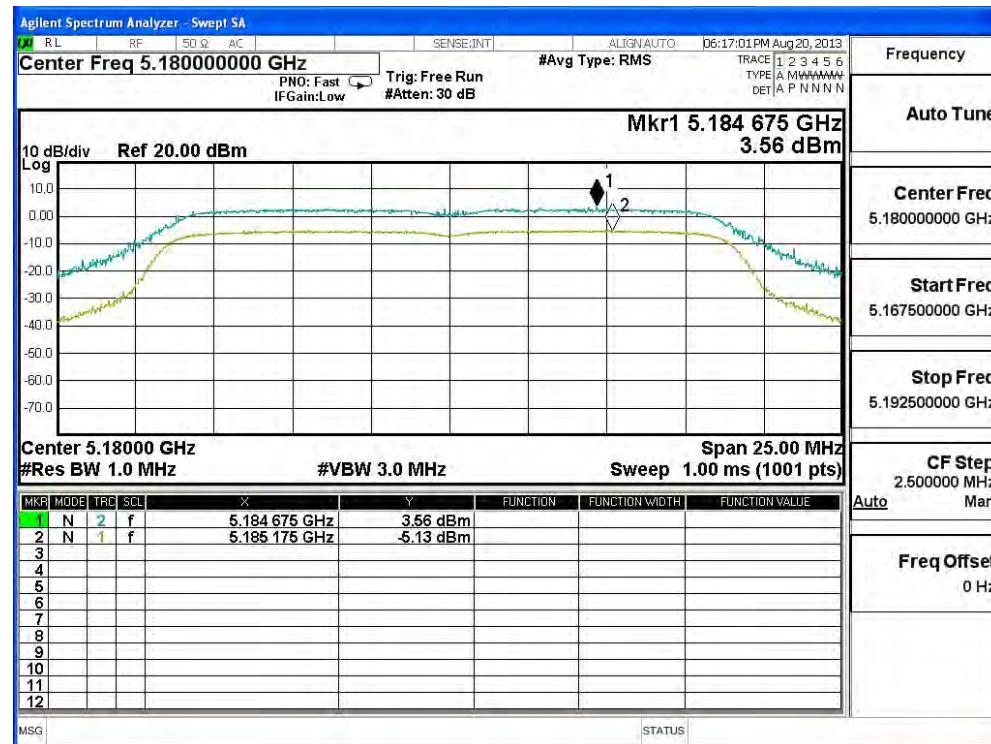
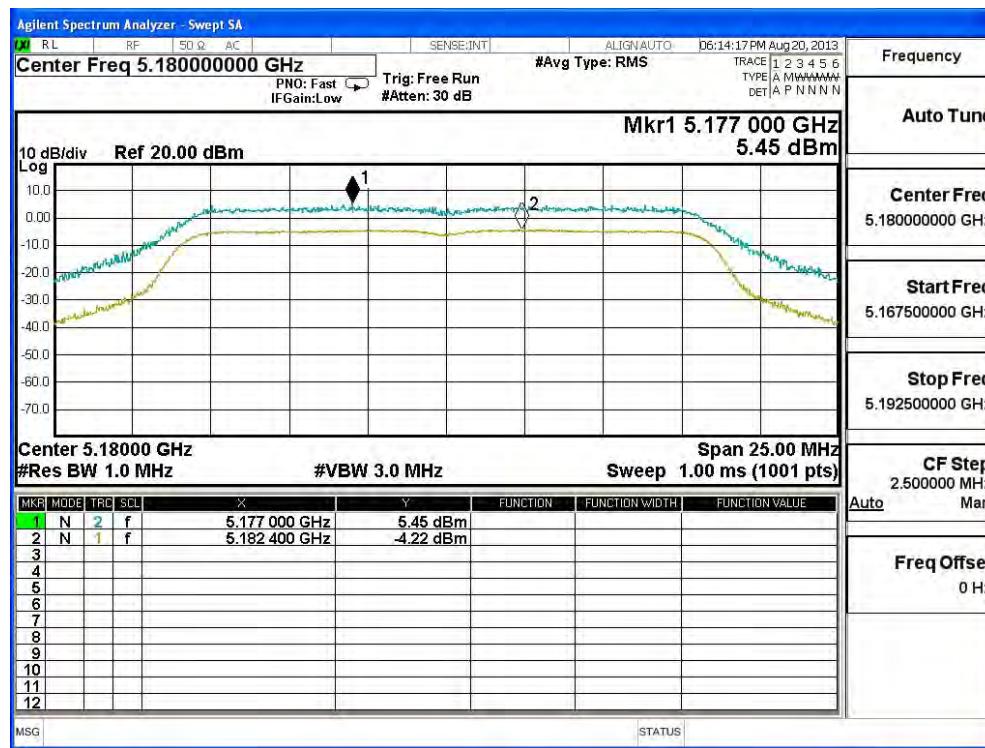
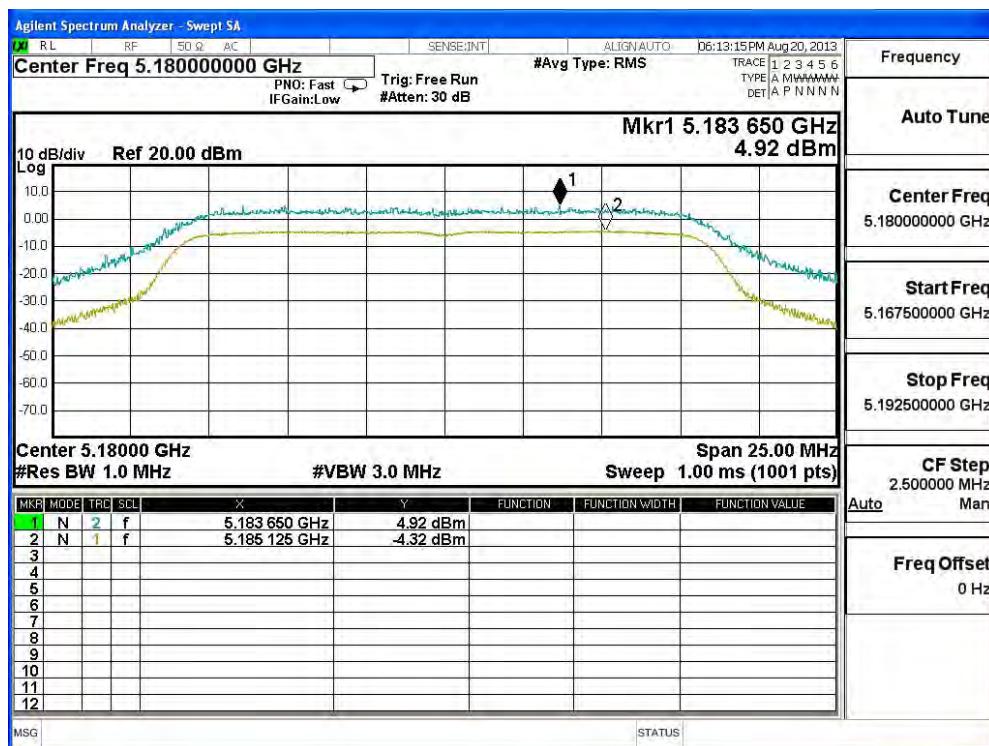


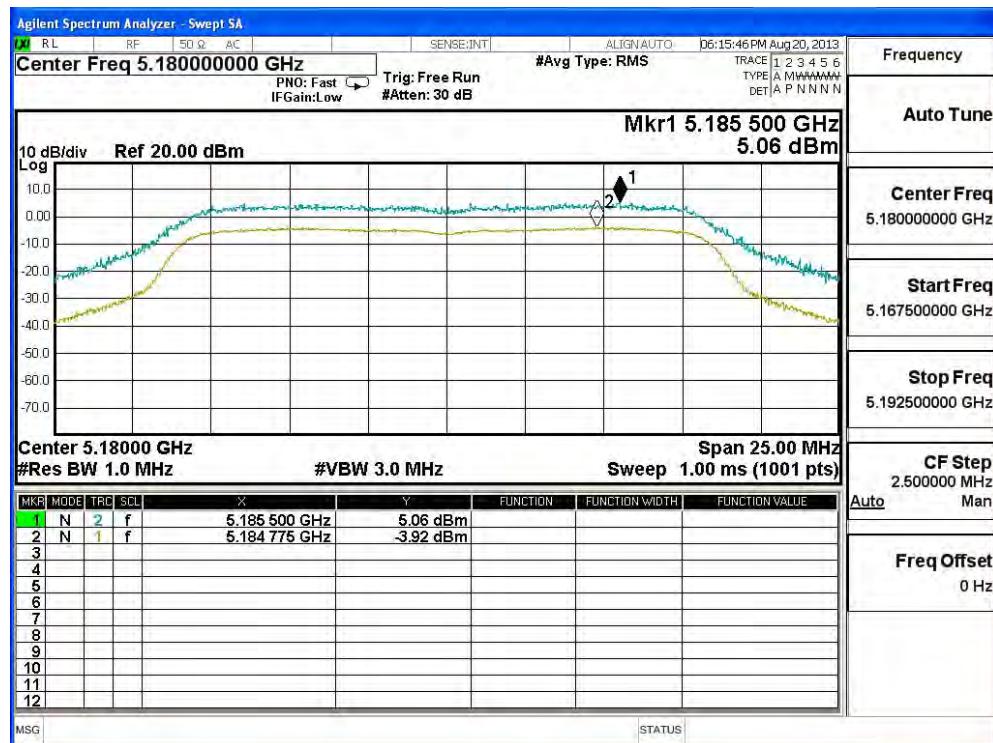
Product : SpectraGuard® Access Point / Sensor
 Test Item : Peak Excursion
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna)

Chain A

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	8.690	<13	Pass
		MCS (2)	9.910	<13	Pass
		MCS (4)	9.880	<13	Pass
		MCS (7)	9.750	<13	Pass

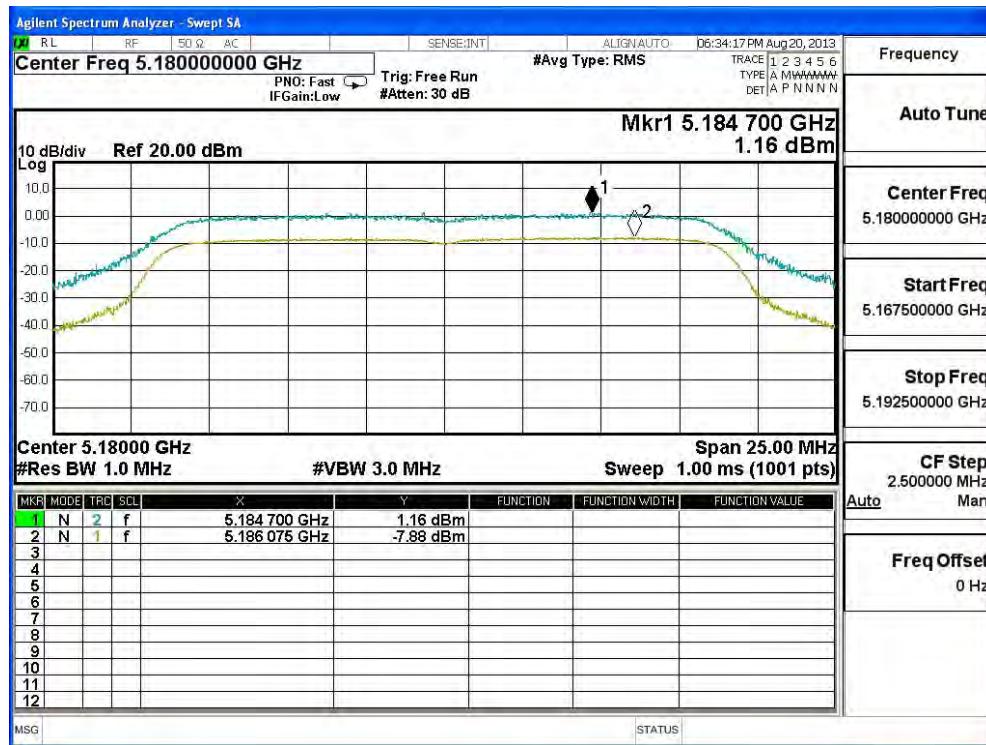
Channel 36:


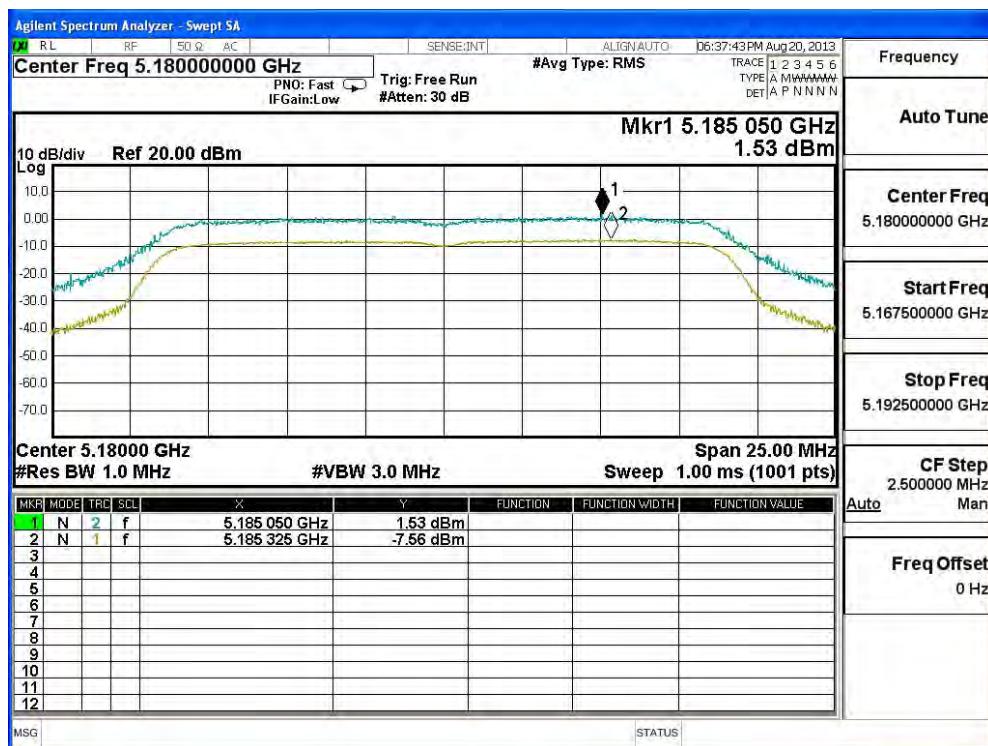
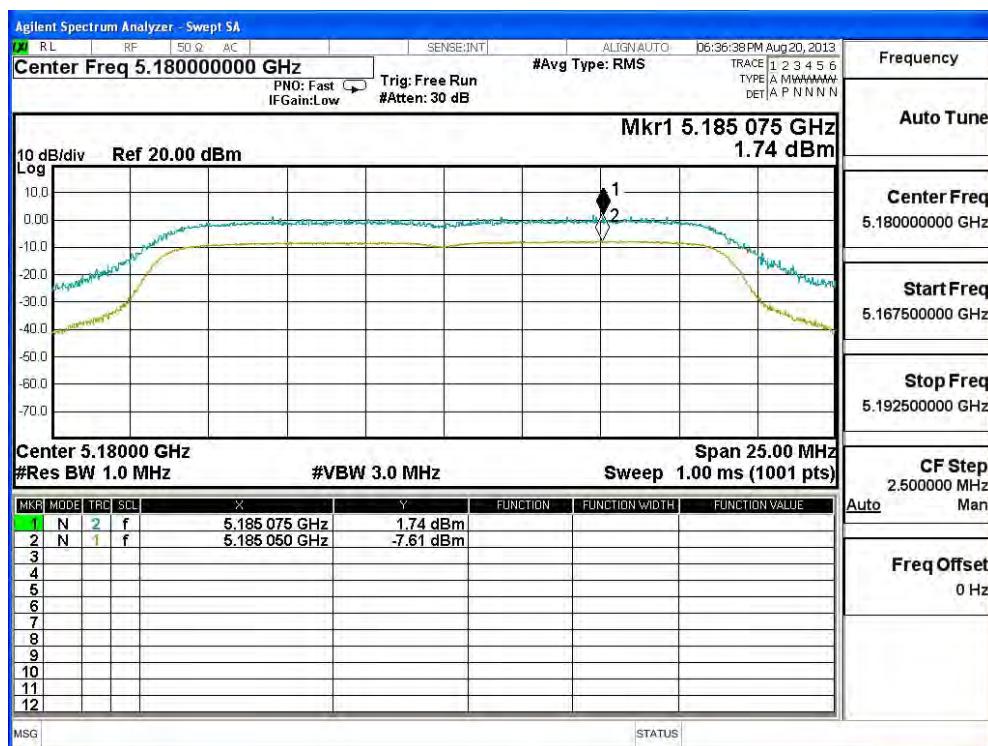


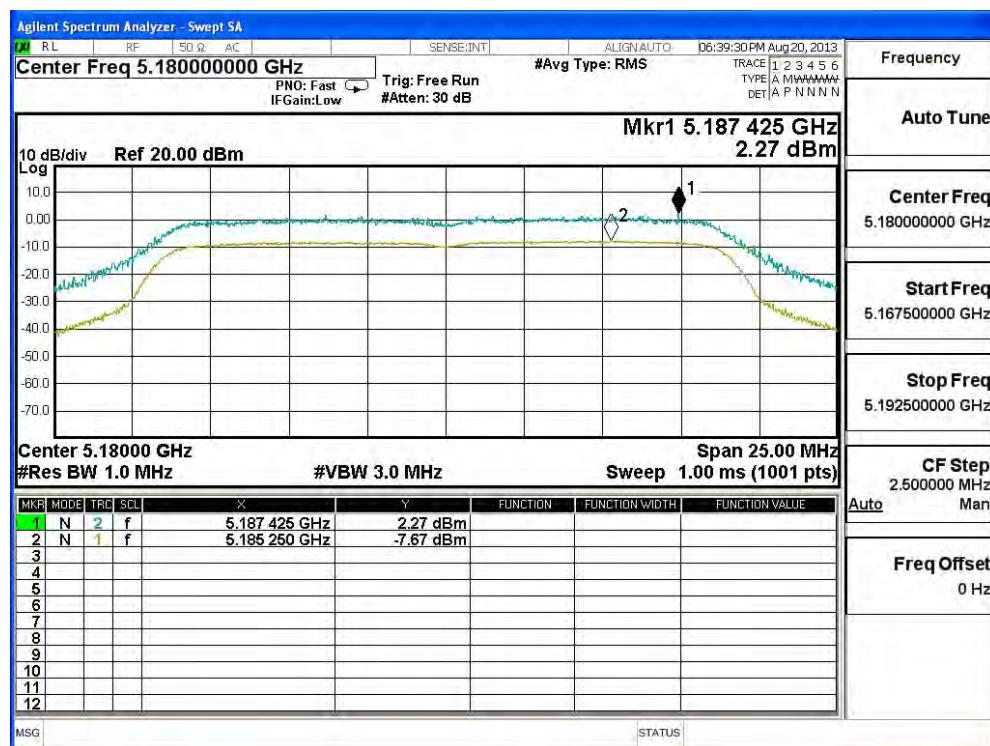


Chain B

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	9.040	<13	Pass
		MCS (2)	9.350	<13	Pass
		MCS (4)	9.090	<13	Pass
		MCS (7)	9.940	<13	Pass

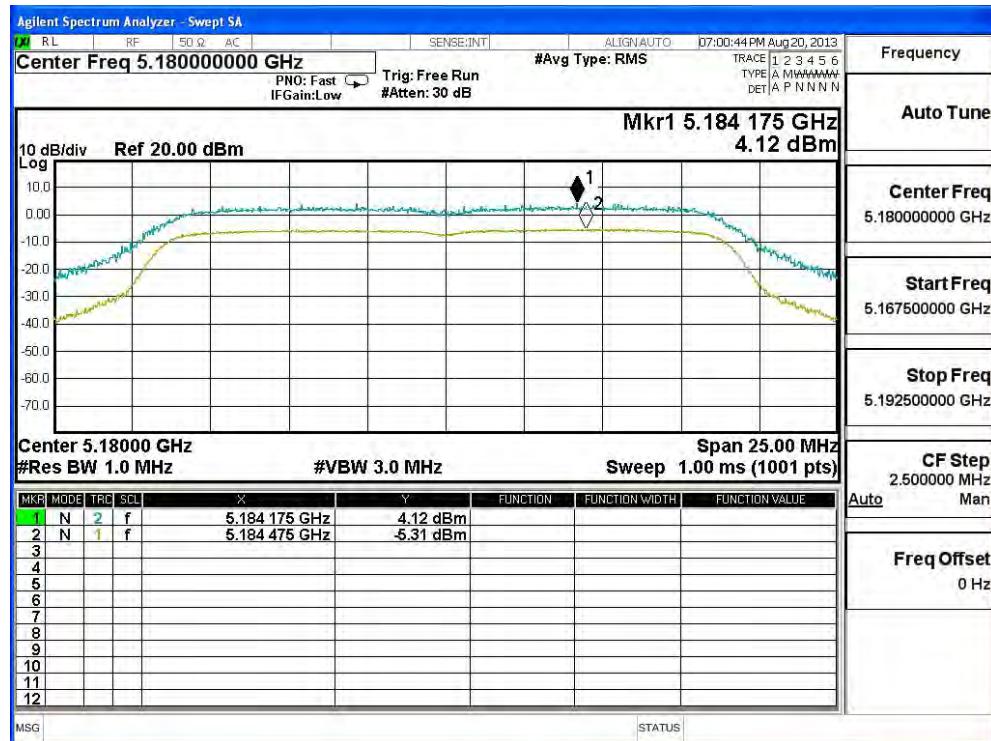
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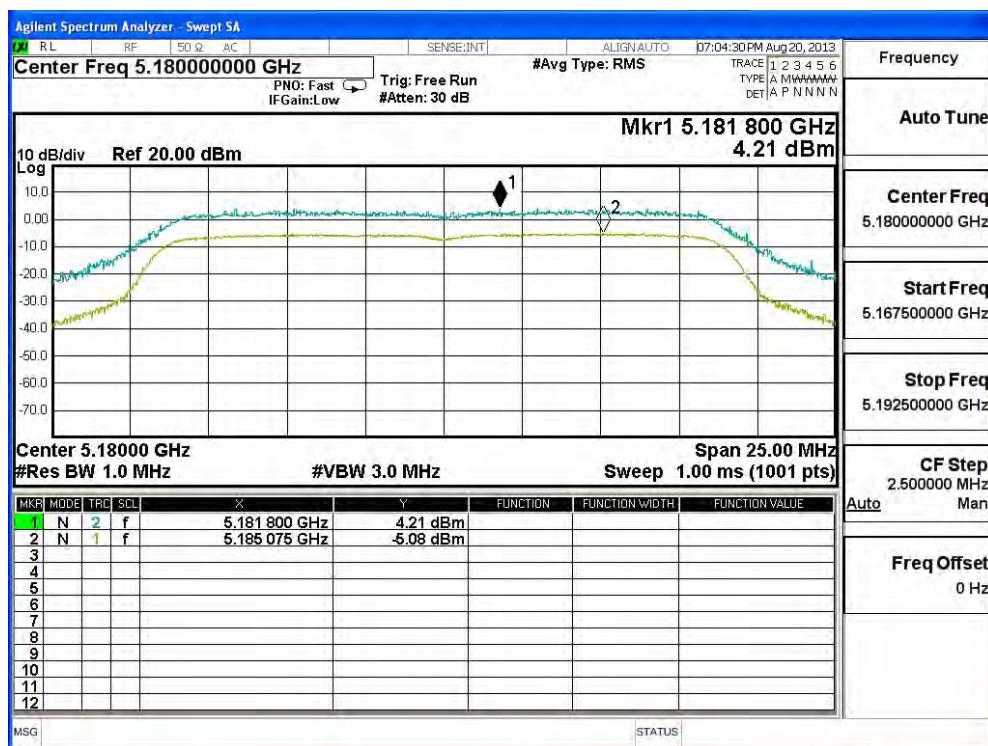
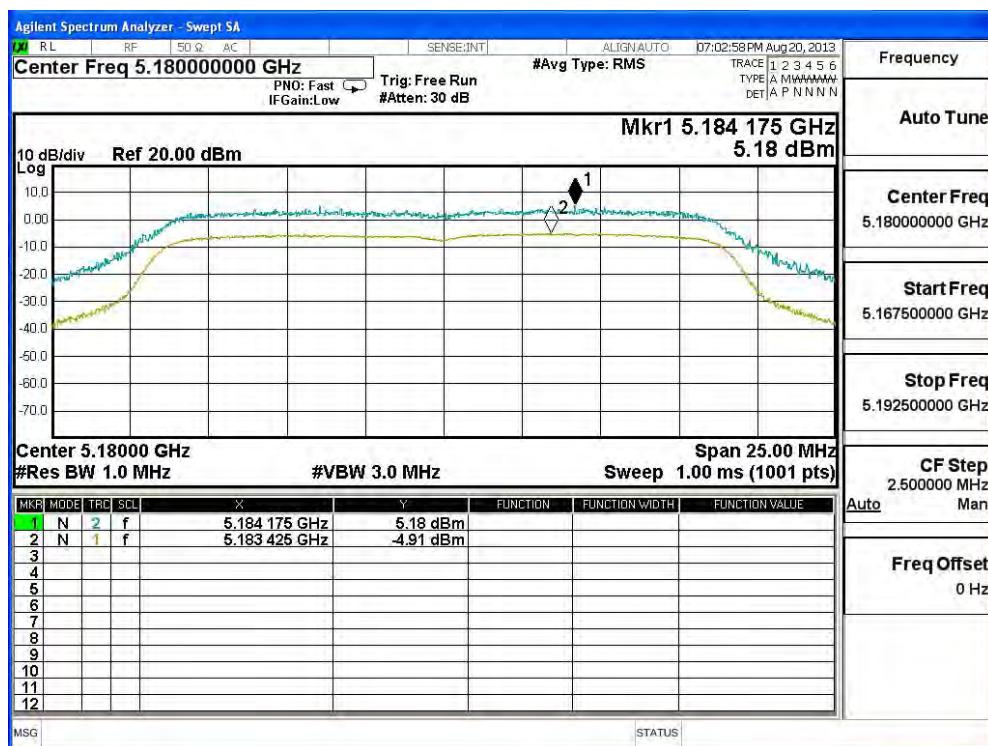


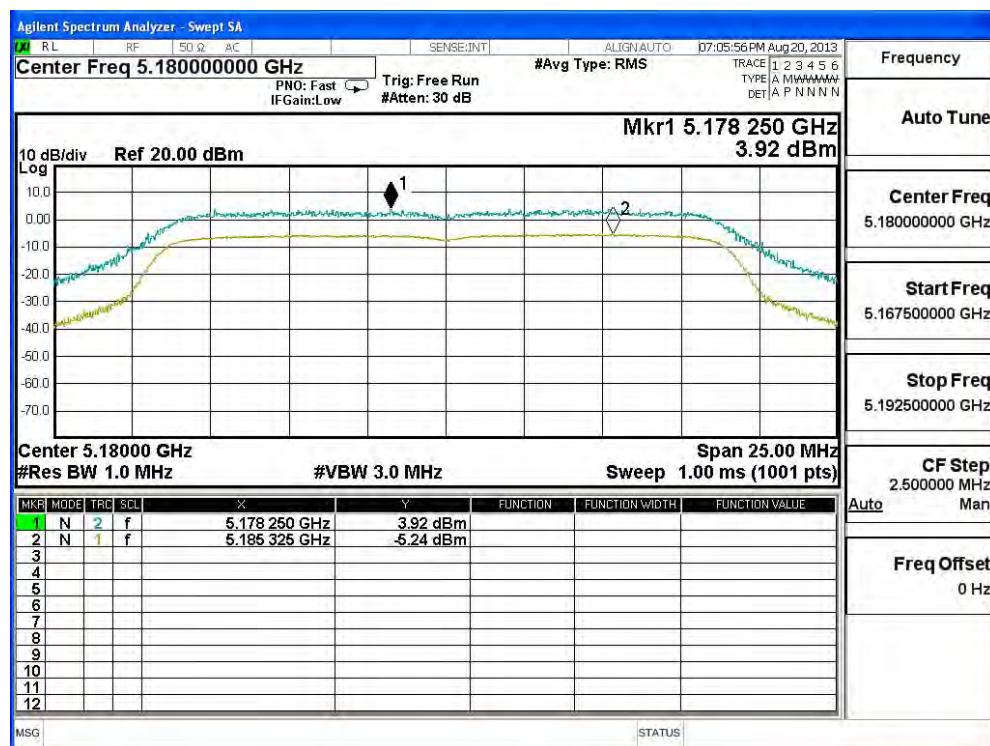


Chain C

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	9.430	<13	Pass
		MCS (2)	10.090	<13	Pass
		MCS (4)	9.290	<13	Pass
		MCS (7)	9.160	<13	Pass

Channel 36:




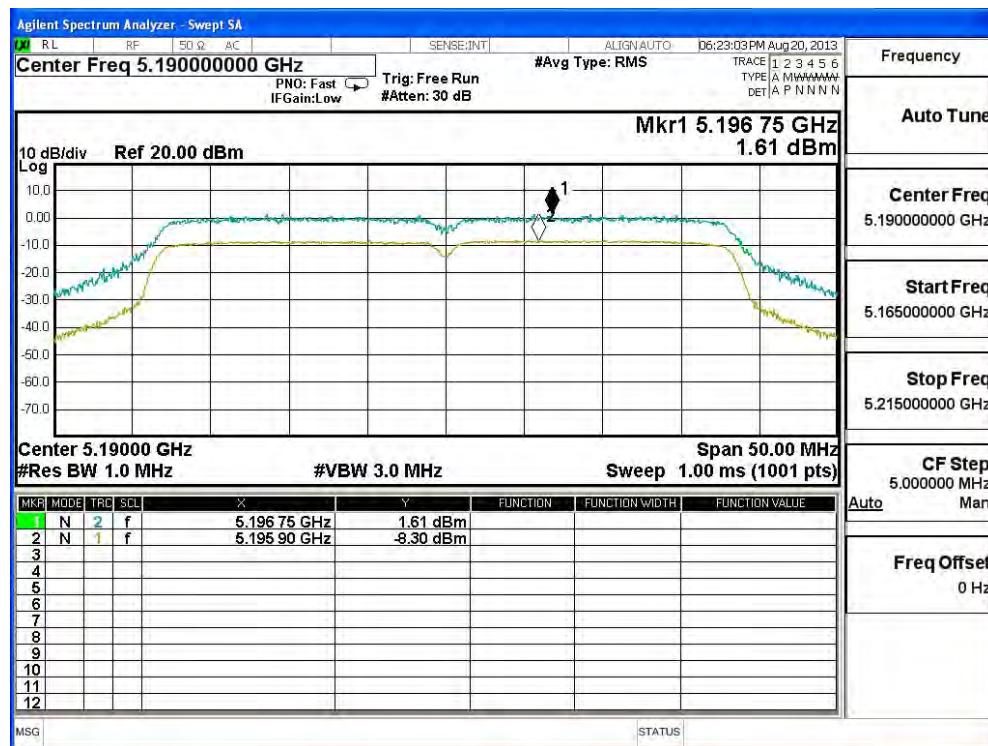


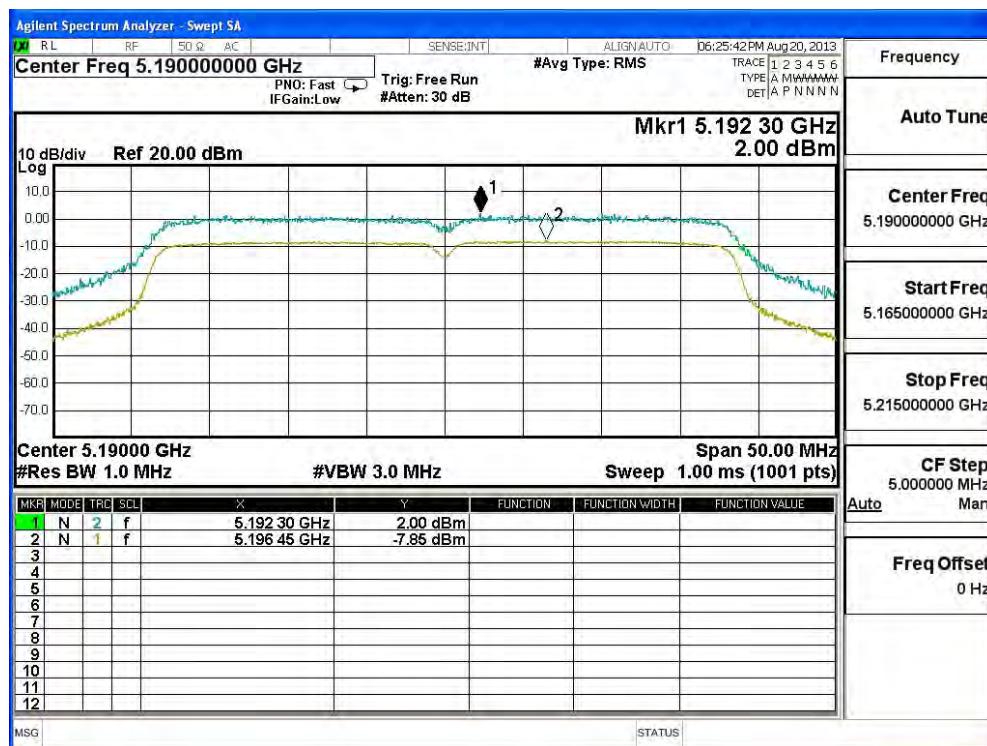
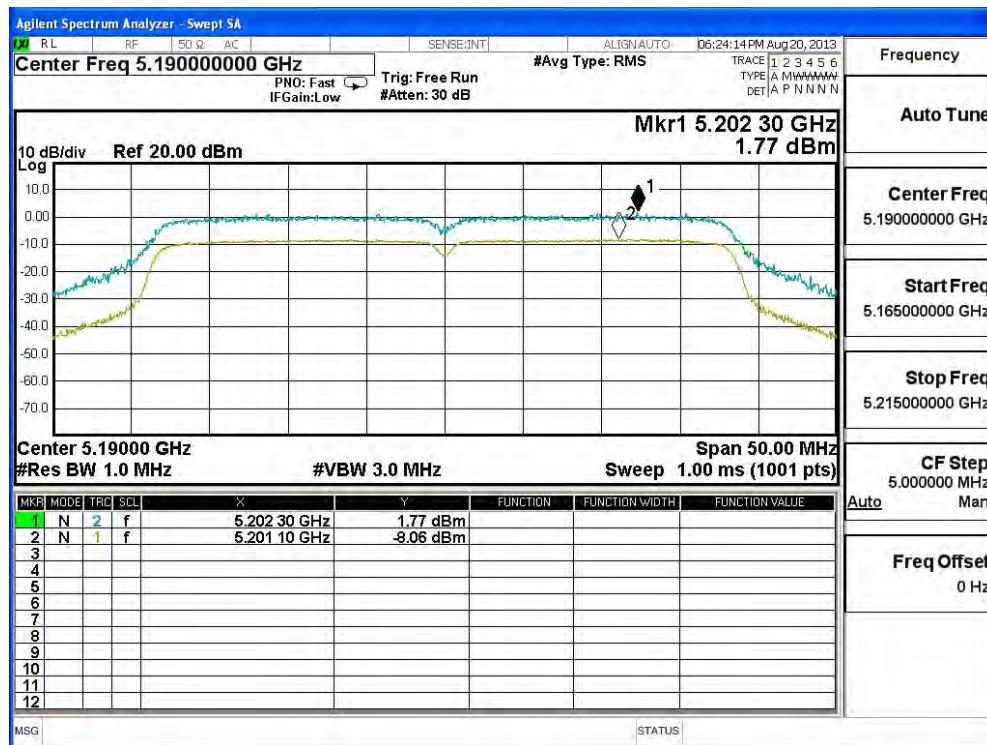
Product : SpectraGuard® Access Point / Sensor
 Test Item : Peak Excursion
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)(Dipole Antenna)

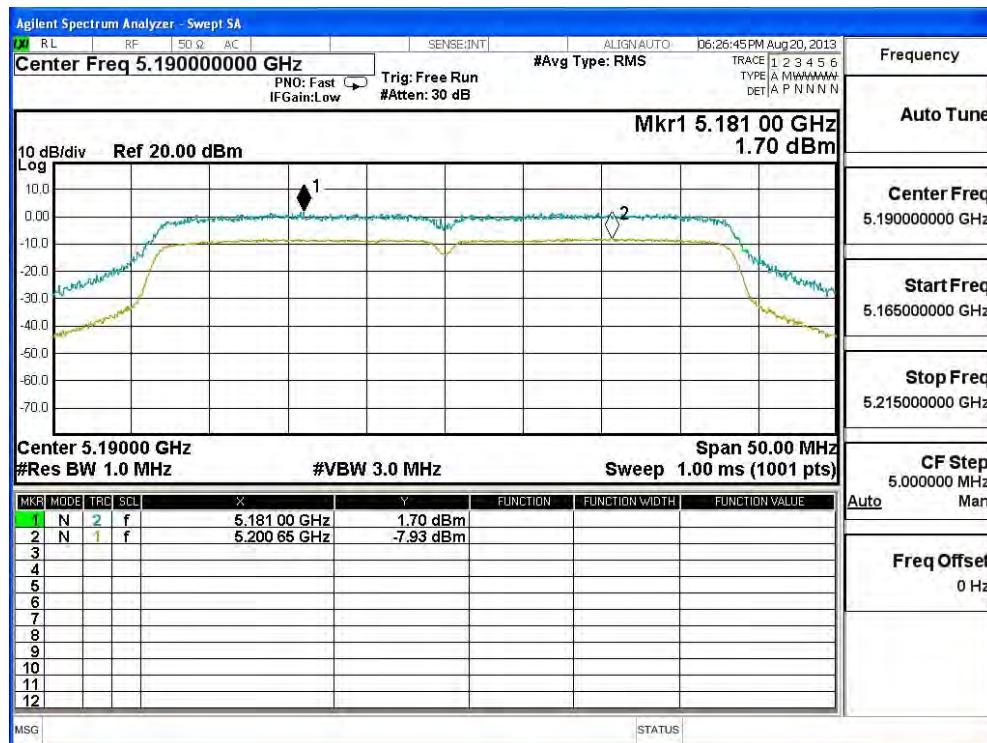
Chain A

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
38	5190	MCS (0)	9.910	<13	Pass
		MCS (2)	9.830	<13	Pass
		MCS (4)	9.850	<13	Pass
		MCS (7)	9.630	<13	Pass

Channel 38:

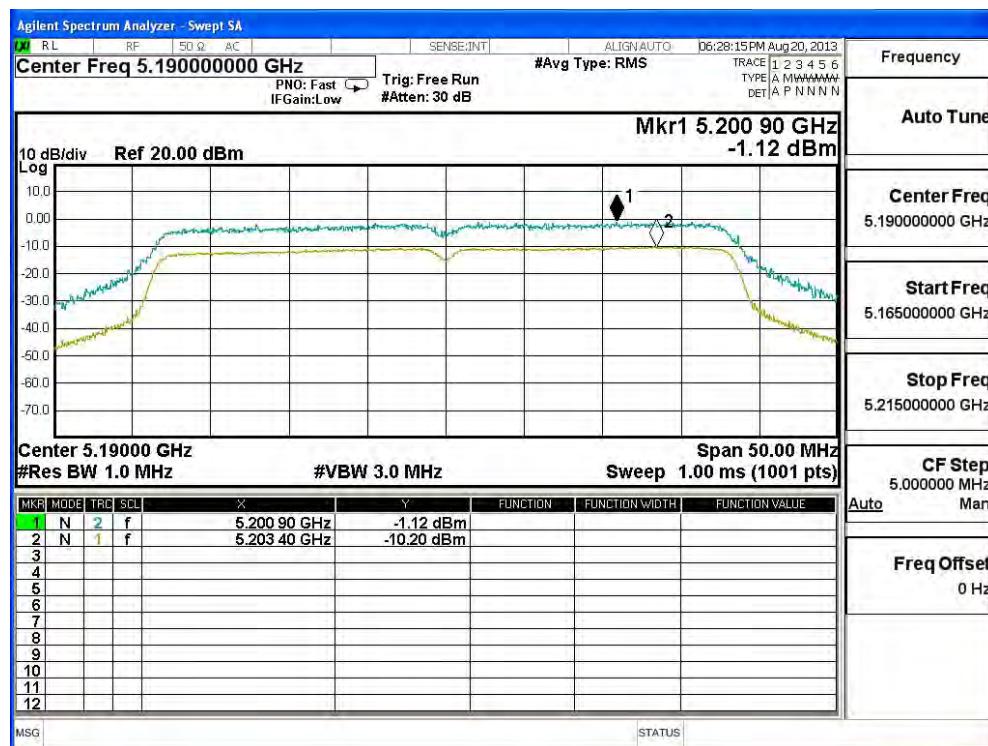


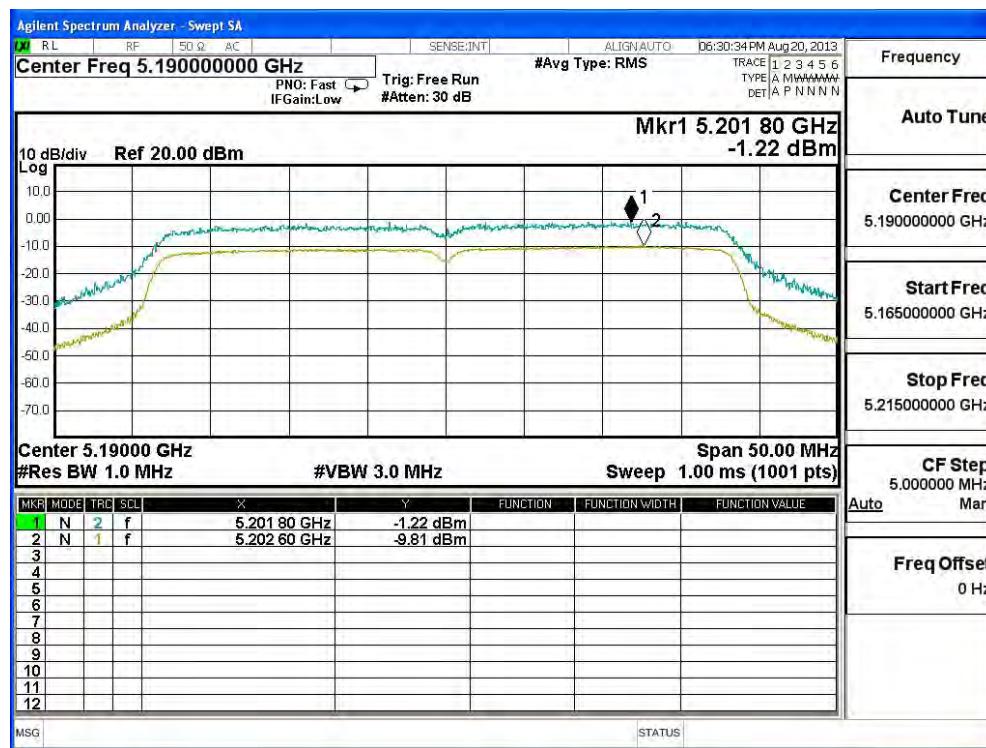
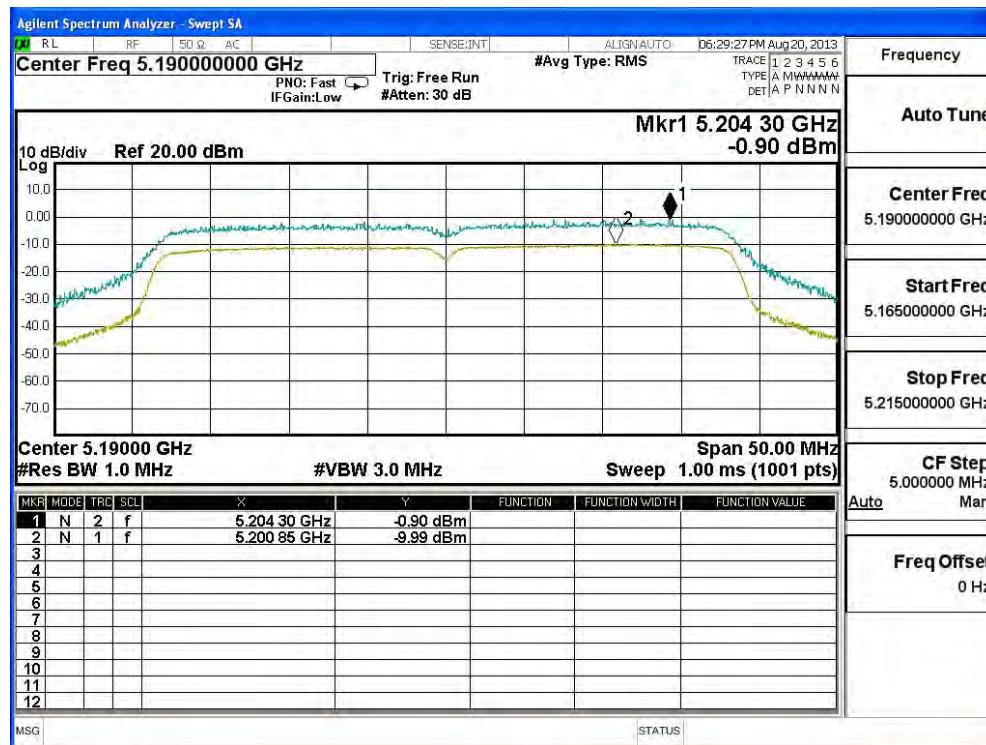


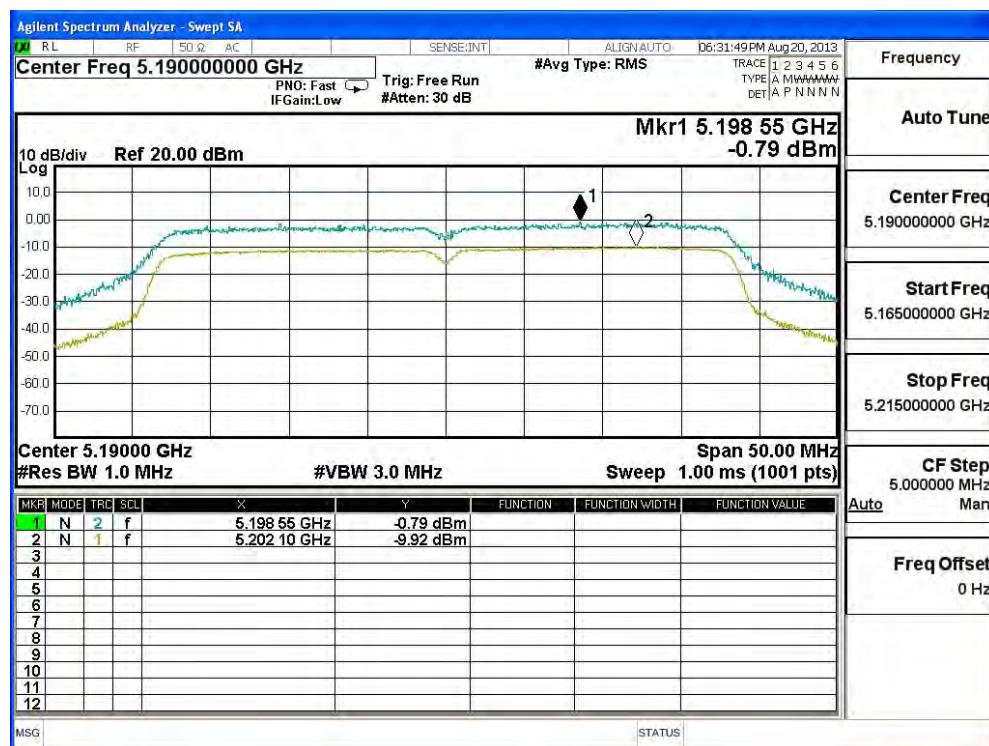


Chain B

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
38	5190	MCS (0)	11.320	<13	Pass
		MCS (2)	10.890	<13	Pass
		MCS (4)	11.030	<13	Pass
		MCS (7)	10.710	<13	Pass

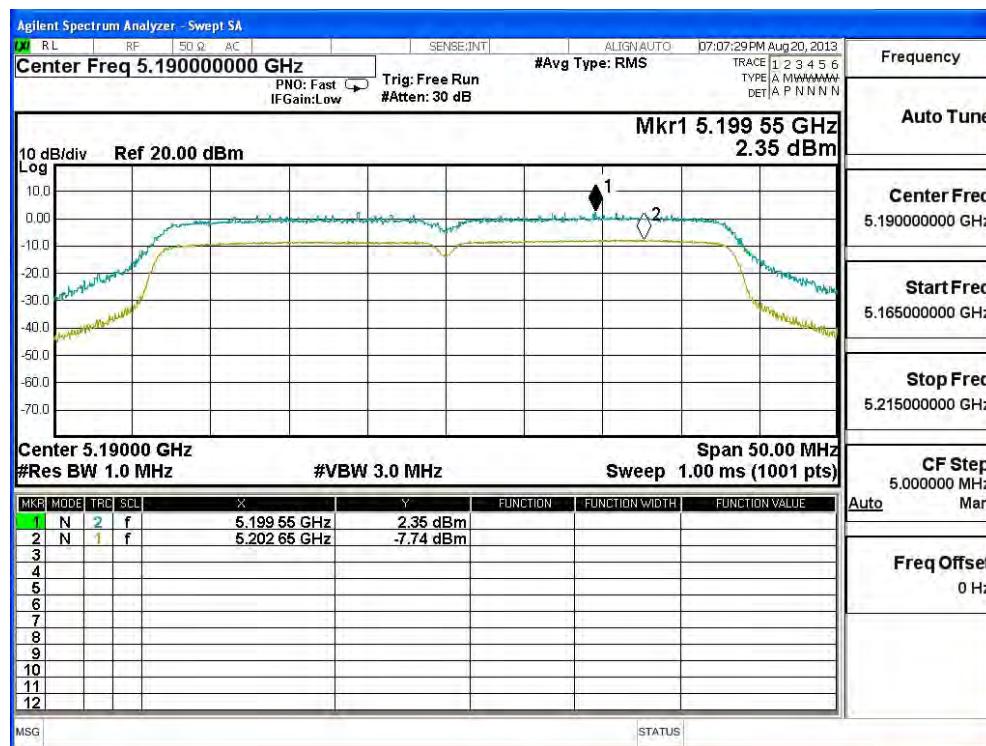
Channel 38:


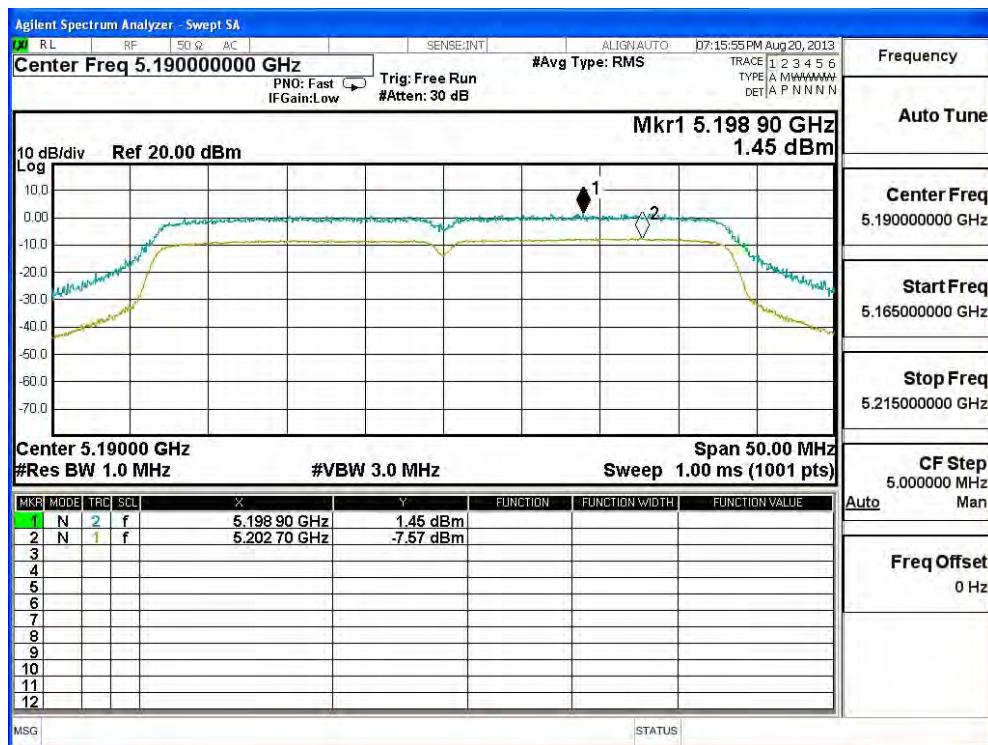
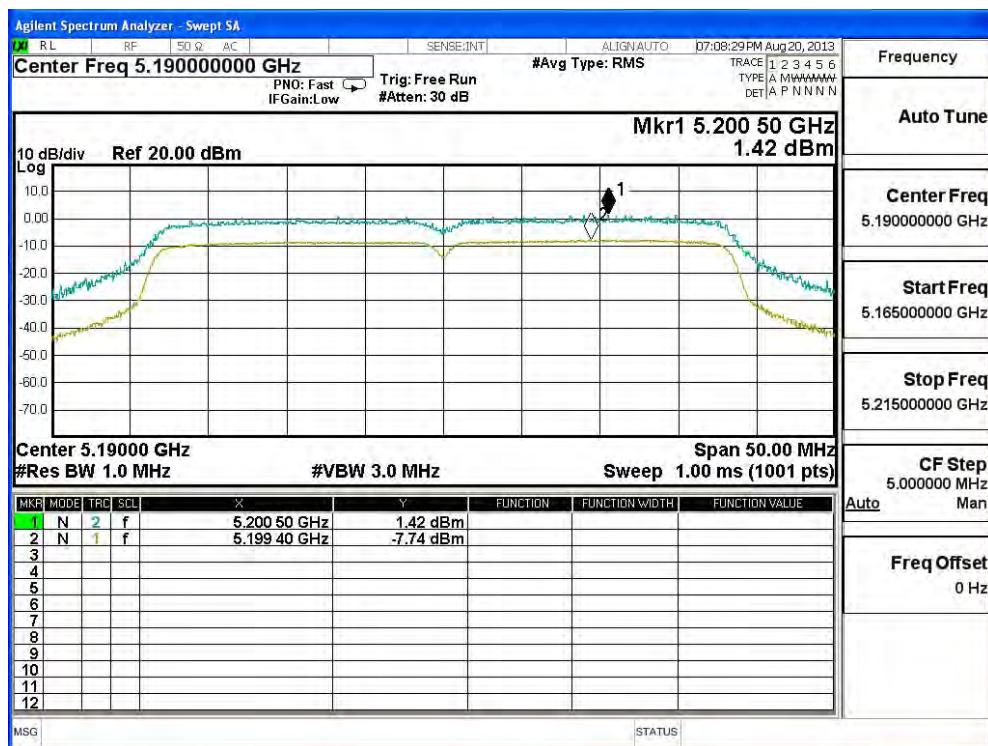


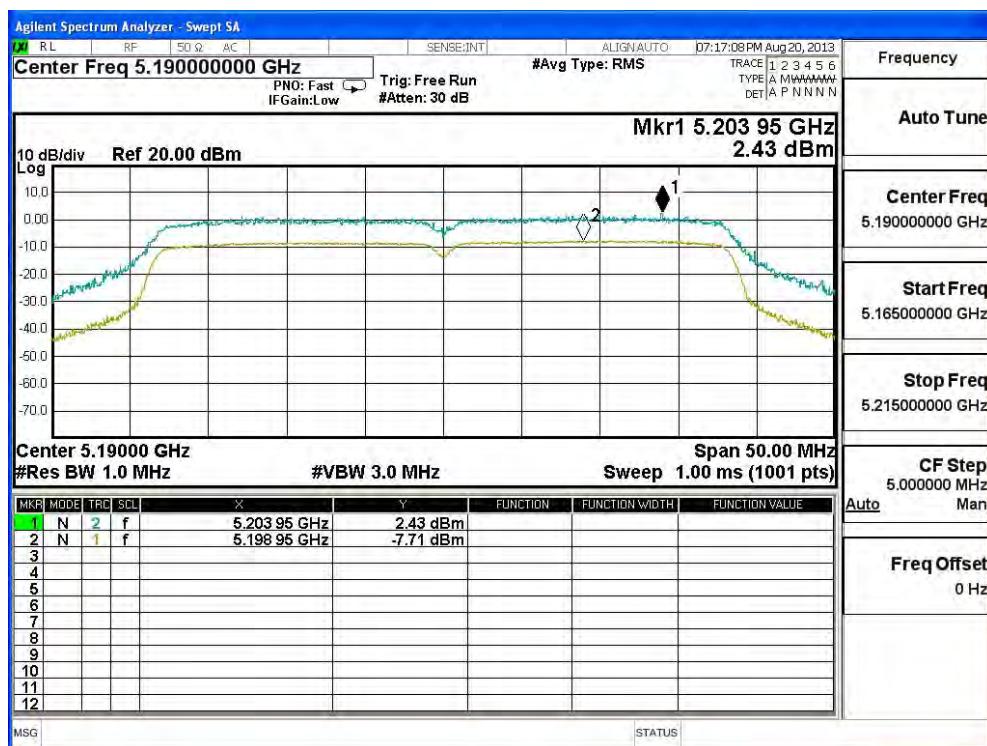


Chain C

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
38	5190	MCS (0)	10.090	<13	Pass
		MCS (2)	9.160	<13	Pass
		MCS (4)	9.020	<13	Pass
		MCS (7)	10.140	<13	Pass

Channel 38:



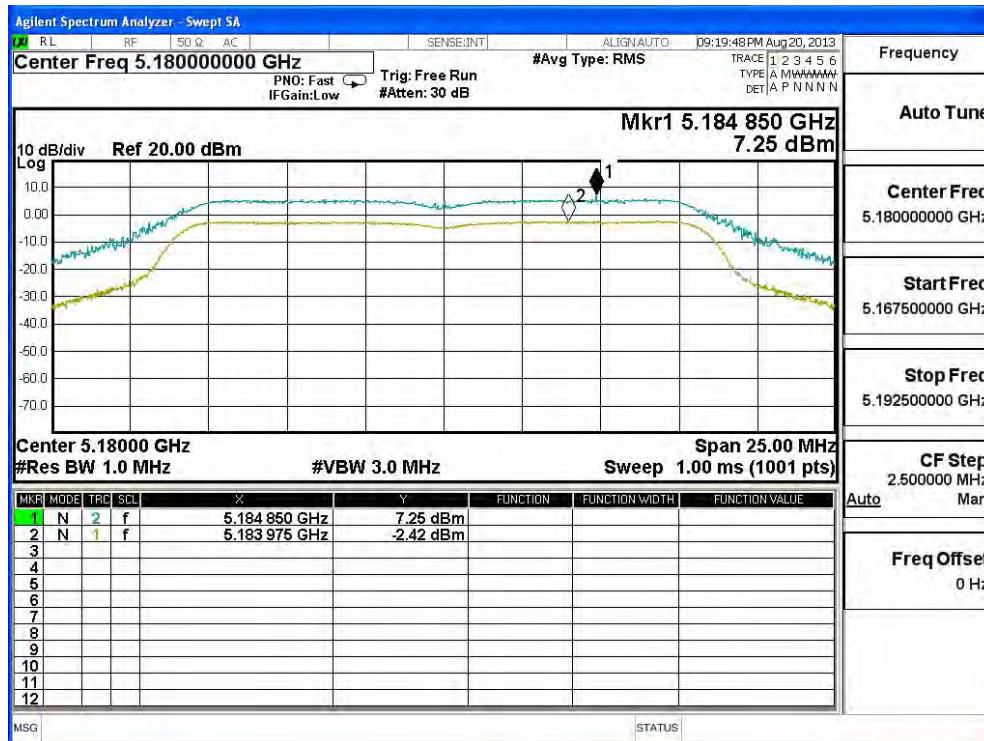


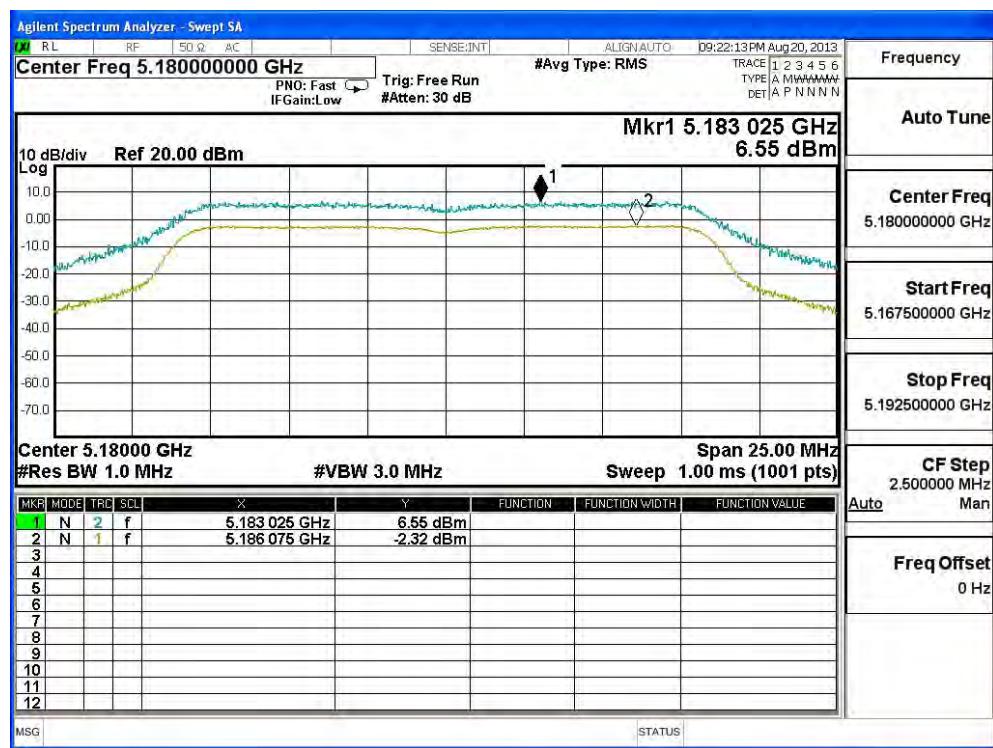
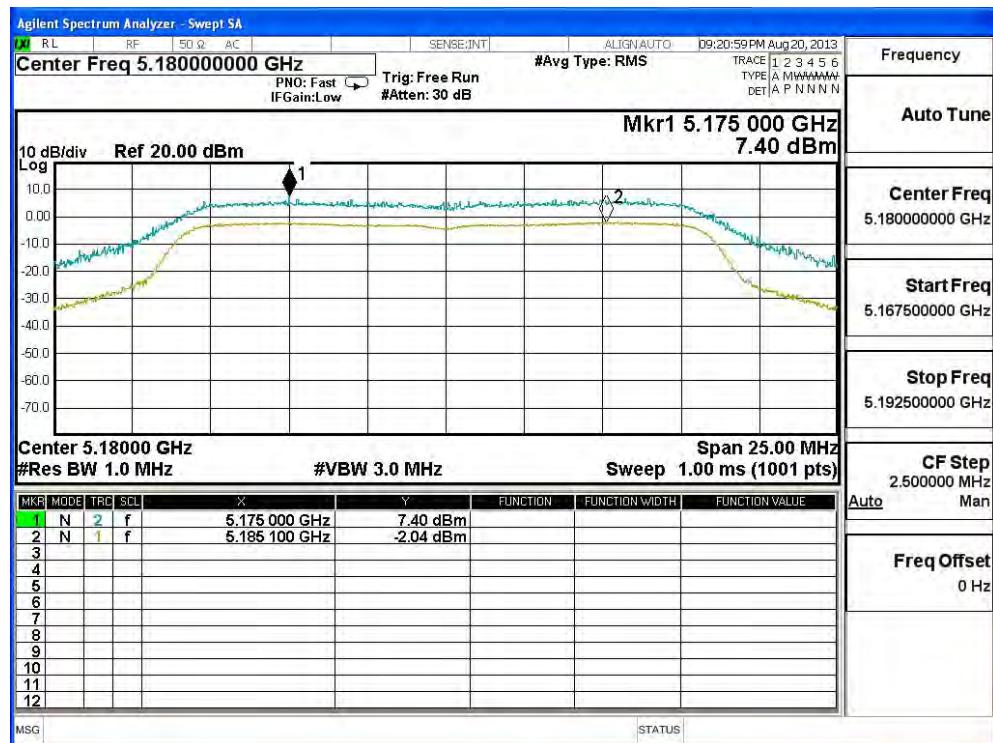
Product : SpectraGuard® Access Point / Sensor
 Test Item : Peak Excursion
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna)

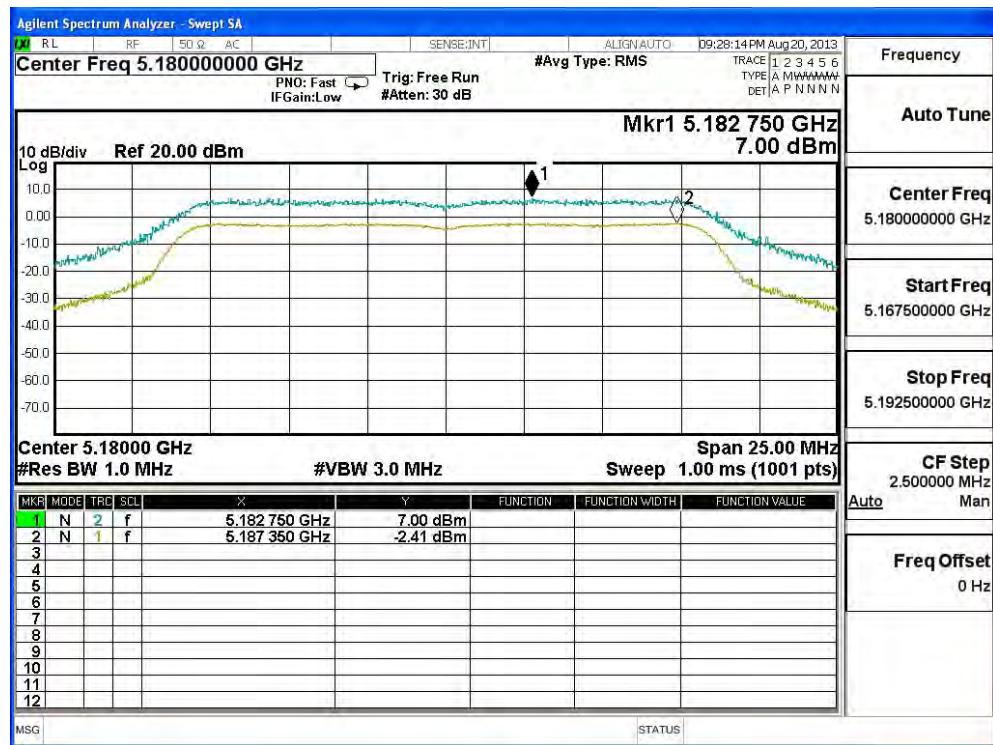
CHAIN A

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	9.670	<13	Pass
		MCS (2)	9.440	<13	Pass
		MCS (4)	8.870	<13	Pass
		MCS (7)	9.410	<13	Pass

Channel 36:

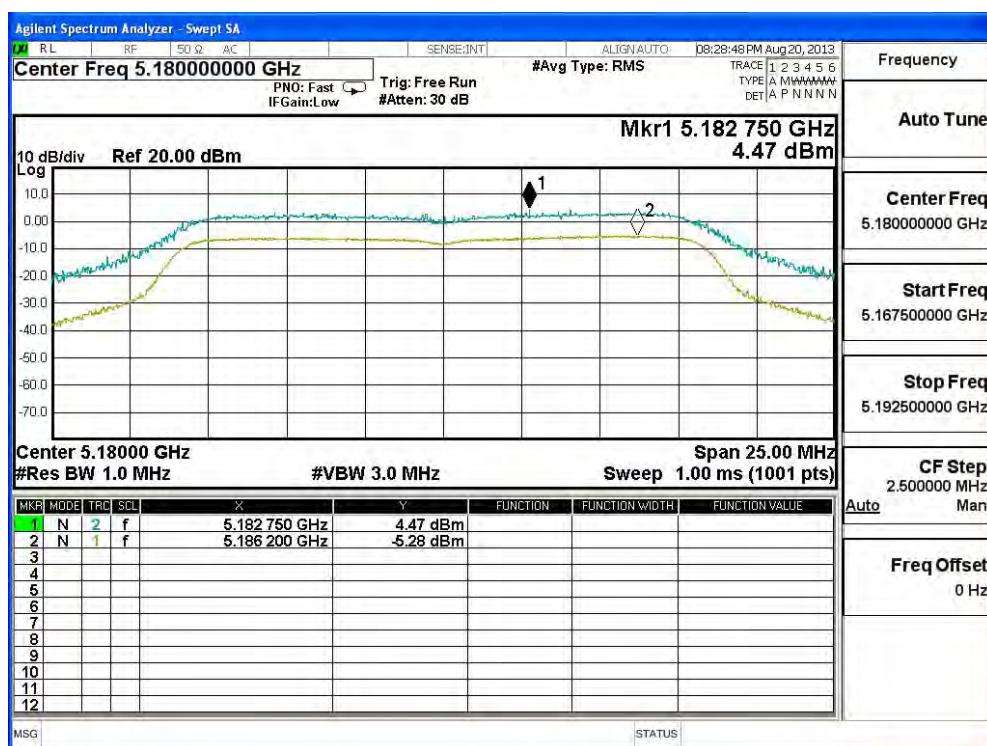


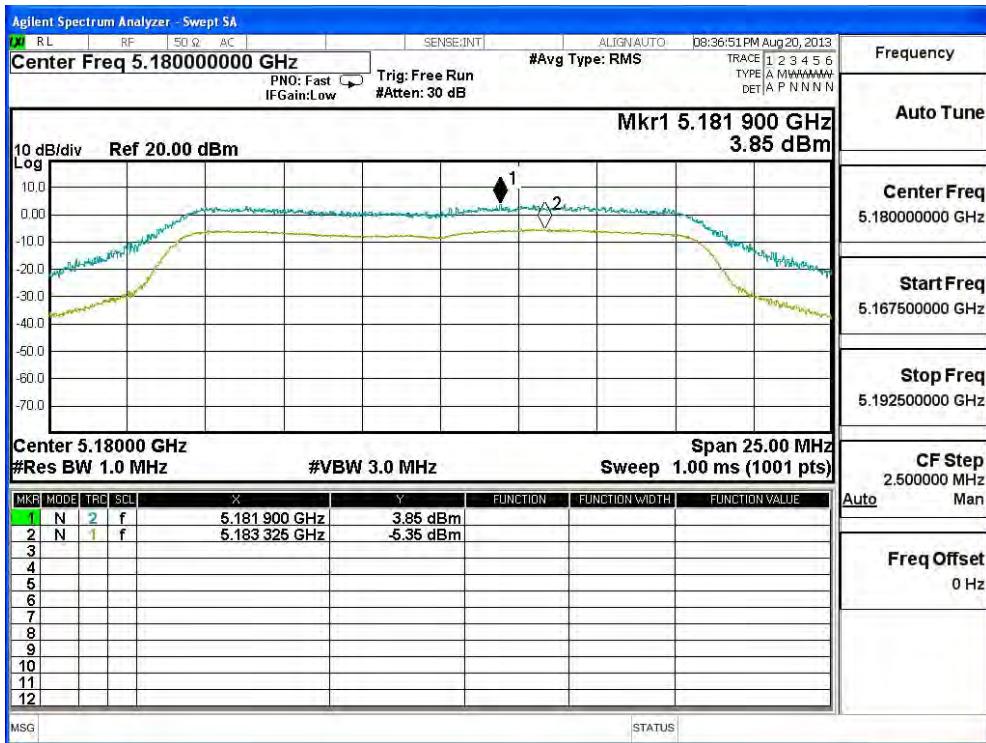
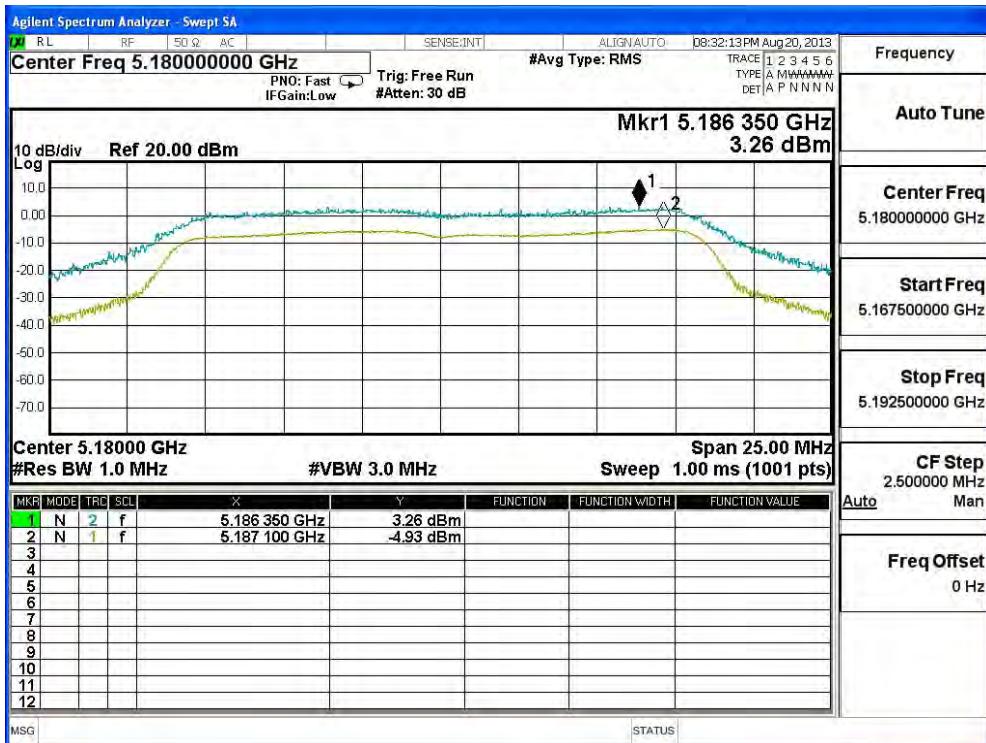


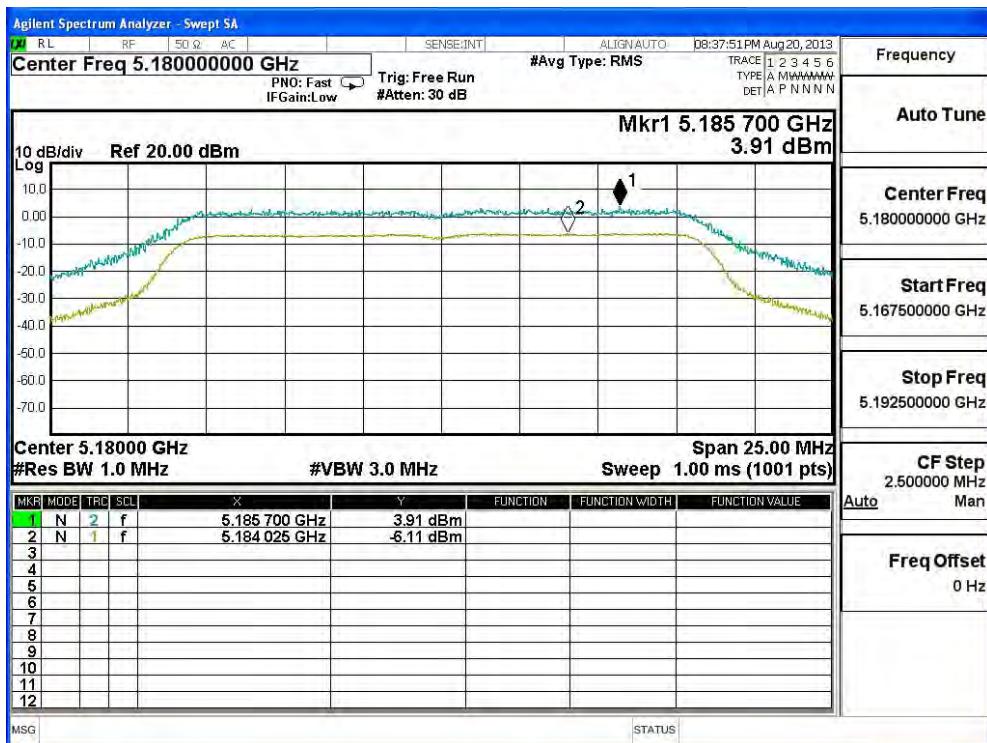


CHAIN B

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	9.750	<13	Pass
		MCS (2)	8.190	<13	Pass
		MCS (4)	9.200	<13	Pass
		MCS (7)	10.020	<13	Pass

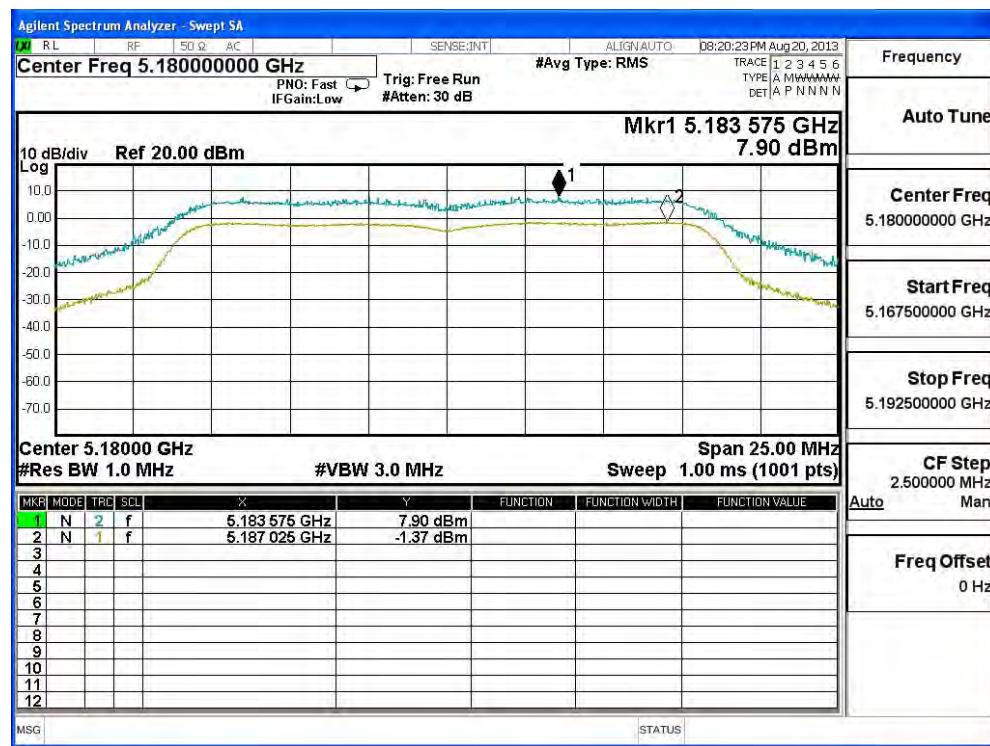
Channel 36:


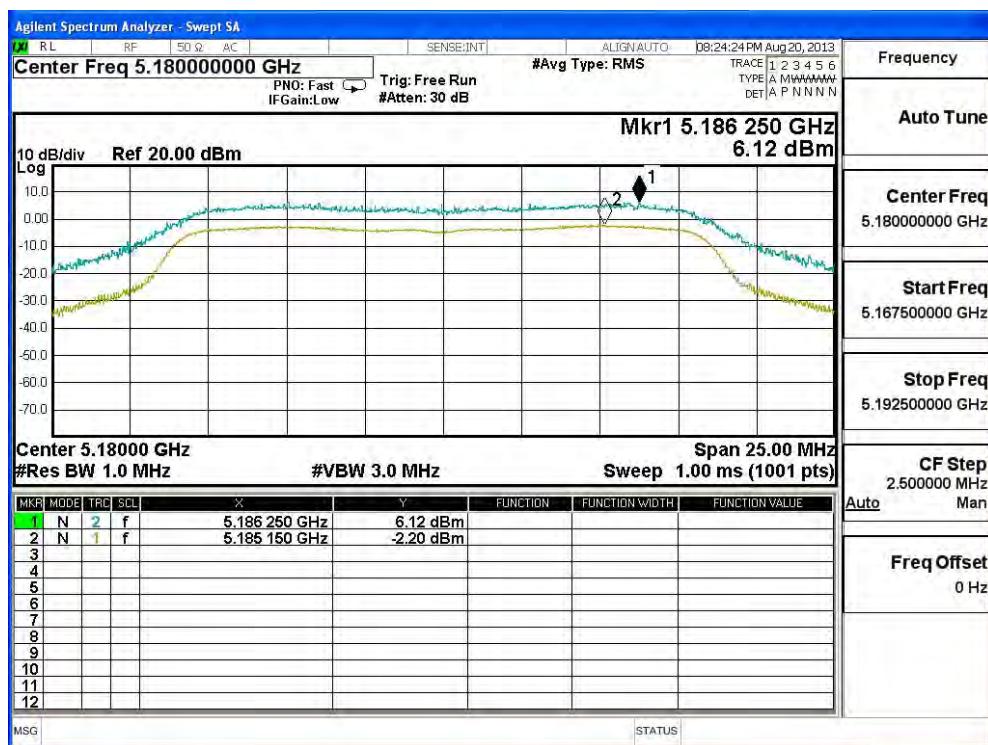
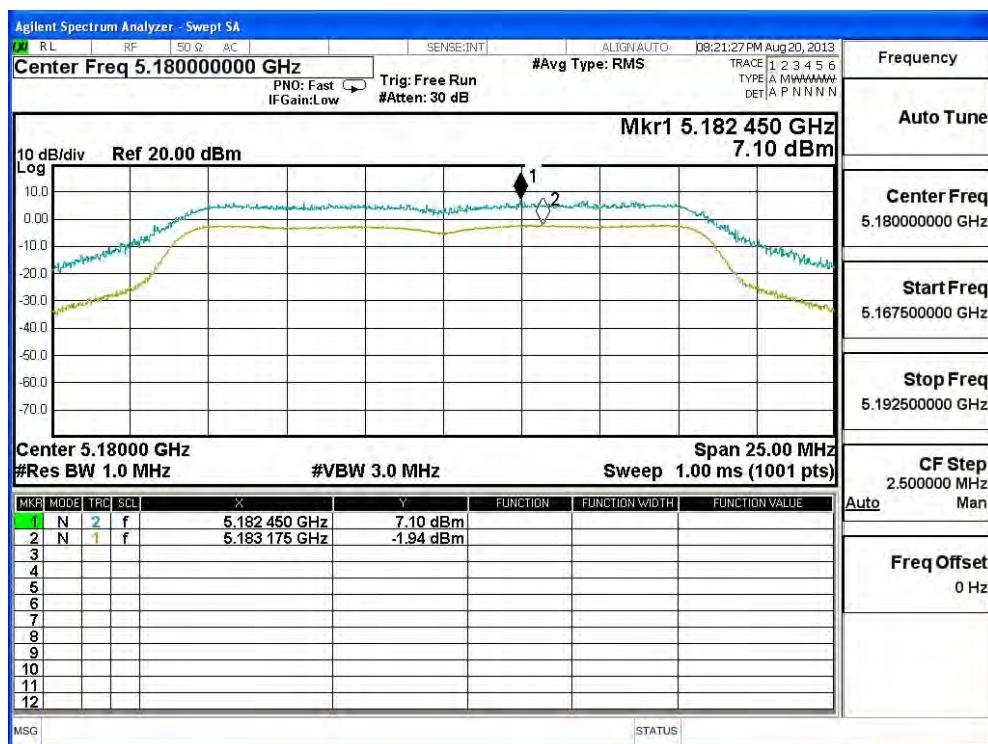


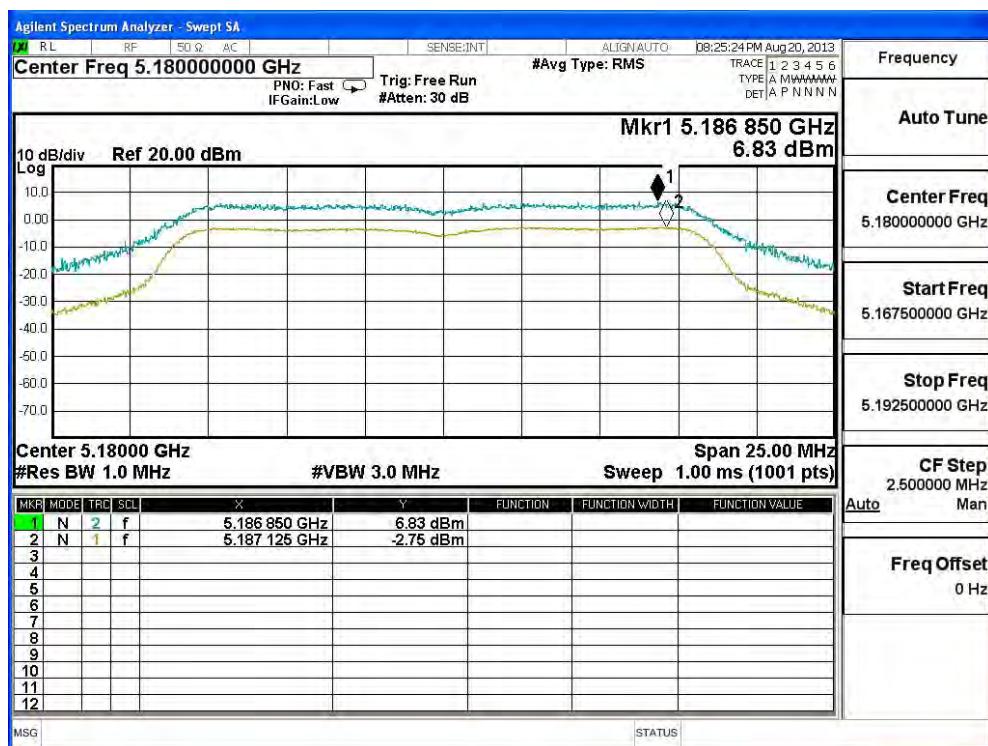


CHAIN C

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	9.270	<13	Pass
		MCS (2)	9.040	<13	Pass
		MCS (4)	8.320	<13	Pass
		MCS (7)	9.580	<13	Pass

Channel 36:




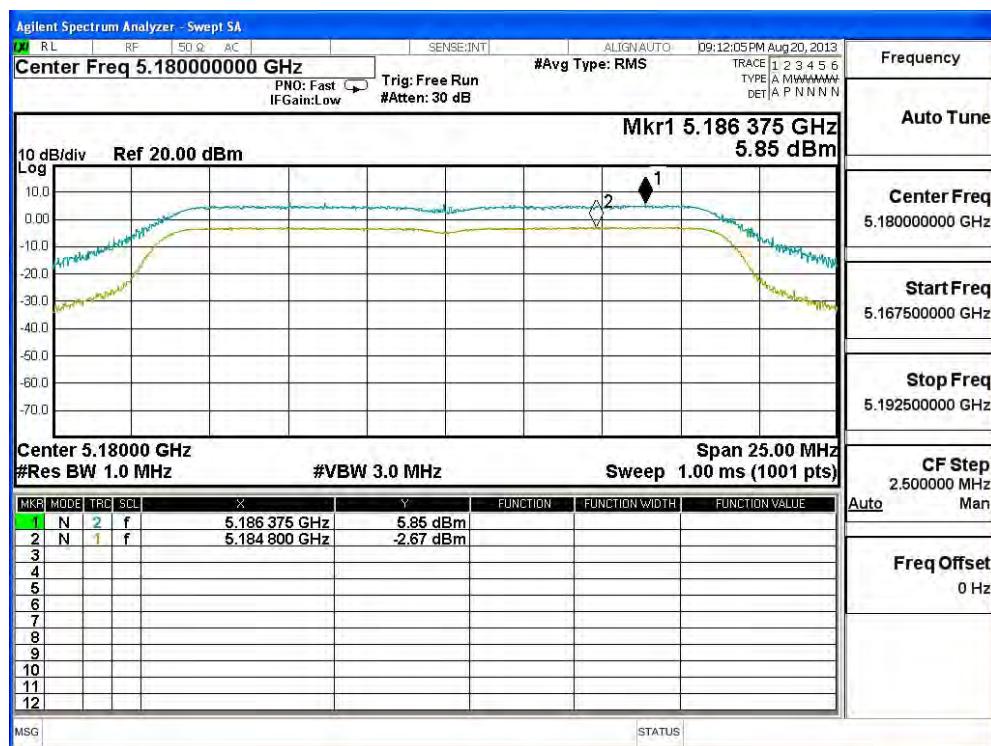


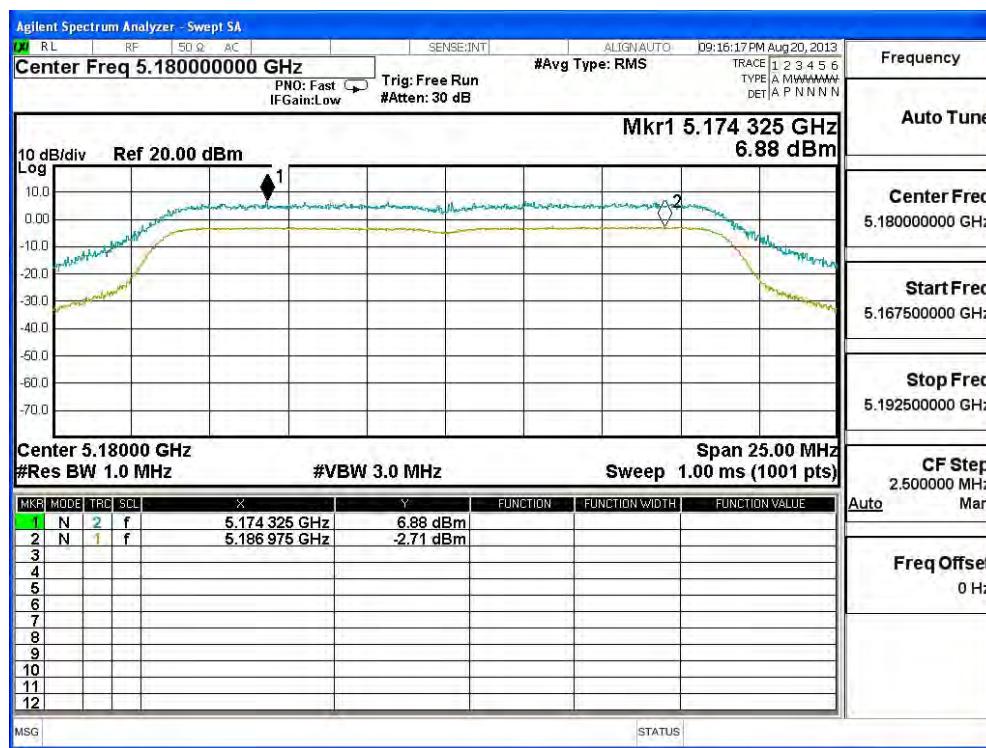
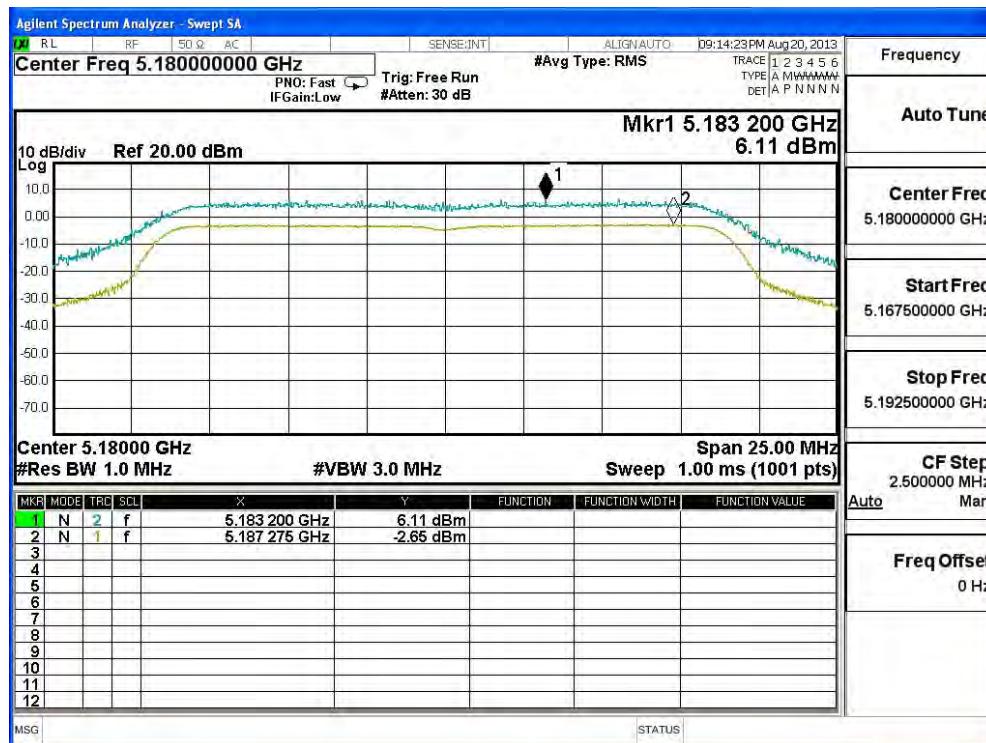
Product : SpectraGuard® Access Point / Sensor
 Test Item : Peak Excursion
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna)

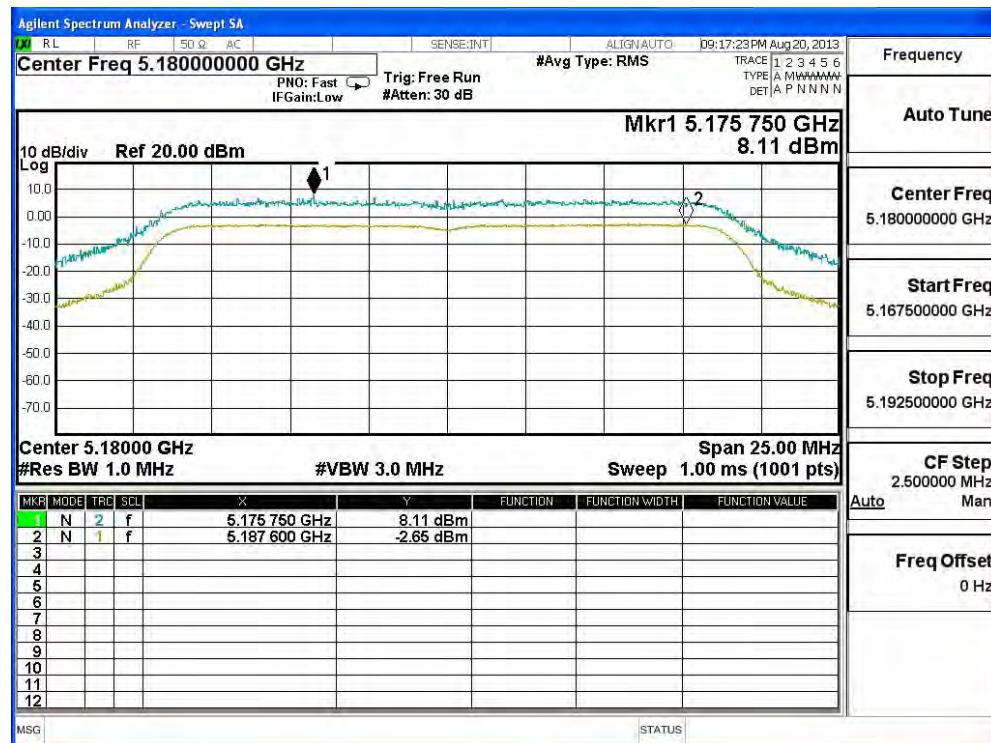
Chain A

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	8.520	<13	Pass
		MCS (2)	8.760	<13	Pass
		MCS (4)	9.590	<13	Pass
		MCS (7)	10.760	<13	Pass

Channel 36:

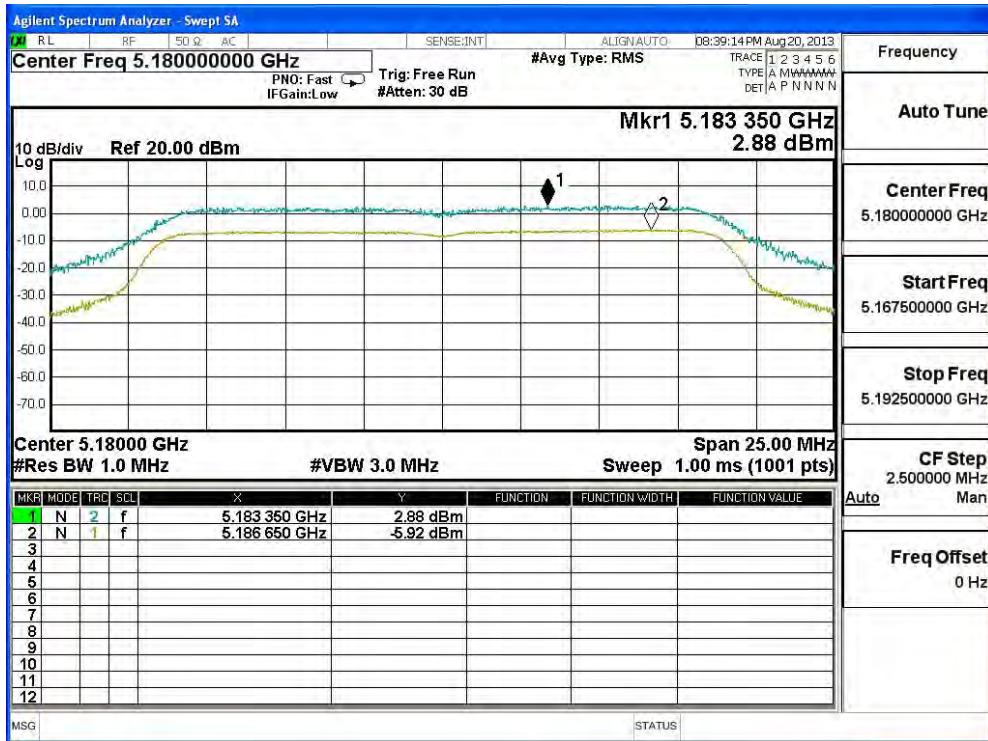


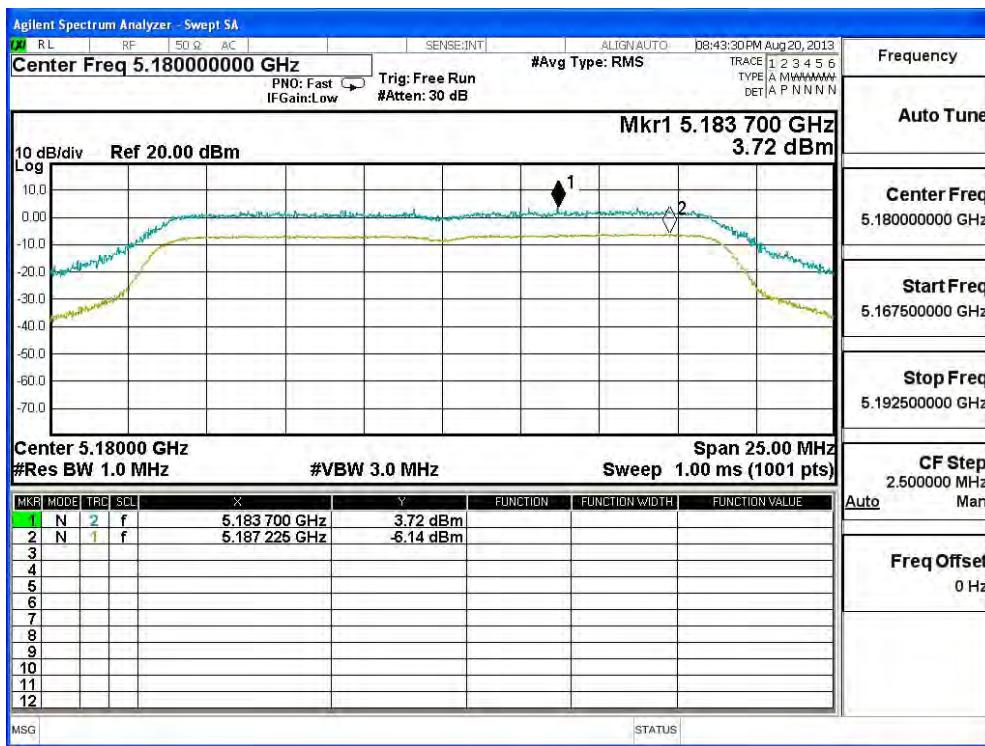
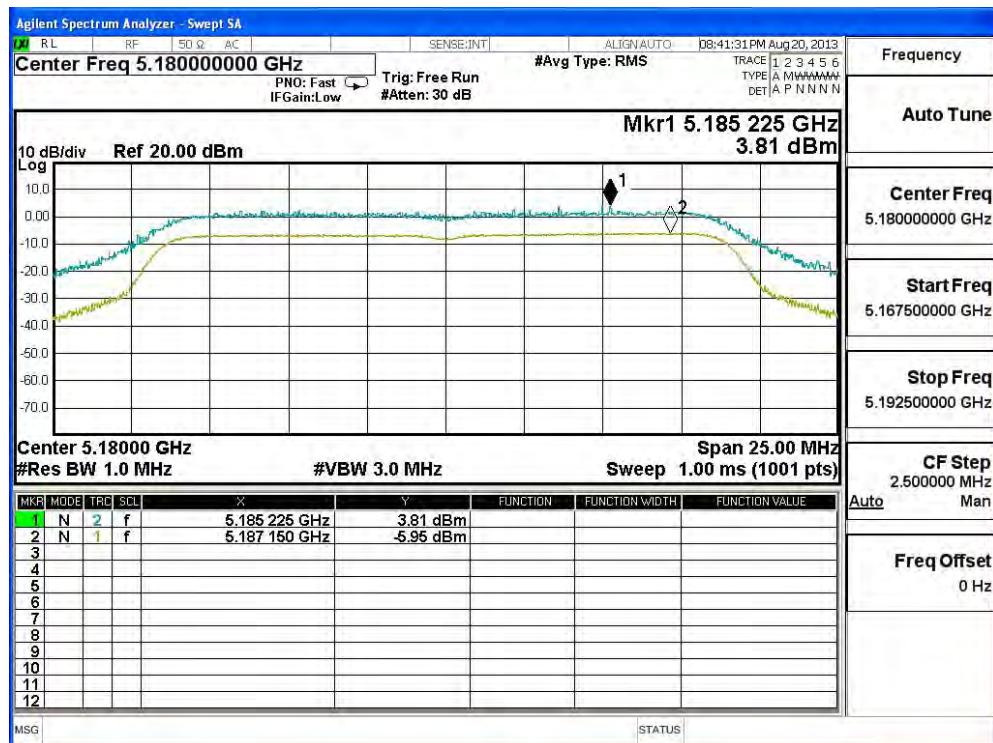


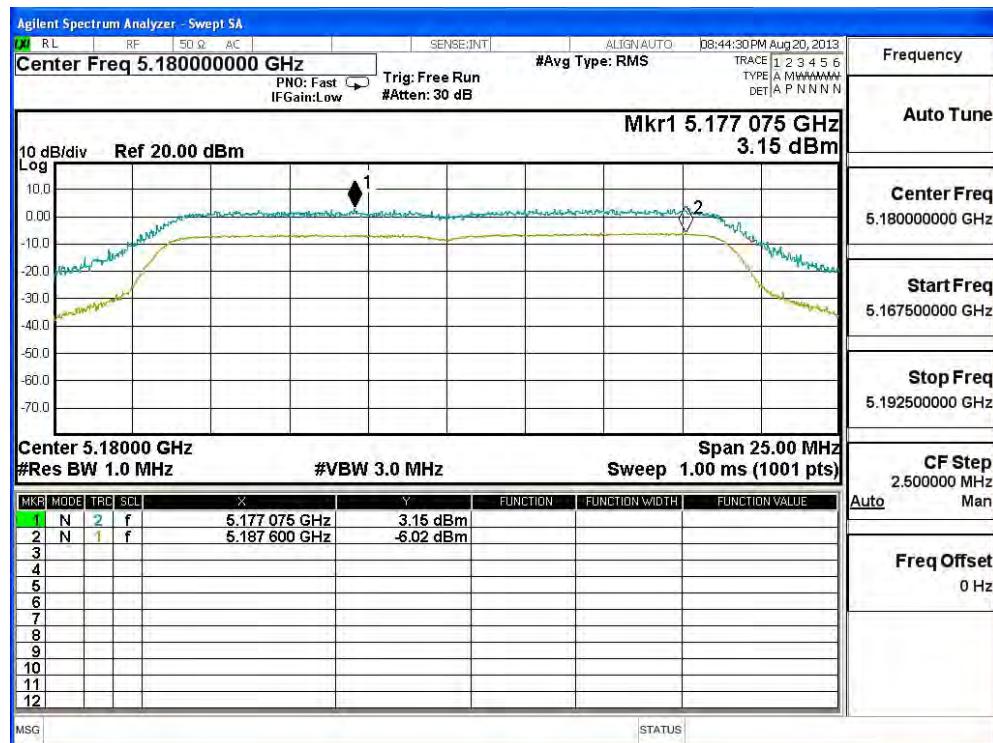


Chain B

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	8.800	<13	Pass
		MCS (2)	9.760	<13	Pass
		MCS (4)	9.860	<13	Pass
		MCS (7)	9.170	<13	Pass

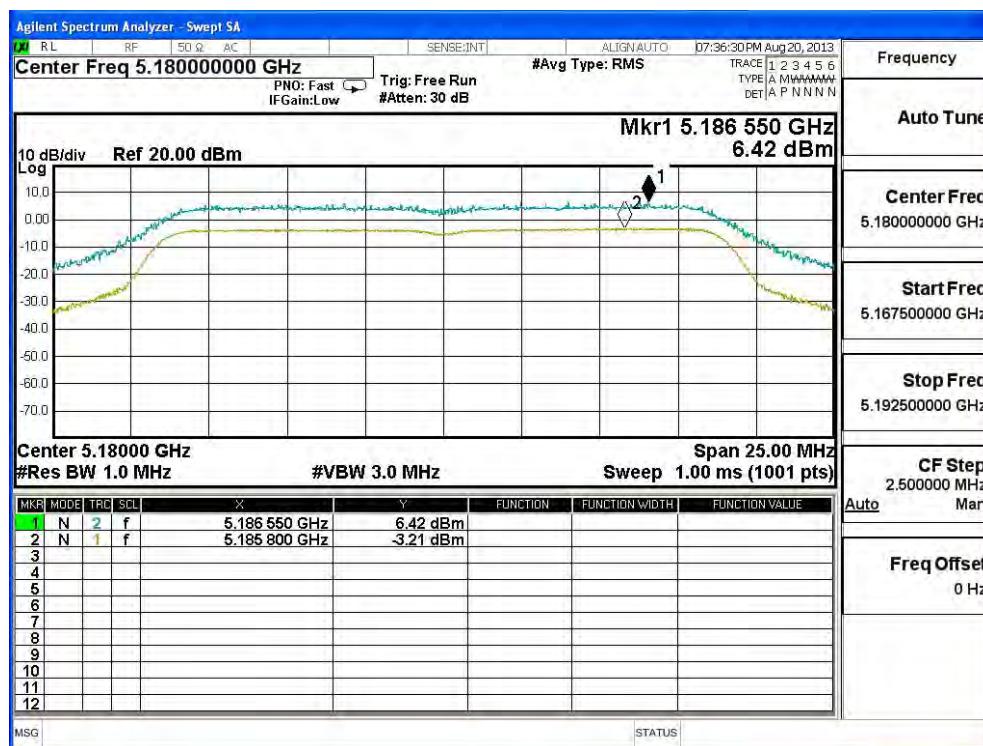
Channel 36:


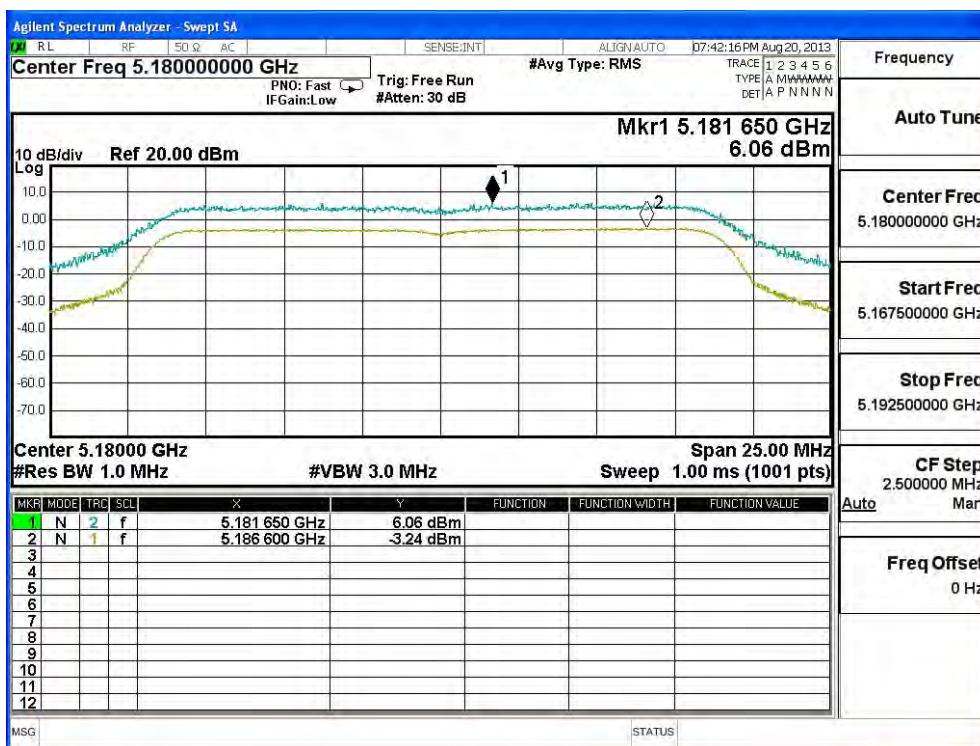
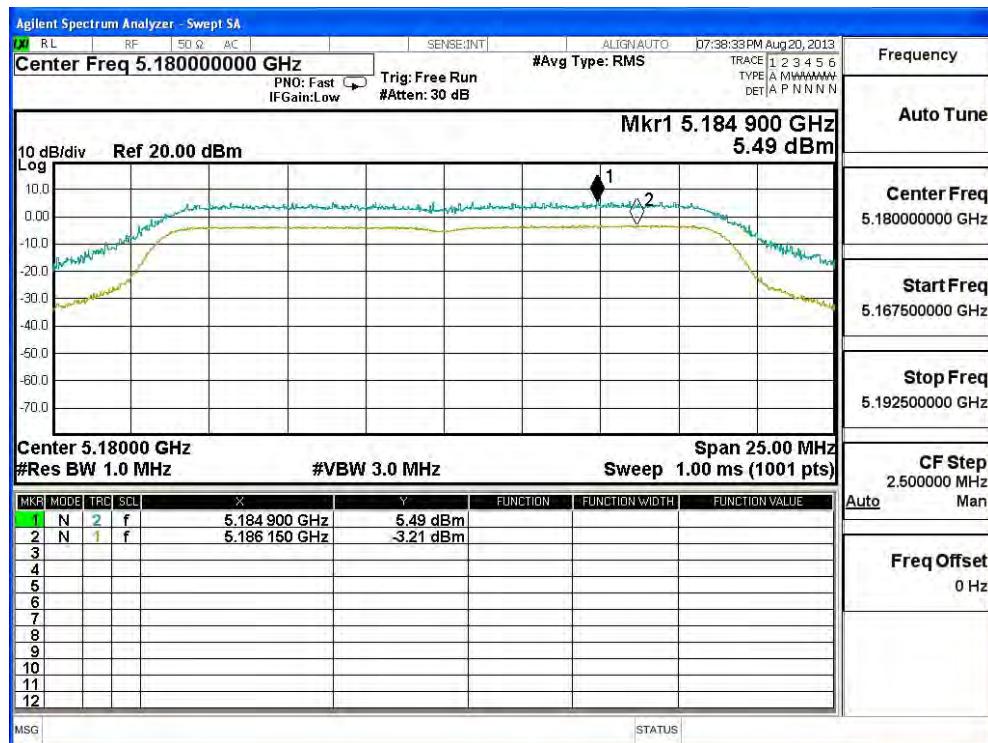


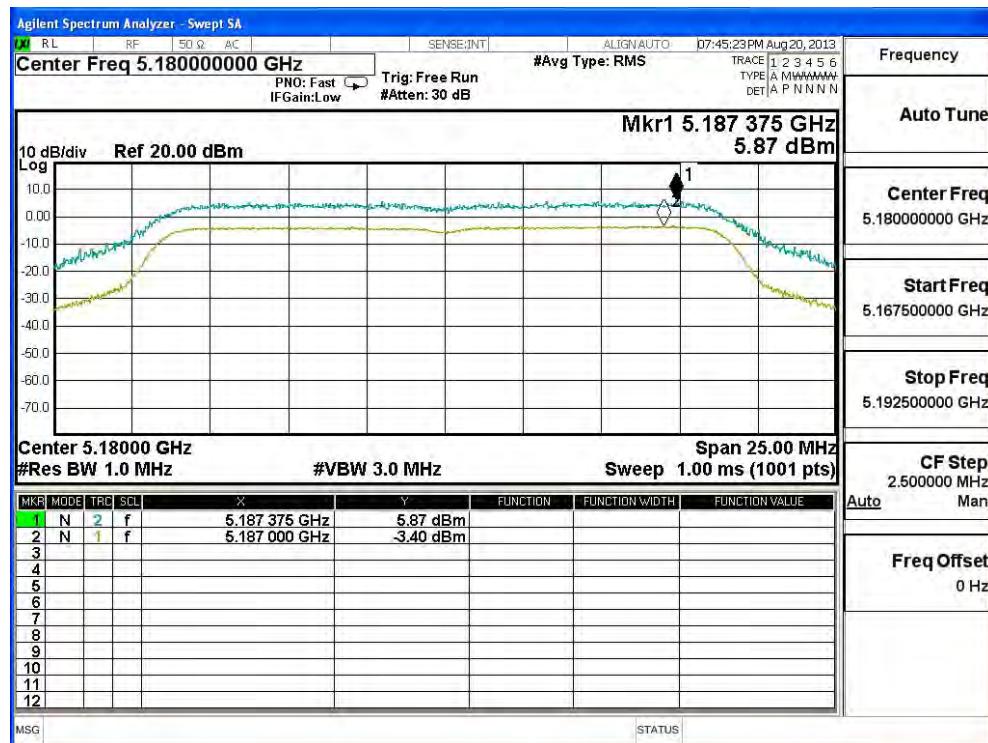


Chain C

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	MCS (0)	9.630	<13	Pass
		MCS (2)	8.700	<13	Pass
		MCS (4)	9.300	<13	Pass
		MCS (7)	9.270	<13	Pass

Channel 36:




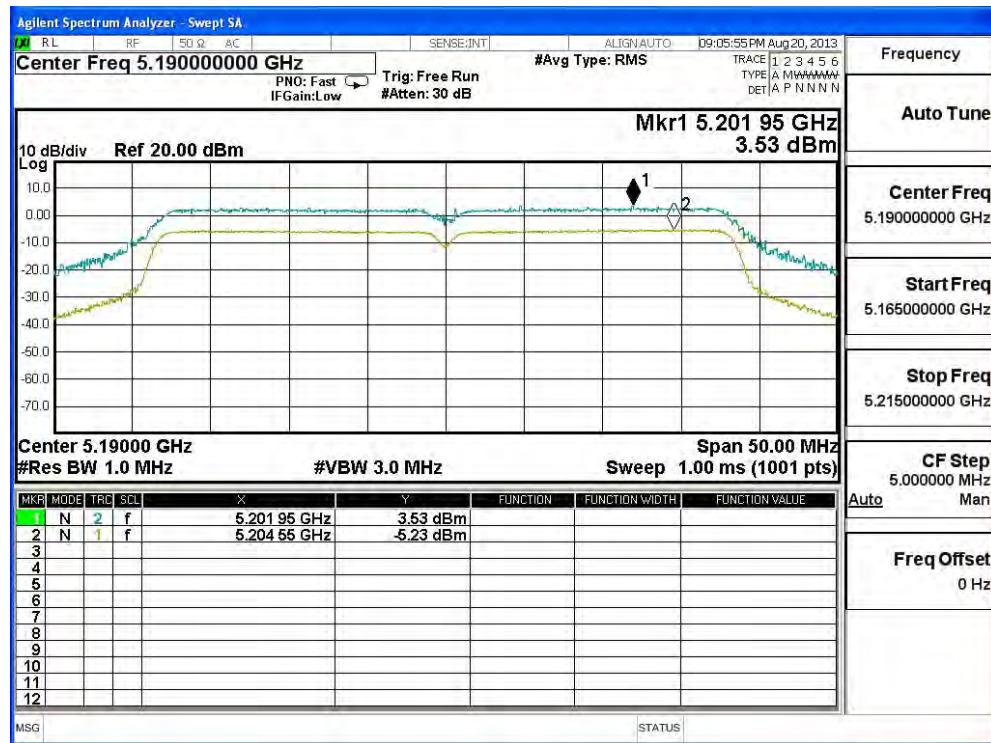


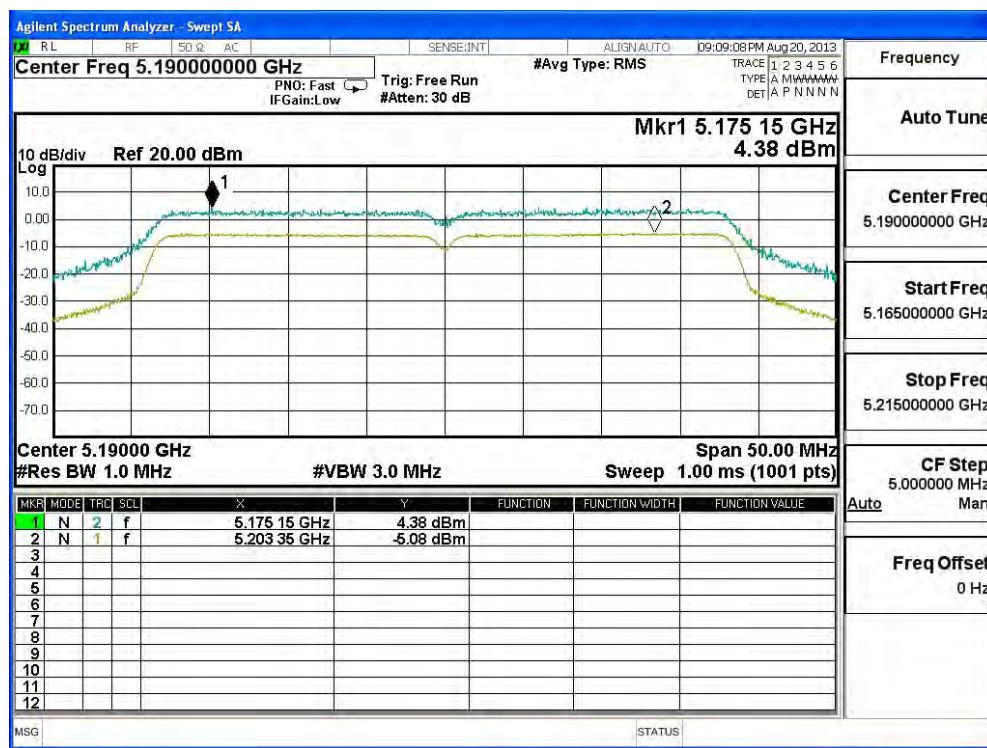
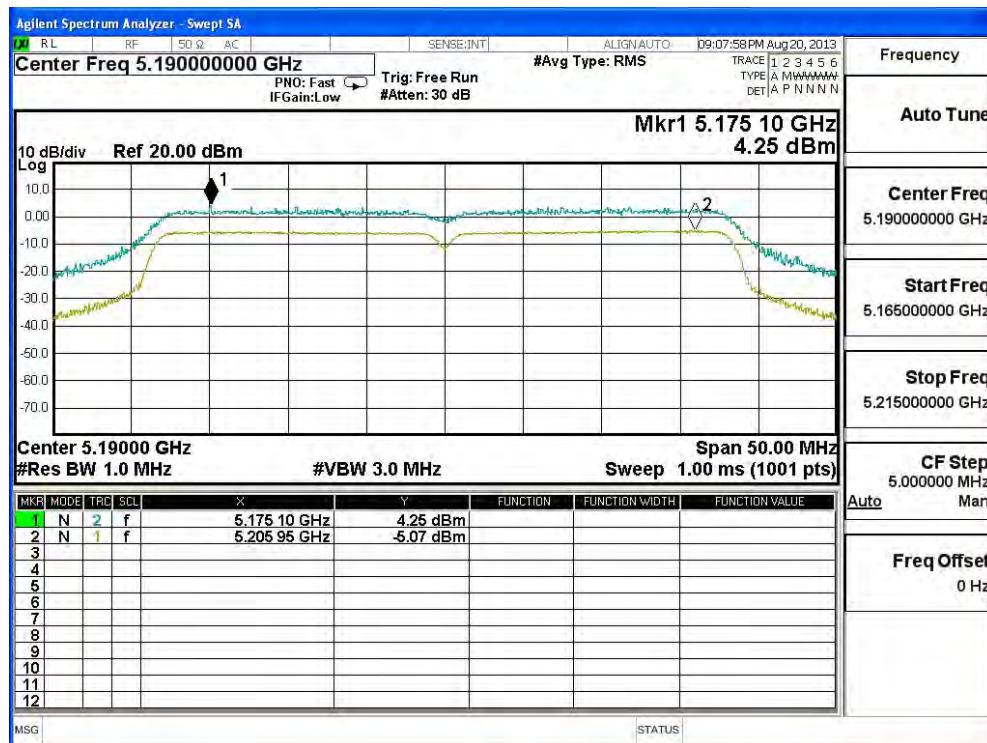
Product : SpectraGuard® Access Point / Sensor
 Test Item : Peak Excursion
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit (802.11n-40BW 45Mbps)(PIFA Antenna)

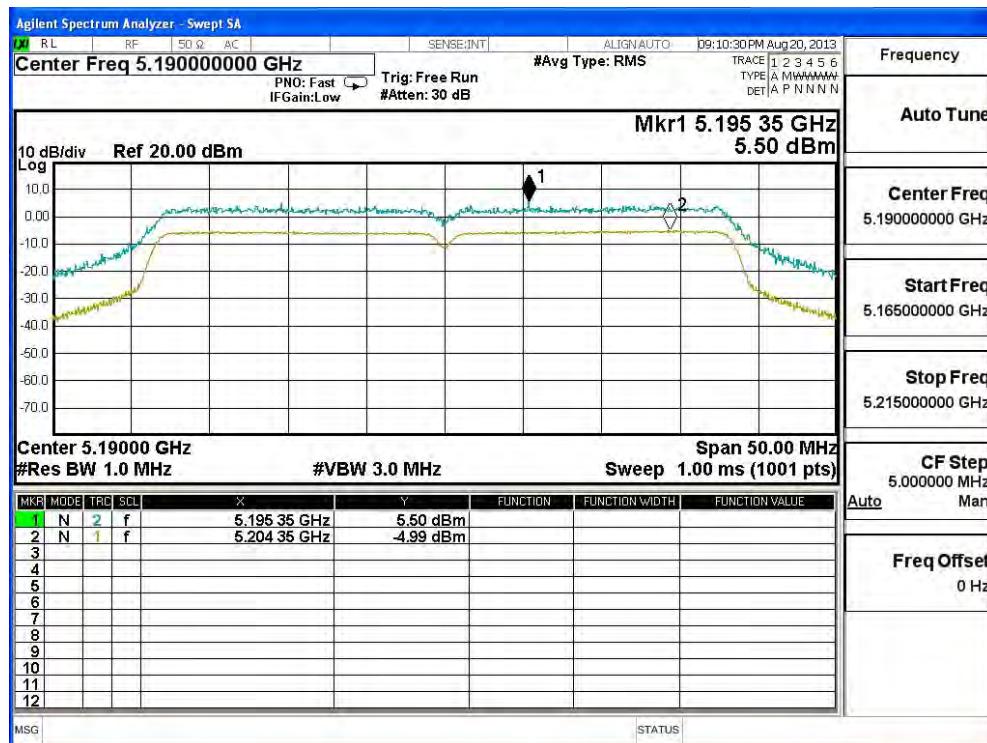
Chain A

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
38	5190	MCS (0)	8.760	<13	Pass
		MCS (2)	9.320	<13	Pass
		MCS (4)	9.460	<13	Pass
		MCS (7)	10.490	<13	Pass

Channel 38:

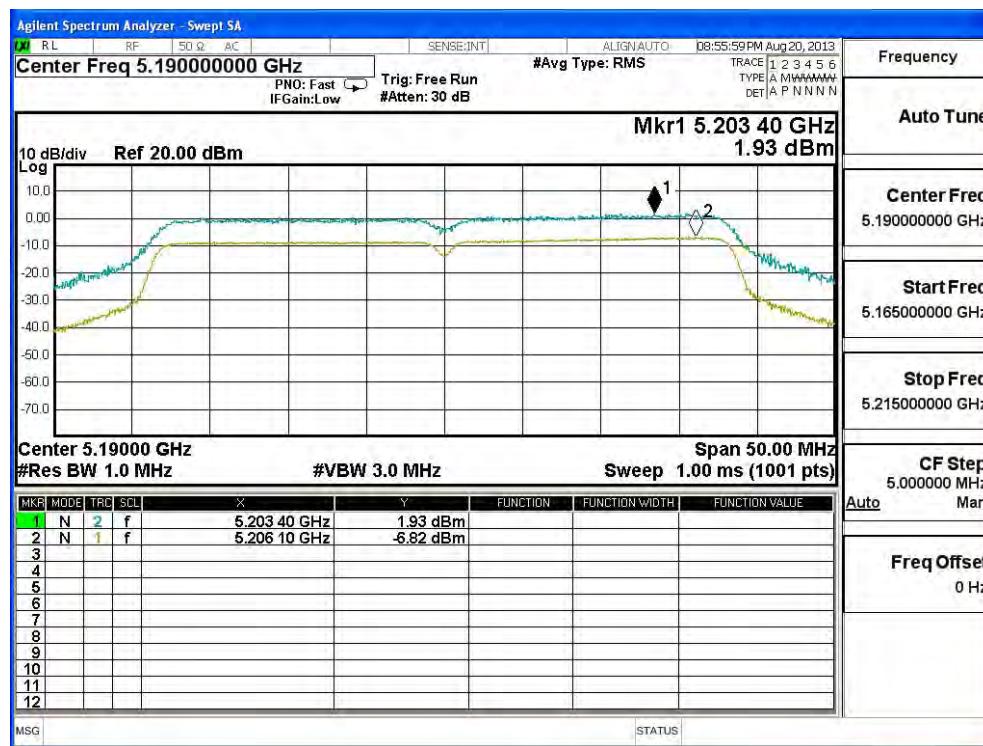


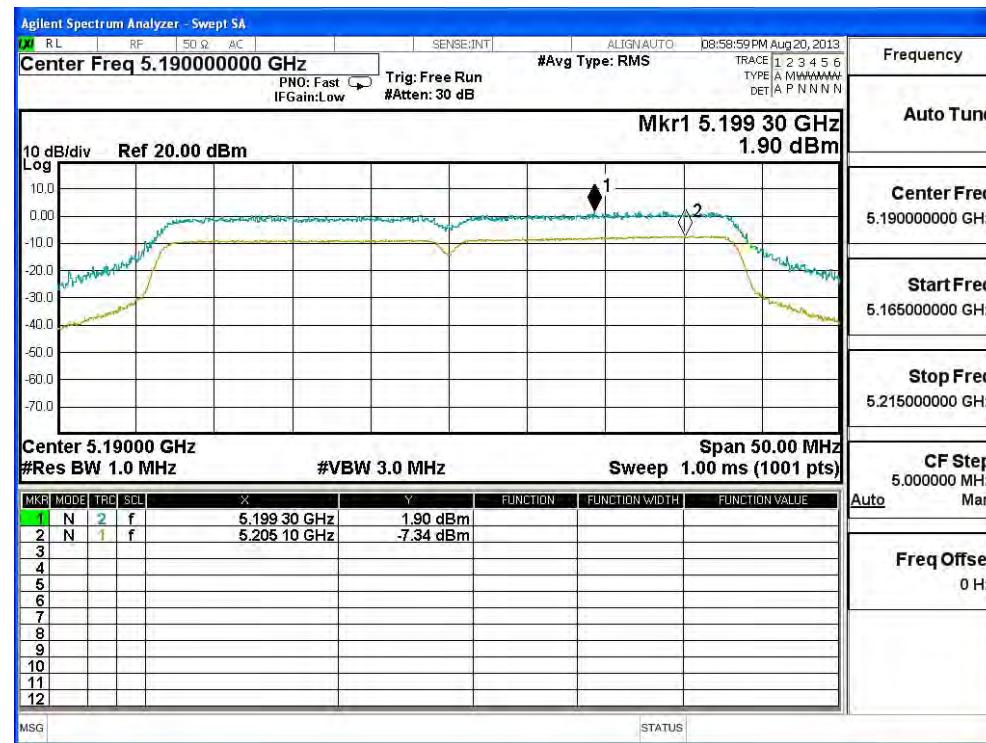
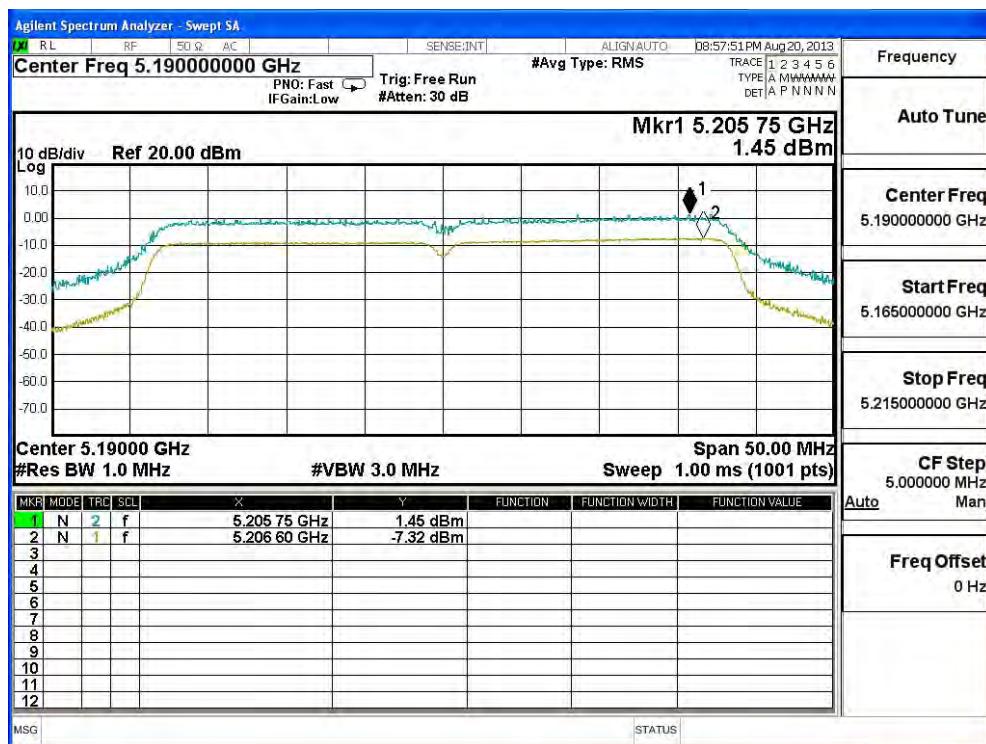


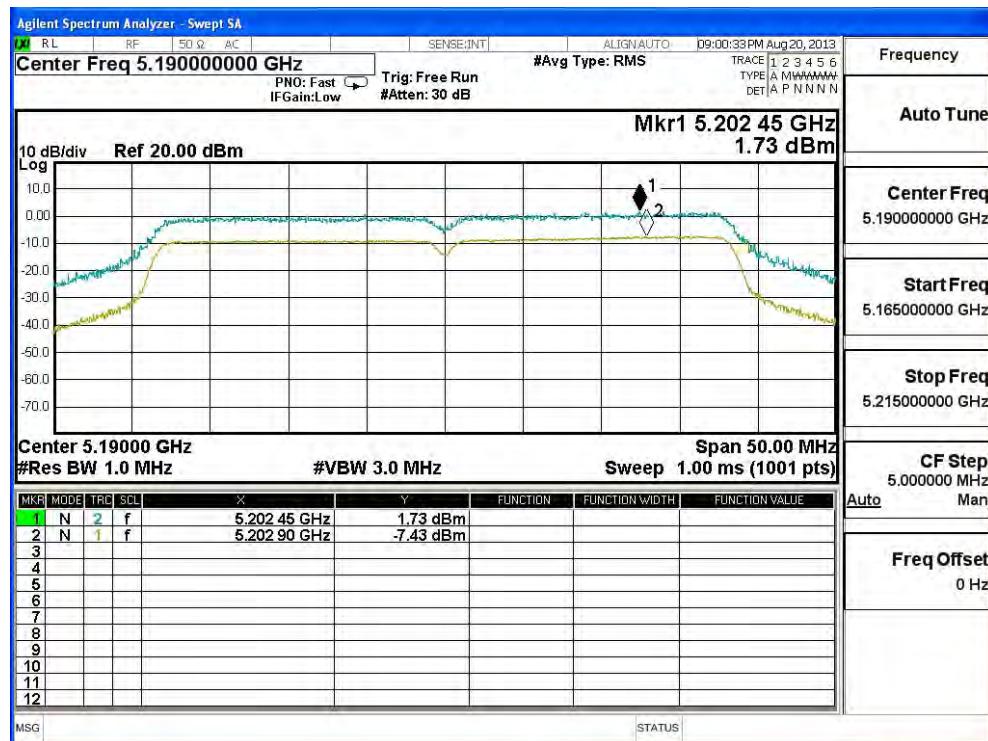


Chain B

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
38	5190	MCS (0)	8.750	<13	Pass
		MCS (2)	8.770	<13	Pass
		MCS (4)	9.240	<13	Pass
		MCS (7)	9.160	<13	Pass

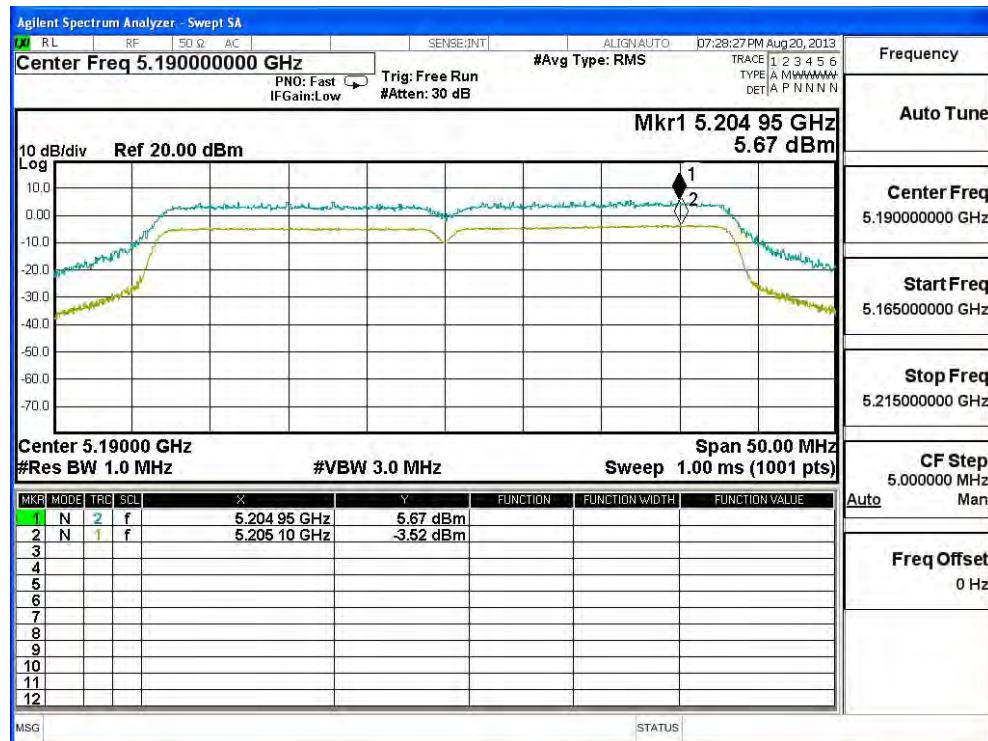
Channel 38:


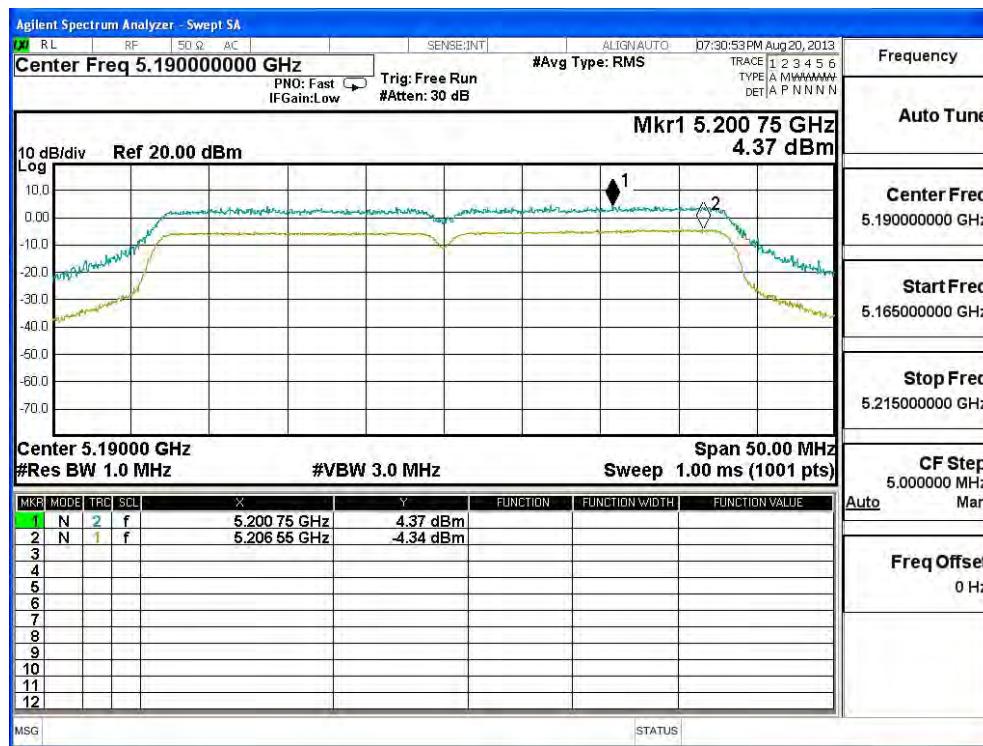
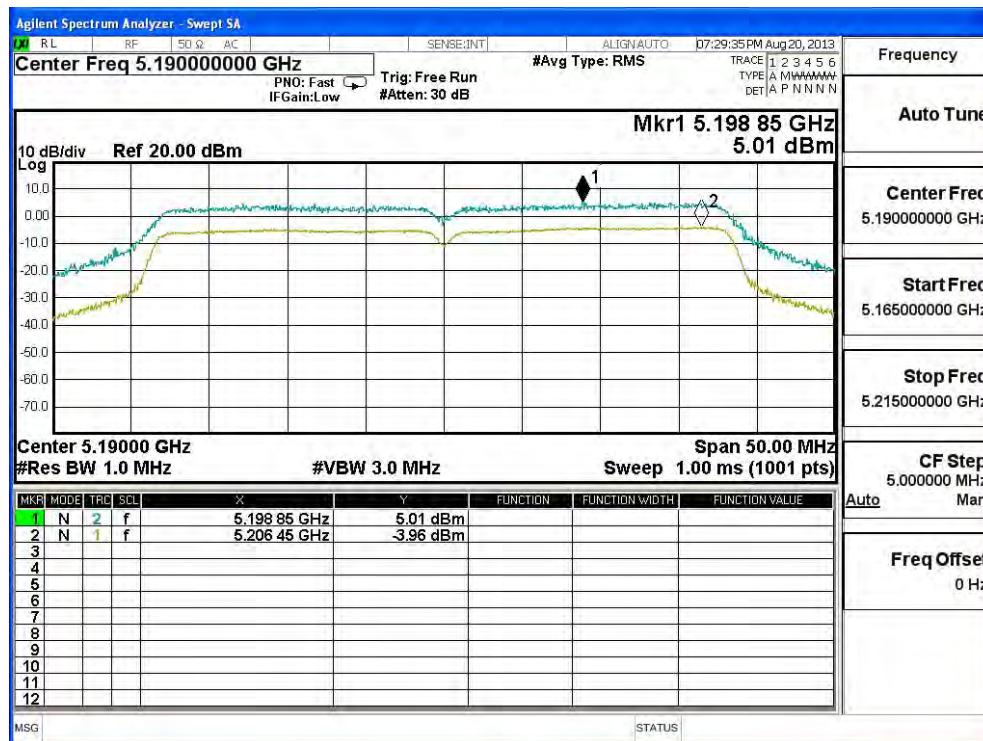


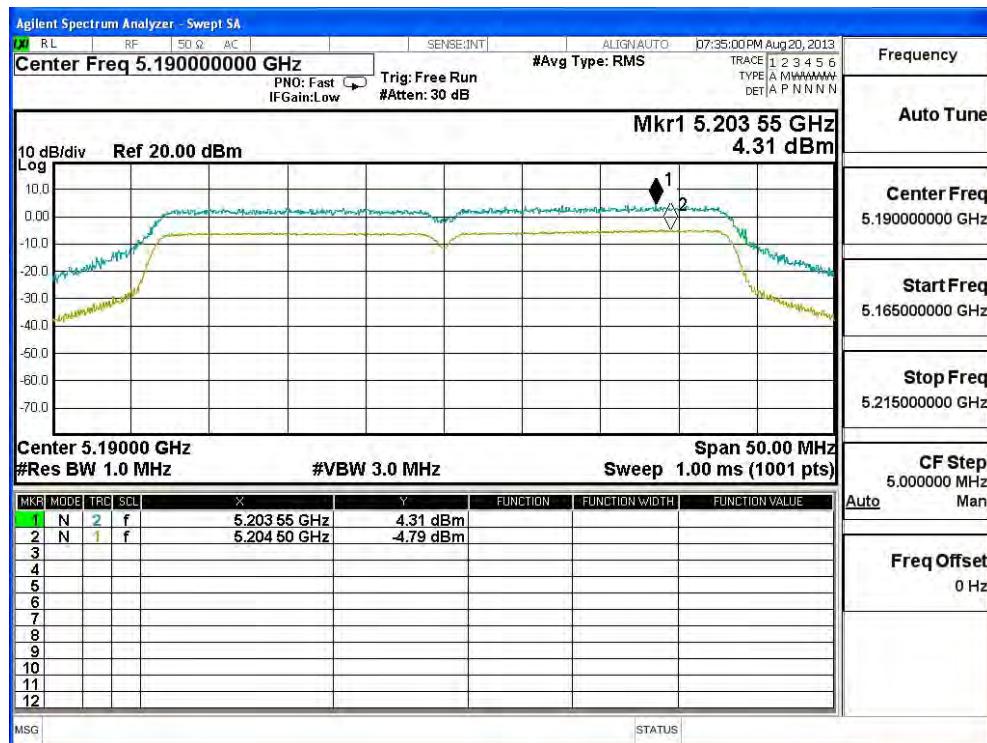


Chain C

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
38	5190	MCS (0)	9.190	<13	Pass
		MCS (2)	8.970	<13	Pass
		MCS (4)	8.710	<13	Pass
		MCS (7)	9.100	<13	Pass

Channel 38:






6. Radiated Emission

6.1. Test Equipment

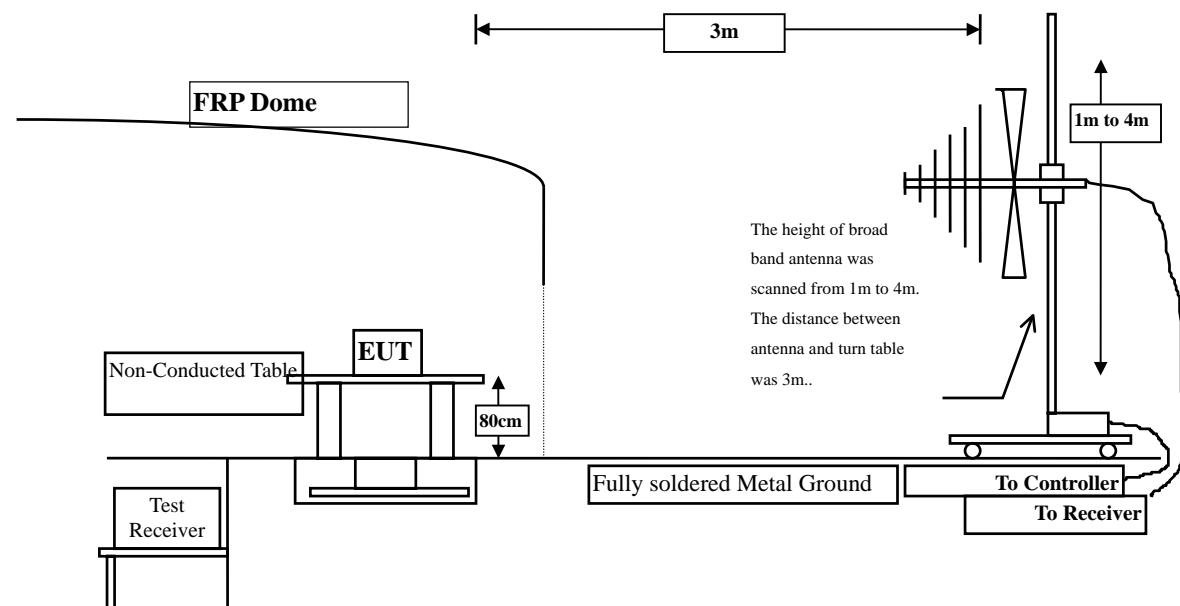
The following test equipments are used during the radiated emission test:

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., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	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., 2012
	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., 2012
	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

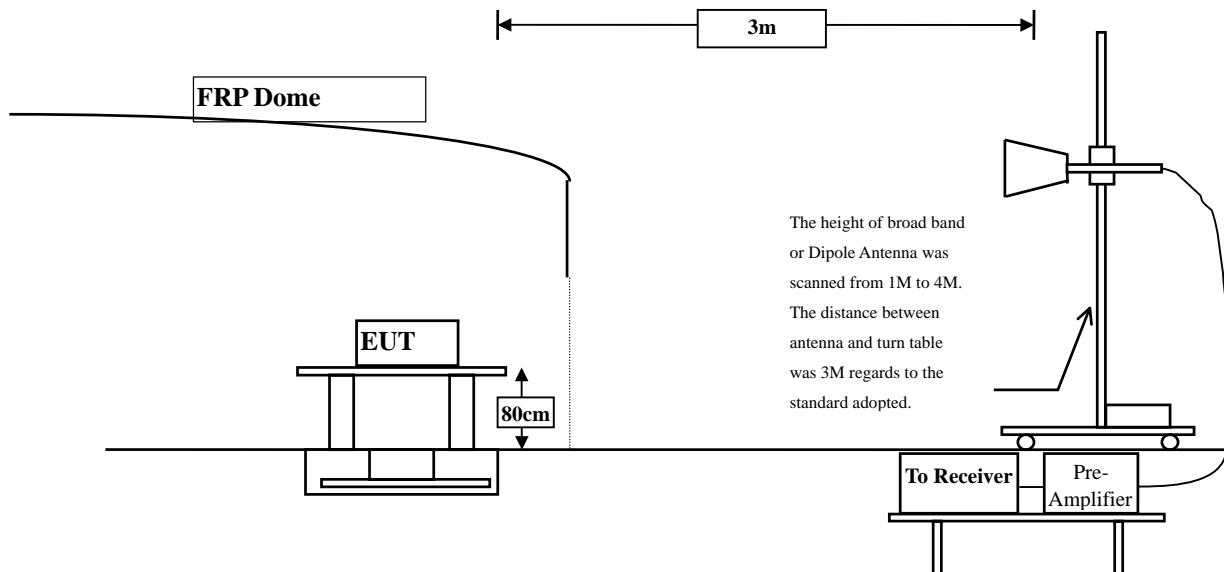
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with "X" are used to measure the final test results.

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 from 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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna) (5180MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
10360.000	12.930	37.490	50.420	-23.580	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	37.490	51.214	-22.786	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna) (5220MHz)

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

Horizontal**Peak Detector:**

10440.000	13.322	37.790	51.112	-22.888	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	14.245	37.170	51.415	-22.585	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna) (5240MHz)

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

Horizontal

Peak Detector:

10480.000	13.693	36.790	50.484	-23.516	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000

Average

Detector:

--

Vertical

Peak Detector:

10480.000	14.620	36.910	51.531	-22.469	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna) (5180MHz)

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

Horizontal

Peak Detector:

10360.000	12.930	37.150	50.080	-23.920	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	37.510	51.234	-22.766	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna) (5220MHz)

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

Horizontal**Peak Detector:**

10440.000	13.322	37.290	50.612	-23.388	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	37.330	51.575	-22.425	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna) (5240MHz)

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

Horizontal

Peak Detector:

10480.000	13.693	37.300	50.994	-23.006	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	36.740	51.361	-22.639	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)(Dipole Antenna) (5190MHz)

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

Horizontal

Peak Detector:

10380.000	12.939	37.090	50.029	-23.971	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	37.390	51.186	-22.814	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)(Dipole Antenna) (5230MHz)

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

Horizontal

Peak Detector:

10460.000	13.508	37.310	50.818	-23.182	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	36.380	50.813	-23.187	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna) (5180MHz)

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

Horizontal

Peak Detector:

10360.000	12.930	37.080	50.010	-23.990	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	36.610	50.334	-23.666	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna) (5220MHz)

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

Horizontal**Peak Detector:**

10440.000	13.322	37.420	50.742	-23.258	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	14.245	37.190	51.435	-22.565	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna) (5240MHz)

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

Horizontal**Peak Detector:**

10480.000	13.693	36.940	50.634	-23.366	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000

Average**Detector:**

--

Vertical**Peak Detector:**

10480.000	14.620	36.250	50.871	-23.129	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna) (5180MHz)

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

Horizontal

Peak Detector:

10360.000	12.930	37.810	50.740	-23.260	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	37.110	50.834	-23.166	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna) (5220MHz)

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

Horizontal**Peak Detector:**

10440.000	13.322	37.300	50.622	-23.378	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	37.530	51.775	-22.225	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna) (5240MHz)

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

Horizontal

Peak Detector:

10480.000	13.693	37.050	50.744	-23.256	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	36.220	50.841	-23.159	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit (802.11n-40BW 45Mbps)(PIFA Antenna) (5190MHz)

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

Horizontal**Peak Detector:**

10380.000	12.939	37.370	50.309	-23.691	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	36.780	50.576	-23.424	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 : SpectraGuard® Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit (802.11n-40BW 45Mbps)(PIFA Antenna) (5230MHz)

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

Horizontal**Peak Detector:**

10460.000	13.508	36.880	50.388	-23.612	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	37.370	51.803	-22.197	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 : SpectraGuard® Access Point / Sensor
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
260.860	-5.032	39.631	34.599	-11.401	46.000
352.040	-2.403	43.057	40.654	-5.346	46.000
474.260	0.024	34.171	34.194	-11.806	46.000
600.360	3.977	31.385	35.362	-10.638	46.000
666.320	2.031	34.720	36.752	-9.248	46.000
802.120	5.091	33.985	39.076	-6.924	46.000
Vertical					
Peak Detector					
200.720	-7.835	42.074	34.239	-9.261	43.500
297.720	-7.143	43.245	36.103	-9.897	46.000
400.540	-5.156	39.096	33.941	-12.059	46.000
499.480	-0.852	35.822	34.970	-11.030	46.000
664.380	-1.918	34.891	32.973	-13.027	46.000
749.740	2.510	34.923	37.433	-8.567	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 : SpectraGuard® Access Point / Sensor
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna) (5220MHz)

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

Horizontal**Peak Detector**

266.680	-4.963	40.748	35.785	-10.215	46.000
400.540	-2.276	42.379	40.103	-5.897	46.000
499.480	0.048	36.079	36.127	-9.873	46.000
600.360	3.977	30.857	34.834	-11.166	46.000
668.260	2.016	32.953	34.969	-11.031	46.000
802.120	5.091	33.878	38.969	-7.031	46.000

Vertical**Peak Detector**

150.280	-6.224	42.928	36.704	-6.796	43.500
251.160	-7.505	42.906	35.401	-10.599	46.000
400.540	-5.156	37.231	32.076	-13.924	46.000
507.240	-0.471	33.592	33.121	-12.879	46.000
668.260	-1.694	31.624	29.930	-16.070	46.000
749.740	2.510	33.817	36.327	-9.673	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 : SpectraGuard® Access Point / Sensor
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)(Dipole Antenna) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
367.560	-1.205	36.051	34.846	-11.154	46.000
450.980	-1.756	42.513	40.758	-5.242	46.000
600.360	3.977	31.770	35.747	-10.253	46.000
666.320	2.031	34.171	36.203	-9.797	46.000
802.120	5.091	32.530	37.621	-8.379	46.000
916.580	6.144	31.777	37.921	-8.079	46.000
Vertical					
Peak Detector					
159.980	-6.185	36.479	30.294	-13.206	43.500
268.620	-8.842	47.336	38.494	-7.506	46.000
379.200	-1.505	35.649	34.143	-11.857	46.000
499.480	-0.852	35.066	34.214	-11.786	46.000
664.380	-1.918	35.162	33.244	-12.756	46.000
800.180	2.801	33.385	36.186	-9.814	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 : SpectraGuard® Access Point / Sensor
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna) (5220MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
340.400	-3.859	39.394	35.535	-10.465	46.000
423.820	-3.167	39.245	36.078	-9.922	46.000
580.960	3.505	30.110	33.615	-12.385	46.000
707.060	2.919	31.032	33.951	-12.049	46.000
800.180	5.141	31.338	36.479	-9.521	46.000
914.640	6.083	30.430	36.513	-9.487	46.000

Vertical

Peak Detector

117.300	-3.106	34.552	31.446	-12.054	43.500
284.140	-8.194	46.717	38.523	-7.477	46.000
499.480	-0.852	35.237	34.385	-11.615	46.000
664.380	-1.918	35.915	33.997	-12.003	46.000
747.800	2.166	35.520	37.686	-8.314	46.000
802.120	3.161	31.734	34.895	-11.105	46.000

Note:

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

Product : SpectraGuard® Access Point / Sensor
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna) (5220MHz)

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

Horizontal

Peak Detector

328.760	-4.609	44.663	40.054	-5.946	46.000
425.760	-3.093	34.388	31.295	-14.705	46.000
499.480	0.048	35.197	35.245	-10.755	46.000
600.360	3.977	30.607	34.584	-11.416	46.000
666.320	2.031	33.019	35.051	-10.949	46.000
800.180	5.141	32.710	37.851	-8.149	46.000

Vertical

Peak Detector

204.600	-7.666	43.187	35.520	-7.980	43.500
348.160	-3.458	38.102	34.644	-11.356	46.000
450.980	-7.106	40.358	33.253	-12.747	46.000
499.480	-0.852	35.996	35.144	-10.856	46.000
664.380	-1.918	35.589	33.671	-12.329	46.000
747.800	2.166	36.234	38.400	-7.600	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 : SpectraGuard® Access Point / Sensor
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit (802.11n-40BW 45Mbps)(PIFA Antenna) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
291.900	-4.174	38.878	34.703	-11.297	46.000
348.160	-2.268	39.197	36.929	-9.071	46.000
450.980	-1.756	42.717	40.962	-5.038	46.000
600.360	3.977	32.119	36.096	-9.904	46.000
668.260	2.016	34.139	36.155	-9.845	46.000
800.180	5.141	33.187	38.328	-7.672	46.000
Vertical					
Peak Detector					
198.780	-8.221	43.526	35.305	-8.195	43.500
282.200	-8.461	48.309	39.848	-6.152	46.000
365.620	-2.179	36.476	34.297	-11.703	46.000
450.980	-7.106	40.279	33.174	-12.826	46.000
664.380	-1.918	35.005	33.087	-12.913	46.000
802.120	3.161	33.048	36.209	-9.791	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:

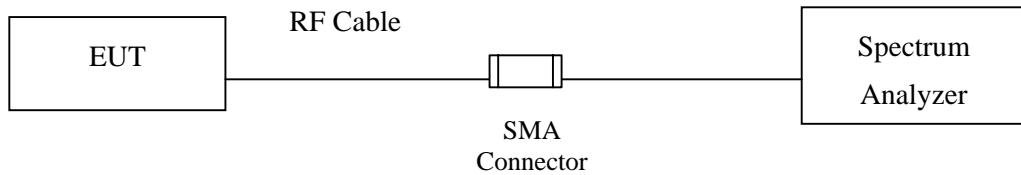
Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2013
	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2013
	X Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2012
	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., 2012
	X Coaxial Cable	QuiTek	QTK-CABLE/ CAB5	Feb., 2013
	X Controller	QuiTek	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.

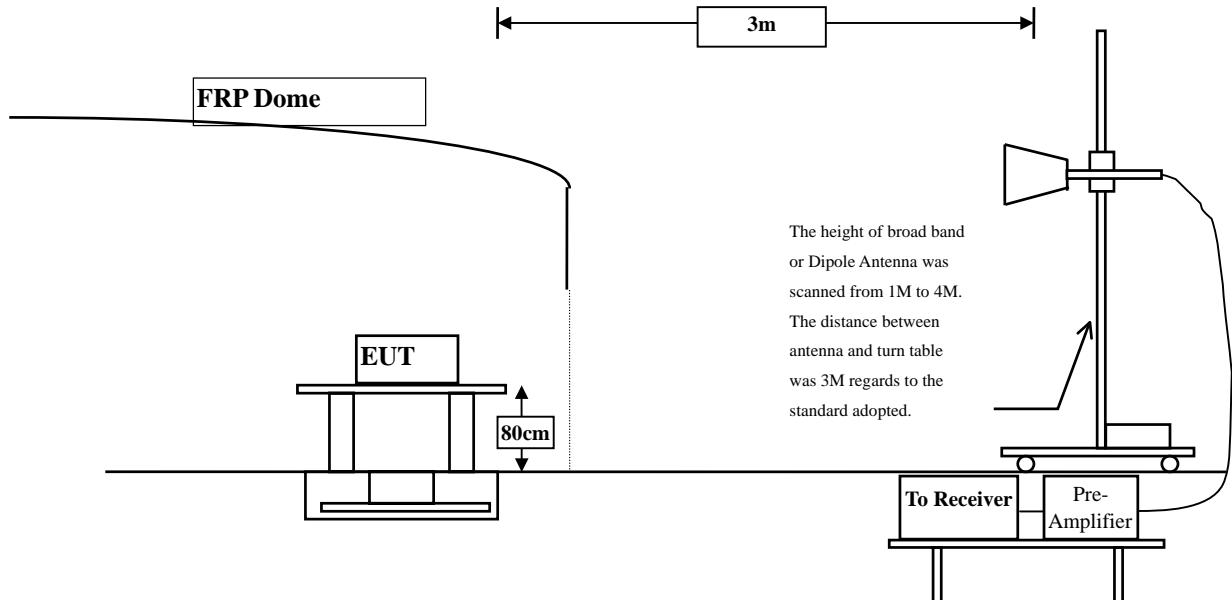
7.2.

7.3. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



7.4. 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) = $20 \log_{10}$ 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.

7.5. 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.

7.6. Uncertainty

± 3.8 dB below 1GHz

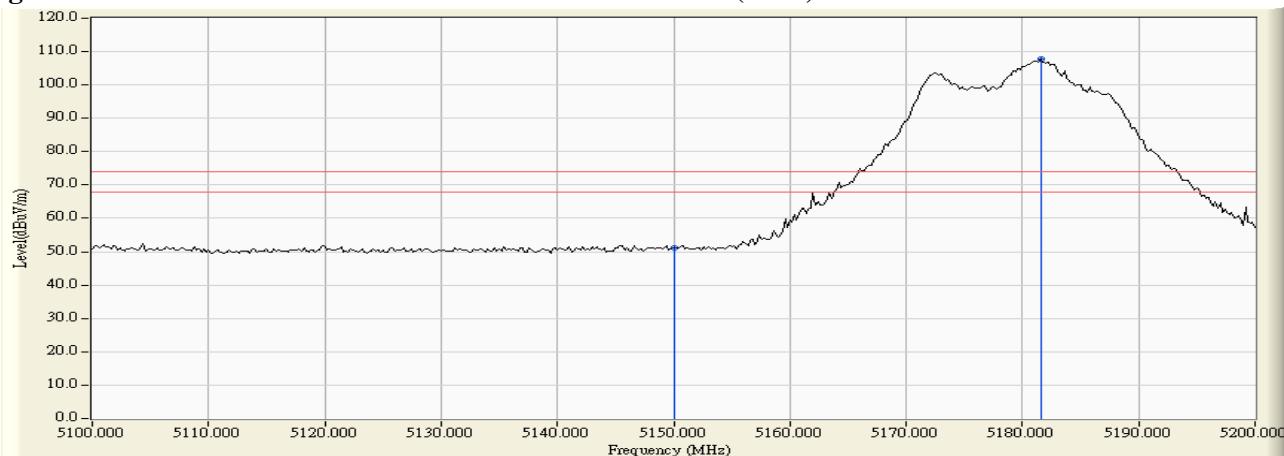
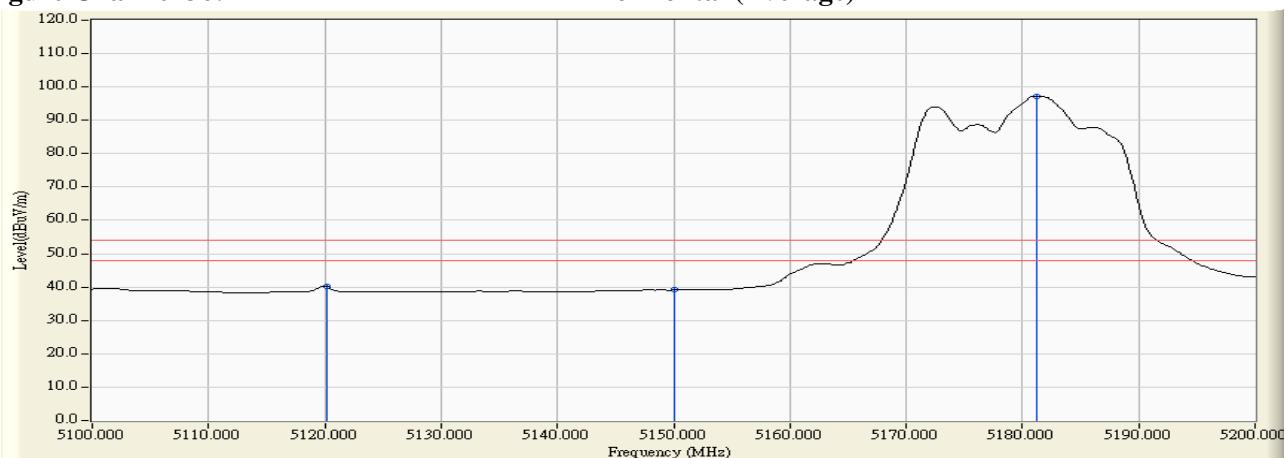
± 3.9 dB above 1GHz

7.7. Test Result of Band Edge

Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna)-Channel 36

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	3.340	47.961	51.301	74.00	54.00	Pass
36 (Peak)	5181.600	3.229	104.491	107.719	--	--	Pass
36 (Average)	5120.200	3.445	36.663	40.108	74.00	54.00	Pass
36 (Average)	5150.000	3.340	35.758	39.098	74.00	54.00	Pass
36 (Average)	5181.200	3.229	94.079	97.309	--	--	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 : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna)-Channel 36

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)	5143.600	5.243	44.129	49.371	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	42.373	47.633	74.00	54.00	Pass
36 (Peak)	5178.400	5.337	91.621	96.958	--	--	Pass
36 (Average)	5147.200	5.252	31.531	36.783	74.00	54.00	Pass
36 (Average)	5150.000	5.260	31.435	36.695	74.00	54.00	Pass
36 (Average)	5178.200	5.336	81.731	87.068	--	--	Pass

Figure Channel 36:

Vertical (Peak)

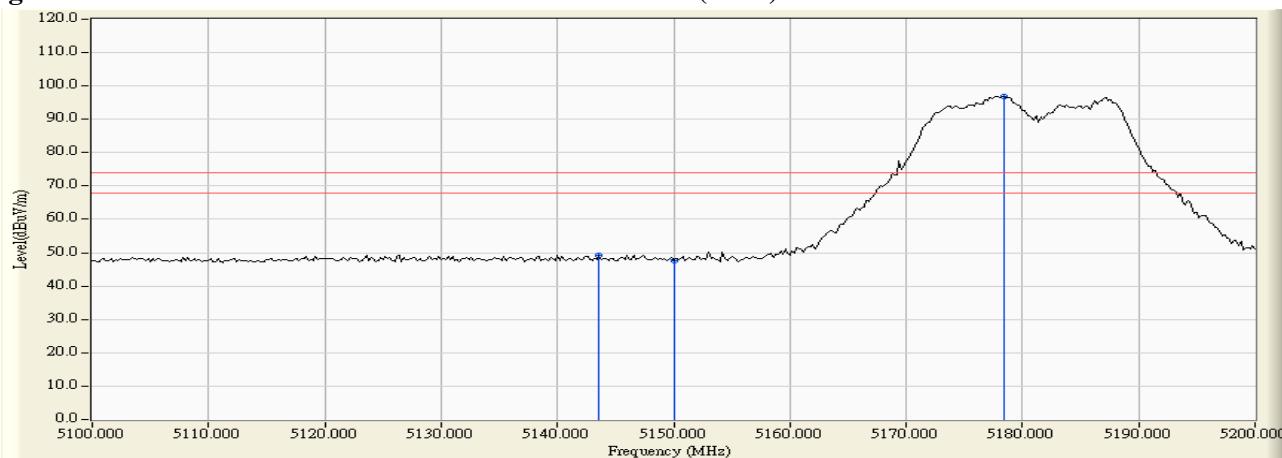
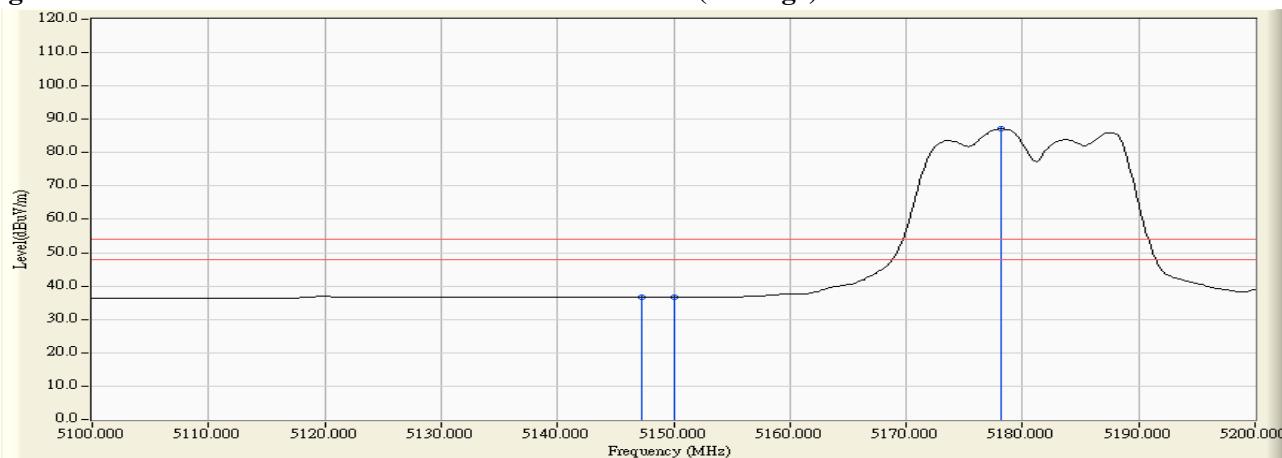


Figure Channel 36:

Vertical (Average)



Note:

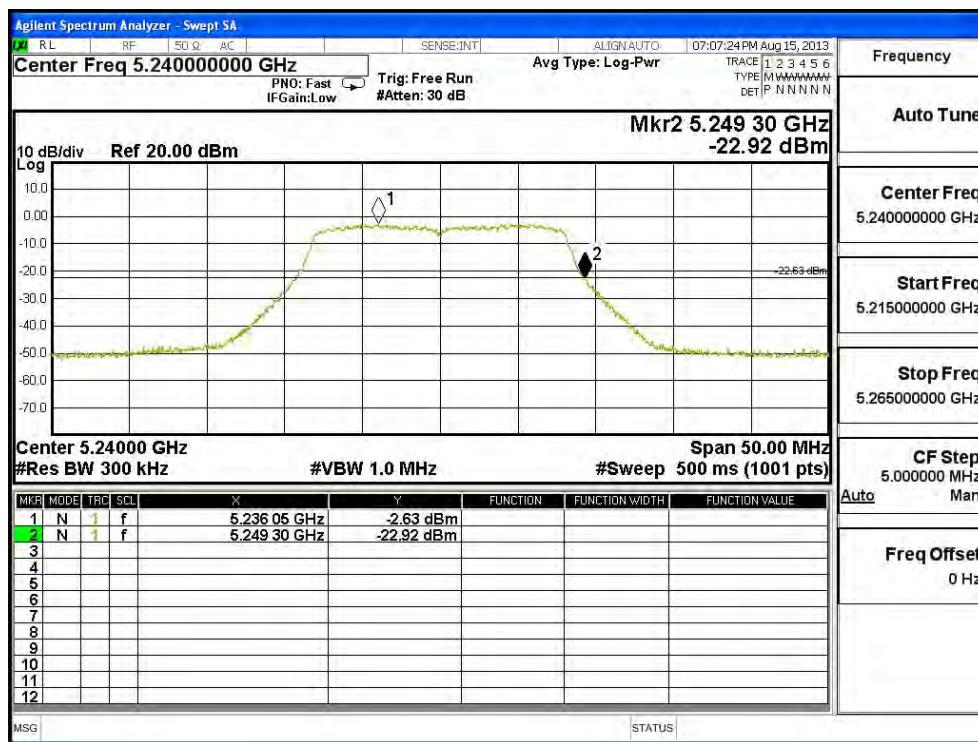
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna)-Channel 48

Chain A

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.30	<5250	PASS

NOTE: Accordance with 15.215 requirement.

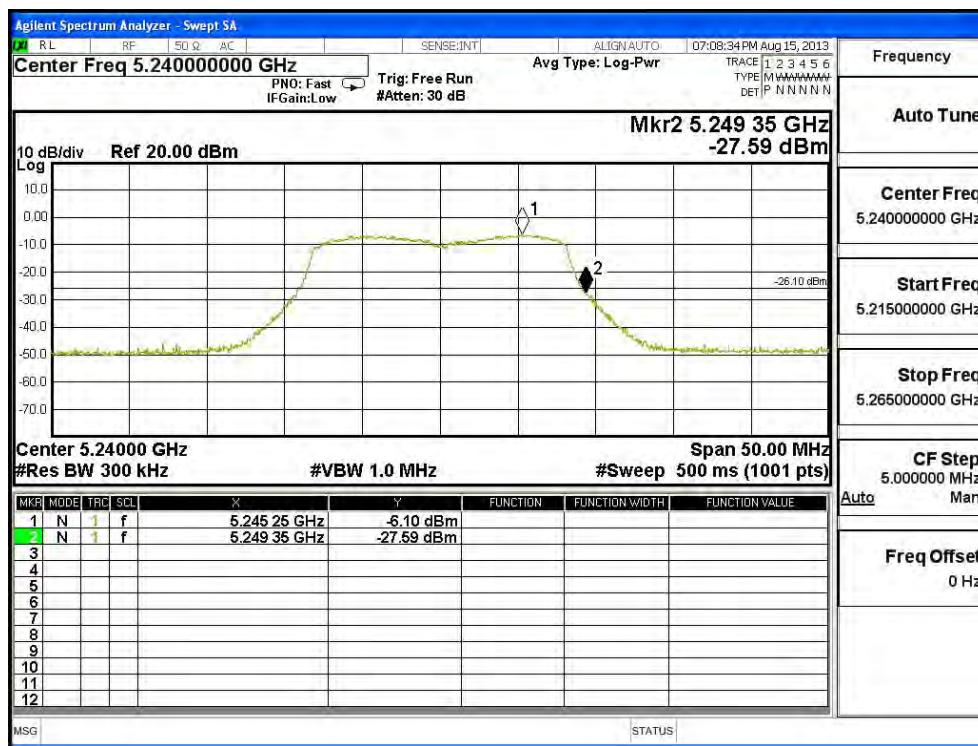


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna)-Channel 48

Chain B

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.35	<5250	PASS

NOTE: Accordance with 15.215 requirement.

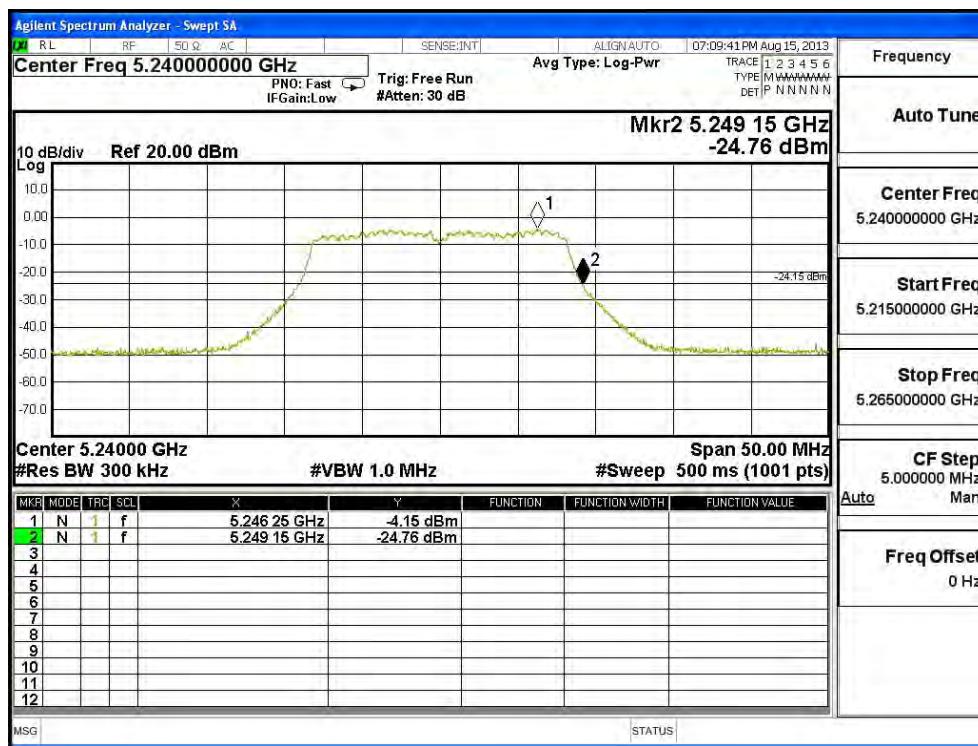


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna)-Channel 48

Chain C

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.15	<5250	PASS

NOTE: Accordance with 15.215 requirement.



Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna) -Channel 36

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	3.340	46.727	50.067	74.00	54.00	Pass
36 (Peak)	5177.800	3.242	101.117	104.359	--	--	Pass
36 (Average)	5150.000	3.340	35.317	38.657	74.00	54.00	Pass
36 (Average)	5176.400	3.248	88.661	91.908	--	--	Pass

Figure Channel 36:

Horizontal (Peak)

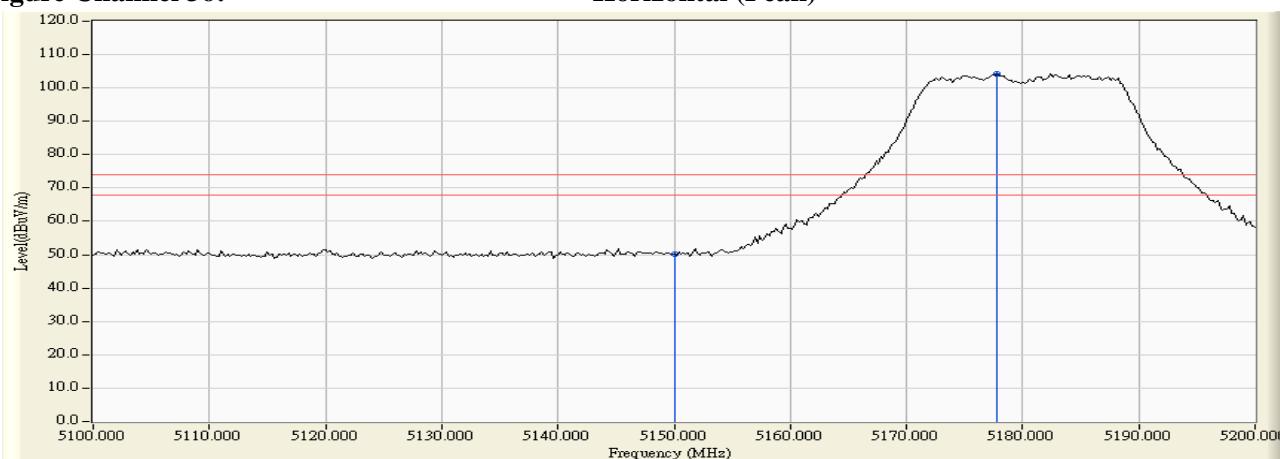
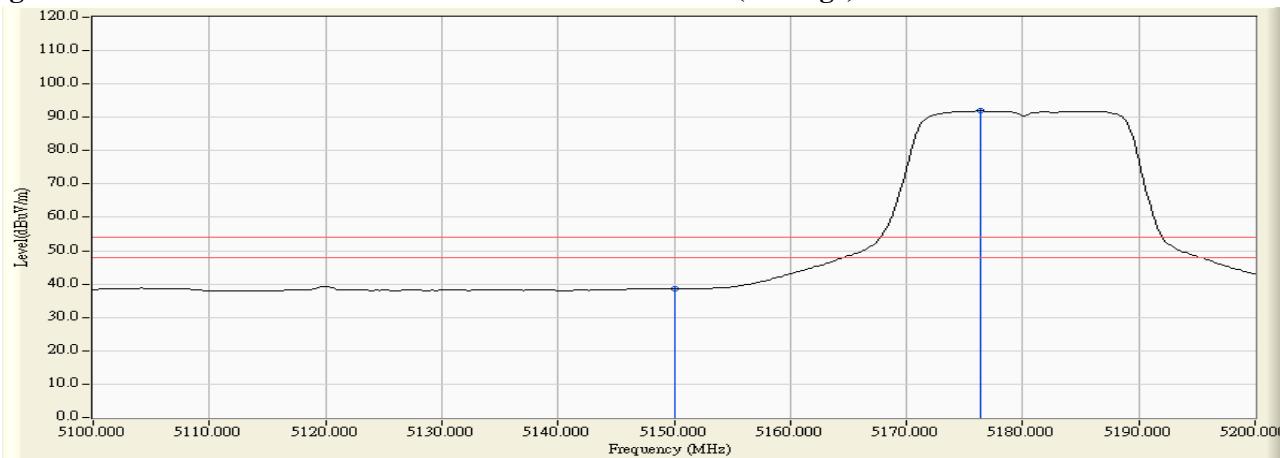


Figure Channel 36:

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 : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna) -Channel 36

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)	5150.000	5.260	42.840	48.100	74.00	54.00	Pass
36 (Peak)	5184.800	5.355	90.524	95.879	--	--	Pass
36 (Average)	5150.000	5.260	31.580	36.840	74.00	54.00	Pass
36 (Average)	5186.000	5.359	78.225	83.583	--	--	Pass

Figure Channel 36:

Vertical (Peak)

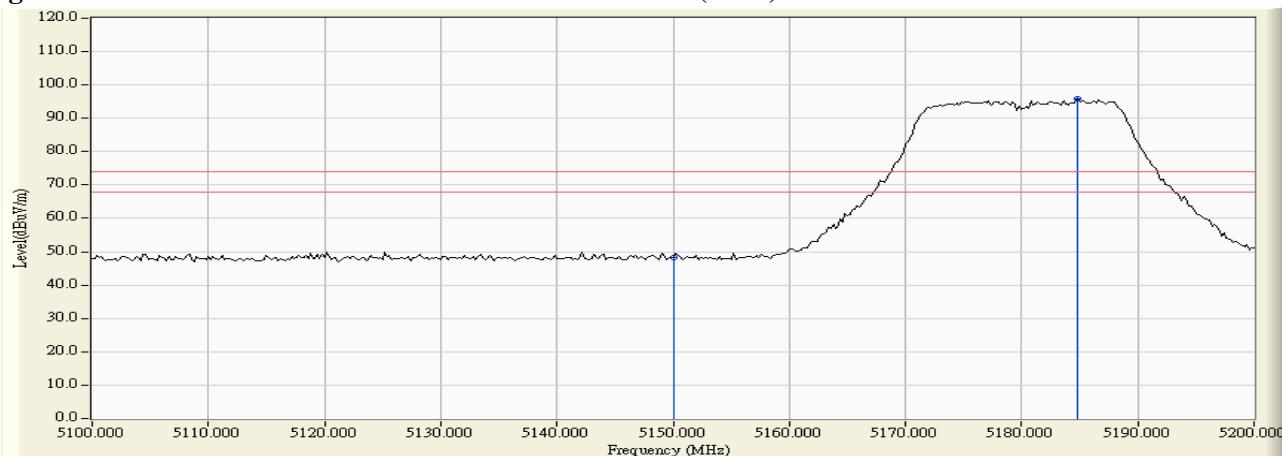
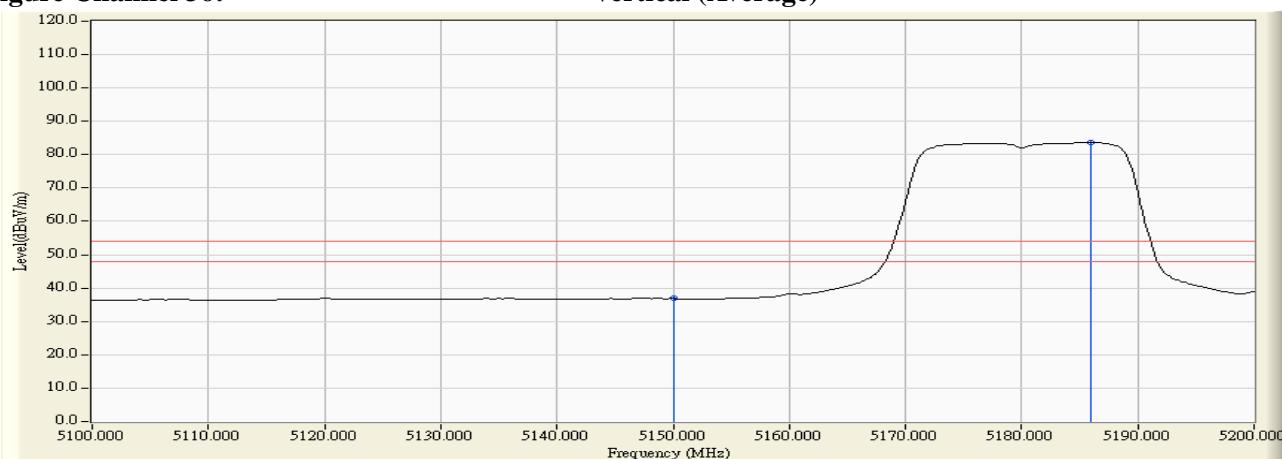


Figure Channel 36:

Vertical (Average)



Note:

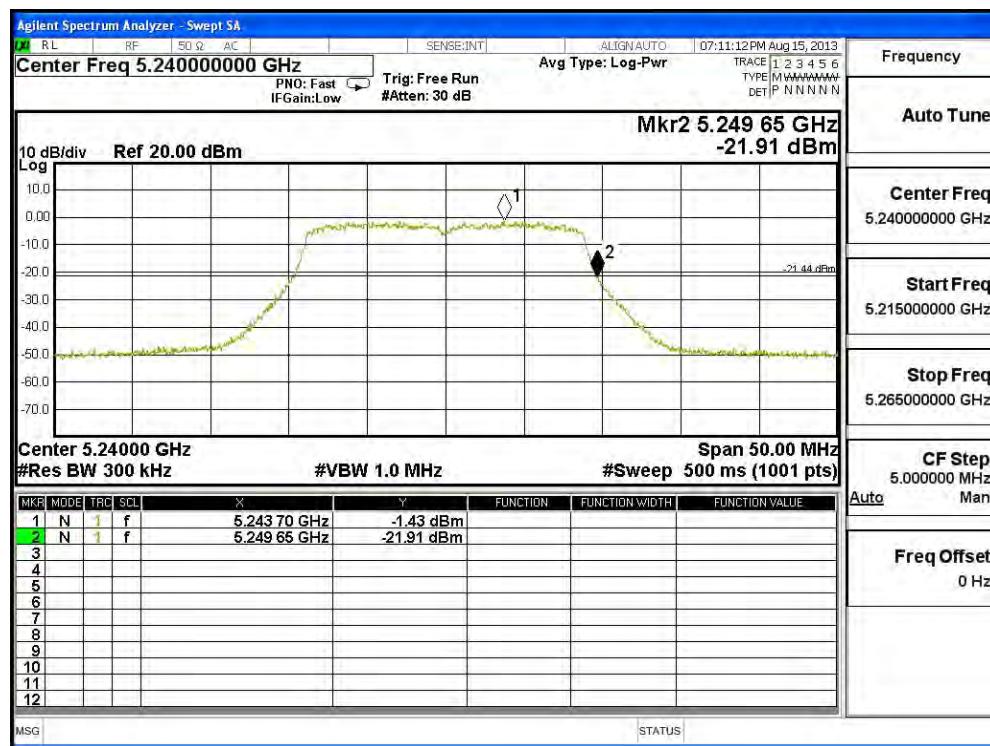
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna) -Channel 48

Chain A

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.65	<5250	PASS

NOTE: Accordance with 15.215 requirement.

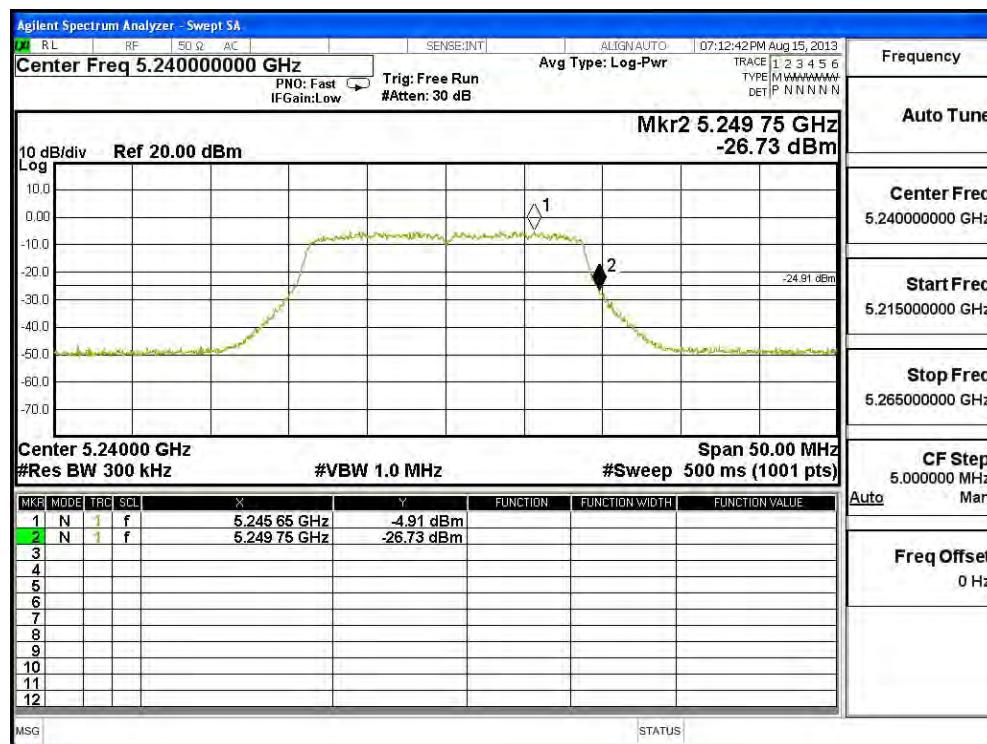


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna) -Channel 48

Chain B

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.75	<5250	PASS

NOTE: Accordance with 15.215 requirement.

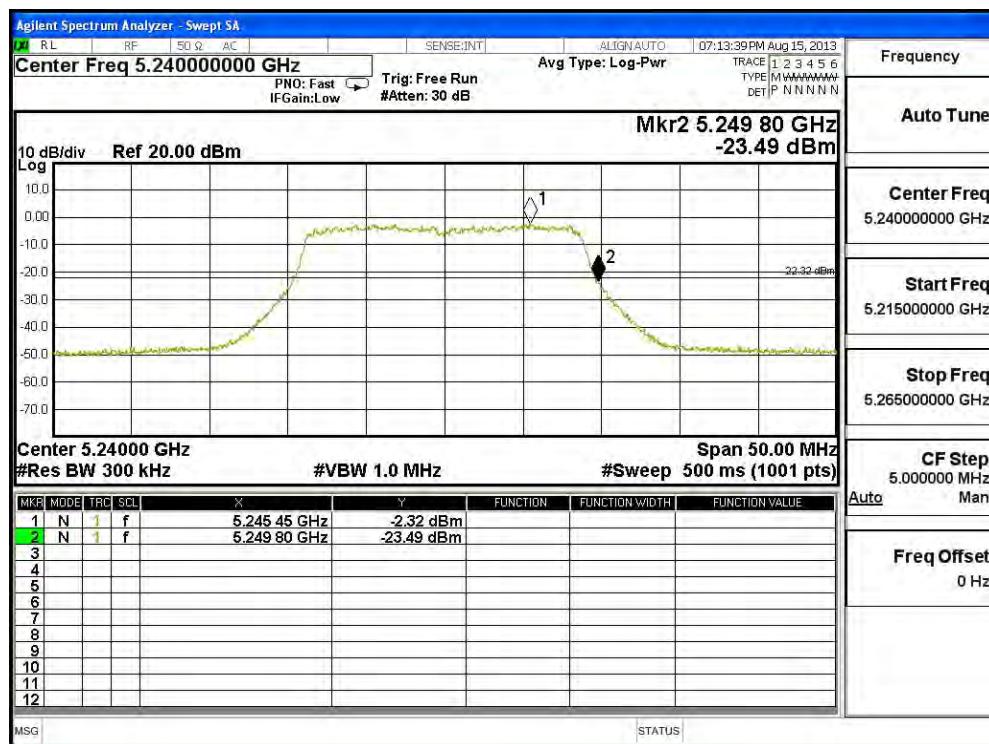


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11n-20BW 21.7Mbps)(Dipole Antenna) -Channel 48

Chain C

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

NOTE: Accordance with 15.215 requirement.



Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)(Dipole Antenna) -Channel 38

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	51.874	55.214	74.00	54.00	Pass
38 (Peak)	5198.400	3.159	98.531	101.690	--	--	Pass
38 (Average)	5150.000	3.340	38.295	41.635	74.00	54.00	Pass
38 (Average)	5199.000	3.156	86.400	89.556	--	--	Pass

Figure Channel 38:

Horizontal (Peak)

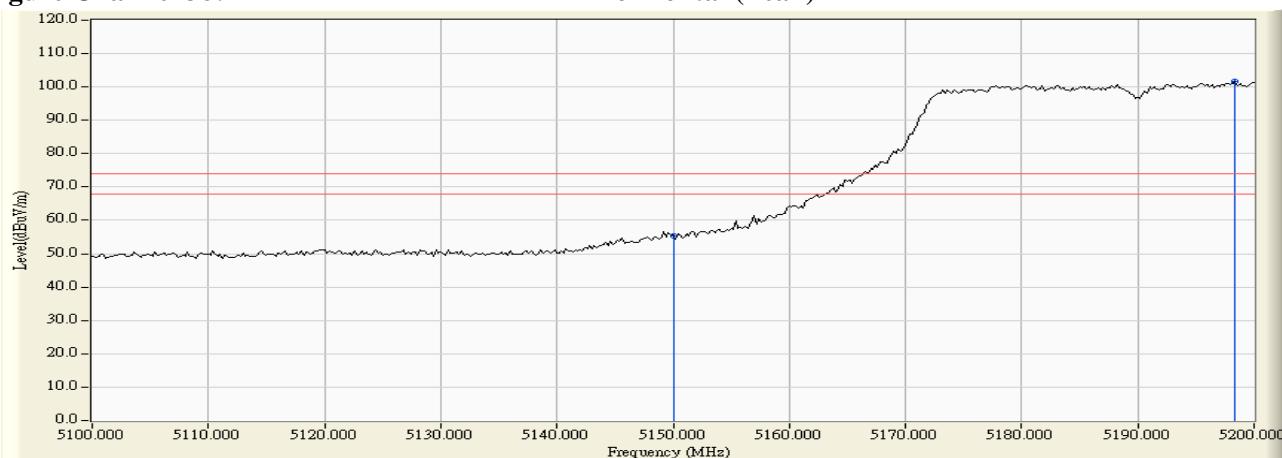
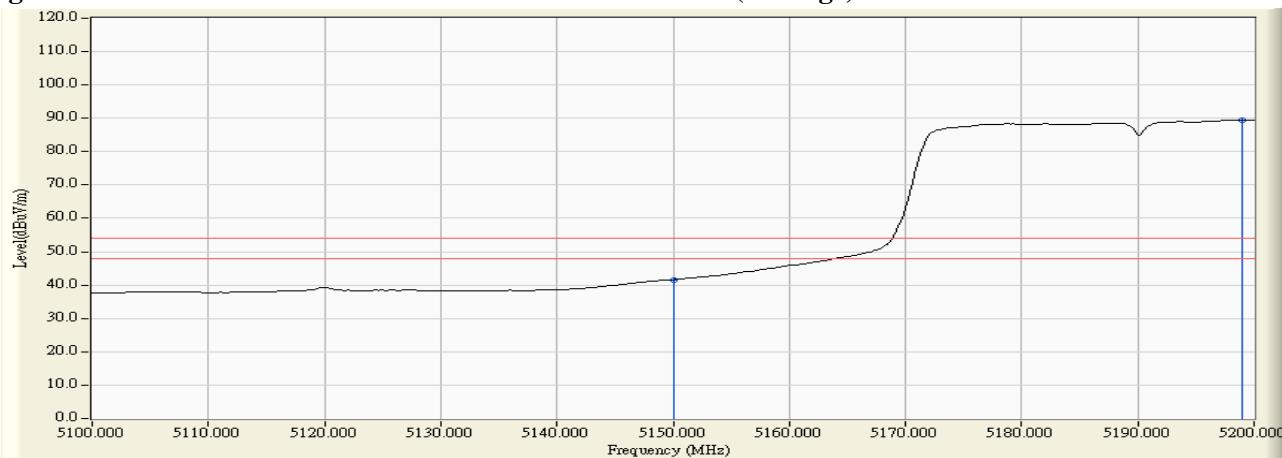


Figure Channel 38:

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 : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)(Dipole Antenna) -Channel 38

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	43.507	48.767	74.00	54.00	Pass
38 (Peak)	5195.000	5.375	87.884	93.260	--	--	Pass
38 (Average)	5150.000	5.260	32.143	37.403	74.00	54.00	Pass
38 (Average)	5200.000	5.389	76.219	81.608	--	--	Pass

Figure Channel 38:

Vertical (Peak)

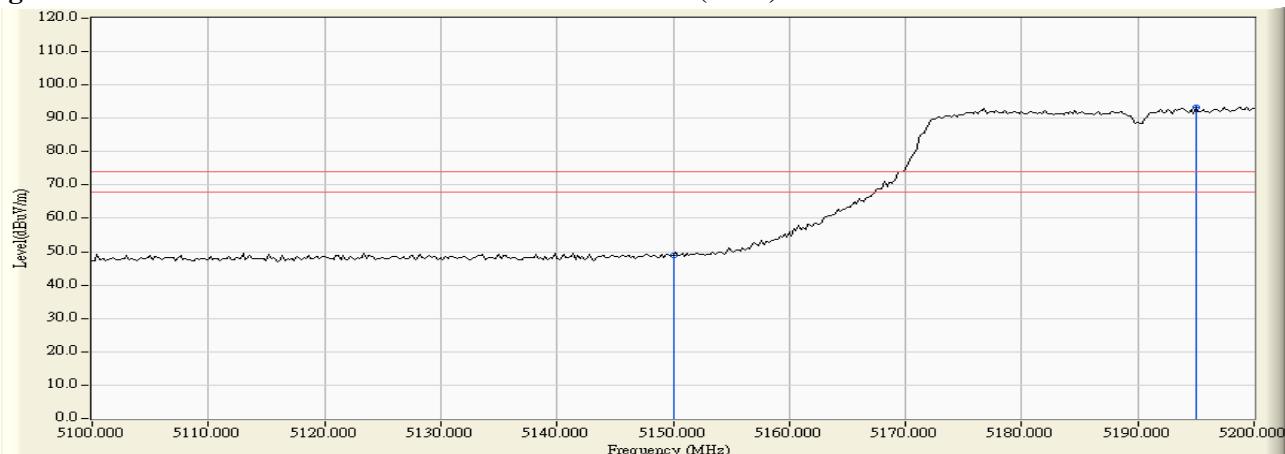
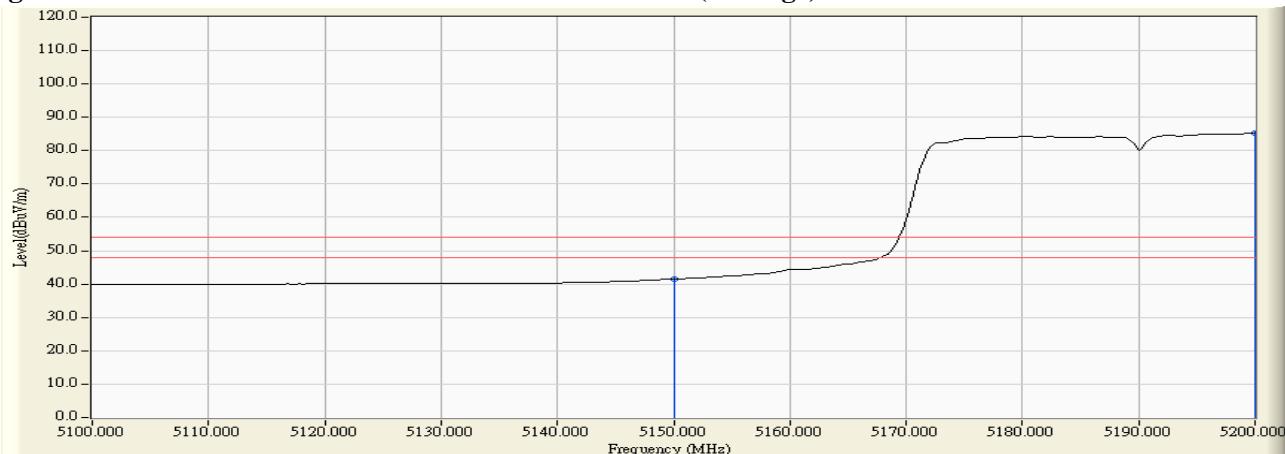


Figure Channel 38:

Vertical (Average)



Note:

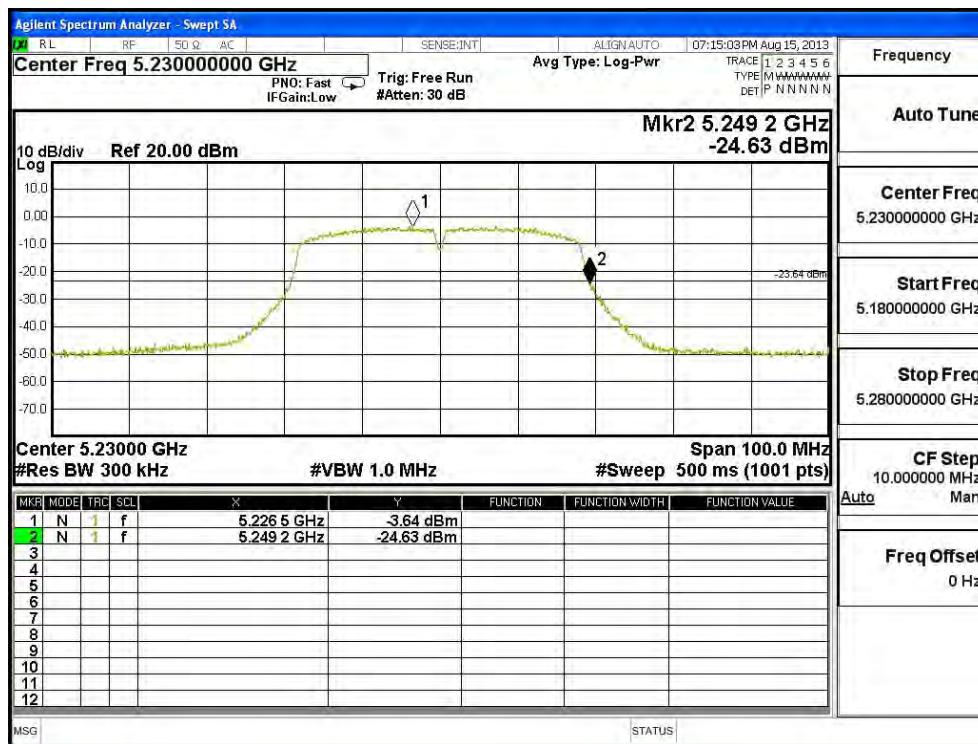
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)(Dipole Antenna)-Channel 46

Chain A

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5249.20	<5250	PASS

NOTE: Accordance with 15.215 requirement.

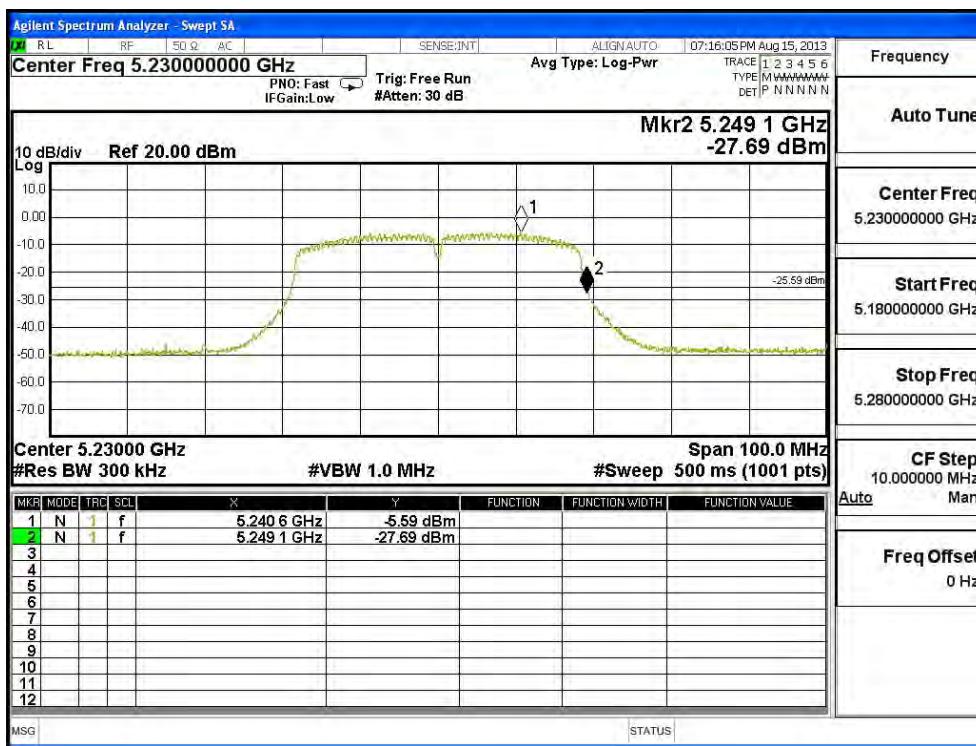


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)(Dipole Antenna)-Channel 46

Chain B

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5249.10	<5250	PASS

NOTE: Accordance with 15.215 requirement.



Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n-40BW 45Mbps)(Dipole Antenna)-Channel 46

Chain C

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5249.20	<5250	PASS

NOTE: Accordance with 15.215 requirement.

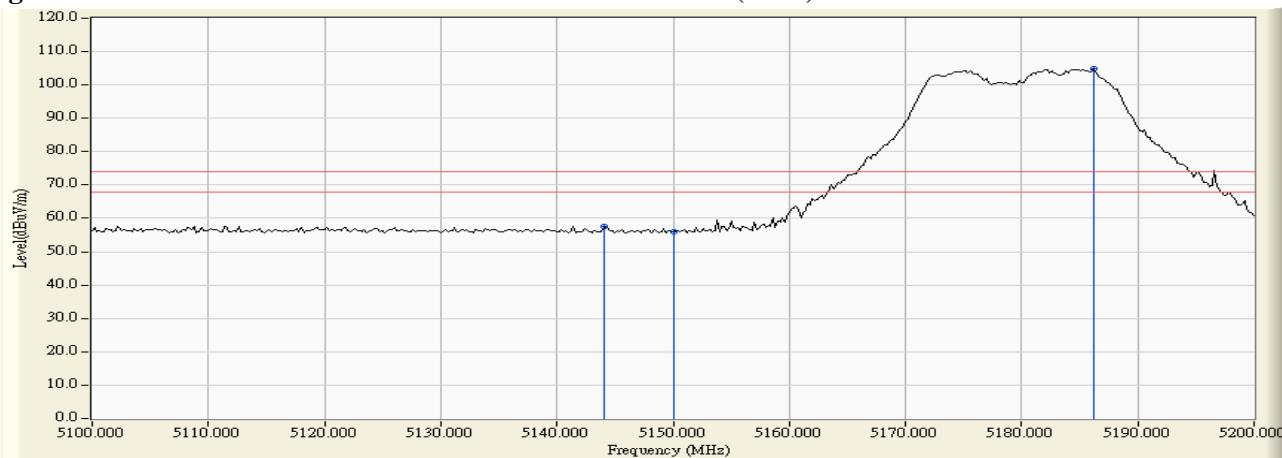
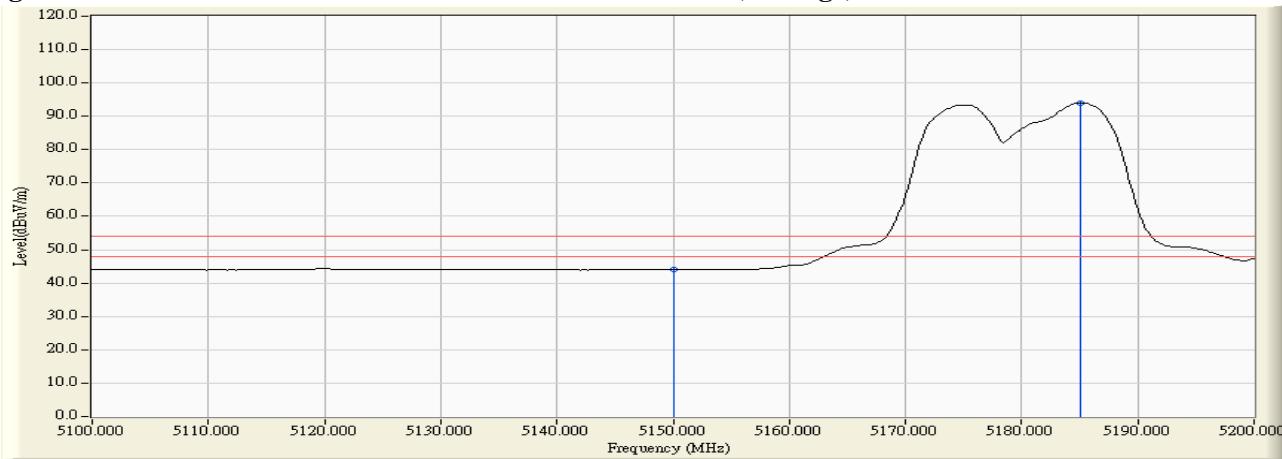


Product : SpectraGuard® Access Point / Sensor

Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna)-Channel 36

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)	5144.000	3.361	54.301	57.662	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	52.721	56.061	74.00	54.00	Pass
36 (Peak)	5186.200	3.213	101.547	104.759	--	--	Pass
36 (Average)	5150.000	3.340	40.639	43.979	74.00	54.00	Pass
36 (Average)	5185.000	3.217	90.802	94.018	--	--	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 : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna)-Channel 36

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)	5145.600	5.248	53.042	58.290	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	52.686	57.946	74.00	54.00	Pass
36 (Peak)	5186.200	5.360	101.574	106.933	--	--	Pass
36 (Average)	5150.000	5.260	40.359	45.619	74.00	54.00	Pass
36 (Average)	5186.000	5.359	90.878	96.236	--	--	Pass

Figure Channel 36:

Vertical (Peak)

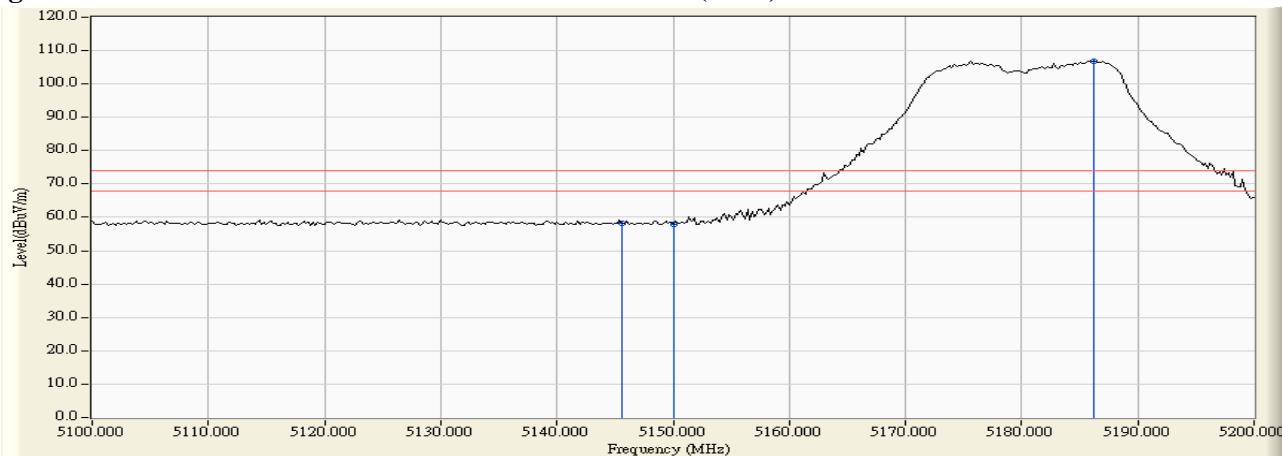
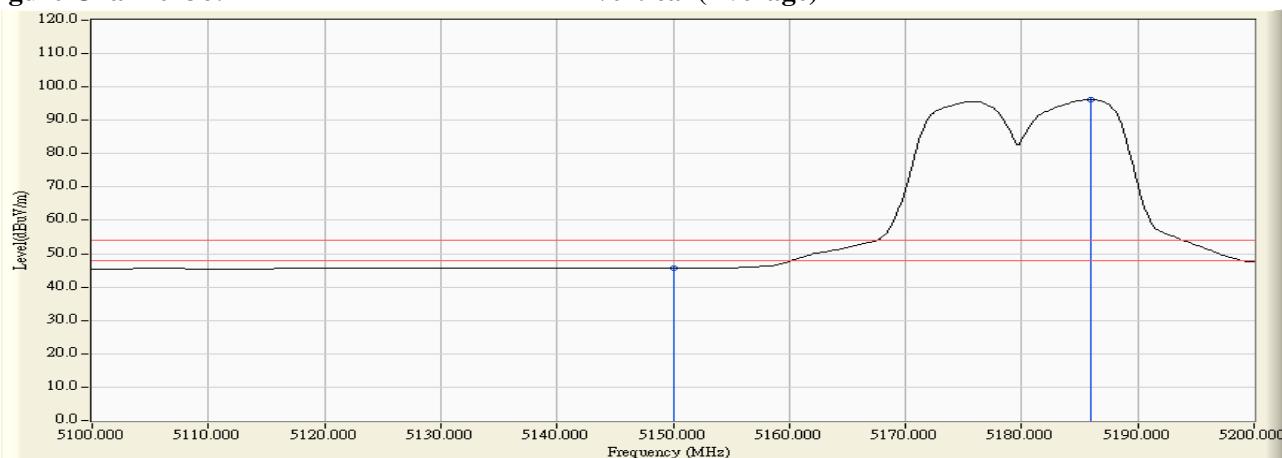


Figure Channel 36:

Vertical (Average)



Note:

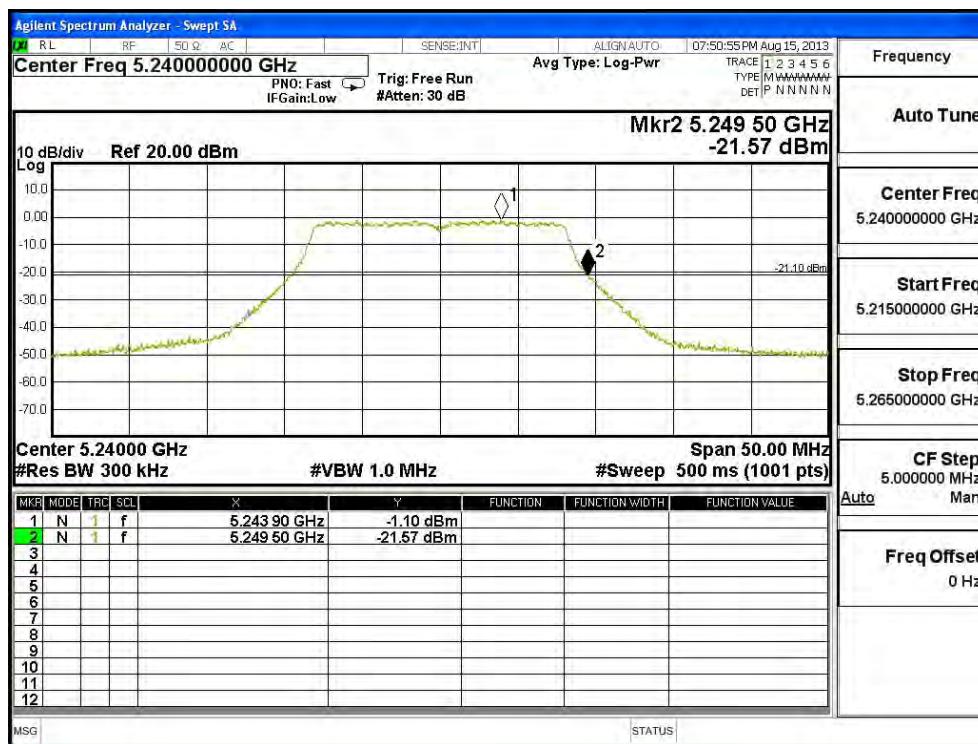
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna)-Channel 48

Chain A

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.50	<5250	PASS

NOTE: Accordance with 15.215 requirement.



Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna)-Channel 48

Chain B

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.45	<5250	PASS

NOTE: Accordance with 15.215 requirement.

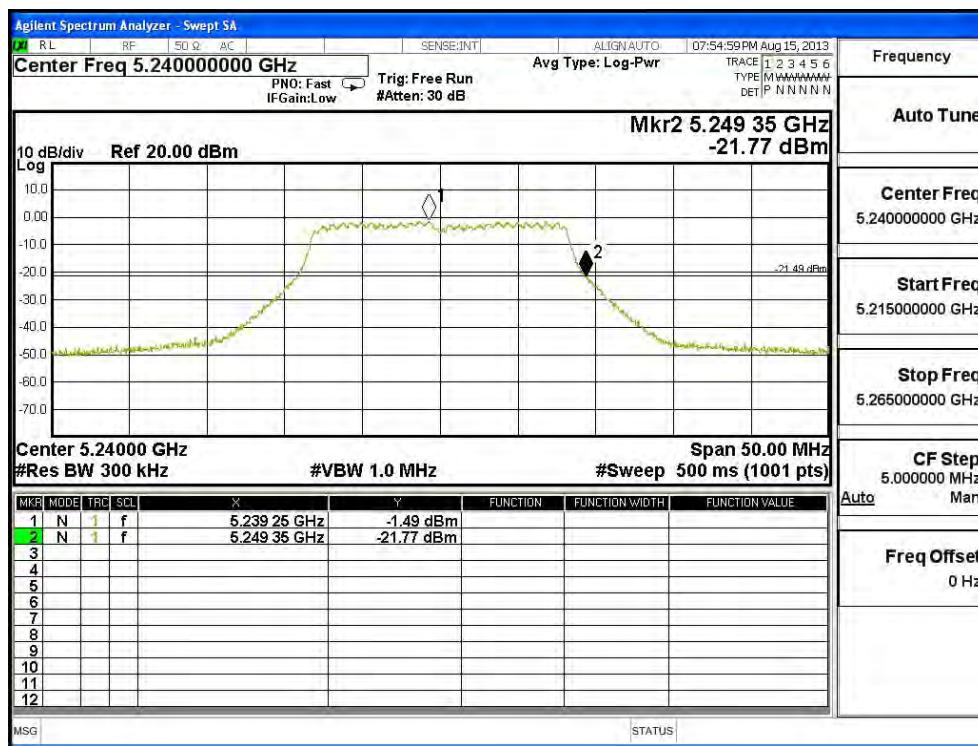


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna)-Channel 48

Chain C

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.35	<5250	PASS

NOTE: Accordance with 15.215 requirement.



Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna) -Channel 36

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)	5142.600	3.366	53.409	56.775	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	52.497	55.837	74.00	54.00	Pass
36 (Peak)	5178.200	3.240	99.860	103.101	--	--	Pass
36 (Average)	5150.000	3.340	40.755	44.095	74.00	54.00	Pass
36 (Average)	5186.800	3.210	87.381	90.591	--	--	Pass

Figure Channel 36:

Horizontal (Peak)

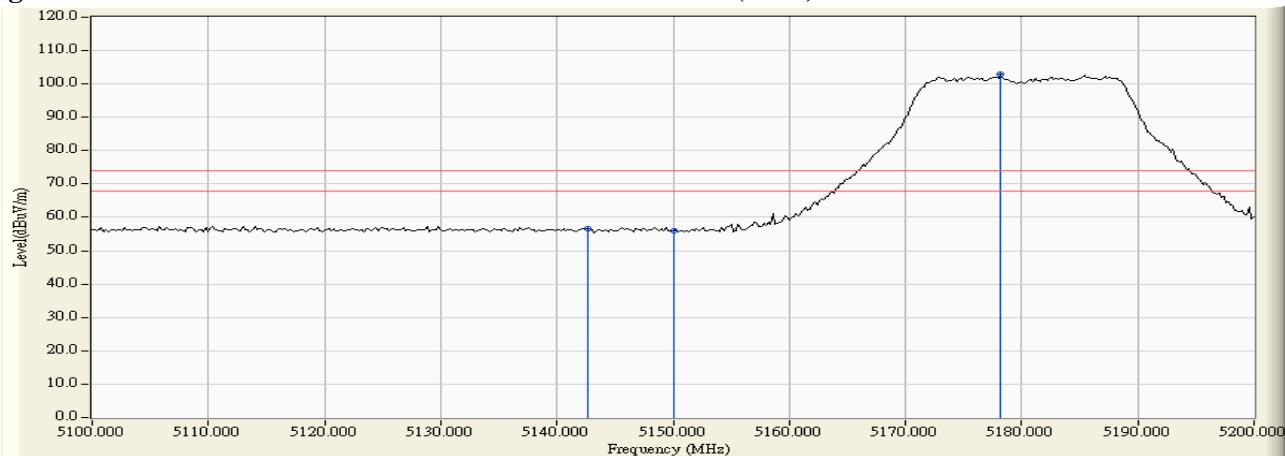
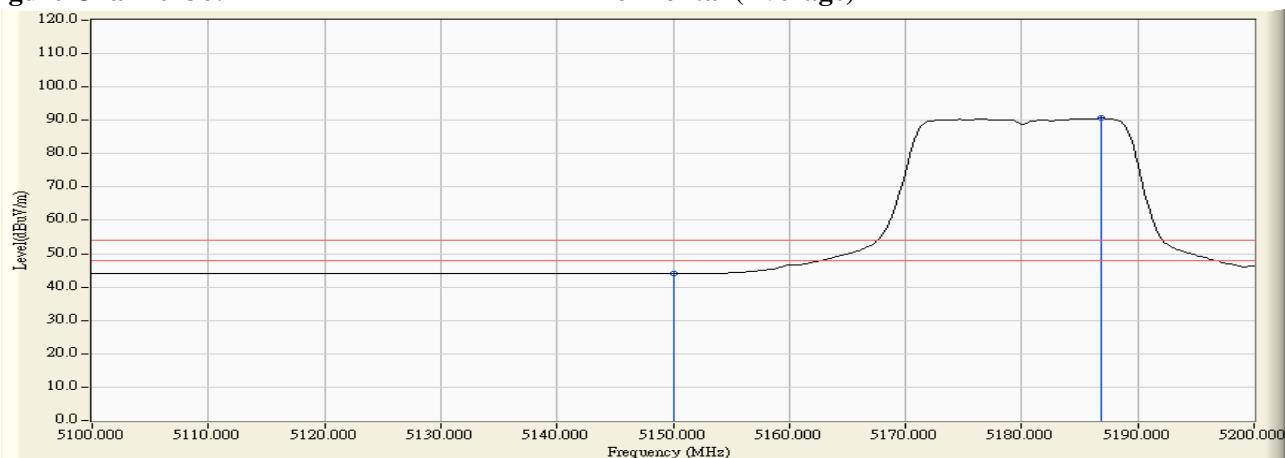


Figure Channel 36:

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 : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna) -Channel 36

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)	5150.000	5.260	52.873	58.133	74.00	54.00	Pass
36 (Peak)	5186.600	5.360	99.615	104.975	--	--	Pass
36 (Average)	5150.000	5.260	40.628	45.888	74.00	54.00	Pass
36 (Average)	5186.400	5.359	88.401	93.760	--	--	Pass

Figure Channel 36:

Vertical (Peak)

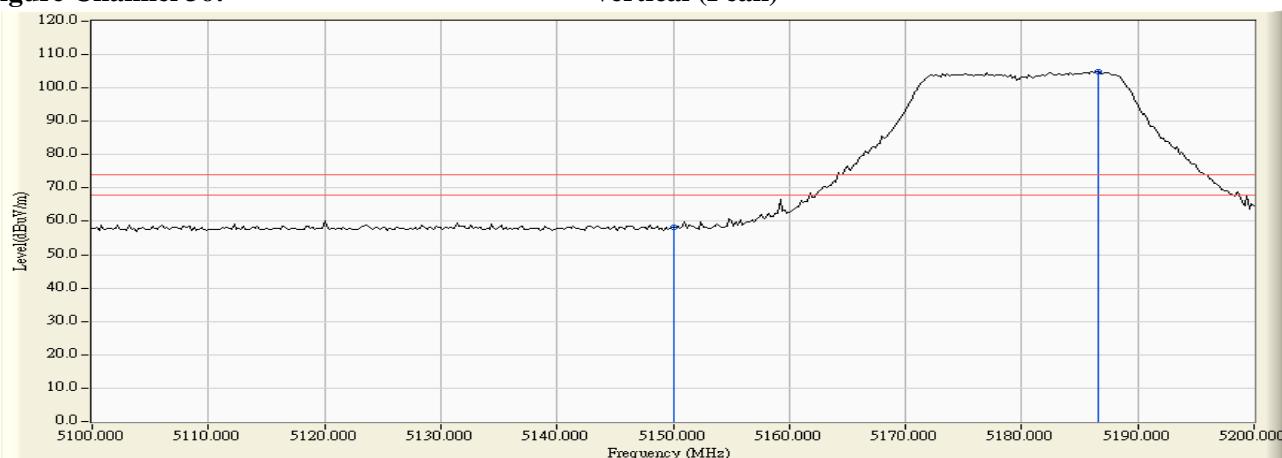
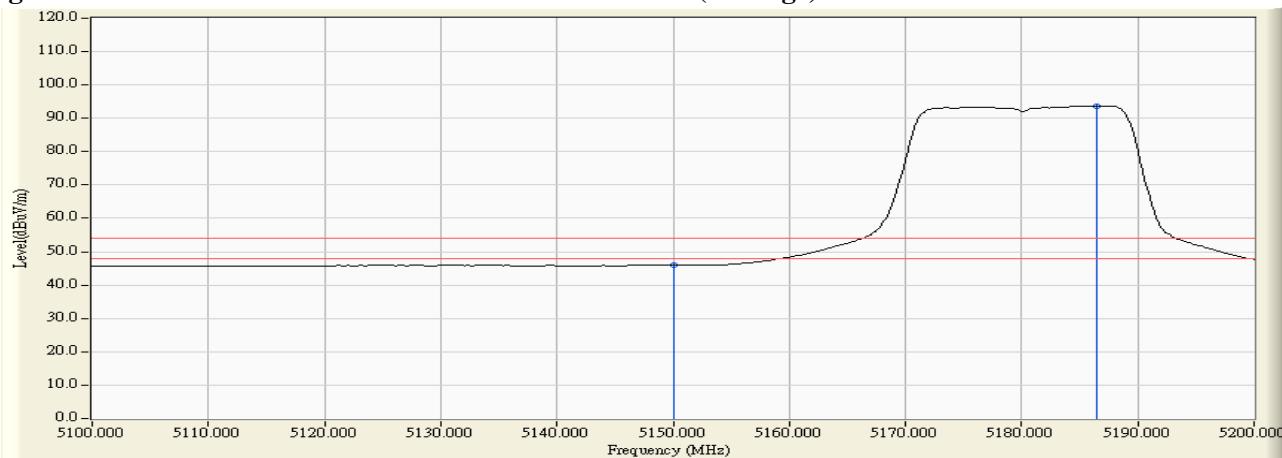


Figure Channel 36:

Vertical (Average)



Note:

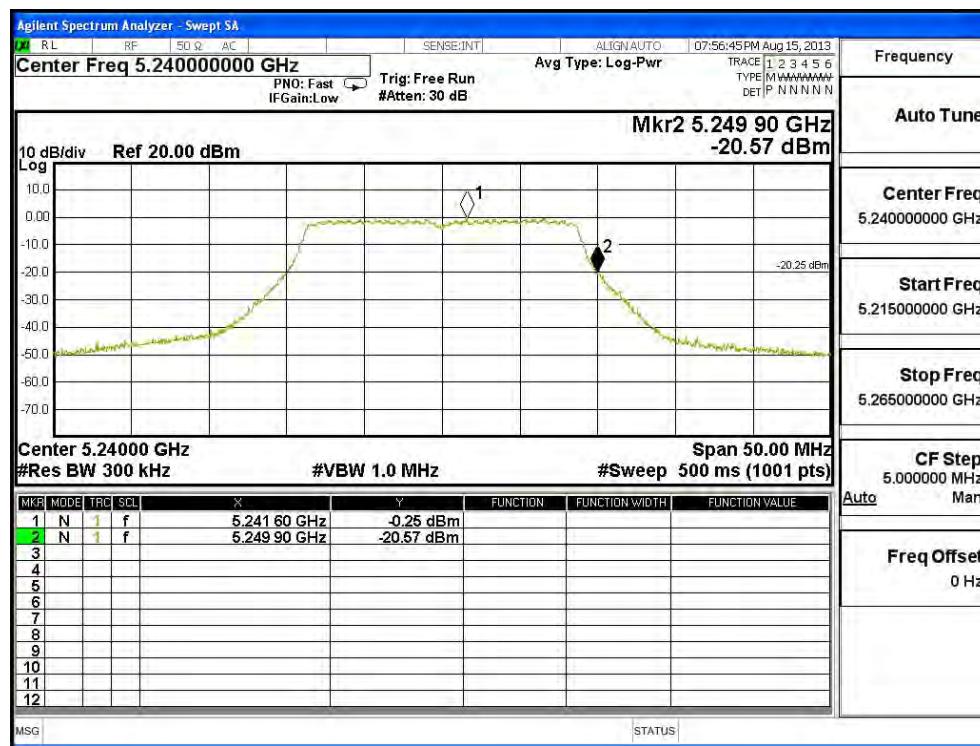
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna) -Channel 48

Chain A

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.90	<5250	PASS

NOTE: Accordance with 15.215 requirement.

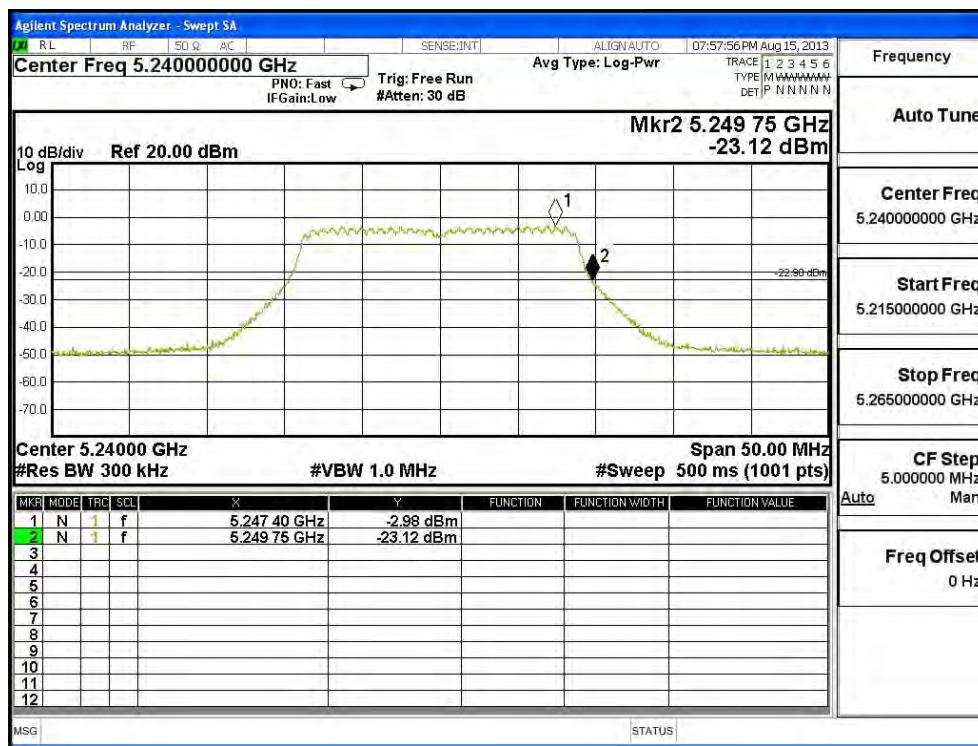


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna) -Channel 48

Chain B

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.75	<5250	PASS

NOTE: Accordance with 15.215 requirement.

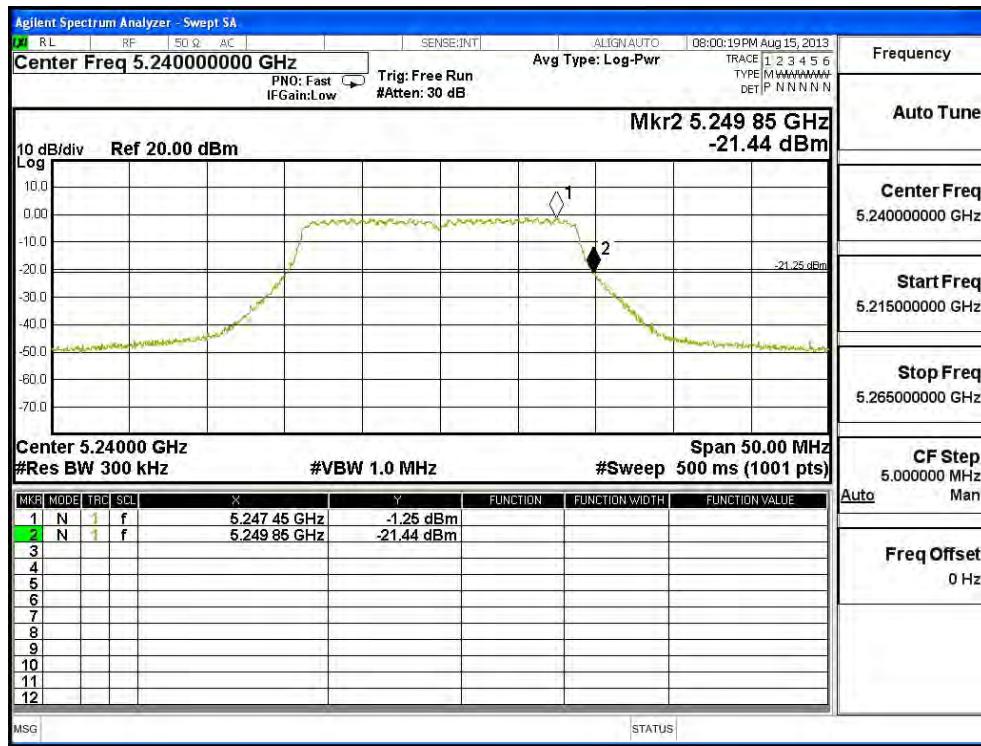


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit (802.11n-20BW 21.7Mbps)(PIFA Antenna) -Channel 48

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 : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit (802.11n-40BW 45Mbps)(PIFA Antenna) -Channel 38

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)	5149.200	3.343	56.812	60.155	74.00	54.00	Pass
38 (Peak)	5150.000	3.340	55.326	58.666	74.00	54.00	Pass
38 (Peak)	5186.400	3.211	96.755	99.967	--	--	Pass
38 (Average)	5150.000	3.340	42.084	45.424	74.00	54.00	Pass
38 (Average)	5198.400	3.159	84.274	87.433	--	--	Pass

Figure Channel 38:

Horizontal (Peak)

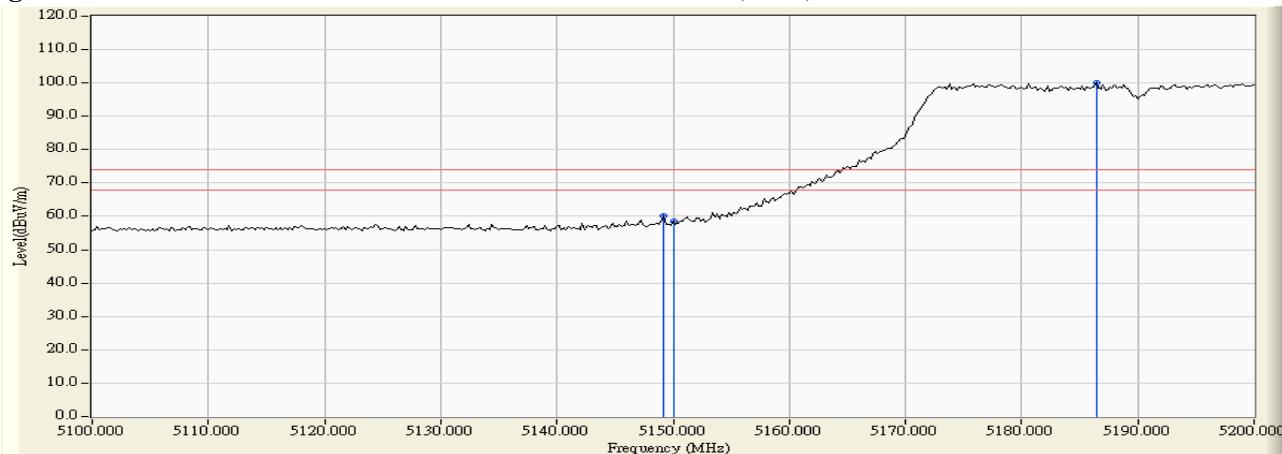
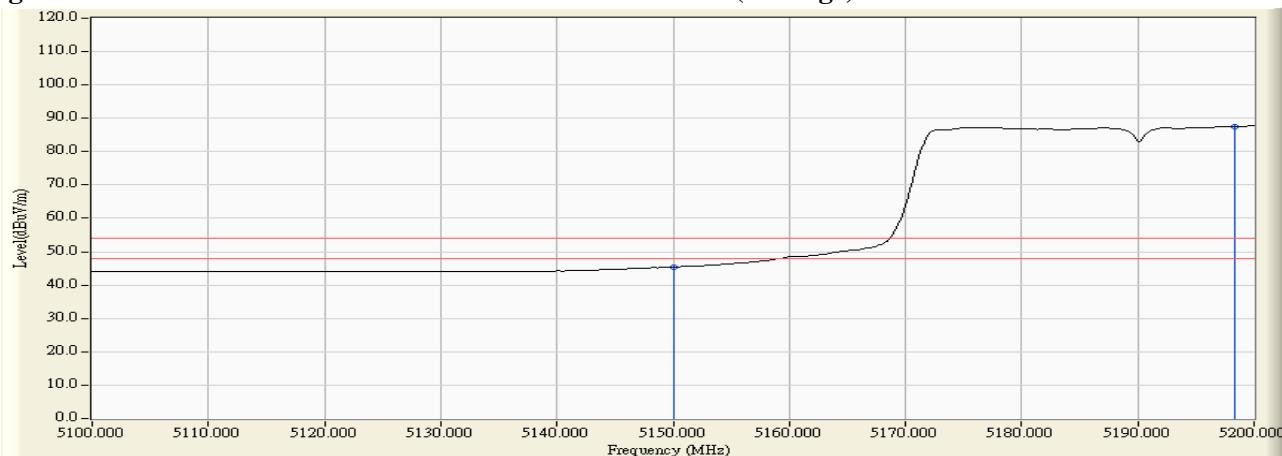


Figure Channel 38:

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 : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit (802.11n-40BW 45Mbps)(PIFA Antenna) -Channel 38

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)	5149.400	5.258	60.006	65.264	74.00	54.00	Pass
38 (Peak)	5150.000	5.260	55.876	61.136	74.00	54.00	Pass
38 (Peak)	5198.000	5.381	98.211	103.592	--	--	Pass
38 (Average)	5150.000	5.260	42.222	47.482	74.00	54.00	Pass
38 (Average)	5197.600	5.380	85.515	90.895	--	--	Pass

Figure Channel 38:

Vertical (Peak)

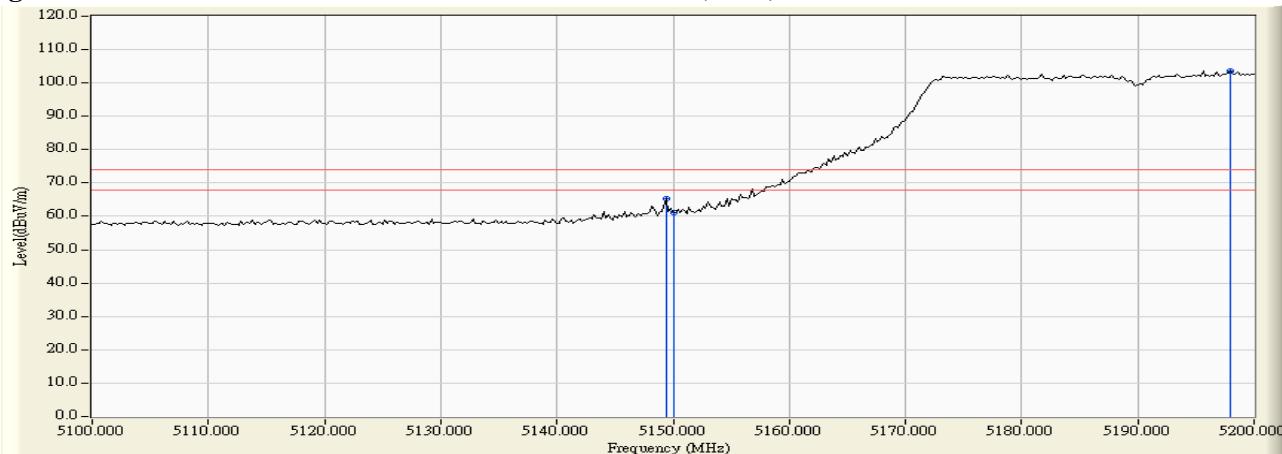
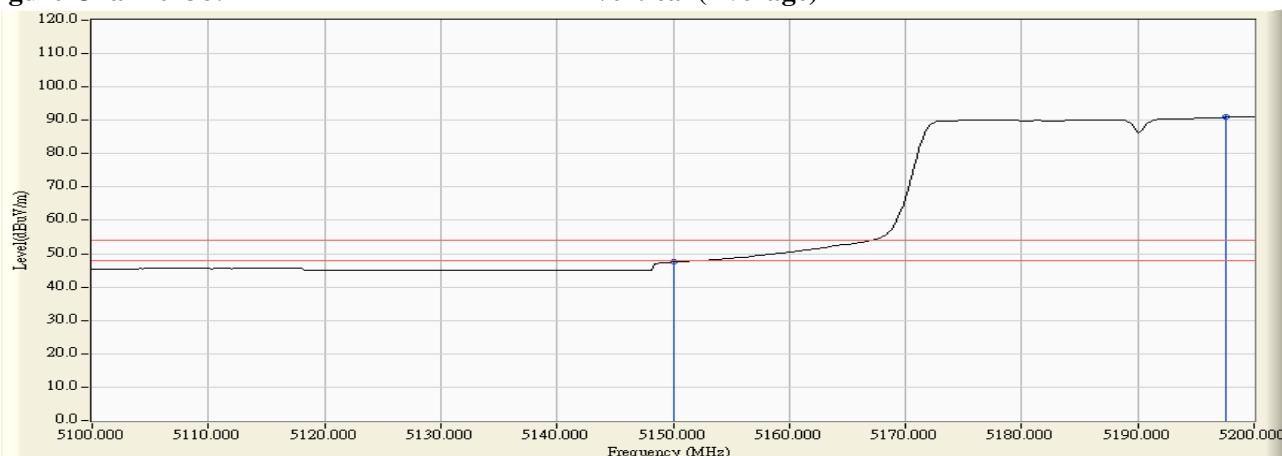


Figure Channel 38:

Vertical (Average)



Note:

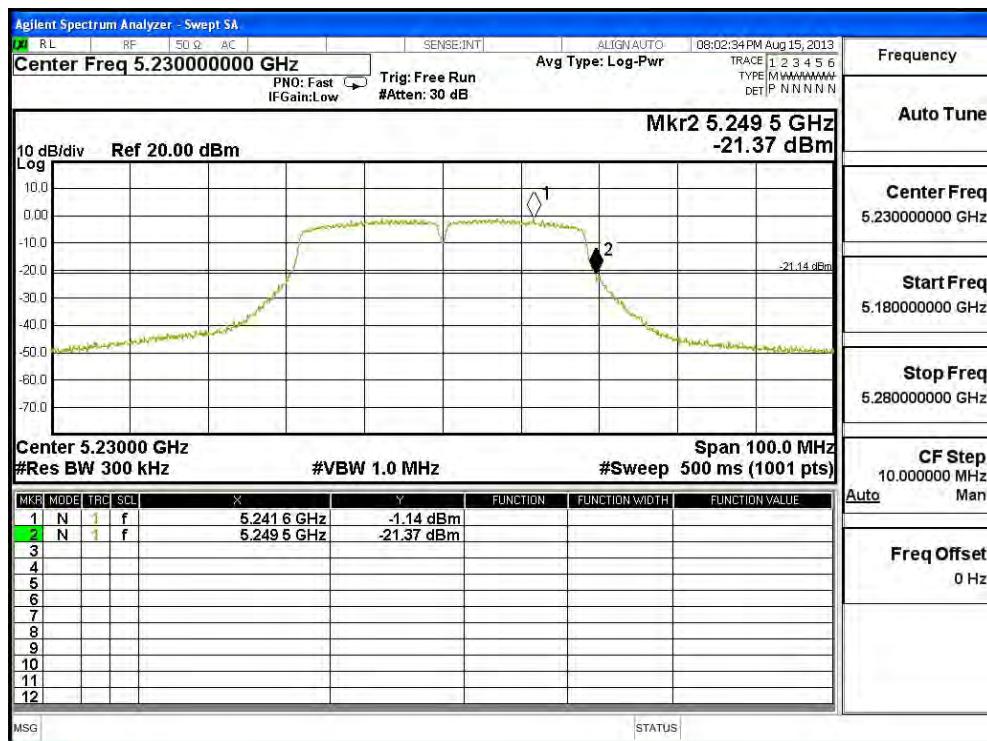
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit (802.11n-40BW 45Mbps)(PIFA Antenna)-Channel 46

Chain A

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5249.50	<5250	PASS

NOTE: Accordance with 15.215 requirement.

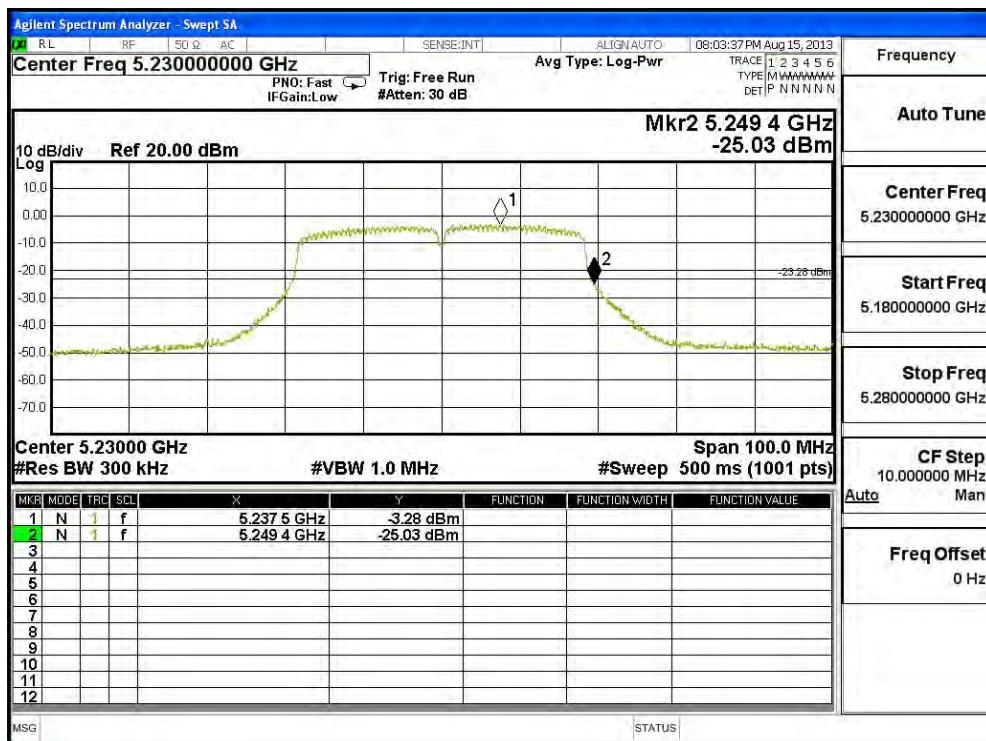


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit (802.11n-40BW 45Mbps)(PIFA Antenna)-Channel 46

Chain B

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5230	5249.40	<5250	PASS

NOTE: Accordance with 15.215 requirement.

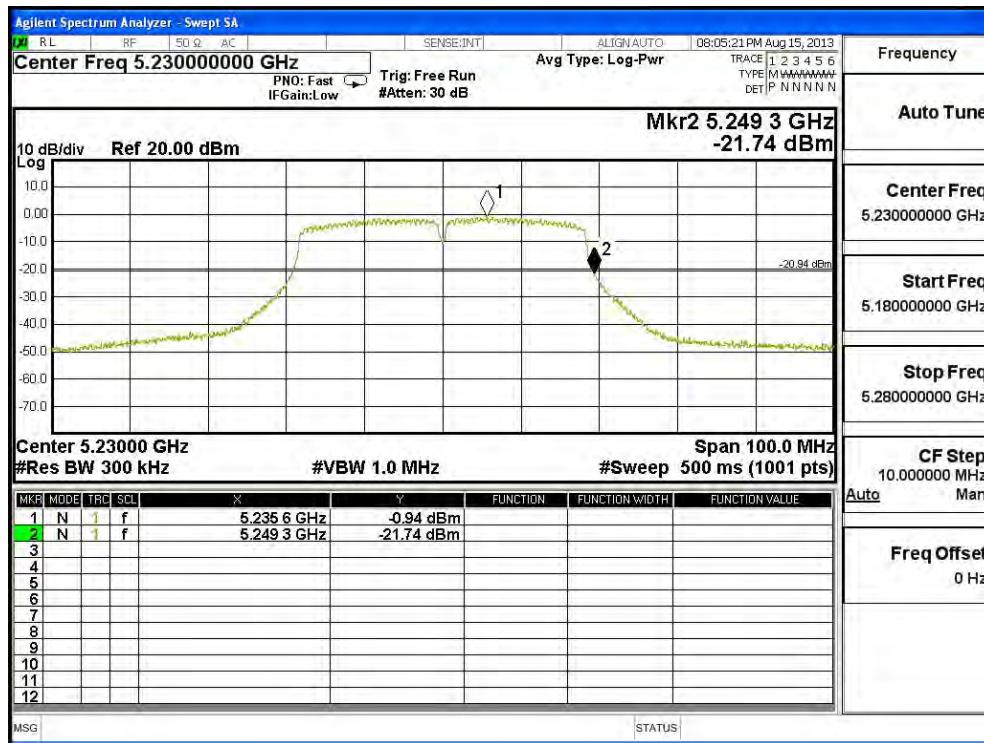


Product : SpectraGuard® Access Point / Sensor
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit (802.11n-40BW 45Mbps)(PIFA Antenna)-Channel 46

Chain C

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

NOTE: Accordance with 15.215 requirement.



8. Frequency Stability

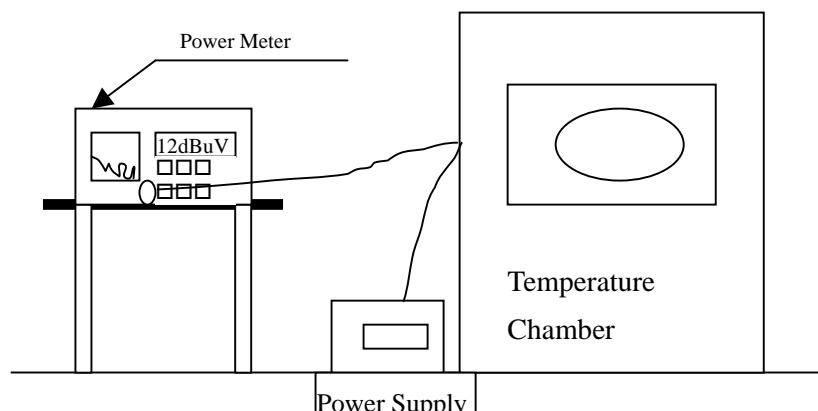
8.1. Test Equipment

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

Manufacturers 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 : SpectraGuard® Access Point / Sensor
 Test Item : Frequency Stability
 Test Site : Temperature Chamber
 Test Mode : Carrier Wave (Dipole Antenna)

Chain A

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
T _{nom} (20) °C	V _{nom} (120)V	36	5180.0000	5180.0064	-0.0064
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0099	-0.0099
T _{max} (40) °C	V _{max} (138)V	36	5180.0000	5180.0058	-0.0058
		38	5190.0000	5190.0099	-0.0099
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0098	-0.0098
T _{max} (40) °C	V _{min} (102)V	36	5180.0000	5180.0058	-0.0058
		38	5190.0000	5190.0099	-0.0099
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0098	-0.0098
T _{min} (0) °C	V _{max} (138)V	36	5180.0000	5180.0100	-0.0100
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0098	-0.0098
		48	5240.0000	5240.0094	-0.0094
T _{min} (0) °C	V _{min} (102)V	36	5180.0000	5180.0100	-0.0100
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0098	-0.0098
		48	5240.0000	5240.0094	-0.0094

Chain B

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
T _{nom} (20) °C	V _{nom} (120)V	36	5180.0000	5180.0065	-0.0065
		38	5190.0000	5190.0091	-0.0091
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0087	-0.0087
		48	5240.0000	5240.0101	-0.0101
T _{max} (40) °C	V _{max} (138)V	36	5180.0000	5180.0059	-0.0059
		38	5190.0000	5190.0101	-0.0101
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0087	-0.0087
		48	5240.0000	5240.0100	-0.0100
T _{max} (40) °C	V _{min} (102)V	36	5180.0000	5180.0059	-0.0059
		38	5190.0000	5190.0101	-0.0101
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0087	-0.0087
		48	5240.0000	5240.0100	-0.0100
T _{min} (0) °C	V _{max} (138)V	36	5180.0000	5180.0101	-0.0101
		38	5190.0000	5190.0091	-0.0091
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0100	-0.0100
		48	5240.0000	5240.0096	-0.0096
T _{min} (0) °C	V _{min} (102)V	36	5180.0000	5180.0101	-0.0101
		38	5190.0000	5190.0091	-0.0091
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0100	-0.0100
		48	5240.0000	5240.0096	-0.0096

Chain C

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
T _{nom} (20) °C	V _{nom} (120)V	36	5180.0000	5180.0064	-0.0064
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0099	-0.0099
T _{max} (40) °C	V _{max} (138)V	36	5180.0000	5180.0058	-0.0058
		38	5190.0000	5190.0099	-0.0099
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0098	-0.0098
T _{max} (40) °C	V _{min} (102)V	36	5180.0000	5180.0058	-0.0058
		38	5190.0000	5190.0099	-0.0099
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0098	-0.0098
T _{min} (0) °C	V _{max} (138)V	36	5180.0000	5180.0100	-0.0100
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0098	-0.0098
		48	5240.0000	5240.0094	-0.0094
T _{min} (0) °C	V _{min} (102)V	36	5180.0000	5180.0100	-0.0100
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0098	-0.0098
		48	5240.0000	5240.0094	-0.0094

Product : SpectraGuard® Access Point / Sensor
 Test Item : Frequency Stability
 Test Site : Temperature Chamber
 Test Mode : Carrier Wave (PIFA Antenna)

Chain A

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
T _{nom} (20) °C	V _{nom} (120)V	36	5180.0000	5180.0064	-0.0064
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0099	-0.0099
T _{max} (40) °C	V _{max} (138)V	36	5180.0000	5180.0058	-0.0058
		38	5190.0000	5190.0099	-0.0099
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0098	-0.0098
T _{max} (40) °C	V _{min} (102)V	36	5180.0000	5180.0058	-0.0058
		38	5190.0000	5190.0099	-0.0099
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0098	-0.0098
T _{min} (0) °C	V _{max} (138)V	36	5180.0000	5180.0100	-0.0100
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0098	-0.0098
		48	5240.0000	5240.0094	-0.0094
T _{min} (0) °C	V _{min} (102)V	36	5180.0000	5180.0100	-0.0100
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0098	-0.0098
		48	5240.0000	5240.0094	-0.0094

Chain B

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
T _{nom} (20) °C	V _{nom} (120)V	36	5180.0000	5180.0065	-0.0065
		38	5190.0000	5190.0091	-0.0091
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0087	-0.0087
		48	5240.0000	5240.0101	-0.0101
T _{max} (40) °C	V _{max} (138)V	36	5180.0000	5180.0059	-0.0059
		38	5190.0000	5190.0101	-0.0101
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0087	-0.0087
		48	5240.0000	5240.0100	-0.0100
T _{max} (40) °C	V _{min} (102)V	36	5180.0000	5180.0059	-0.0059
		38	5190.0000	5190.0101	-0.0101
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0087	-0.0087
		48	5240.0000	5240.0100	-0.0100
T _{min} (0) °C	V _{max} (138)V	36	5180.0000	5180.0101	-0.0101
		38	5190.0000	5190.0091	-0.0091
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0100	-0.0100
		48	5240.0000	5240.0096	-0.0096
T _{min} (0) °C	V _{min} (102)V	36	5180.0000	5180.0101	-0.0101
		38	5190.0000	5190.0091	-0.0091
		44	5220.0000	5220.0098	-0.0098
		46	5230.0000	5230.0100	-0.0100
		48	5240.0000	5240.0096	-0.0096

Chain C

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
T _{nom} (20) °C	V _{nom} (120)V	36	5180.0000	5180.0066	-0.0066
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0095	-0.0095
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0099	-0.0099
T _{max} (40) °C	V _{max} (138)V	36	5180.0000	5180.0063	-0.0063
		38	5190.0000	5190.0092	-0.0092
		44	5220.0000	5220.0101	-0.0101
		46	5230.0000	5230.0085	-0.0085
		48	5240.0000	5240.0103	-0.0103
T _{max} (40) °C	V _{min} (102)V	36	5180.0000	5180.0068	-0.0068
		38	5190.0000	5190.0089	-0.0089
		44	5220.0000	5220.0100	-0.0100
		46	5230.0000	5230.0088	-0.0088
		48	5240.0000	5240.0098	-0.0098
T _{min} (0) °C	V _{max} (138)V	36	5180.0000	5180.0063	-0.0063
		38	5190.0000	5190.0092	-0.0092
		44	5220.0000	5220.0100	-0.0100
		46	5230.0000	5230.0086	-0.0086
		48	5240.0000	5240.0100	-0.0100
T _{min} (0) °C	V _{min} (102)V	36	5180.0000	5180.0063	-0.0063
		38	5190.0000	5190.0093	-0.0093
		44	5220.0000	5220.0097	-0.0097
		46	5230.0000	5230.0086	-0.0086
		48	5240.0000	5240.0104	-0.0104

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.