FCC Test Report

Product Name	WiFi module
Model No	WL960E5
FCC ID	RK9-WL960E5

Applicant	CastleNet Technology Inc.
Address	No.64, Chung-Shan Rd. Tu-Cheng District, New Taipei City, Taiwan

Date of Receipt	Aug. 29, 2013
Issued Date	Oct. 11, 2013
Report No.	139073R-RFUSP31V01
Report Version	V1.0

Testing Laboratory
0914

Test Report Certification

Issued Date: Oct. 11, 2013
Report No.: 139073R-RFUSP31V01

Product Name	WiFi module
Applicant	CastleNet Technology Inc.
Address	No.64, Chung-Shan Rd. Tu-Cheng District, New Taipei City, Taiwan
Manufacturer	CastleNet Technology Inc.
Model No.	WL960E5
FCC ID.	RK9-WL960E5
EUT Rated Voltage	DC3.3V (via Mini-PCI Express slot)
EUT Test Voltage	AC 120V/60Hz
Trade Name	CastleNet
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2012 ANSI C63.4: 2003, ANSI C63.10: 2009, FCC KDB-789033
Test Result	Complied

The Test Results relate only to the samples tested.
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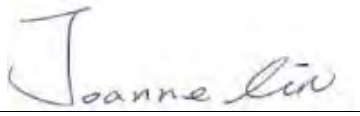
Documented By : 

(Senior Adm. Specialist / Joanne Lin)

Tested By : 

(Engineer / Jack Hsu)

Approved By : 

(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	WiFi module
Trade Name	CastleNet
Model No.	WL960E5
FCC ID.	RK9-WL960E5
Frequency Range	802.11a/n-20MHz: 5180-5240MHz, 802.11n-40MHz: 5190-5230MHz 802.11ac-80MHz: 5210, 5775MHz
Number of Channels	802.11a/n-20MHz: 4, n-40MHz: 2, ac-80MHz: 2
Data Rate	802.11a: 6-54Mbps, 802.11n: up to 450Mbps, 802.11ac up to 1.3Gbps
Channel Control	Auto
Type of Modulation	802.11a/n:OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna type	Dipole / PIFA
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1.	Master Wave	98619PIPF013 (TX1)(TX2)(TX3)	Dipole	5150-5250MHz:4.34 5725-5850MHz:4.17
2.	Master Wave	98619PIPF014 (TX1)(TX2)(TX3)	Dipole	5150-5250MHz:3.89 5725-5850MHz:4.20
3	Master Wave	98619PIPF015 (TX1)(TX2)(TX3)	Dipole	5150-5250MHz: 4.00 5725-5850MHz: 4.21
4	Taiwan Anjie	AP11I-0001 (TX1)(TX2)(TX3)	PIFA	5150-5250MHz:5.65 5725-5850MHz:5.65
5	Taiwan Anjie	AD11I-0003 (TX1)(TX2)(TX3)	Dipole	5150-5250MHz:4.49 5725-5850MHz:3.63
6	Taiwan Anjie	AD11I-0004 (TX1)(TX2)(TX3)	Dipole	5150-5250MHz:4.49 5725-5850MHz:3.63
7	Taiwan Anjie	AD11I-0005 (TX1)(TX2)(TX3)	Dipole	5150-5250MHz:4.49 5725-5850MHz:3.63
8	Aristotle	RFA-52-P171-TF-1 (TX1)(TX2)(TX3)	Dipole	5150-5250MHz:2.70 5725-5850MHz:3.60
9	Aristotle	RFA-52-T42-TF-200 (TX1)(TX2)(TX3)	Dipole	5150-5250MHz:2.00 5725-5850MHz:2.00
10	Taiwan Anjie	AP11I-00003 (TX1)(TX2)(TX3)	Dipole	5150-5250MHz:3.30 5725-5850MHz:3.16

Note: 1.The antenna of EUT is conform to FCC 15.203

2.Only the higher gain antenna was tested and recorded in this report.

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

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

Channel	Frequency	Channel	Frequency
Channel 38:	5190 MHz	Channel 46:	5230 MHz

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

Channel	Frequency	Channel	Frequency
Channel 42:	5210 MHz	Channel 155:	5775 MHz

Note:

1. This device is a WiFi module with a built-in two WLAN module.
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 three-channel transmission, only the worst case is shown in the report. (802.11a is chain A、802.11n/ac is chain A+ chain B +chain C)
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 21.7Mbps, 802.11n-40BW is 45Mbps and 802.11ac is 97.5 Mbps)
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.

Test Mode	Mode 1: Transmit (802.11a-6Mbps) Mode 2: Transmit (802.11n-20BW 21.7Mbps) Mode 3: Transmit (802.11n-40BW 45Mbps) Mode 4: Transmit (802.11ac-80BW 1.3Gbps)

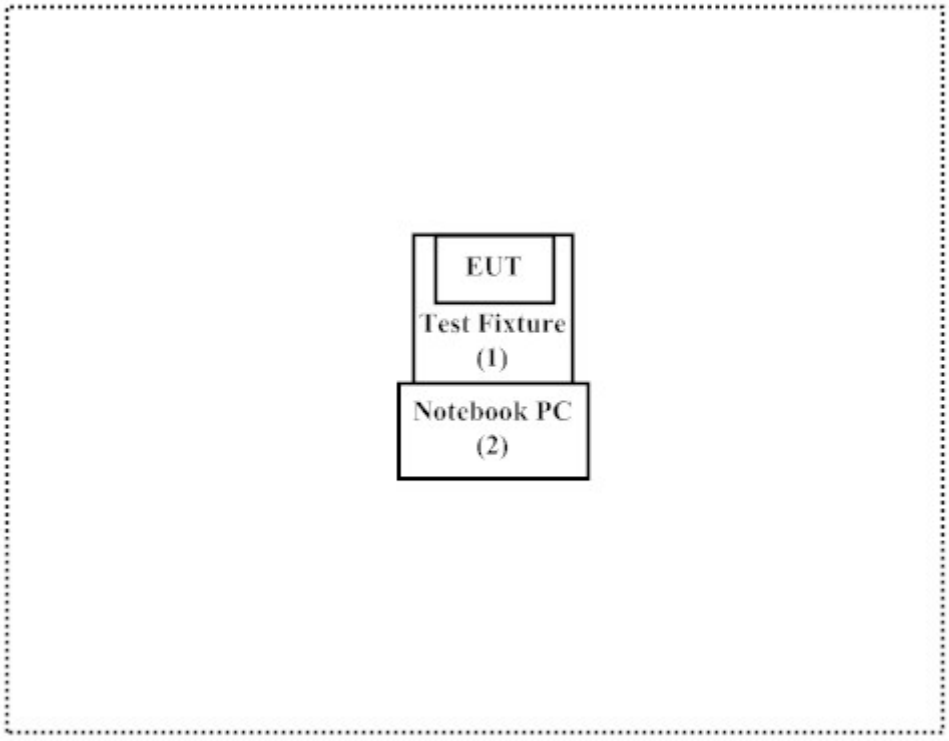
1.3. Tested System Datails

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	Test Fixture	N/A	N/A	N/A	N/A
2	Notebook PC	N/A	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
N/A	

1.4. Configuration of tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4
(2) Execute program”Mtool v6.30.130.0” on the Notebook PC.
(3) Configure the test mode, the test channel, and the data rate.
(4) Start transmits continually.
(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://tw.quietek.com/modules/myalbum/

The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

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

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

FCC Accreditation Number: TW1014

2. Conducted Emission

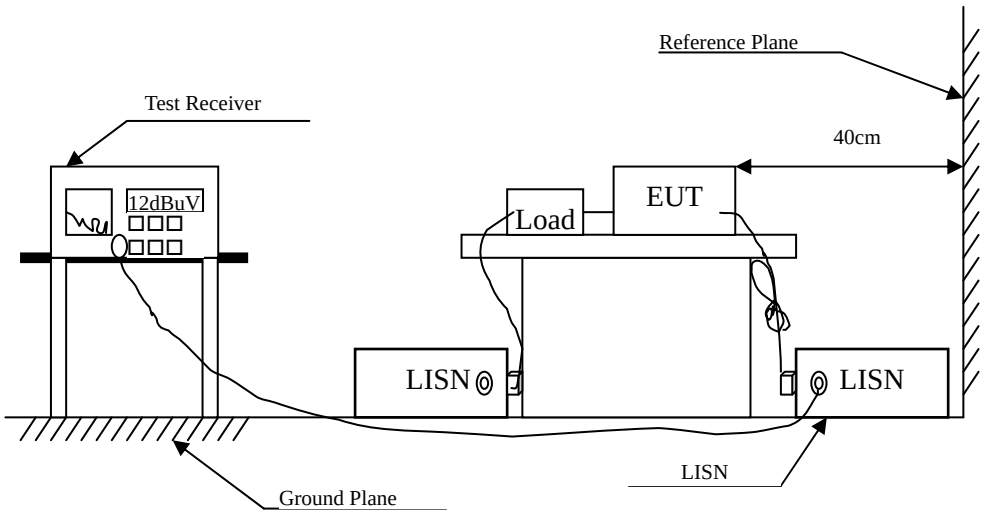
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2013	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2013	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2013	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar., 2013	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2013	
	No.1 Shielded Room				

Note:

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

2.2. Test Setup



2.3. Limits

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

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

2.4. Test Procedure

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

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2009 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, 2009; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : WiFi module
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5210MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.373	9.707	36.040	45.747	-13.882	59.629
0.963	9.733	27.320	37.053	-18.947	56.000
1.123	9.741	23.920	33.661	-22.339	56.000
1.416	9.764	24.100	33.864	-22.136	56.000
3.427	9.820	21.520	31.340	-24.660	56.000
16.834	9.900	44.840	54.740	-5.260	60.000
Average					
0.373	9.707	31.790	41.497	-8.132	49.629
0.963	9.733	19.500	29.233	-16.767	46.000
1.123	9.741	16.530	26.271	-19.729	46.000
1.416	9.764	13.980	23.744	-22.256	46.000
3.427	9.820	15.400	25.220	-20.780	46.000
16.834	9.900	37.000	46.900	-3.100	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5210MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.369	9.686	38.020	47.706	-12.037	59.743
0.666	9.700	34.550	44.250	-11.750	56.000
0.955	9.723	26.110	35.833	-20.167	56.000
1.423	9.744	22.900	32.644	-23.356	56.000
4.009	9.810	22.270	32.080	-23.920	56.000
17.740	9.990	46.250	56.240	-3.760	60.000
Average					
0.369	9.686	34.750	44.436	-5.307	49.743
0.666	9.700	28.970	38.670	-7.330	46.000
0.955	9.723	21.750	31.473	-14.527	46.000
1.423	9.744	17.390	27.134	-18.866	46.000
4.009	9.810	17.090	26.900	-19.100	46.000
17.740	9.990	37.920	47.910	-2.090	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5775MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.369	9.706	37.480	47.186	-12.557	59.743
0.670	9.720	34.650	44.370	-11.630	56.000
0.908	9.731	25.660	35.391	-20.609	56.000
1.209	9.745	22.120	31.865	-24.135	56.000
4.045	9.820	20.990	30.810	-25.190	56.000
16.709	9.900	45.510	55.410	-4.590	60.000
Average					
0.369	9.706	34.340	44.046	-5.697	49.743
0.670	9.720	31.570	41.290	-4.710	46.000
0.908	9.731	22.720	32.451	-13.549	46.000
1.209	9.745	17.410	27.155	-18.845	46.000
4.045	9.820	15.250	25.070	-20.930	46.000
16.709	9.900	37.270	47.170	-2.830	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5775MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.373	9.687	37.820	47.507	-12.122	59.629
0.521	9.693	29.680	39.373	-16.627	56.000
0.673	9.700	35.860	45.560	-10.440	56.000
0.947	9.723	26.070	35.793	-20.207	56.000
4.650	9.820	21.590	31.410	-24.590	56.000
17.119	9.980	46.300	56.280	-3.720	60.000
Average					
0.373	9.687	34.290	43.977	-5.652	49.629
0.521	9.693	21.850	31.543	-14.457	46.000
0.673	9.700	32.770	42.470	-3.530	46.000
0.947	9.723	20.730	30.453	-15.547	46.000
4.650	9.820	16.310	26.130	-19.870	46.000
17.119	9.980	37.840	47.820	-2.180	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5210MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.377	9.707	35.900	45.607	-13.907	59.514
0.673	9.720	32.900	42.620	-13.380	56.000
1.119	9.740	25.500	35.240	-20.760	56.000
1.951	9.798	20.370	30.168	-25.832	56.000
4.115	9.820	22.370	32.190	-23.810	56.000
16.904	9.900	44.810	54.710	-5.290	60.000
Average					
0.377	9.707	29.530	39.237	-10.277	49.514
0.673	9.720	30.060	39.780	-6.220	46.000
1.119	9.740	16.530	26.270	-19.730	46.000
1.951	9.798	8.860	18.658	-27.342	46.000
4.115	9.820	17.590	27.410	-18.590	46.000
16.904	9.900	37.680	47.580	-2.420	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5210MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.369	9.706	37.700	47.406	-12.337	59.743
0.646	9.719	32.310	42.029	-13.971	56.000
1.287	9.758	26.420	36.178	-19.822	56.000
3.939	9.820	23.660	33.480	-22.520	56.000
5.267	9.830	20.460	30.290	-29.710	60.000
17.521	9.900	46.420	56.320	-3.680	60.000
Average					
0.369	9.706	33.730	43.436	-6.307	49.743
0.646	9.719	26.950	36.669	-9.331	46.000
1.287	9.758	18.720	28.478	-17.522	46.000
3.939	9.820	18.500	28.320	-17.680	46.000
5.267	9.830	15.110	24.940	-25.060	50.000
17.521	9.900	37.310	47.210	-2.790	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5775MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.373	9.707	36.160	45.867	-13.762	59.629
0.681	9.721	32.540	42.261	-13.739	56.000
1.349	9.761	22.870	32.631	-23.369	56.000
3.732	9.820	22.450	32.270	-23.730	56.000
7.420	9.850	28.420	38.270	-21.730	60.000
16.615	9.900	43.780	53.680	-6.320	60.000
Average					
0.373	9.707	31.340	41.047	-8.582	49.629
0.681	9.721	29.060	38.781	-7.219	46.000
1.349	9.761	18.910	28.671	-17.329	46.000
3.732	9.820	16.780	26.600	-19.400	46.000
7.420	9.850	23.560	33.410	-16.590	50.000
16.615	9.900	37.400	47.300	-2.700	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

Product : WiFi module
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5775MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.373	9.707	37.620	47.327	-12.302	59.629
0.673	9.720	36.000	45.720	-10.280	56.000
0.963	9.733	23.950	33.683	-22.317	56.000
1.185	9.743	22.180	31.923	-24.077	56.000
4.572	9.830	21.290	31.120	-24.880	56.000
17.693	9.900	45.880	55.780	-4.220	60.000
Average					
0.373	9.707	33.390	43.097	-6.532	49.629
0.673	9.720	33.080	42.800	-3.200	46.000
0.963	9.733	17.710	27.443	-18.557	46.000
1.185	9.743	16.950	26.693	-19.307	46.000
4.572	9.830	14.050	23.880	-22.120	46.000
17.693	9.900	37.420	47.320	-2.680	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 Equipment

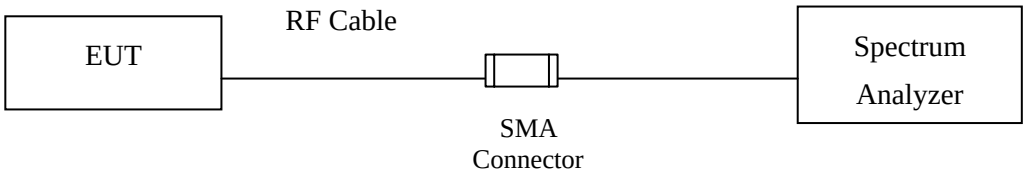
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2013
X	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

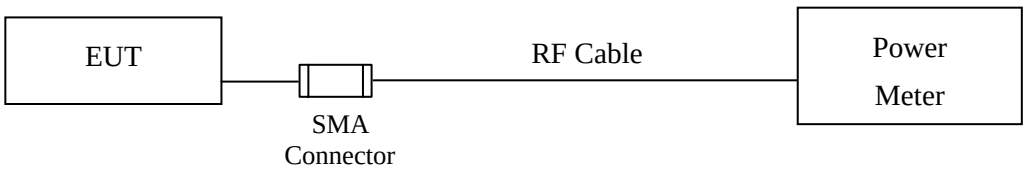
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup

26dBc Occupied Bandwidth



Conduction Power Measurement



3.3. Limits

(1) For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

(2) For the band 5.25-5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1W or 17 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

3.4. Test Procedur

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 than 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.
The Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter).

3.5. Uncertainty

± 1.27 dB

3.6. 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	12.01	--	--	--	--	--	--	--	<17dBm
44	5220	11.99	11.99	11.97	11.97	11.96	11.95	11.94	11.93	<17dBm
48	5240	12.04	--	--	--	--	--	--	--	<17dBm

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
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	11.53	--	--	--	--	--	--	--	<17dBm
44	5220	11.35	11.35	11.34	11.35	11.34	11.33	11.34	11.32	<17dBm
48	5240	11.55	--	--	--	--	--	--	--	<17dBm

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

CHAIN C

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	11.39	--	--	--	--	--	--	--	<17dBm
44	5220	11.40	11.40	11.39	11.39	11.38	11.37	11.38	11.38	<17dBm
48	5240	11.45	--	--	--	--	--	--	--	<17dBm

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

Maximum conducted output power Measurement:

CHAIN A

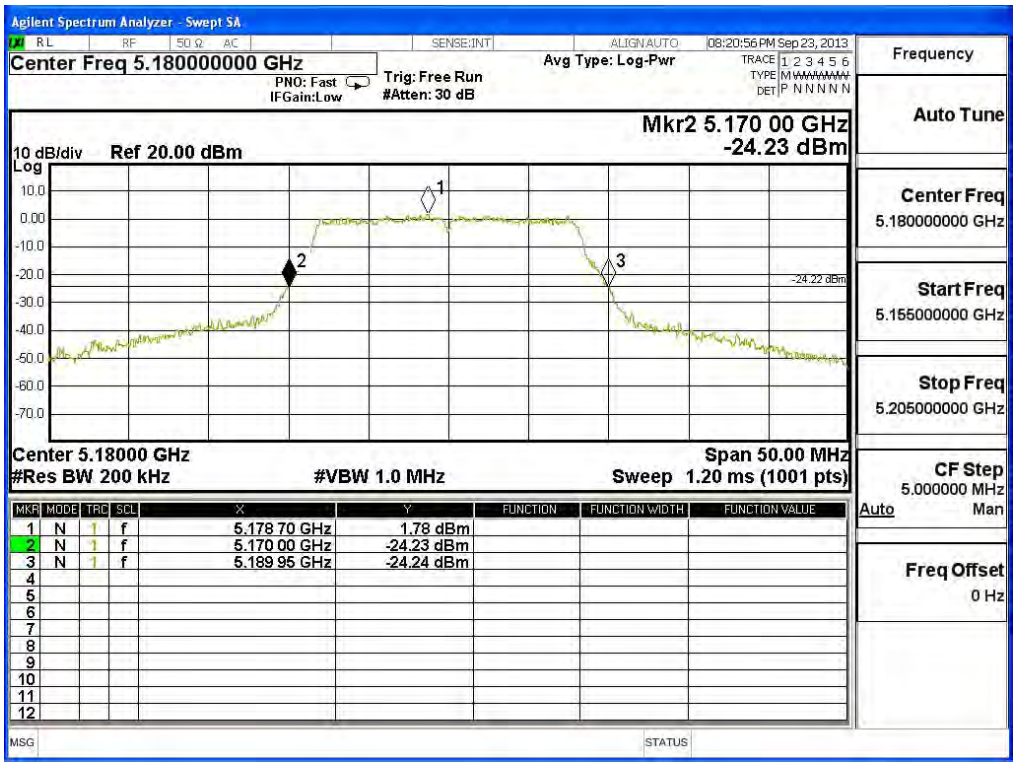
Channel Number	Frequency	26dB Bandwidth	Output Power	Output Power Limit	
	(MHz)	(MHz)	(dBm)	(dBm)	dBm+10log(BW)
36	5180	19.950	12.01	17	17.00
44	5220	19.850	11.99	17	16.98
48	5240	20.000	12.04	17	17.01

Note:

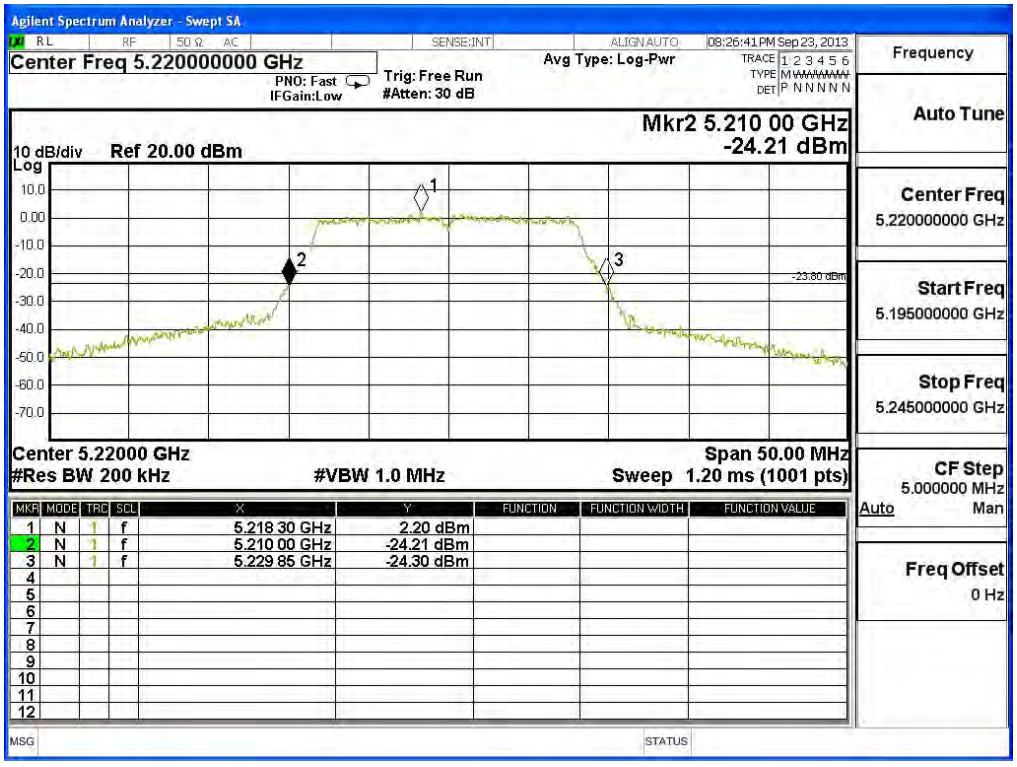
1. Power Output Value =Reading value on average power meter + cable loss

26dBc Occupied Bandwidth:

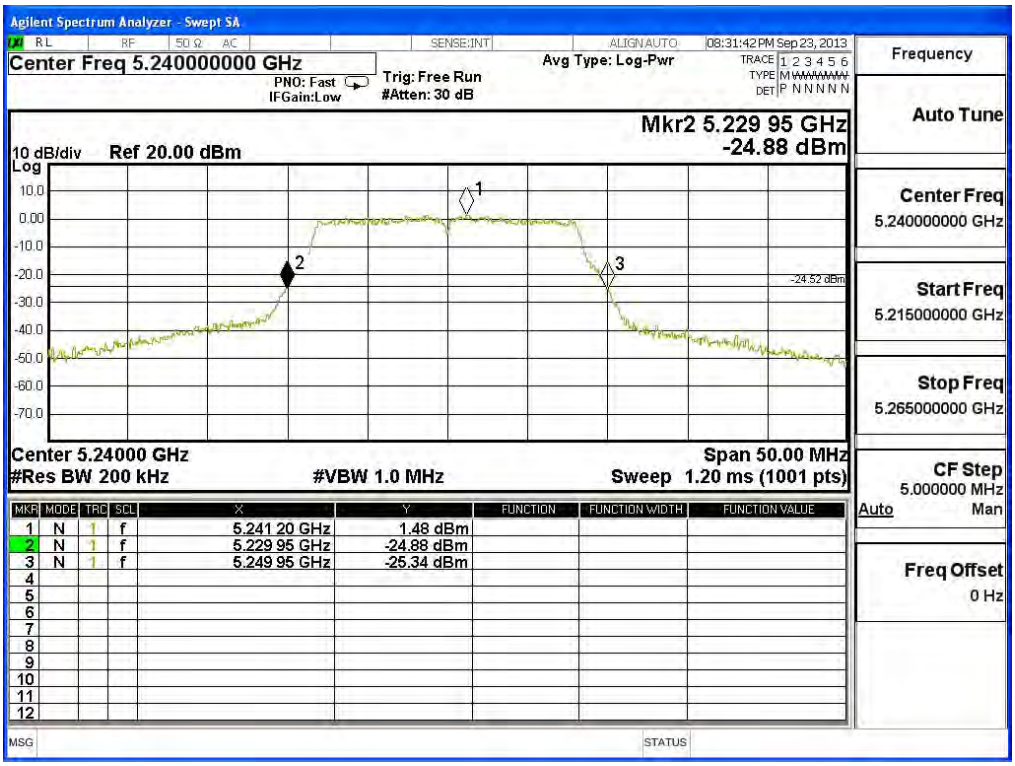
Channel 36:



Channel 44:



Channel 48:



Product : WiFi module
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		21.7	43.3	65	86.7	130.7	173.3	195	216.7	
		Measurement Level (dBm)								
36	5180	7.12	--	--	--	--	--	--	--	<17dBm
44	5220	7.08	7.08	7.07	7.06	7.06	7.05	7.04	7.02	<17dBm
48	5240	7.06	--	--	--	--	--	--	--	<17dBm

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
		21.7	43.3	65	86.7	130.7	173.3	195	216.7	
		Measurement Level (dBm)								
36	5180	7.16	--	--	--	--	--	--	--	<17dBm
44	5220	7.32	7.3	7.33	7.32	7.31	7.22	7.23	7.2	<17dBm
48	5240	7.11	--	--	--	--	--	--	--	<17dBm

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

CHAIN C

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		21.7	43.3	65	86.7	130.7	173.3	195	216.7	
		Measurement Level (dBm)								
36	5180	7.08	--	--	--	--	--	--	--	<17dBm
44	5220	7.38	7.36	7.38	7.38	7.36	7.23	7.25	7.11	<17dBm
48	5240	7.09	--	--	--	--	--	--	--	<17dBm

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

Maximum conducted output power Measurement:

(**CHAIN A+ B+C)**

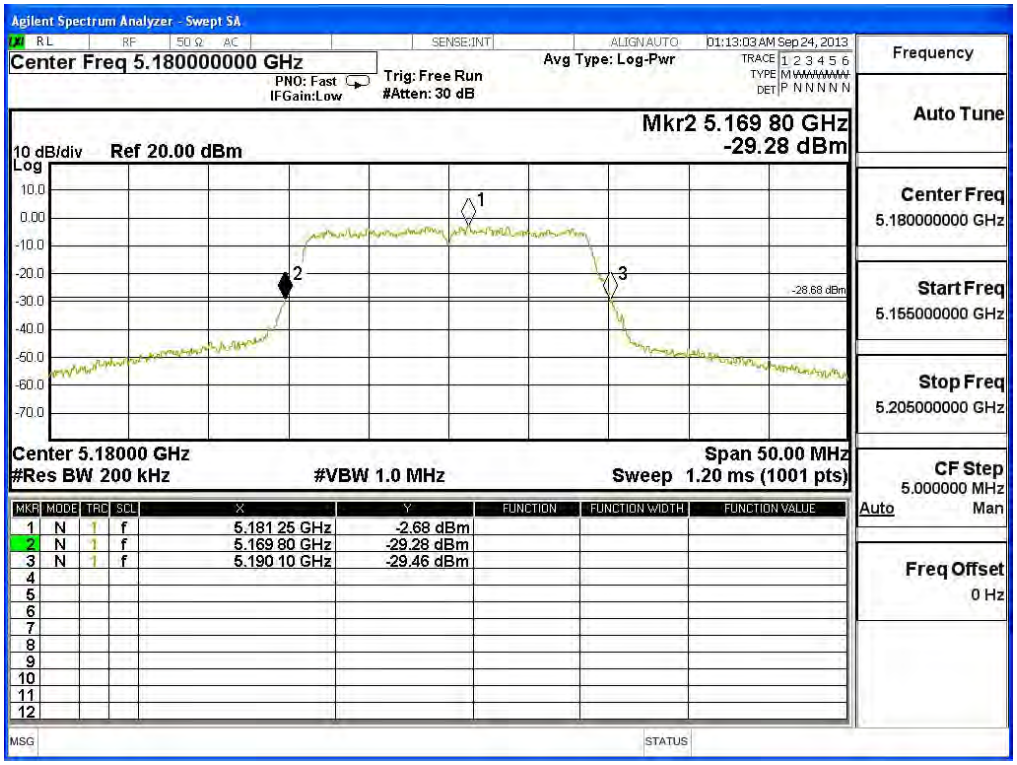
Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Output Power (dBm)	Output Power Limit	
							(dBm)	dBm+10log(BW)
36	5180	20.200	7.12	7.16	7.08	11.89	17	17.05
44	5220	20.050	7.08	7.33	7.38	12.04	17	17.02
48	5240	20.200	7.06	7.11	7.09	11.86	17	17.05

Note:

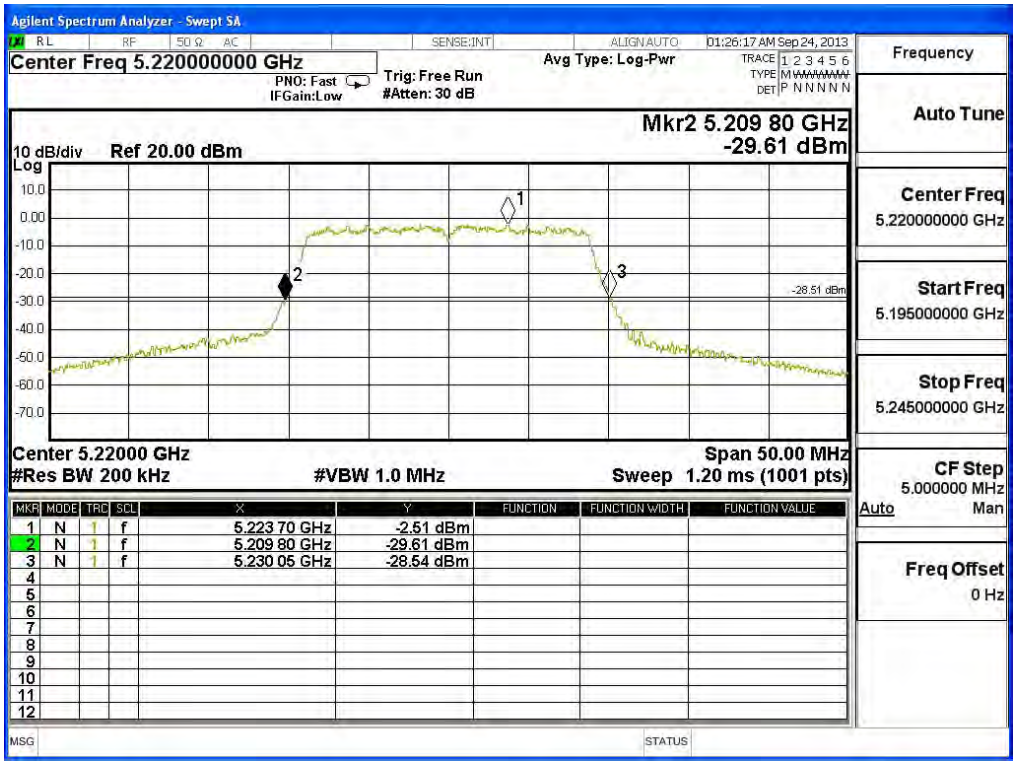
1. Power Output Value =Reading value on average power meter + cable loss
2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW) + Chain C Power(mW))
3. 26 dB Bandwidth is the bandwidth of chain A or chain B or chain C whichever is less bandwidth, output power limitation is more stringent.

26dBc Occupied Bandwidth:

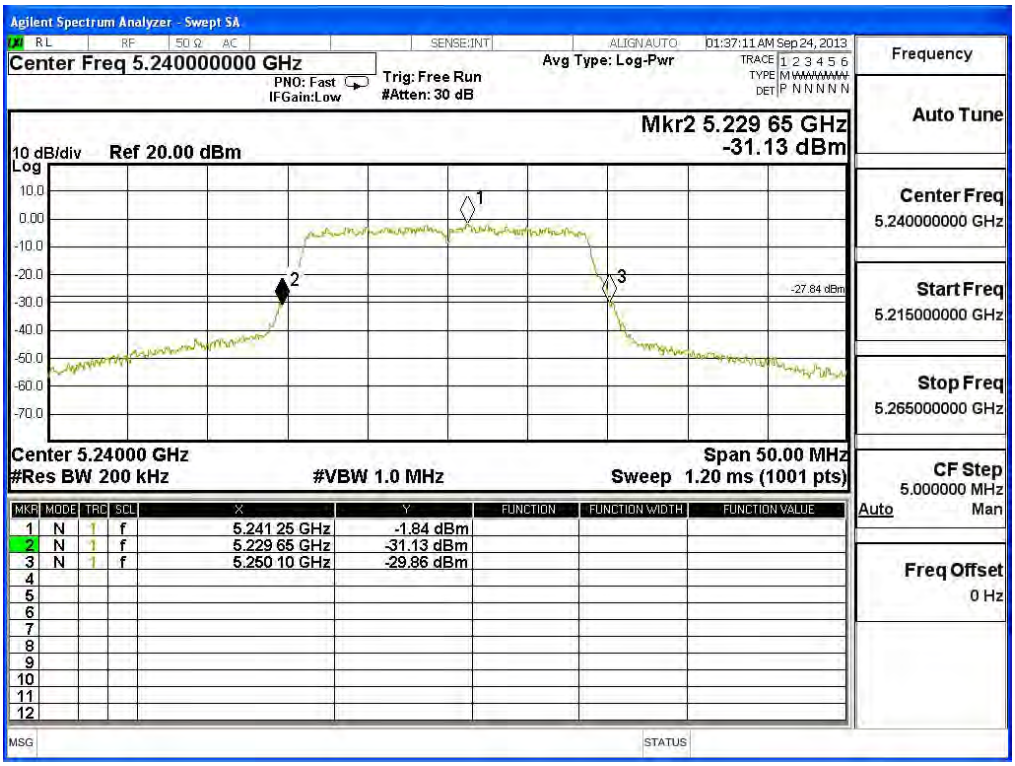
Channel 36 -Chain A



Channel 44 -Chain A

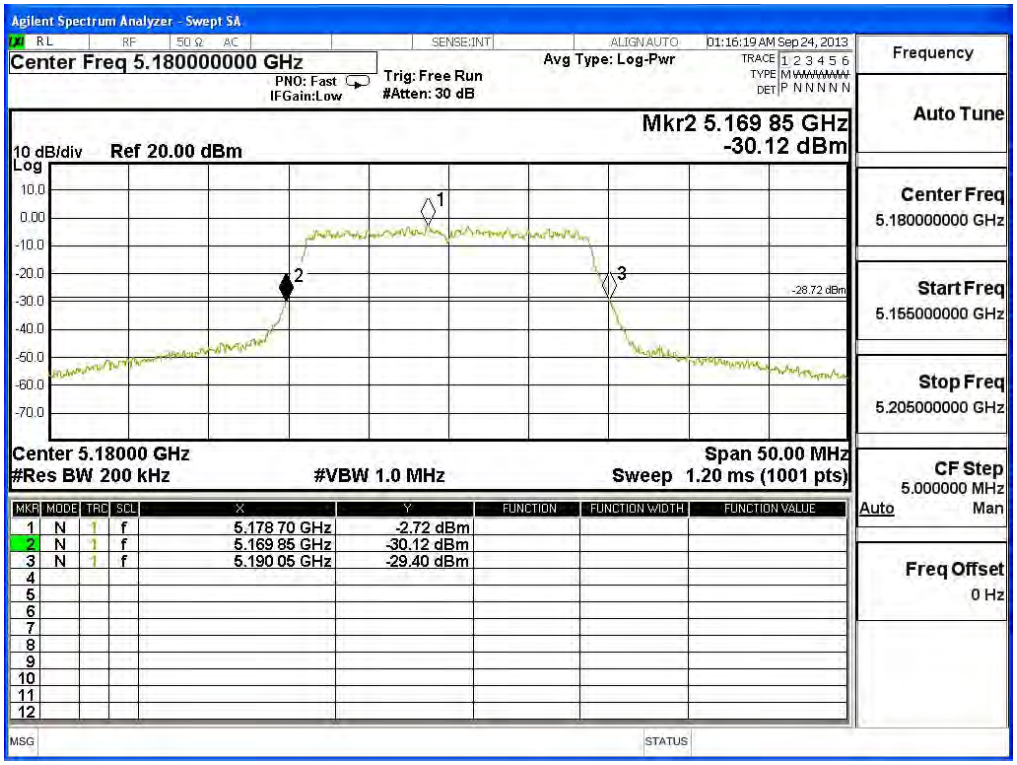


Channel 48 -Chain A

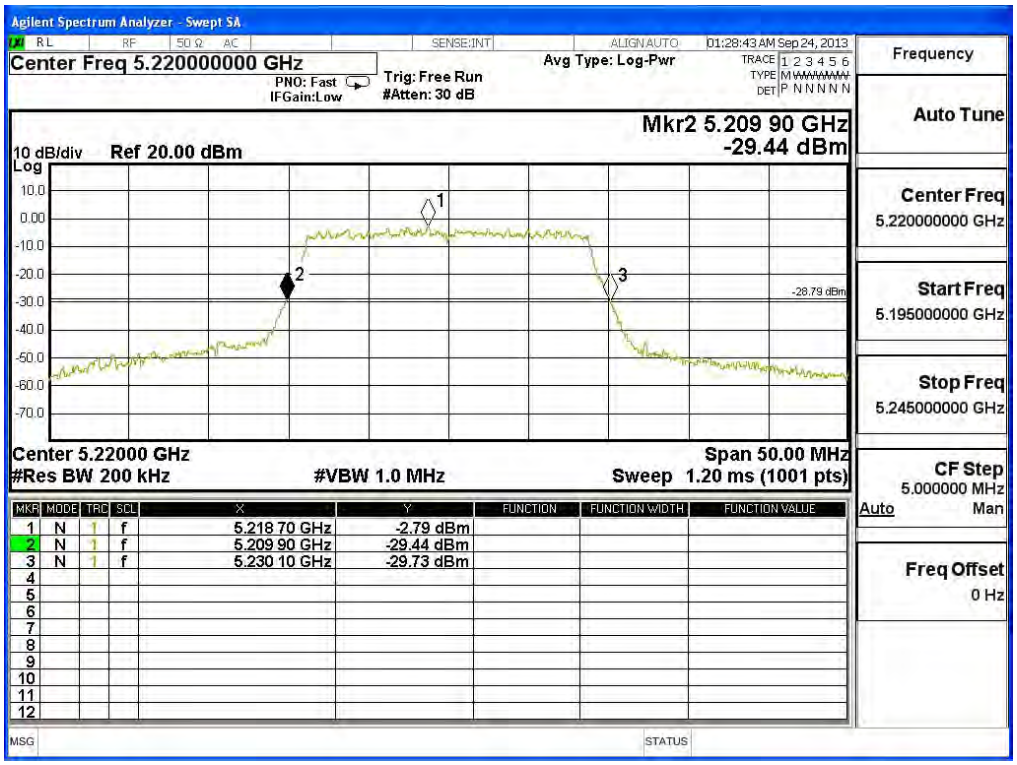


26dBc Occupied Bandwidth:

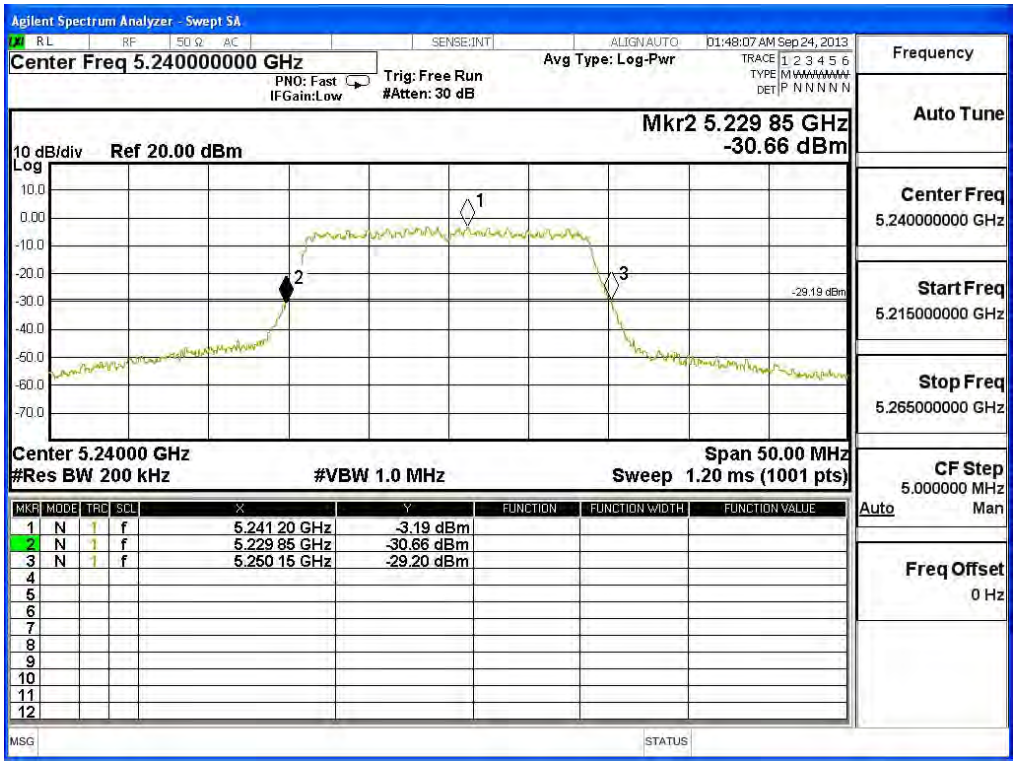
Channel 36 -Chain B



Channel 44 -Chain B

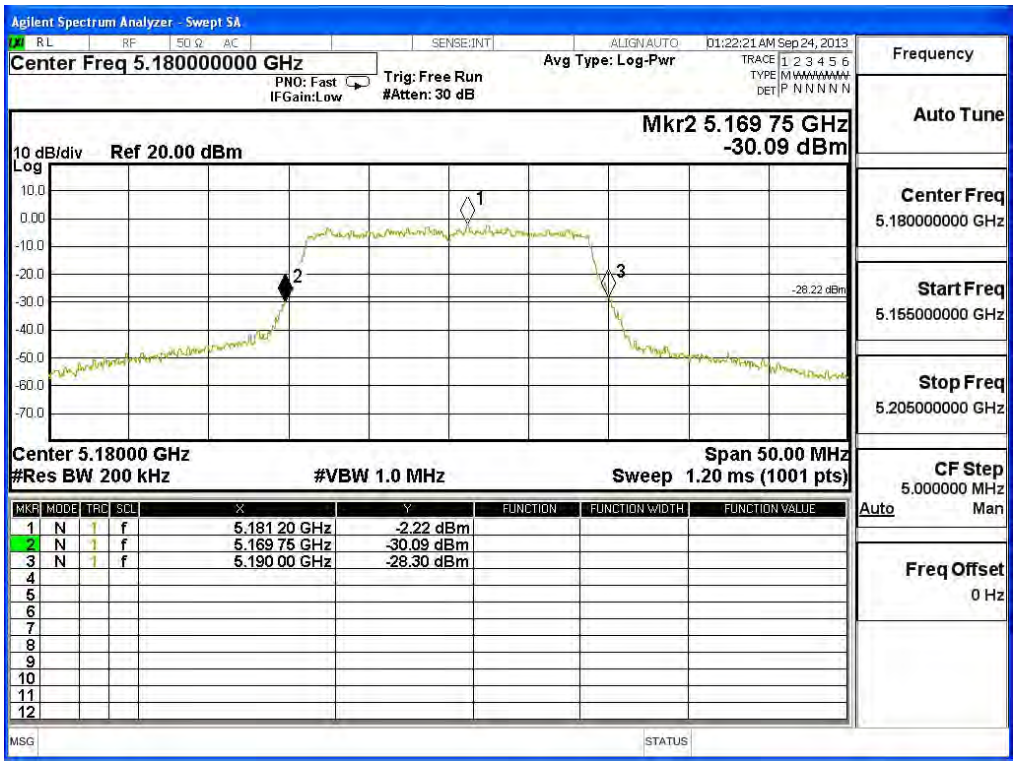


Channel 48 -Chain B

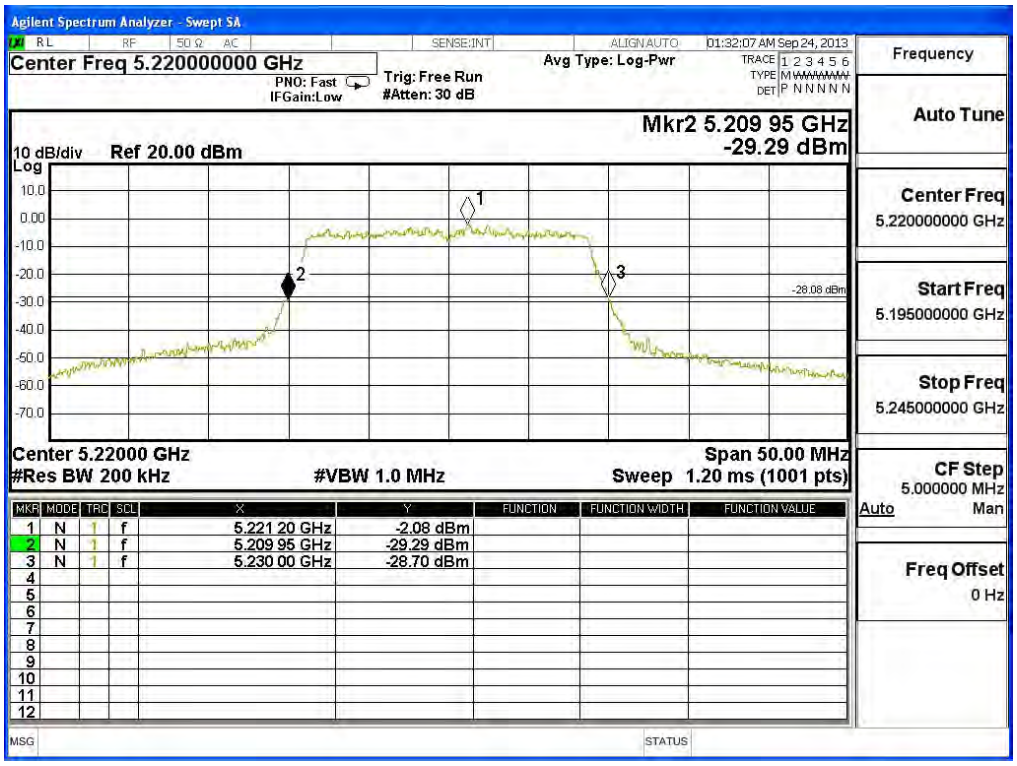


26dBc Occupied Bandwidth:

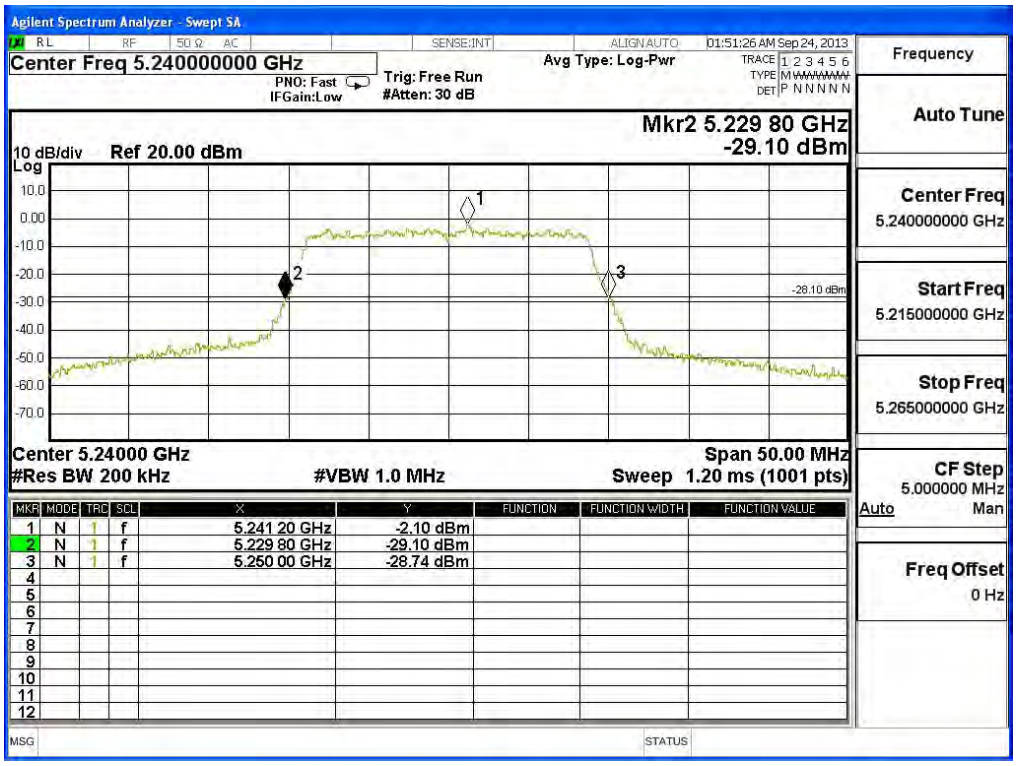
Channel 36 -Chain C



Channel 44 -Chain C



Channel 48 -Chain C



Product : WiFi module
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		45	90	135	180	270	360	405	450	
		Measurement Level (dBm)								
38	5190	7.12	--	--	--	--	--	--	--	<17dBm
46	5230	7.33	7.22	7.28	7.29	7.26	7.33	7.31	7.32	<17dBm

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
		45	90	135	180	270	360	405	450	
		Measurement Level (dBm)								
38	5190	7.15	--	--	--	--	--	--	--	<17dBm
46	5230	7.36	7.36	7.37	7.32	7.33	7.36	7.29	7.27	<17dBm

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

CHAIN C

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		45	90	135	180	270	360	405	450	
		Measurement Level (dBm)								
38	5190	7.13	--	--	--	--	--	--	--	<17dBm
46	5230	7.33	7.33	7.31	7.3	7.31	7.3	7.3	7.29	<17dBm

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

Maximum conducted output power Measurement:

(**CHAIN A+ B+C)**

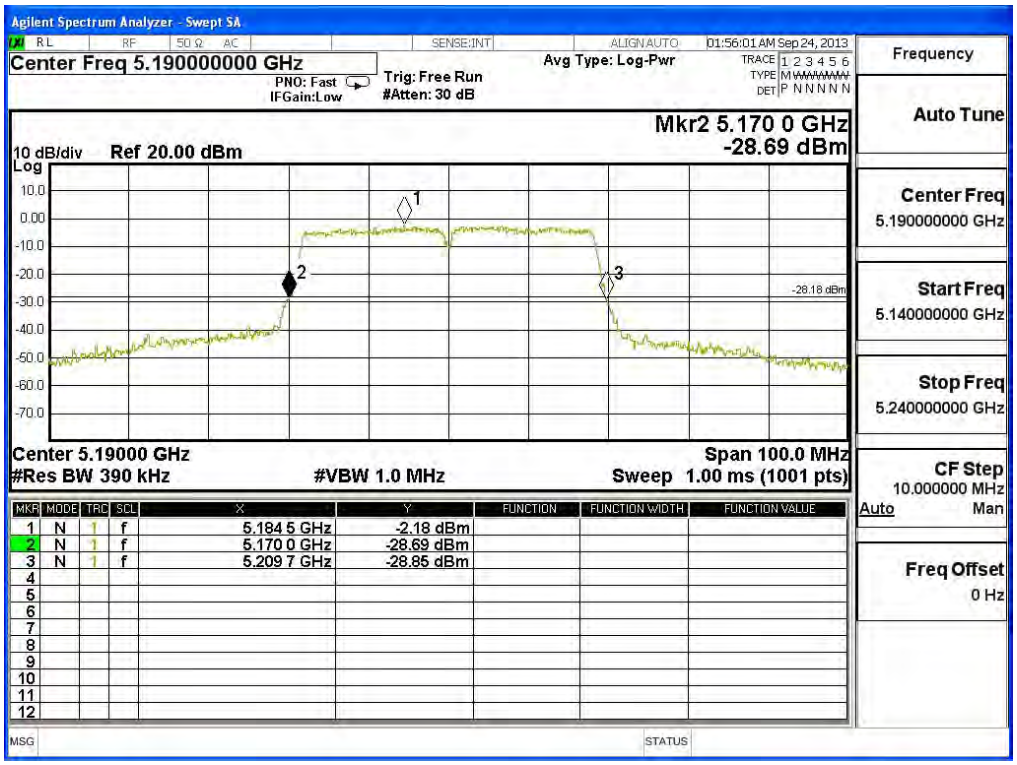
Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Output Power (dBm)	Output Power Limit	
							(dBm)	dBm+10log(BW)
38	5190	39.300	7.12	7.15	7.13	11.90	17	19.94
46	5230	39.300	7.33	7.37	7.33	12.11	17	19.94

Note:

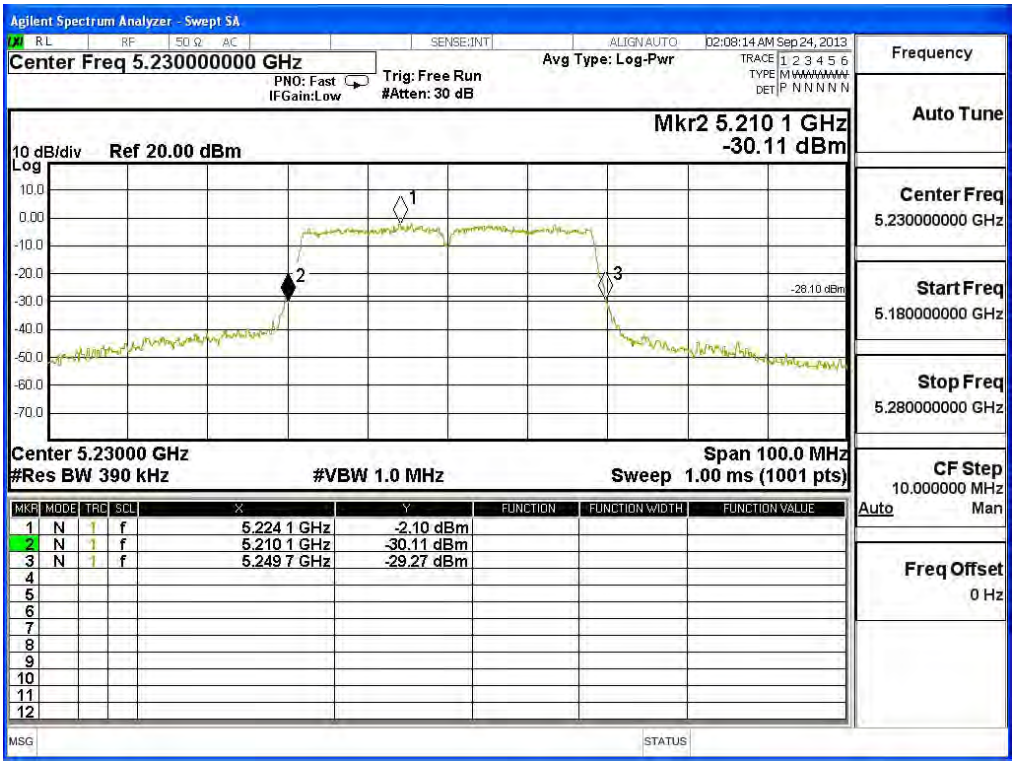
1. Power Output Value =Reading value on average power meter + cable loss
2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW) + Chain C Power (mW))
3. 26 dB Bandwidth is the bandwidth of chain A or chain B or chain C whichever is less bandwidth, output power limitation is more stringent.

26dBc Occupied Bandwidth:

Channel 38 – Chain A

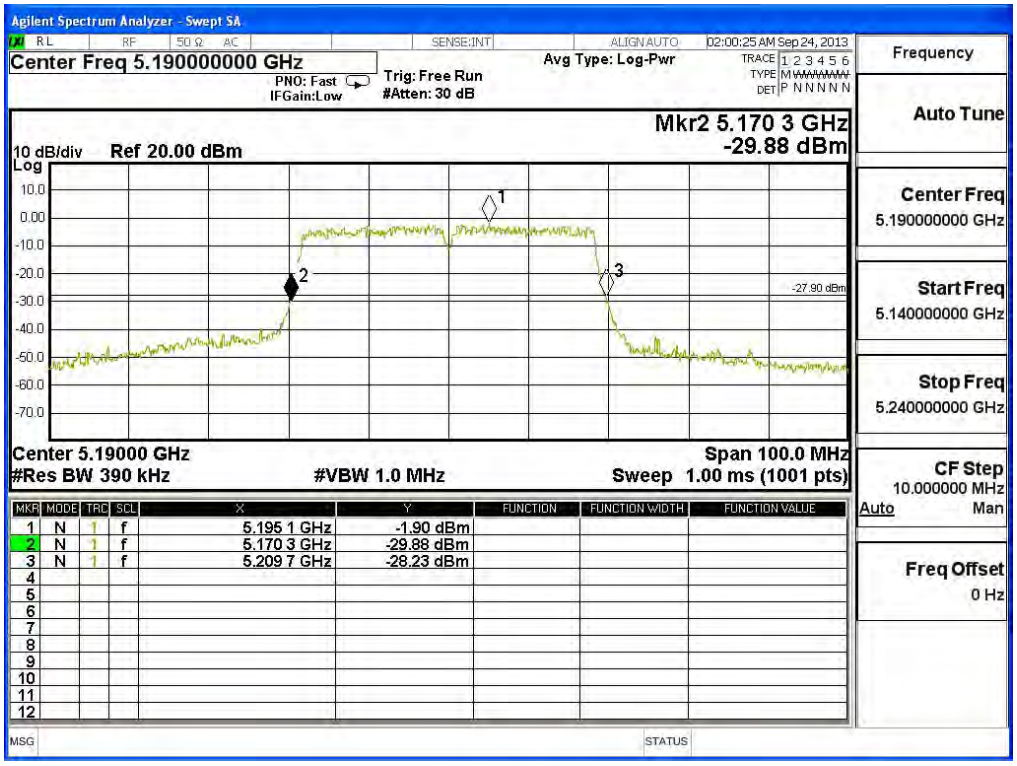


Channel 46 – Chain A

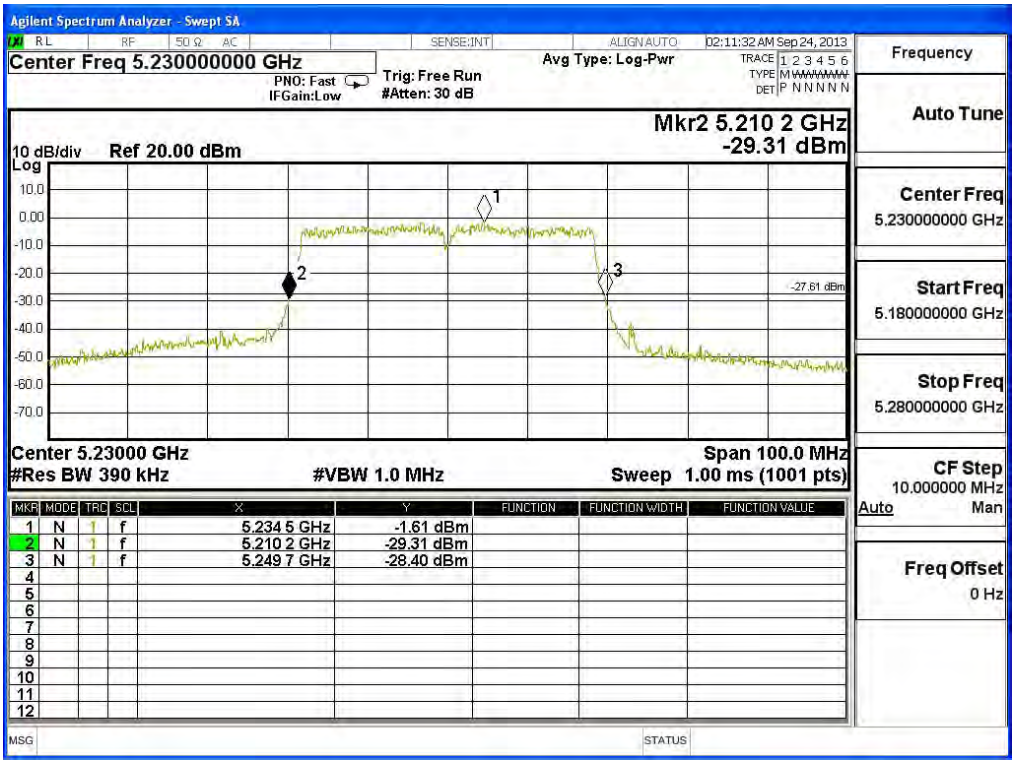


26dBc Occupied Bandwidth:

Channel 38 – Chain B

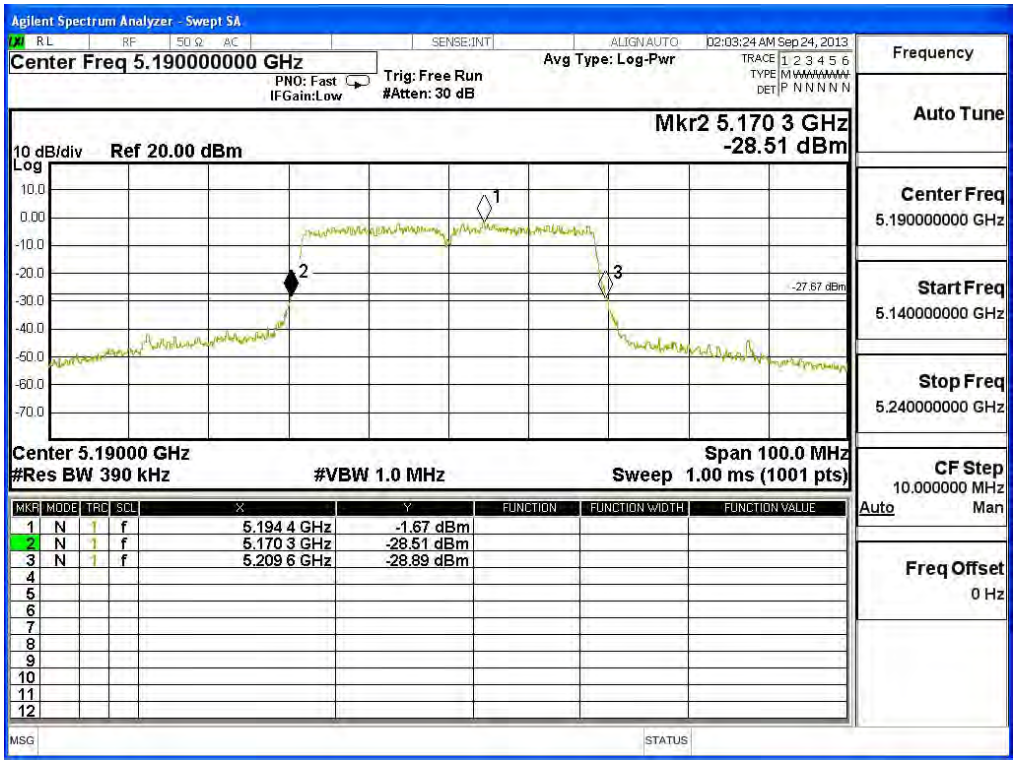


Channel 46 – Chain B

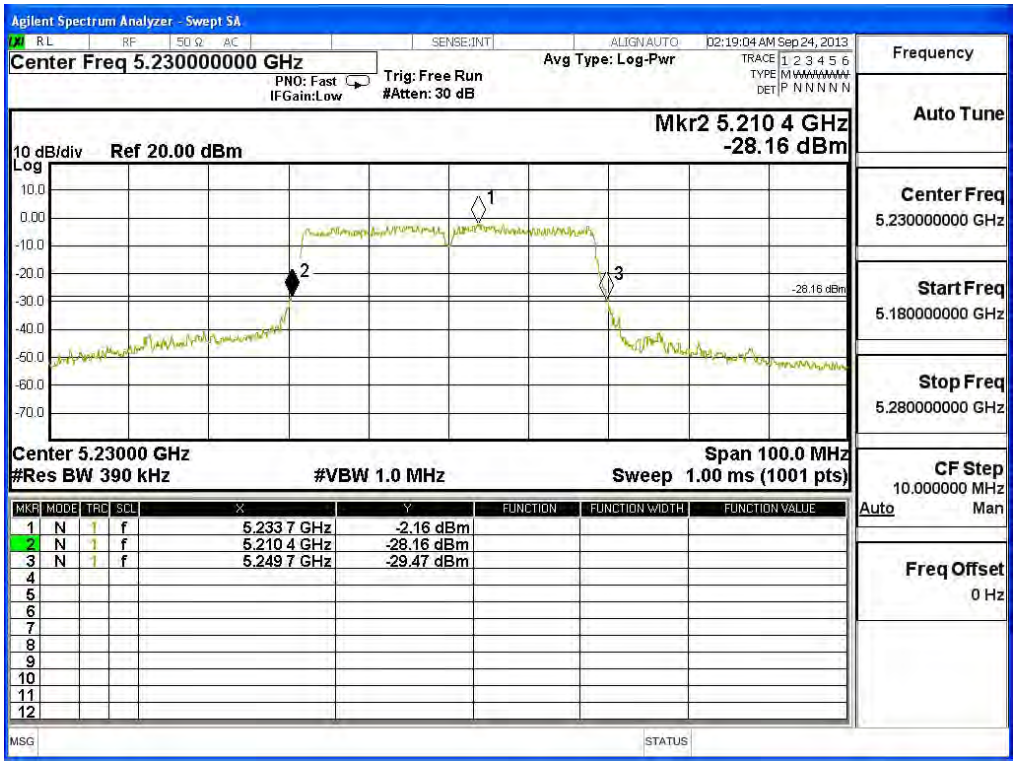


26dBc Occupied Bandwidth:

Channel 38 – Chain C



Channel 46 – Chain C



Product : WiFi module
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps)

CHAIN A

Channel No.	Frequency (MHz)	Peak Power Output (dBm)										
		Data Rate (Mbps)										Required Limit
		97.5	195	292.5	390	585	780	877.5	975	1170	1300	
42	5210	5.82	5.52	5.23	5.17	4.93	4.88	4.81	4.68	4.68	4.64	<17dBm
155	5775	5.81	5.6	5.47	5.34	5.32	5.28	5.27	5.02	4.89	4.85	<30dBm

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

CHAIN B

Channel No.	Frequency (MHz)	Peak Power Output (dBm)										
		Data Rate (Mbps)										Required Limit
		97.5	195	292.5	390	585	780	877.5	975	1170	1300	
42	5210	4.51	4.49	4.50	4.41	4.41	4.38	4.39	4.47	4.40	4.34	<17dBm
155	5775	5.50	5.01	4.93	4.70	4.59	4.54	4.49	4.47	4.50	4.59	<30dBm

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

CHAIN C

Channel No.	Frequency (MHz)	Peak Power Output (dBm)										
		Data Rate (Mbps)										Required Limit
		97.5	195	292.5	390	585	780	877.5	975	1170	1300	
42	5210	4.75	4.73	4.70	4.72	4.65	4.66	4.63	4.61	4.58	4.58	<17dBm
155	5775	5.55	5.31	5.14	4.92	4.87	4.60	4.51	4.53	4.55	4.59	<30dBm

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

Maximum conducted output power Measurement:

(CHAIN A+ B+C)

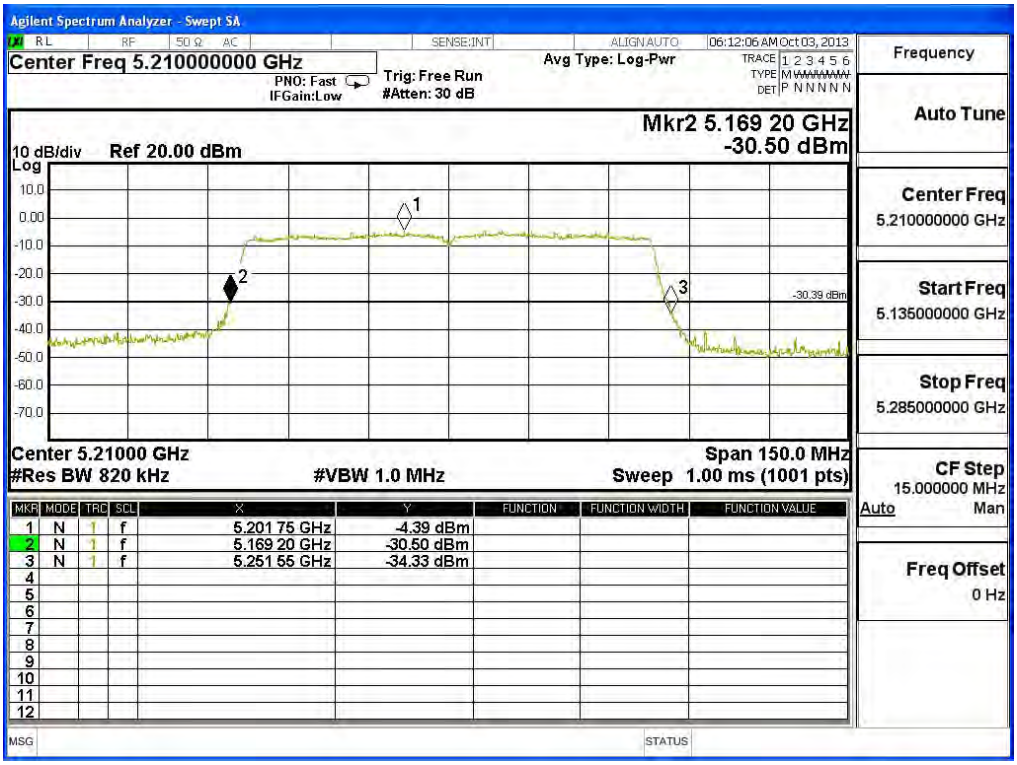
Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Output Power (dBm)	Output Power Limit	
							(dBm)	dBm+10log(BW)
42	5210	82.350	5.82	4.51	4.75	9.84	17	30.16
155	5775	82.400	5.81	5.50	5.55	10.39	30	36.16

Note:

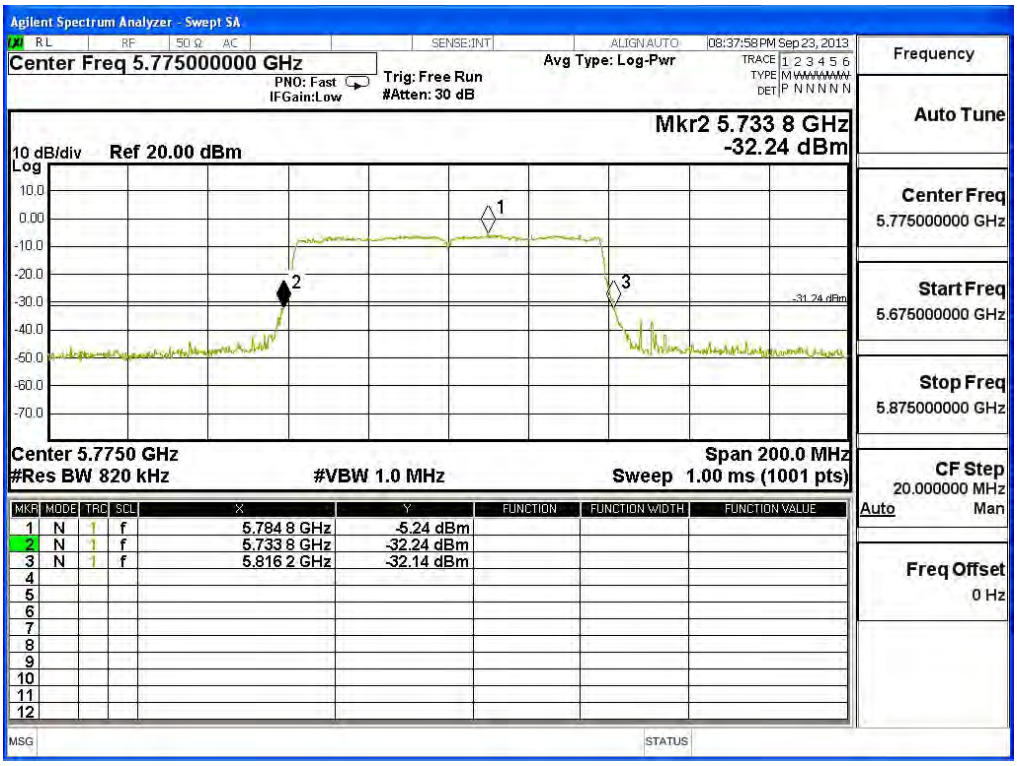
1. Power Output Value =Reading value on average power meter + cable loss
2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW) + Chain C Power (mW))
3. 26 dB Bandwidth is the bandwidth of chain A or chain B or chain C whichever is less bandwidth, output power limitation is more stringent.

26dBc Occupied Bandwidth:

Channel 42– Chain A

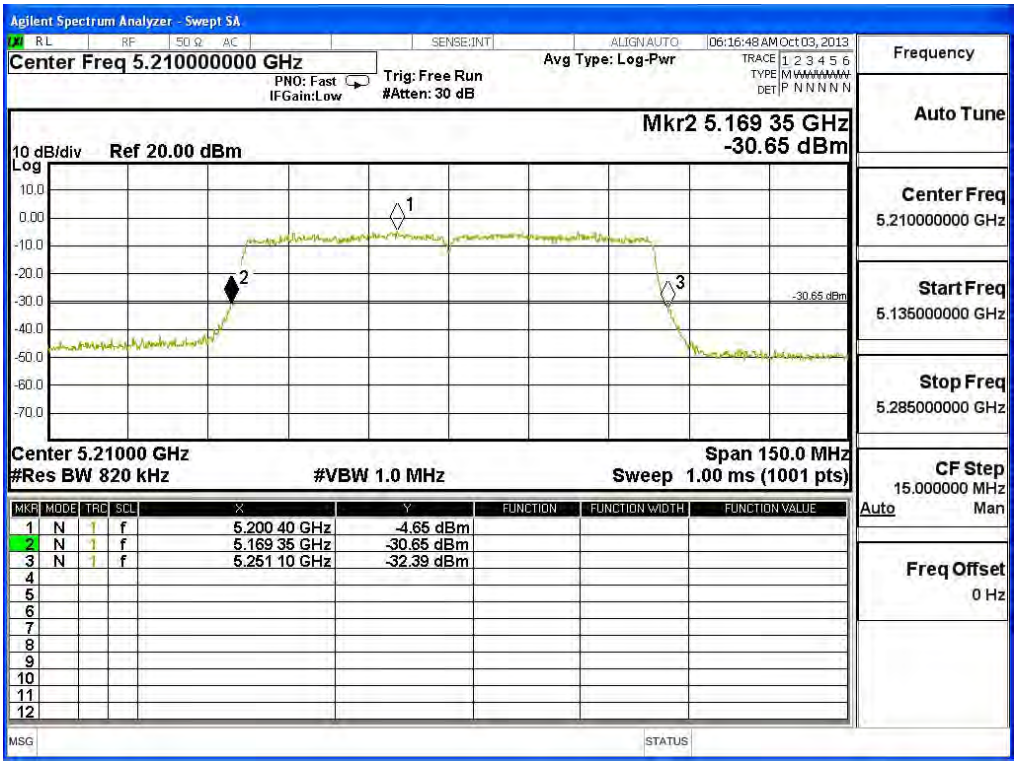


Channel 155 – Chain A

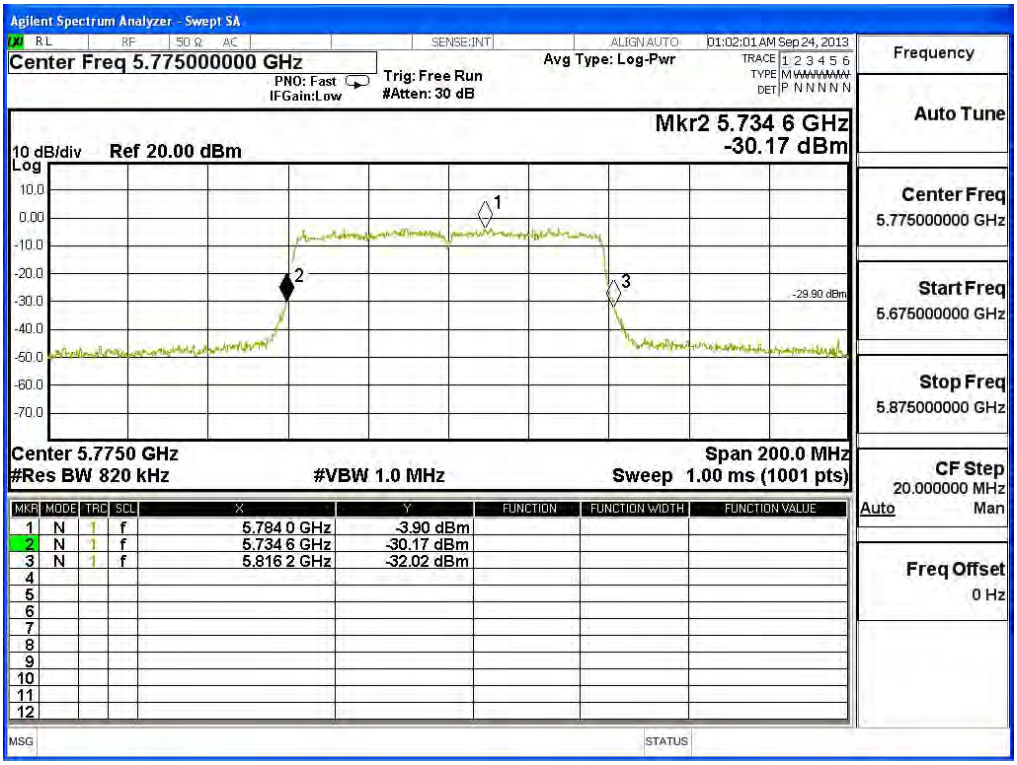


26dBc Occupied Bandwidth:

Channel 42– Chain B

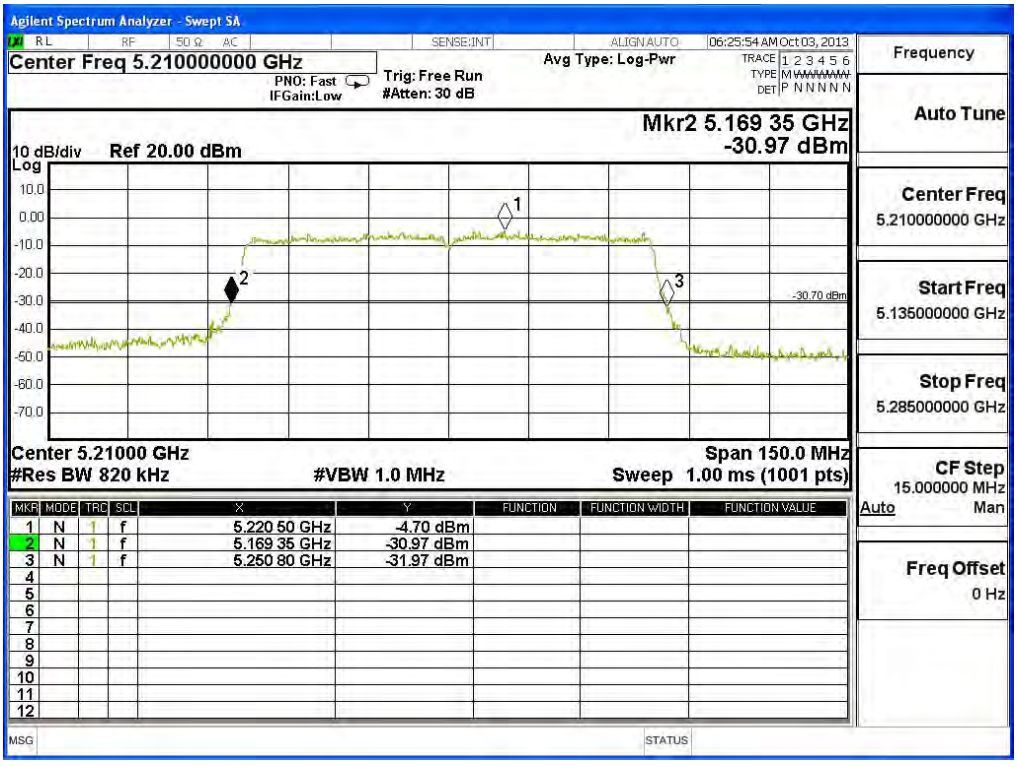


Channel 155– Chain B

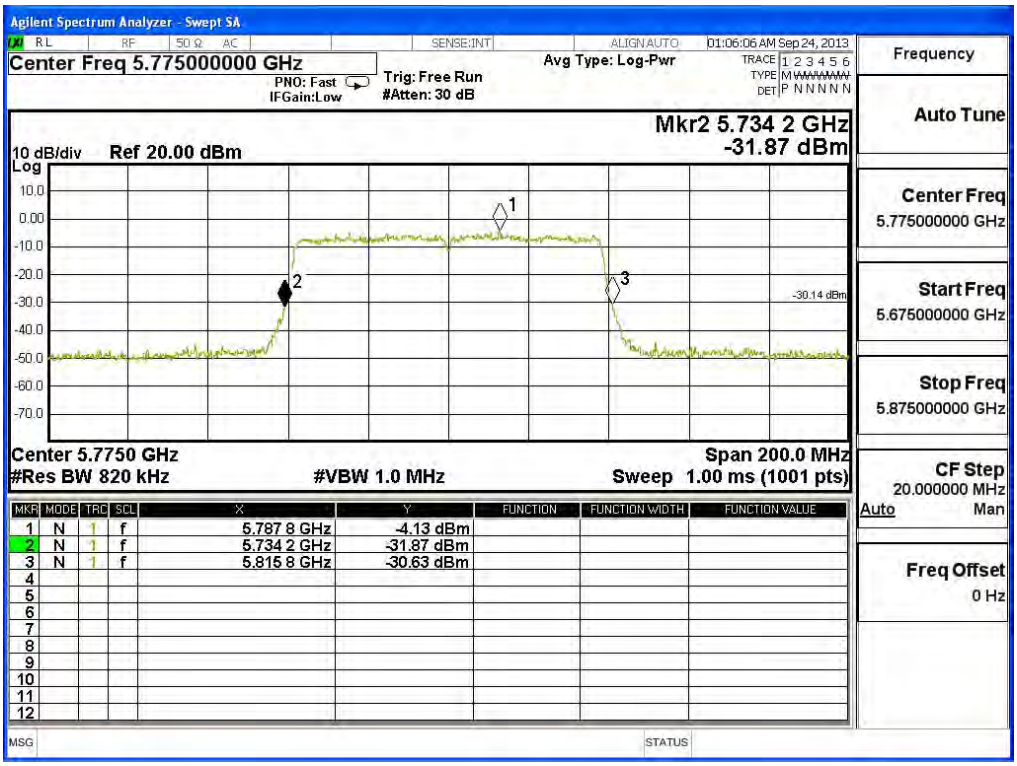


26dBc Occupied Bandwidth:

Channel 42– Chain C



Channel 155– Chain C



4. Peak Power Spectral Density

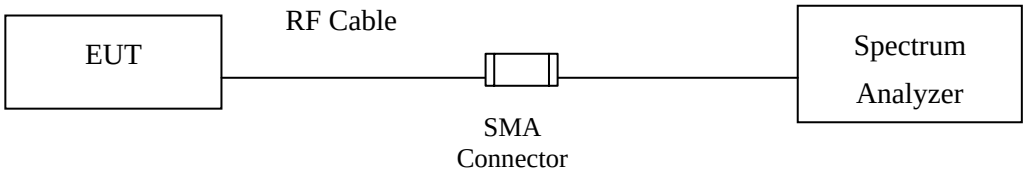
4.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

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

4.2. Test Setup



4.3. Limits

(4) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

(5) For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

(6) For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

4.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to DTS 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.

4.5. Uncertainty

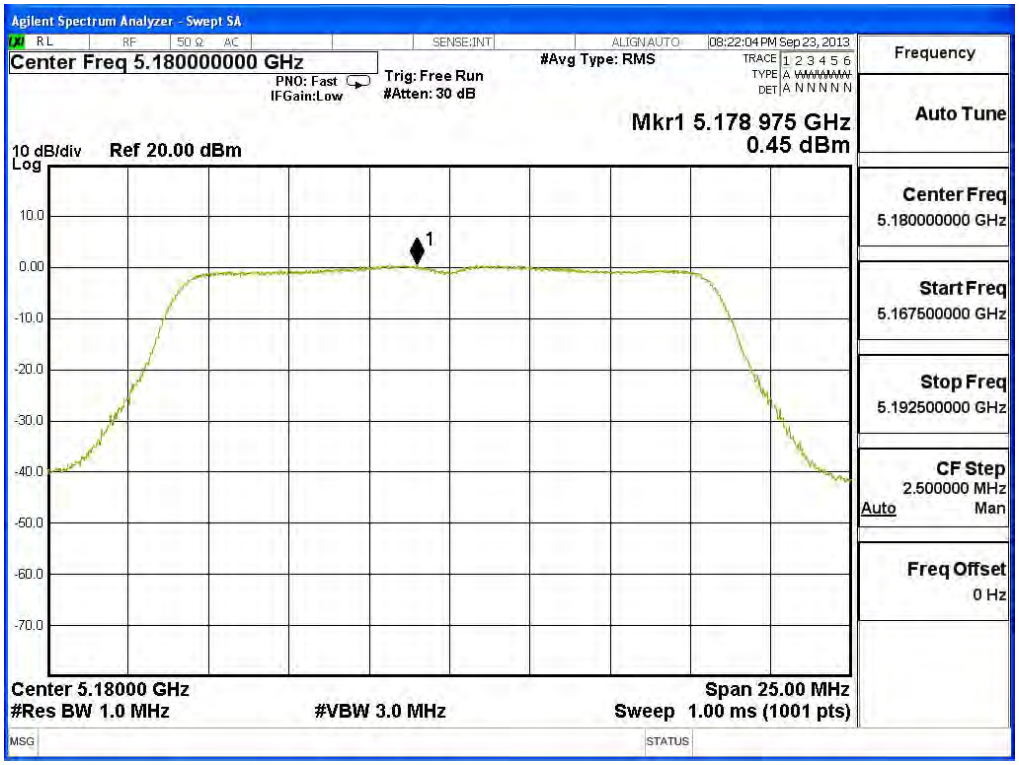
± 1.27 dB

4.6. Test Result of Peak Power Spectral Density

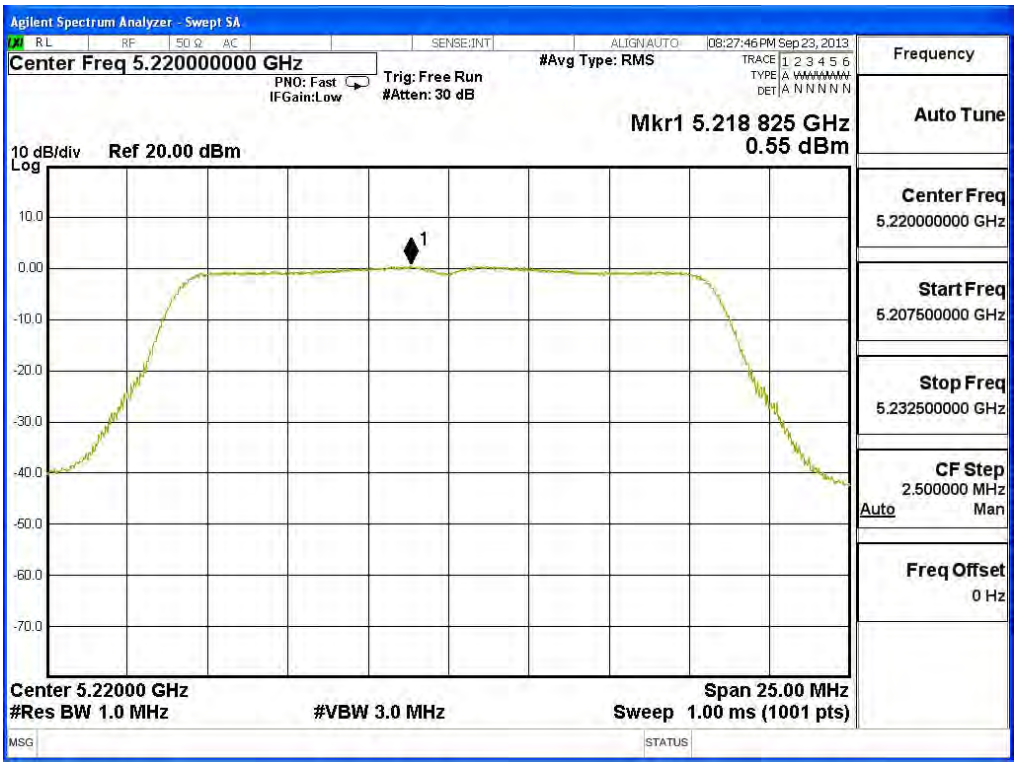
Product : WiFi module
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	0.450	<4	Pass
44	5220	6	0.550	<4	Pass
48	5240	6	0.330	<4	Pass

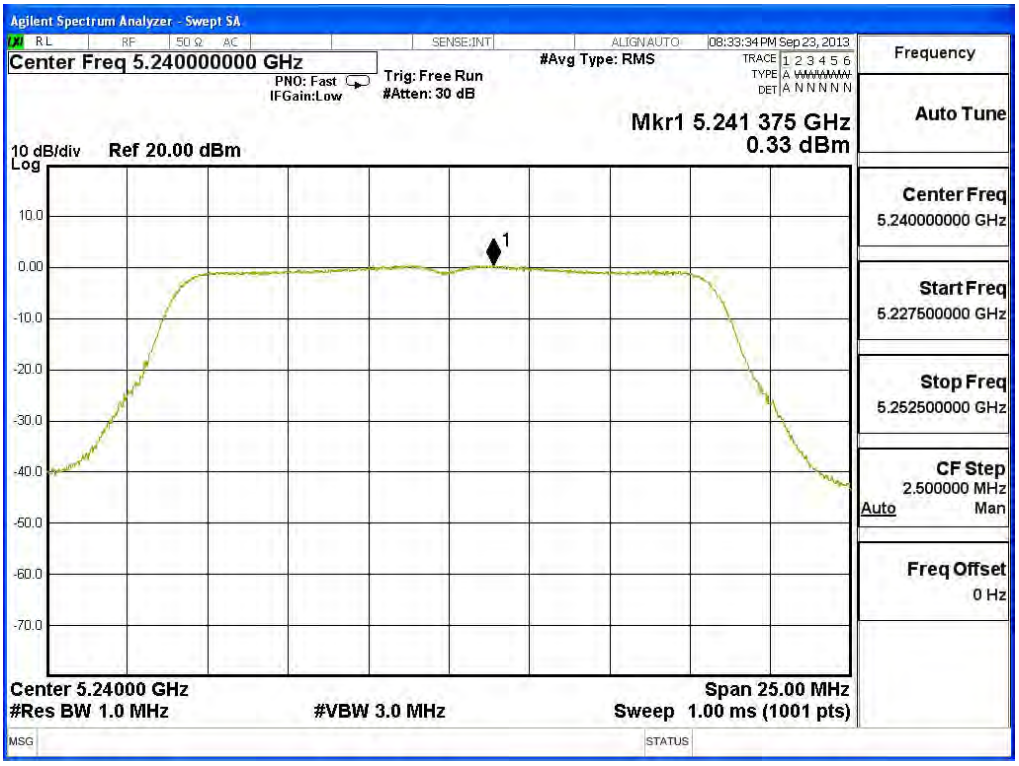
Channel 36:



Channel 44:



Channel 48:

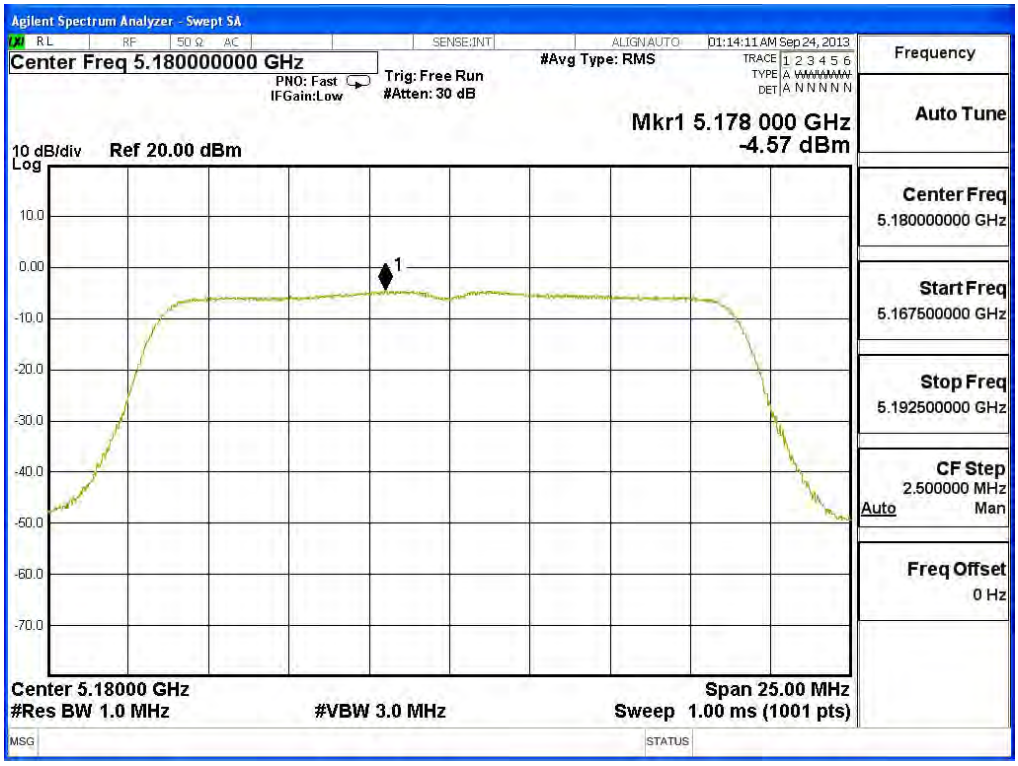


Product : WiFi module
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)

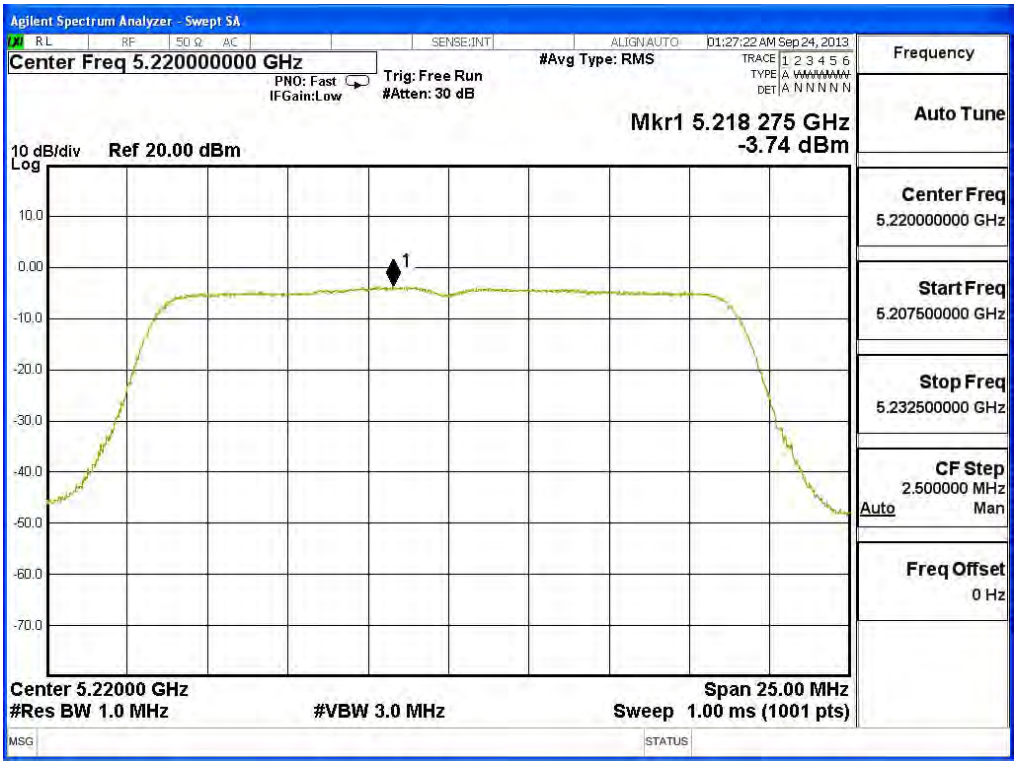
Channel No.	Frequency (MHz)	Chain (dBm)	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
36	5180	A	-4.570	0.201	<4	Pass
		B	-4.700	0.071	<4	Pass
		C	-4.310	0.461	<4	Pass
44	5220	A	-3.740	1.031	<4	Pass
		B	-4.580	0.191	<4	Pass
		C	-4.390	0.381	<4	Pass
48	5240	A	-3.760	1.011	<4	Pass
		B	-4.560	0.211	<4	Pass
		C	-4.380	0.391	<4	Pass

Note 1: The quantity 10*log 3 (three antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 36 – Chain A

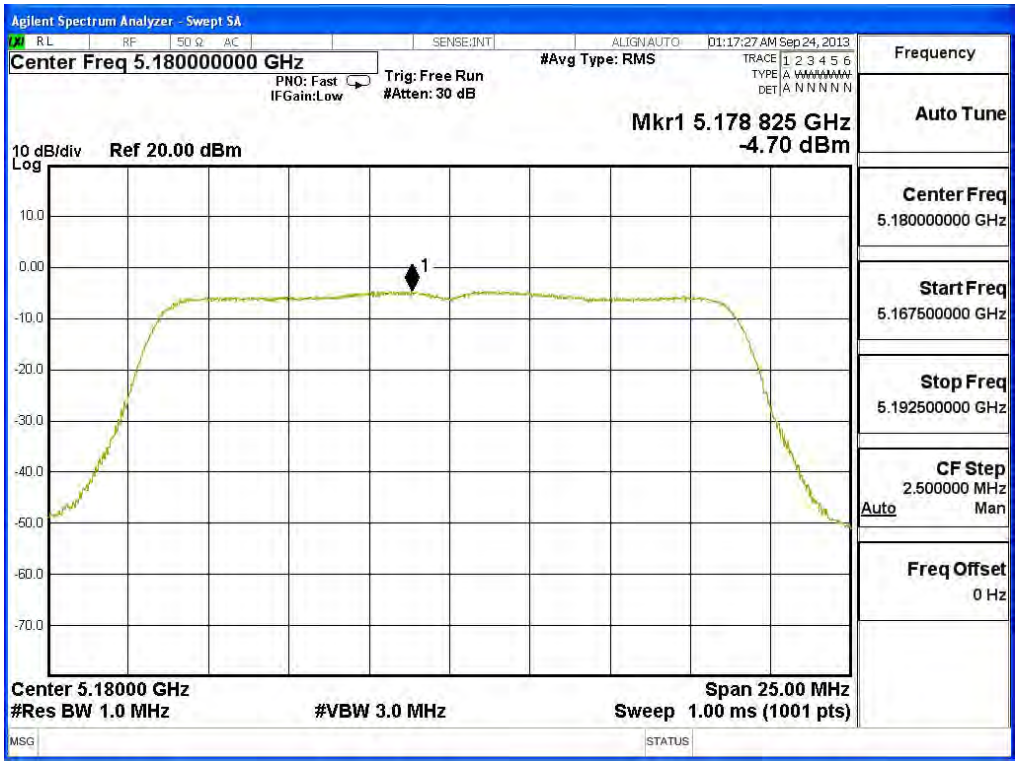


Channel 44 – Chain A

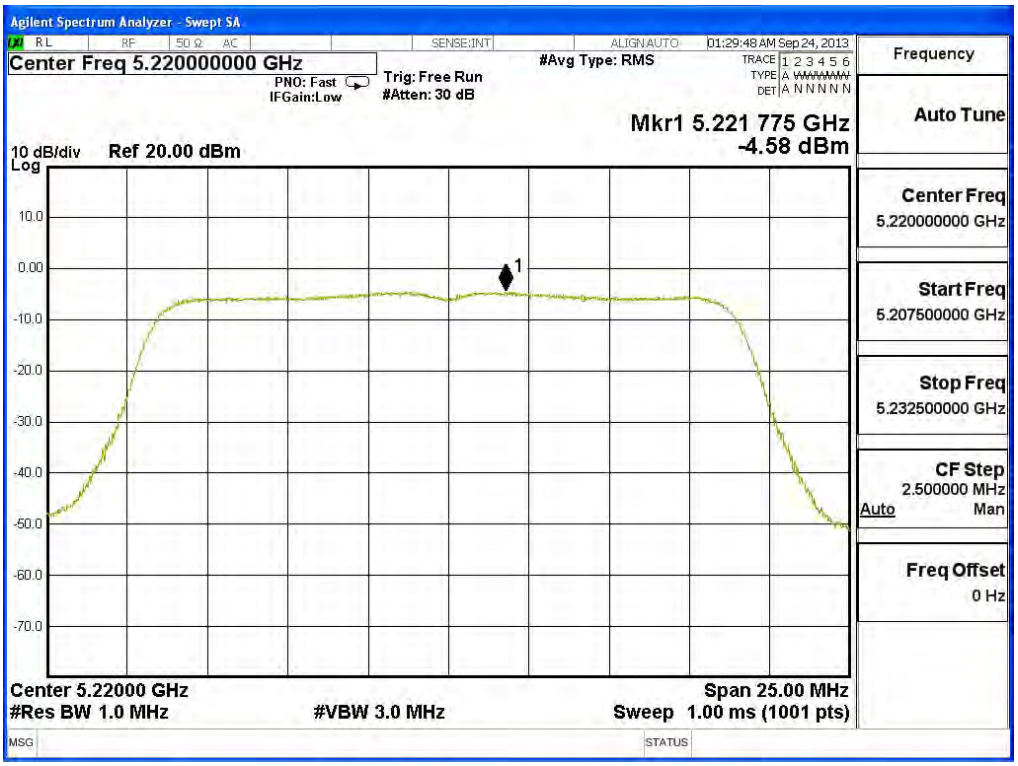


Channel 48 – Chain A

Channel 36 – Chain B

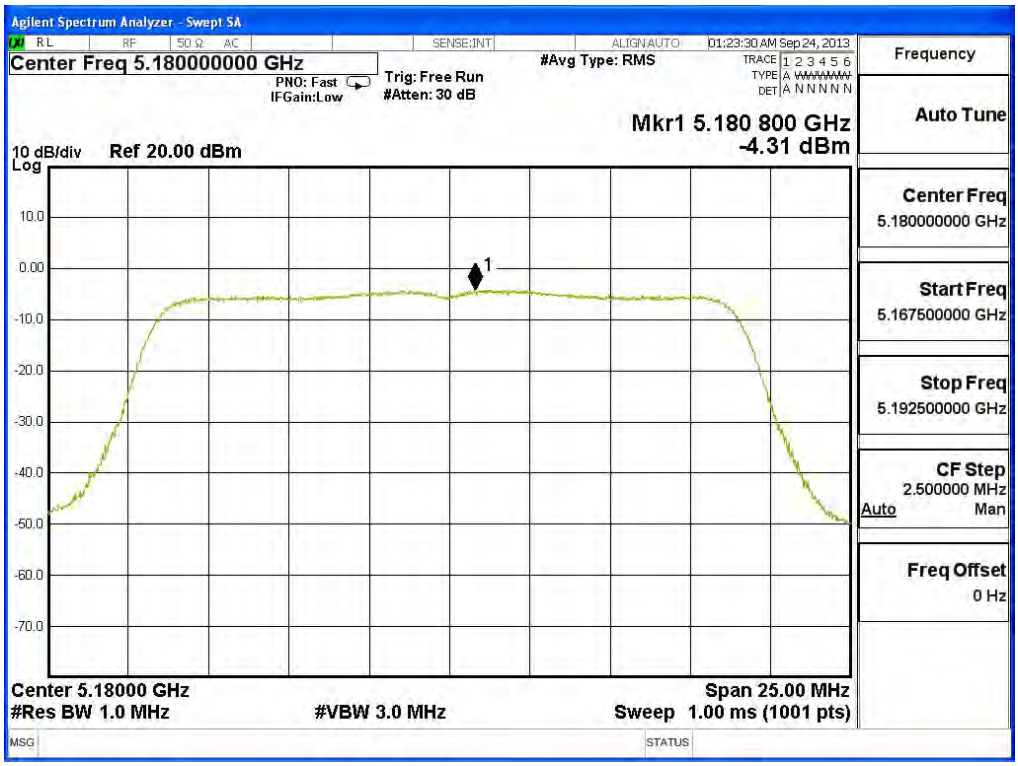


Channel 44 – Chain B

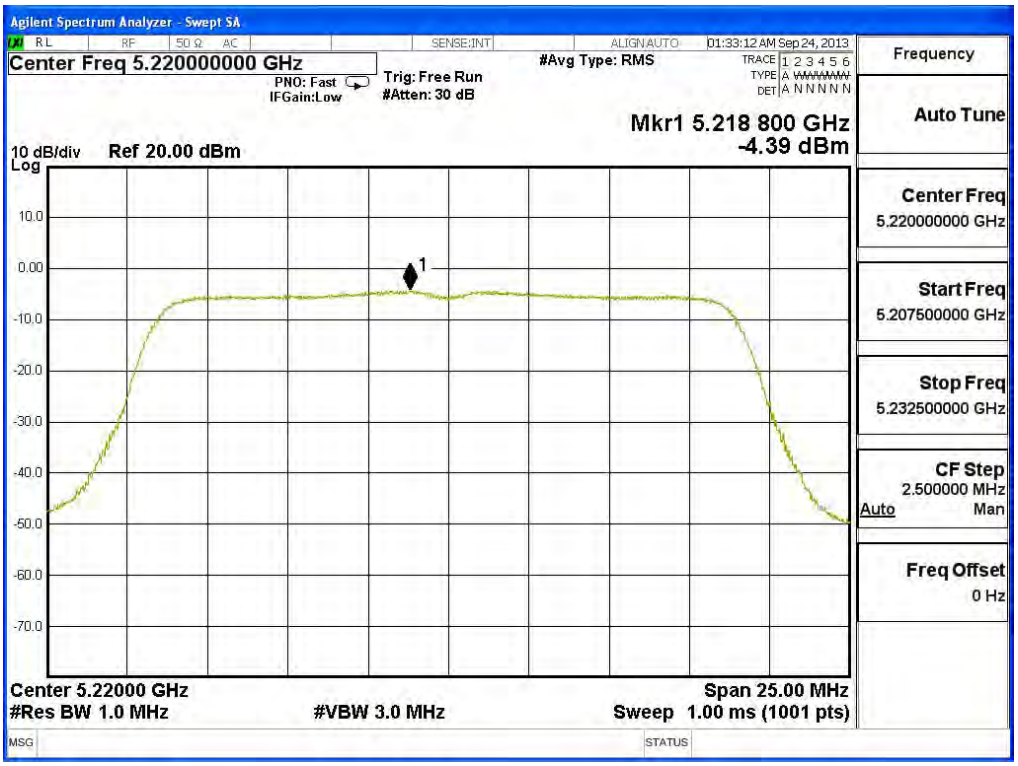


Channel 48 – Chain B

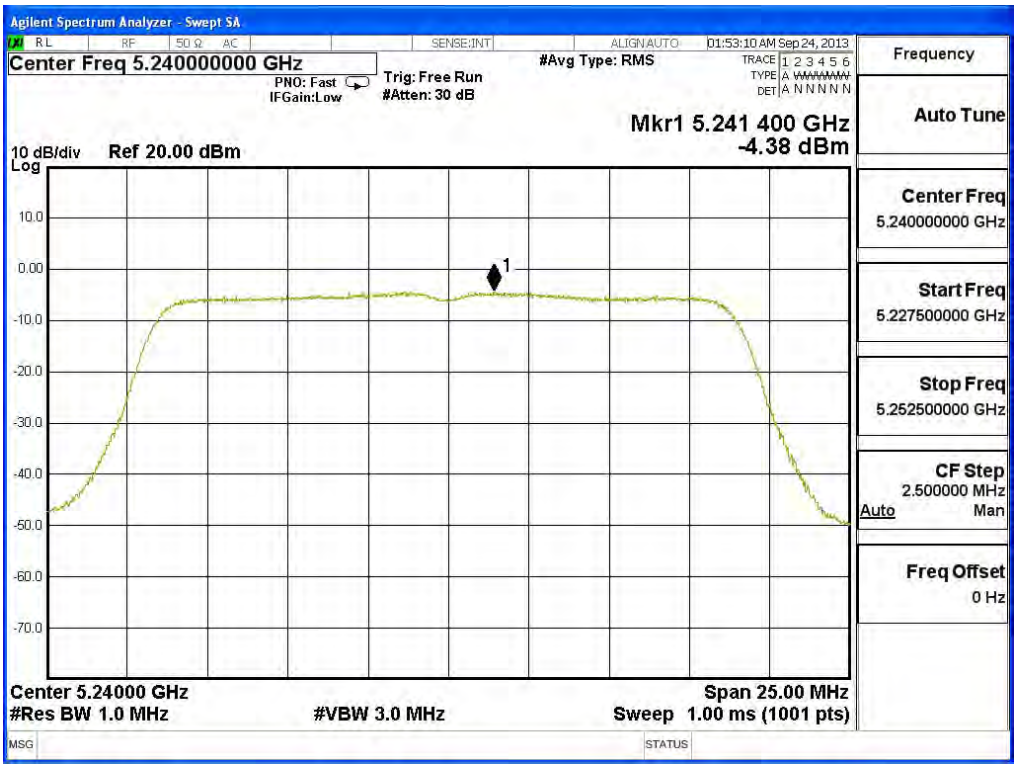
Channel 36 – Chain C



Channel 44 – Chain C



Channel 48 – Chain C

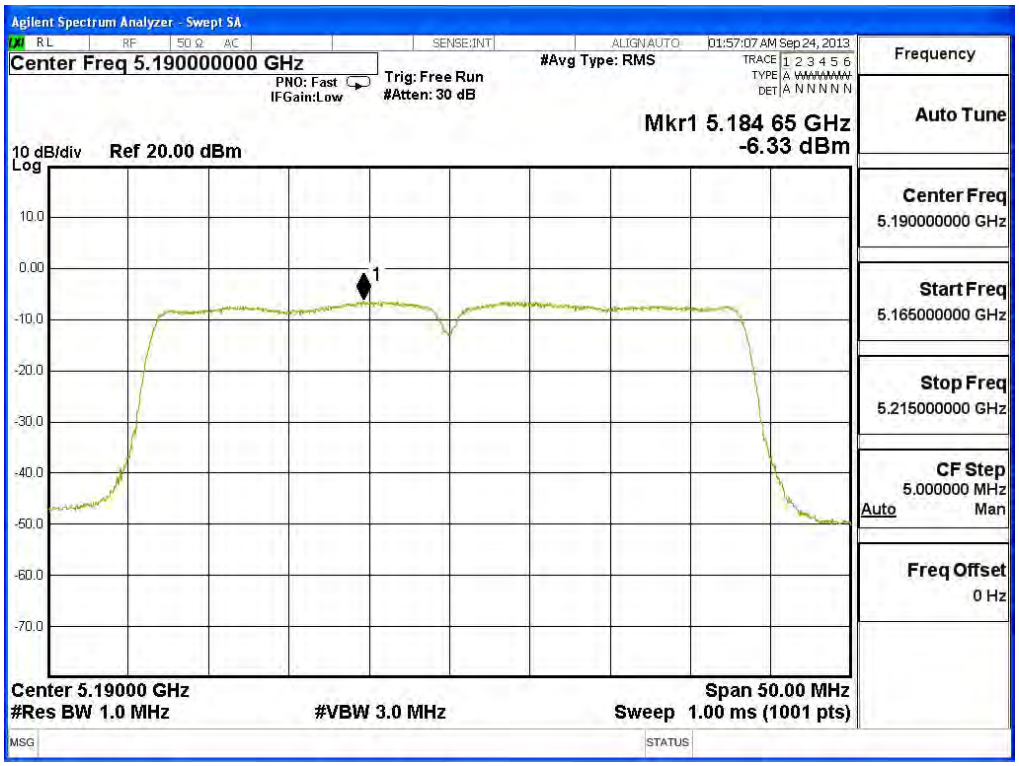


Product : WiFi module
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)

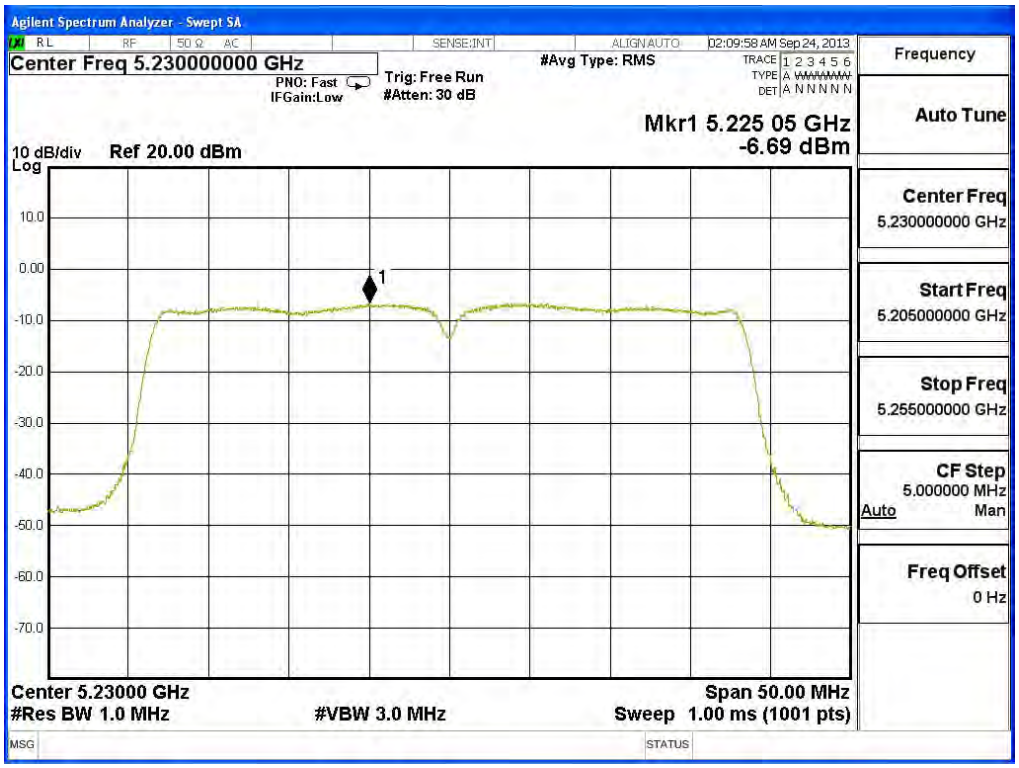
Channel No.	Frequency (MHz)	Chain (dBm)	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
38	5190	A	-6.330	-1.559	<4	Pass
		B	-7.520	-2.749	<4	Pass
		C	-7.550	-2.779	<4	Pass
46	5230	A	-6.690	-1.919	<4	Pass
		B	-7.450	-2.679	<4	Pass
		C	-7.310	-2.539	<4	Pass

Note 1: The quantity 10*log 3 (three antennas) is added to the spectrum peak value according to document 662911 D01.

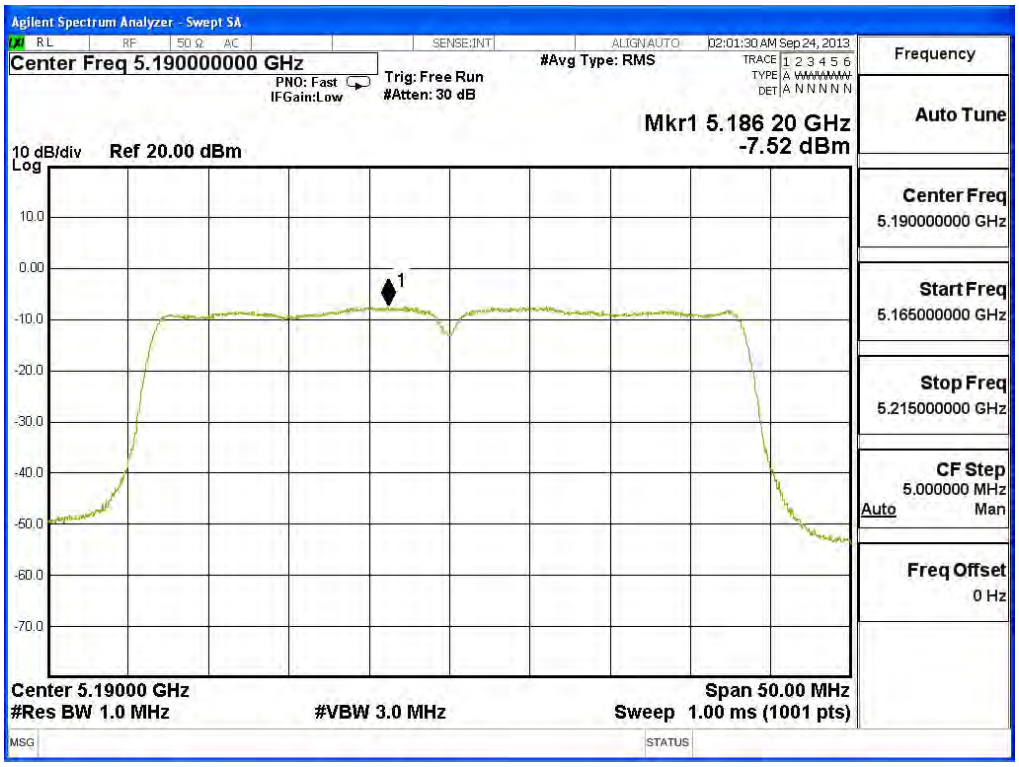
Channel 38 – Chain A



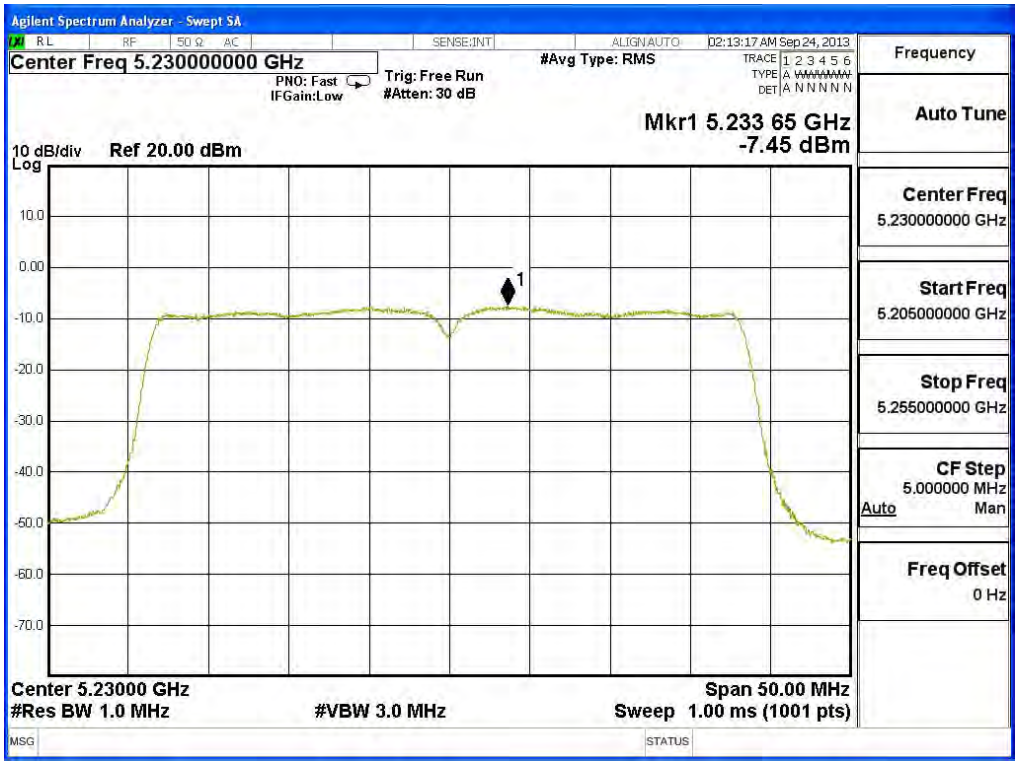
Channel 46 – Chain A



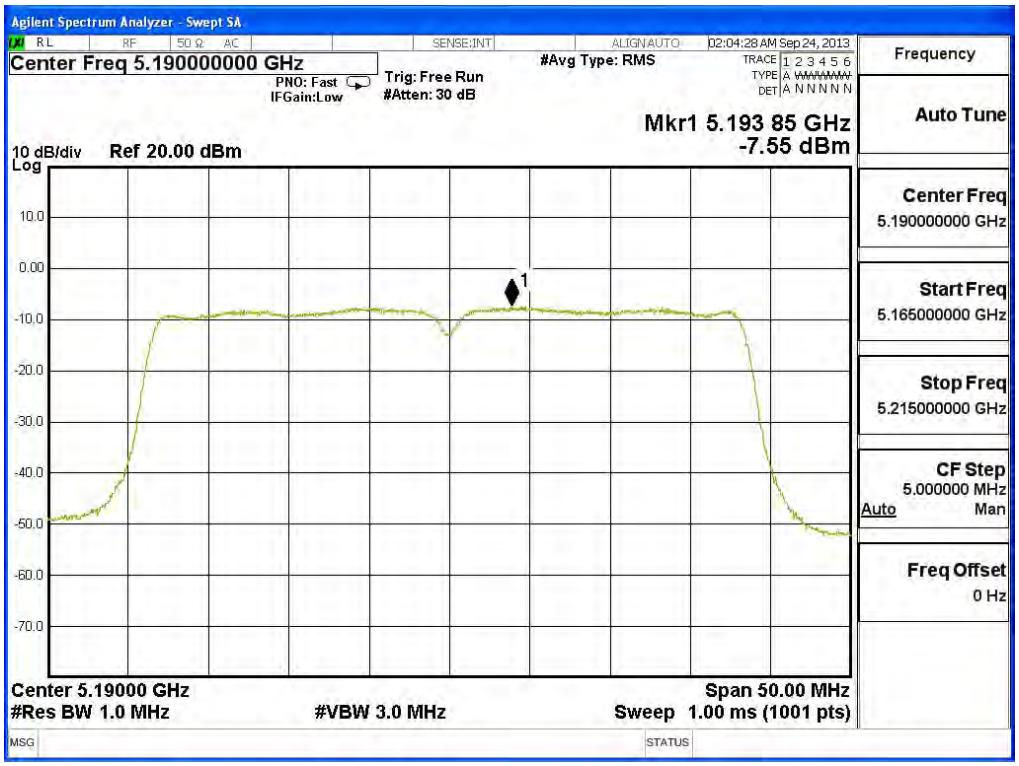
Channel 38 – Chain B



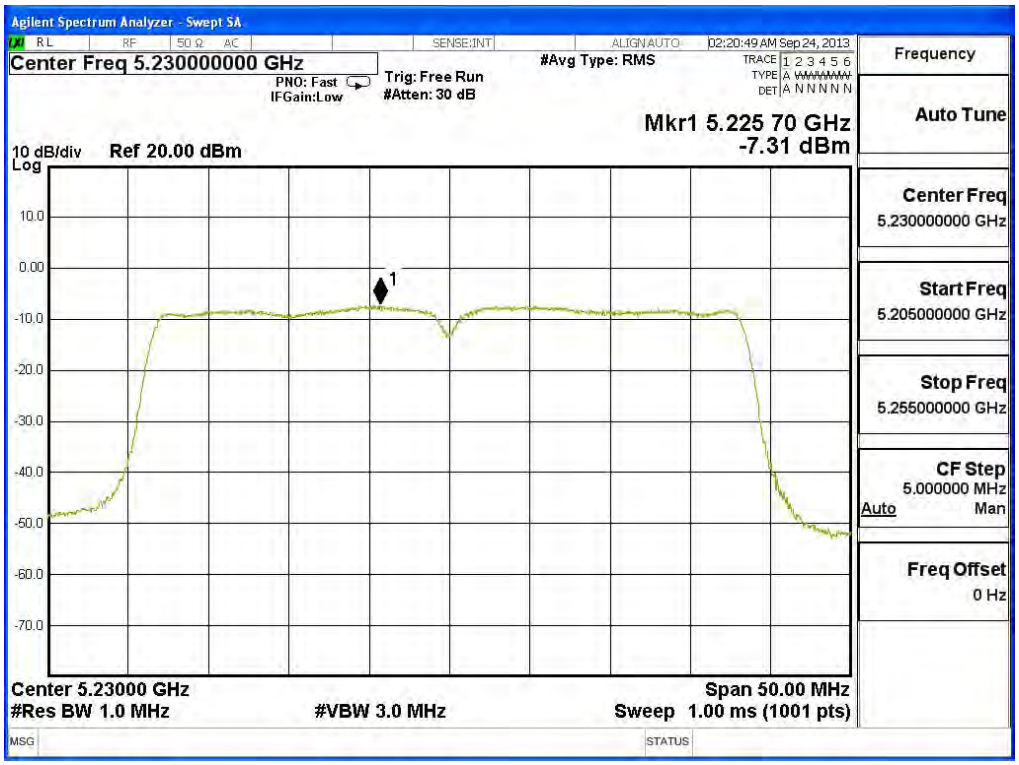
Channel 46 – Chain B



Channel 38 – Chain C



Channel 46 – Chain C

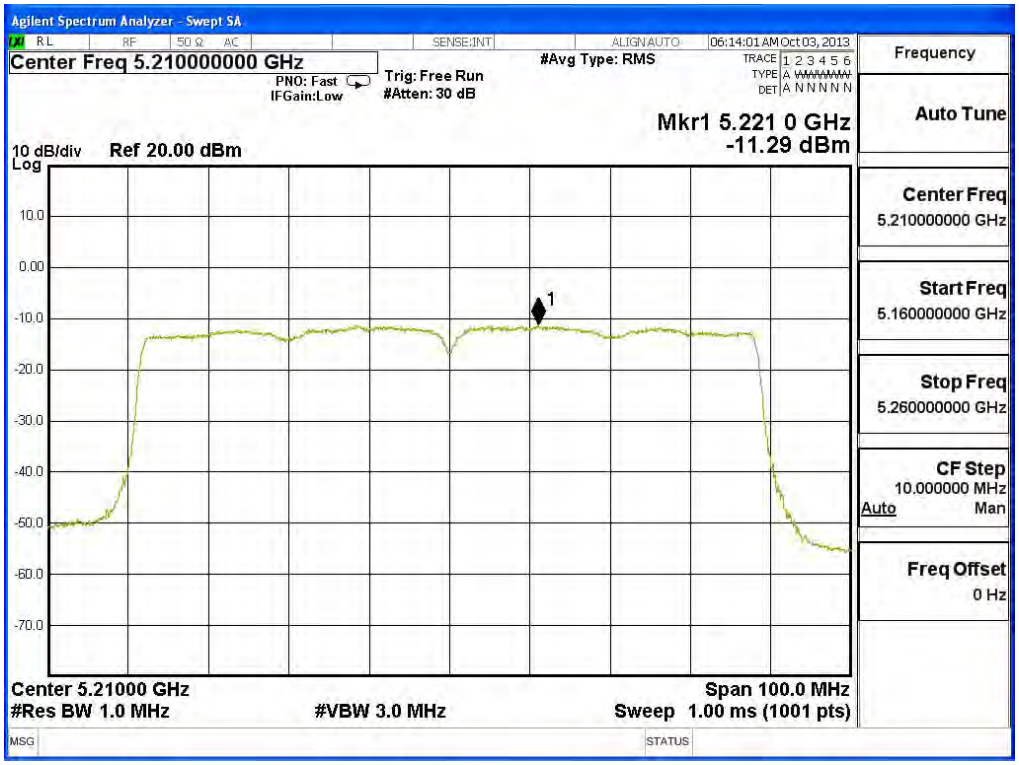


Product : WiFi module
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps)

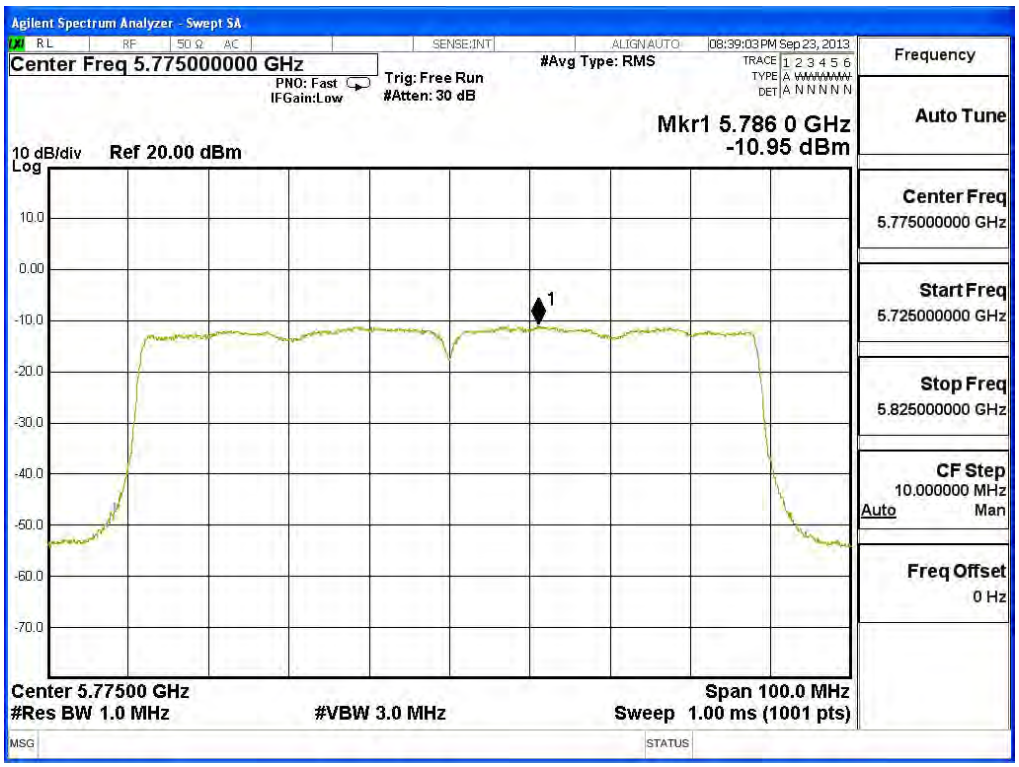
Channel No.	Frequency (MHz)	Chain (dBm)	PPSD/MHz (dBm)	Total PPSD/MHz (dBm)	Required Limit (dBm)	Result
42	5210	A	-11.290	-6.519	<4	Pass
		B	-12.680	-7.909	<4	Pass
		C	-11.130	-6.359	<4	Pass
155	5775	A	-10.950	-6.179	<17	Pass
		B	-10.940	-6.169	<17	Pass
		C	-11.890	-7.119	<17	Pass

Note 1: The quantity 10*log 3 (three antennas) is added to the spectrum peak value according to document 662911 D01.

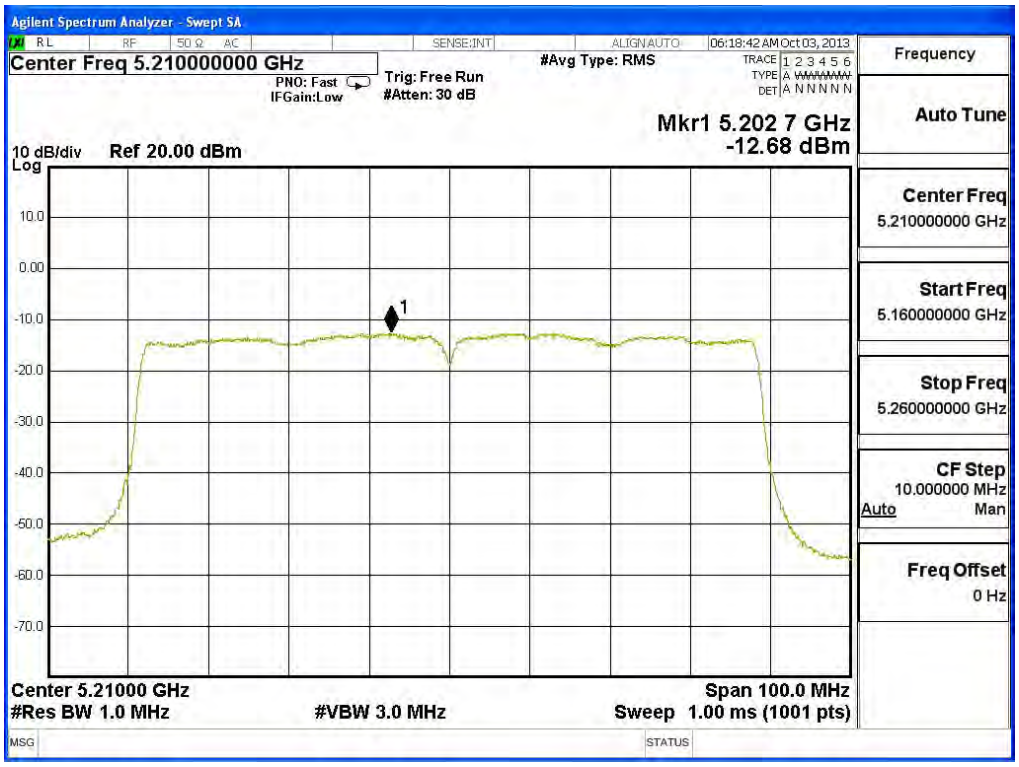
Channel 42 – Chain A



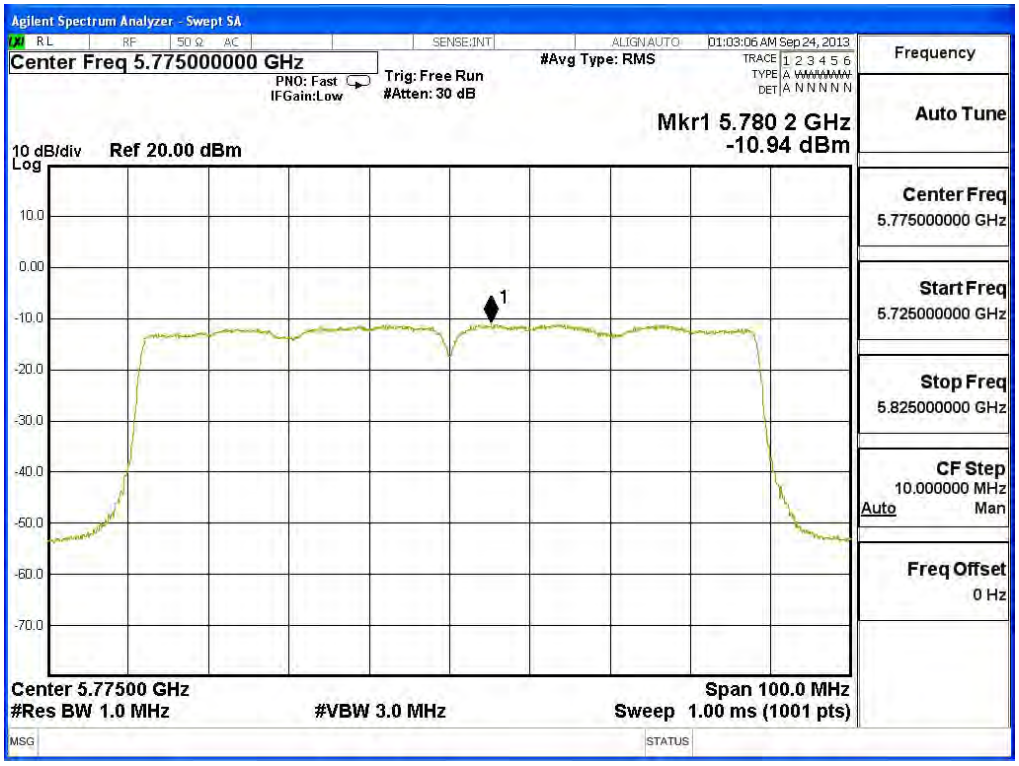
Channel 155 – Chain A



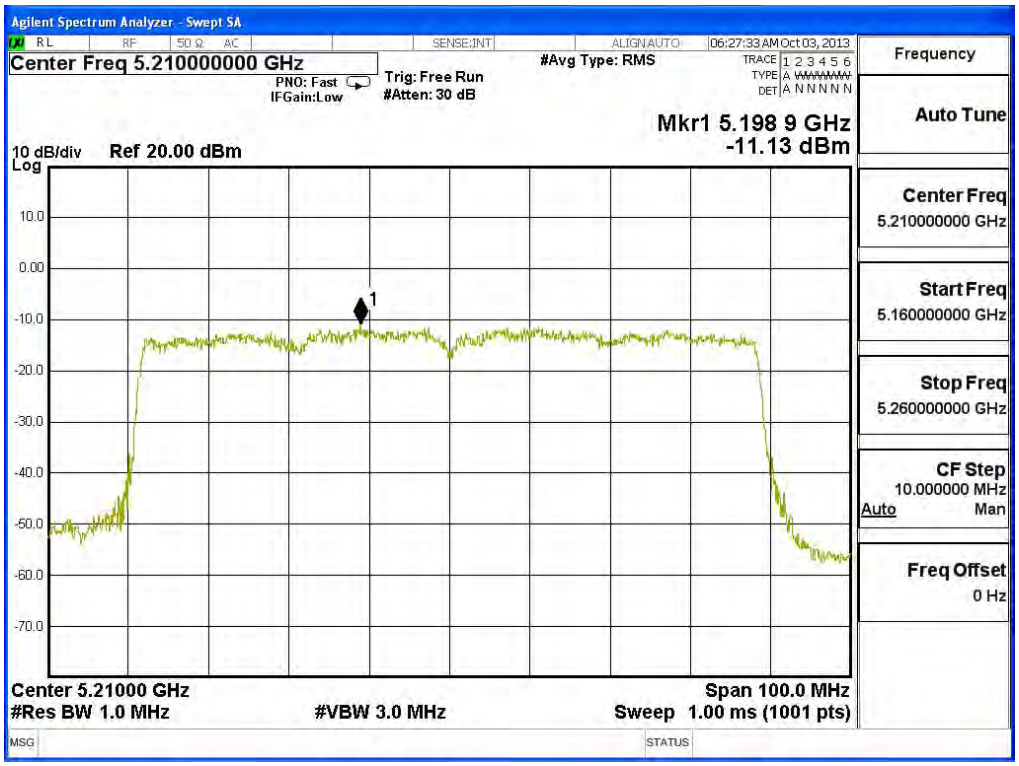
Channel 42 – Chain B



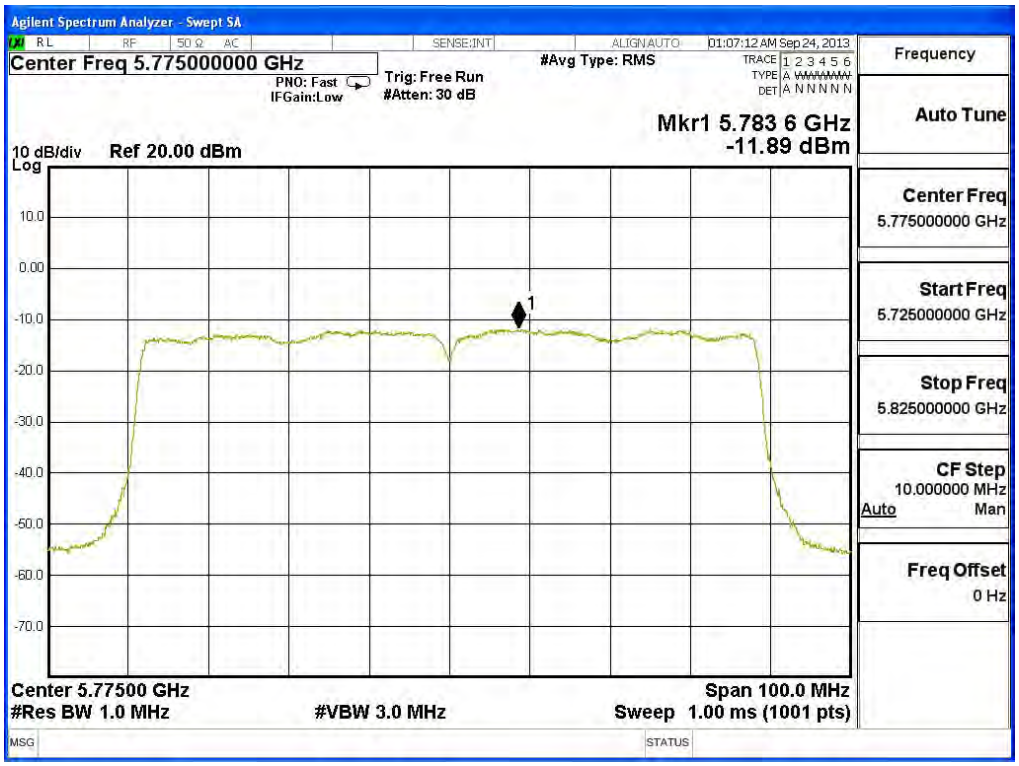
Channel 155 – Chain B



Channel 42 – Chain C



Channel 155 – Chain C



5. Peak Excursion

5.1. Test Equipment

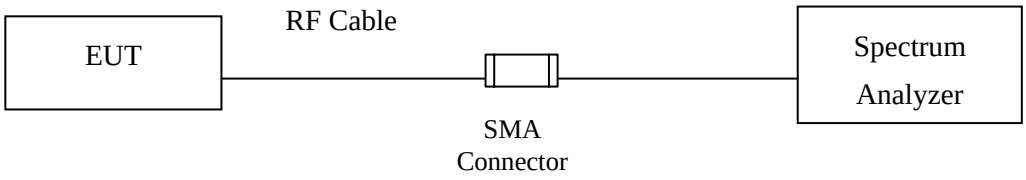
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

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

5.2. Test Setup

Conduction Power Measurement



5.3. Limits

The ratio of the peak excursion of the modulation envelope (measured suing a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

5.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

Step 1: Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.
Step 2: Find the maximum of the peak-max-hold spectrum.
(Set RBW = 1 MHz, VBW ≥ 3 MHz, Detector = peak, Trace mode = max-hold, Allow the sweeps to continue until the trace stabilizes,Use the peak search function to find the peak of the spectrum.)
Step 3: Use the procedure found under KDB-789033 F) to measure the PPSD.
Step 4: Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

5.5. Uncertainty

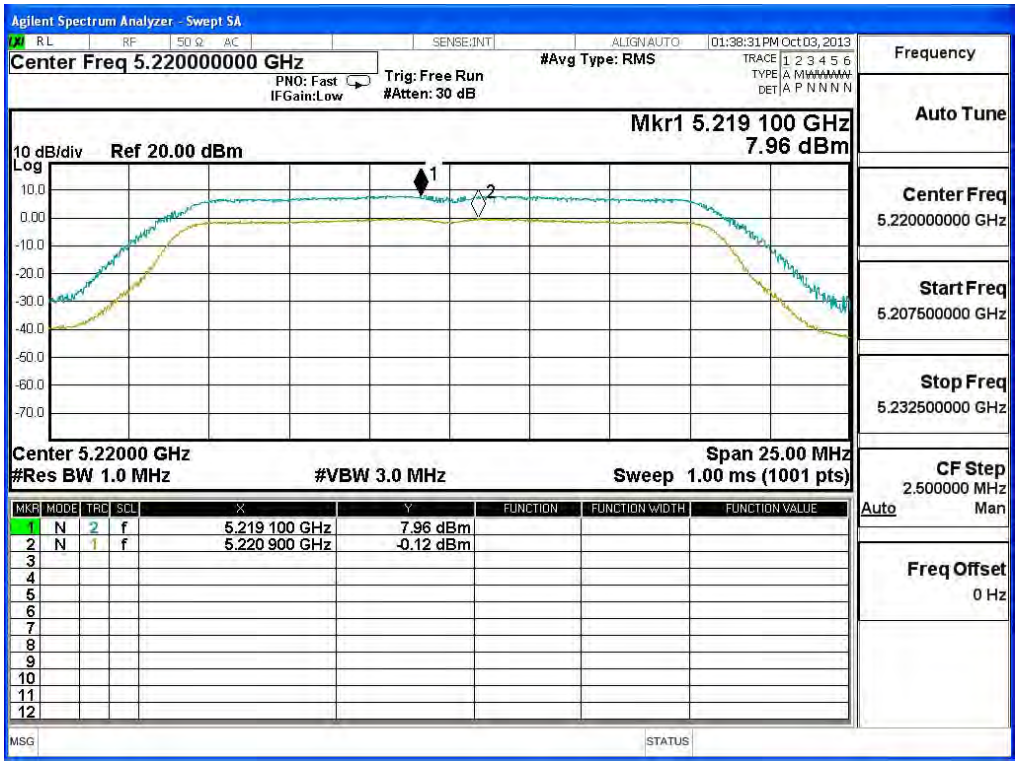
± 1.27 dB

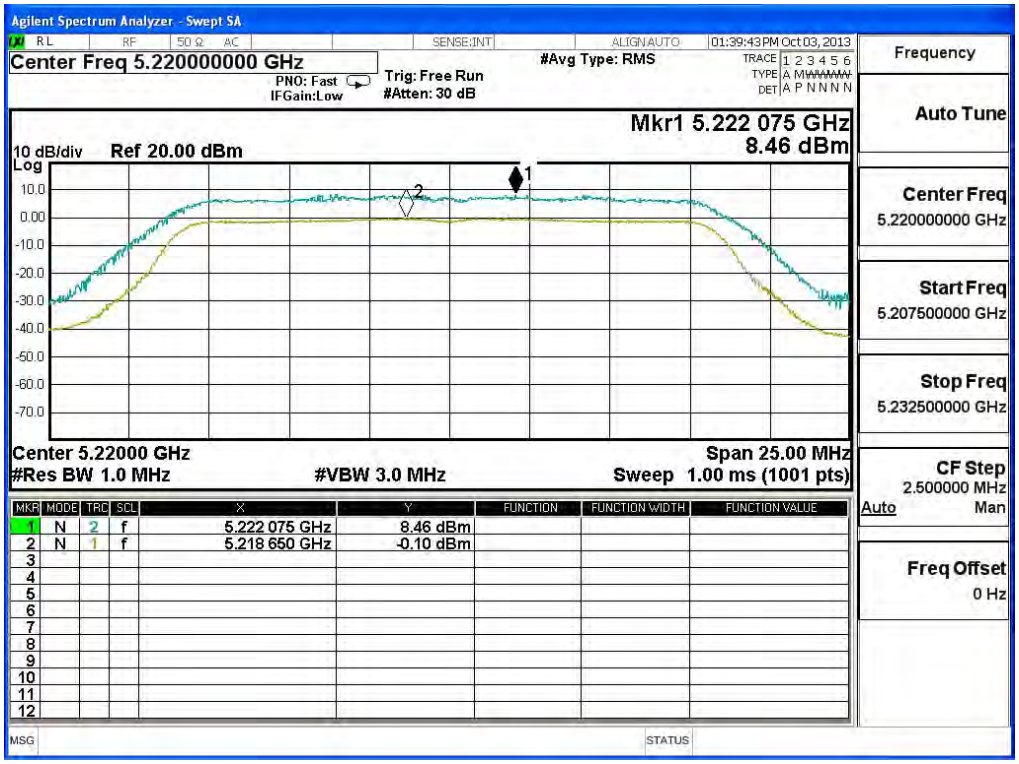
5.6. Test Result of Peak Excursion

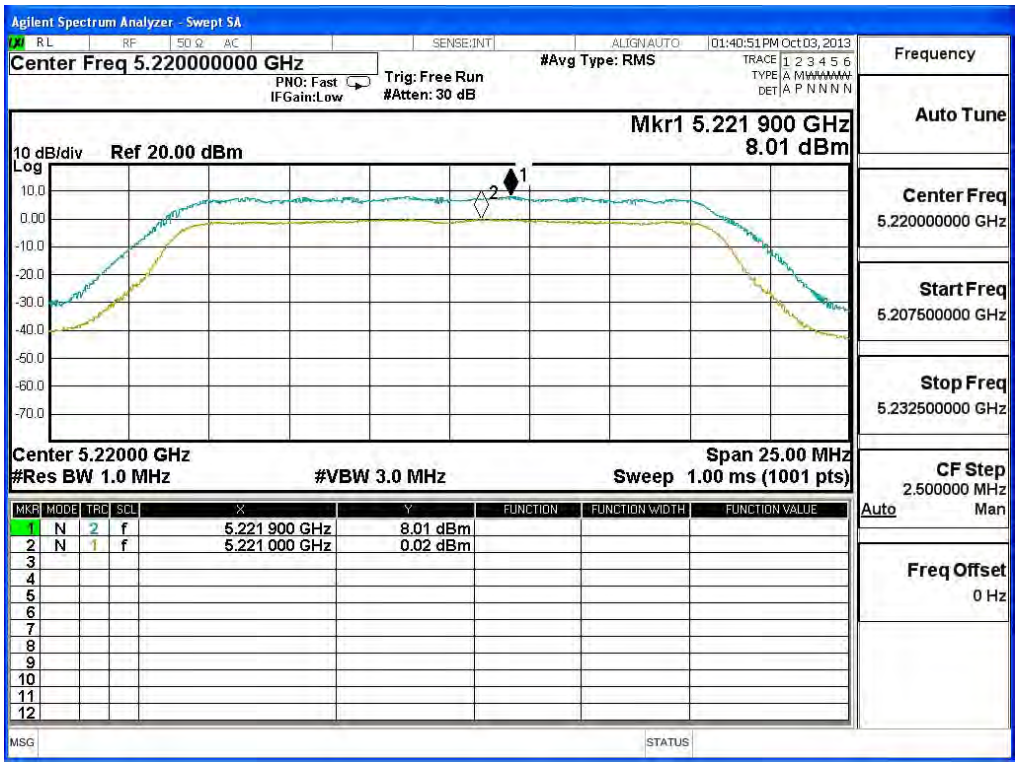
Product : WiFi module
Test Item : Peak Excursion
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)

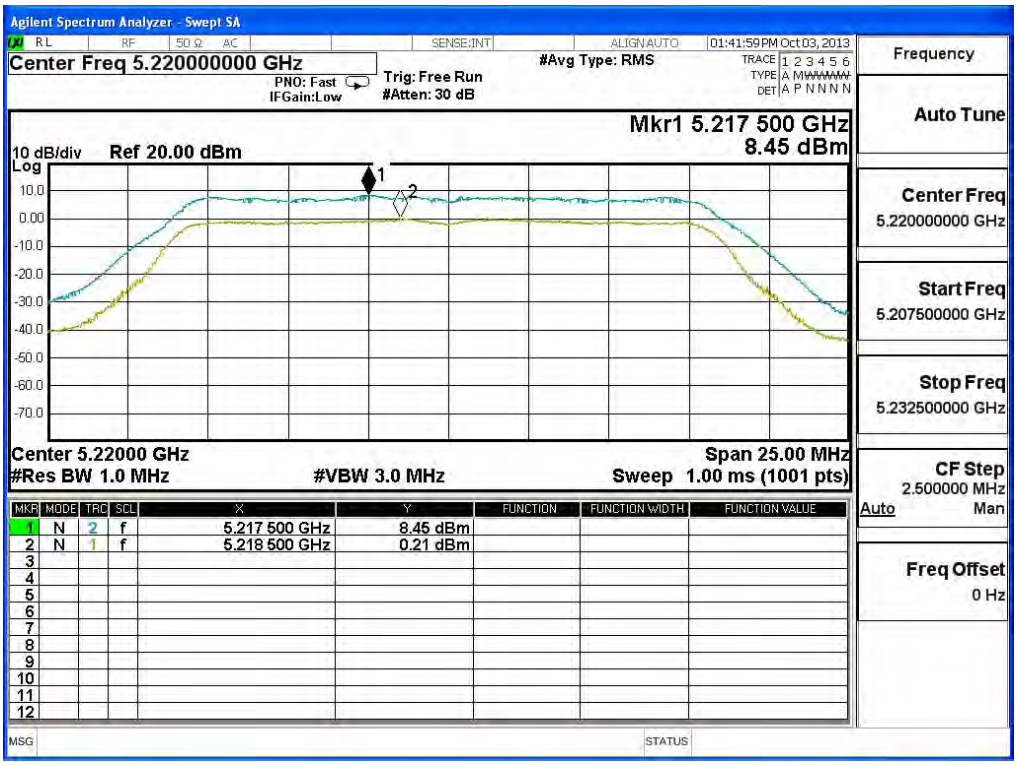
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
44	5220	MCS (0)	8.080	<13	Pass
		MCS (2)	8.560	<13	Pass
		MCS (4)	7.990	<13	Pass
		MCS (7)	8.240	<13	Pass

Channel 44:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:39:43 PM Oct 03, 2013
Mkr1 5.222 075 GHz
8.46 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.222 075 GHz 8.46 dBm
2 N 1 f 5.218 650 GHz -0.10 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:40:51 PM Oct 03, 2013
Mkr1 5.221 900 GHz
8.01 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.221 900 GHz 8.01 dBm
2 N 1 f 5.221 000 GHz 0.02 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

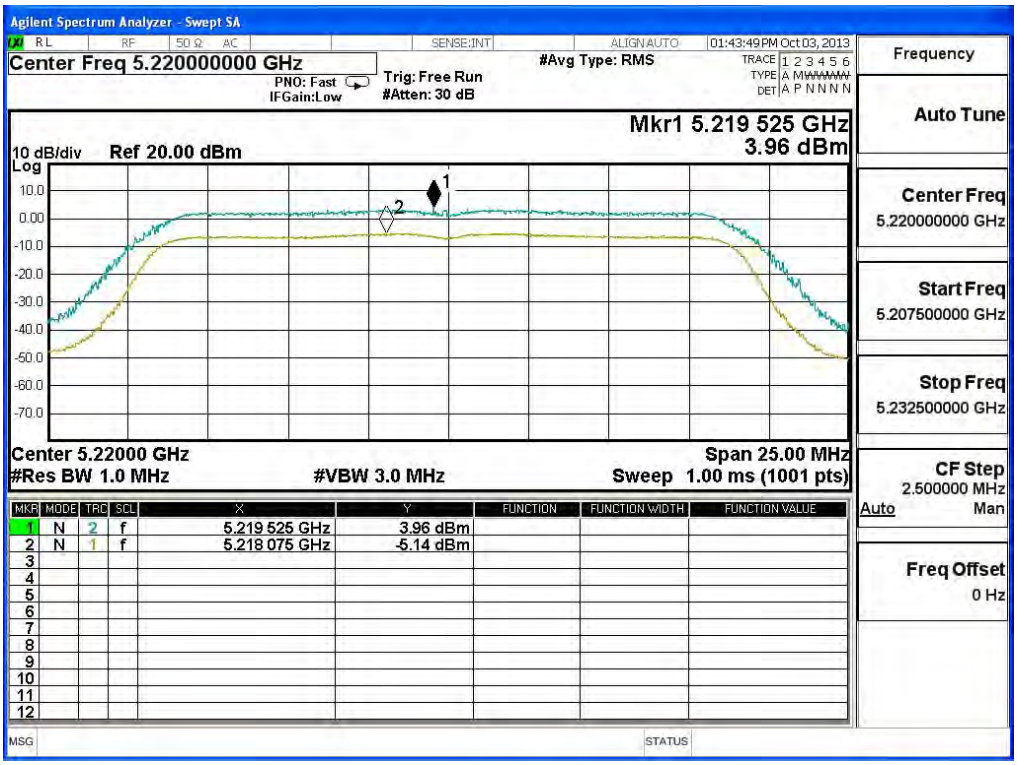

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
01:41:59 PM Oct 03, 2013
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A MWWWWW
DET A P N N N N
Mkr1 5.217 500 GHz
8.45 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 2 f 5.217 500 GHz 8.45 dBm
2 N 1 f 5.218 500 GHz 0.21 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

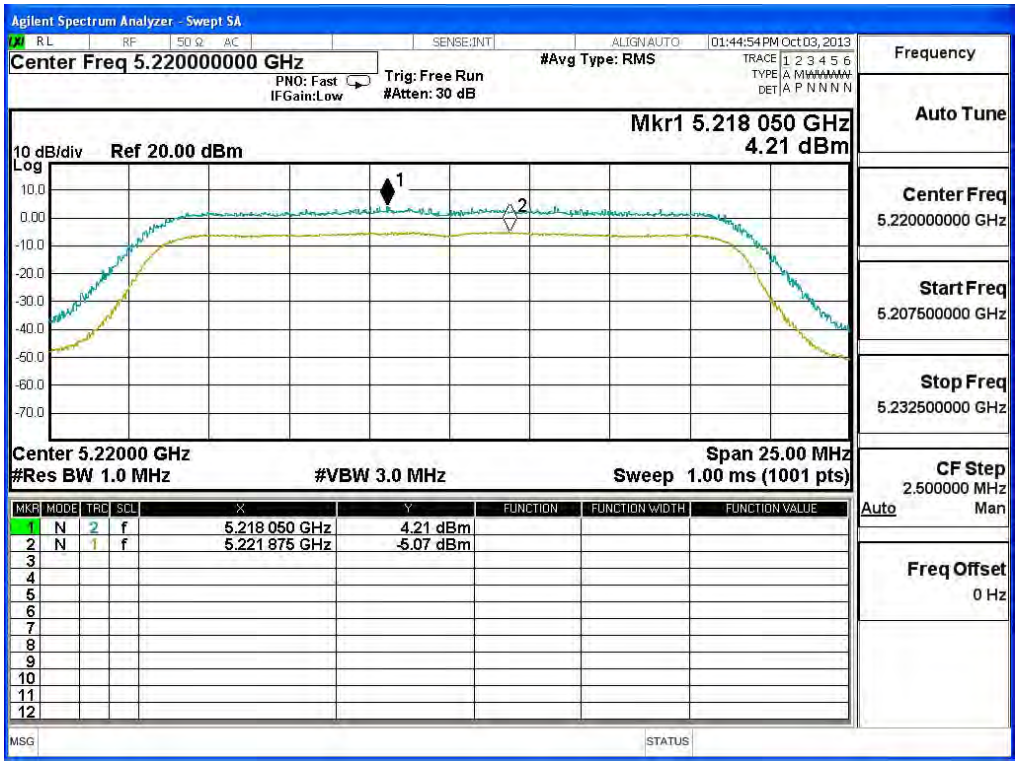
Product : WiFi module
Test Item : Peak Excursion
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)

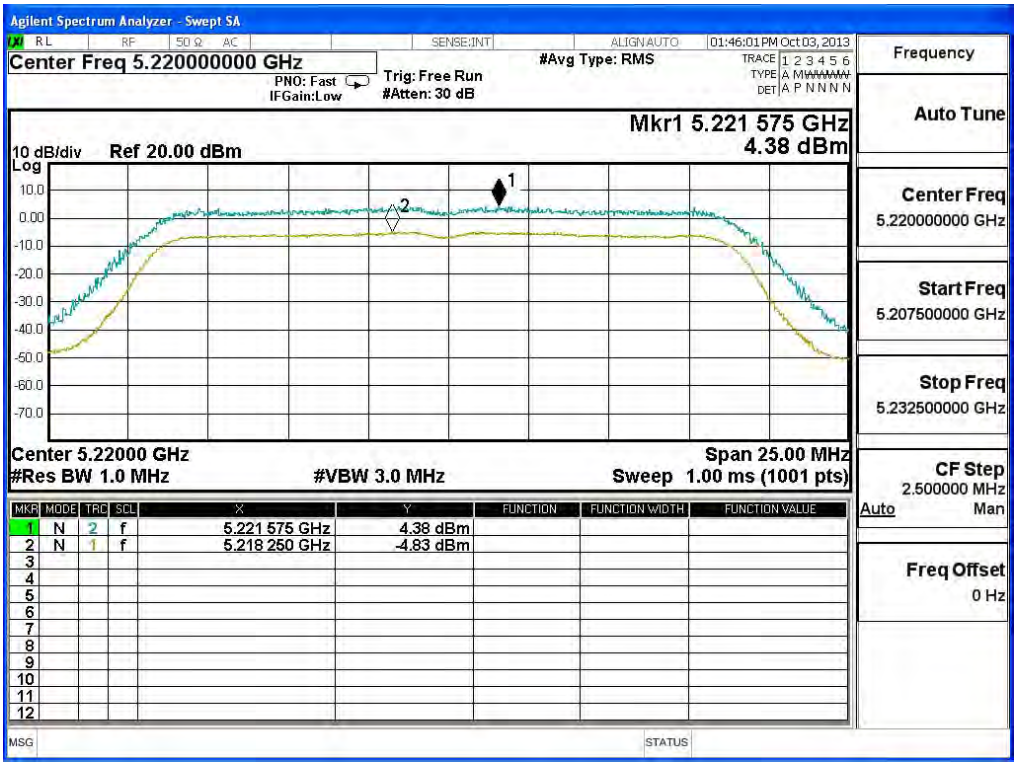
Chain A

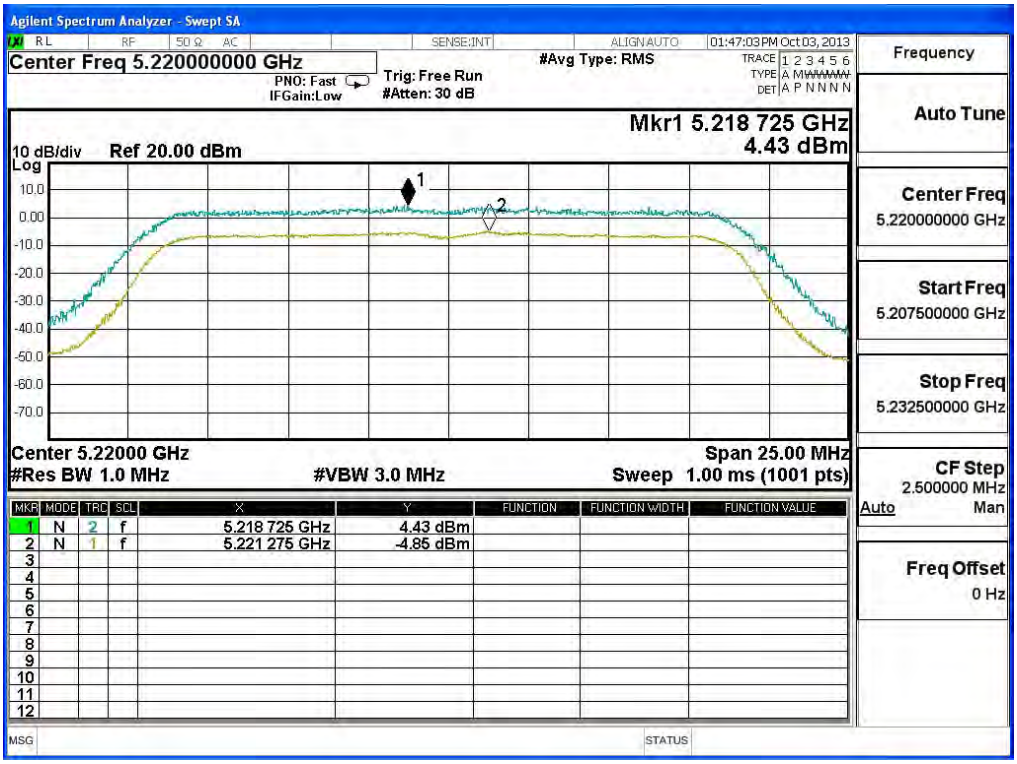
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
44	5220	MCS (0)	9.100	<13	Pass
		MCS (2)	9.280	<13	Pass
		MCS (4)	9.210	<13	Pass
		MCS (7)	9.280	<13	Pass

Channel 44:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:44:54 PM Oct 03, 2013
Mkr1 5.218 050 GHz
4.21 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.218 050 GHz 4.21 dBm
2 N 1 f 5.221 875 GHz -5.07 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

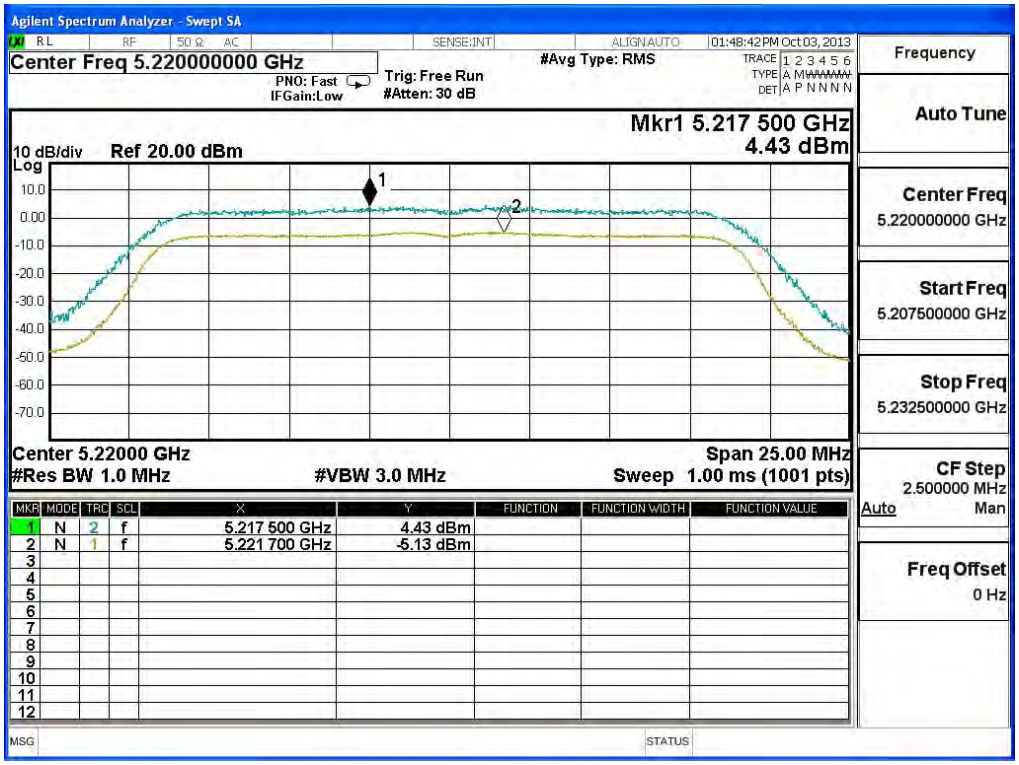

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:46:01 PM Oct 03, 2013
Mkr1 5.221 575 GHz
4.38 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.221 575 GHz 4.38 dBm
2 N 1 f 5.218 250 GHz -4.83 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

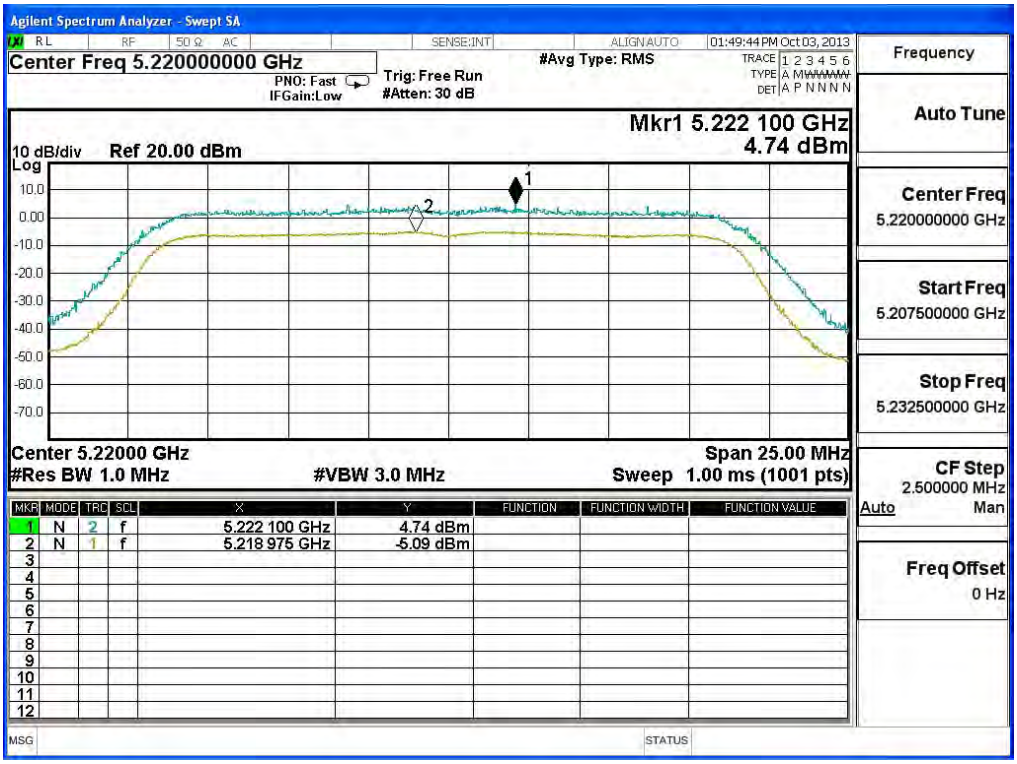

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:47:03 PM Oct 03, 2013
Mkr1 5.218 725 GHz
4.43 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.218 725 GHz 4.43 dBm
2 N 1 f 5.221 275 GHz -4.85 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

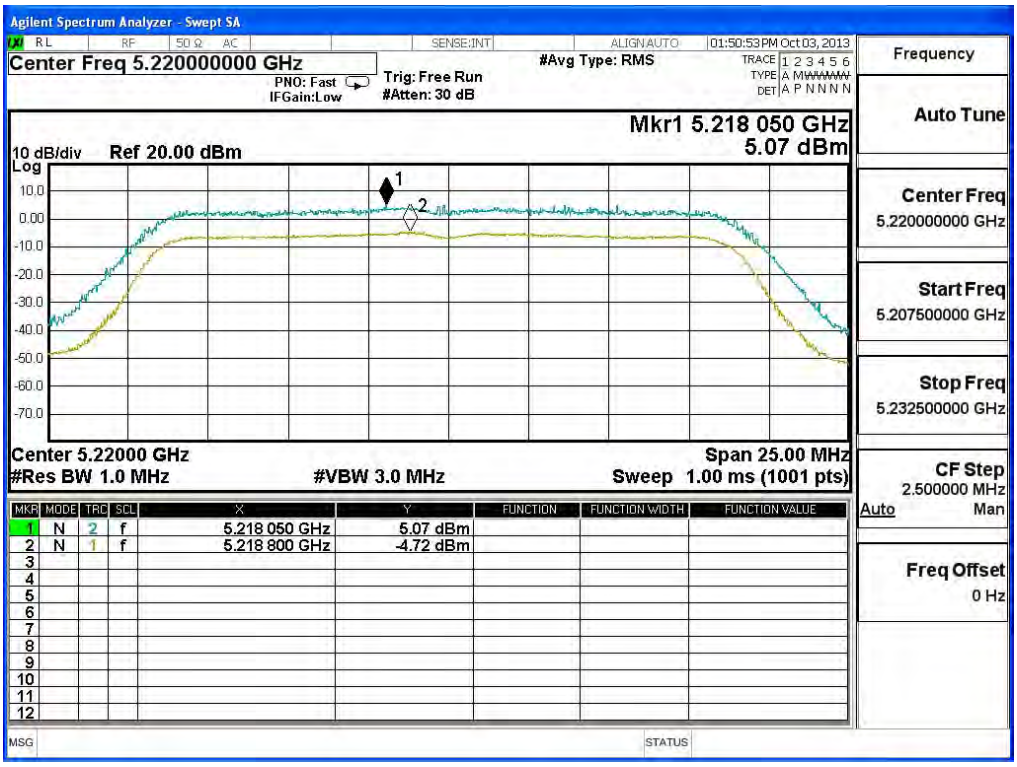
Chain B

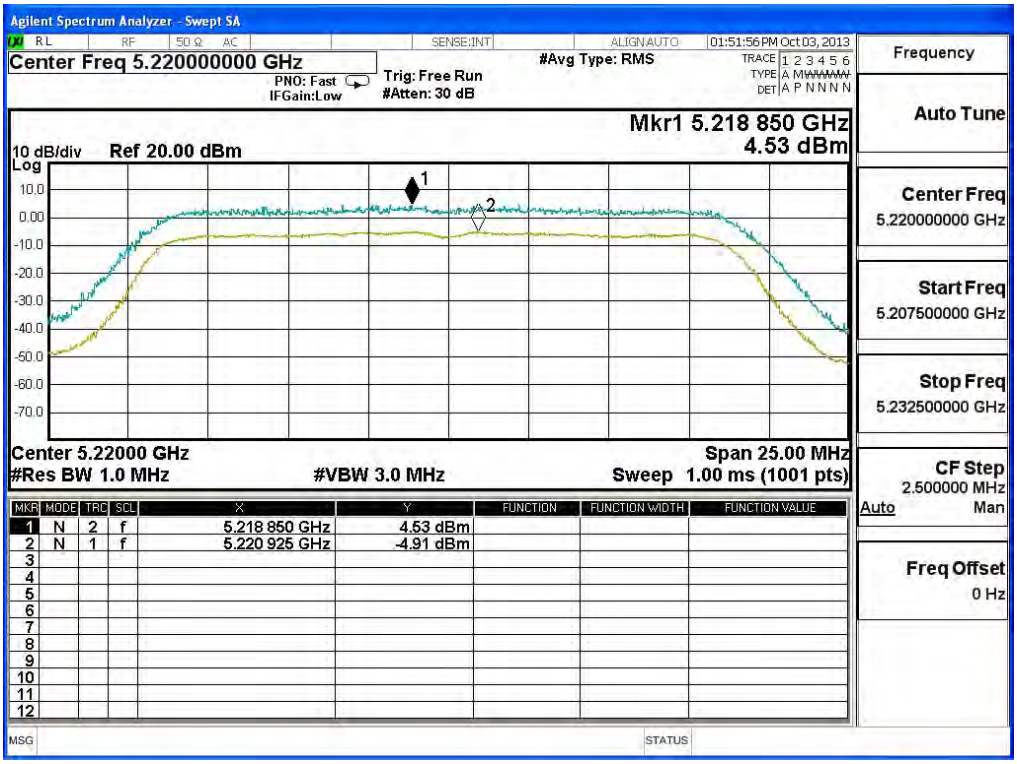
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
44	5220	MCS (0)	9.560	<13	Pass
		MCS (2)	9.830	<13	Pass
		MCS (4)	9.790	<13	Pass
		MCS (7)	9.440	<13	Pass

Channel 44:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:49:44 PM Oct 03, 2013
Mkr1 5.222 100 GHz
4.74 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.222 100 GHz 4.74 dBm
2 N 1 f 5.218 975 GHz -5.09 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

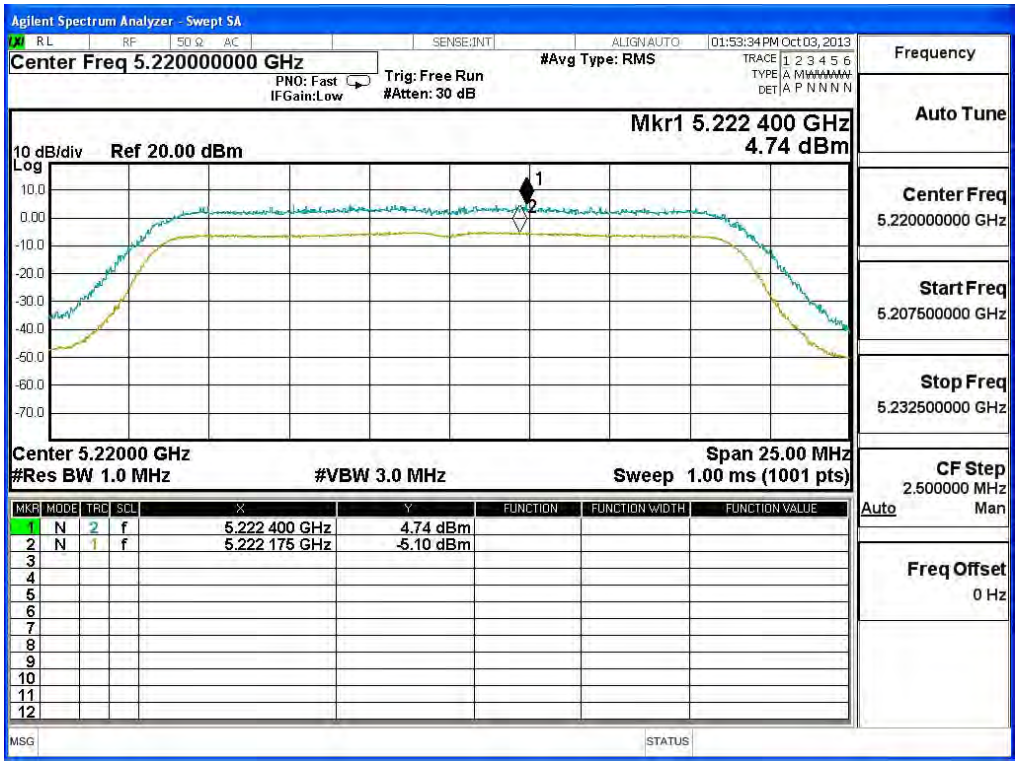

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:50:53 PM Oct 03, 2013
Mkr1 5.218 050 GHz
5.07 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.218 050 GHz 5.07 dBm
2 N 1 f 5.218 800 GHz -4.72 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

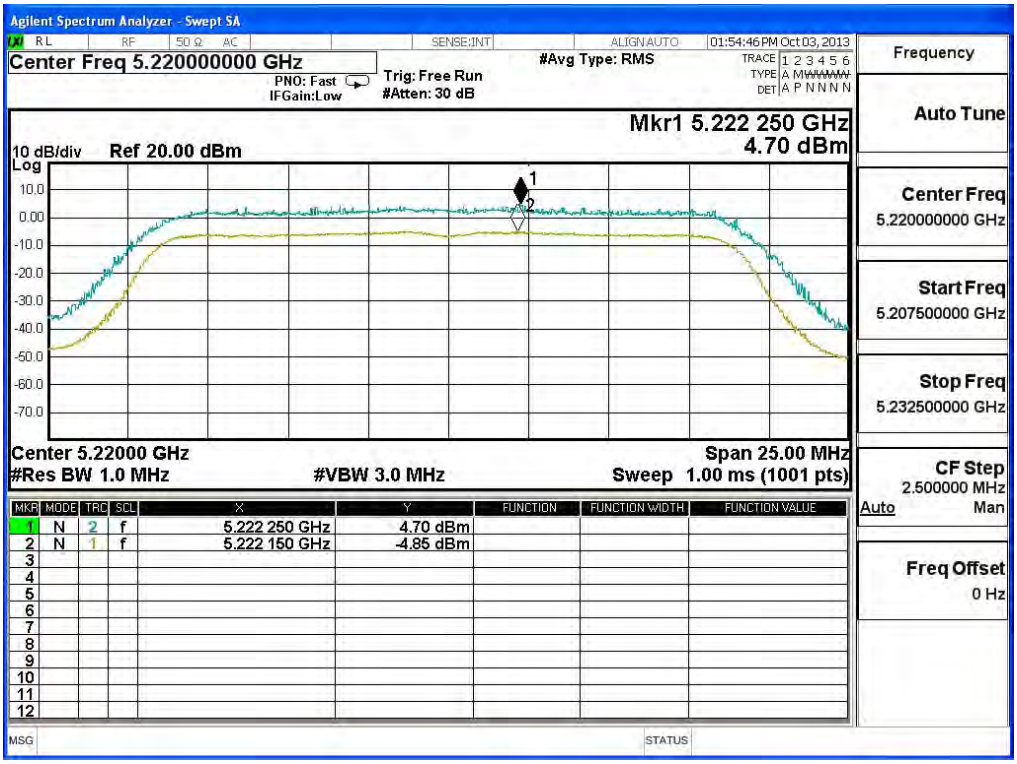

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
01:51:56 PM Oct 03, 2013
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A MWWWWW
DET A P N N N N
Mkr1 5.218 850 GHz
4.53 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 2 f 5.218 850 GHz 4.53 dBm
2 N 1 f 5.220 925 GHz -4.91 dBm
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

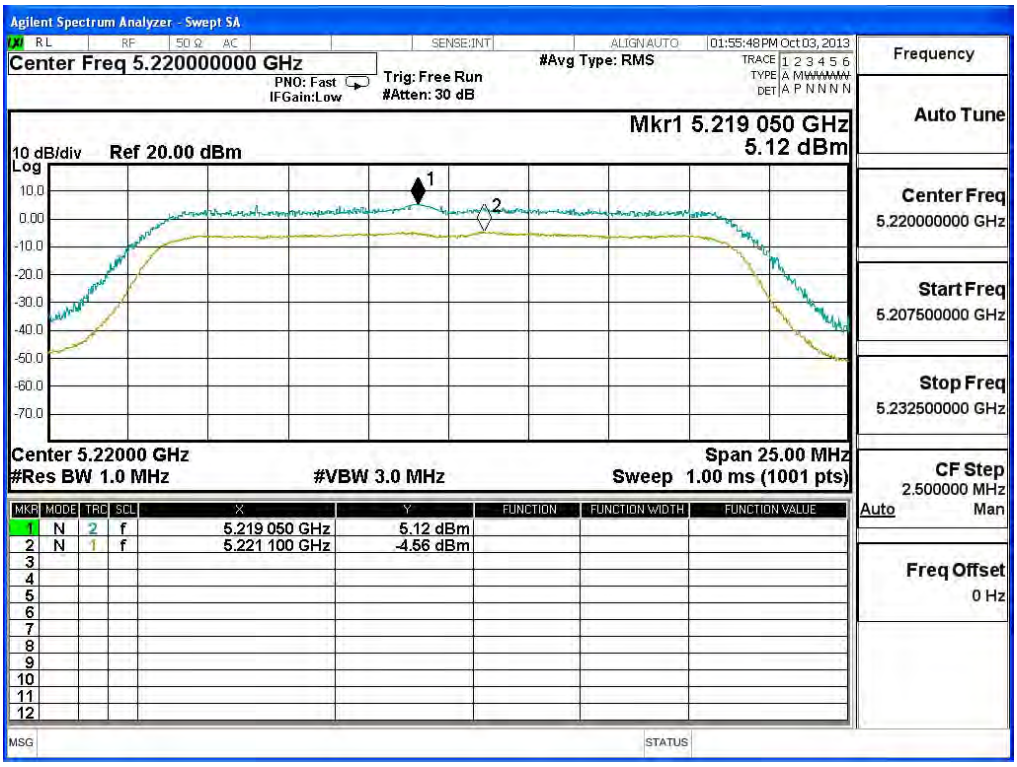
Chain C

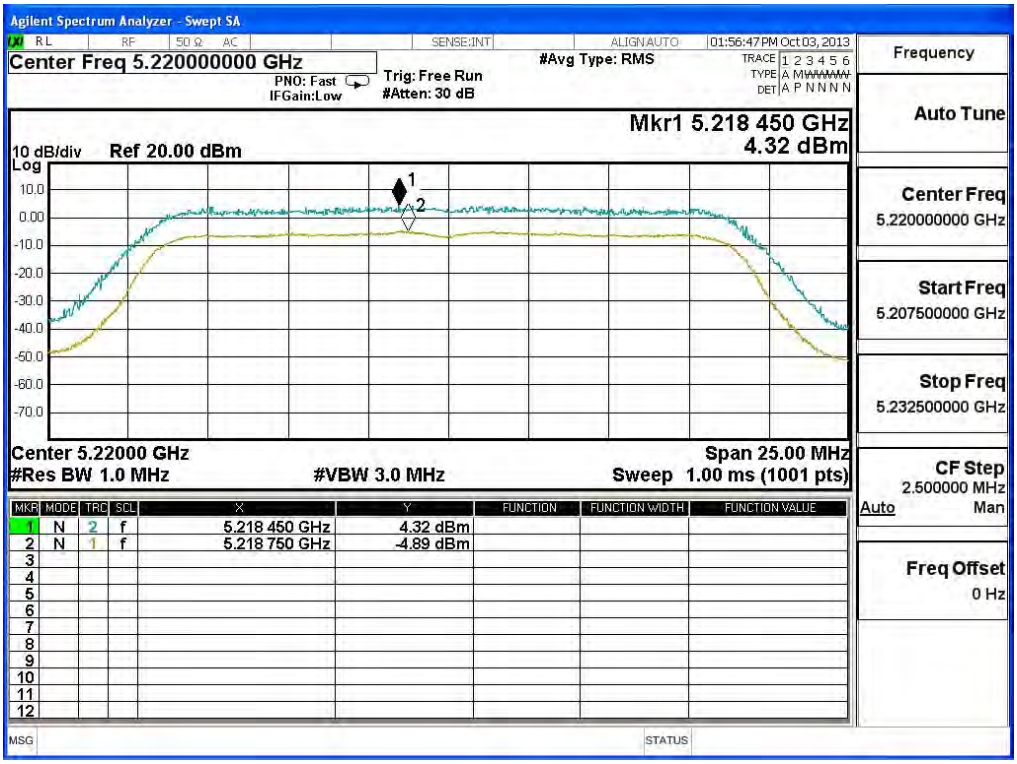
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
44	5180	MCS (0)	9.840	<13	Pass
		MCS (2)	9.550	<13	Pass
		MCS (4)	9.680	<13	Pass
		MCS (7)	9.210	<13	Pass

Channel 44:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:54:46 PM Oct 03, 2013
Mkr1 5.222 250 GHz
4.70 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.222 250 GHz 4.70 dBm
2 N 1 f 5.222 150 GHz -4.85 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:55:48 PM Oct 03, 2013
Mkr1 5.219 050 GHz
5.12 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.219 050 GHz 5.12 dBm
2 N 1 f 5.221 100 GHz -4.56 dBm
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

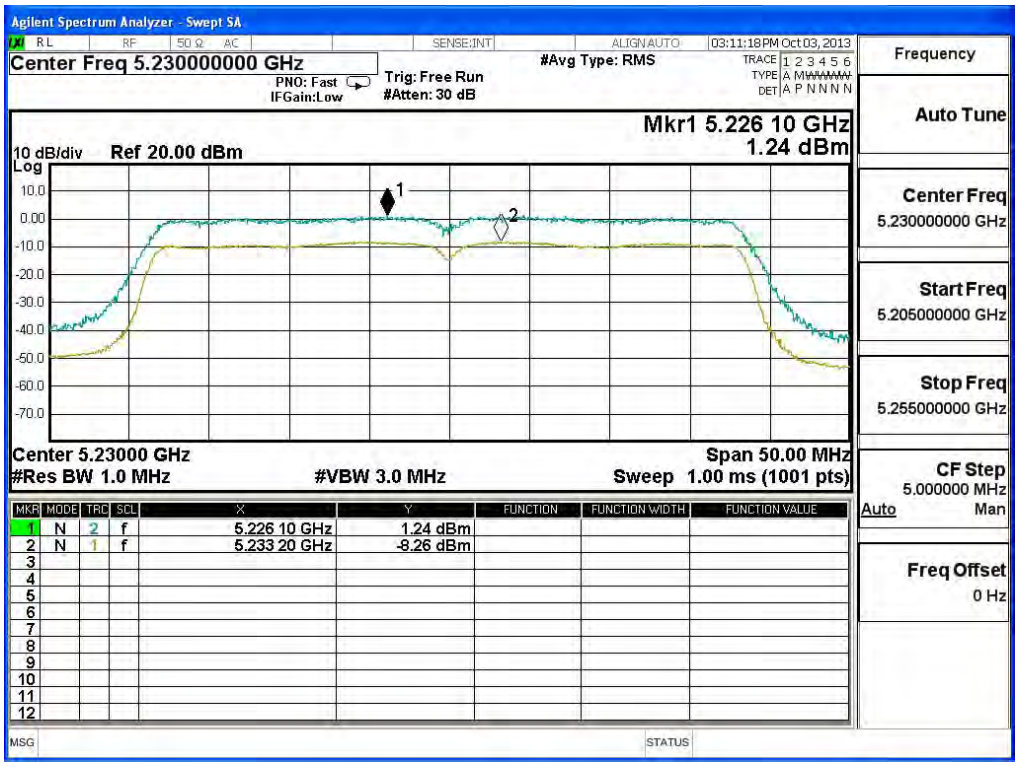

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
01:56:47 PM Oct 03, 2013
Center Freq 5.220000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A MWWWWW
DET A P N N N N
Mkr1 5.218 450 GHz
4.32 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.22000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 2 f 5.218 450 GHz 4.32 dBm
2 N 1 f 5.218 750 GHz -4.89 dBm
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.220000000 GHz
Start Freq
5.207500000 GHz
Stop Freq
5.232500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

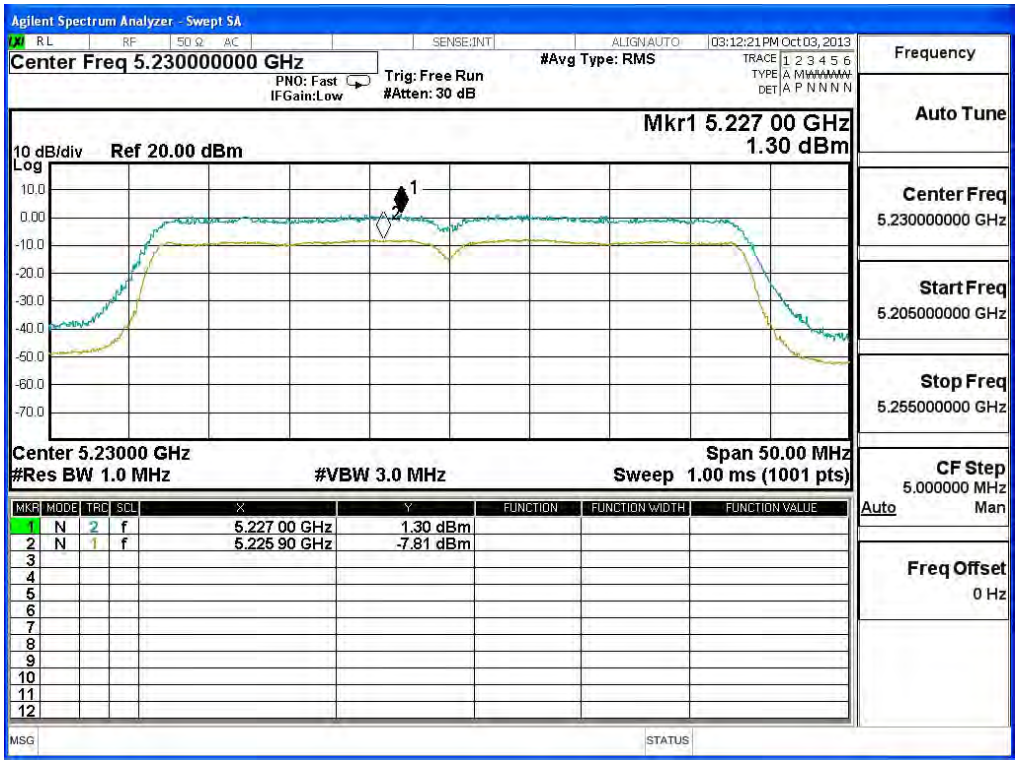
Product : WiFi module
Test Item : Peak Excursion
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)

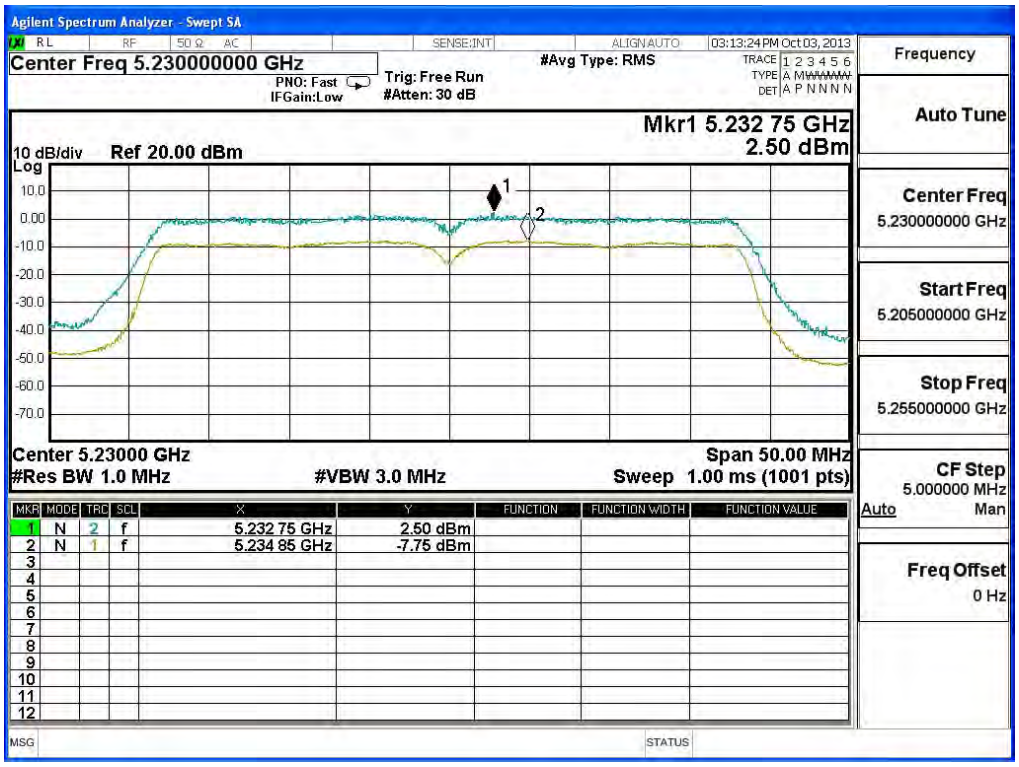
Chain A

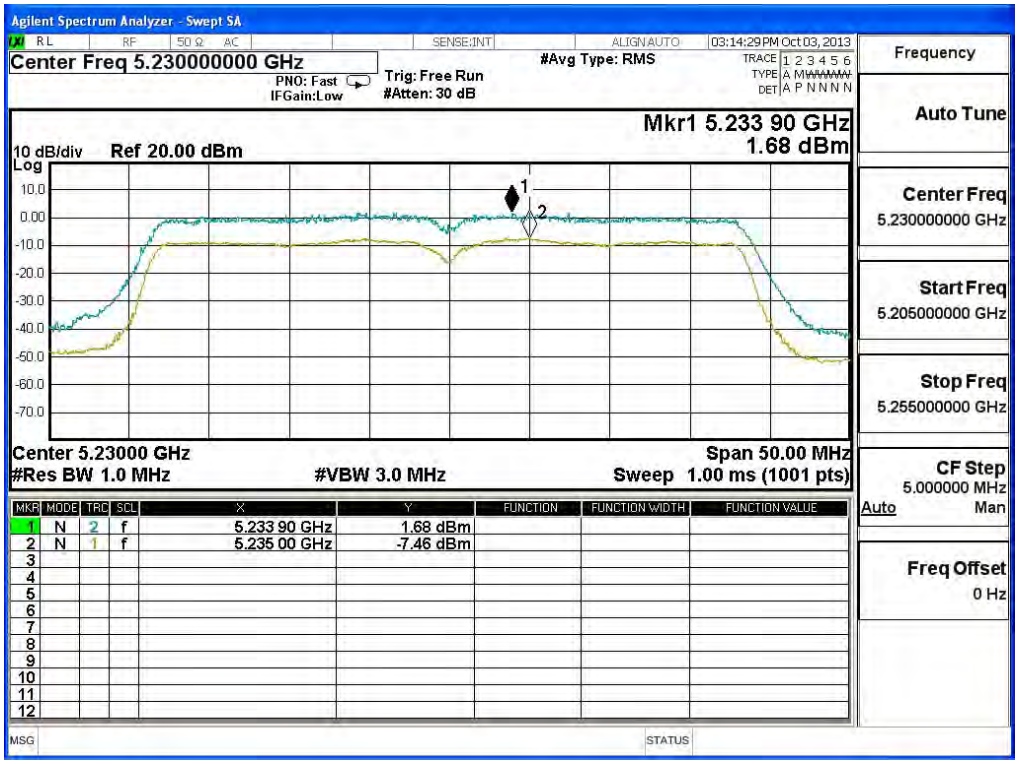
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
46	5230	MCS (0)	9.470	<13	Pass
		MCS (2)	9.110	<13	Pass
		MCS (4)	10.250	<13	Pass
		MCS (7)	9.140	<13	Pass

Channel 46:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:12:21 PM Oct 03, 2013
Mkr1 5.227 00 GHz
1.30 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.227 00 GHz 1.30 dBm
2 N 1 f 5.225 90 GHz -7.81 dBm
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.205000000 GHz
Stop Freq
5.255000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

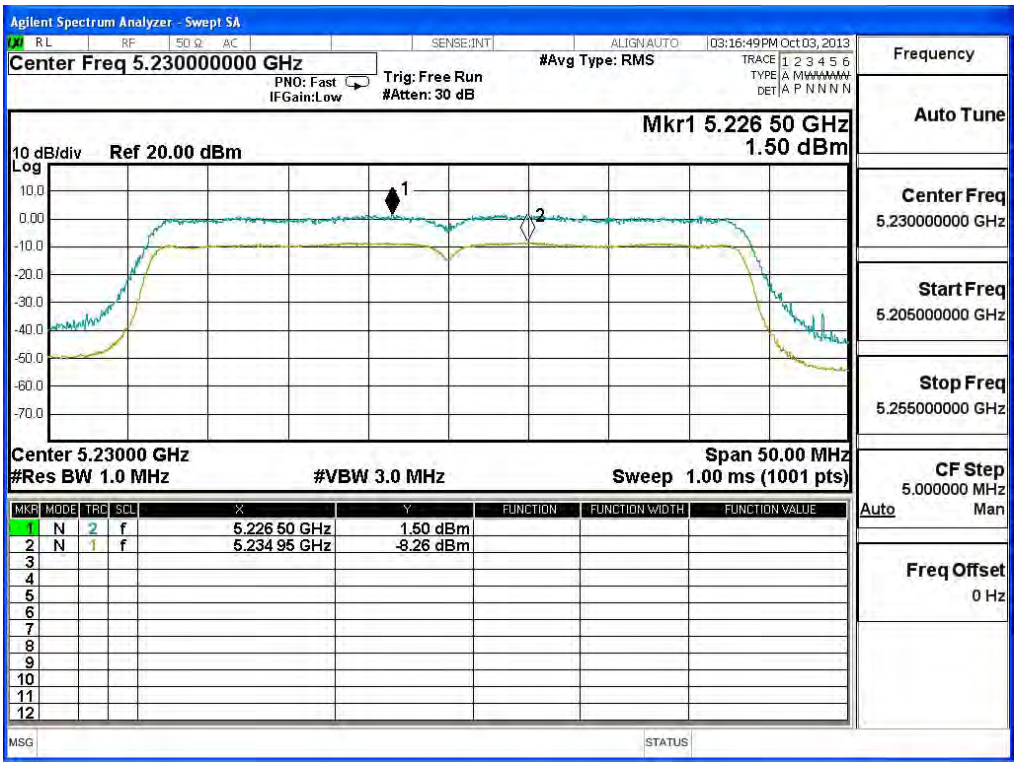

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:13:24 PM Oct 03, 2013
Mkr1 5.232 75 GHz
2.50 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.232 75 GHz 2.50 dBm
2 N 1 f 5.234 85 GHz -7.75 dBm
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.205000000 GHz
Stop Freq
5.255000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

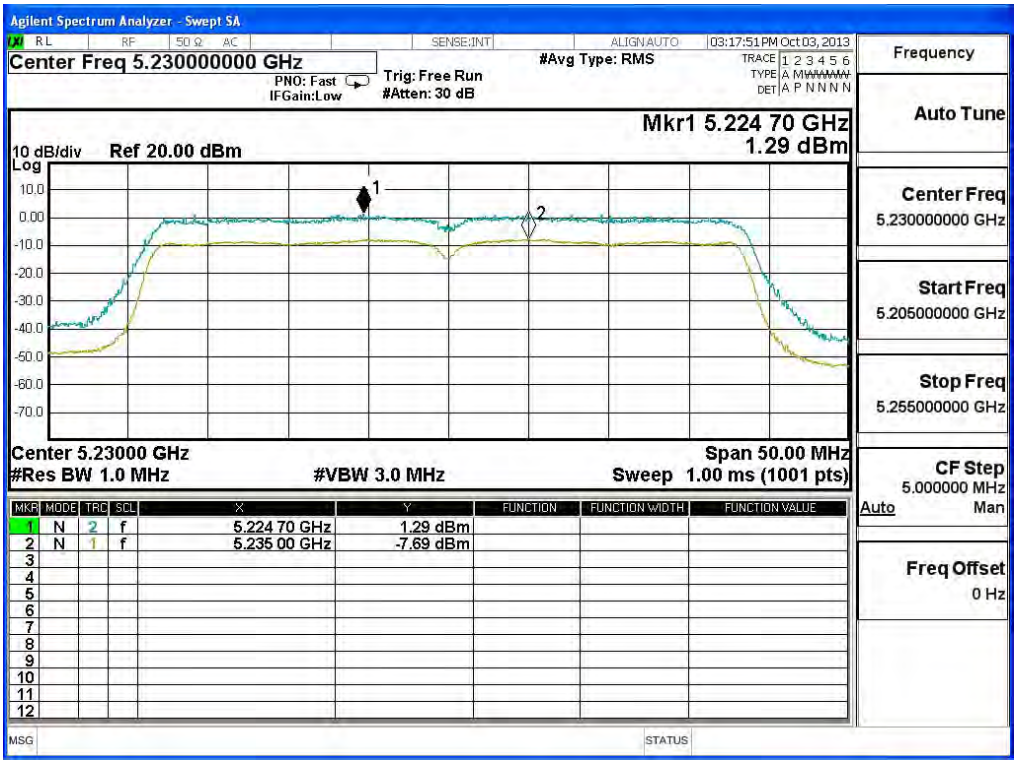

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:14:29 PM Oct 03, 2013
Mkr1 5.233 90 GHz
1.68 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.233 90 GHz 1.68 dBm
2 N 1 f 5.235 00 GHz -7.46 dBm
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.205000000 GHz
Stop Freq
5.255000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

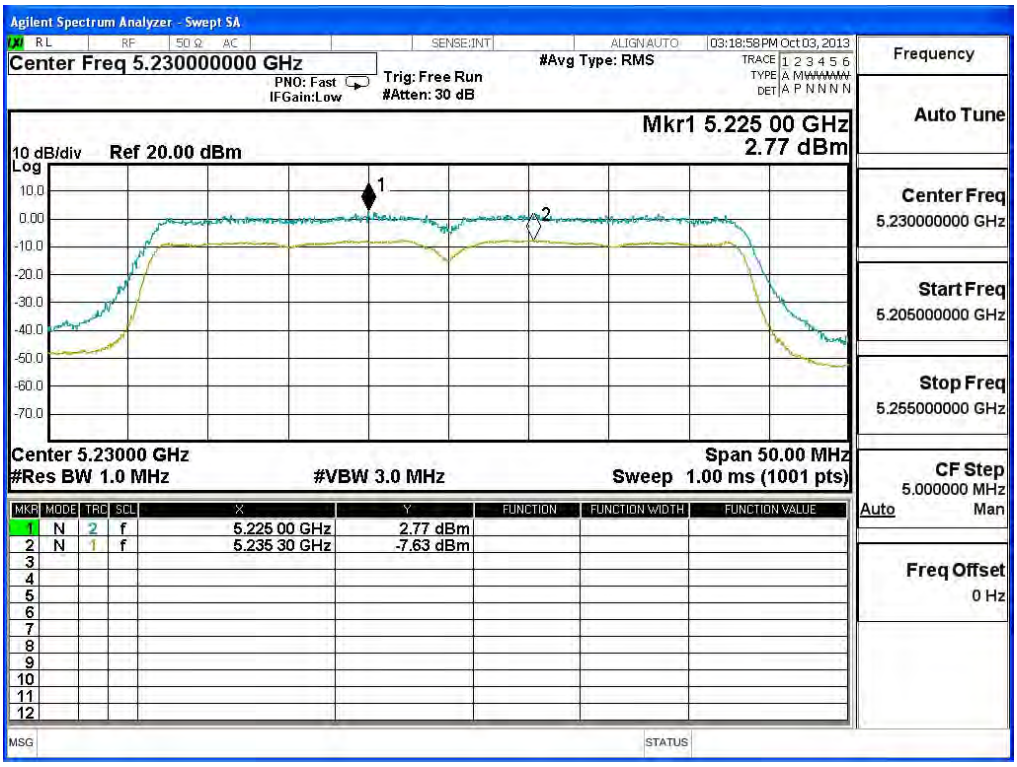
Chain B

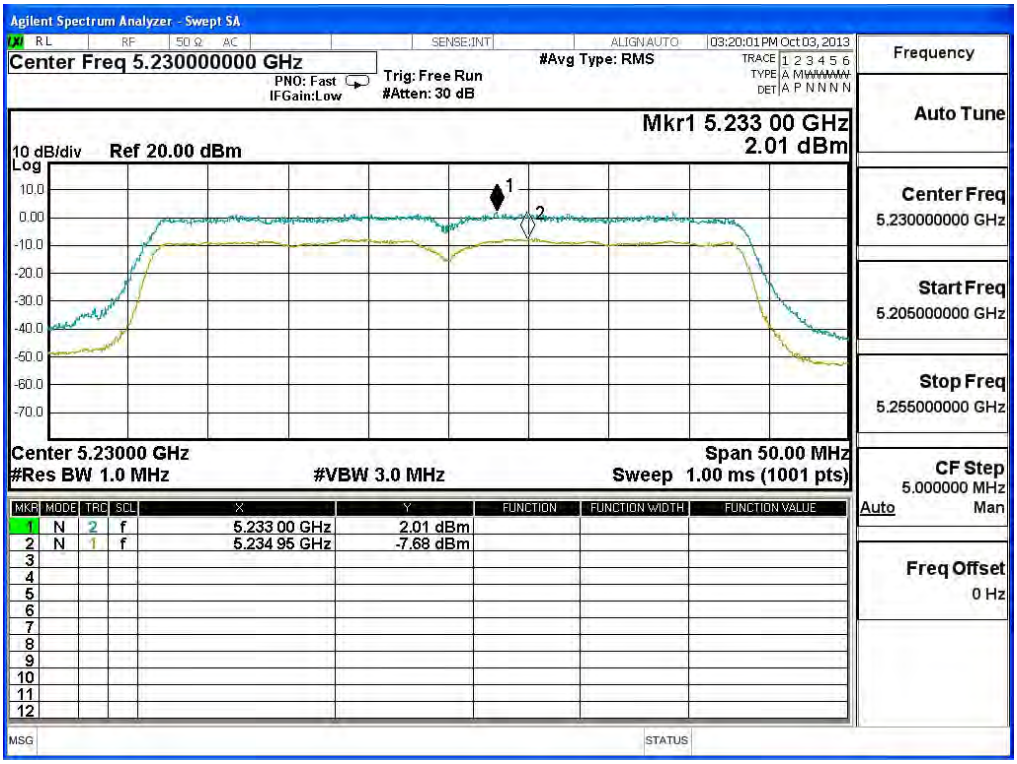
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
46	5230	MCS (0)	9.760	<13	Pass
		MCS (2)	8.980	<13	Pass
		MCS (4)	10.400	<13	Pass
		MCS (7)	9.690	<13	Pass

Channel 46:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:17:51 PM Oct 03, 2013
Mkr1 5.224 70 GHz
1.29 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.224 70 GHz 1.29 dBm
2 N 1 f 5.235 00 GHz -7.69 dBm
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.205000000 GHz
Stop Freq
5.255000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

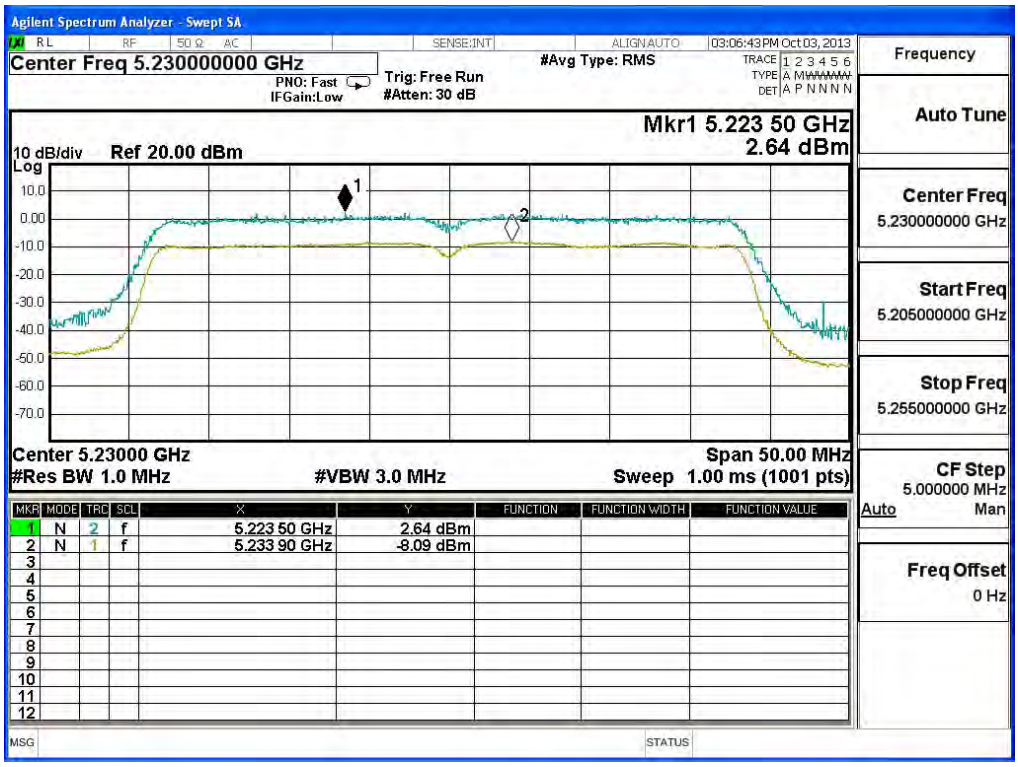

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:18:58 PM Oct 03, 2013
Mkr1 5.225 00 GHz
2.77 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.225 00 GHz 2.77 dBm
2 N 1 f 5.235 30 GHz -7.63 dBm
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.205000000 GHz
Stop Freq
5.255000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

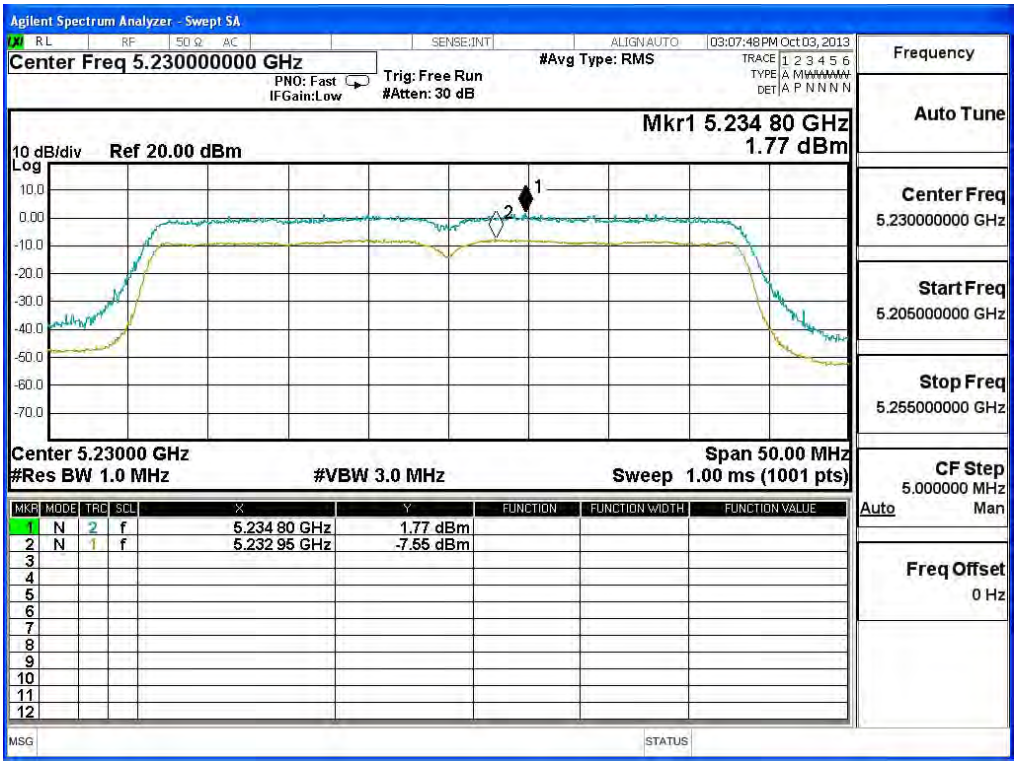

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:20:01 PM Oct 03, 2013
Mkr1 5.233 00 GHz
2.01 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.233 00 GHz 2.01 dBm
2 N 1 f 5.234 95 GHz -7.68 dBm
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.205000000 GHz
Stop Freq
5.255000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

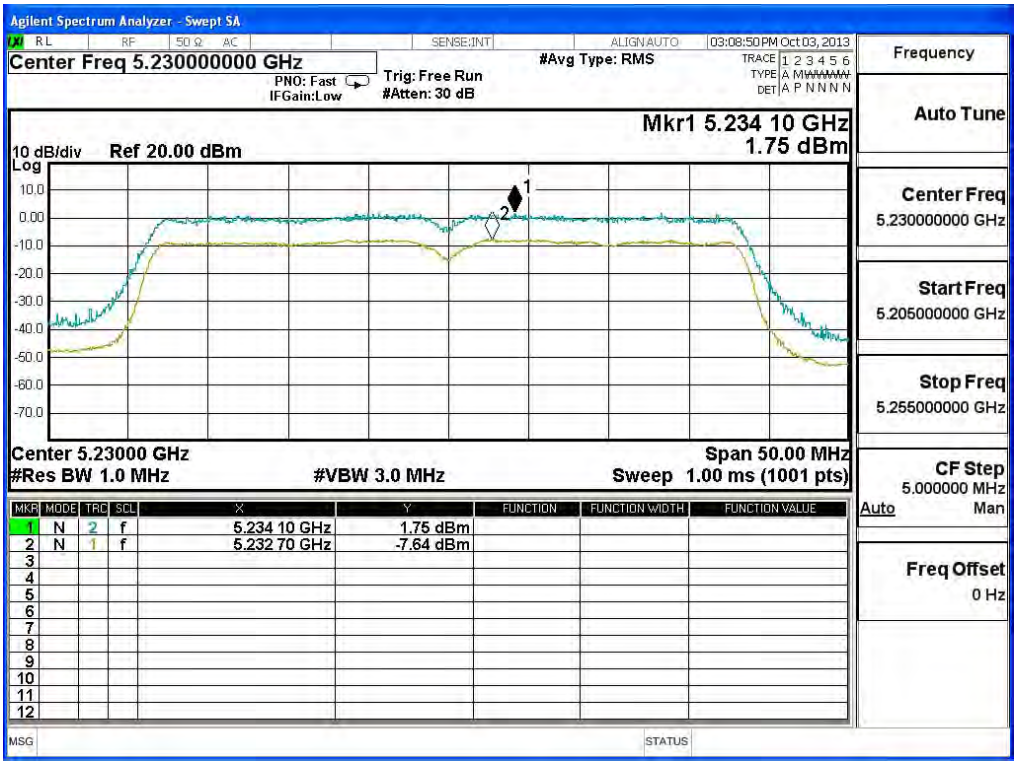
Chain C

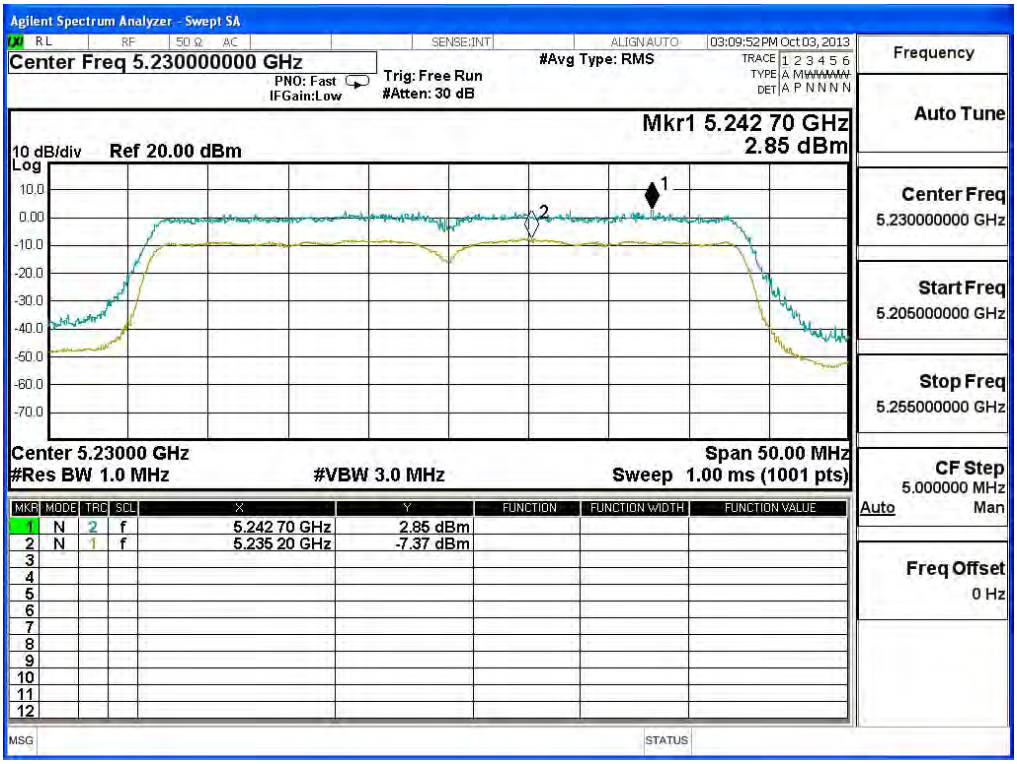
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
46	5230	MCS (0)	10.730	<13	Pass
		MCS (2)	9.320	<13	Pass
		MCS (4)	9.390	<13	Pass
		MCS (7)	10.220	<13	Pass

Channel 38:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:07:48 PM Oct 03, 2013
Mkr1 5.234 80 GHz
1.77 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.234 80 GHz 1.77 dBm
2 N 1 f 5.232 95 GHz -7.55 dBm
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.205000000 GHz
Stop Freq
5.255000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:08:50 PM Oct 03, 2013
Mkr1 5.234 10 GHz
1.75 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.234 10 GHz 1.75 dBm
2 N 1 f 5.232 70 GHz -7.64 dBm
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.205000000 GHz
Stop Freq
5.255000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

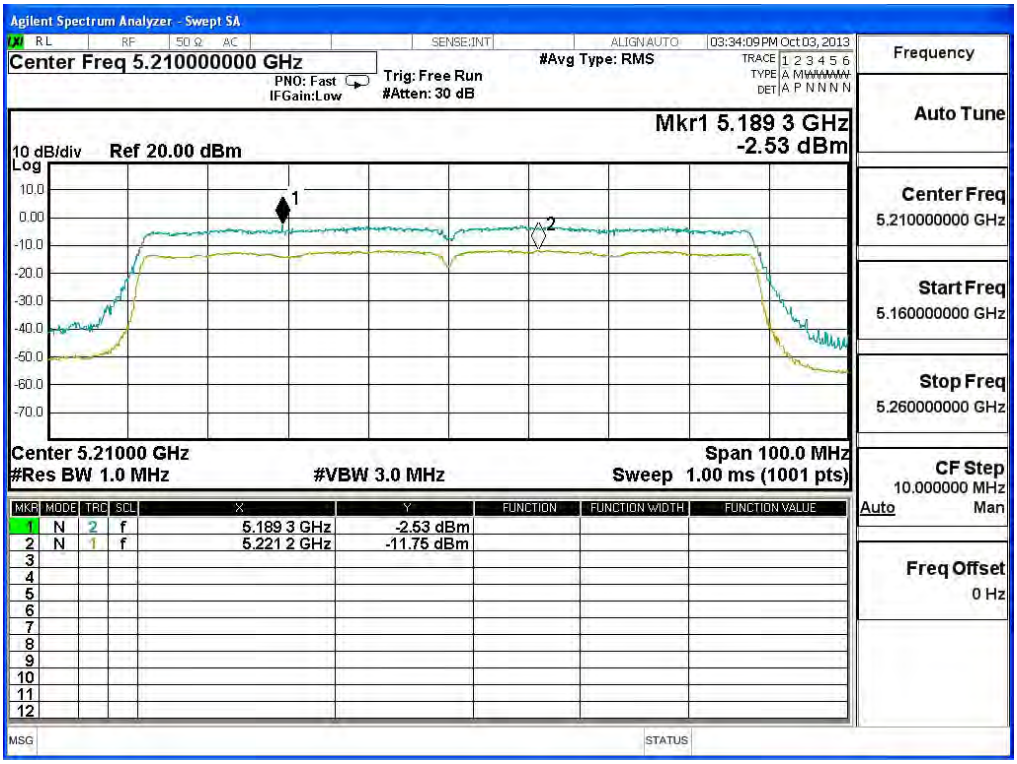

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
03:09:52 PM Oct 03, 2013
Center Freq 5.230000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A MWWWWW
DET A P N N N N
Mkr1 5.242 70 GHz
2.85 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.23000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 2 f 5.242 70 GHz 2.85 dBm
2 N 1 f 5.235 20 GHz -7.37 dBm
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.230000000 GHz
Start Freq
5.205000000 GHz
Stop Freq
5.255000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

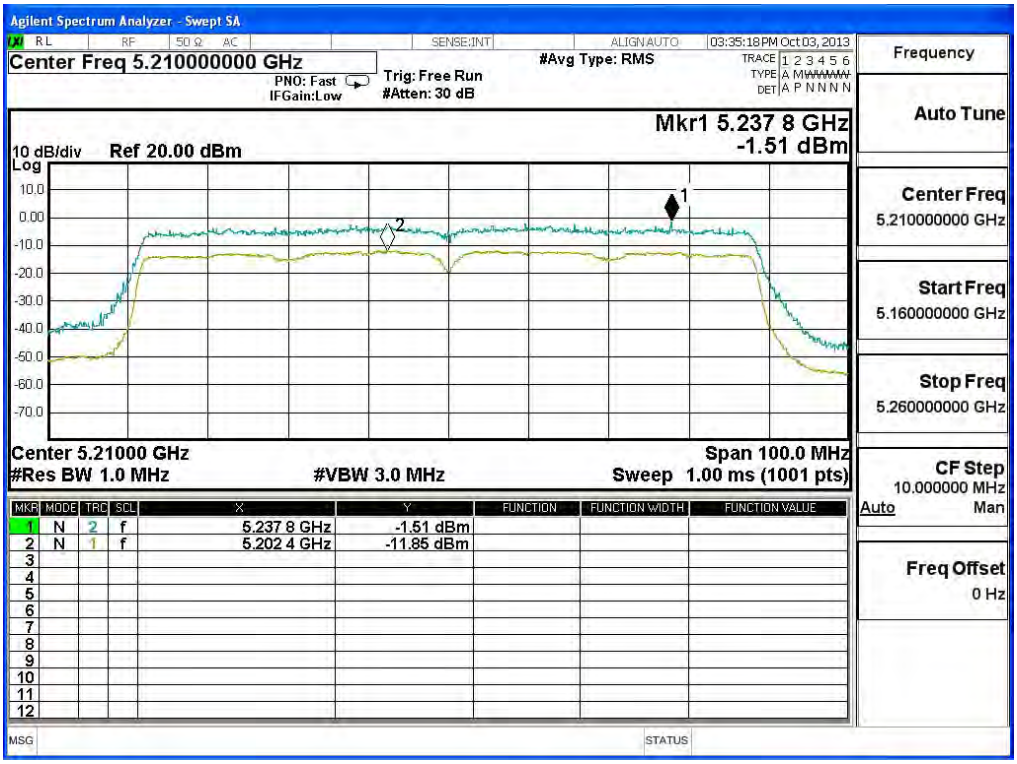
Product : WiFi module
Test Item : Peak Excursion
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps)

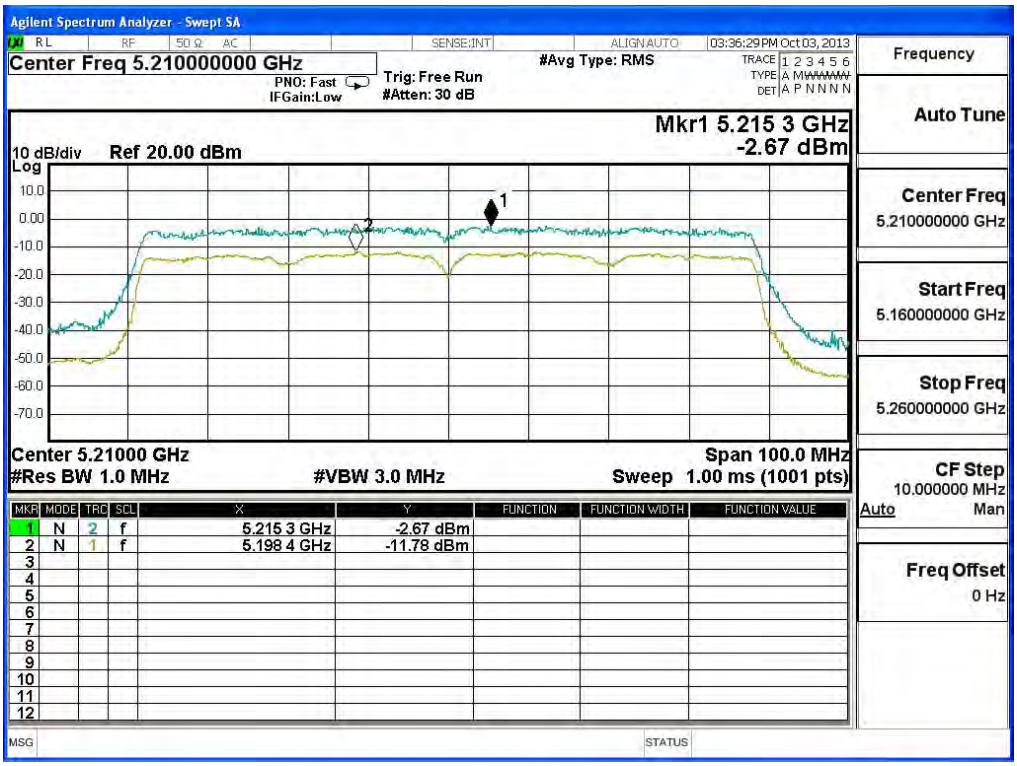
CHAIN A

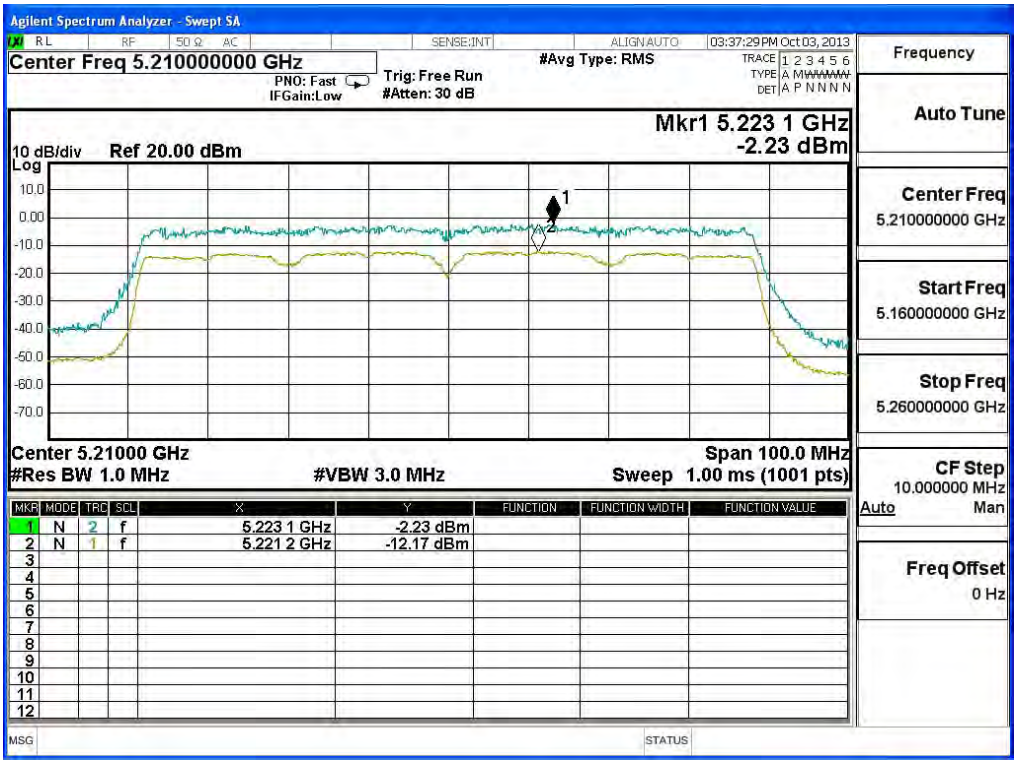
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
42	5210	MCS (0)	9.220	<13	Pass
		MCS (2)	10.340	<13	Pass
		MCS (4)	9.110	<13	Pass
		MCS (7)	9.940	<13	Pass
		MCS (9)	10.070	<13	Pass

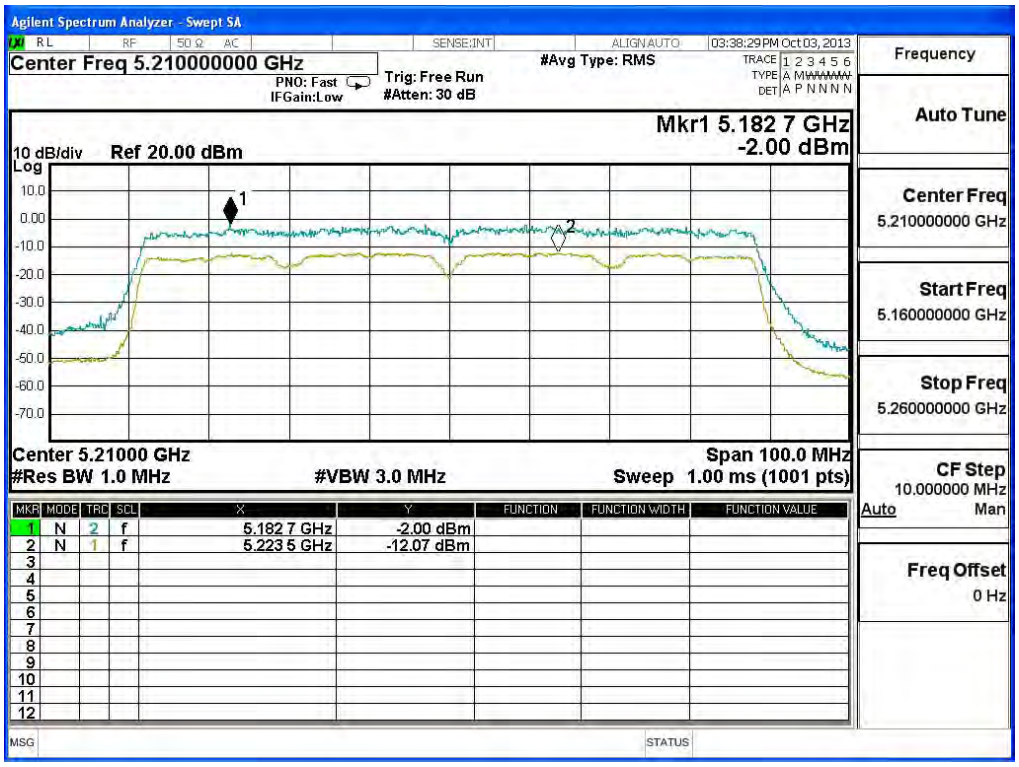
Channel 42:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:35:18 PM Oct 03, 2013
Mkr1 5.237 8 GHz
-1.51 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.237 8 GHz -1.51 dBm
2 N 1 f 5.202 4 GHz -11.85 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:36:29 PM Oct 03, 2013
Mkr1 5.215 3 GHz
-2.67 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.215 3 GHz -2.67 dBm
2 N 1 f 5.198 4 GHz -11.78 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz

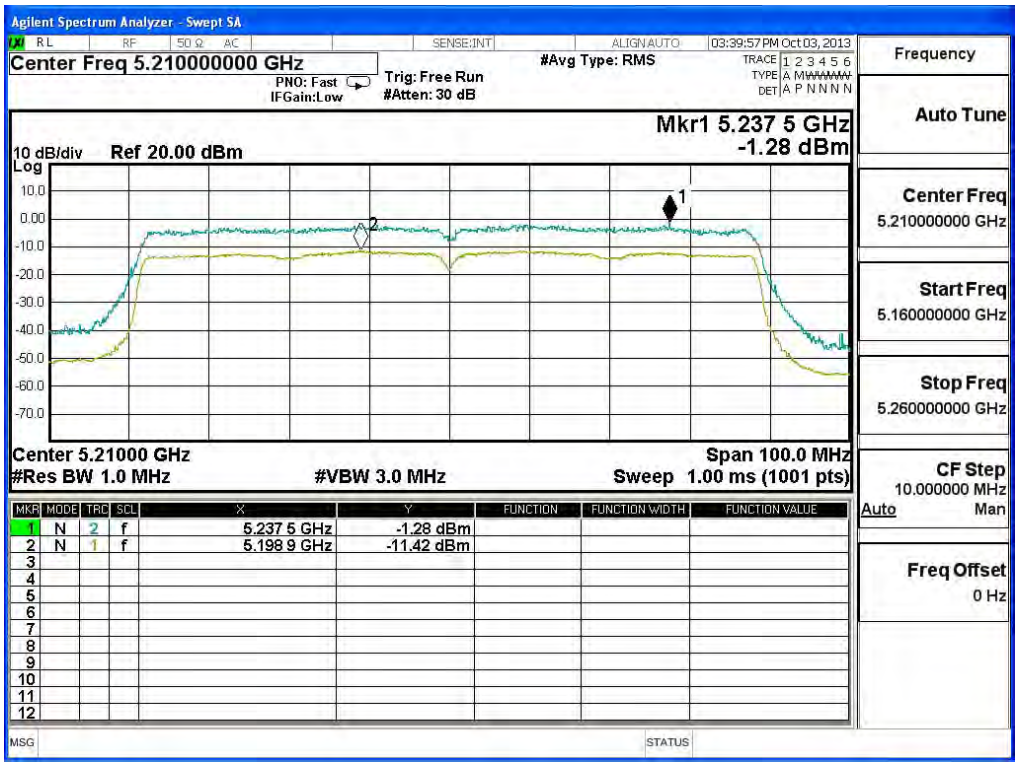

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:37:29 PM Oct 03, 2013
Mkr1 5.223 1 GHz
-2.23 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.223 1 GHz -2.23 dBm
2 N 1 f 5.221 2 GHz -12.17 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz

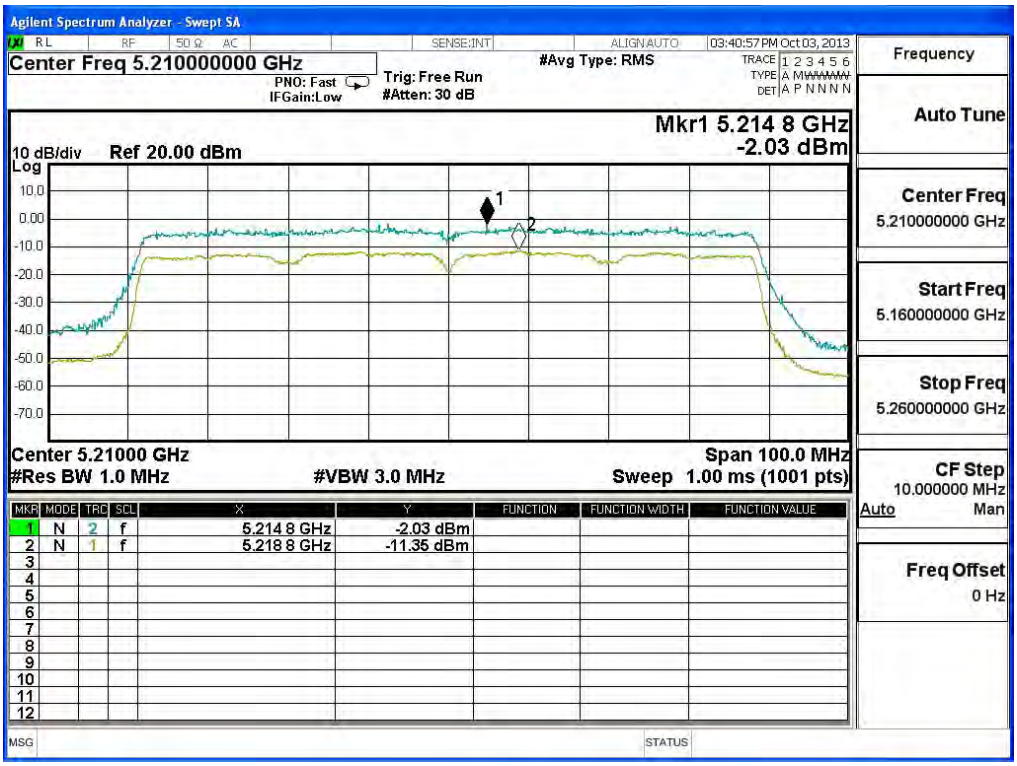

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:38:29 PM Oct 03, 2013
Mkr1 5.182 7 GHz
-2.00 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.182 7 GHz -2.00 dBm
2 N 1 f 5.223 5 GHz -12.07 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz

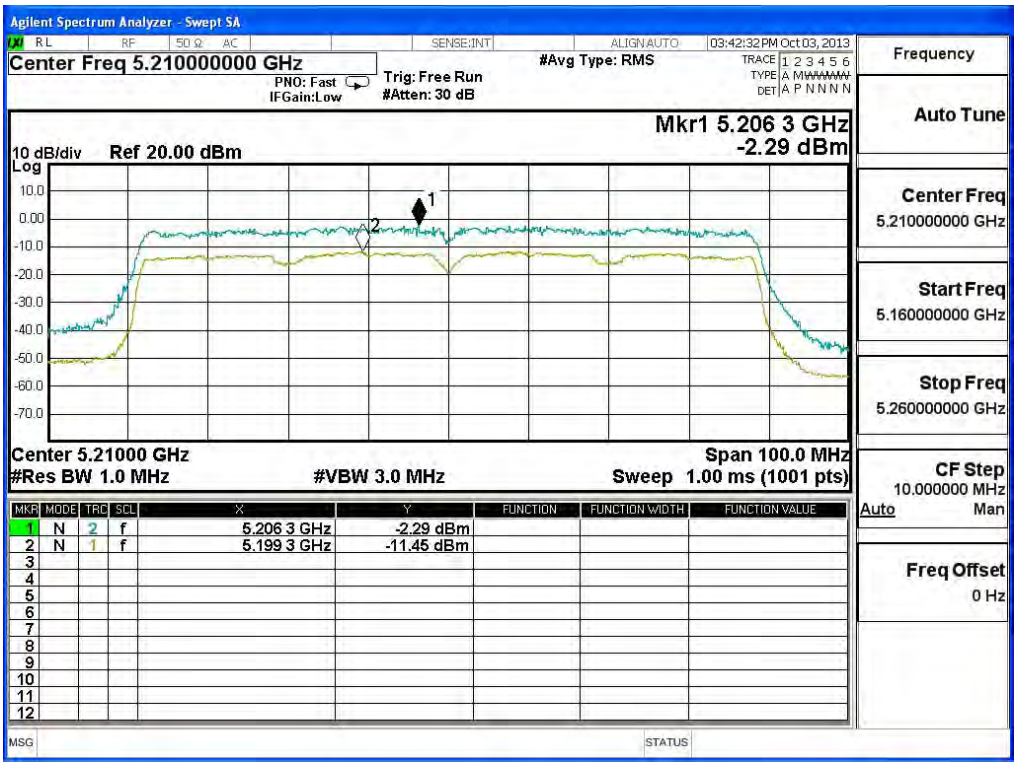
CHAIN B

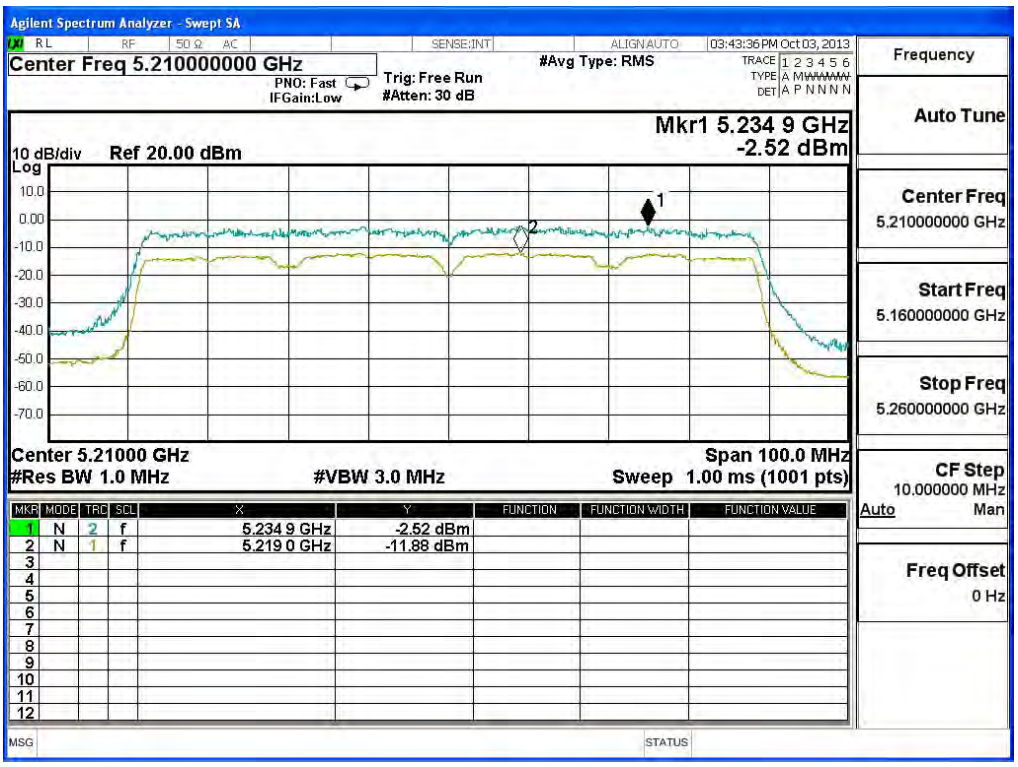
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
42	5210	MCS (0)	10.140	<13	Pass
		MCS (2)	9.320	<13	Pass
		MCS (4)	9.160	<13	Pass
		MCS (7)	9.360	<13	Pass
		MCS (9)	9.130	<13	Pass

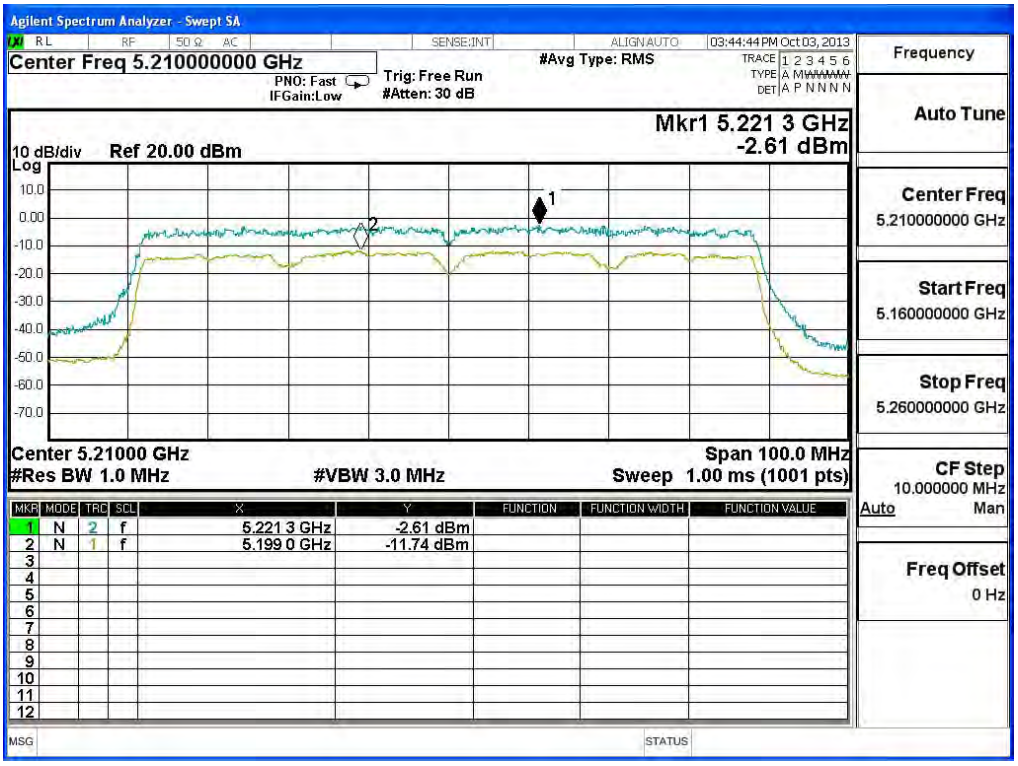
hannel 42:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:40:57 PM Oct 03, 2013
Mkr1 5.214 8 GHz
-2.03 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.214 8 GHz -2.03 dBm
2 N 1 f 5.218 8 GHz -11.35 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:42:32 PM Oct 03, 2013
Mkr1 5.206 3 GHz
-2.29 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.206 3 GHz -2.29 dBm
2 N 1 f 5.199 3 GHz -11.45 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz

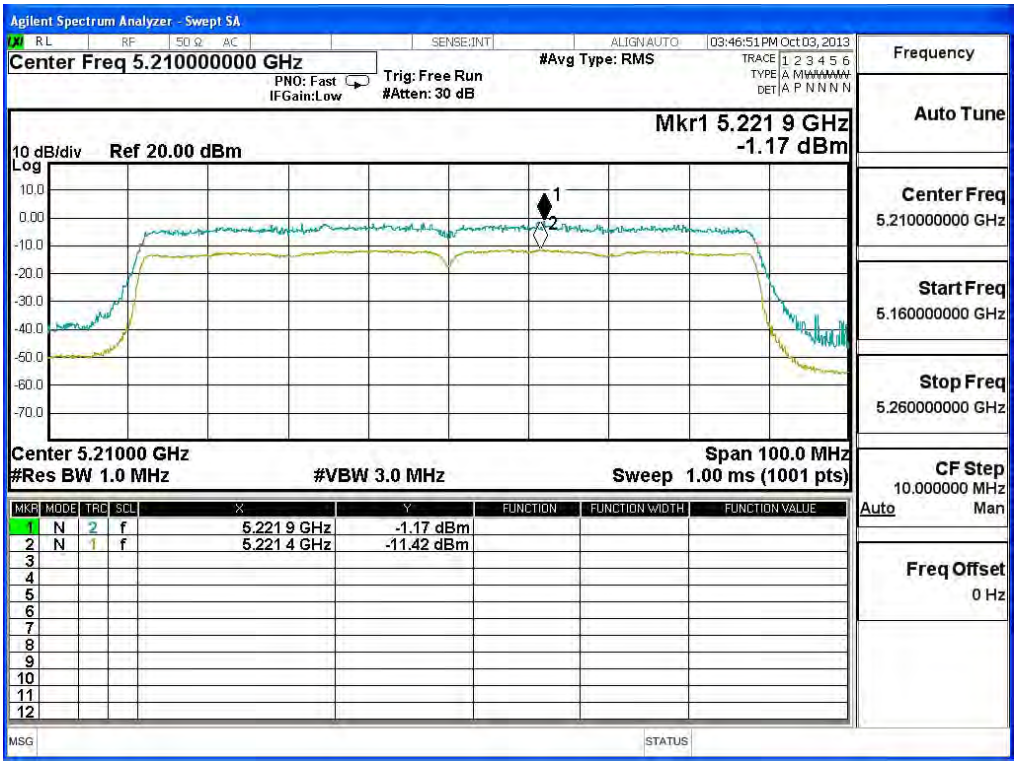

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:43:36 PM Oct 03, 2013
Mkr1 5.234 9 GHz
-2.52 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.234 9 GHz -2.52 dBm
2 N 1 f 5.219 0 GHz -11.88 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz

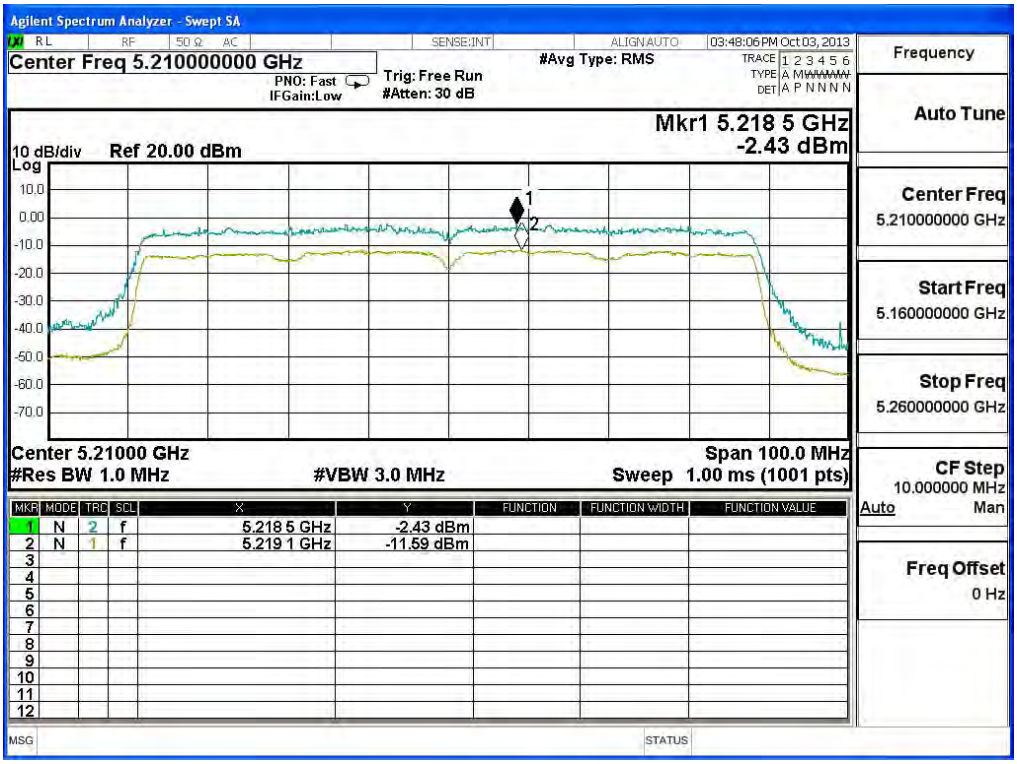

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:44:44 PM Oct 03, 2013
Mkr1 5.221 3 GHz
-2.61 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.221 3 GHz -2.61 dBm
2 N 1 f 5.199 0 GHz -11.74 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz

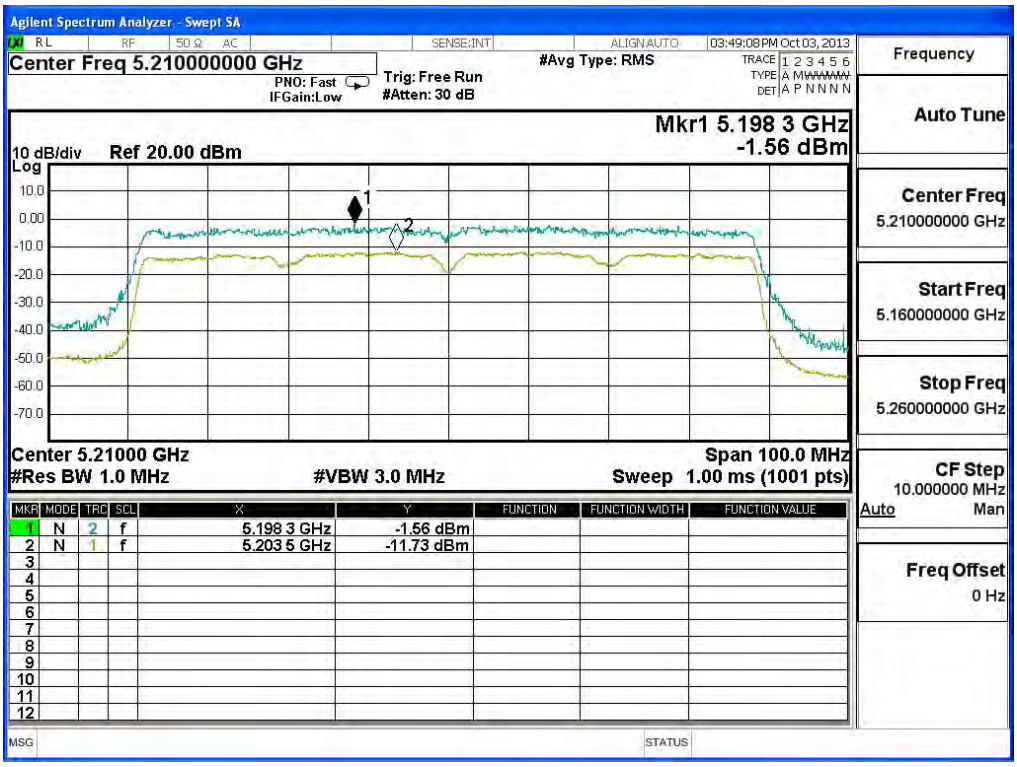
CHAIN C

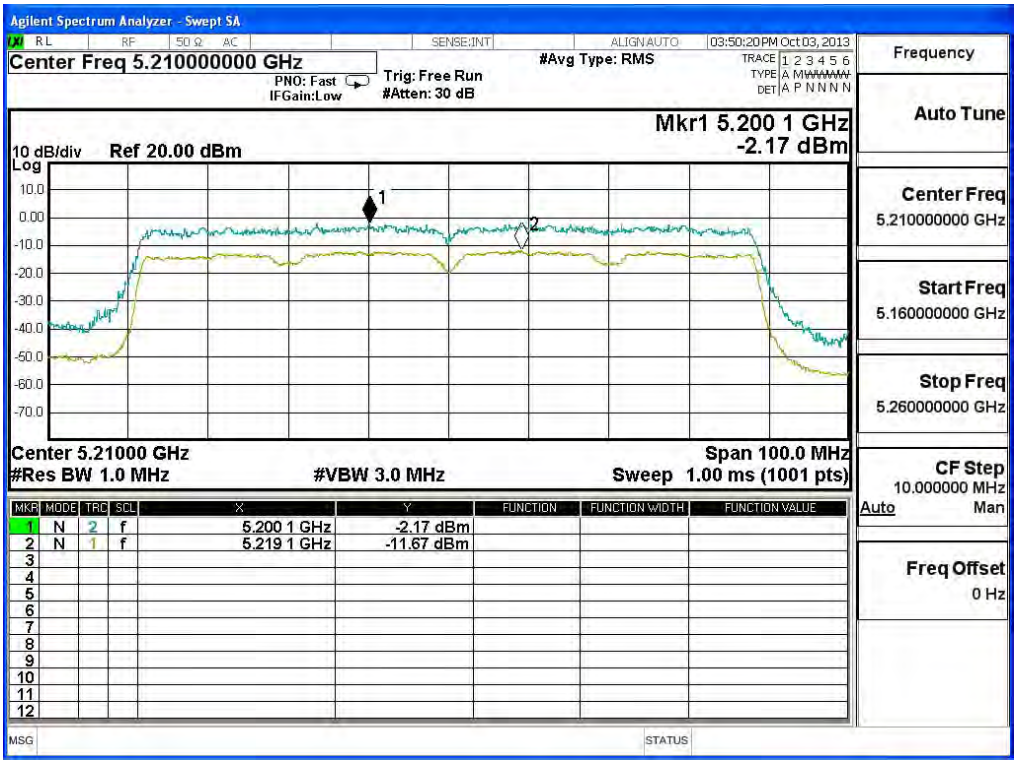
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
42	5210	MCS (0)	10.250	<13	Pass
		MCS (2)	9.160	<13	Pass
		MCS (4)	10.170	<13	Pass
		MCS (7)	9.500	<13	Pass
		MCS (9)	9.560	<13	Pass

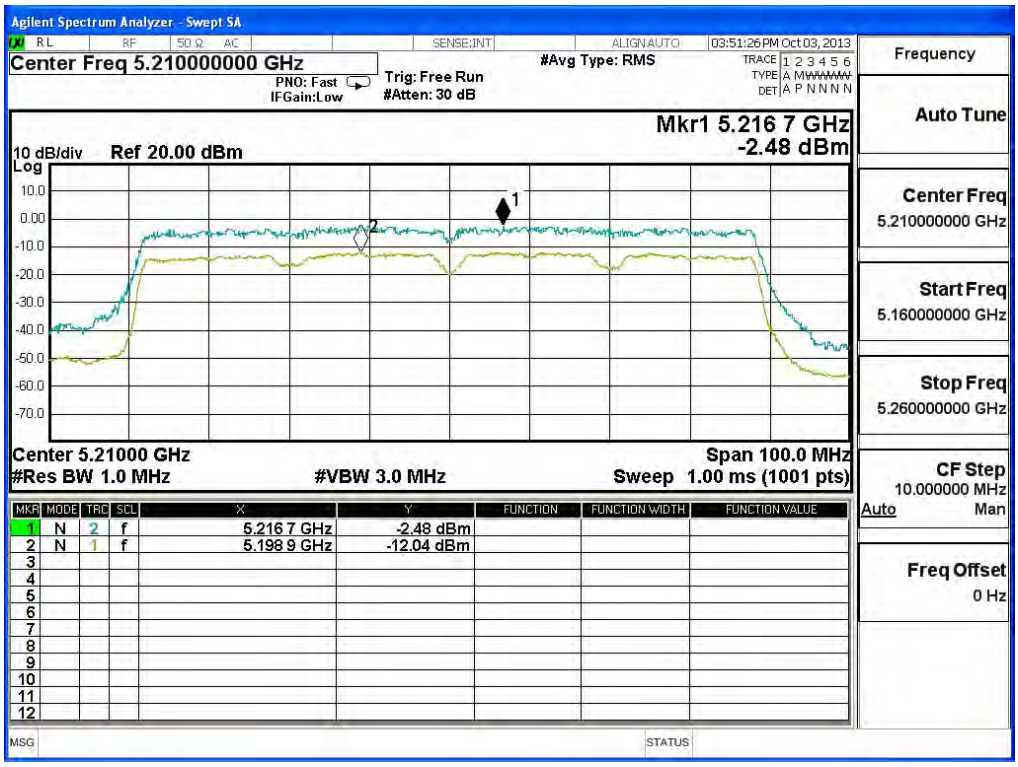
Channel 42:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:48:06 PM Oct 03, 2013
Mkr1 5.218 5 GHz
-2.43 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.218 5 GHz -2.43 dBm
2 N 1 f 5.219 1 GHz -11.59 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:49:08 PM Oct 03, 2013
Mkr1 5.198 3 GHz
-1.56 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.198 3 GHz -1.56 dBm
2 N 1 f 5.203 5 GHz -11.73 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:50:20 PM Oct 03, 2013
Mkr1 5.200 1 GHz
-2.17 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.200 1 GHz -2.17 dBm
2 N 1 f 5.219 1 GHz -11.67 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
03:51:26 PM Oct 03, 2013
Mkr1 5.216 7 GHz
-2.48 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.21000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 100.0 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.216 7 GHz -2.48 dBm
2 N 1 f 5.198 9 GHz -12.04 dBm
Frequency
Auto Tune
Center Freq
5.210000000 GHz
Start Freq
5.160000000 GHz
Stop Freq
5.260000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz

6. Radiated Emission

6.1. Test Equipment

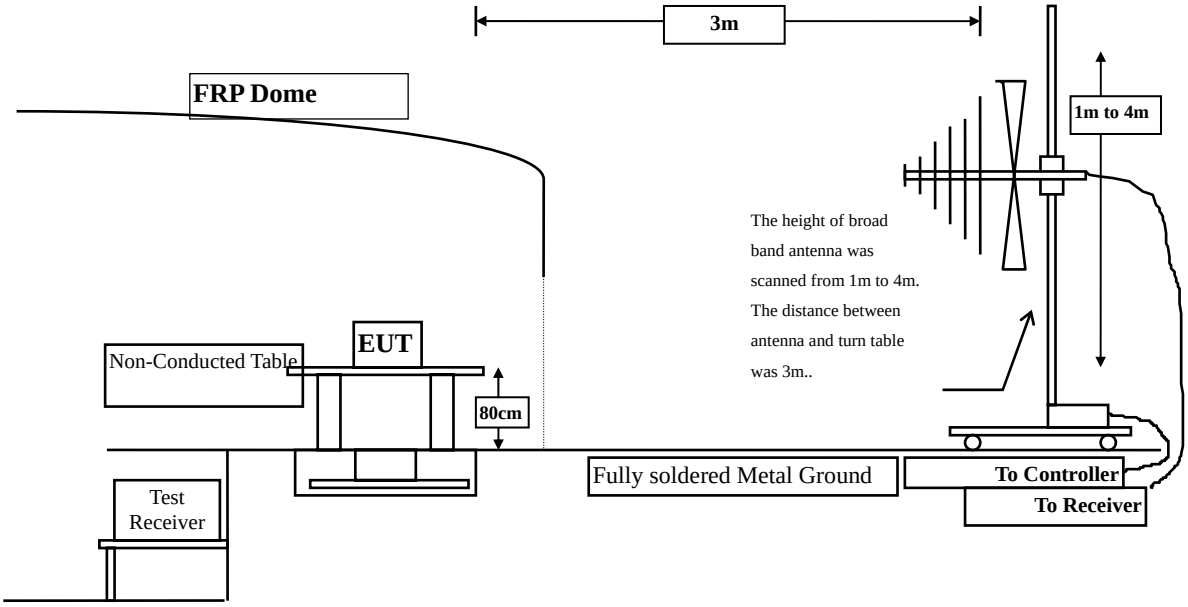
The following test equipments are used during the radiated emission test:

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2013
	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2013
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2013
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2013
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2013
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2013
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2013
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

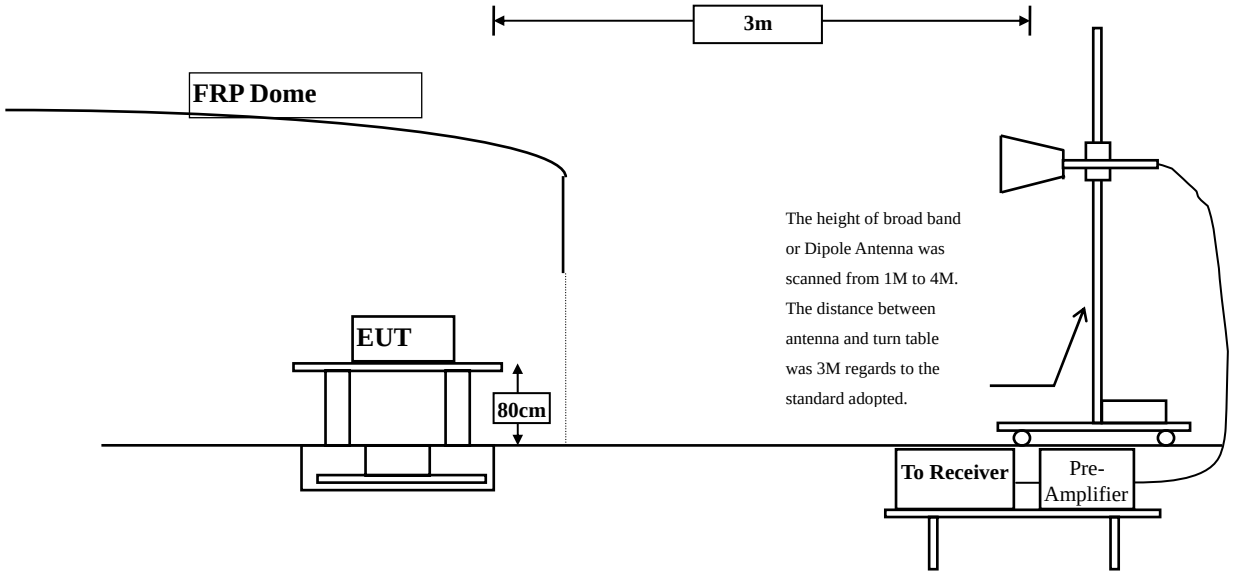
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

6.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



6.3. Limits

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

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

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

6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10, 2009 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.

6.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

6.6. Test Result of Radiated Emission

Product : WiFi module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
10360.000	10.932	41.230	52.162	-21.838	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
--					
Vertical Peak Detector:					
10360.000	12.436	47.260	59.695	-14.305	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10360.000	12.436	30.230	42.665	-11.335	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 Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10440.000	9.725	42.150	51.875	-22.125	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
10440.000	11.505	45.260	56.765	-17.235	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	11.505	29.590	41.095	-12.905	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 Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10480.000	10.464	44.590	55.053	-18.947	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
10480.000	10.464	27.150	37.613	-16.387	54.000
Vertical					
Peak Detector:					
10480.000	12.399	43.590	55.989	-18.011	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
10480.000	12.399	29.190	41.589	-12.411	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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) (5180MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10360.000	10.932	40.560	51.492	-22.508	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10360.000	12.436	41.529	53.964	-20.036	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
--					

Note:

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

Product : WiFi module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) (5220MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10440.000	9.725	40.590	50.315	-23.685	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
10440.000	11.505	42.150	53.655	-20.345	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average					
Detector:					
--					

Note:

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

Product : WiFi module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) (5240MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10480.000	10.464	40.260	50.723	-23.277	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
10480.000	12.399	40.560	52.959	-21.041	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					
--					

Note:

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

Product : WiFi module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps) (5190MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10380.000	10.400	40.590	50.990	-23.010	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
31140.000	*	*	*	*	74.000
36330.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
10380.000	11.965	41.560	53.526	-20.474	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
31140.000	*	*	*	*	74.000
36330.000	*	*	*	*	74.000
Average					
Detector:					
--					

Note:

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

Product : WiFi module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps) (5230MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10460.000	9.932	40.590	50.522	-23.478	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
10460.000	11.790	40.590	52.380	-21.620	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
Average					
Detector:					
--					

Note:

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

Product : WiFi module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5210MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10420.000	9.787	38.150	47.937	-26.063	74.000
15630.000	*	*	*	*	74.000
20840.000	*	*	*	*	74.000
26050.000	*	*	*	*	74.000
31260.000	*	*	*	*	74.000
36470.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
10420.000	11.491	39.150	50.641	-23.359	74.000
15630.000	*	*	*	*	74.000
20840.000	*	*	*	*	74.000
26050.000	*	*	*	*	74.000
31260.000	*	*	*	*	74.000
36470.000	*	*	*	*	74.000
Average					
Detector:					
--					

Note:

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

Product : WiFi module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5775MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11550.000	15.077	36.150	51.228	-22.772	74.000
17325.000	*	*	*	*	74.000
23100.000	*	*	*	*	74.000
28875.000	*	*	*	*	74.000
34650.000	*	*	*	*	74.000
40425.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11550.000	16.485	36.150	52.635	-21.365	74.000
17325.000	*	*	*	*	74.000
23100.000	*	*	*	*	74.000
28875.000	*	*	*	*	74.000
34650.000	*	*	*	*	74.000
40425.000	*	*	*	*	74.000
Average					
Detector:					
--					

Note:

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

Product : WiFi module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
10360.000	12.930	42.740	55.670	-18.330	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10360.000	12.930	28.780	41.710	-12.290	54.000
Vertical Peak Detector:					
10360.000	13.724	45.330	59.054	-14.946	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10360.000	13.724	30.290	44.014	-9.986	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 Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10440.000	13.322	42.020	55.342	-18.658	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	13.322	27.950	41.272	-12.728	54.000
Vertical					
Peak Detector:					
10440.000	14.245	43.590	57.835	-16.165	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	14.245	29.450	43.695	-10.305	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 Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10480.000	13.693	42.050	55.744	-18.256	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
10480.000	13.693	27.800	41.494	-12.506	54.000
Vertical					
Peak Detector:					
10480.000	14.620	42.760	57.381	-16.619	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
10480.000	14.620	28.970	43.591	-10.409	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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) (5180MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10360.000	12.930	40.370	53.300	-20.700	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10360.000	13.724	40.770	54.494	-19.506	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10360.000	13.724	25.590	39.314	-14.686	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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) (5220MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10440.000	13.322	40.180	53.502	-20.498	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
10440.000	14.245	41.660	55.905	-18.095	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	14.245	26.260	40.505	-13.495	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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) (5240MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10480.000	13.693	39.360	53.054	-20.946	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
10480.000	14.620	39.840	54.461	-19.539	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	14.620	25.800	40.421	-13.579	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 Mode : Mode 3: Transmit (802.11n-40BW 45Mbps) (5190MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10380.000	12.939	40.480	53.419	-20.581	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
31140.000	*	*	*	*	74.000
36330.000	*	*	*	*	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10380.000	13.796	40.210	54.006	-19.994	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
31140.000	*	*	*	*	74.000
36330.000	*	*	*	*	74.000
Average Detector:					
10380.000	13.796	24.970	38.766	-15.234	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 Mode : Mode 3: Transmit (802.11n-40BW 45Mbps) (5230MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10460.000	13.508	38.750	52.258	-21.742	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
10460.000	14.433	39.880	54.313	-19.687	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
Average					
Detector:					
10460.000	14.433	24.850	39.283	-14.717	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5210MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10420.000	13.135	36.780	49.915	-24.085	74.000
15630.000	*	*	*	*	74.000
20840.000	*	*	*	*	74.000
26050.000	*	*	*	*	74.000
31260.000	*	*	*	*	74.000
36470.000	*	*	*	*	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10420.000	14.057	38.530	52.587	-21.413	74.000
15630.000	*	*	*	*	74.000
20840.000	*	*	*	*	74.000
26050.000	*	*	*	*	74.000
31260.000	*	*	*	*	74.000
36470.000	*	*	*	*	74.000
Average Detector:					
--					

Note:

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

Product : WiFi module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5775MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11550.000	16.914	34.430	51.344	-22.656	74.000
17325.000	*	*	*	*	74.000
23100.000	*	*	*	*	74.000
28875.000	*	*	*	*	74.000
34650.000	*	*	*	*	74.000
40425.000	*	*	*	*	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11550.000	17.826	34.800	52.625	-21.375	74.000
17325.000	*	*	*	*	74.000
23100.000	*	*	*	*	74.000
28875.000	*	*	*	*	74.000
34650.000	*	*	*	*	74.000
40425.000	*	*	*	*	74.000
Average					
Detector:					
--					

Note:

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

Product : WiFi module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
99.840	-9.873	43.307	33.434	-10.066	43.500
245.340	-6.478	40.439	33.961	-12.039	46.000
398.600	0.879	40.230	41.109	-4.891	46.000
497.540	1.697	29.096	30.793	-15.207	46.000
619.760	2.074	31.001	33.075	-12.925	46.000
792.420	6.391	29.358	35.749	-10.251	46.000
Vertical					
Peak Detector					
99.840	-6.063	43.307	37.244	-6.256	43.500
216.240	-6.051	42.337	36.286	-9.714	46.000
398.600	-2.371	40.230	37.859	-8.141	46.000
530.520	1.192	28.417	29.609	-16.391	46.000
619.760	0.474	31.001	31.475	-14.525	46.000
792.420	2.681	29.863	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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) (5220MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
99.840	-9.873	43.521	33.648	-9.852	43.500
191.020	-9.679	50.186	40.507	-2.993	43.500
268.620	-5.522	39.825	34.303	-11.697	46.000
398.600	0.879	40.230	41.109	-4.891	46.000
619.760	2.074	31.001	33.075	-12.925	46.000
792.420	6.391	29.965	36.356	-9.644	46.000
Vertical					
Peak Detector					
99.840	-6.063	43.521	37.458	-6.042	43.500
204.600	-5.473	45.329	39.856	-3.644	43.500
398.600	-2.371	40.230	37.859	-8.141	46.000
598.420	1.114	29.688	30.802	-15.198	46.000
749.740	2.023	27.394	29.417	-16.583	46.000
961.200	3.310	24.695	28.005	-25.995	54.000

Note:

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

Product : WiFi module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps) (5190MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
99.840	-9.873	43.521	33.648	-9.852	43.500
191.020	-9.679	50.186	40.507	-2.993	43.500
398.600	0.879	40.230	41.109	-4.891	46.000
530.520	3.062	28.417	31.479	-14.521	46.000
676.020	2.841	33.019	35.861	-10.139	46.000
792.420	6.391	30.253	36.644	-9.356	46.000
Vertical					
Peak Detector					
142.520	-5.547	42.417	36.870	-6.630	43.500
264.740	-5.071	40.277	35.207	-10.793	46.000
398.600	-2.371	40.230	37.859	-8.141	46.000
499.480	-0.199	28.839	28.639	-17.361	46.000
598.420	1.114	29.688	30.802	-15.198	46.000
676.020	0.451	33.019	33.471	-12.529	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5210MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
99.840	-9.873	43.521	33.648	-9.852	43.500
270.560	-5.638	40.696	35.058	-10.942	46.000
398.600	0.879	40.230	41.109	-4.891	46.000
530.520	3.062	28.417	31.479	-14.521	46.000
676.020	2.841	33.019	35.861	-10.139	46.000
792.420	6.391	30.307	36.698	-9.302	46.000
Vertical					
Peak Detector					
97.900	-6.437	43.275	36.838	-6.662	43.500
148.340	-5.406	43.256	37.850	-5.650	43.500
243.400	-5.976	41.871	35.895	-10.105	46.000
375.320	0.388	31.667	32.055	-13.945	46.000
530.520	1.192	28.417	29.609	-16.391	46.000
676.020	0.451	33.019	33.471	-12.529	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5775MHz)_Dipole

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
99.840	-9.873	43.521	33.648	-9.852	43.500
191.020	-9.679	50.186	40.507	-2.993	43.500
398.600	0.879	40.230	41.109	-4.891	46.000
598.420	3.524	29.688	33.212	-12.788	46.000
792.420	6.391	30.363	36.754	-9.246	46.000
961.200	6.810	24.695	31.505	-22.495	54.000
Vertical					
Peak Detector					
99.840	-6.063	43.521	37.458	-6.042	43.500
241.460	-6.000	42.323	36.323	-9.677	46.000
398.600	-2.371	40.230	37.859	-8.141	46.000
598.420	1.114	29.688	30.802	-15.198	46.000
749.740	2.023	27.689	29.712	-16.288	46.000
932.100	3.430	25.014	28.444	-17.556	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 Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
171.620	-10.242	40.626	30.384	-13.116	43.500
262.800	-5.013	41.370	36.357	-9.643	46.000
431.580	-2.099	38.886	36.787	-9.213	46.000
666.320	2.031	28.213	30.245	-15.755	46.000
745.860	3.308	26.668	29.976	-16.024	46.000
897.180	5.182	27.180	32.362	-13.638	46.000
Vertical					
Peak Detector					
152.220	-6.215	39.515	33.300	-10.200	43.500
497.540	-1.393	27.911	26.518	-19.482	46.000
691.540	2.421	28.145	30.566	-15.434	46.000
769.140	2.923	27.652	30.575	-15.425	46.000
846.740	2.601	23.350	25.951	-20.049	46.000
928.220	6.203	28.417	34.620	-11.380	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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) (5220MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
175.500	-10.017	41.281	31.263	-12.237	43.500
266.680	-4.963	40.026	35.063	-10.937	46.000
431.580	-2.099	37.490	35.391	-10.609	46.000
666.320	2.031	27.556	29.588	-16.412	46.000
745.860	3.308	27.554	30.862	-15.138	46.000
901.060	5.591	26.833	32.424	-13.576	46.000
Vertical					
Peak Detector					
152.220	-6.215	40.859	34.644	-8.856	43.500
499.480	-0.852	27.679	26.827	-19.173	46.000
691.540	2.421	30.272	32.693	-13.307	46.000
769.140	2.923	27.186	30.109	-15.891	46.000
941.800	6.585	27.798	34.383	-11.617	46.000
968.960	8.191	27.438	35.629	-18.371	54.000

Note:

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

Product : WiFi module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps) (5190MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
173.560	-9.954	43.926	33.973	-9.527	43.500
262.800	-5.013	40.072	35.059	-10.941	46.000
497.540	-0.273	34.917	34.644	-11.356	46.000
664.380	2.062	27.150	29.212	-16.788	46.000
798.240	5.148	23.939	29.087	-16.913	46.000
901.060	5.591	27.139	32.730	-13.270	46.000
Vertical					
Peak Detector					
152.220	-6.215	40.355	34.140	-9.360	43.500
398.600	-4.678	36.350	31.672	-14.328	46.000
499.480	-0.852	28.388	27.536	-18.464	46.000
691.540	2.421	29.691	32.112	-13.888	46.000
769.140	2.923	27.300	30.223	-15.777	46.000
945.680	6.594	26.441	33.035	-12.965	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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5210MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
167.740	-10.799	41.652	30.853	-12.647	43.500
239.520	-6.851	41.792	34.942	-11.058	46.000
350.100	-2.332	38.593	36.261	-9.739	46.000
745.860	3.308	26.409	29.717	-16.283	46.000
800.180	5.141	25.297	30.438	-15.562	46.000
901.060	5.591	27.463	33.054	-12.946	46.000
Vertical					
Peak Detector					
152.220	-6.215	39.908	33.693	-9.807	43.500
332.640	-4.914	35.357	30.443	-15.557	46.000
398.600	-4.678	38.068	33.390	-12.610	46.000
689.600	2.538	27.259	29.797	-16.203	46.000
769.140	2.923	27.742	30.665	-15.335	46.000
967.020	8.071	29.228	37.299	-16.701	54.000

Note:

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

Product : WiFi module
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) (5775MHz)_PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
99.840	-7.471	41.563	34.092	-9.408	43.500
247.280	-6.192	43.239	37.046	-8.954	46.000
612.000	3.819	25.972	29.791	-16.209	46.000
664.380	2.062	28.192	30.254	-15.746	46.000
800.180	5.141	24.539	29.680	-16.320	46.000
901.060	5.591	27.820	33.411	-12.589	46.000
Vertical					
Peak Detector					
99.840	-0.021	34.447	34.426	-9.074	43.500
152.220	-6.215	41.089	34.874	-8.626	43.500
499.480	-0.852	30.544	29.692	-16.308	46.000
691.540	2.421	27.844	30.265	-15.735	46.000
769.140	2.923	26.658	29.581	-16.419	46.000
953.440	6.637	27.781	34.418	-11.582	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.

7. Band Edge

7.1. Test Equipment

RF Conducted Measurement

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

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

RF Radiated Measurement:

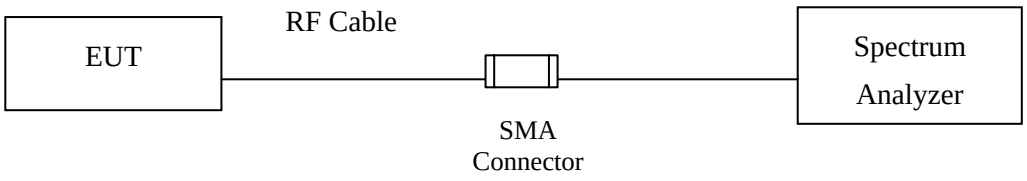
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2013
		Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2013
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2013
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2013
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2013
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2013
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

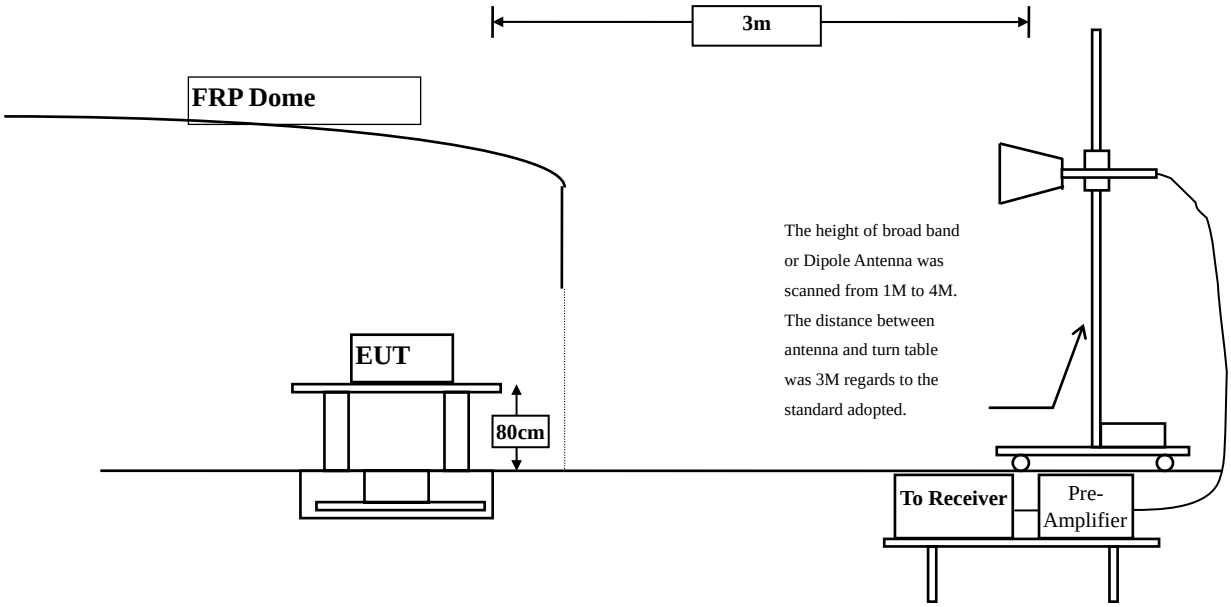
Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

7.2. Setup

RF Conducted Measurement:



RF Radiated Measurement:



7.3. Limits

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

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

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

Remarks : 1. RF Voltage (dBuV) = 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.

7.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 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 C63.10:2009 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, 2009; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

7.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

7.6. Test Result of Band Edge

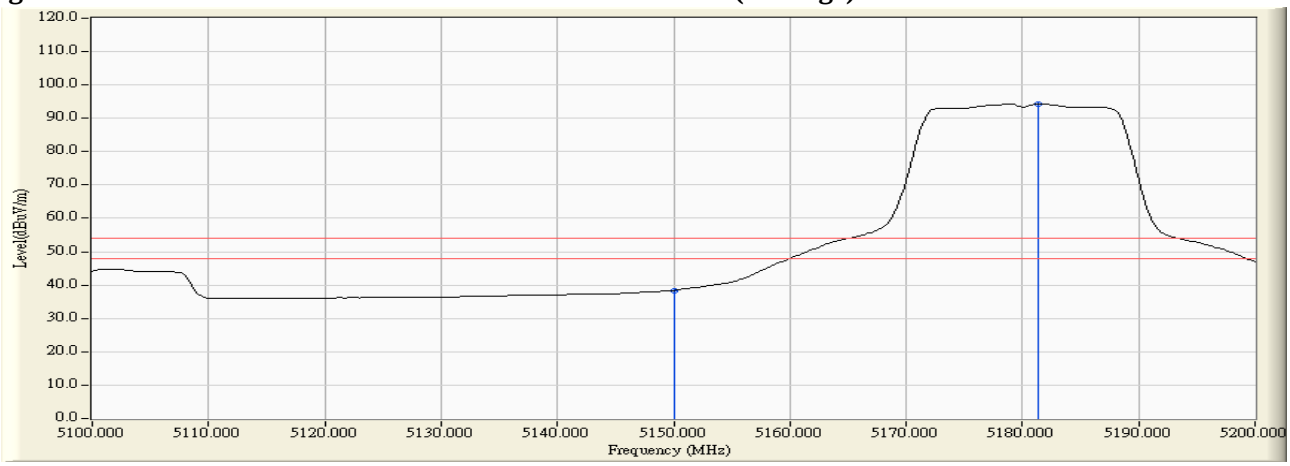
Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36_Dipole

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5150.000	2.796	53.487	56.283	74.00	54.00	Pass
36 (Peak)	5179.000	2.698	104.427	107.126	--	--	Pass
36 (Average)	5150.000	2.796	35.640	38.436	74.00	54.00	Pass
36 (Average)	5181.400	2.691	91.594	94.285	--	--	Pass

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 Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36_Dipole

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5149.200	3.328	44.496	47.824	74.00	54.00	Pass
36 (Peak)	5150.000	3.331	43.721	47.053	74.00	54.00	Pass
36 (Peak)	5178.200	3.464	95.651	99.115	--	--	Pass
36 (Average)	5150.000	3.331	32.135	35.467	74.00	54.00	Pass
36 (Average)	5178.800	3.466	82.968	86.435	--	--	Pass

Figure Channel 36: Vertical (Peak)

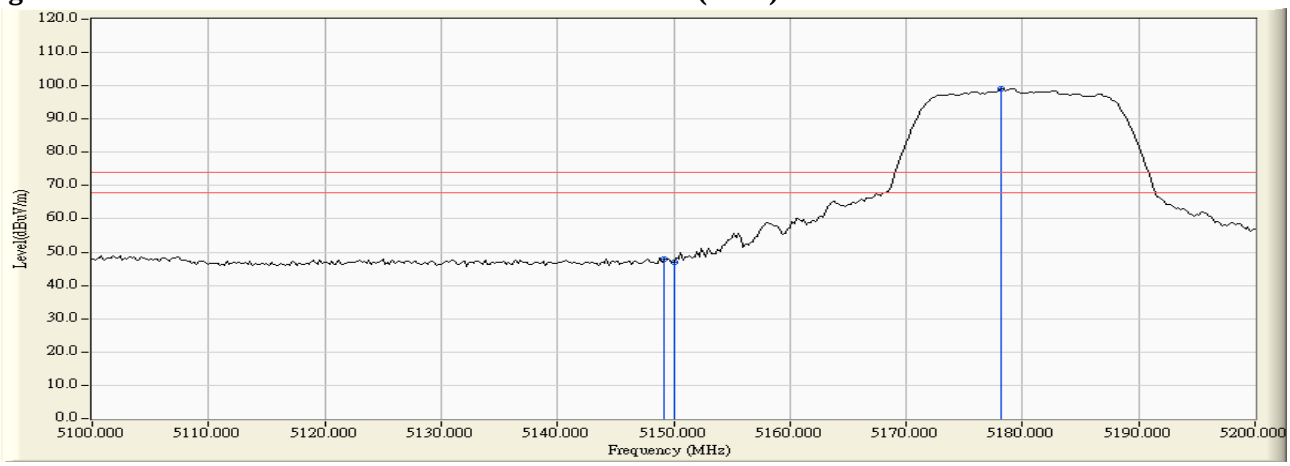
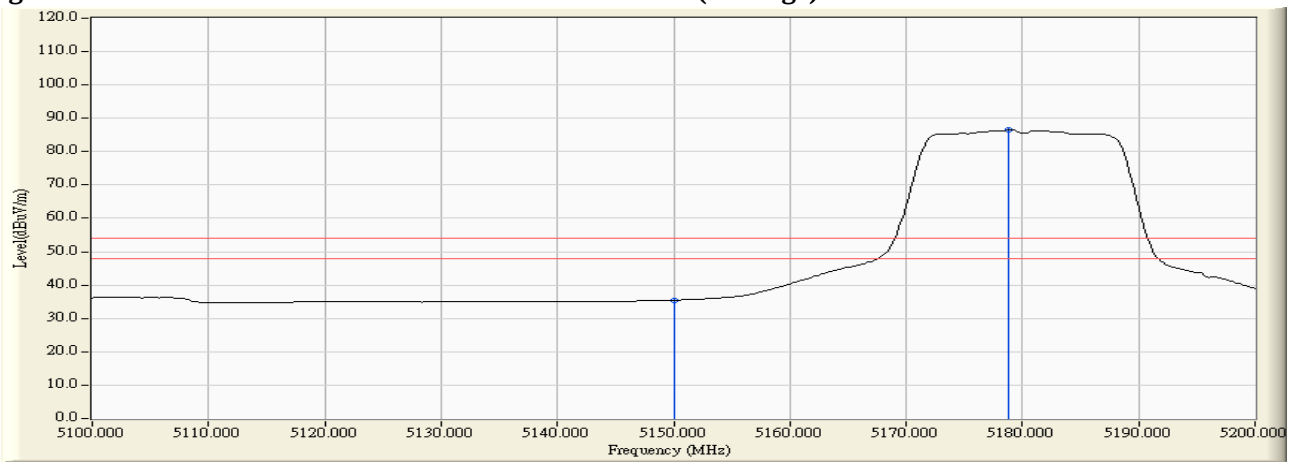


Figure Channel 36: Vertical (Average)



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 Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36_PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5147.800	3.348	51.707	55.055	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	50.441	53.781	74.00	54.00	Pass
36 (Peak)	5178.200	3.240	99.210	102.451	--	--	Pass
36 (Average)	5107.000	3.475	39.807	43.283	74.00	54.00	Pass
36 (Average)	5147.800	3.348	38.136	41.484	74.00	54.00	Pass
36 (Average)	5150.000	3.340	38.331	41.671	74.00	54.00	Pass
36 (Average)	5181.400	3.229	86.989	90.218	--	--	Pass

Figure Channel 36: Horizontal (Peak)

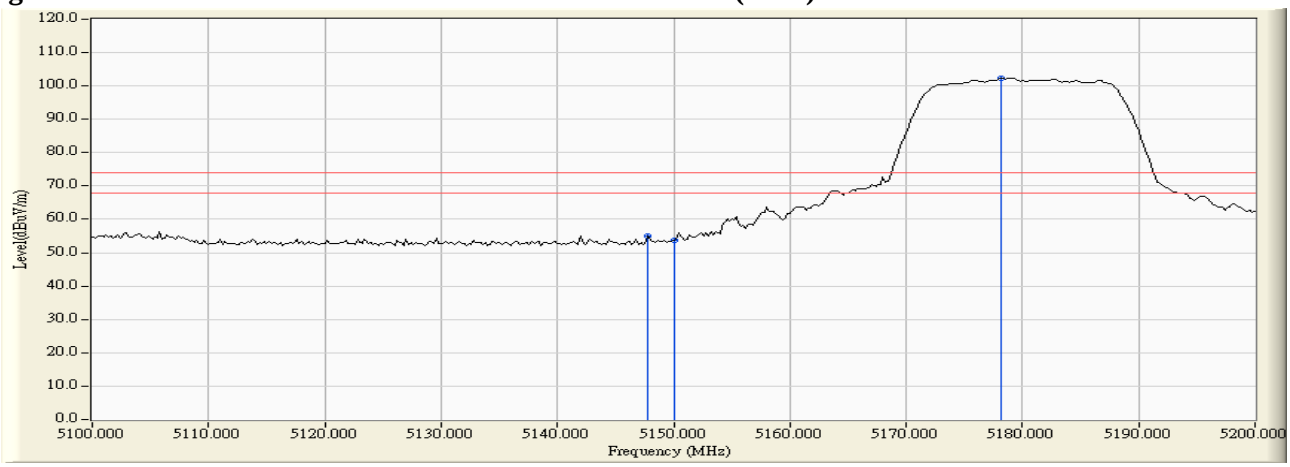
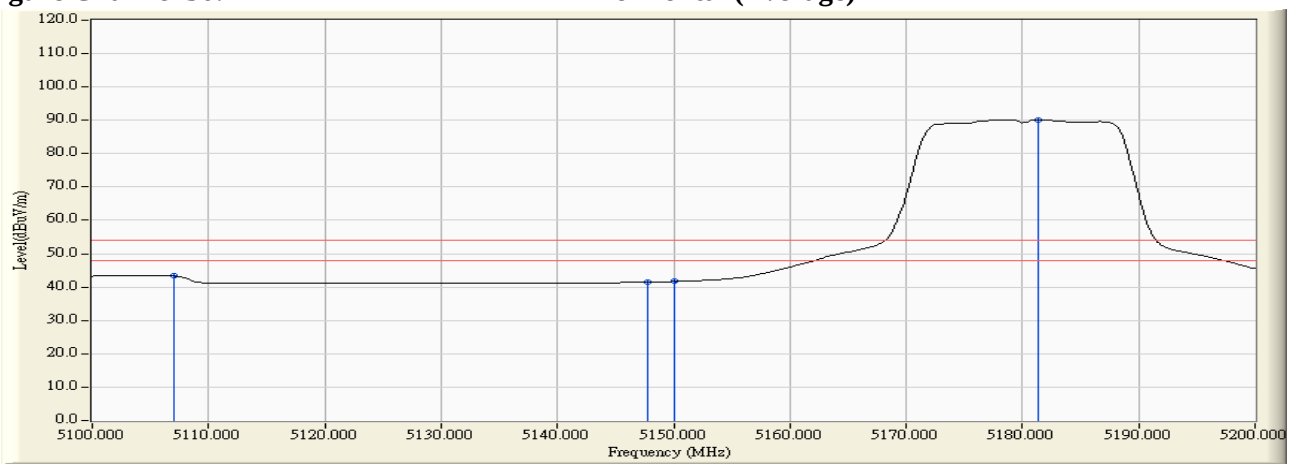


Figure Channel 36: Horizontal (Average)



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 Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36_PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5149.000	5.257	52.147	57.404	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	50.308	55.568	74.00	54.00	Pass
36 (Peak)	5179.000	5.338	98.843	104.182	--	--	Pass
36 (Average)	5107.400	5.150	39.230	44.381	74.00	54.00	Pass
36 (Average)	5149.000	5.257	38.046	43.303	74.00	54.00	Pass
36 (Average)	5150.000	5.260	38.144	43.404	74.00	54.00	Pass
36 (Average)	5181.200	5.344	86.503	91.848	--	--	Pass

Figure Channel 36: Vertical (Peak)

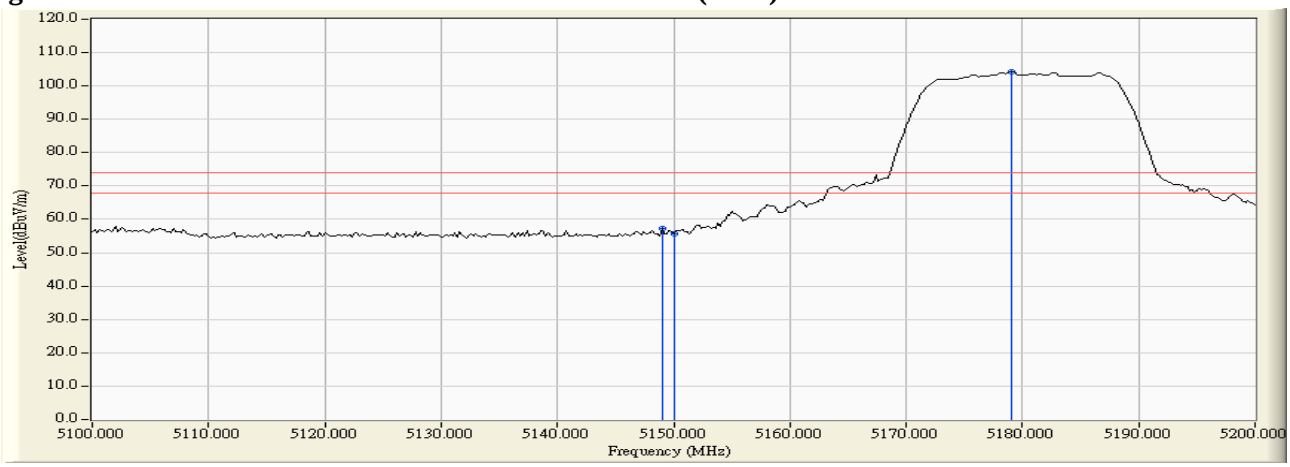
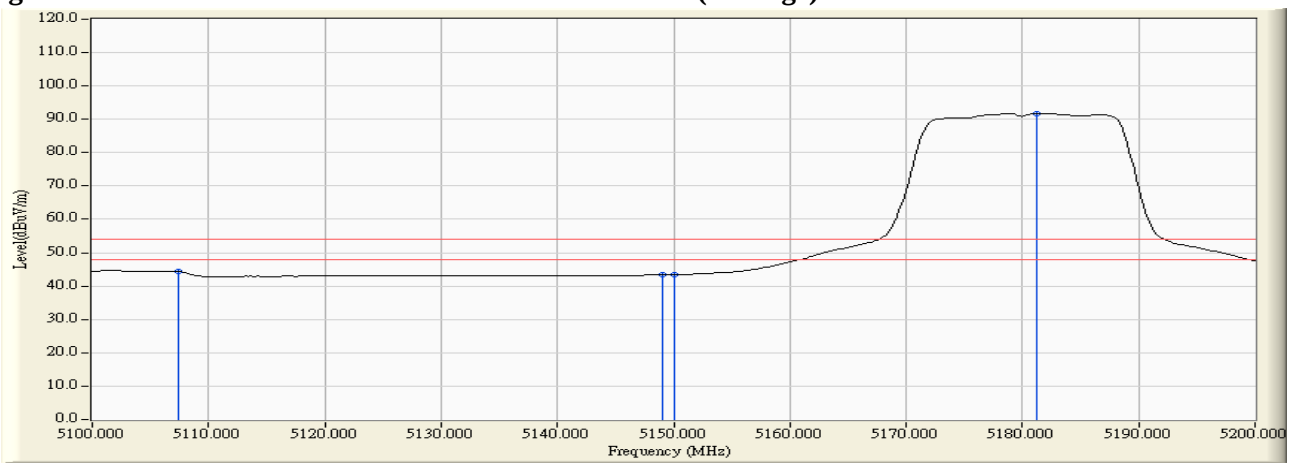


Figure Channel 36: Vertical (Average)



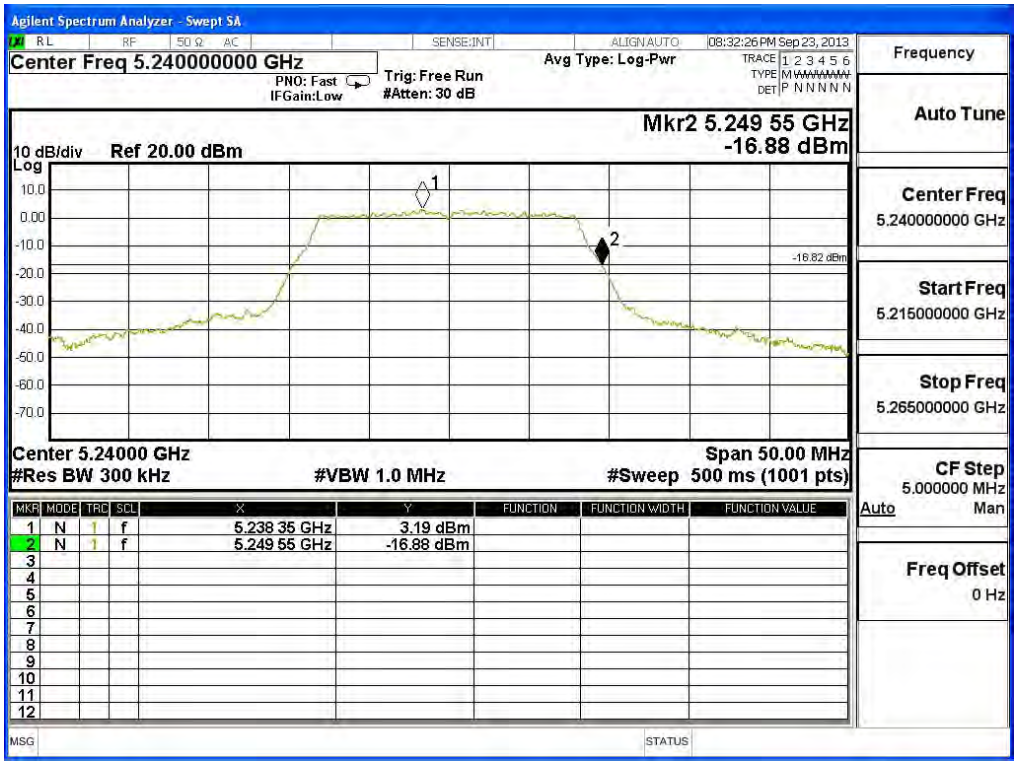
Note:

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 Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 48

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.55	<5250	PASS

NOTE: Accordance with 15.215 requirement.



Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) -Channel 36_Dipole

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5150.000	2.796	43.791	46.587	74.00	54.00	Pass
36 (Peak)	5178.600	2.700	100.216	102.916	--	--	Pass
36 (Average)	5150.000	2.796	32.483	35.279	74.00	54.00	Pass
36 (Average)	5179.000	2.698	81.624	84.323	--	--	Pass

Figure Channel 36: Horizontal (Peak)

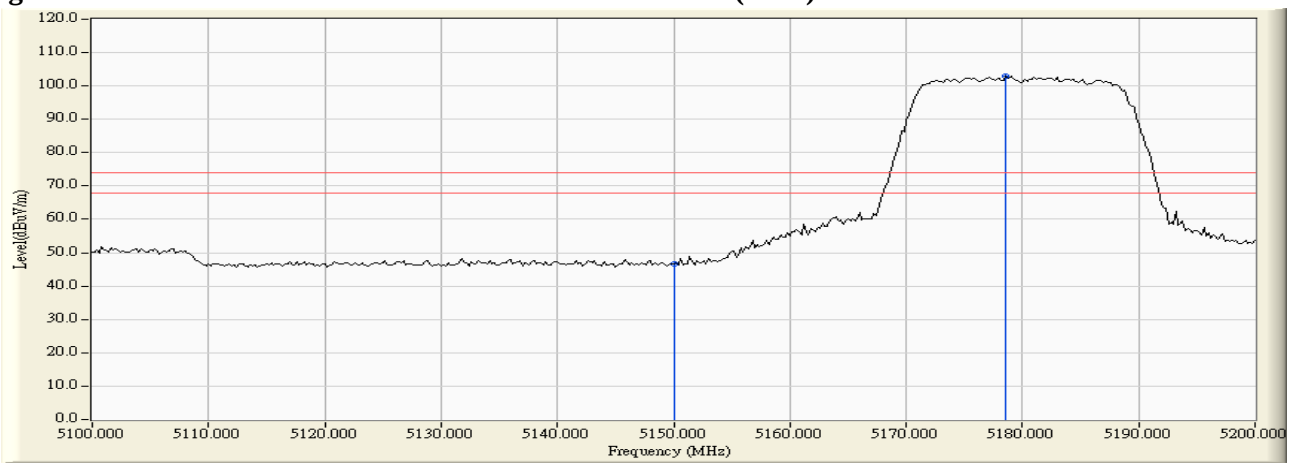
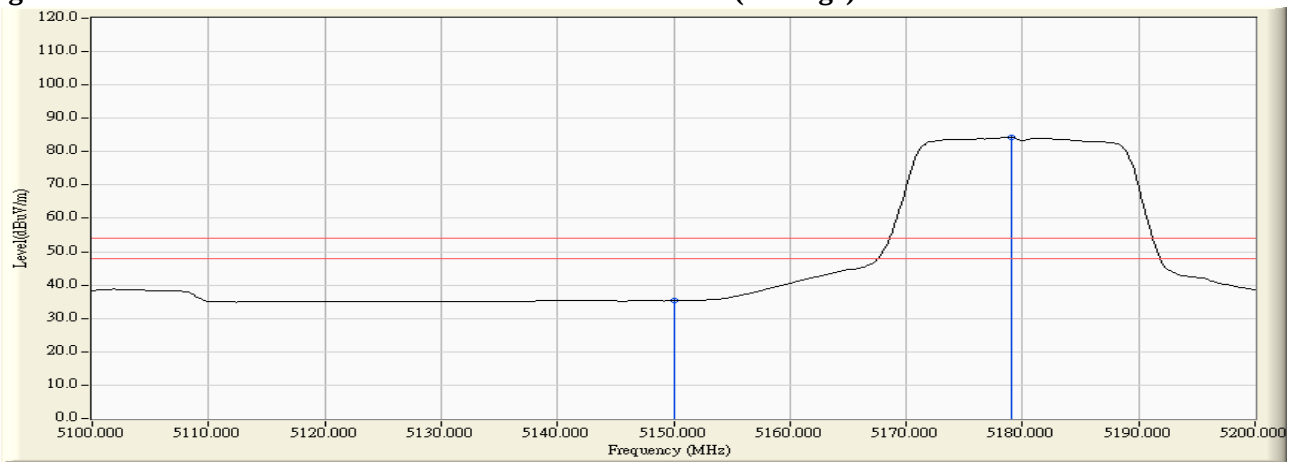


Figure Channel 36: Horizontal (Average)



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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) -Channel 36_Dipole

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5148.600	3.325	47.524	50.849	74.00	54.00	Pass
36 (Peak)	5150.000	3.331	46.649	49.981	74.00	54.00	Pass
36 (Peak)	5178.600	3.466	106.673	110.139	--	--	Pass
36 (Average)	5150.000	3.331	33.958	37.290	74.00	54.00	Pass
36 (Average)	5181.800	3.481	86.759	90.240	--	--	Pass

Figure Channel 36: Vertical (Peak)

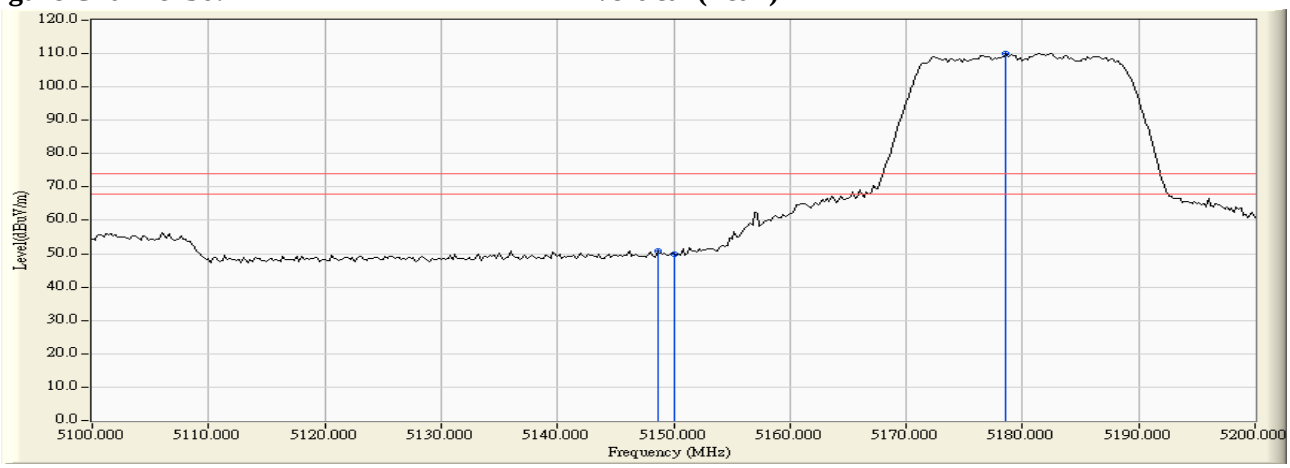
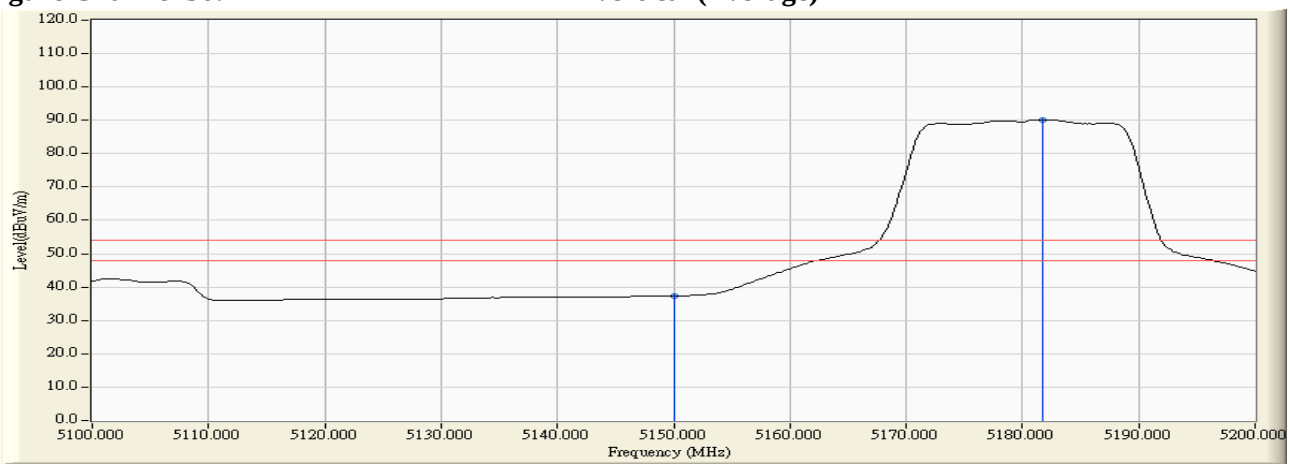


Figure Channel 36: Vertical (Average)



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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) -Channel 36_PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5106.000	3.476	52.189	55.666	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	49.624	52.964	74.00	54.00	Pass
36 (Peak)	5176.000	3.249	98.716	101.965	--	--	Pass
36 (Average)	5106.000	3.476	38.853	42.330	74.00	54.00	Pass
36 (Average)	5150.000	3.340	37.771	41.111	74.00	54.00	Pass
36 (Average)	5178.400	3.240	80.120	83.360	--	--	Pass

Figure Channel 36: Horizontal (Peak)

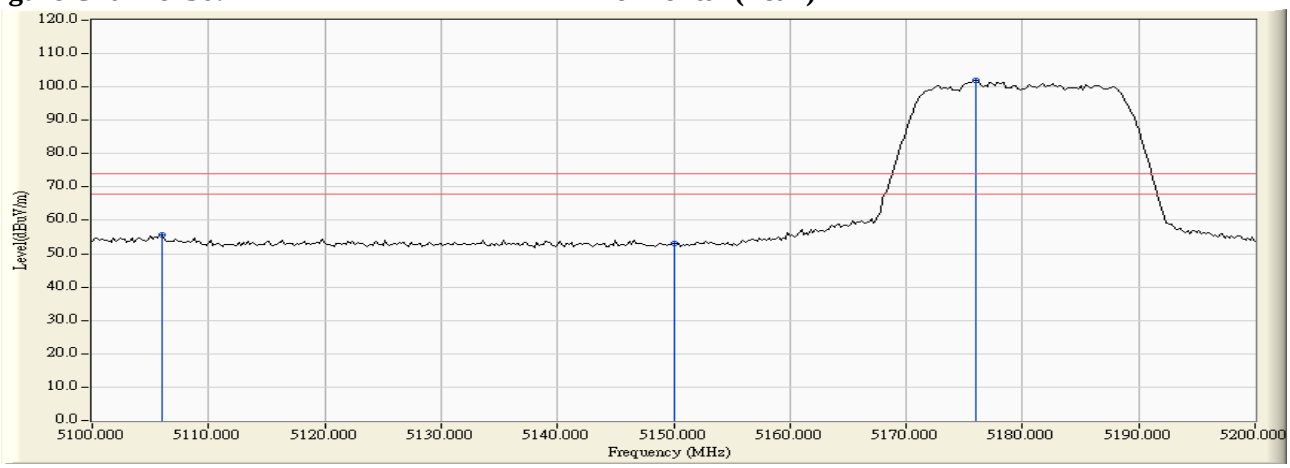
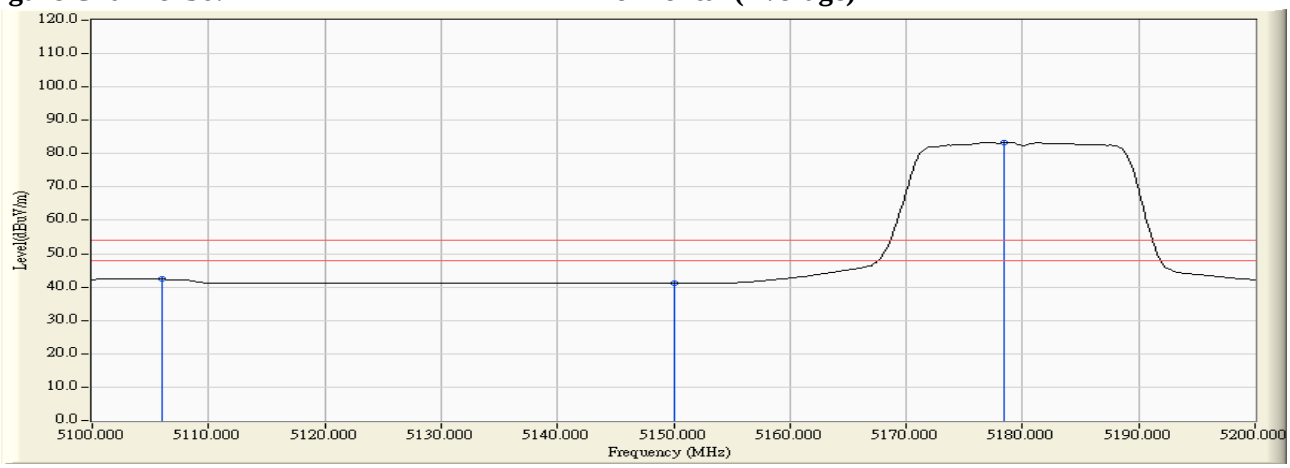


Figure Channel 36: Horizontal (Average)



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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) -Channel 36_PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5145.800	5.248	50.662	55.910	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	49.515	54.775	74.00	54.00	Pass
36 (Peak)	5183.000	5.350	98.807	104.157	--	--	Pass
36 (Average)	5145.800	5.248	37.765	43.013	74.00	54.00	Pass
36 (Average)	5150.000	5.260	37.750	43.010	74.00	54.00	Pass
36 (Average)	5181.600	5.346	80.979	86.325	--	--	Pass

Figure Channel 36: Vertical (Peak)

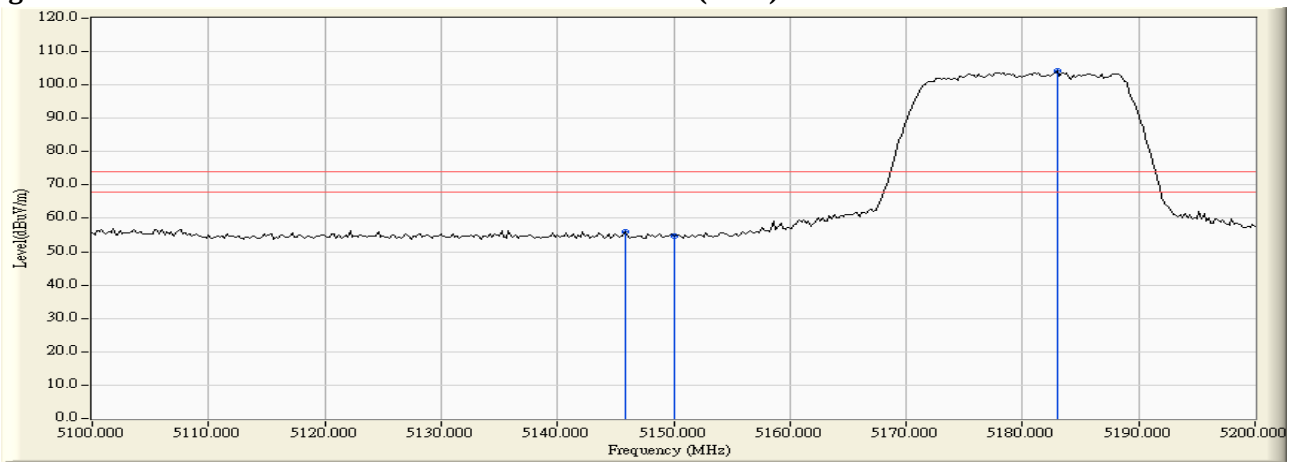
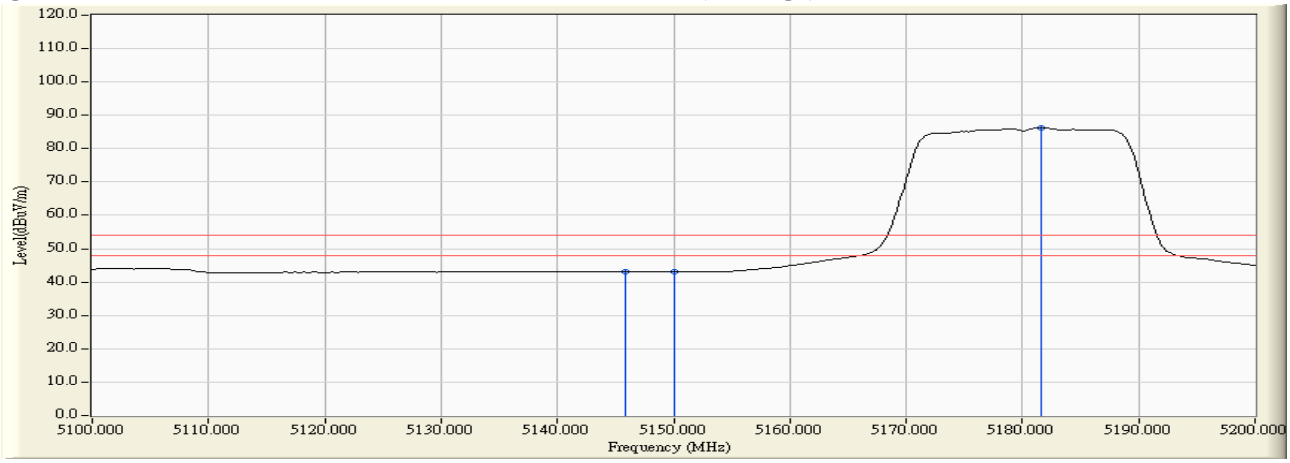


Figure Channel 36: Vertical (Average)



Note:

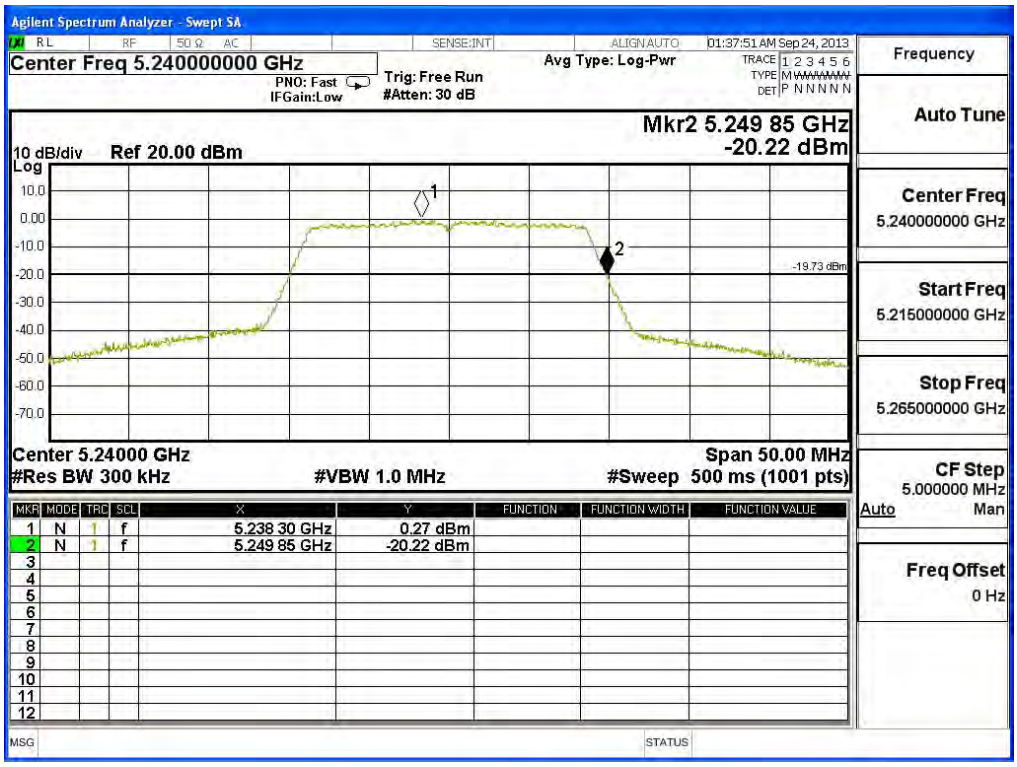
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading 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 Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) -Channel 48

Chain A

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.85	<5250	PASS

NOTE: Accordance with 15.215 requirement.

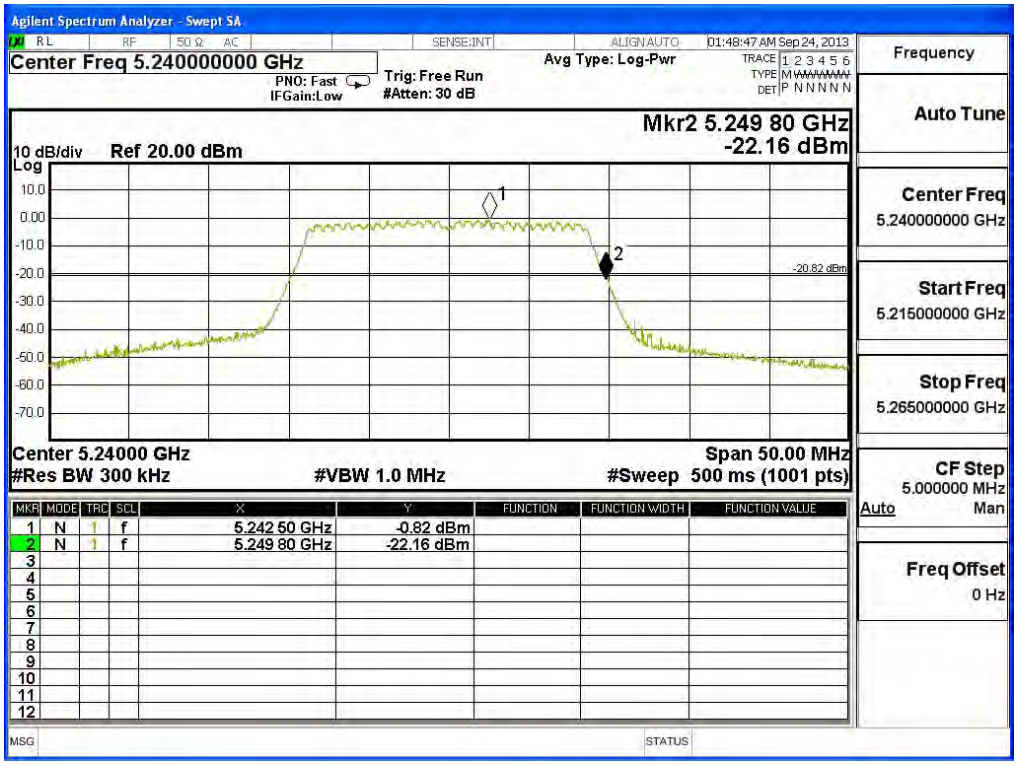


Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) -Channel 48

Chain B

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.80	<5250	PASS

NOTE: Accordance with 15.215 requirement.

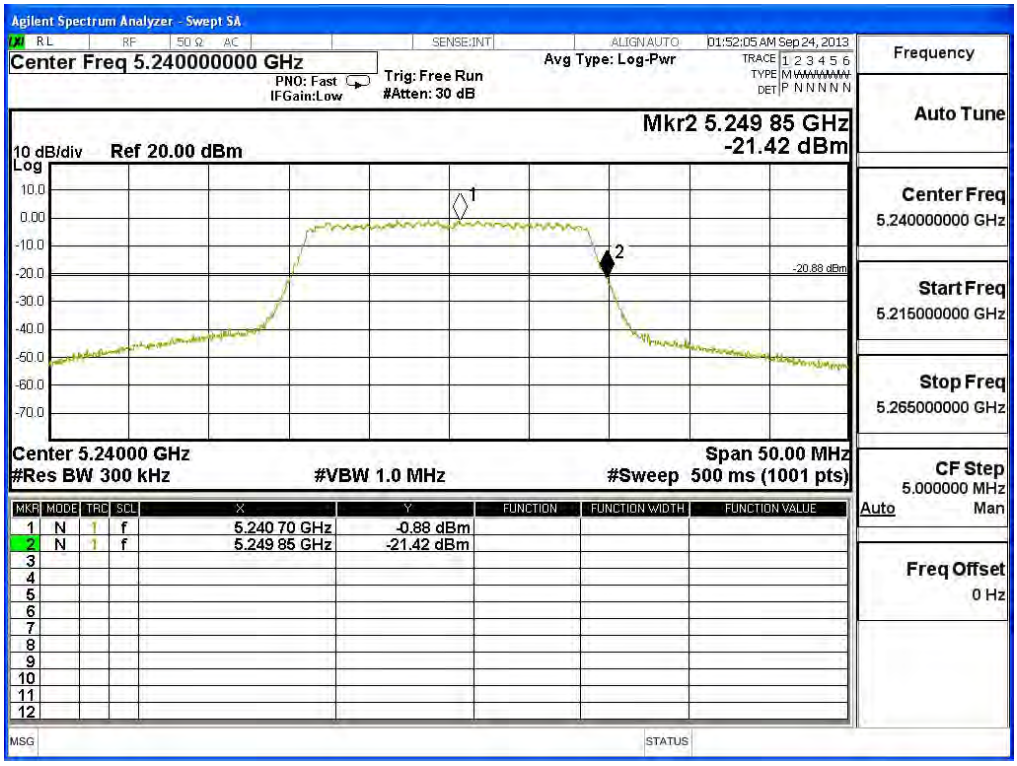


Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps) -Channel 48

Chain C

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.85	<5250	PASS

NOTE: Accordance with 15.215 requirement.



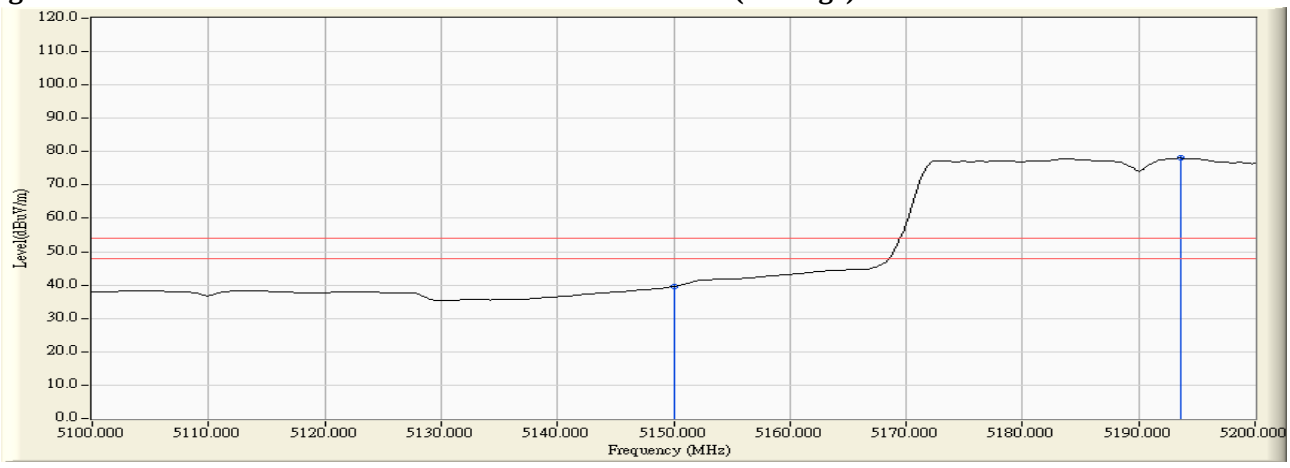
Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps) -Channel 38_Dipole

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
38 (Peak)	5150.000	2.796	53.215	56.011	74.00	54.00	Pass
38 (Peak)	5186.600	2.674	99.022	101.696	--	--	Pass
38 (Average)	5150.000	2.796	36.787	39.583	74.00	54.00	Pass
38 (Average)	5193.600	2.651	75.394	78.045	--	--	Pass

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.

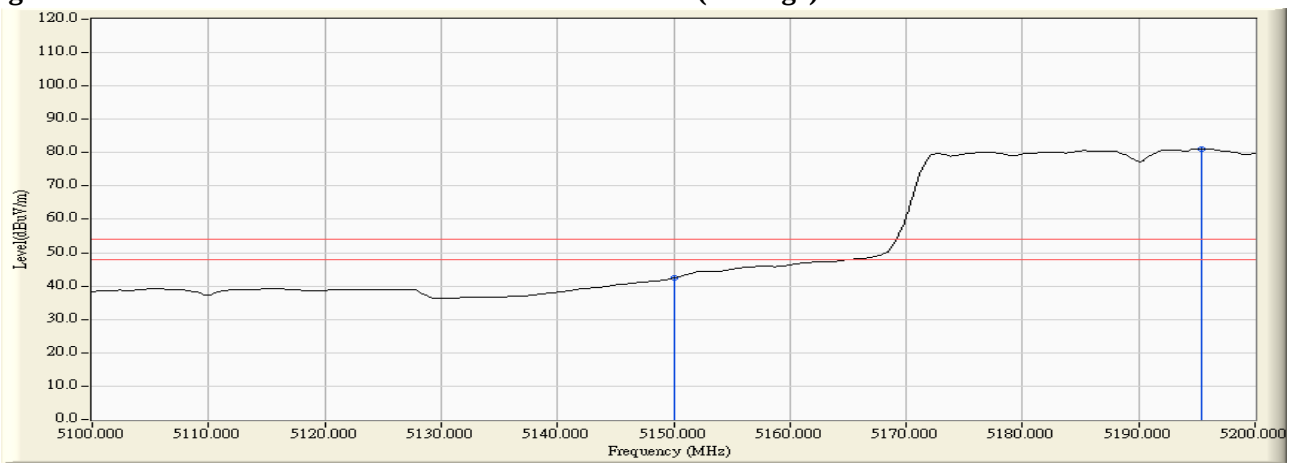
Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)-Channel 38_Dipole

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
38 (Peak)	5149.200	3.328	57.180	60.508	74.00	54.00	Pass
38 (Peak)	5150.000	3.331	56.447	59.779	74.00	54.00	Pass
38 (Peak)	5195.400	3.546	102.019	105.566	--	--	Pass
38 (Average)	5150.000	3.331	38.995	42.327	74.00	54.00	Pass
38 (Average)	5195.400	3.546	77.514	81.061	--	--	Pass

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 Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)-Channel 38_PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
38 (Peak)	5150.000	3.340	52.442	55.782	74.00	54.00	Pass
38 (Peak)	5196.600	3.167	97.218	100.385	--	--	Pass
38 (Average)	5150.000	3.340	38.914	42.254	74.00	54.00	Pass
38 (Average)	5196.000	3.169	74.705	77.874	--	--	Pass

Figure Channel 38: Horizontal (Peak)

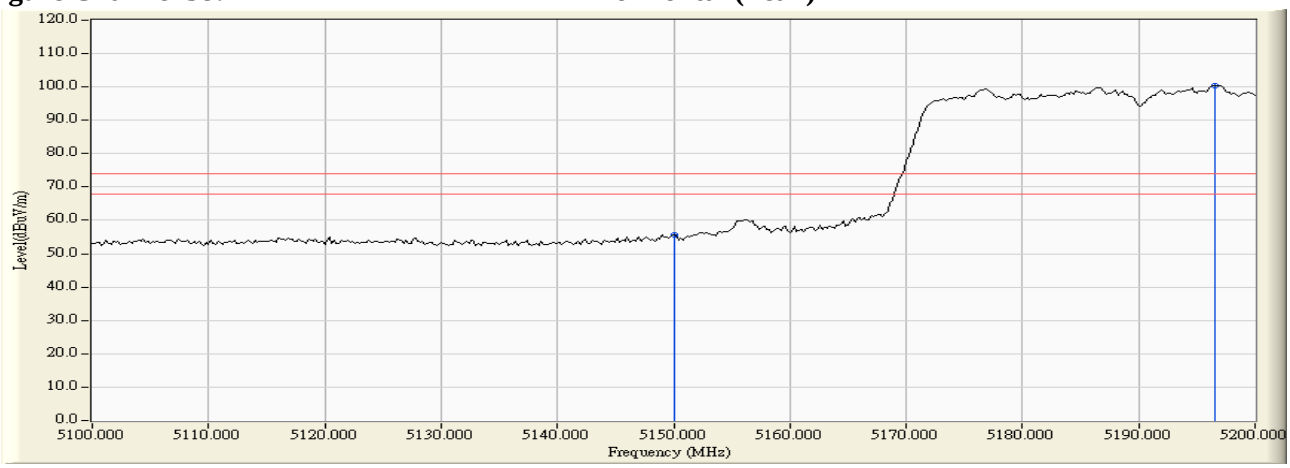
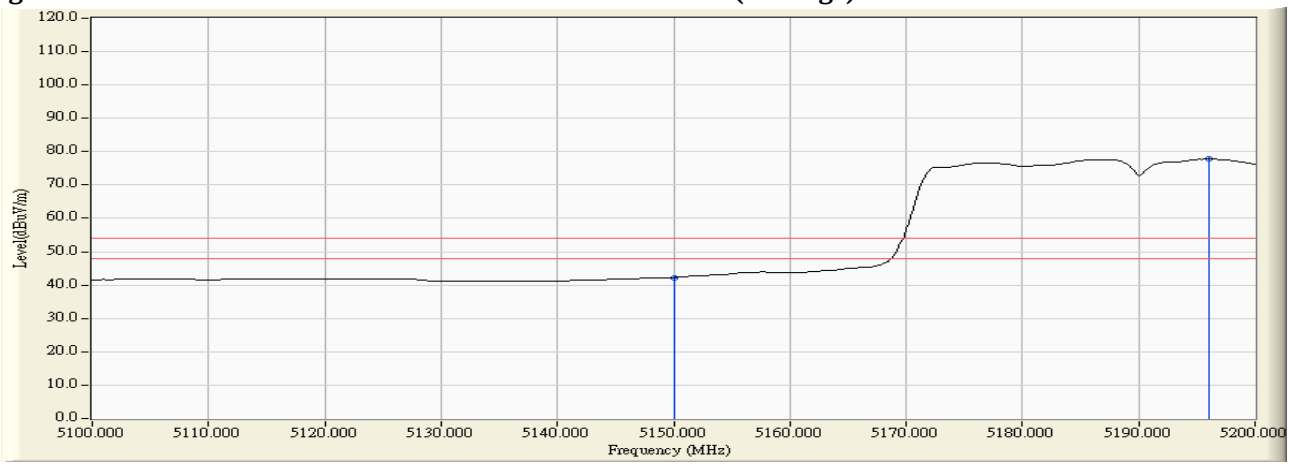


Figure Channel 38: Horizontal (Average)



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 Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)-Channel 38_PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
38 (Peak)	5150.000	5.260	54.353	59.613	74.00	54.00	Pass
38 (Peak)	5195.800	5.376	98.001	103.378	--	--	Pass
38 (Average)	5150.000	5.260	39.556	44.816	74.00	54.00	Pass
38 (Average)	5194.600	5.375	76.051	81.426	--	--	Pass

Figure Channel 38: Vertical (Peak)

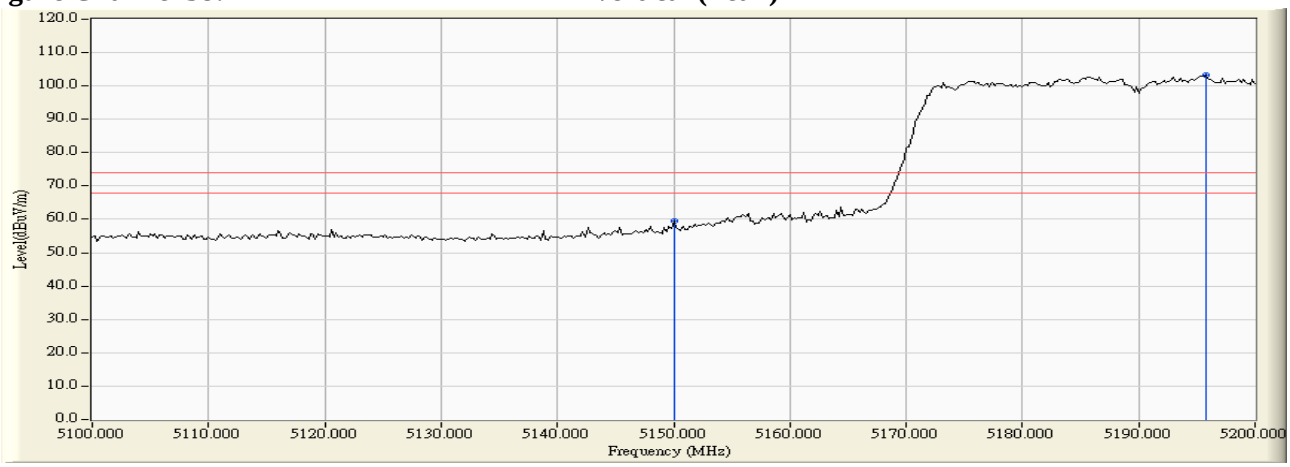
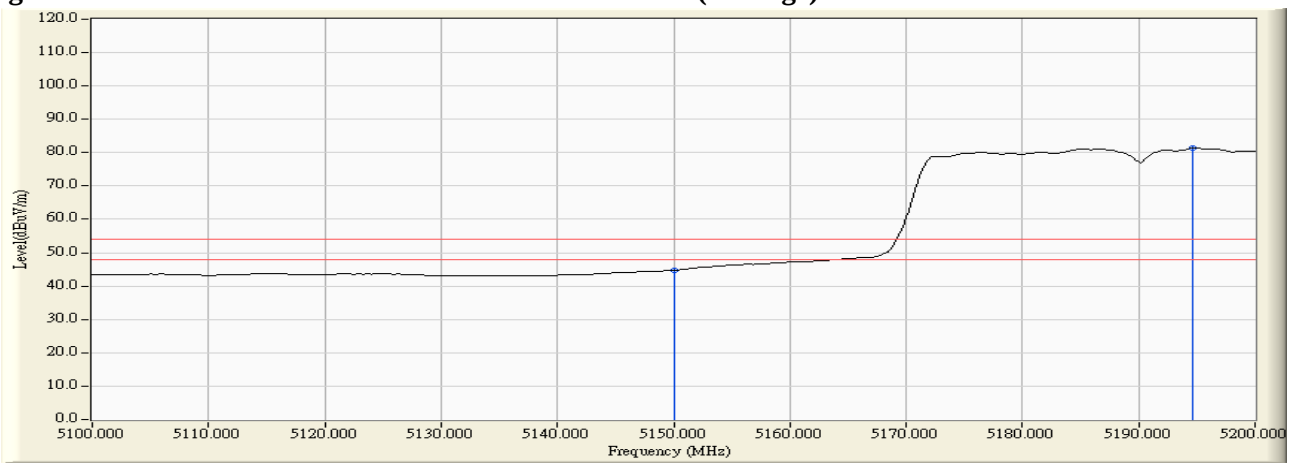


Figure Channel 38: Vertical (Average)



Note:

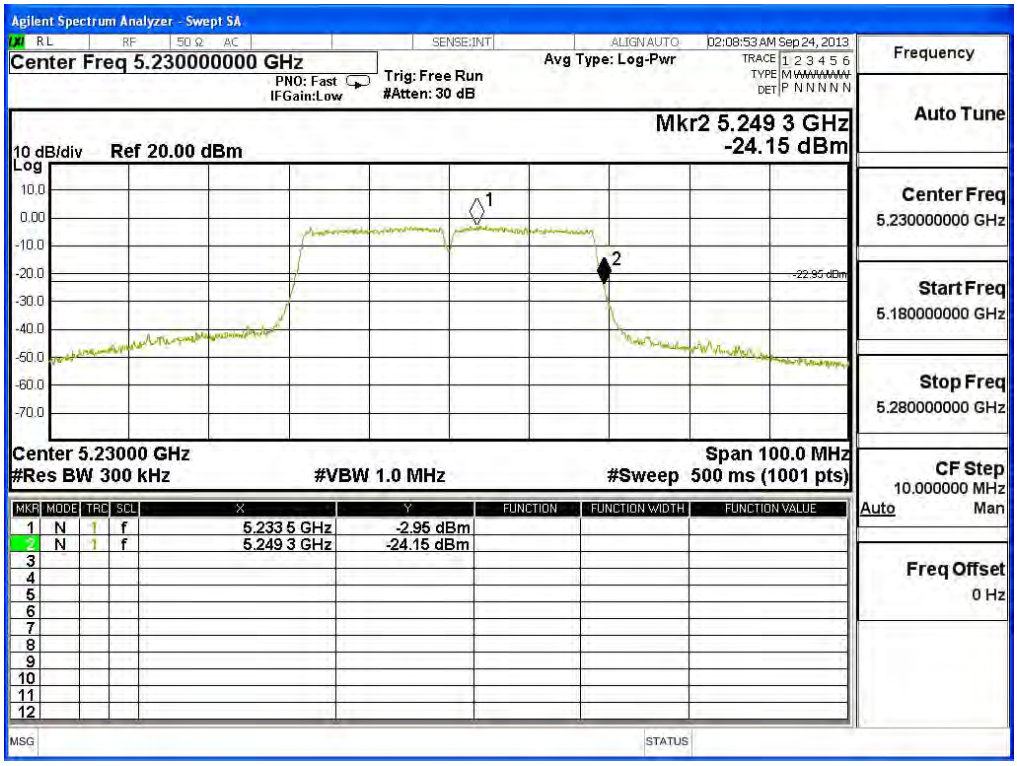
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading 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 Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)-Channel 46

Chain A

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5249.30	<5250	PASS

NOTE: Accordance with 15.215 requirement.

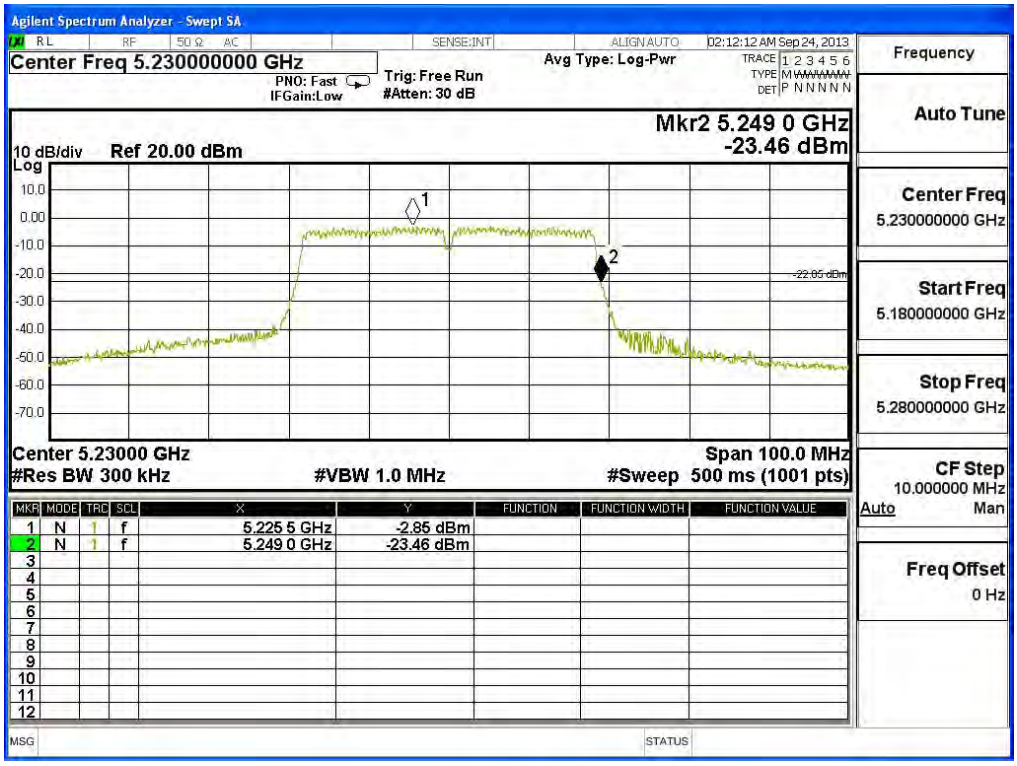


Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)-Channel 46

Chain B

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5249.00	<5250	PASS

NOTE: Accordance with 15.215 requirement.

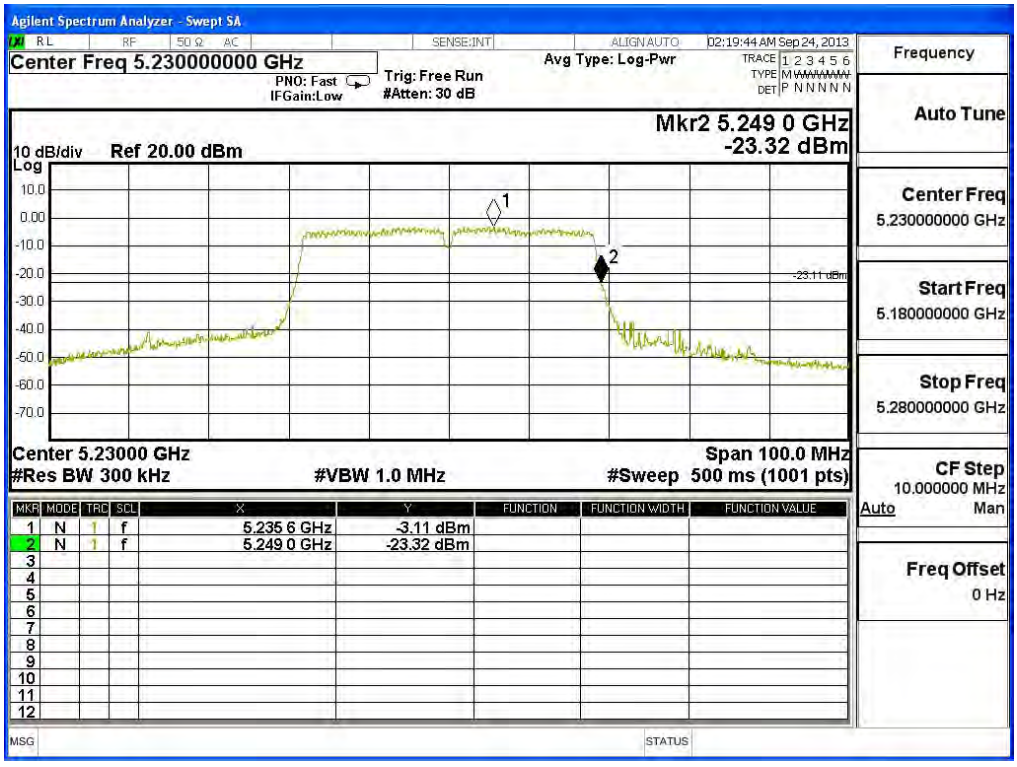


Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)-Channel 46

Chain C

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5249.00	<5250	PASS

NOTE: Accordance with 15.215 requirement.



Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps)-Channel 42_Dipole

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
42 (Peak)	5137.600	3.383	49.670	53.054	74.00	54.00	Pass
42 (Peak)	5150.000	3.340	48.452	51.792	74.00	54.00	Pass
42 (Peak)	5197.600	3.162	89.716	92.878	--	--	Pass
42 (Average)	5147.600	3.348	33.233	36.582	74.00	54.00	Pass
42 (Average)	5150.000	3.340	32.063	35.403	74.00	54.00	Pass
42 (Average)	5197.800	3.161	73.269	76.430	--	--	Pass

Figure Channel 38: Horizontal (Peak)

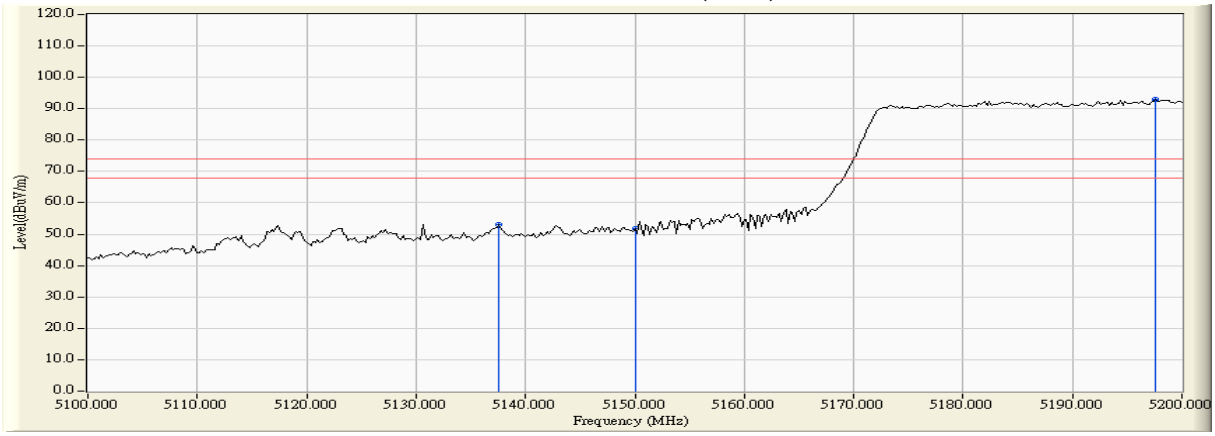
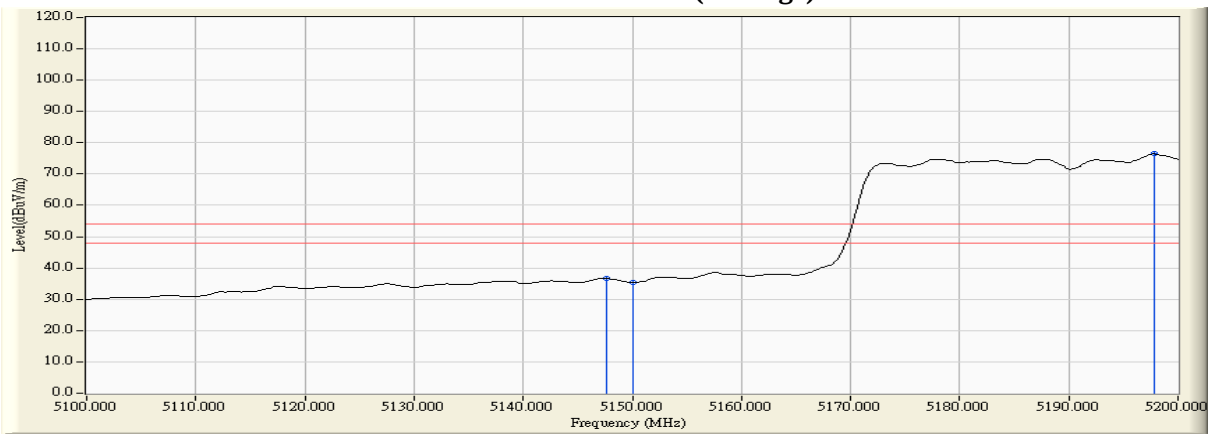


Figure Channel 38: Horizontal (Average)



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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps)-Channel 42_Dipole

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
42 (Peak)	5142.800	5.241	57.235	62.475	74.00	54.00	Pass
42 (Peak)	5150.000	5.260	53.371	58.631	74.00	54.00	Pass
42 (Peak)	5199.800	5.387	96.238	101.626	--	--	Pass
42 (Average)	5148.000	5.254	38.124	43.378	74.00	54.00	Pass
42 (Average)	5150.000	5.260	37.691	42.951	74.00	54.00	Pass
42 (Average)	5198.800	5.383	77.230	82.613	--	--	Pass

Figure Channel 38: Vertical (Peak)

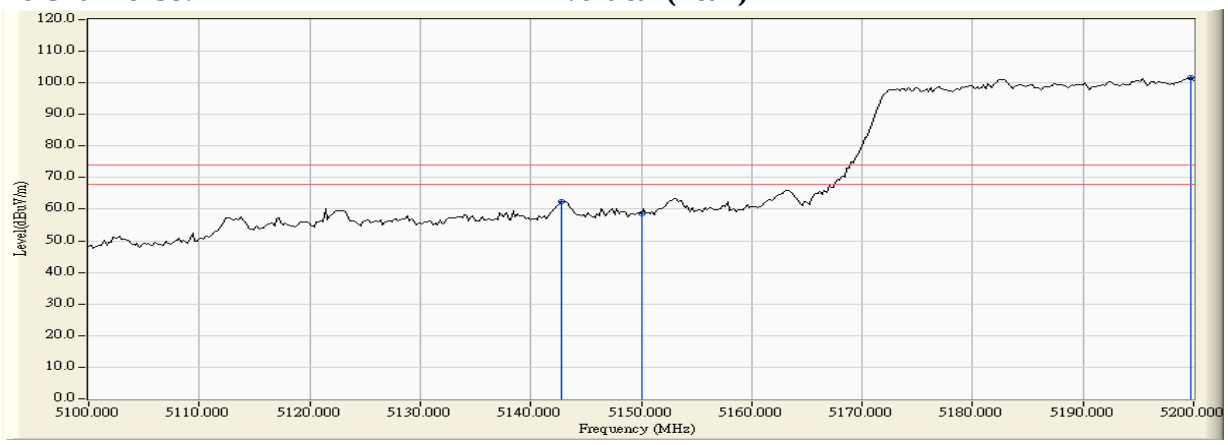
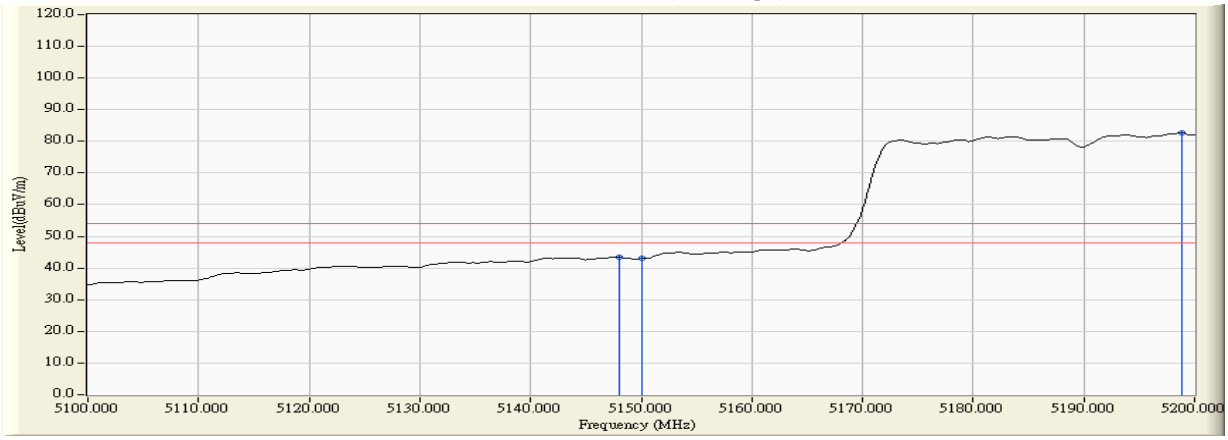


Figure Channel 38: Vertical (Average)



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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) -Channel 42_PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
42 (Peak)	5137.400	3.383	52.444	55.828	74.00	54.00	Pass
42 (Peak)	5150.000	3.340	52.117	55.457	74.00	54.00	Pass
42 (Peak)	5197.000	3.164	93.341	96.506	--	--	Pass
42 (Average)	5146.800	3.351	36.873	40.225	74.00	54.00	Pass
42 (Average)	5150.000	3.340	35.433	38.773	74.00	54.00	Pass
42 (Average)	5186.600	3.211	75.465	78.676	--	--	Pass

Figure Channel 38: Horizontal (Peak)

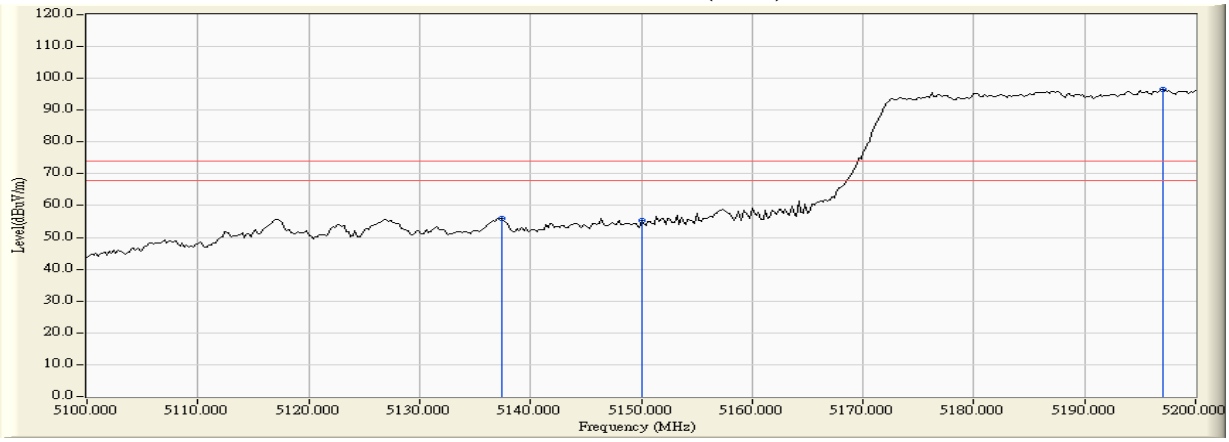
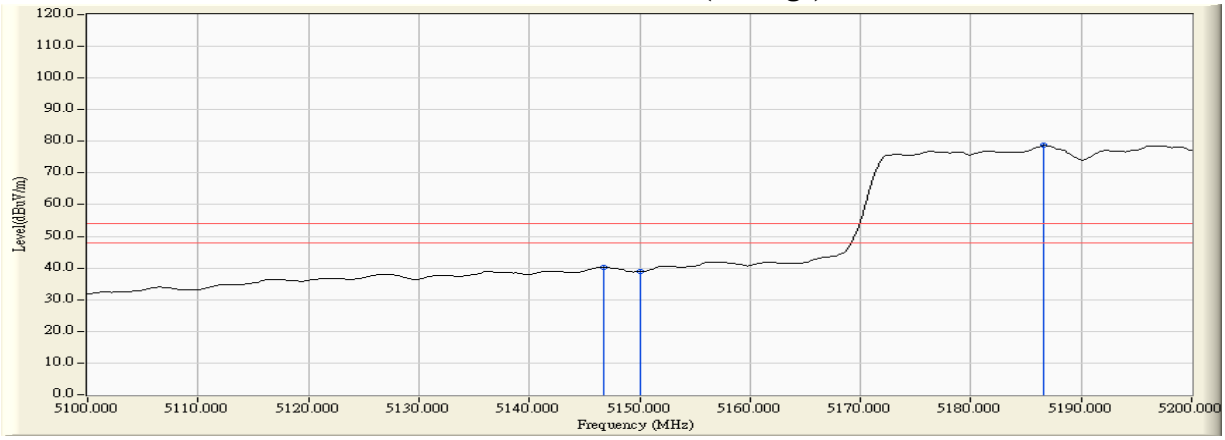


Figure Channel 38: Horizontal (Average)



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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps)-Channel 42_PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
42 (Peak)	5142.600	5.240	51.833	57.073	74.00	54.00	Pass
42 (Peak)	5150.000	5.260	47.859	53.119	74.00	54.00	Pass
42 (Peak)	5182.800	5.349	90.893	96.242	--	--	Pass
42 (Average)	5147.200	5.252	33.938	39.190	74.00	54.00	Pass
42 (Average)	5150.000	5.260	33.009	38.269	74.00	54.00	Pass
42 (Average)	5197.800	5.381	73.444	78.825	--	--	Pass

Figure Channel 38: Vertical (Peak)

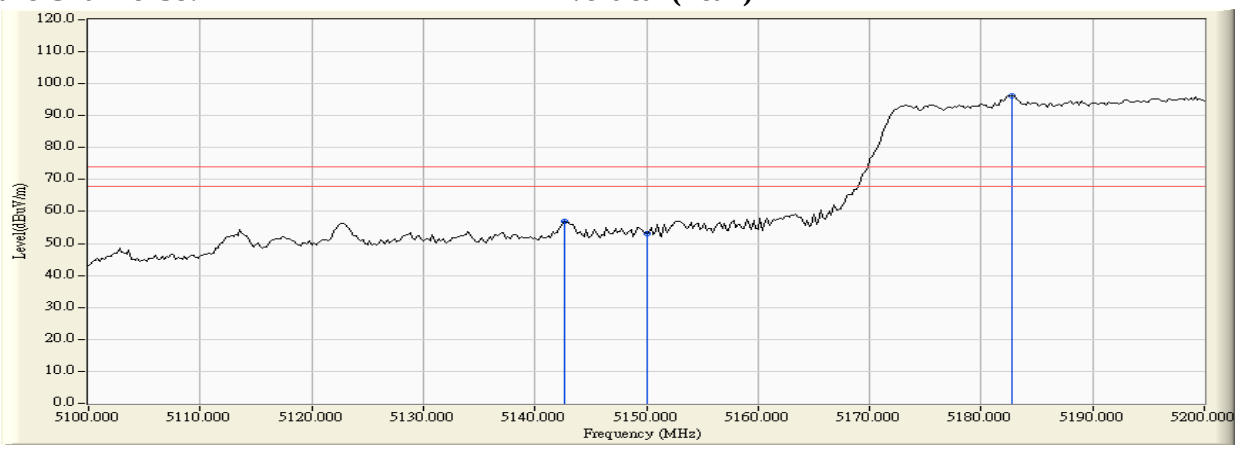
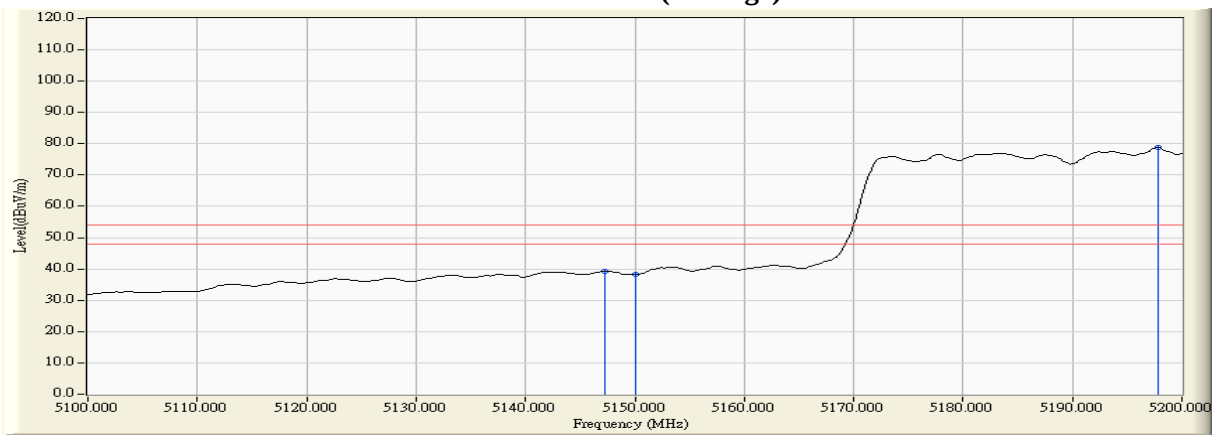


Figure Channel 38: Vertical (Average)



Note:

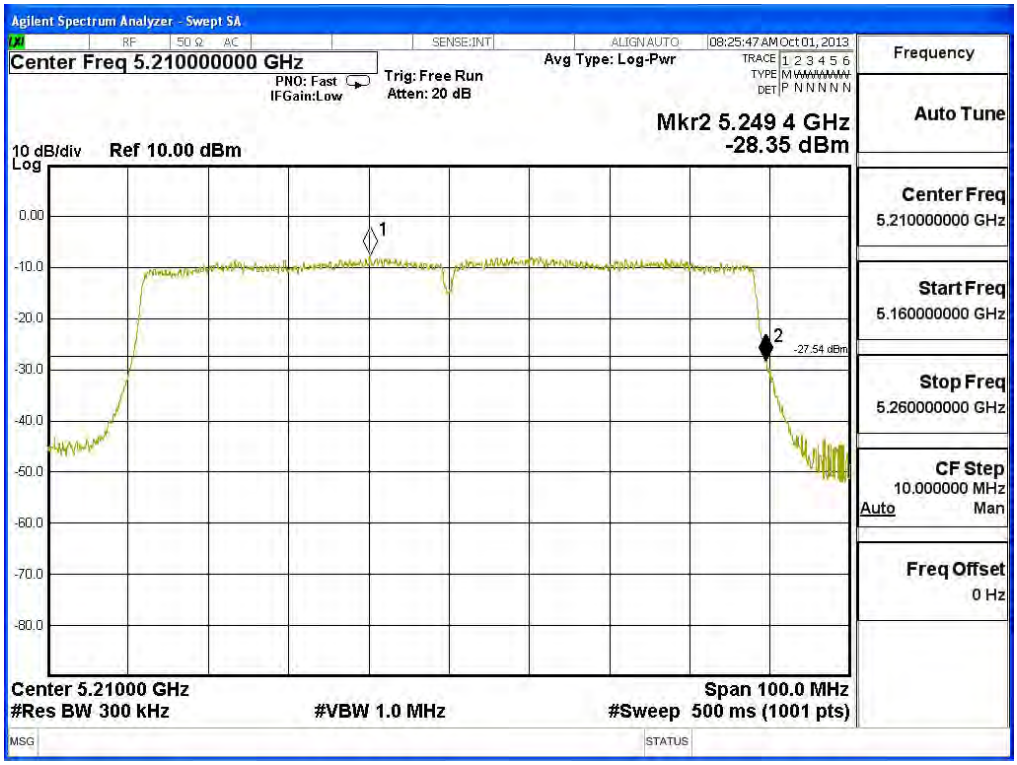
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading 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 Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps)-Channel 42

Chain A

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5210	5249.40	<5250	PASS

NOTE: Accordance with 15.215 requirement.

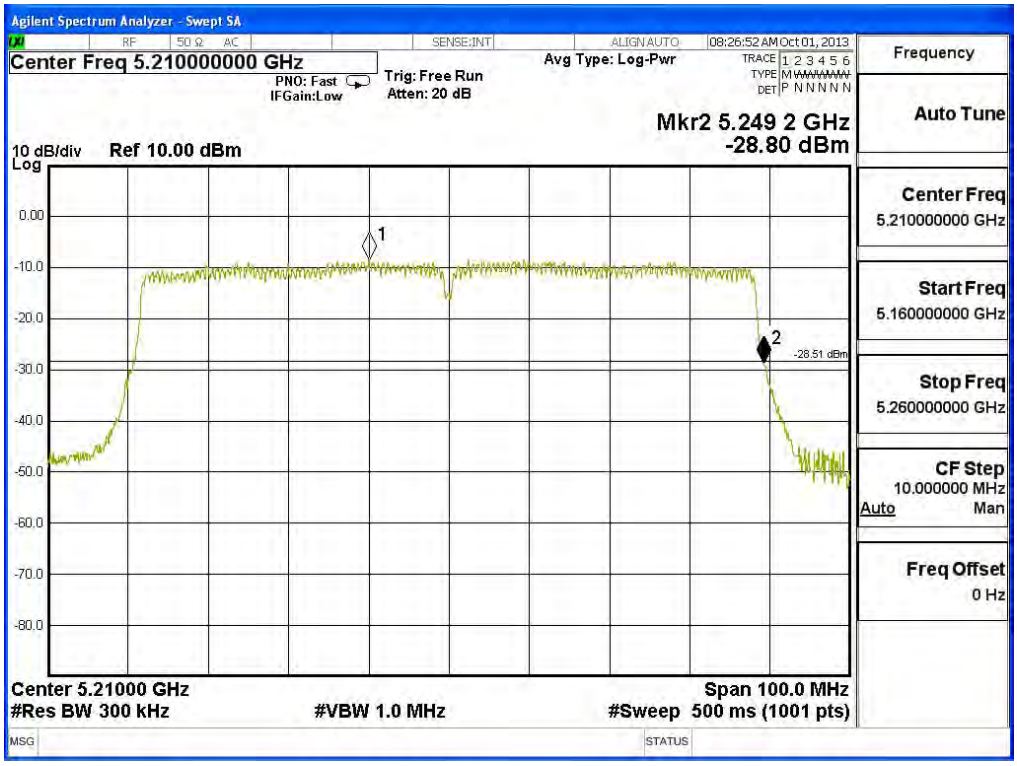


Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps)-Channel 42

Chain B

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5210	5249.20	<5250	PASS

NOTE: Accordance with 15.215 requirement.

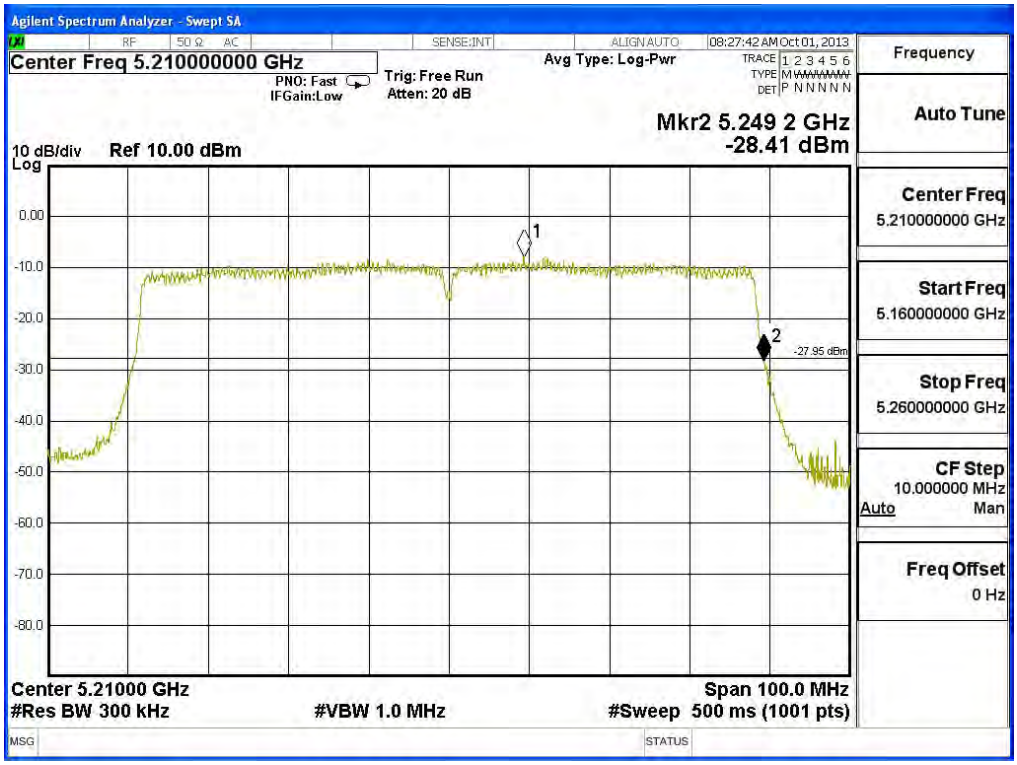


Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps)-Channel 42

Chain C

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5210	5249.20	<5250	PASS

NOTE: Accordance with 15.215 requirement.



Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) -Channel 155_Dipole

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5715.000	18.644	-62.350	-43.706	-16.706	-27.000	Pass
Horizontal	5723.400	18.648	-55.150	-36.502	-19.502	-17.000	Pass
Horizontal	5725.000	18.649	-60.350	-41.701	-24.701	-17.000	Pass
Horizontal	5825.000	18.983	-58.960	-39.977	-22.977	-17.000	Pass
Horizontal	5825.360	18.987	-53.560	-34.573	-17.573	-17.000	Pass
Horizontal	5835.000	19.106	-62.850	-43.744	-16.744	-27.000	Pass

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5715.000	19.296	-51.560	-32.264	-5.264	-27.000	Pass
Vertical	5719.200	19.328	-47.040	-27.712	-10.712	-17.000	Pass
Vertical	5725.000	19.372	-51.800	-32.428	-15.428	-17.000	Pass
Vertical	5825.000	20.205	-48.680	-28.475	-11.475	-17.000	Pass
Vertical	5825.200	20.207	-47.340	-27.133	-10.133	-17.000	Pass
Vertical	5835.000	20.326	-52.360	-32.034	-5.034	-27.000	Pass

Product : WiFi module
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-80BW 1.3Gbps) -Channel 155_PIFA

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5715.000	18.644	-55.220	-36.576	-9.576	-27.000	Pass
Horizontal	5723.100	18.648	-47.150	-28.502	-11.502	-17.000	Pass
Horizontal	5725.000	18.649	-51.250	-32.601	-15.601	-17.000	Pass
Horizontal	5825.000	18.983	-54.660	-35.677	-18.677	-17.000	Pass
Horizontal	5827.800	19.018	-50.670	-31.652	-14.652	-17.000	Pass
Horizontal	5835.000	19.106	-58.140	-39.034	-12.034	-27.000	Pass

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5715.000	19.296	-55.060	-35.764	-8.764	-27.000	Pass
Vertical	5722.400	19.352	-51.950	-32.598	-15.598	-17.000	Pass
Vertical	5725.000	19.372	-52.140	-32.768	-15.768	-17.000	Pass
Vertical	5825.000	20.205	-53.230	-33.025	-16.025	-17.000	Pass
Vertical	5825.800	20.214	-52.250	-32.036	-15.036	-17.000	Pass
Vertical	5835.000	20.326	-56.880	-36.554	-9.554	-27.000	Pass

8. Frequency Stability

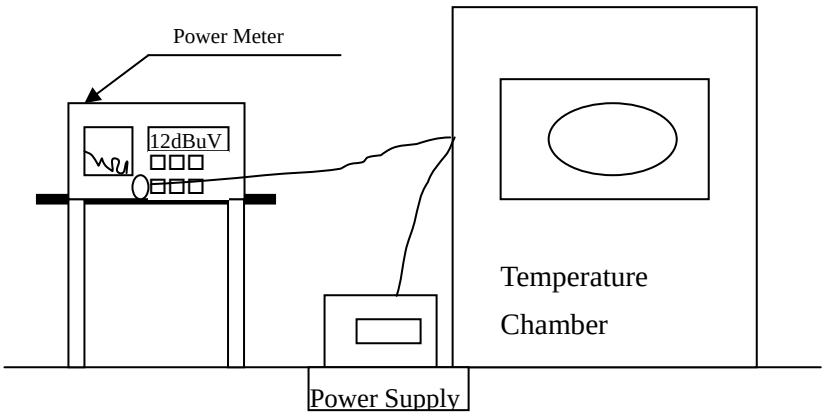
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

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

8.2. Test Setup



8.3. Limits

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

8.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

8.5. Uncertainty

± 150 Hz

8.6. Test Result of Frequency Stability

Product : WiFi module
Test Item : Frequency Stability
Test Site : Temperature Chamber
Test Mode : Carrier Wave

Chain A

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tnom (20) °C	Vnom (120)V	36	5180.0000	5180.0010	-0.0010
		38	5190.0000	5190.0015	-0.0015
		42	5210.0000	5220.0005	-0.0005
		44	5220.0000	5230.0010	-0.0010
		46	5230.0000	5240.0015	-0.0015
		48	5240.0000	5180.0010	-0.0010
		155	5775.0000	5190.0015	-0.0015
Tmax (50) °C	Vmax (132)V	36	5180.0000	5220.0015	-0.0015
		38	5190.0000	5230.0010	-0.0010
		42	5210.0000	5240.0020	-0.0020
		44	5220.0000	5180.0015	-0.0015
		46	5230.0000	5190.0020	-0.0020
		48	5240.0000	5220.0005	-0.0005
		155	5775.0000	5230.0015	-0.0015
Tmax (50) °C	Vmin (108)V	36	5180.0000	5240.0010	-0.0010
		38	5190.0000	5180.0020	-0.0020
		42	5210.0000	5190.0015	-0.0015
		44	5220.0000	5220.0015	-0.0015
		46	5230.0000	5230.0015	-0.0015
		48	5240.0000	5240.0020	-0.0020
		155	5775.0000	5180.0020	-0.0020
Tmin (0) °C	Vmax (132)V	36	5180.0000	5190.0015	-0.0015
		38	5190.0000	5220.0025	-0.0025
		42	5210.0000	5230.0020	-0.0020
		44	5220.0000	5240.0030	-0.0030
		46	5230.0000	5180.0010	-0.0010
		48	5240.0000	5190.0015	-0.0015
		155	5775.0000	5220.0005	-0.0005
Tmin (0) °C	Vmin (108)V	36	5180.0000	5230.0010	-0.0010
		38	5190.0000	5240.0015	-0.0015
		42	5210.0000	5180.0010	-0.0010
		44	5220.0000	5190.0015	-0.0015
		46	5230.0000	5220.0015	-0.0015
		48	5240.0000	5230.0010	-0.0010
		155	5775.0000	5240.0020	-0.0020

Chain B

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tnom (20) °C	Vnom (120)V	36	5180.0000	5180.0015	-0.0015
		38	5190.0000	5190.0020	-0.0020
		42	5210.0000	5220.0000	0.0000
		44	5220.0000	5230.0015	-0.0015
		46	5230.0000	5240.0015	-0.0015
		48	5240.0000	5180.0015	-0.0015
		155	5775.0000	5190.0020	-0.0020
Tmax (50) °C	Vmax (132)V	36	5180.0000	5220.0025	-0.0025
		38	5190.0000	5230.0015	-0.0015
		42	5210.0000	5240.0015	-0.0015
		44	5220.0000	5180.0020	-0.0020
		46	5230.0000	5190.0025	-0.0025
		48	5240.0000	5220.0015	-0.0015
		155	5775.0000	5230.0010	-0.0010
Tmax (50) °C	Vmin (108)V	36	5180.0000	5240.0015	-0.0015
		38	5190.0000	5180.0025	-0.0025
		42	5210.0000	5190.0020	-0.0020
		44	5220.0000	5220.0010	-0.0010
		46	5230.0000	5230.0005	-0.0005
		48	5240.0000	5240.0025	-0.0025
		155	5775.0000	5180.0030	-0.0030
Tmin (0) °C	Vmax (132)V	36	5180.0000	5190.0015	-0.0015
		38	5190.0000	5220.0030	-0.0030
		42	5210.0000	5230.0025	-0.0025
		44	5220.0000	5240.0025	-0.0025
		46	5230.0000	5180.0015	-0.0015
		48	5240.0000	5190.0020	-0.0020
		155	5775.0000	5220.0000	0.0000
Tmin (0) °C	Vmin (108)V	36	5180.0000	5230.0015	-0.0015
		38	5190.0000	5240.0015	-0.0015
		42	5210.0000	5180.0015	-0.0015
		44	5220.0000	5190.0020	-0.0020
		46	5230.0000	5220.0025	-0.0025
		48	5240.0000	5230.0015	-0.0015
		155	5775.0000	5240.0015	-0.0015

Chain C

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tnom (20) °C	Vnom (120)V	36	5180.0000	5180.0005	-0.0005
		38	5190.0000	5190.0015	-0.0015
		42	5210.0000	5220.0015	-0.0015
		44	5220.0000	5230.0010	-0.0010
		46	5230.0000	5240.0015	-0.0015
		48	5240.0000	5180.0015	-0.0015
		155	5775.0000	5190.0020	-0.0020
Tmax (50) °C	Vmax (132)V	36	5180.0000	5220.0020	-0.0020
		38	5190.0000	5230.0020	-0.0020
		42	5210.0000	5240.0015	-0.0015
		44	5220.0000	5180.0025	-0.0025
		46	5230.0000	5190.0020	-0.0020
		48	5240.0000	5220.0020	-0.0020
		155	5775.0000	5230.0015	-0.0015
Tmax (50) °C	Vmin (108)V	36	5180.0000	5240.0050	-0.0050
		38	5190.0000	5180.0020	-0.0020
		42	5210.0000	5190.0030	-0.0030
		44	5220.0000	5220.0015	-0.0015
		46	5230.0000	5230.0025	-0.0025
		48	5240.0000	5240.0030	-0.0030
		155	5775.0000	5180.0015	-0.0015
Tmin (0) °C	Vmax (132)V	36	5180.0000	5190.0020	-0.0020
		38	5190.0000	5220.0025	-0.0025
		42	5210.0000	5230.0010	-0.0010
		44	5220.0000	5240.0015	-0.0015
		46	5230.0000	5180.0005	-0.0005
		48	5240.0000	5190.0015	-0.0015
		155	5775.0000	5220.0015	-0.0015
Tmin (0) °C	Vmin (108)V	36	5180.0000	5230.0010	-0.0010
		38	5190.0000	5240.0015	-0.0015
		42	5210.0000	5180.0015	-0.0015
		44	5220.0000	5190.0020	-0.0020
		46	5230.0000	5220.0020	-0.0020
		48	5240.0000	5230.0020	-0.0020
		155	5775.0000	5240.0015	-0.0015

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.