FCC Test Report

Product Name	WiFi Module
Model No	ComXS-320
FCC ID	XB7-COMXS320

Applicant	ACTIA I+ME GmbH
Address	Dresdenstrasse 17/18, D-38124 Braunschweig, Germany

Date of Receipt	Feb. 07, 2017
Issued Date	Mar. 24, 2017
Report No.	1720095R-RFUSP06V00
Report Version	V1.0

Testing Laboratory
3023

Test Report

Issued Date: Mar. 24, 2017
Report No.: 1720095R-RFUSP06V00

Product Name	WiFi Module
Applicant	ACTIA I+ME GmbH
Address	Dresdenstrasse 17/18, D-38124 Braunschweig, Germany
Manufacturer	ACTIA I+ME GmbH
Model No.	ComXS-320
FCC ID.	XB7-COMXS320
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	DC 3.3V
Trade Name	ACTIA
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2015 ANSI C63.4: 2014, ANSI C63.10: 2013 789033 D02 General UNII Test Procedures New Rules v01r03
Test Result	Complied

Documented By : Rita Huang

(Senior Adm. Specialist / Rita Huang)

Tested By : Vic Chen

(Engineer / Vic Chen)

Approved By :

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	WiFi Module
Trade Name	ACTIA
FCC ID.	XB7-COMXS320
Model No.	ComXS-320
Frequency Range	802.11a/n-20MHz: 5180-5320MHz, 5500-5700MHz, 5745-5825MHz 802.11n-40MHz: 5190-5310, 5510-5670MHz, 5755-5795MHz
Number of Channels	802.11a/n-20MHz: 24; 802.11n-40MHz: 11
Data Rate	802.11a: 6 - 54Mbps 802.11n: up to 300Mbps
Channel Control	Auto
Type of Modulation	802.11a/n:OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Chip Antenna
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ACTIA	Laird MAF95029	Chip Antenna	4 dBi for 5GHz

Note: 1. 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 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz
Channel 52:	5260 MHz	Channel 56:	5280 MHz	Channel 60:	5300 MHz	Channel 64:	5320 MHz
Channel 100:	5500 MHz	Channel 104:	5520 MHz	Channel 108:	5540 MHz	Channel 112:	5560 MHz
Channel 116:	5580 MHz	Channel 120:	5600 MHz	Channel 124:	5620 MHz	Channel 128:	5640 MHz
Channel 132:	5660 MHz	Channel 136:	5680 MHz	Channel 140:	5700 MHz	Channel 149:	5745 MHz
Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz	Channel 165:	5825 MHz

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 38:	5190 MHz	Channel 46:	5230 MHz	Channel 54:	5270 MHz	Channel 62:	5310 MHz
Channel 102:	5510 MHz	Channel 110:	5550 MHz	Channel 118:	5590 MHz	Channel 126:	5630 MHz
Channel 134:	5670 MHz	Channel 151:	5755 MHz	Channel 159:	5795 MHz		

Note:

1. This device is a WiFi Module with a built-in 802.11a/b/g/n WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (802.11a is chain A)
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps、802.11n-20BW is 14.4Mbps、802.11n-40BW is 30Mbps)
5. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.
6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Transmit (802.11a-6Mbps) Mode 2: Transmit (802.11n-20BW 14.4Mbps) Mode 3: Transmit (802.11n-40BW 30Mbps)

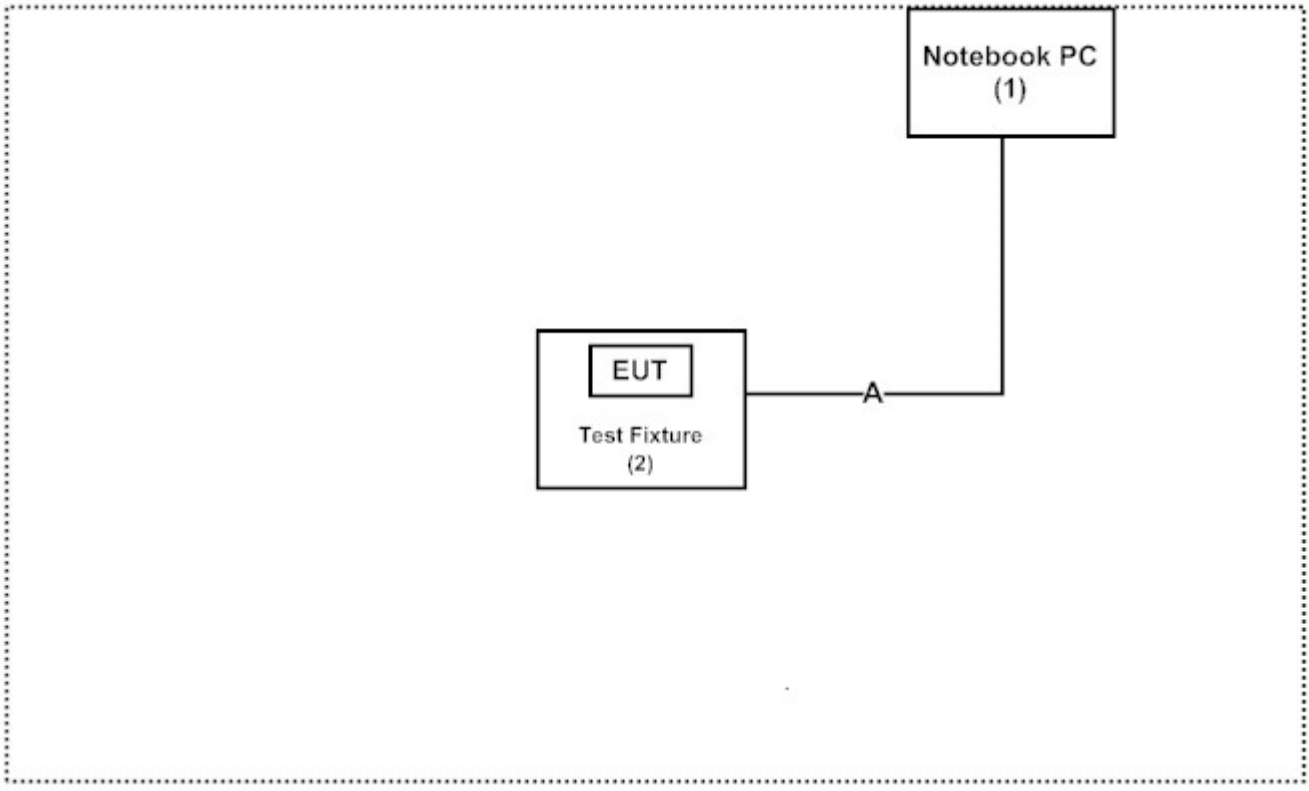
1.3. Tested System Datails

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	Lenovo	N/A	N/A	Non-Shielded, 0.8m
(2)	Test Fixture	embedded wireless	N/A	N/A	N/A

Signal Cable Type		Signal cable Description
A	USB Cable	Non-Shielded, 1.9m

1.4. Configuration of tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown on 1.4

(2) Execute “Art-gui V1.1” program on the EUT.

(3) Configure the test mode, the test channel, and the data rate.

(4) Start the continuous transmission.

(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:
http://www.dekra.com.tw/english/about/certificates.aspx?bval=5
The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw/index_en.aspx

Site Description: Accredited by TAF
Accredited Number: 3023

Site Name: DEKRA Testing and Certification Co., Ltd
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 : info.tw@dekra.com

FCC Accreditation Number: TW1014

1.7. List of Test Equipment

For Conducted measurements /CB3/SR8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
	Temperature Chamber	WIT GROUP	TH-1S-B	EQ-201-00146	2016/11/28	2017/11/27
X	Spectrum Analyzer	Agilent	N9010A	MY48030495	2016/7/22	2017/7/21
X	Power Meter	Anritsu	ML2495A	6K00003357	2016/6/23	2017/6/22
X	Pulse power sensor	Anritsu	MA2411B	0846193	2016/6/23	2017/6/22
X	EMI Test Receiver	R&S	ESCS 30	100369	2016/10/13	2017/10/12
X	LISN	R&S	ESH3-Z5	836679/017	2017/1/18	2018/1/17
X	LISN	R&S	ENV216	100097	2017/1/18	2018/1/17
X	Coaxial Cable	QTK(Arnist)	RG 400	LC018-RG	2016/6/25	2017/6/24

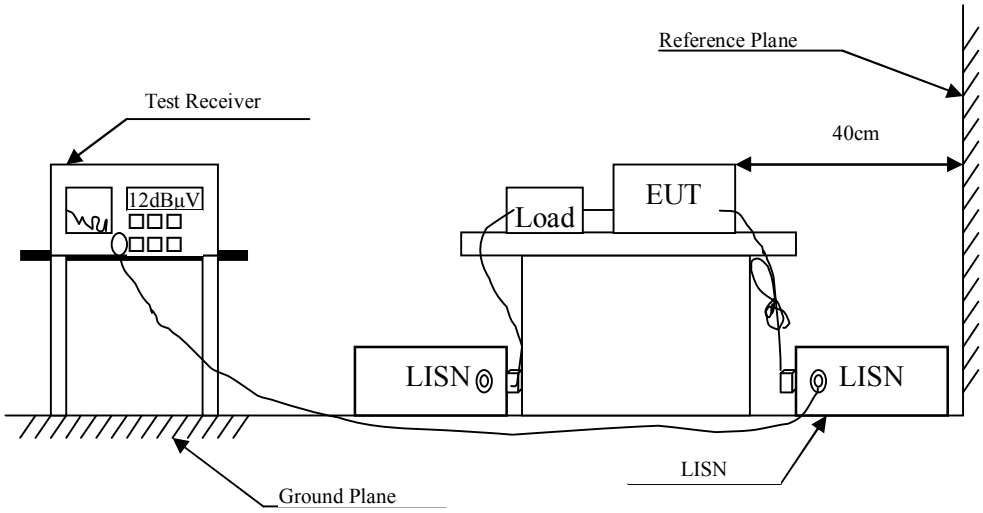
For Radiated measurements /Site3/CB8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Spectrum Analyzer	R&S	FSP40	100170	2017/1/18	2018/1/17
	Loop Antenna	Teseq	HLA6121	37133	2017/3/18	2018/3/17
X	Bi-Log Antenna	Schaffner Chase	CBL6112B	2707	2016/6/11	2017/6/10
X	Horn Antenna	ETS-Lindgren	3117	00135205	2016/4/6	2017/4/5
X	Horn Antenna	Schwarzbeck	BBHA9170	209	2016/4/14	2017/4/13
X	Pre-Amplifier	QTK	AP/0100A	CHM/0901069	2016/6/23	2017/6/22
X	Pre-Amplifier	EMCI	EMC012630SE	980210	2017/1/26	2018/1/24
X	Pre-Amplifier	NARDA WE	DBL-1840N506	013	2016/9/30	2017/9/29
	Filter	MicroTRON	BRM50701	019	2016/11/2	2017/11/1
X	Filter	Microwave Circuits	N0257881	36681	2017/1/3	2018/1/2
X	EMI Test Receiver	R&S	ESR26	101385	2016/9/29	2017/9/28
X	Coaxial Cable	QTK(Arnist)	SUCOFLEX 106	L1606-015C	2016/6/23	2017/6/22
X	EMI Test Receiver	R&S	ESCS 30	838251/001	2016/7/21	2017/7/20
X	Coaxial Cable	QTK(Arnist)	RG 214	LC003-RG	2016/6/16	2017/6/15
X	Coaxial signal switch	Anritsu	MP59B	6201415889	2016/6/16	2017/6/15

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version: QuieTek EMI 2.0 V2.1.113.

2. Conducted Emission

2.1. Test Setup



2.2. Limits

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

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

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.

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

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

2.4. Uncertainty

± 2.26 dB

2.5. Test Result of Conducted Emission

Product : WiFi Module
Test Item : Conducted Emission Test
Power Line : Line 1
Test Date : 2017/03/15
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.150	9.756	32.050	41.806	-24.194	66.000
0.267	9.752	34.170	43.922	-18.735	62.657
0.330	9.740	26.290	36.030	-24.827	60.857
0.666	9.731	24.390	34.121	-21.879	56.000
1.029	9.742	24.830	34.572	-21.428	56.000
11.052	9.890	25.400	35.290	-24.710	60.000
Average					
0.150	9.756	9.690	19.446	-36.554	56.000
0.267	9.752	19.810	29.562	-23.095	52.657
0.330	9.740	11.370	21.110	-29.747	50.857
0.666	9.731	11.150	20.881	-25.119	46.000
1.029	9.742	13.680	23.422	-22.578	46.000
11.052	9.890	15.920	25.810	-24.190	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 : WiFi Module
Test Item : Conducted Emission Test
Power Line : Line 2
Test Date : 2017/03/15
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.259	9.748	40.220	49.968	-12.918	62.886
0.482	9.765	34.860	44.625	-11.889	56.514
0.646	9.800	32.830	42.630	-13.370	56.000
1.013	9.862	30.380	40.242	-15.758	56.000
3.900	9.875	26.910	36.785	-19.215	56.000
7.740	9.915	28.220	38.135	-21.865	60.000
Average					
0.259	9.748	30.160	39.908	-12.978	52.886
0.482	9.765	23.250	33.015	-13.499	46.514
0.646	9.800	20.260	30.060	-15.940	46.000
1.013	9.862	18.180	28.042	-17.958	46.000
3.900	9.875	14.960	24.835	-21.165	46.000
7.740	9.915	18.170	28.085	-21.915	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 : WiFi Module
Test Item : Conducted Emission Test
Power Line : Line 1
Test Date : 2017/03/15
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5270MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.189	9.766	32.490	42.256	-22.630	64.886
0.263	9.753	34.490	44.243	-18.528	62.771
0.338	9.740	27.860	37.600	-23.029	60.629
0.478	9.725	24.930	34.655	-21.974	56.629
1.041	9.739	24.330	34.069	-21.931	56.000
10.830	9.888	26.490	36.378	-23.622	60.000
Average					
0.189	9.766	19.620	29.386	-25.500	54.886
0.263	9.753	21.310	31.063	-21.708	52.771
0.338	9.740	12.400	22.140	-28.489	50.629
0.478	9.725	12.560	22.285	-24.344	46.629
1.041	9.739	12.890	22.629	-23.371	46.000
10.830	9.888	16.590	26.478	-23.522	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 : WiFi Module
Test Item : Conducted Emission Test
Power Line : Line 2
Test Date : 2017/03/15
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5270MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.275	9.748	40.390	50.138	-12.291	62.429
0.338	9.750	37.230	46.980	-13.649	60.629
0.482	9.765	35.270	45.035	-11.479	56.514
0.685	9.802	33.740	43.542	-12.458	56.000
4.463	9.891	27.320	37.211	-18.789	56.000
7.490	9.912	27.870	37.782	-22.218	60.000
Average					
0.275	9.748	30.040	39.788	-12.641	52.429
0.338	9.750	26.140	35.890	-14.739	50.629
0.482	9.765	23.640	33.405	-13.109	46.514
0.685	9.802	22.100	31.902	-14.098	46.000
4.463	9.891	15.490	25.381	-20.619	46.000
7.490	9.912	18.660	28.572	-21.428	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 : WiFi Module
Test Item : Conducted Emission Test
Power Line : Line 1
Test Date : 2017/03/15
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5550MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.255	9.756	35.650	45.406	-17.594	63.000
0.322	9.740	29.030	38.770	-22.316	61.086
0.463	9.724	24.470	34.194	-22.863	57.057
0.795	9.735	24.550	34.285	-21.715	56.000
1.326	9.712	23.690	33.402	-22.598	56.000
10.763	9.887	26.390	36.277	-23.723	60.000
Average					
0.255	9.756	21.960	31.716	-21.284	53.000
0.322	9.740	14.860	24.600	-26.486	51.086
0.463	9.724	11.480	21.204	-25.853	47.057
0.795	9.735	11.000	20.735	-25.265	46.000
1.326	9.712	12.460	22.172	-23.828	46.000
10.763	9.887	16.880	26.767	-23.233	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 : WiFi Module
Test Item : Conducted Emission Test
Power Line : Line 2
Test Date : 2017/03/15
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5550MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.279	9.749	40.430	50.179	-12.135	62.314
0.310	9.750	36.030	45.780	-15.649	61.429
0.654	9.801	33.720	43.521	-12.479	56.000
1.068	9.854	30.500	40.354	-15.646	56.000
7.838	9.917	27.420	37.337	-22.663	60.000
25.228	10.270	29.480	39.750	-20.250	60.000
Average					
0.279	9.749	28.350	38.099	-14.215	52.314
0.310	9.750	21.260	31.010	-20.419	51.429
0.654	9.801	22.100	31.901	-14.099	46.000
1.068	9.854	17.150	27.004	-18.996	46.000
7.838	9.917	17.980	27.897	-22.103	50.000
25.228	10.270	29.430	39.700	-10.300	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 : WiFi Module
Test Item : Conducted Emission Test
Power Line : Line 1
Test Date : 2017/03/15
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.201	9.766	31.190	40.956	-23.587	64.543
0.271	9.751	35.600	45.351	-17.192	62.543
0.513	9.726	33.480	43.206	-12.794	56.000
2.982	9.728	18.970	28.698	-27.302	56.000
10.838	9.888	26.510	36.398	-23.602	60.000
25.228	10.090	29.560	39.650	-20.350	60.000
Average					
0.201	9.766	20.640	30.406	-24.137	54.543
0.271	9.751	22.640	32.391	-20.152	52.543
0.513	9.726	27.840	37.566	-8.434	46.000
2.982	9.728	7.800	17.528	-28.472	46.000
10.838	9.888	16.650	26.538	-23.462	50.000
25.228	10.090	29.430	39.520	-10.480	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 : WiFi Module
Test Item : Conducted Emission Test
Power Line : Line 2
Test Date : 2017/03/15
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.275	9.748	40.830	50.578	-11.851	62.429
0.341	9.751	37.470	47.221	-13.322	60.543
0.447	9.760	35.640	45.400	-12.114	57.514
1.525	9.793	29.050	38.843	-17.157	56.000
7.529	9.913	29.480	39.393	-20.607	60.000
25.228	10.270	29.080	39.350	-20.650	60.000
Average					
0.275	9.748	30.800	40.548	-11.881	52.429
0.341	9.751	26.670	36.421	-14.122	50.543
0.447	9.760	25.480	35.240	-12.274	47.514
1.525	9.793	16.290	26.083	-19.917	46.000
7.529	9.913	19.120	29.033	-20.967	50.000
25.228	10.270	29.030	39.300	-10.700	50.000

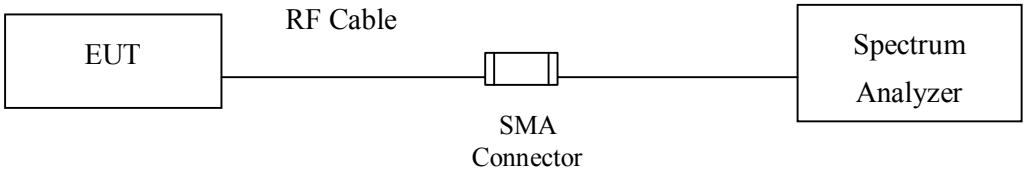
Note:

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

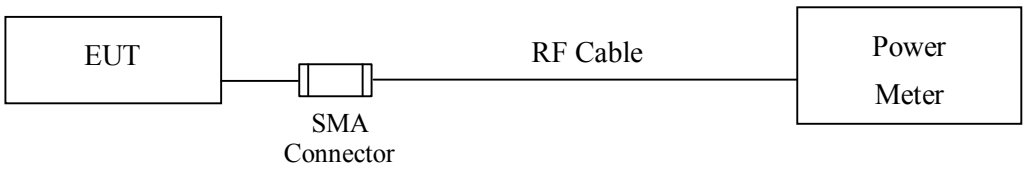
3. Maximun conducted output power

3.1. Test Setup

99% Occupied Bandwidth



Conduction Power Measurement (for 802.11an)



3.2. Limits

3.2.1. For the band 5.15-5.25 GHz,

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

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

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

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

3.2.2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in

this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

3.3. Test Procedure

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

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

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

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

3.4. Uncertainty

± 1.62 dB

3.5. Test Result of Maximum conducted output power

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

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	17.32	--	--	--	--	--	--	--	<24dBm
44	5220	17.27	17.12	17.01	16.92	16.81	16.67	16.55	16.40	<24dBm
48	5240	17.04	--	--	--	--	--	--	--	<24dBm
52	5260	17.13	--	--	--	--	--	--	--	<24dBm
60	5300	17.05	16.93	16.87	16.74	16.66	16.52	16.41	16.33	<24dBm
64	5320	17.34	--	--	--	--	--	--	--	<24dBm
100	5500	16.47	--	--	--	--	--	--	--	<24dBm
116	5580	15.93	15.82	15.74	15.66	15.51	15.34	15.23	15.18	<24dBm
140	5700	16.08	--	--	--	--	--	--	--	<24dBm
149	5745	19.03	--	--	--	--	--	--	--	<30dBm
157	5785	18.49	18.41	18.33	18.22	18.09	17.95	17.84	17.72	<30dBm
165	5825	17.43	--	--	--	--	--	--	--	<30dBm

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

Maximum conducted output power Measurement:

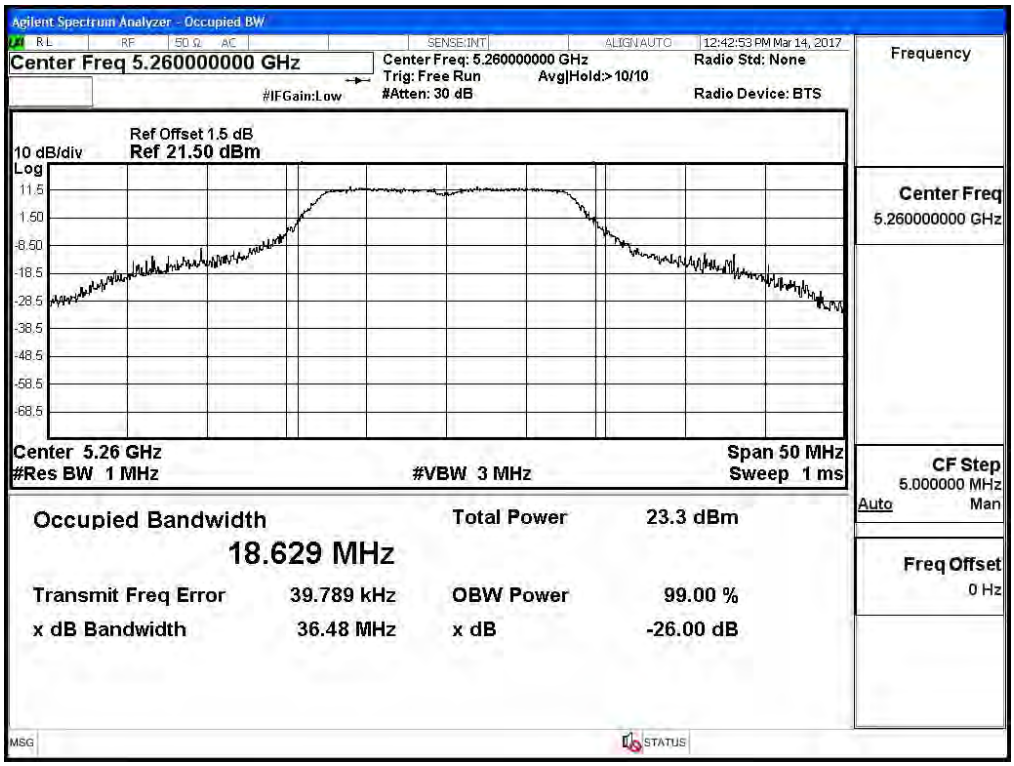
CHAIN A

Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	17.32	24	--
44	5220	--	17.27	24	--
48	5240	--	17.04	24	--
52	5260	18.629	17.13	24	23.70
60	5300	18.689	17.05	24	23.72
64	5320	18.806	17.34	24	23.74
100	5500	19.169	16.47	24	23.83
116	5580	19.190	15.93	24	23.83
140	5700	19.097	16.08	24	23.81
149	5745	--	19.03	30	--
157	5785	--	18.49	30	--
165	5825	--	17.43	30	--

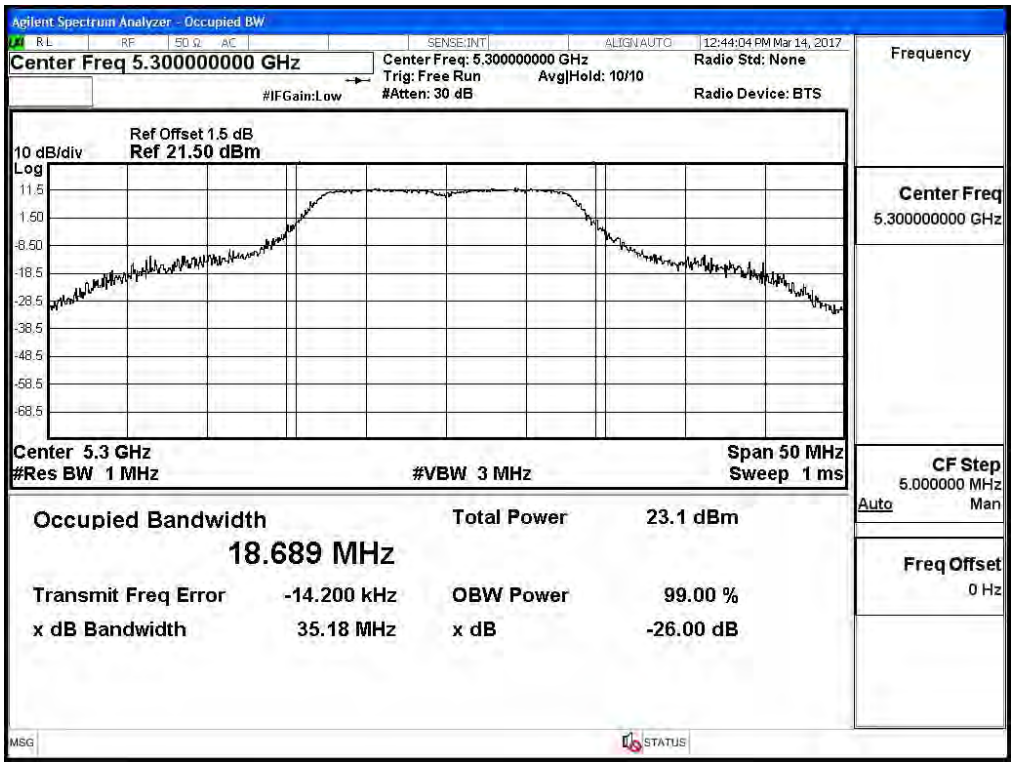
Note:
1. Power Output Value =Reading value on average power meter + cable loss
2. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

99% Bandwidth:

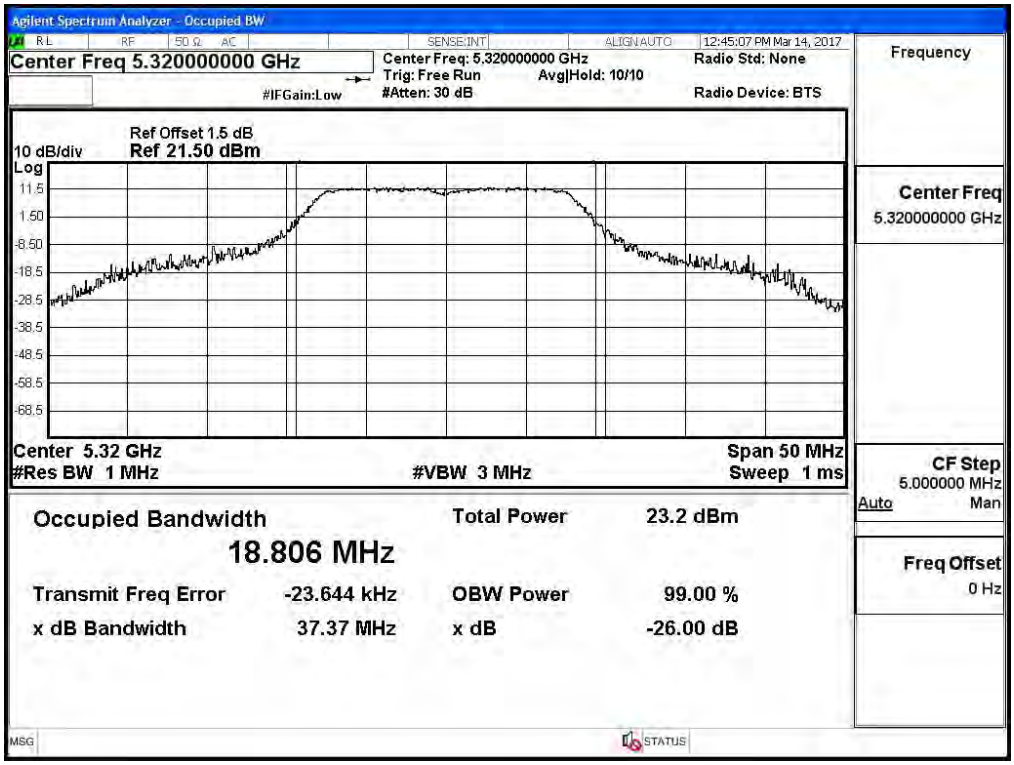
Channel 52:



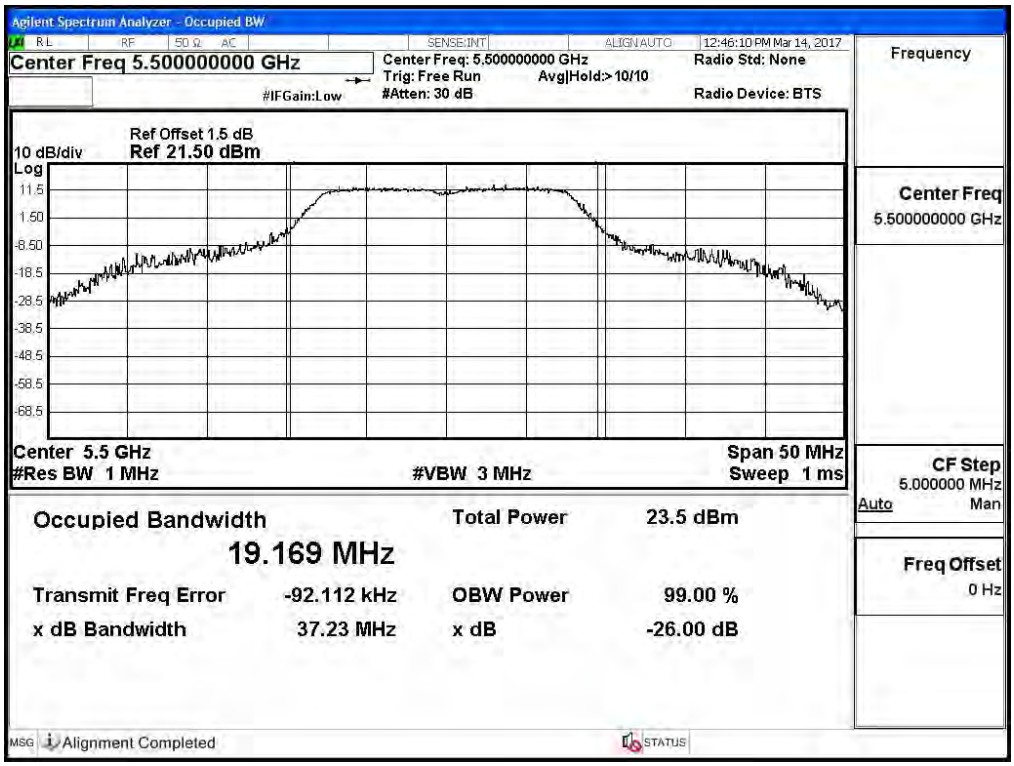
Channel 60:



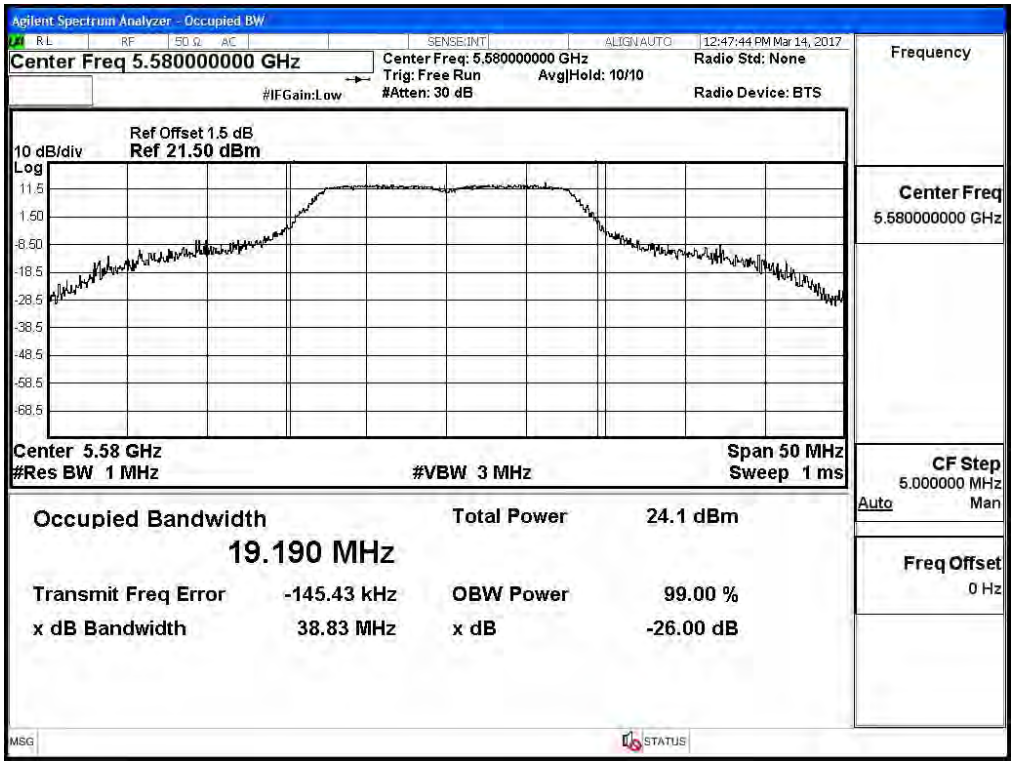
Channel 64:



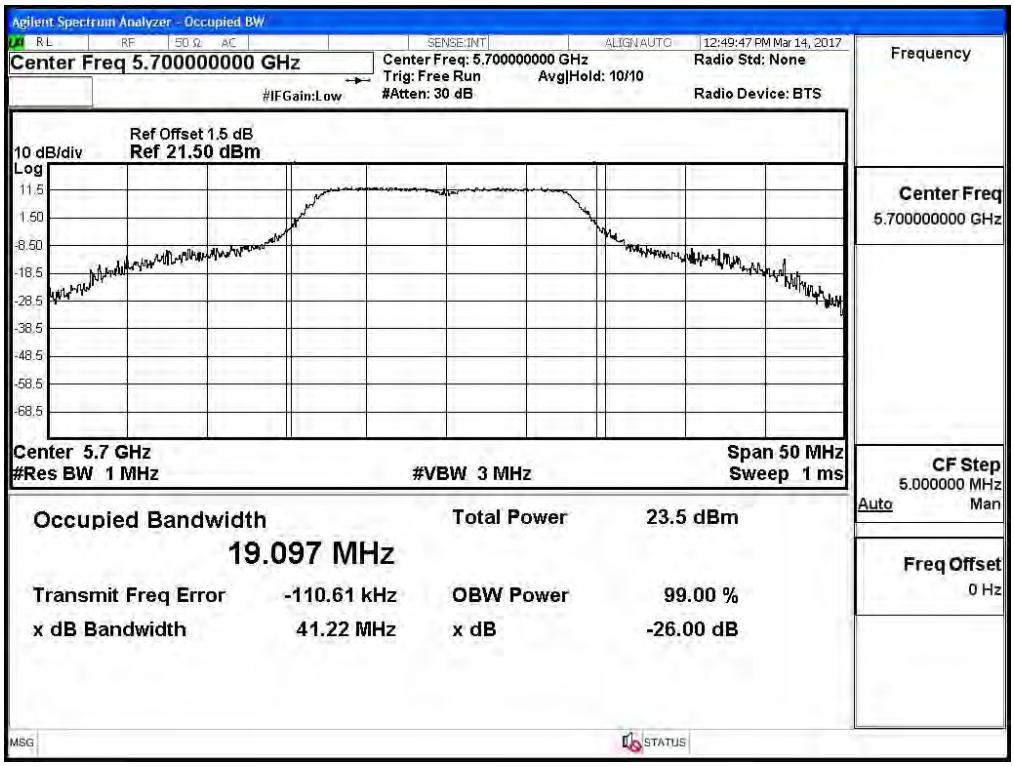
Channel 100:



Channel 116:



Channel 140:



Product : WiFi Module
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	
		Measurement Level (dBm)								
36	5180	14.41	--	--	--	--	--	--	--	<24dBm
44	5220	14.31	14.22	14.1	14.02	13.91	13.77	13.65	13.57	<24dBm
48	5240	14.03	--	--	--	--	--	--	--	<24dBm
52	5260	14.25	--	--	--	--	--	--	--	<24dBm
60	5300	14.01	13.93	13.79	13.66	13.57	13.41	13.32	13.24	<24dBm
64	5320	14.8	--	--	--	--	--	--	--	<24dBm
100	5500	14.06	--	--	--	--	--	--	--	<24dBm
116	5580	13.69	13.55	13.41	13.37	13.24	13.15	13.05	12.97	<24dBm
140	5700	13.9	--	--	--	--	--	--	--	<24dBm
149	5745	17.53	--	--	--	--	--	--	--	<30dBm
157	5785	16.87	16.77	16.69	16.58	16.42	16.32	16.24	16.09	<30dBm
165	5825	15.79	--	--	--	--	--	--	--	<30dBm

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

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	
		Measurement Level (dBm)								
36	5180	14.49	--	--	--	--	--	--	--	<24dBm
44	5220	14.38	14.29	14.15	14.06	13.95	13.87	13.74	13.62	<24dBm
48	5240	14.01	--	--	--	--	--	--	--	<24dBm
52	5260	14.01	--	--	--	--	--	--	--	<24dBm
60	5300	12.56	12.48	12.41	12.34	12.22	12.14	12.01	11.93	<24dBm
64	5320	12.21	--	--	--	--	--	--	--	<24dBm
100	5500	11.74	--	--	--	--	--	--	--	<24dBm
116	5580	13.15	13.04	12.93	12.88	12.74	12.62	12.50	12.38	<24dBm
140	5700	14.23	--	--	--	--	--	--	--	<24dBm
149	5745	15.36	--	--	--	--	--	--	--	<30dBm
157	5785	14.34	14.27	14.15	14.02	13.92	13.81	13.66	13.57	<30dBm
165	5825	13.49	--	--	--	--	--	--	--	<30dBm

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

Maximum conducted output power Measurement:

(CHAIN A+ B)

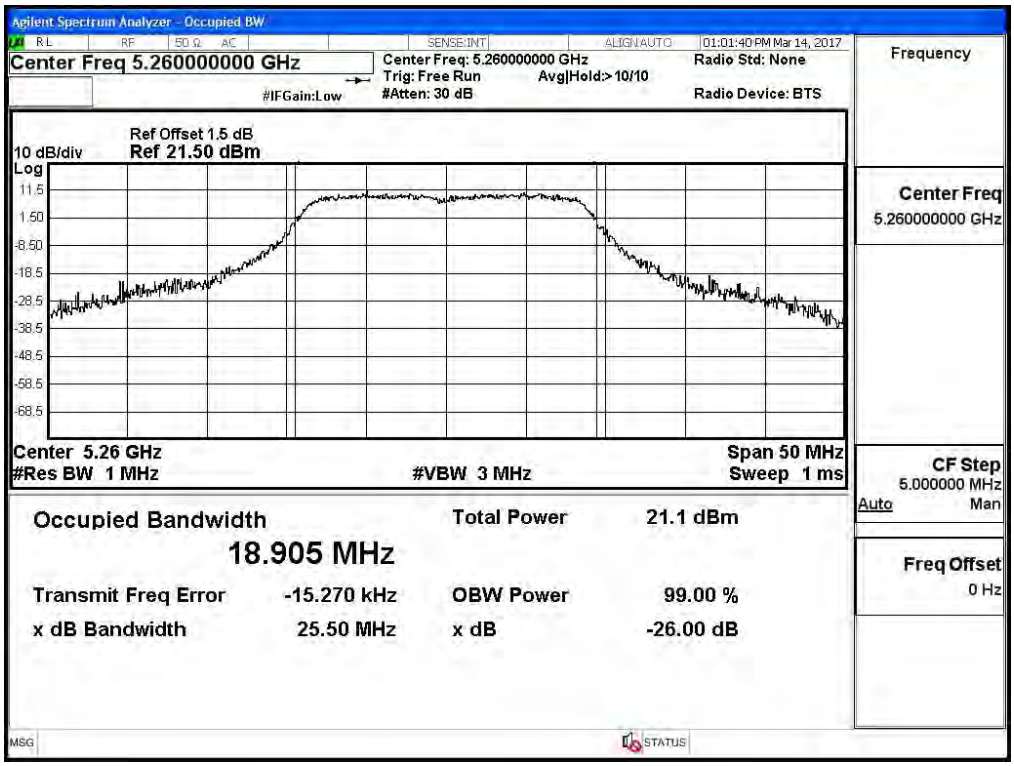
Channel Number	Frequency (MHz)	99% Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
36	5180	--	14.41	14.49	17.46	24	--
44	5220	--	14.31	14.38	17.36	24	--
48	5240	--	14.03	14.01	17.03	24	--
52	5260	18.905	14.25	14.01	17.14	24	23.77
60	5300	18.919	14.01	12.56	16.36	24	23.77
64	5320	18.947	14.80	12.21	16.71	24	23.78
100	5500	18.962	14.06	11.74	16.06	24	23.78
116	5580	19.037	13.69	13.15	16.44	24	23.80
140	5700	18.982	13.90	14.23	17.08	24	23.78
149	5745	--	17.53	15.36	19.59	30	--
157	5785	--	16.87	14.34	18.80	30	--
165	5825	--	15.79	13.49	17.80	30	--

Note:

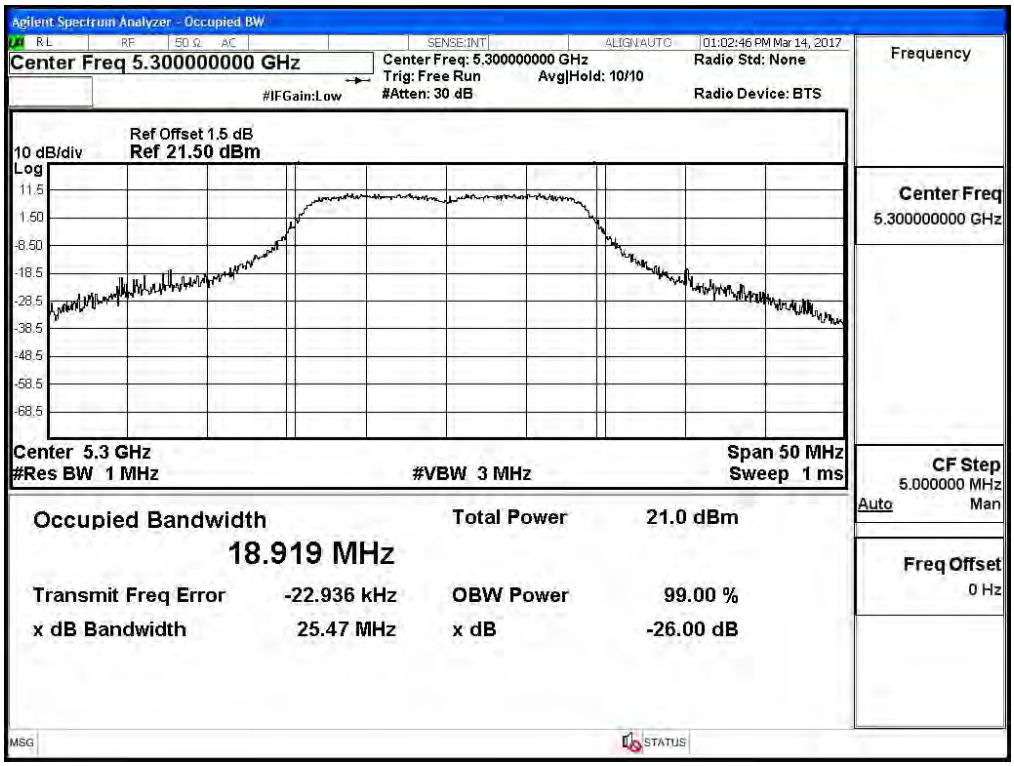
1. Power Output Value =Reading value on average power meter + cable loss
2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))
3. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

99% Bandwidth:

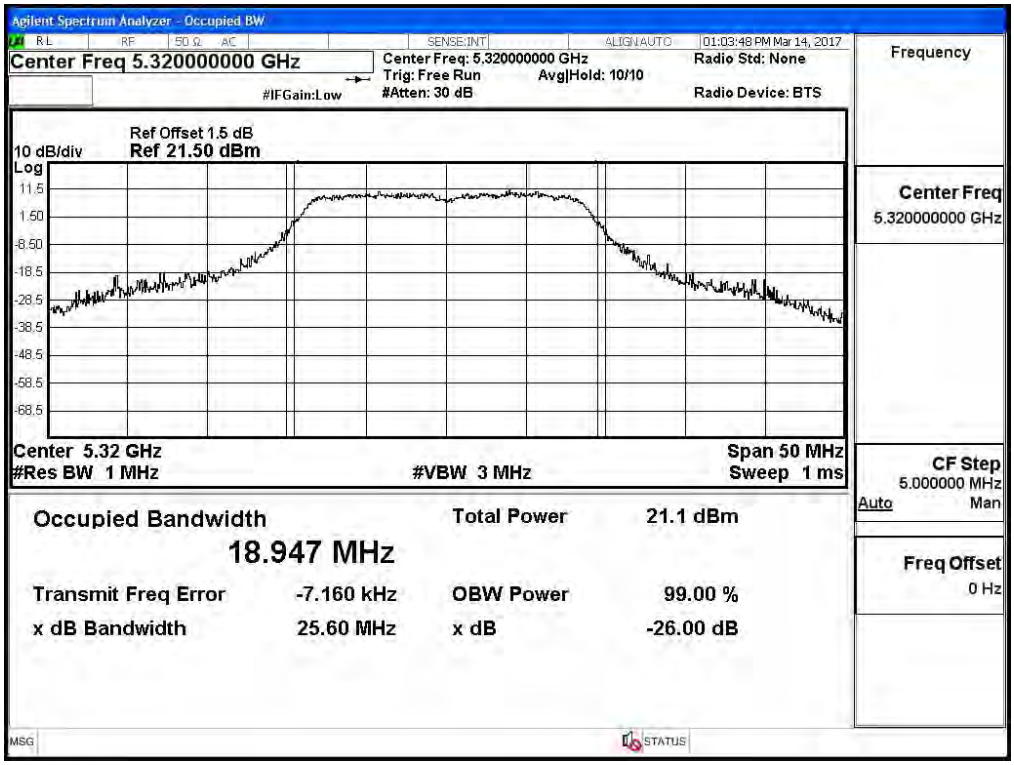
Channel 52 -Chain A



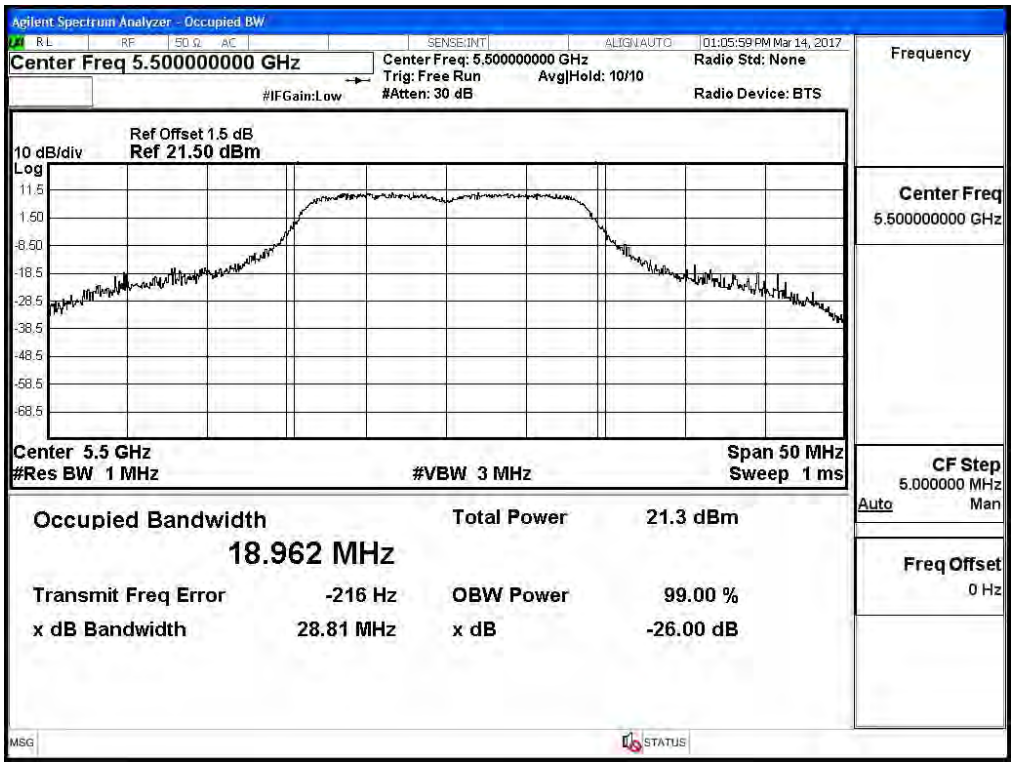
Channel 60 -Chain A



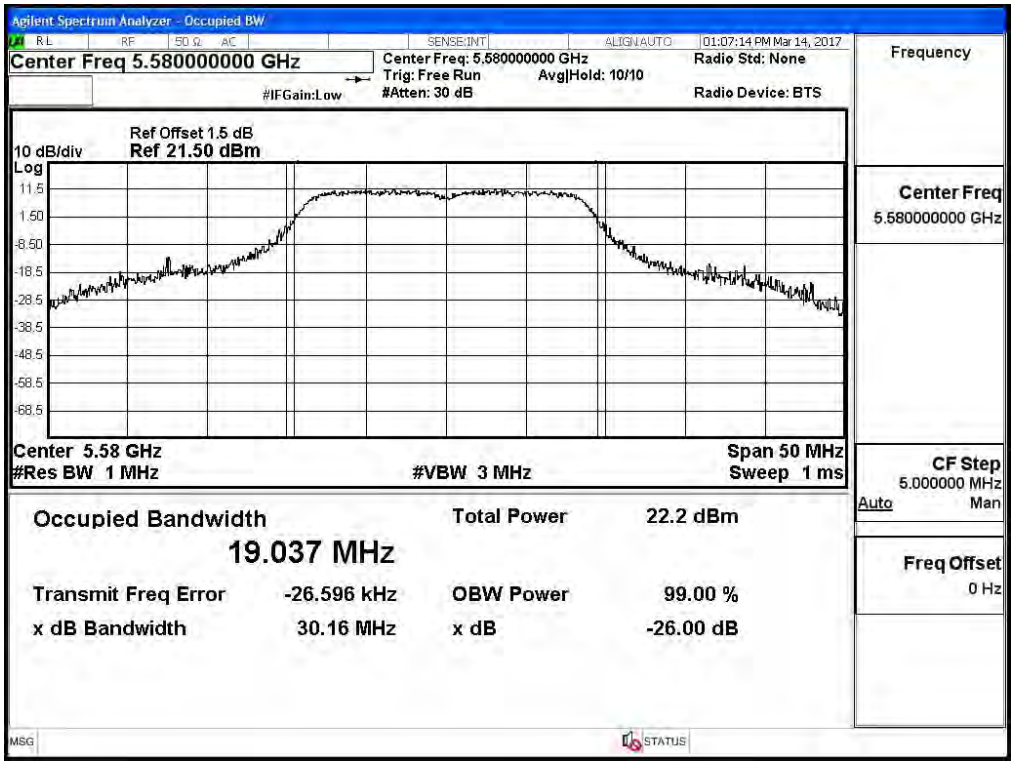
Channel 64 -Chain A



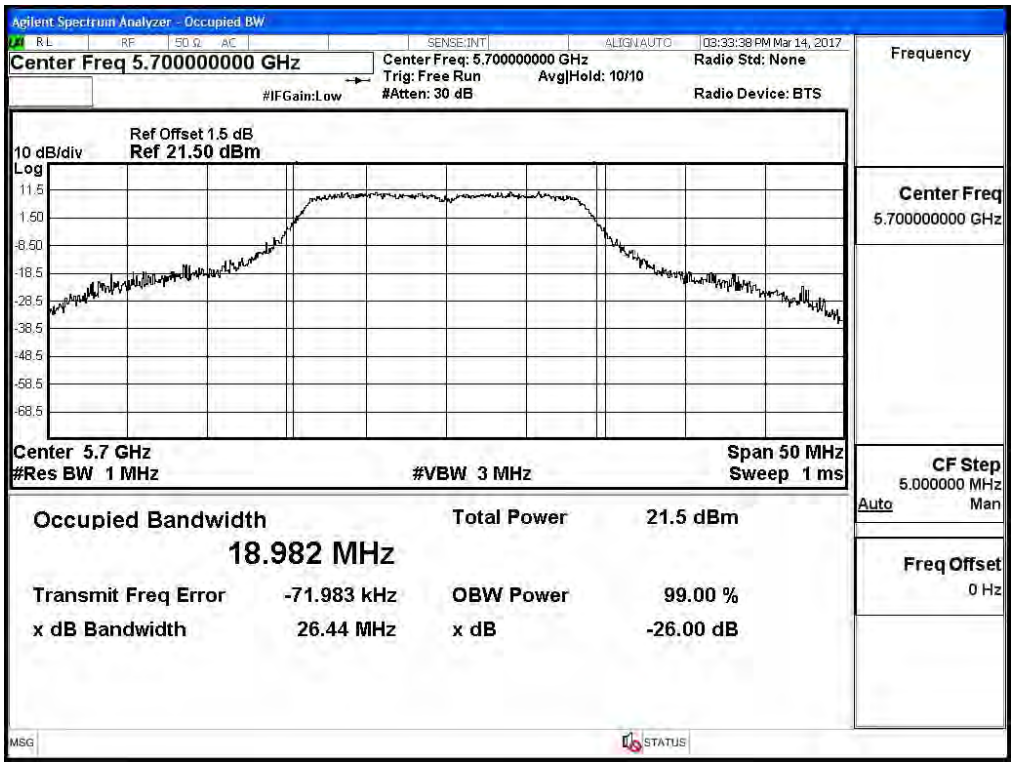
Channel 100 -Chain A



Channel 116 -Chain A

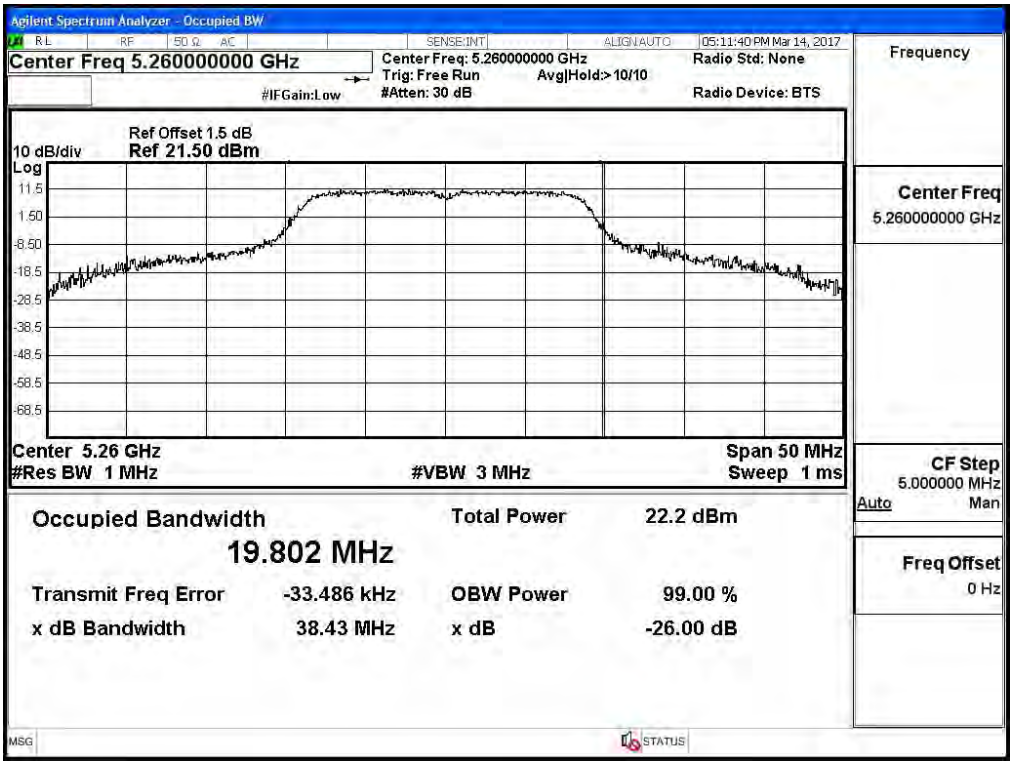


Channel 140 -Chain A

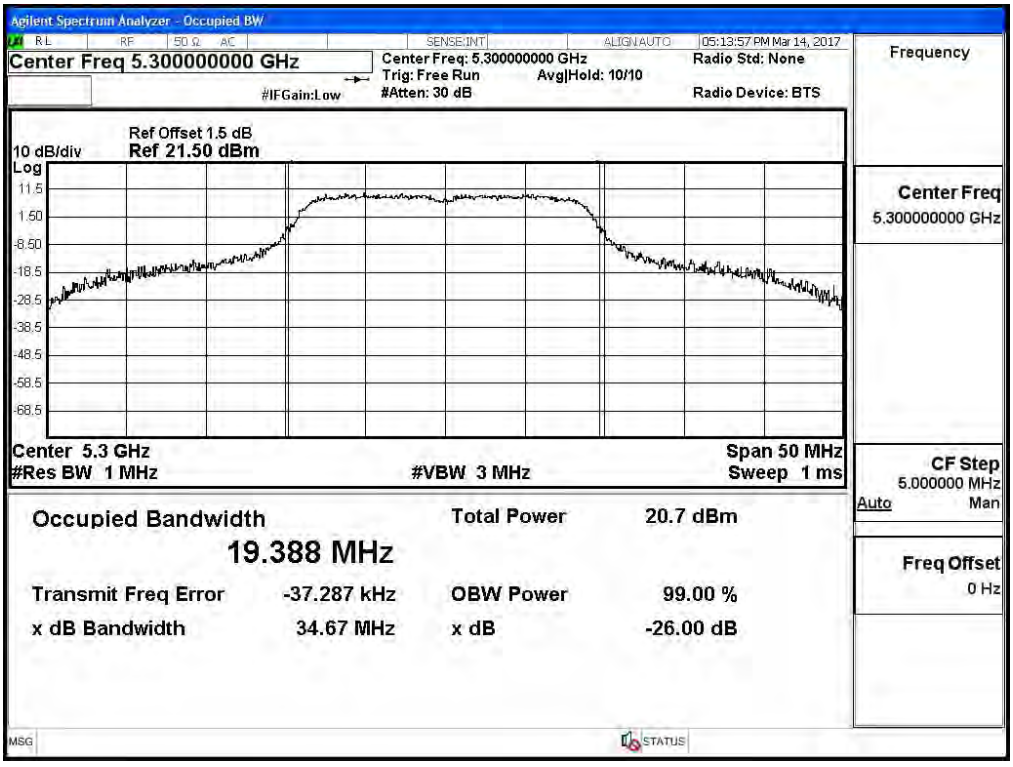


99% Bandwidth:

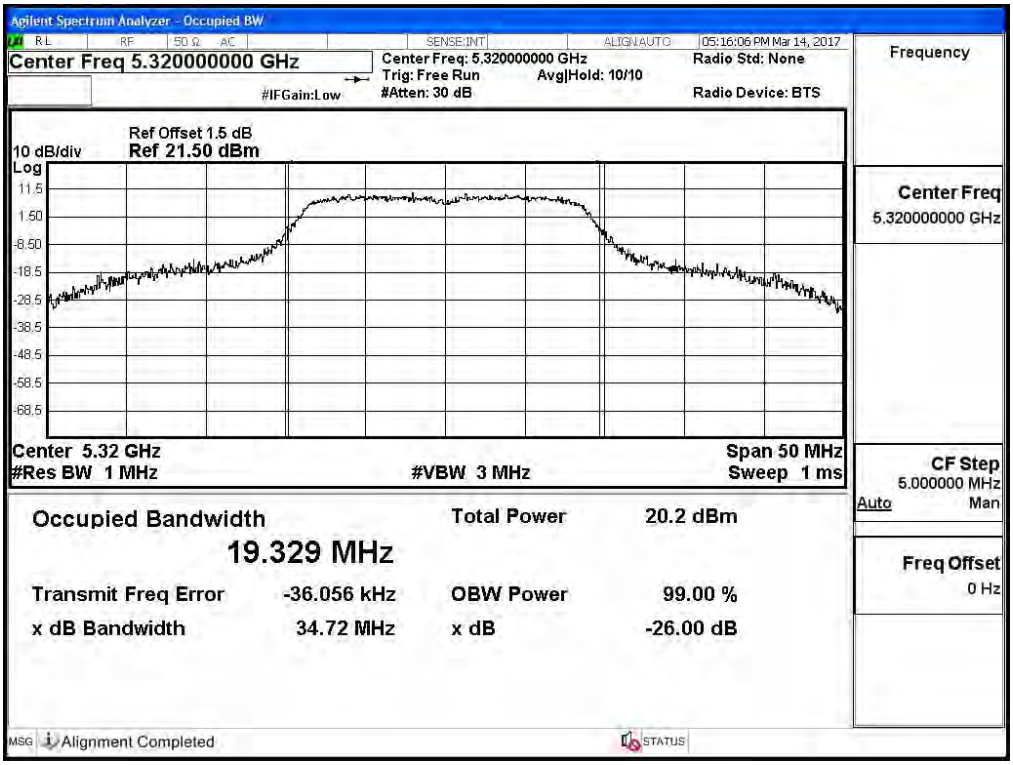
Channel 52 -Chain B



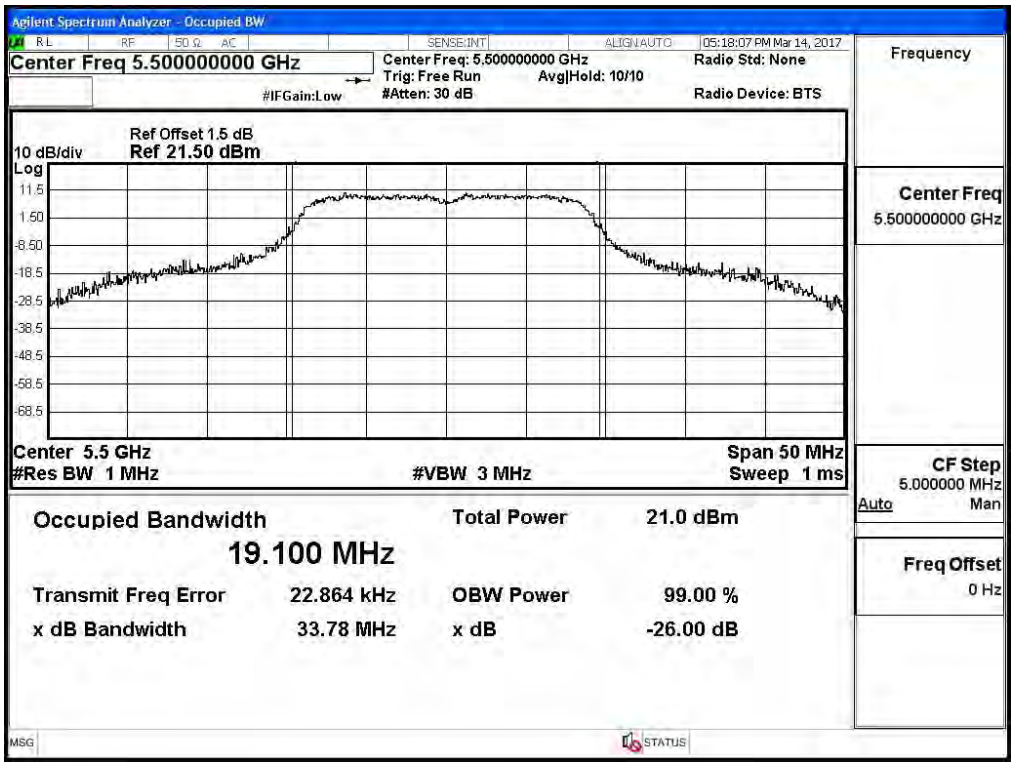
Channel 60 -Chain B



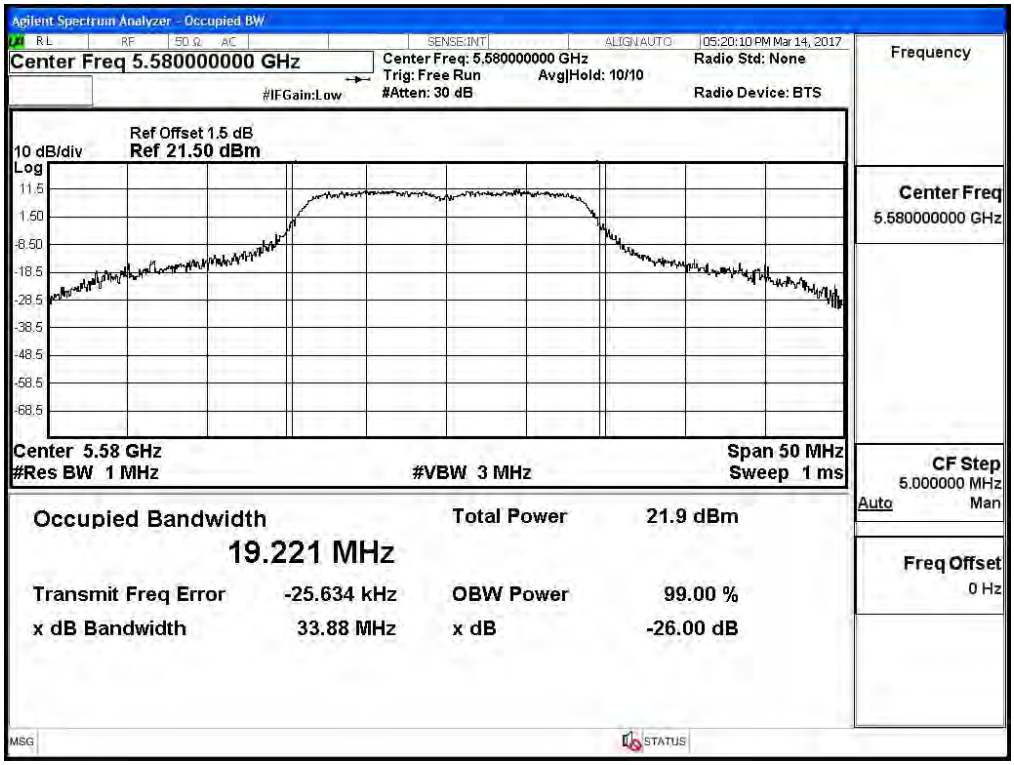
Channel 64 -Chain B



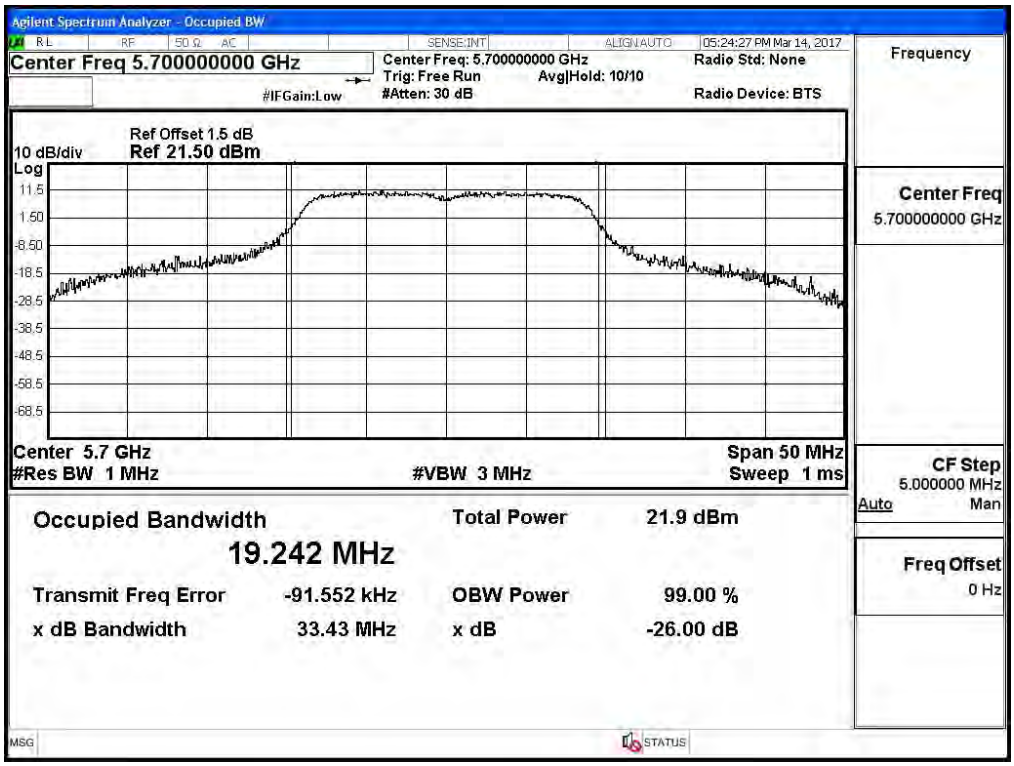
Channel 100 -Chain B



Channel 116 -Chain B



Channel 140 -Chain B



Product : WiFi Module
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		30	60	90	120	180	240	270	300	
		Measurement Level (dBm)								
38	5190	8.36	--	--	--	--	--	--	--	<24dBm
46	5230	14.39	14.29	14.15	14.02	13.94	13.78	13.64	13.52	<24dBm
54	5270	14.32	--	--	--	--	--	--	--	<24dBm
62	5310	11.55	11.47	11.38	11.24	11.12	11.01	10.92	10.81	<24dBm
102	5510	10.2	--	--	--	--	--	--	--	<24dBm
110	5550	13.42	13.31	13.22	13.08	12.99	12.84	12.71	12.6	<24dBm
134	5670	13.31	--	--	--	--	--	--	--	<24dBm
151	5755	16.96	--	--	--	--	--	--	--	<30dBm
159	5795	16.21	16.14	16.02	15.94	15.88	15.71	15.62	15.54	<30dBm

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

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		30	60	90	120	180	240	270	300	
		Measurement Level (dBm)								
38	5190	11.47	--	--	--	--	--	--	--	<24dBm
46	5230	14.37	14.22	14.1	14.01	13.88	13.76	13.61	13.51	<24dBm
54	5270	13.9	--	--	--	--	--	--	--	<24dBm
62	5310	12.18	12.05	11.97	10.88	10.79	10.68	10.55	10.48	<24dBm
102	5510	10.62	--	--	--	--	--	--	--	<24dBm
110	5550	12.44	12.37	12.27	12.19	12.07	11.99	11.87	11.74	<24dBm
134	5670	14.03	--	--	--	--	--	--	--	<24dBm
151	5755	14.55	--	--	--	--	--	--	--	<30dBm
159	5795	13.65	13.55	13.41	13.31	13.19	13.08	12.97	12.91	<30dBm

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

Maximum conducted output power Measurement:

(CHAIN A+ B)

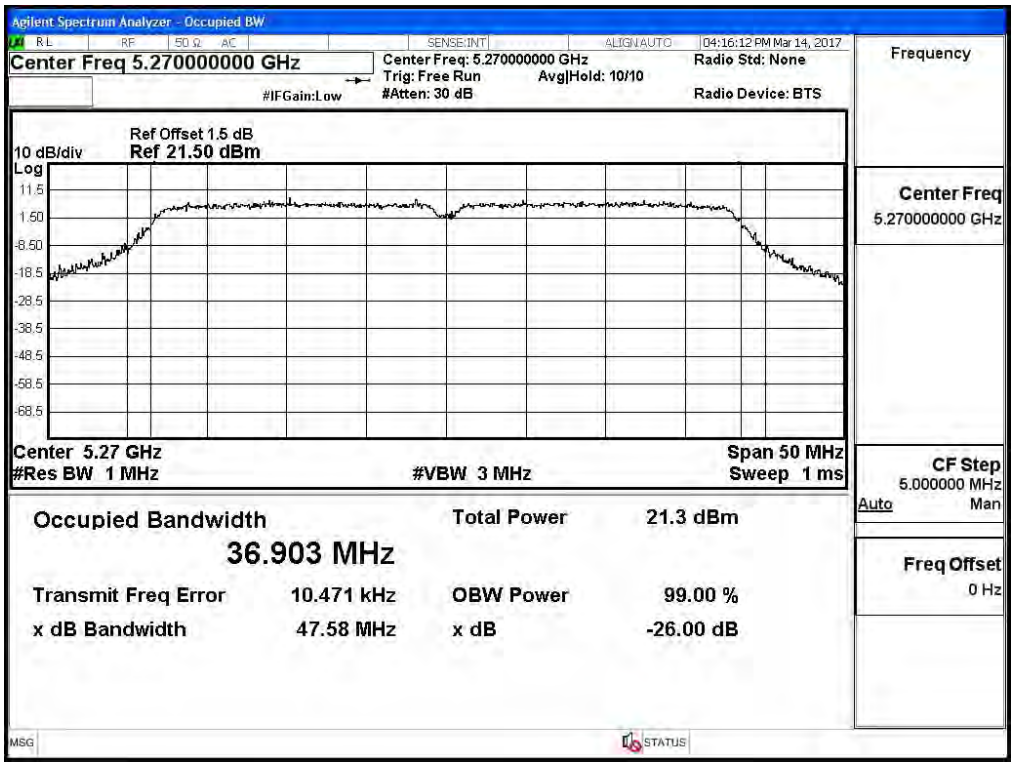
Channel Number	Frequency (MHz)	99% Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
38	5190	--	8.36	11.47	13.20	24	--
46	5230	--	14.39	14.37	17.39	24	--
54	5270	36.903	14.32	13.90	17.13	24	26.67
62	5310	36.852	11.55	12.18	14.89	24	26.66
102	5510	36.924	10.20	10.62	13.43	24	26.67
110	5550	37.224	13.42	12.44	15.97	24	26.71
134	5670	37.229	13.31	14.03	16.70	24	26.71
151	5755	--	16.96	14.55	18.93	30	--
159	5795	--	16.21	13.65	18.13	30	--

Note:

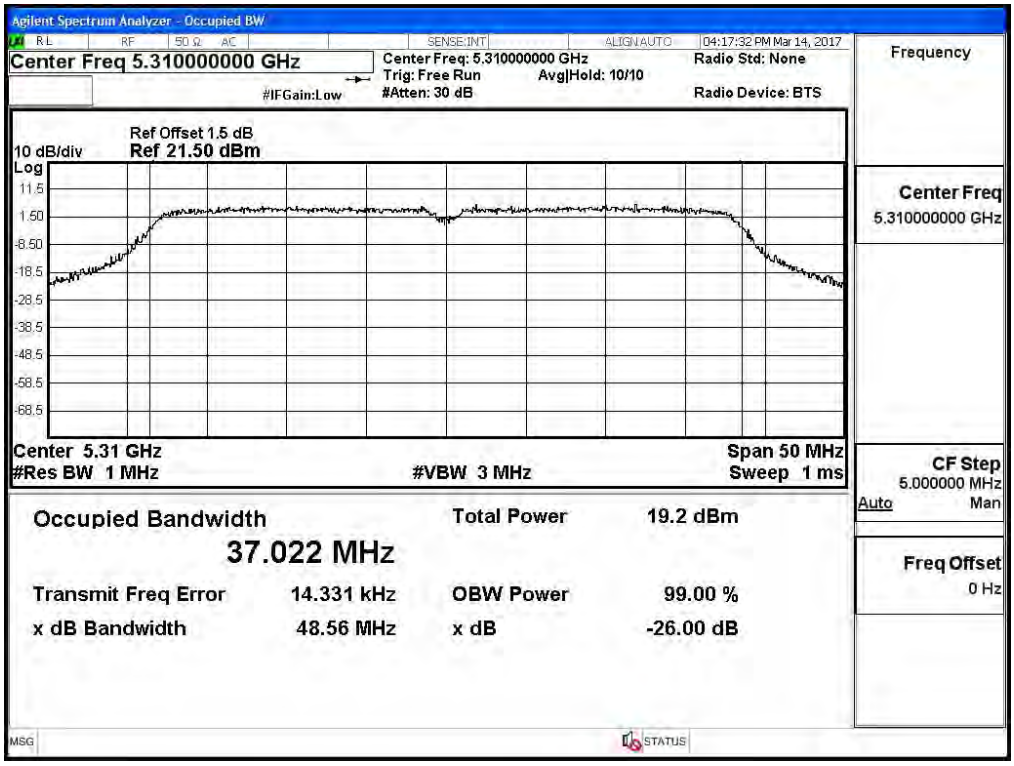
1. Power Output Value =Reading value on average power meter + cable loss
2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))
3. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

99% Bandwidth:

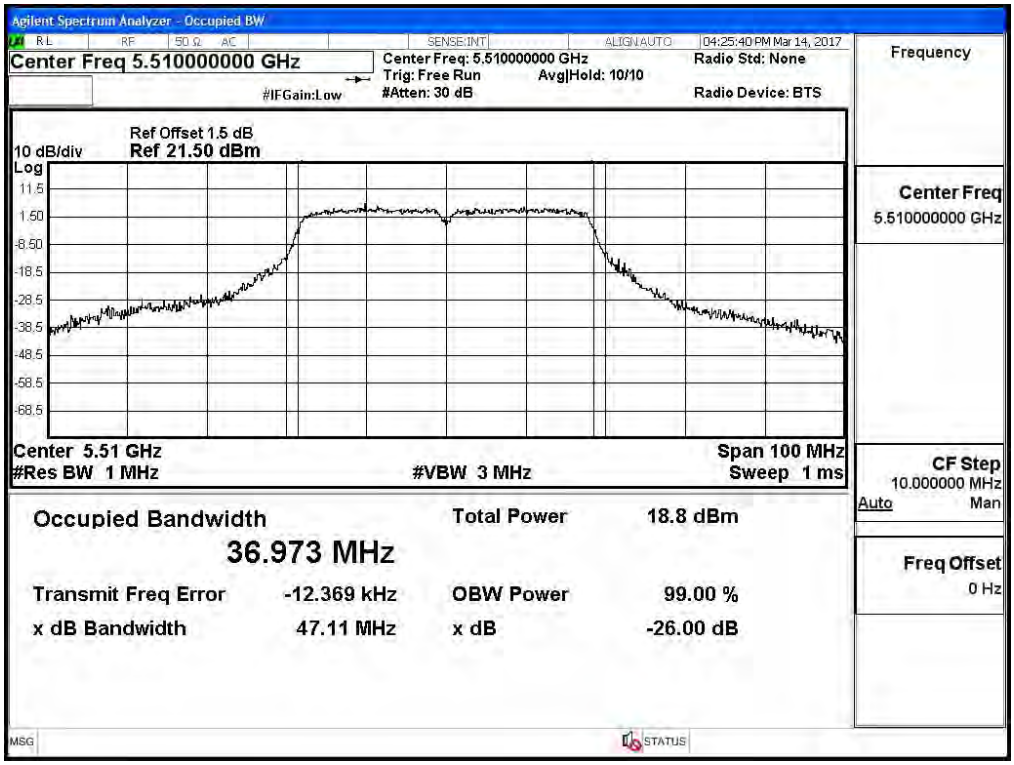
Channel 54 – Chain A



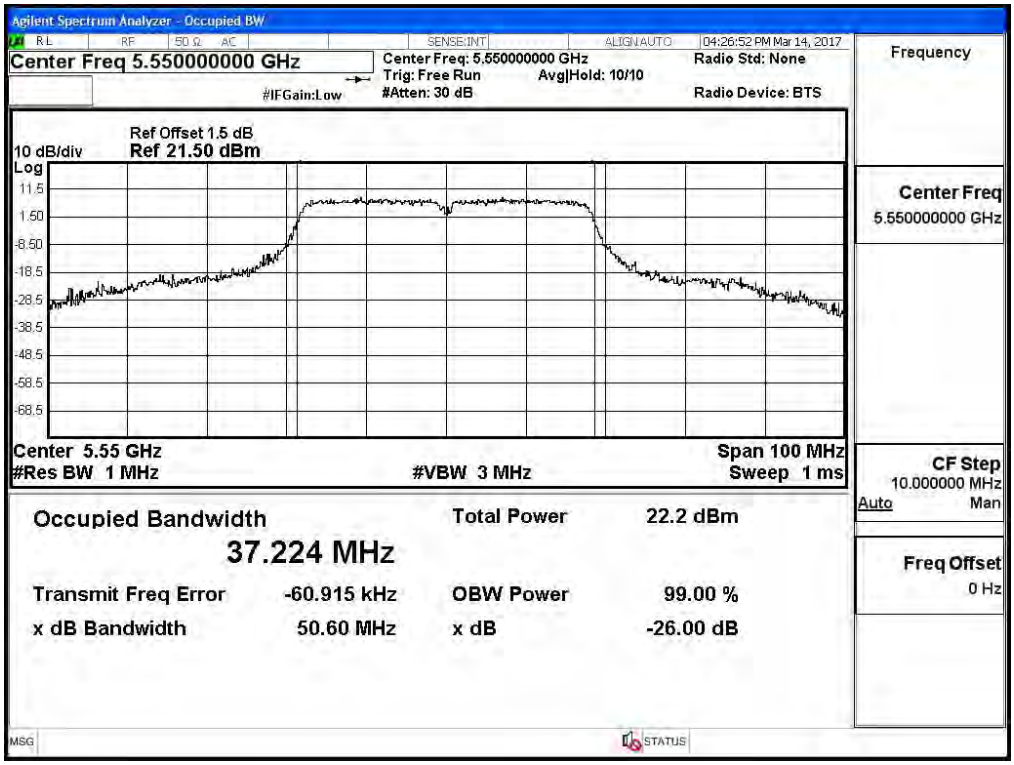
Channel 62 – Chain A



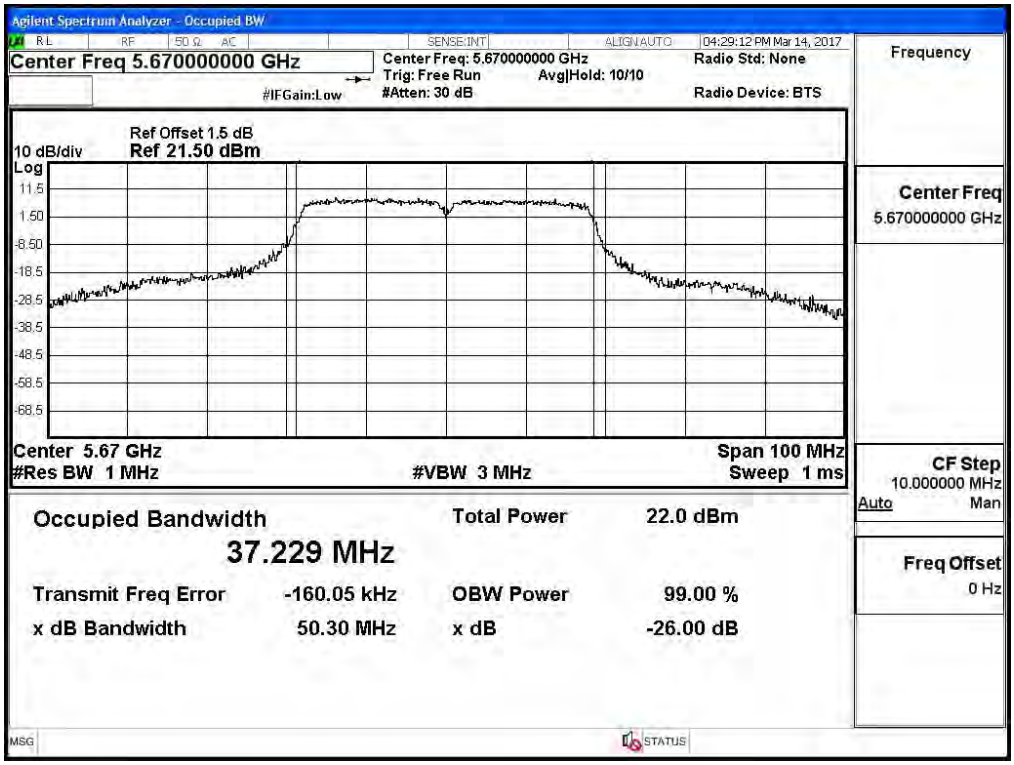
Channel 102 – Chain A



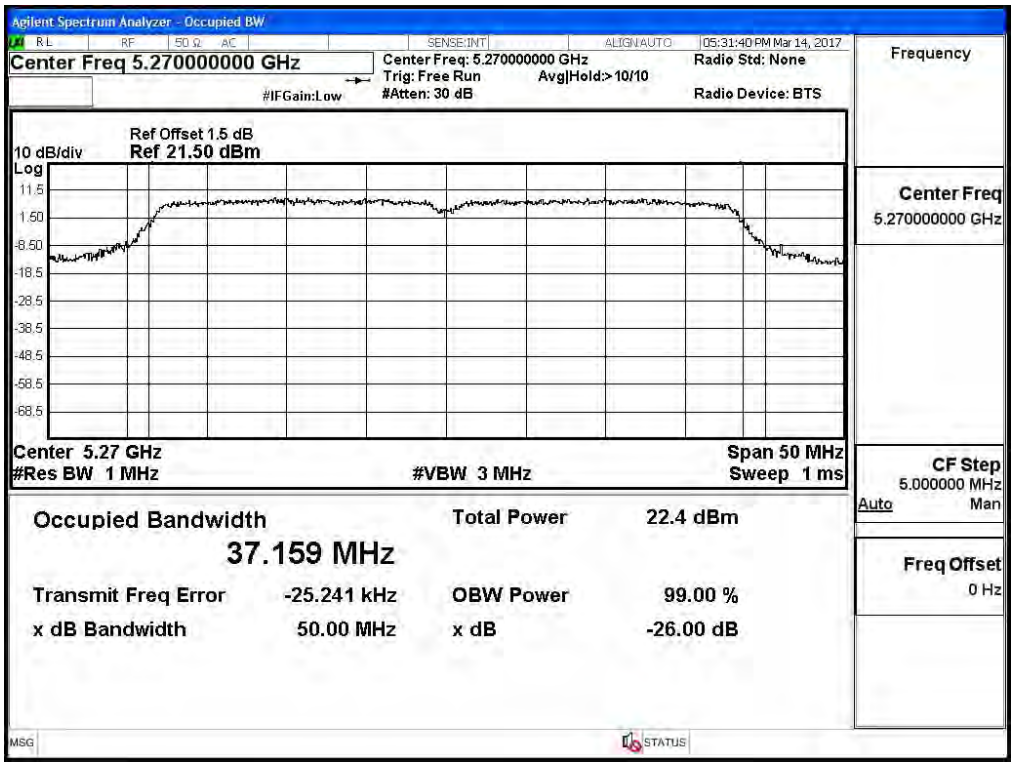
Channel 110 – Chain A



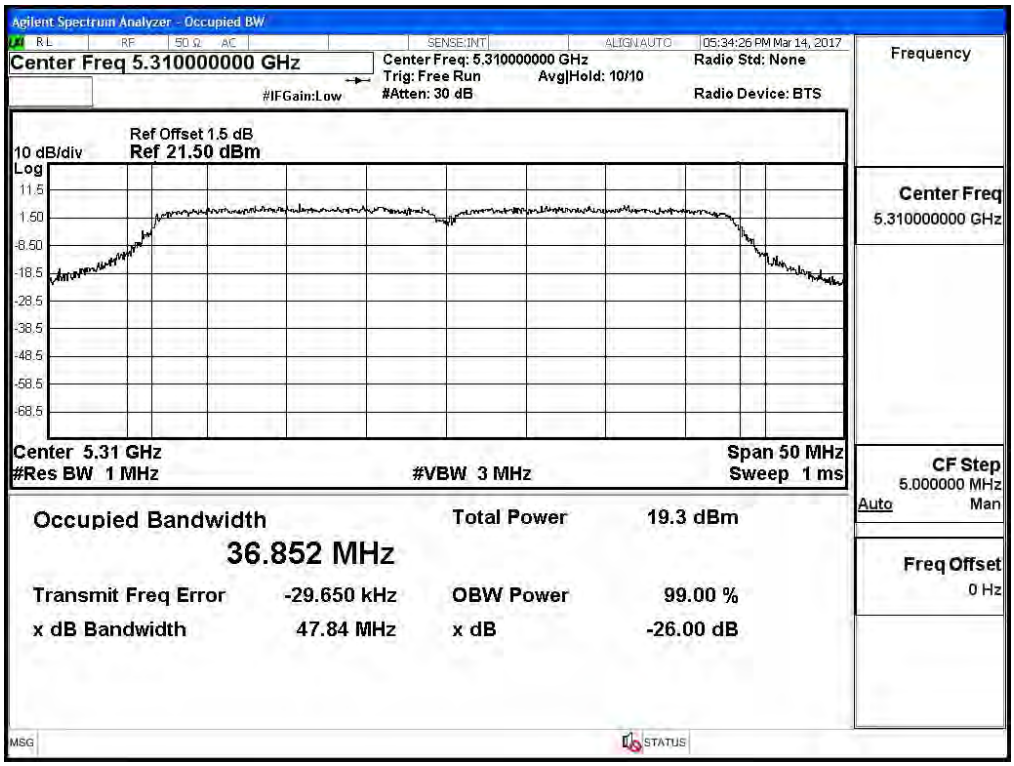
Channel 134 – Chain A



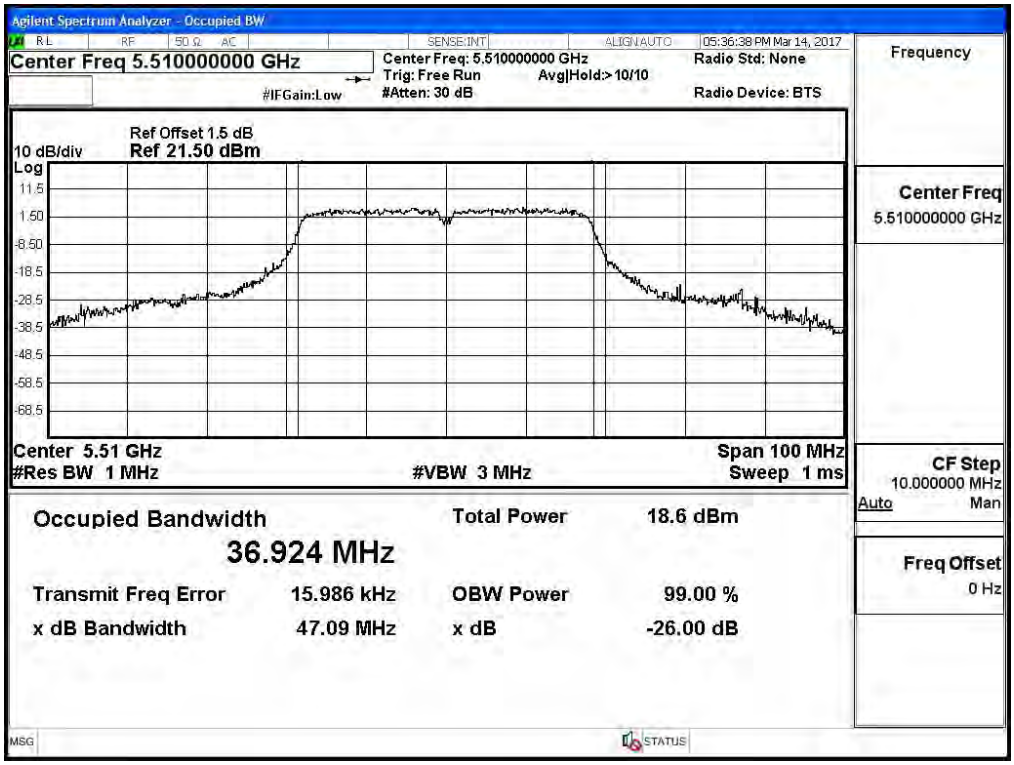
99% Bandwidth:
Channel 54 – Chain B



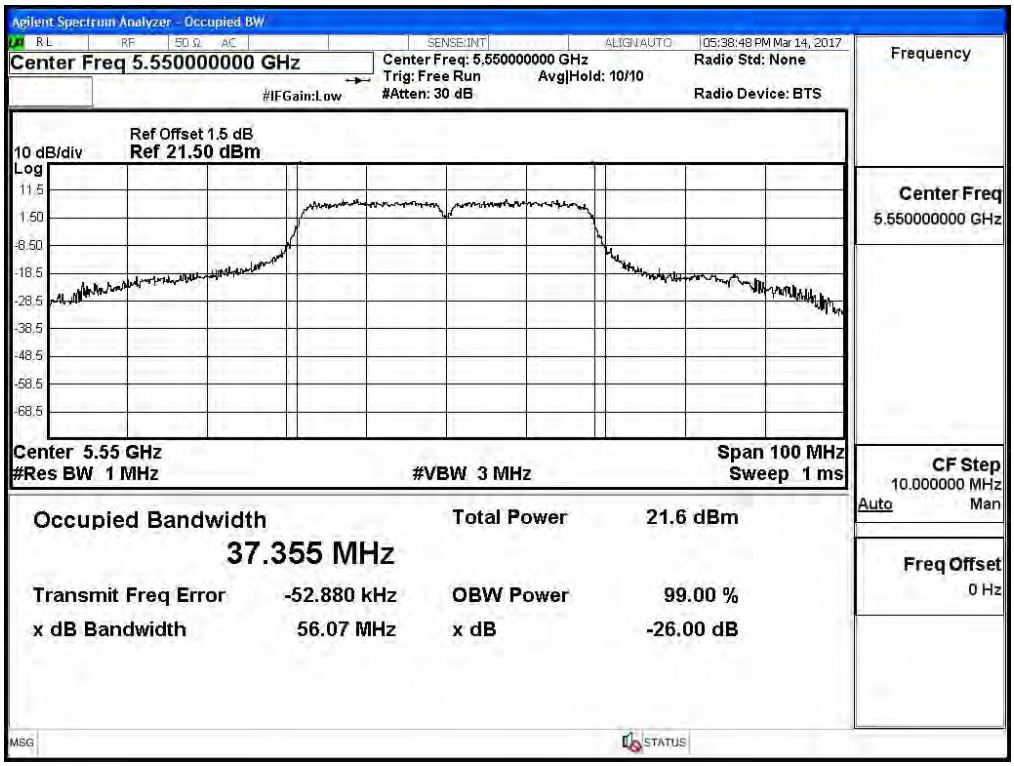
Channel 62 – Chain B



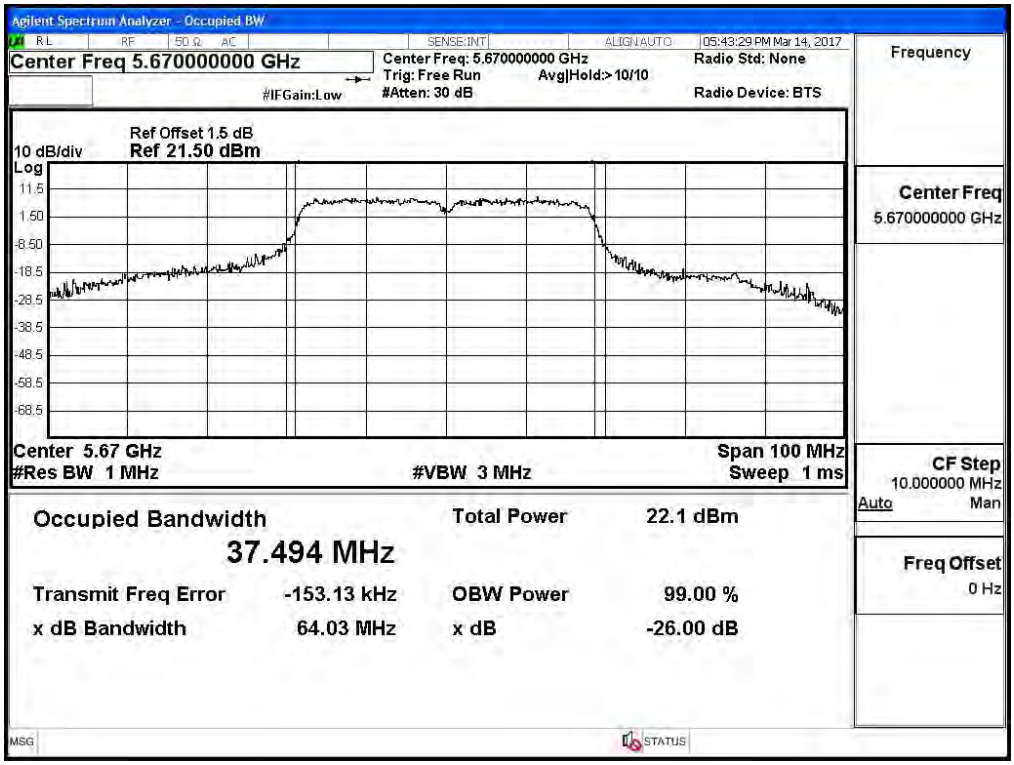
Channel 102 – Chain B



Channel 110 – Chain B

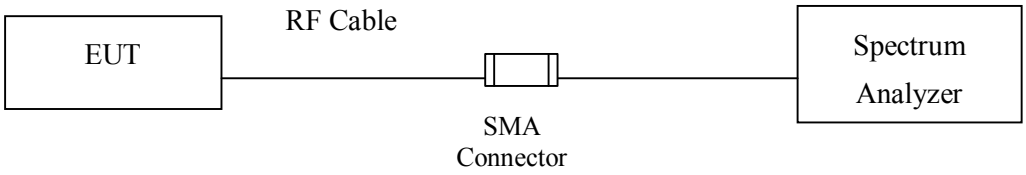


Channel 134 – Chain B



4. Peak Power Spectral Density

4.1. Test Setup



4.2. Limits

(1) For the band 5.15-5.25 GHz,

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

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

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

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.+

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the

maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

4.3. Test Procedure

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

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

SA-1 method is selected to run the test.

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

4.4. Uncertainty

± 1.62 dB

4.5. Test Result of Peak Power Spectral Density

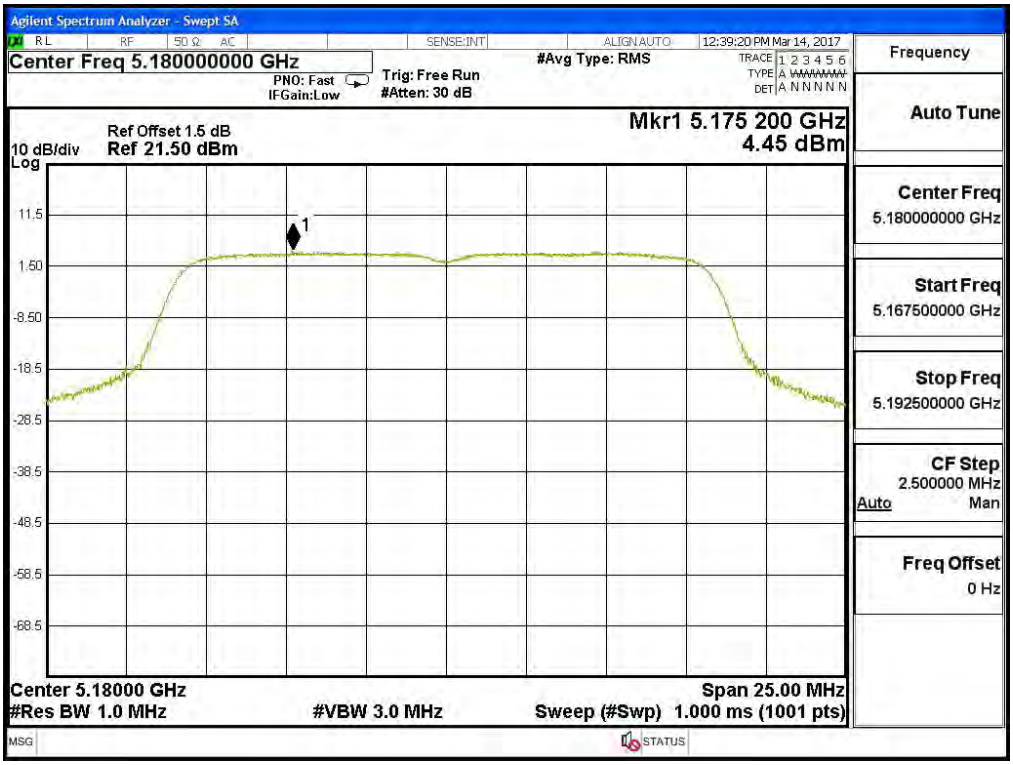
Product : WiFi Module
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	4.450	11	Pass
44	5220	6	4.380	11	Pass
48	5240	6	4.000	11	Pass
52	5260	6	4.100	11	Pass
60	5300	6	4.380	11	Pass
64	5320	6	4.190	11	Pass
100	5500	6	4.250	11	Pass
116	5580	6	5.020	11	Pass
140	5700	6	4.310	11	Pass

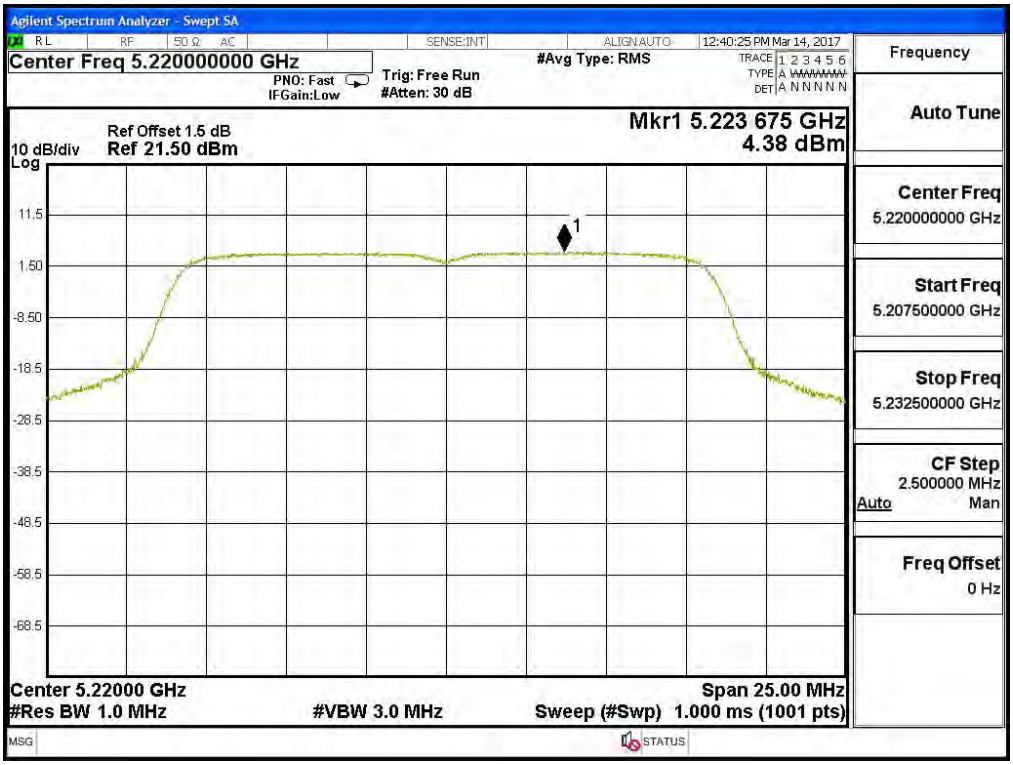
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-0.130	6.980	6.850	<30	Pass
157	5785	6	-0.830	6.980	6.150	<30	Pass
165	5825	6	-1.240	6.980	5.740	<30	Pass

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

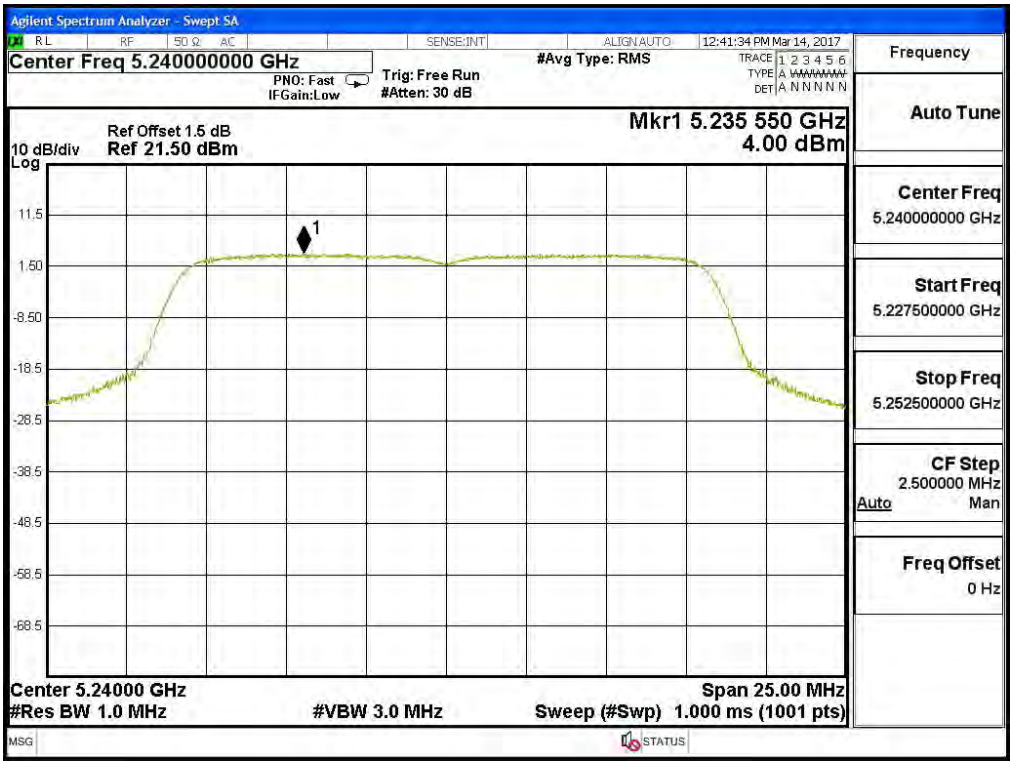
Channel 36:



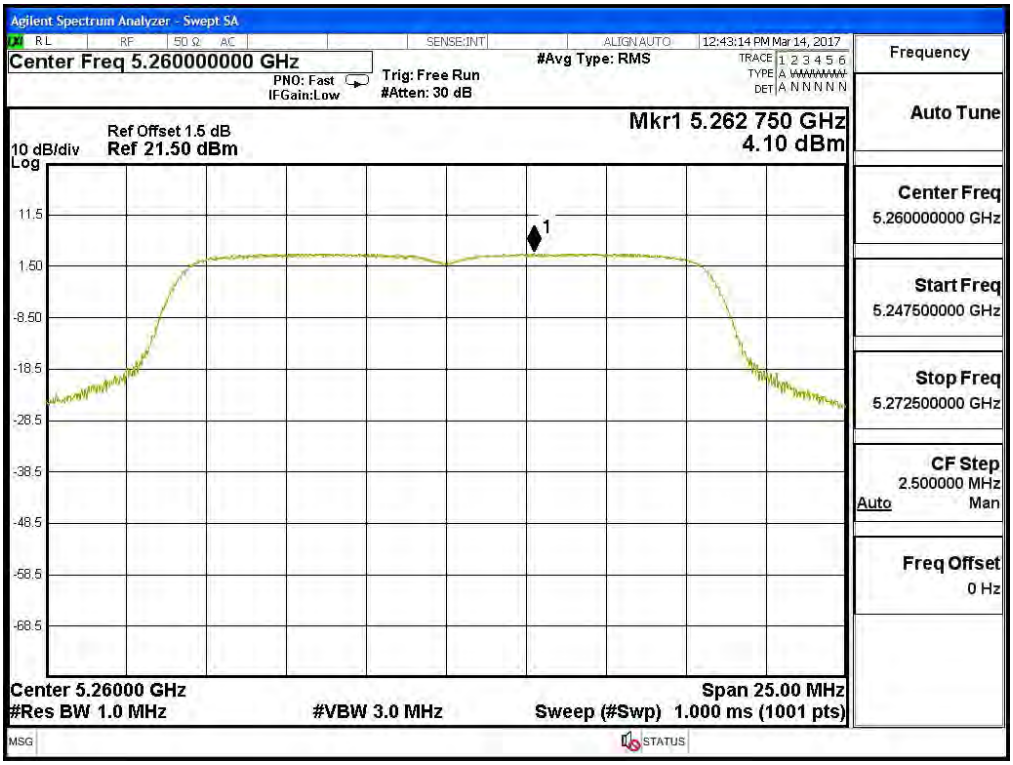
Channel 44:



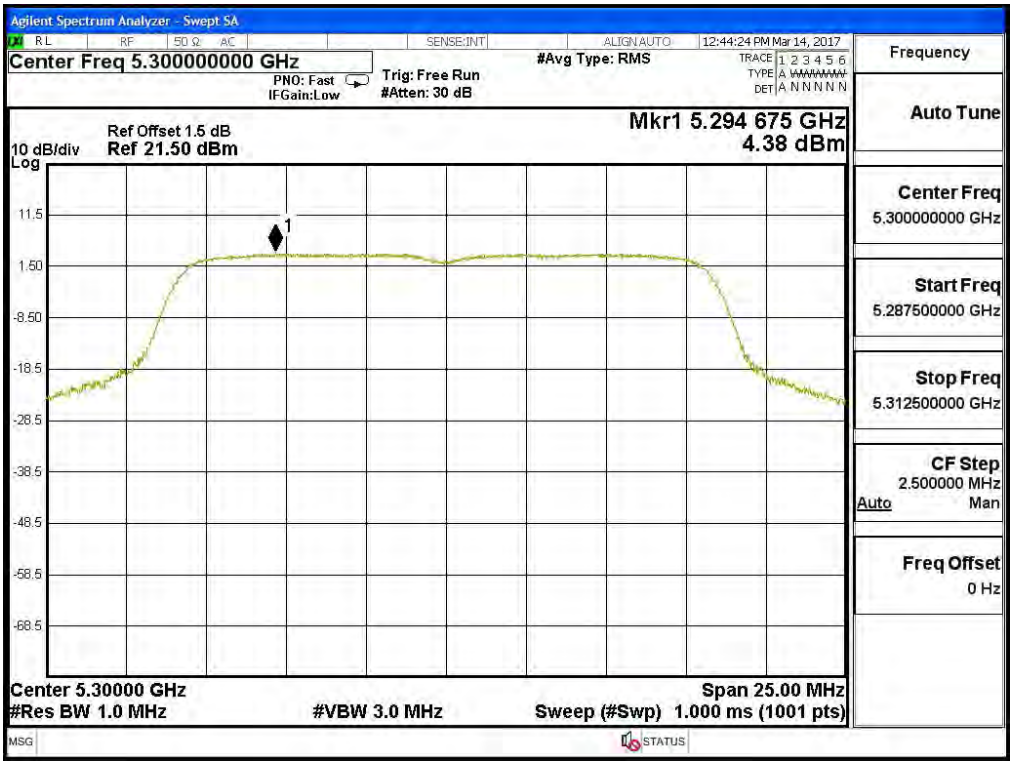
Channel 48:



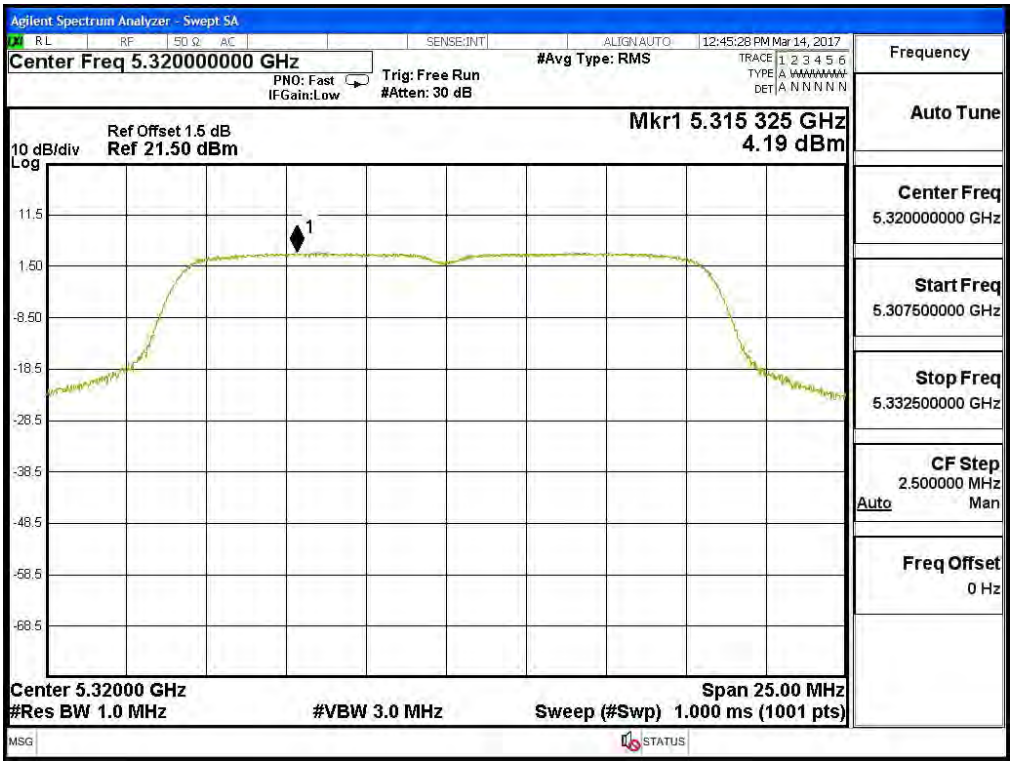
Channel 52:



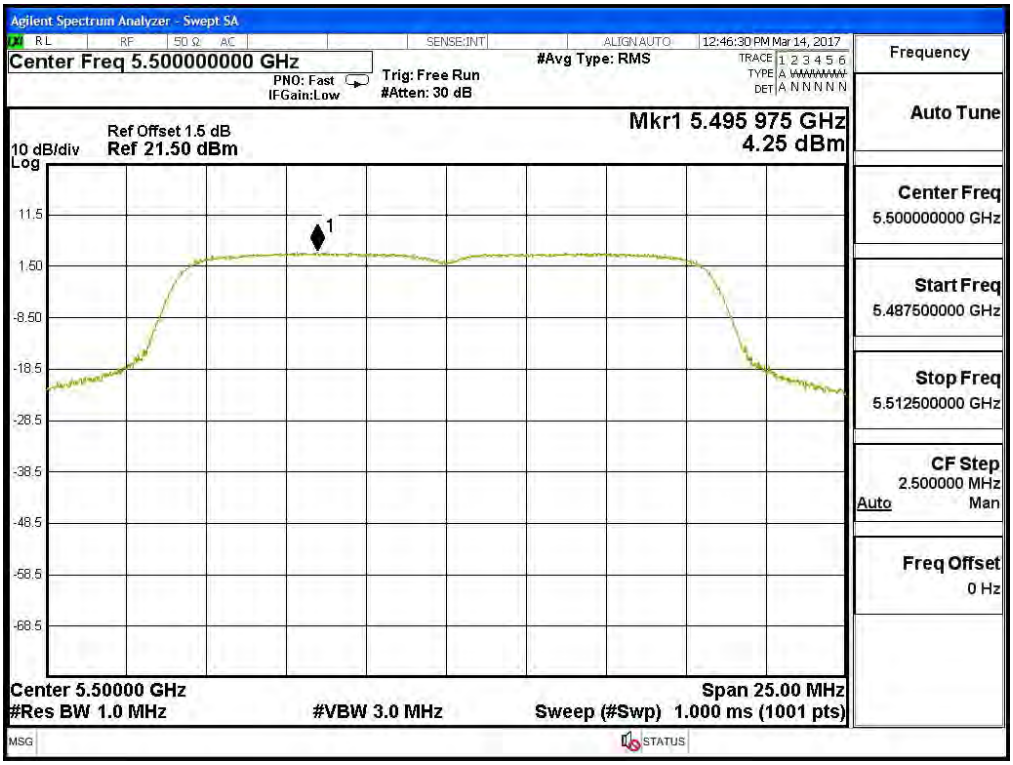
Channel 60:



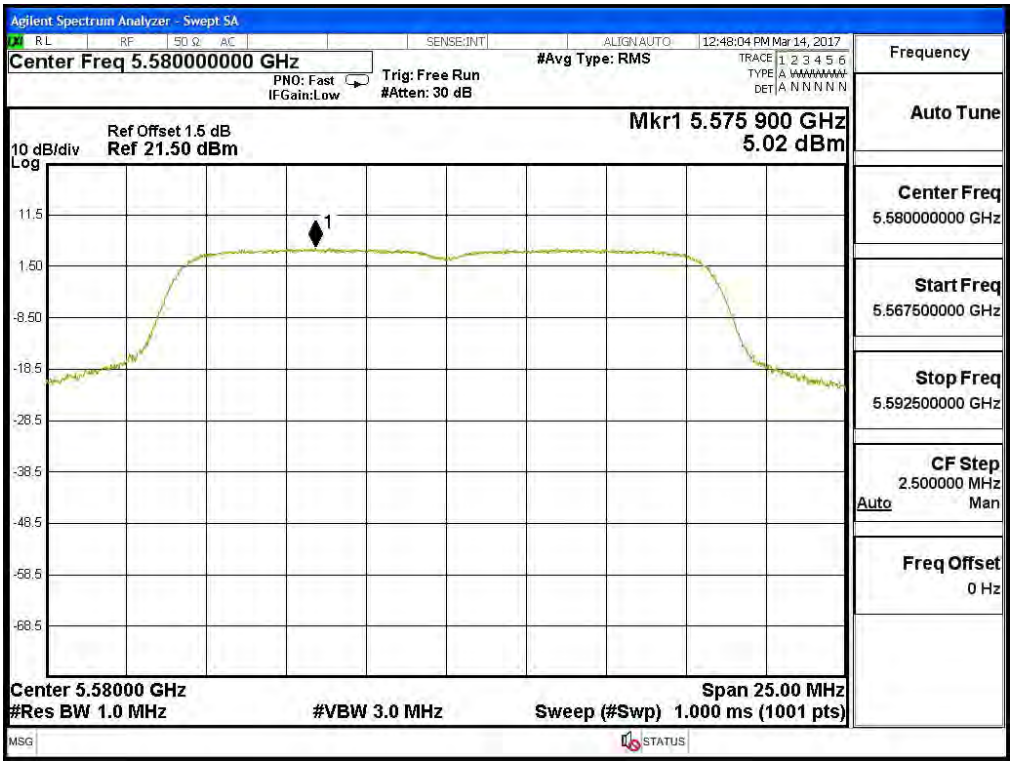
Channel 64:



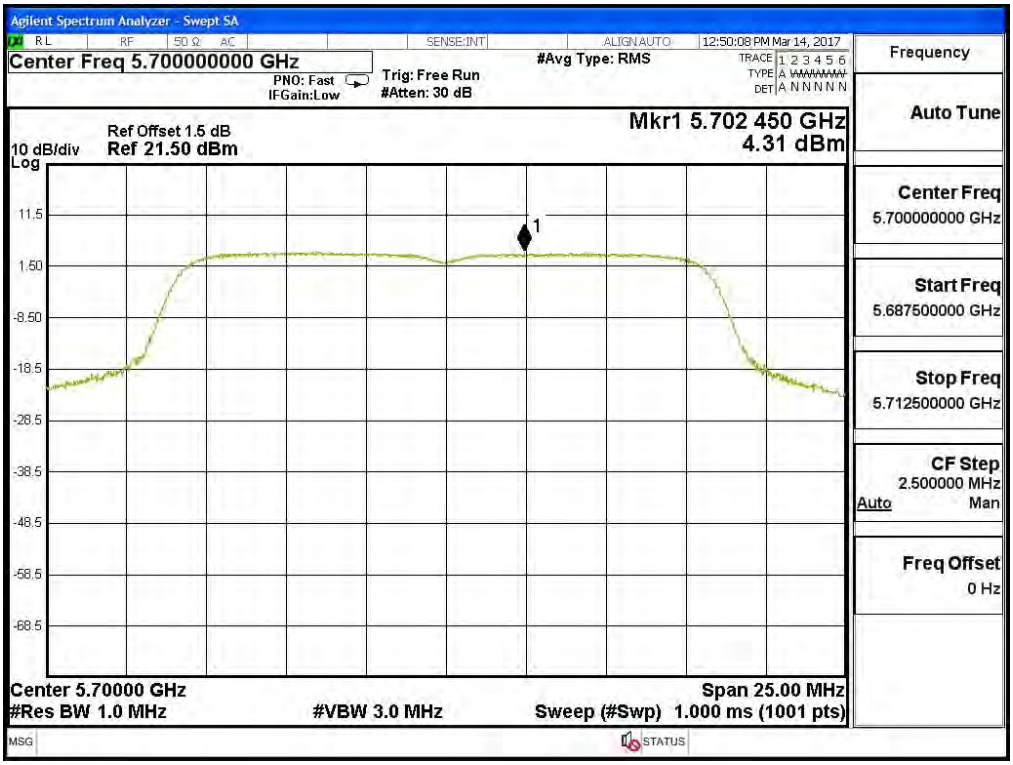
Channel 100:



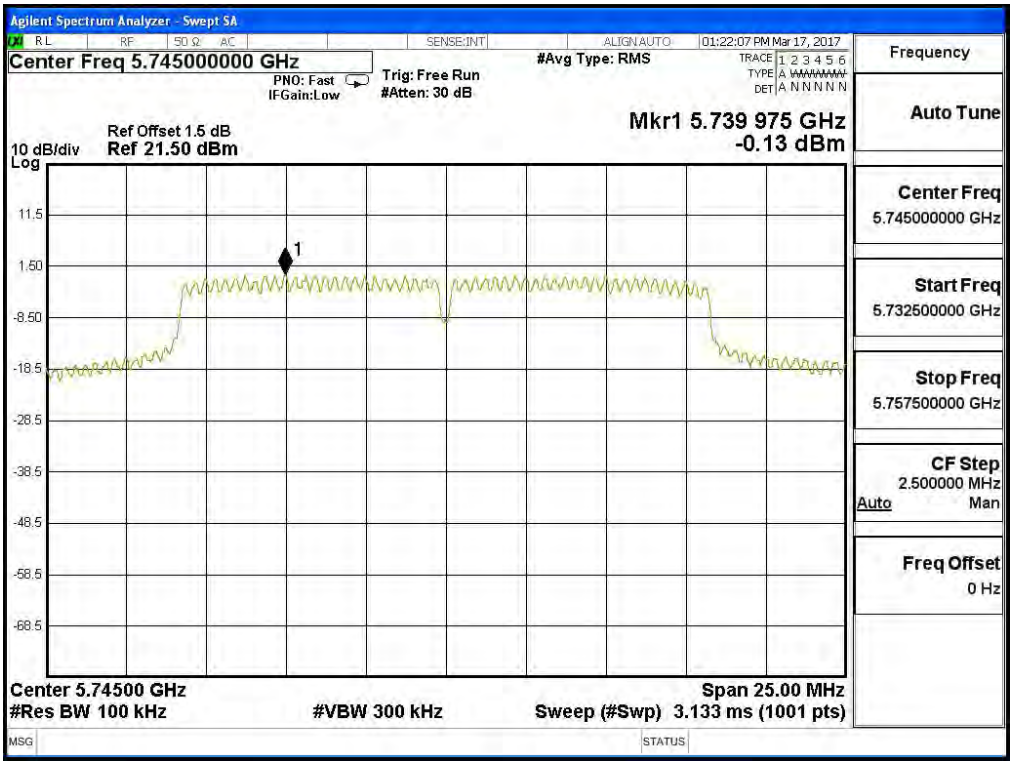
Channel 116:



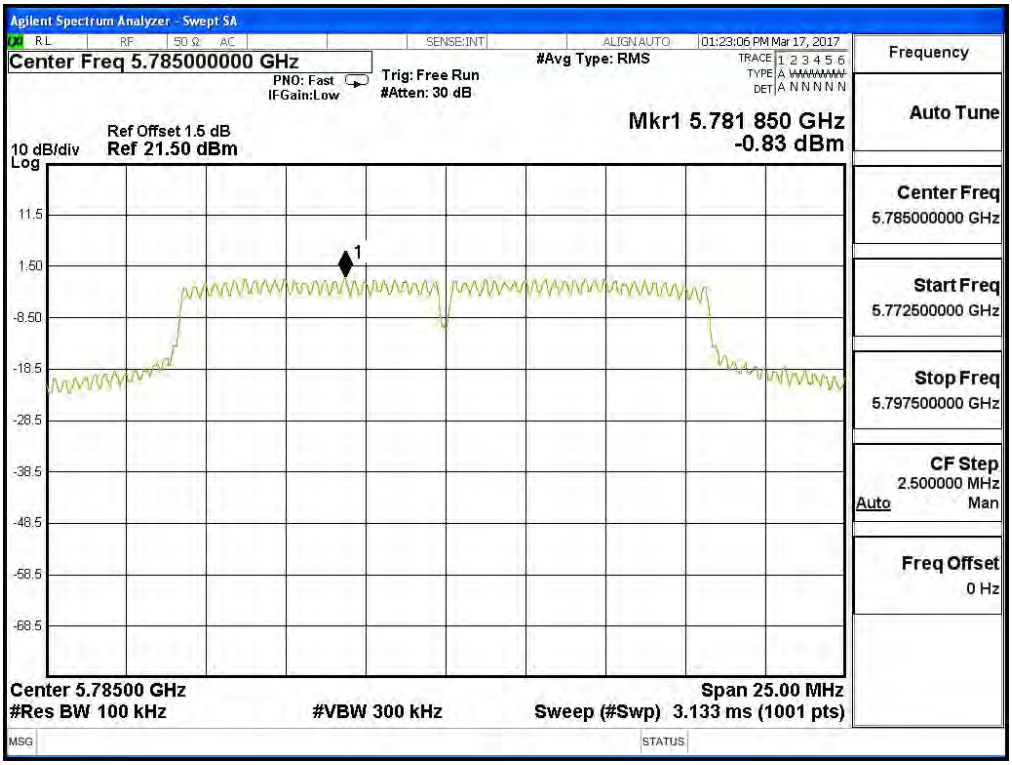
Channel 140:



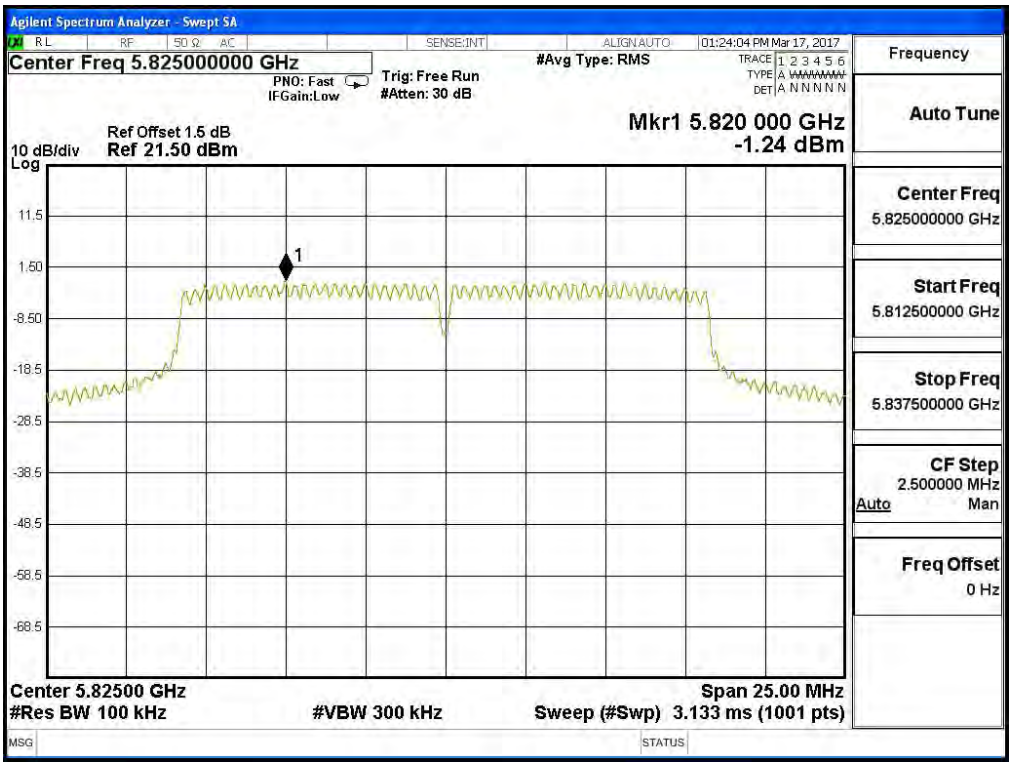
Channel 149



Channel 157



Channel 165



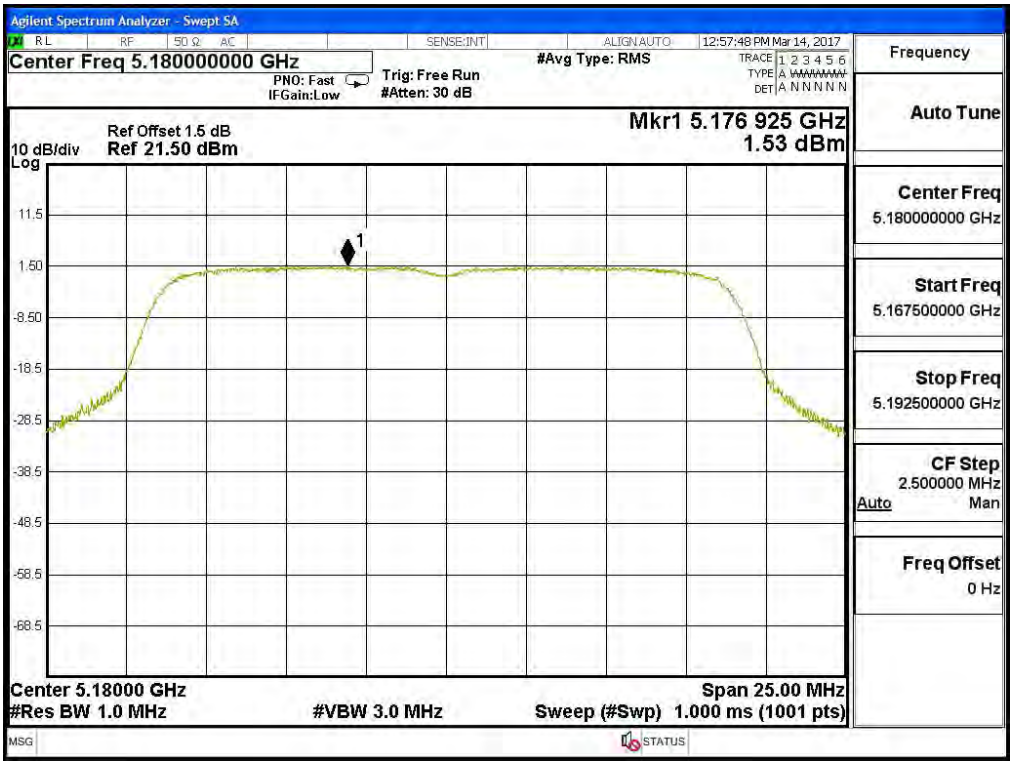
Product : WiFi Module
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps)

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm)[1]	Required Limit (dBm)	Result
36	5180	A	1.530	4.540	11	Pass
		B	2.880	5.890	11	Pass
44	5220	A	1.620	4.630	11	Pass
		B	2.630	5.640	11	Pass
48	5240	A	0.970	3.980	11	Pass
		B	2.270	5.280	11	Pass
52	5260	A	1.020	4.030	11	Pass
		B	2.520	5.530	11	Pass
60	5300	A	0.930	3.940	11	Pass
		B	0.850	3.860	11	Pass
64	5320	A	1.000	4.010	11	Pass
		B	0.050	3.060	11	Pass
100	5500	A	1.370	4.380	11	Pass
		B	0.930	3.940	11	Pass
116	5580	A	2.390	5.400	11	Pass
		B	1.890	4.900	11	Pass
140	5700	A	1.790	4.800	11	Pass
		B	2.230	5.240	11	Pass

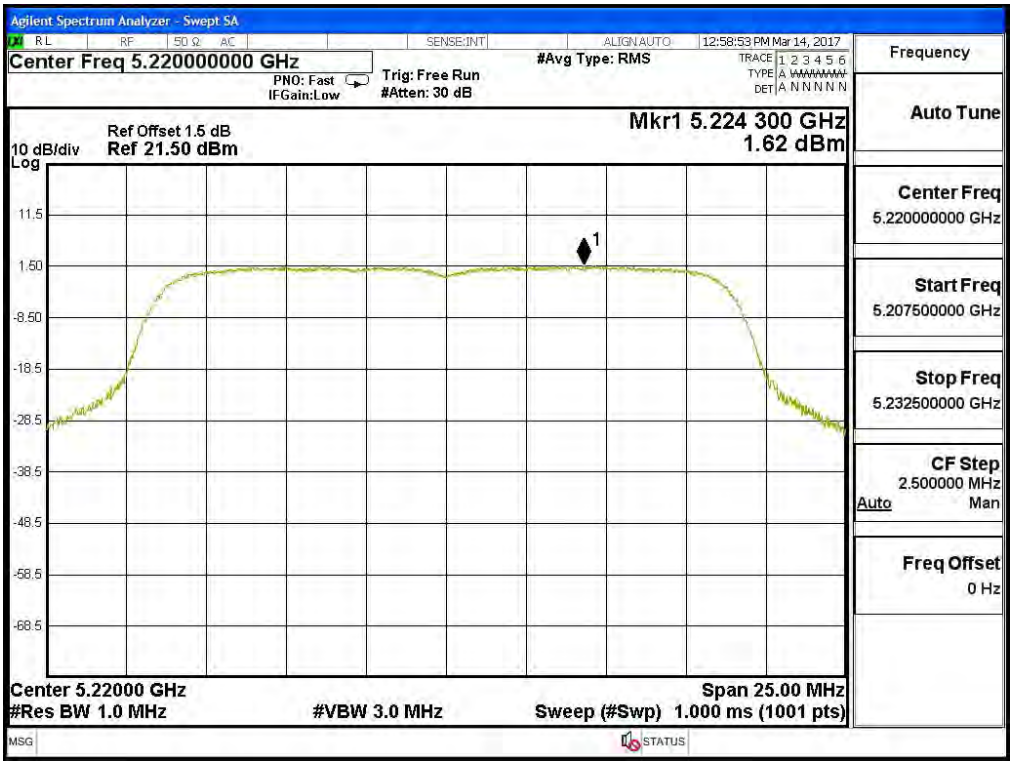
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)[1]	Required Limit (dBm)	Result
149	5745	A	-1.660	6.980	8.330	<30	Pass
		B	-3.490	6.980	6.500	<30	Pass
157	5785	A	-2.970	6.980	7.020	<30	Pass
		B	-4.340	6.980	5.650	<30	Pass
165	5825	A	-3.430	6.980	6.560	<30	Pass
		B	-6.160	6.980	3.830	<30	Pass

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

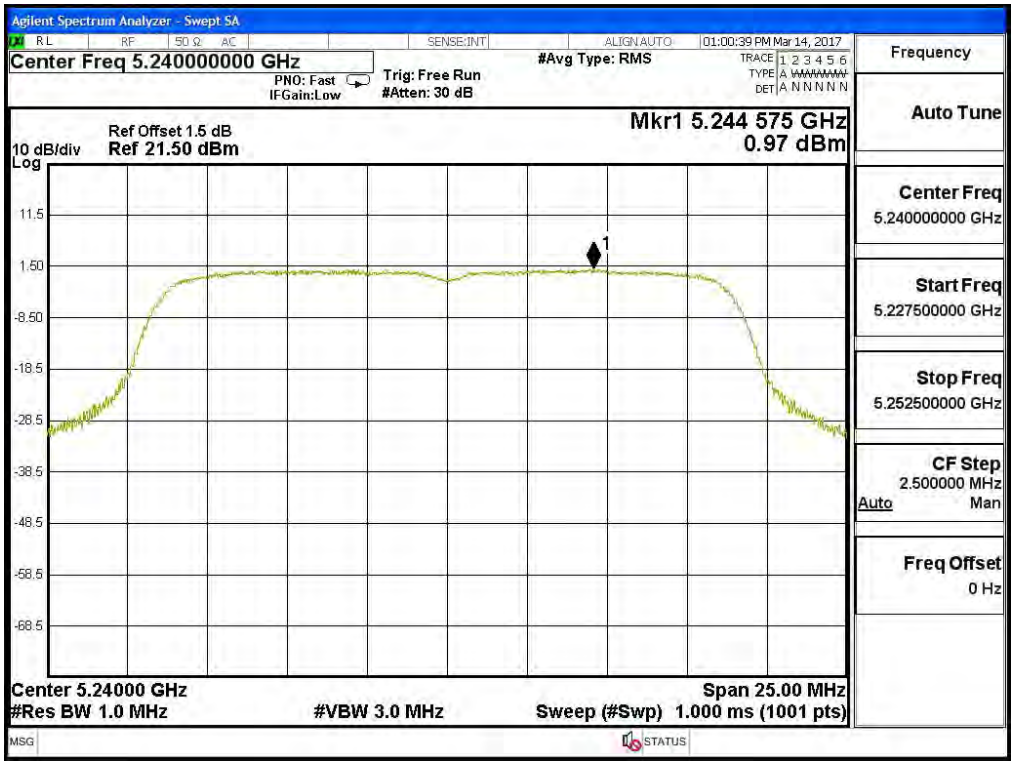
Channel 36 – Chain A



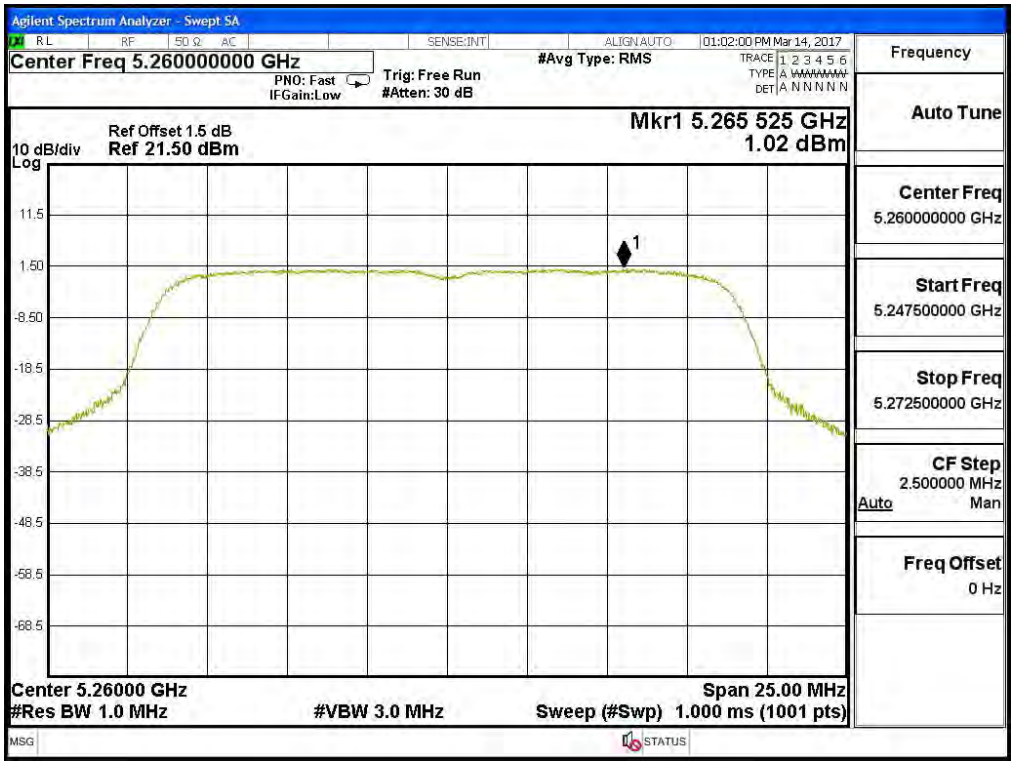
Channel 44 – Chain A



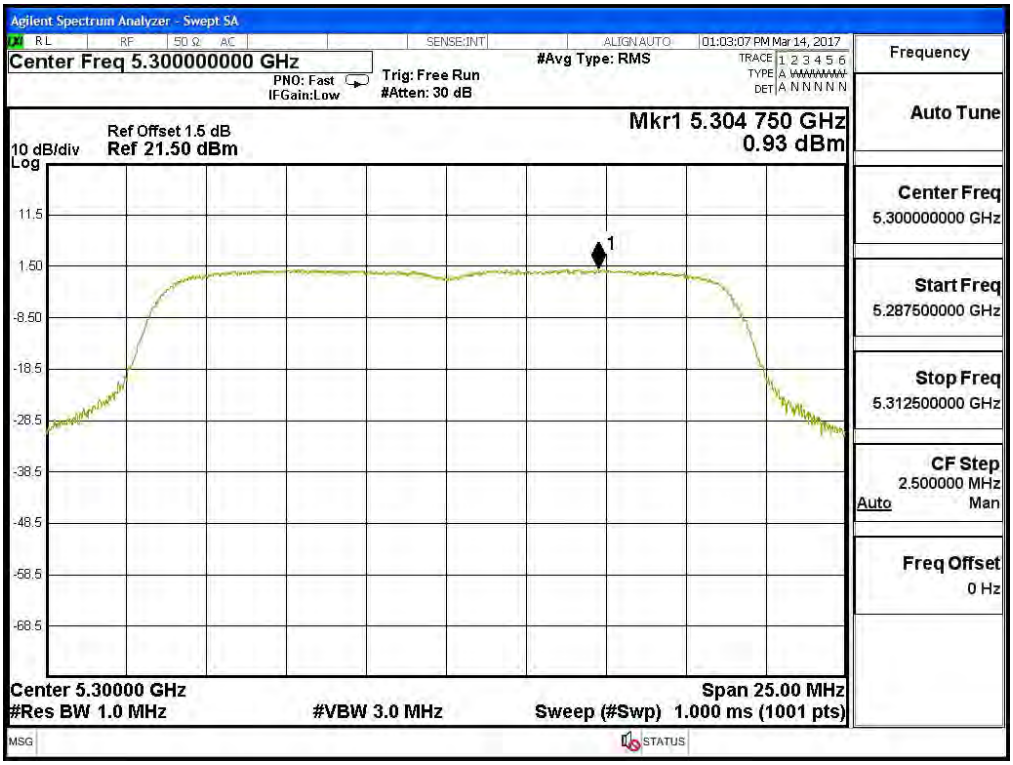
Channel 48 – Chain A



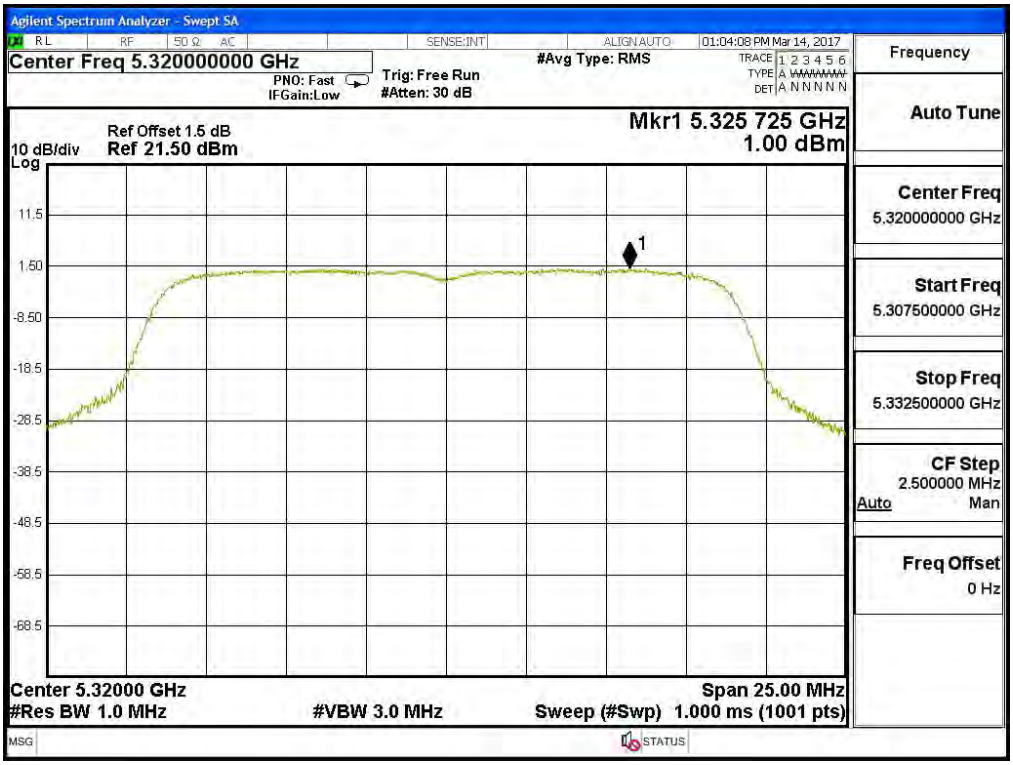
Channel 52 – Chain A



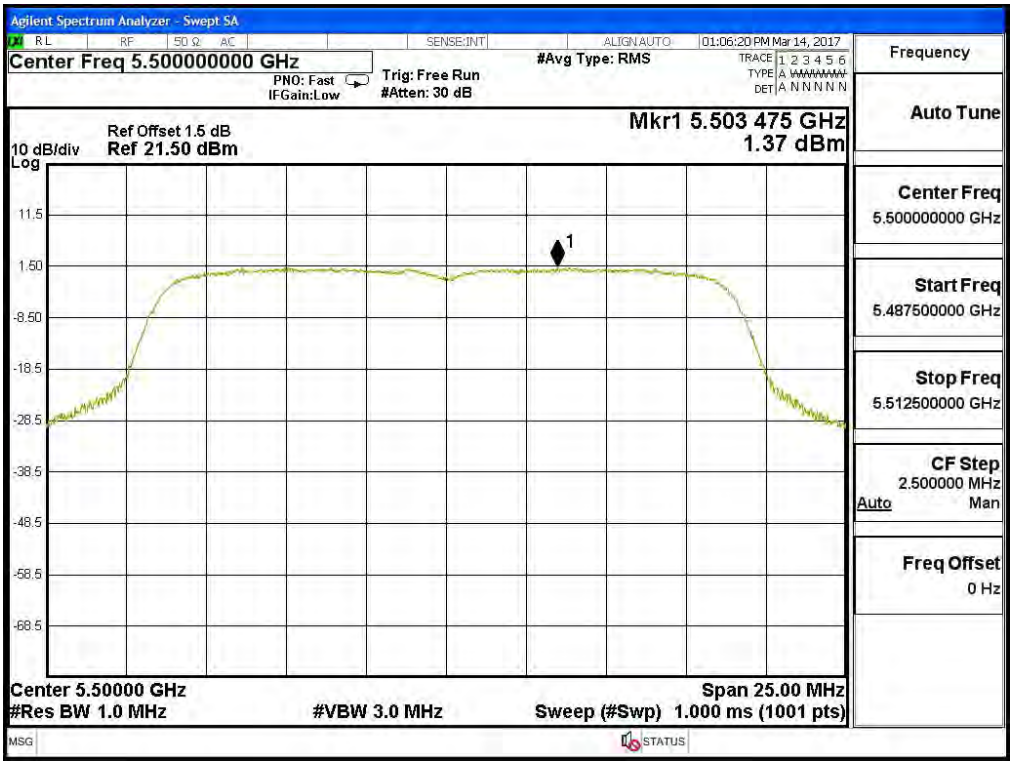
Channel 60 – Chain A



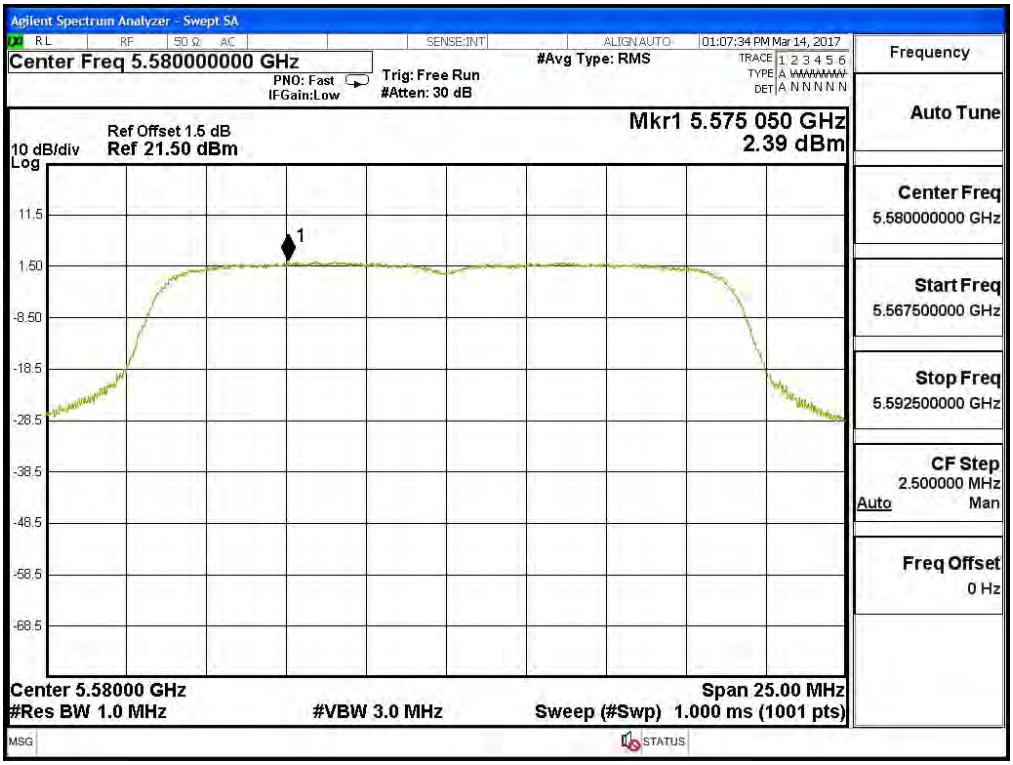
Channel 64 – Chain A



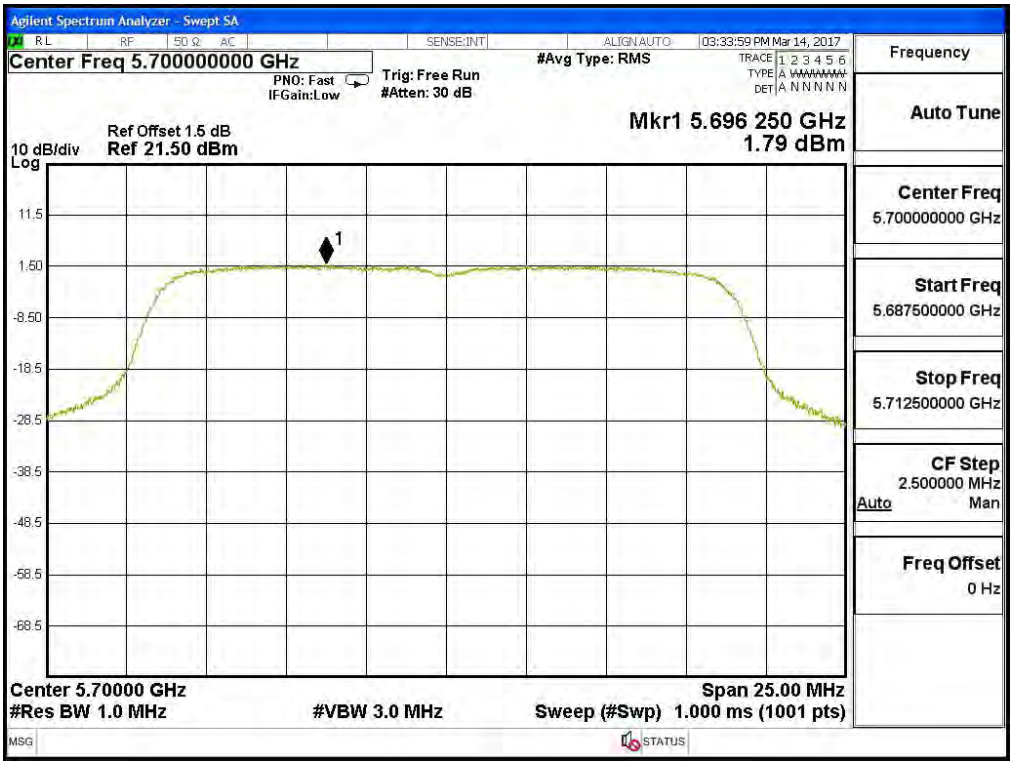
Channel 100 – Chain A



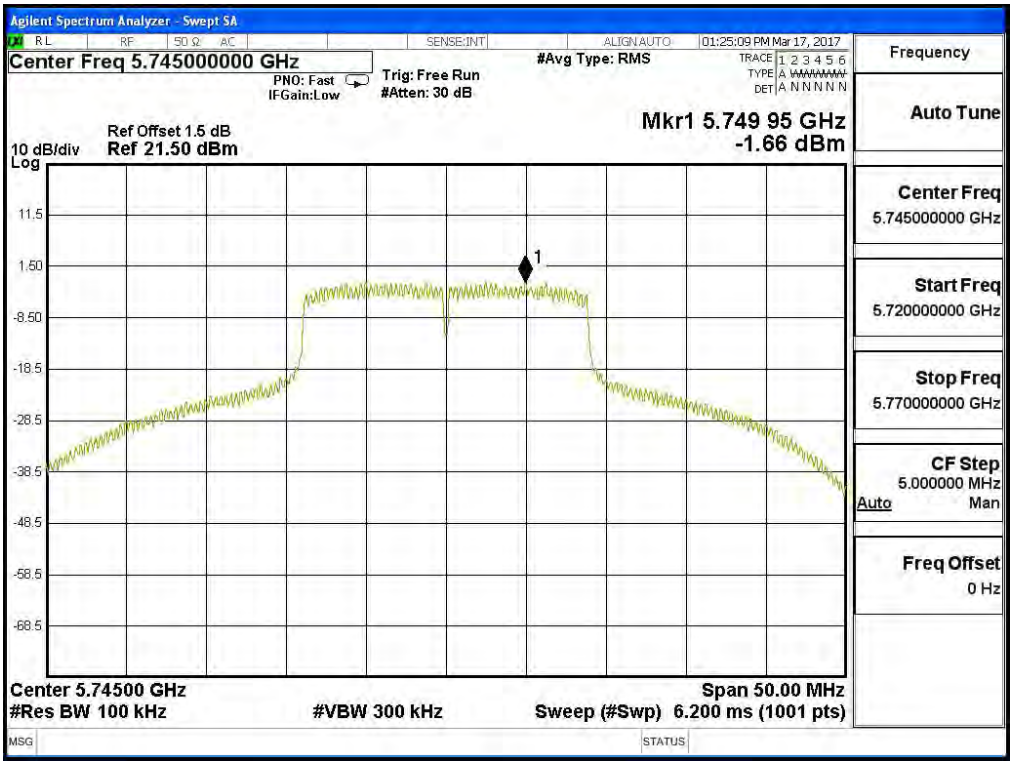
Channel 116 – Chain A



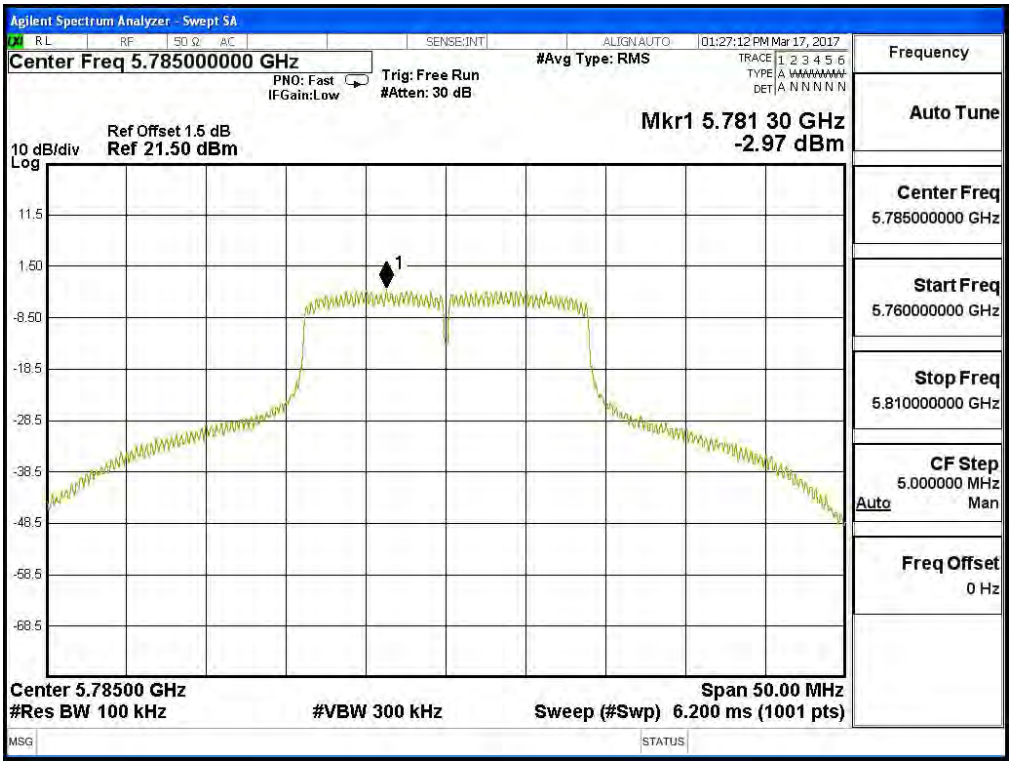
Channel 140 – Chain A



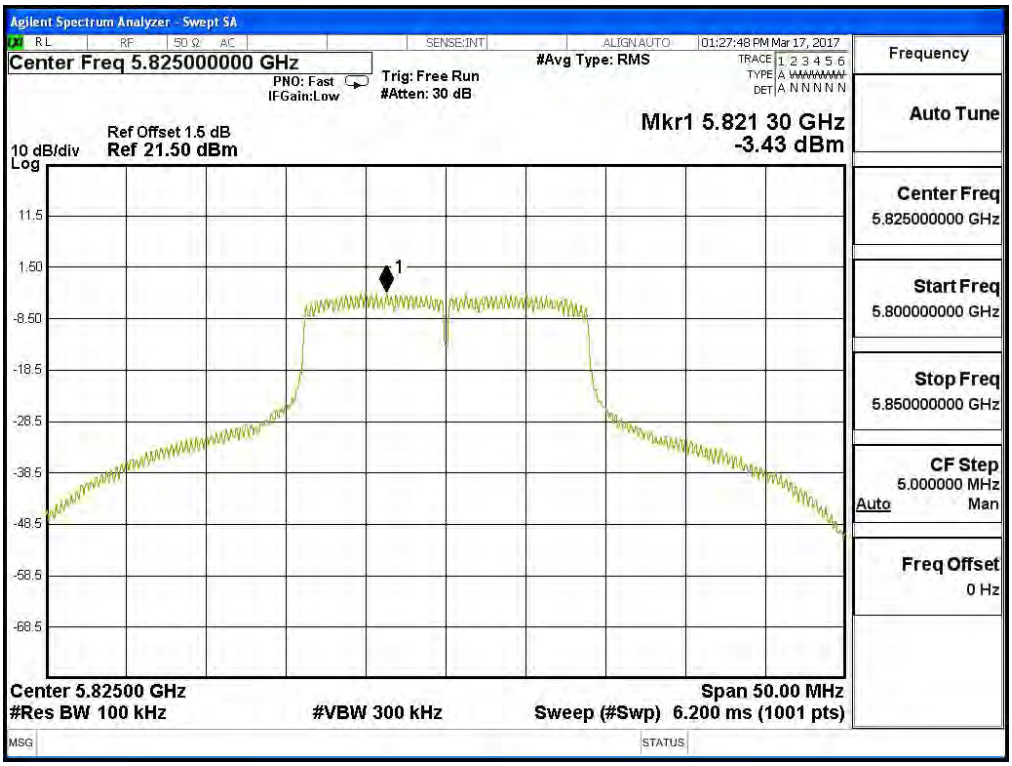
.Channel 149 – Chain A



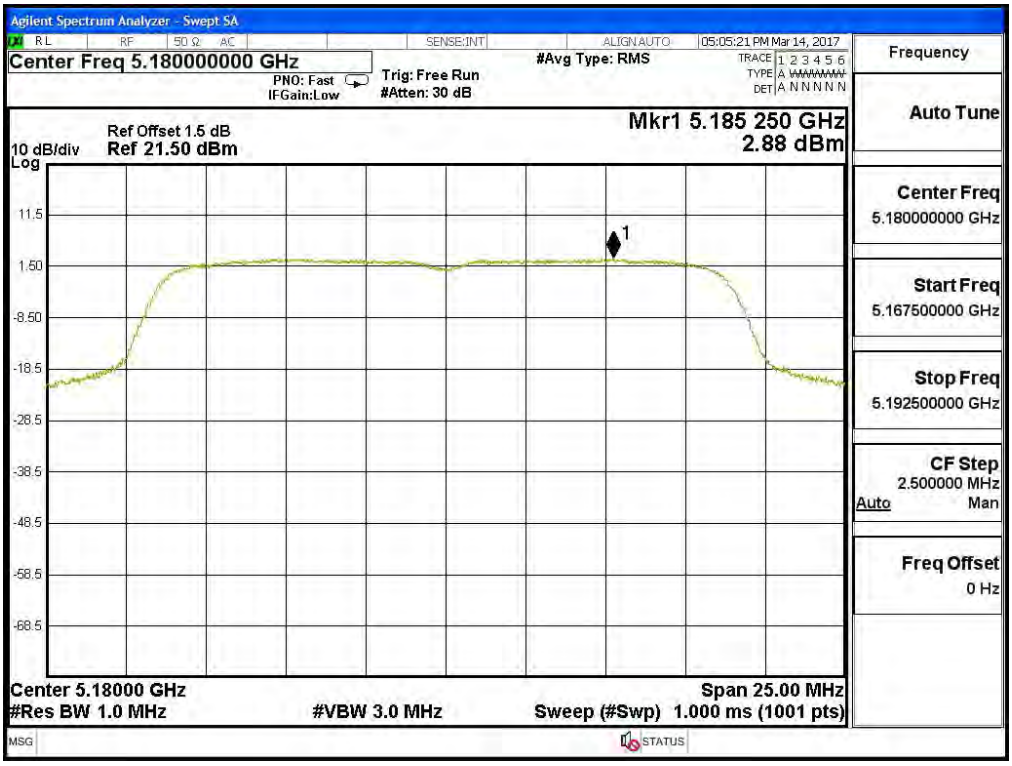
Channel 157 – Chain A



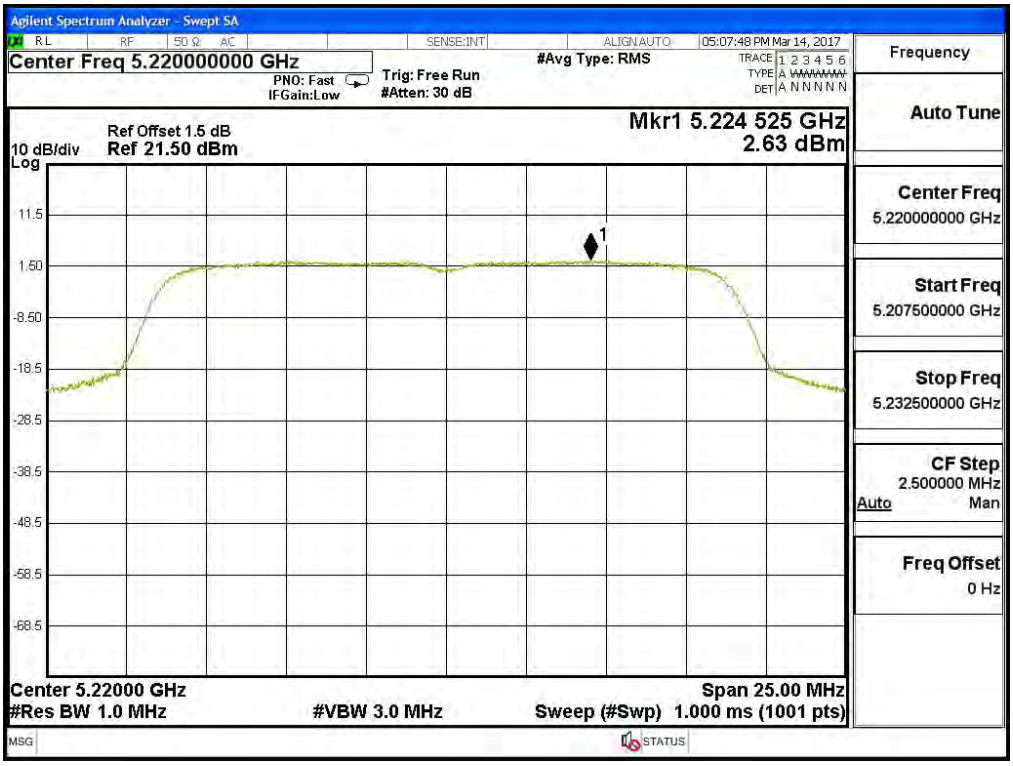
Channel 165 – Chain A



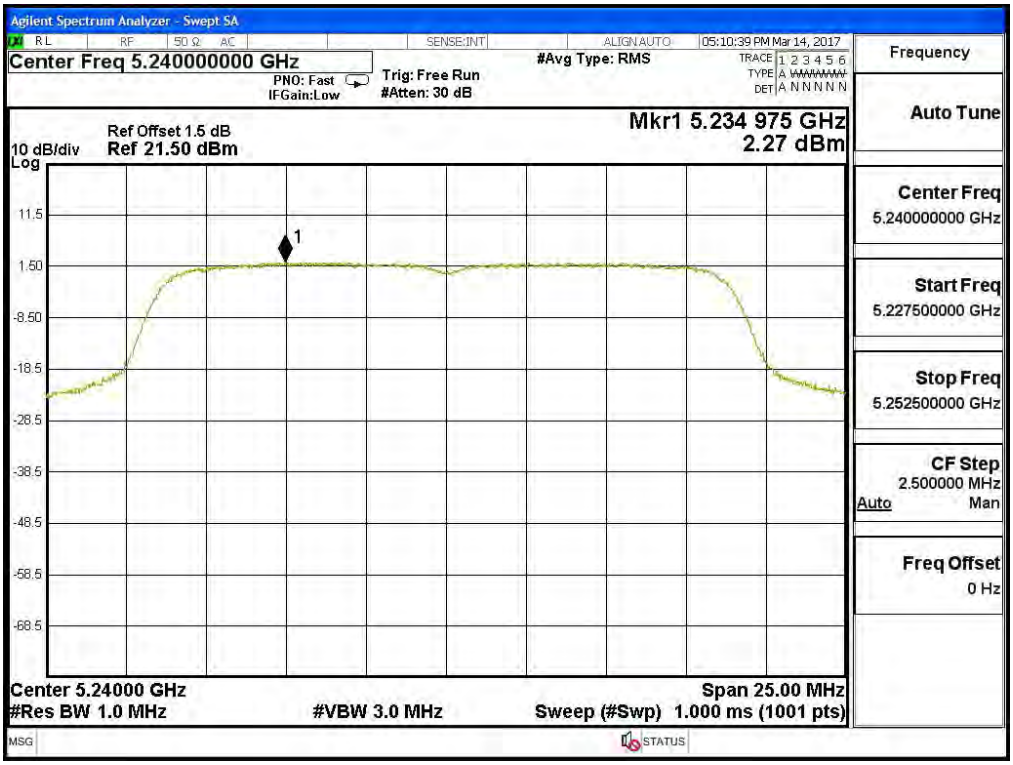
Channel 36 – Chain B



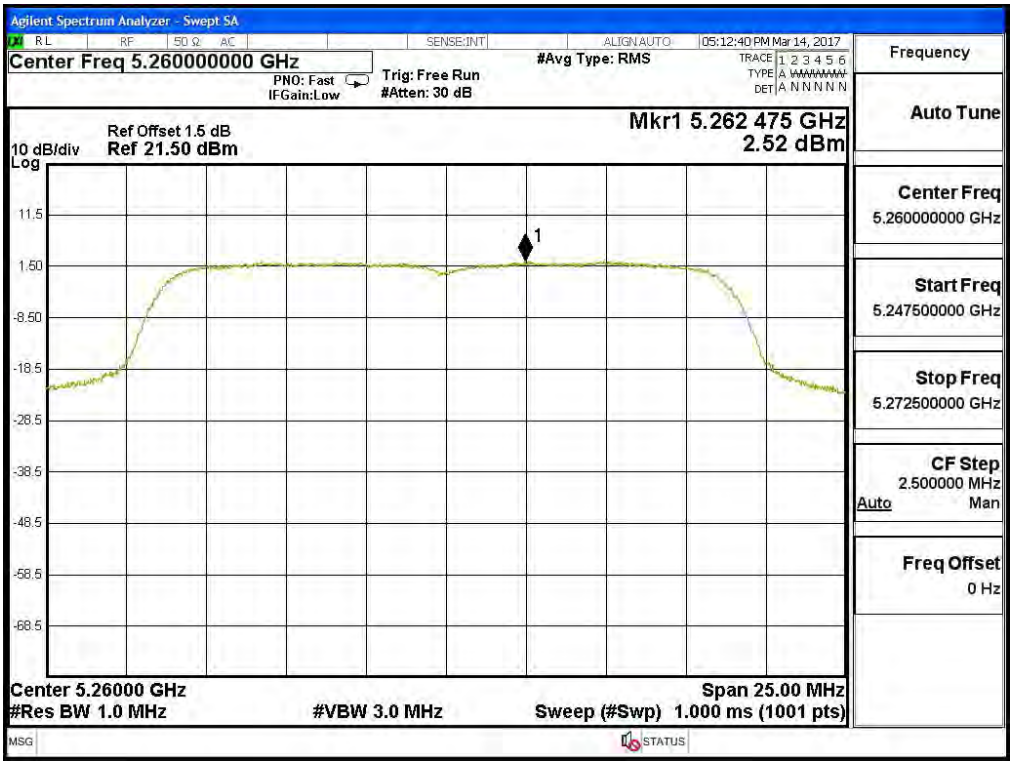
Channel 44 – Chain B



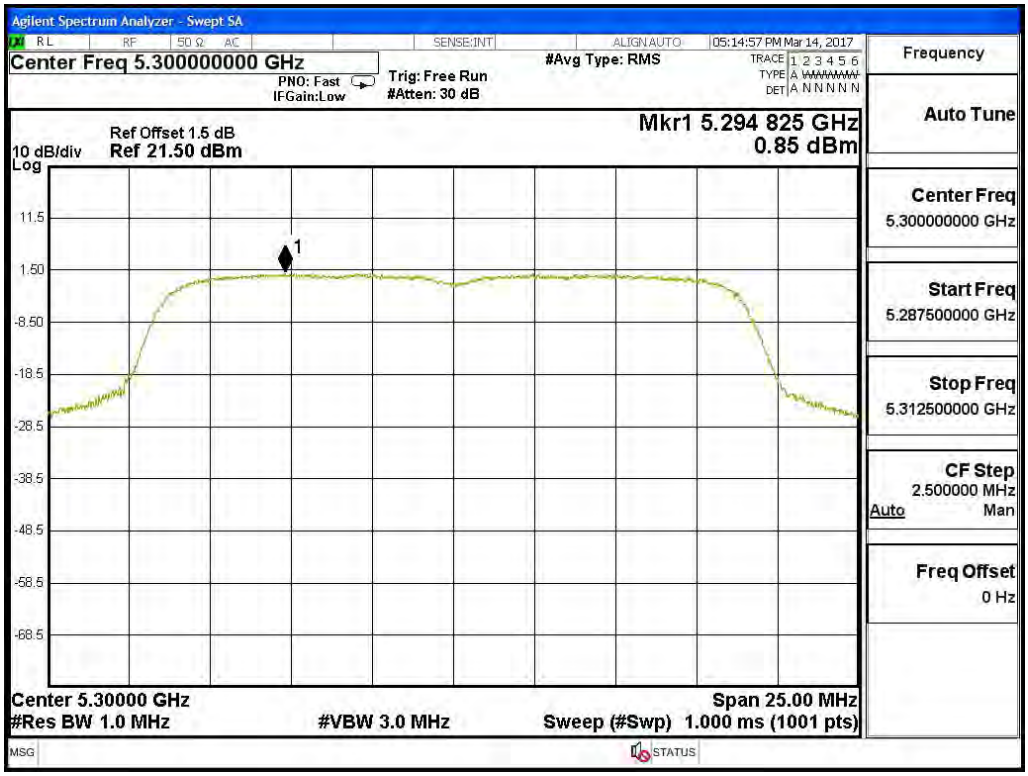
Channel 48 – Chain B



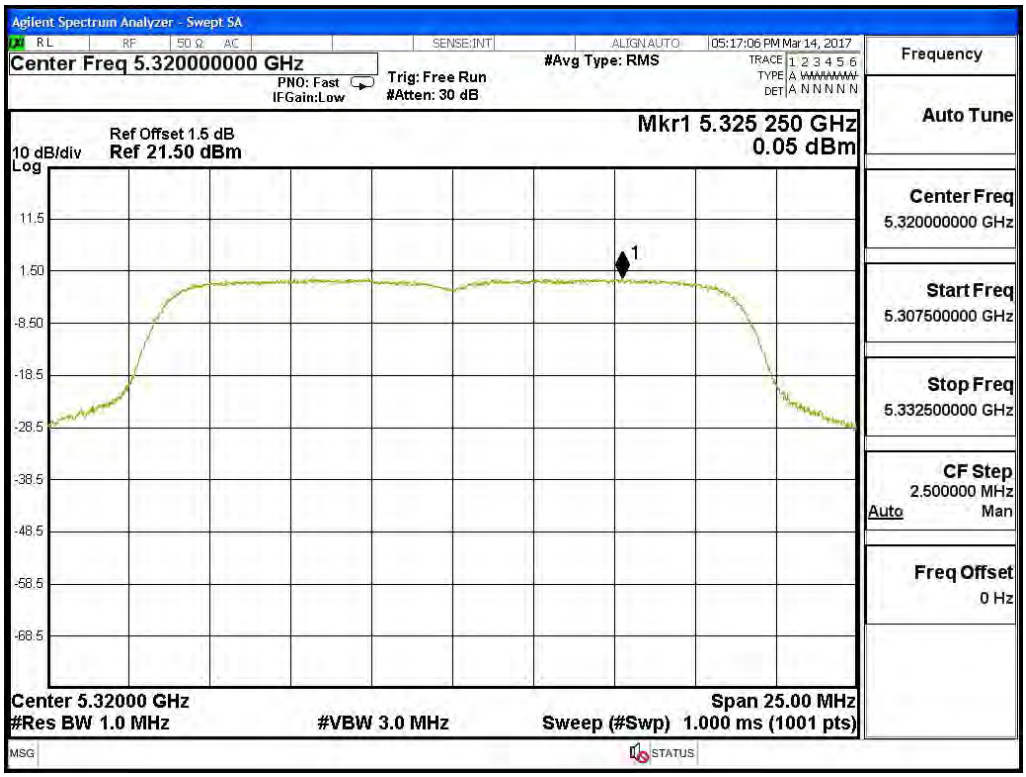
Channel 52 – Chain B



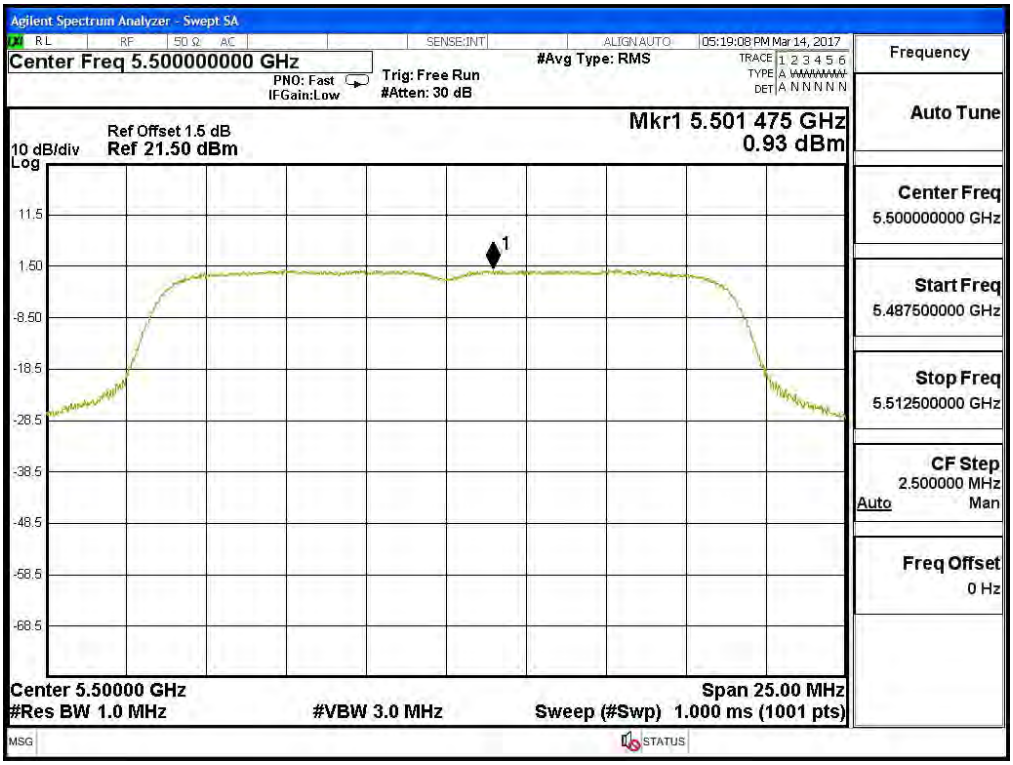
Channel 60 – Chain B



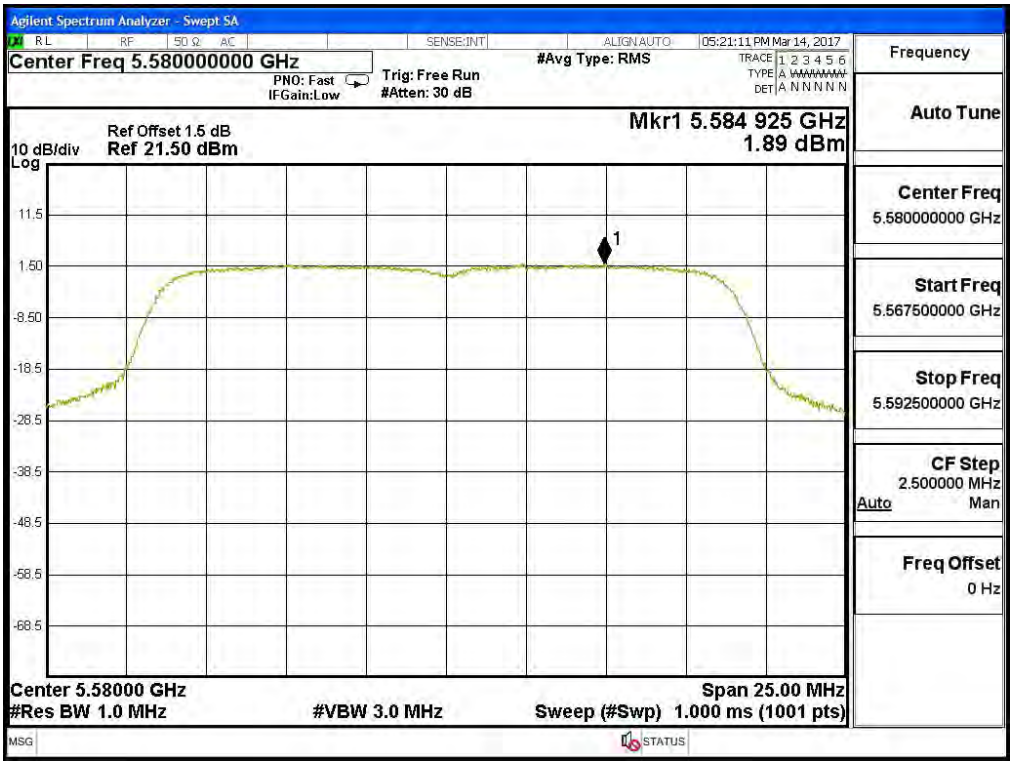
Channel 64 – Chain B



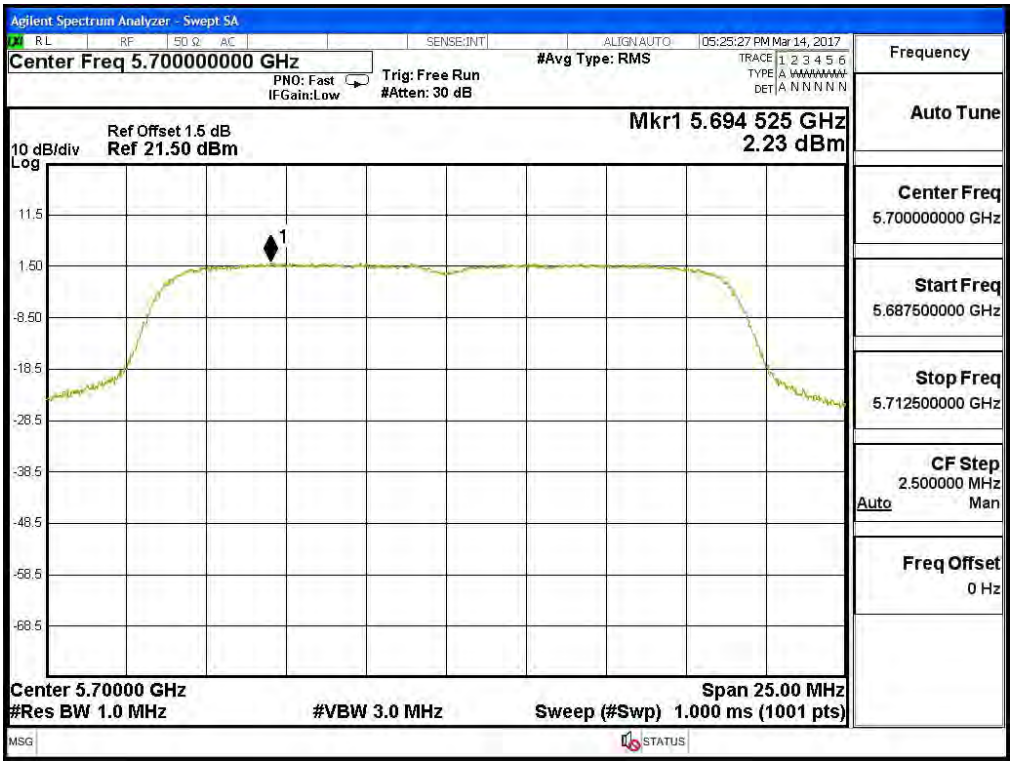
Channel 100 – Chain B



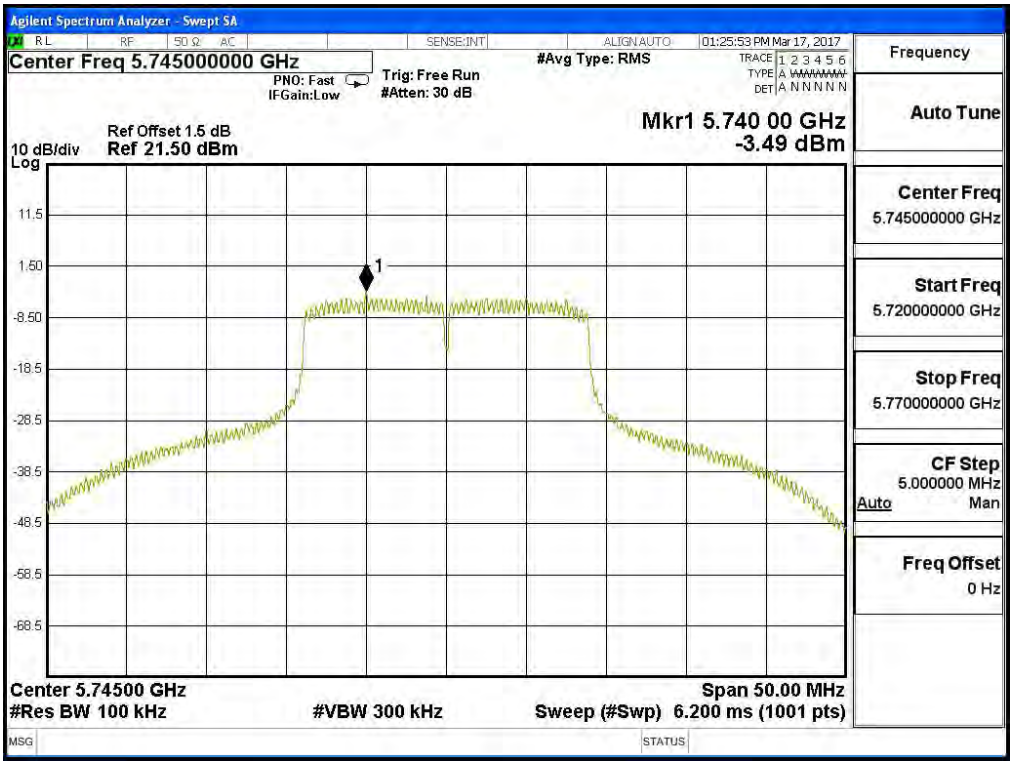
Channel 116 – Chain B



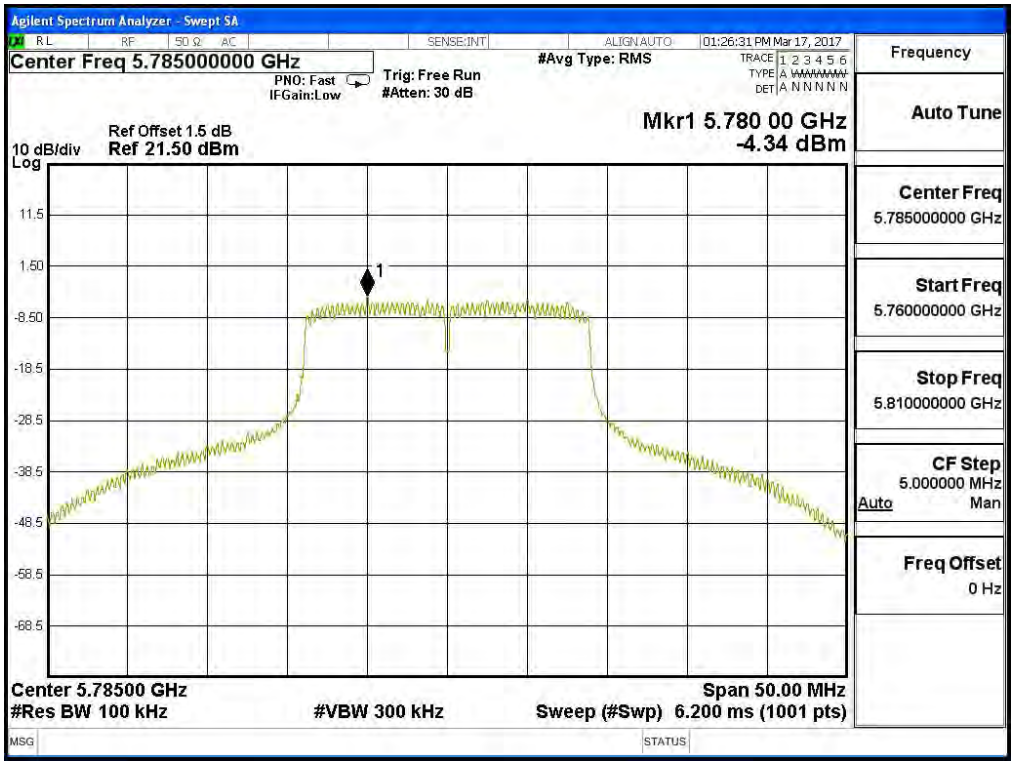
Channel 140 – Chain B



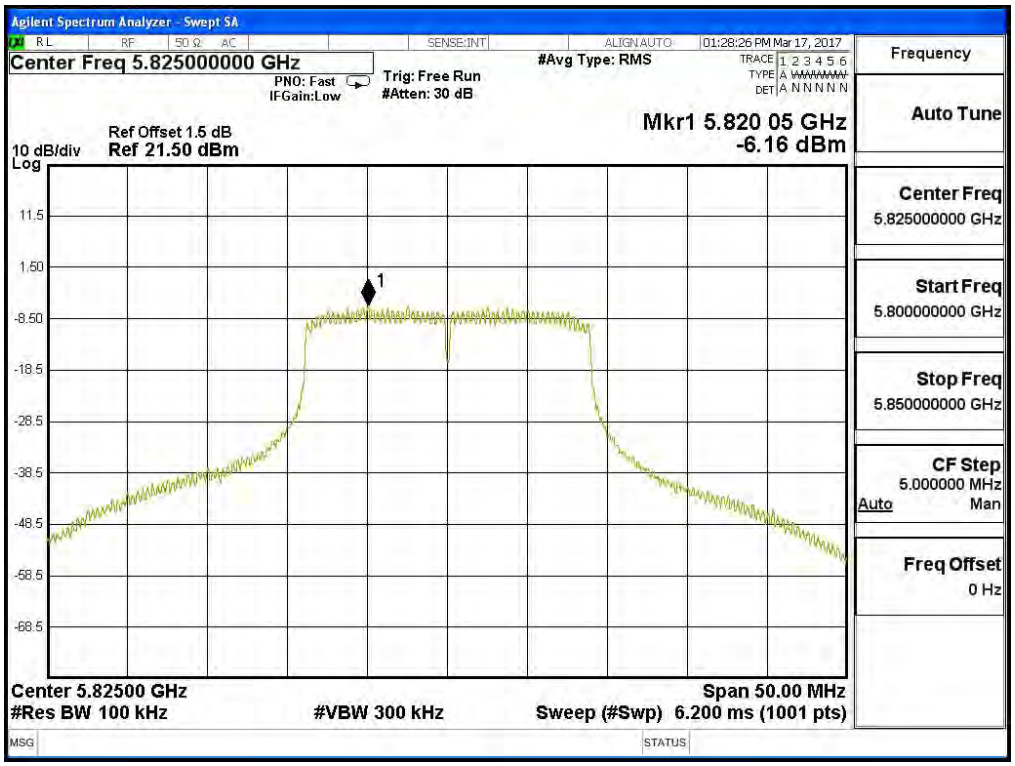
Channel 149 – Chain B



Channel 157 – Chain B



Channel 165 – Chain B



Product : WiFi Module
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps)

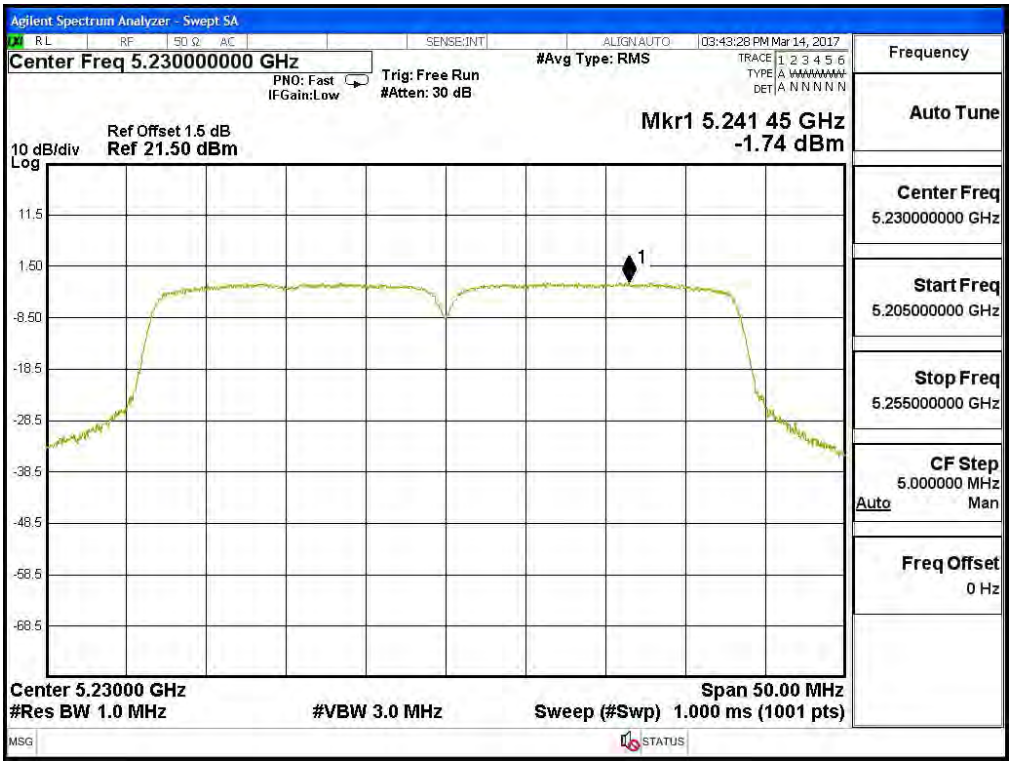
Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	Total PPSD (dBm) [1]	Required Limit (dBm)	Result
38	5190	A	-6.520	-3.510	11	Pass
		B	-4.060	-1.050	11	Pass
46	5230	A	-1.740	1.270	11	Pass
		B	-0.520	2.490	11	Pass
54	5270	A	-1.950	1.060	11	Pass
		B	-0.860	2.150	11	Pass
62	5310	A	-3.840	-0.830	11	Pass
		B	-4.030	-1.020	11	Pass
102	5510	A	-4.020	-1.010	11	Pass
		B	-4.560	-1.550	11	Pass
110	5550	A	-0.950	2.060	11	Pass
		B	-1.750	1.260	11	Pass
134	5670	A	-1.180	1.830	11	Pass
		B	-0.940	2.070	11	Pass

Channel Number	Frequency (MHz)	Chain	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)[1]	Required Limit (dBm)	Result
151	5755	A	-5.760	6.980	4.230	<30	Pass
		B	-7.340	6.980	2.650	<30	Pass
159	5795	A	-6.260	6.980	3.730	<30	Pass
		B	-8.620	6.980	1.370	<30	Pass

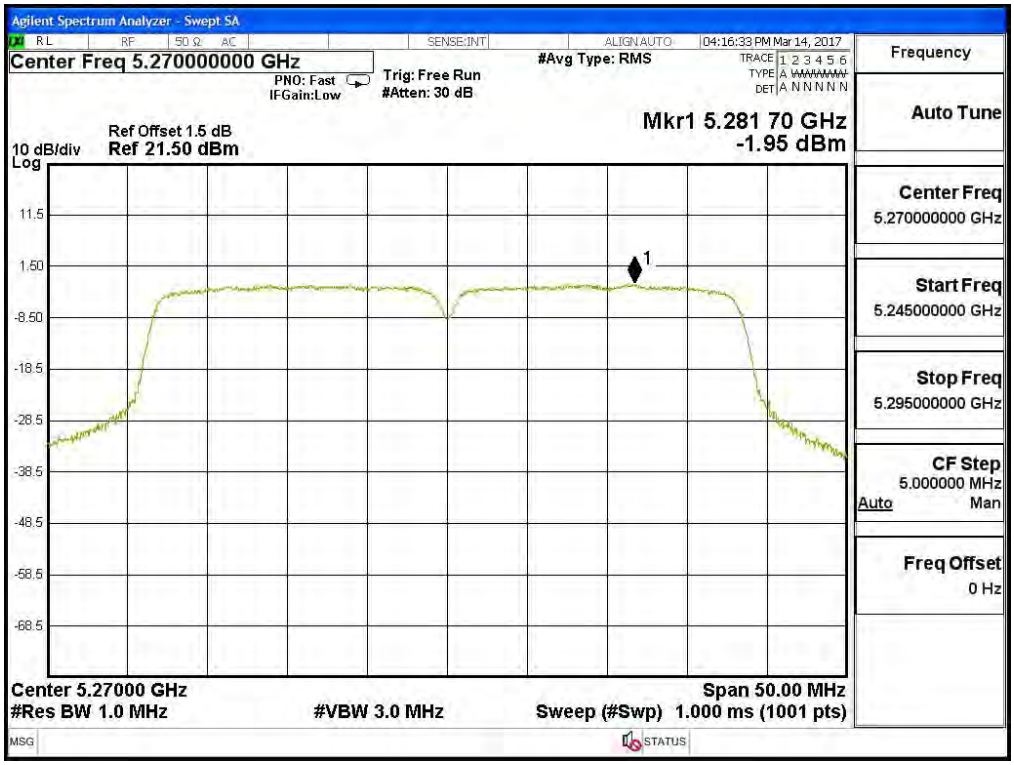
Note 1: The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 38 – Chain A

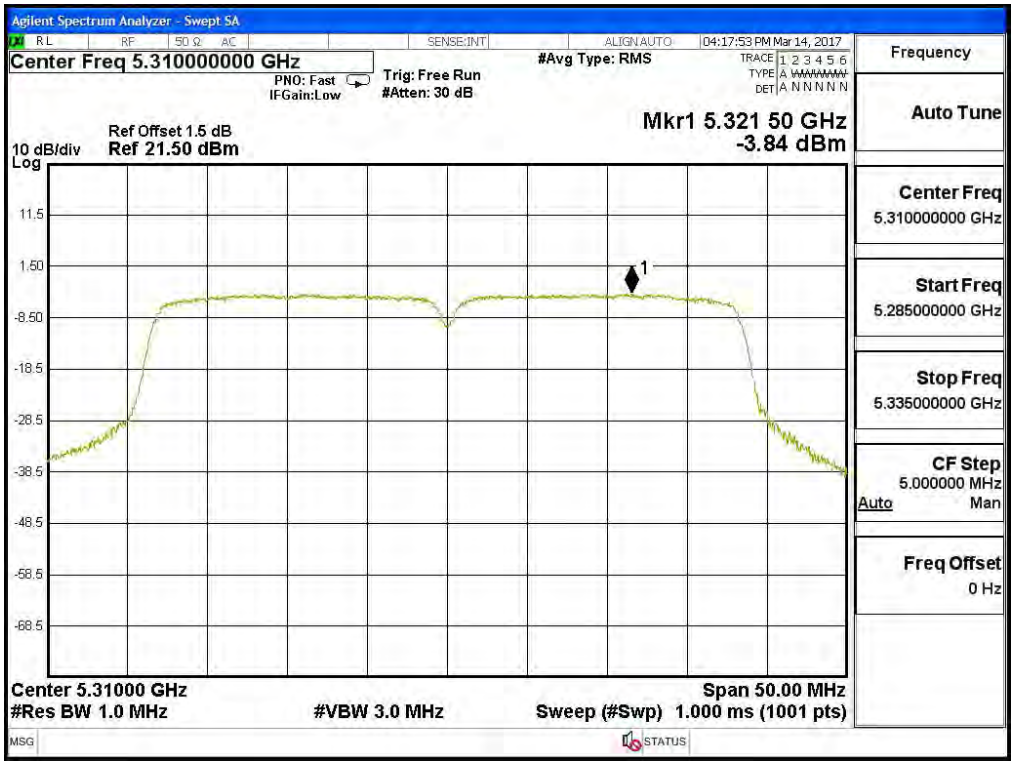
Channel 46 – Chain A



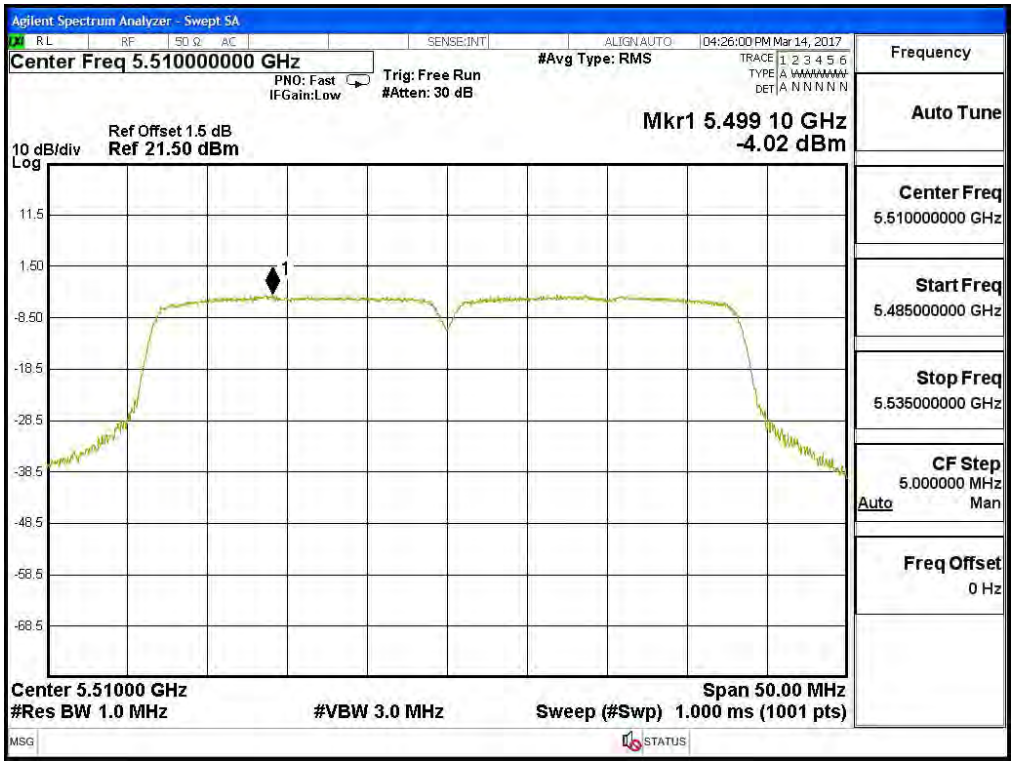
Channel 54 – Chain A



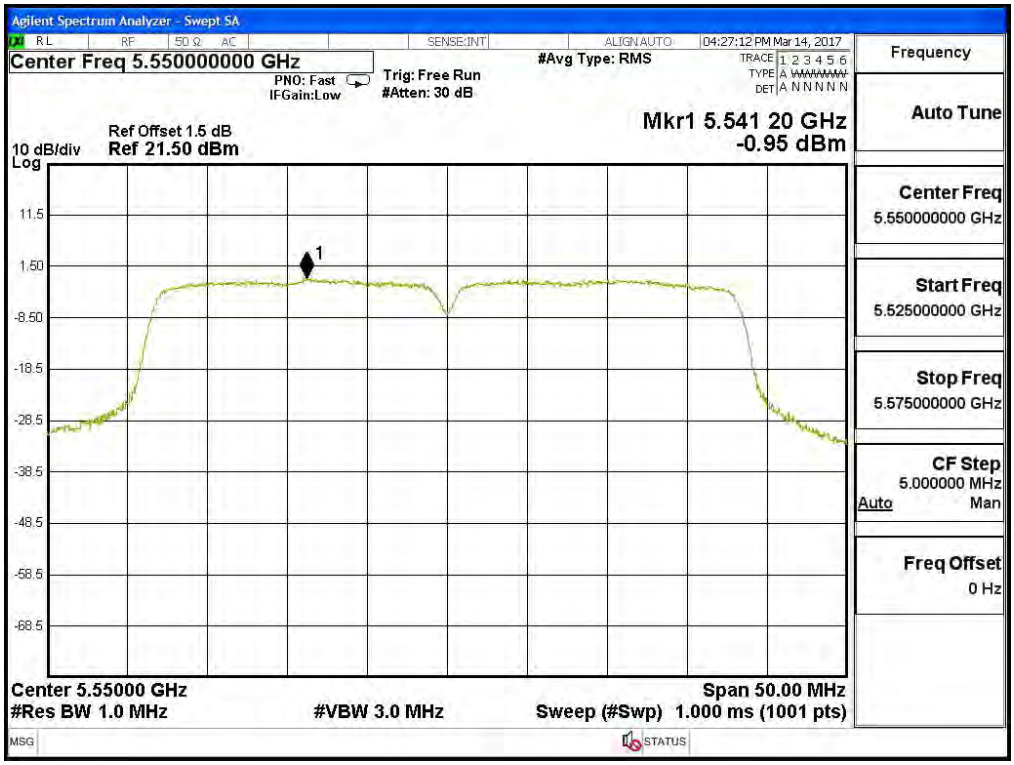
Channel 62 – Chain A



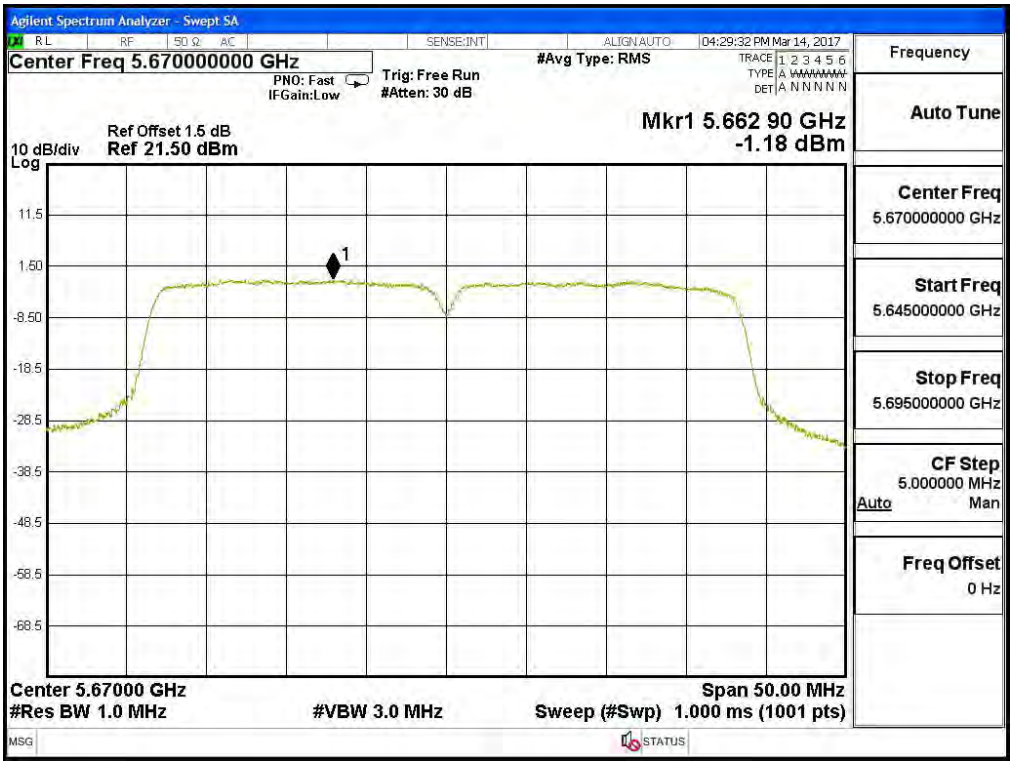
Channel 102 – Chain A



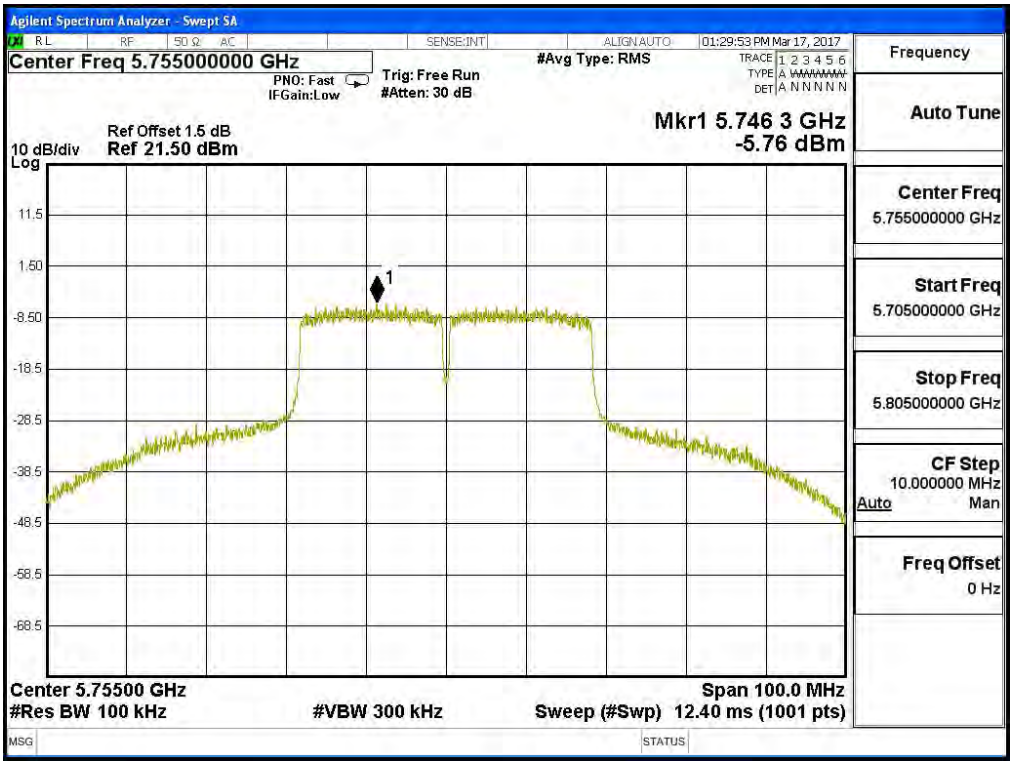
Channel 110 – Chain A



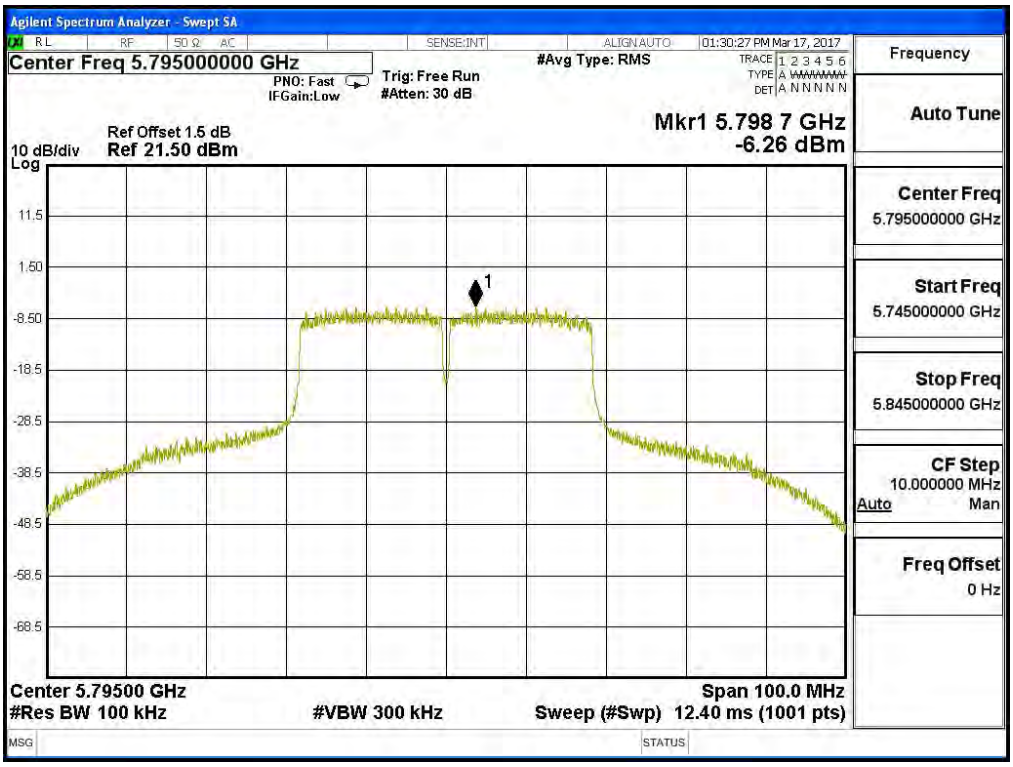
Channel 134 – Chain A



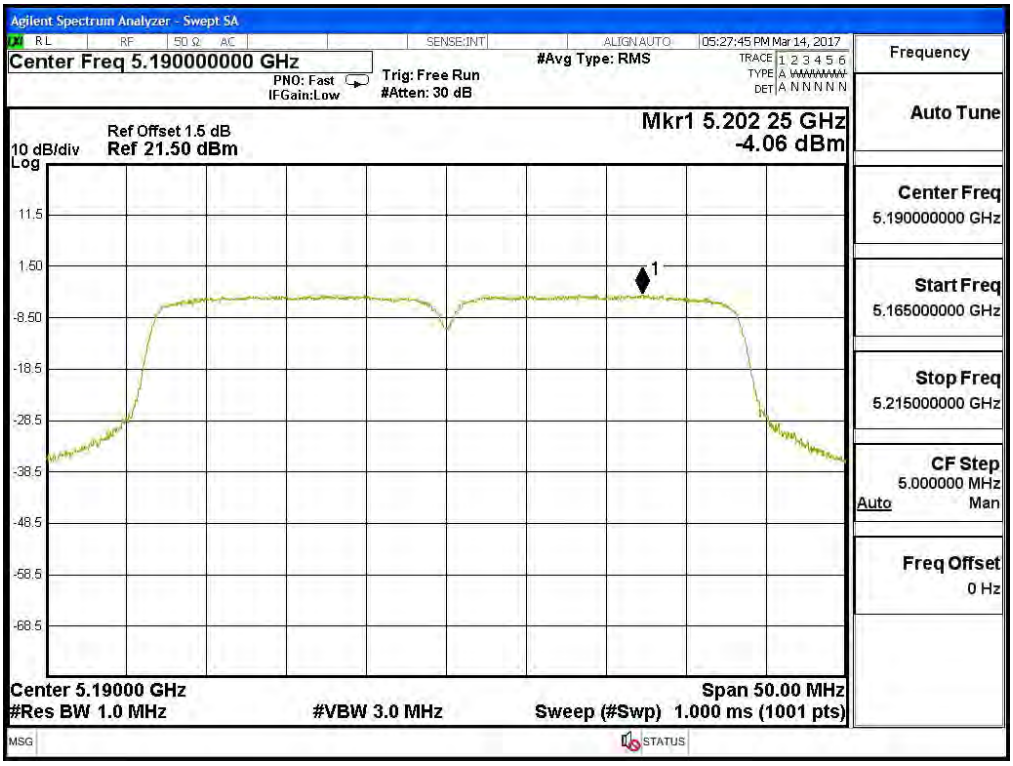
Channel 151 – Chain A



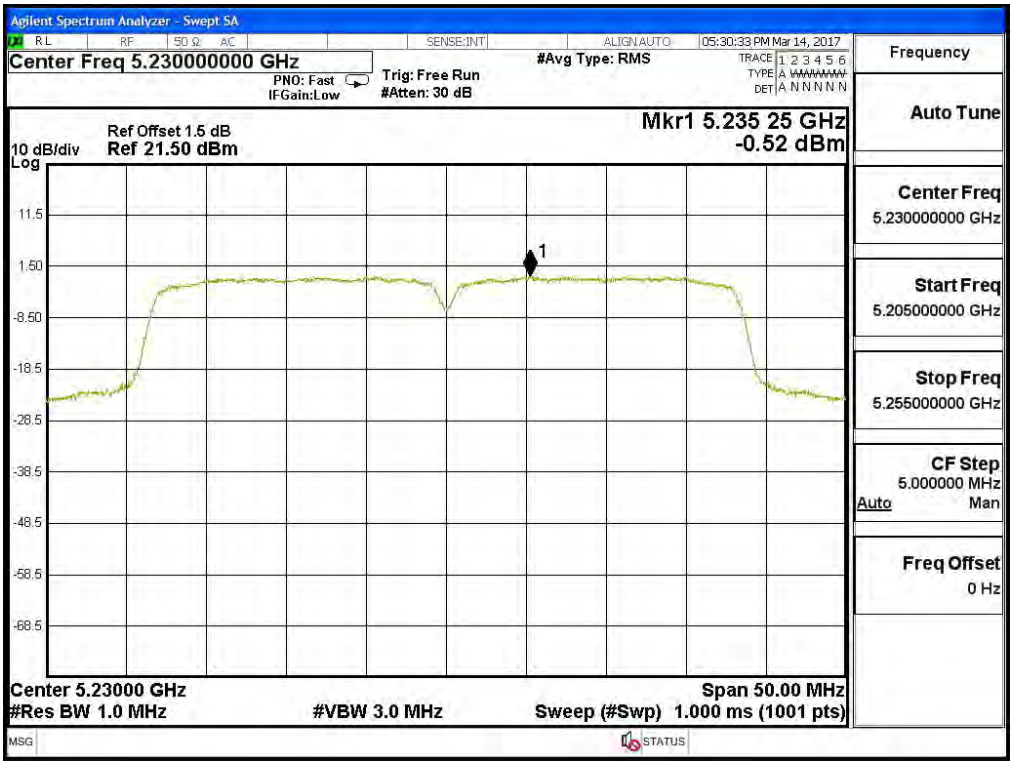
Channel 159 – Chain A



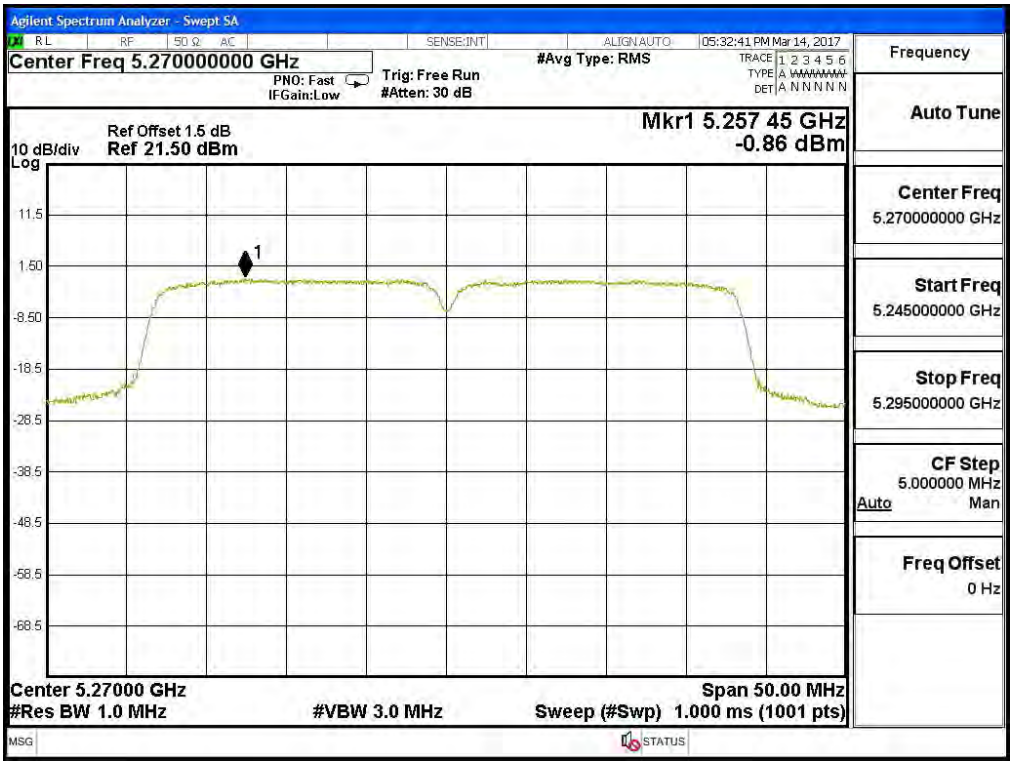
Channel 38 – Chain B



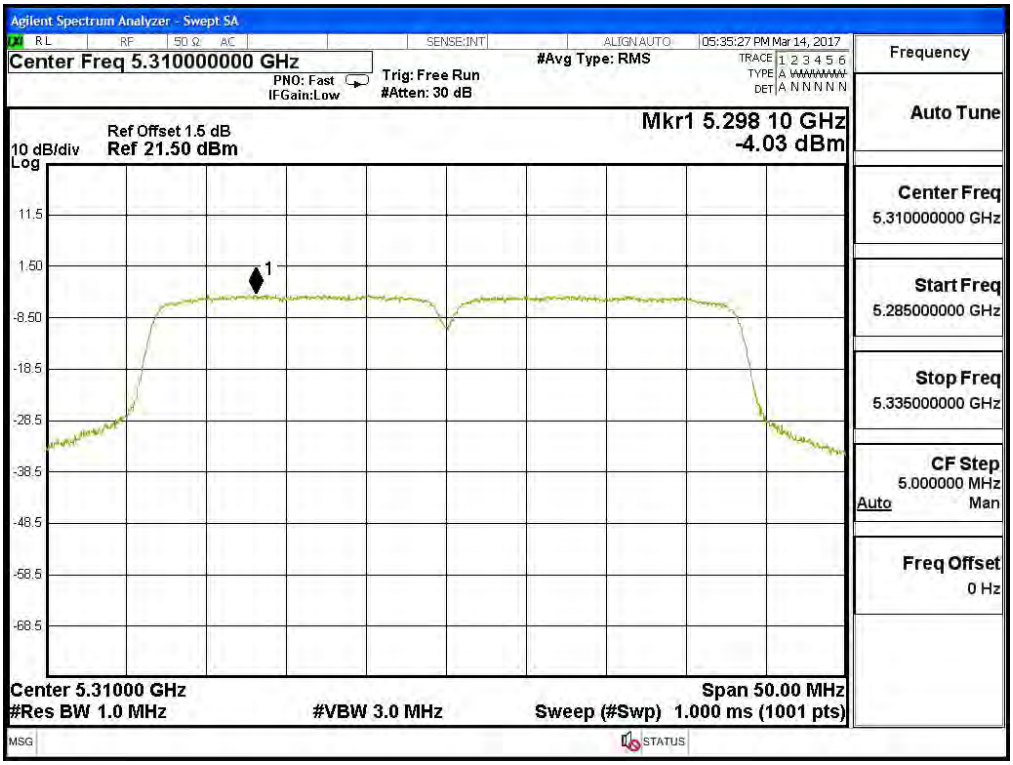
Channel 46 – Chain B



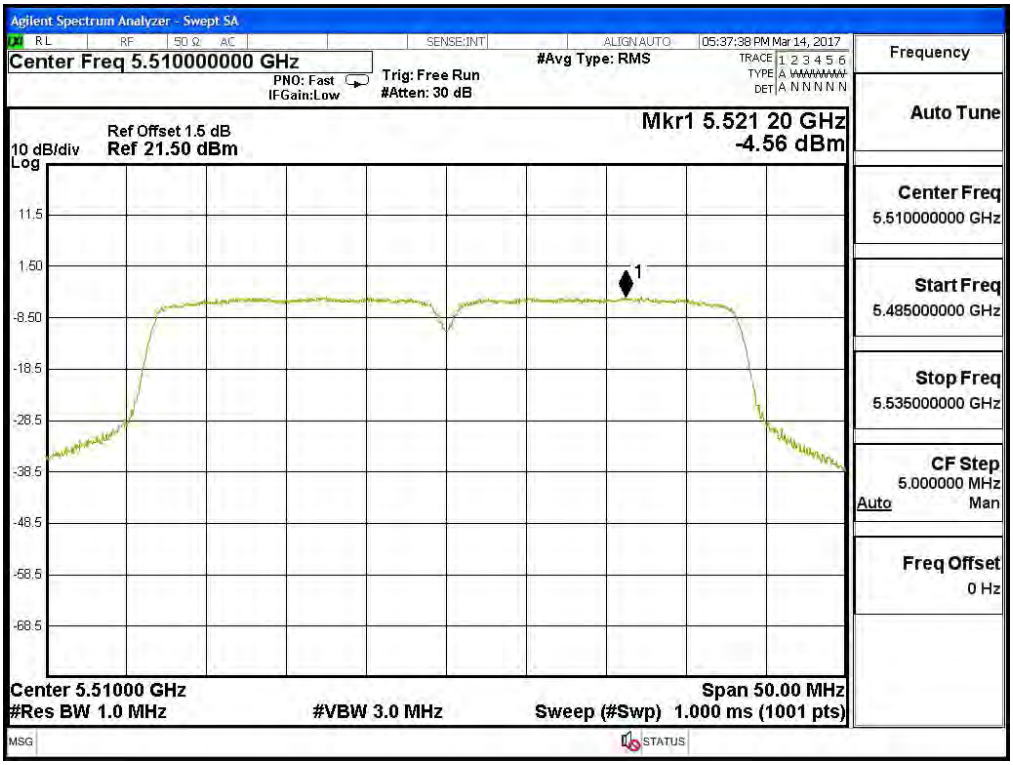
Channel 54 – Chain B



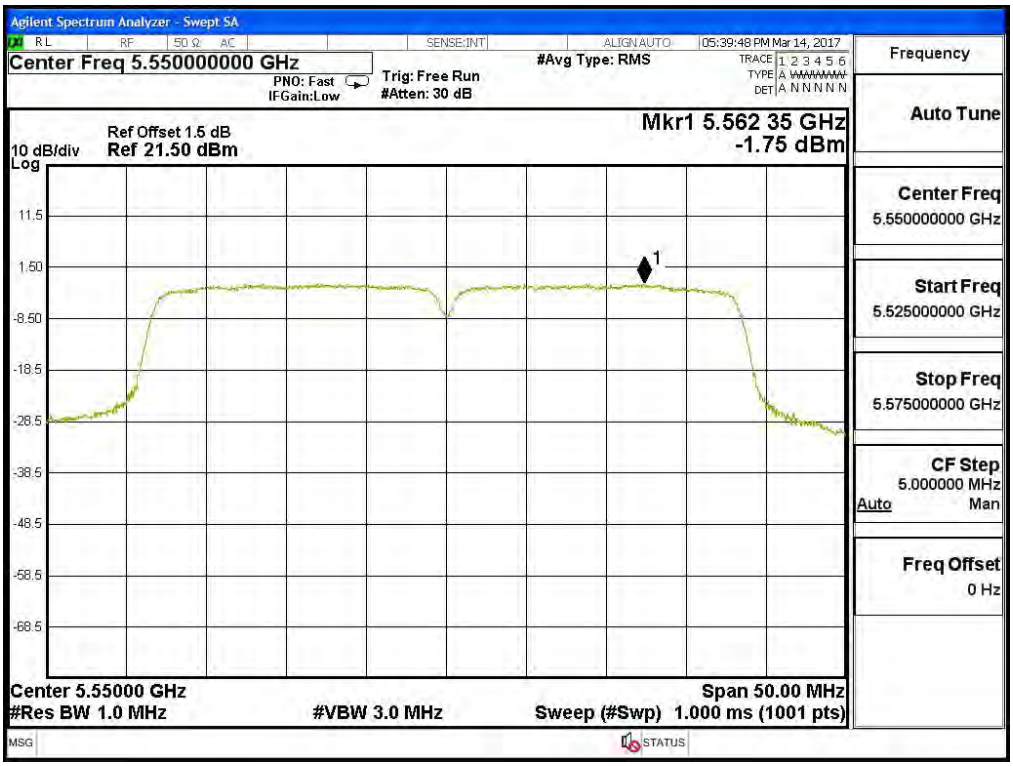
Channel 62 – Chain B



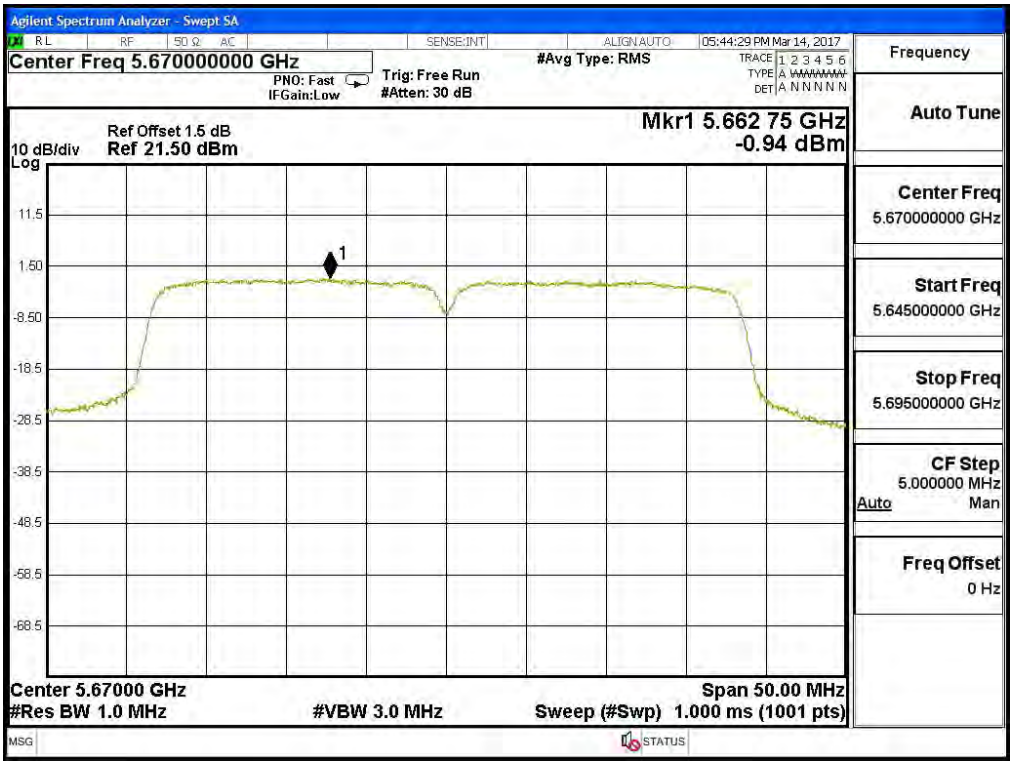
Channel 102 – Chain B



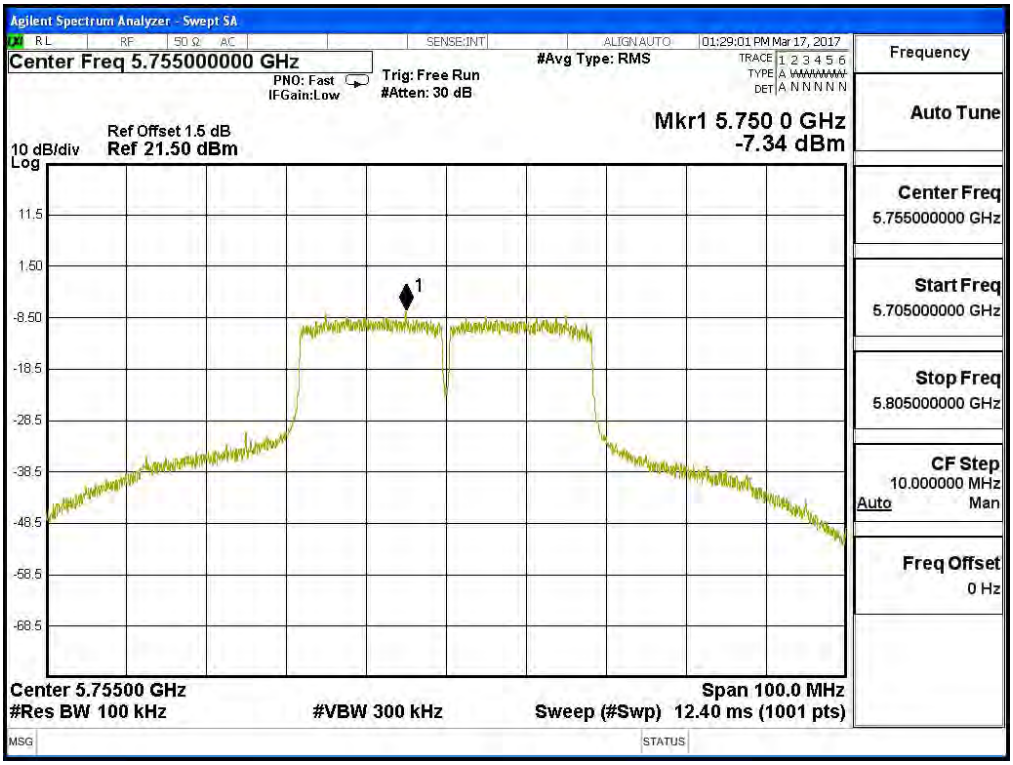
Channel 110 – Chain B



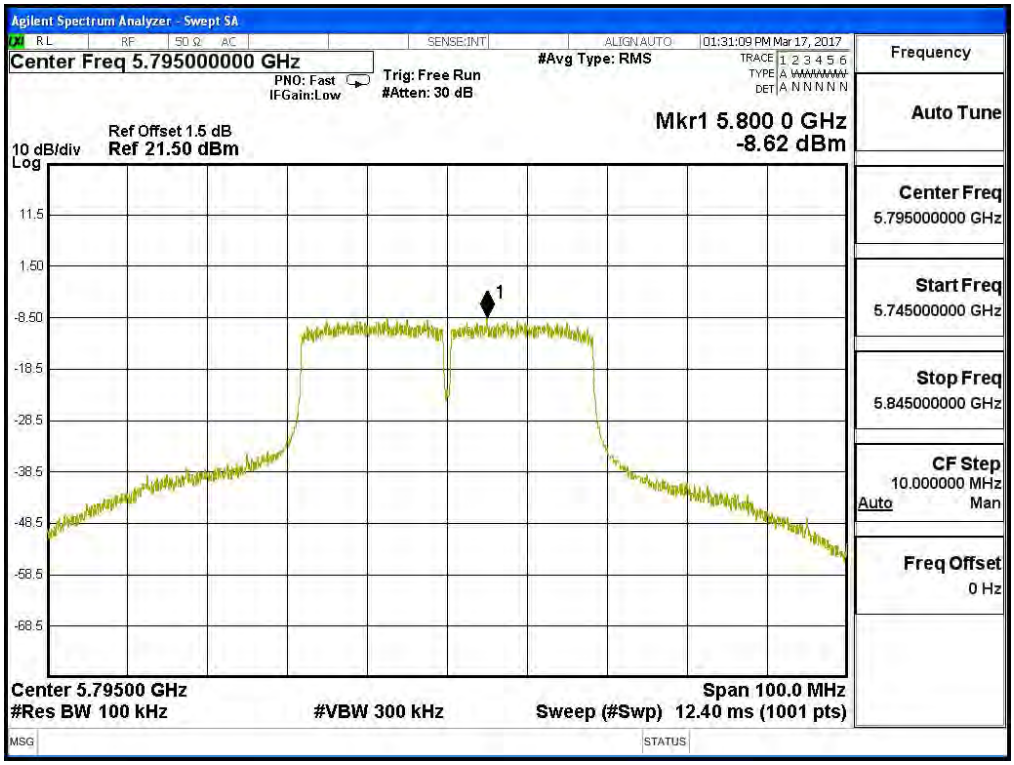
Channel 134 – Chain B



Channel 151 – Chain B



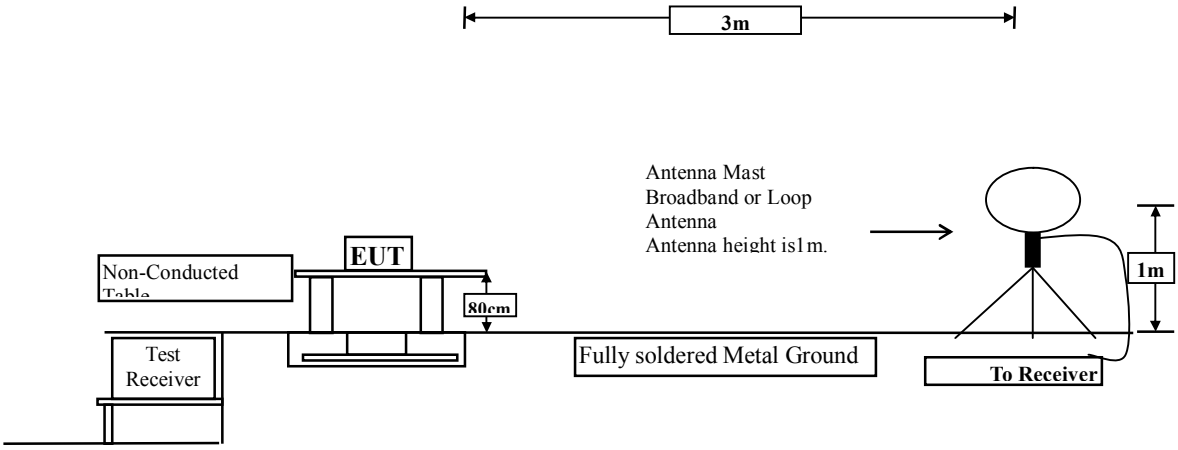
Channel 159 – Chain B



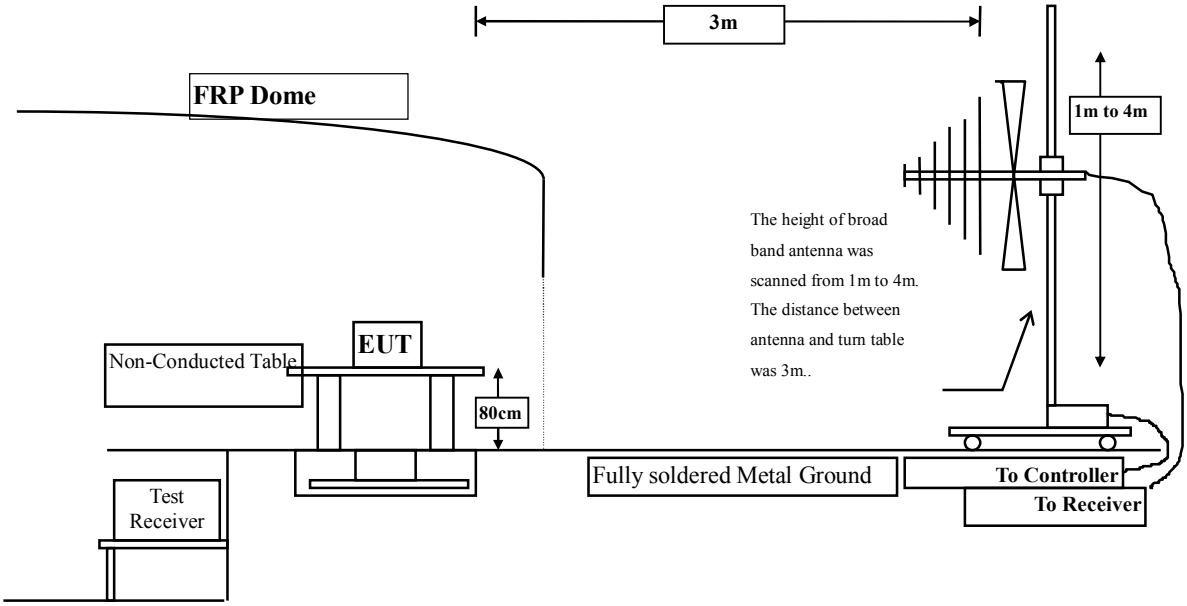
5. Radiated Emission

5.1. Test Setup

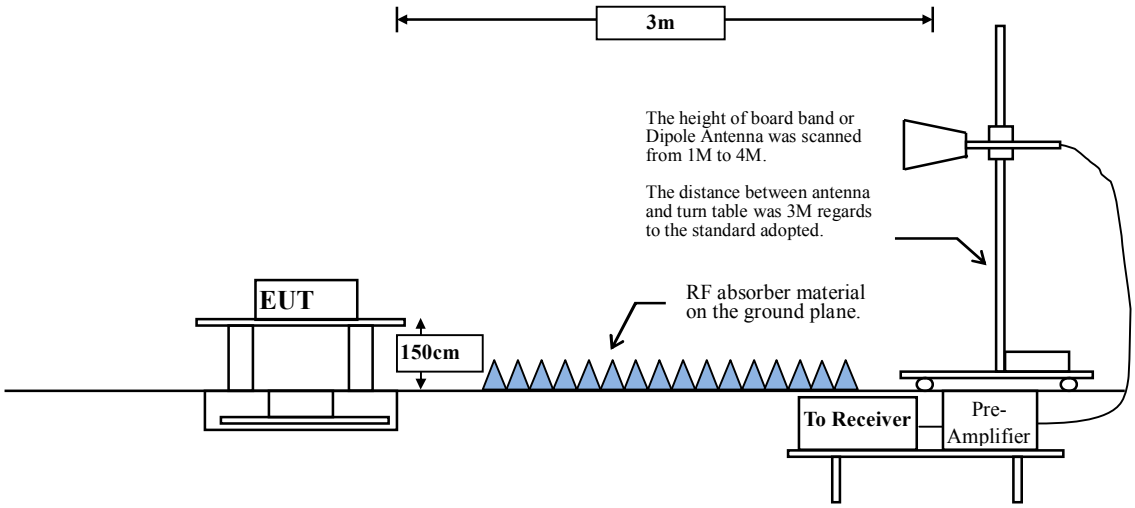
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



5.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

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

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

5.3. Test Procedure

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

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

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

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

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

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

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

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

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

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

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

5.4. Uncertainty

± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

5.5. Test Result of Radiated Emission

Product : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	10.540	40.760	51.300	-22.700	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10360.000	12.044	41.450	53.493	-20.507	74.000
Average Detector:					
--	--	--	--	--	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	9.649	41.650	51.298	-22.702	74.000
Average					
Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10440.000	11.429	42.230	53.658	-20.342	74.000
Average					
Detector:					
--	--	--	--	--	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10480.000	10.166	41.560	51.726	-22.274	74.000
Average					
Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10480.000	12.101	41.610	53.711	-20.289	74.000
Average					
Detector:					
--	--	--	--	--	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5260MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10520.000	11.021	41.860	52.881	-21.119	74.000
Average					
Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10520.000	12.931	41.050	53.981	-20.019	74.000
Average					
Detector:					
--	--	--	--	--	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10600.000	11.868	41.640	53.508	-20.492	74.000
Average					
Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10600.000	13.403	40.490	53.893	-20.107	74.000
Average					
Detector:					
--	--	--	--	--	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10640.000	11.844	41.550	53.394	-20.606	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10640.000	13.517	40.410	53.927	-20.073	74.000
Average Detector:					
--	--	--	--	--	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11000.000	12.392	47.090	59.482	-14.518	74.000
Average Detector:					
11000.000	12.392	30.910	43.302	-10.698	54.000
Vertical					
Peak Detector:					
11000.000	14.514	52.900	67.414	-6.586	74.000
Average Detector:					
11000.000	14.514	34.870	49.384	-4.616	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11160.000	12.201	45.100	57.301	-16.699	74.000
Average Detector:					
11160.000	12.201	30.570	42.771	-11.229	54.000
Vertical					
Peak Detector:					
11160.000	14.445	51.390	65.835	-8.165	74.000
Average Detector:					
11160.000	14.445	35.790	50.235	-3.765	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5700MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11400.000	13.372	44.460	57.832	-16.168	74.000
Average Detector:					
11400.000	13.372	29.150	42.522	-11.478	54.000
Vertical					
Peak Detector:					
11400.000	14.922	42.810	57.732	-16.268	74.000
Average Detector:					
11400.000	14.922	29.000	43.922	-10.078	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (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	44.980	59.305	-14.695	74.000
Average Detector:					
11490.000	14.326	31.130	45.455	-8.545	54.000
Vertical Peak Detector:					
11490.000	15.842	45.190	61.031	-12.969	74.000
Average Detector:					
11490.000	15.842	30.570	46.411	-7.589	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	14.849	46.560	61.409	-12.591	74.000
Average Detector:					
11570.000	14.849	32.580	47.429	-6.571	54.000
Vertical Peak Detector:					
11570.000	16.215	46.430	62.644	-11.356	74.000
Average Detector:					
11570.000	16.215	31.990	48.204	-5.796	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	13.179	46.290	59.469	-14.531	74.000
Average Detector:					
11650.000	13.179	32.770	45.949	-8.051	54.000
Vertical Peak Detector:					
11650.000	14.634	45.910	60.544	-13.456	74.000
Average Detector:					
11650.000	14.634	31.440	46.074	-7.926	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5180MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	10.540	43.240	53.780	-20.220	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10360.000	12.044	43.570	55.613	-18.387	74.000
Average Detector:					
10360.000	12.044	28.420	40.463	-13.537	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10440.000	9.649	42.880	52.528	-21.472	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10440.000	11.429	44.410	55.838	-18.162	74.000
Average Detector:					
10440.000	11.429	29.580	41.008	-12.992	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5240MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10480.000	10.166	43.720	53.886	-20.114	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10480.000	12.101	44.210	56.311	-17.689	74.000
Average Detector:					
10480.000	12.101	29.810	41.911	-12.089	54.000

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

Product : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5260MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10520.000	11.021	42.950	53.971	-20.029	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10520.000	12.931	44.040	56.971	-17.029	74.000
Average Detector:					
10520.000	12.931	29.310	42.241	-11.759	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5300MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10600.000	11.868	41.100	52.968	-21.032	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10600.000	13.403	42.210	55.613	-18.387	74.000
Average Detector:					
10600.000	13.403	28.830	42.233	-11.767	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5320MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10640.000	11.844	41.390	53.234	-20.766	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10640.000	13.517	43.350	56.867	-17.133	74.000
Average Detector:					
10640.000	13.517	29.410	42.927	-11.073	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5500MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11000.000	12.392	48.220	60.612	-13.388	74.000
Average Detector:					
11000.000	12.392	32.080	44.472	-9.528	54.000
Vertical					
Peak Detector:					
11000.000	14.514	50.520	65.034	-8.966	74.000
Average Detector:					
11000.000	14.514	33.190	47.704	-6.296	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5580MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11160.000	12.201	47.310	59.511	-14.489	74.000
Average Detector:					
11160.000	12.201	30.610	42.811	-11.189	54.000
Vertical					
Peak Detector:					
11160.000	14.445	47.550	61.995	-12.005	74.000
Average Detector:					
11160.000	14.445	32.860	47.305	-6.695	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5700MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11400.000	13.372	43.920	57.292	-16.708	74.000
Average Detector:					
11400.000	13.372	28.110	41.482	-12.518	54.000
Vertical					
Peak Detector:					
11400.000	14.922	47.310	62.232	-11.768	74.000
Average Detector:					
11400.000	14.922	30.180	45.102	-8.898	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (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	47.720	62.045	-11.955	74.000
Average Detector:					
11490.000	14.326	30.320	44.645	-9.355	54.000
Vertical					
Peak Detector:					
11490.000	15.842	47.670	63.511	-9.511	74.000
Average Detector:					
11490.000	15.842	31.810	47.651	-6.349	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	14.849	47.050	61.899	-12.101	74.000
Average Detector:					
11570.000	46.807	29.880	44.729	-9.271	54.000
Vertical					
Peak Detector:					
11570.000	16.215	50.090	66.304	-7.696	74.000
Average Detector:					
11570.000	16.215	32.790	49.004	-4.996	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5825MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	13.179	46.310	59.489	-14.511	74.000
Average Detector:					
11650.000	13.179	30.470	43.649	-10.351	54.000
Vertical Peak Detector:					
11650.000	14.634	49.440	64.074	-9.926	74.000
Average Detector:					
11650.000	14.634	31.630	46.264	-7.736	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10380.000	10.400	41.892	52.292	-21.708	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10380.000	11.965	40.779	52.745	-21.255	74.000
Average Detector:					
--	--	--	--	--	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5230MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10460.000	9.932	41.879	51.811	-22.189	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10460.000	11.790	41.608	53.398	-20.602	74.000
Average Detector:					
--	--	--	--	--	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5270MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10540.000	12.058	40.070	52.129	-21.871	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10540.000	13.868	45.400	59.268	-14.732	74.000
Average Detector:					
10540.000	13.868	28.250	42.118	-11.882	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5310MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10620.000	13.096	39.670	52.765	-21.235	74.000
Average Detector:					
--	--	--	--	--	54.000
Vertical					
Peak Detector:					
10620.000	14.683	40.590	55.273	-18.727	74.000
Average Detector:					
10620.000	14.683	25.300	39.983	-14.017	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	:	WiFi Module
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test Date	:	2017/03/14
Test Mode	:	Mode 3: Transmit (802.11n-40BW 30Mbps) (5510MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11020.000	12.820	44.550	57.370	-16.630	74.000
Average Detector:					
11020.000	12.820	28.060	40.880	-13.120	54.000
Vertical					
Peak Detector:					
11020.000	14.966	43.790	58.757	-15.243	74.000
Average Detector:					
11020.000	14.966	28.950	43.917	-10.083	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5550MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11100.000	12.752	44.100	56.852	-17.148	74.000
Average Detector:					
11100.000	12.752	29.430	42.182	-11.818	54.000
Vertical					
Peak Detector:					
11100.000	15.006	45.260	60.266	-13.734	74.000
Average Detector:					
11100.000	15.006	29.630	44.636	-9.364	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5670MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11340.000	14.149	41.740	55.889	-18.111	74.000
Average Detector:					
11340.000	14.149	26.710	40.859	-13.141	54.000
Vertical					
Peak Detector:					
11340.000	15.891	42.980	58.871	-15.129	74.000
Average Detector:					
11340.000	15.891	27.050	42.941	-11.059	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	15.044	45.190	60.233	-13.767	74.000
Average					
Detector:					
11510.000	15.044	29.870	44.913	-9.087	54.000
Vertical					
Peak Detector:					
11510.000	16.536	46.520	63.056	-10.944	74.000
Average					
Detector:					
11510.000	16.536	28.590	45.126	-8.874	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 : WiFi Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5795MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11590.000	15.364	48.410	63.774	-10.226	74.000
Average					
Detector:					
11590.000	15.364	31.650	47.014	-6.986	54.000
Vertical					
Peak Detector:					
11590.000	16.687	47.650	64.337	-9.663	74.000
Average					
Detector:					
11590.000	16.687	29.770	46.457	-7.543	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
39.700	-3.625	35.813	32.188	-7.812	40.000
142.520	-7.627	42.961	35.334	-8.166	43.500
332.640	-3.895	37.880	33.985	-12.015	46.000
582.900	3.351	32.609	35.960	-10.040	46.000
780.780	5.259	37.587	42.846	-3.154	46.000
951.500	6.993	34.390	41.383	-4.617	46.000
Vertical					
Peak Detector					
109.540	-3.507	41.138	37.630	-5.870	43.500
181.320	-1.910	34.868	32.958	-10.542	43.500
379.200	0.881	30.388	31.269	-14.731	46.000
520.820	1.078	29.454	30.531	-15.469	46.000
782.720	2.757	34.155	36.912	-9.088	46.000
926.280	3.342	30.940	34.282	-11.718	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
101.780	-9.100	40.392	31.291	-12.209	43.500
243.400	-6.546	39.304	32.758	-13.242	46.000
402.480	0.915	35.015	35.930	-10.070	46.000
586.780	3.246	31.649	34.895	-11.105	46.000
784.660	5.526	37.287	42.813	-3.187	46.000
951.500	6.993	35.020	42.013	-3.987	46.000
Vertical					
Peak Detector					
105.660	-4.576	41.654	37.077	-6.423	43.500
177.440	-1.248	32.173	30.925	-12.575	43.500
379.200	0.881	28.718	29.599	-16.401	46.000
608.120	2.175	29.572	31.747	-14.253	46.000
780.780	2.769	32.845	35.614	-10.386	46.000
941.800	3.460	29.854	33.314	-12.686	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
142.520	-7.627	43.006	35.379	-8.121	43.500
243.400	-6.546	40.299	33.753	-12.247	46.000
373.380	0.873	34.603	35.476	-10.524	46.000
584.840	3.251	32.167	35.418	-10.582	46.000
784.660	5.526	37.241	42.767	-3.233	46.000
951.500	6.993	34.787	41.780	-4.220	46.000
Vertical					
Peak Detector					
107.600	-4.027	39.967	35.940	-7.560	43.500
229.820	-6.141	34.314	28.173	-17.827	46.000
383.080	0.195	29.875	30.070	-15.930	46.000
600.360	1.302	30.163	31.465	-14.535	46.000
782.720	2.757	33.500	36.257	-9.743	46.000
951.500	3.083	31.021	34.104	-11.896	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
105.660	-7.676	42.171	34.494	-9.006	43.500
245.340	-6.478	39.179	32.701	-13.299	46.000
379.200	1.301	33.838	35.139	-10.861	46.000
584.840	3.251	32.351	35.602	-10.398	46.000
778.840	5.180	37.702	42.882	-3.118	46.000
875.840	5.816	36.251	42.067	-3.933	46.000
Vertical					
Peak Detector					
107.600	-4.027	40.271	36.244	-7.256	43.500
181.320	-1.910	34.085	32.175	-11.325	43.500
348.160	-0.890	30.729	29.839	-16.161	46.000
518.880	0.763	30.065	30.828	-15.172	46.000
782.720	2.757	33.973	36.730	-9.270	46.000
951.500	3.083	30.313	33.396	-12.604	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
39.700	-3.625	34.872	31.247	-8.753	40.000
142.520	-7.627	44.214	36.587	-6.913	43.500
359.800	-0.226	33.620	33.394	-12.606	46.000
584.840	3.251	33.413	36.664	-9.336	46.000
784.660	5.526	37.456	42.982	-3.018	46.000
926.280	6.832	33.560	40.392	-5.608	46.000
Vertical					
Peak Detector					
107.600	-4.027	41.434	37.407	-6.093	43.500
181.320	-1.910	33.193	31.283	-12.217	43.500
381.140	0.816	29.995	30.811	-15.189	46.000
604.240	2.199	29.302	31.502	-14.498	46.000
782.720	2.757	33.699	36.456	-9.544	46.000
941.800	3.460	30.184	33.644	-12.356	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5300MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
39.700	-3.625	35.588	31.963	-8.037	40.000
140.580	-7.561	44.056	36.495	-7.005	43.500
390.840	0.962	32.260	33.222	-12.778	46.000
584.840	3.251	32.436	35.687	-10.313	46.000
782.720	5.387	37.438	42.825	-3.175	46.000
926.280	6.832	31.730	38.562	-7.438	46.000
Vertical					
Peak Detector					
43.580	-10.919	44.275	33.356	-6.644	40.000
138.640	-5.159	40.357	35.198	-8.302	43.500
379.200	0.881	29.126	30.007	-15.993	46.000
608.120	2.175	29.369	31.544	-14.456	46.000
782.720	2.757	34.616	37.373	-8.627	46.000
941.800	3.460	29.748	33.208	-12.792	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5580MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
109.540	-7.537	40.263	32.725	-10.775	43.500
280.260	-6.335	37.387	31.052	-14.948	46.000
456.800	2.432	30.748	33.180	-12.820	46.000
701.240	2.759	35.199	37.958	-8.042	46.000
784.660	5.526	37.384	42.910	-3.090	46.000
951.500	6.993	32.135	39.128	-6.872	46.000
Vertical					
Peak Detector					
101.780	-5.570	42.598	37.027	-6.473	43.500
181.320	-1.910	33.960	32.050	-11.450	43.500
381.140	0.816	29.391	30.207	-15.793	46.000
612.000	1.943	29.347	31.289	-14.711	46.000
782.720	2.757	34.155	36.912	-9.088	46.000
941.800	3.460	29.084	32.544	-13.456	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
109.540	-7.537	41.093	33.555	-9.945	43.500
247.280	-6.359	38.948	32.589	-13.411	46.000
359.800	-0.226	33.629	33.403	-12.597	46.000
586.780	3.246	31.791	35.037	-10.963	46.000
778.840	5.180	37.762	42.942	-3.058	46.000
951.500	6.993	32.496	39.489	-6.511	46.000
Vertical					
Peak Detector					
105.660	-4.576	42.617	38.040	-5.460	43.500
177.440	-1.248	33.568	32.320	-11.180	43.500
381.140	0.816	31.878	32.694	-13.306	46.000
606.180	2.246	29.016	31.262	-14.738	46.000
782.720	2.757	34.193	36.950	-9.050	46.000
930.160	3.830	29.280	33.110	-12.890	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5230MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
144.460	-7.703	44.045	36.342	-7.158	43.500
385.020	1.209	33.109	34.318	-11.682	46.000
586.780	3.246	31.542	34.788	-11.212	46.000
689.600	3.642	32.931	36.573	-9.427	46.000
780.780	5.259	37.630	42.889	-3.111	46.000
951.500	6.993	32.616	39.609	-6.391	46.000
Vertical					
Peak Detector					
101.780	-5.570	42.738	37.167	-6.333	43.500
214.300	-5.859	36.567	30.708	-12.792	43.500
379.200	0.881	29.413	30.294	-15.706	46.000
538.280	1.996	28.554	30.550	-15.450	46.000
782.720	2.757	33.973	36.730	-9.270	46.000
930.160	3.830	29.467	33.297	-12.703	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5270MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
105.660	-7.676	41.581	33.904	-9.596	43.500
241.460	-6.590	38.586	31.996	-14.004	46.000
385.020	1.209	36.727	37.936	-8.064	46.000
584.840	3.251	32.719	35.970	-10.030	46.000
782.720	5.387	37.550	42.937	-3.063	46.000
951.500	6.993	33.648	40.641	-5.359	46.000
Vertical					
Peak Detector					
107.600	-4.027	42.325	38.298	-5.202	43.500
379.200	0.881	29.226	30.107	-15.893	46.000
538.280	1.996	30.037	32.033	-13.967	46.000
689.600	2.302	29.563	31.865	-14.135	46.000
778.840	2.580	35.008	37.588	-8.412	46.000
939.860	3.400	29.841	33.241	-12.759	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5550MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector					
109.540	-7.537	41.232	33.694	-9.806	43.500
243.400	-6.546	40.539	33.993	-12.007	46.000
359.800	-0.226	34.437	34.211	-11.789	46.000
586.780	3.246	31.556	34.802	-11.198	46.000
784.660	5.526	37.176	42.702	-3.298	46.000
951.500	6.993	33.207	40.200	-5.800	46.000
Vertical					
Peak Detector					
140.580	-5.561	44.294	38.733	-4.767	43.500
386.960	-0.708	30.928	30.220	-15.780	46.000
538.280	1.996	29.615	31.611	-14.389	46.000
683.780	2.011	29.413	31.424	-14.576	46.000
782.720	2.757	33.290	36.047	-9.953	46.000
930.160	3.830	28.823	32.653	-13.347	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 : WiFi Module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Date : 2017/03/13
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector					
39.700	-3.625	34.768	31.143	-8.857	40.000
144.460	-7.703	41.821	34.118	-9.382	43.500
460.680	4.030	29.094	33.124	-12.876	46.000
689.600	3.642	31.257	34.899	-11.101	46.000
780.780	5.259	37.636	42.895	-3.105	46.000
951.500	6.993	33.332	40.325	-5.675	46.000
Vertical					
Peak Detector					
107.600	-4.027	41.162	37.135	-6.365	43.500
353.980	-1.124	31.108	29.984	-16.016	46.000
540.220	2.169	29.139	31.308	-14.692	46.000
689.600	2.302	30.380	32.682	-13.318	46.000
780.780	2.769	33.647	36.416	-9.584	46.000
941.800	3.460	29.497	32.957	-13.043	46.000

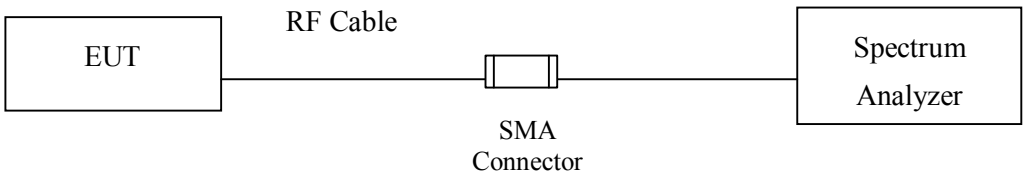
Note:

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.

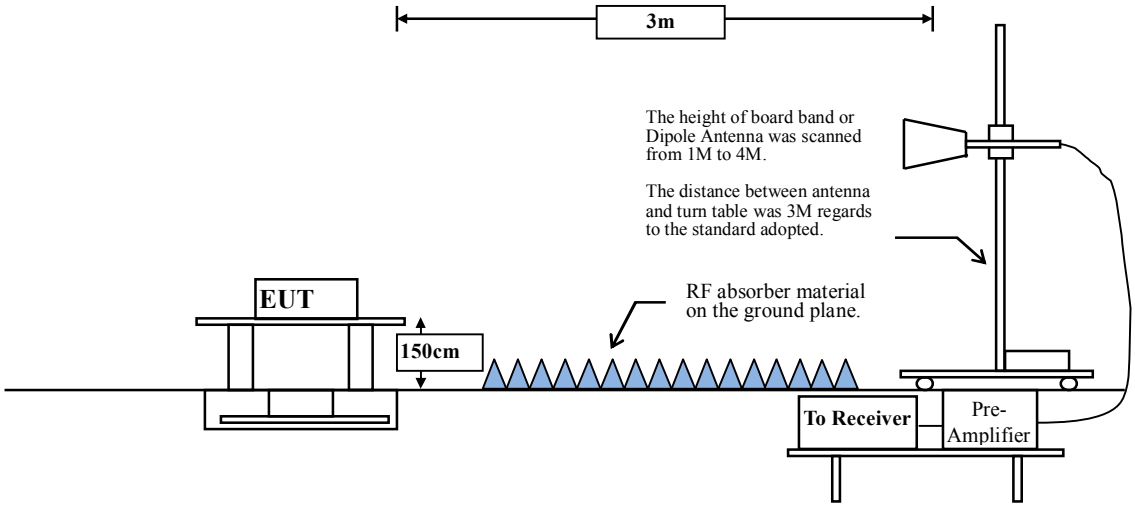
6. Band Edge

6.1. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



6.2. Limits

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

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

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

Remarks : 1. RF Voltage (dBμV) = 20 log RF Voltage (uV)

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

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

6.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

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

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

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

6.4. Uncertainty

± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

6.5. Test Result of Band Edge

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5149.200	2.799	70.478	73.277	74.00	54.00	Pass
36 (Peak)	5150.000	2.796	66.152	68.948	74.00	54.00	Pass
36 (Peak)	5183.800	2.683	110.006	112.689	--	--	--
36 (Average)	5150.000	2.796	49.629	52.425	74.00	54.00	Pass
36 (Average)	5184.200	2.682	98.234	100.916	--	--	--

Figure Channel 36: Horizontal (Peak)

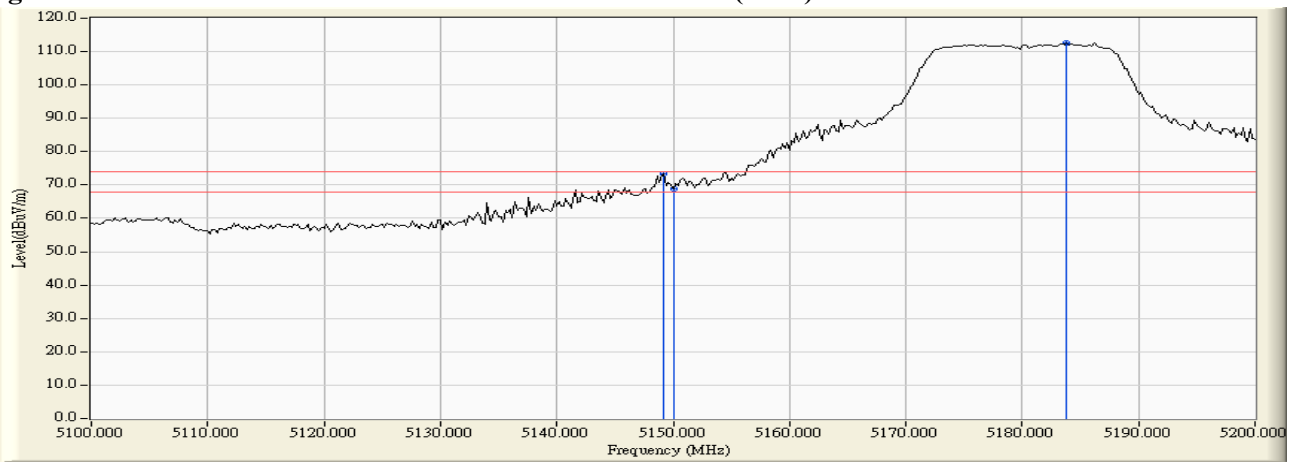
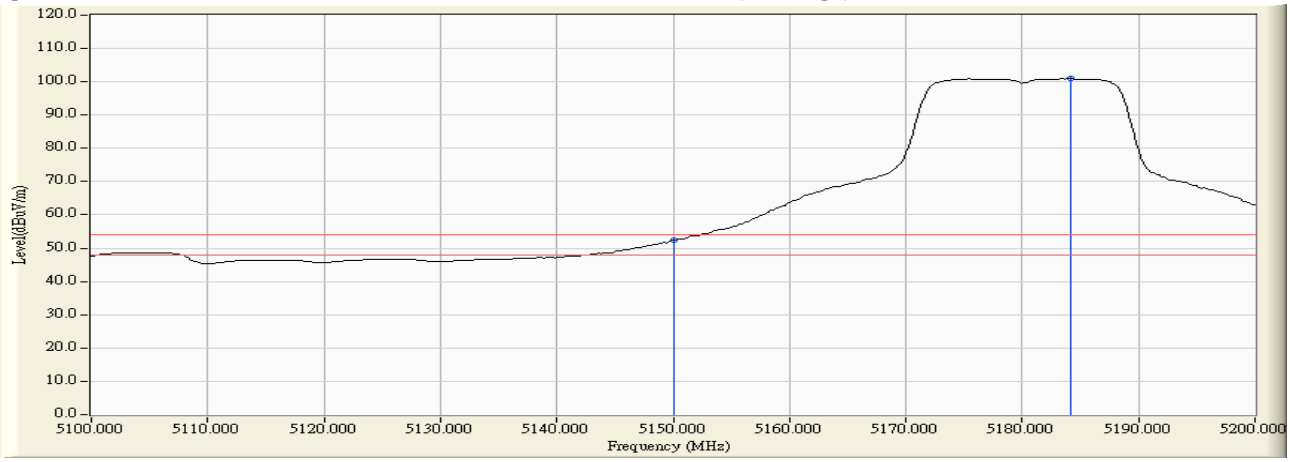


Figure Channel 36: Horizontal (Average)



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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
36 (Peak)	5149.400	3.329	60.624	63.953	74.00	54.00	Pass
36 (Peak)	5150.000	3.331	58.719	62.051	74.00	54.00	Pass
36 (Peak)	5184.000	3.492	103.170	106.662	--	--	--
36 (Average)	5150.000	3.331	42.885	46.217	74.00	54.00	Pass
36 (Average)	5183.800	3.491	91.147	94.638	--	--	--

Figure Channel 36: Vertical (Peak)

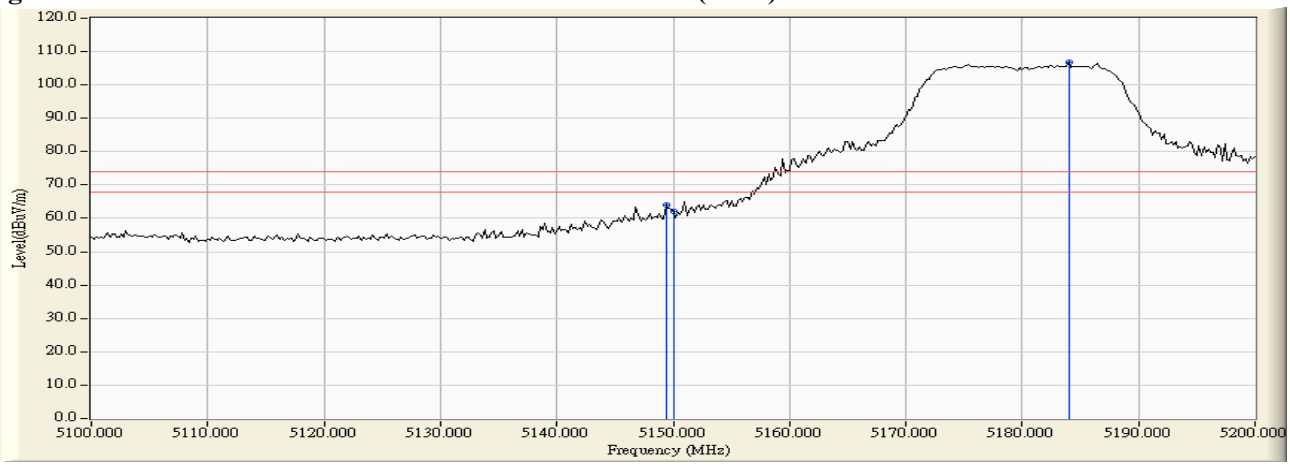
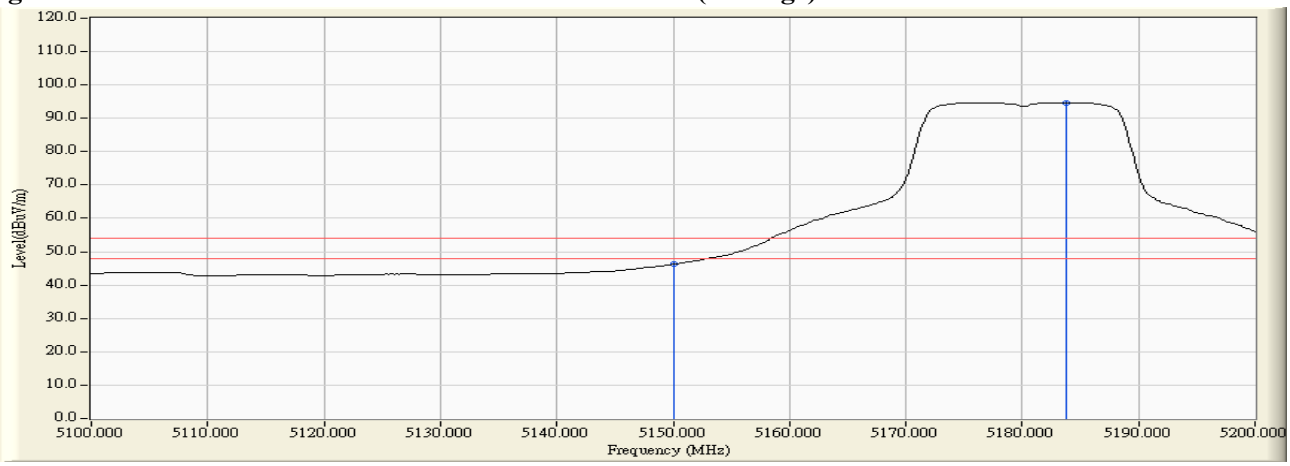


Figure Channel 36: Vertical (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 64

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5325.400	3.633	109.025	112.657	--	--	--
64 (Peak)	5350.000	3.575	62.506	66.081	74.00	54.00	Pass
64 (Peak)	5350.600	3.573	63.950	67.523	74.00	54.00	Pass
64 (Average)	5324.000	3.635	97.119	100.754	--	--	--
64 (Average)	5350.000	3.575	46.298	49.873	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

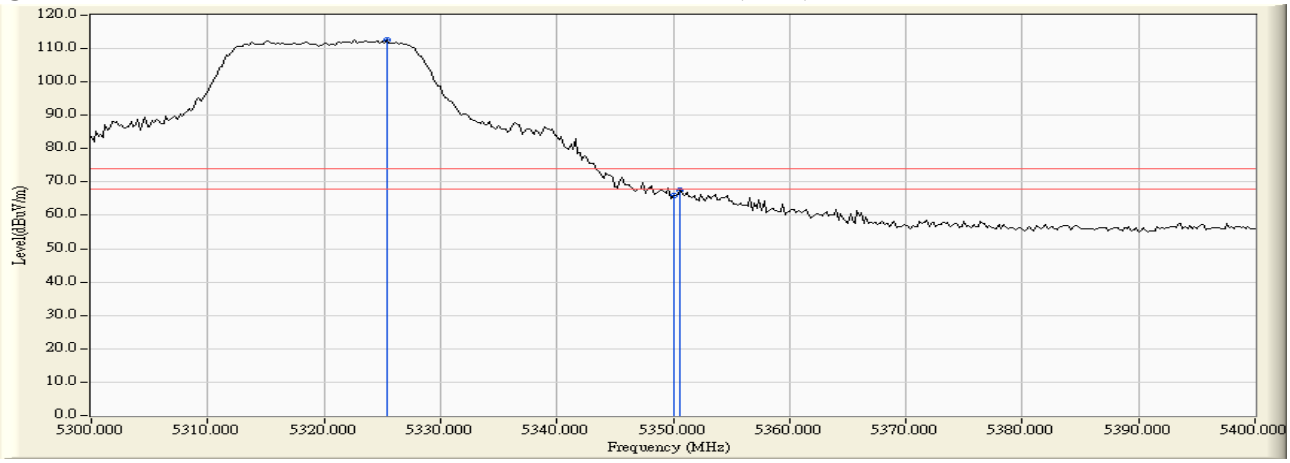
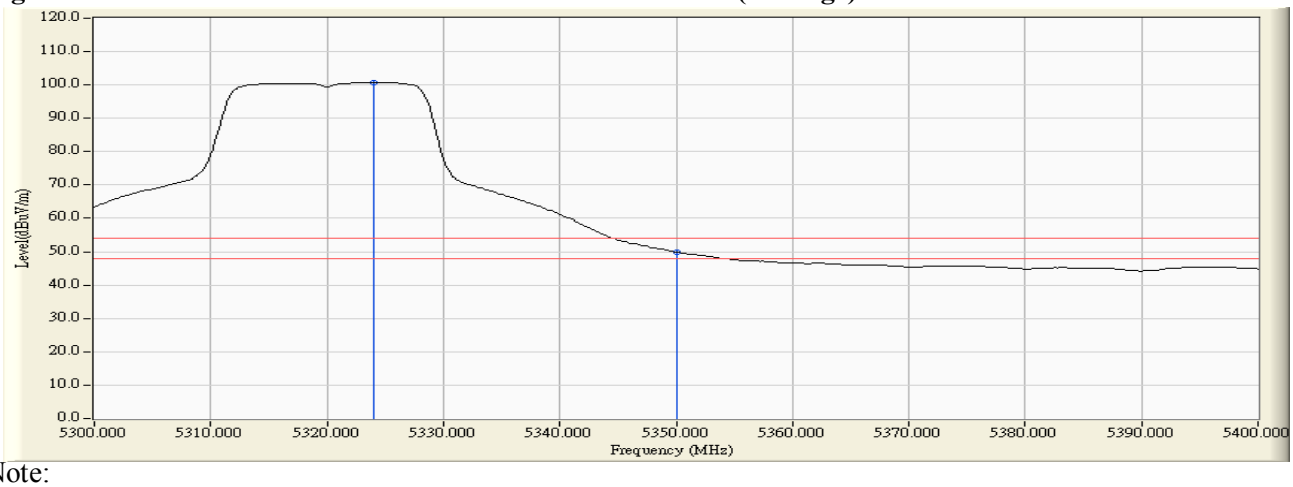


Figure Channel 64: Horizontal (Average)



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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 64

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Arerage Limit (dBµV/m)	Result
64 (Peak)	5322.800	3.890	97.777	101.666	--	--	--
64 (Peak)	5350.000	3.900	51.115	55.015	74.00	54.00	Pass
64 (Average)	5323.800	3.889	86.024	89.914	--	--	--
64 (Average)	5350.000	3.900	39.766	43.666	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

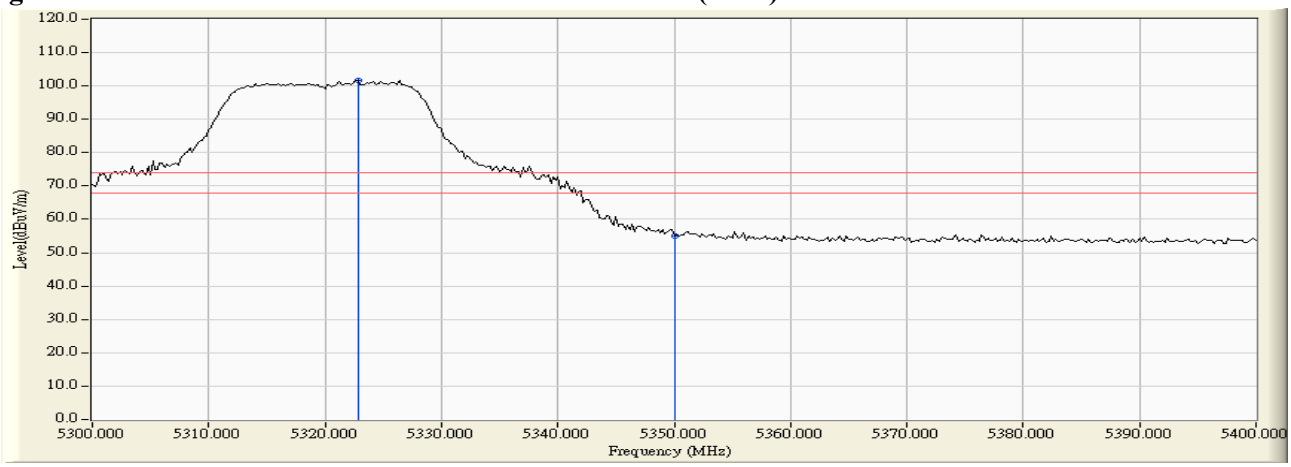
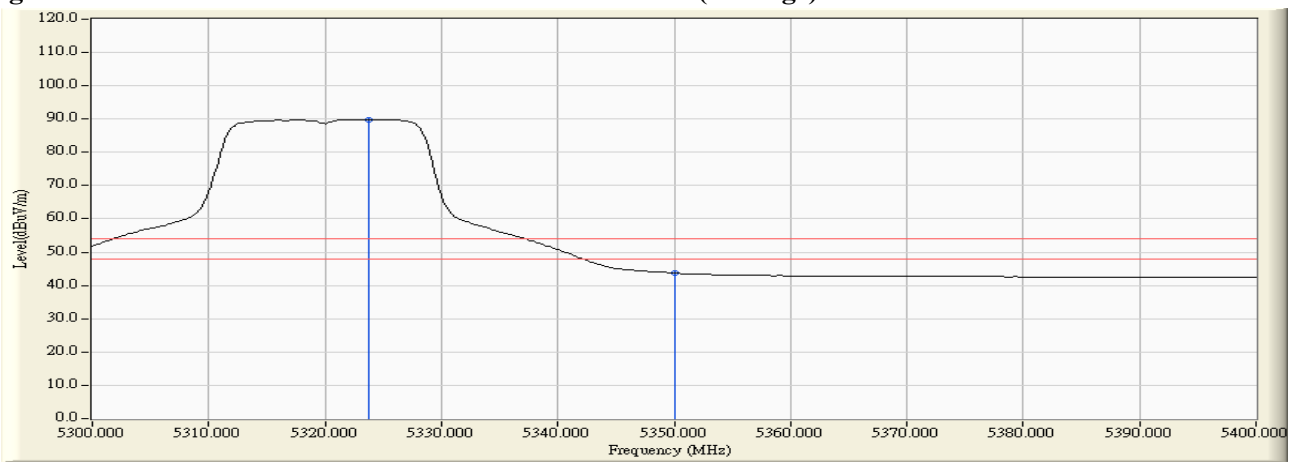


Figure Channel 64: Vertical (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 100

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5457.400	3.725	60.473	64.198	74.00	54.00	Pass
100 (Peak)	5460.000	3.775	59.238	63.013	74.00	54.00	Pass
100 (Peak)	5504.800	4.543	107.749	112.293	--	--	--
100 (Average)	5423.200	3.372	44.664	48.036	74.00	54.00	Pass
100 (Average)	5460.000	3.775	42.162	45.937	74.00	54.00	Pass
100 (Average)	5504.800	4.543	95.790	100.334	--	--	--

Figure Channel 100: Horizontal (Peak)

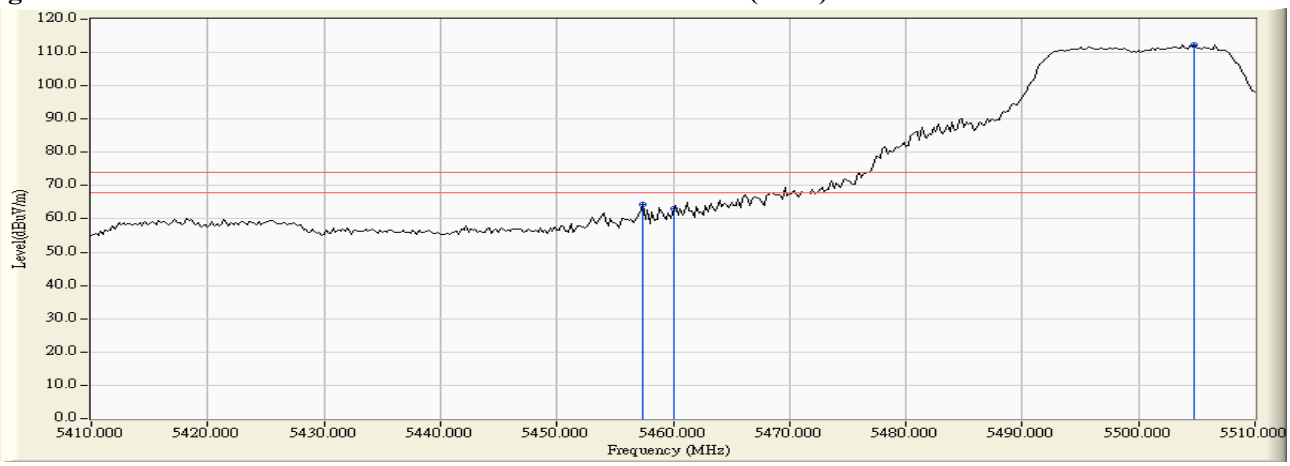
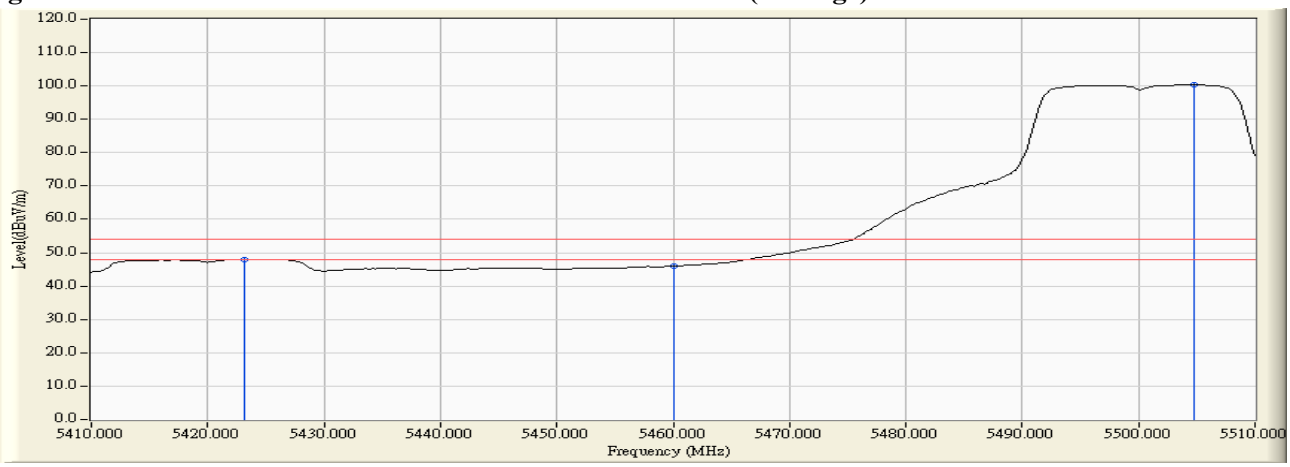


Figure Channel 100: Horizontal (Average)



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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 100

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Arerage Limit (dBµV/m)	Result
100 (Peak)	5459.400	3.927	51.506	55.432	74.00	54.00	Pass
100 (Peak)	5460.000	3.934	49.734	53.669	74.00	54.00	Pass
100 (Peak)	5503.000	4.491	99.608	104.099	--	--	--
100 (Average)	5460.000	3.934	39.085	43.020	74.00	54.00	Pass
100 (Average)	5495.400	4.413	87.677	92.089	--	--	--

Figure Channel 100: Vertical (Peak)

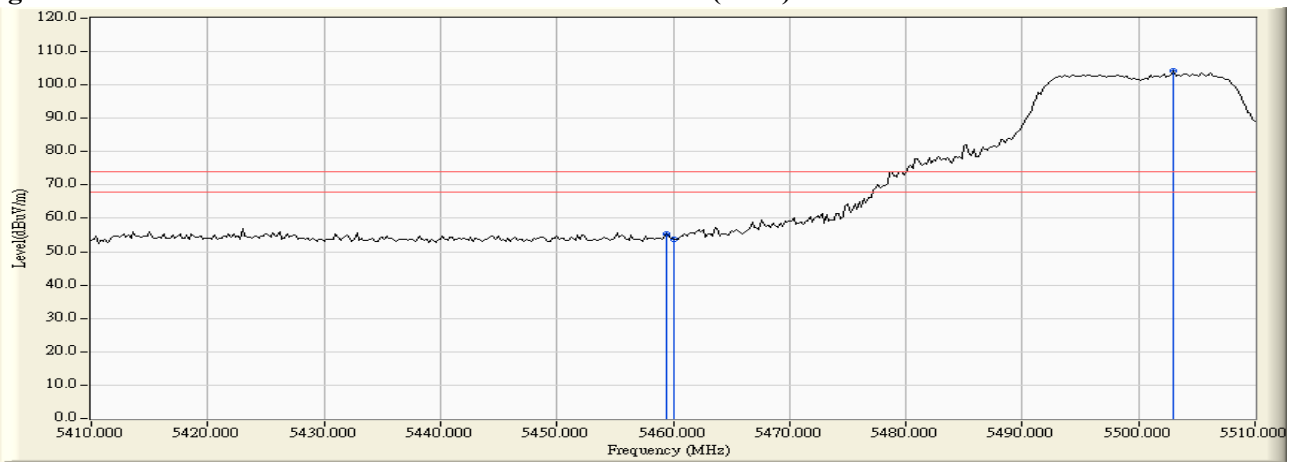
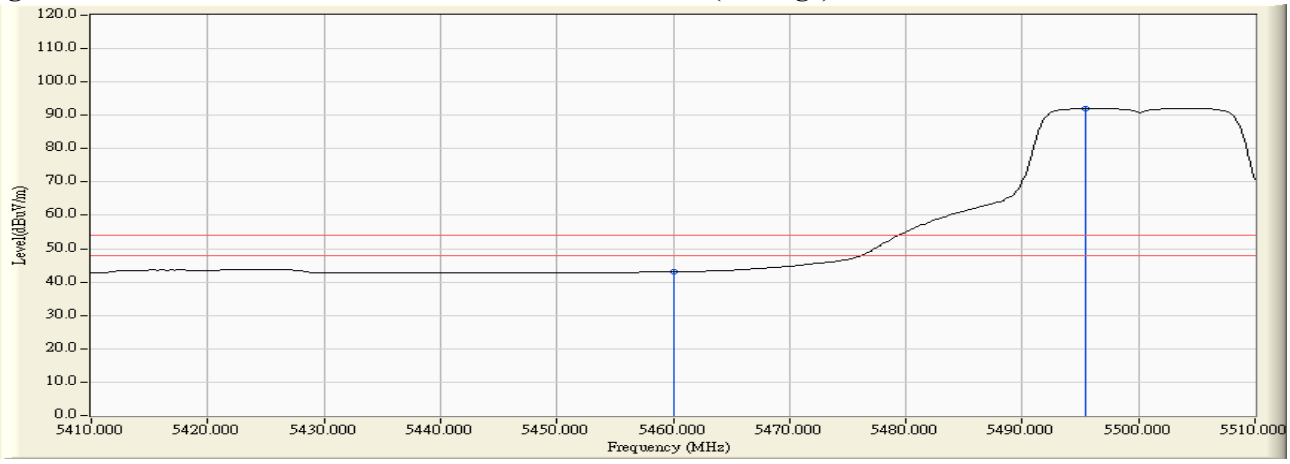


Figure Channel 100: Vertical (Average)

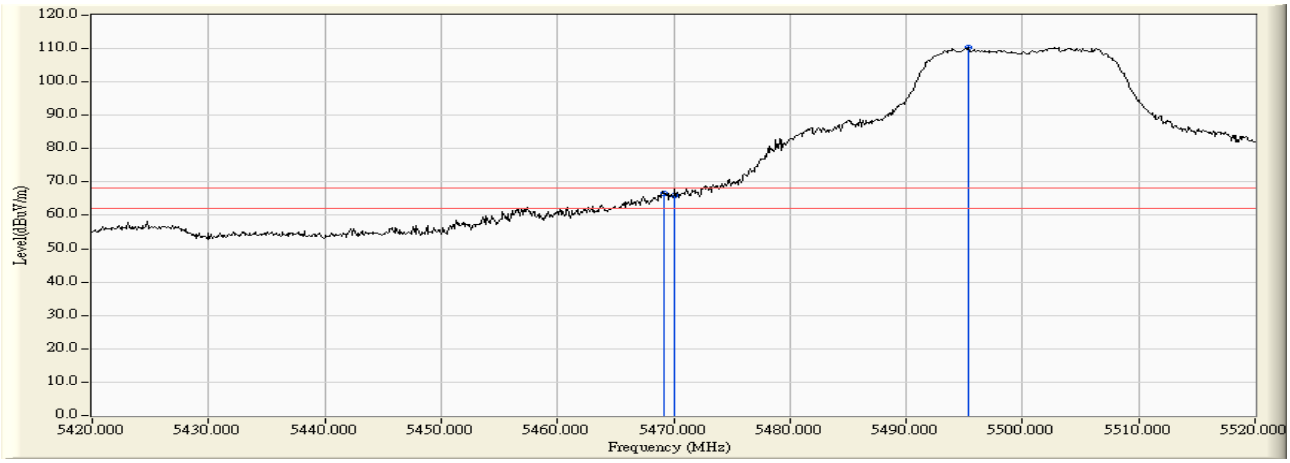


Note:

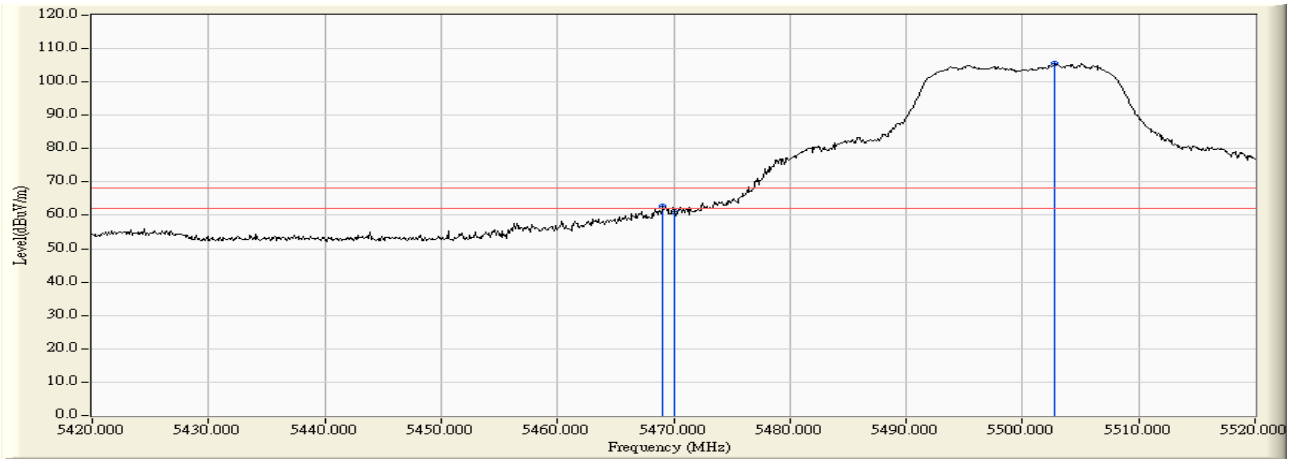
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 100

RF Radiated Measurement:



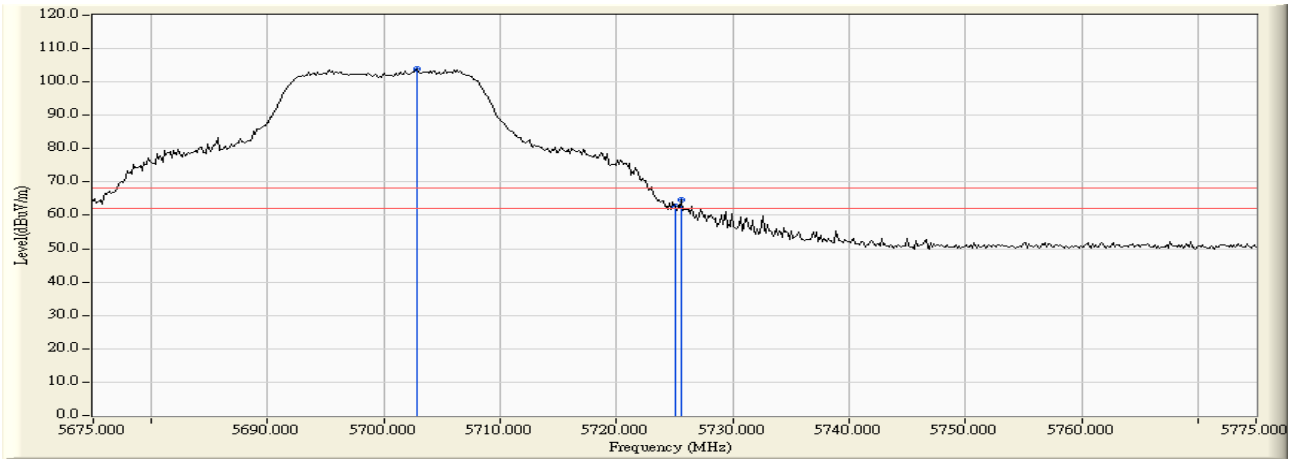
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5469.200	3.954	62.786	66.740	-1.480	68.220	Pass
Horizontal	5470.000	3.970	62.136	66.106	-2.114	68.220	Pass
Horizontal	5495.300	4.415	106.028	110.443	42.223	68.220	Pass



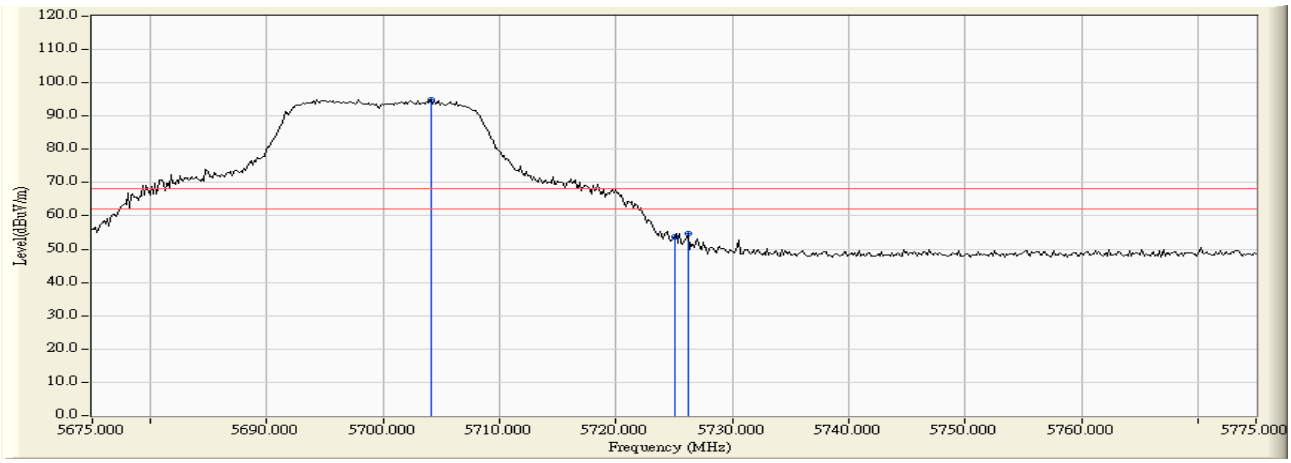
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5469.100	4.066	58.829	62.895	-5.325	68.220	Pass
Vertical	5470.000	4.079	57.159	61.238	-6.982	68.220	Pass
Vertical	5502.800	4.488	101.078	105.567	37.347	68.220	Pass

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 140

RF Radiated Measurement:



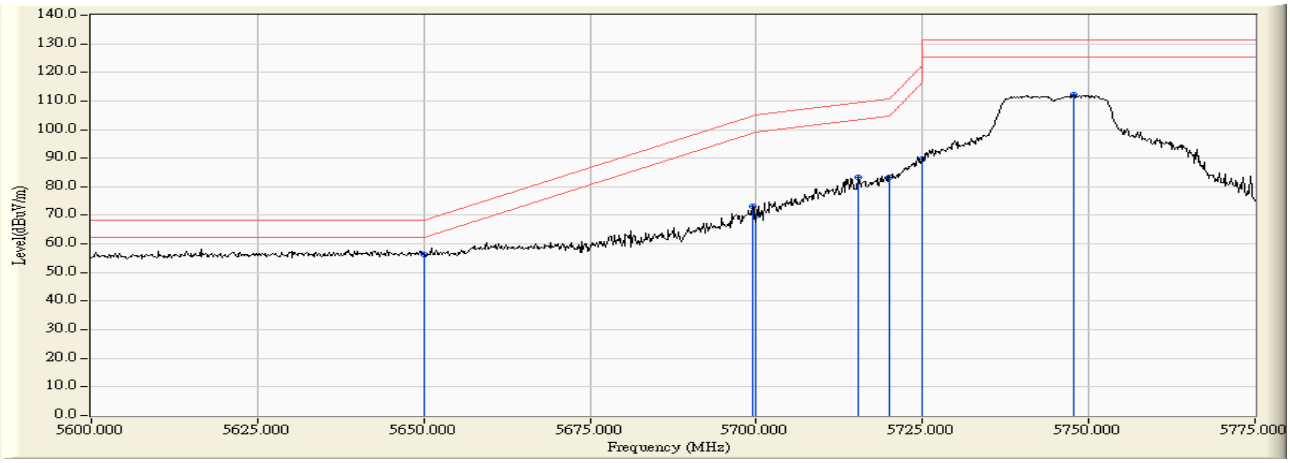
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5702.826	5.013	98.749	103.762	35.542	68.220	Pass
Horizontal	5725.000	5.104	57.577	62.680	-5.540	68.220	Pass
Horizontal	5725.580	5.106	59.548	64.654	-3.566	68.220	Pass



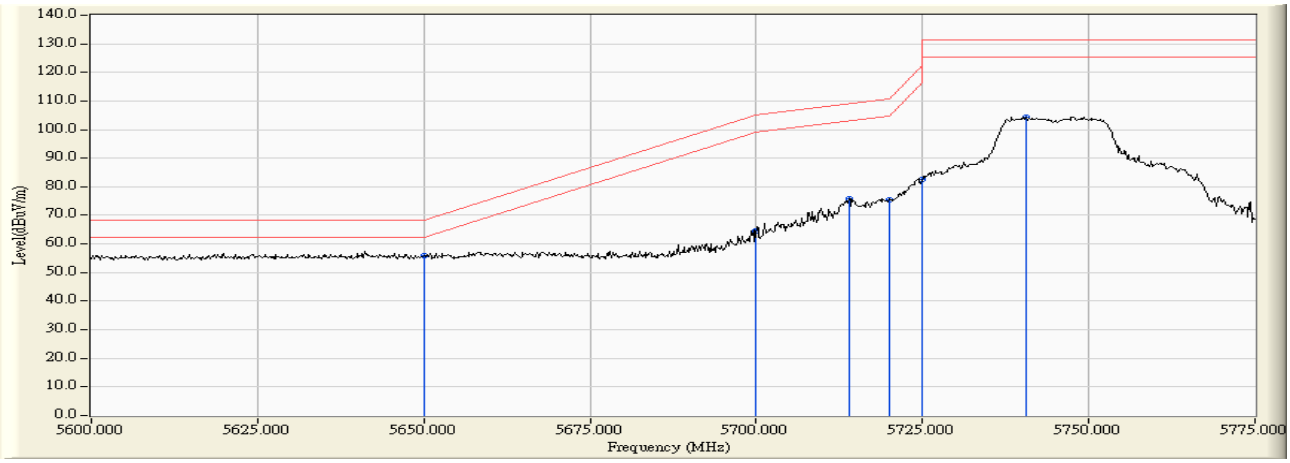
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5704.130	4.173	90.834	95.006	26.786	68.220	Pass
Vertical	5725.000	4.215	49.572	53.787	-14.433	68.220	Pass
Vertical	5726.159	4.219	50.359	54.577	-13.643	68.220	Pass

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 149

RF Radiated Measurement:



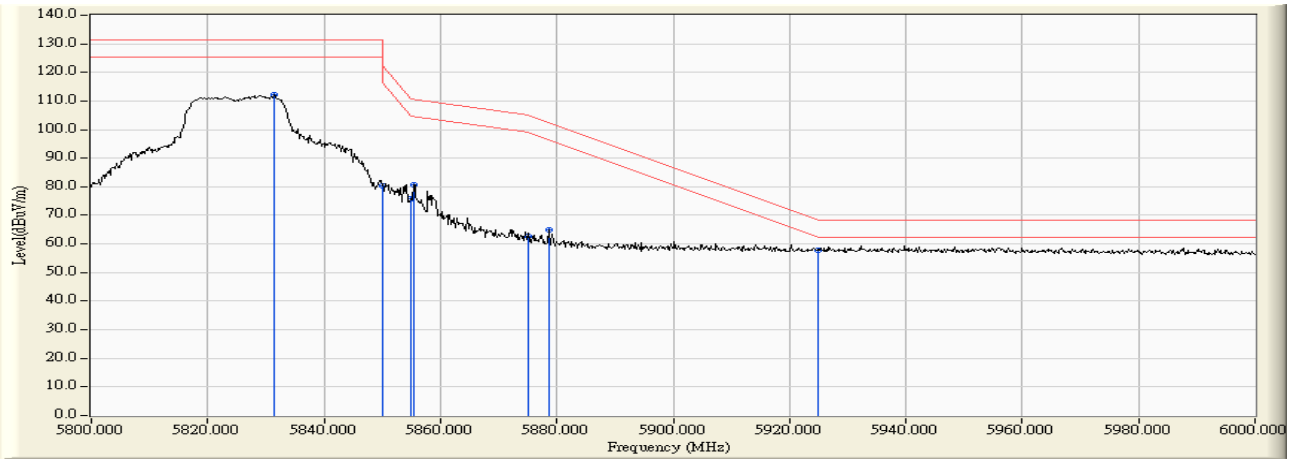
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5650.000	4.764	51.590	56.355	-11.865	68.220	Pass
Horizontal	5699.400	4.999	68.172	73.172	-31.584	104.756	Pass
Horizontal	5700.000	5.002	64.645	69.647	-35.553	105.200	Pass
Horizontal	5715.325	5.064	78.126	83.190	-26.301	109.491	Pass
Horizontal	5720.000	5.083	78.347	83.430	-27.370	110.800	Pass
Horizontal	5725.000	5.104	84.564	89.667	-32.533	122.200	Pass
Horizontal	5747.700	5.195	107.086	112.282	-18.918	131.200	Pass



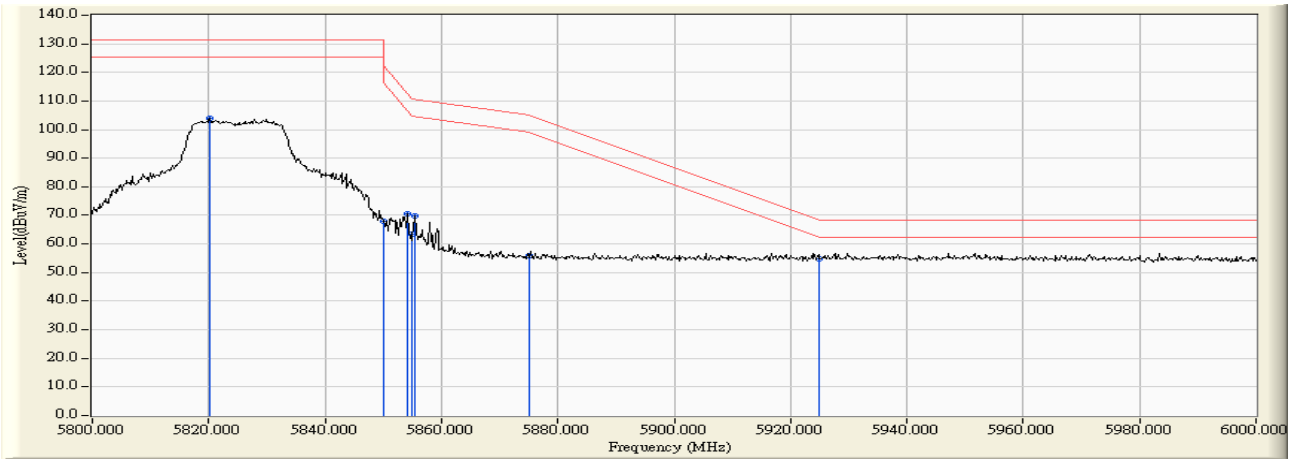
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5650.000	4.361	51.486	55.848	-12.372	68.220	Pass
Vertical	5700.000	4.176	60.206	64.382	-40.818	105.200	Pass
Vertical	5713.925	4.183	71.817	76.000	-33.099	109.099	Pass
Vertical	5720.000	4.200	71.319	75.519	-35.281	110.800	Pass
Vertical	5725.000	4.215	78.249	82.464	-39.736	122.200	Pass
Vertical	5740.525	4.261	100.265	104.526	-26.674	131.200	Pass

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 165

RF Radiated Measurement:



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5831.400	5.583	106.568	112.151	-19.049	131.200	Pass
Horizontal	5850.000	5.715	74.618	80.333	-41.867	122.200	Pass
Horizontal	5855.000	5.757	70.040	75.797	-35.003	110.800	Pass
Horizontal	5855.400	5.760	75.108	80.868	-29.820	110.688	Pass
Horizontal	5875.000	5.931	56.634	62.565	-42.635	105.200	Pass
Horizontal	5878.600	5.964	58.953	64.916	-37.620	102.536	Pass
Horizontal	5925.000	6.245	51.605	57.851	-10.349	68.200	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5820.200	4.312	99.579	103.892	-27.308	131.200	Pass
Vertical	5850.000	4.194	63.657	67.851	-54.349	122.200	Pass
Vertical	5854.200	4.183	66.244	70.427	-42.197	112.624	Pass
Vertical	5855.000	4.181	59.199	63.380	-47.420	110.800	Pass
Vertical	5855.400	4.180	65.694	69.874	-40.814	110.688	Pass
Vertical	5875.000	4.137	51.653	55.790	-49.410	105.200	Pass
Vertical	5925.000	4.270	50.377	54.647	-13.553	68.200	Pass

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 36

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5150.000	2.796	64.053	66.849	74.00	54.00	Pass
36 (Peak)	5184.348	2.681	102.922	105.603	--	--	--
36 (Average)	5150.000	2.796	48.474	51.270	74.00	54.00	Pass
36 (Average)	5177.826	2.703	93.931	96.634	--	--	--

Figure Channel 36: Horizontal (Peak)

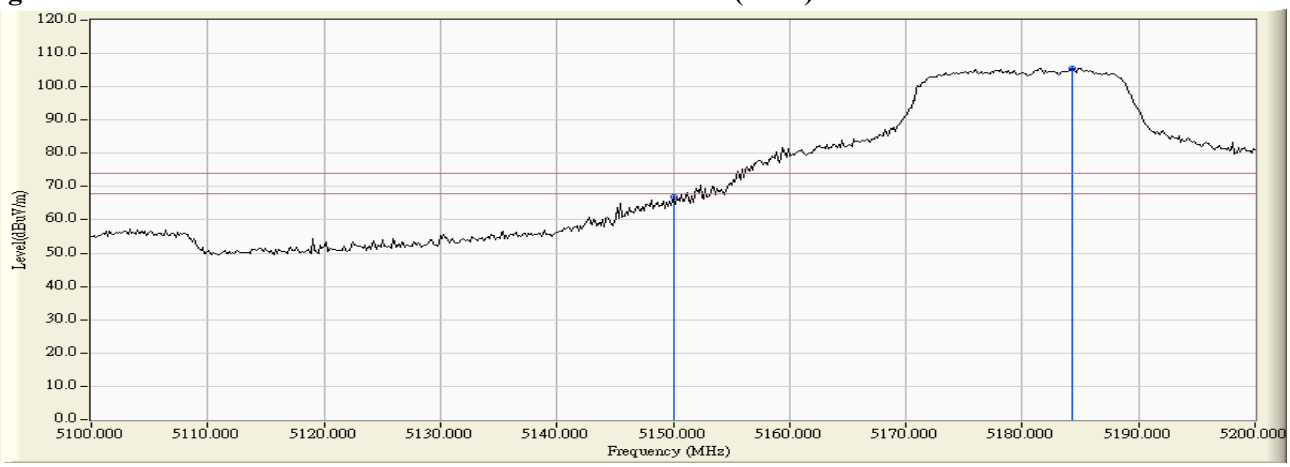
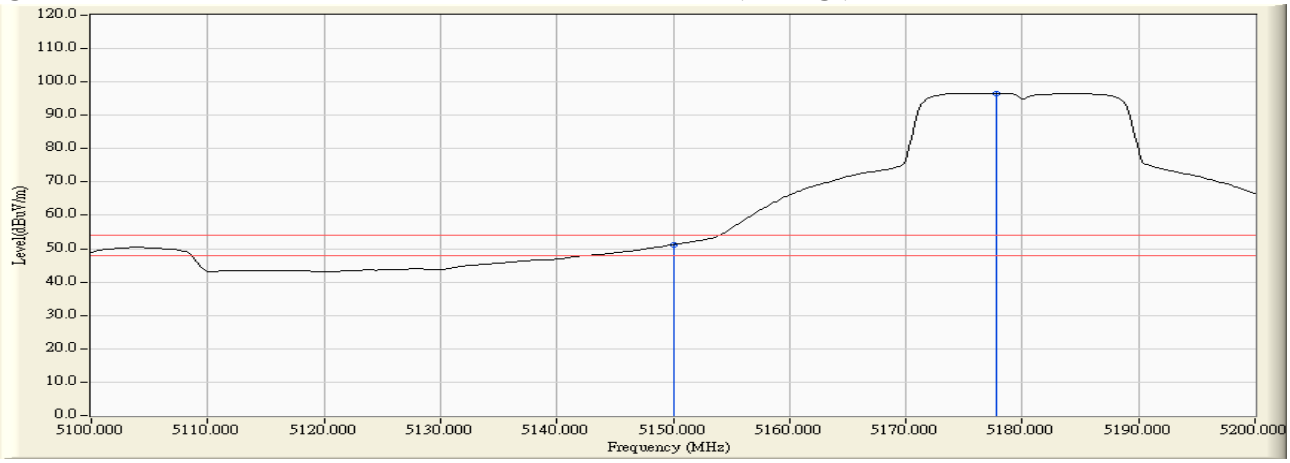


Figure Channel 36: Horizontal (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 36

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5149.420	3.329	54.440	57.769	74.00	54.00	Pass
36 (Peak)	5150.000	3.331	53.886	57.218	74.00	54.00	Pass
36 (Peak)	5176.667	3.457	94.614	98.071	--	--	--
36 (Average)	5150.000	3.331	41.064	44.396	74.00	54.00	Pass
36 (Average)	5176.667	3.457	86.230	89.687	--	--	--

Figure Channel 36: Vertical (Peak)

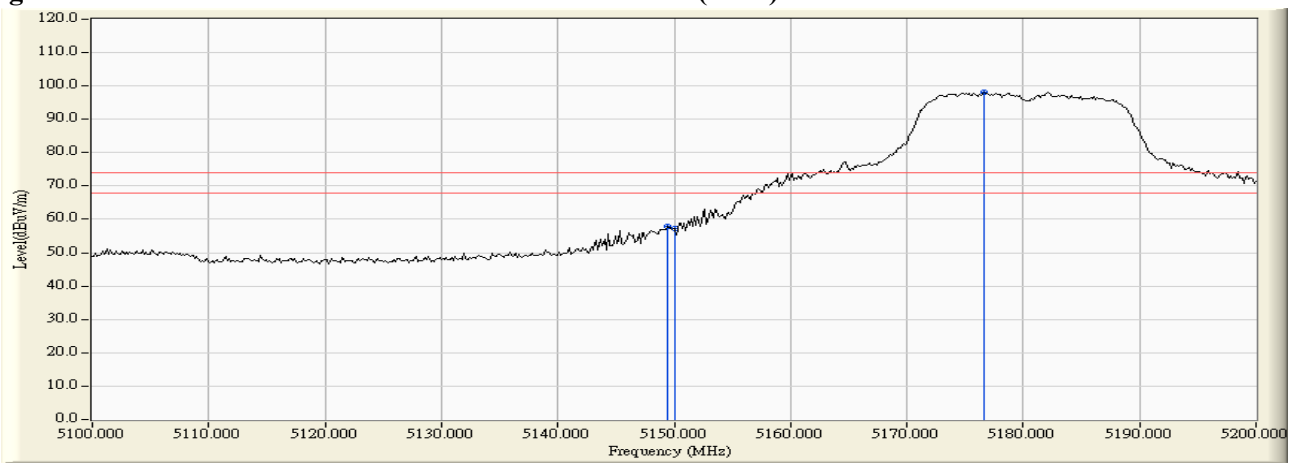
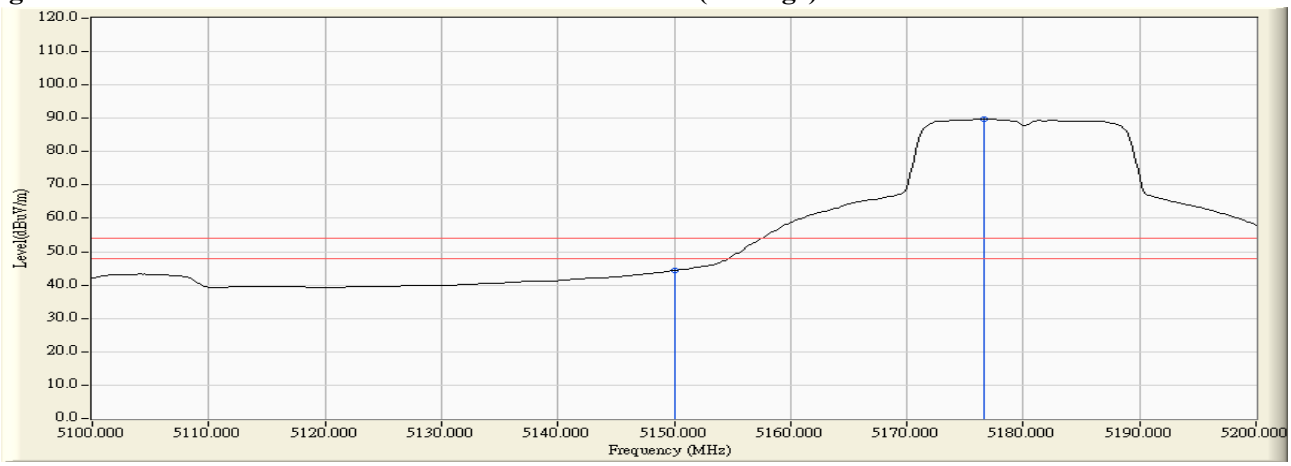


Figure Channel 36: Vertical (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 64

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5322.029	3.639	102.066	105.705	--	--	--
64 (Peak)	5350.000	3.575	54.254	57.829	74.00	54.00	Pass
64 (Peak)	5350.725	3.572	55.335	58.908	74.00	54.00	Pass
64 (Average)	5325.797	3.632	93.025	96.657	--	--	--
64 (Average)	5350.000	3.575	42.589	46.164	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

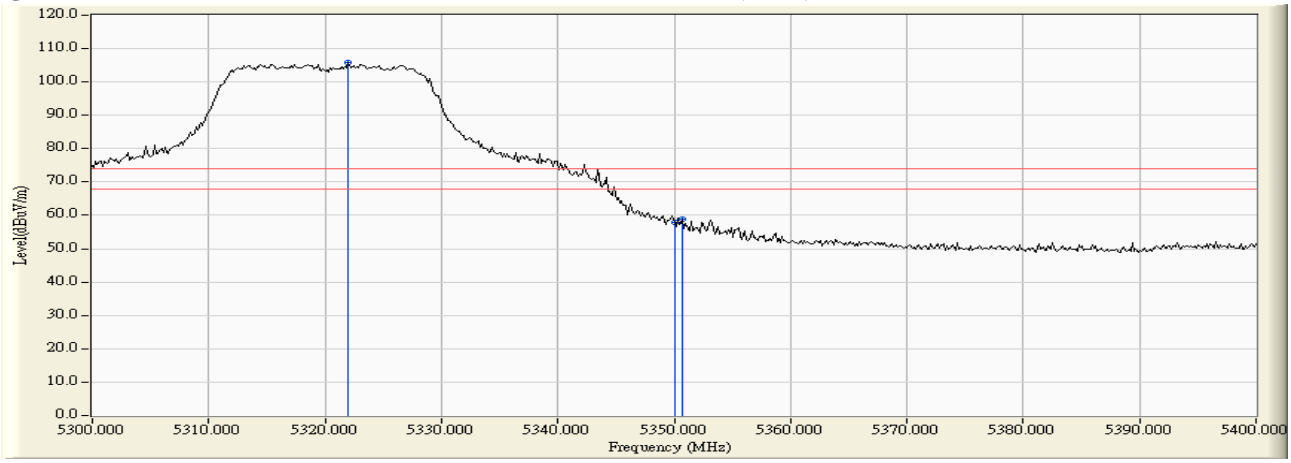
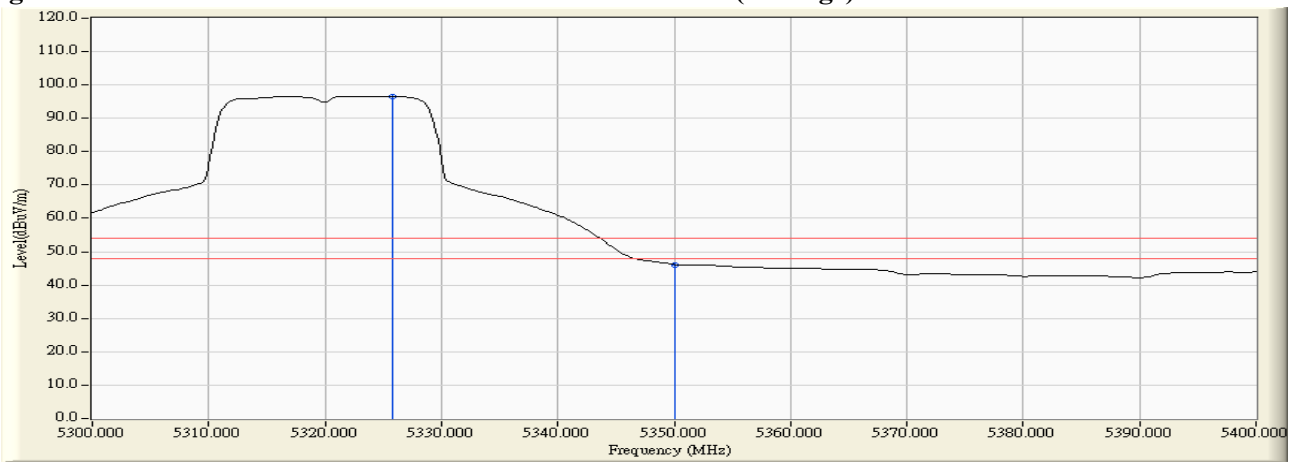


Figure Channel 64: Horizontal (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 64

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5324.493	3.890	92.442	96.332	--	--	--
64 (Peak)	5350.000	3.900	47.217	51.117	74.00	54.00	Pass
64 (Peak)	5352.174	3.900	49.213	53.113	74.00	54.00	Pass
64 (Average)	5324.203	3.890	84.088	87.978	--	--	--
64 (Average)	5350.000	3.900	37.636	41.536	74.00	54.00	Pass
64 (Average)	5351.739	3.901	37.689	41.590	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

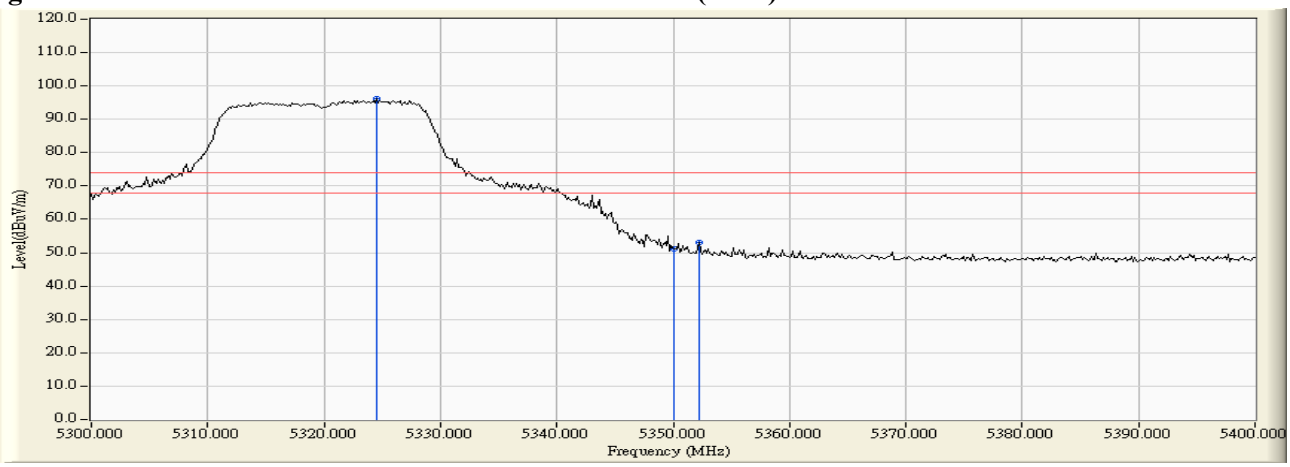
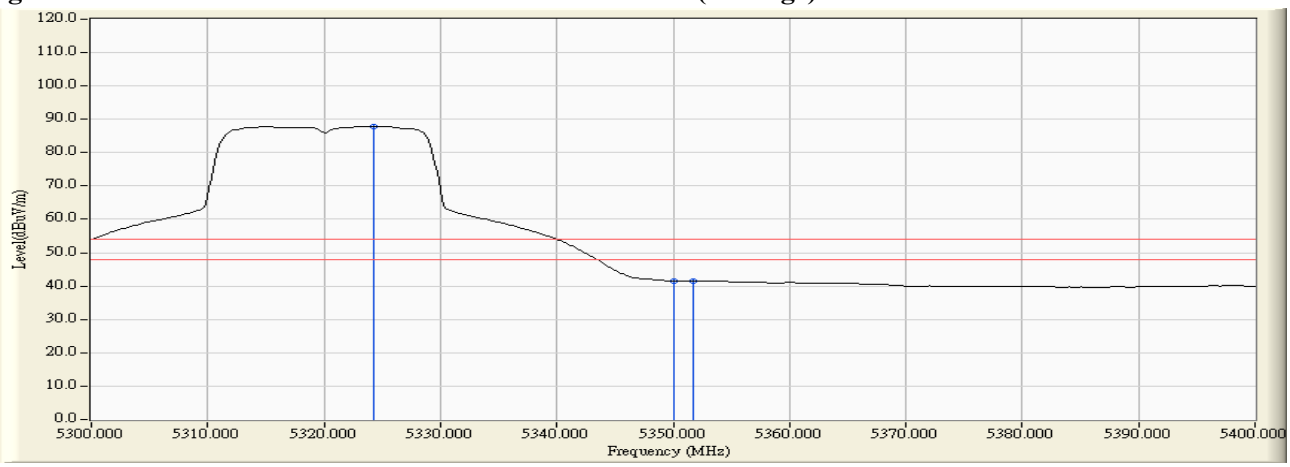


Figure Channel 64: Vertical (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 100

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Arerage Limit (dBµV/m)	Result
100 (Peak)	5413.333	3.295	52.740	56.035	74.00	54.00	Pass
100 (Peak)	5460.000	3.775	49.208	52.983	74.00	54.00	Pass
100 (Peak)	5502.174	4.509	101.881	106.389	--	--	--
100 (Average)	5416.232	3.318	45.368	48.686	74.00	54.00	Pass
100 (Average)	5460.000	3.775	40.873	44.648	74.00	54.00	Pass
100 (Average)	5496.522	4.432	92.763	97.195	--	--	--

Figure Channel 100: Horizontal (Peak)

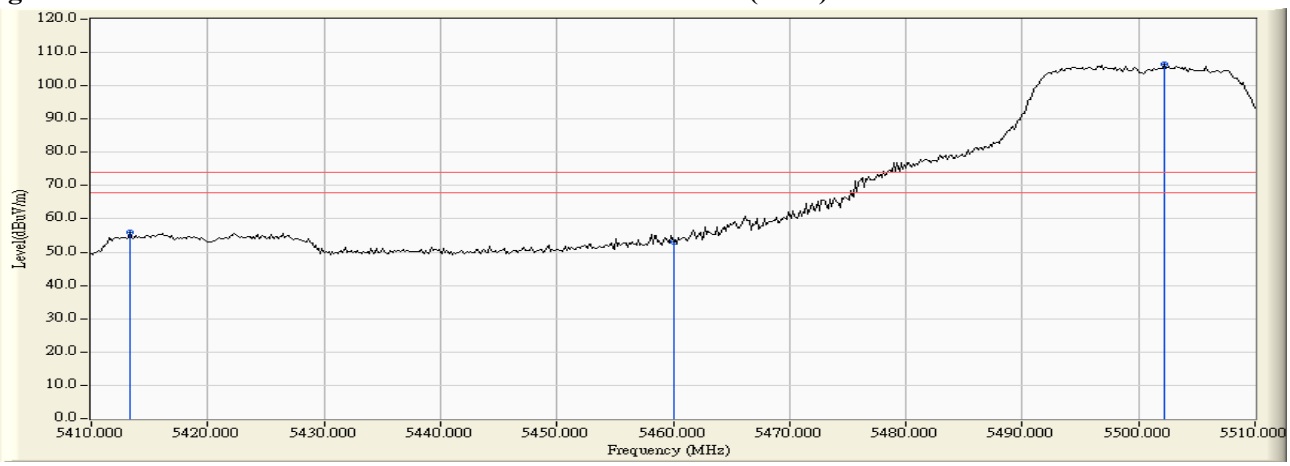
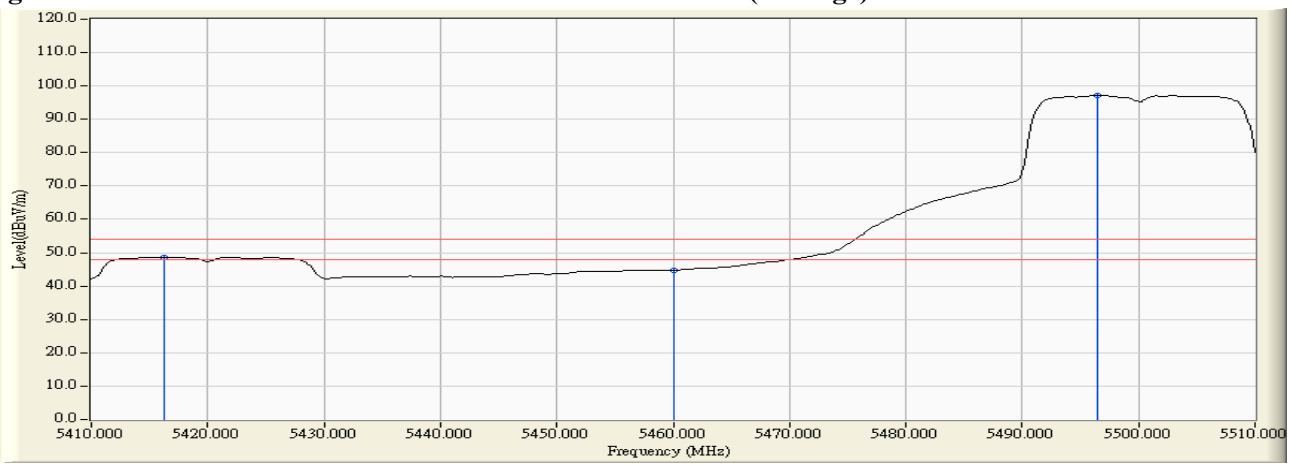


Figure Channel 100: Horizontal (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 100

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5425.942	3.724	47.090	50.814	74.00	54.00	Pass
100 (Peak)	5460.000	3.934	43.665	47.600	74.00	54.00	Pass
100 (Peak)	5504.493	4.506	90.662	95.168	--	--	--
100 (Average)	5415.072	3.694	38.904	42.598	74.00	54.00	Pass
100 (Average)	5460.000	3.934	36.375	40.310	74.00	54.00	Pass
100 (Average)	5495.072	4.409	82.741	87.150	--	--	--

Figure Channel 100: Vertical (Peak)

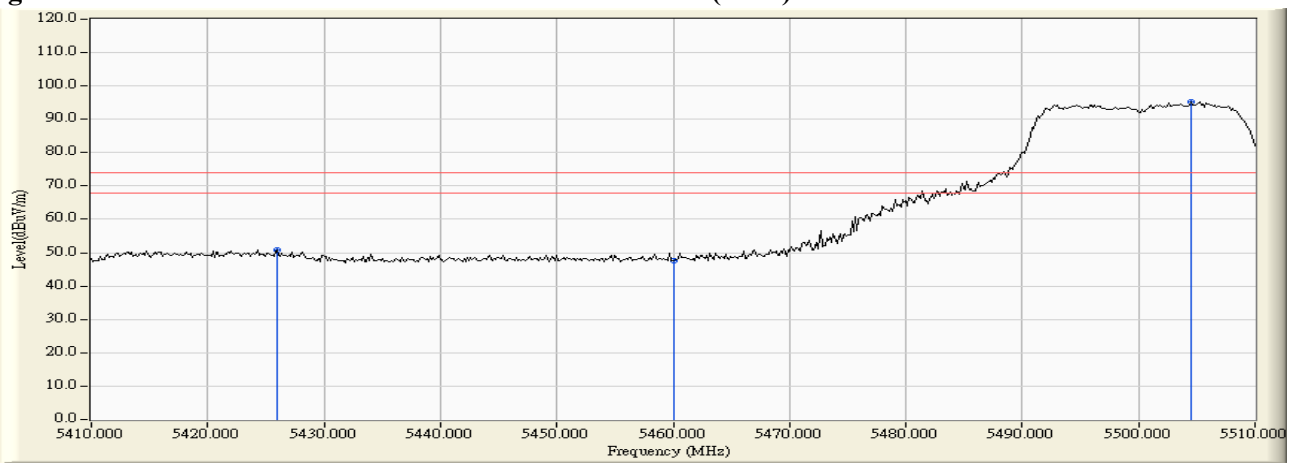
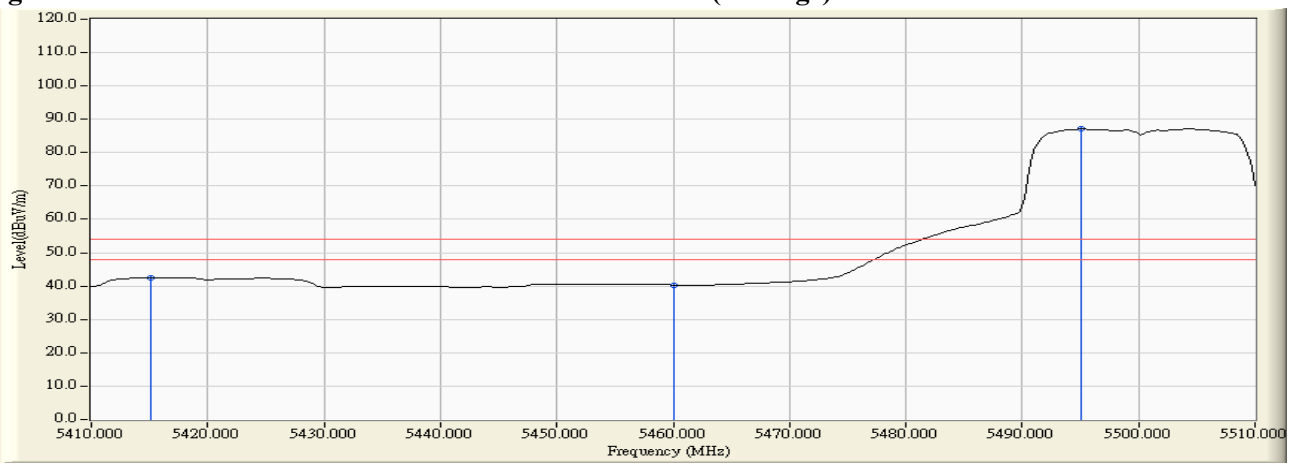


Figure Channel 100: Vertical (Average)

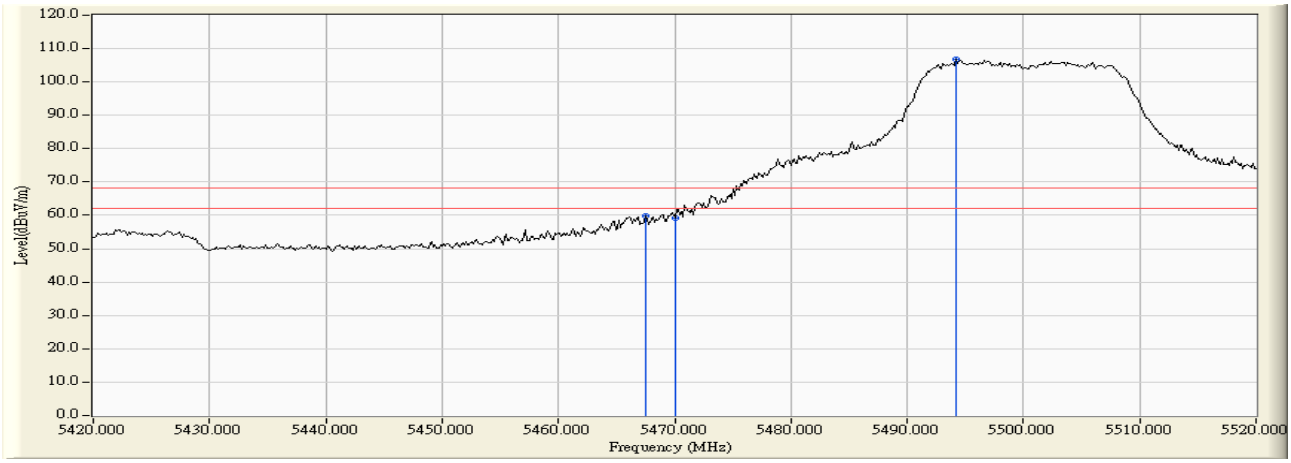


Note:

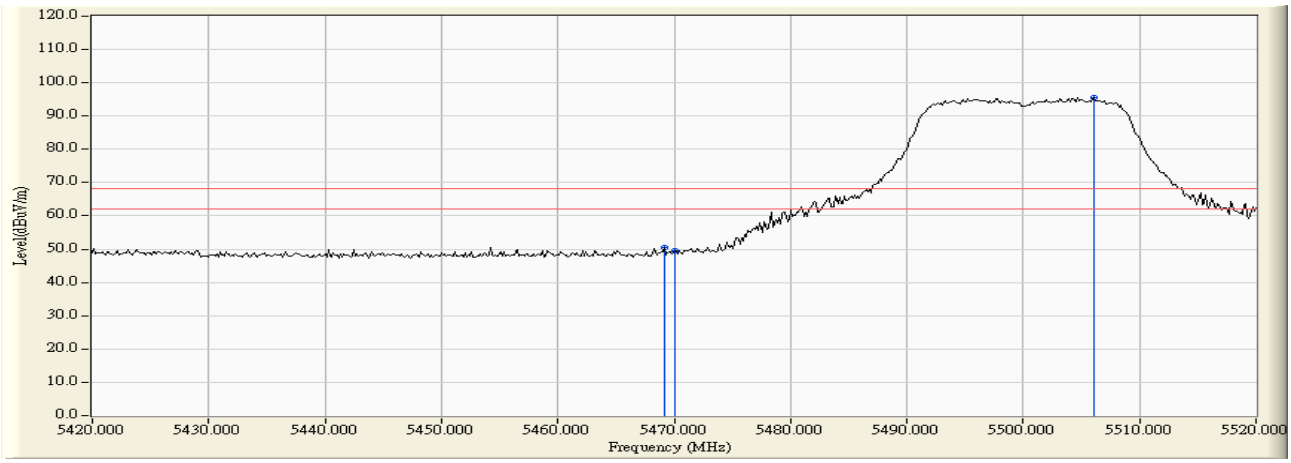
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 100

RF Radiated Measurement:



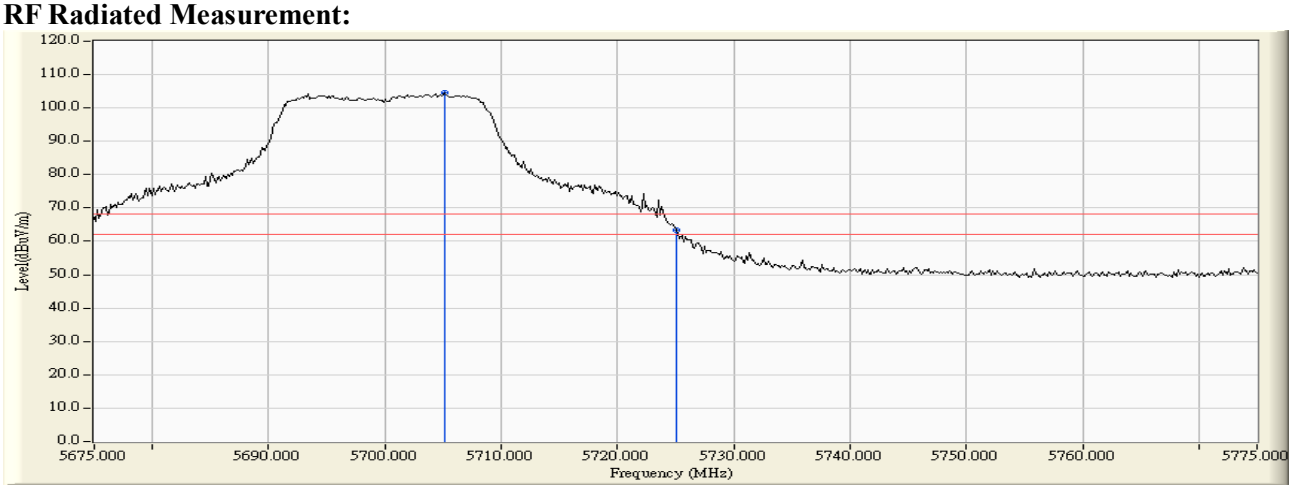
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5467.536	3.923	56.063	59.985	-8.235	68.220	Pass
Horizontal	5470.000	3.970	55.311	59.281	-8.939	68.220	Pass
Horizontal	5494.203	4.401	102.271	106.671	38.451	68.220	Pass



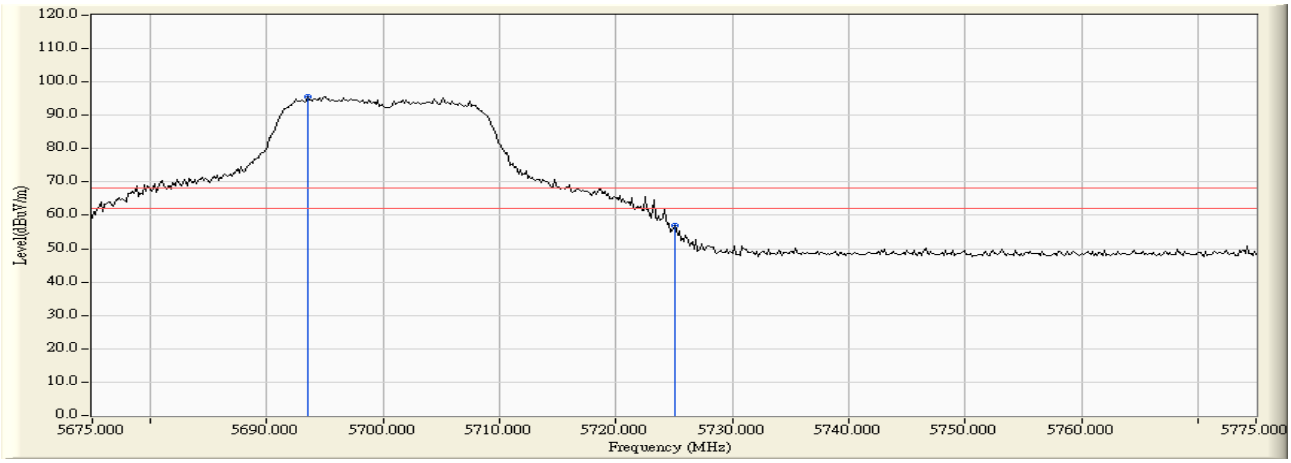
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5469.130	4.066	46.295	50.362	-17.858	68.220	Pass
Vertical	5470.000	4.079	45.353	49.432	-18.788	68.220	Pass
Vertical	5506.087	4.511	91.183	95.694	27.474	68.220	Pass

Product	:	WiFi Module
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Date	:	2017/03/14
Test Mode	:	Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 140

RF Radiated Measurement:



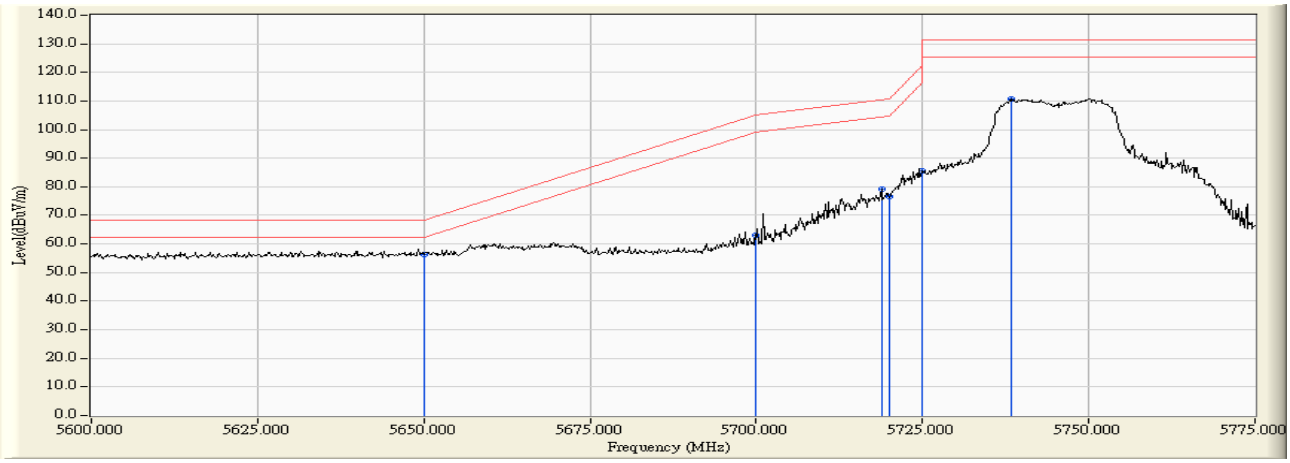
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5705.145	5.023	99.417	104.440	36.220	68.220	Pass
Horizontal	5725.000	5.104	58.395	63.498	-4.722	68.220	Pass



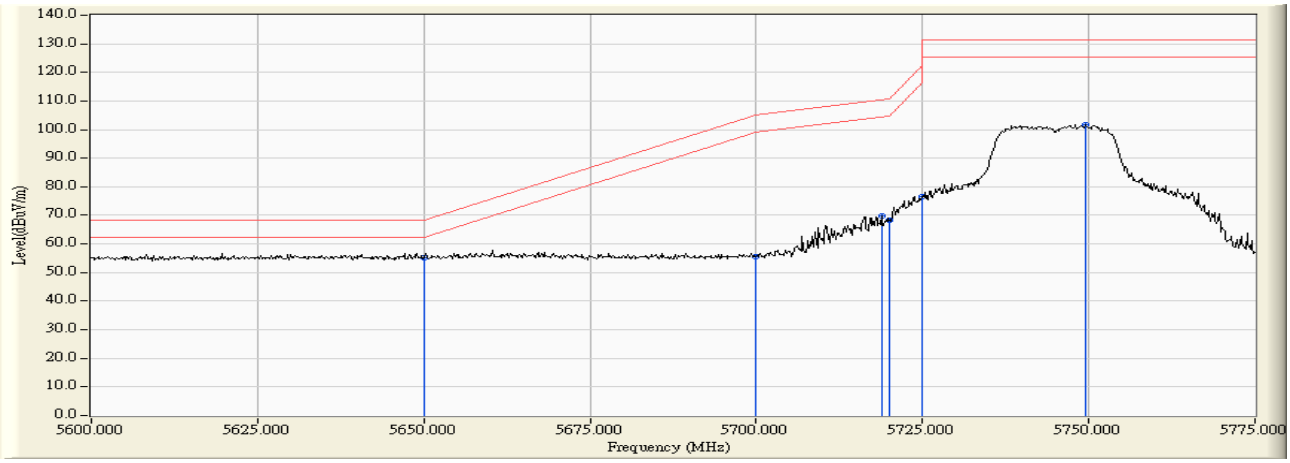
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5693.551	4.181	91.418	95.599	27.379	68.220	Pass
Vertical	5725.000	4.215	52.812	57.027	-11.193	68.220	Pass

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 149

RF Radiated Measurement:



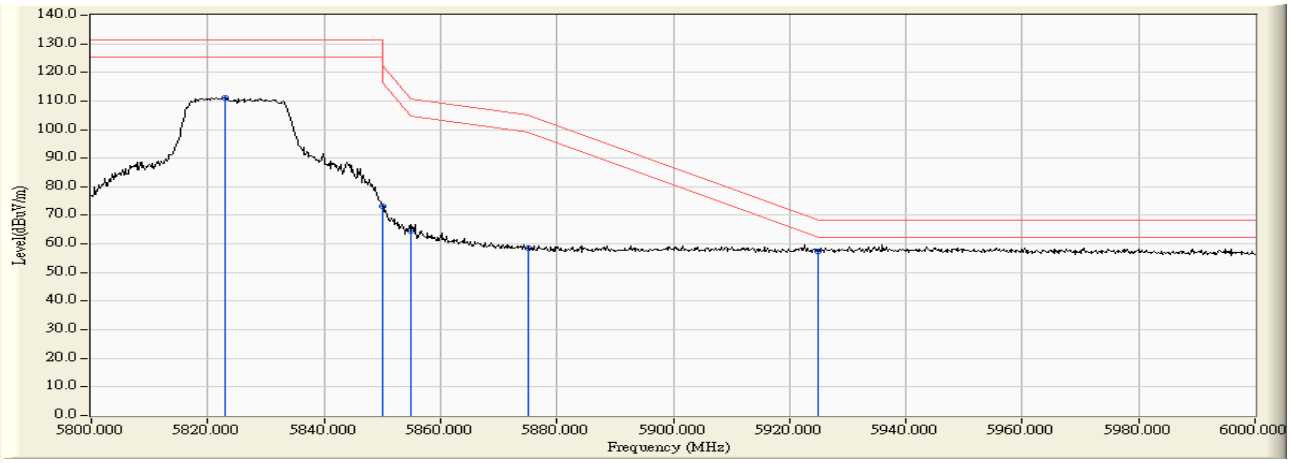
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5650.000	4.764	51.583	56.348	-11.872	68.220	Pass
Horizontal	5700.000	5.002	58.133	63.135	-42.065	105.200	Pass
Horizontal	5718.825	5.078	73.978	79.056	-31.415	110.471	Pass
Horizontal	5720.000	5.083	71.507	76.590	-34.210	110.800	Pass
Horizontal	5725.000	5.104	80.289	85.392	-36.808	122.200	Pass
Horizontal	5738.250	5.159	105.589	110.748	-20.452	131.200	Pass



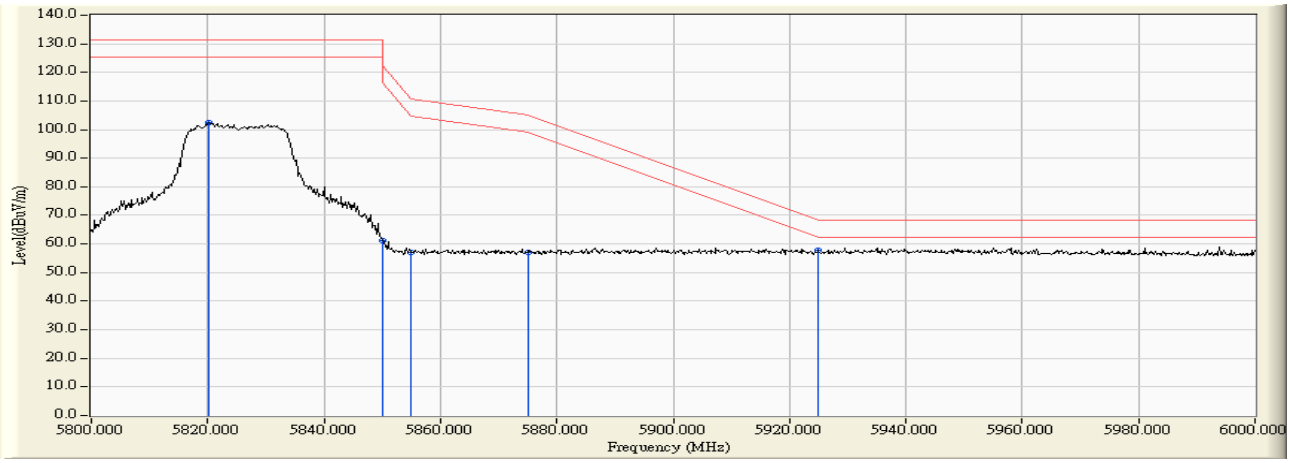
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5650.000	4.361	50.689	55.051	-13.169	68.220	Pass
Vertical	5700.000	4.176	51.405	55.581	-49.619	105.200	Pass
Vertical	5718.825	4.197	65.802	69.999	-40.472	110.471	Pass
Vertical	5720.000	4.200	64.078	68.278	-42.522	110.800	Pass
Vertical	5725.000	4.215	72.203	76.418	-45.782	122.200	Pass
Vertical	5749.625	4.285	97.345	101.630	-29.570	131.200	Pass

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) -Channel 165

RF Radiated Measurement:



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5823.000	5.528	105.680	111.208	-19.992	131.200	Pass
Horizontal	5850.000	5.715	67.492	73.207	-48.993	122.200	Pass
Horizontal	5855.000	5.757	58.927	64.684	-46.116	110.800	Pass
Horizontal	5875.000	5.931	52.528	58.459	-46.741	105.200	Pass
Horizontal	5925.000	6.245	51.136	57.382	-10.818	68.200	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5820.200	5.509	96.779	102.288	-28.912	131.200	Pass
Vertical	5850.000	5.715	55.577	61.292	-60.908	122.200	Pass
Vertical	5855.000	5.757	51.407	57.164	-53.636	110.800	Pass
Vertical	5875.000	5.931	51.001	56.932	-48.268	105.200	Pass
Vertical	5925.000	6.245	51.546	57.792	-10.408	68.200	Pass

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 38

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
38 (Peak)	5149.565	2.798	62.582	65.380	74.00	54.00	Pass
38 (Peak)	5150.000	2.796	60.865	63.661	74.00	54.00	Pass
38 (Peak)	5177.536	2.705	95.952	98.656	--	--	--
38 (Average)	5150.000	2.796	48.465	51.261	74.00	54.00	Pass
38 (Average)	5177.536	2.705	85.792	88.496	--	--	--

Figure Channel 38: Horizontal (Peak)

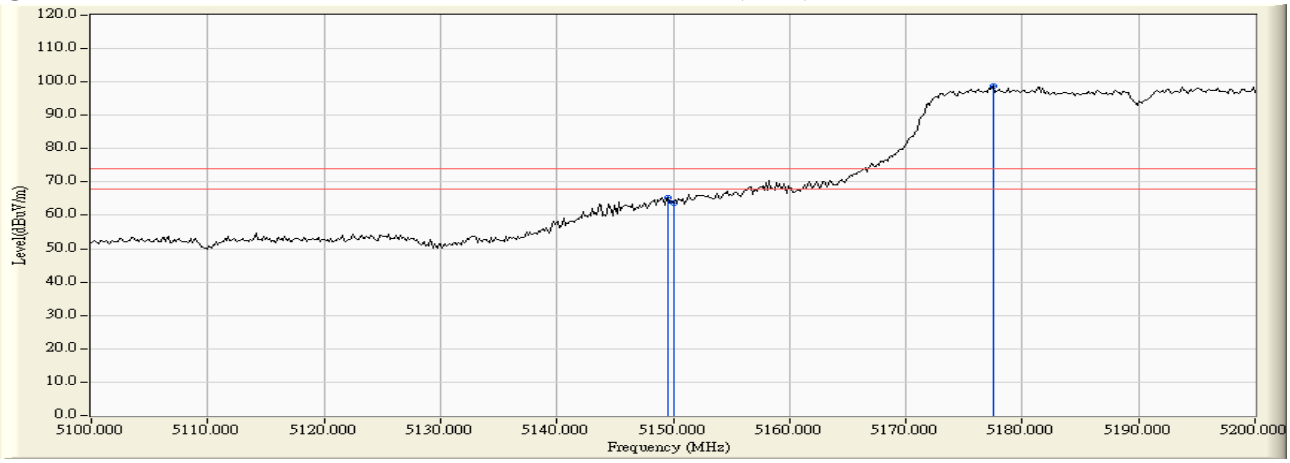
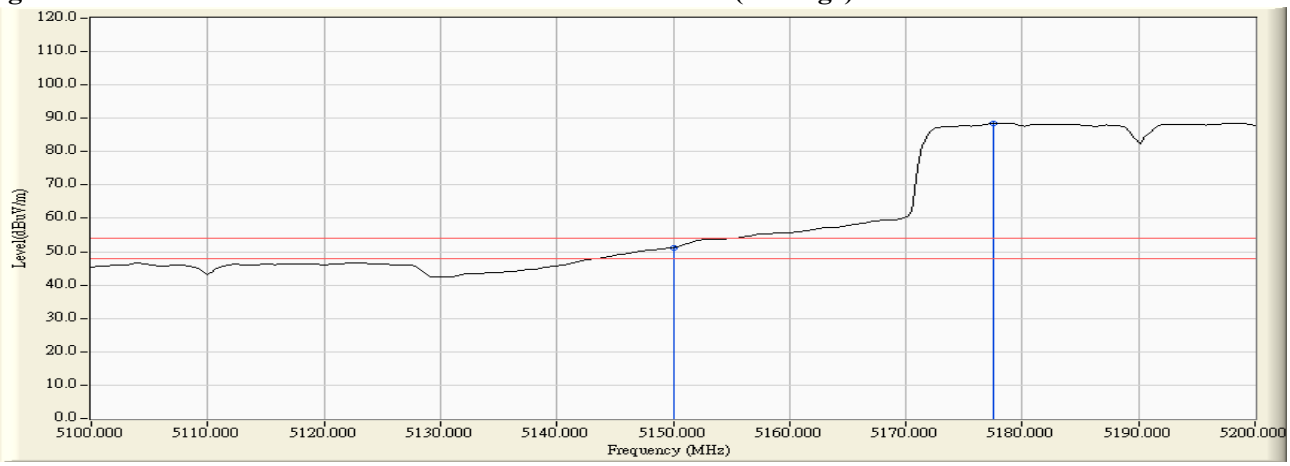


Figure Channel 38: Horizontal (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 38

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
38 (Peak)	5148.986	3.327	54.020	57.347	74.00	54.00	Pass
38 (Peak)	5150.000	3.331	53.328	56.660	74.00	54.00	Pass
38 (Peak)	5191.884	3.530	87.451	90.981	--	--	--
38 (Average)	5150.000	3.331	41.645	44.977	74.00	54.00	Pass
38 (Average)	5177.391	3.460	78.698	82.158	--	--	--

Figure Channel 38: Vertical (Peak)

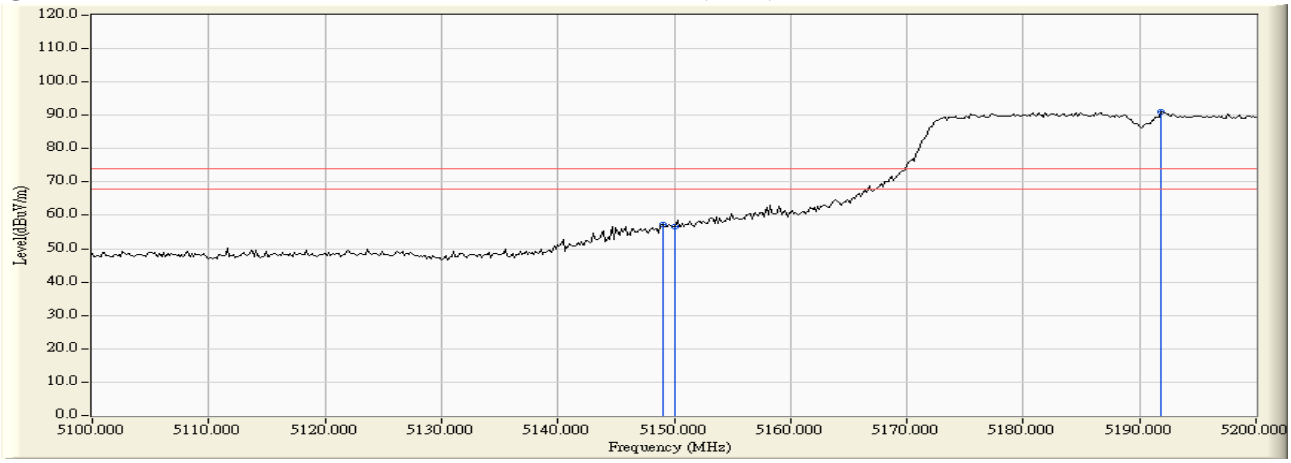
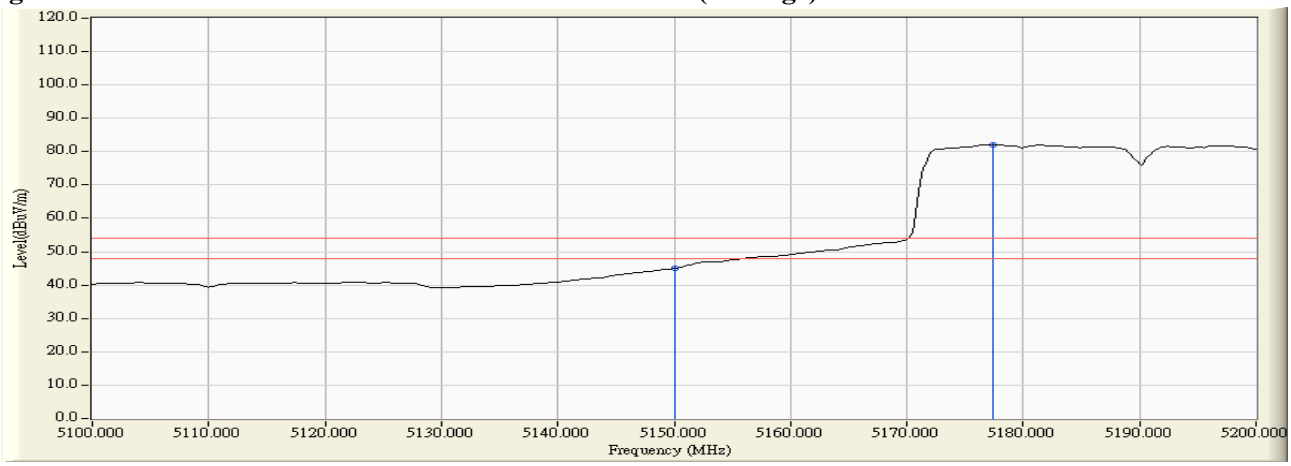


Figure Channel 38: Vertical (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 62

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
62 (Peak)	5322.319	3.638	97.573	101.211	--	--	--
62 (Peak)	5350.000	3.575	62.491	66.066	74.00	54.00	Pass
62 (Peak)	5352.174	3.569	63.333	66.901	74.00	54.00	Pass
62 (Average)	5321.449	3.639	87.719	91.359	--	--	--
62 (Average)	5350.000	3.575	49.261	52.836	74.00	54.00	Pass

Figure Channel 62: Horizontal (Peak)

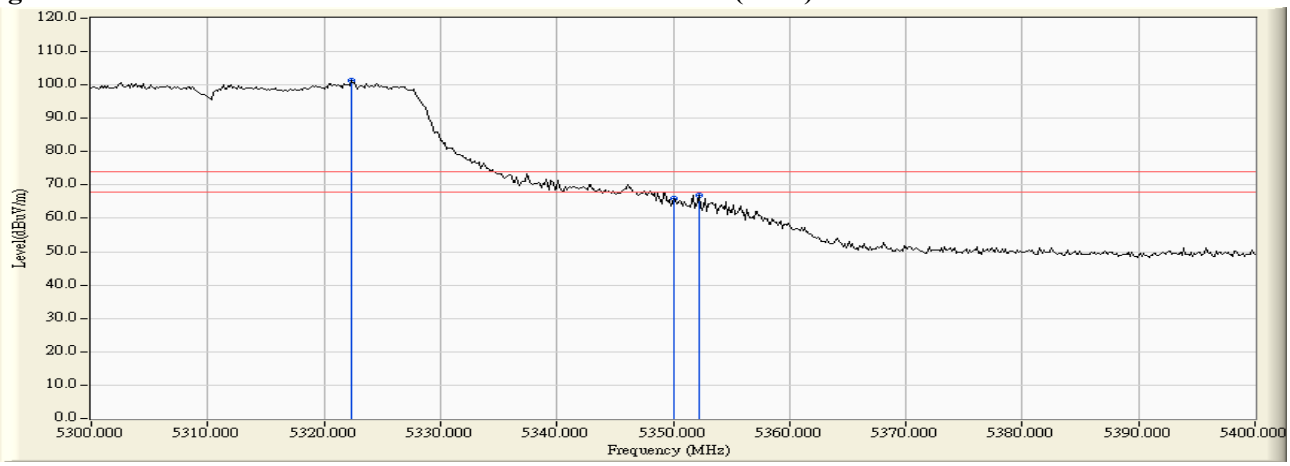
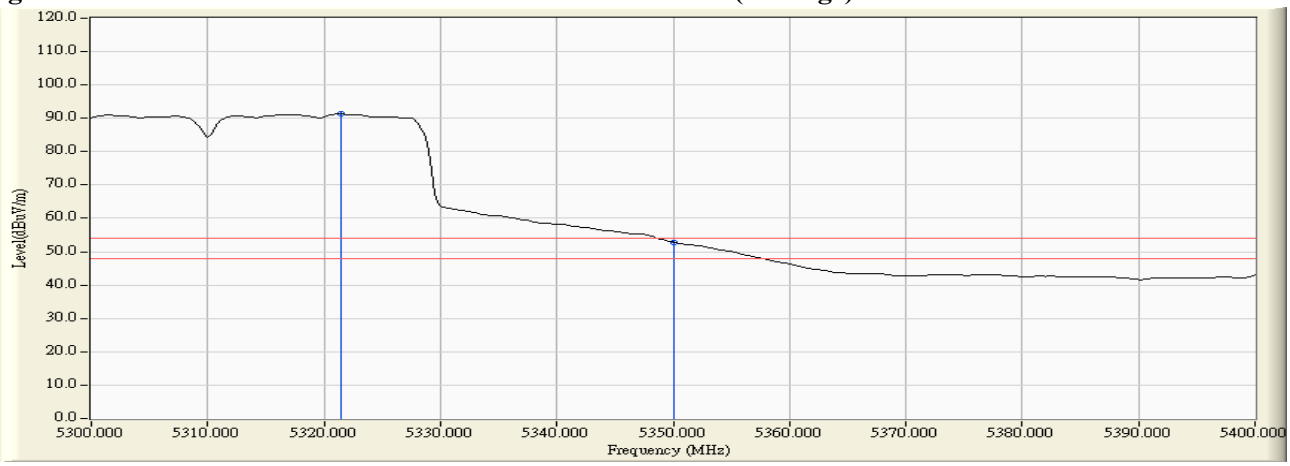


Figure Channel 62: Horizontal (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 62

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
62 (Peak)	5322.029	3.889	87.892	91.780	--	--	--
62 (Peak)	5350.000	3.900	53.886	57.786	74.00	54.00	Pass
62 (Peak)	5351.449	3.900	57.156	61.056	74.00	54.00	Pass
62 (Average)	5318.841	3.886	78.799	82.685	--	--	--
62 (Average)	5350.000	3.900	43.471	47.371	74.00	54.00	Pass

Figure Channel 62: Vertical (Peak)

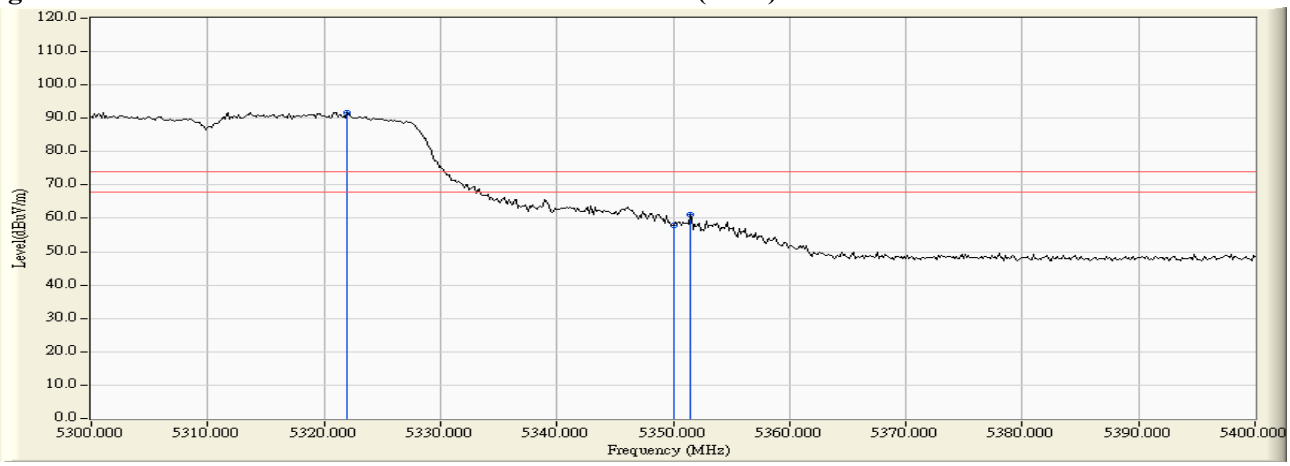
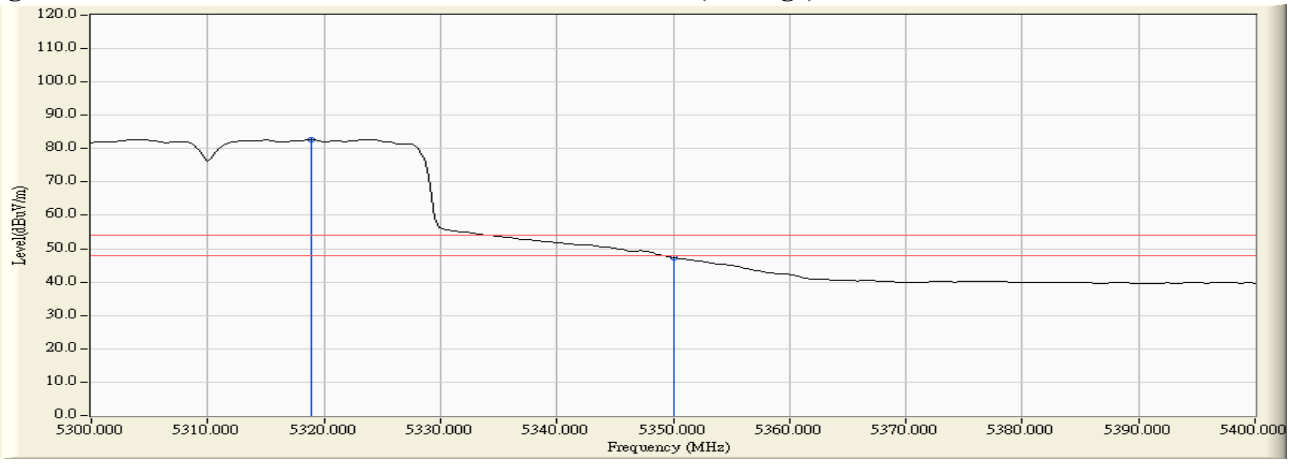


Figure Channel 62: Vertical (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 102

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Arerage Limit (dBµV/m)	Result
102 (Peak)	5460.000	3.775	61.050	64.825	74.00	54.00	Pass
102 (Peak)	5502.609	4.513	96.182	100.696	--	--	--
102 (Average)	5460.000	3.775	49.846	53.621	74.00	54.00	Pass
102 (Average)	5501.594	4.500	88.867	93.367	--	--	--

Figure Channel 102: Horizontal (Peak)

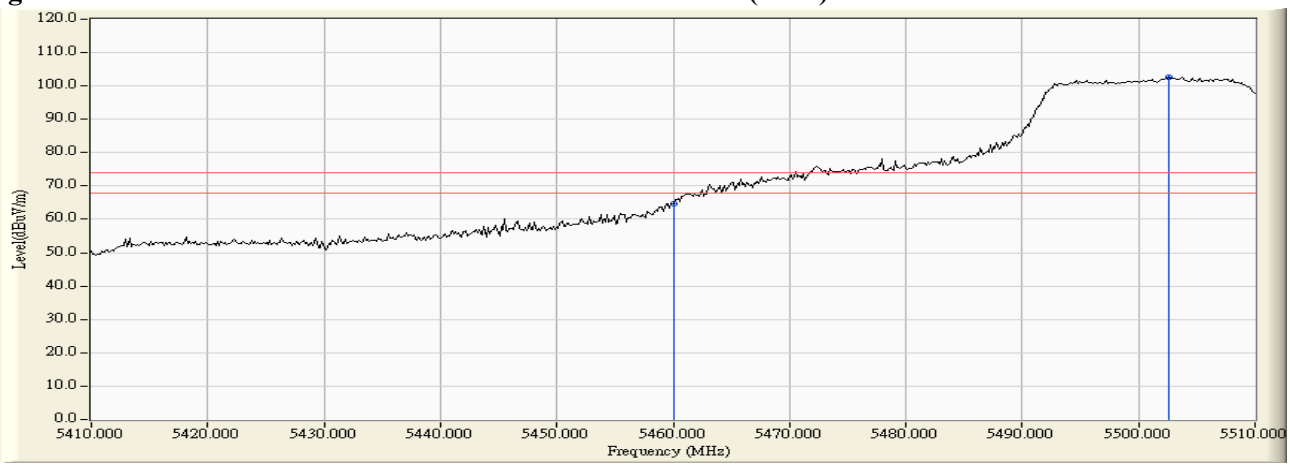
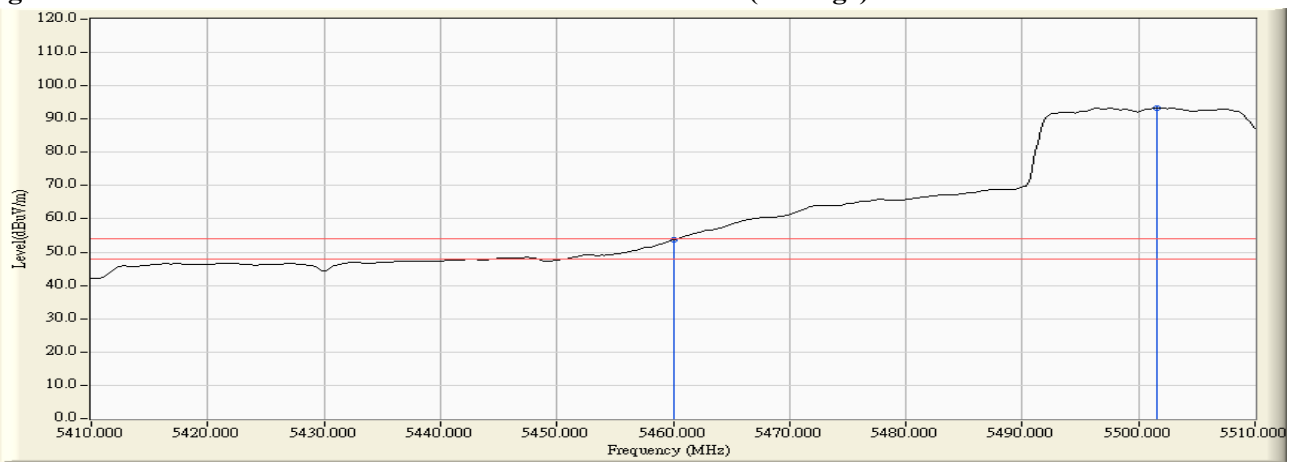


Figure Channel 102: Horizontal (Average)



Note:

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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 102

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
102 (Peak)	5460.000	3.934	51.938	55.873	74.00	54.00	Pass
102 (Peak)	5501.304	4.472	86.075	90.548	--	--	--
102 (Average)	5460.000	3.934	41.293	45.228	74.00	54.00	Pass
102 (Average)	5504.783	4.509	78.836	83.345	--	--	--

Figure Channel 102: Vertical (Peak)

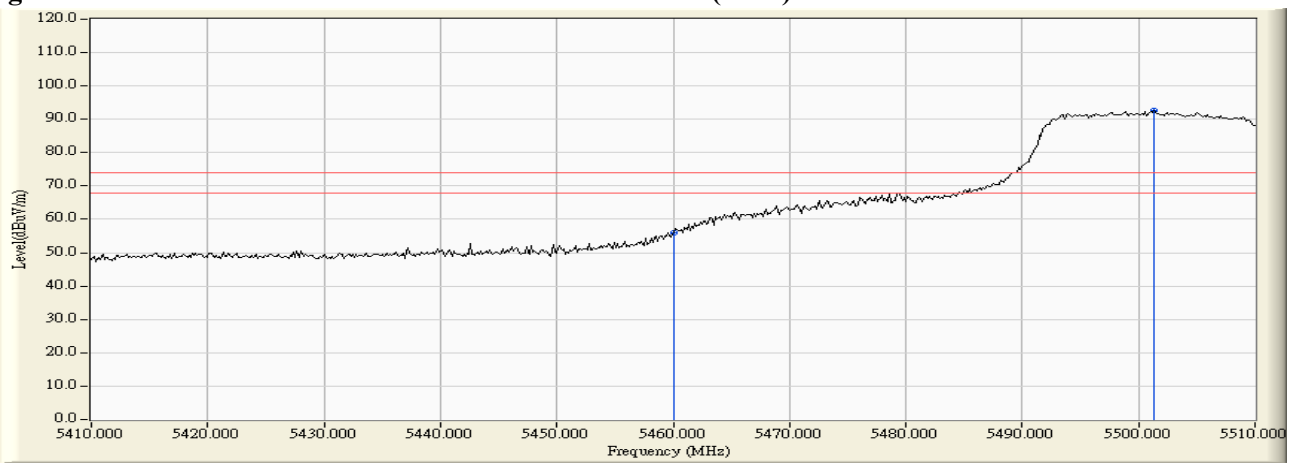
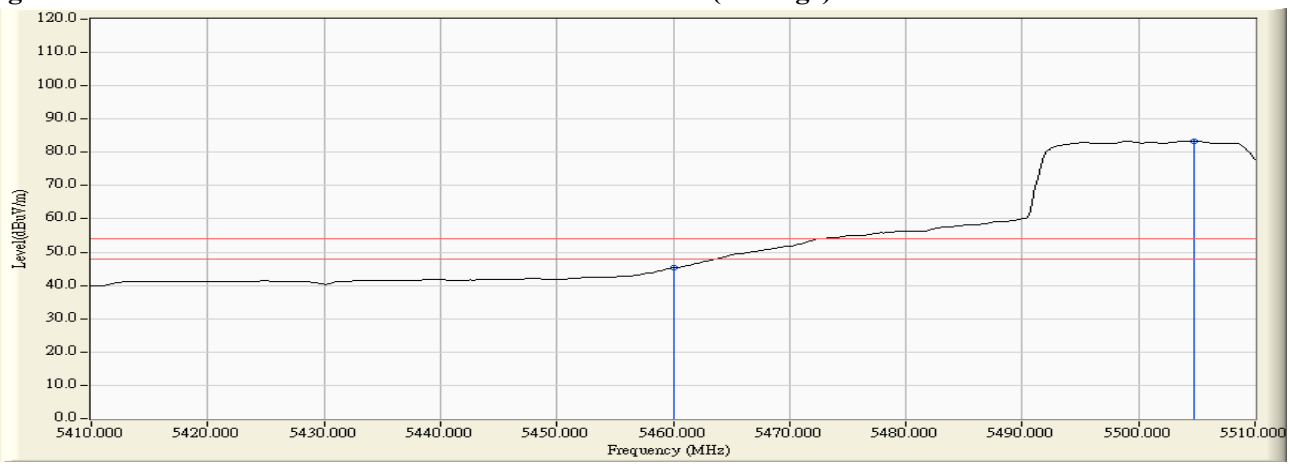


Figure Channel 102: Vertical (Average)

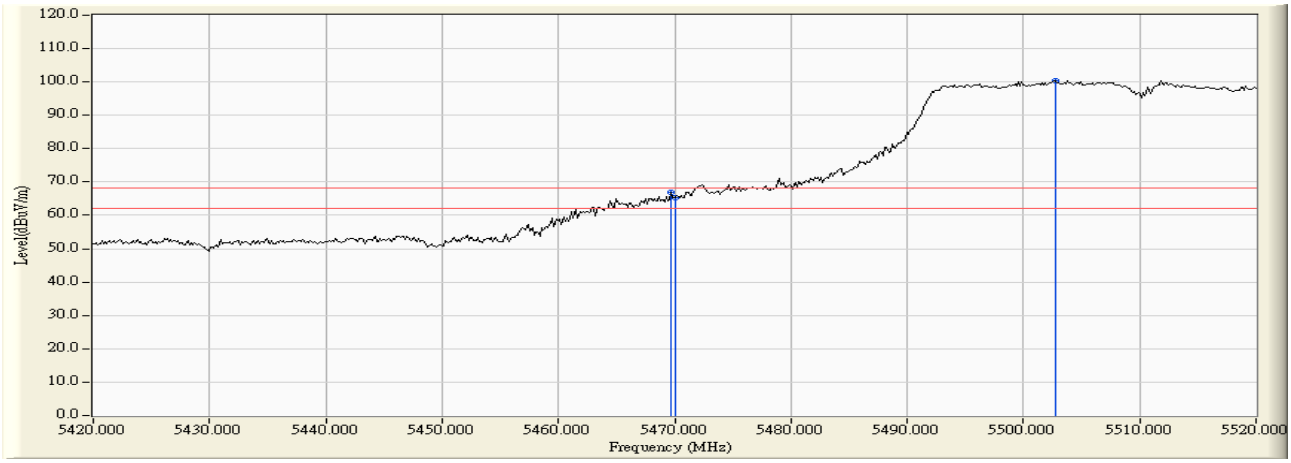


Note:

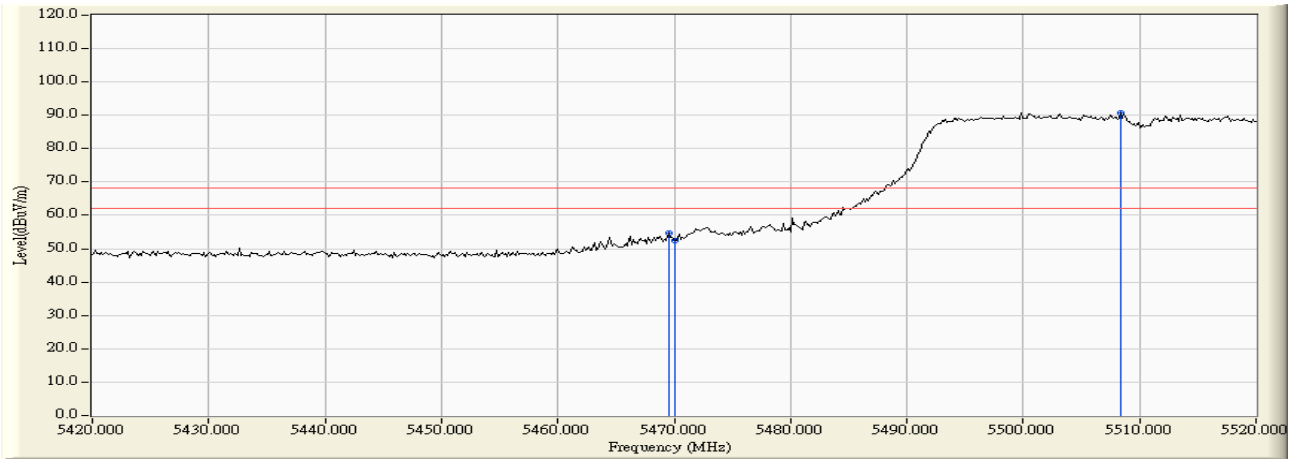
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading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

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 102

RF Radiated Measurement:



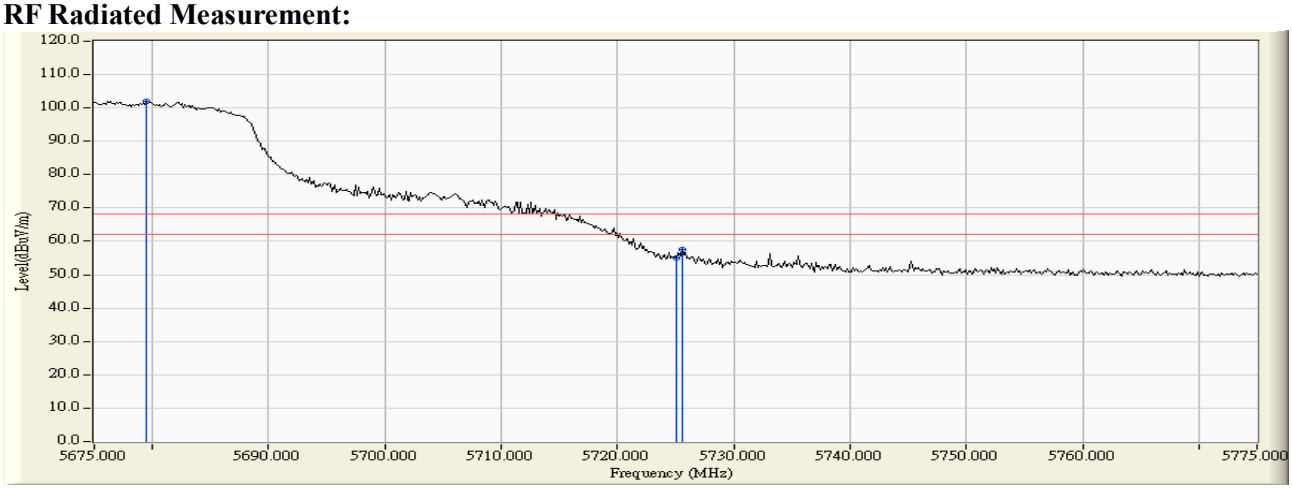
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5469.710	3.965	62.890	66.854	-1.366	68.220	Pass
Horizontal	5470.000	3.970	61.471	65.441	-2.779	68.220	Pass
Horizontal	5502.754	4.515	96.019	100.535	32.315	68.220	Pass



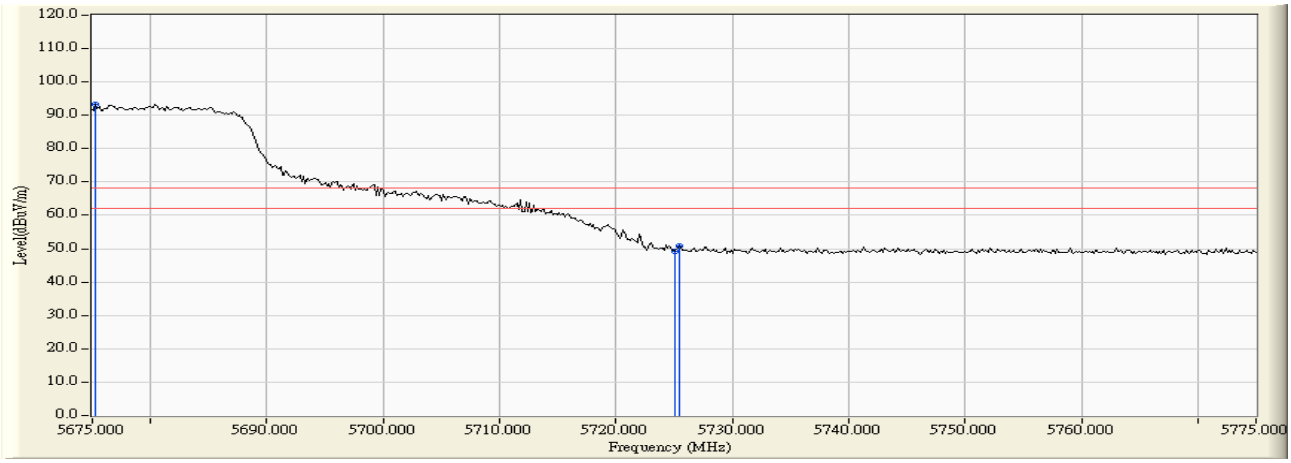
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5469.565	4.073	50.731	54.804	-13.416	68.220	Pass
Vertical	5470.000	4.079	48.253	52.332	-15.888	68.220	Pass
Vertical	5508.406	4.511	86.286	90.797	22.577	68.220	Pass

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 134

RF Radiated Measurement:



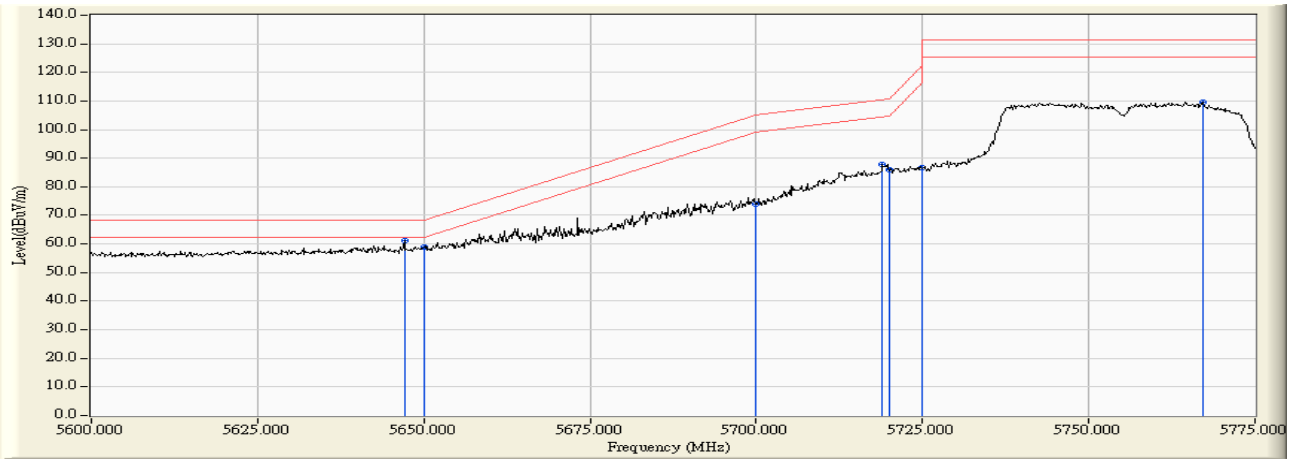
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5679.493	4.924	96.988	101.912	33.692	68.220	Pass
Horizontal	5725.000	5.104	49.999	55.102	-13.118	68.220	Pass
Horizontal	5725.580	5.106	52.409	57.515	-10.705	68.220	Pass



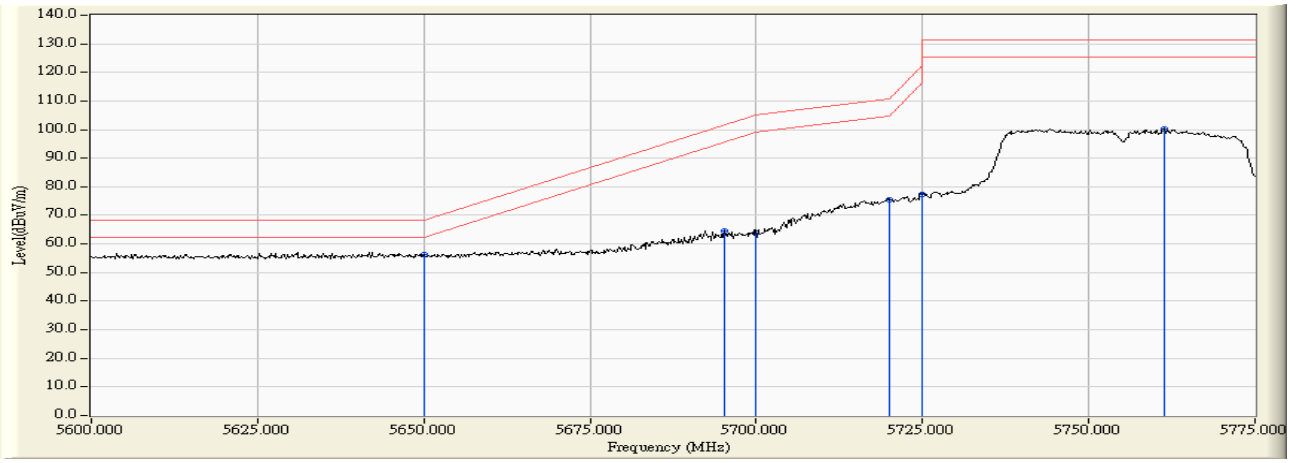
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5675.290	4.274	88.977	93.251	25.031	68.220	Pass
Vertical	5725.000	4.215	44.889	49.104	-19.116	68.220	Pass
Vertical	5725.435	4.216	46.593	50.809	-17.411	68.220	Pass

Product : WiFi Module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Date : 2017/03/14
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 151

RF Radiated Measurement :



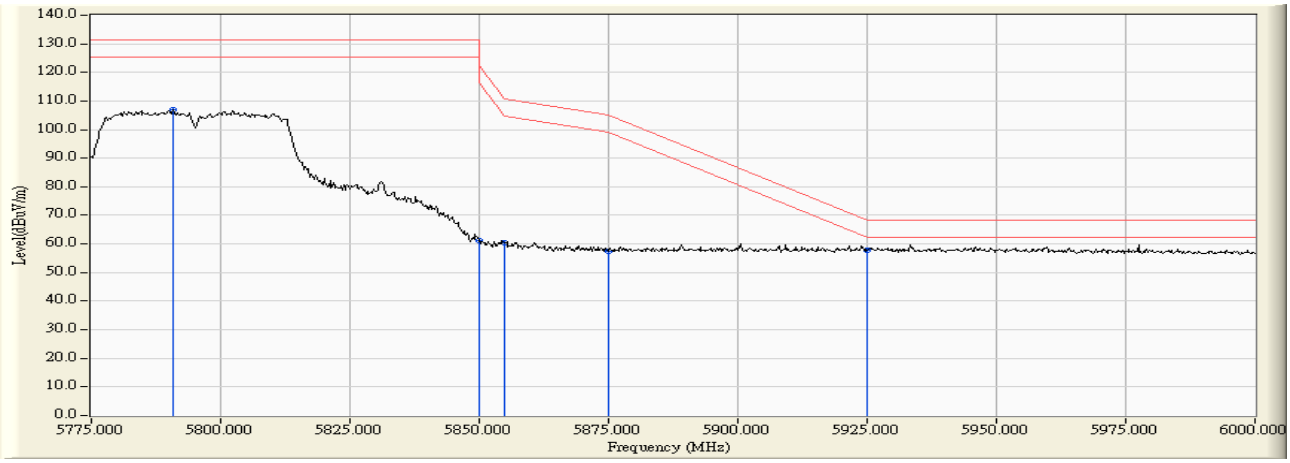
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Horizontal	5647.075	4.736	56.294	61.030	-7.190	68.220	Pass
Horizontal	5650.000	4.764	54.161	58.926	-9.294	68.220	Pass
Horizontal	5700.000	5.002	68.808	73.810	-31.390	105.200	Pass
Horizontal	5719.000	5.079	82.753	87.832	-22.688	110.520	Pass
Horizontal	5720.000	5.083	80.753	85.836	-24.964	110.800	Pass
Horizontal	5725.000	5.104	81.485	86.588	-35.612	122.200	Pass
Horizontal	5767.125	5.265	104.278	109.542	-21.658	131.200	Pass



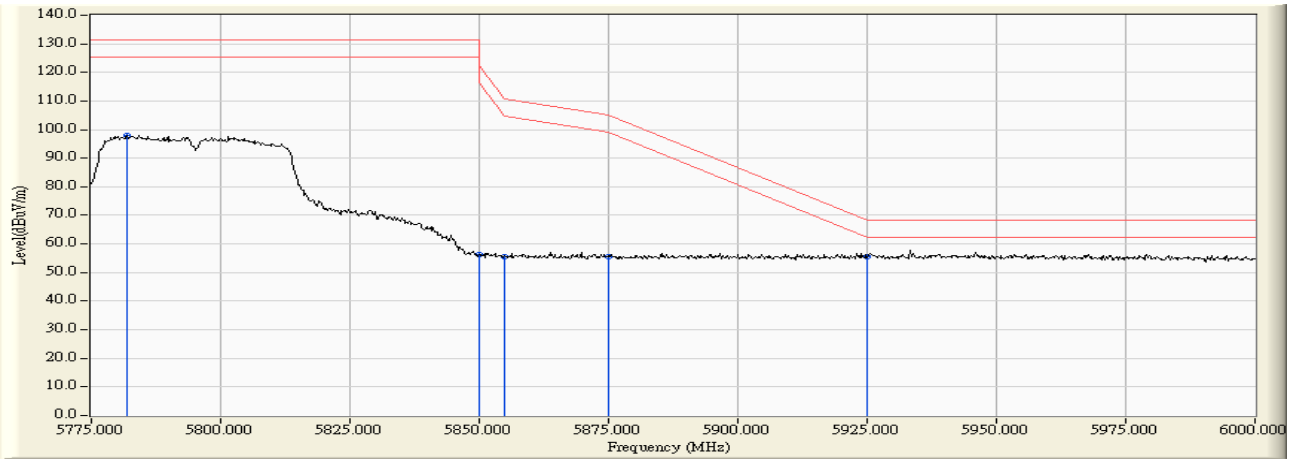
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5650.000	4.361	51.910	56.272	-11.948	68.220	Pass
Vertical	5695.200	4.180	60.451	64.631	-37.019	101.650	Pass
Vertical	5700.000	4.176	59.658	63.834	-41.366	105.200	Pass
Vertical	5720.000	4.200	71.344	75.544	-35.256	110.800	Pass
Vertical	5725.000	4.215	73.156	77.371	-44.829	122.200	Pass
Vertical	5761.350	4.314	95.906	100.221	-30.979	131.200	Pass

Product	:	WiFi Module
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Date	:	2017/03/14
Test Mode	:	Mode 3: Transmit (802.11n-40BW 30Mbps) -Channel 159

RF Radiated Measurement:



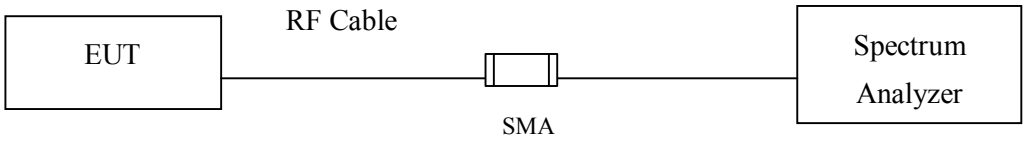
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5790.750	5.344	101.591	106.936	-24.264	131.200	Pass
Horizontal	5850.000	5.715	55.314	61.029	-61.171	122.200	Pass
Horizontal	5855.000	5.757	54.730	60.487	-50.313	110.800	Pass
Horizontal	5875.000	5.931	51.678	57.609	-47.591	105.200	Pass
Horizontal	5925.000	6.245	51.701	57.947	-10.253	68.200	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Measure Level (dBµV /m)	Margin (dB)	Limit (dBµV /m)	Result
Vertical	5781.975	4.360	93.669	98.028	-33.172	131.200	Pass
Vertical	5850.000	4.194	52.064	56.258	-65.942	122.200	Pass
Vertical	5855.000	4.181	51.486	55.667	-55.133	110.800	Pass
Vertical	5875.000	4.137	51.506	55.643	-49.557	105.200	Pass
Vertical	5925.000	4.270	51.228	55.498	-12.702	68.200	Pass

7. Occupied Bandwidth

7.1. Test Setup



7.2. Limits

For the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz

7.3. .Test Procedure

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

7.4. Uncertainty

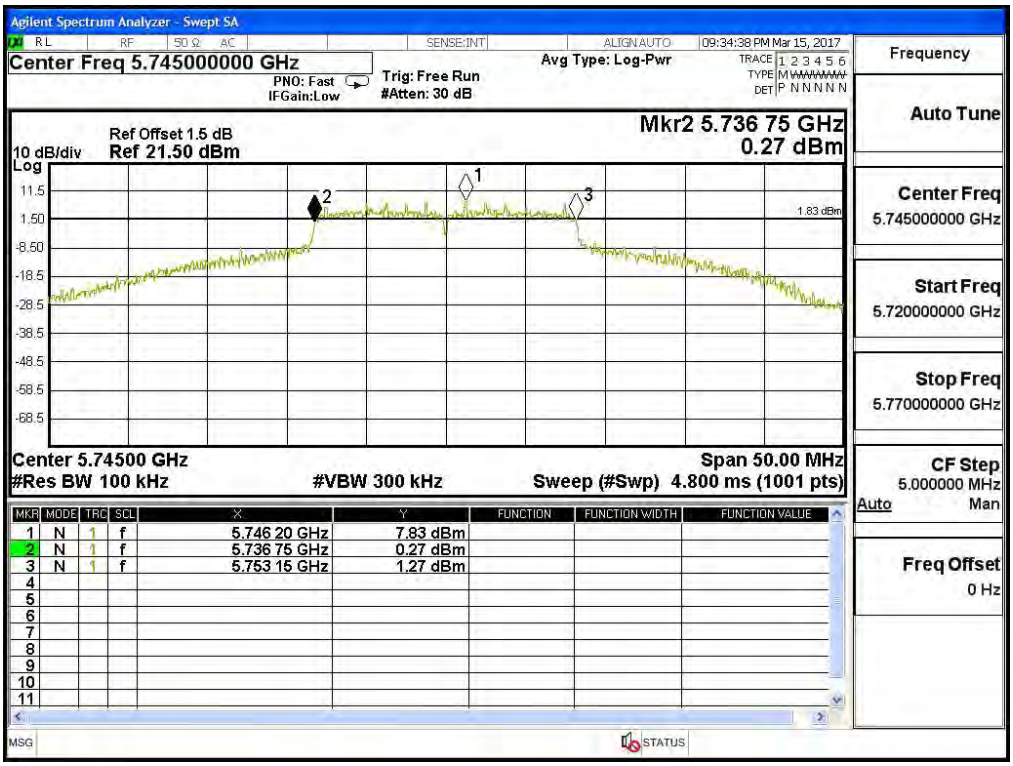
± 681.6Hz

7.5. Test Result of Occupied Bandwidth

Product : WiFi Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5745MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	16400	>500	Pass

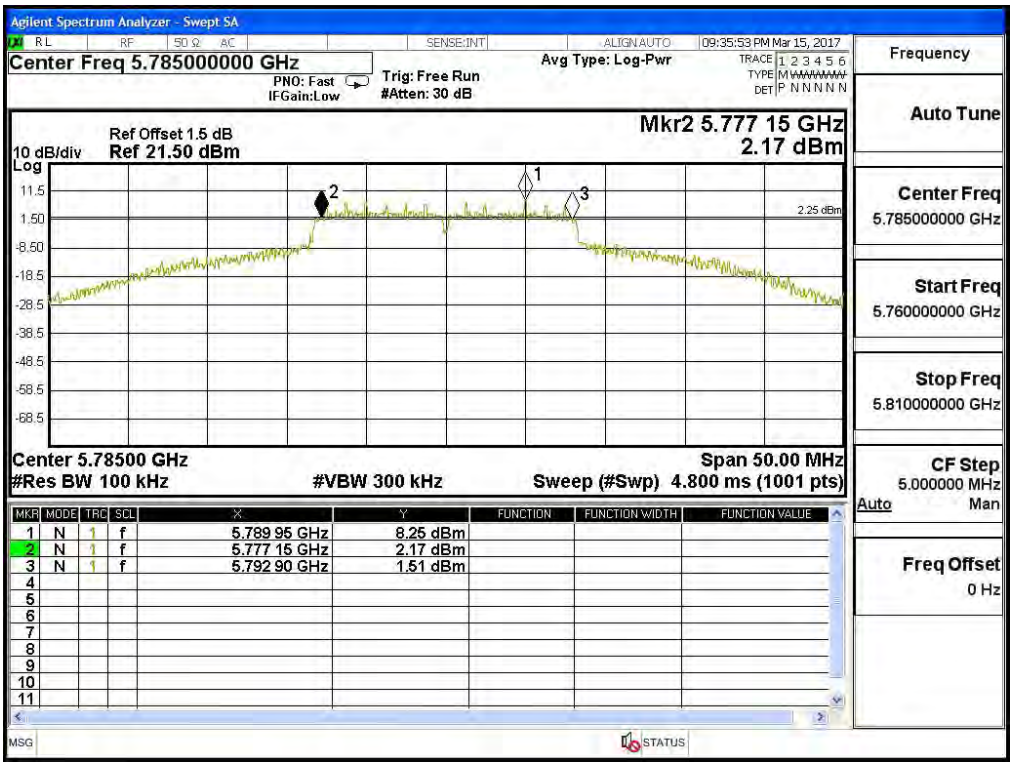
Figure Channel 149:



Product : WiFi Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	15750	>500	Pass

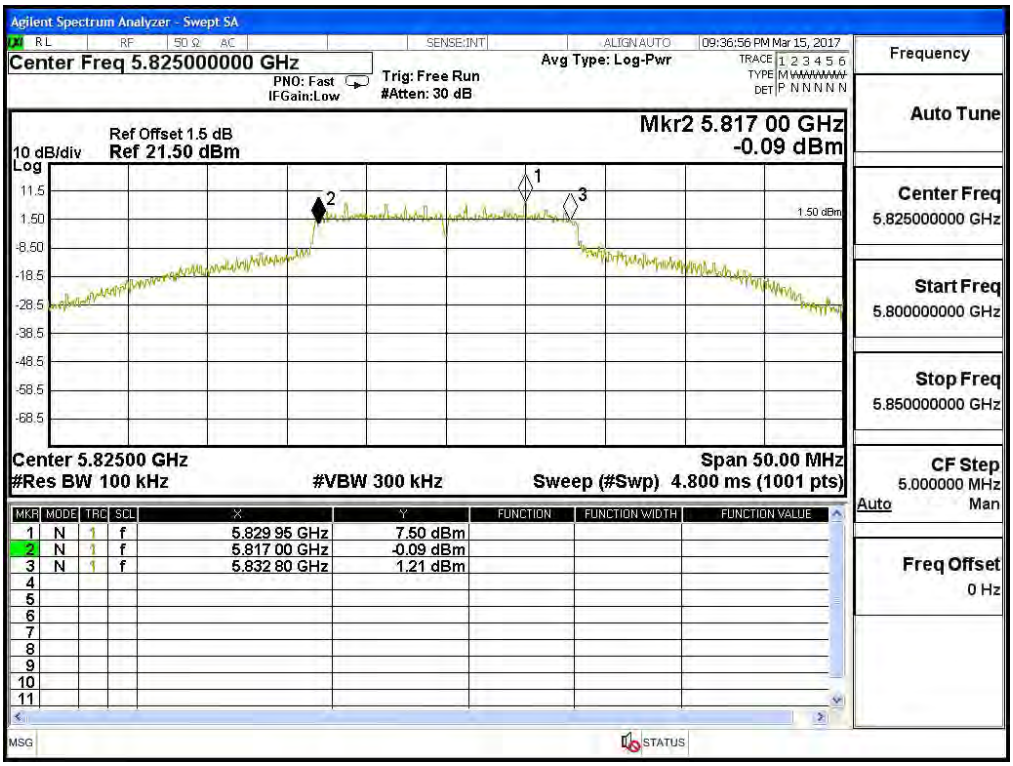
Figure Channel 157:



Product : WiFi Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	15800	>500	Pass

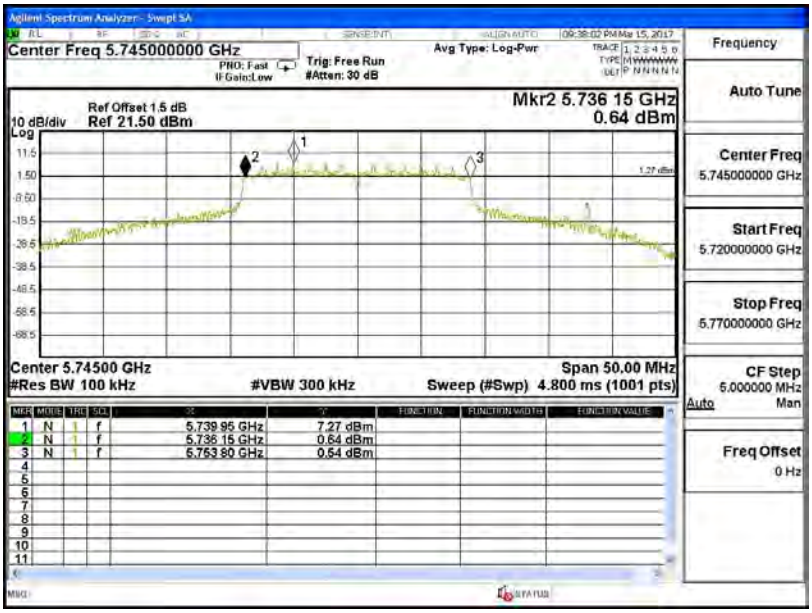
Figure Channel 165:



Product : WiFi Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5745MHz)

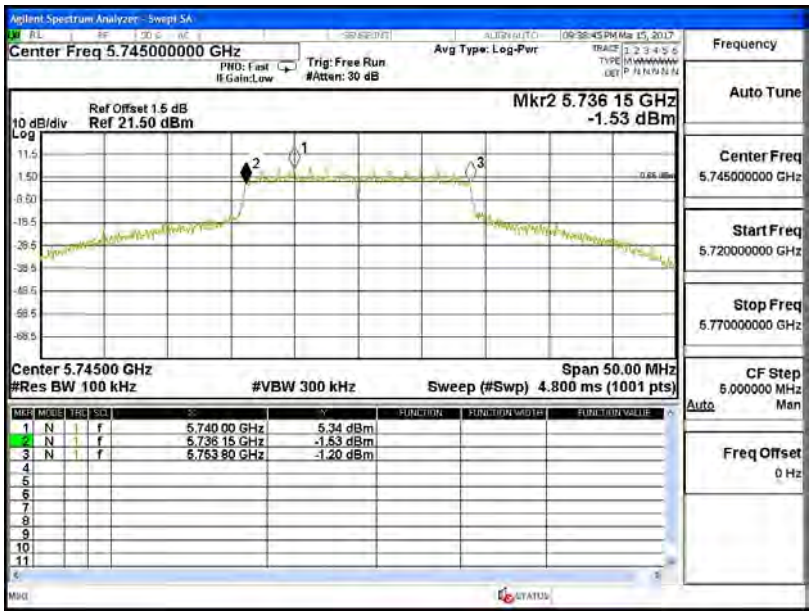
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	17650	>500	Pass

Figure Channel 149: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	17650	>500	Pass

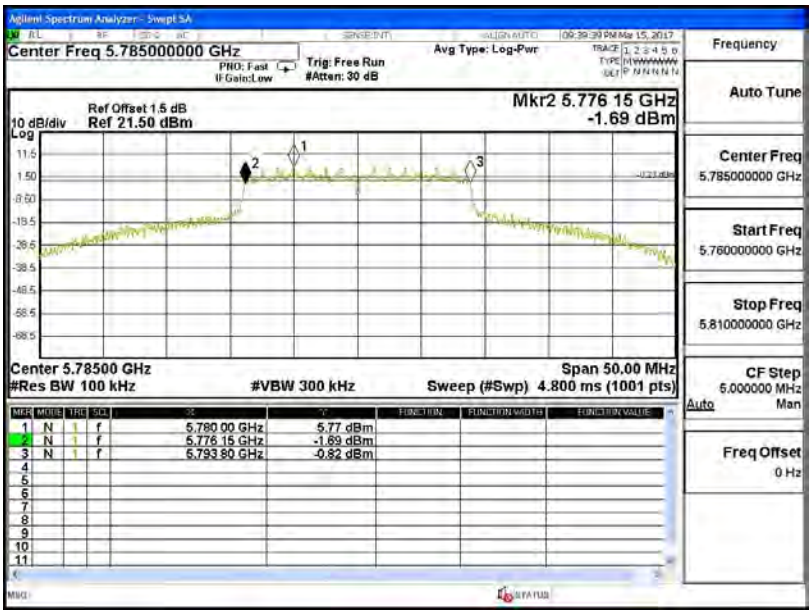
Figure Channel 149: (Chain B)



Product : WiFi Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5785MHz)

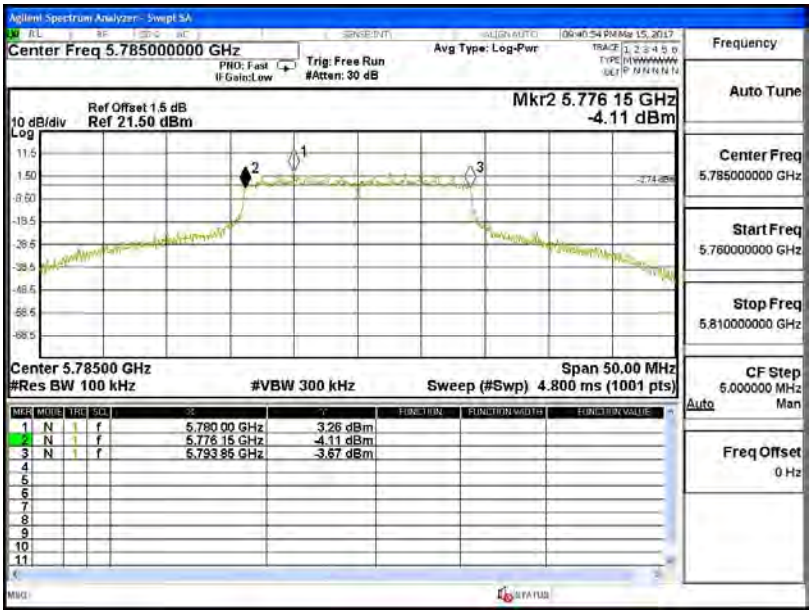
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	17650	>500	Pass

Figure Channel 157: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	17700	>500	Pass

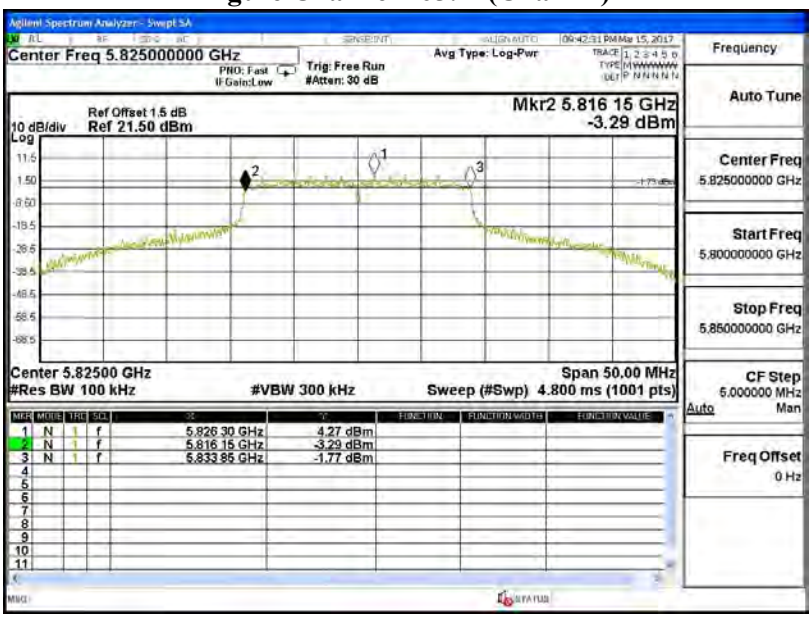
Figure Channel 157: (Chain B)



Product : WiFi Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps) (5825MHz)

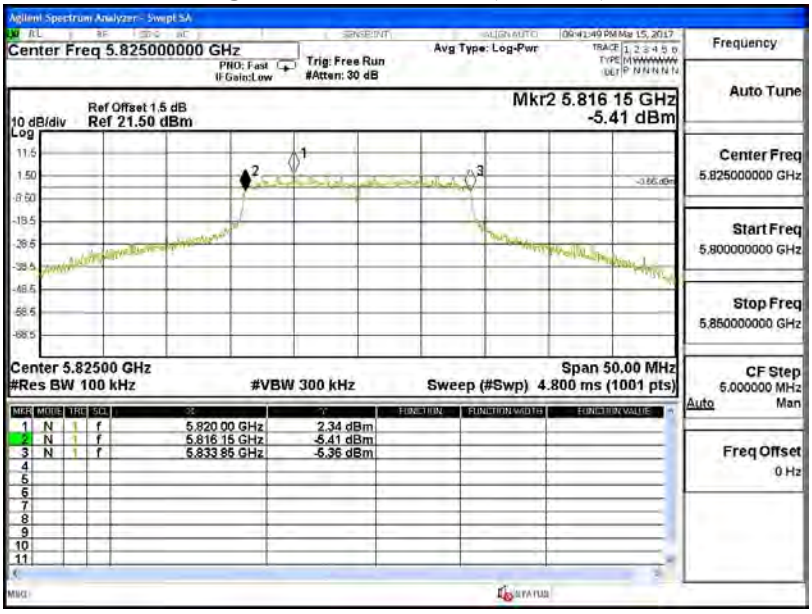
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	17700	>500	Pass

Figure Channel 165: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	17700	>500	Pass

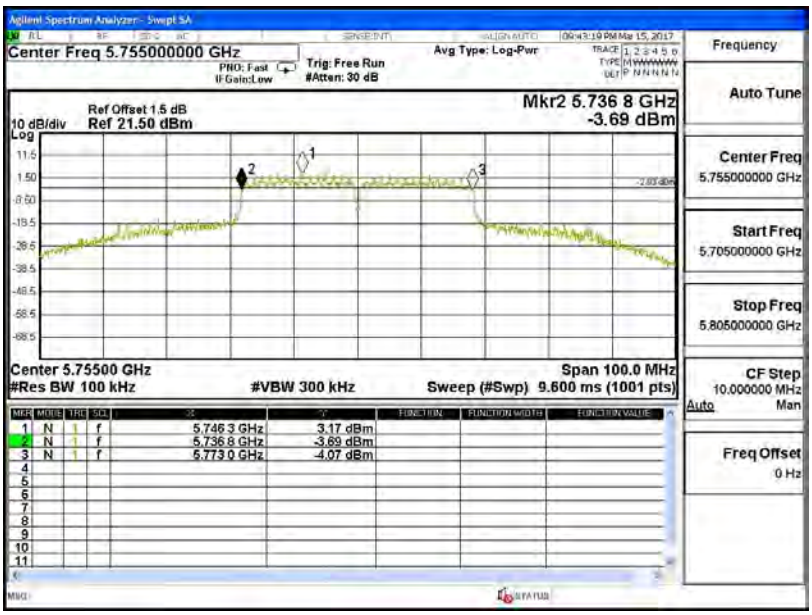
Figure Channel 165: (Chain B)



Product : WiFi Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5755MHz)

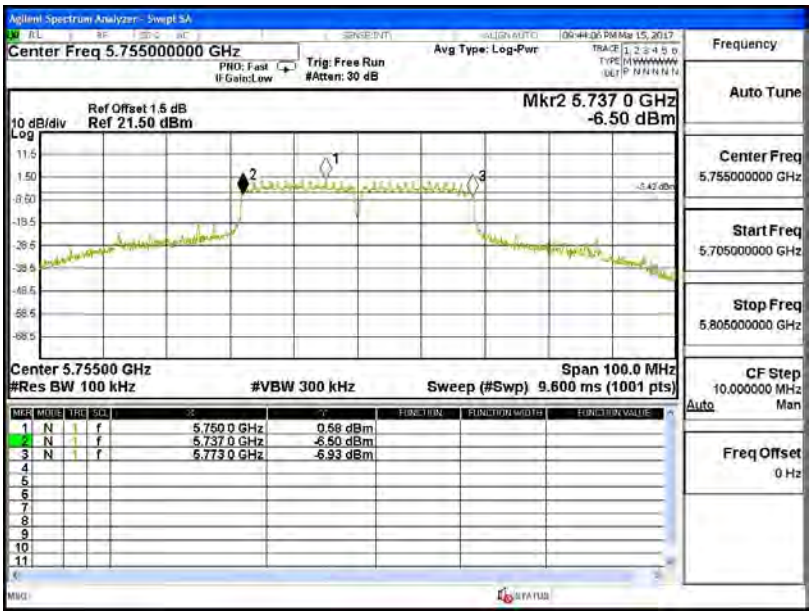
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755.00	36200	>500	Pass

Figure Channel 151: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755.00	36000	>500	Pass

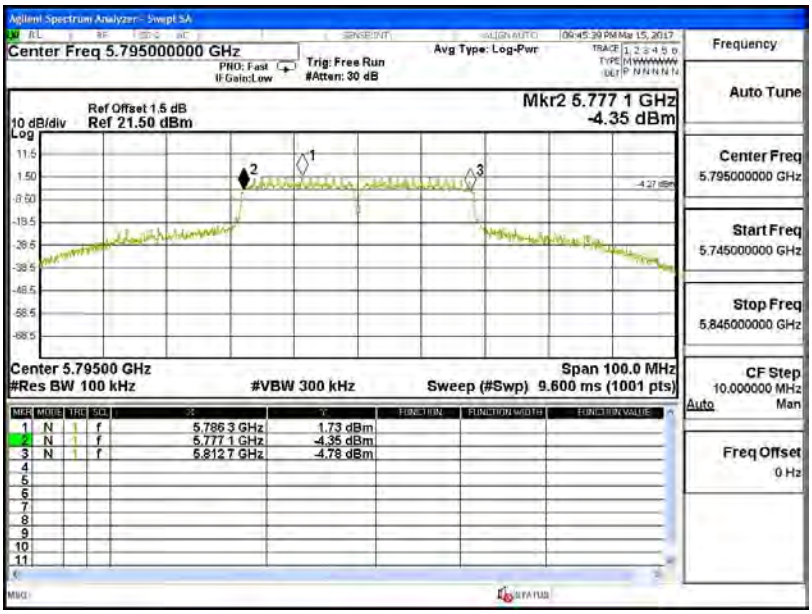
Figure Channel 151: (Chain B)



Product : WiFi Module
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps) (5795MHz)

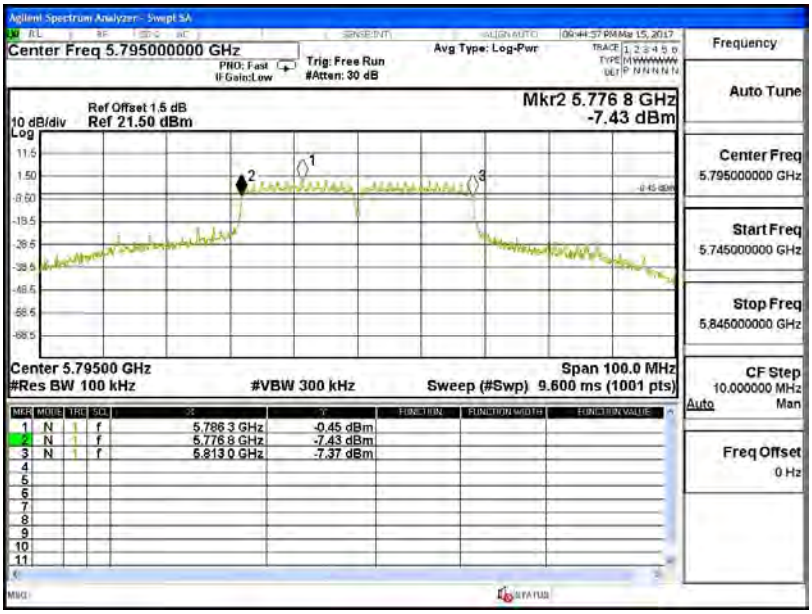
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
159	5795.00	35600	>500	Pass

Figure Channel 159: (Chain A)



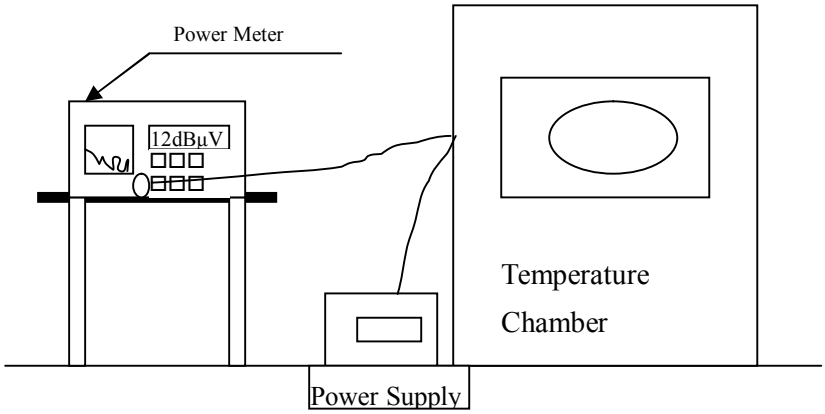
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
159	5795.00	36200	>500	Pass

Figure Channel 159: (Chain B)



8. Frequency Stability

8.1. Test Setup



8.2. Limits

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified

8.3. Test Procedure

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

8.4. Uncertainty

± 681.6 Hz

8.5. Test Result of Frequency Stability

Product : WiFi Module
Test Item : Frequency Stability
Test Site : Temperature Chamber
Test Date : 2017/03/14
Test Mode : Carrier Wave

Chain A

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (20) oC	Vnom (120)V	36	5180.0000	5180.0065	-0.0065
		38	5190.0000	5190.0062	-0.0062
		44	5220.0000	5220.0102	-0.0102
		46	5230.0000	5230.0016	-0.0016
		48	5240.0000	5240.0648	-0.0648
		52	5260.0000	5260.0065	-0.0065
		54	5270.0000	5270.0035	-0.0035
		60	5300.0000	5300.0021	-0.0021
		62	5310.0000	5310.0085	-0.0085
		64	5320.0000	5320.0045	-0.0045
		100	5500.0000	5500.0040	-0.0040
		102	5510.0000	5510.0025	-0.0025
		110	5550.0000	5550.0110	-0.0110
		116	5580.0000	5580.0320	-0.0320
		134	5670.0000	5670.0210	-0.0210
		140	5700.0000	5700.0048	-0.0048
		149	5745.0000	5745.0099	-0.0099
		151	5755.0000	5755.0024	-0.0024
		157	5785.0000	5785.0032	-0.0032
		159	5795.0000	5795.0065	-0.0065
		165	5825.0000	5825.0105	-0.0105

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tmax (50) oC	Vmax (138)V	36	5180.0000	5180.0114	-0.0114
		38	5190.0000	5190.0052	-0.0052
		44	5220.0000	5220.0058	-0.0058
		46	5230.0000	5230.0101	-0.0101
		48	5240.0000	5240.0069	-0.0069
		52	5260.0000	5260.0114	-0.0114
		54	5270.0000	5270.0109	-0.0109
		60	5300.0000	5300.0060	-0.0060
		62	5310.0000	5310.0110	-0.0110
		64	5320.0000	5320.0120	-0.0120
		100	5500.0000	5500.0090	-0.0090
		102	5510.0000	5510.0880	-0.0880
		110	5550.0000	5550.0007	-0.0007
		116	5580.0000	5580.0009	-0.0009
		134	5670.0000	5670.0043	-0.0043
		140	5700.0000	5700.0035	-0.0035
		149	5745.0000	5745.0026	-0.0026
		151	5755.0000	5755.0057	-0.0057
		157	5785.0000	5785.0053	-0.0053
		159	5795.0000	5795.0069	-0.0069
		165	5825.0000	5825.0038	-0.0038

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tmax (50) °C	Vmin (102)V	36	5180.0000	5180.0115	-0.0115
		38	5190.0000	5190.0059	-0.0059
		44	5220.0000	5220.0057	-0.0057
		46	5230.0000	5230.0099	-0.0099
		48	5240.0000	5240.0064	-0.0064
		52	5260.0000	5260.0115	-0.0115
		54	5270.0000	5270.0110	-0.0110
		60	5300.0000	5300.0061	-0.0061
		62	5310.0000	5310.0111	-0.0111
		64	5320.0000	5320.0122	-0.0122
		100	5500.0000	5500.0093	-0.0093
		102	5510.0000	5510.0887	-0.0887
		110	5550.0000	5550.0006	-0.0006
		116	5580.0000	5580.0011	-0.0011
		134	5670.0000	5670.0041	-0.0041
		140	5700.0000	5700.0039	-0.0039
		149	5745.0000	5745.0037	-0.0037
		151	5755.0000	5755.0055	-0.0055
		157	5785.0000	5785.0054	-0.0054
		159	5795.0000	5795.0071	-0.0071
		165	5825.0000	5825.0039	-0.0039

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (-10) °C	Vnom (138)V	36	5180.0000	5180.0011	-0.0011
		38	5190.0000	5190.0082	-0.0082
		44	5220.0000	5220.0043	-0.0043
		46	5230.0000	5230.0067	-0.0067
		48	5240.0000	5240.0112	-0.0112
		52	5260.0000	5260.0023	-0.0023
		54	5270.0000	5270.0069	-0.0069
		60	5300.0000	5300.0045	-0.0045
		62	5310.0000	5310.0011	-0.0011
		64	5320.0000	5320.0106	-0.0106
		100	5500.0000	5500.0086	-0.0086
		102	5510.0000	5510.0063	-0.0063
		110	5550.0000	5550.0077	-0.0077
		116	5580.0000	5580.0022	-0.0022
		134	5670.0000	5670.0110	-0.0110
		140	5700.0000	5700.0079	-0.0079
		149	5745.0000	5745.0027	-0.0027
		151	5755.0000	5755.0063	-0.0063
		157	5785.0000	5785.0065	-0.0065
		159	5795.0000	5795.0014	-0.0014
		165	5825.0000	5825.0098	-0.0098

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tmax (-10) °C	Vmax (102)V	36	5180.0000	5180.0010	-0.0010
		38	5190.0000	5190.0080	-0.0080
		44	5220.0000	5220.0044	-0.0044
		46	5230.0000	5230.0060	-0.0060
		48	5240.0000	5240.0110	-0.0110
		52	5260.0000	5260.0028	-0.0028
		54	5270.0000	5270.0068	-0.0068
		60	5300.0000	5300.0040	-0.0040
		62	5310.0000	5310.0010	-0.0010
		64	5320.0000	5320.0105	-0.0105
		100	5500.0000	5500.0084	-0.0084
		102	5510.0000	5510.0062	-0.0062
		110	5550.0000	5550.0072	-0.0072
		116	5580.0000	5580.0021	-0.0021
		134	5670.0000	5670.0109	-0.0109
		140	5700.0000	5700.0077	-0.0077
		149	5745.0000	5745.0028	-0.0028
		151	5755.0000	5755.0061	-0.0061
		157	5785.0000	5785.0069	-0.0069
		159	5795.0000	5795.0013	-0.0013
		165	5825.0000	5825.0097	-0.0097

Chain B

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (20) oC	Vnom (120)V	36	5180.0000	5180.0531	-0.0531
		38	5190.0000	5190.0059	-0.0059
		44	5220.0000	5220.0046	-0.0046
		46	5230.0000	5230.0055	-0.0055
		48	5240.0000	5240.0079	-0.0079
		52	5260.0000	5260.0052	-0.0052
		54	5270.0000	5270.0109	-0.0109
		60	5300.0000	5300.0067	-0.0067
		62	5310.0000	5310.0036	-0.0036
		64	5320.0000	5320.0092	-0.0092
		100	5500.0000	5500.0023	-0.0023
		102	5510.0000	5510.0099	-0.0099
		110	5550.0000	5550.0105	-0.0105
		116	5580.0000	5580.0098	-0.0098
		134	5670.0000	5670.0087	-0.0087
		140	5700.0000	5700.0018	-0.0018
		149	5745.0000	5745.0074	-0.0074
		151	5755.0000	5755.0122	-0.0122
		157	5785.0000	5785.0119	-0.0119
		159	5795.0000	5795.0049	-0.0049
		165	5825.0000	5825.0111	-0.0111

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tmax (50) oC	Vmax (138)V	36	5180.0000	5180.0086	-0.0086
		38	5190.0000	5190.0048	-0.0048
		44	5220.0000	5220.0101	-0.0101
		46	5230.0000	5230.0091	-0.0091
		48	5240.0000	5240.0029	-0.0029
		52	5260.0000	5260.0042	-0.0042
		54	5270.0000	5270.0026	-0.0026
		60	5300.0000	5300.0078	-0.0078
		62	5310.0000	5310.0012	-0.0012
		64	5320.0000	5320.0119	-0.0119
		100	5500.0000	5500.0054	-0.0054
		102	5510.0000	5510.0048	-0.0048
		110	5550.0000	5550.0045	-0.0045
		116	5580.0000	5580.0095	-0.0095
		134	5670.0000	5670.0103	-0.0103
		140	5700.0000	5700.0115	-0.0115
		149	5745.0000	5745.0034	-0.0034
		151	5755.0000	5755.0039	-0.0039
		157	5785.0000	5785.0410	-0.0410
		159	5795.0000	5795.0160	-0.0160
		165	5825.0000	5825.0280	-0.0280

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tmax (50) °C	Vmin (102)V	36	5180.0000	5180.0087	-0.0087
		38	5190.0000	5190.0049	-0.0049
		44	5220.0000	5220.0112	-0.0112
		46	5230.0000	5230.0097	-0.0097
		48	5240.0000	5240.0034	-0.0034
		52	5260.0000	5260.0046	-0.0046
		54	5270.0000	5270.0027	-0.0027
		60	5300.0000	5300.0079	-0.0079
		62	5310.0000	5310.0017	-0.0017
		64	5320.0000	5320.0120	-0.0120
		100	5500.0000	5500.0056	-0.0056
		102	5510.0000	5510.0047	-0.0047
		110	5550.0000	5550.0046	-0.0046
		116	5580.0000	5580.0096	-0.0095
		134	5670.0000	5670.0104	-0.0104
		140	5700.0000	5700.0117	-0.0117
		149	5745.0000	5745.0036	-0.0036
		151	5755.0000	5755.0032	-0.0032
		157	5785.0000	5785.0412	-0.0412
		159	5795.0000	5795.0163	-0.0163
		165	5825.0000	5825.0270	-0.0270

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (-10) °C	Vnom (138)V	36	5180.0000	5180.0112	-0.0112
		38	5190.0000	5190.0043	-0.0043
		44	5220.0000	5220.0111	-0.0111
		46	5230.0000	5230.0098	-0.0098
		48	5240.0000	5240.0011	-0.0011
		52	5260.0000	5260.0053	-0.0053
		54	5270.0000	5270.0076	-0.0076
		60	5300.0000	5300.0045	-0.0045
		62	5310.0000	5310.0038	-0.0038
		64	5320.0000	5320.0013	-0.0013
		100	5500.0000	5500.0086	-0.0086
		102	5510.0000	5510.0093	-0.0093
		110	5550.0000	5550.0044	-0.0044
		116	5580.0000	5580.0082	-0.0082
		134	5670.0000	5670.0010	-0.0010
		140	5700.0000	5700.0063	-0.0063
		149	5745.0000	5745.0062	-0.0062
		151	5755.0000	5755.0017	-0.0017
		157	5785.0000	5785.0092	-0.0092
		159	5795.0000	5795.0071	-0.0071
		165	5825.0000	5825.0033	-0.0033

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tmax (-10) °C	Vmax (102)V	36	5180.0000	5180.0110	-0.0110
		38	5190.0000	5190.0042	-0.0042
		44	5220.0000	5220.0110	-0.0110
		46	5230.0000	5230.0097	-0.0097
		48	5240.0000	5240.0010	-0.0010
		52	5260.0000	5260.0053	-0.0053
		54	5270.0000	5270.0075	-0.0075
		60	5300.0000	5300.0043	-0.0043
		62	5310.0000	5310.0037	-0.0037
		64	5320.0000	5320.0014	-0.0014
		100	5500.0000	5500.0085	-0.0085
		102	5510.0000	5510.0092	-0.0092
		110	5550.0000	5550.0043	-0.0043
		116	5580.0000	5580.0081	-0.0081
		134	5670.0000	5670.0007	-0.0007
		140	5700.0000	5700.0059	-0.0059
		149	5745.0000	5745.0067	-0.0067
		151	5755.0000	5755.0015	-0.0015
		157	5785.0000	5785.0090	-0.0090
		159	5795.0000	5795.0070	-0.0070
		165	5825.0000	5825.0030	-0.0030

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs