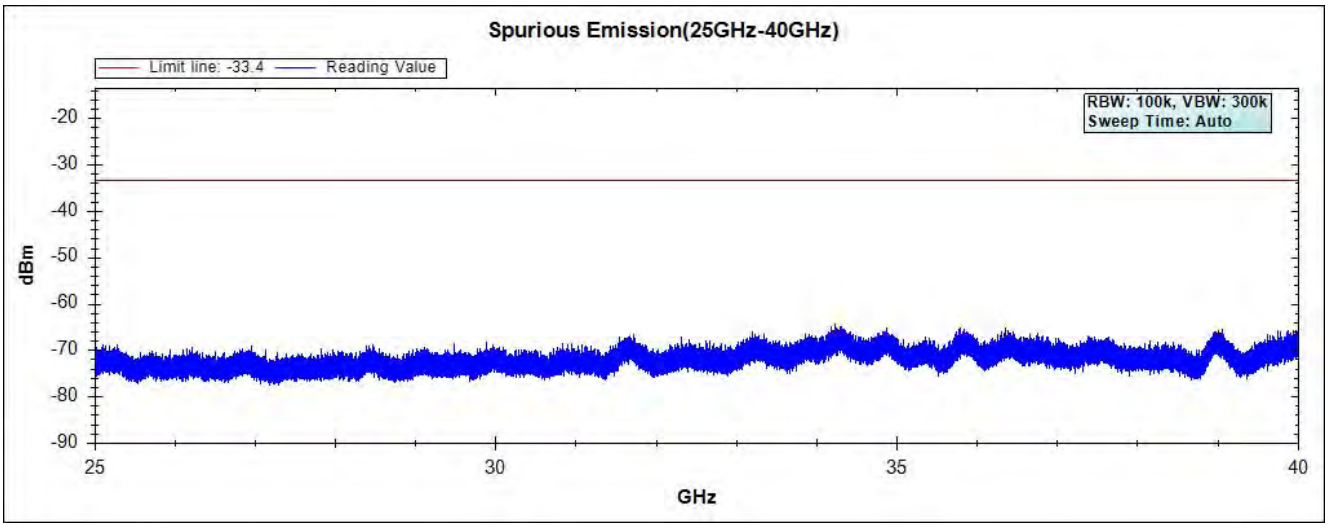
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



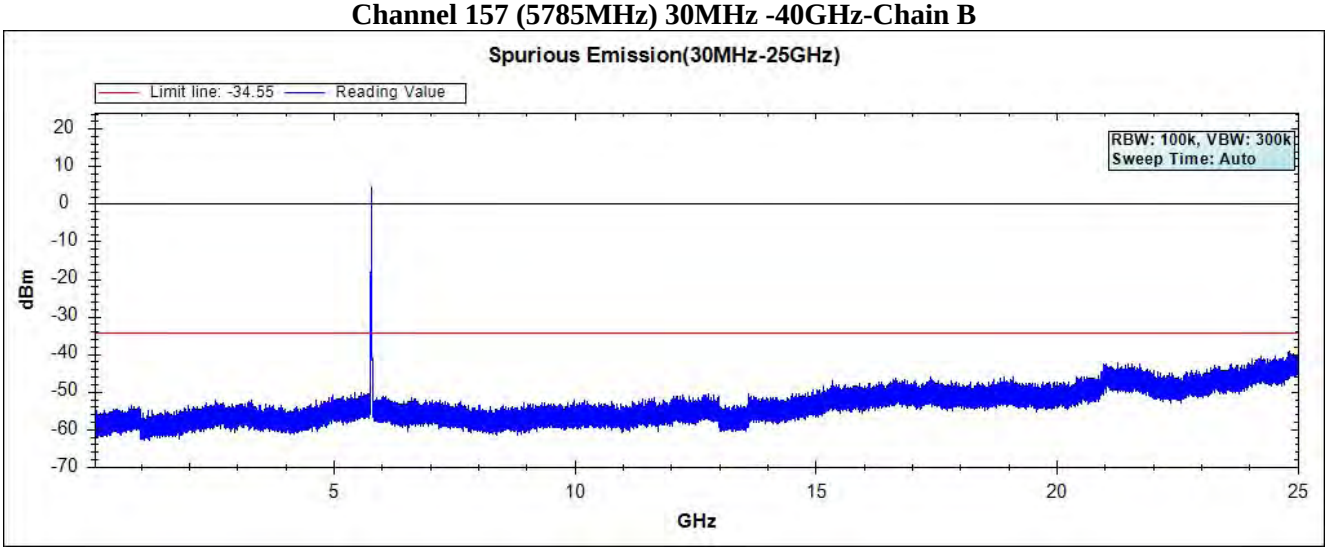


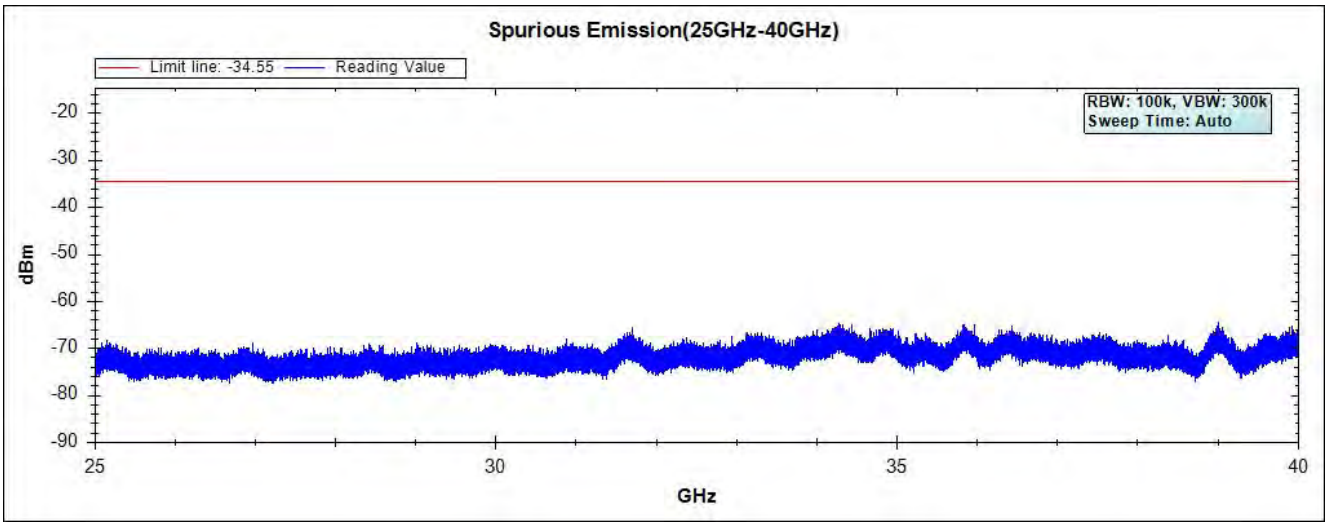
Channel 149 (5745MHz) 30MHz -40GHz-Chain B



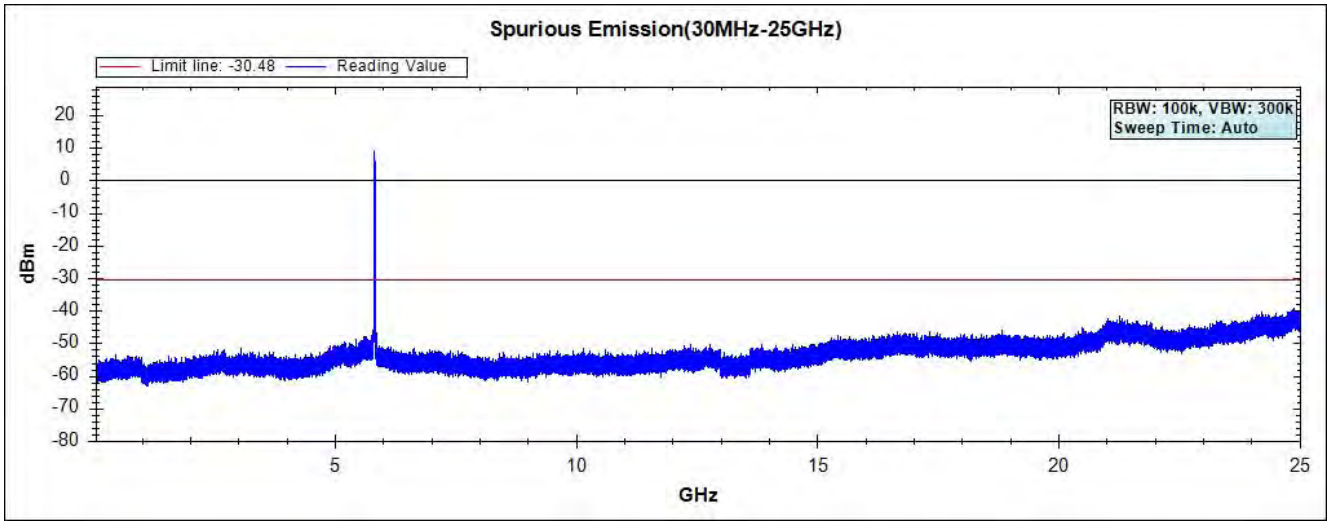


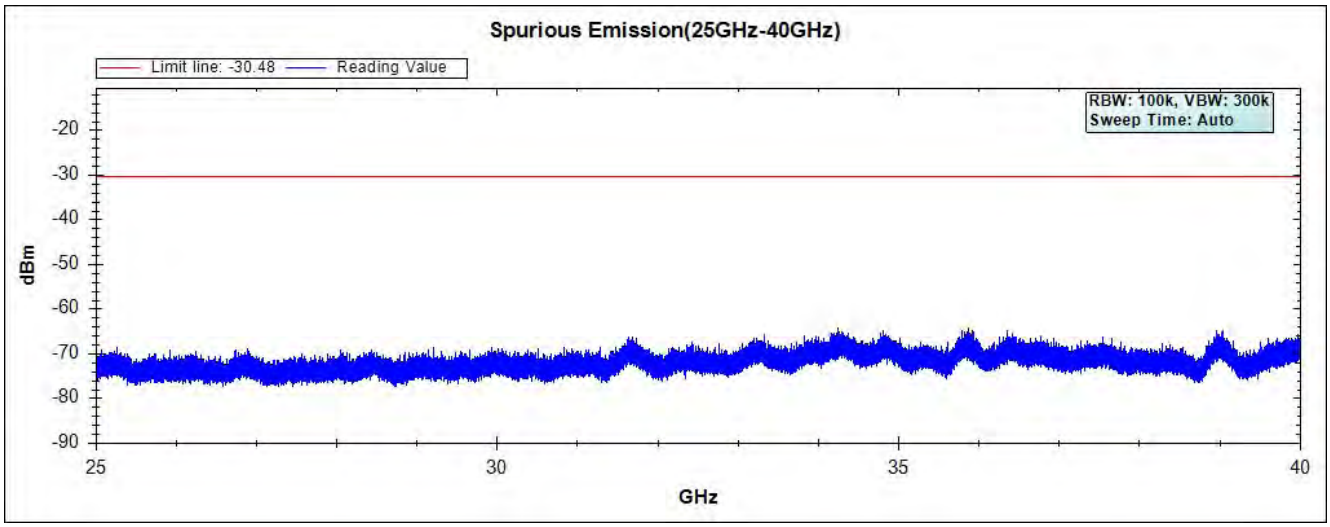
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





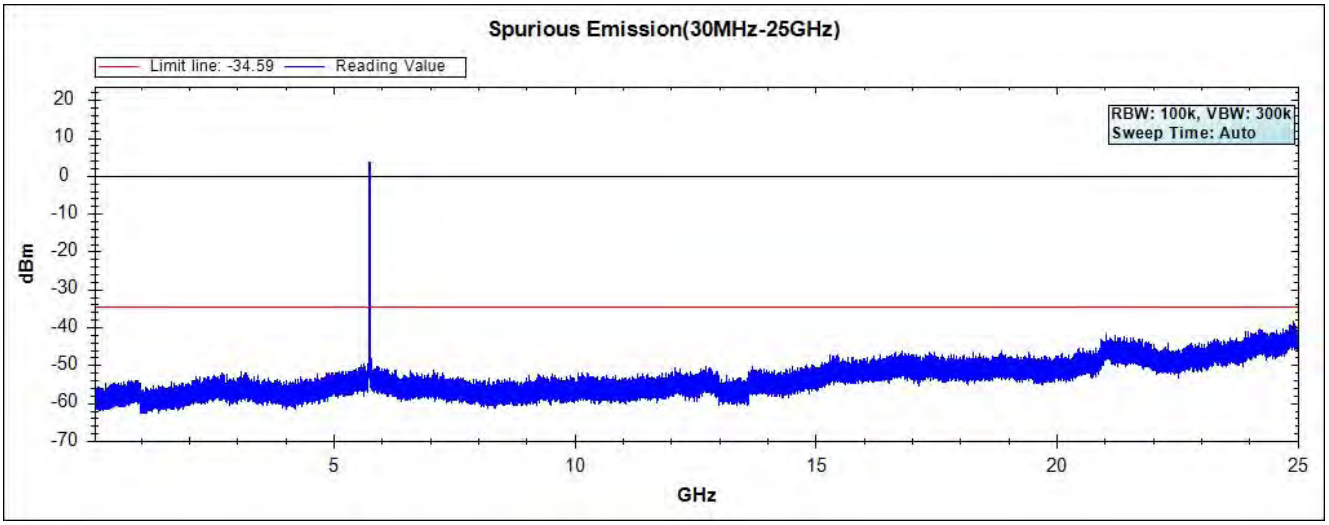
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

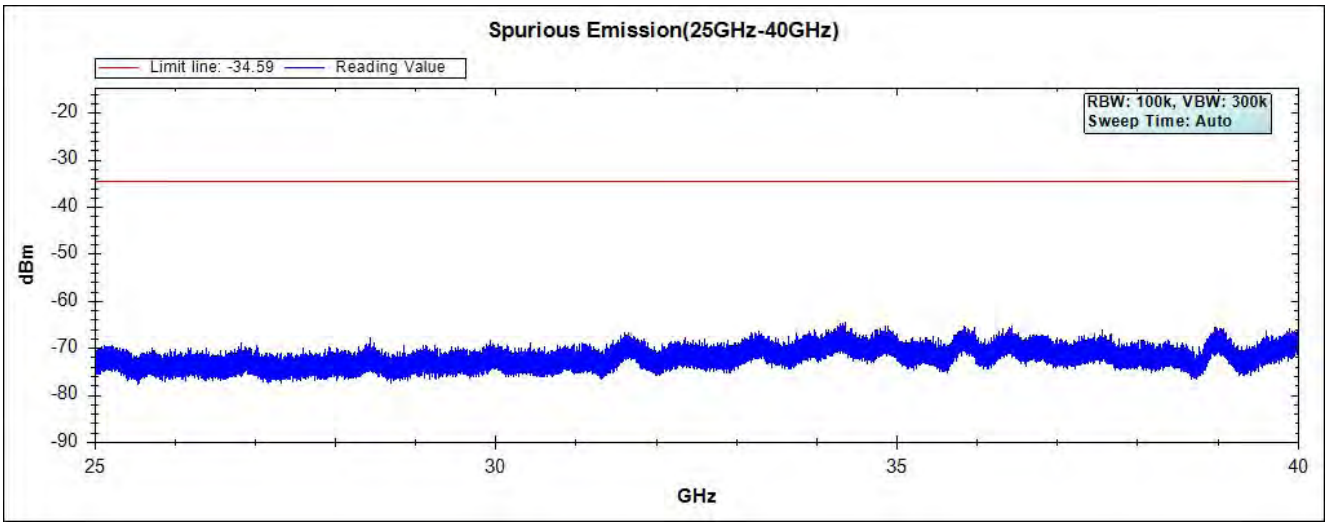




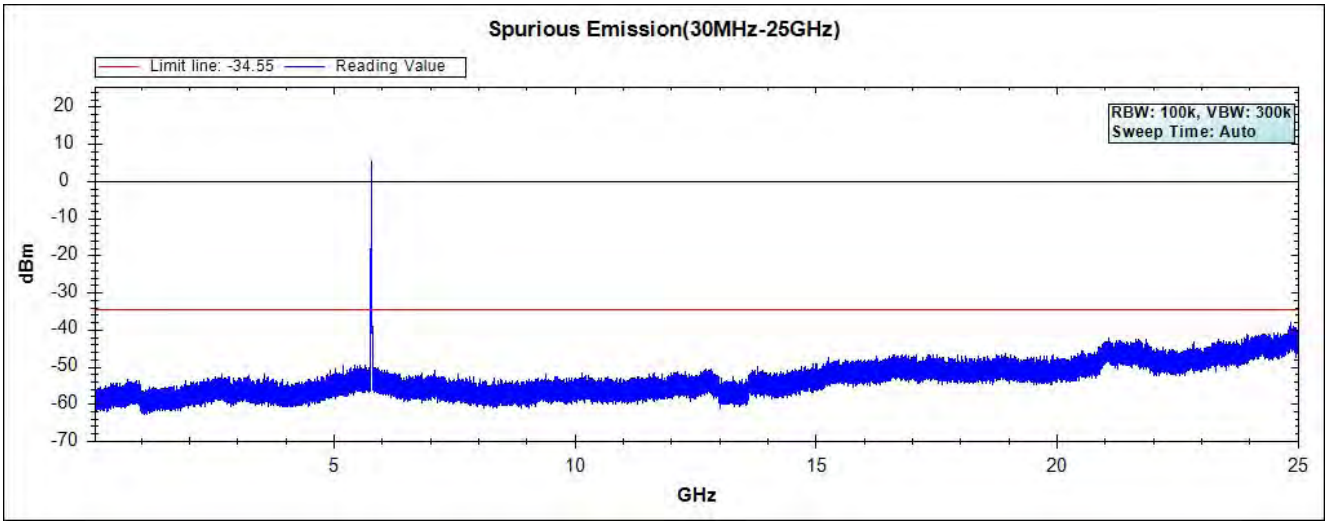
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Grid DISH Antenna)

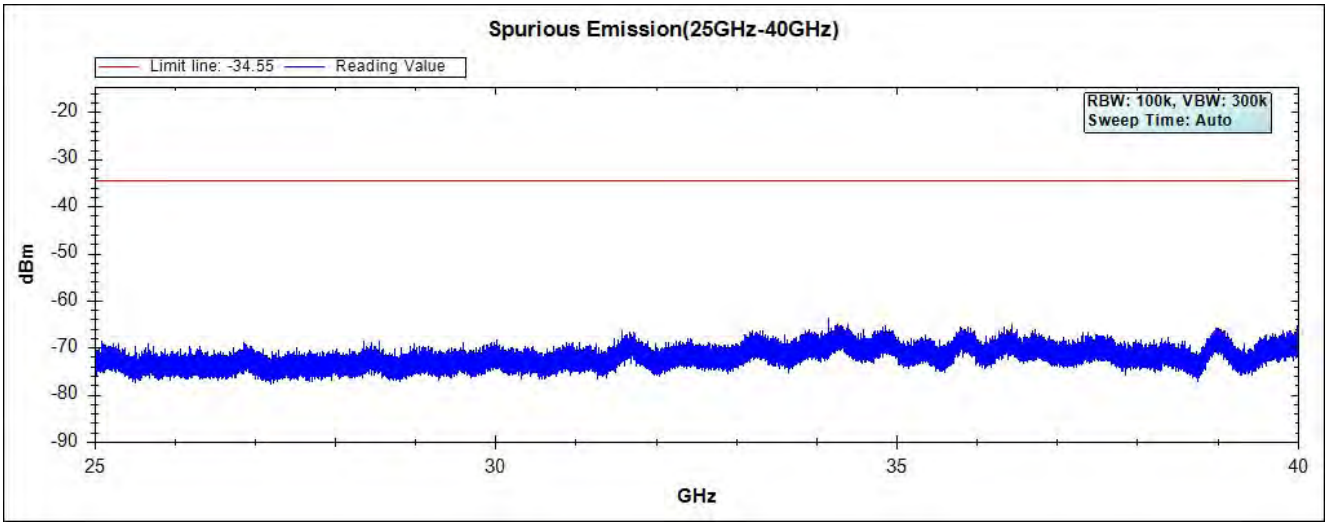
Channel 49 (5745MHz) 30MHz -40GHz-Chain A



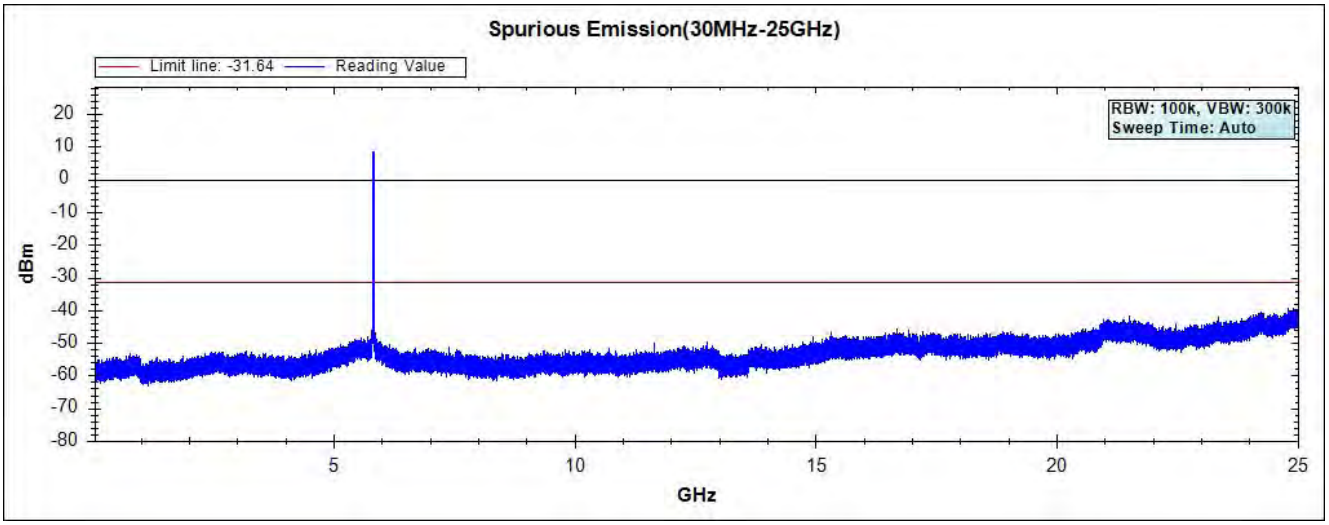


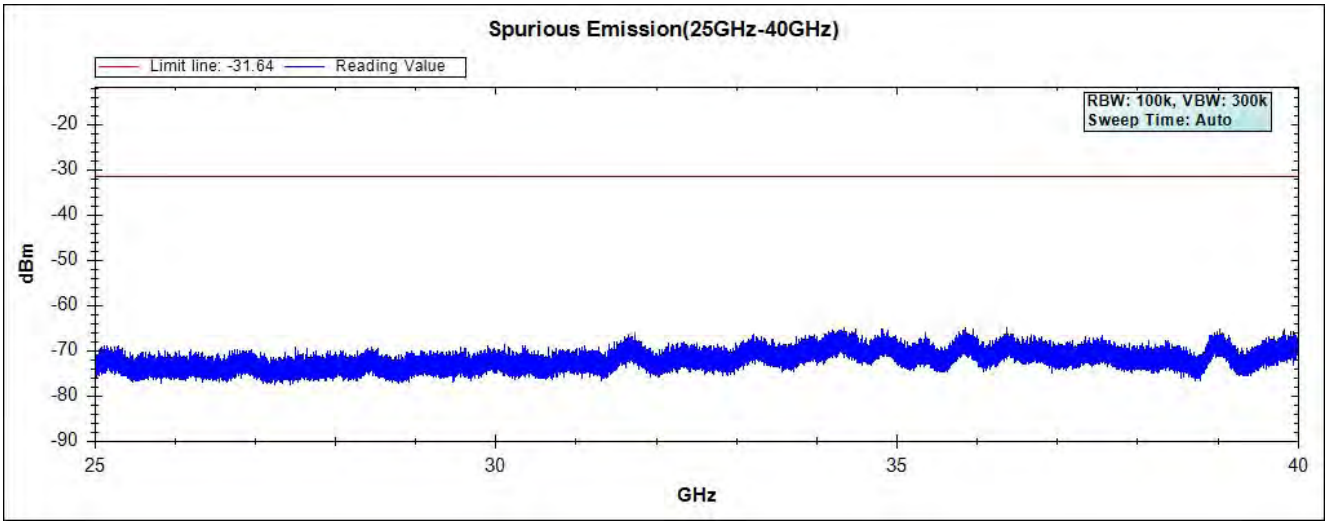
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



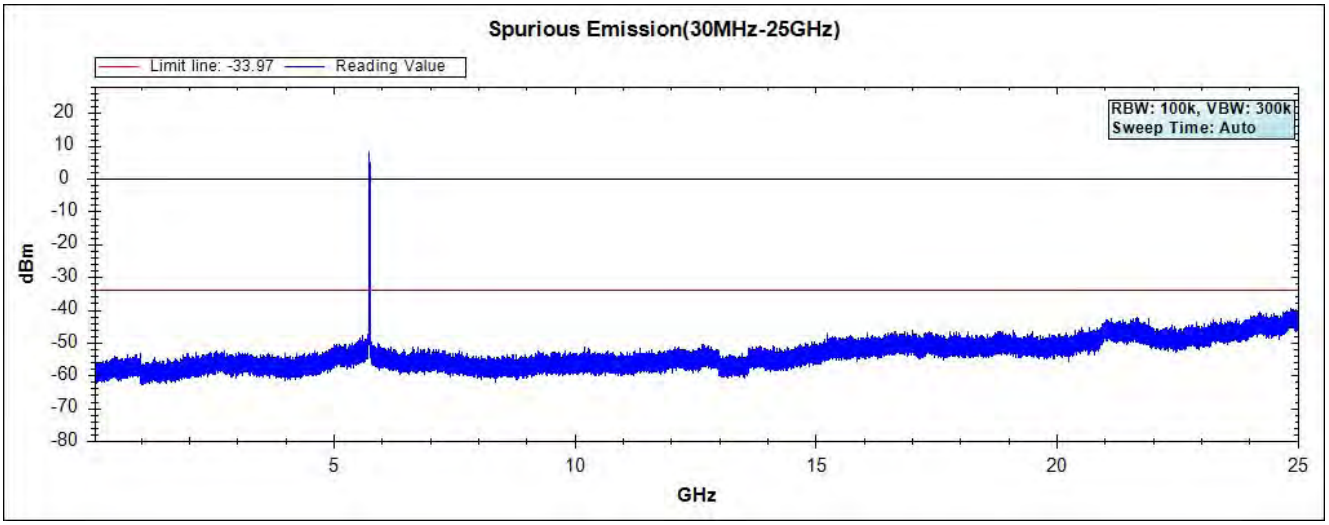


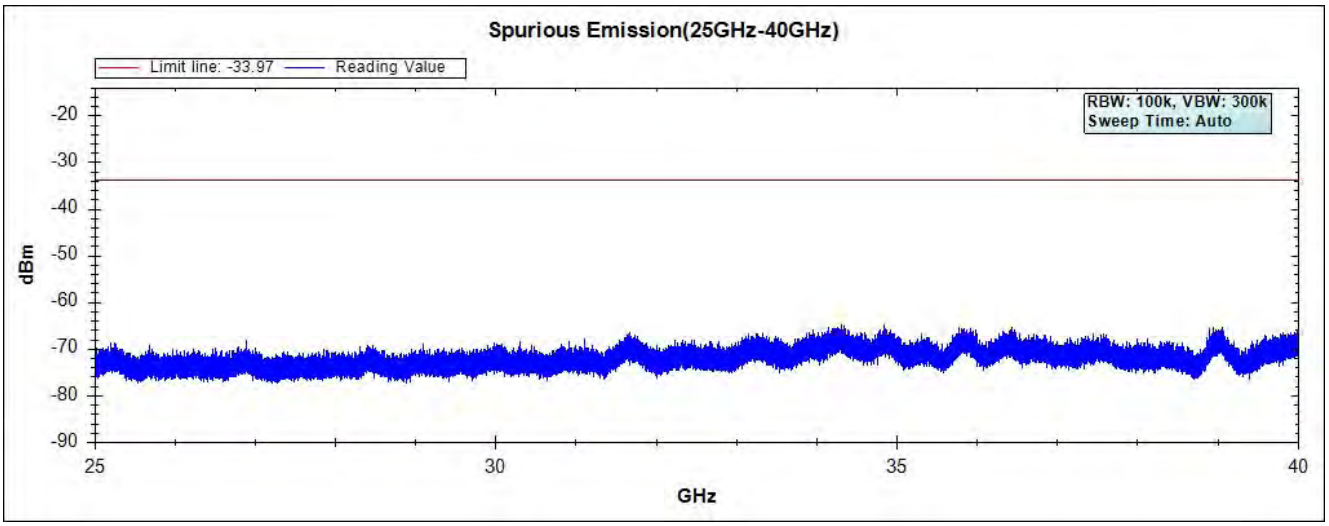
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



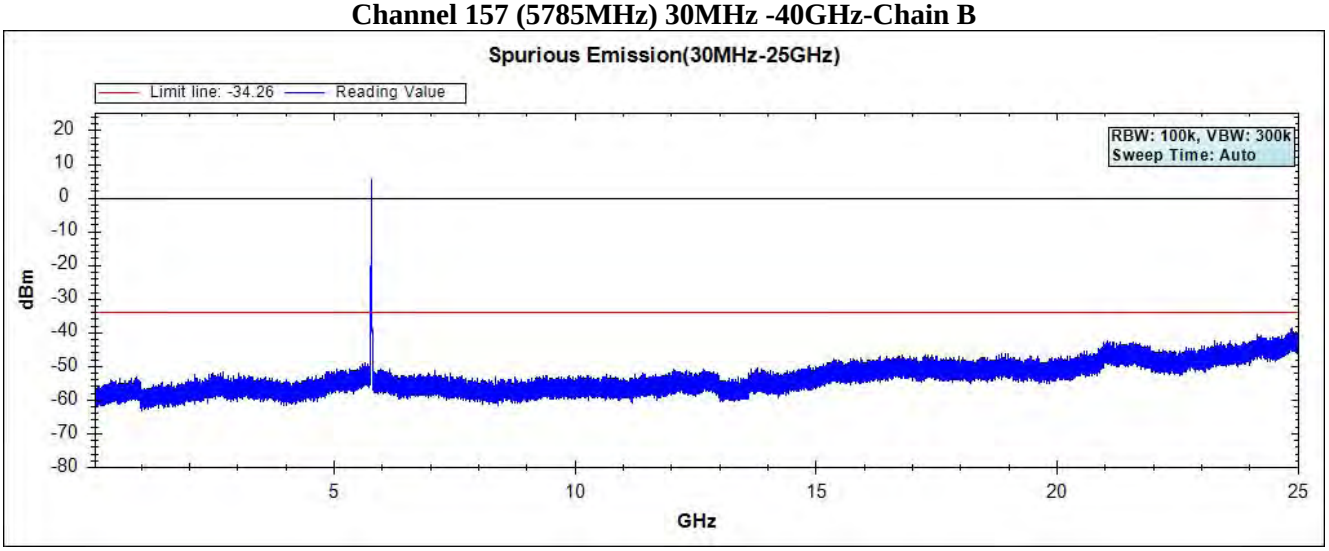


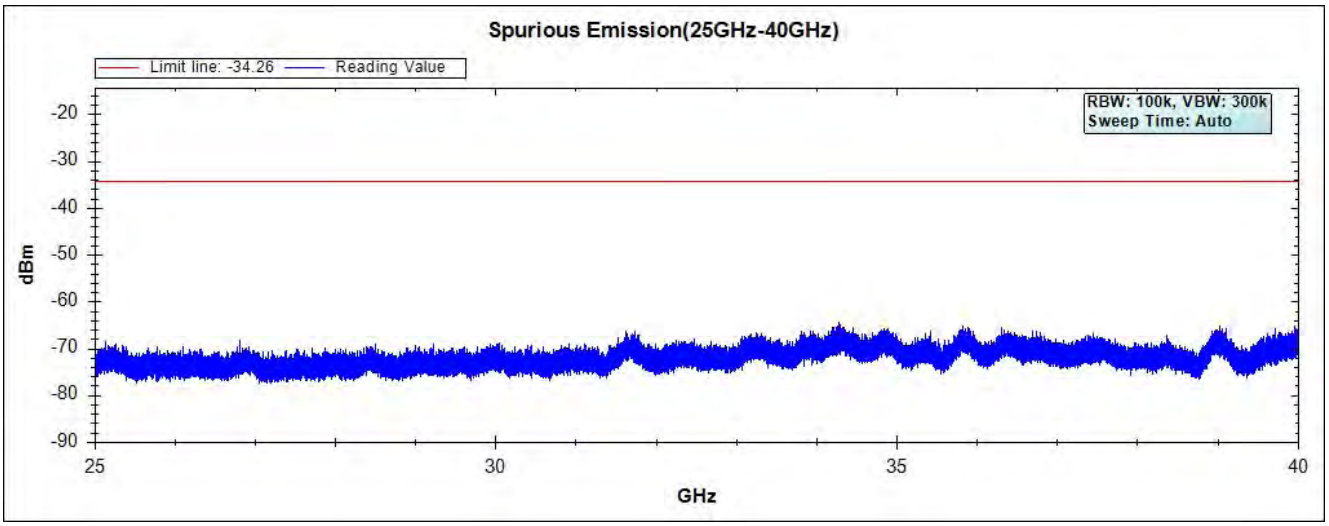
Channel 49 (5745MHz) 30MHz -40GHz-Chain B



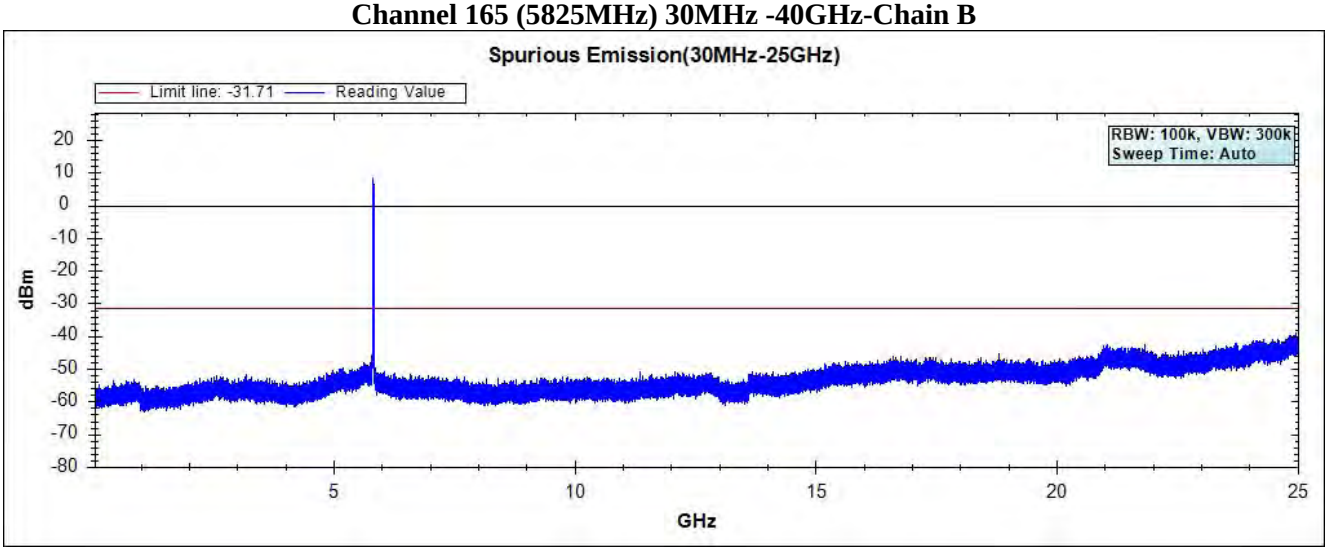


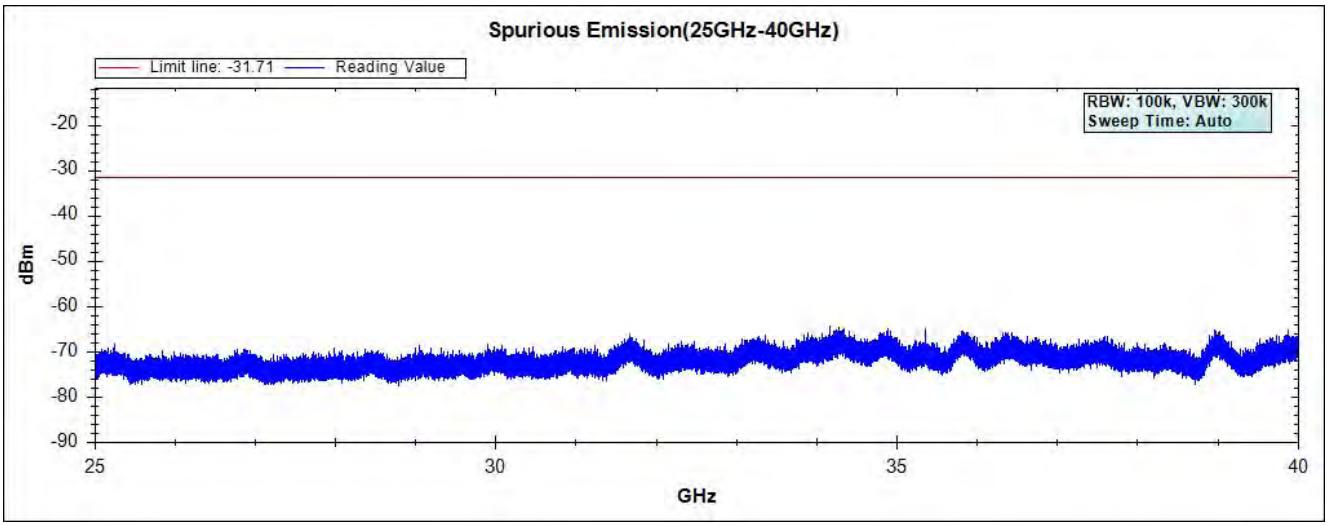
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





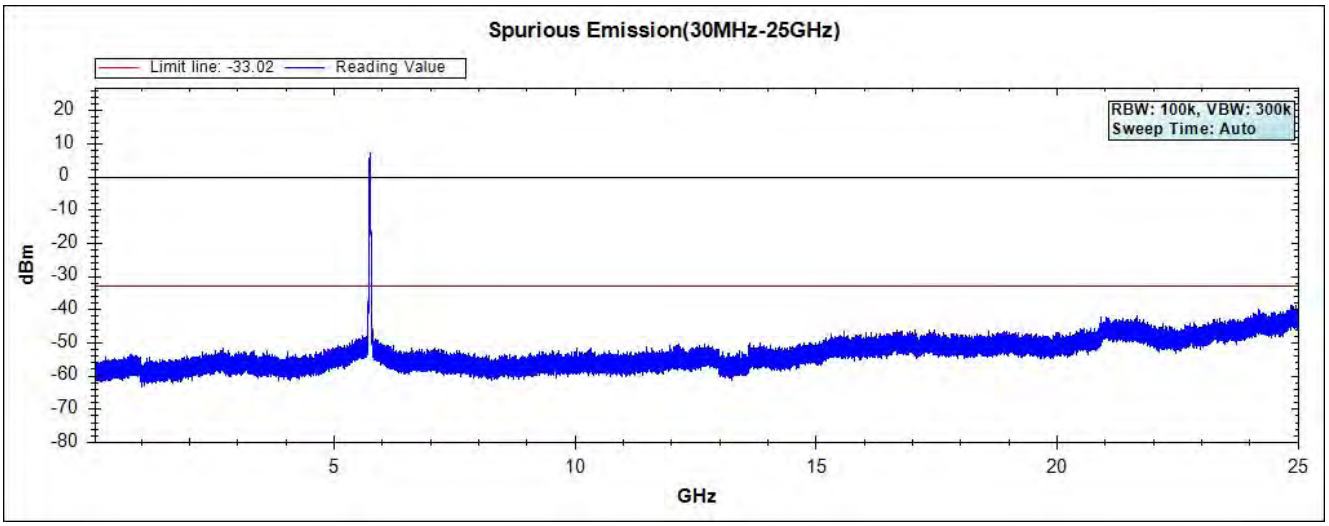
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

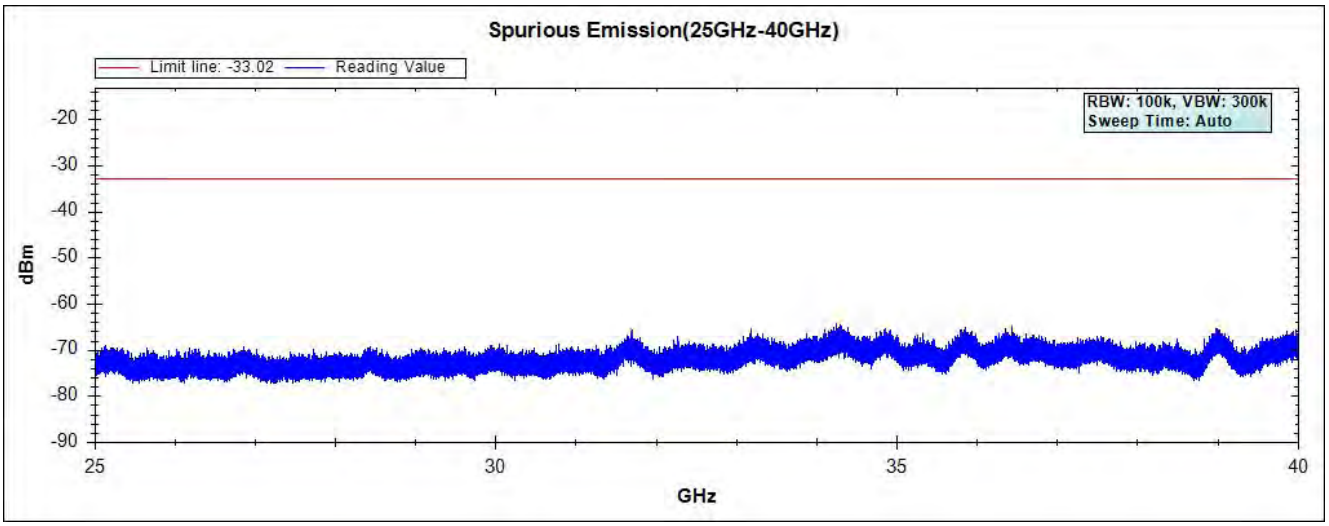




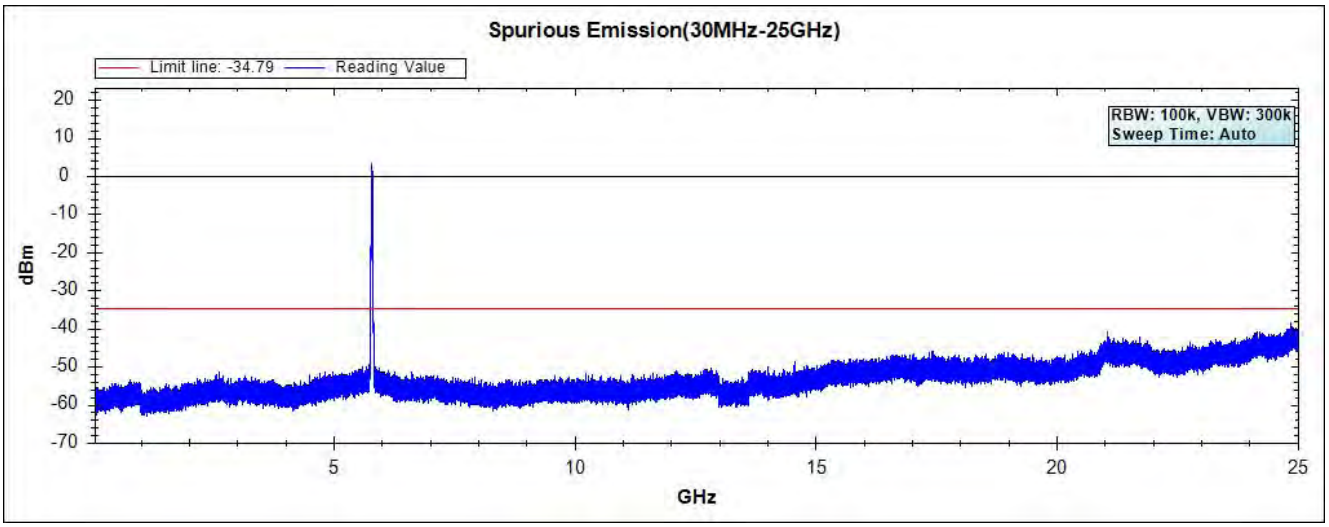
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band)(Grid DISH Antenna)

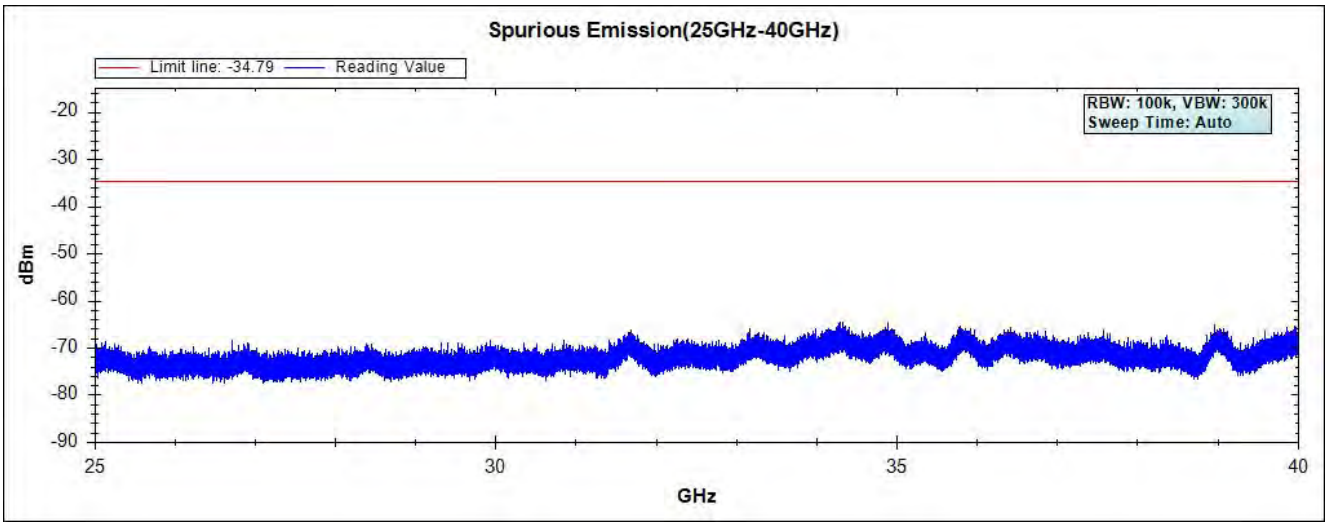
Channel 151 (5755MHz) 30MHz -40GHz-Chain A



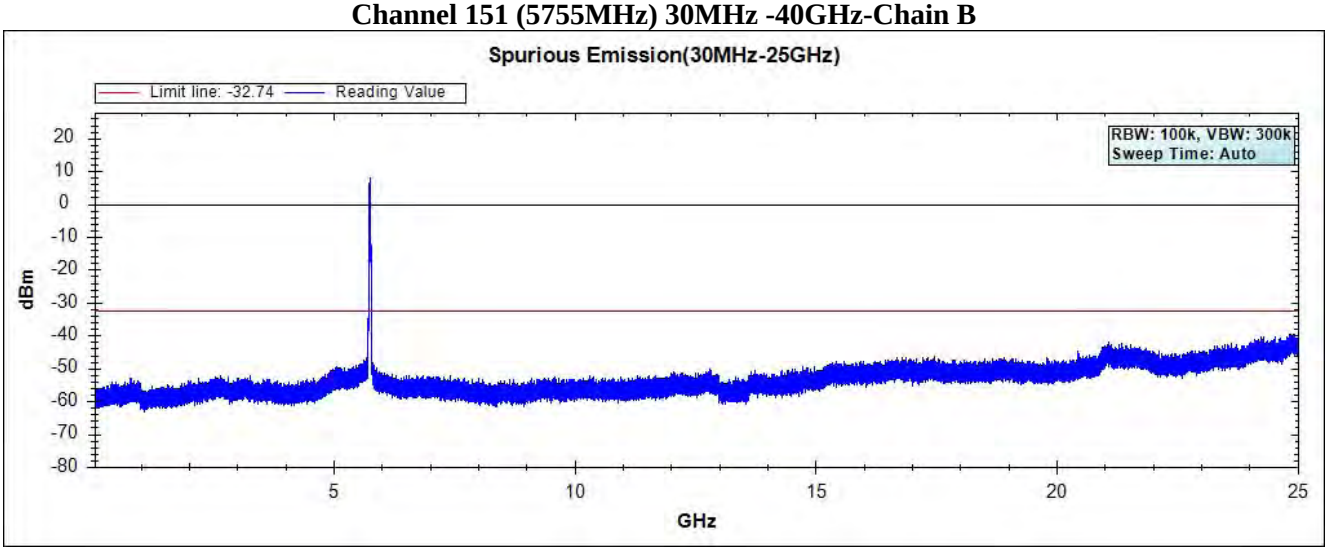


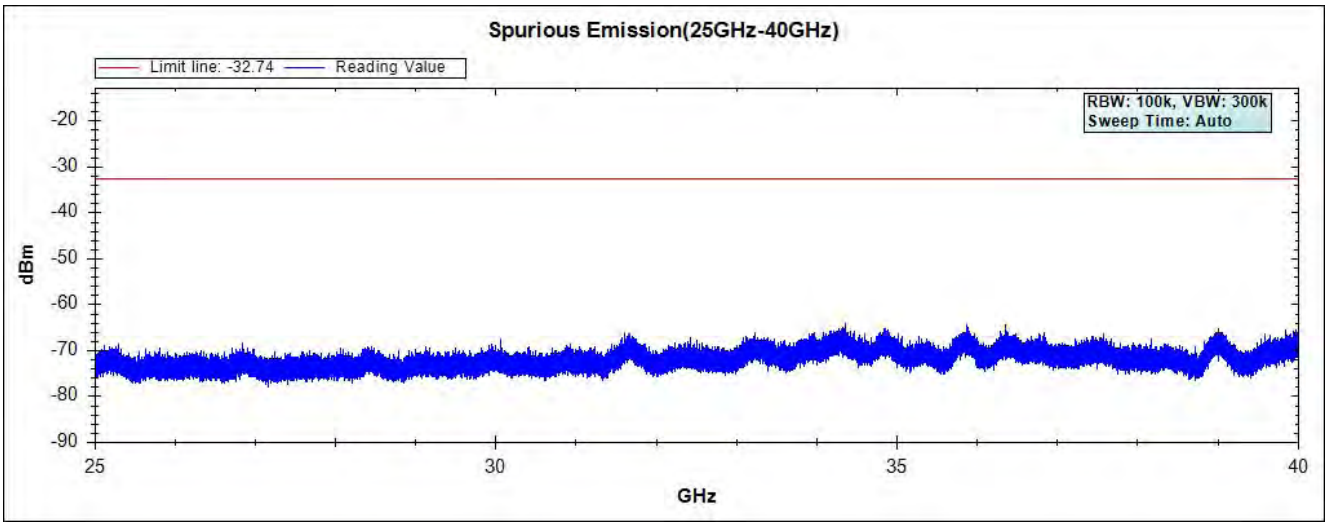
Channel 159 (5795MHz) 30MHz -40GHz-Chain A



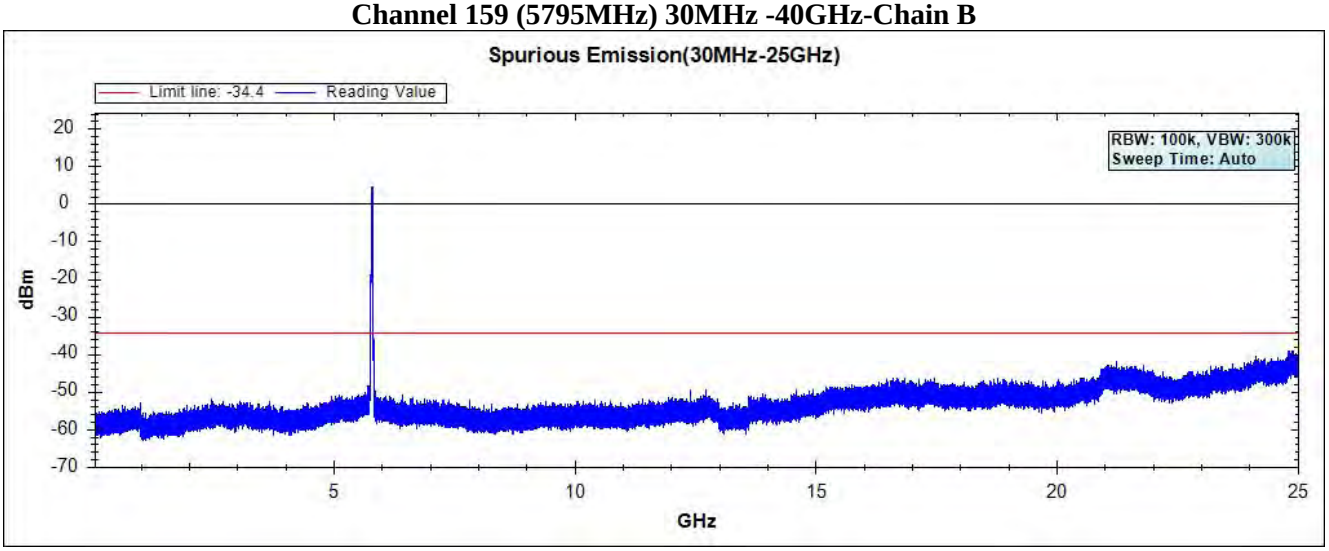


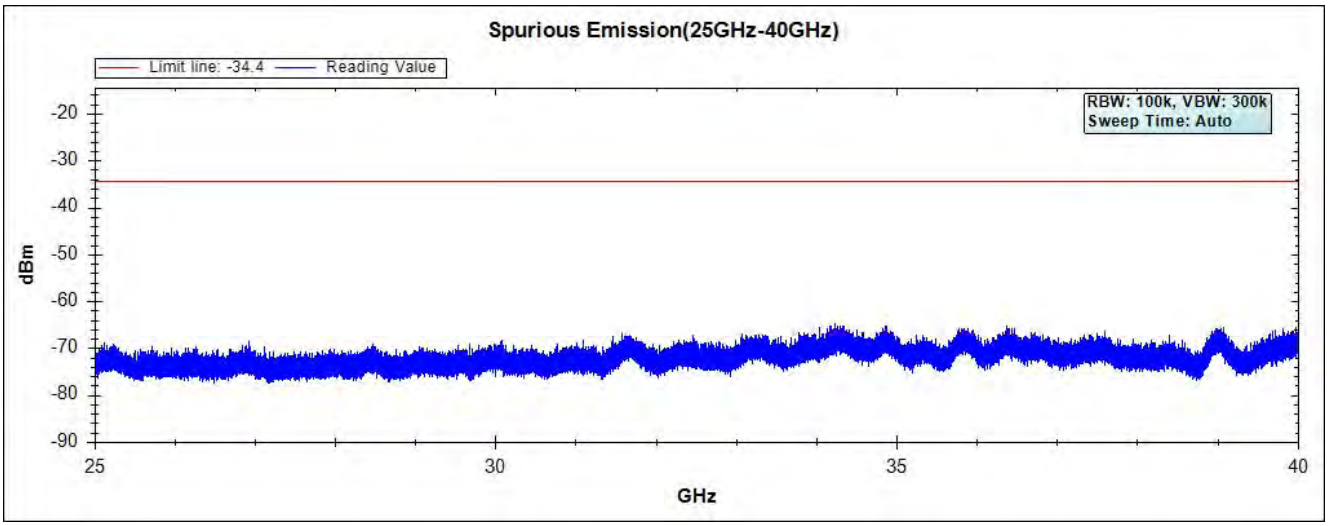
Channel 151 (5755MHz) 30MHz -40GHz-Chain B





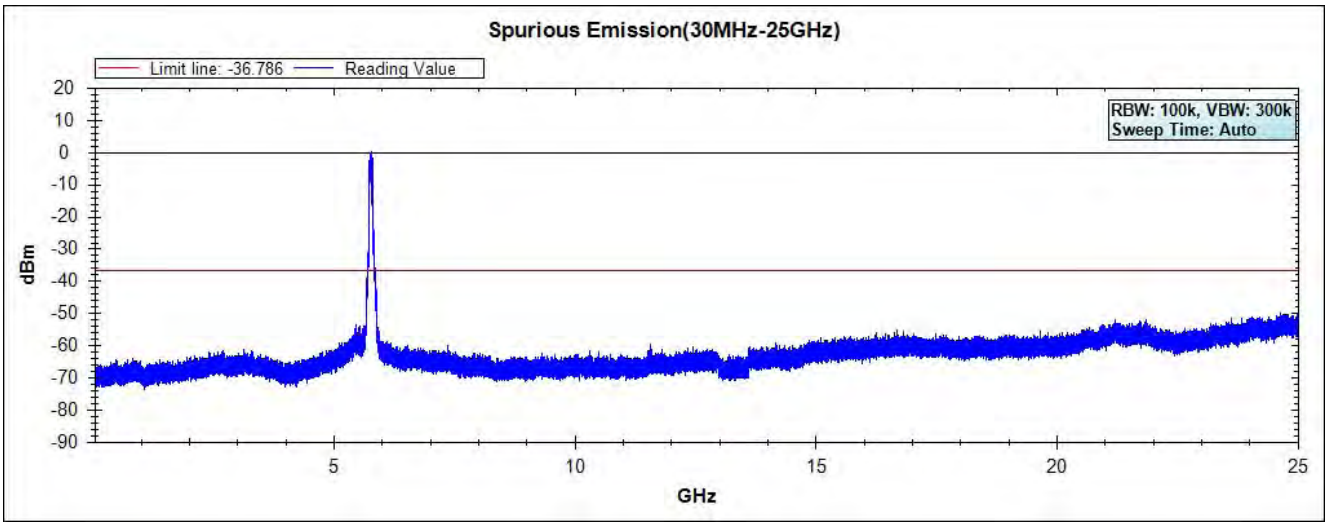
Channel 159 (5795MHz) 30MHz -40GHz-Chain B

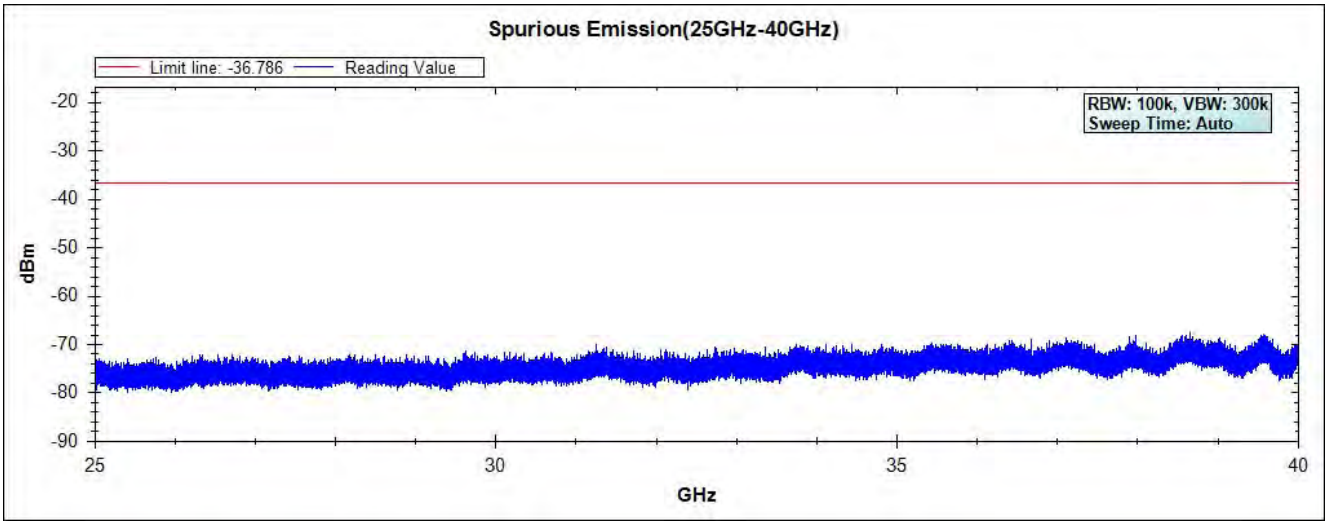




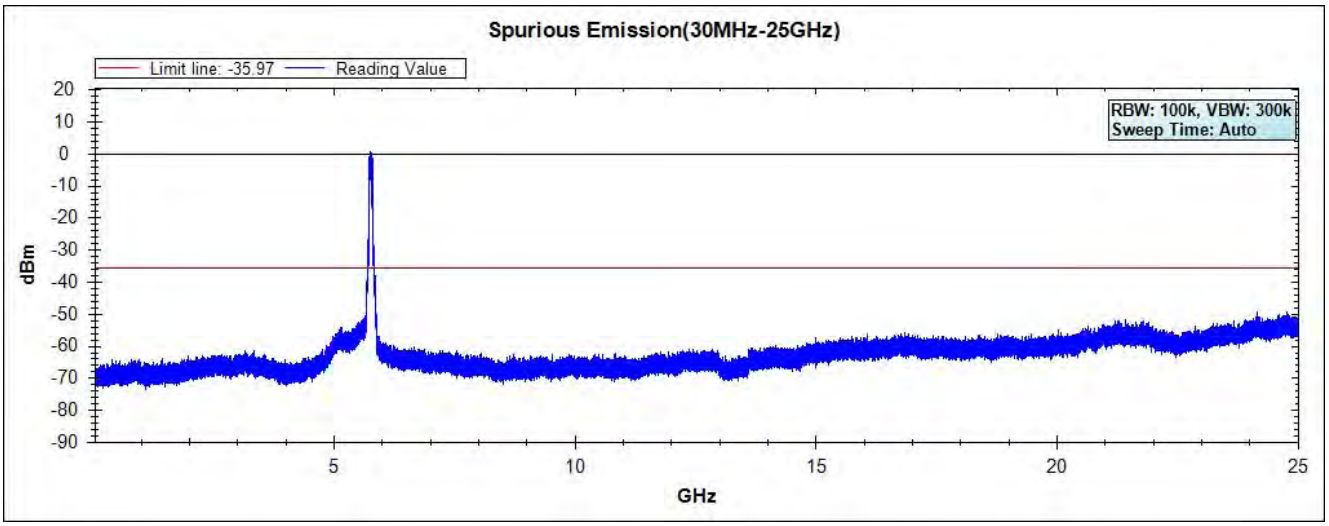
Product	:	802.11 ac PCIe Module
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	No.3 OATS
Test Mode	:	Mode 8: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Grid DISH Antenna)

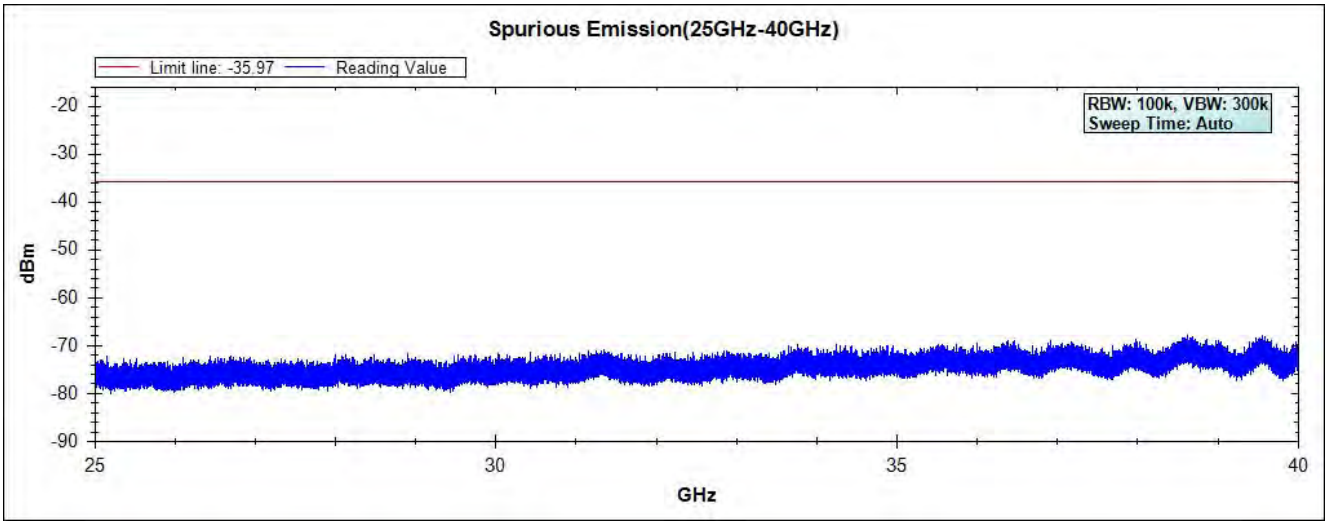
Channel 1 (5780MHz) 30MHz -40GHz- Chaia A





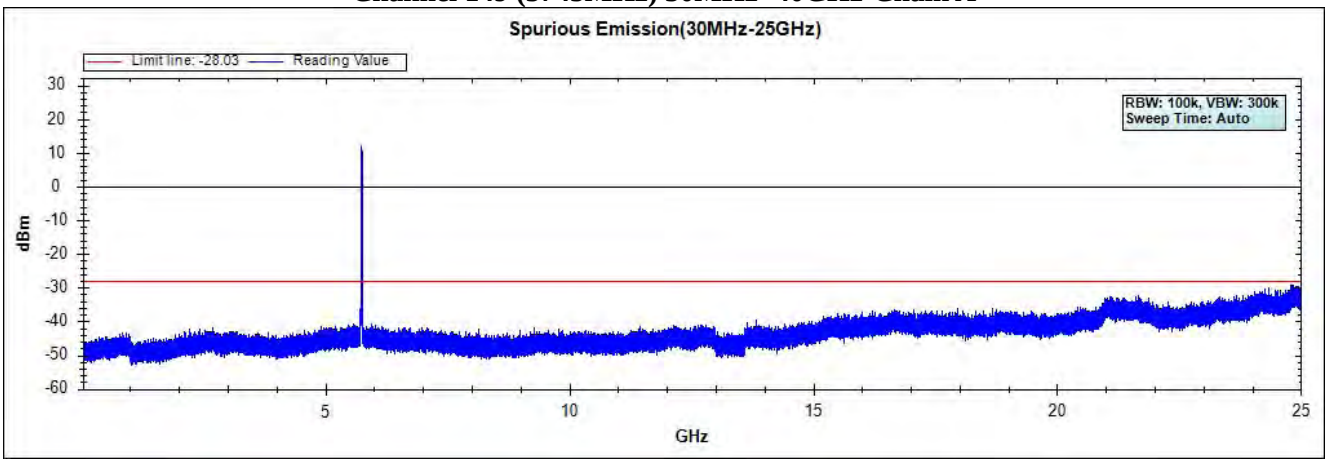
Channel 1 (5780MHz) 30MHz -40GHz- Chaia B

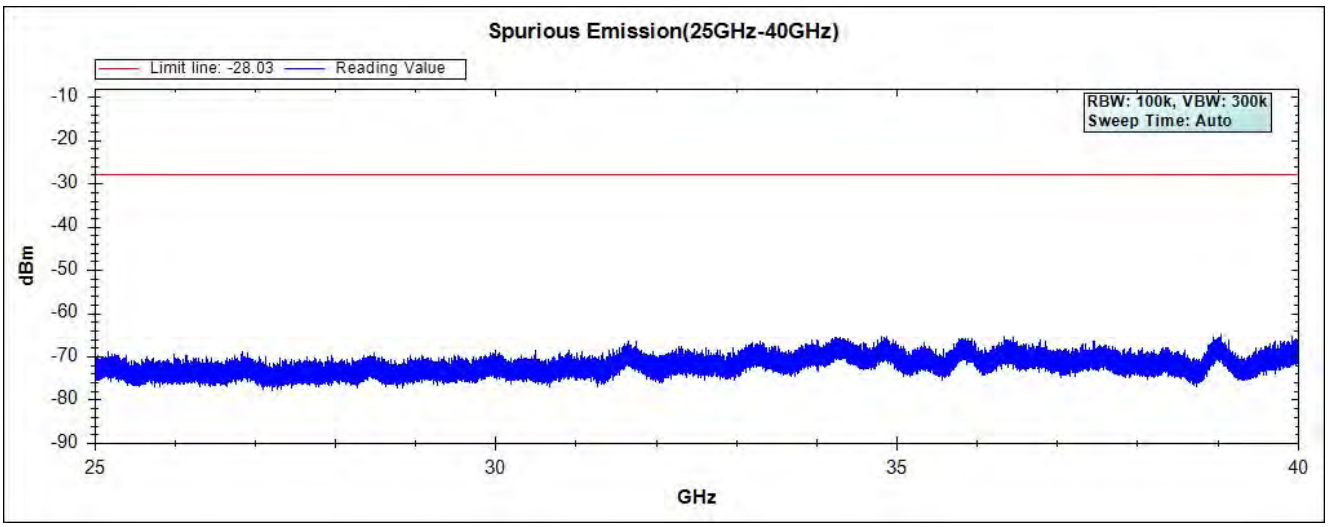




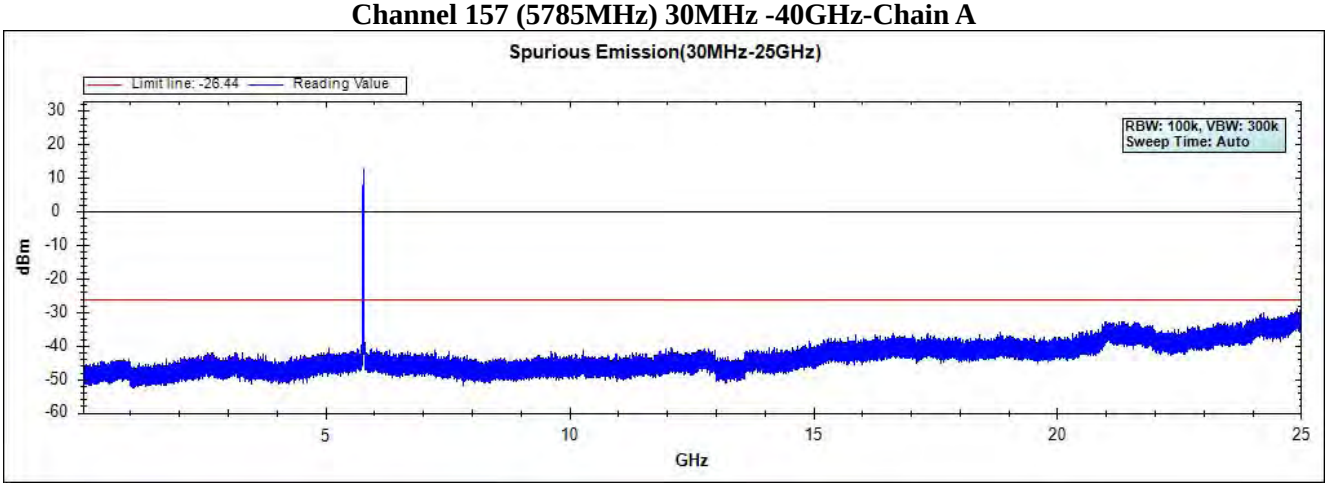
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 9: Transmit - 802.11a_6Mbps(Omni Antenna)

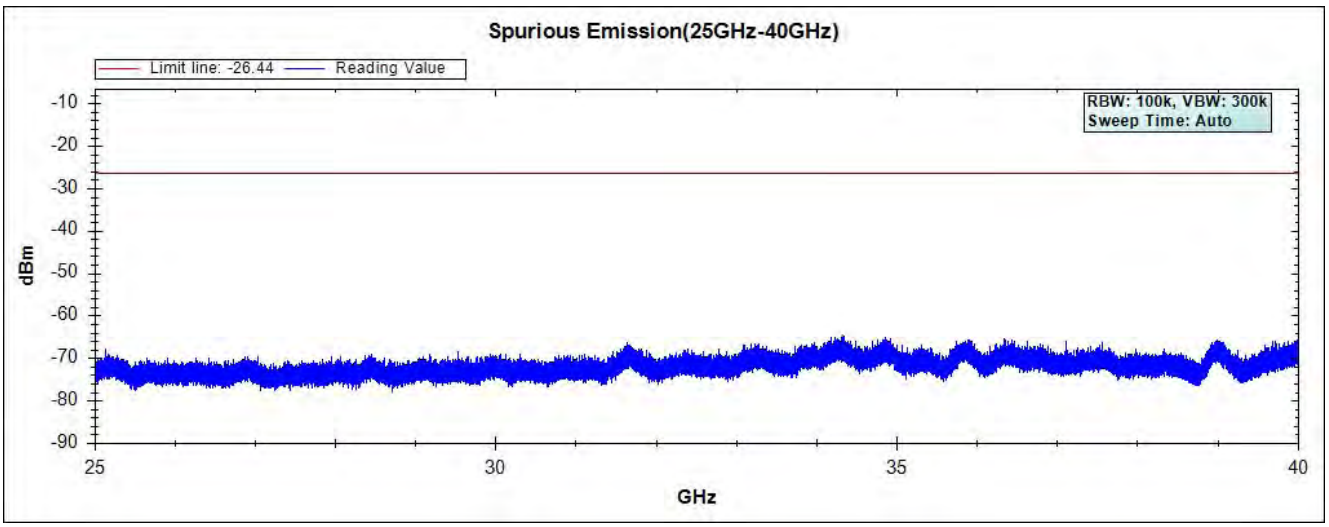
Channel 149 (5745MHz) 30MHz -40GHz-Chain A



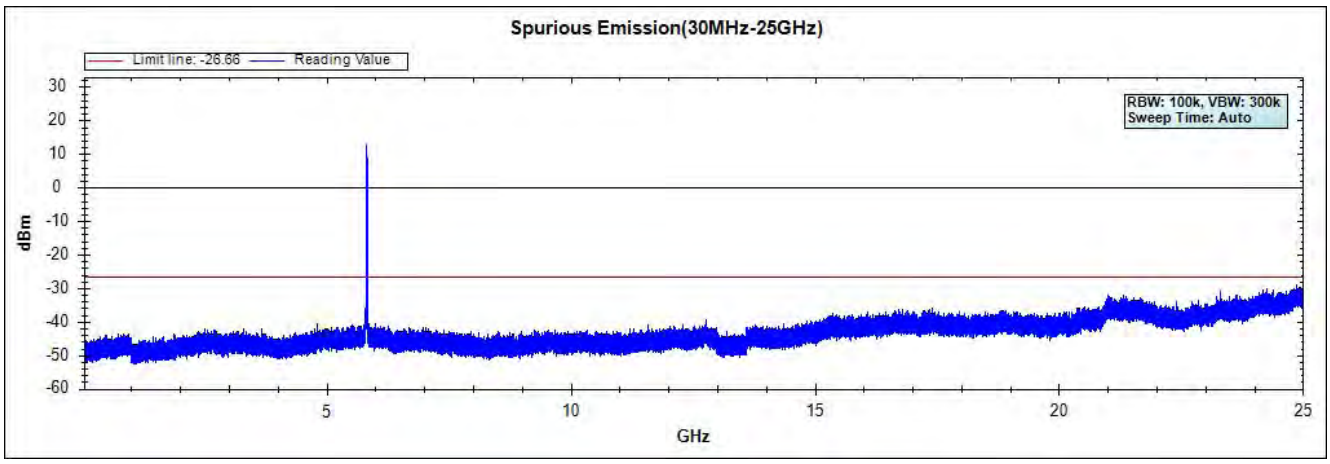


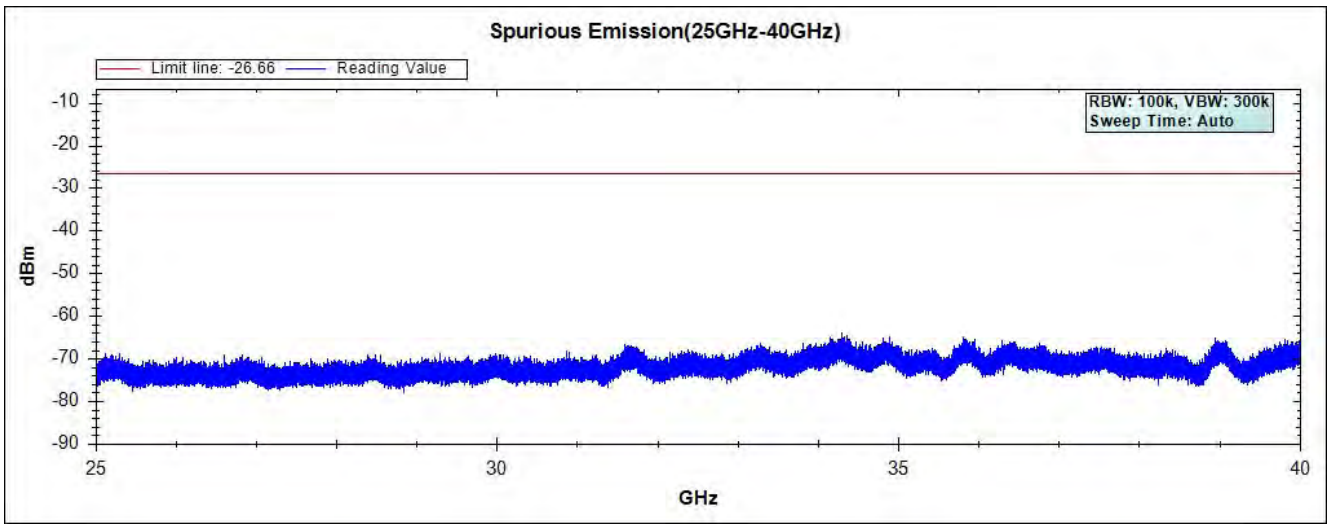
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



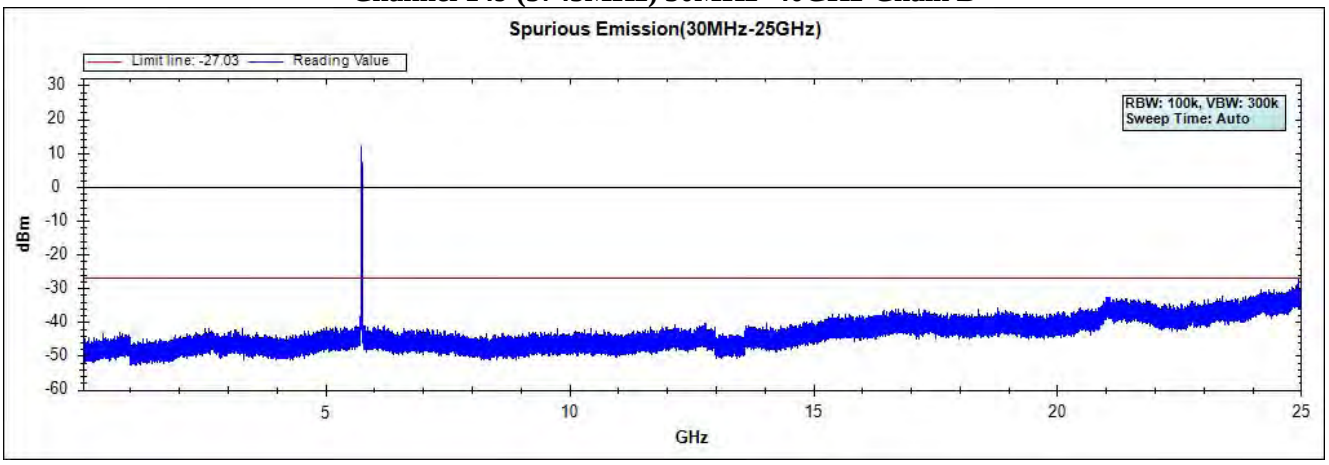


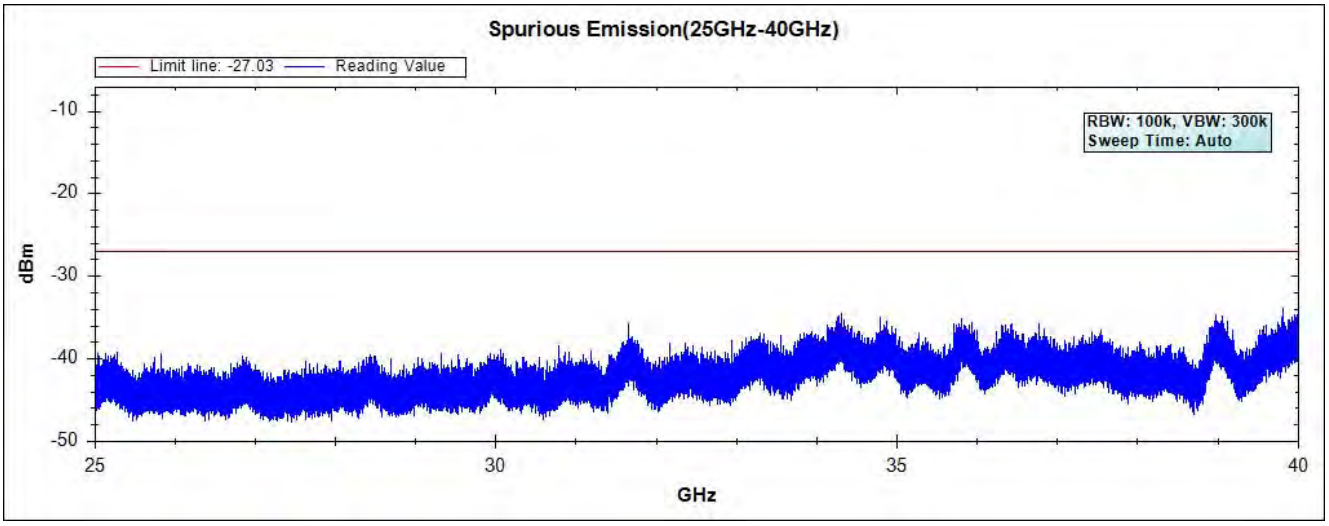
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



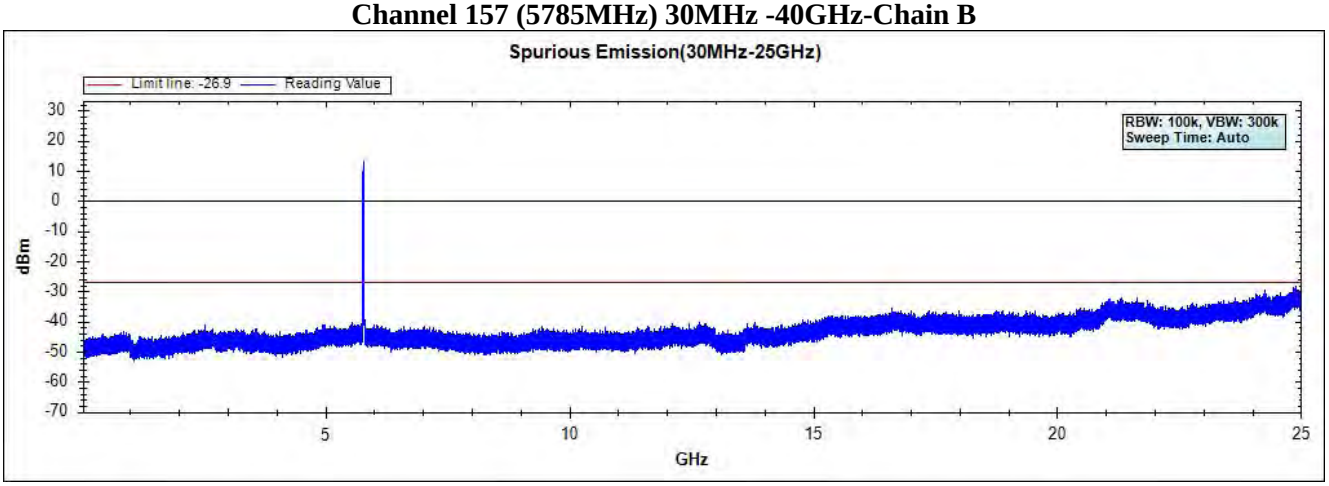


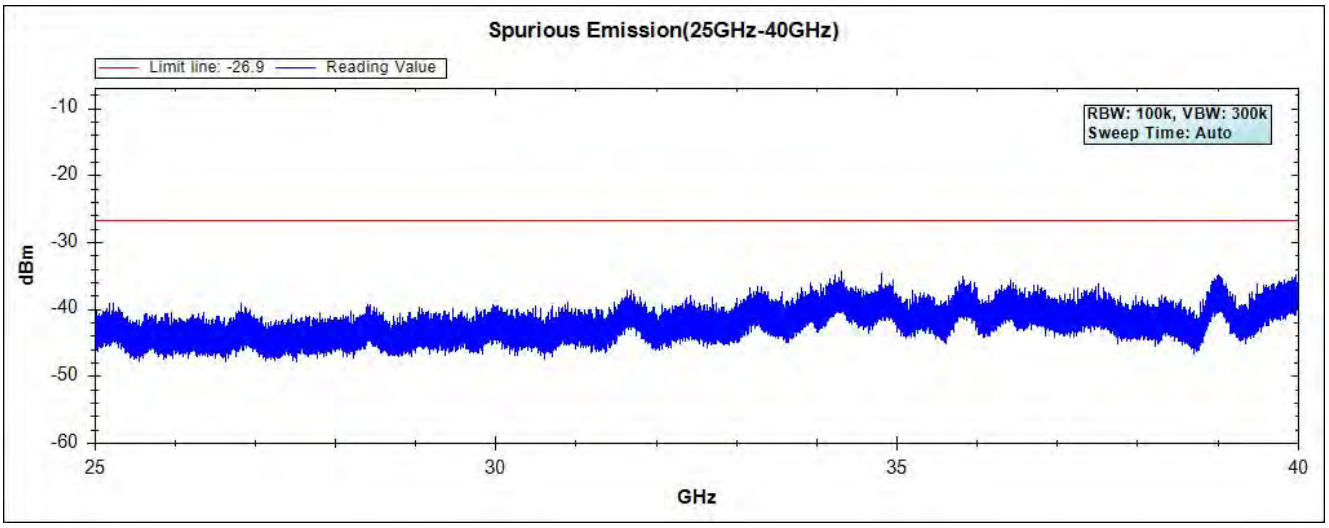
Channel 149 (5745MHz) 30MHz -40GHz-Chain B



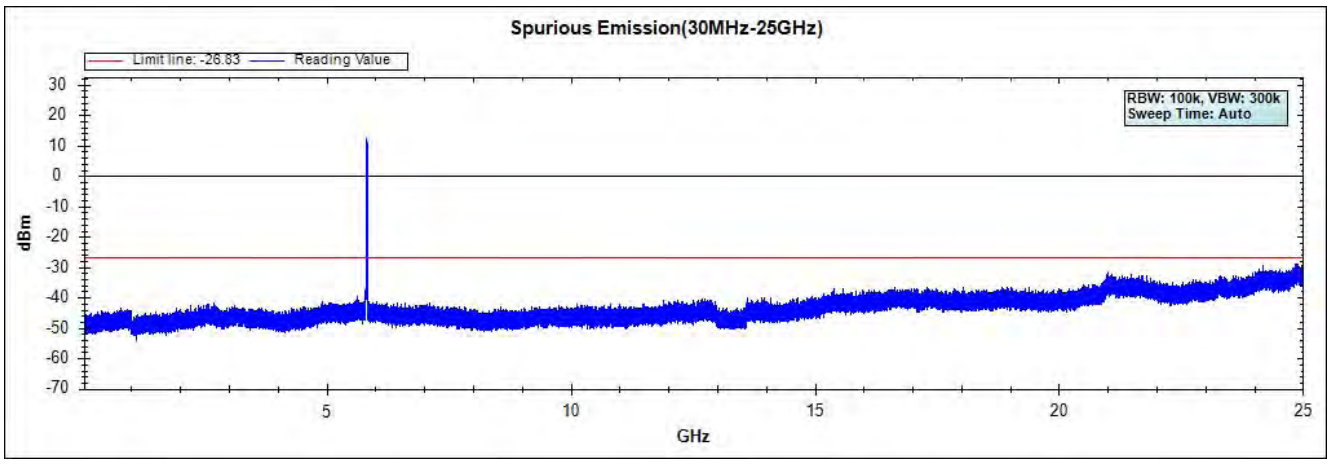


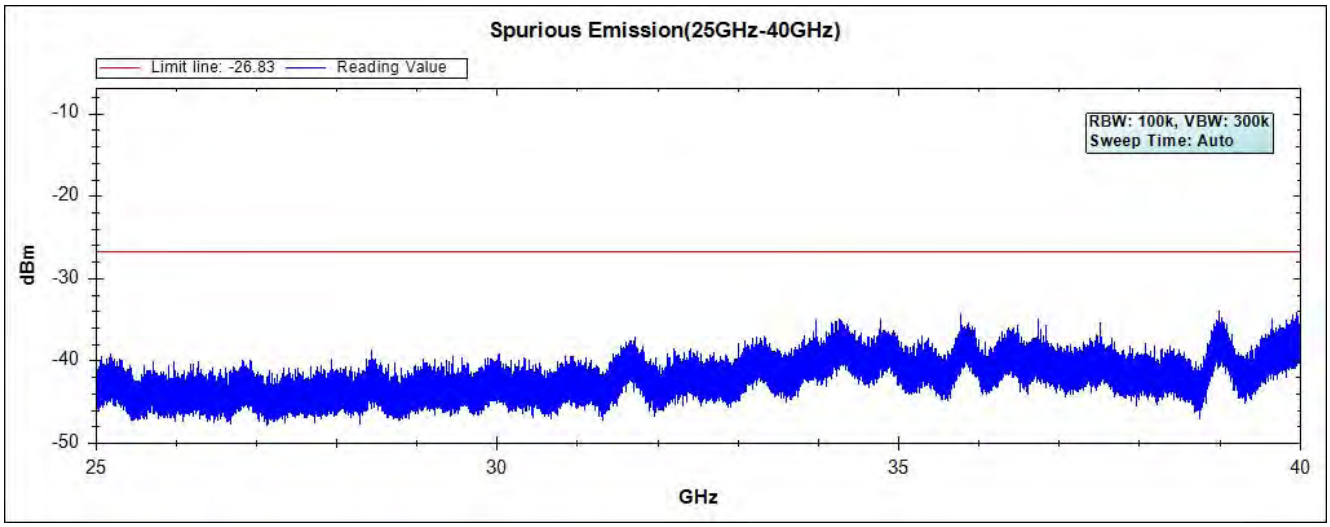
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





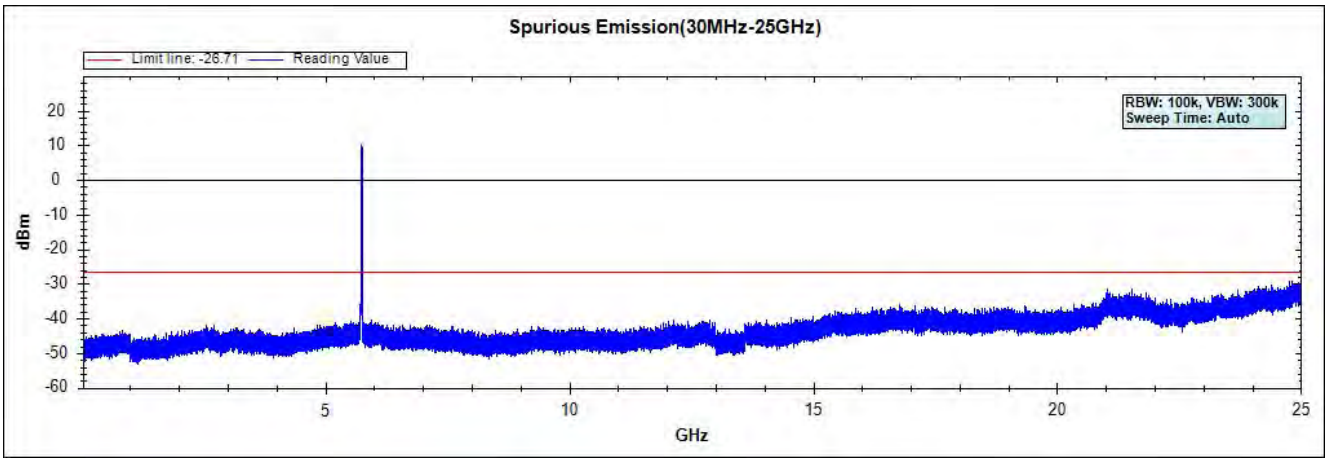
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

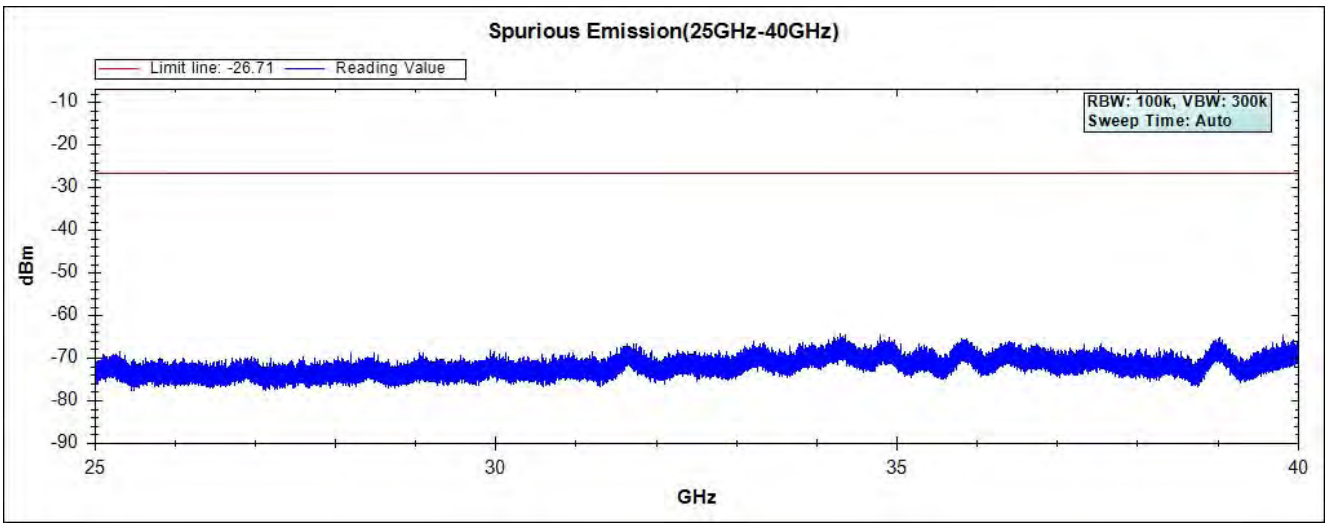




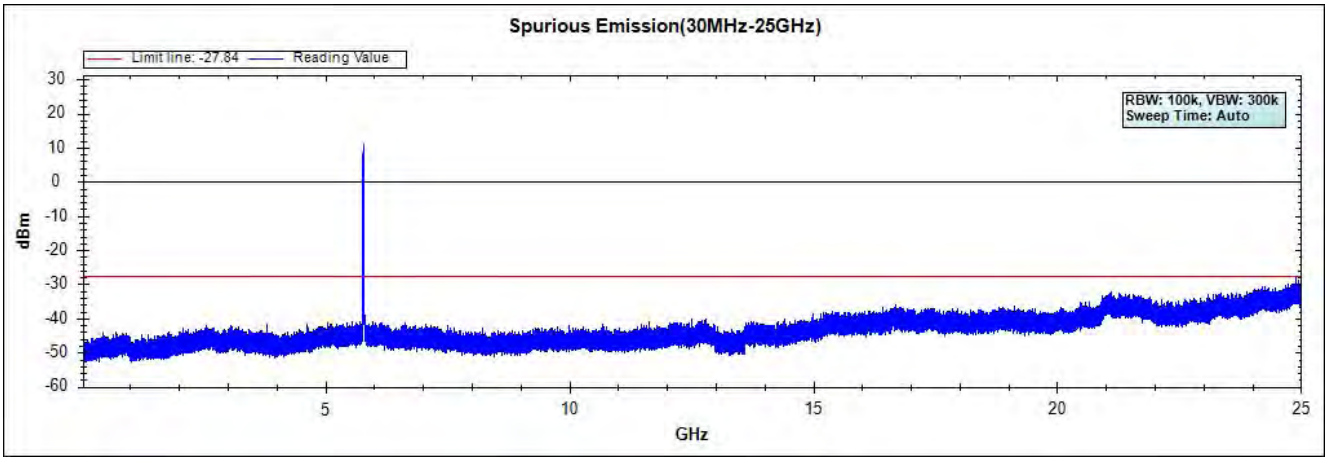
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 10: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Omni Antenna)

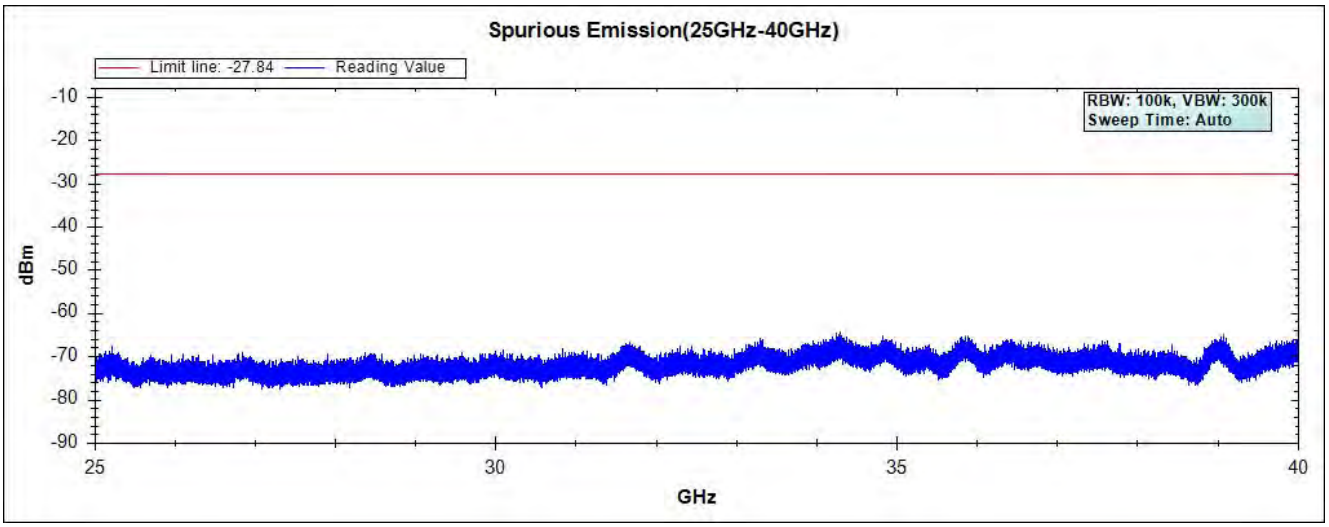
Channel 49 (5745MHz) 30MHz -40GHz-Chain A



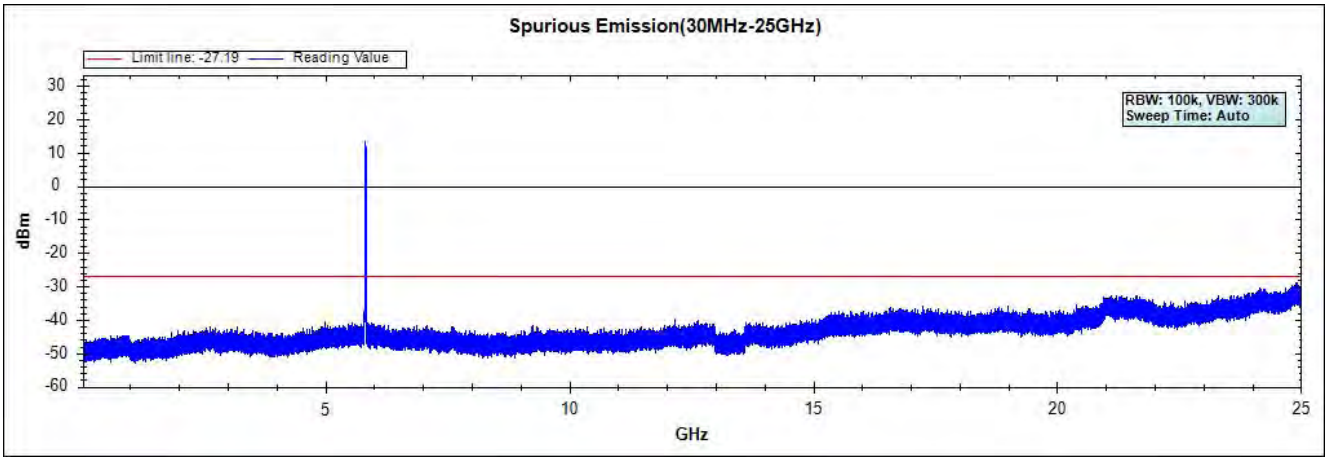


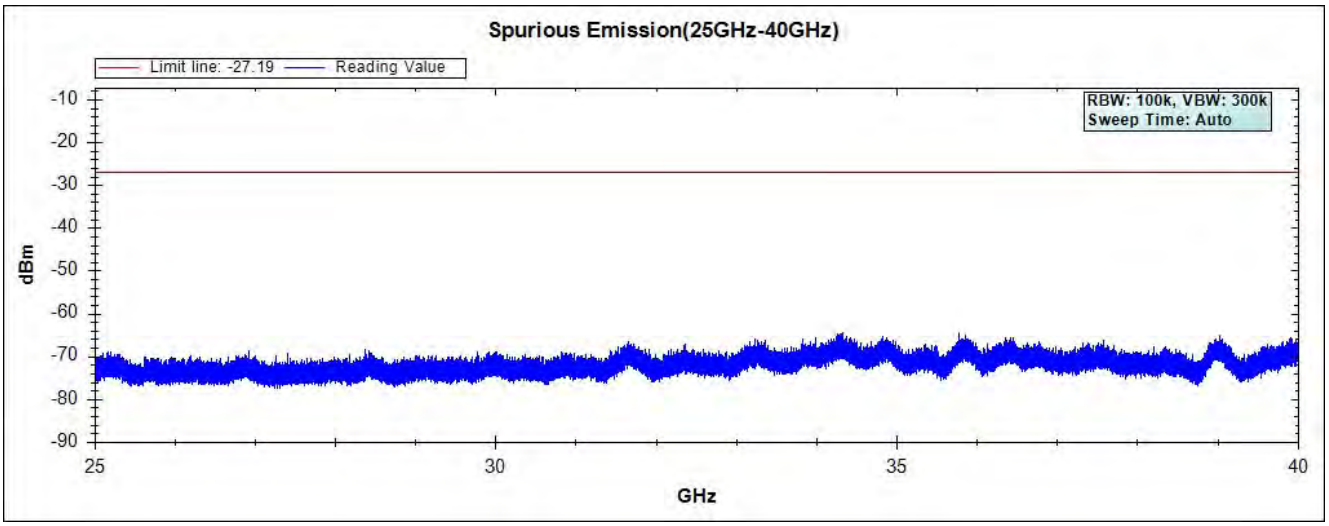
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



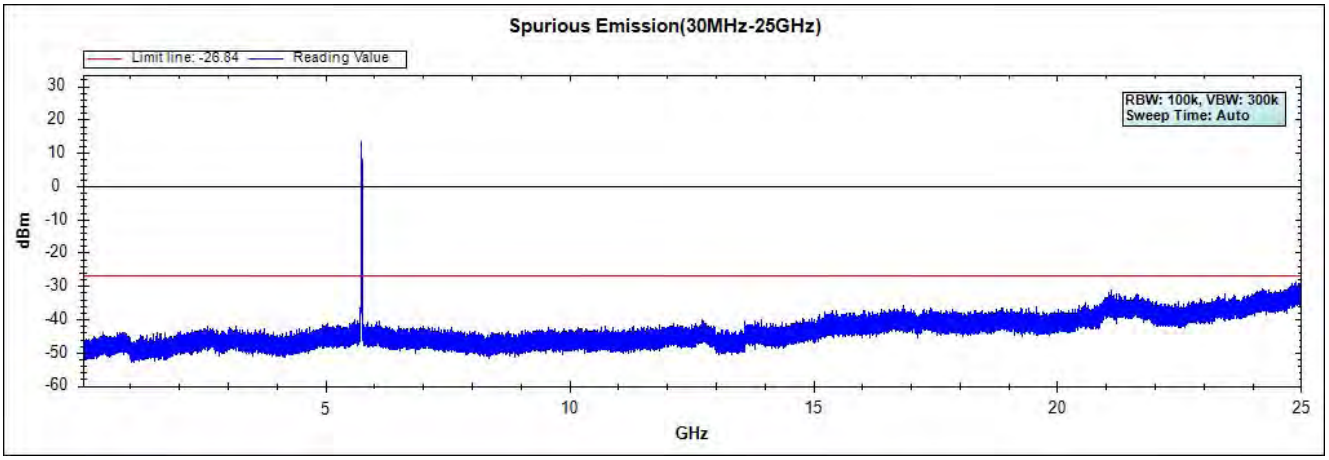


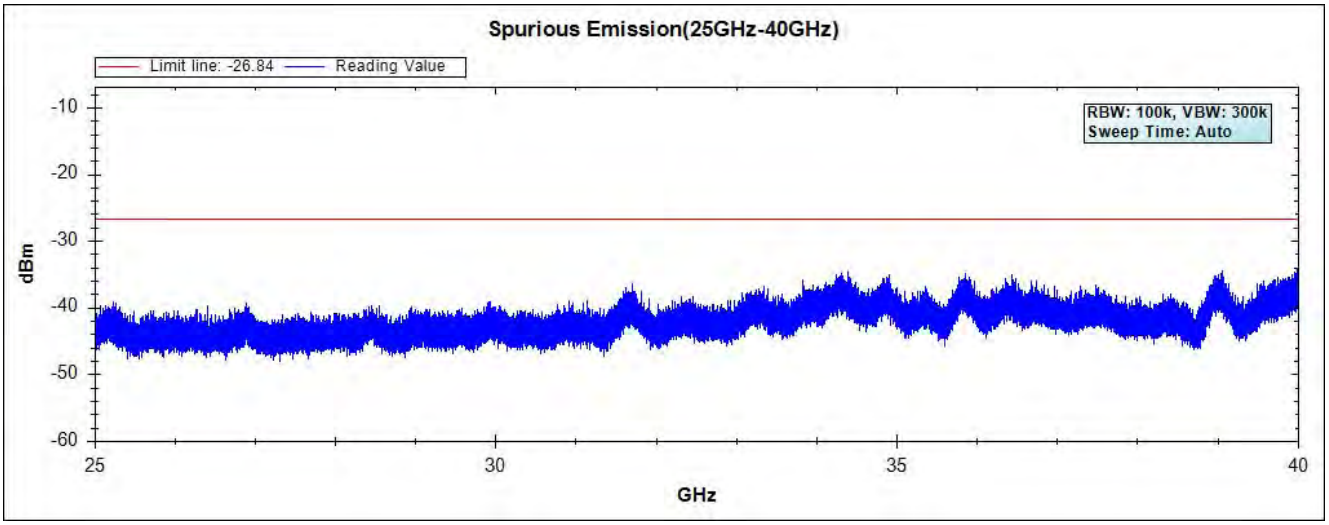
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



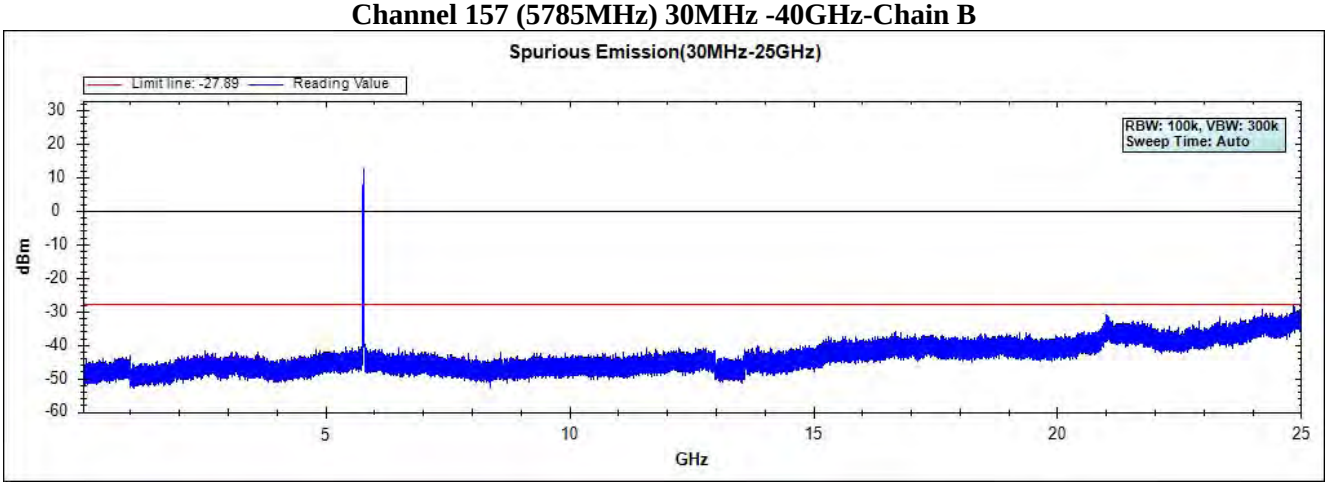


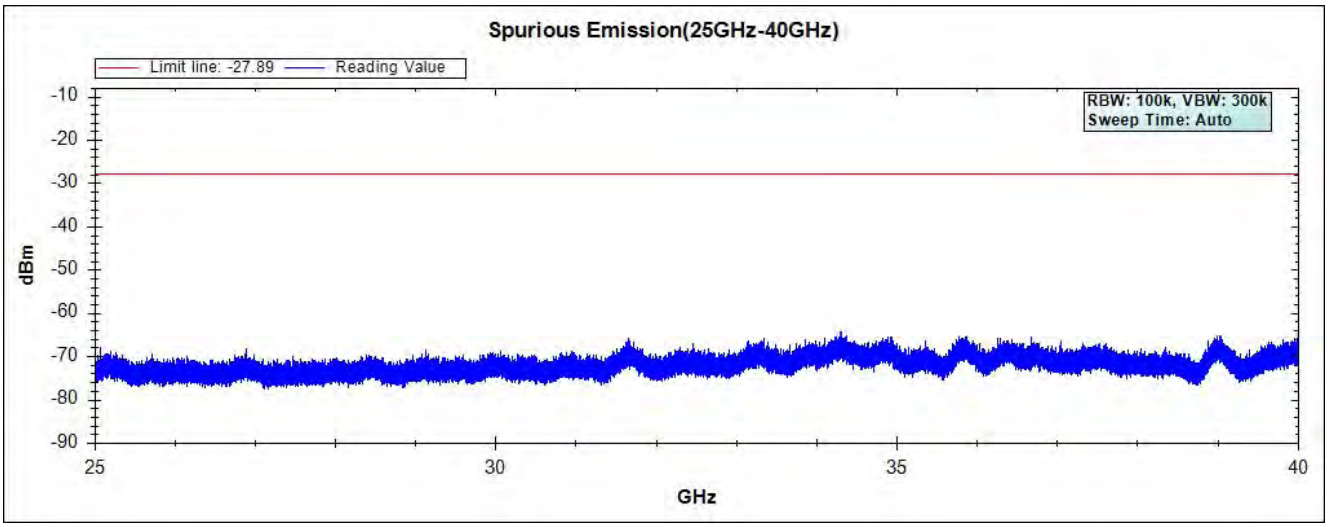
Channel 49 (5745MHz) 30MHz -40GHz-Chain B



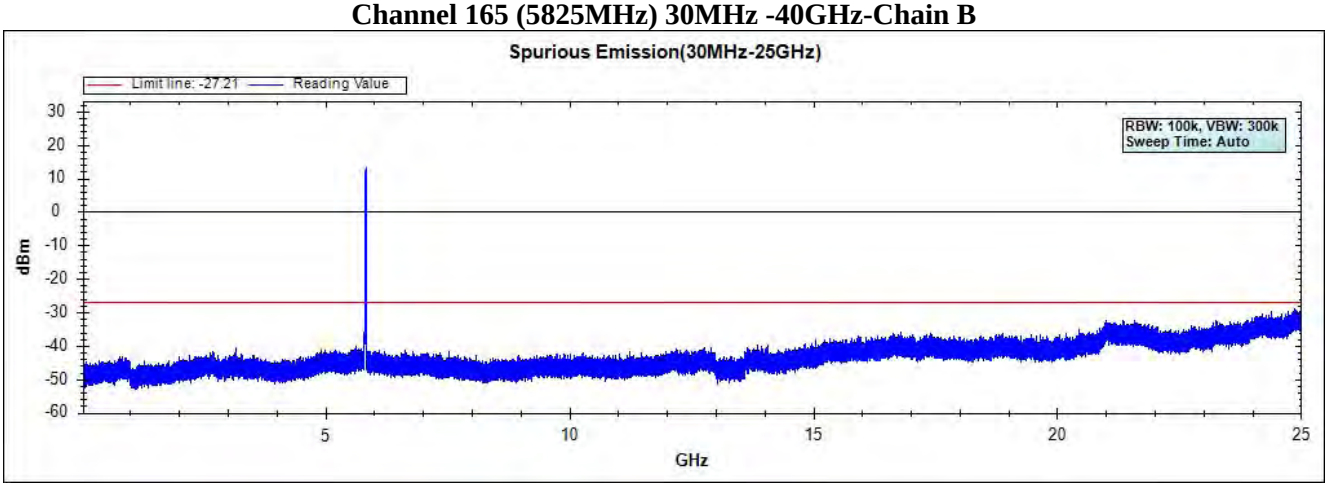


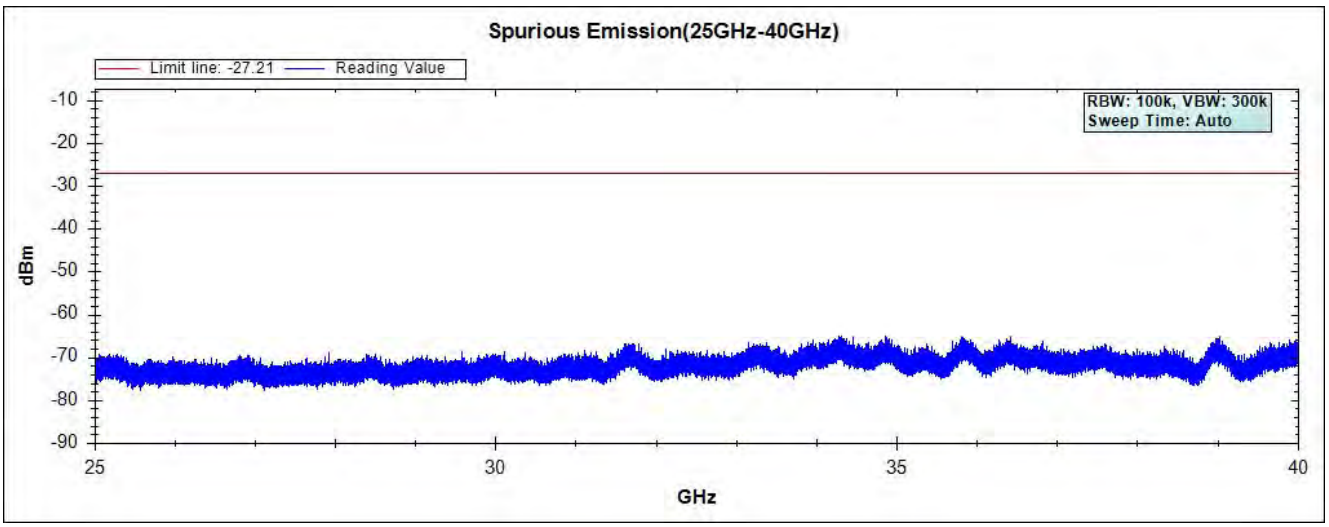
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





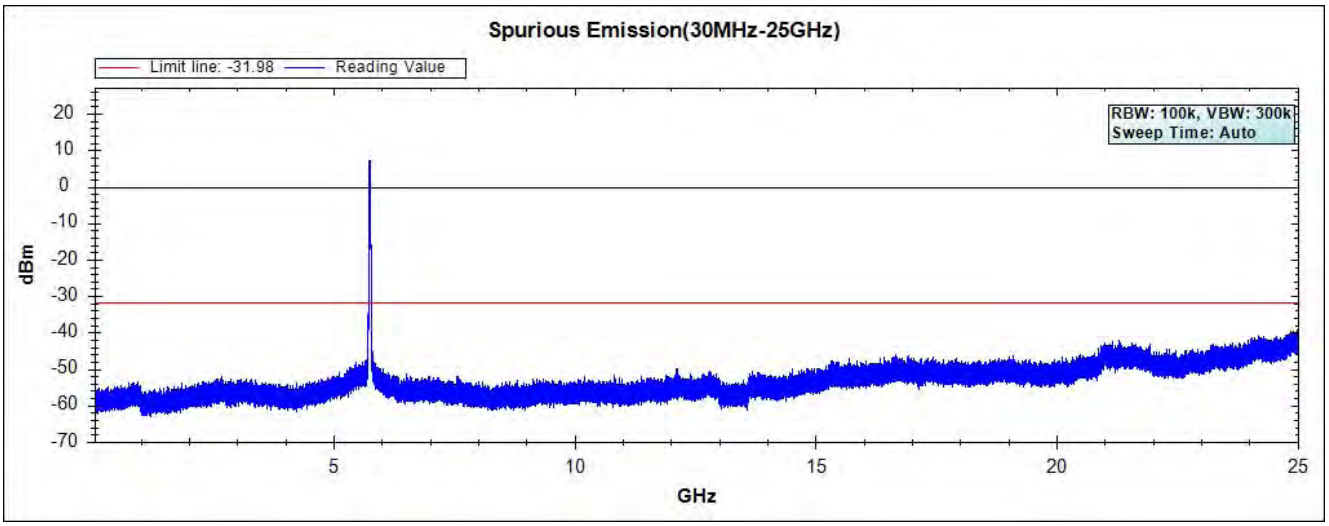
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

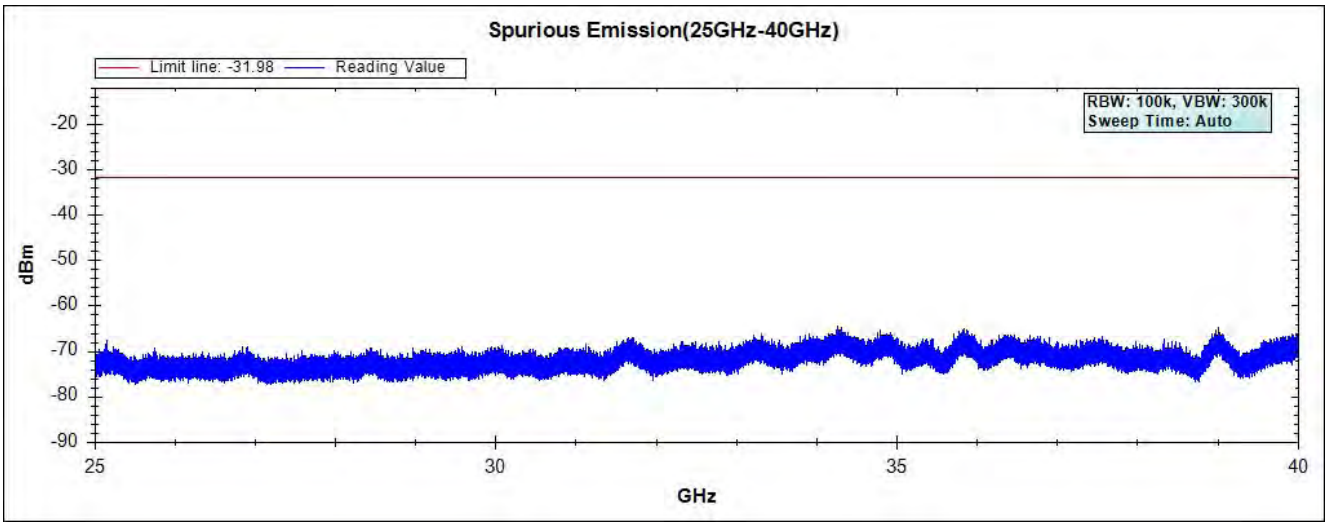




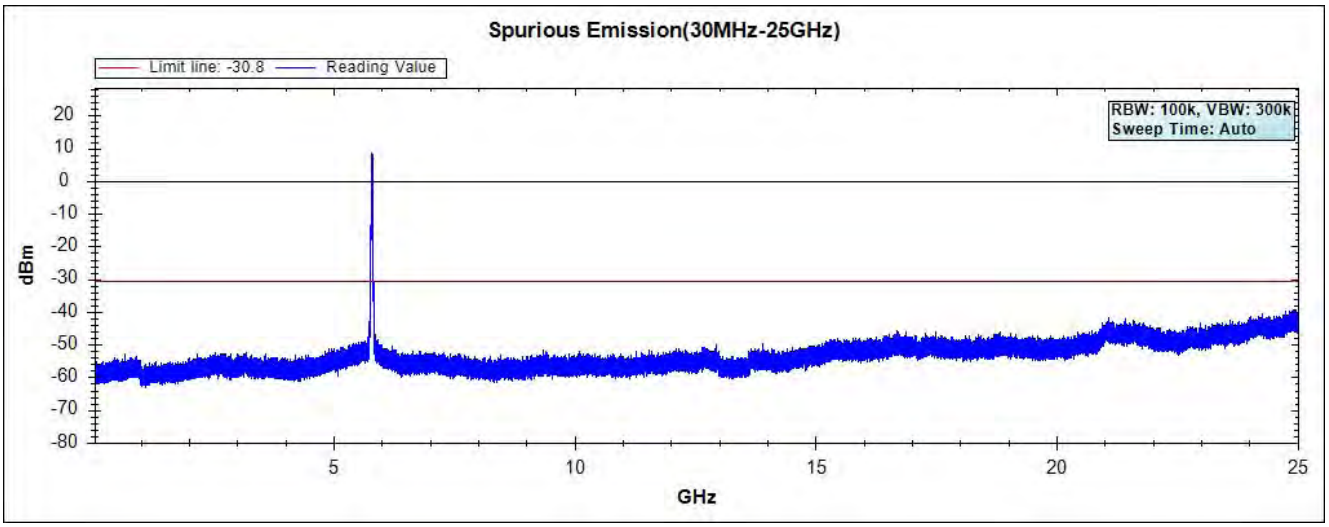
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 11: Transmit - 802.11n-40BW_30Mbps(5G Band)(Omni Antenna)

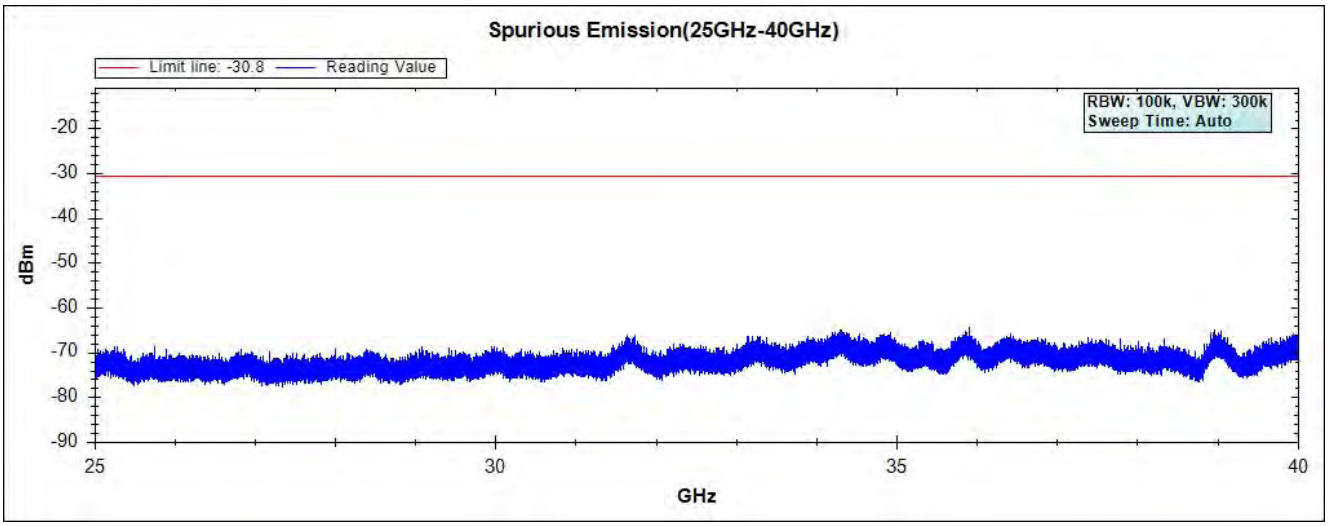
Channel 151 (5755MHz) 30MHz -40GHz-Chain A



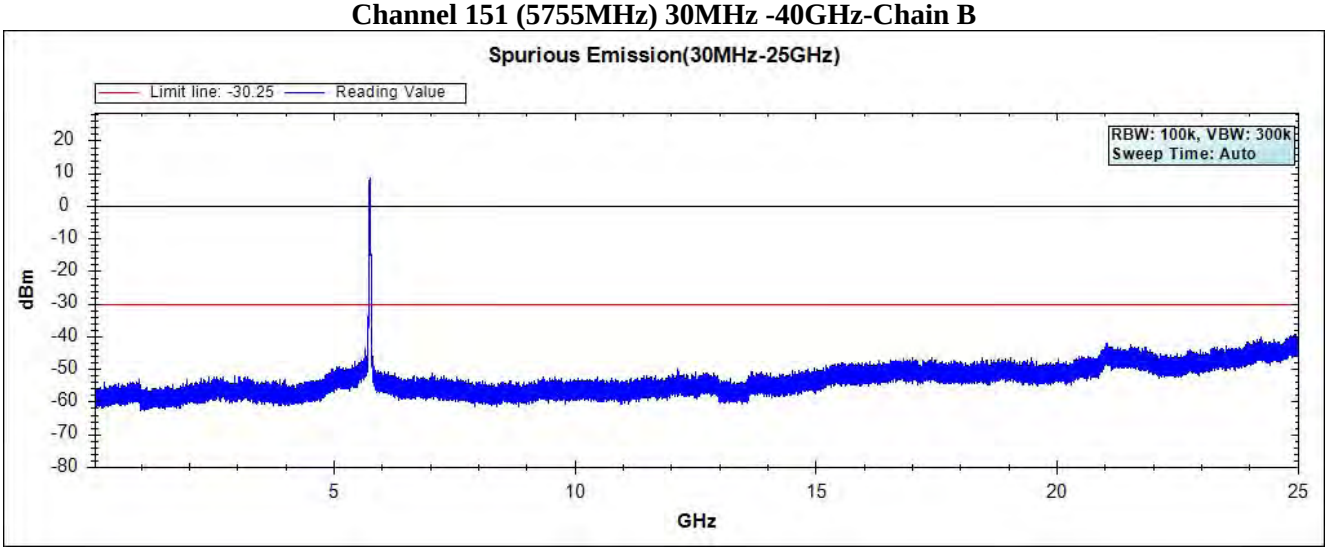


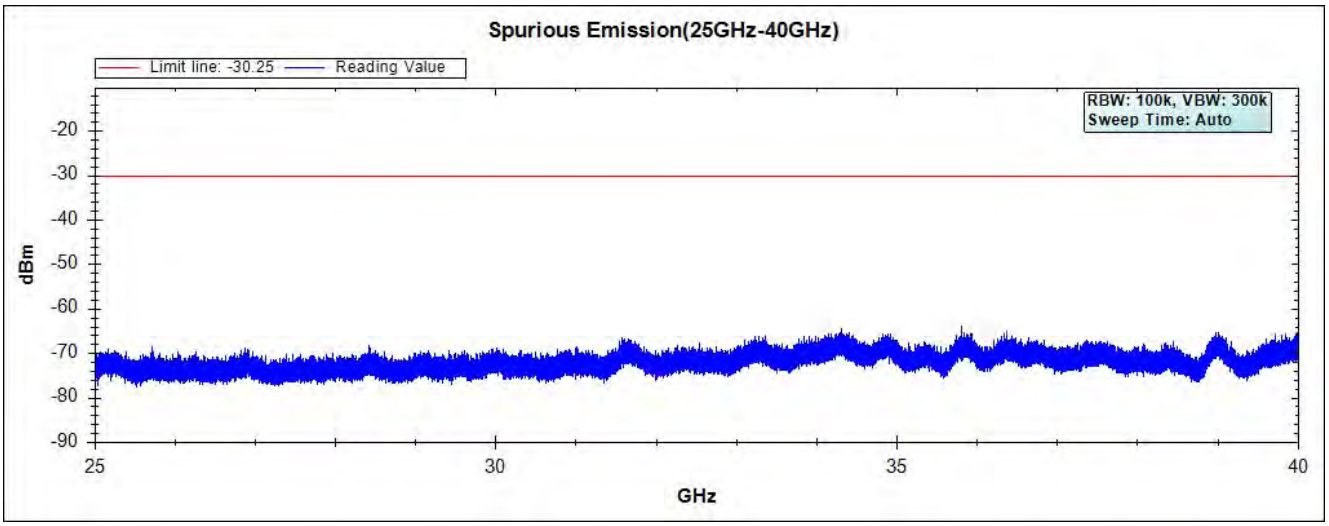
Channel 159 (5795MHz) 30MHz -40GHz-Chain A



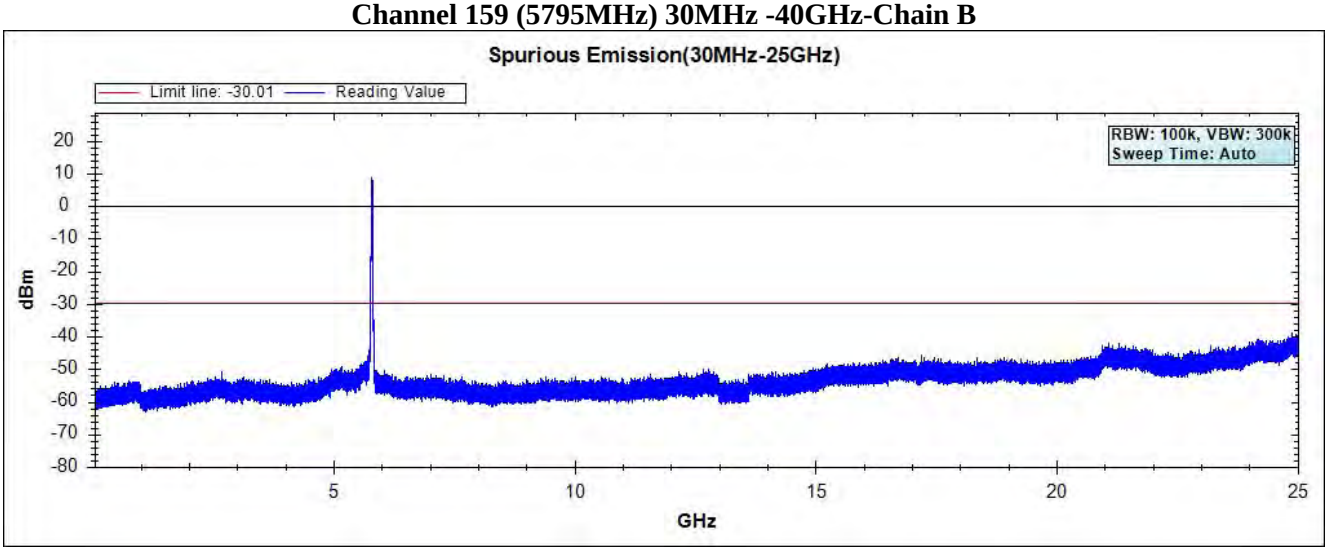


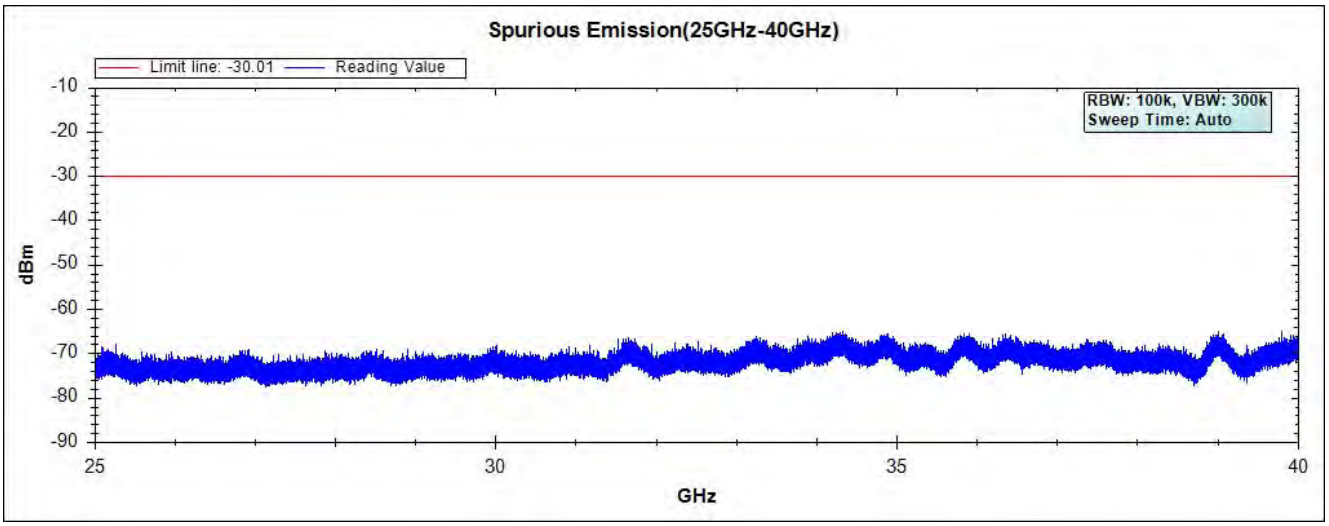
Channel 151 (5755MHz) 30MHz -40GHz-Chain B





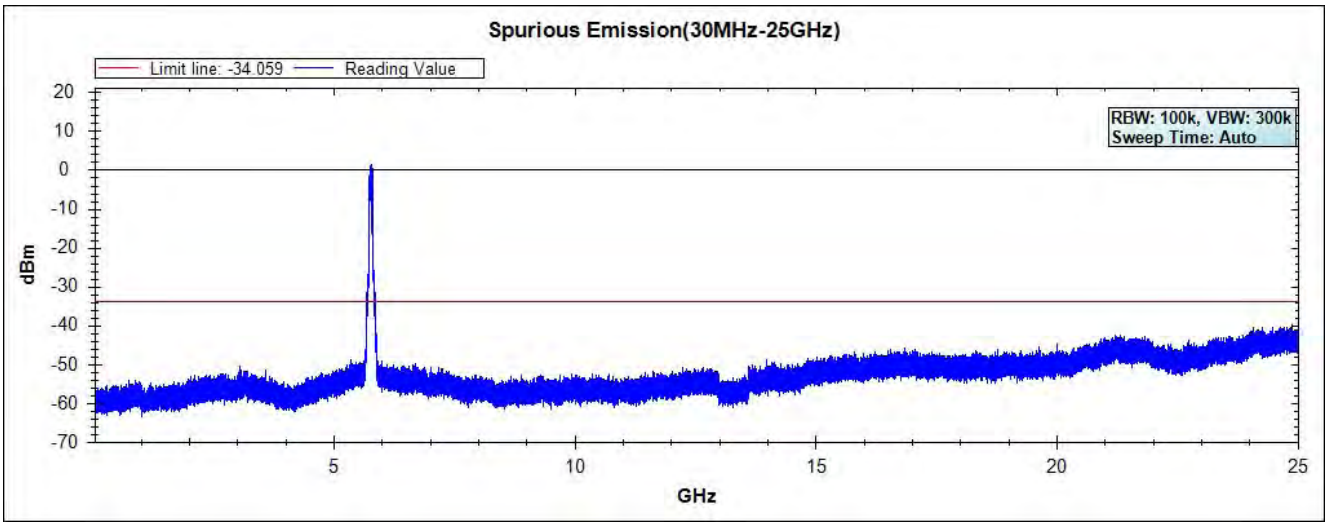
Channel 159 (5795MHz) 30MHz -40GHz-Chain B

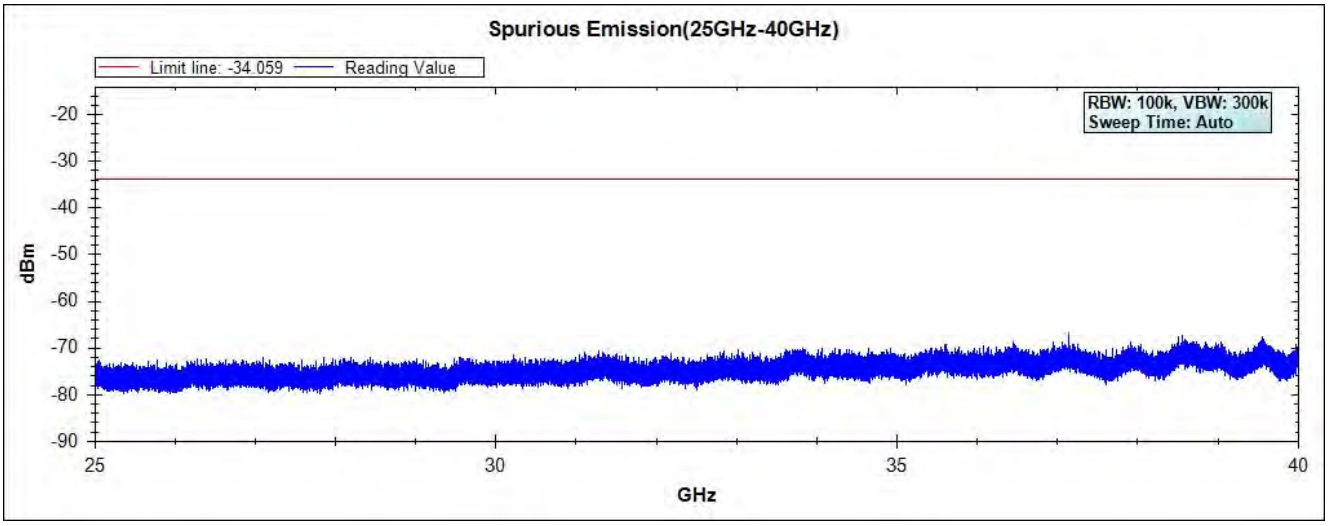




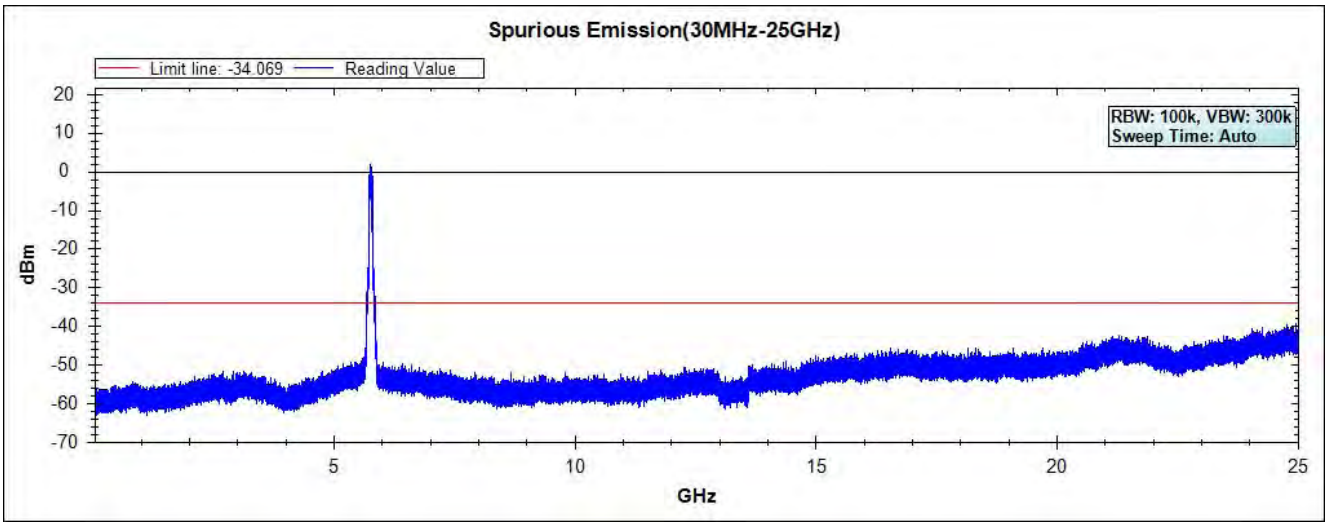
Product	:	802.11 ac PCIe Module
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	No.3 OATS
Test Mode	:	Mode 12: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Omni Antenna)

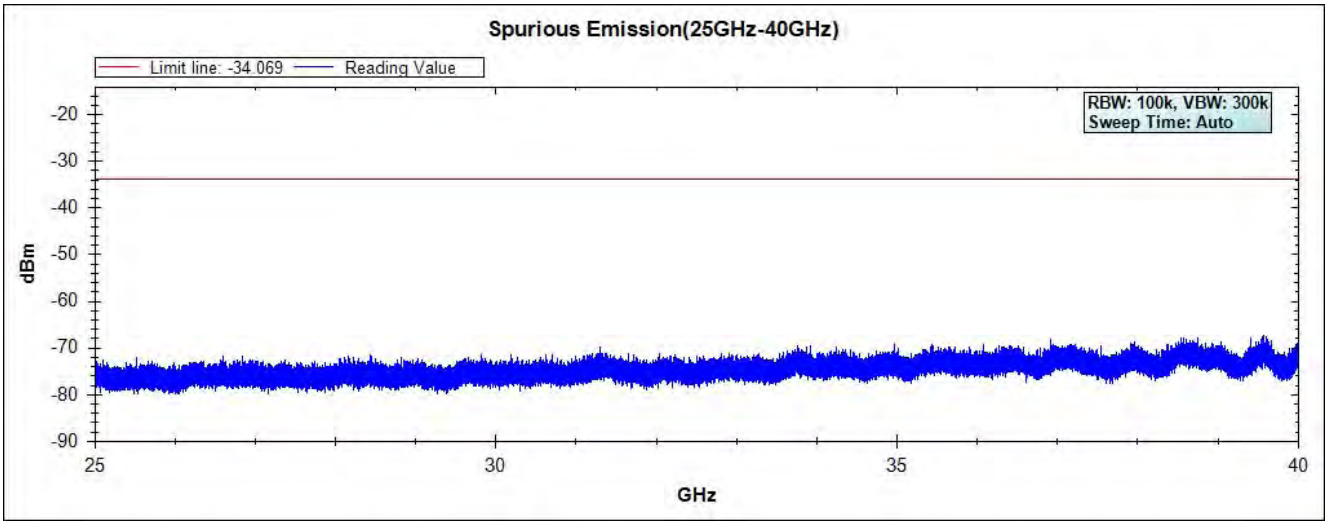
Channel 1 (5780MHz) 30MHz -40GHz- Chaia A





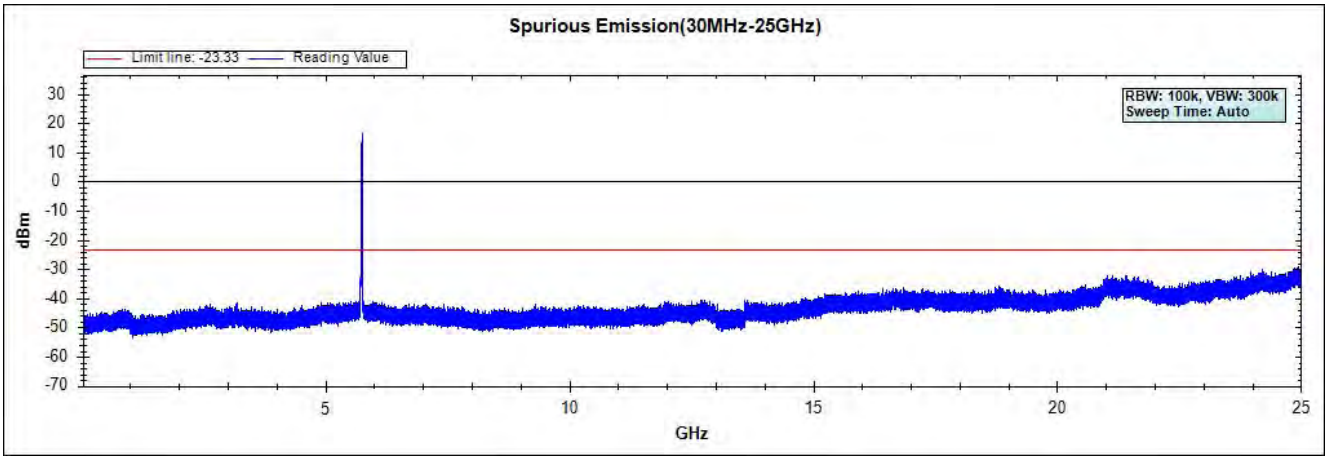
Channel 1 (5780MHz) 30MHz -40GHz- Chaia B

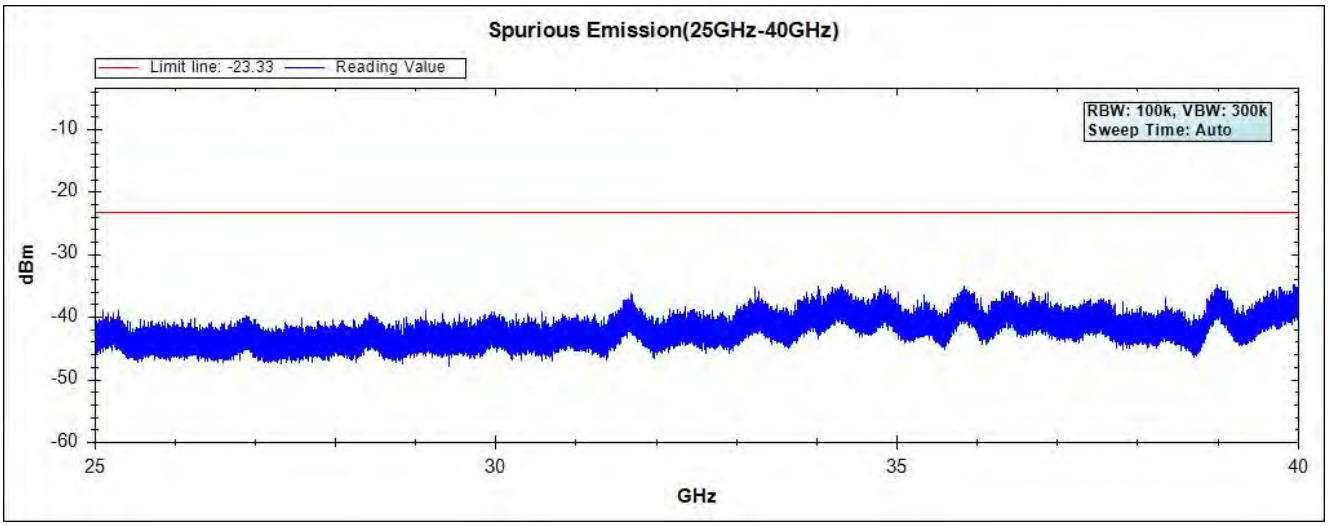




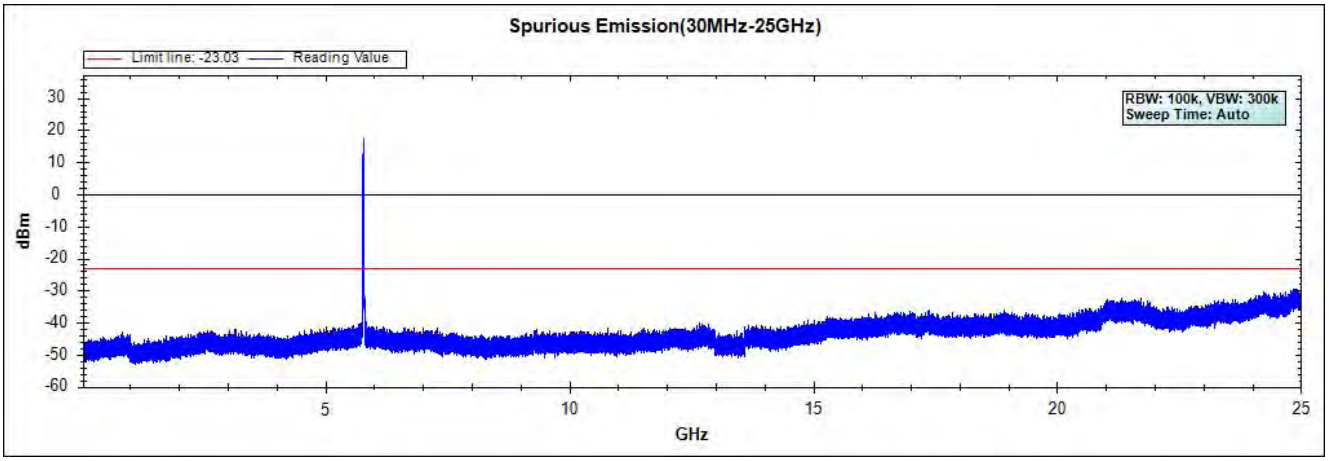
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 13: Transmit - 802.11a_6Mbps(Panel Antenna)

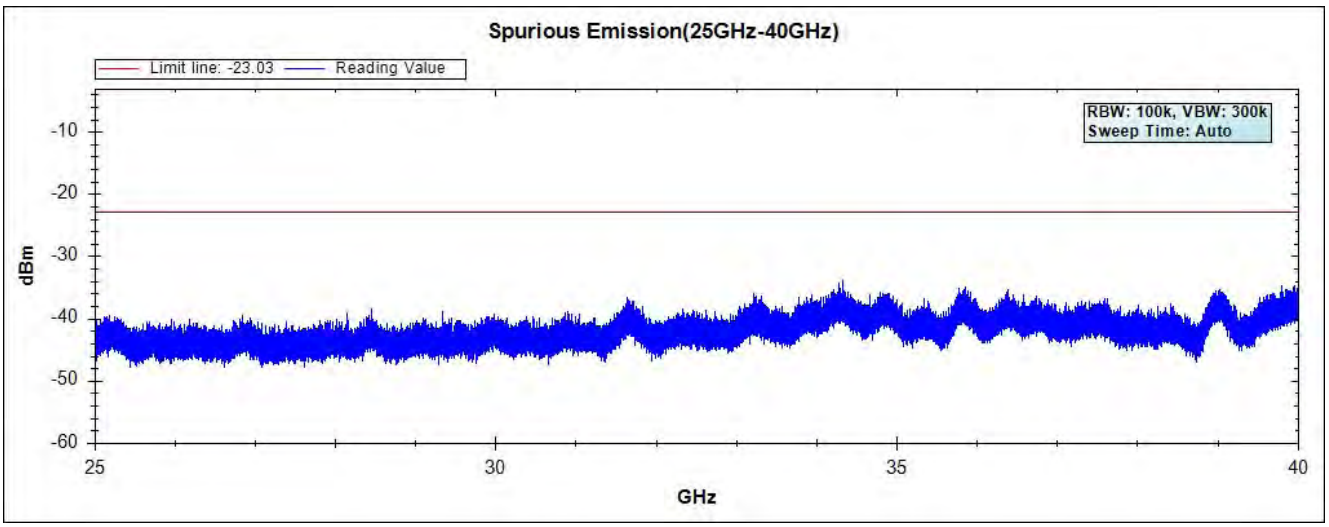
Channel 149 (5745MHz) 30MHz -40GHz-Chain A



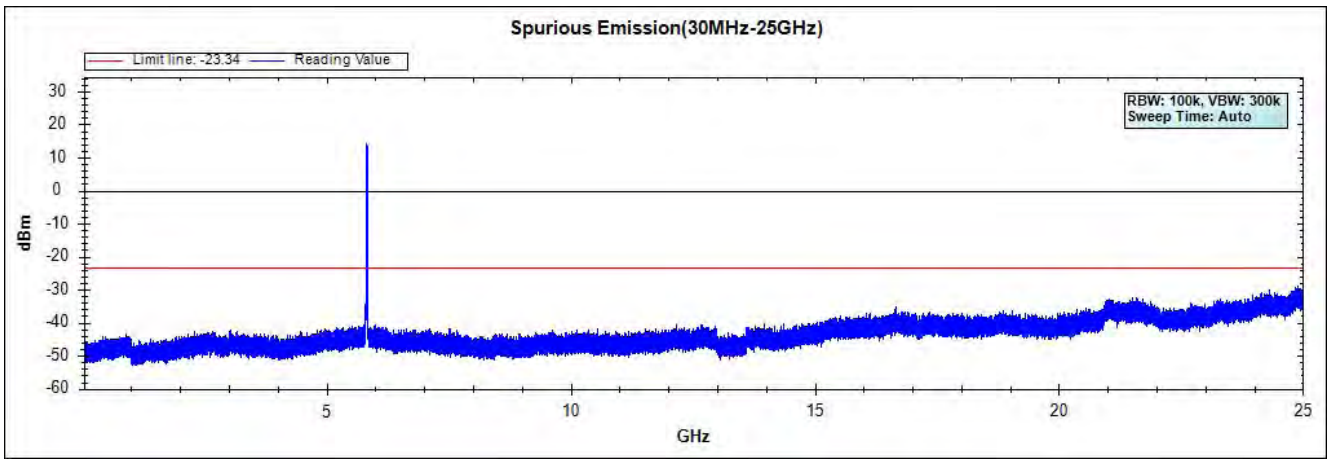


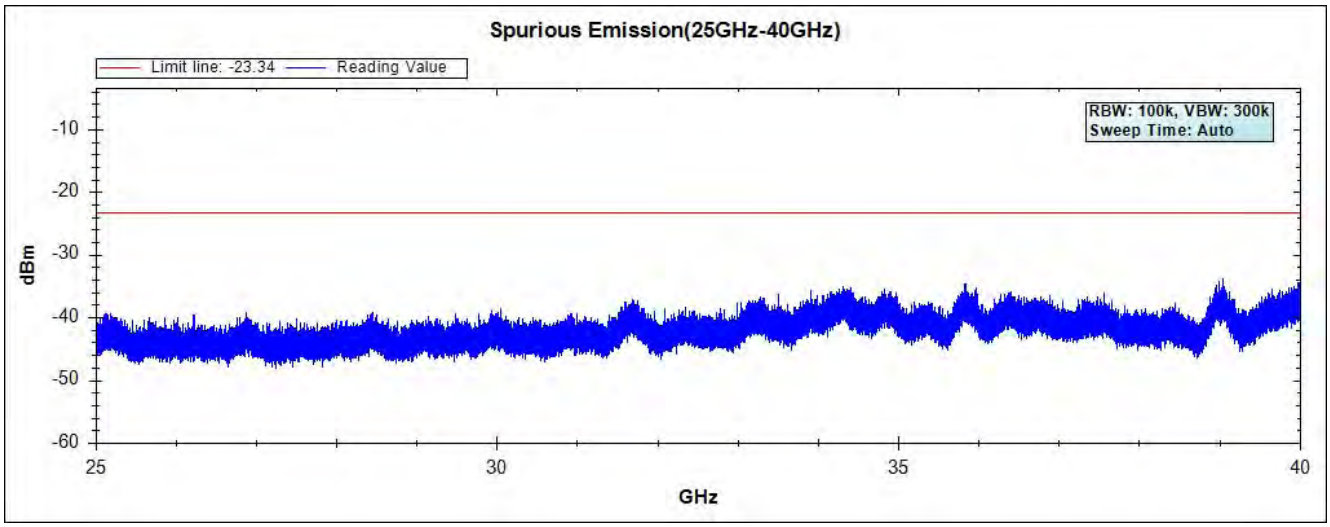
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



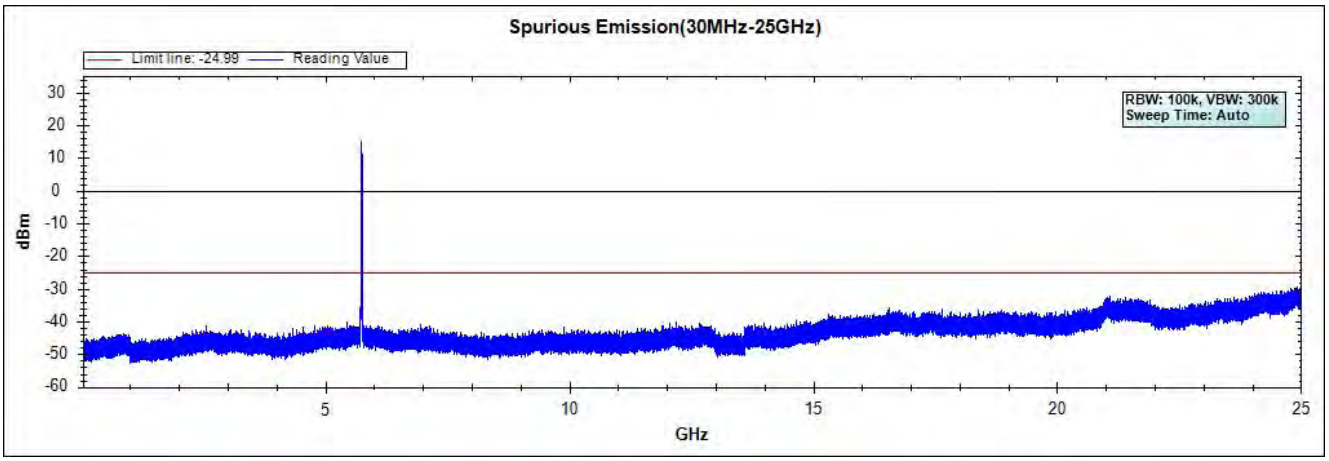


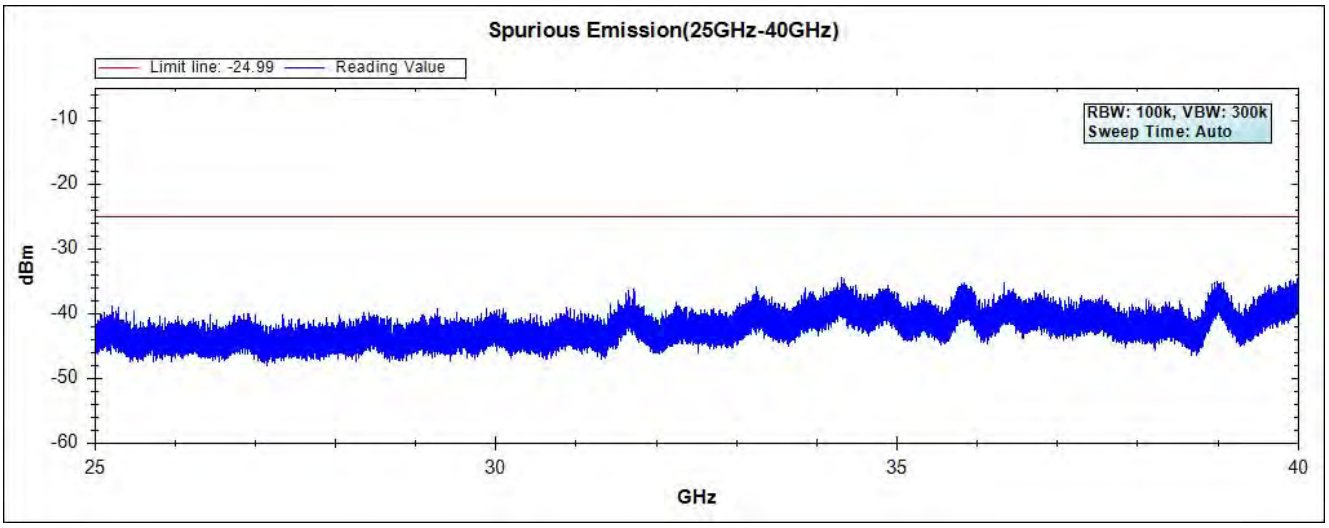
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



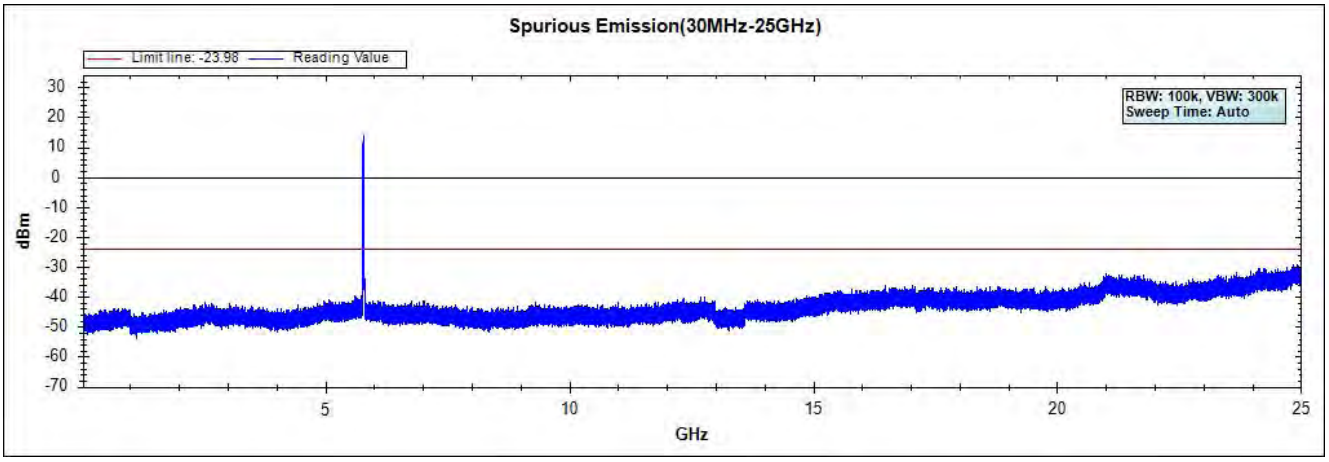


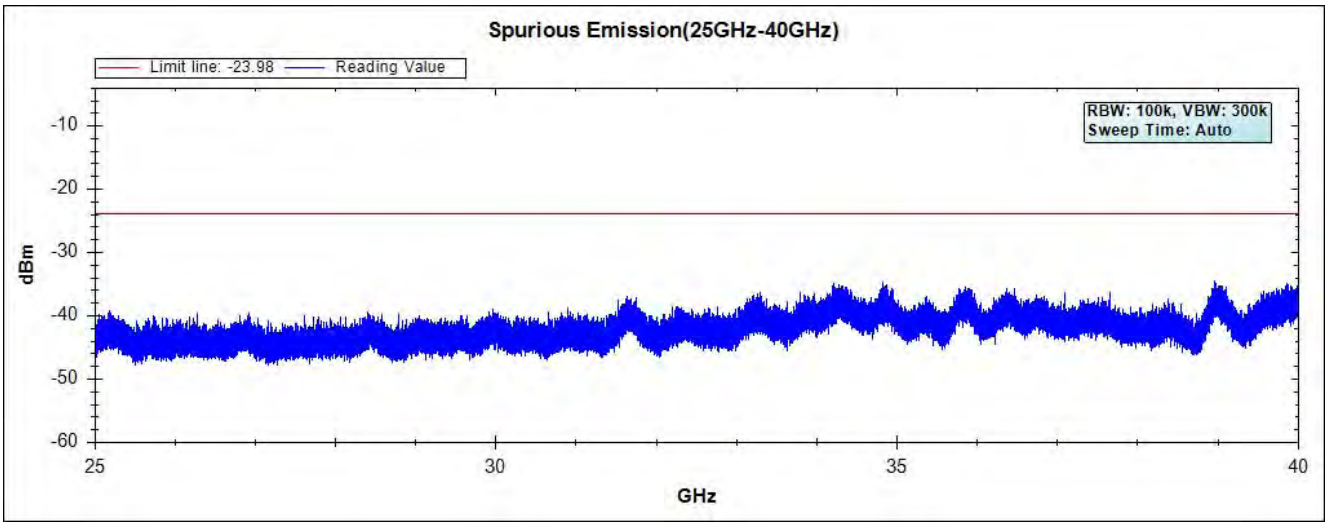
Channel 149 (5745MHz) 30MHz -40GHz-Chain B



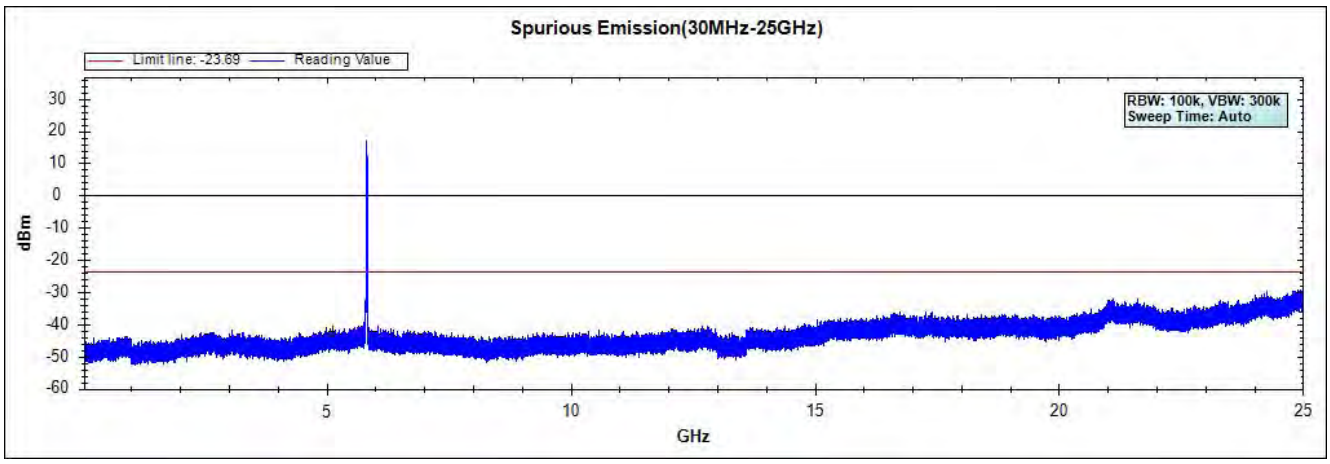


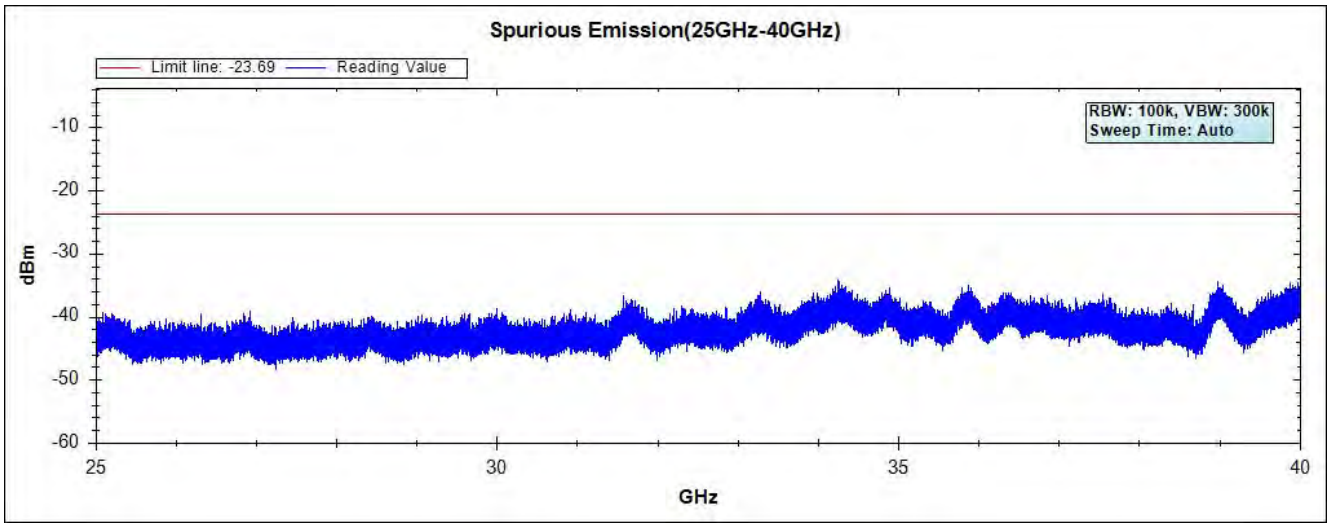
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





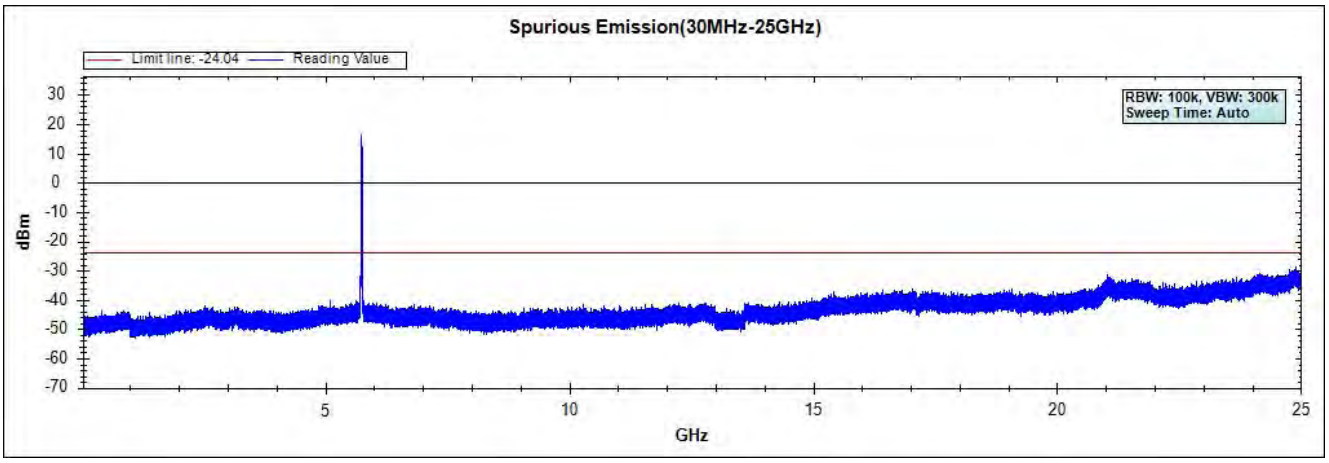
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

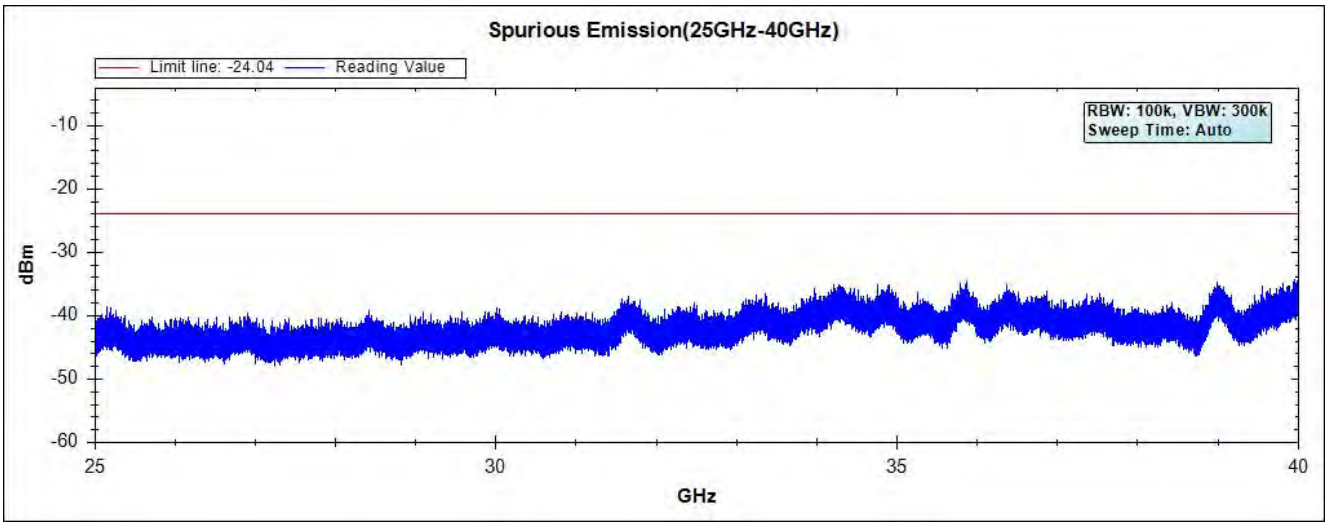




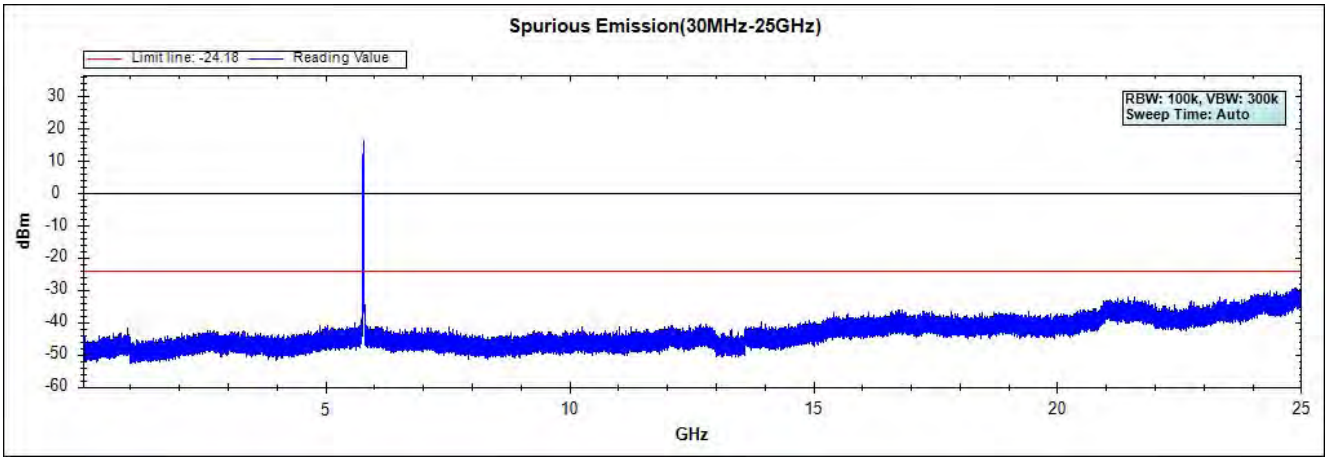
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 14: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Panel Antenna)

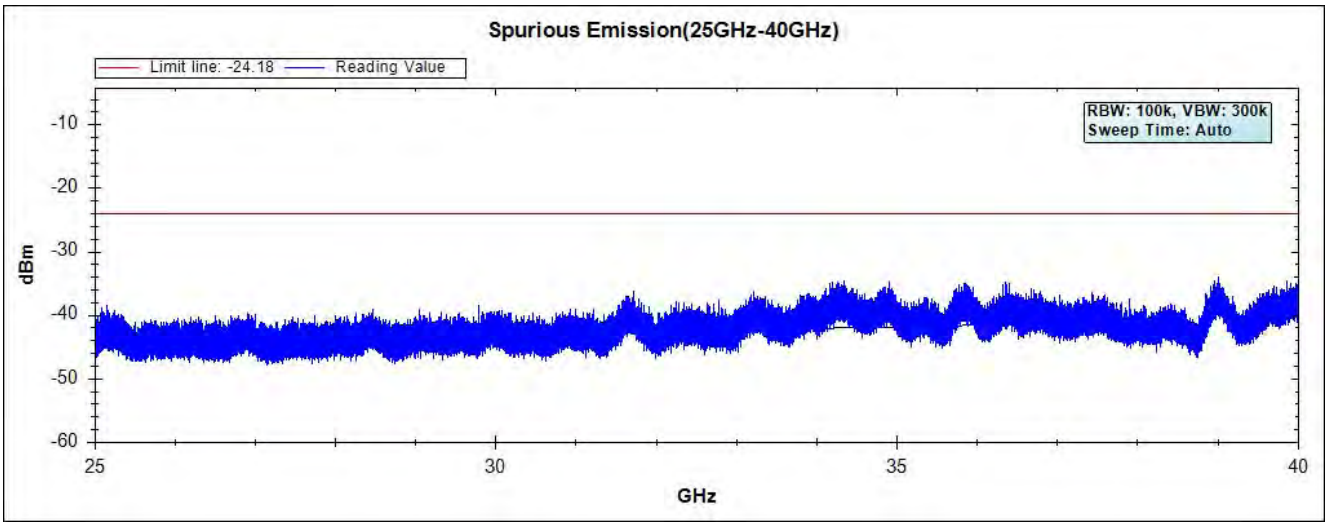
Channel 49 (5745MHz) 30MHz -40GHz-Chain A



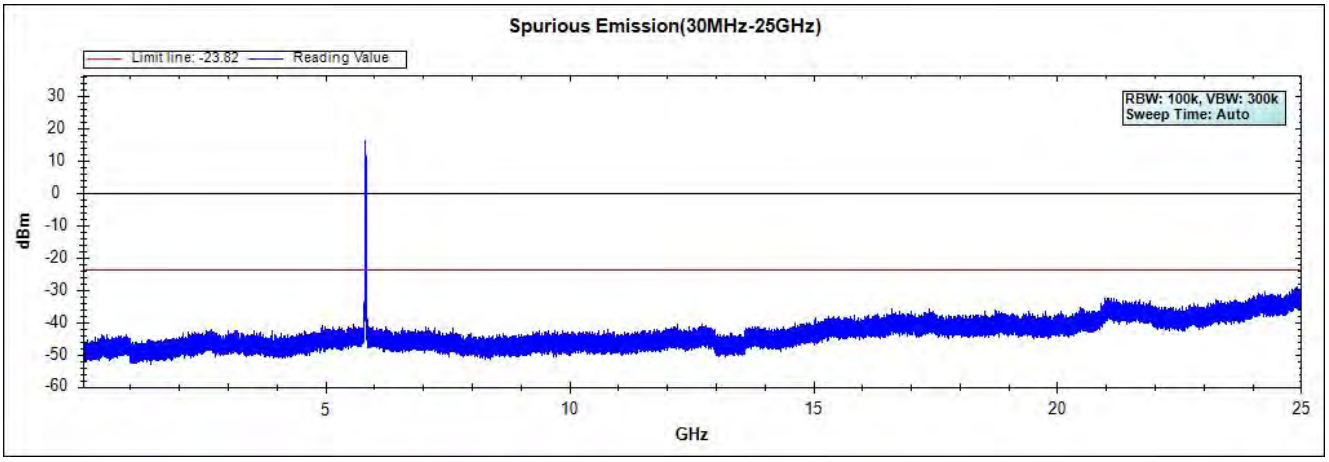


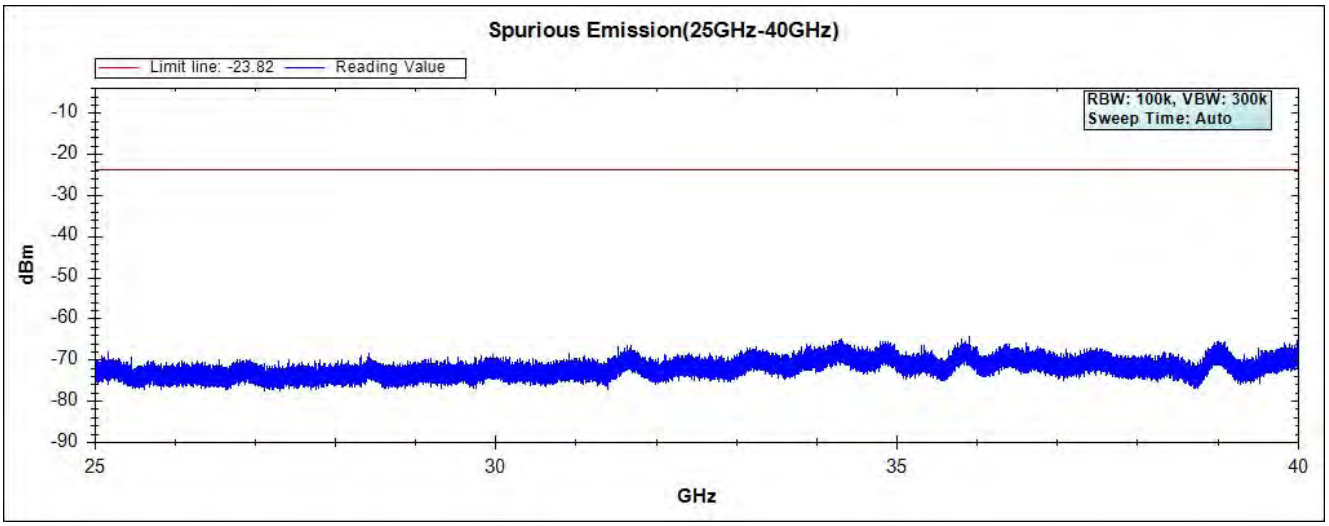
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



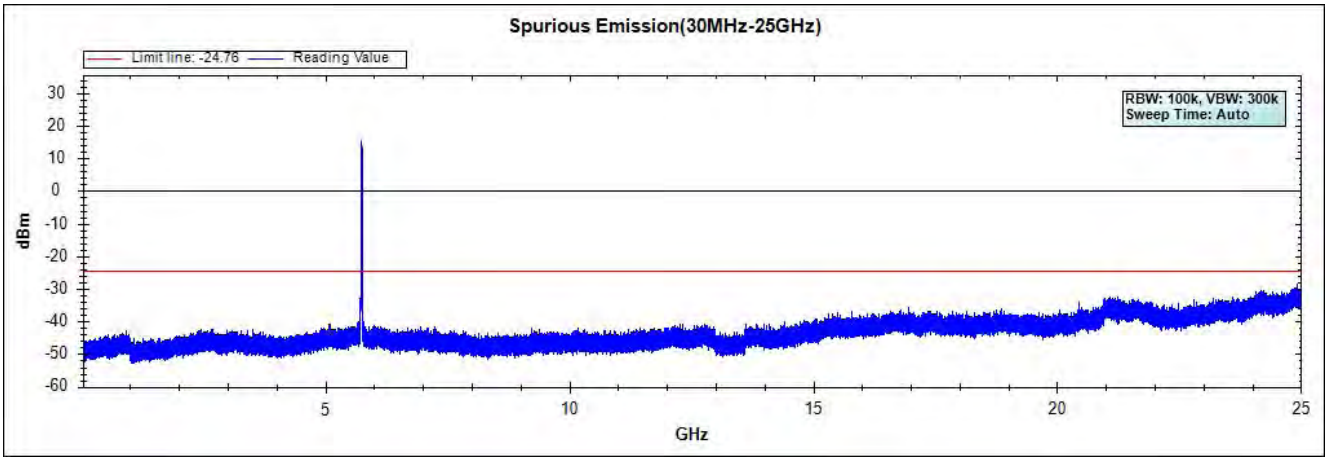


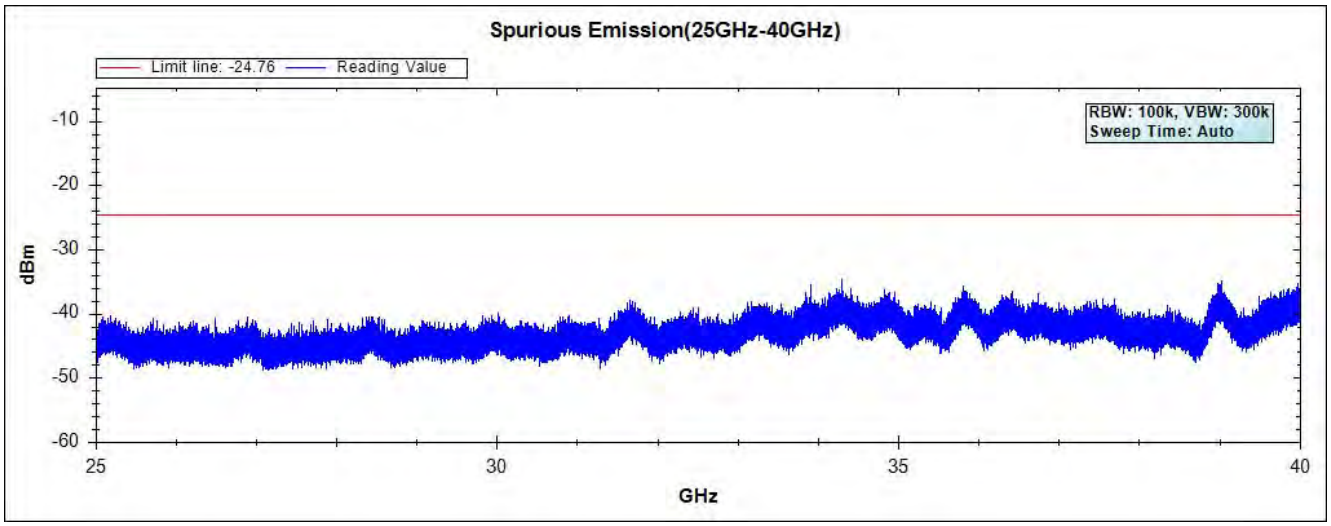
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



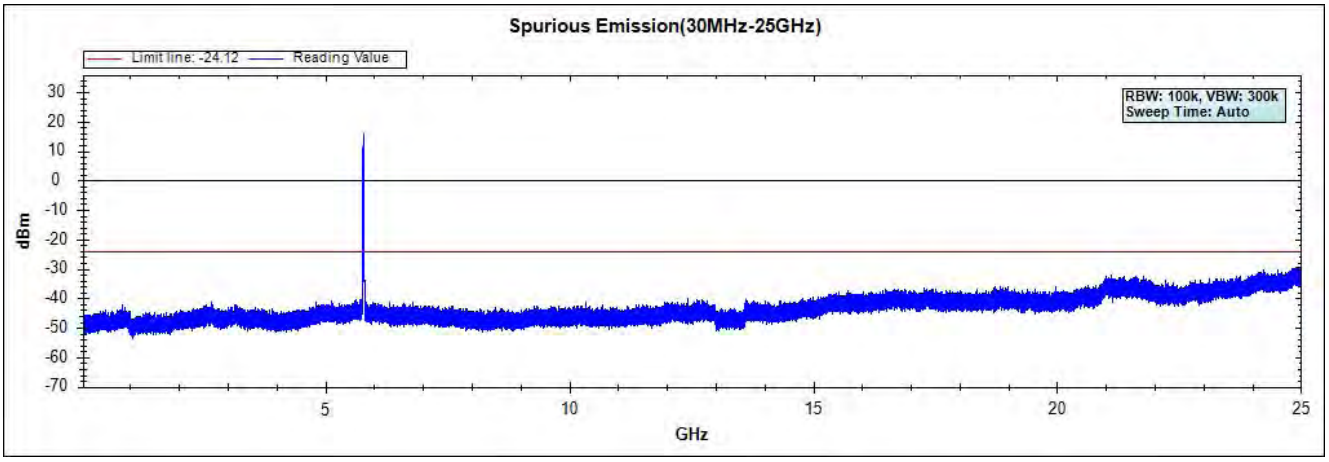


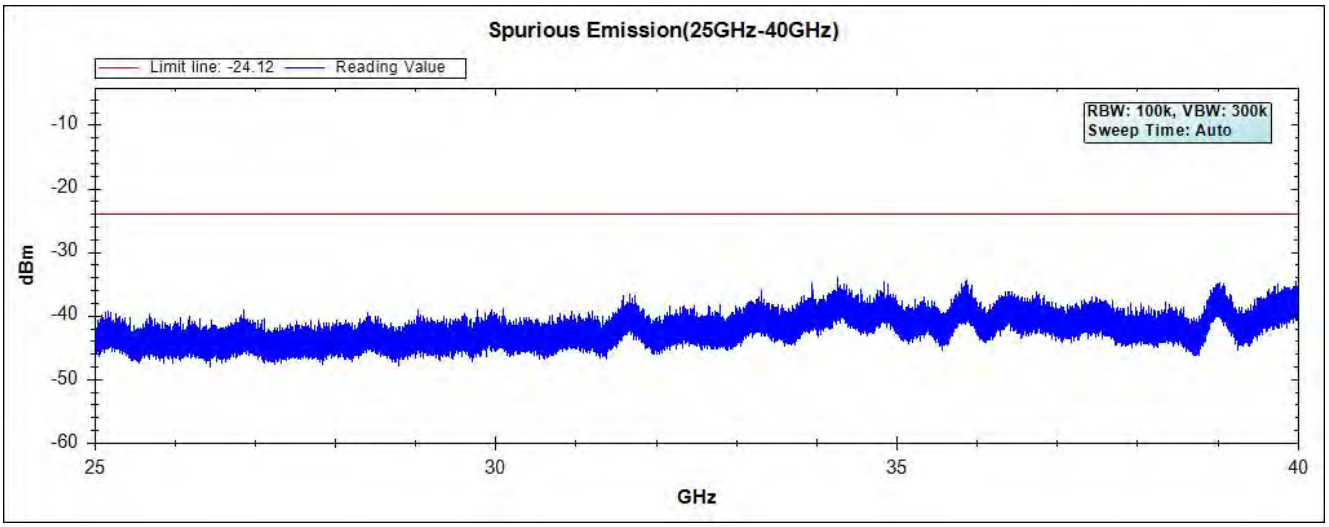
Channel 49 (5745MHz) 30MHz -40GHz-Chain B



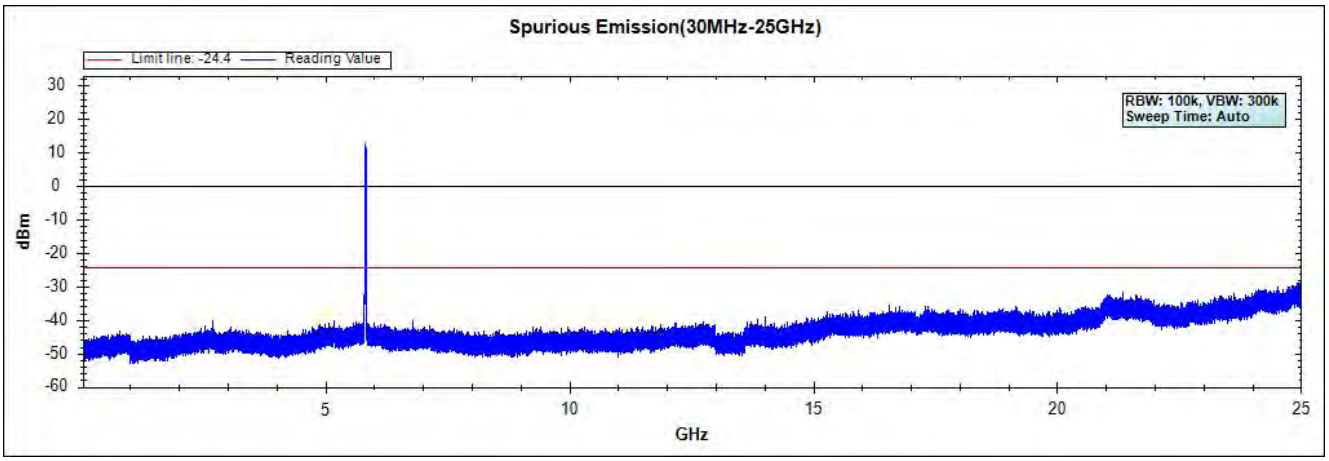


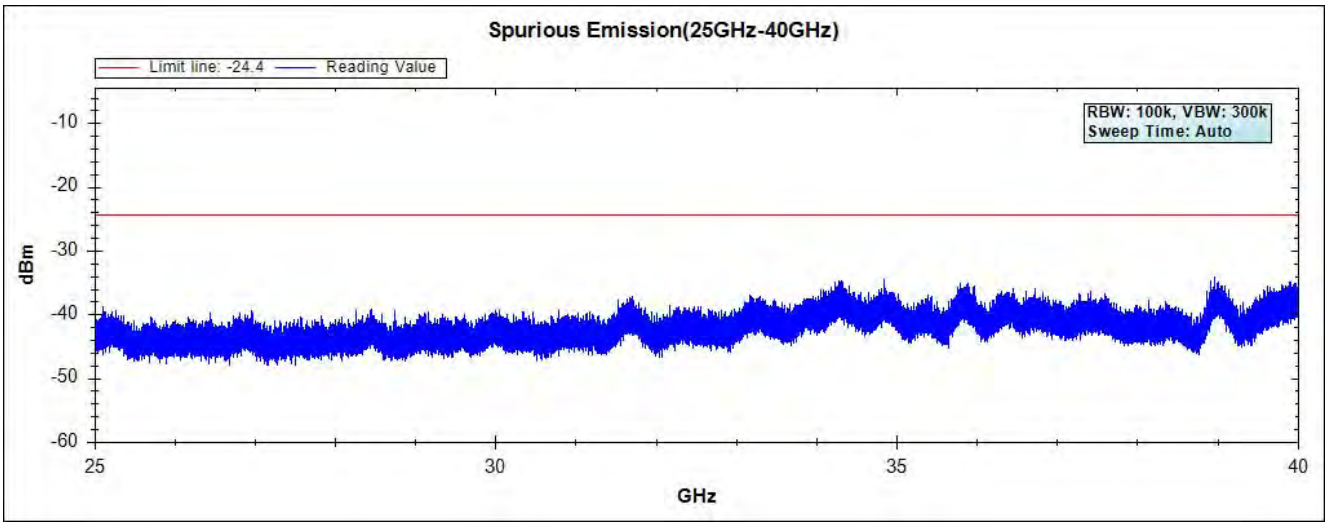
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





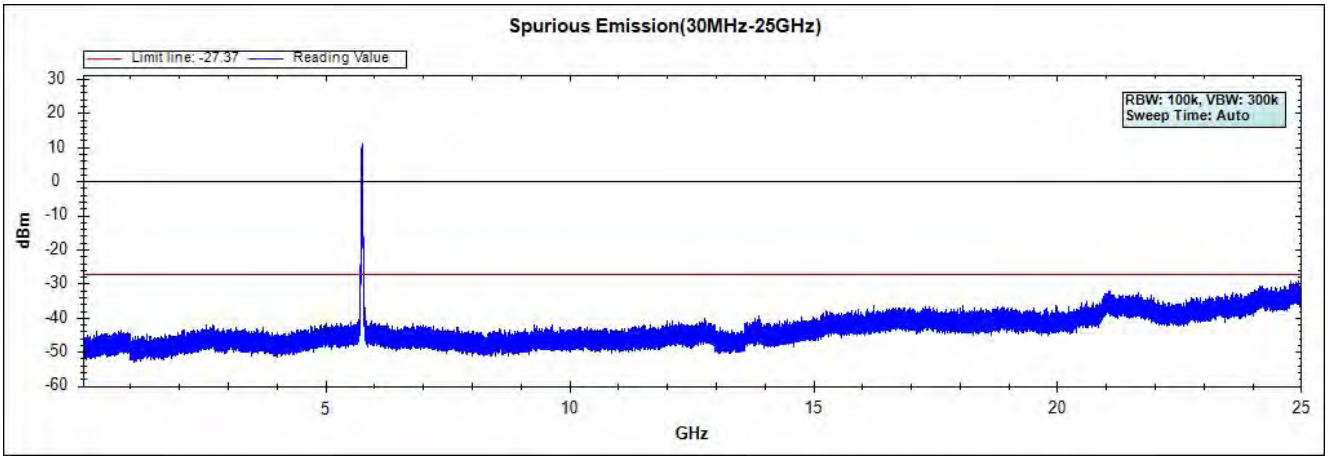
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

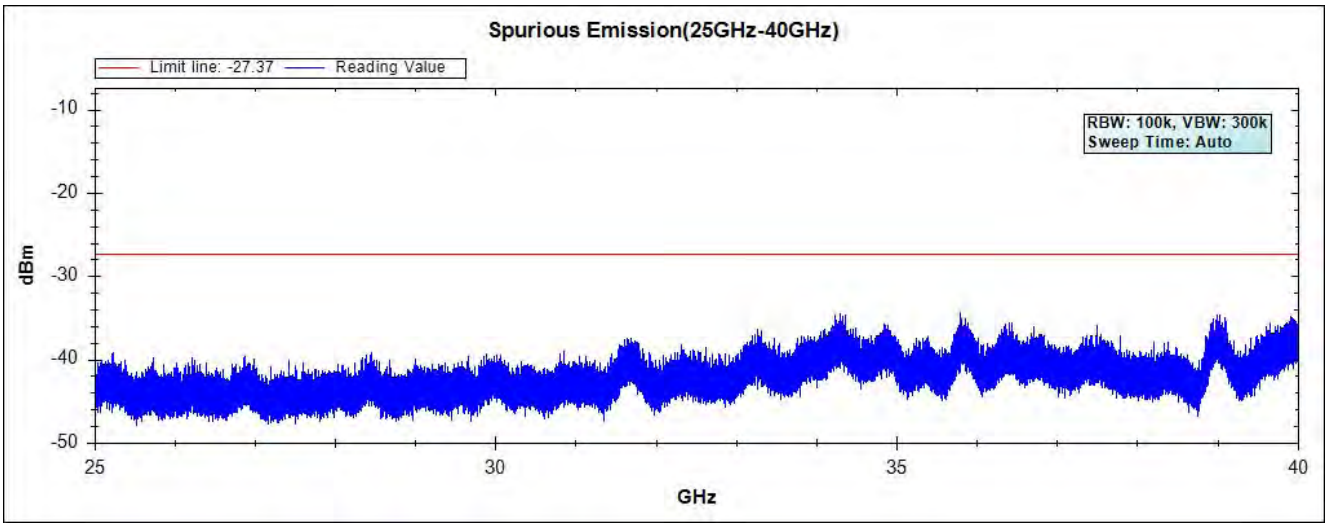




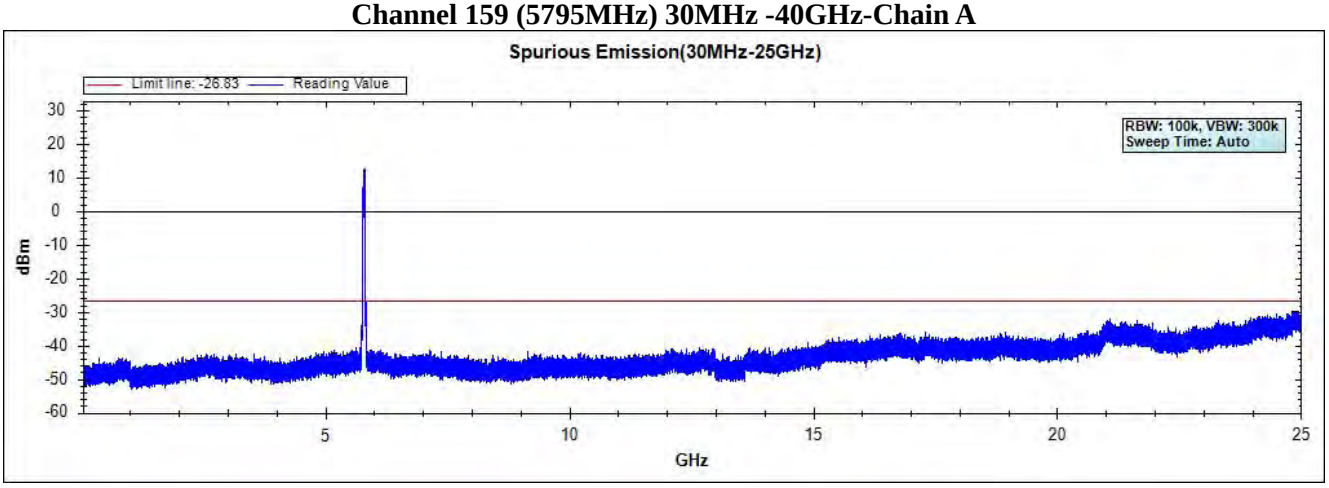
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 15: Transmit - 802.11n-40BW_30Mbps(5G Band)(Panel Antenna)

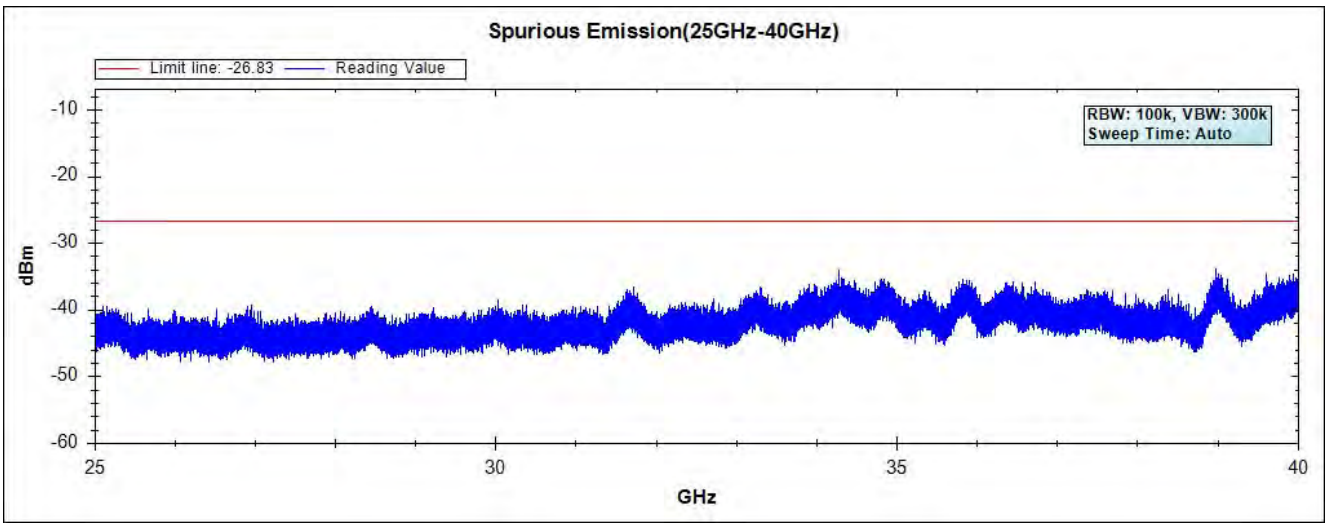
Channel 151 (5755MHz) 30MHz -40GHz-Chain A



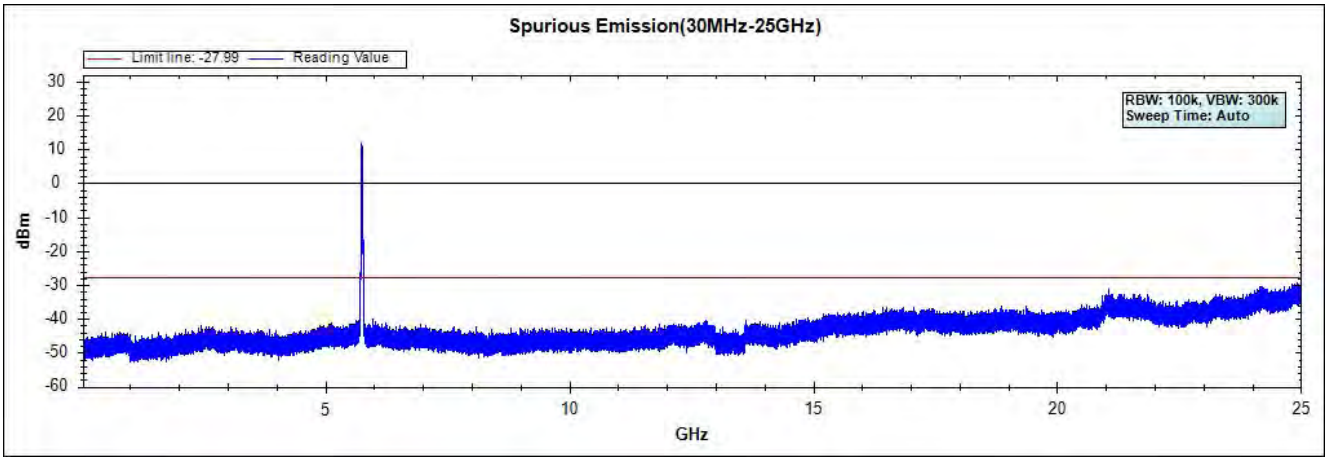


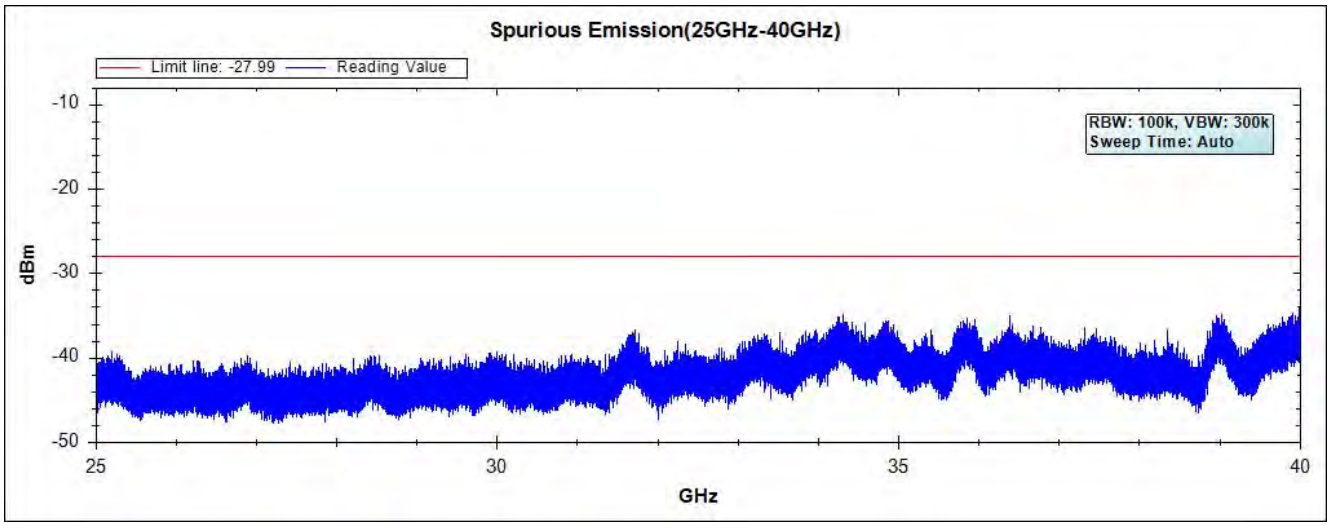
Channel 159 (5795MHz) 30MHz -40GHz-Chain A



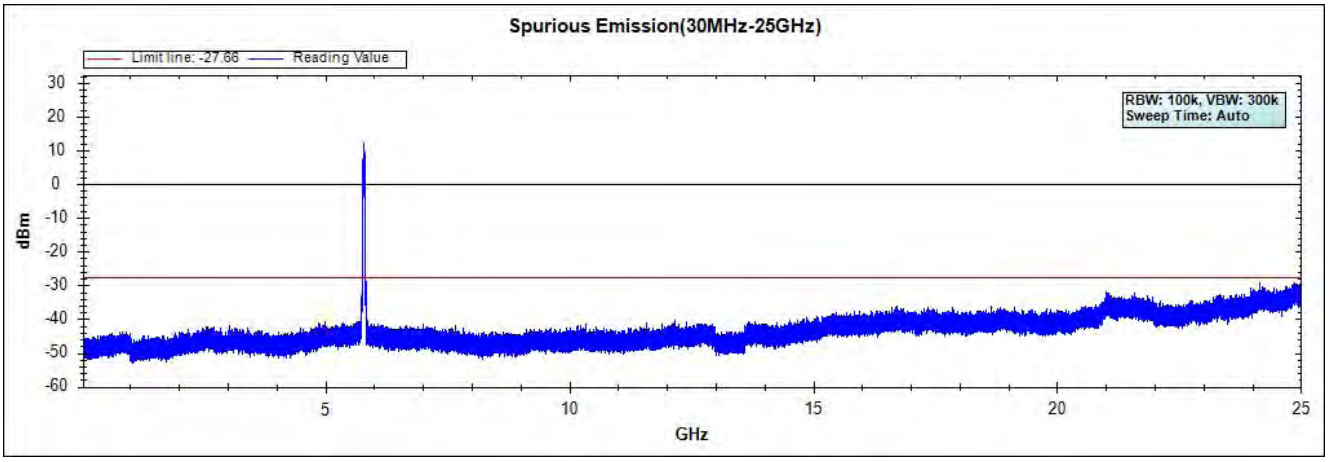


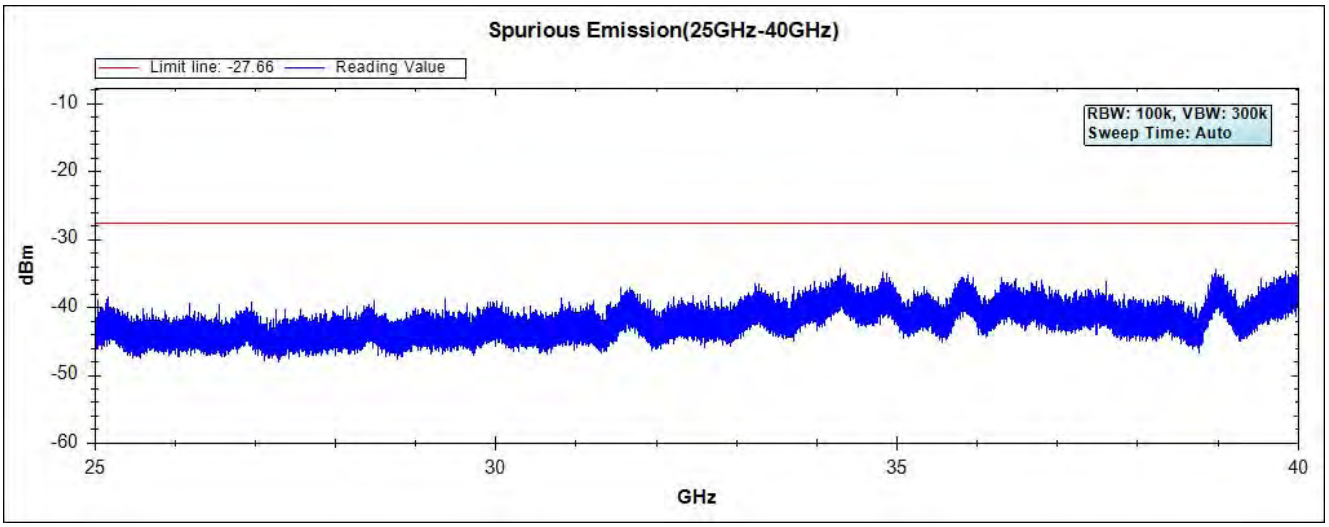
Channel 151 (5755MHz) 30MHz -40GHz-Chain B





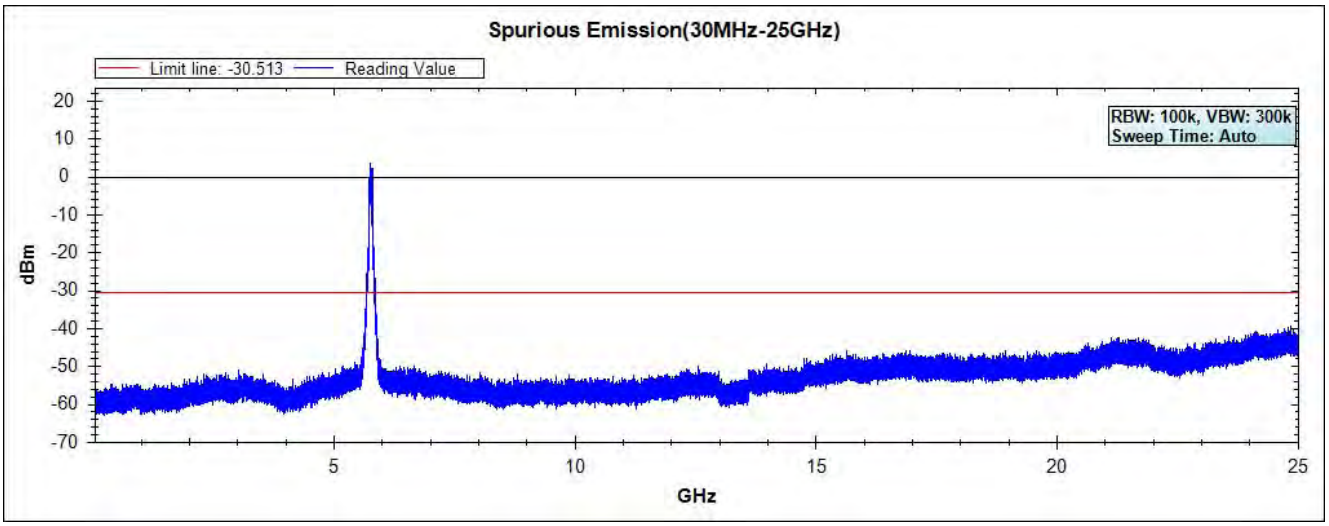
Channel 159 (5795MHz) 30MHz -40GHz-Chain B

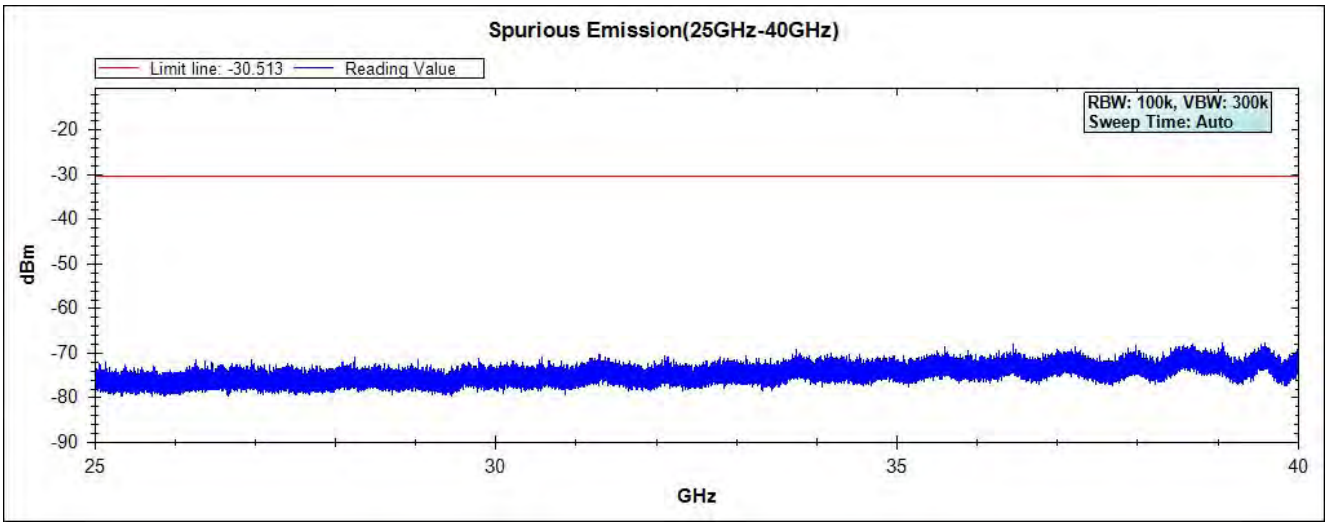




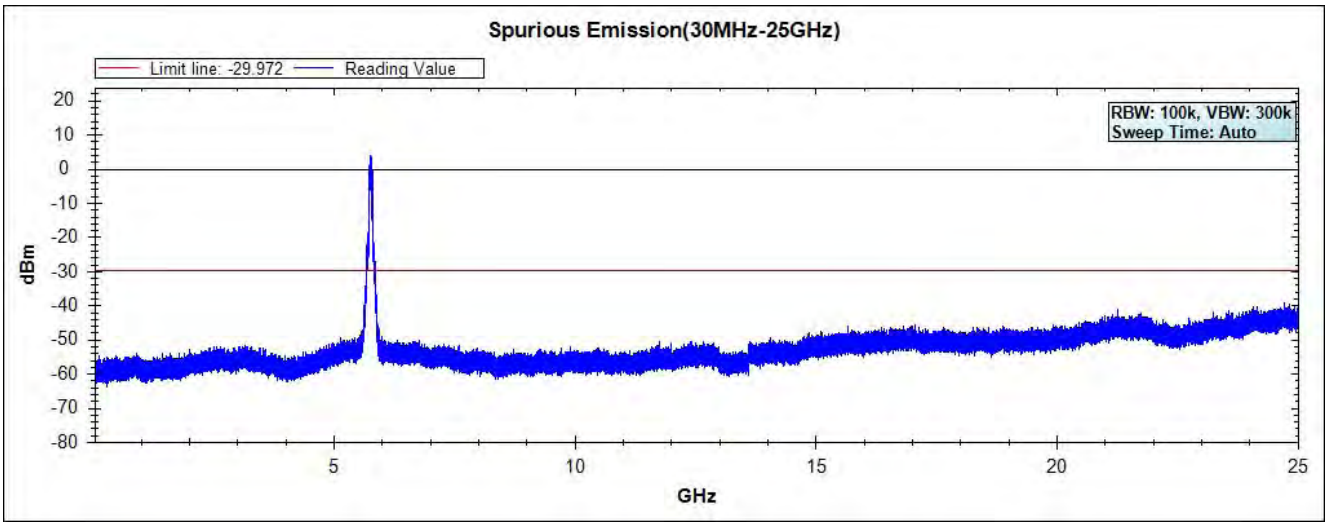
Product	:	802.11 ac PCIe Module
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	No.3 OATS
Test Mode	:	Mode 16: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Panel Antenna)

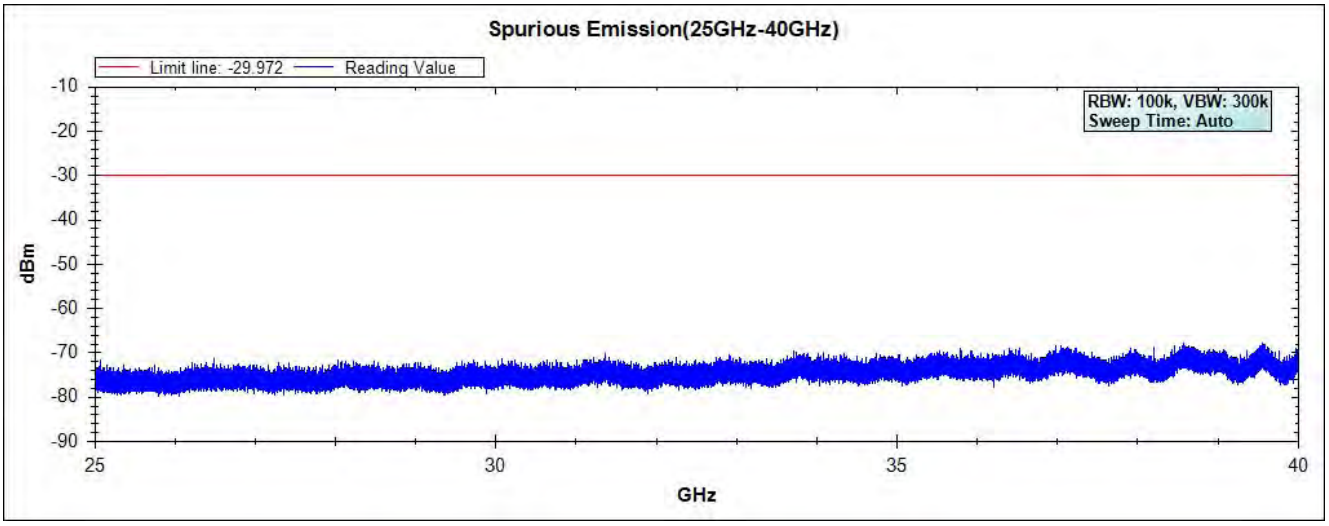
Channel 1 (5780MHz) 30MHz -40GHz- Chaia A





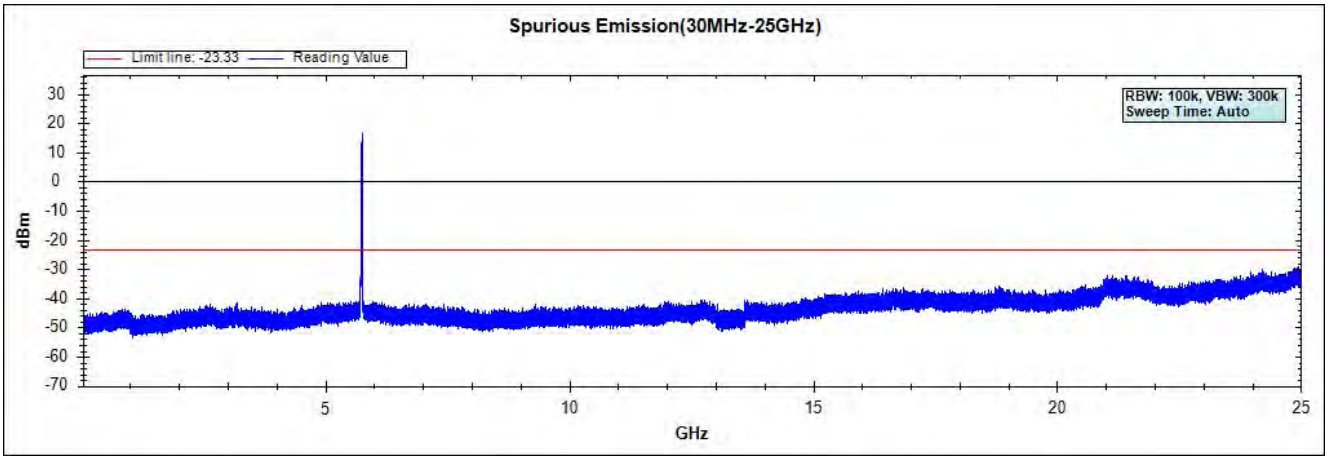
Channel 1 (5780MHz) 30MHz -40GHz- Chaia B

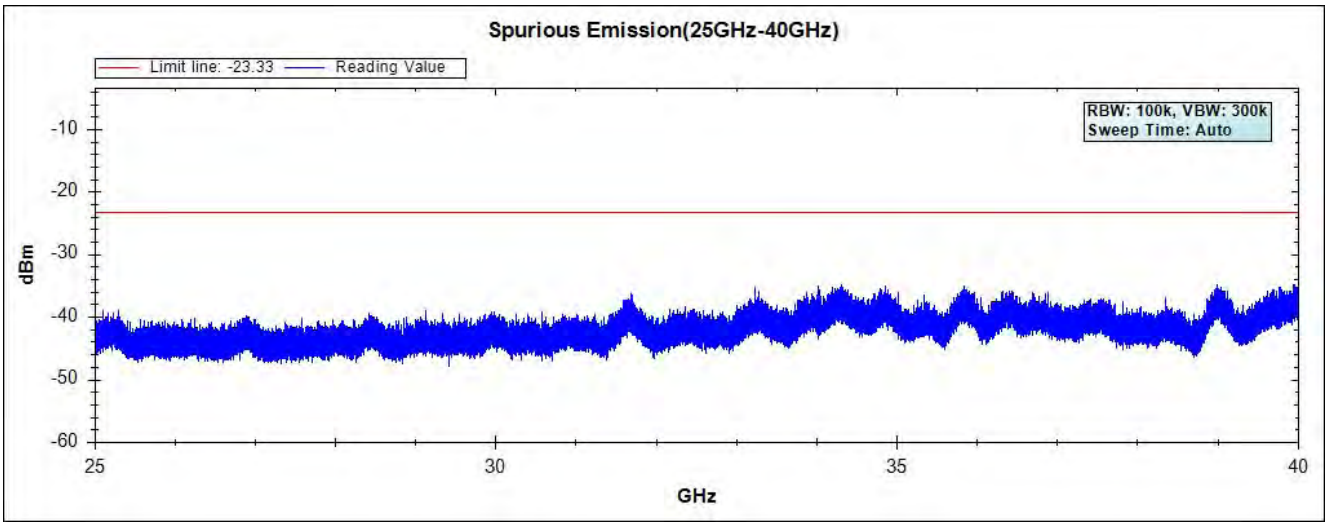




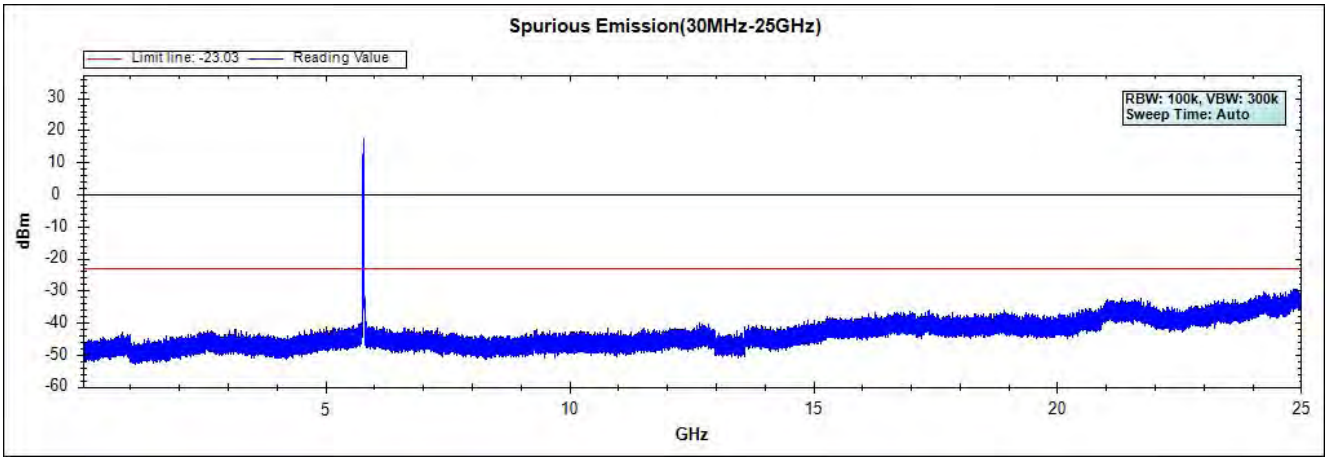
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 17: Transmit - 802.11a_6Mbps(Sector Antenna)

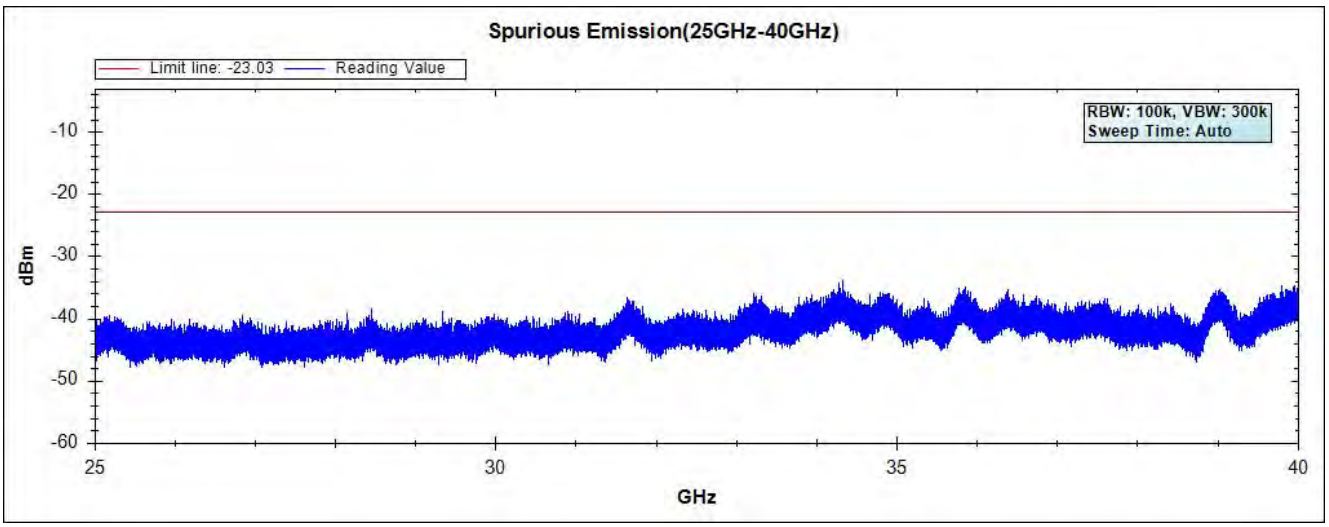
Channel 149 (5745MHz) 30MHz -40GHz-Chain A



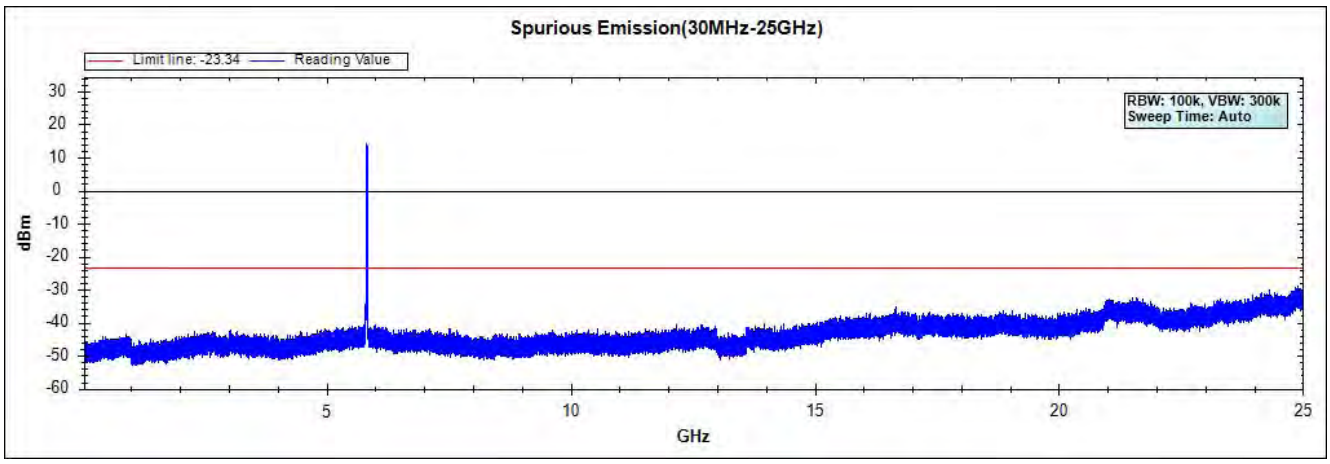


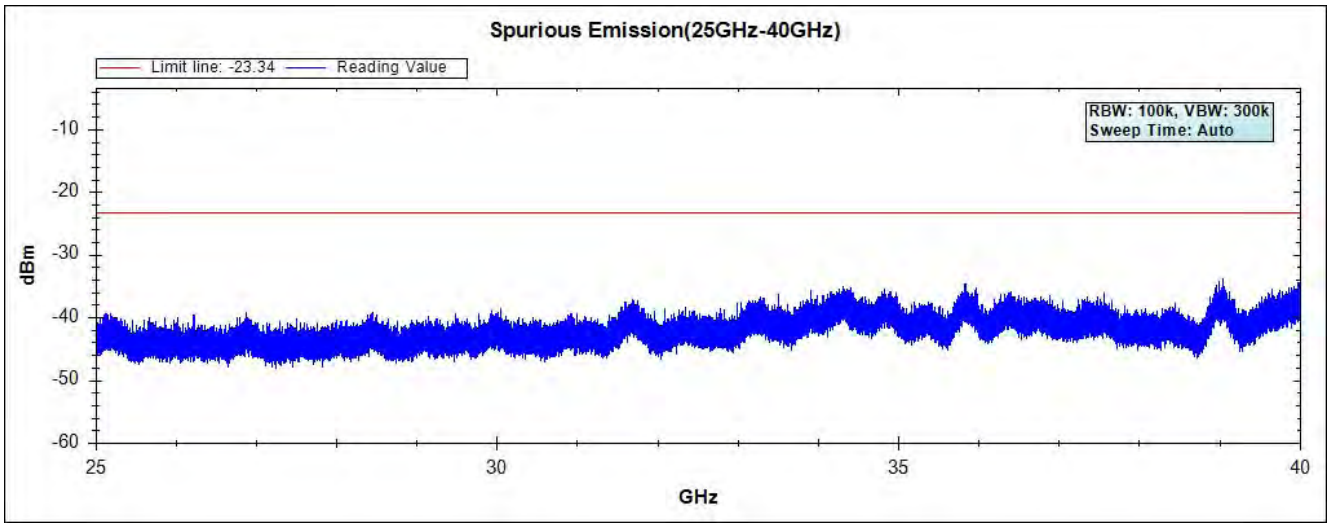
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



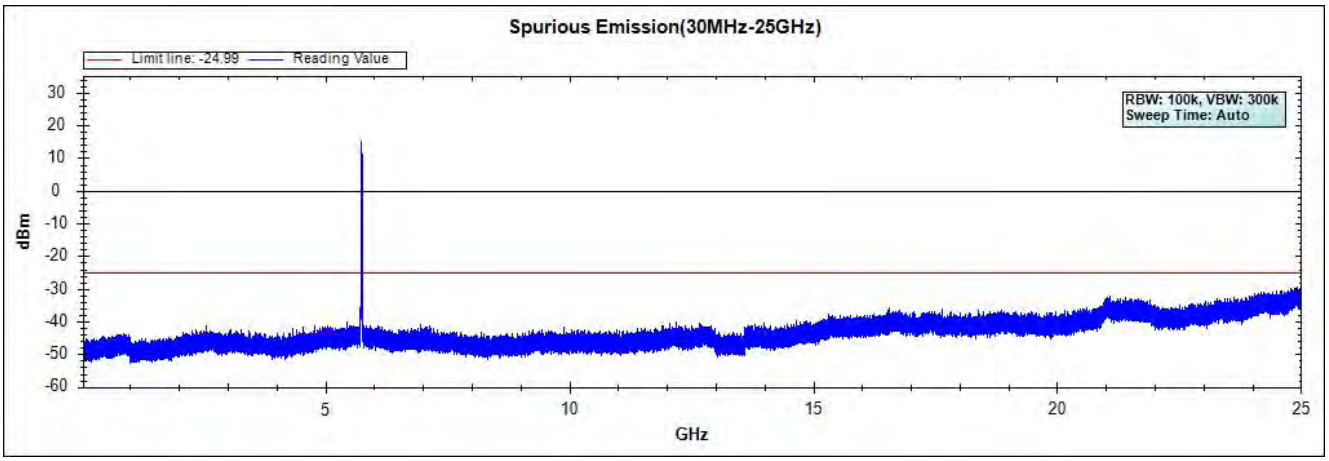


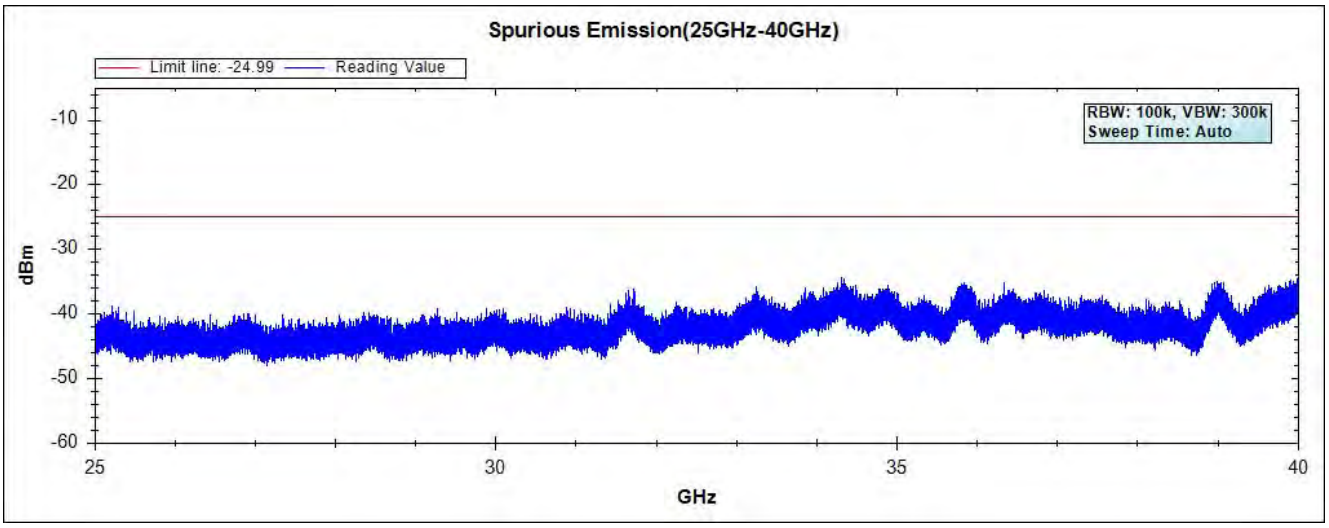
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



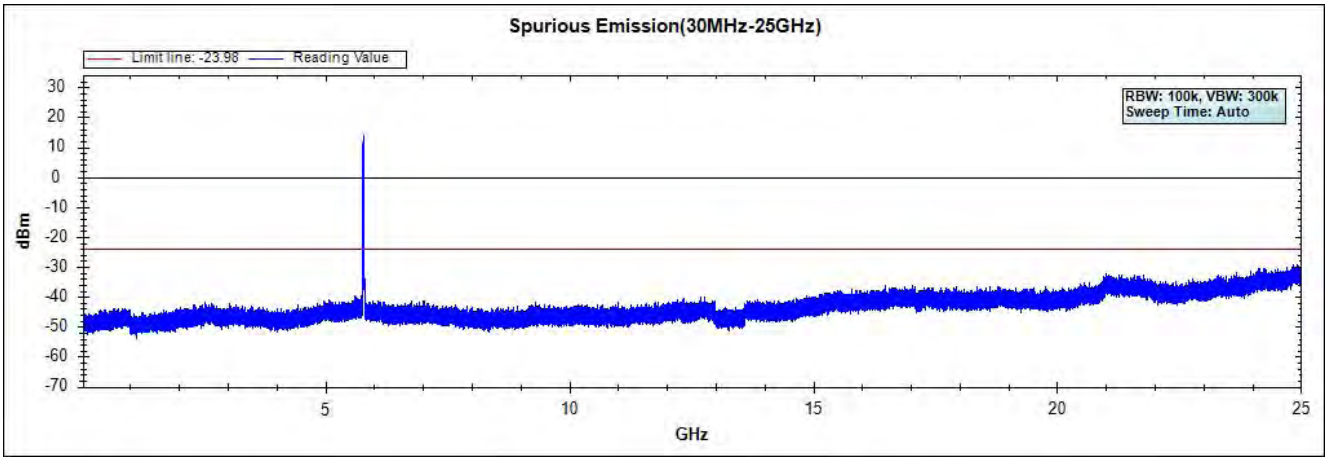


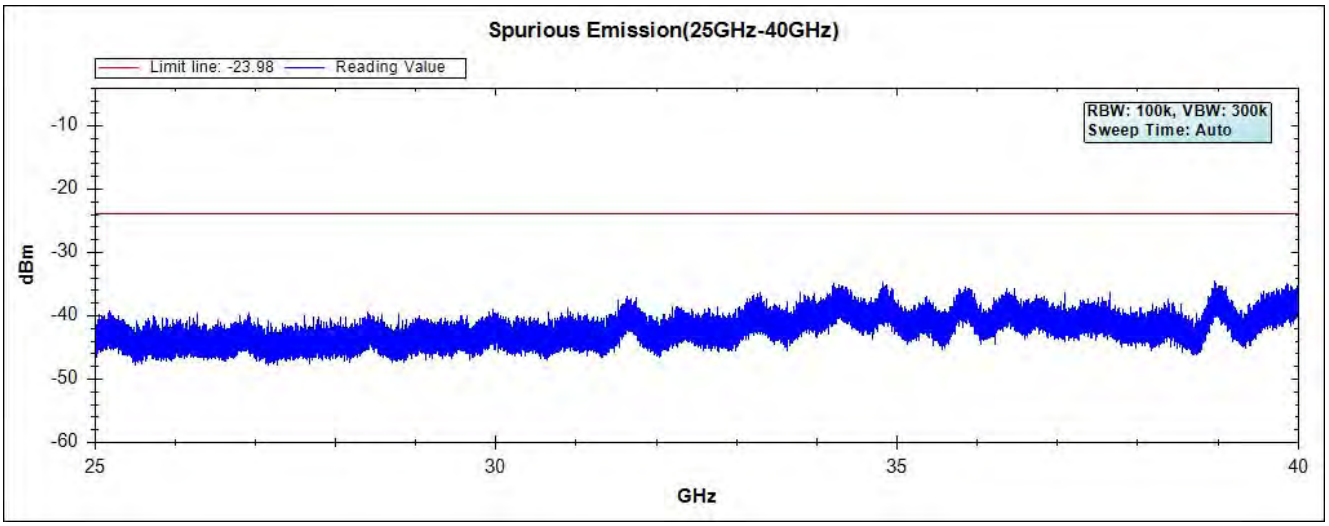
Channel 149 (5745MHz) 30MHz -40GHz-Chain B



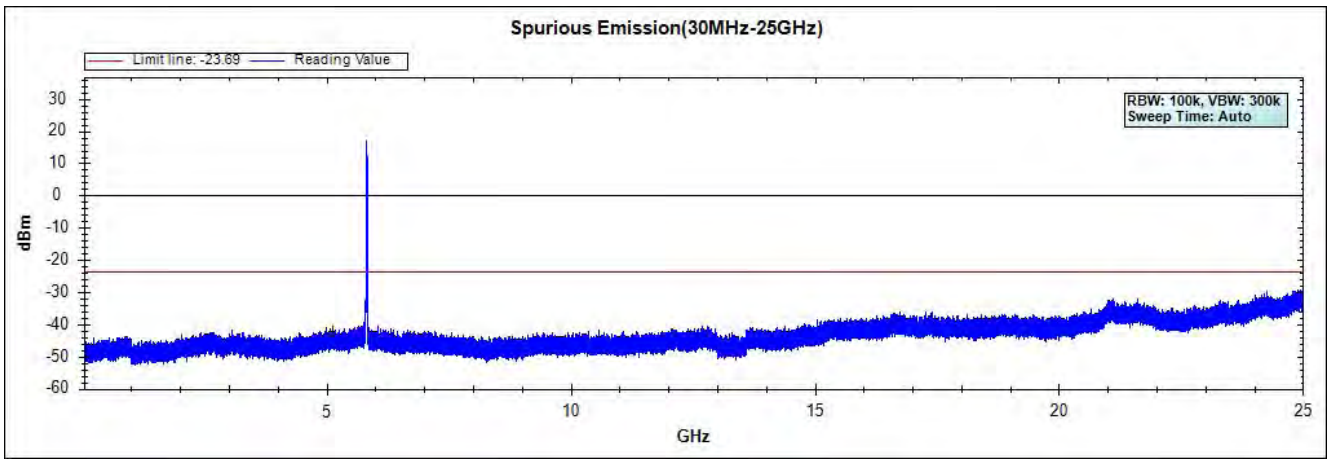


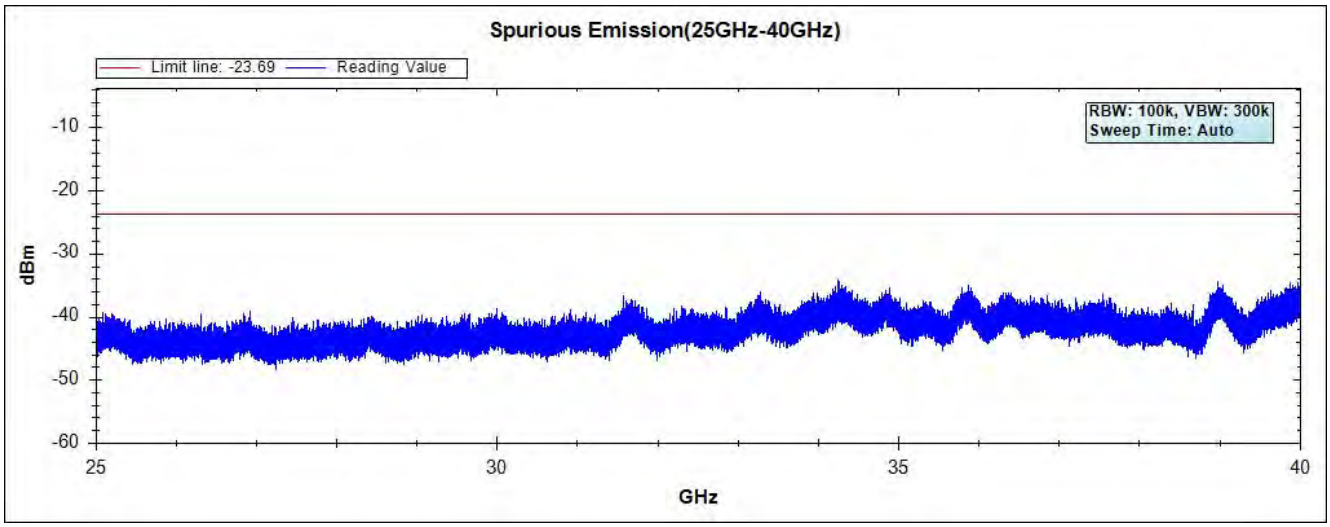
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





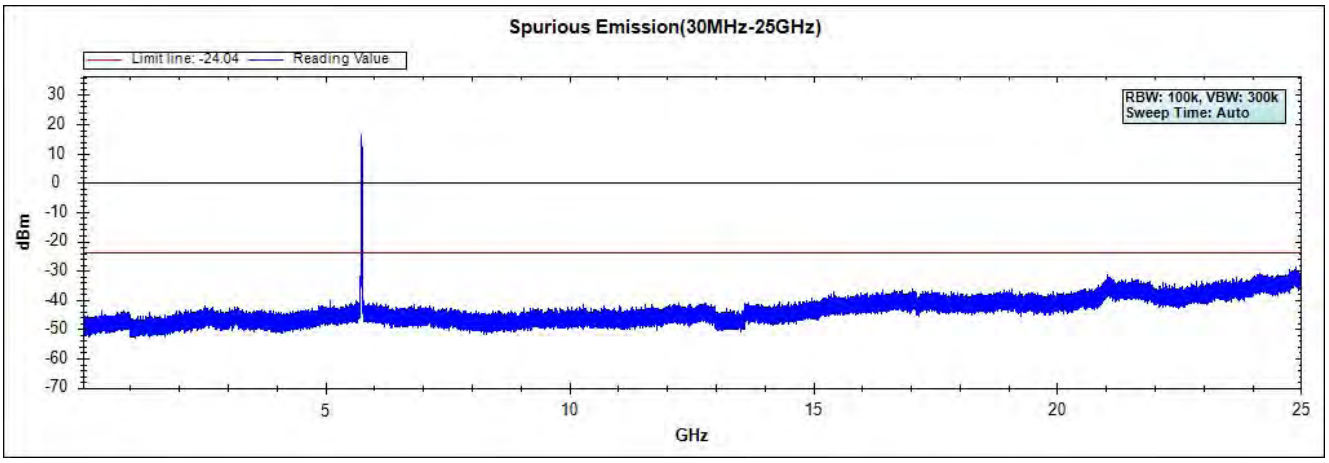
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

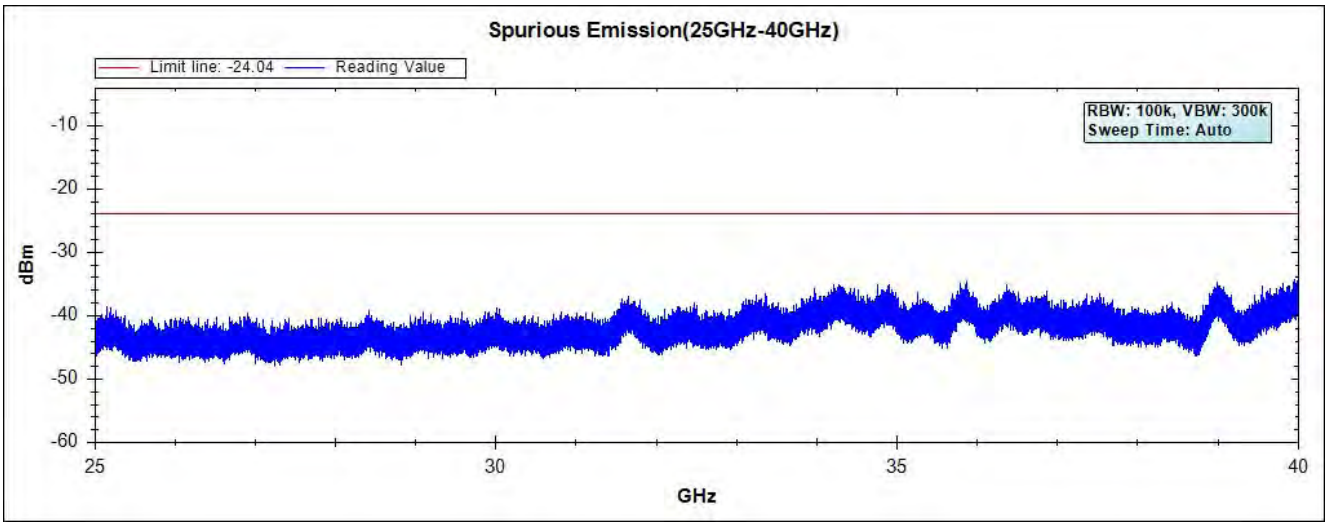




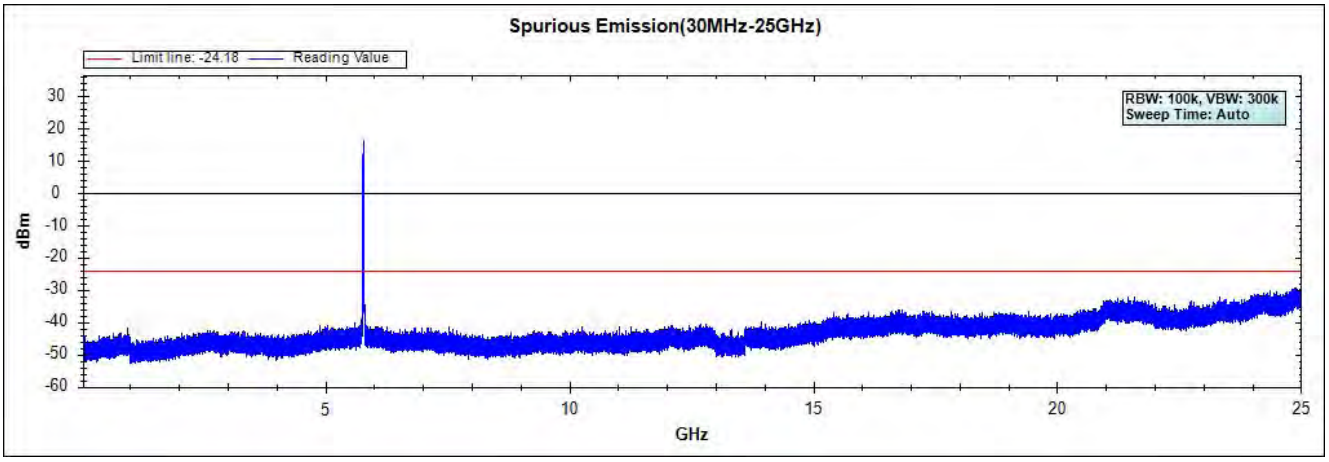
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 18: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Sector Antenna)

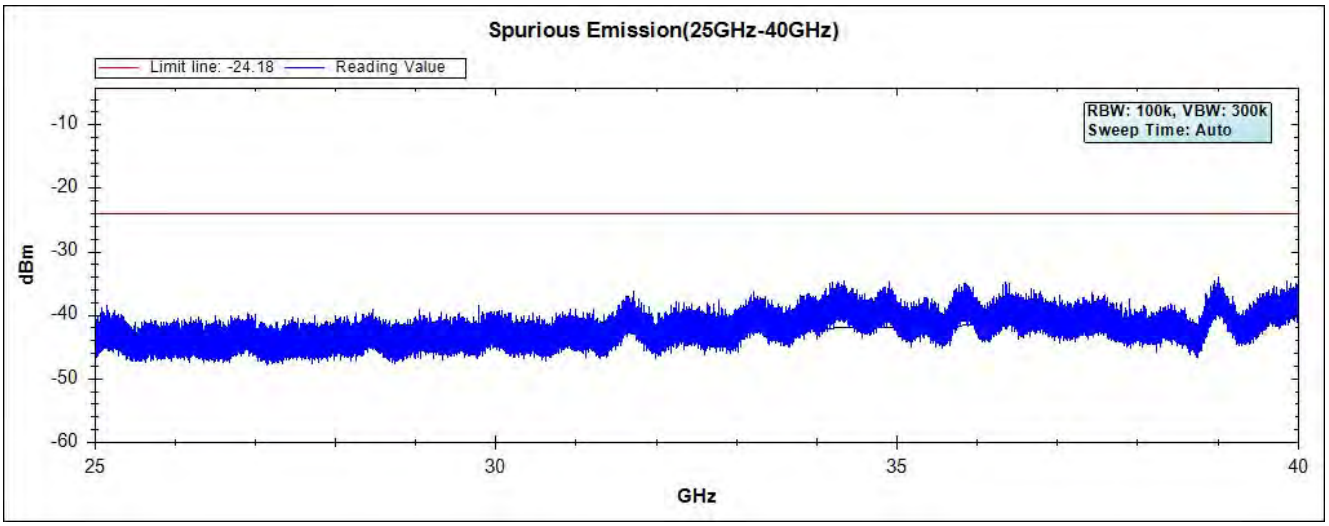
Channel 49 (5745MHz) 30MHz -40GHz-Chain A



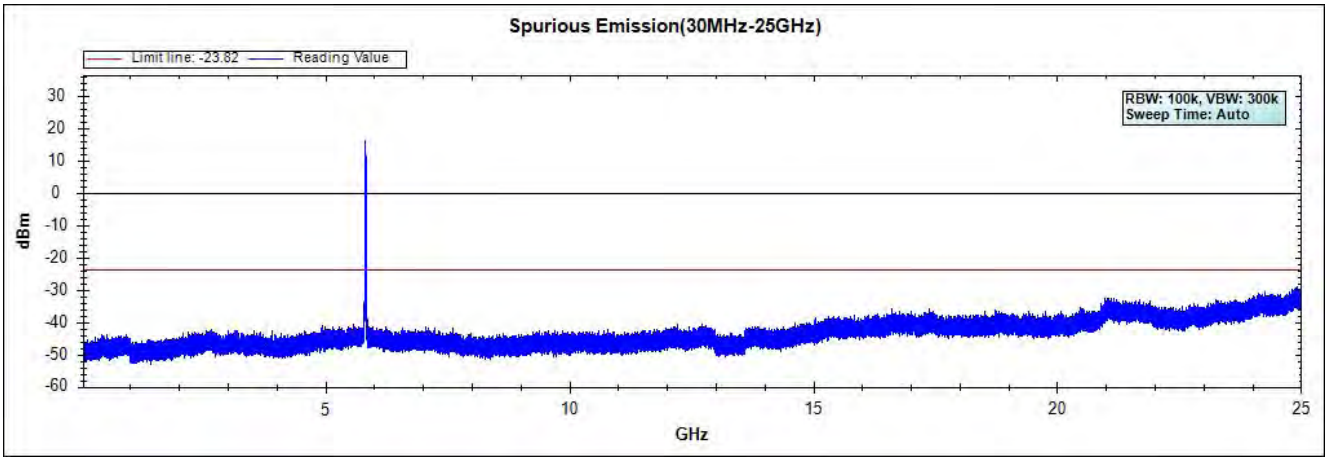


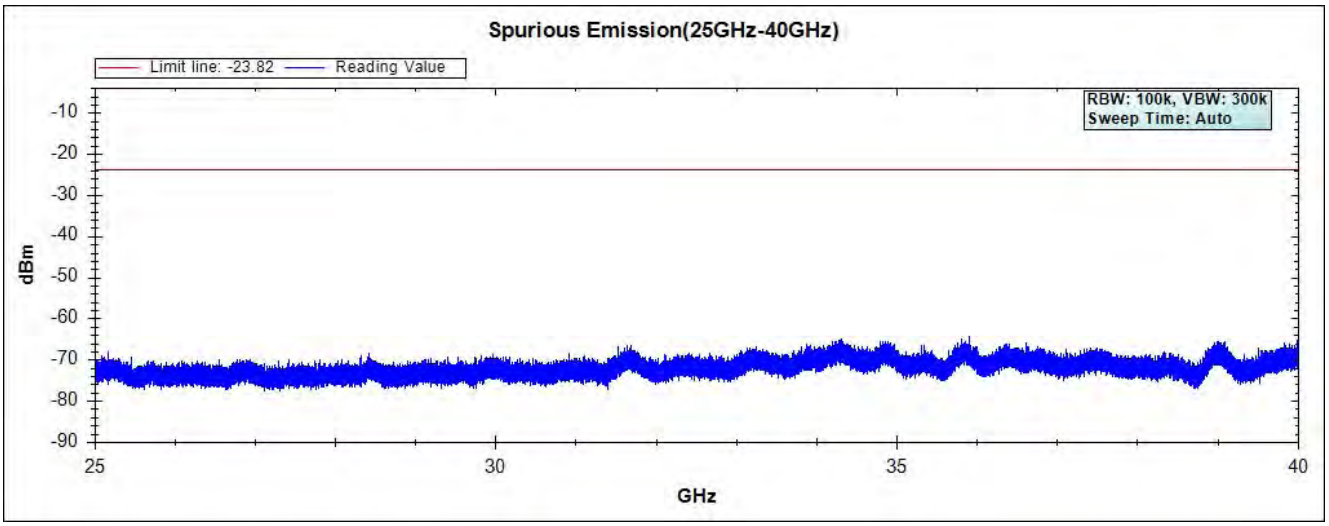
Channel 157 (5785MHz) 30MHz -40GHz-Chain A



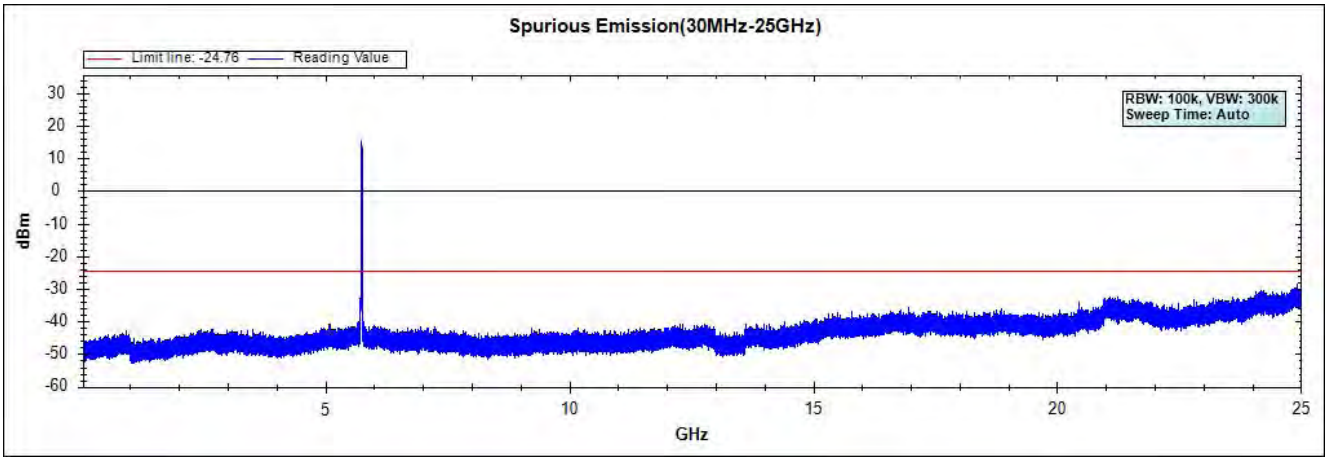


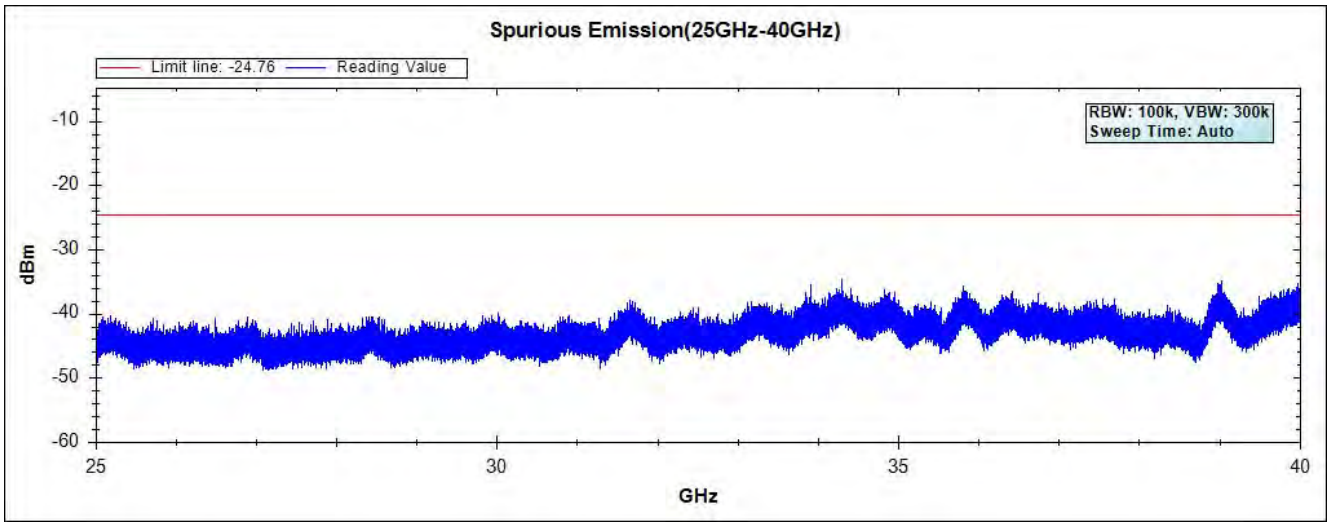
Channel 165 (5825MHz) 30MHz -40GHz-Chain A



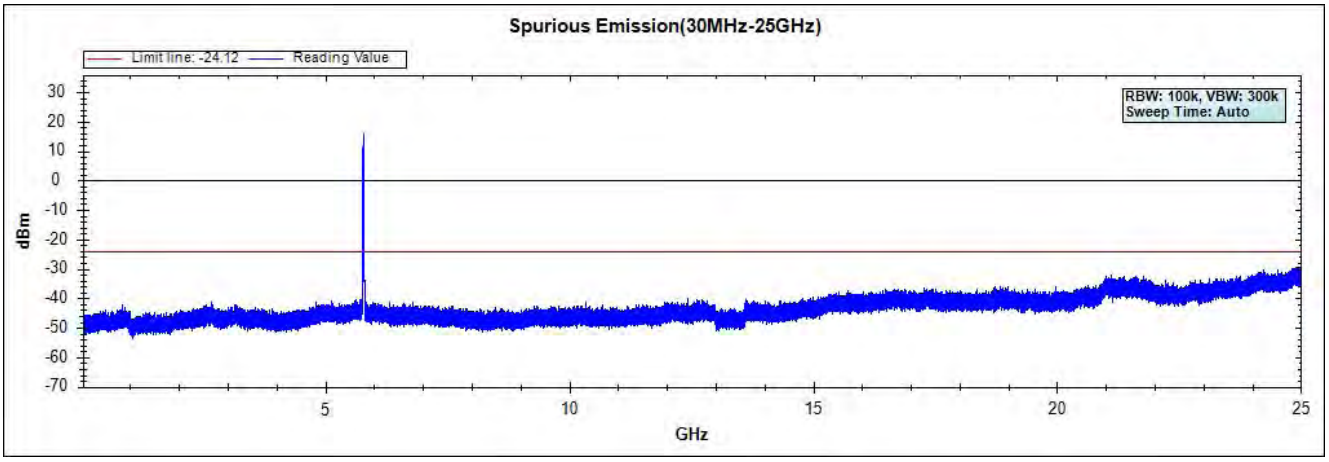


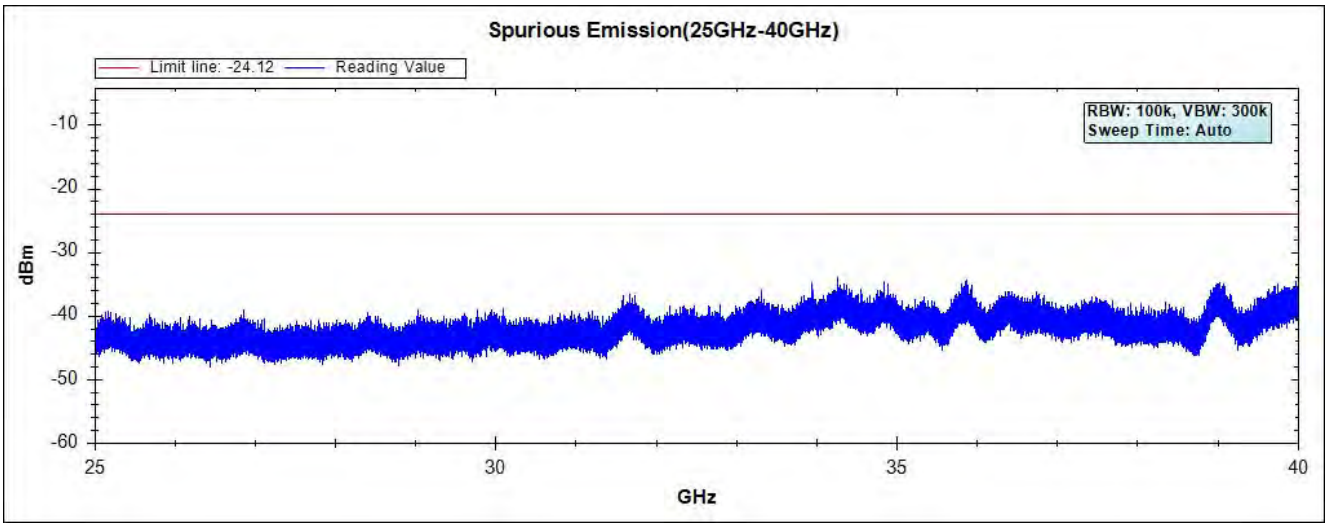
Channel 49 (5745MHz) 30MHz -40GHz-Chain B



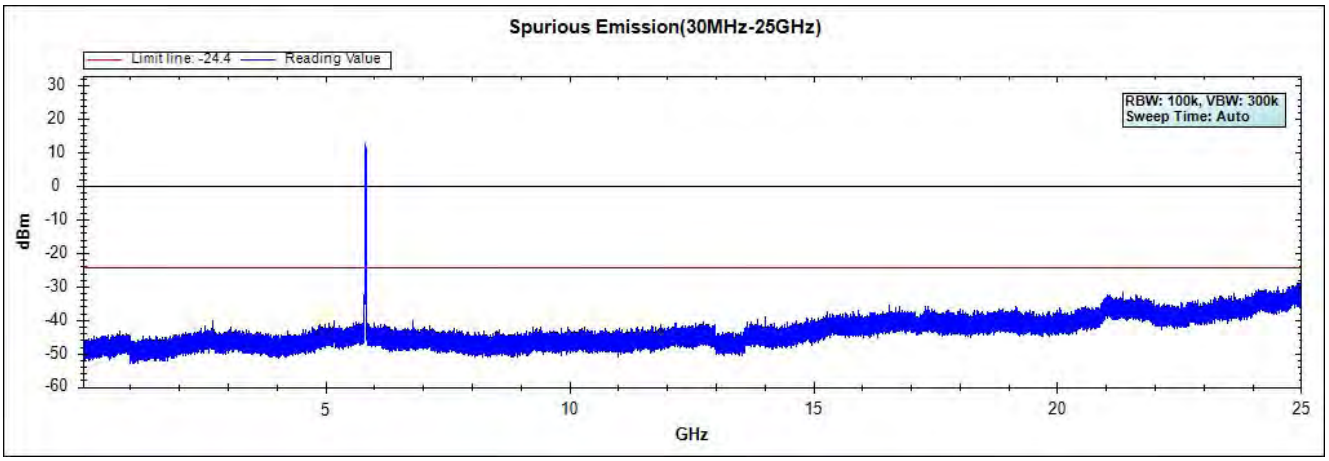


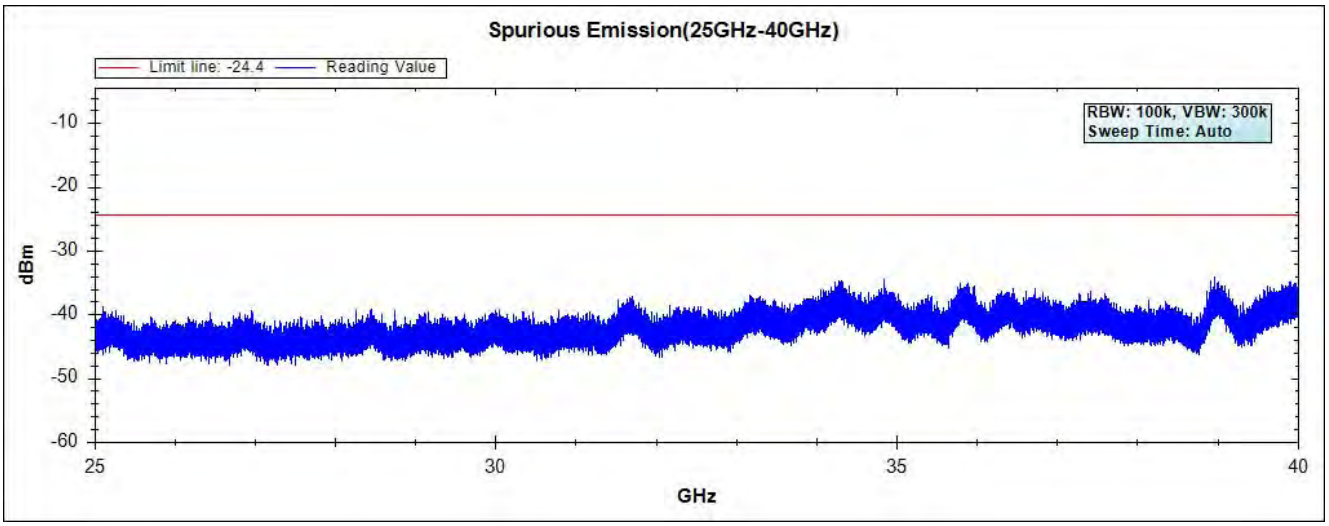
Channel 157 (5785MHz) 30MHz -40GHz-Chain B





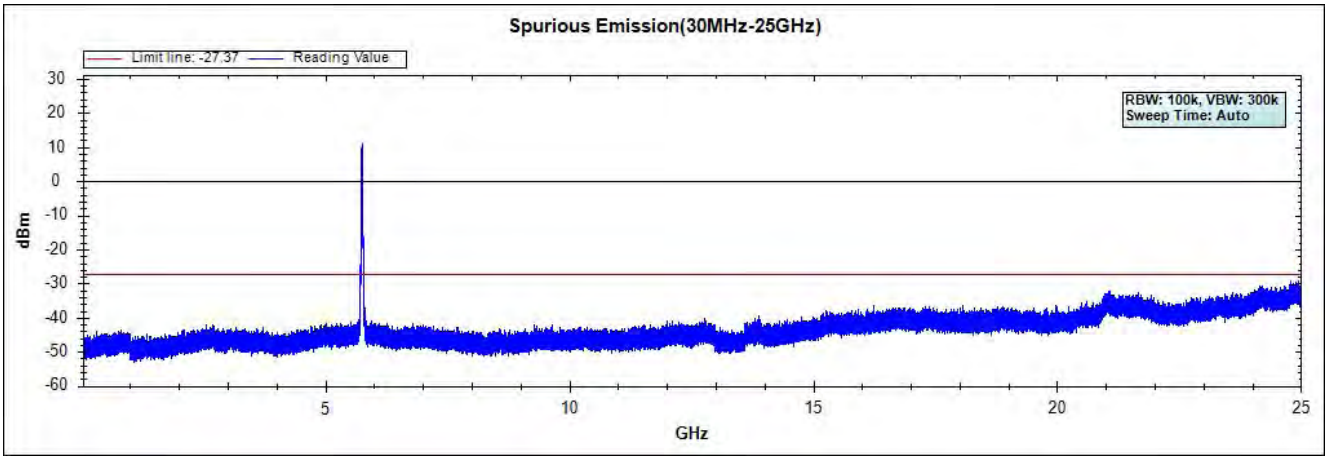
Channel 165 (5825MHz) 30MHz -40GHz-Chain B

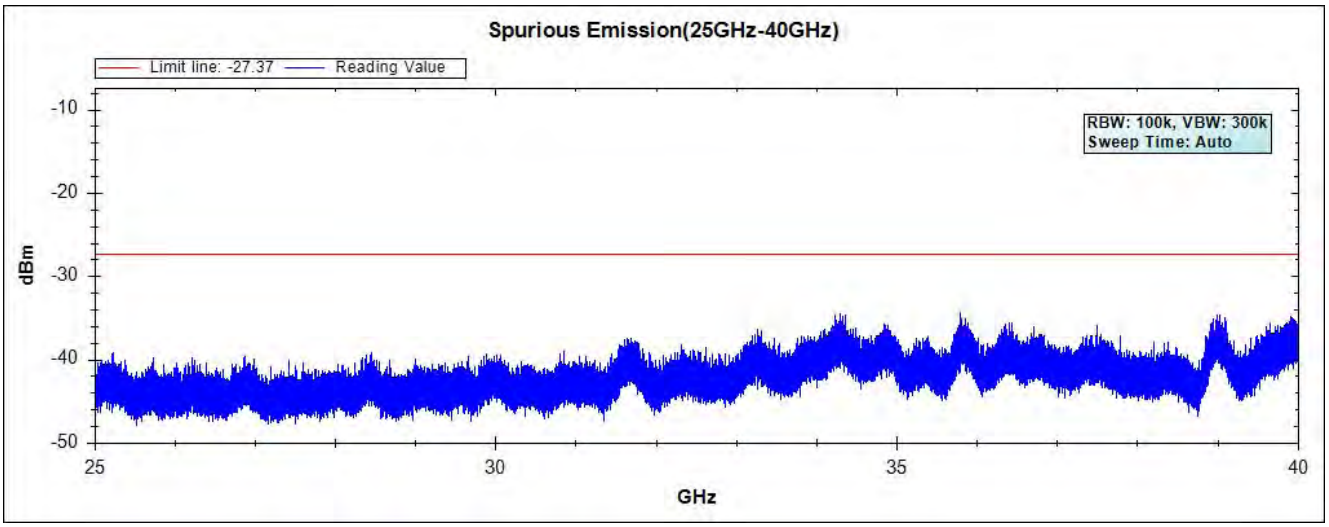




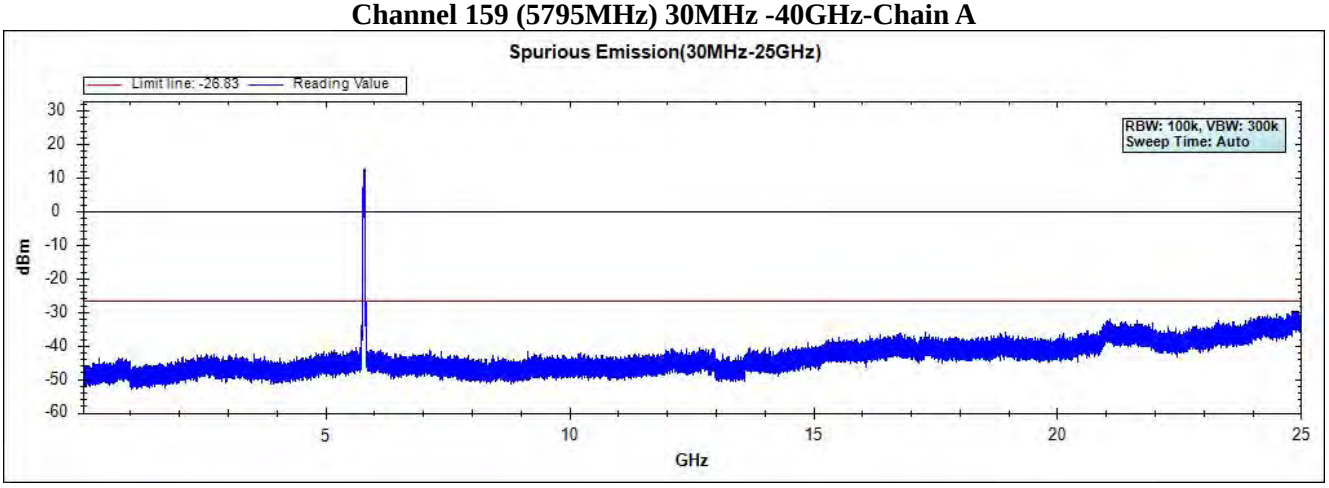
Product : 802.11 ac PCIe Module
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 19: Transmit - 802.11n-40BW_30Mbps(5G Band)(Sector Antenna)

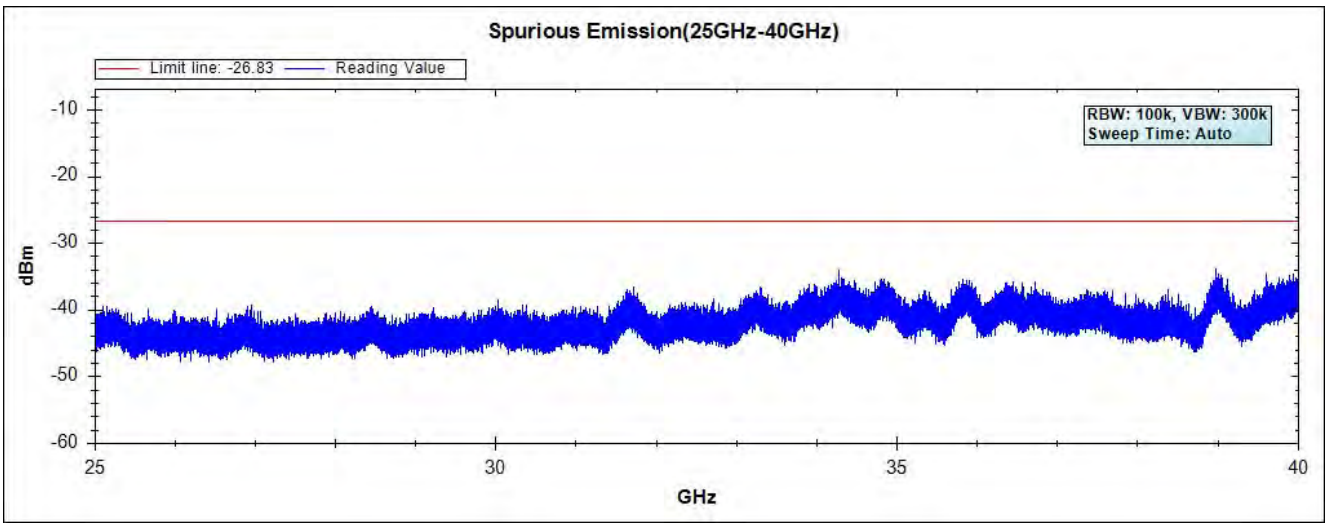
Channel 151 (5755MHz) 30MHz -40GHz-Chain A



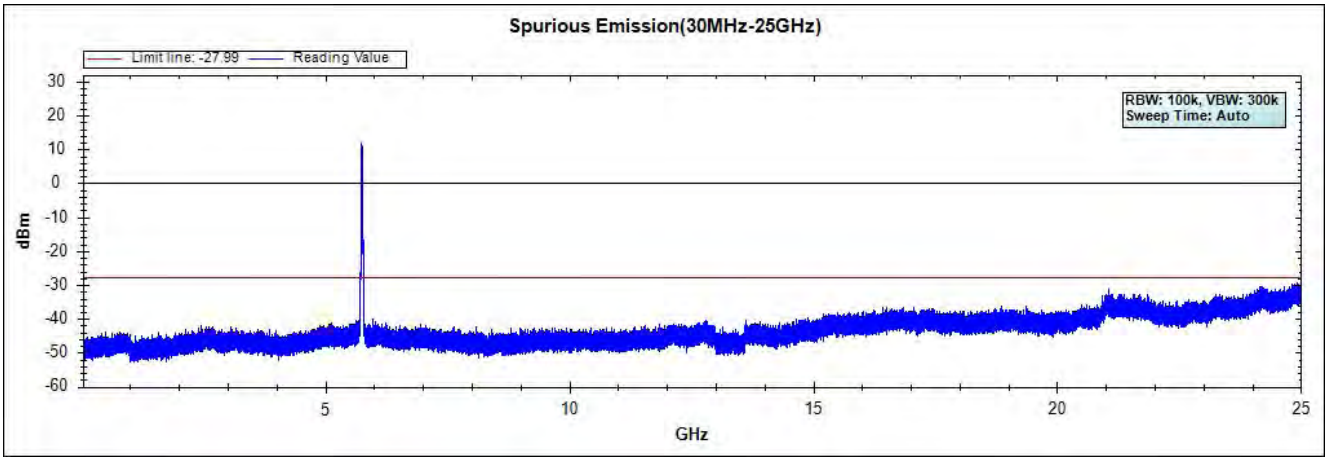


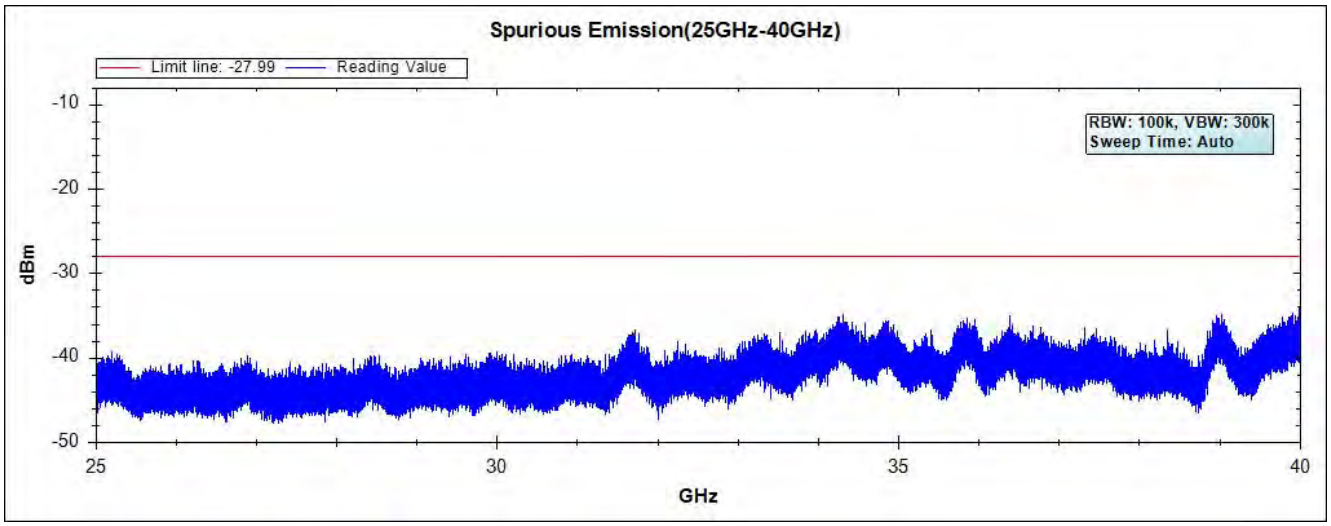
Channel 159 (5795MHz) 30MHz -40GHz-Chain A



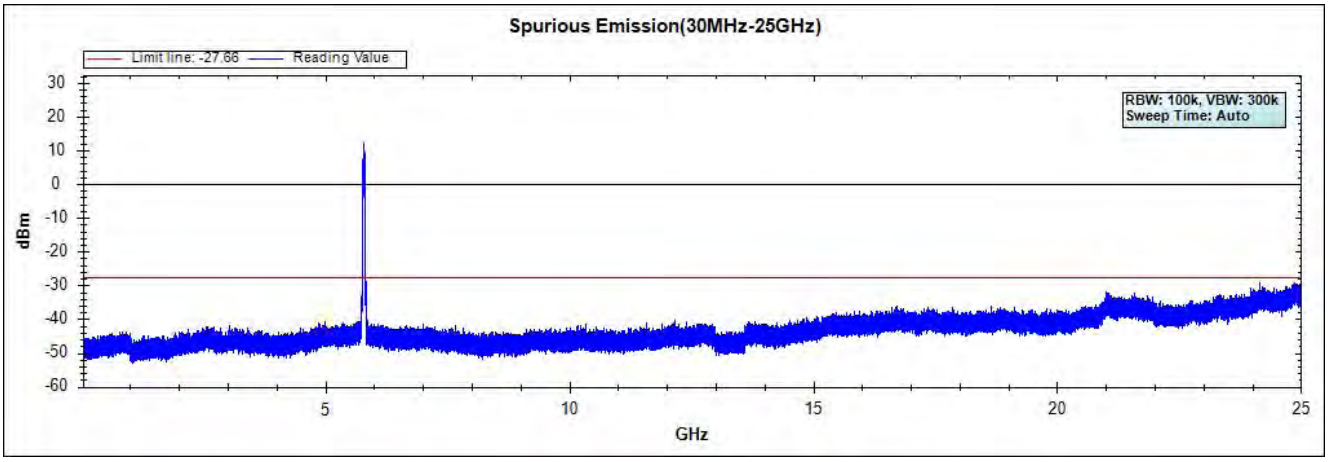


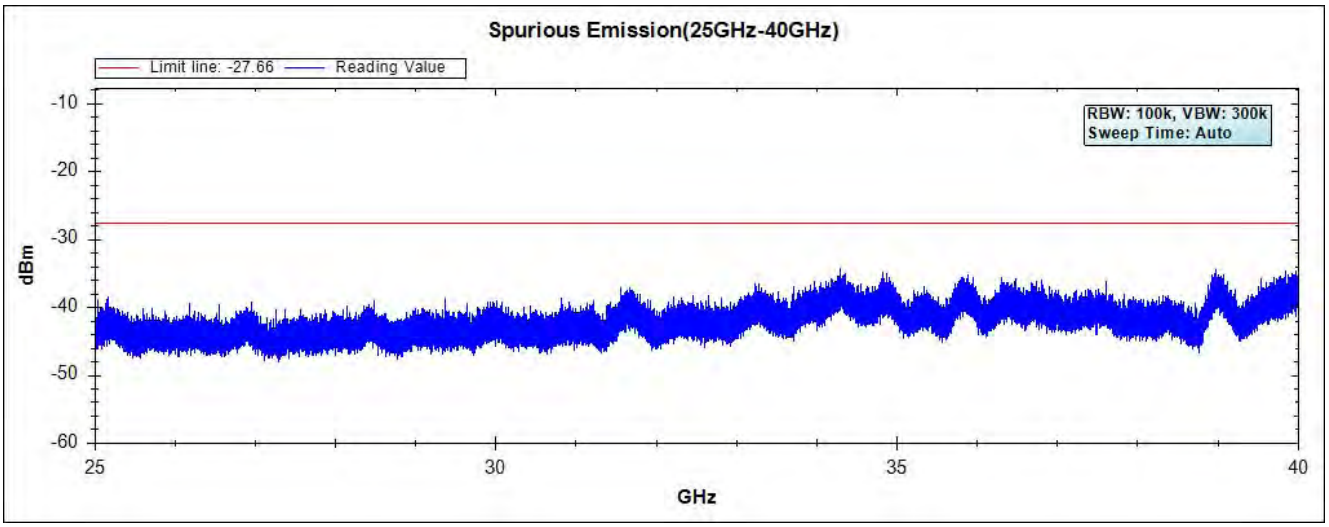
Channel 151 (5755MHz) 30MHz -40GHz-Chain B





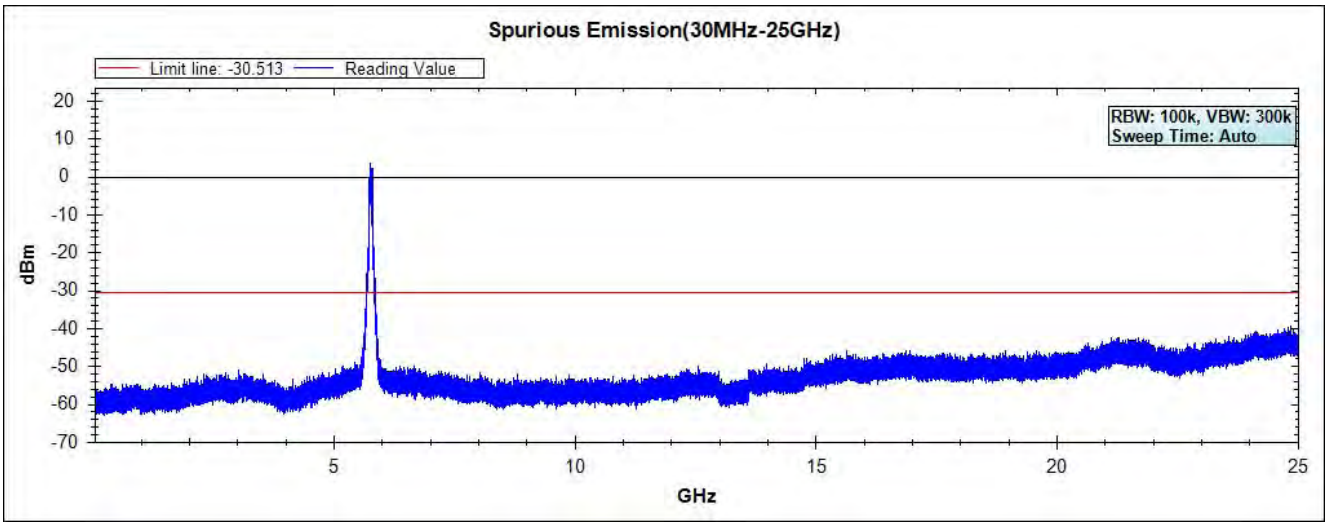
Channel 159 (5795MHz) 30MHz -40GHz-Chain B

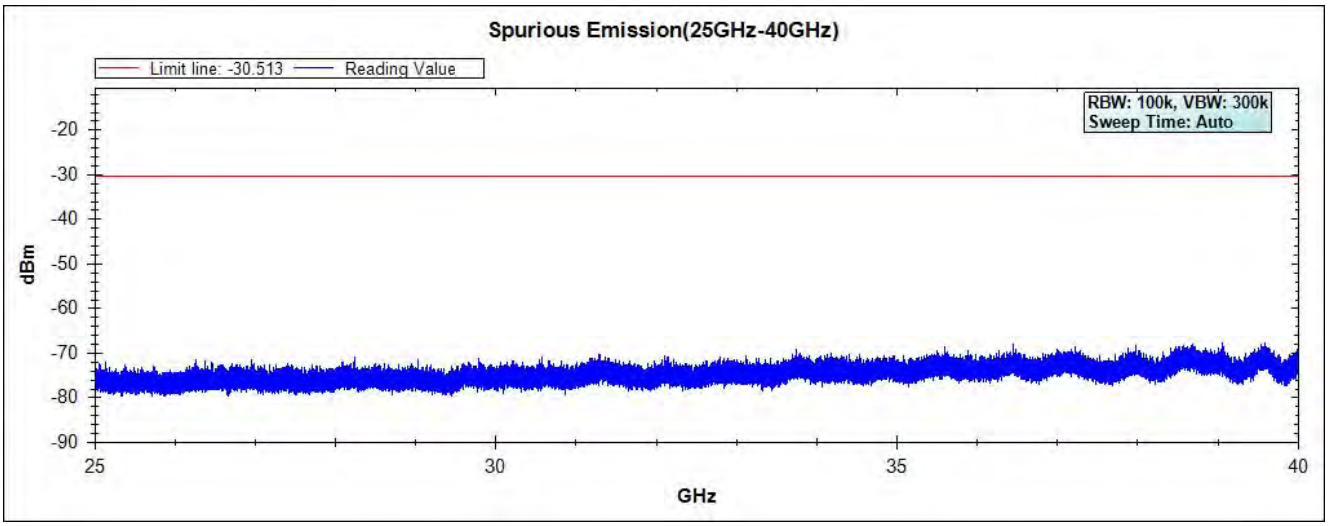




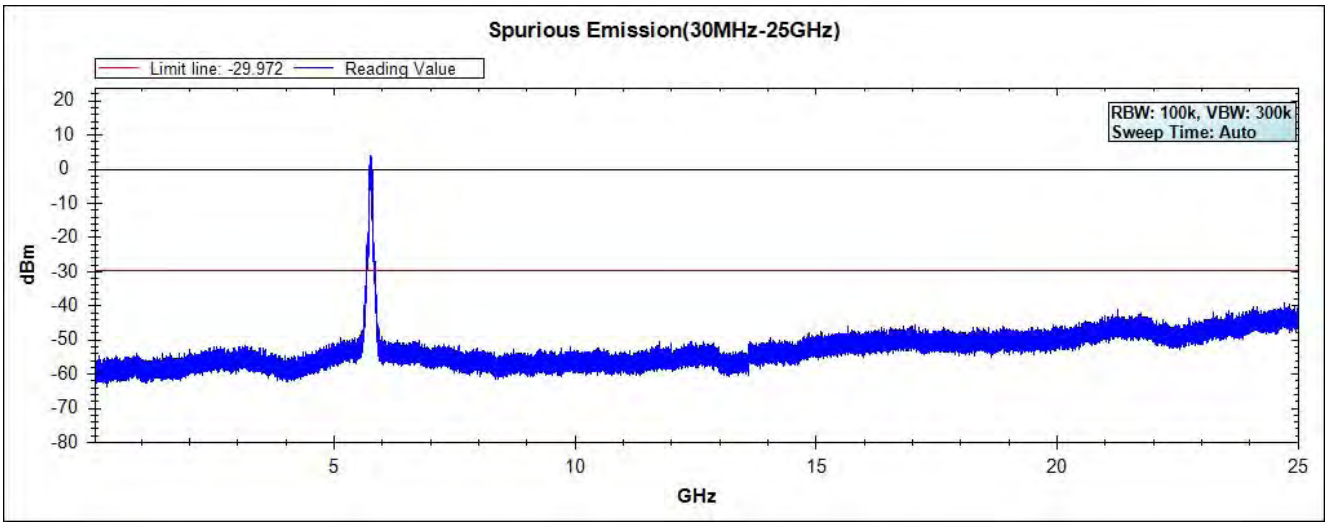
Product	:	802.11 ac PCIe Module
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	No.3 OATS
Test Mode	:	Mode 20: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Sector Antenna)

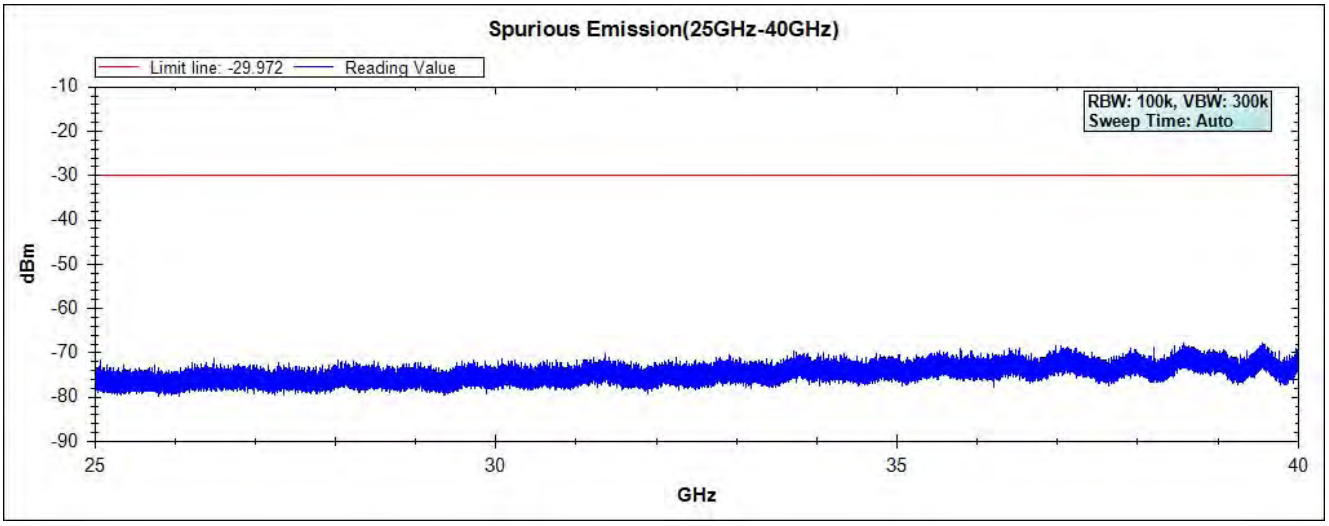
Channel 1 (5780MHz) 30MHz -40GHz- Chaia A





Channel 1 (5780MHz) 30MHz -40GHz- Chaia B





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, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

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

RF Radiated Measurement:

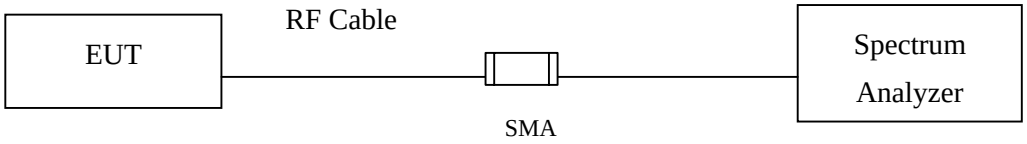
The following test equipments are used during the band edge tests:

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

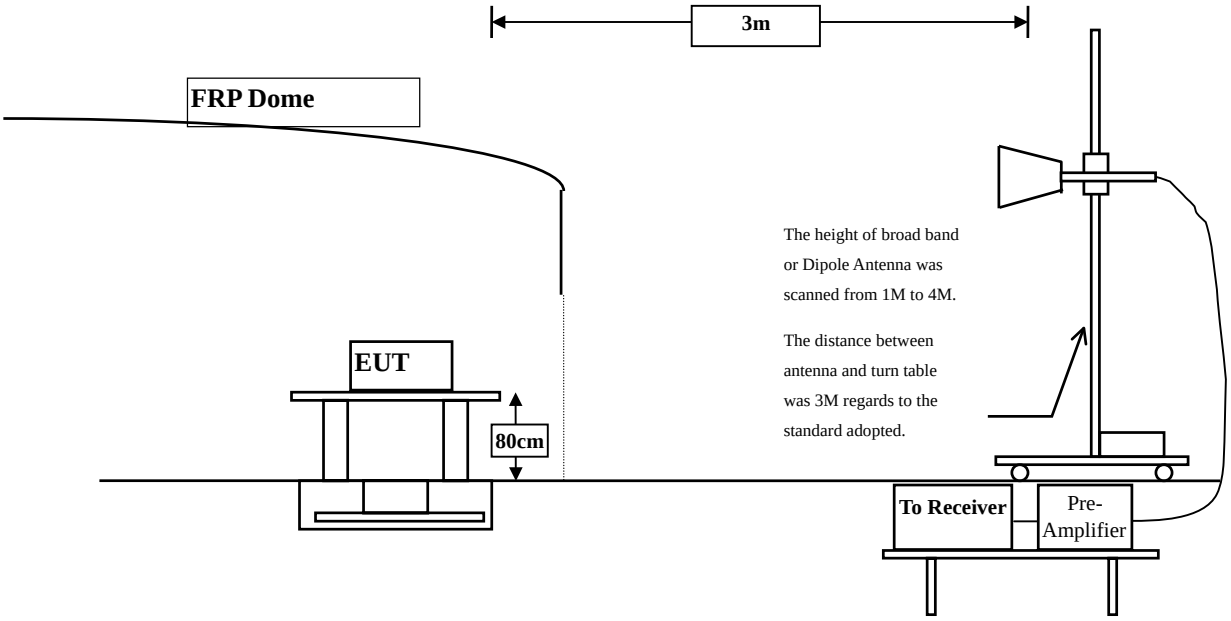
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



6.3. Limits

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

6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

6.5. Uncertainty

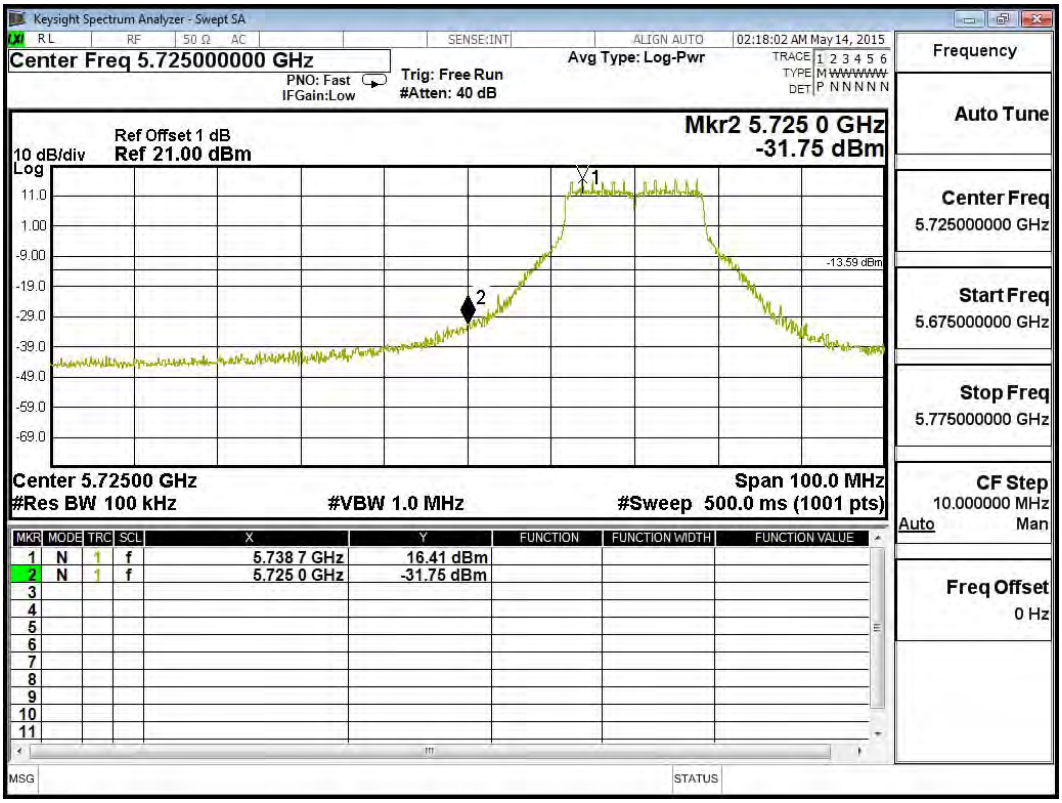
± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna)

Chain A

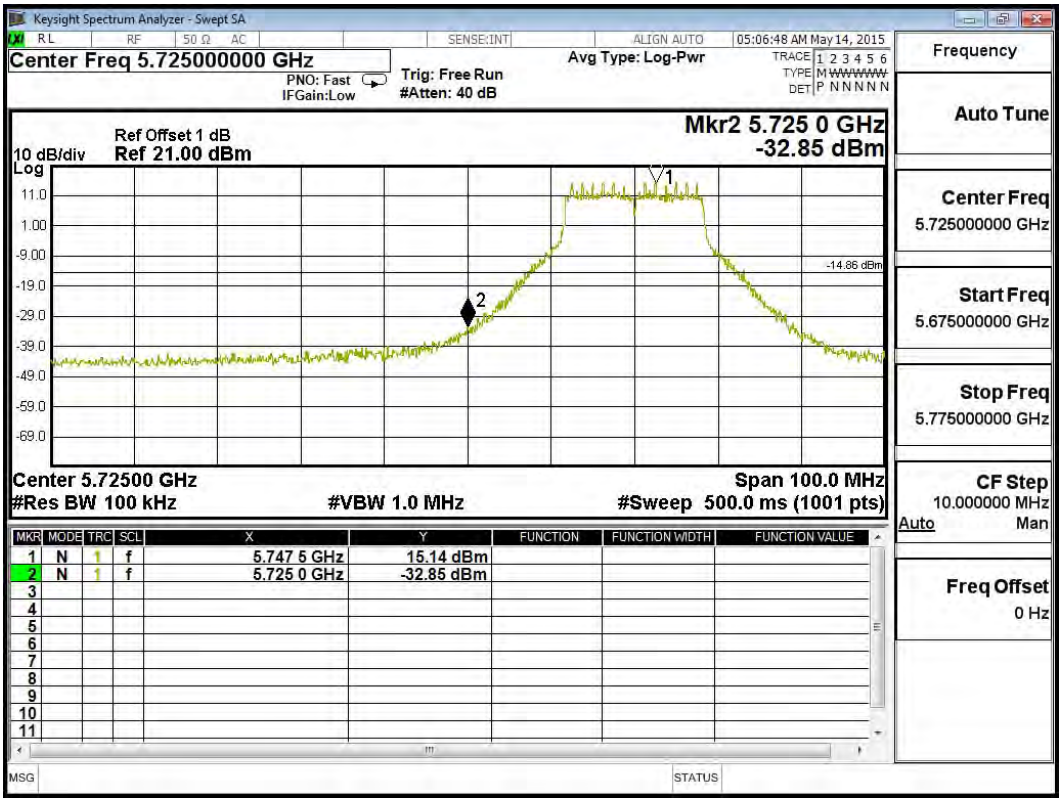
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	48.16	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna)

Chain B

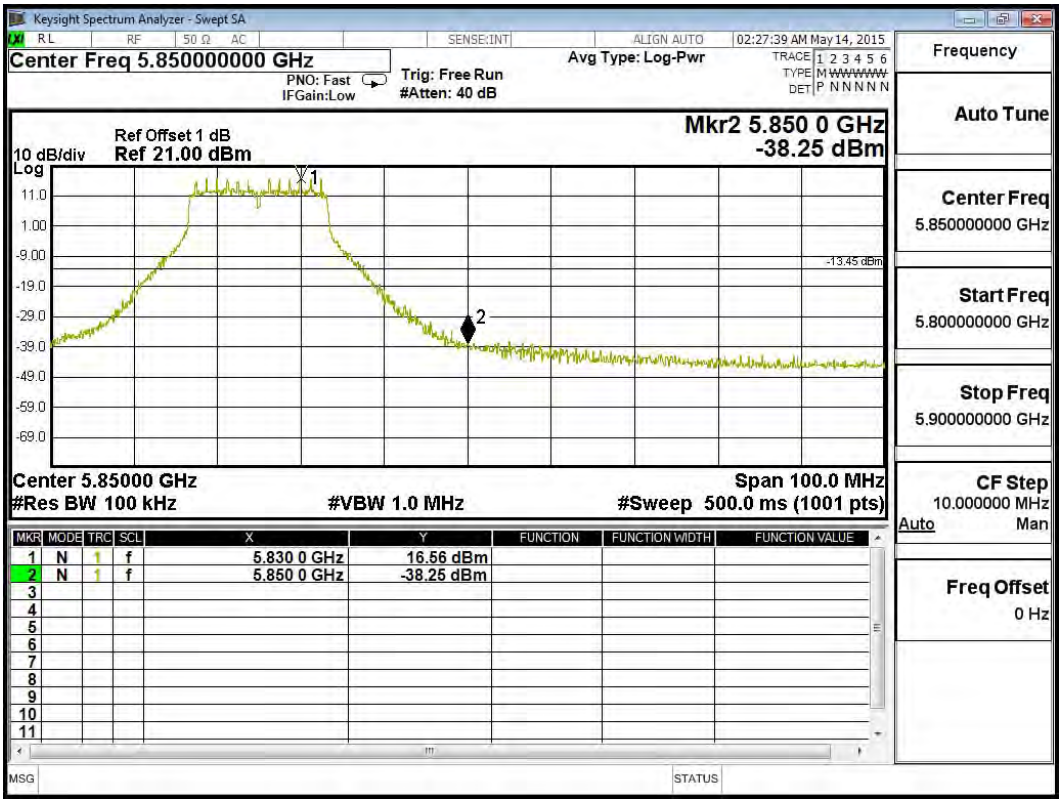
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	47.99	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna)

Chain A

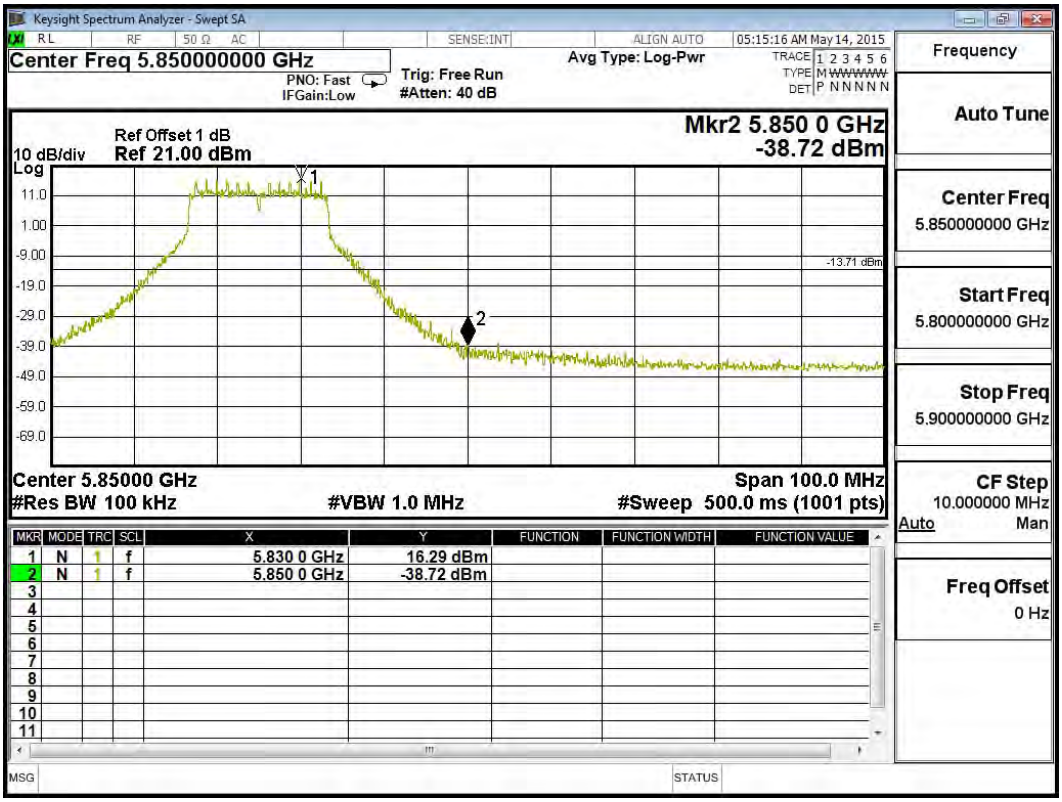
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	54.82	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11a_6Mbps(Dipole Antenna)

Chain B

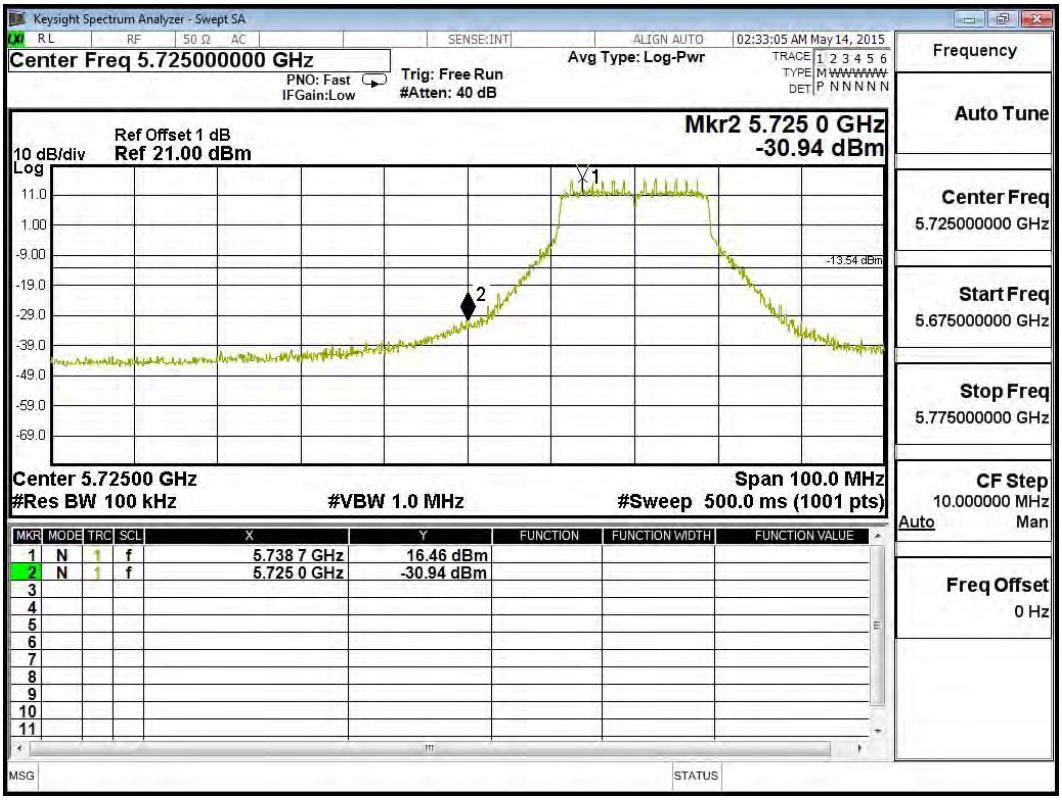
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	55.01	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)

Chain A

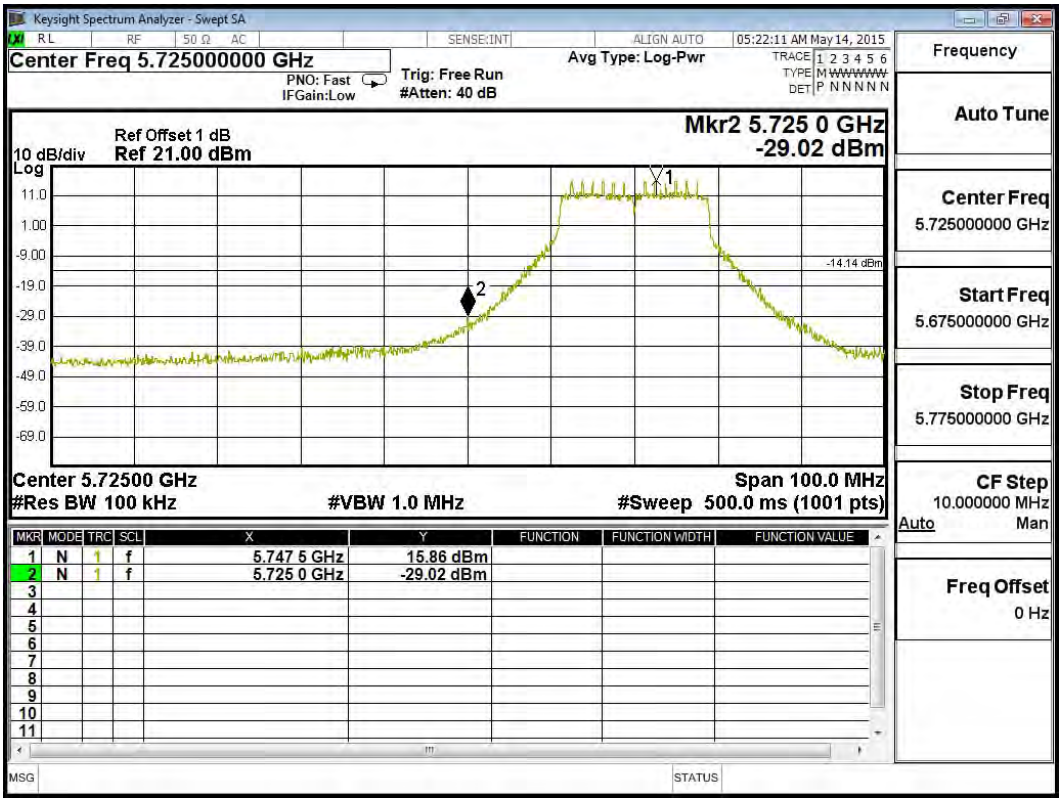
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	47.40	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)

Chain B

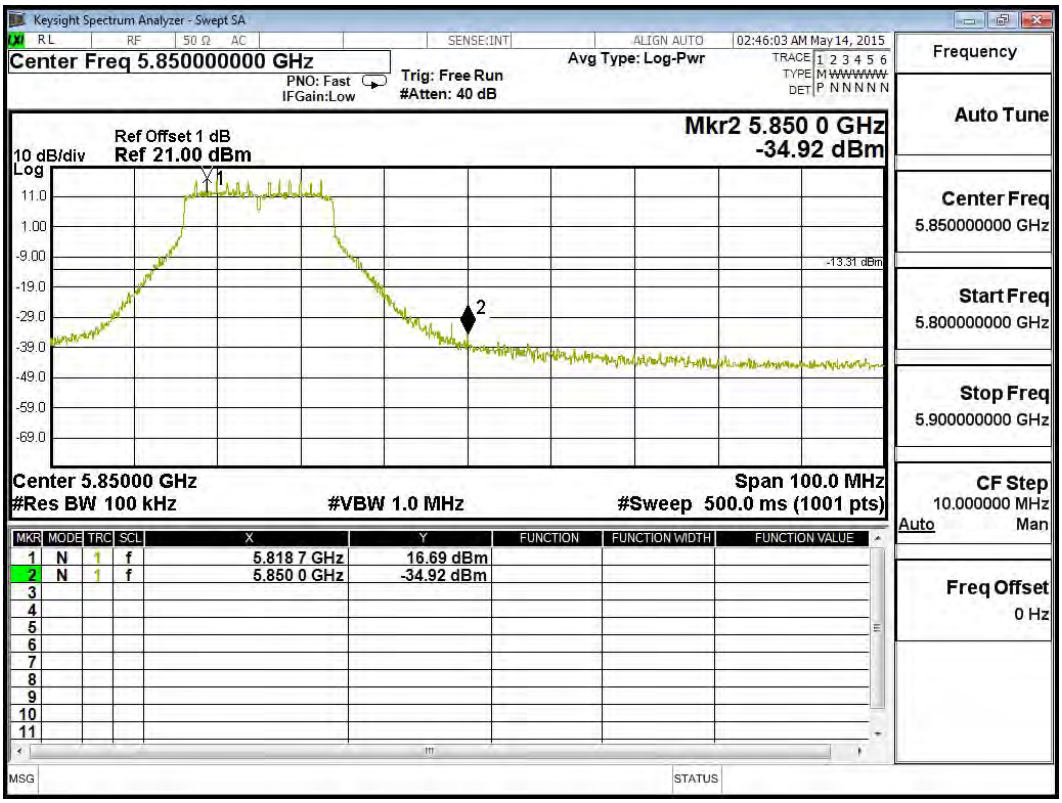
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	44.88	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)

Chain A

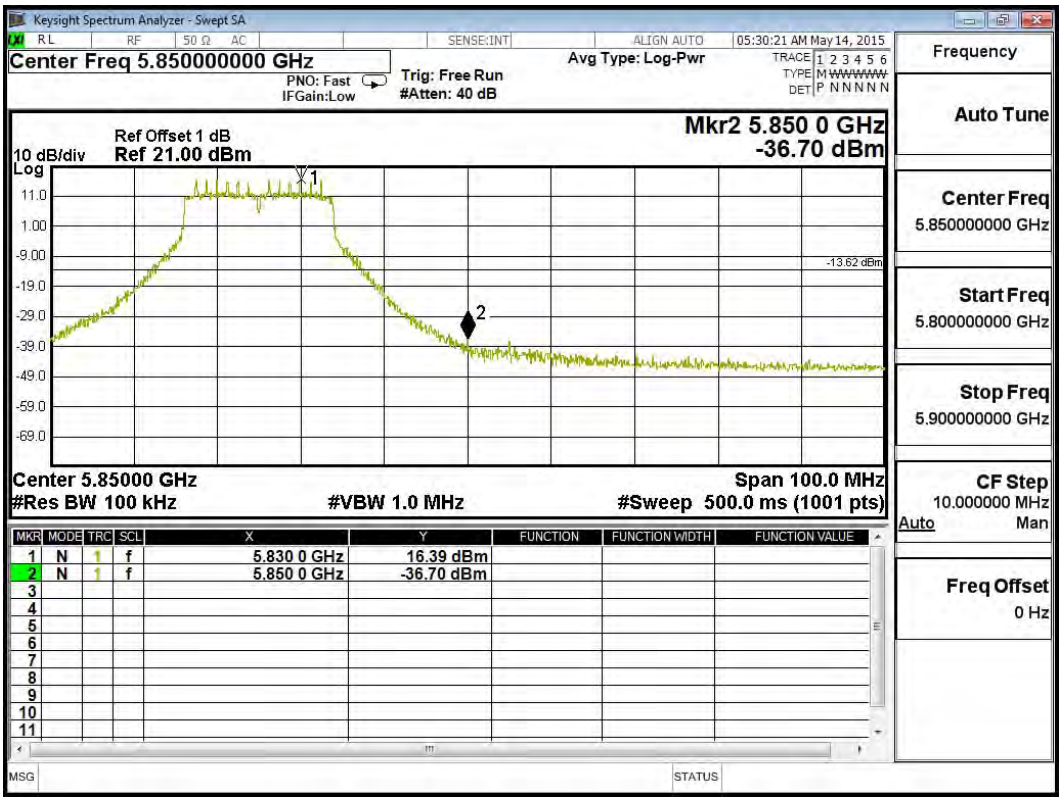
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	51.61	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)

Chain B

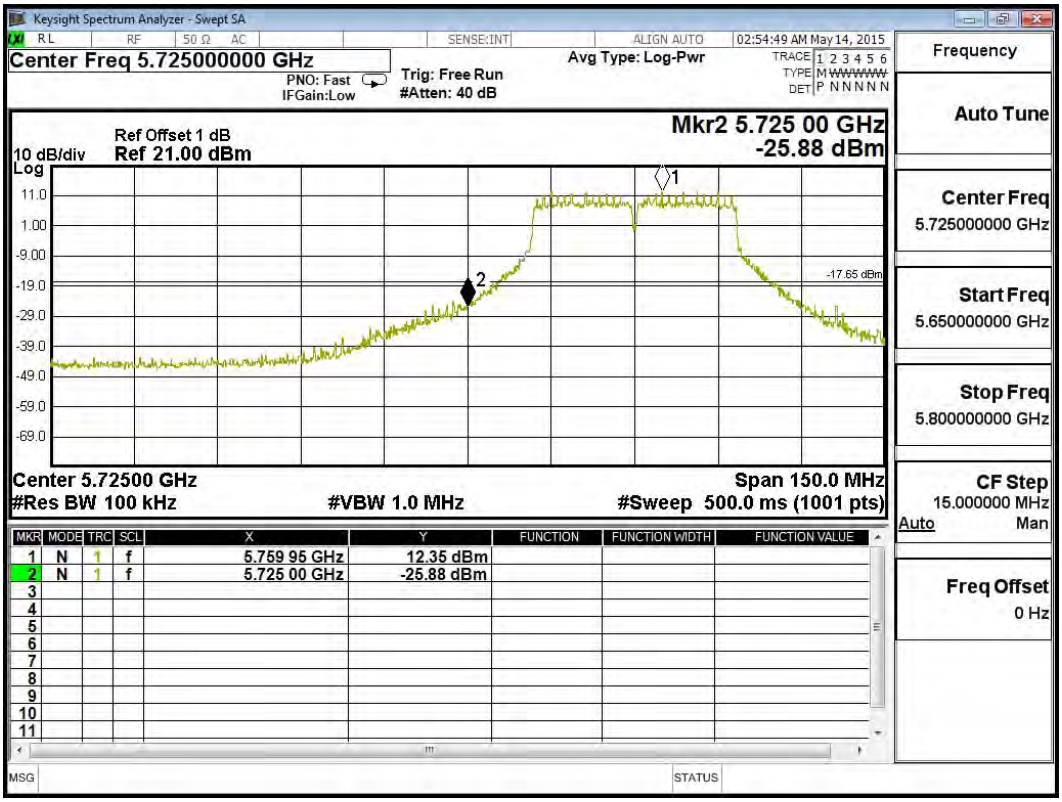
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	53.09	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)

Chain A

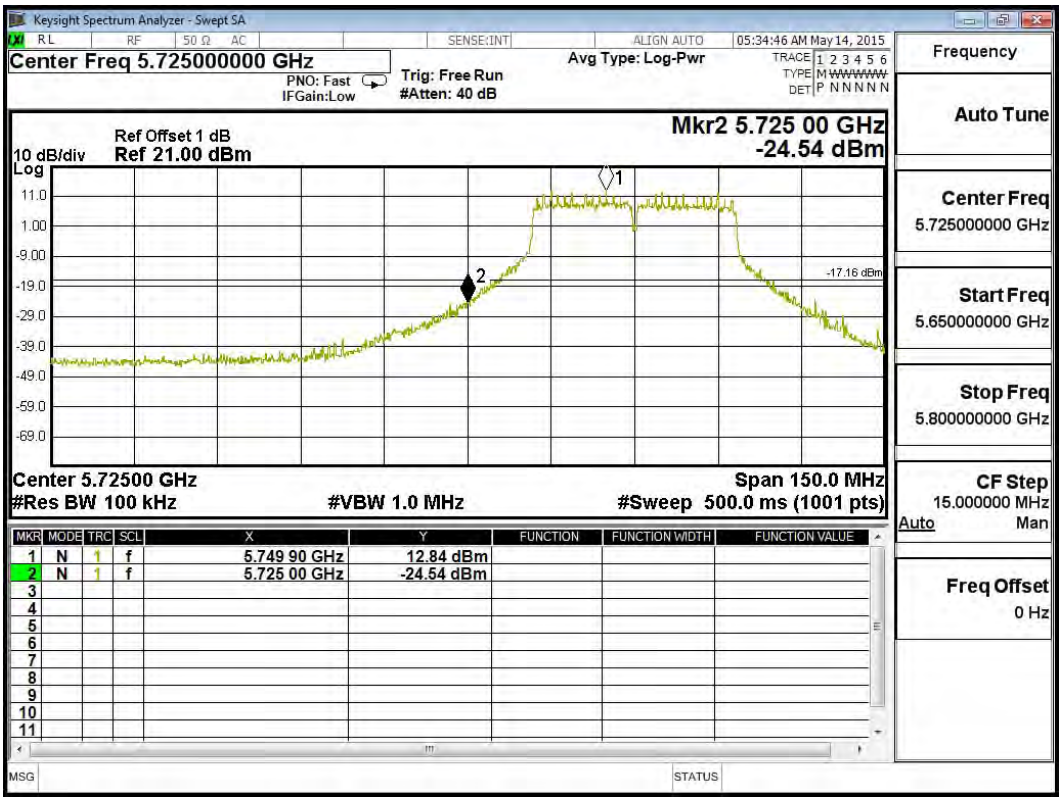
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5755	38.23	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)

Chain B

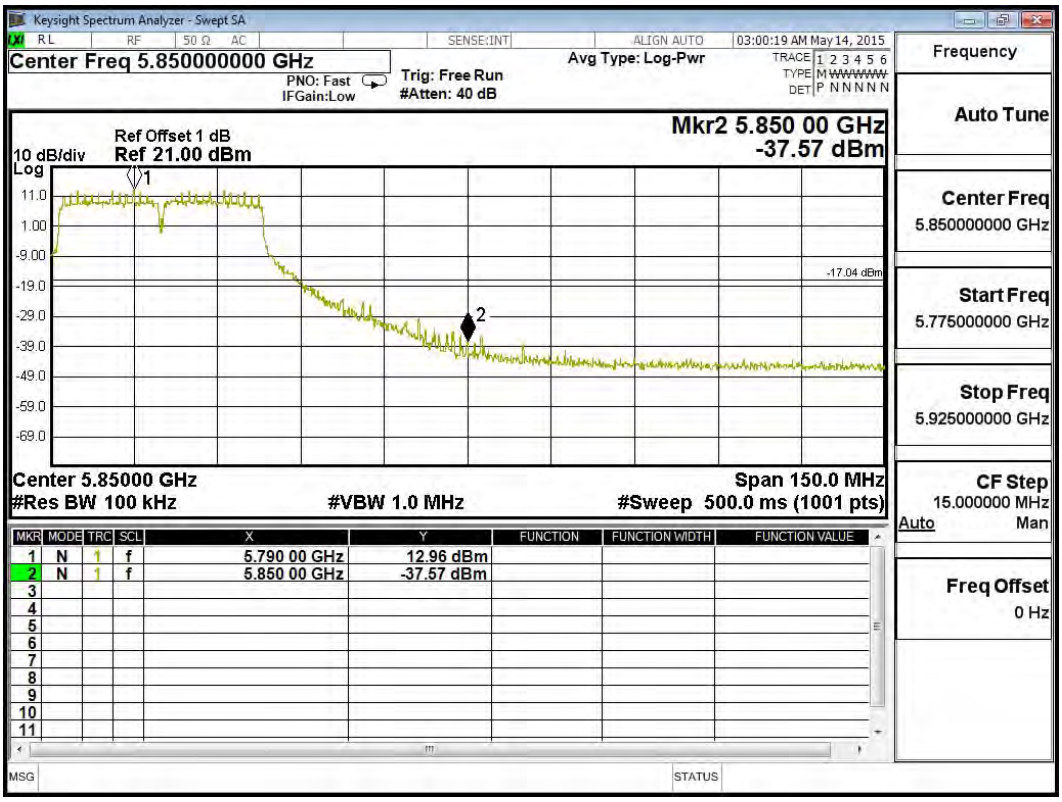
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5755	37.38	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)

Chain A

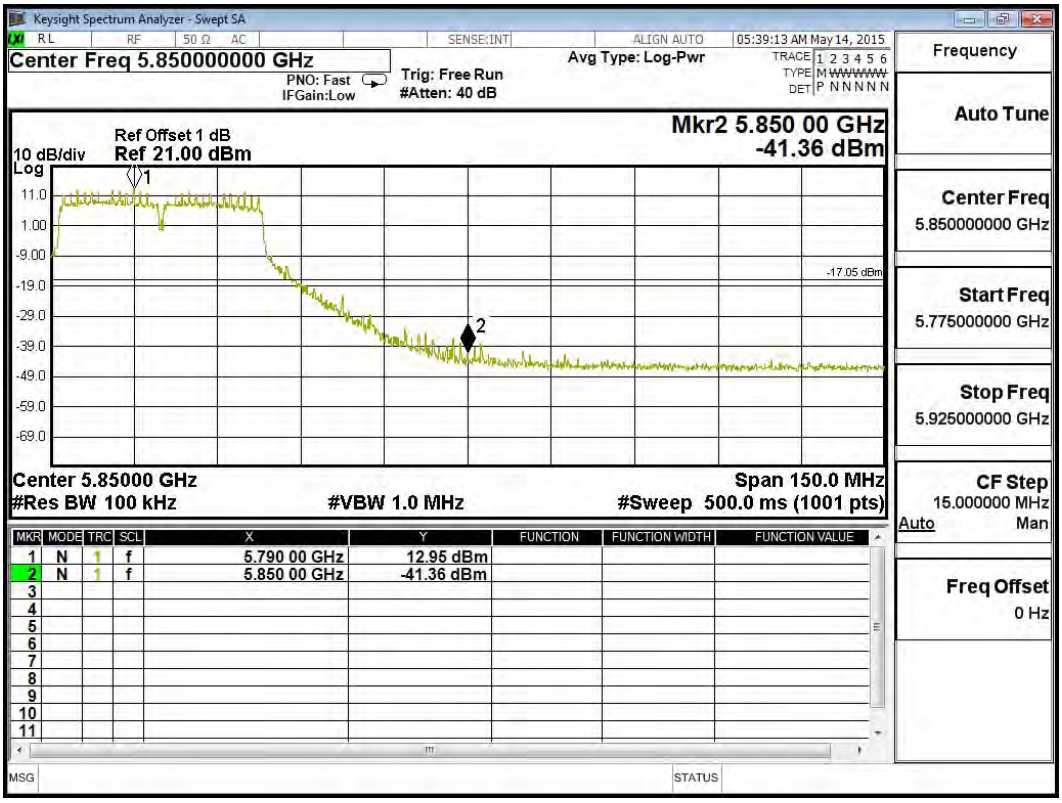
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5795	50.53	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)

Chain B

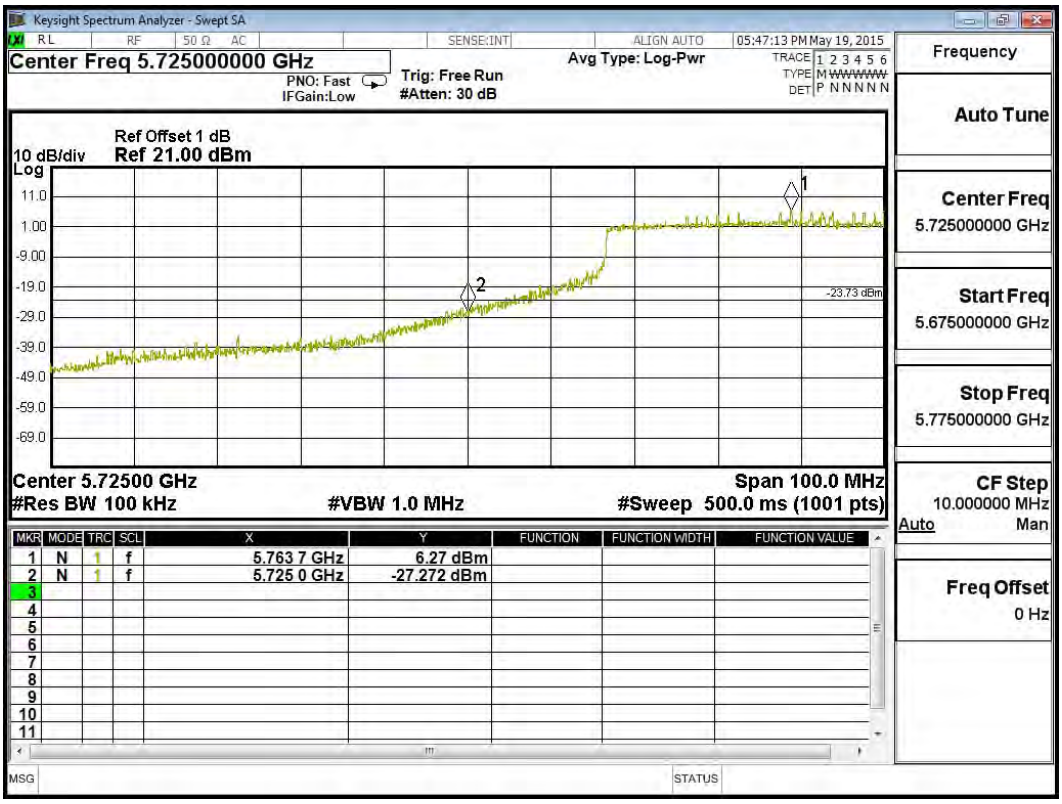
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5795	54.31	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Dipole Antenna)

Chain A

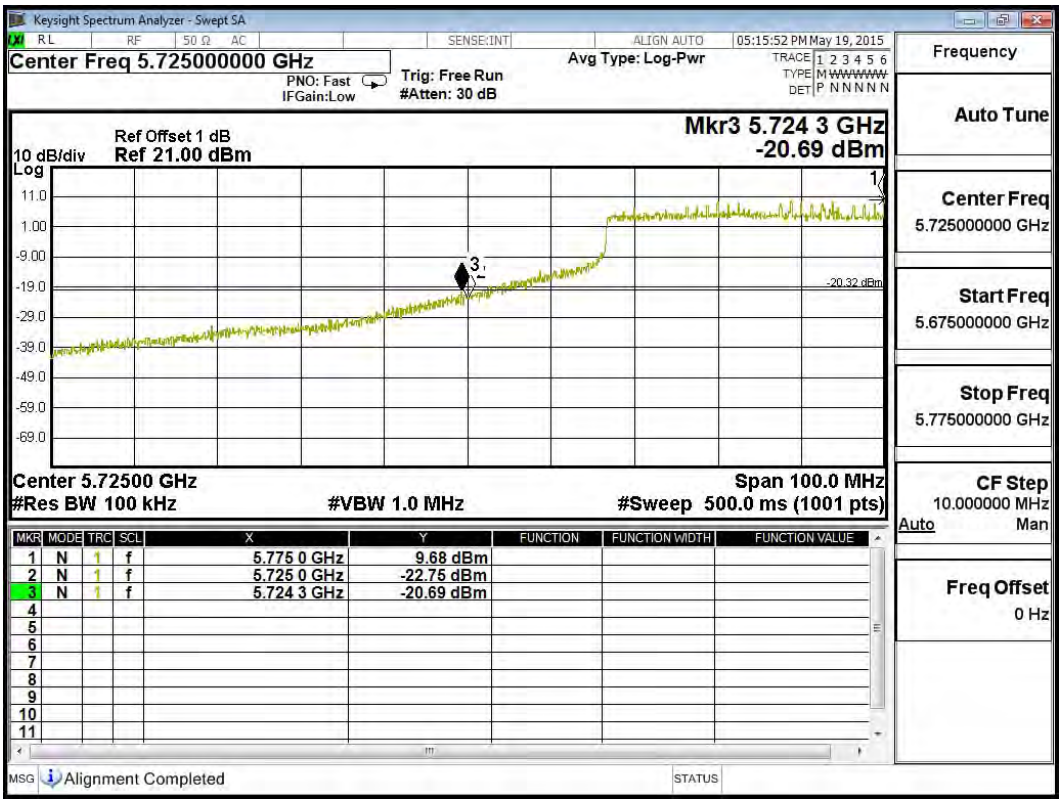
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5780	33.54	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11ac-80BW_65Mbps(5G Band)(Dipole Antenna)

Chain B

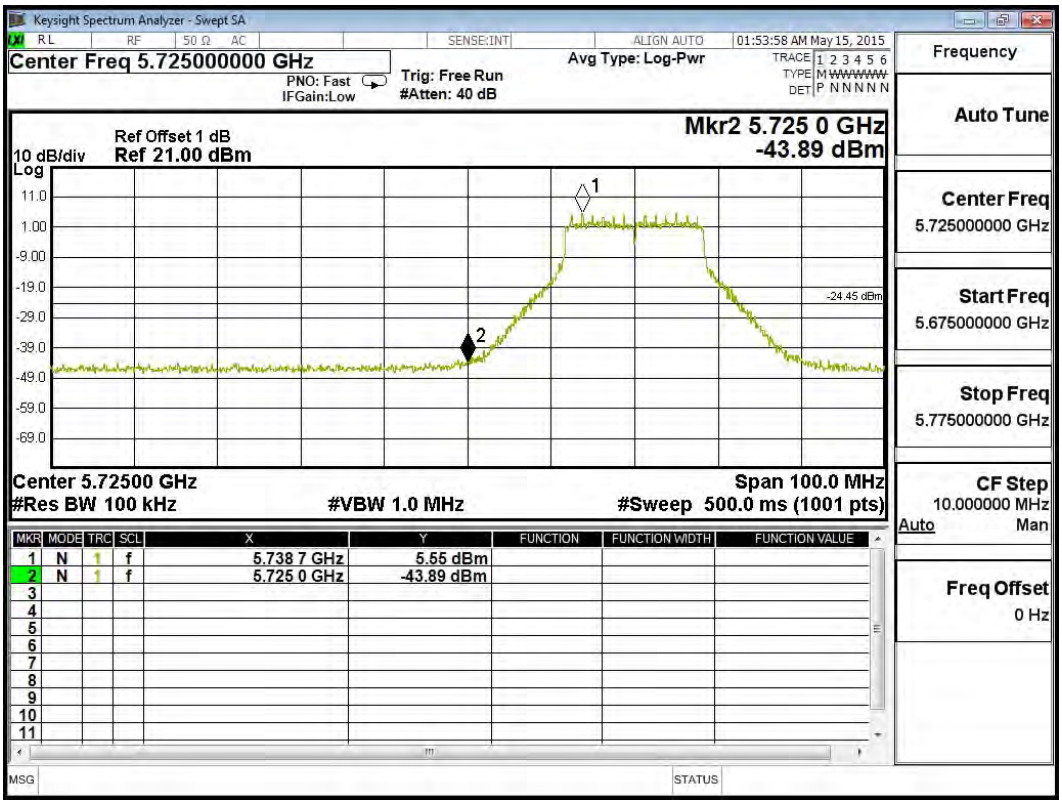
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5780	30.37	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11a_6Mbps(Grid DISH Antenna)

Chain A

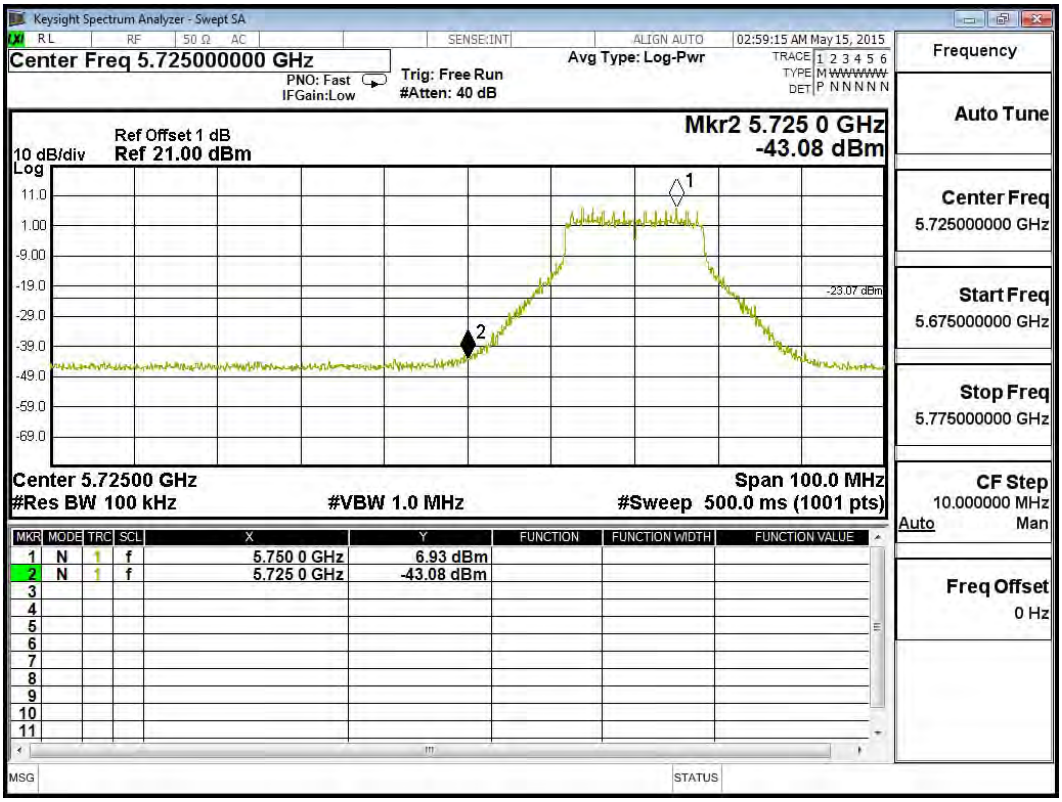
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	49.39	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11a_6Mbps(Grid DISH Antenna)

Chain B

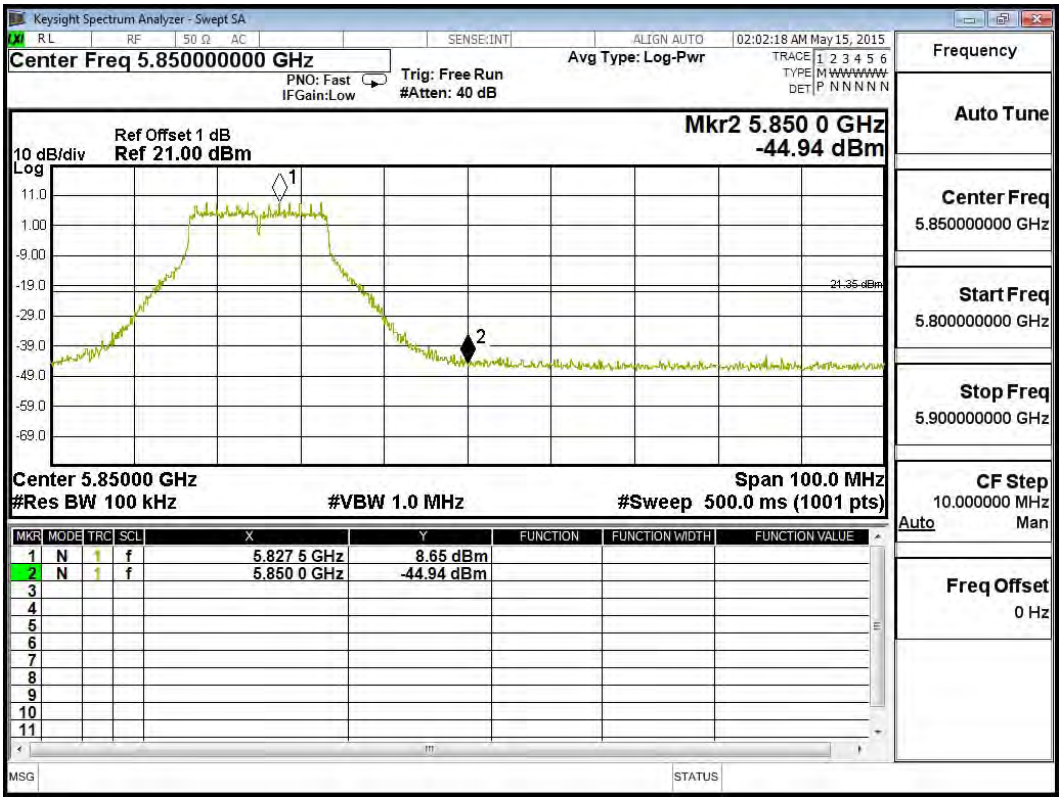
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	50.01	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11a_6Mbps(Grid DISH Antenna)

Chain A

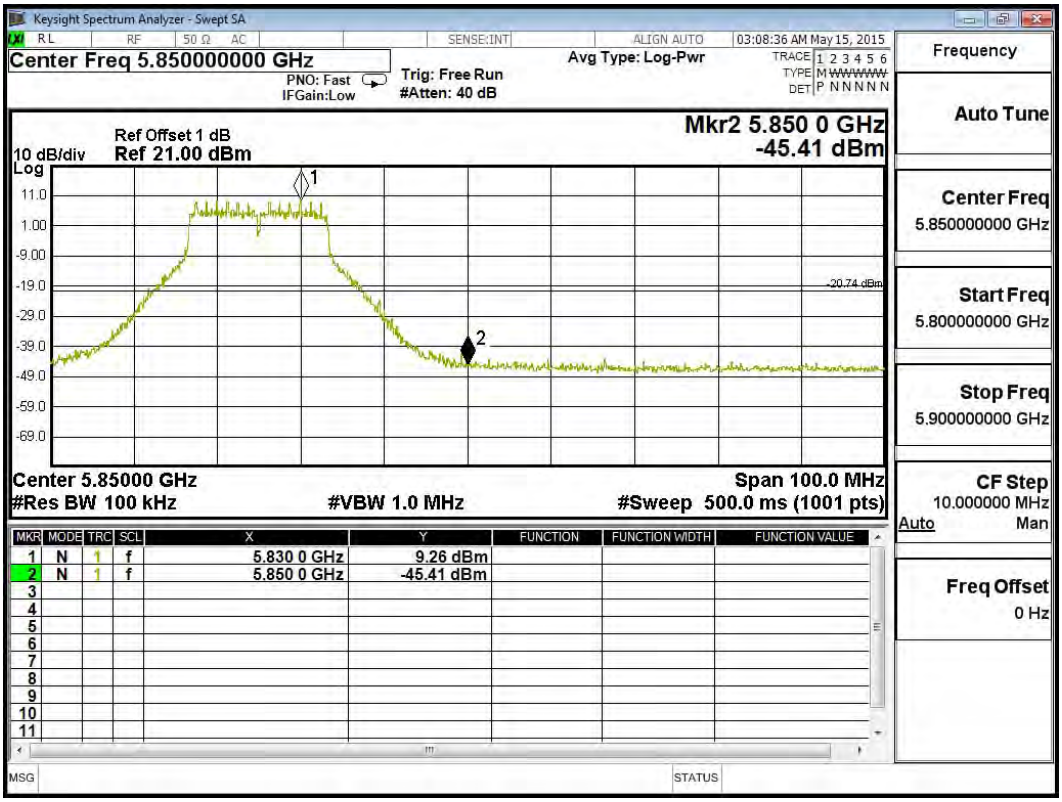
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	53.59	>30	PASS



Product : 802.11 ac PCIe Module
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11a_6Mbps(Grid DISH Antenna)

Chain B

Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	54.67	>30	PASS



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

Chain A

Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	49.78	>30	PASS