Test Report

Product Name	SpectraGuardR Access Point / Sensor
Model No	SS-300-AT-C-60
FCC ID	TOR-SS300AT60

Applicant	AirTight Networks, Inc.
Address	339 N. Bernardo Avenue, Suite #200, Mountain View, California, USA

Date of Receipt	Oct. 11, 2012
Issued Date	Oct. 26, 2012
Report No.	12A193R-RFUSP32V01-A
Report Version	V1.0

Testing Laboratory
0914

The test results relate only to the samples tested.
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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Issued Date: Oct. 26, 2012
Report No.: 12A193R-RFUSP32V01-A

Product Name	SpectraGuardR Access Point / Sensor
Applicant	AirTight Networks, Inc.
Address	339 N. Bernardo Avenue, Suite #200, Mountain View, California, USA
Manufacturer	DONG GUAN G-COM COMPUTER CO., LTD.
Model No.	SS-300-AT-C-60
FCC ID.	TOR-SS300AT60
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	AirTight
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2010 ANSI C63.4: 2003; FCC KDB-789033
Test Result	Complied

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(Senior Adm. Specialist / Rita Huang)

Tested By : Vincent chu
(Engineer / Vincent Chu)

Approved By :
(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	SpectraGuardR Access Point / Sensor
Trade Name	AirTight
FCC ID.	TOR-SS300AT60
Model No.	SS-300-AT-C-60
Frequency Range	802.11a/n-20MHz: 5180-5240MHz 802.11n-40MHz: 5190-5230MHz
Number of Channels	802.11a/n-20MHz: 4, n-40MHz: 2
Data Rate	802.11a/g: 6-54Mbps, 802.11n: up to 300Mbps
Channel Control	Auto
Type of Modulation	802.11a/n:OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna type	PIFA / Dipole
Antenna Gain	Refer to the table “Antenna List”
Adapter	MFR: DVE, M/N: DSA-15P-123 US 120150 Input: AC 100-240V~50/60Hz, 0.5A Output: DC +12V, 1.25A Cable out: Non-Shielded, 1.7m

Antenna List

No.	Manufacturer	Part No.	Peak Gain	Note
1.	JOYMAX	JWX-614XRSXX-361	5dBi for 5.15~5.25GHz	External Antenna (Dipole)
2.	MAG.LAYERS	MSA-3810-2G4C1-A36 MSA-3810-2G4C1-A38	2.64dBi for 5.15~5.25GHz	Internal Antenna (PIFA)

Note: The antenna of EUT is conform to FCC 15.203

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz

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

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

Note:

1. This device is a SpectraGuardR Access Point / Sensor with a built-in two WLAN module, module 1 support 2T2R, module 2 support 3T3R technology, this report for 2T2R module.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps, 802.11n-20BW is 14.4Mbps and 802.11n-40BW are 30Mbps)
4. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.
5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna)
	Mode 2: Transmit (802.11n-20BW 14.4Mbps)(Dipole Antenna)
	Mode 3: Transmit (802.11n-40BW 30Mbps)(Dipole Antenna)
	Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna)
	Mode 5: Transmit (802.11n-20BW 14.4Mbps)(PIFA Antenna)
	Mode 6: Transmit (802.11n-40BW 30Mbps)(PIFA Antenna)

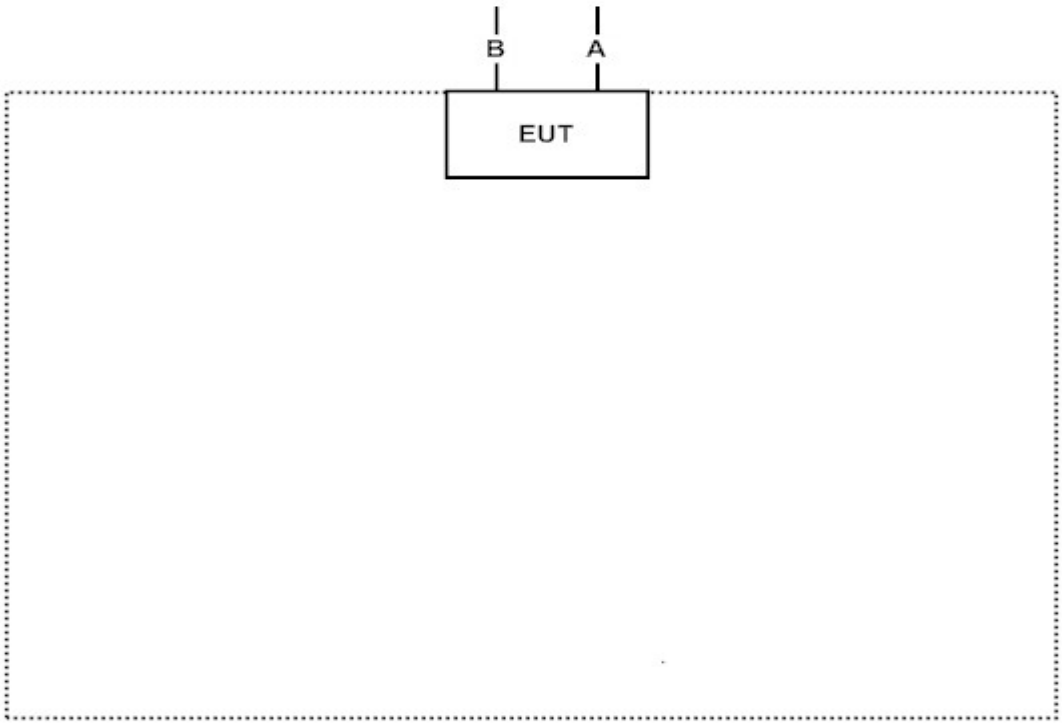
1.3. Tested System Datails

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

Product	Manufacturer	Model No.	Serial No.	Power Cord
N/A				

Signal Cable Type		Signal cable Description
A	RJ-45 Cable	Non-Shielded, 2.0m
B	RJ-45 Cable	Non-Shielded, 2.0m

1.4. Configuration of tested System



1.5. EUT Exercise Software

(1) Connect EUT and Notebook via LAN Cable
(2) Execute “Art2. V2.3 exe” program on the Notebook
(3) Configure the test mode, the test channel, and the data rate.
(4) Start the continuous transmission.
(5) Remove Notebook, Setup the EUT as shown in Section 1.4
(6) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

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

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

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

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation
Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
Lin-Kou Shiang, Taipei,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

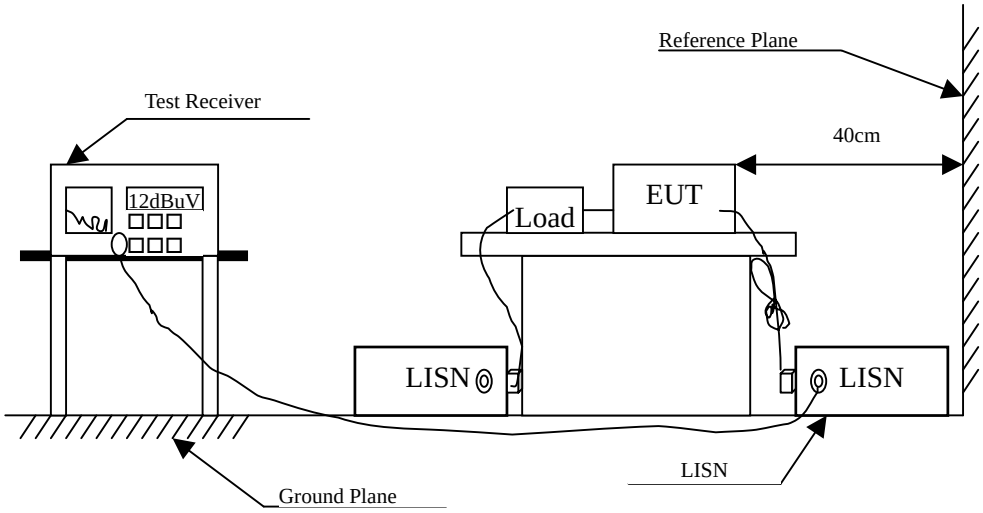
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2012	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2012	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2012	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2012	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2012	
	No.1 Shielded Room				

Note:

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

2.2. Test Setup



2.3. Limits

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

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

2.4. Test Procedure

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

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

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

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : SpectraGuardR Access Point / Sensor
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps)(Dipole Antenna) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.291	9.830	27.920	37.750	-24.221	61.971
0.377	9.830	29.340	39.170	-20.344	59.514
0.638	9.830	28.830	38.660	-17.340	56.000
1.806	9.840	26.040	35.880	-20.120	56.000
3.009	9.850	24.710	34.560	-21.440	56.000
5.947	9.891	36.640	46.531	-13.469	60.000
Average					
0.291	9.830	19.810	29.640	-22.331	51.971
0.377	9.830	18.760	28.590	-20.924	49.514
0.638	9.830	21.180	31.010	-14.990	46.000
1.806	9.840	9.290	19.130	-26.870	46.000
3.009	9.850	11.250	21.100	-24.900	46.000
5.947	9.891	23.720	33.611	-16.389	50.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps)(Dipole Antenna) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.334	9.840	38.600	48.440	-12.303	60.743
0.638	9.840	29.480	39.320	-16.680	56.000
0.873	9.850	30.920	40.770	-15.230	56.000
1.455	9.850	29.910	39.760	-16.240	56.000
2.310	9.860	30.300	40.160	-15.840	56.000
5.529	9.905	34.570	44.475	-15.525	60.000
Average					
0.334	9.840	28.030	37.870	-12.873	50.743
0.638	9.840	21.480	31.320	-14.680	46.000
0.873	9.850	16.300	26.150	-19.850	46.000
1.455	9.850	13.670	23.520	-22.480	46.000
2.310	9.860	16.130	25.990	-20.010	46.000
5.529	9.905	22.520	32.425	-17.575	50.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 6: Transmit (802.11n-40BW 30Mbps)(PIFA Antenna) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.170	9.830	21.930	31.760	-33.669	65.429
0.314	9.830	31.430	41.260	-20.054	61.314
0.662	9.830	29.760	39.590	-16.410	56.000
1.482	9.831	23.230	33.061	-22.939	56.000
2.154	9.840	26.080	35.920	-20.080	56.000
5.595	9.886	33.630	43.516	-16.484	60.000
Average					
0.170	9.830	14.390	24.220	-31.209	55.429
0.314	9.830	22.460	32.290	-19.024	51.314
0.662	9.830	21.830	31.660	-14.340	46.000
1.482	9.831	8.760	18.591	-27.409	46.000
2.154	9.840	10.890	20.730	-25.270	46.000
5.595	9.886	20.440	30.326	-19.674	50.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 6: Transmit (802.11n-40BW 30Mbps)(PIFA Antenna) (5190MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.322	9.840	29.870	39.710	-21.376	61.086
0.517	9.840	24.430	34.270	-21.730	56.000
0.666	9.840	29.540	39.380	-16.620	56.000
0.966	9.850	22.450	32.300	-23.700	56.000
2.205	9.860	23.880	33.740	-22.260	56.000
6.298	9.926	31.290	41.216	-18.784	60.000
Average					
0.322	9.840	20.030	29.870	-21.216	51.086
0.517	9.840	17.240	27.080	-18.920	46.000
0.666	9.840	21.290	31.130	-14.870	46.000
0.966	9.850	9.150	19.000	-27.000	46.000
2.205	9.860	9.310	19.170	-26.830	46.000
6.298	9.926	18.760	28.686	-21.314	50.000

Note:

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

3. Maximun conducted output power

3.1. Test Equipment

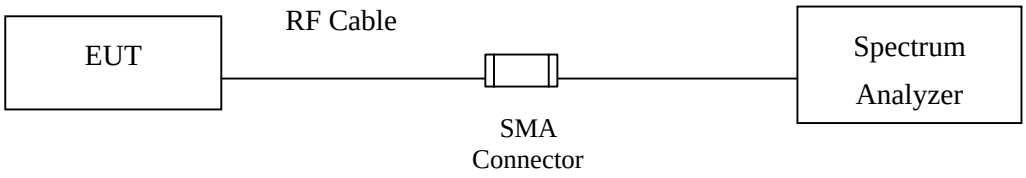
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2012
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

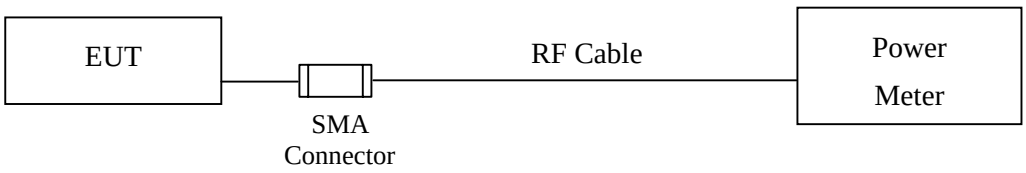
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup

26dBc Occupied Bandwidth



Conduction Power Measurement



3.3. Limits

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

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

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

3.4. Test Procedur

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

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Maximum conducted output power

Product : SpectraGuardR Access Point / Sensor
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)(Dipole Antenna)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	13.42	--	--	--	--	--	--	--	<17dBm
44	5220	13.93	13.81	13.77	13.64	13.5	13.47	13.32	13.22	<17dBm
48	5240	14.41	--	--	--	--	--	--	--	<17dBm

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

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	12.90	--	--	--	--	--	--	--	<17dBm
44	5220	12.40	12.37	12.23	12.18	12.05	11.95	11.81	11.76	<17dBm
48	5240	12.71	--	--	--	--	--	--	--	<17dBm

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

Maximum conducted output power Measurement:

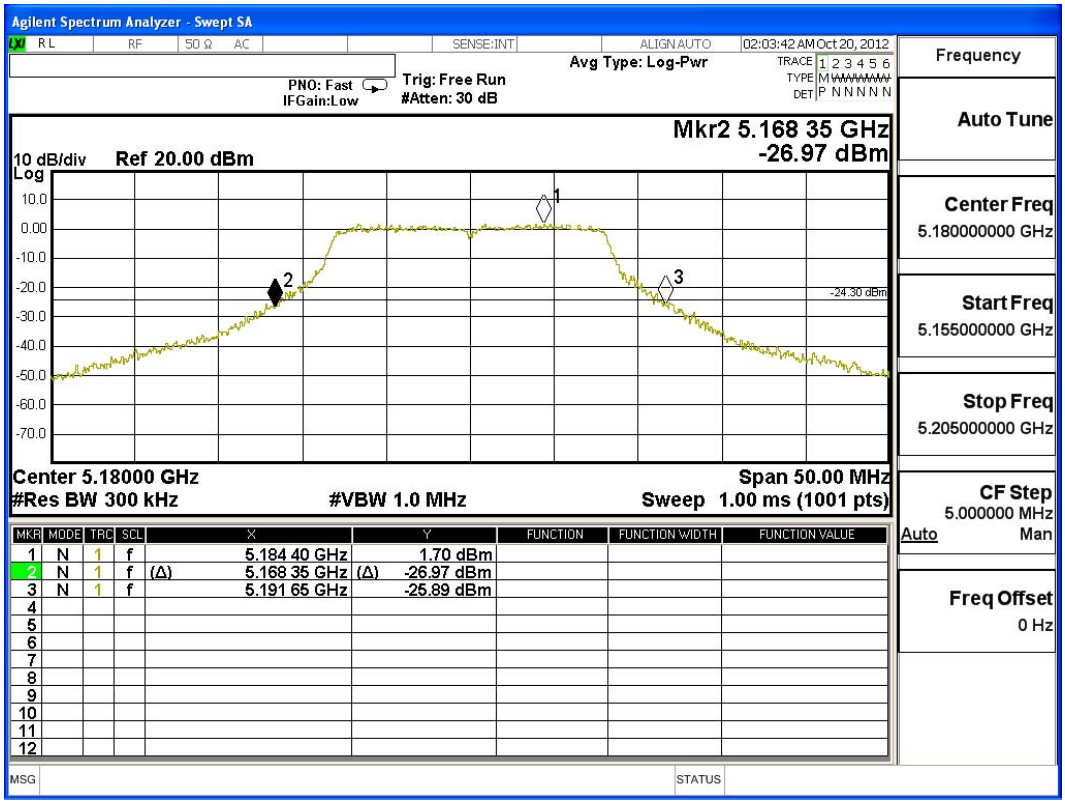
(CHAIN A+ B)

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
36	5180	21.350	13.42	12.90	16.18	17	17.29
44	5220	21.700	13.93	12.40	16.24	17	17.36
48	5240	21.600	14.41	12.71	16.65	17	17.34

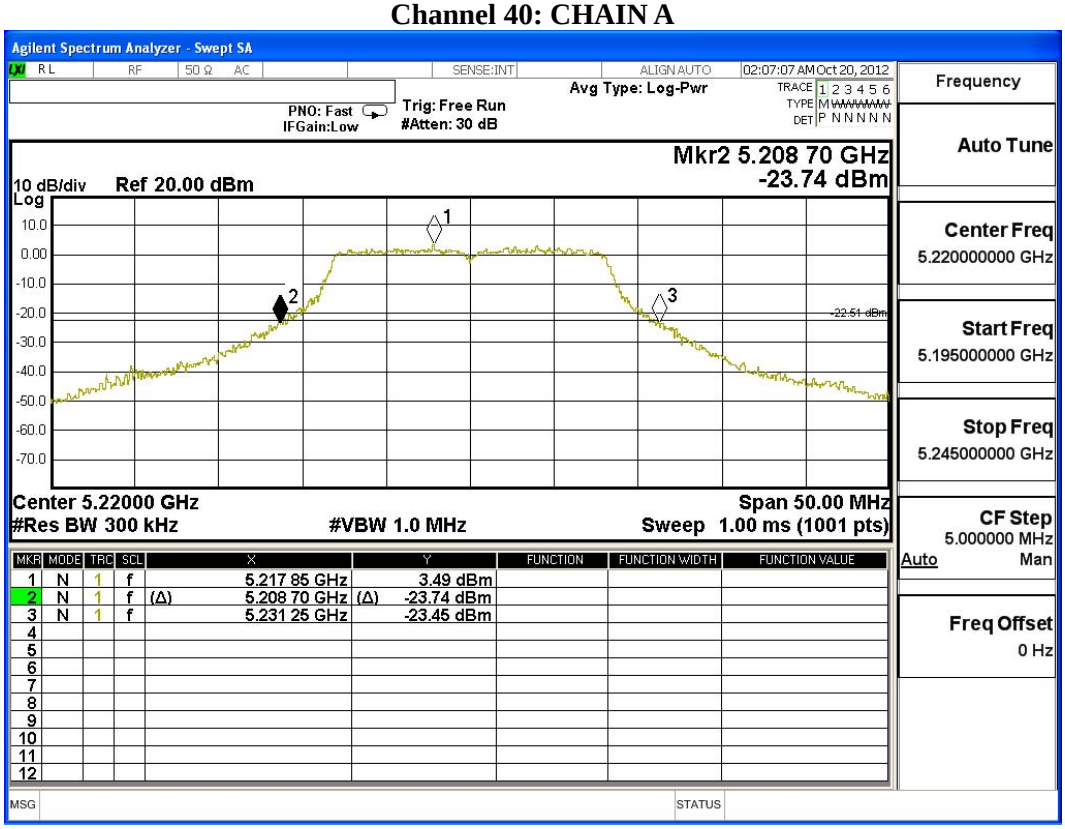
Note:

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

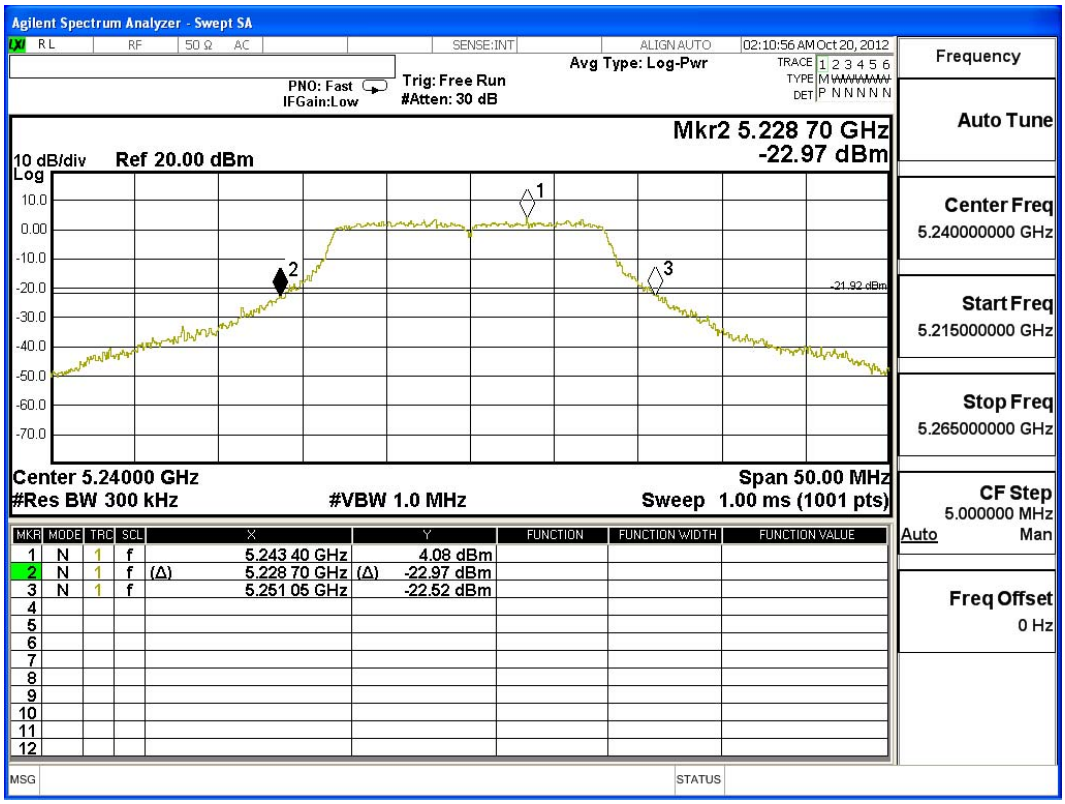
26dBc Occupied Bandwidth:
Channel 36: CHAIN A



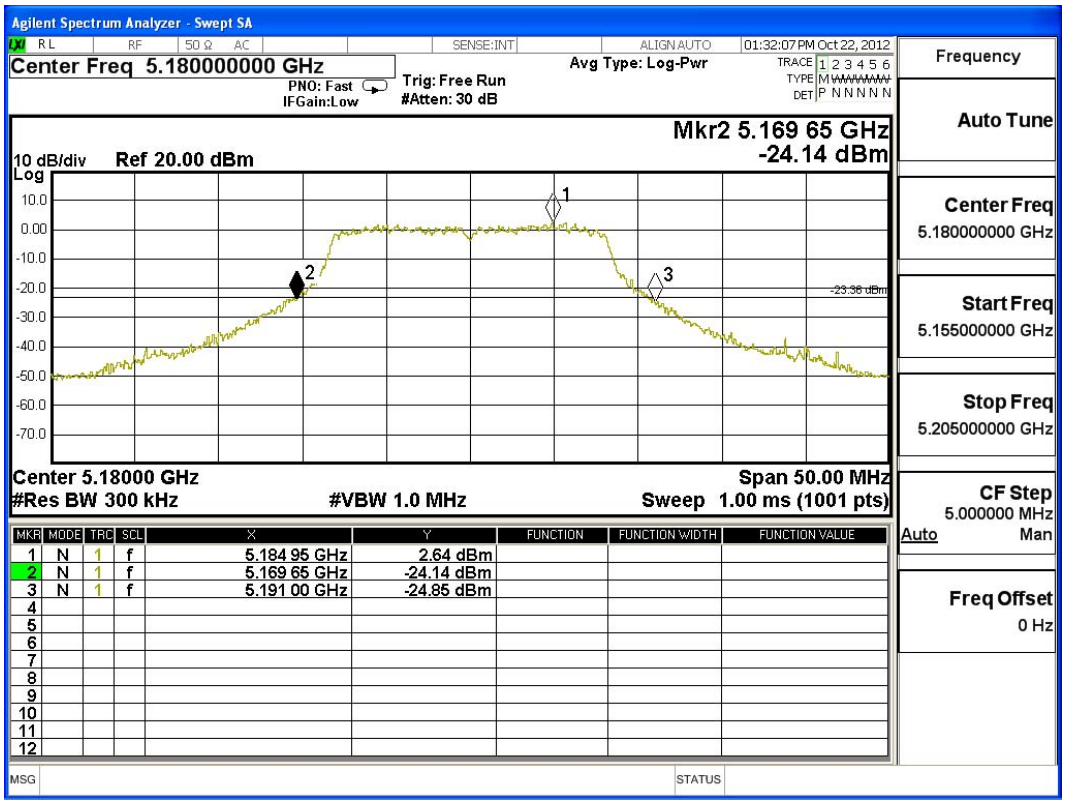
Channel 40: CHAIN A



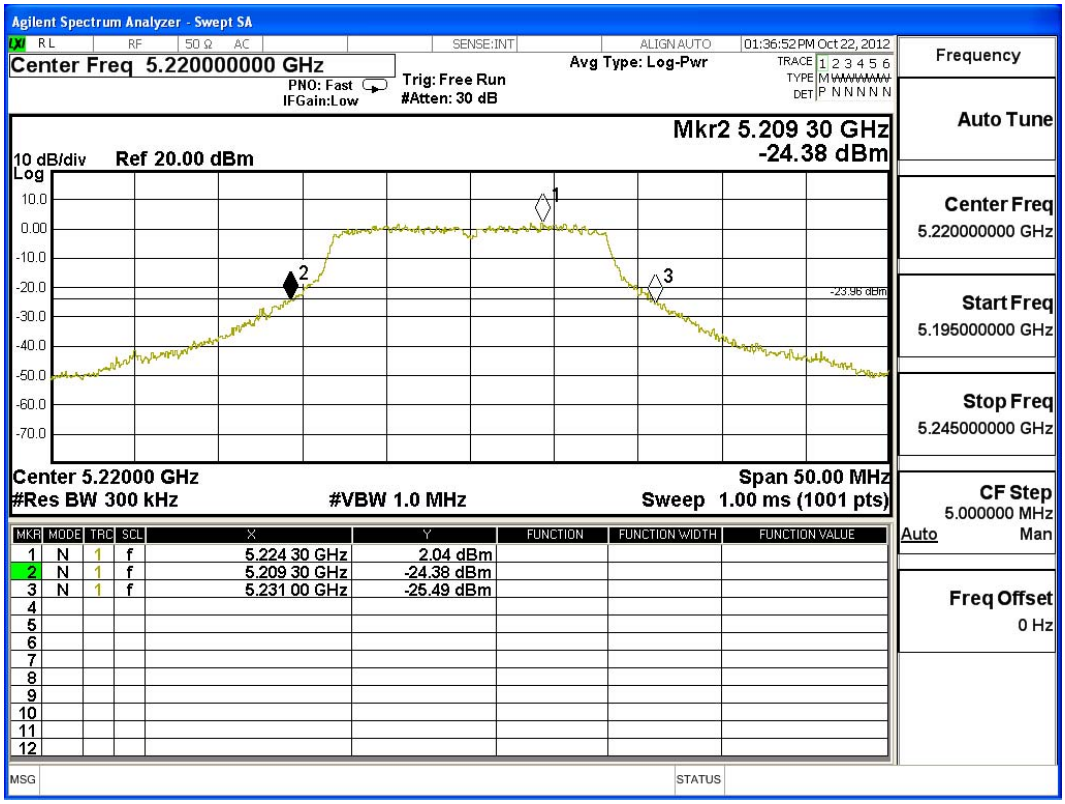
Channel 48: CHAIN A



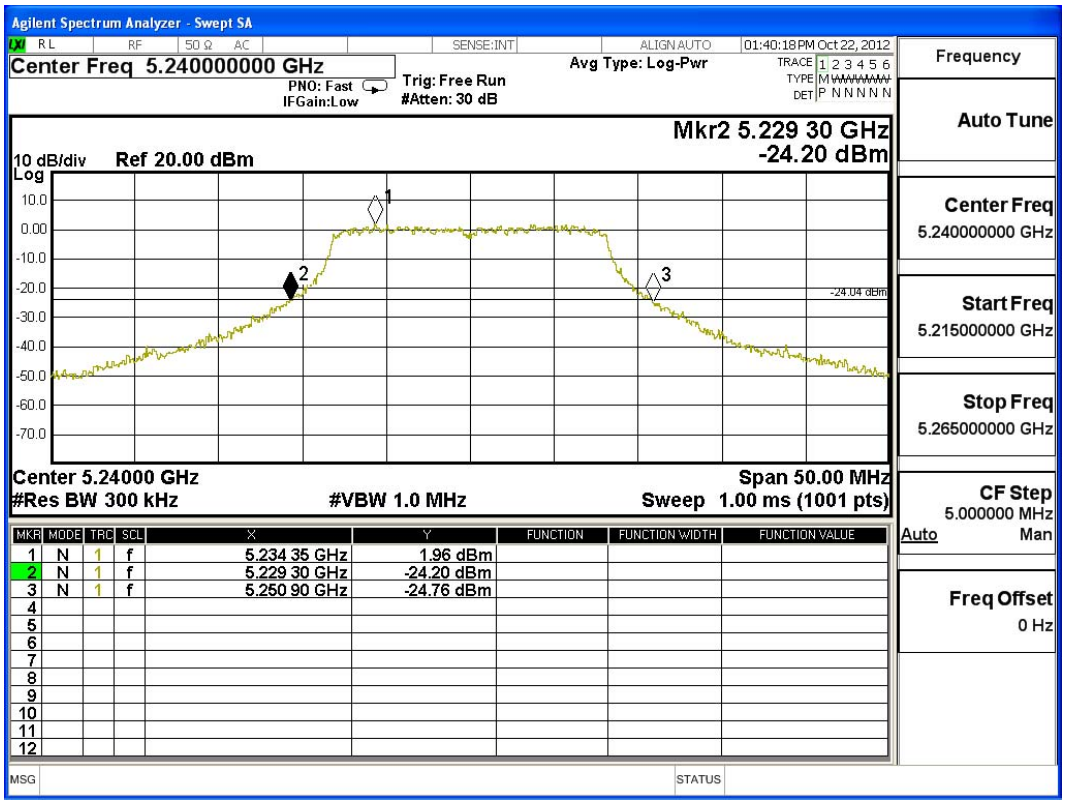
26dBc Occupied Bandwidth:
Channel 36: CHAIN B



Channel 40: CHAIN B



Channel 48: CHAIN B



Product : SpectraGuardR Access Point / Sensor
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 14.4Mbps)(Dipole Antenna)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	
		Measurement Level (dBm)								
36	5180	13.43	--	--	--	--	--	--	--	<17dBm
44	5220	13.95	13.86	13.74	13.65	13.52	13.47	13.38	13.28	<17dBm
48	5240	13.81	--	--	--	--	--	--	--	<17dBm

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

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	
		Measurement Level (dBm)								
36	5180	13.32	--	--	--	--	--	--	--	<17dBm
44	5220	12.87	12.75	12.66	12.54	12.42	12.33	12.28	12.16	<17dBm
48	5240	12.90	--	--	--	--	--	--	--	<17dBm

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

Maximum conducted output power Measurement:

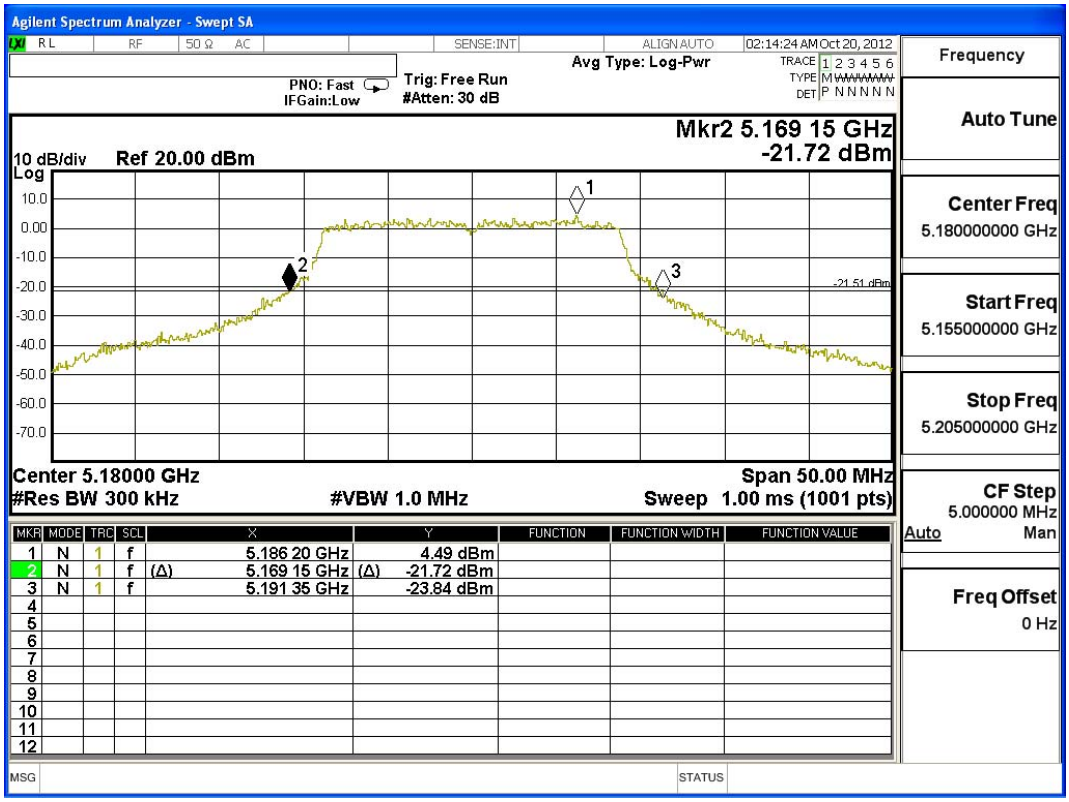
(CHAIN A+ B)

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
36	5180	22.200	13.43	13.32	16.39	17	17.46
44	5220	22.100	13.95	12.87	16.45	17	17.44
48	5240	22.250	13.81	12.90	16.39	17	17.47

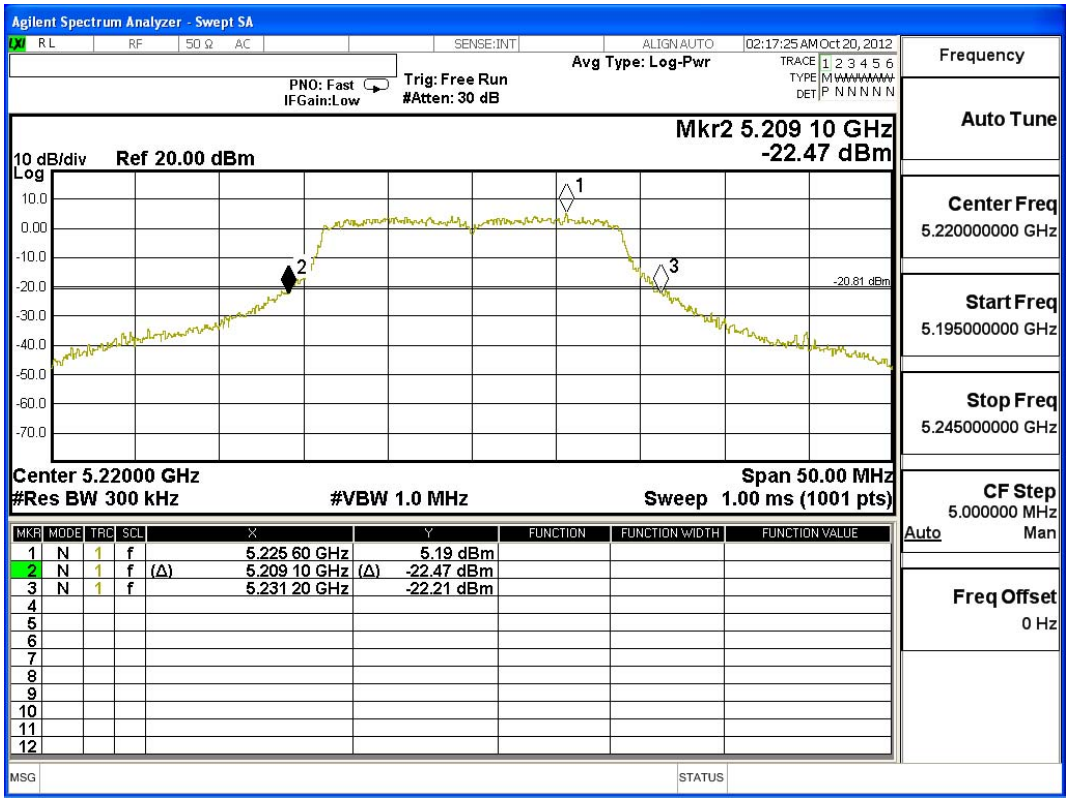
Note:

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

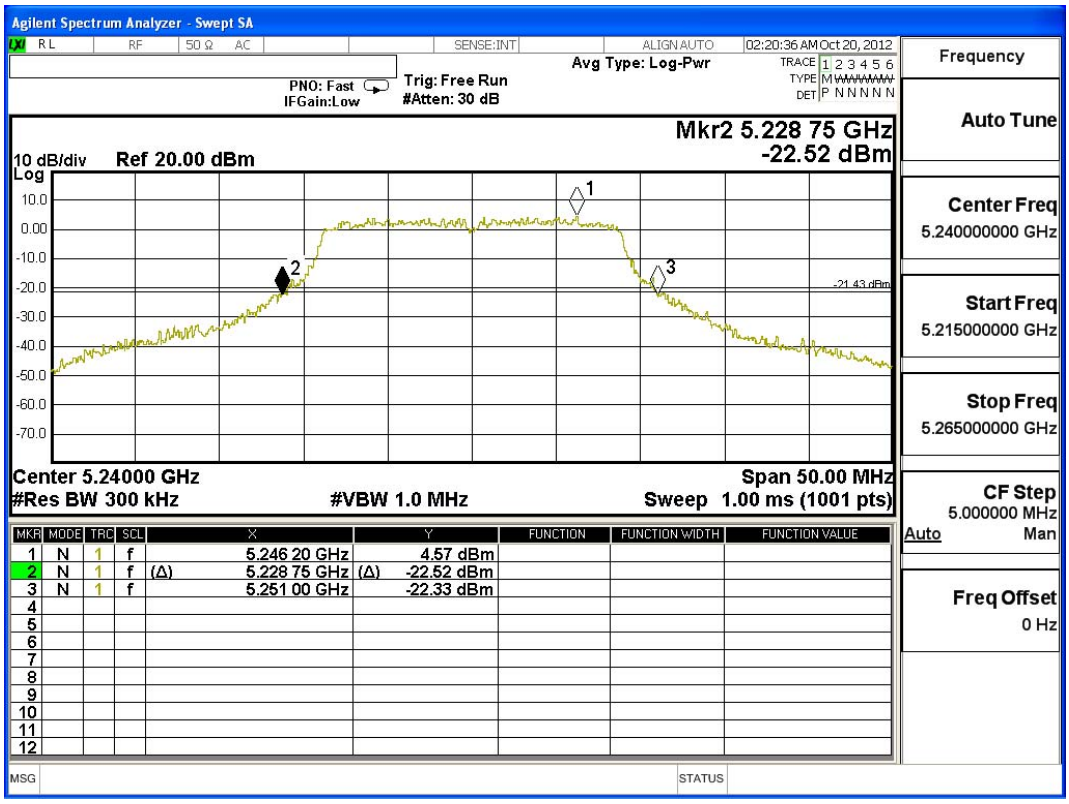
26dBc Occupied Bandwidth:
Channel 36 -Chain A



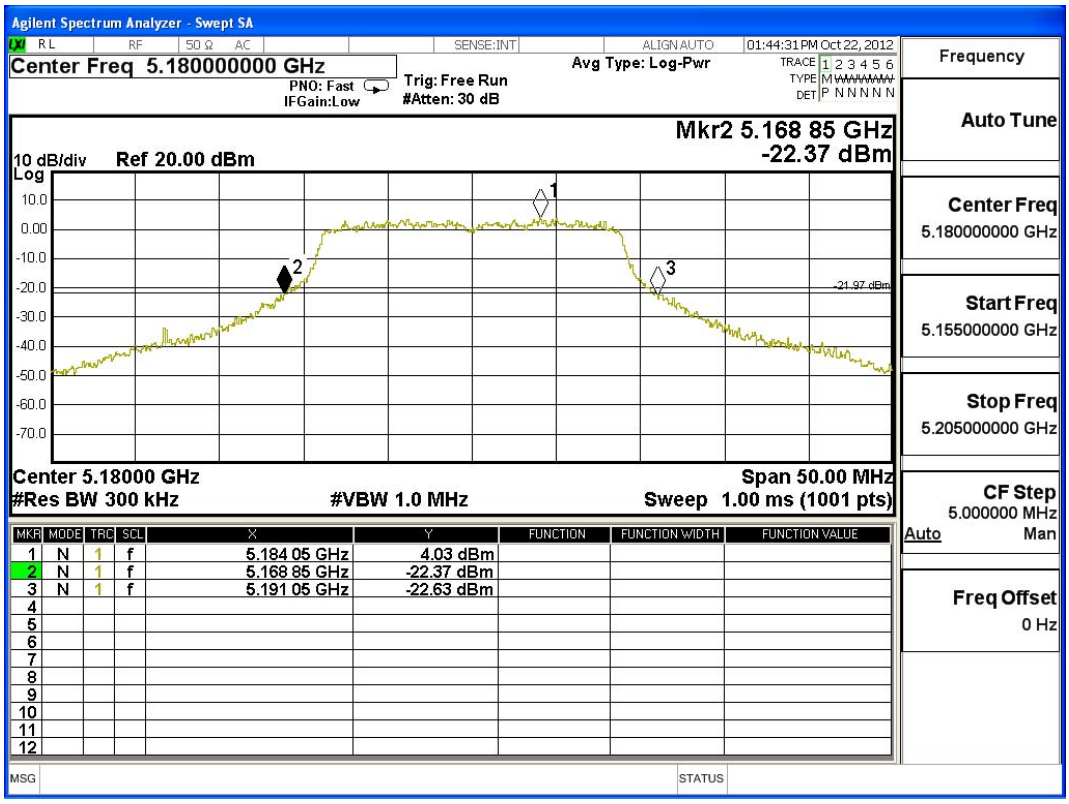
Channel 44 -Chain A



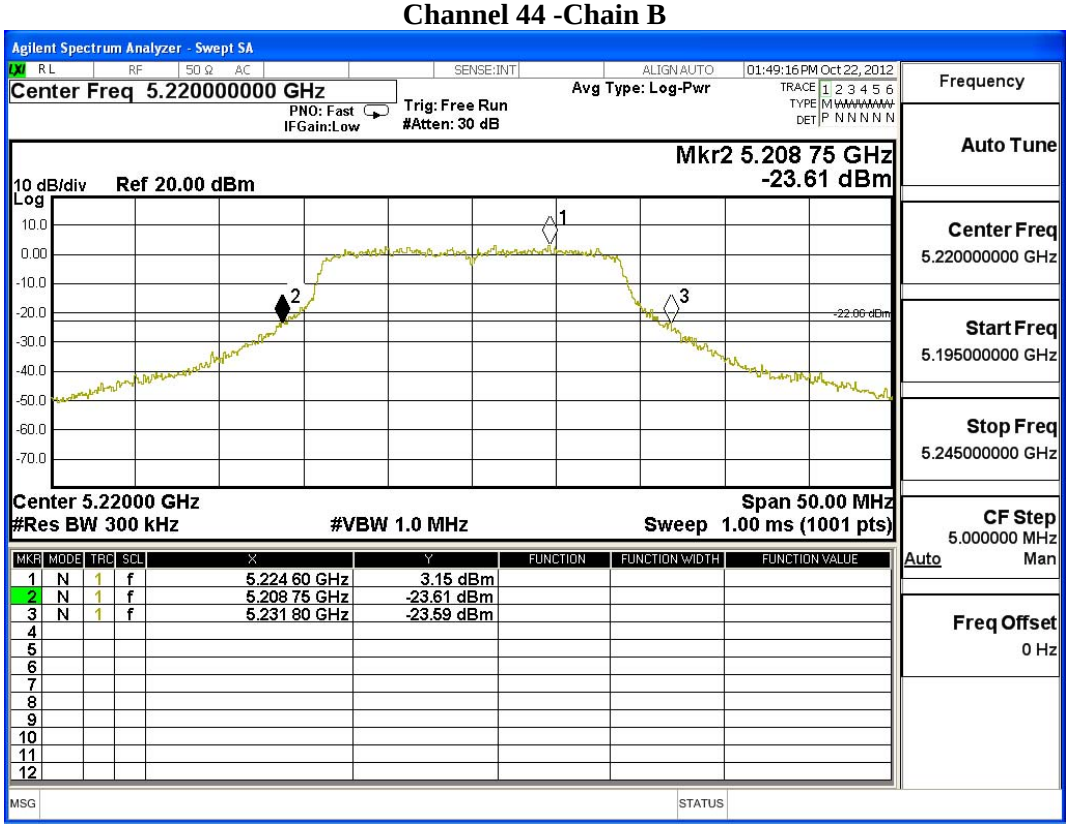
Channel 48 -Chain A



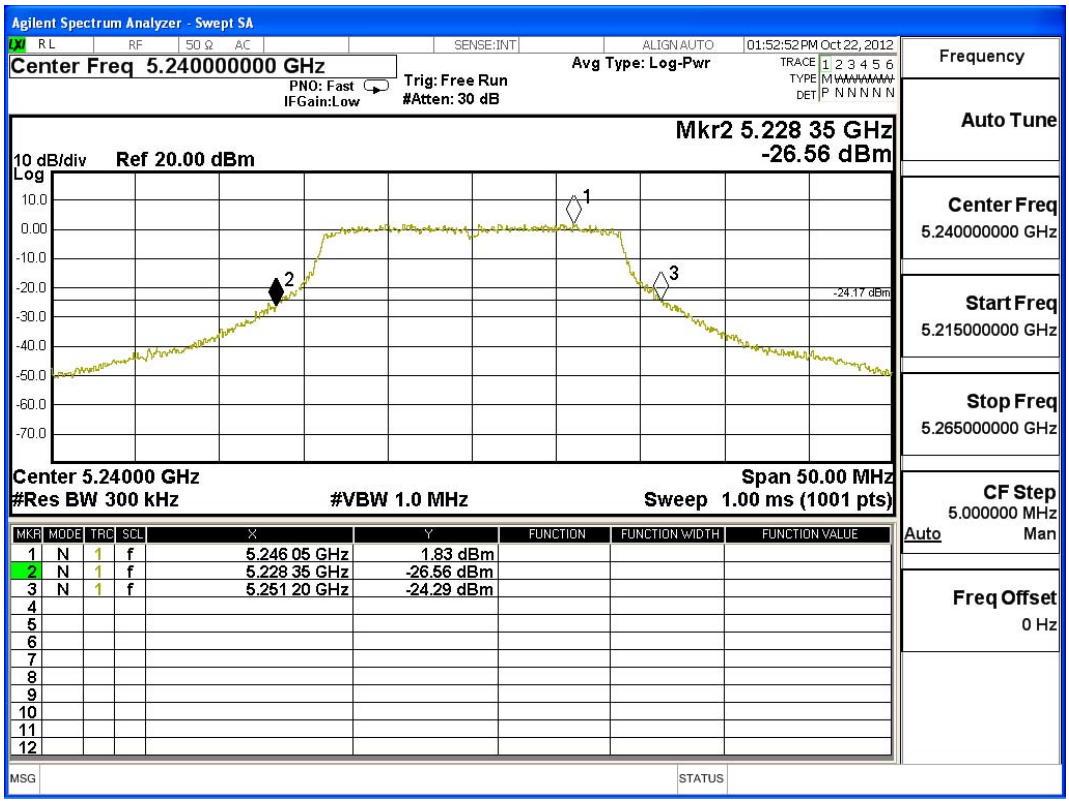
26dBc Occupied Bandwidth:
Channel 36 -Chain B



Channel 44 -Chain B



Channel 48 -Chain B



Product : SpectraGuardR Access Point / Sensor
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 30Mbps)(Dipole Antenna)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		30	60	90	120	180	240	270	300	
		Measurement Level (dBm)								
38	5190	13.51	--	--	--	--	--	--	--	<17dBm
46	5230	13.81	13.75	13.64	13.52	13.42	13.37	13.21	13.09	<17dBm

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

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		30	60	90	120	180	240	270	300	
		Measurement Level (dBm)								
38	5190	13.43	--	--	--	--	--	--	--	<17dBm
46	5230	13.71	13.64	13.55	13.41	13.32	13.22	13.15	13.02	<17dBm

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

Maximum conducted output power Measurement:

(CHAIN A+ B)

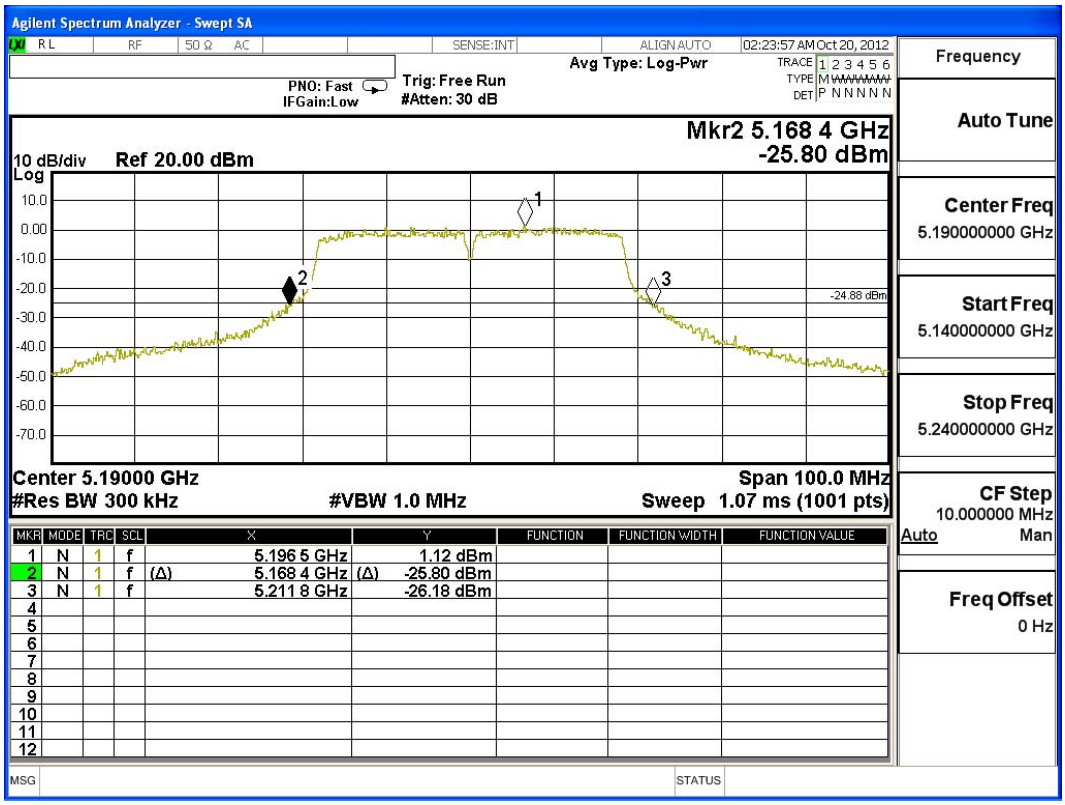
Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
38	5190	42.700	13.51	13.43	16.48	17	20.30
46	5230	42.400	13.81	13.71	16.77	17	20.27

Note:

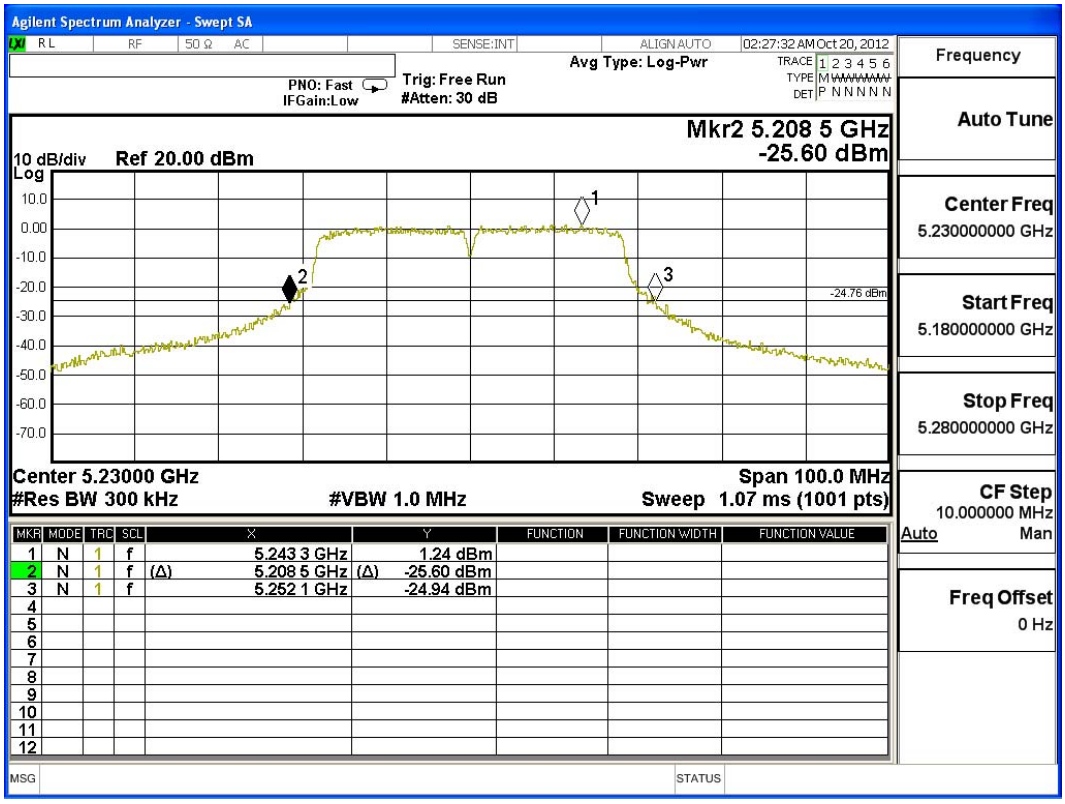
1. Power Output Value =Reading value on average power meter + cable loss
2. Output Power (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))
3. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

26dBc Occupied Bandwidth:

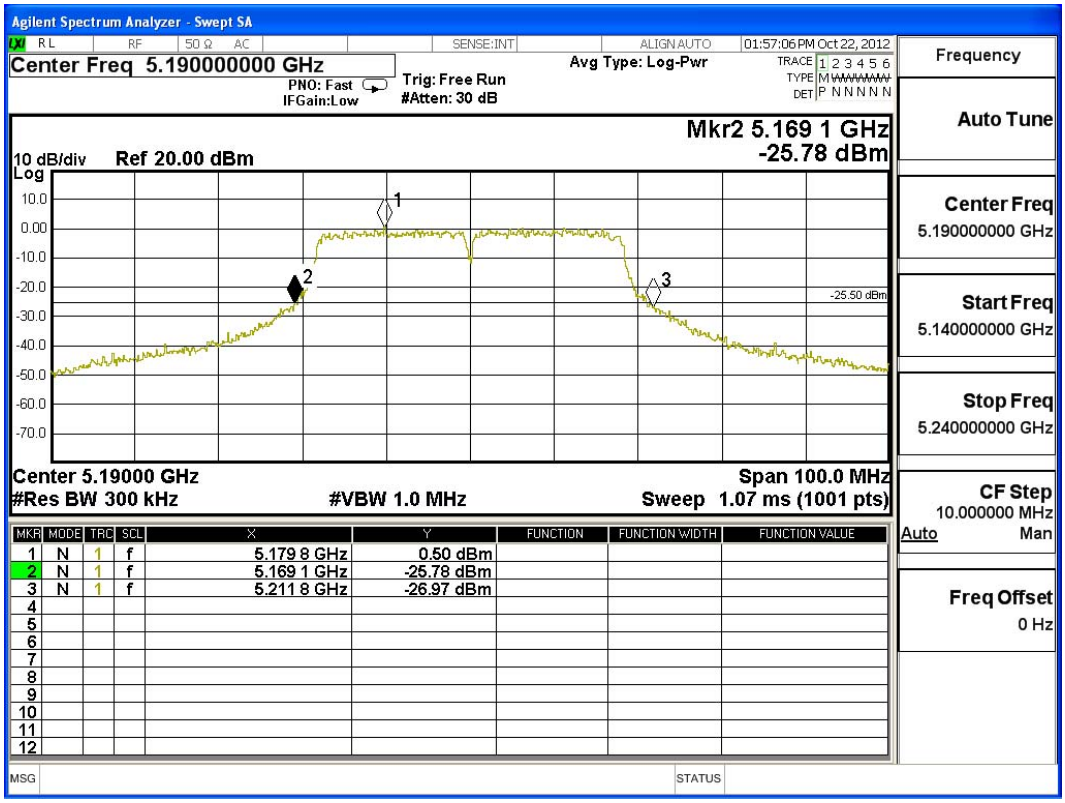
Channel 38 – Chain A



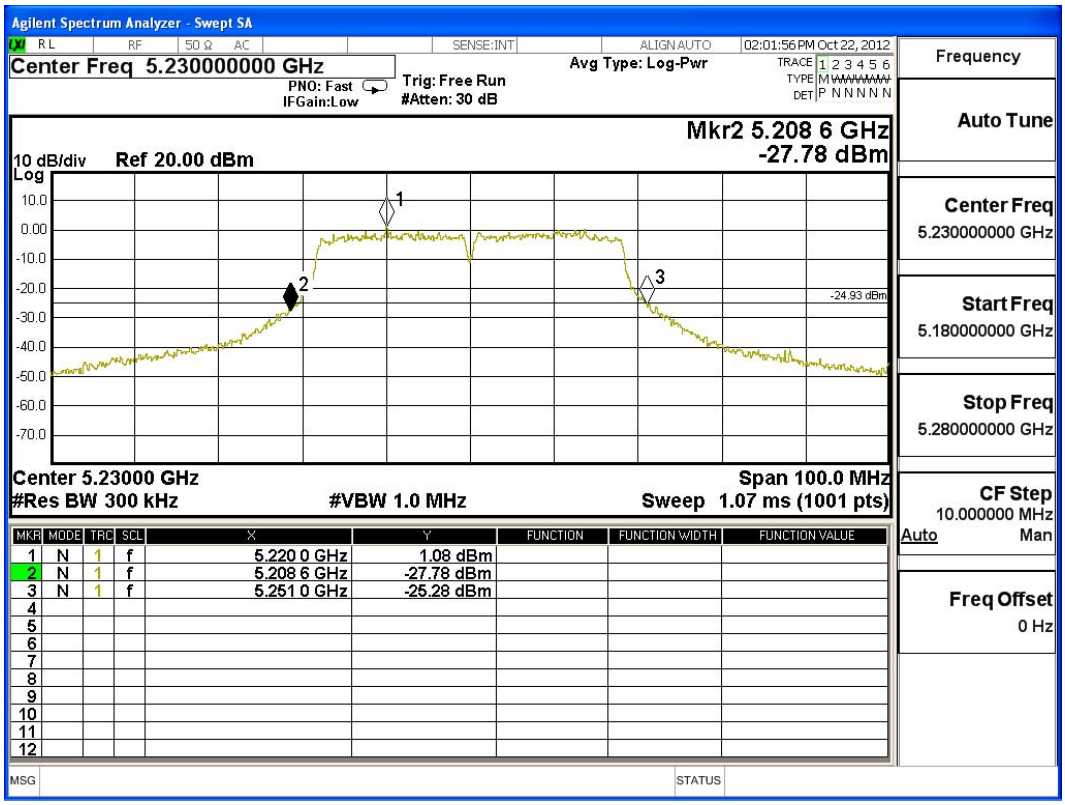
Channel 46 – Chain A



26dBc Occupied Bandwidth:
Channel 38 – Chain B



Channel 46 – Chain B



Product : SpectraGuardR Access Point / Sensor
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11a-6Mbps)(PIFA Antenna)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	12.55	--	--	--	--	--	--	--	<17dBm
44	5220	13.13	13.05	12.96	12.91	12.85	12.72	12.61	12.57	<17dBm
48	5240	13.1	--	--	--	--	--	--	--	<17dBm

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

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	14.51	--	--	--	--	--	--	--	<17dBm
44	5220	13.41	13.33	13.27	13.18	13.06	12.96	12.81	12.77	<17dBm
48	5240	13.32	--	--	--	--	--	--	--	<17dBm

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

Maximum conducted output power Measurement:

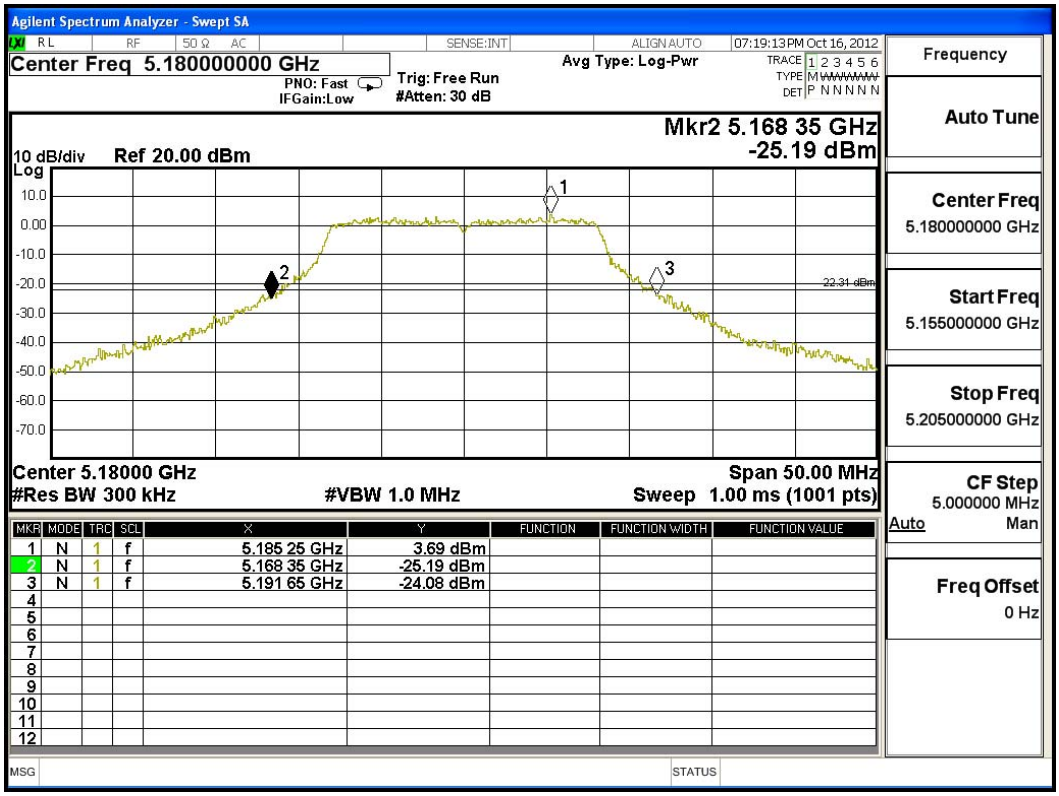
(CHAIN A+ B)

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
36	5180	23.100	12.55	14.51	16.65	17	17.64
44	5220	22.400	13.13	13.41	16.28	17	17.50
48	5240	22.400	13.10	13.32	16.22	17	17.50

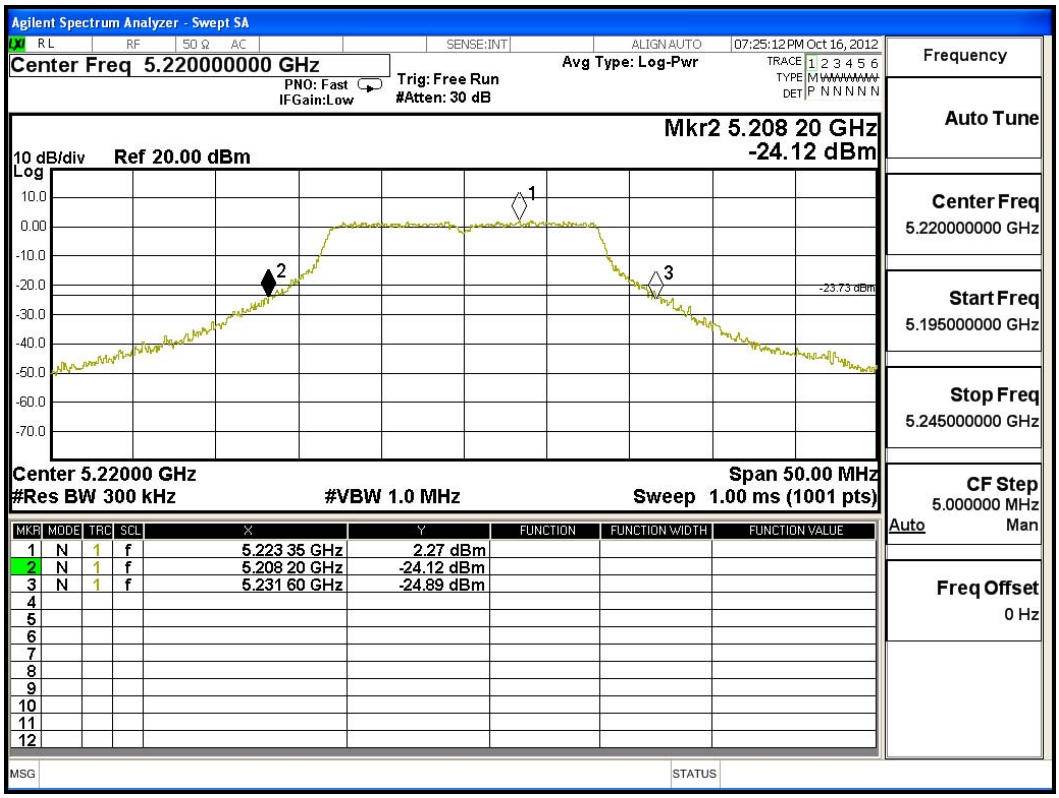
Note:

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

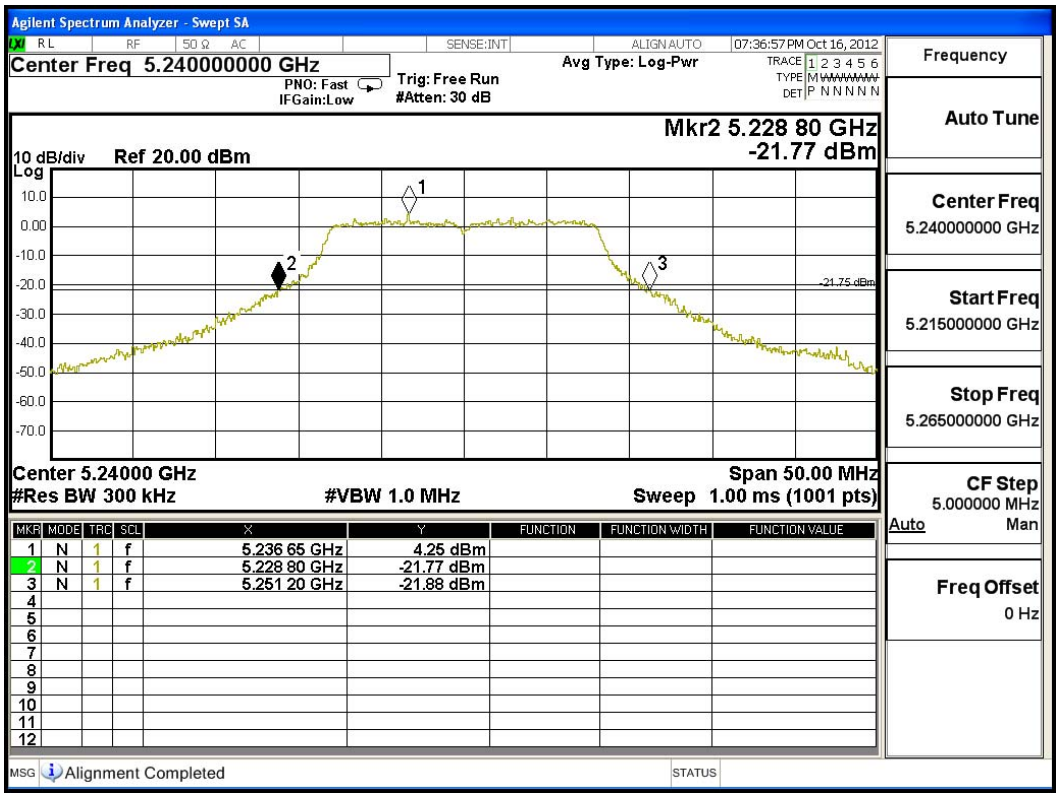
26dBc Occupied Bandwidth:
Channel 36: CHAIN A



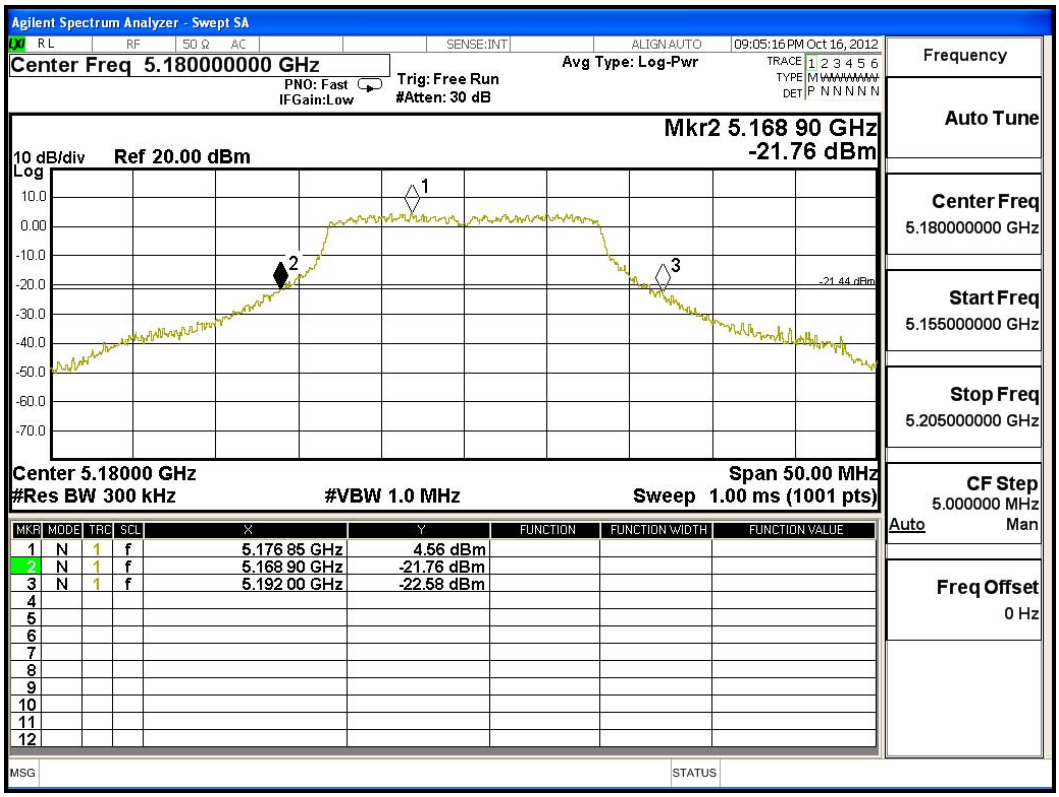
Channel 40: CHAIN A



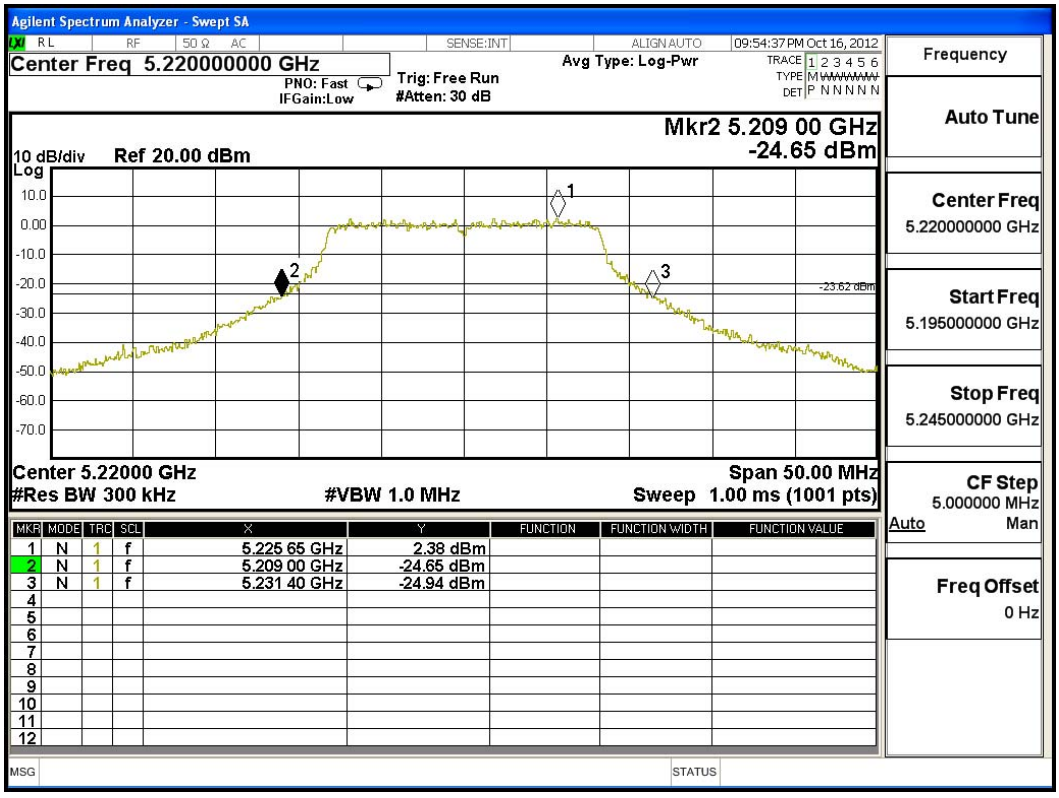
Channel 48: CHAIN A



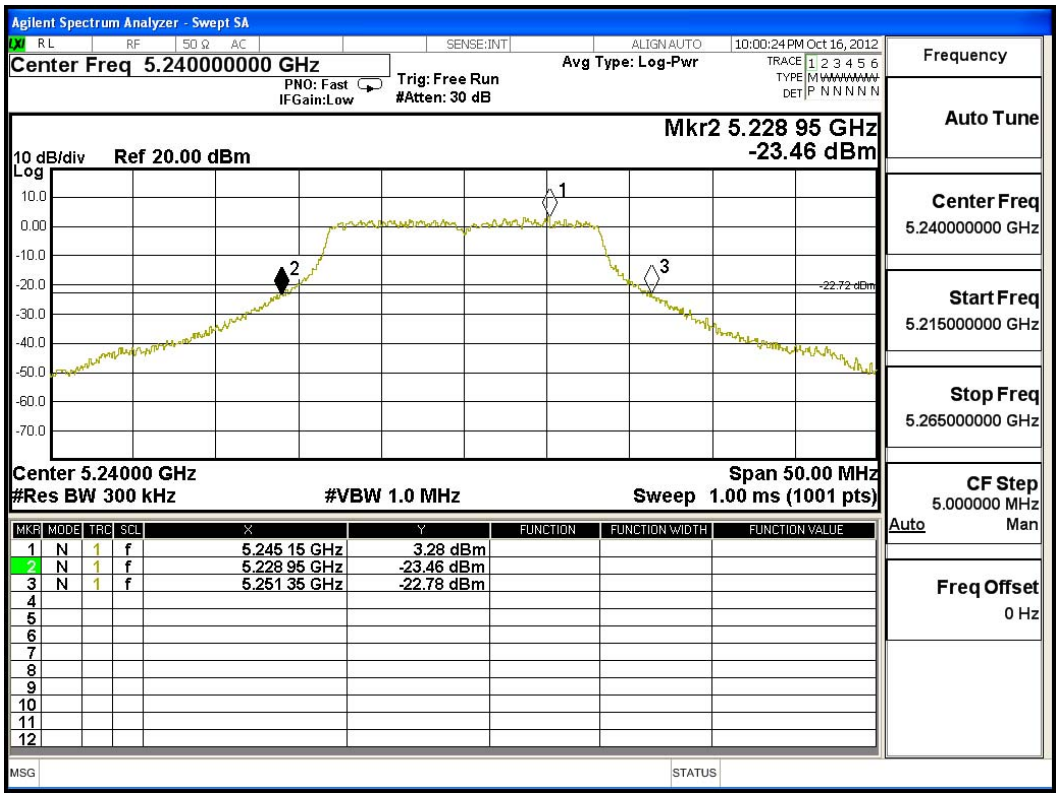
26dBc Occupied Bandwidth:
Channel 36: CHAIN B



Channel 40: CHAIN B



Channel 48: CHAIN B



Product : SpectraGuardR Access Point / Sensor
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit (802.11n-20BW 14.4Mbps)(PIFA Antenna)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	
		Measurement Level (dBm)								
36	5180	13.31	--	--	--	--	--	--	--	<17dBm
44	5220	13.41	13.32	13.2	13.08	12.92	12.81	12.63	13.1	<17dBm
48	5240	13.41	--	--	--	--	--	--	--	<17dBm

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

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	
		Measurement Level (dBm)								
36	5180	13.21	--	--	--	--	--	--	--	<17dBm
44	5220	13.57	13.43	13.28	13.16	13.02	12.87	12.76	12.61	<17dBm
48	5240	13.32	--	--	--	--	--	--	--	<17dBm

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

Maximum conducted output power Measurement:

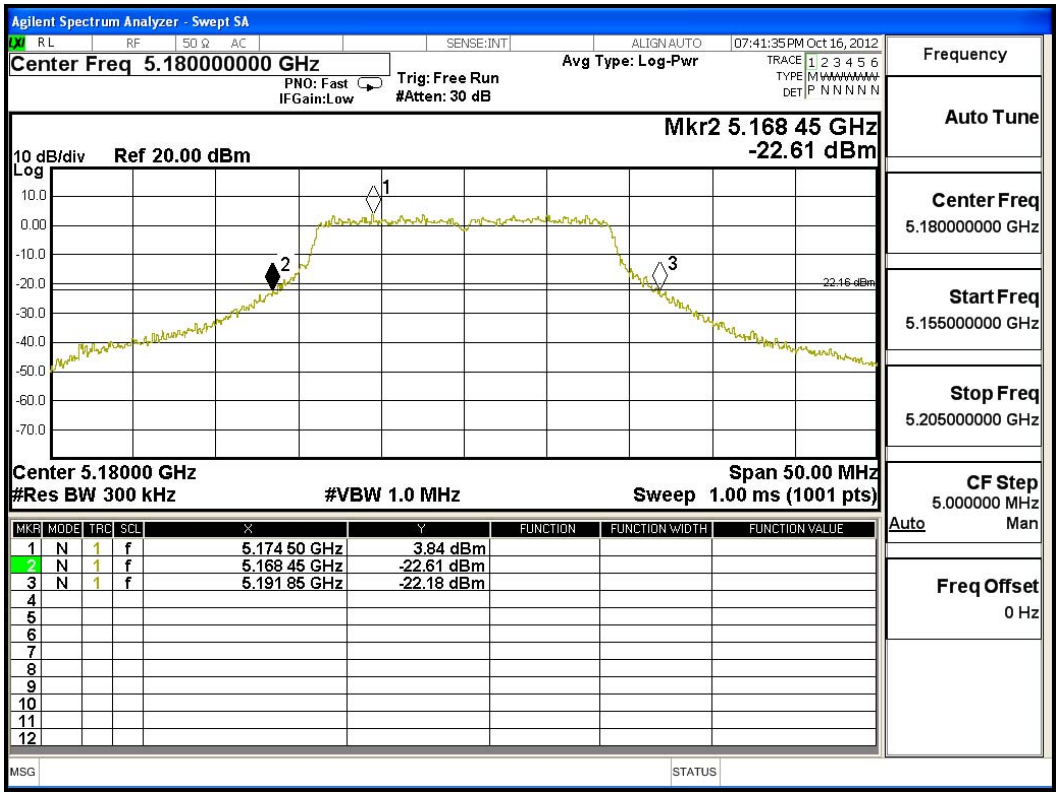
(CHAIN A+ B)

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
36	5180	23.150	13.31	13.21	16.27	17	17.65
44	5220	22.750	13.41	13.57	16.50	17	17.57
48	5240	23.350	13.41	13.32	16.38	17	17.68

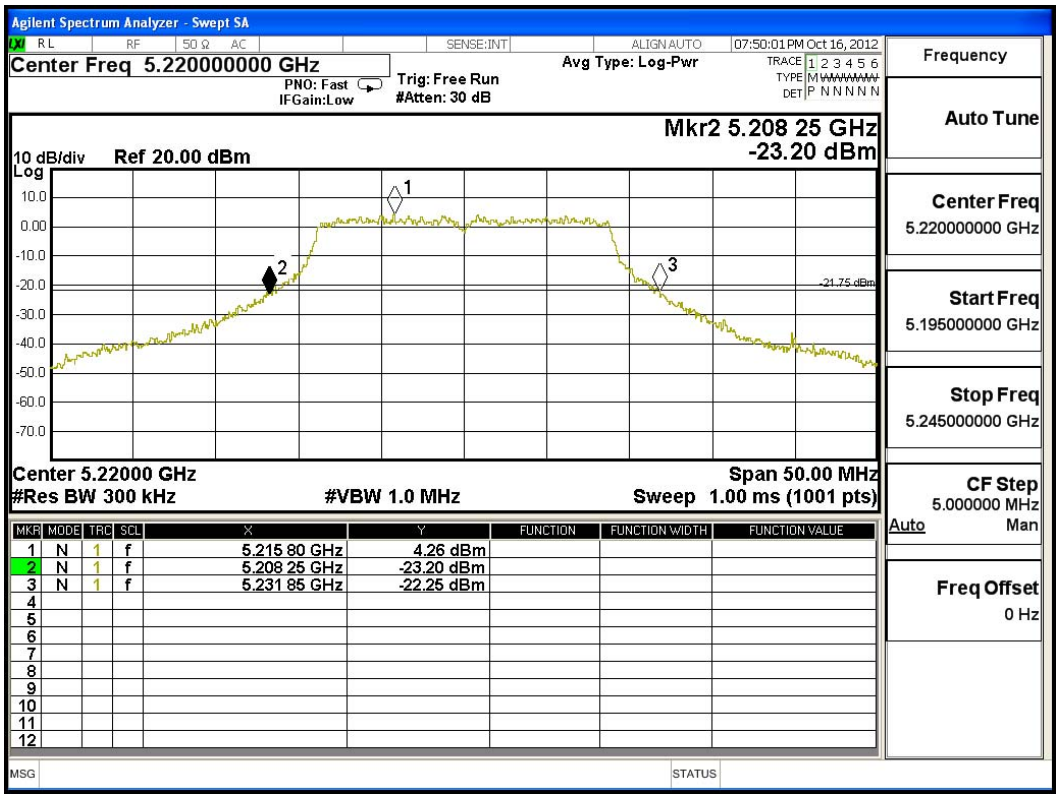
Note:

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

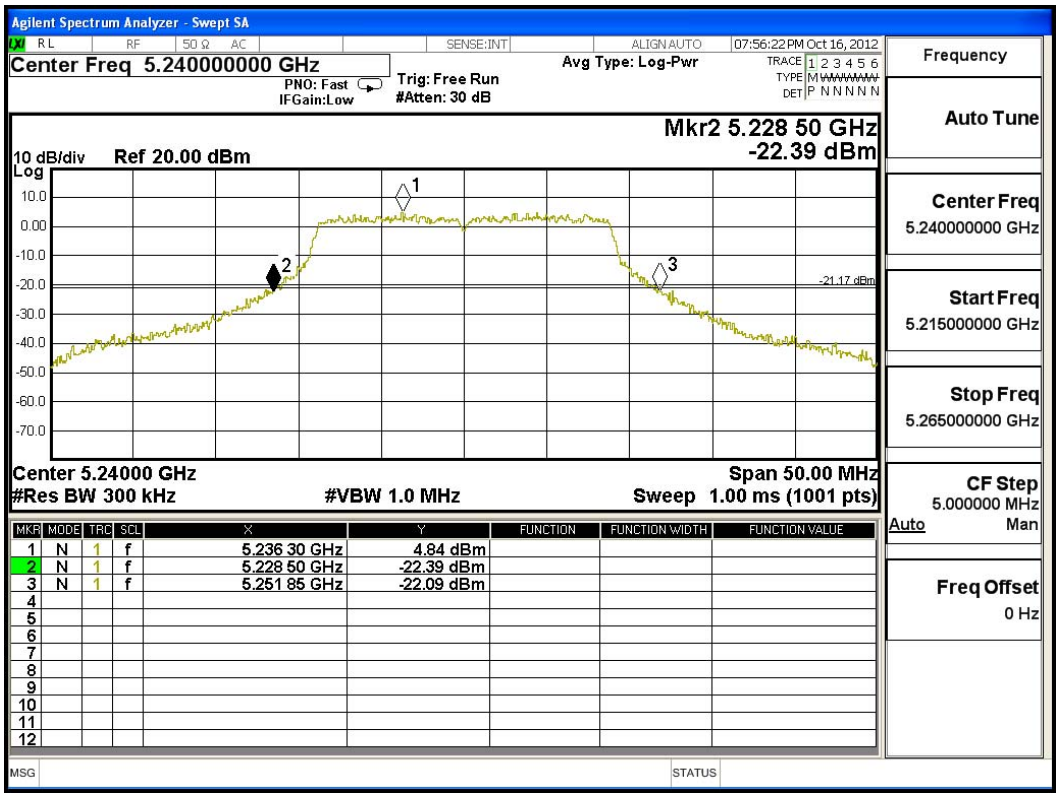
26dBc Occupied Bandwidth:
Channel 36 -Chain A



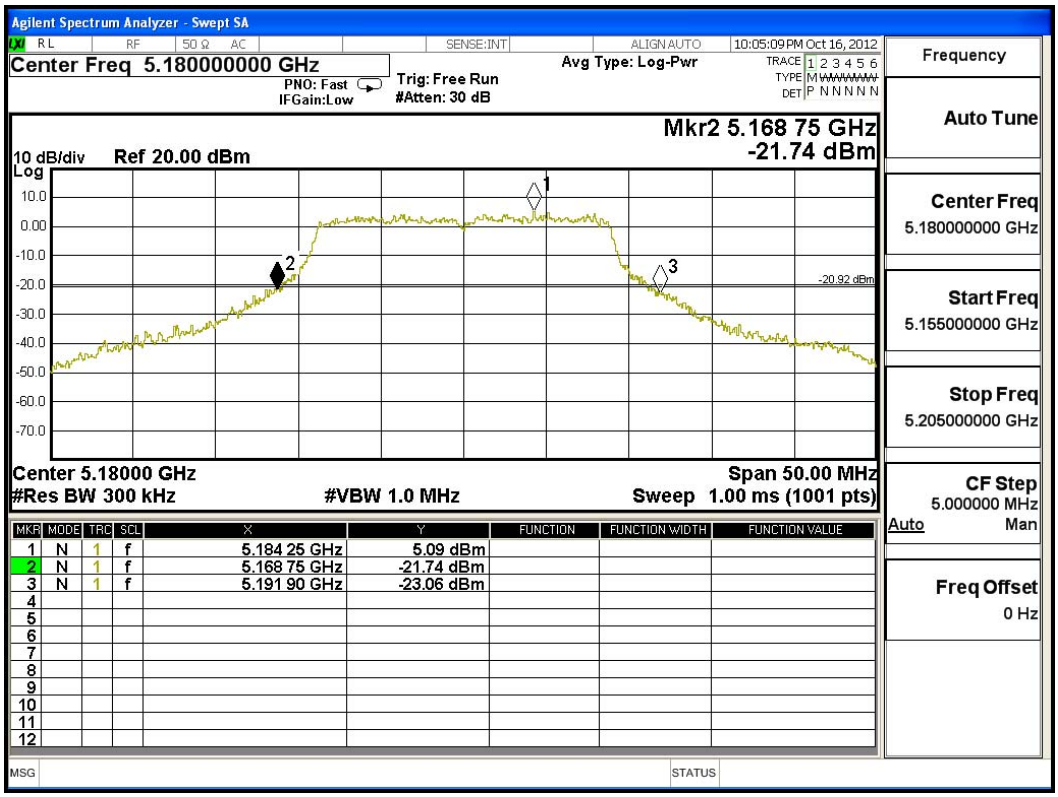
Channel 44 -Chain A



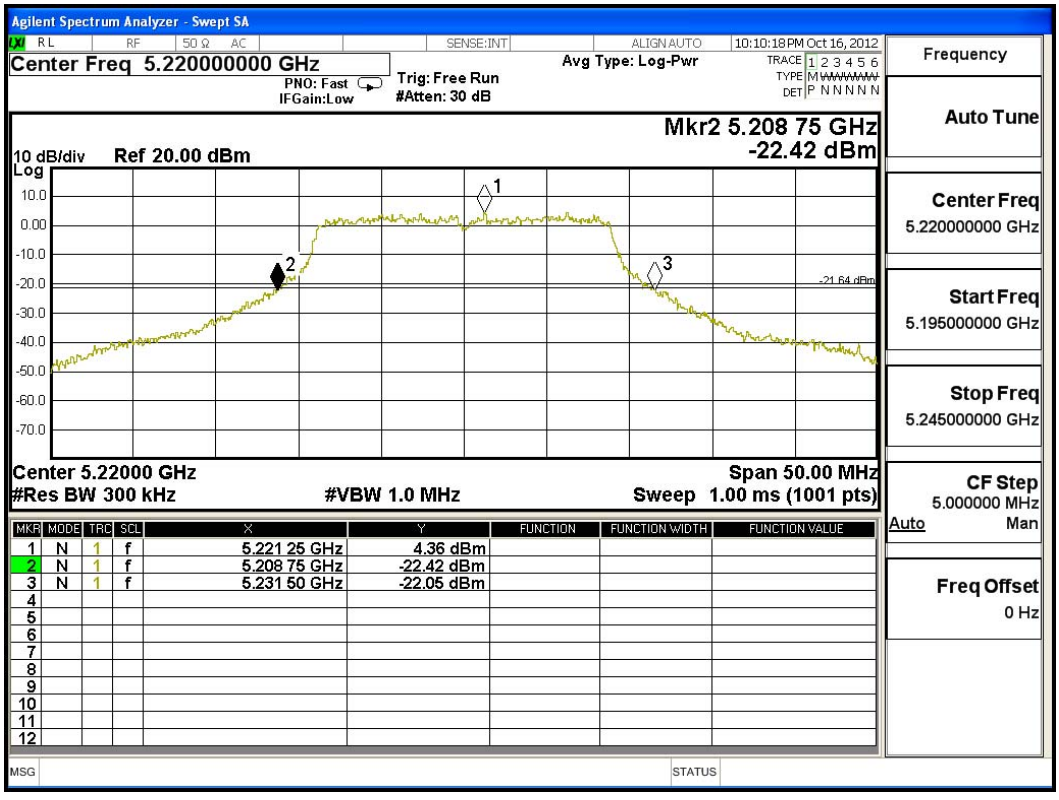
Channel 48 -Chain A



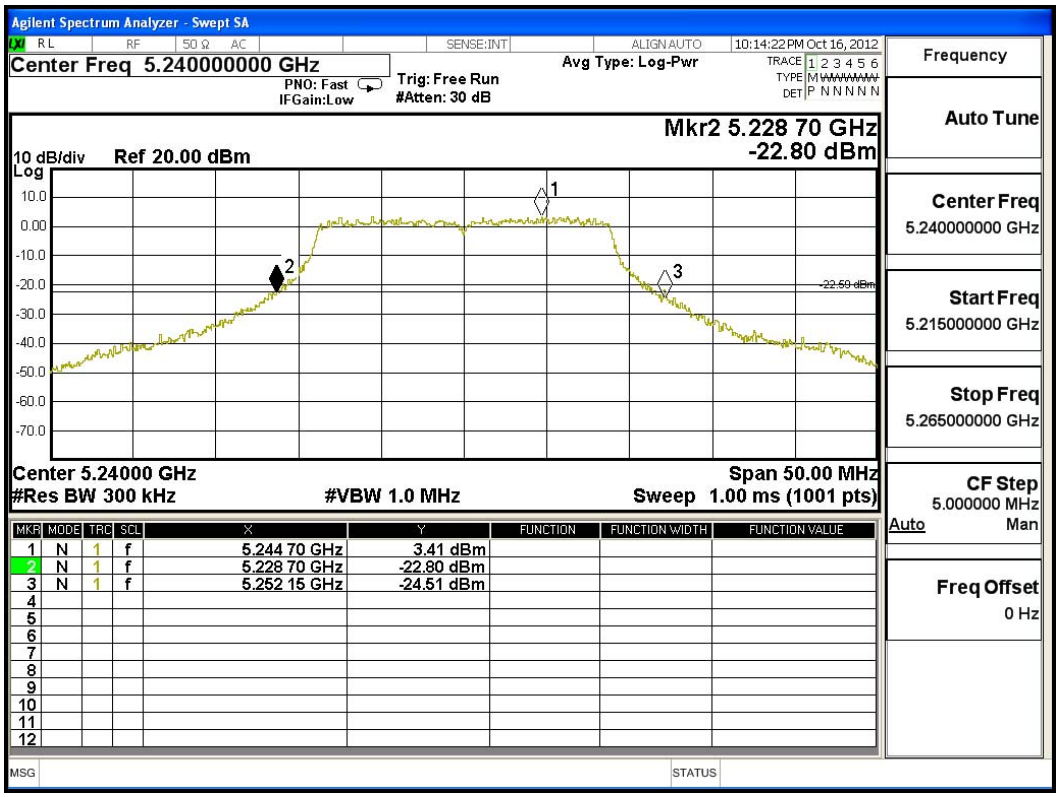
26dBc Occupied Bandwidth:
Channel 36 -Chain B



Channel 44 -Chain B



Channel 48 -Chain B



Product : SpectraGuardR Access Point / Sensor
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11n-40BW 30Mbps)(PIFA Antenna)

CHAIN A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		30	60	90	120	180	240	270	300	
		Measurement Level (dBm)								
38	5190	13.03	--	--	--	--	--	--	--	<17dBm
46	5230	13.62	13.54	13.43	13.37	13.24	13.11	13.05	12.86	<17dBm

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

CHAIN B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		30	60	90	120	180	240	270	300	
		Measurement Level (dBm)								
38	5190	13.21	--	--	--	--	--	--	--	<17dBm
46	5230	13.13	13	12.94	12.81	12.73	12.66	12.57	12.42	<17dBm

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

Maximum conducted output power Measurement:

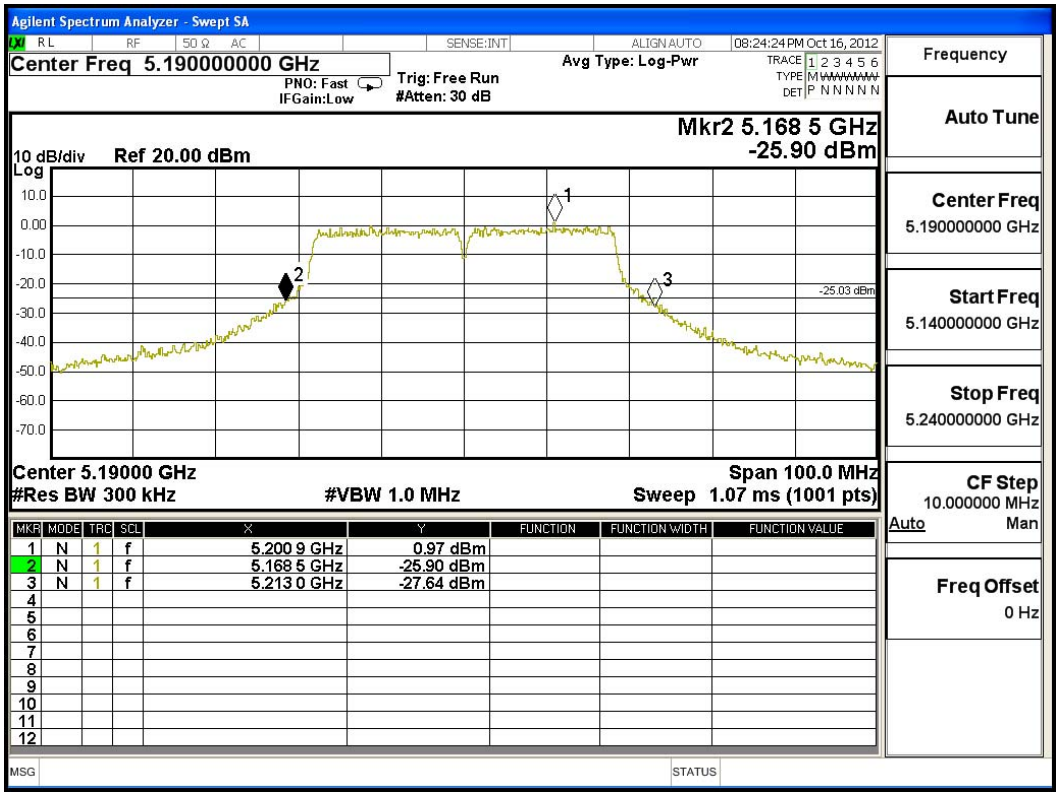
(CHAIN A+ B)

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
38	5190	43.700	13.03	13.21	16.13	17	20.40
46	5230	44.100	13.62	13.13	16.39	17	20.44

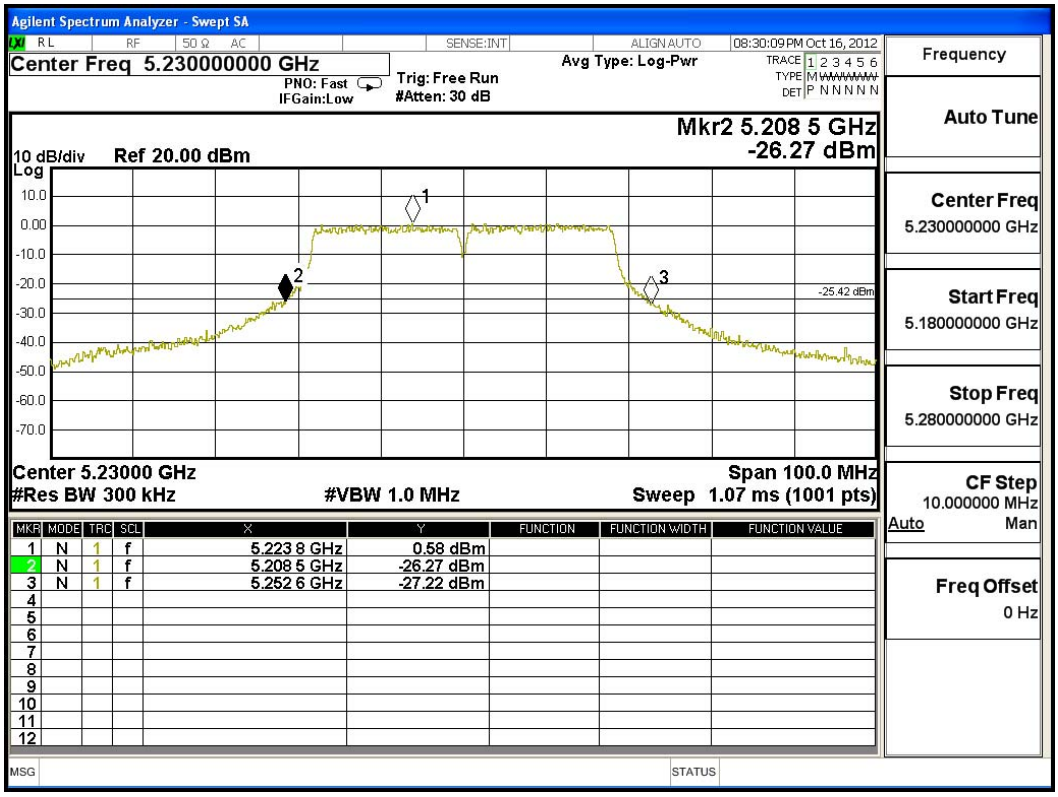
Note:

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

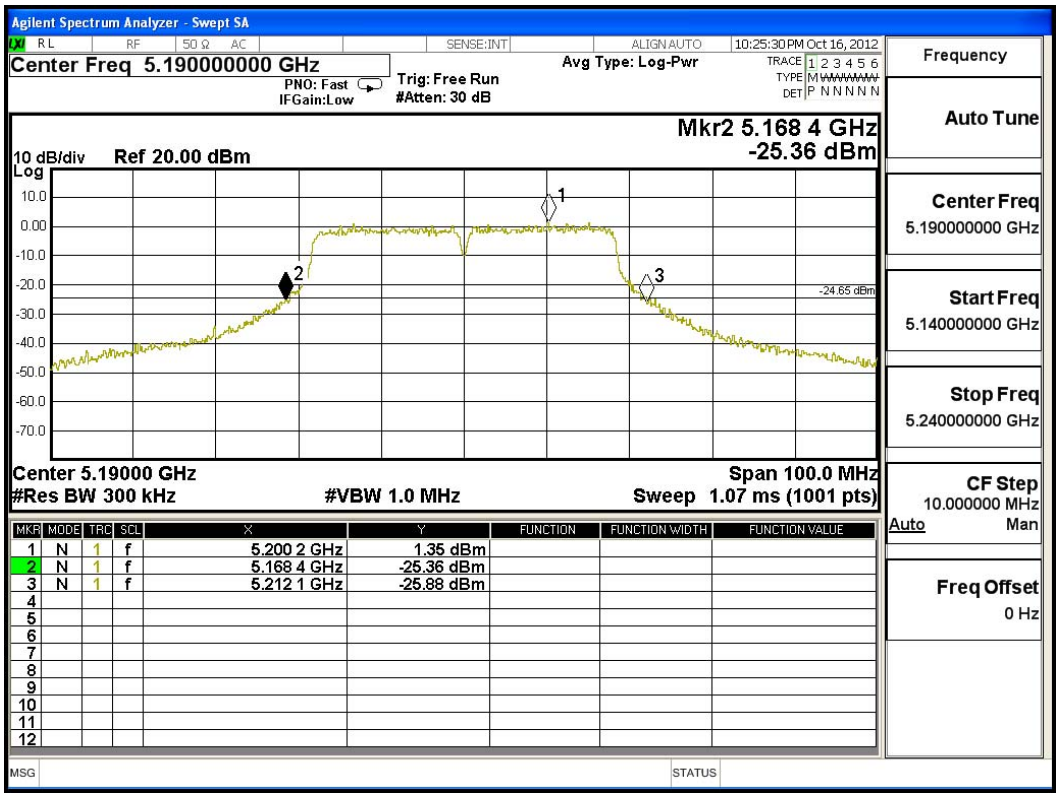
26dBc Occupied Bandwidth:
Channel 38 – Chain A



Channel 46 – Chain A



26dBc Occupied Bandwidth:
Channel 38 – Chain B



Channel 46 – Chain B