

FC

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
Issue Date	Oct. 26, 2012
Report No.	12A193R-RFUSP28V01-A
Report Version	V1.0



The test results relate only to the samples tested.
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Test Report Certification

Issue Date: Oct. 26, 2012

Report No.: 12A193R-RFUSP28V01-A

**Accredited by NIST (NVLAP)**

NVLAP Lab Code: 200533-0

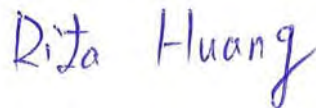
Product Name	SpectraGuardR Access Point / Sensor
Applicant	AirTight Networks, Inc.
Address	339 N. Bernardo Avenue, Suite #200, Mountain View, California, USA
Manufacturer	DONG GUAN G-COM COMPUTER CO., LTD.
Model No.	SS-300-AT-C-60
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade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

The test results relate only to the samples tested.

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Documented By :



(Senior Adm. Specialist / Rita Huang)

Tested By :



(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
Model No.	SS-300-AT-C-60
FCC ID.	TOR-SS300AT60
Frequency Range	802.11b/g/n-20MHz:2412-2462MHz,802.11n-40MHz:2422-2452MHz 802.11a/n-20MHz:5745-5825MHz ,802.11n-40MHz:5755-5795MHz
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7 802.11a/n-20MHz: 5, n-40MHz: 2
Data Speed	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps, 802.11n: up to 300Mbps
Channel separation	802.11b/g/n-20MHz: 5 MHz, 802.11a/n-20MHz: 20MHz 802.11n-40MHz: 40MHz
Type of Modulation	802.11b:DSSS DBPSK, DQPSK, CCK 802.11a/g/n: OFDM BPSK, QPSK, 16QAM, 64QAM
Antenna Type	PIFA / Dipole
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
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	3dBi for 2.4GHz 5dBi for 5.725~5.850GHz	External Antenna (Dipole)
2.	MAGLAYERS	MSA-3810-2G4C1-A36 MSA-3810-2G4C1-A38	3.89dBi for 2.4GHz 2.90dBi for 5.725~5.850GHz	Internal Antenna (PIFA)

Note: The antenna of EUT is conform to FCC 15.203

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

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

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

802.11n-40MHz (2.4G Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	2422 MHz	Channel 2:	2427 MHz	Channel 3:	2432 MHz	Channel 4:	2437 MHz
Channel 5:	2442 MHz	Channel 6:	2447 MHz	Channel 7:	2452 MHz		

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

Channel	Frequency	Channel	Frequency
Channel 151:	5755 MHz	Channel 159:	5795 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. (802.11b is 1Mbps 、802.11a/g is 6Mbps 、802.11n(20M-BW) is 14.4Mbps and 、802.11n(40M-BW) is 30Mbps).
4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11a/b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum 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 (802.11b 1Mbps)(Dipole Antenna)
	Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna)
	Mode 3: Transmit - 802.11a 6Mbps(Dipole Antenna)
	Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(Dipole Antenna)
	Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(Dipole Antenna)
	Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)
	Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)
	Mode 8: Transmit (802.11b 1Mbps)(PIFA Antenna)
	Mode 9: Transmit (802.11g 6Mbps)(PIFA Antenna)
	Mode 10: Transmit - 802.11a 6Mbps(PIFA Antenna)
	Mode 11: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(PIFA Antenna)
	Mode 12: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(PIFA Antenna)
	Mode 13: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(PIFA Antenna)
	Mode 14: Transmit - 802.11n-40BW_30Mbps(5G Band)(PIFA Antenna)

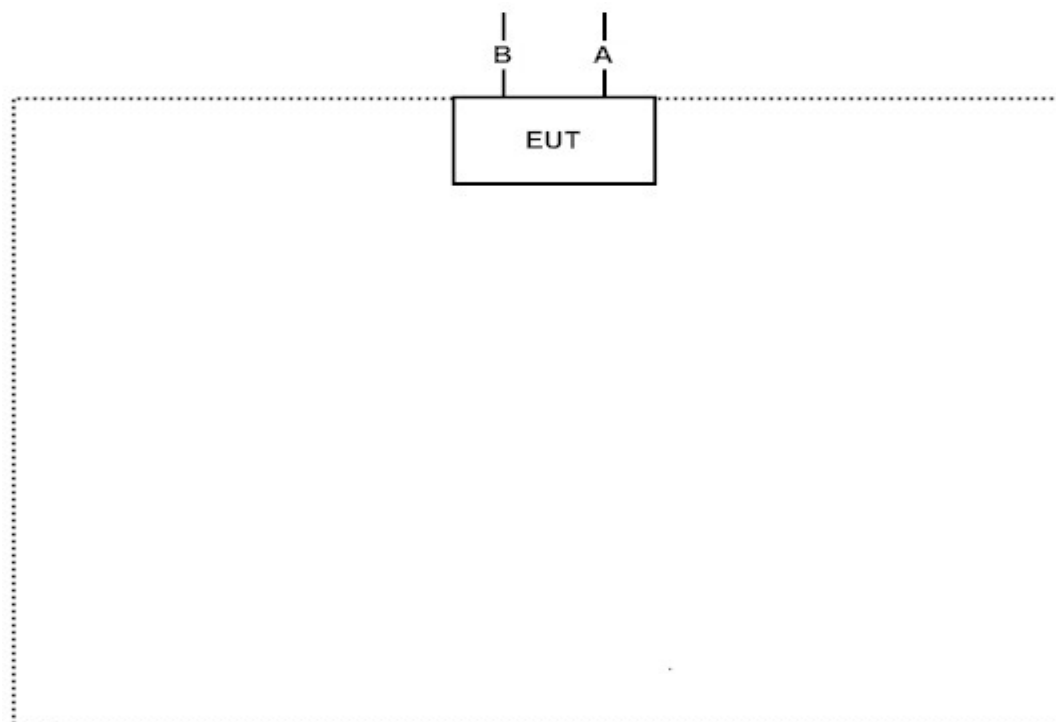
1.3. Tested System Details

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

Product	Manufacturer	Model No.	Serial No.	Power Cord
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://www.quietek.com/tw/ctg/cts/accreditations.htm>

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,
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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

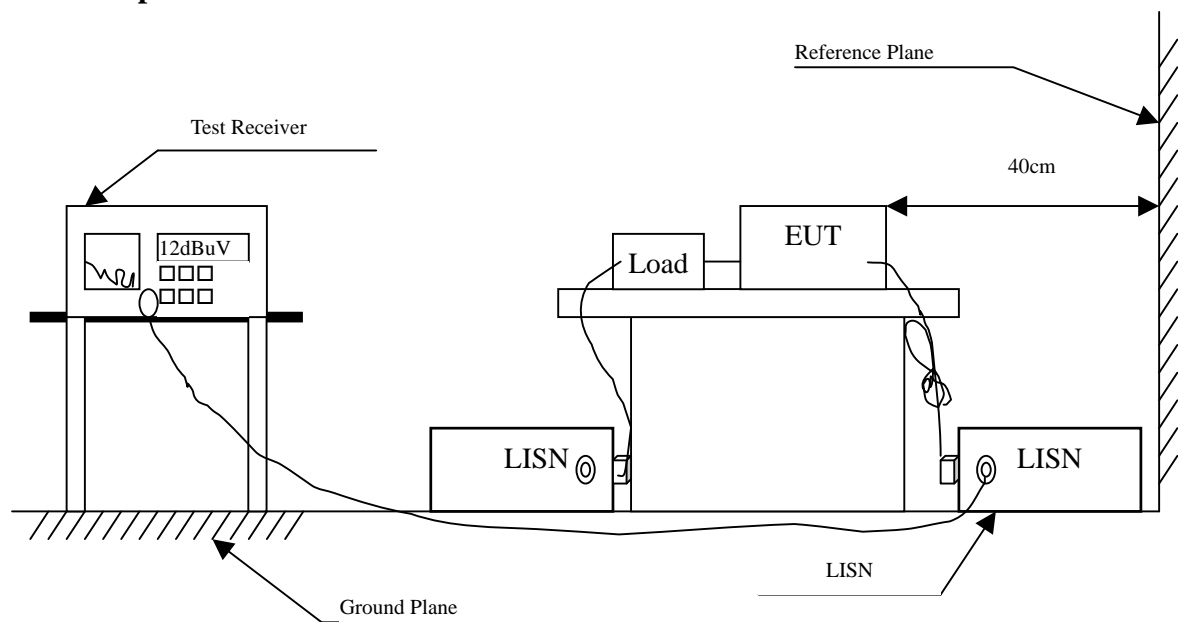
2.1. Test Equipment

	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	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.4. Test Procedure

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

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

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : SpectraGuardR Access Point / Sensor
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(Dipole Antenna)
 (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.177	9.830	27.020	36.850	-28.379	65.229
0.338	9.830	28.010	37.840	-22.789	60.629
0.666	9.830	33.230	43.060	-12.940	56.000
0.990	9.830	25.490	35.320	-20.680	56.000
2.146	9.840	26.400	36.240	-19.760	56.000
6.068	9.893	34.240	44.133	-15.867	60.000
Average					
0.177	9.830	13.800	23.630	-31.599	55.229
0.338	9.830	11.080	20.910	-29.719	50.629
0.666	9.830	23.900	33.730	-12.270	46.000
0.990	9.830	9.810	19.640	-26.360	46.000
2.146	9.840	10.990	20.830	-25.170	46.000
6.068	9.893	20.550	30.443	-19.557	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 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(Dipole Antenna)
 (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.322	9.840	29.990	39.830	-21.256	61.086
0.517	9.840	29.500	39.340	-16.660	56.000
0.677	9.840	35.720	45.560	-10.440	56.000
1.720	9.860	23.290	33.150	-22.850	56.000
2.423	9.860	23.750	33.610	-22.390	56.000
5.853	9.910	31.770	41.680	-18.320	60.000
Average					
0.322	9.840	20.450	30.290	-20.796	51.086
0.517	9.840	22.440	32.280	-13.720	46.000
0.677	9.840	26.380	36.220	-9.780	46.000
1.720	9.860	13.890	23.750	-22.250	46.000
2.423	9.860	10.510	20.370	-25.630	46.000
5.853	9.910	19.240	29.150	-20.850	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 7: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)
(5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.322	9.830	32.900	42.730	-18.356	61.086
0.377	9.830	26.760	36.590	-22.924	59.514
0.755	9.830	24.780	34.610	-21.390	56.000
1.533	9.840	24.180	34.020	-21.980	56.000
2.123	9.840	26.920	36.760	-19.240	56.000
5.818	9.889	37.080	46.969	-13.031	60.000
Average					
0.322	9.830	22.810	32.640	-18.446	51.086
0.377	9.830	16.510	26.340	-23.174	49.514
0.755	9.830	10.290	20.120	-25.880	46.000
1.533	9.840	9.460	19.300	-26.700	46.000
2.123	9.840	11.330	21.170	-24.830	46.000
5.818	9.889	23.130	33.019	-16.981	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 7: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)
 (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.334	9.840	37.370	47.210	-13.533	60.743
0.662	9.840	42.900	52.740	-3.260	56.000
1.091	9.850	30.950	40.800	-15.200	56.000
1.595	9.860	30.870	40.730	-15.270	56.000
2.228	9.860	31.430	41.290	-14.710	56.000
5.709	9.908	35.230	45.138	-14.862	60.000
Average					
0.334	9.840	24.220	34.060	-16.683	50.743
0.662	9.840	33.150	42.990	-3.010	46.000
1.091	9.850	17.050	26.900	-19.100	46.000
1.595	9.860	18.510	28.370	-17.630	46.000
2.228	9.860	16.710	26.570	-19.430	46.000
5.709	9.908	23.580	33.488	-16.512	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 12: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(PIFA Antenna)
 (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.326	9.830	32.620	42.450	-18.521	60.971
0.451	9.830	22.870	32.700	-24.700	57.400
0.994	9.830	25.510	35.340	-20.660	56.000
1.427	9.830	25.130	34.960	-21.040	56.000
2.068	9.840	25.170	35.010	-20.990	56.000
5.755	9.888	34.610	44.498	-15.502	60.000
Average					
0.326	9.830	3.740	13.570	-37.401	50.971
0.451	9.830	9.410	19.240	-28.160	47.400
0.994	9.830	9.020	18.850	-27.150	46.000
1.427	9.830	12.300	22.130	-23.870	46.000
2.068	9.840	8.150	17.990	-28.010	46.000
5.755	9.888	20.730	30.618	-19.382	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 12: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(PIFA Antenna)
 (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.236	9.830	18.750	28.580	-34.963	63.543
0.330	9.840	30.530	40.370	-20.487	60.857
0.666	9.840	37.750	47.590	-8.410	56.000
0.959	9.850	21.370	31.220	-24.780	56.000
1.412	9.850	22.890	32.740	-23.260	56.000
5.841	9.910	31.490	41.400	-18.600	60.000
Average					
0.236	9.830	8.740	18.570	-34.973	53.543
0.330	9.840	20.100	29.940	-20.917	50.857
0.666	9.840	27.850	37.690	-8.310	46.000
0.959	9.850	5.600	15.450	-30.550	46.000
1.412	9.850	9.590	19.440	-26.560	46.000
5.841	9.910	19.150	29.060	-20.940	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 14: Transmit - 802.11n-40BW_30Mbps(5G Band)(PIFA Antenna)
 (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.291	9.830	28.020	37.850	-24.121	61.971
0.377	9.830	28.730	38.560	-20.954	59.514
0.662	9.830	27.290	37.120	-18.880	56.000
1.005	9.830	25.700	35.530	-20.470	56.000
2.423	9.840	27.500	37.340	-18.660	56.000
5.814	9.889	37.100	46.989	-13.011	60.000
Average					
0.291	9.830	19.660	29.490	-22.481	51.971
0.377	9.830	19.090	28.920	-20.594	49.514
0.662	9.830	17.830	27.660	-18.340	46.000
1.005	9.830	9.710	19.540	-26.460	46.000
2.423	9.840	13.360	23.200	-22.800	46.000
5.814	9.889	24.230	34.119	-15.881	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 14: Transmit - 802.11n-40BW_30Mbps(5G Band)(PIFA Antenna)
 (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.189	9.830	22.830	32.660	-32.226	64.886
0.334	9.840	29.020	38.860	-21.883	60.743
0.517	9.840	26.860	36.700	-19.300	56.000
0.662	9.840	38.170	48.010	-7.990	56.000
1.318	9.850	24.340	34.190	-21.810	56.000
5.572	9.906	34.720	44.626	-15.374	60.000
Average					
0.189	9.830	12.370	22.200	-32.686	54.886
0.334	9.840	22.060	31.900	-18.843	50.743
0.517	9.840	19.710	29.550	-16.450	46.000
0.662	9.840	27.560	37.400	-8.600	46.000
1.318	9.850	9.590	19.440	-26.560	46.000
5.572	9.906	22.900	32.806	-17.194	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. Maximum Conducted Power

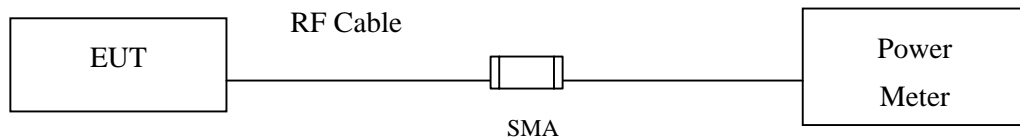
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2012
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2012
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
	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



3.3. Limits

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

3.4. Test Procedure

The EUT was tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Maximum Conducted Power

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Required Limit	Result
		1	2	5.5	11		
		Measurement Level (dBm)					
01	2412	16	--	--	--	<30dBm	Pass
06	2437	17.01	16.92	16.83	16.75	<30dBm	Pass
11	2462	14.51	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

TABLE 2

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Required Limit	Result
		1	2	5.5	11		
		Measurement Level (dBm)					
01	2412	14.62	--	--	--	<30dBm	Pass
06	2437	17.03	16.93	16.81	16.73	<30dBm	Pass
11	2462	14.06	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	1	16.00	14.62	18.37	<30dBm	Pass
6	2437	1	17.01	17.03	20.03	<30dBm	Pass
11	2462	1	14.51	14.06	17.30	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
Test Item : Maximum Conducted Power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
01	2412	8.14	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	19.34	19.26	19.15	19.05	18.97	18.82	18.75	18.66	<30dBm	Pass
11	2462	8.67	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
01	2412	6.81	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	18.94	18.86	18.73	18.58	18.43	18.37	18.22	18.19	<30dBm	Pass
11	2462	7.61	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	6	8.14	6.81	10.54	<30dBm	Pass
6	2437	6	19.34	18.94	22.15	<30dBm	Pass
11	2462	6	8.67	7.61	11.18	<30dBm	Pass

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

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

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	14.27	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	22.11	22.05	21.96	21.86	21.74	21.65	21.53	21.4	<30dBm	Pass
165	5825	20.61	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power								Required Limit	Result
		For different Data Rate (Mbps)									
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	14.71	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	20.84	20.76	20.67	20.56	20.41	20.39	20.28	20.15	<30dBm	Pass
165	5825	19.61	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	6	14.27	14.71	17.51	<30dBm	Pass
157	5785	6	22.11	20.84	24.53	<30dBm	Pass
165	5825	6	20.61	19.61	23.15	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
01	2412	8	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	19.34	19.21	19.17	19.03	18.95	18.83	18.76	18.67	<30dBm	Pass
11	2462	8.72	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
01	2412	6.87	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	18.91	18.85	18.74	18.65	18.51	18.4	18.29	18.18	<30dBm	Pass
11	2462	7.21	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	HT8	8.00	6.87	10.48	<30dBm	Pass
6	2437	HT8	19.34	18.91	22.14	<30dBm	Pass
11	2462	HT8	8.72	7.21	11.04	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
3	2422	5.12	--	--	--	--	--	--	--	<30dBm	Pass
6	2437	19.26	19.15	19.06	18.94	18.83	18.75	18.64	18.55	<30dBm	Pass
9	2452	6.71	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
3	2422	3.71	--	--	--	--	--	--	--	<30dBm	Pass
6	2437	18.94	18.83	18.77	18.59	18.47	18.39	18.3	18.21	<30dBm	Pass
9	2452	6.64	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
3	2422	HT8	5.12	3.71	7.48	<30dBm	Pass
6	2437	HT8	19.26	18.94	22.11	<30dBm	Pass
9	2452	HT8	6.71	6.64	9.69	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
149	5745	15.07	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	22.31	22.25	22.18	22.08	21.96	21.85	21.77	21.63	<30dBm	Pass
165	5825	20.21	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power								Required Limit	Result
		For different Data Rate (Mbps)									
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
149	5745	15.56	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	21.05	20.96	20.85	20.75	20.64	20.55	20.41	20.3	<30dBm	Pass
165	5825	19.03	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	HT8	15.07	15.56	18.33	<30dBm	Pass
157	5785	HT8	22.31	21.05	24.74	<30dBm	Pass
165	5825	HT8	20.21	19.03	22.67	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
151	5755	14.19	--	--	--	--	--	--	--	<30dBm	Pass
159	5795	20.53	20.45	20.38	20.26	20.14	20.06	19.92	19.87	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
151	5755	14.56	--	--	--	--	--	--	--	<30dBm	Pass
159	5795	19.43	19.35	19.25	19.17	19.06	18.95	18.82	18.73	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	HT8	14.19	14.56	17.39	<30dBm	Pass
159	5795	HT8	20.53	19.43	23.03	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 8: Transmit (802.11b 1Mbps)(PIFA Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Required Limit	Result
		1	2	5.5	11		
		Measurement Level (dBm)					
01	2412	15.85	--	--	--	<30dBm	Pass
06	2437	19.11	19.08	18.95	18.76	<30dBm	Pass
11	2462	15.16	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Required Limit	Result
		1	2	5.5	11		
		Measurement Level (dBm)					
01	2412	16.07	--	--	--	<30dBm	Pass
06	2437	19.55	19.46	19.41	19.35	<30dBm	Pass
11	2462	15.47	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	1	15.85	16.07	18.97	<30dBm	Pass
6	2437	1	19.11	19.55	22.35	<30dBm	Pass
11	2462	1	15.16	15.47	18.33	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 9: Transmit (802.11g 6Mbps)(PIFA Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power								Required Limit	Result
		For different Data Rate (Mbps)									
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
01	2412	9.75	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	19.12	18.96	18.87	18.72	18.62	18.49	18.31	18.1	<30dBm	Pass
11	2462	8.52	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power								Required Limit	Result
		For different Data Rate (Mbps)									
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
01	2412	9.29	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	19.14	18.85	18.76	18.54	18.46	18.32	18.22	18.14	<30dBm	Pass
11	2462	8.05	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	6	9.75	9.29	12.54	<30dBm	Pass
6	2437	6	19.12	19.14	22.14	<30dBm	Pass
11	2462	6	8.52	8.05	11.30	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 10: Transmit - 802.11a 6Mbps(PIFA Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	14.81	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	21.71	21.65	21.57	21.44	21.3	21.24	21.18	21.05	<30dBm	Pass
165	5825	21.51	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	15.81	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	21.5	21.46	21.34	21.23	21.27	21.18	21.09	21	<30dBm	Pass
165	5825	21.03	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	6	14.81	15.81	18.35	<30dBm	Pass
157	5785	6	21.71	21.50	24.62	<30dBm	Pass
165	5825	6	21.51	21.03	24.29	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 11: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(PIFA Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
01	2412	9.48	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	19.01	18.92	18.77	18.63	18.57	18.42	18.31	18.24	<30dBm	Pass
11	2462	8.85	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
01	2412	9.24	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	19.14	18.94	18.82	18.65	18.51	18.42	18.31	18.18	<30dBm	Pass
11	2462	8.52	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	HT8	9.48	9.24	12.37	<30dBm	Pass
6	2437	HT8	19.01	19.14	22.09	<30dBm	Pass
11	2462	HT8	8.85	8.52	11.70	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 12: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(PIFA Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
3	2422	7.22	--	--	--	--	--	--	--	<30dBm	Pass
6	2437	19.01	18.85	18.76	18.61	18.52	18.43	18.34	18.22	<30dBm	Pass
9	2452	6.67	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
3	2422	6.62	--	--	--	--	--	--	--	<30dBm	Pass
6	2437	19.07	18.82	18.73	18.64	18.57	18.4	18.35	18.21	<30dBm	Pass
9	2452	6.47	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
3	2422	HT8	7.22	6.62	9.94	<30dBm	Pass
6	2437	HT8	19.01	19.07	22.05	<30dBm	Pass
9	2452	HT8	6.67	6.47	9.58	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(PIFA Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
149	5745	16.11	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	21.83	21.72	21.62	21.48	21.34	21.24	21.12	21.07	<30dBm	Pass
165	5825	20.68	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power								Required Limit	Result
		For different Data Rate (Mbps)									
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
149	5745	16.83	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	20.47	20.38	20.28	20.12	20.03	19.89	19.72	19.66	<30dBm	Pass
165	5825	20.53	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	HT8	16.11	16.83	19.50	<30dBm	Pass
157	5785	HT8	21.83	20.47	24.21	<30dBm	Pass
165	5825	HT8	20.68	20.53	23.62	<30dBm	Pass

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_30Mbps(5G Band)(PIFA Antenna)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
151	5755	15.21	--	--	--	--	--	--	--	<30dBm	Pass
159	5795	20.83	20.76	20.62	20.54	20.43	20.36	20.28	20.15	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
151	5755	15.83	--	--	--	--	--	--	--	<30dBm	Pass
159	5795	20.11	20.05	19.95	19.86	19.71	19.66	19.54	19.43	<30dBm	Pass

Note: Average Power for different data rate = Reading value on Power Meter +cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	HT8	15.21	15.83	18.54	<30dBm	Pass
159	5795	HT8	20.83	20.11	23.50	<30dBm	Pass

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

4. Radiated Emission

4.1. Test Equipment

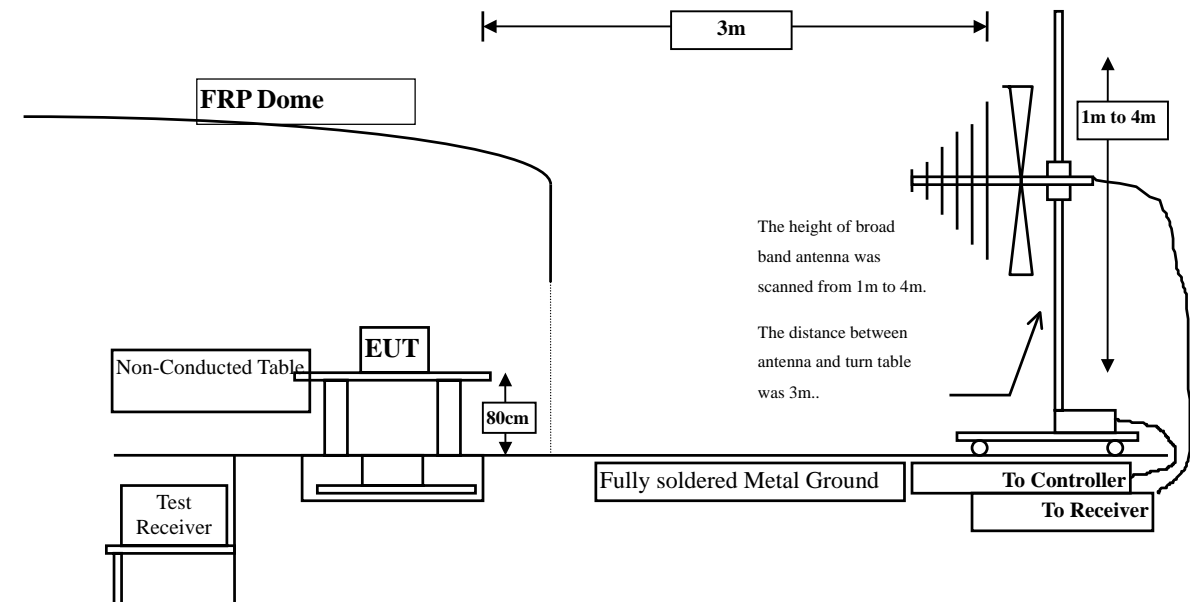
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2012
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2012
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2012
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

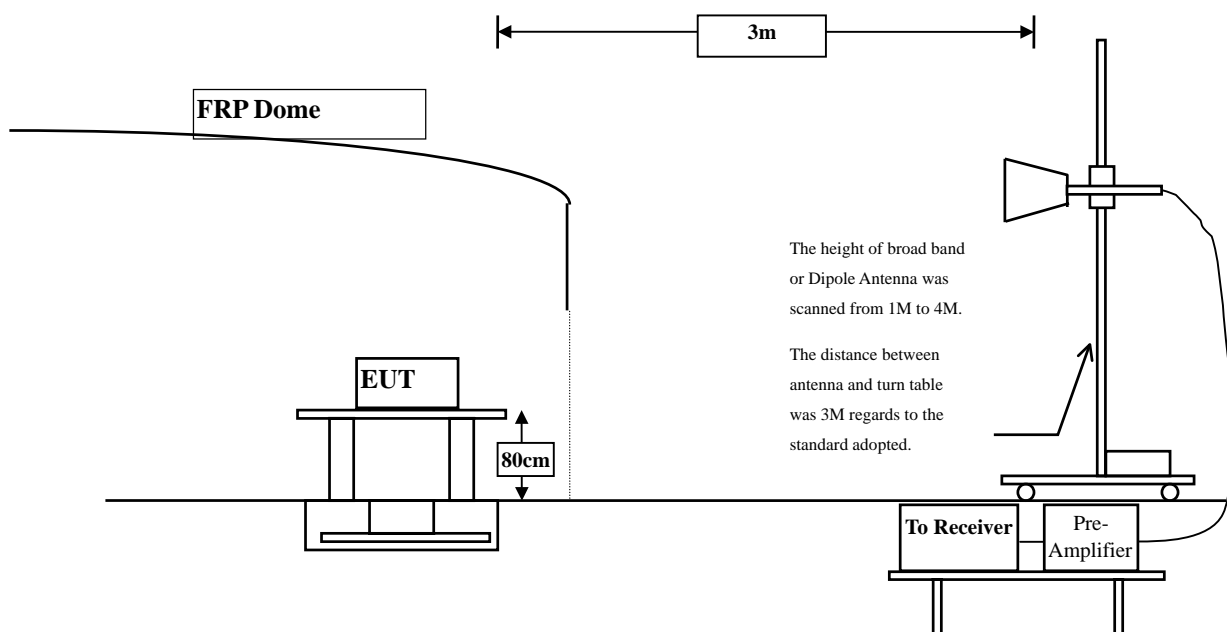
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

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

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

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

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

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

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

Radiated emission measurements below 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 30MHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : SpectraGuardR Access Point / Sensor
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)(Dipole Antenna) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	0.428	42.850	43.279	-30.721	74.000
7236.000	7.177	39.870	47.047	-26.953	74.000
9648.000	8.019	39.660	47.680	-26.320	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	0.836	49.190	50.027	-23.973	74.000
7236.000	7.676	44.940	52.616	-21.384	74.000
9648.000	8.556	41.220	49.777	-24.223	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(Dipole Antenna) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	0.076	44.770	44.847	-29.153	74.000
7311.000	7.512	41.600	49.112	-24.888	74.000
9748.000	7.630	39.230	46.860	-27.140	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	53.290	53.822	-20.178	74.000
7311.000	8.089	47.360	55.449	-18.551	74.000
9748.000	8.266	39.300	47.567	-26.433	74.000
Average					
Detector:					
4874.000	0.532	50.430	50.962	-3.038	54.000
7311.000	8.089	41.080	49.169	-4.831	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(Dipole Antenna) (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	0.191	41.310	41.501	-32.499	74.000
7386.000	8.373	38.490	46.864	-27.136	74.000
9848.000	7.964	38.870	46.834	-27.166	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	47.090	47.895	-26.105	74.000
7386.000	9.180	39.960	49.140	-24.860	74.000
9848.000	8.801	39.140	47.941	-26.059	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna) (2412MHz)

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

Horizontal

Peak Detector:

4824.000	0.428	39.230	39.659	-34.341	74.000
7236.000	7.177	38.790	45.967	-28.033	74.000
9648.000	8.019	39.390	47.410	-26.590	74.000

Average

Detector:

--

Vertical

Peak Detector:

4824.000	0.836	41.780	42.617	-31.383	74.000
7236.000	7.676	38.920	46.596	-27.404	74.000
9648.000	8.556	39.870	48.427	-25.573	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	0.076	44.980	45.057	-28.943	74.000
7311.000	7.512	41.510	49.022	-24.978	74.000
9748.000	7.630	38.950	46.580	-27.420	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	57.680	58.212	-15.788	74.000
7311.000	8.089	49.130	57.219	-16.781	74.000
9748.000	8.266	39.300	47.567	-26.433	74.000
Average					
Detector:					
4874.000	0.532	42.910	43.442	-10.558	54.000
7311.000	8.089	35.300	43.389	-10.611	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna) (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	0.191	41.580	41.771	-32.229	74.000
7386.000	8.373	38.130	46.504	-27.496	74.000
9848.000	7.964	39.540	47.504	-26.496	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	41.530	42.335	-31.665	74.000
7386.000	9.180	38.510	47.690	-26.310	74.000
9848.000	8.801	39.510	48.311	-25.689	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps(Dipole Antenna) (5745 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	12.995	38.900	51.895	-22.105	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11490.000	14.511	46.600	61.111	-12.889	74.000
Average					
Detector:					
11490.000	14.511	33.310	47.821	-6.179	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps(Dipole Antenna) (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	13.461	40.030	53.491	-20.509	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11570.000	14.827	46.930	61.756	-12.244	74.000
Average					
Detector:					
11570.000	14.827	33.250	48.076	-5.924	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps(Dipole Antenna) (5825 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11650.000	11.802	42.120	53.922	-20.078	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11650.000	13.257	47.690	60.947	-13.053	74.000
Average					
Detector:					
11650.000	13.257	34.340	47.597	-6.403	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(Dipole Antenna)
 (2412MHz)

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

Horizontal

Peak Detector:

4824.000	0.428	41.760	42.189	-31.811	74.000
7236.000	7.177	38.960	46.137	-27.863	74.000
9648.000	8.019	41.570	49.590	-24.410	74.000

Average

Detector:

--

Vertical

Peak Detector:

4824.000	0.836	41.650	42.487	-31.513	74.000
7236.000	7.676	38.940	46.616	-27.384	74.000
9648.000	8.556	40.030	48.587	-25.413	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(Dipole Antenna)
 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	0.076	45.080	45.157	-28.843	74.000
7311.000	7.512	41.100	48.612	-25.388	74.000
9748.000	7.630	38.720	46.350	-27.650	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	54.910	55.442	-18.558	74.000
7311.000	8.089	48.090	56.179	-17.821	74.000
9748.000	8.266	39.010	47.277	-26.723	74.000
Average					
Detector:					
4874.000	0.532	41.110	41.642	-12.358	54.000
7311.000	8.089	34.390	42.479	-11.521	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(Dipole Antenna)
 (2462 MHz)

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

Horizontal

Peak Detector:

4924.000	0.191	41.270	41.461	-32.539	74.000
7386.000	8.373	38.790	47.164	-26.836	74.000
9848.000	7.964	39.590	47.554	-26.446	74.000

Average

Detector:

--

Vertical

Peak Detector:

4924.000	0.805	40.470	41.275	-32.725	74.000
7386.000	9.180	38.030	47.210	-26.790	74.000
9848.000	8.801	38.800	47.601	-26.399	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(Dipole Antenna)
 (2422MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4844.000	0.280	41.550	41.831	-32.169	74.000
7266.000	7.106	39.480	46.586	-27.414	74.000
9688.000	7.663	39.540	47.203	-26.797	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4844.000	0.707	42.060	42.768	-31.232	74.000
7266.000	7.626	39.930	47.556	-26.444	74.000
9688.000	8.284	39.570	47.854	-26.146	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(Dipole Antenna)
 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	0.076	44.300	44.377	-29.623	74.000
7311.000	7.512	40.110	47.622	-26.378	74.000
9748.000	7.630	39.320	46.950	-27.050	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	51.440	51.972	-22.028	74.000
7311.000	8.089	44.810	52.899	-21.101	74.000
9748.000	8.266	39.240	47.507	-26.493	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(Dipole Antenna)
 (2452 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4904.000	0.000	41.580	41.581	-32.419	74.000
7386.000	8.373	39.010	47.384	-26.616	74.000
9808.000	7.850	39.520	47.370	-26.630	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4904.000	0.513	41.170	41.684	-32.316	74.000
7356.000	9.022	38.550	47.572	-26.428	74.000
9808.000	8.512	39.440	47.952	-26.048	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)
 (5745MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	12.995	39.390	52.385	-21.615	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11490.000	14.511	44.310	58.821	-15.179	74.000
Average					
Detector:					
11490.000	14.511	31.360	45.871	-8.129	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)
 (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	13.461	40.250	53.711	-20.289	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11570.000	14.827	45.910	60.736	-13.264	74.000
Average					
Detector:					
11570.000	14.827	32.820	47.646	-6.354	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)
 (5825 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11650.000	11.802	41.060	52.862	-21.138	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11650.000	13.257	45.310	58.567	-15.433	74.000
Average					
Detector:					
11650.000	13.257	32.189	45.446	-8.554	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)
 (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	13.042	39.520	52.562	-21.438	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11510.000	14.534	41.750	56.284	-17.716	74.000
Average					
Detector:					
11510.000	14.534	28.080	42.614	-11.386	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna)
 (5795 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11590.000	13.802	39.940	53.742	-20.258	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11590.000	15.125	44.010	59.135	-14.865	74.000
Average					
Detector:					
11590.000	15.125	30.730	45.855	-8.145	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 8: Transmit (802.11b 1Mbps)(PIFA Antenna) (2412MHz)

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

Horizontal

Peak Detector:

4824.000	0.428	45.290	45.719	-28.281	74.000
7236.000	7.177	40.660	47.837	-26.163	74.000
9648.000	8.019	39.060	47.080	-26.920	74.000

Average

Detector:

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Vertical

Peak Detector:

4824.000	0.836	45.340	46.177	-27.823	74.000
7236.000	7.676	43.450	51.126	-22.874	74.000
9648.000	8.556	38.860	47.417	-26.583	74.000

Average

Detector:

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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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 8: Transmit (802.11b 1Mbps)(PIFA Antenna) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	0.076	49.790	49.867	-24.133	74.000
7311.000	7.512	44.890	52.402	-21.598	74.000
9748.000	7.630	39.280	46.910	-27.090	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	48.170	48.702	-25.298	74.000
7311.000	8.089	50.600	58.689	-15.311	74.000
9748.000	8.266	42.050	50.317	-23.683	74.000
Average					
Detector:					
7311.000	8.089	45.370	53.459	-0.541	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 8: Transmit (802.11b 1Mbps)(PIFA Antenna) (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	0.191	48.240	48.431	-25.569	74.000
7386.000	8.373	40.210	48.584	-25.416	74.000
9848.000	7.964	39.470	47.434	-26.566	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	45.630	46.435	-27.565	74.000
7386.000	9.180	44.220	53.400	-20.600	74.000
9848.000	8.801	39.430	48.231	-25.769	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 9: Transmit (802.11g 6Mbps)(PIFA Antenna) (2412MHz)

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

Horizontal

Peak Detector:

4824.000	0.428	41.090	41.519	-32.481	74.000
7236.000	7.177	38.670	45.847	-28.153	74.000
9648.000	8.019	39.760	47.780	-26.220	74.000

Average

Detector:

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Vertical

Peak Detector:

4824.000	0.836	41.340	42.177	-31.823	74.000
7236.000	7.676	39.020	46.696	-27.304	74.000
9648.000	8.556	38.710	47.267	-26.733	74.000

Average

Detector:

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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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 9: Transmit (802.11g 6Mbps)(PIFA Antenna) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	0.076	49.230	49.307	-24.693	74.000
7311.000	7.512	49.290	56.802	-17.198	74.000
9748.000	7.630	42.360	49.990	-24.010	74.000
Average					
Detector:					
7311.000	7.512	35.250	42.762	-11.238	54.000
Vertical					
Peak Detector:					
4874.000	0.532	49.840	50.372	-23.628	74.000
7311.000	8.089	54.470	62.559	-11.441	74.000
9748.000	8.266	50.690	58.957	-15.043	74.000
Average					
Detector:					
7311.000	8.089	39.920	48.009	-5.991	54.000
9748.000	8.266	33.350	41.617	-12.383	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 9: Transmit (802.11g 6Mbps)(PIFA Antenna) (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	0.191	40.830	41.021	-32.979	74.000
7386.000	8.373	38.550	46.924	-27.076	74.000
9848.000	7.964	39.670	47.634	-26.366	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	39.560	40.365	-33.635	74.000
7386.000	9.180	37.820	47.000	-27.000	74.000
9848.000	8.801	39.200	48.001	-25.999	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 10: Transmit - 802.11a 6Mbps(PIFA Antenna) (5745 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	12.326	42.690	55.015	-18.985	74.000
17235.000	12.435	45.680	58.115	-15.885	74.000
Average					
Detector:					
11490.000	12.326	30.980	43.305	-10.695	54.000
17235.000	12.435	29.700	42.135	-11.865	54.000
Vertical					
Peak Detector:					
11490.000	13.842	45.400	59.241	-14.759	74.000
17235.000	14.428	44.030	58.458	-15.542	74.000
Average					
Detector:					
11490.000	13.842	31.630	45.471	-8.529	54.000
17235.000	14.428	29.720	44.148	-9.852	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 10: Transmit - 802.11a 6Mbps(PIFA Antenna) (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	12.849	41.830	54.679	-19.321	74.000
17355.000	14.213	42.710	56.923	-17.077	74.000
Average					
Detector:					
11570.000	12.849	29.570	42.419	-11.581	54.000
17355.000	14.213	30.120	44.333	-9.667	54.000
Vertical					
Peak Detector:					
11570.000	14.215	46.380	60.594	-13.406	74.000
17355.000	16.127	43.980	60.107	-13.893	74.000
Average					
Detector:					
11570.000	14.215	31.520	45.734	-8.266	54.000
17355.000	16.127	31.110	47.237	-6.763	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 10: Transmit - 802.11a 6Mbps(PIFA Antenna) (5825 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11650.000	11.179	45.190	56.369	-17.631	74.000
17475.000	14.425	42.880	57.305	-16.695	74.000
Average					
Detector:					
11650.000	11.179	32.400	43.579	-10.421	54.000
17475.000	14.425	28.600	43.025	-10.975	54.000
Vertical					
Peak Detector:					
11650.000	12.634	47.030	59.664	-14.336	74.000
17475.000	15.261	44.070	59.331	-14.669	74.000
Average					
Detector:					
11650.000	12.634	33.370	46.004	-7.996	54.000
17475.000	15.261	31.890	47.151	-6.849	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 11: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(PIFA Antenna)
 (2412MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	0.428	40.800	41.229	-32.771	74.000
7236.000	7.177	38.580	45.757	-28.243	74.000
9648.000	8.019	39.150	47.170	-26.830	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4824.000	0.836	40.390	41.227	-32.773	74.000
7236.000	7.676	39.140	46.816	-27.184	74.000
9648.000	8.556	39.150	47.707	-26.293	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 11: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(PIFA Antenna)
 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	0.076	45.710	45.787	-28.213	74.000
7311.000	7.512	45.673	53.185	-20.815	74.000
9748.000	7.630	42.020	49.650	-24.350	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	47.970	48.502	-25.498	74.000
7311.000	8.089	54.740	62.829	-11.171	74.000
9748.000	8.266	47.310	55.577	-18.423	74.000
Average					
Detector:					
7311.000	8.089	39.570	47.659	-6.341	54.000
9748.000	8.266	31.400	39.667	-14.333	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 11: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(PIFA Antenna)
 (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	0.191	40.400	40.591	-33.409	74.000
7386.000	8.373	37.760	46.134	-27.866	74.000
9848.000	7.964	39.110	47.074	-26.926	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	40.090	40.895	-33.105	74.000
7386.000	9.180	37.540	46.720	-27.280	74.000
9848.000	8.801	39.220	48.021	-25.979	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 12: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(PIFA Antenna)
 (2422MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4844.000	0.280	40.580	40.861	-33.139	74.000
7266.000	7.106	38.150	45.256	-28.744	74.000
9688.000	7.663	38.780	46.443	-27.557	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4844.000	0.707	40.780	41.488	-32.512	74.000
7266.000	7.626	38.460	46.086	-27.914	74.000
9688.000	8.284	38.100	46.384	-27.616	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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 12: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(PIFA Antenna)
 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	0.076	43.830	43.907	-30.093	74.000
7311.000	7.512	44.440	51.952	-22.048	74.000
9748.000	7.630	39.220	46.850	-27.150	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	45.230	45.762	-28.238	74.000
7311.000	8.089	51.670	59.759	-14.241	74.000
9748.000	8.266	41.190	49.457	-24.543	74.000
Average					
Detector:					
7311.000	8.089	38.340	46.429	-7.571	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 12: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(PIFA Antenna)
 (2452 MHz)

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

Horizontal

Peak Detector:

4904.000	0.000	40.670	40.671	-33.329	74.000
7356.000	8.308	37.380	45.688	-28.312	74.000
9808.000	7.850	38.460	46.310	-27.690	74.000

Average

Detector:

--

Vertical

Peak Detector:

4904.000	0.513	40.580	41.094	-32.906	74.000
7356.000	9.022	37.740	46.762	-27.238	74.000
9808.000	8.512	38.590	47.102	-26.898	74.000

Average

Detector:

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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 : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(PIFA Antenna)
 (5745MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	12.326	42.640	54.965	-19.035	74.000
17235.000	12.435	43.300	55.735	-18.265	74.000
Average					
Detector:					
11490.000	12.326	30.560	42.885	-11.115	54.000
17235.000	12.435	30.660	43.095	-10.905	54.000
Vertical					
Peak Detector:					
11490.000	13.842	43.400	57.241	-16.759	74.000
17235.000	14.428	43.120	57.548	-16.452	74.000
Average					
Detector:					
11490.000	13.842	31.040	44.881	-9.119	54.000
17235.000	14.428	30.650	45.078	-8.922	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(PIFA Antenna)
 (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	12.849	40.900	53.749	-20.251	74.000
17355.000	16.127	42.410	58.537	-15.463	74.000
Average					
Detector:					
17355.000	16.127	30.130	46.257	-7.743	54.000
Vertical					
Peak Detector:					
11570.000	14.215	43.530	57.744	-16.256	74.000
17355.000	16.127	43.090	59.217	-14.783	74.000
Average					
Detector:					
11570.000	14.215	30.790	45.004	-8.996	54.000
17355.000	16.127	30.550	46.677	-7.323	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 13: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(PIFA Antenna)
(5825 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11650.000	11.179	43.910	55.089	-18.911	74.000
17475.000	14.425	42.770	57.195	-16.805	74.000
Average					
Detector:					
11650.000	11.179	31.000	42.179	-11.821	54.000
17475.000	14.425	29.550	43.975	-10.025	54.000
Vertical					
Peak Detector:					
11650.000	12.634	42.790	55.424	-18.576	74.000
17475.000	15.261	43.370	58.631	-15.369	74.000
Average					
Detector:					
11650.000	12.634	31.070	43.704	-10.296	54.000
17475.000	15.261	30.490	45.751	-8.249	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_30Mbps(5G Band)(PIFA Antenna)
 (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	12.402	40.780	53.182	-20.818	74.000
17265.000	15.064	43.360	58.424	-15.576	74.000
Average					
Detector:					
17265.000	15.064	30.670	45.734	-8.266	54.000
Vertical					
Peak Detector:					
11510.000	13.894	43.140	57.034	-16.966	74.000
17265.000	15.064	43.260	58.324	-15.676	74.000
Average					
Detector:					
11510.000	13.894	31.940	45.834	-8.166	54.000
17265.000	15.064	30.660	45.724	-8.276	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_30Mbps(5G Band)(PIFA Antenna)
 (5795 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11590.000	13.138	40.530	53.668	-20.332	74.000
17385.000	15.833	42.330	58.163	-15.837	74.000
Average					
Detector:					
17385.000	15.833	29.820	45.653	-8.347	54.000
Vertical					
Peak Detector:					
11590.000	14.461	41.390	55.851	-18.149	74.000
17385.000	15.833	43.200	59.033	-14.967	74.000
Average					
Detector:					
11590.000	14.461	29.550	44.011	-9.989	54.000
17385.000	15.833	29.970	45.803	-8.197	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(Dipole Antenna) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
163.860	-9.989	40.899	30.910	-12.590	43.500
359.800	-0.226	39.752	39.526	-6.474	46.000
499.480	1.991	34.644	36.634	-9.366	46.000
625.580	1.419	34.290	35.710	-10.290	46.000
749.740	3.963	34.643	38.606	-7.394	46.000
800.000	6.417	38.482	44.898	-1.102	46.000
Vertical					
109.540	-3.507	40.778	37.270	-6.230	43.500
183.260	-3.735	42.905	39.170	-4.330	43.500
499.480	-0.199	37.761	37.561	-8.439	46.000
664.380	-0.978	35.966	34.988	-11.012	46.000
800.000	2.635	42.033	44.667	-1.333	46.000
920.460	3.272	29.490	32.762	-13.238	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
284.140	-5.797	42.723	36.926	-9.074	46.000
499.480	1.991	37.116	39.106	-6.894	46.000
625.580	1.419	35.171	36.591	-9.409	46.000
751.680	4.332	33.507	37.839	-8.161	46.000
800.000	6.417	37.918	44.334	-1.666	46.000
875.840	5.816	32.458	38.274	-7.726	46.000
Vertical					
136.700	-4.561	39.359	34.798	-8.702	43.500
499.480	-0.199	38.349	38.149	-7.851	46.000
625.580	0.299	33.134	33.434	-12.566	46.000
687.660	2.292	31.932	34.224	-11.776	46.000
749.740	2.023	33.548	35.571	-10.429	46.000
800.000	2.635	42.004	44.638	-1.362	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps(Dipole Antenna) (5785MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
189.080	-10.027	44.220	34.193	-9.307	43.500
317.120	-4.599	46.322	41.722	-4.278	46.000
375.320	0.918	39.123	40.041	-5.959	46.000
499.480	1.991	37.339	39.329	-6.671	46.000
664.380	1.882	32.361	34.243	-11.757	46.000
866.140	6.240	28.355	34.595	-11.405	46.000
Vertical					
111.480	-3.439	37.848	34.410	-9.090	43.500
192.960	-5.655	45.274	39.619	-3.881	43.500
313.240	-4.090	44.042	39.952	-6.048	46.000
499.480	-0.199	35.145	34.945	-11.055	46.000
664.380	-0.978	36.730	35.752	-10.248	46.000
749.740	2.023	31.236	33.259	-12.741	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(Dipole Antenna) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
125.060	-7.335	39.277	31.942	-11.558	43.500
313.240	-4.640	40.497	35.857	-10.143	46.000
499.480	1.991	35.155	37.145	-8.855	46.000
625.580	1.419	32.988	34.408	-11.592	46.000
749.740	3.963	33.405	37.368	-8.632	46.000
800.000	6.417	38.496	44.912	-1.088	46.000
Vertical					
109.540	-3.507	41.153	37.645	-5.855	43.500
249.220	-5.096	45.154	40.058	-5.942	46.000
499.480	-0.199	37.068	36.868	-9.132	46.000
625.580	0.299	32.169	32.469	-13.531	46.000
749.740	2.023	33.595	35.618	-10.382	46.000
800.000	2.635	42.077	44.711	-1.289	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(Dipole Antenna)
 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
103.720	-8.230	41.389	33.158	-10.342	43.500
187.140	-11.217	46.194	34.977	-8.523	43.500
499.480	1.991	35.327	37.317	-8.683	46.000
625.580	1.419	33.419	34.839	-11.161	46.000
749.740	3.963	32.992	36.955	-9.045	46.000
800.000	6.417	37.999	44.415	-1.585	46.000
Vertical					
179.380	-0.824	36.214	35.390	-8.110	43.500
383.080	0.195	38.733	38.928	-7.072	46.000
608.120	2.175	30.714	32.889	-13.111	46.000
749.740	2.023	33.414	35.437	-10.563	46.000
800.000	2.635	41.592	44.226	-1.774	46.000
961.200	3.310	30.502	33.812	-20.188	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)
 (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
119.240	-7.291	31.508	24.218	-19.282	43.500
249.220	-6.216	47.925	41.709	-4.291	46.000
353.980	-1.274	43.191	41.917	-4.083	46.000
499.480	1.991	37.172	39.162	-6.838	46.000
664.380	1.882	33.683	35.565	-10.435	46.000
749.740	3.963	35.058	39.021	-6.979	46.000
Vertical					
123.120	-3.630	37.540	33.910	-9.590	43.500
177.440	-1.248	40.335	39.087	-4.413	43.500
249.220	-5.096	45.253	40.157	-5.843	46.000
375.320	0.388	34.892	35.280	-10.720	46.000
499.480	-0.199	37.549	37.349	-8.651	46.000
664.380	-0.978	36.516	35.538	-10.462	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band)(Dipole Antenna) (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
191.020	-9.679	45.116	35.437	-8.063	43.500
350.100	-1.298	37.662	36.364	-9.636	46.000
499.480	1.991	35.677	37.667	-8.333	46.000
625.580	1.419	33.546	34.966	-11.034	46.000
751.680	4.332	32.023	36.355	-9.645	46.000
875.840	5.816	29.388	35.204	-10.796	46.000
Vertical					
191.020	-5.629	42.181	36.552	-6.948	43.500
315.180	-4.108	40.964	36.856	-9.144	46.000
388.900	-0.726	37.351	36.625	-9.375	46.000
499.480	-0.199	35.385	35.185	-10.815	46.000
664.380	-0.978	34.978	34.000	-12.000	46.000
749.740	2.023	30.974	32.997	-13.003	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 8: Transmit (802.11b 1Mbps)(PIFA Antenna) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
125.060	-7.335	39.389	32.054	-11.446	43.500
309.360	-4.463	42.925	38.462	-7.538	46.000
450.980	0.835	37.303	38.138	-7.862	46.000
507.240	2.529	37.147	39.676	-6.324	46.000
608.120	3.925	34.188	38.113	-7.887	46.000
749.740	3.963	35.009	38.972	-7.028	46.000
Vertical					
125.060	-3.725	39.523	35.798	-7.702	43.500
388.900	-0.726	40.479	39.753	-6.247	46.000
544.100	1.503	34.690	36.193	-9.807	46.000
608.120	2.175	37.122	39.297	-6.703	46.000
676.020	0.451	36.466	36.918	-9.082	46.000
831.220	2.041	36.072	38.113	-7.887	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 9: Transmit (802.11g 6Mbps)(PIFA Antenna) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
107.600	-7.597	38.914	31.317	-12.183	43.500
175.500	-9.792	45.012	35.220	-8.280	43.500
406.360	0.628	36.403	37.032	-8.968	46.000
507.240	2.529	35.388	37.917	-8.083	46.000
608.120	3.925	36.595	40.520	-5.480	46.000
901.060	5.878	34.479	40.357	-5.643	46.000
Vertical					
125.060	-3.725	38.459	34.734	-8.766	43.500
303.540	-3.998	43.944	39.946	-6.054	46.000
497.540	-0.713	41.173	40.460	-5.540	46.000
608.120	2.175	35.444	37.619	-8.381	46.000
749.740	2.023	33.545	35.568	-10.432	46.000
922.400	3.200	29.613	32.813	-13.187	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 10: Transmit - 802.11a 6Mbps(PIFA Antenna) (5785MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
152.220	-7.926	44.371	36.445	-7.055	43.500
336.520	-3.399	41.387	37.988	-8.012	46.000
507.240	2.529	36.755	39.284	-6.716	46.000
608.120	3.925	33.646	37.571	-8.429	46.000
683.780	2.811	33.525	36.336	-9.664	46.000
825.400	7.346	29.557	36.903	-9.097	46.000
Vertical					
107.600	-4.027	39.758	35.731	-7.769	43.500
386.960	-0.708	38.130	37.422	-8.578	46.000
499.480	-0.199	37.009	36.809	-9.191	46.000
608.120	2.175	37.827	40.002	-5.998	46.000
749.740	2.023	34.658	36.681	-9.319	46.000
901.060	1.858	32.438	34.296	-11.704	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 11: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(PIFA Antenna)
 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
125.060	-7.335	39.156	31.821	-11.679	43.500
175.500	-9.792	45.728	35.936	-7.564	43.500
346.220	-1.347	40.912	39.565	-6.435	46.000
507.240	2.529	35.366	37.895	-8.105	46.000
608.120	3.925	36.383	40.308	-5.692	46.000
749.740	3.963	34.878	38.841	-7.159	46.000
Vertical					
107.600	-4.027	41.104	37.077	-6.423	43.500
181.320	-1.910	40.078	38.168	-5.332	43.500
334.580	-2.253	45.210	42.957	-3.043	46.000
497.540	-0.713	40.500	39.787	-6.213	46.000
608.120	2.175	36.826	39.001	-6.999	46.000
831.220	2.041	32.552	34.593	-11.407	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 12: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(PIFA Antenna)
 (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
173.560	-9.543	44.829	35.286	-8.214	43.500
346.220	-1.347	40.431	39.084	-6.916	46.000
507.240	2.529	35.544	38.073	-7.927	46.000
608.120	3.925	37.135	41.060	-4.940	46.000
683.780	2.811	38.117	40.928	-5.072	46.000
901.060	5.878	34.600	40.478	-5.522	46.000
Vertical					
107.600	-4.027	42.055	38.028	-5.472	43.500
156.100	-5.217	43.621	38.404	-5.096	43.500
406.360	-4.472	39.327	34.856	-11.144	46.000
608.120	2.175	34.882	37.057	-8.943	46.000
749.740	2.023	34.504	36.527	-9.473	46.000
963.140	3.581	30.960	34.541	-19.459	54.000

Note:

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

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 13: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(PIFA Antenna)
 (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
152.220	-7.926	43.747	35.821	-7.679	43.500
353.980	-1.274	38.047	36.773	-9.227	46.000
507.240	2.529	36.677	39.206	-6.794	46.000
608.120	3.925	33.619	37.544	-8.456	46.000
734.220	3.155	34.038	37.194	-8.806	46.000
875.840	5.816	29.583	35.399	-10.601	46.000
Vertical					
101.780	-5.570	43.394	37.823	-5.677	43.500
375.320	0.388	40.898	41.286	-4.714	46.000
544.100	1.503	33.169	34.672	-11.328	46.000
608.120	2.175	36.731	38.906	-7.094	46.000
749.740	2.023	35.512	37.535	-8.465	46.000
862.260	-0.263	31.202	30.939	-15.061	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.

Product : SpectraGuardR Access Point / Sensor
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 14: Transmit - 802.11n-40BW_30Mbps(5G Band)(PIFA Antenna) (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
148.340	-7.806	41.644	33.838	-9.662	43.500
369.500	0.787	35.682	36.469	-9.531	46.000
507.240	2.529	37.466	39.995	-6.005	46.000
676.020	2.841	35.357	38.199	-7.801	46.000
788.540	6.144	32.387	38.531	-7.469	46.000
901.060	5.878	36.393	42.271	-3.729	46.000
Vertical					
107.600	-4.027	41.478	37.451	-6.049	43.500
278.320	-6.092	47.092	41.000	-5.000	46.000
497.540	-0.713	35.660	34.947	-11.053	46.000
608.120	2.175	36.441	38.616	-7.384	46.000
749.740	2.023	34.166	36.189	-9.811	46.000
901.060	1.858	32.248	34.106	-11.894	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.

5. RF antenna conducted test

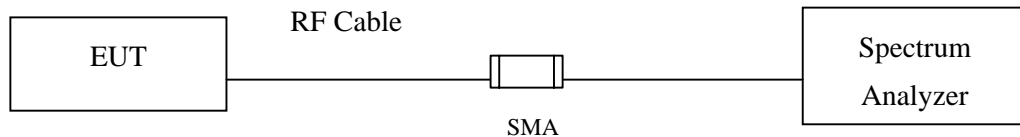
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	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.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

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

5.4. Test Procedure

The EUT was tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.5. Uncertainty

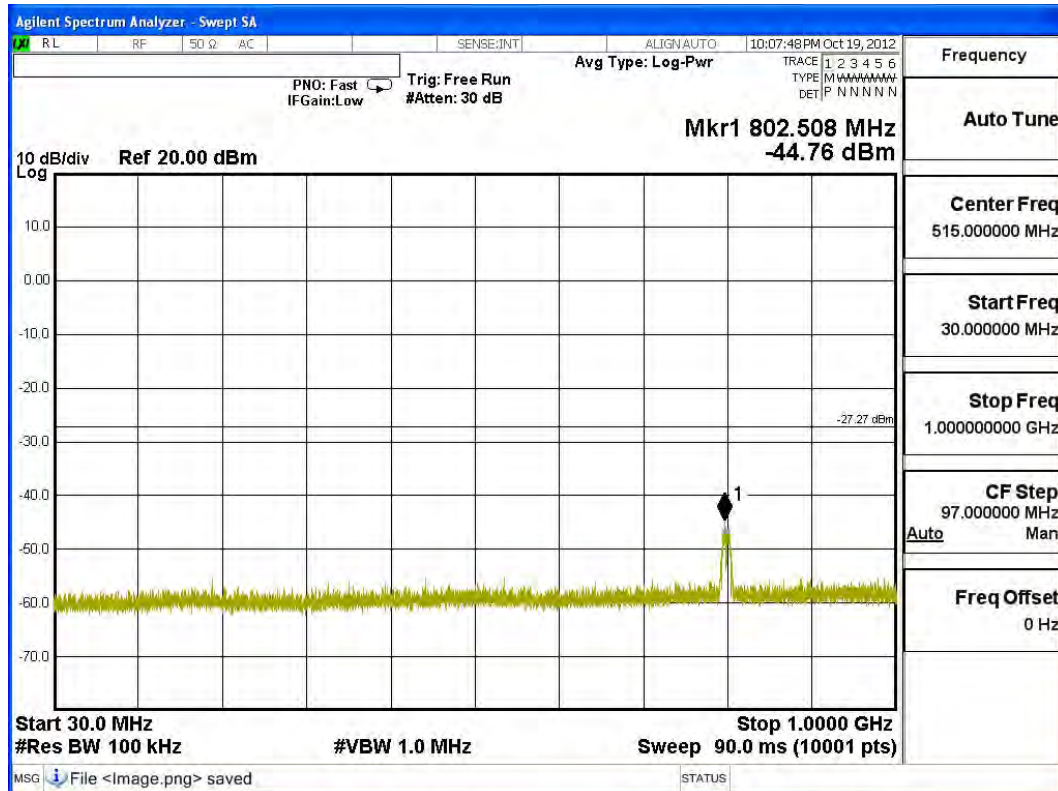
The measurement uncertainty

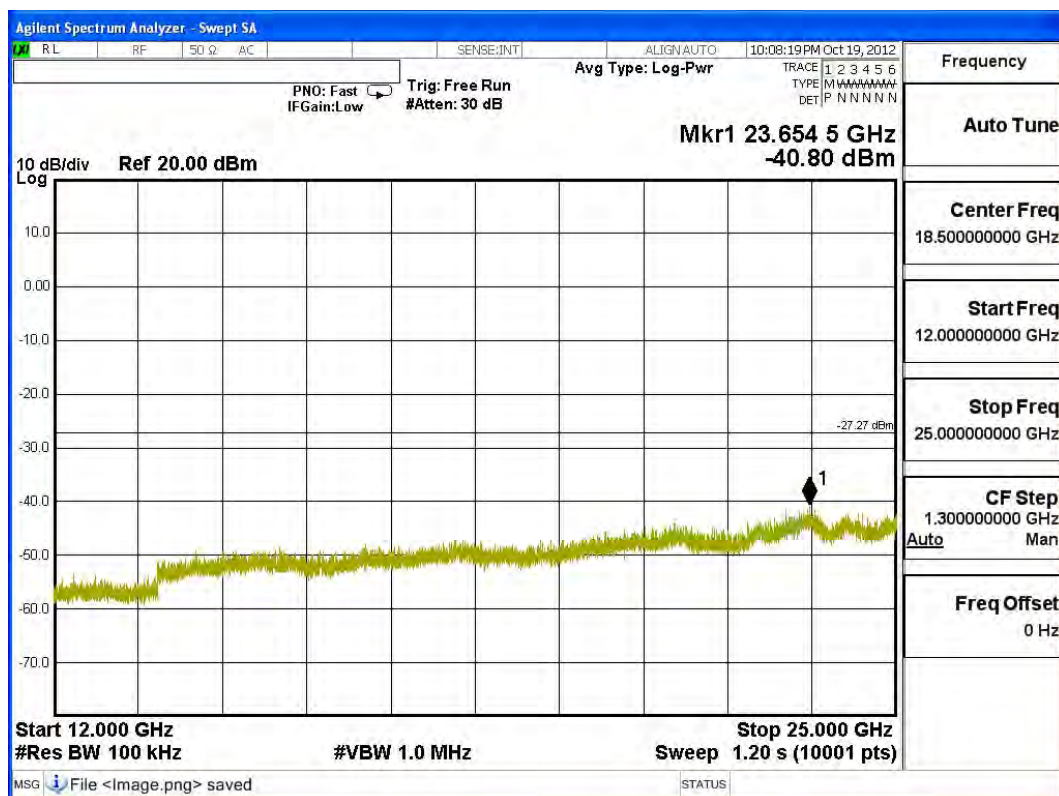
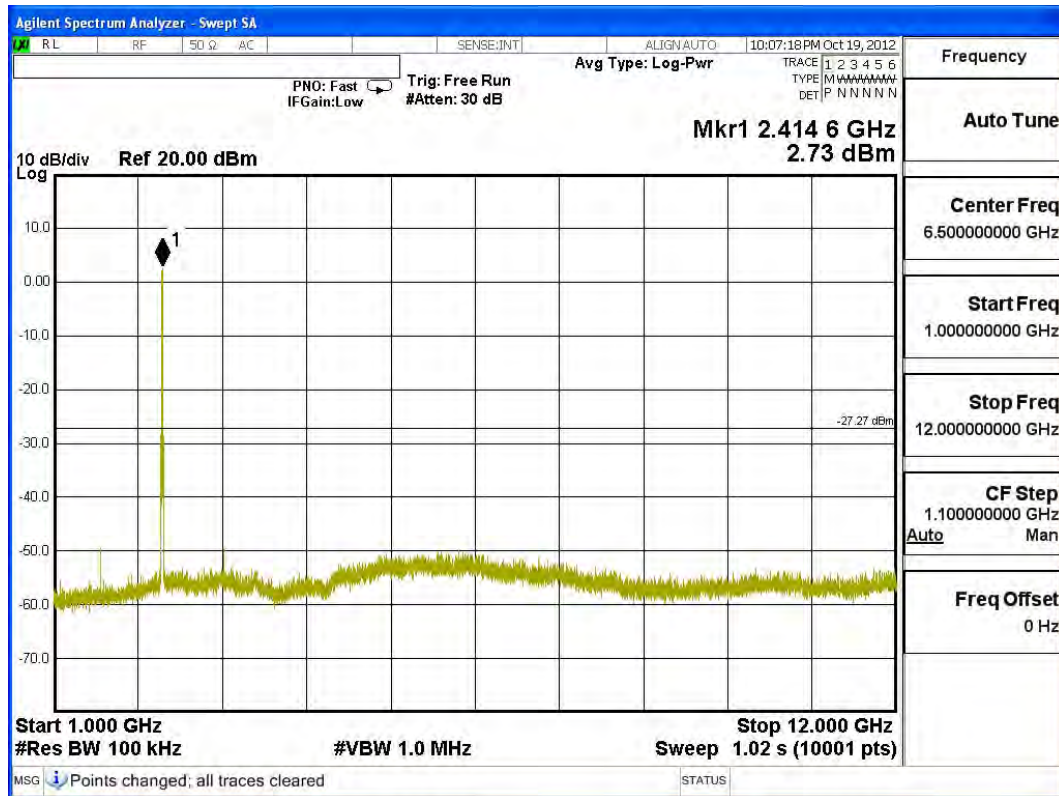
Conducted is defined as $\pm 1.27\text{dB}$

5.6. Test Result of RF antenna conducted test

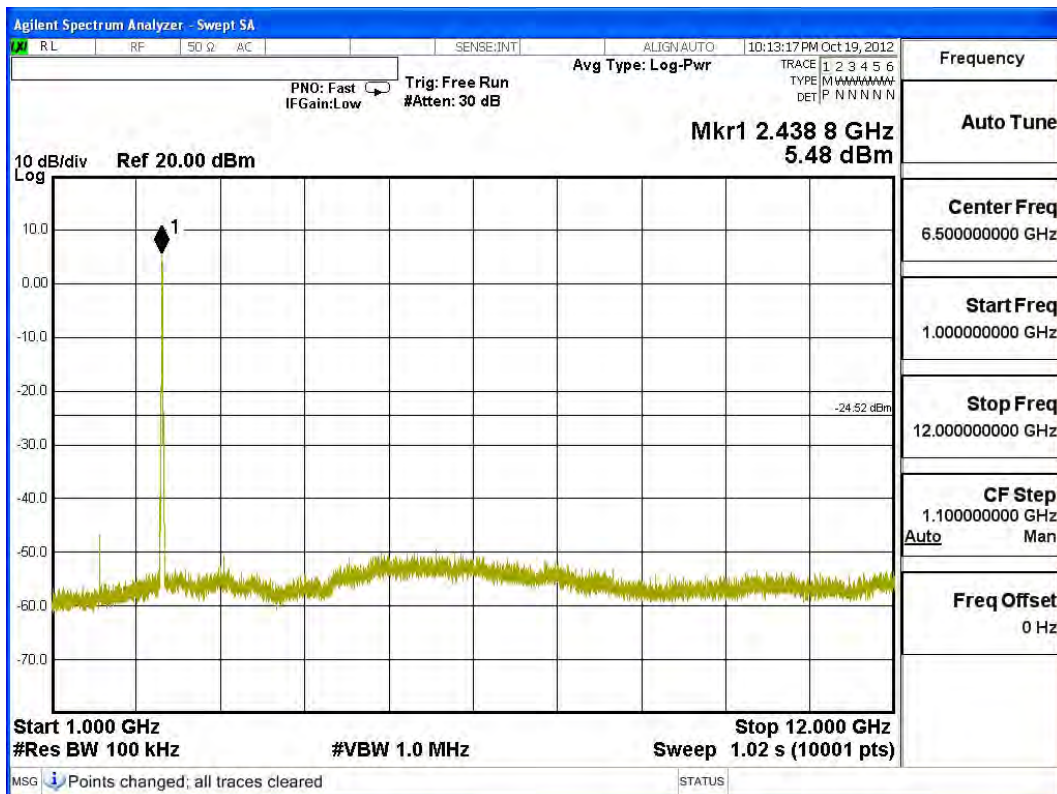
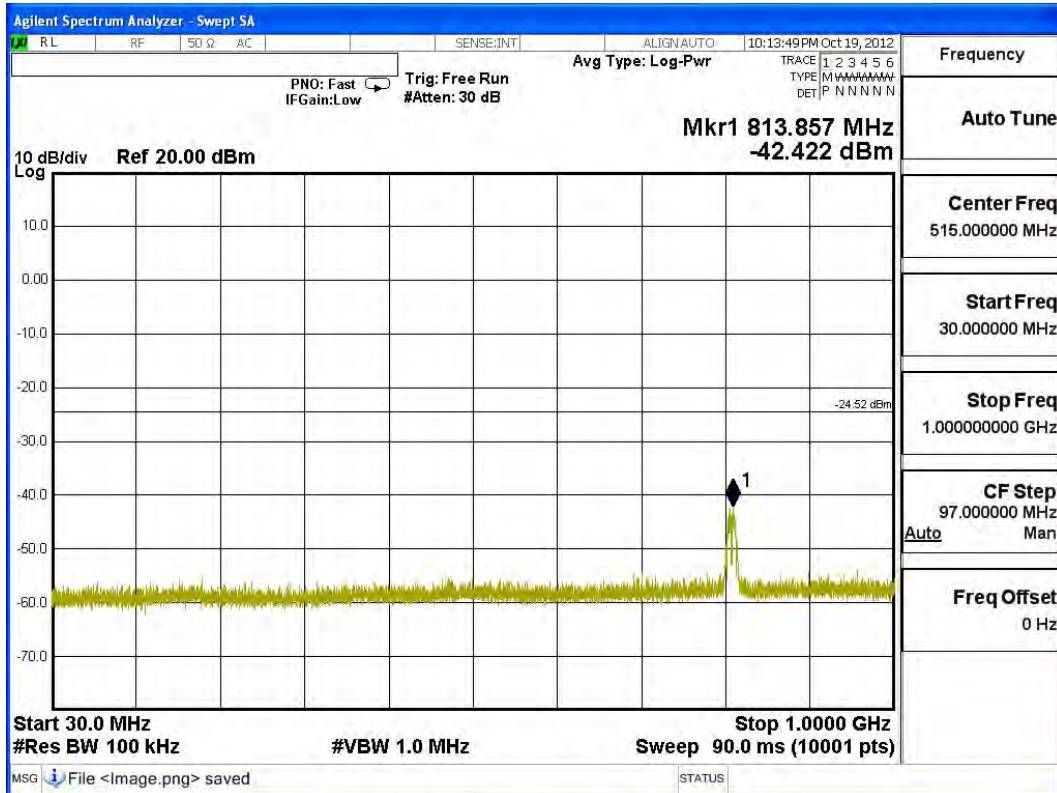
Product : SpectraGuardR Access Point / Sensor
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(Dipole Antenna)

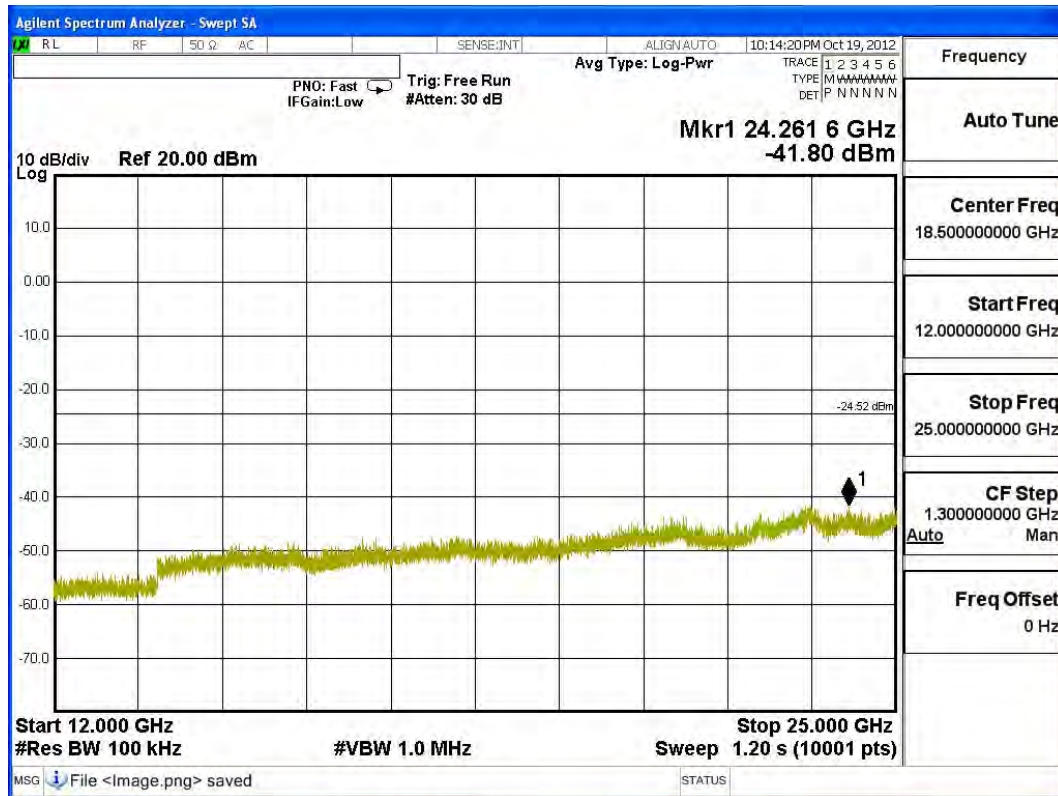
Channel 01 (2412MHz) 30MHz-25GHz-Chain A



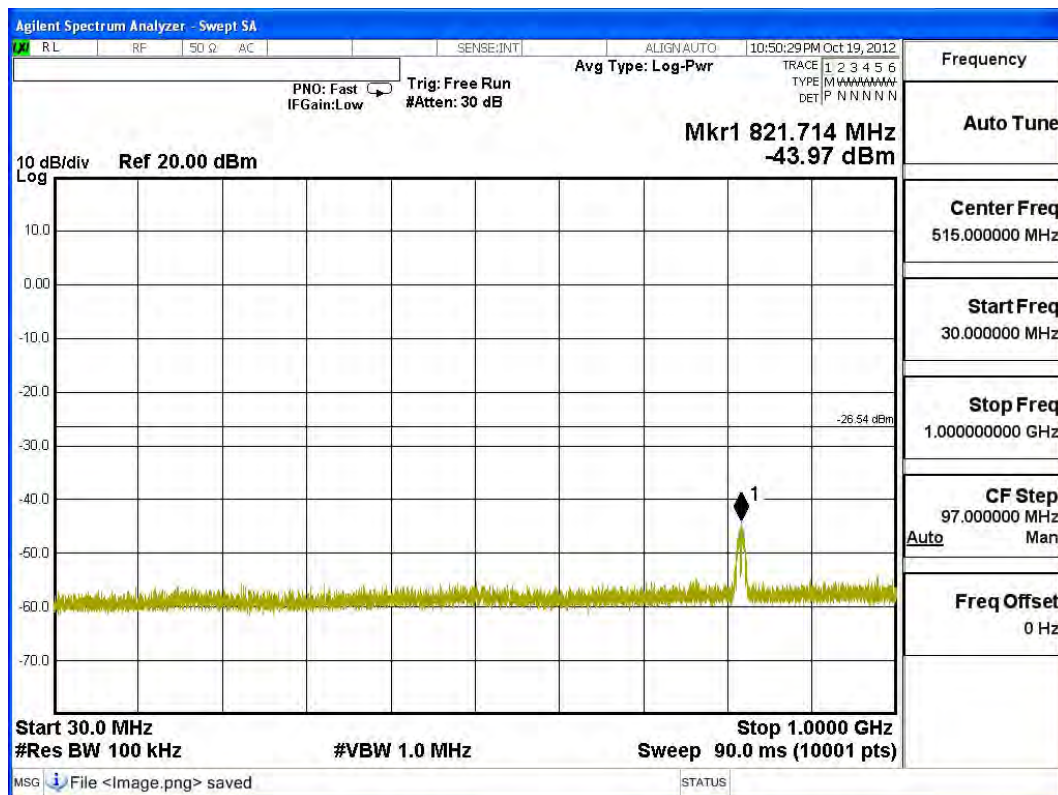


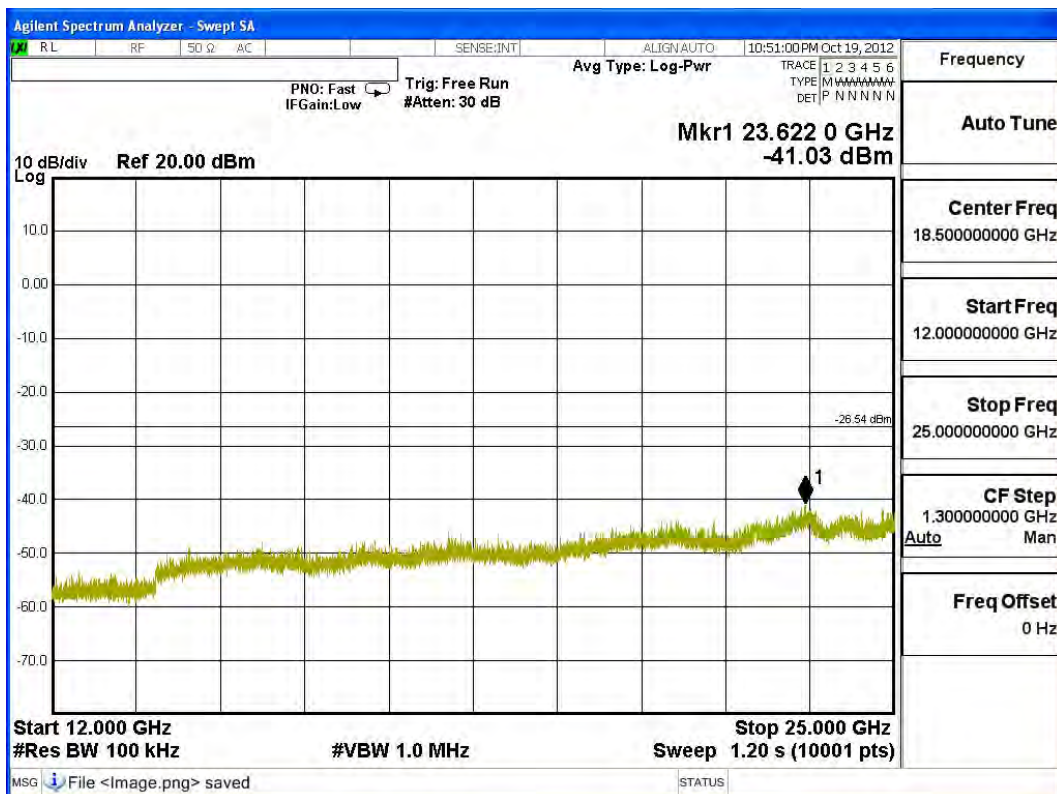
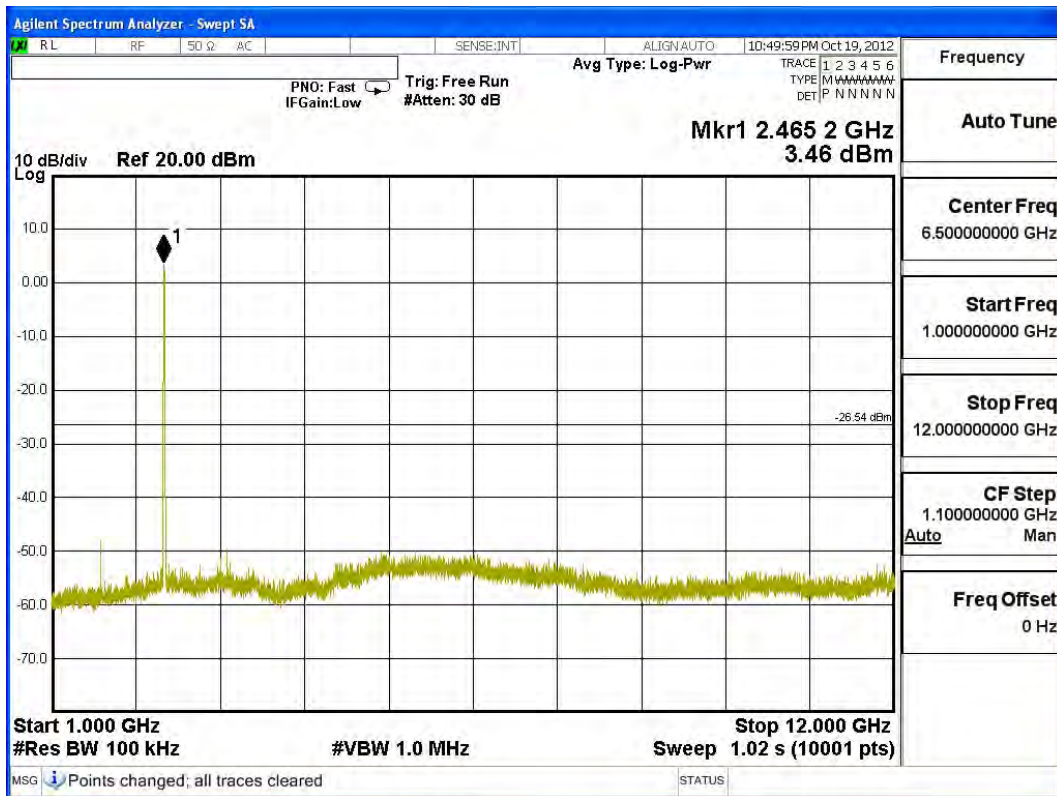
Channel 06 (2437MHz) 30MHz -25GHz-Chain A



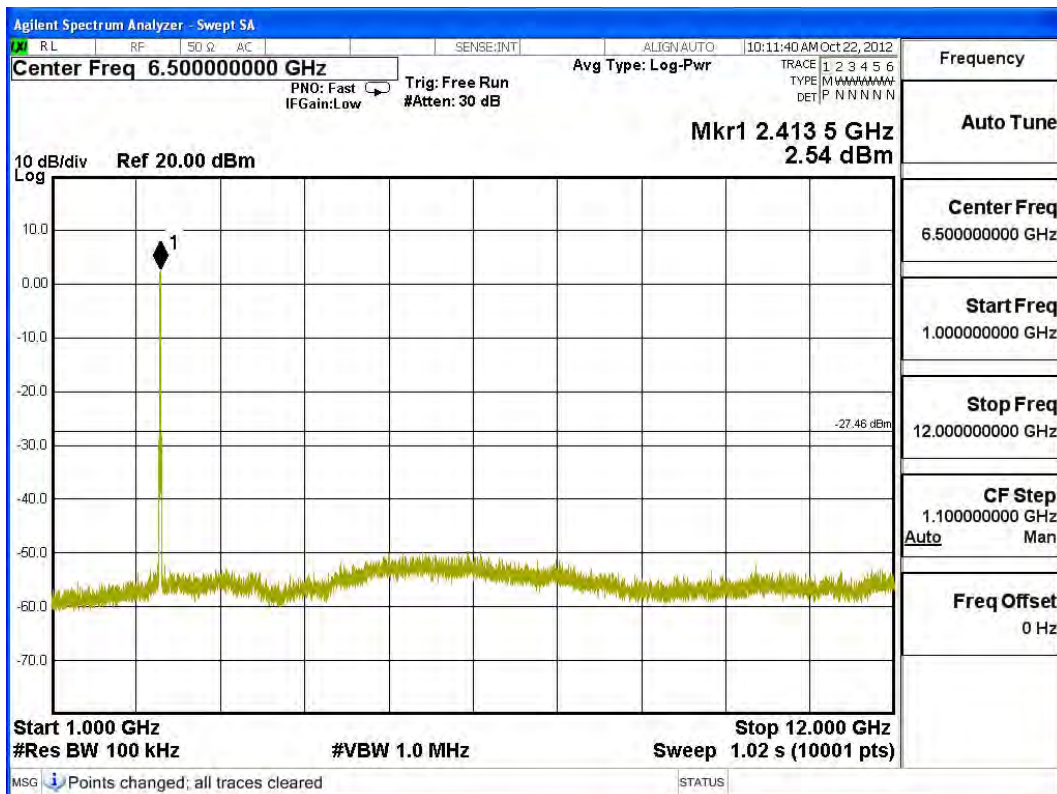
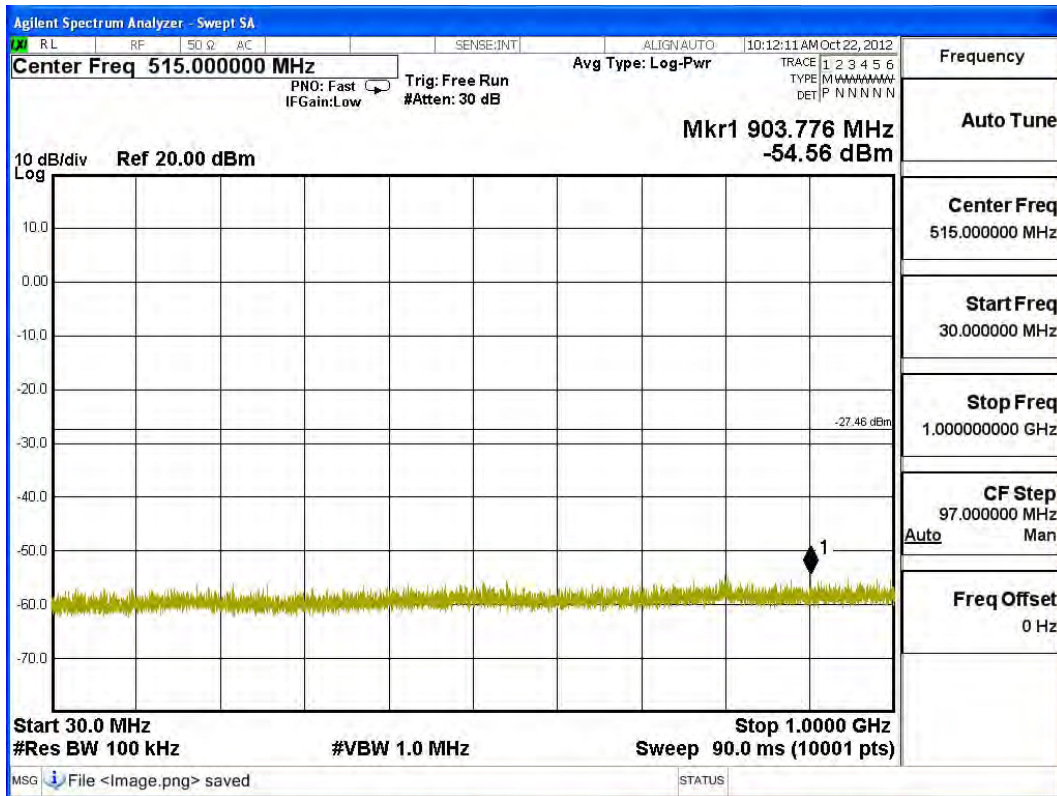


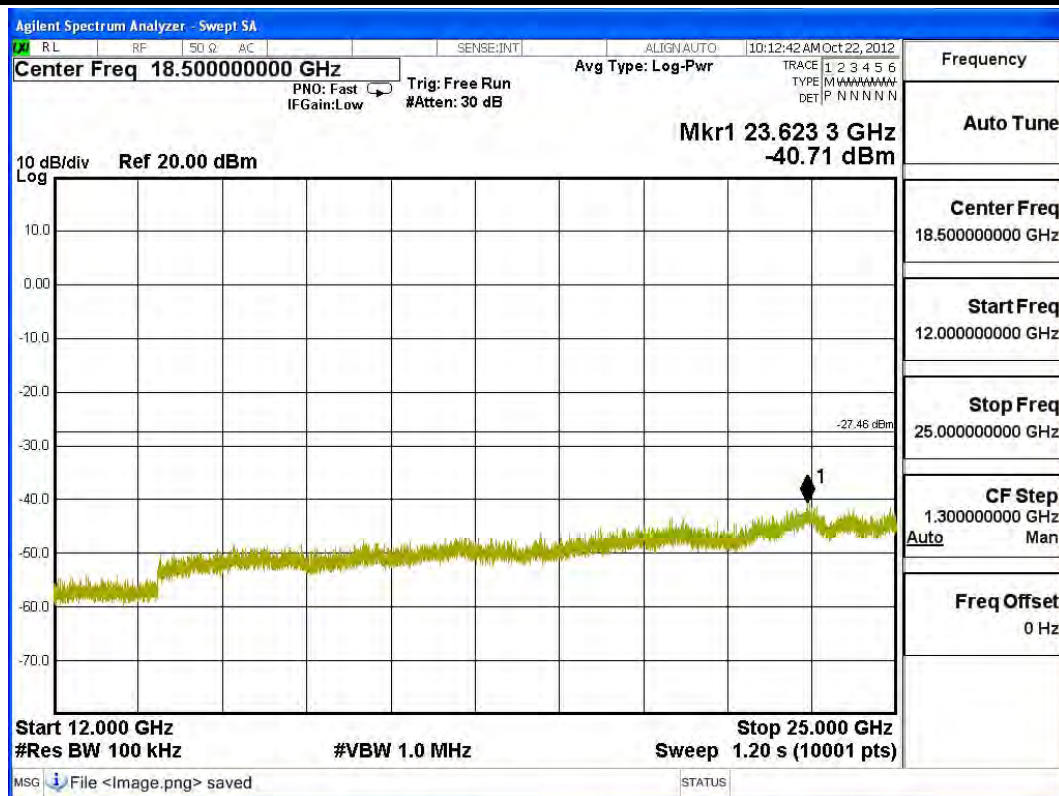
Channel 11 (2462MHz) 30MHz -25GHz-Chain A



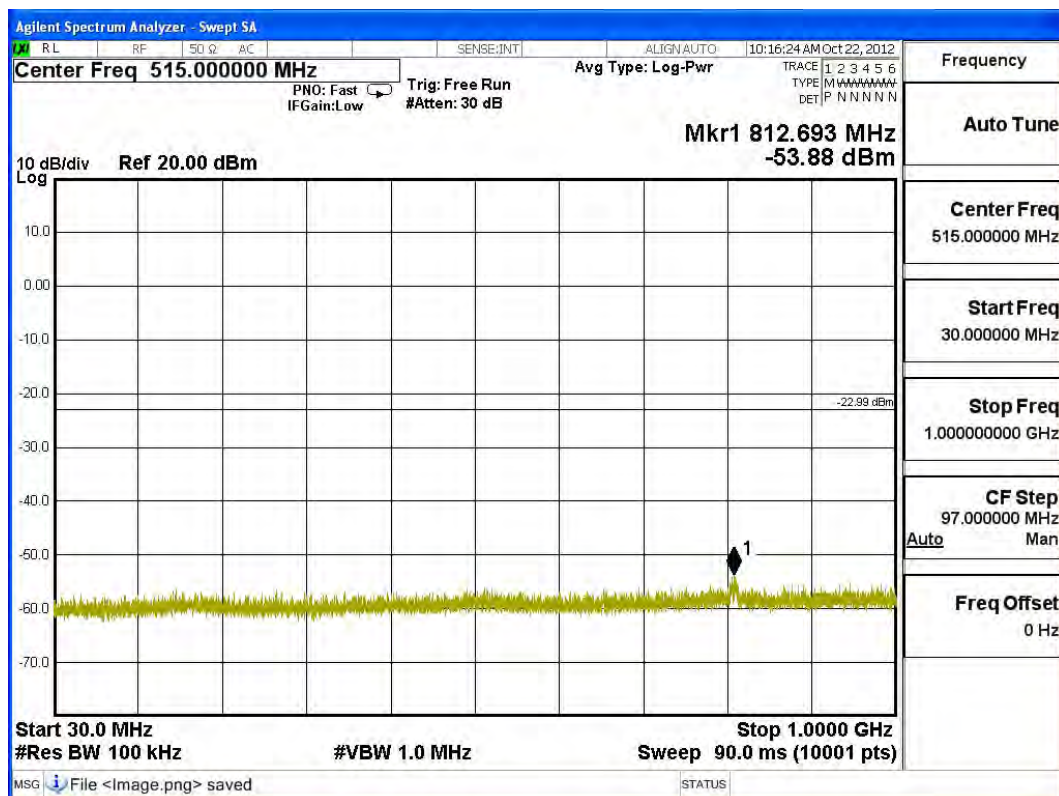


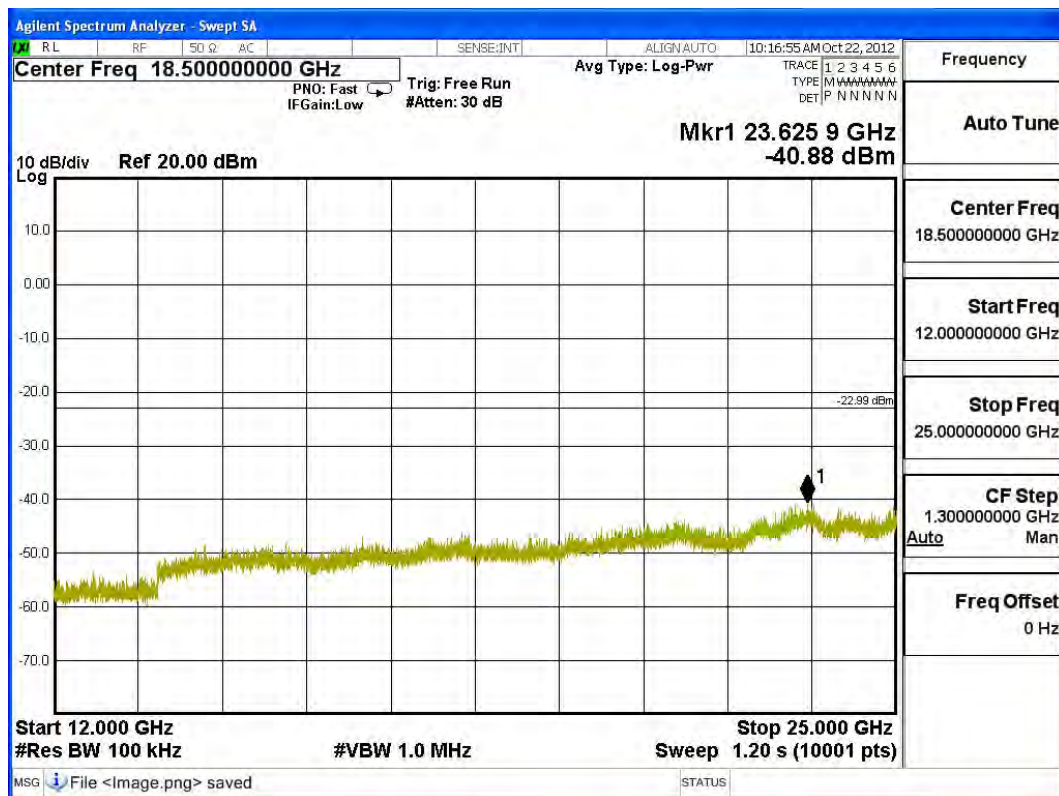
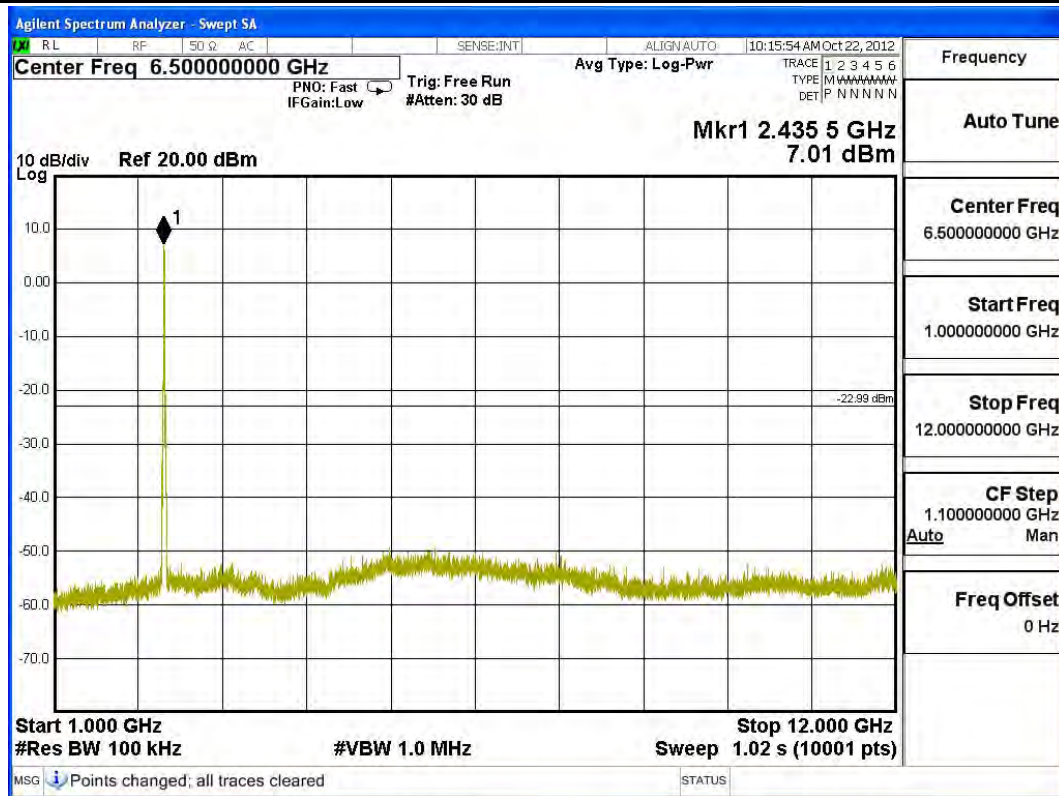
Channel 01 (2412MHz) 30MHz-25GHz-Chain B



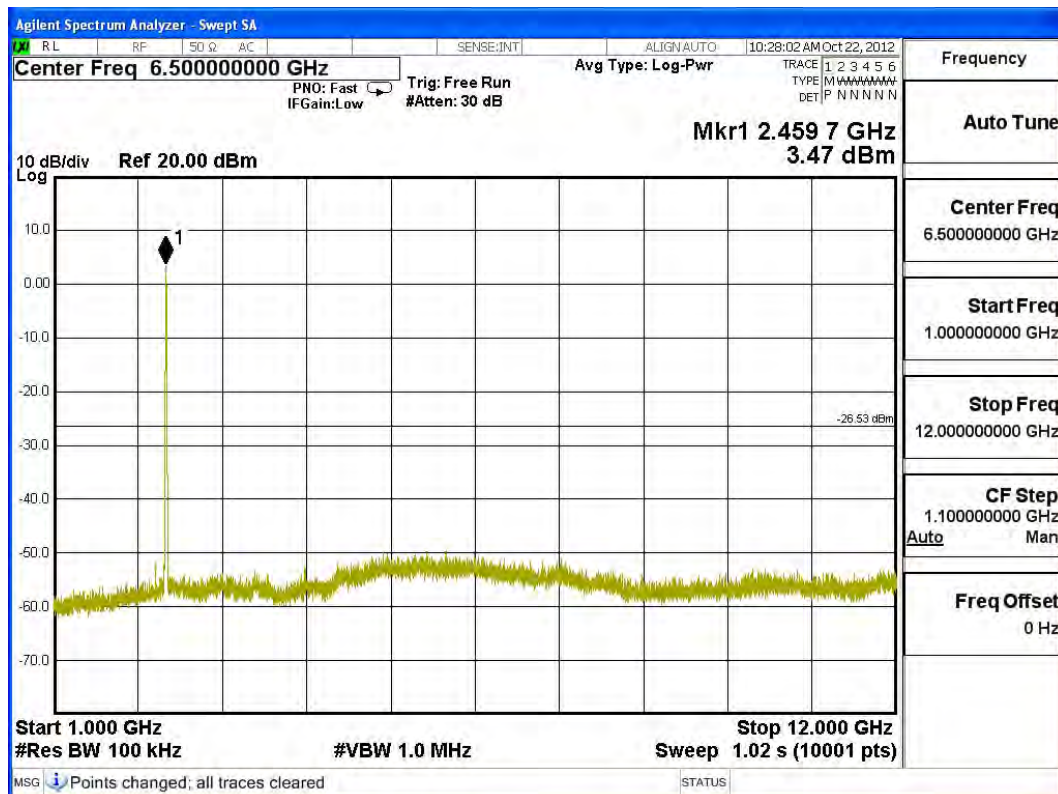
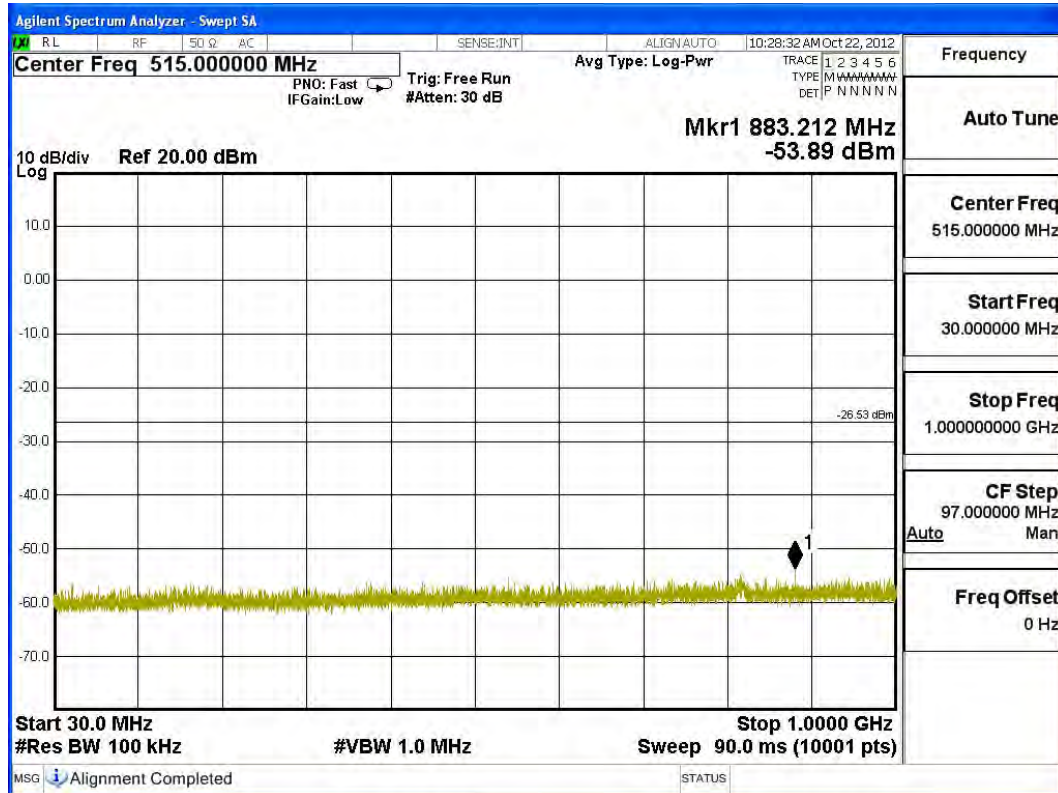


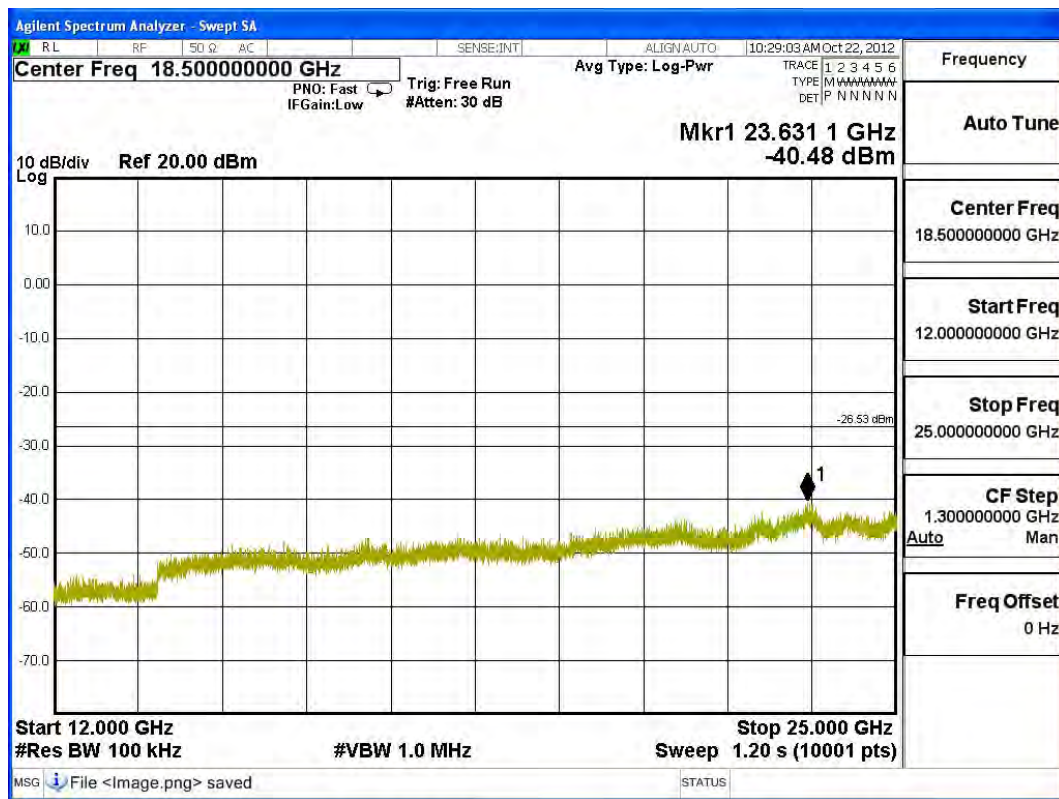
Channel 06 (2437MHz) 30MHz -25GHz-Chain B





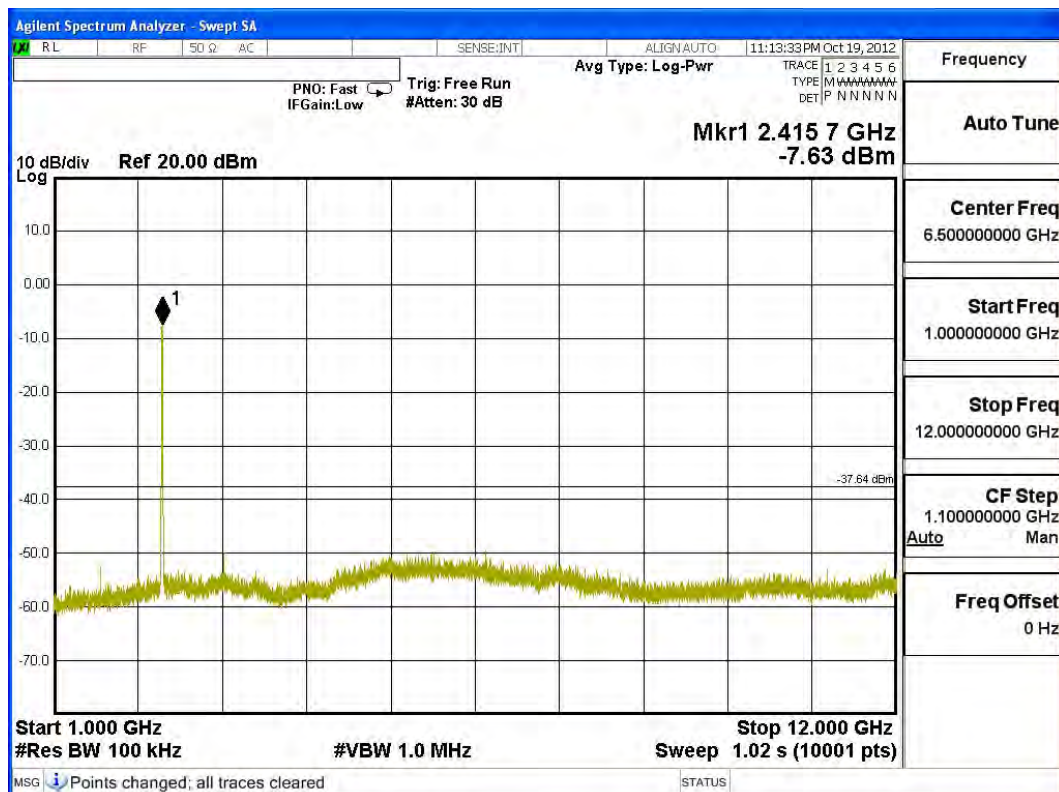
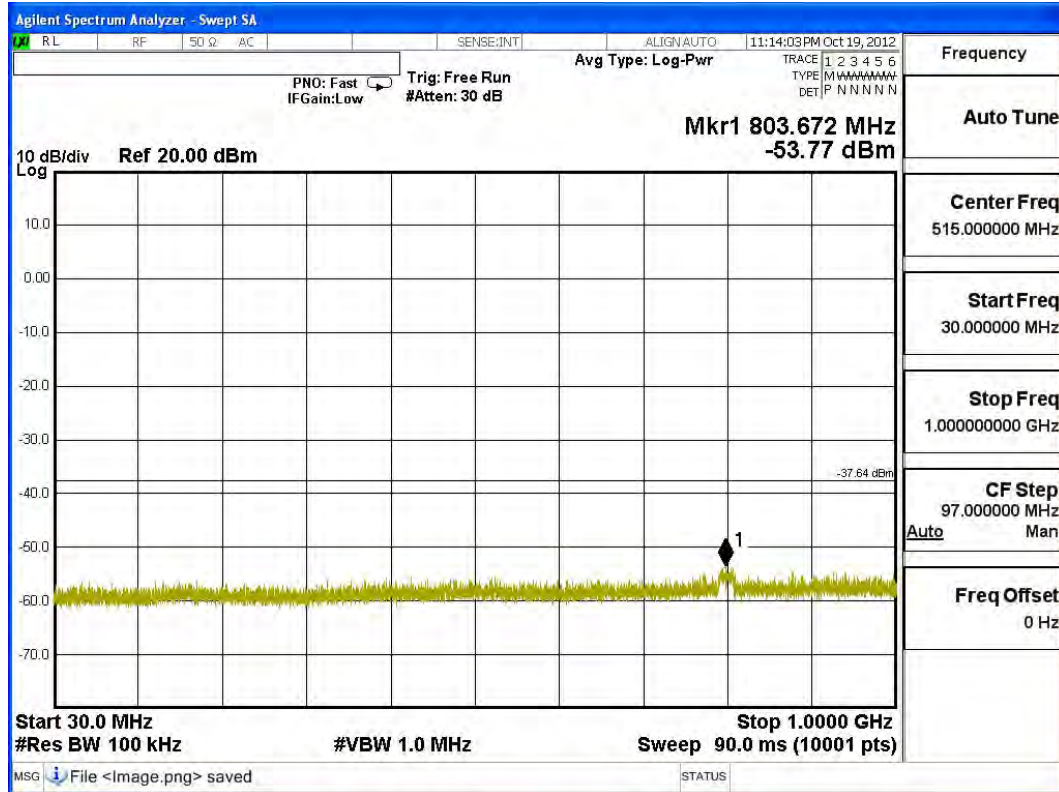
Channel 11 (2462MHz) 30MHz -25GHz-Chain B

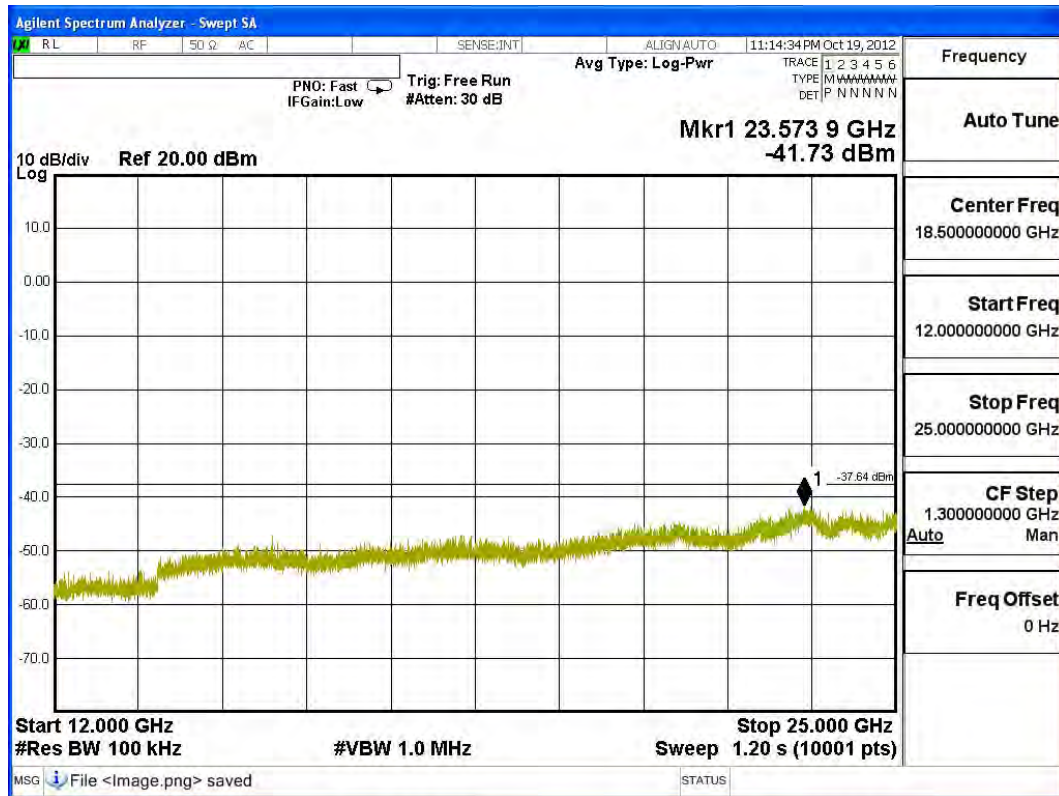




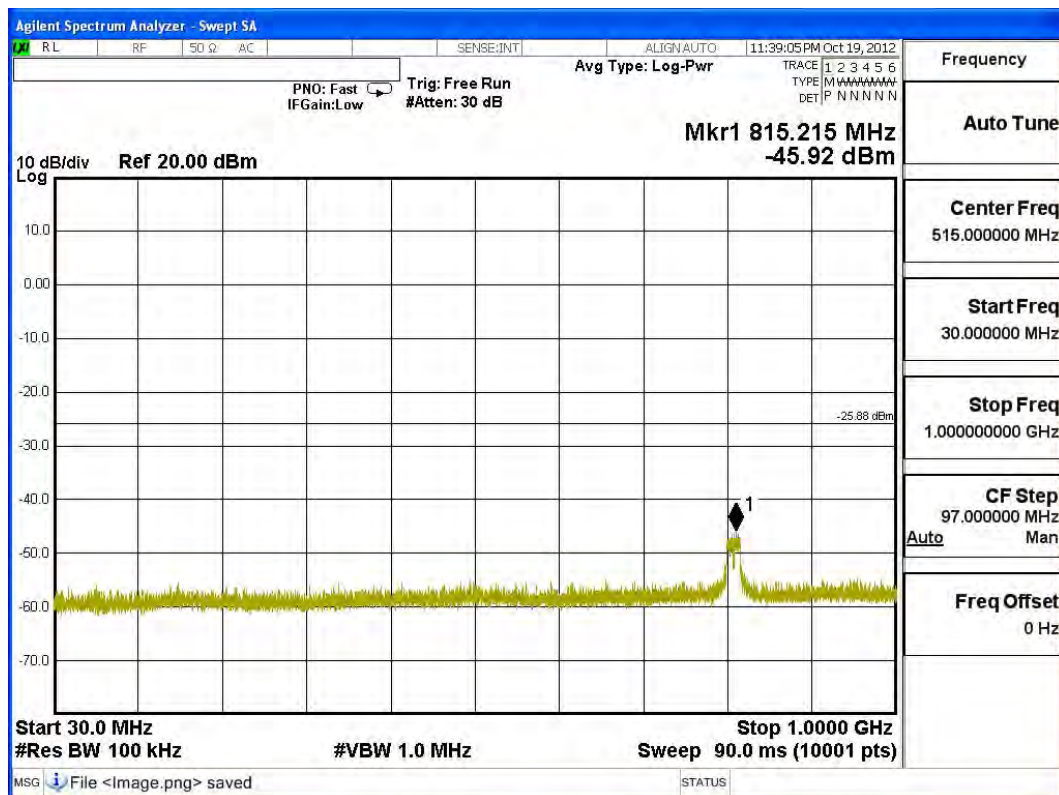
Product : SpectraGuardR Access Point / Sensor
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(Dipole Antenna)

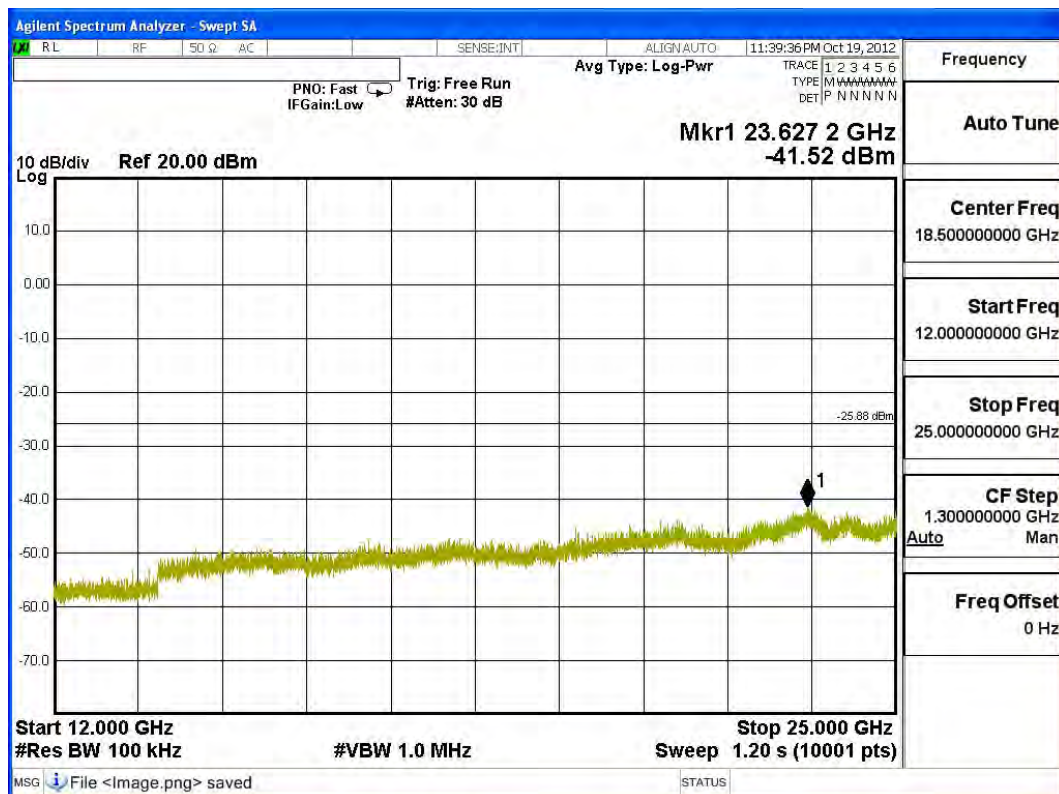
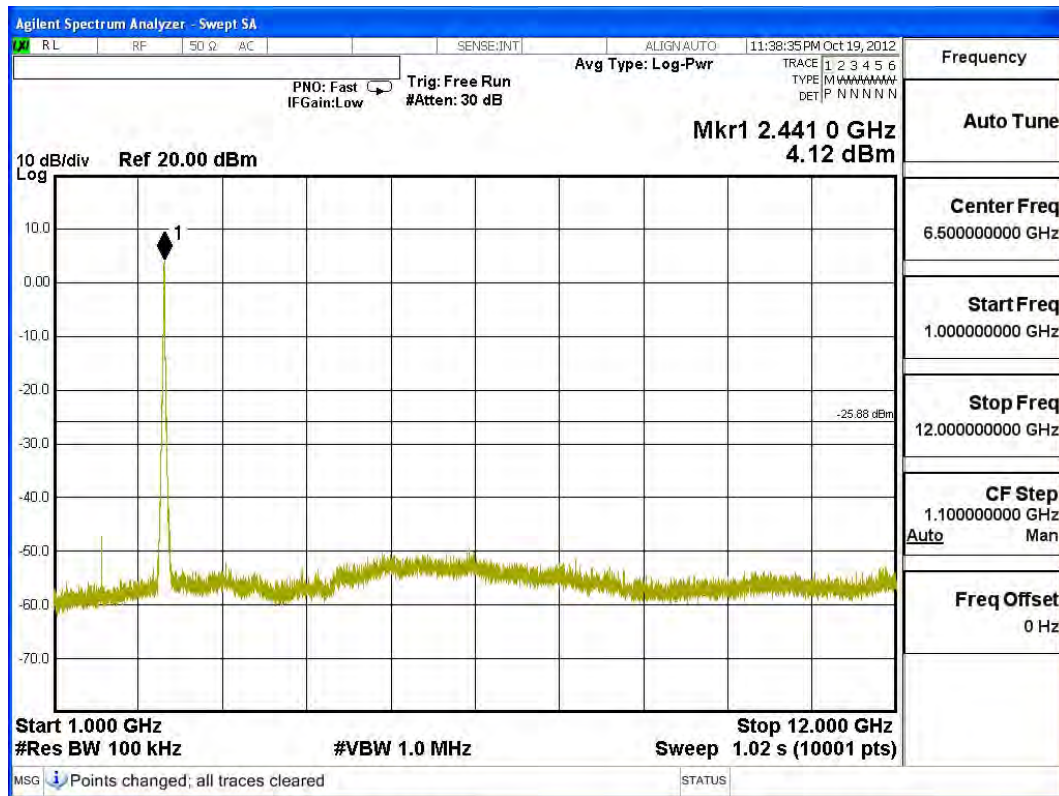
Channel 01 (2412MHz) 30MHz -25GHz-Chain A



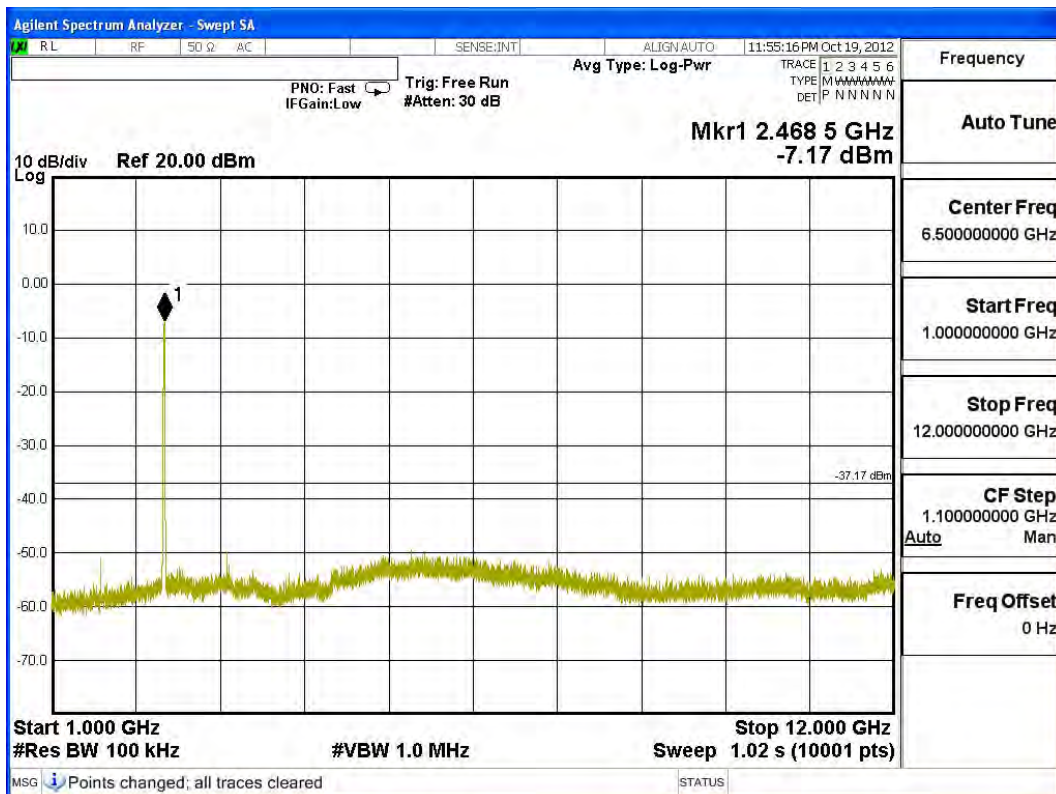
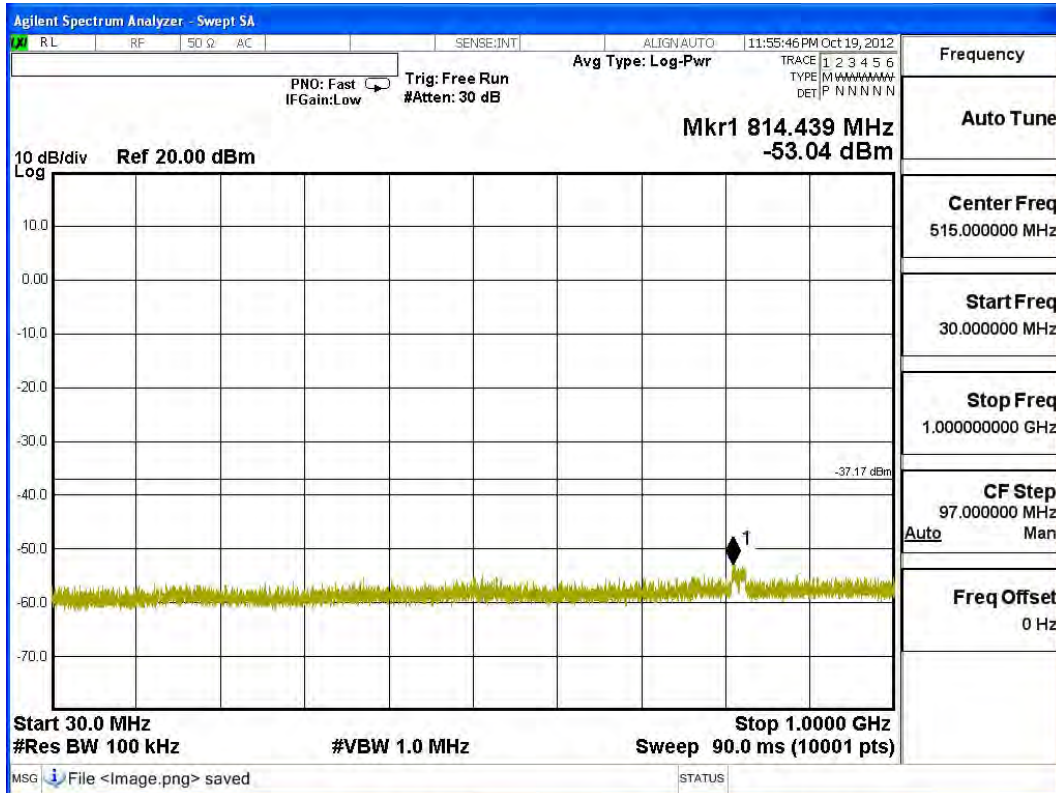


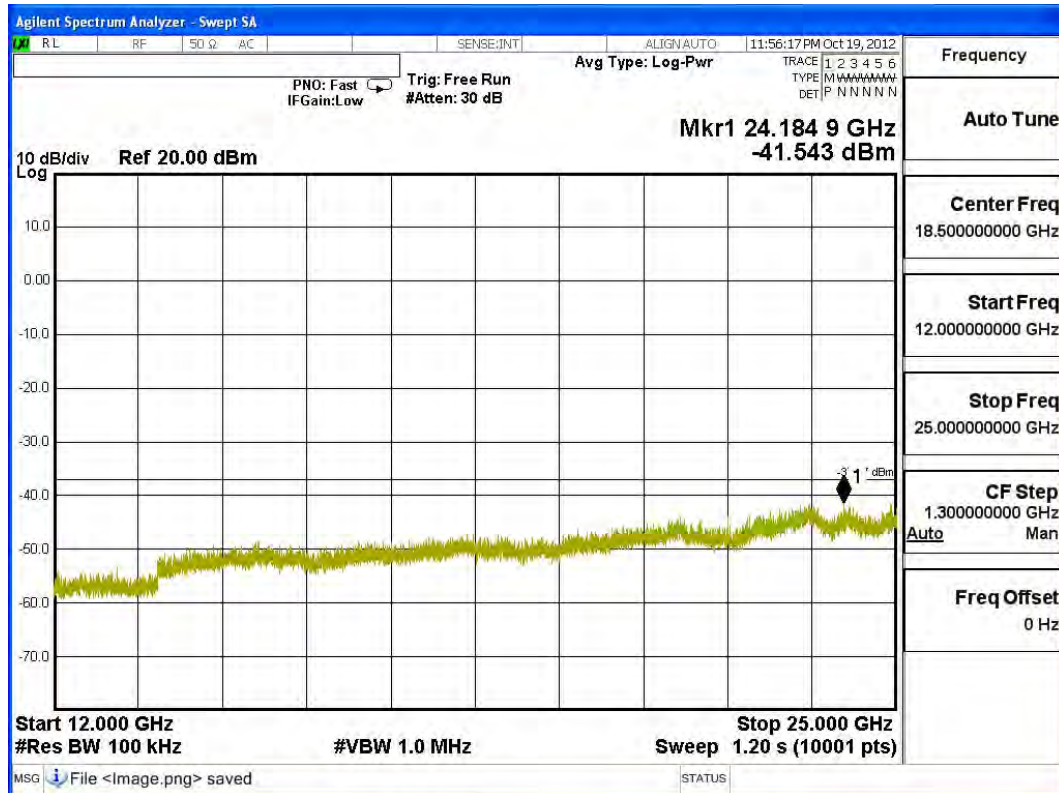
Channel 06 (2437MHz) 30MHz -25GHz-Chain A



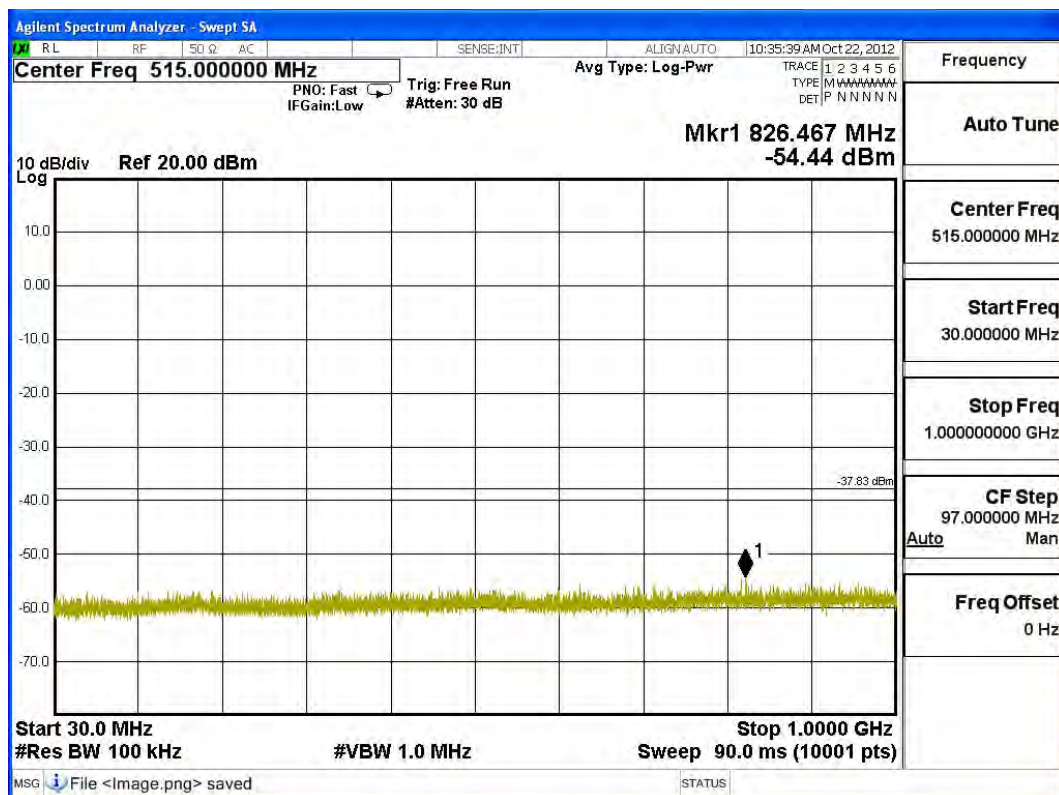


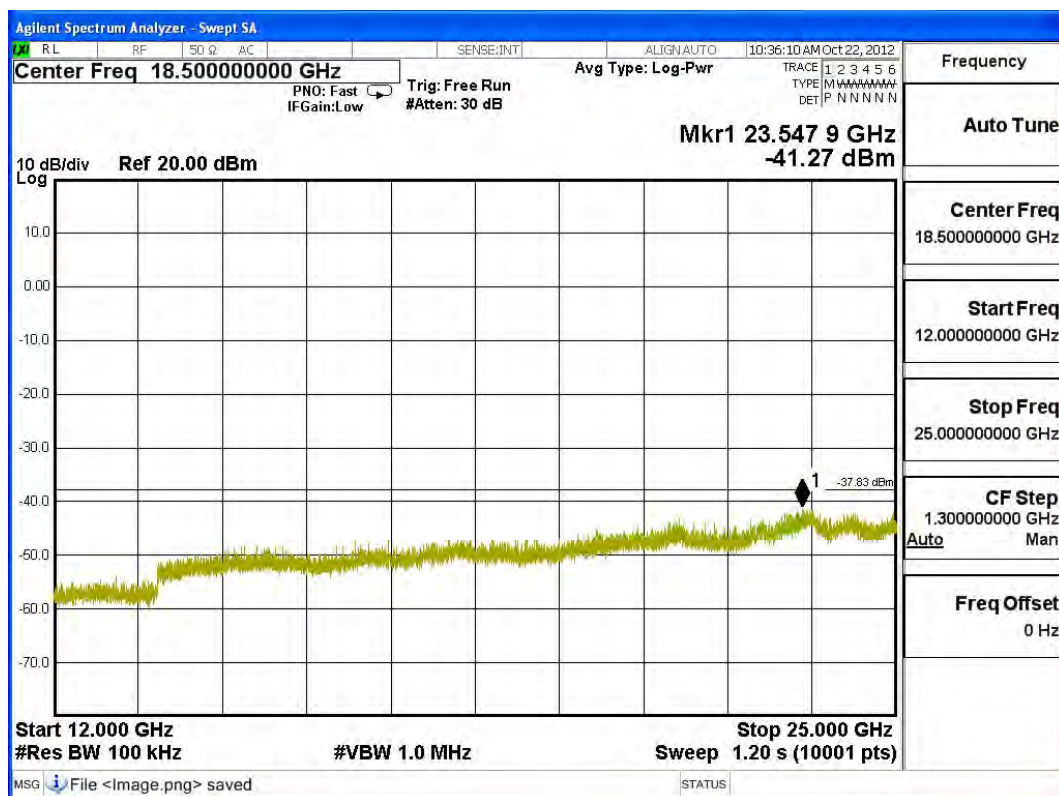
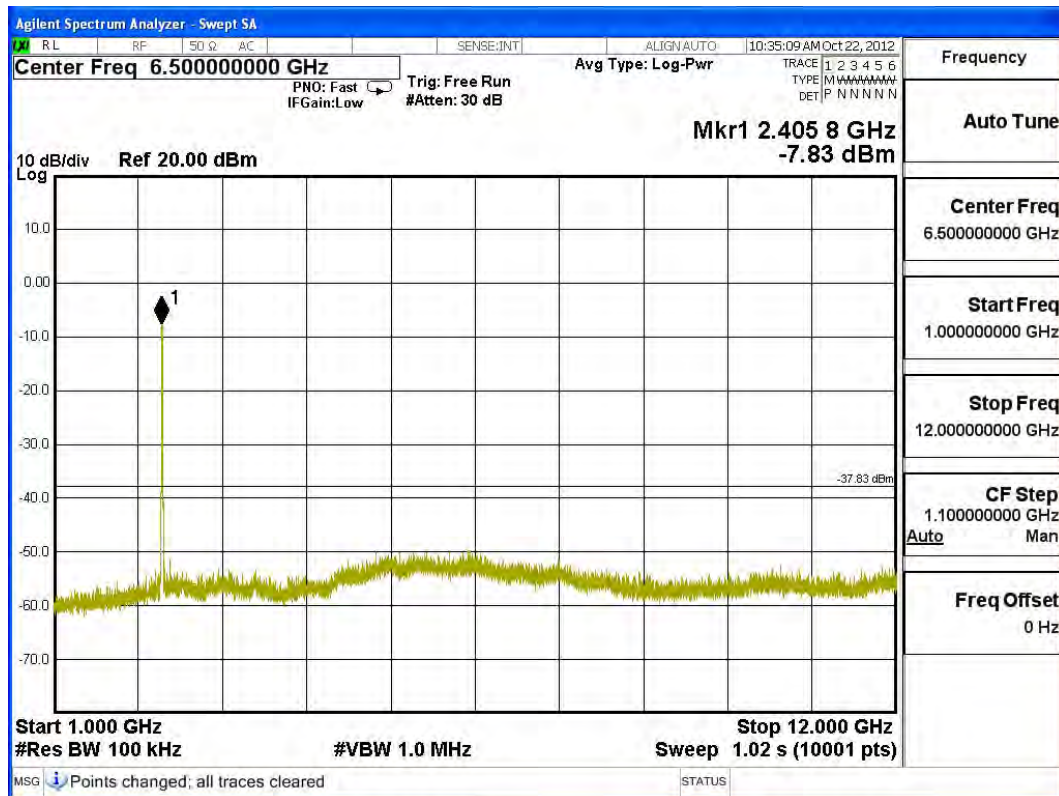
Channel 11 (2462MHz) 30MHz -25GHz-Chain A



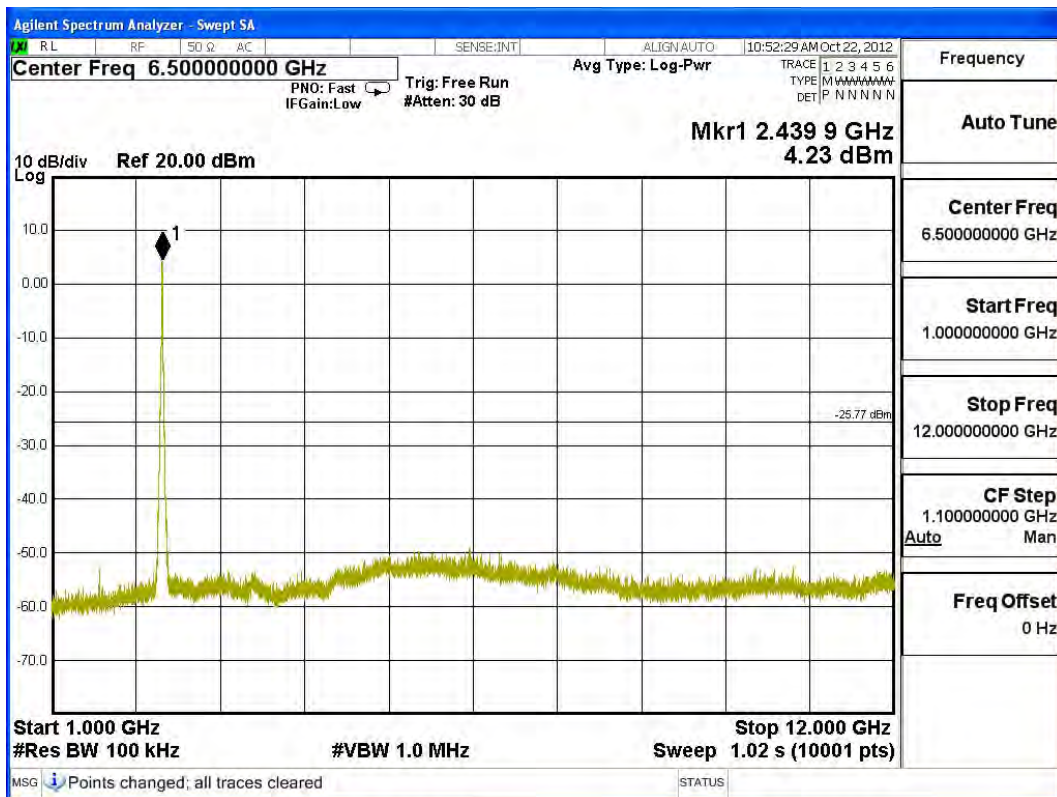
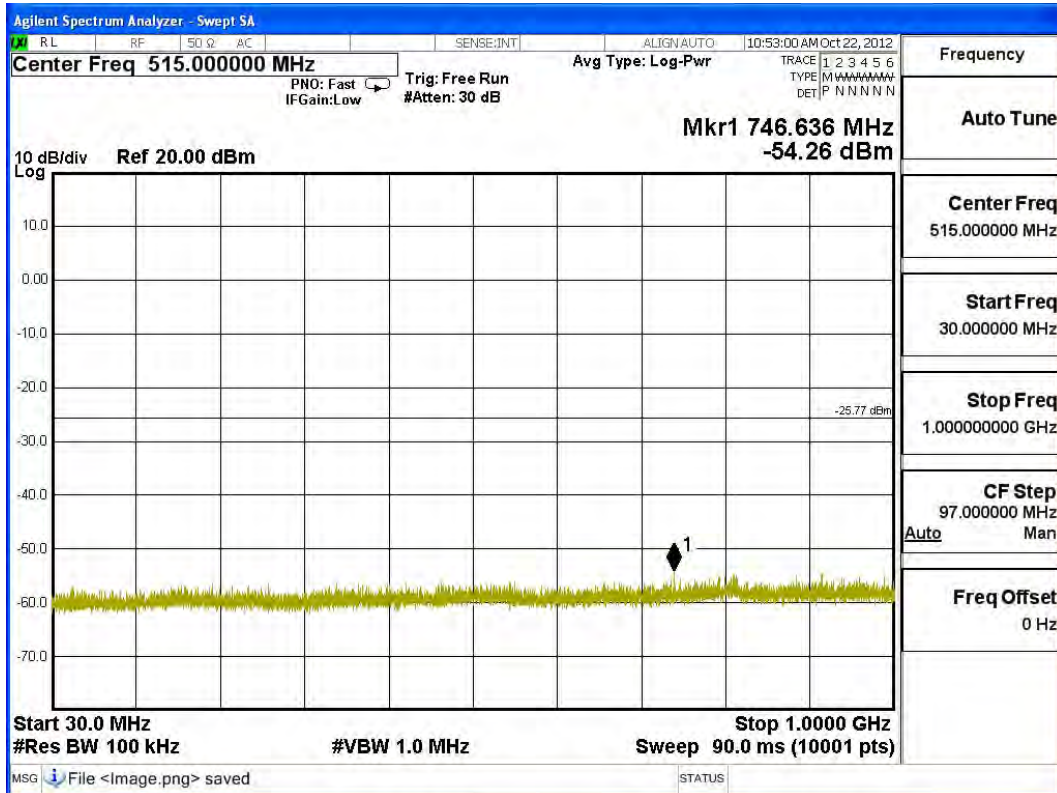


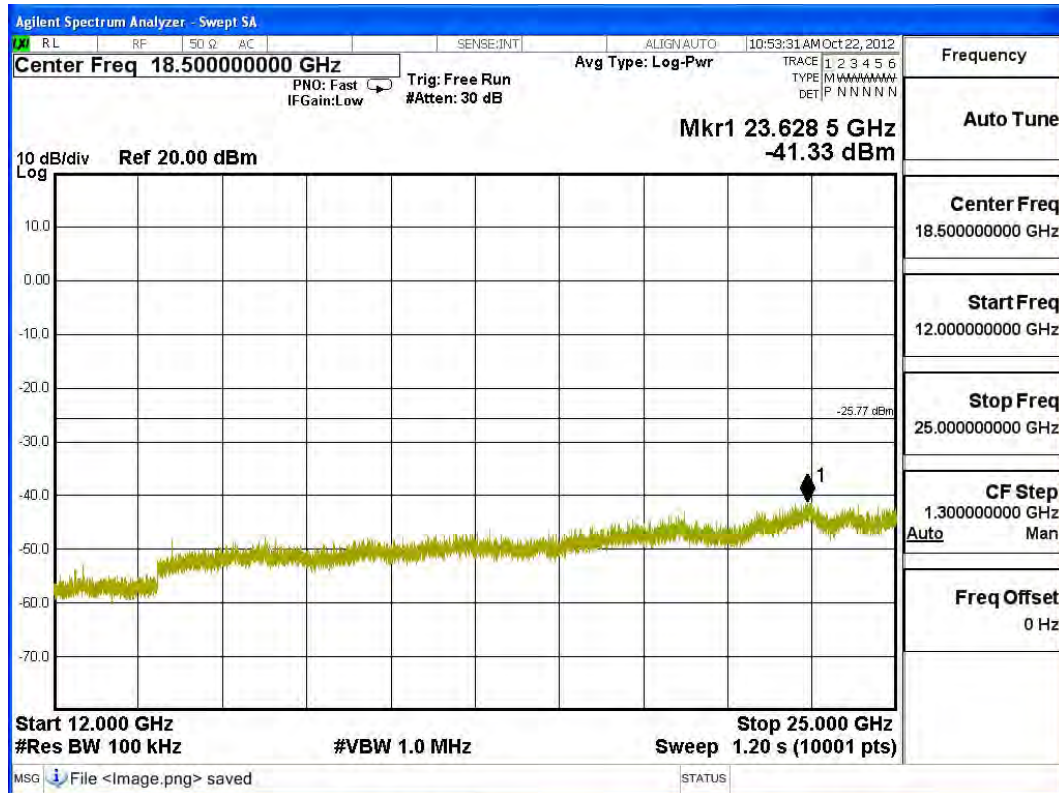
Channel 01 (2412MHz) 30MHz -25GHz-Chain B



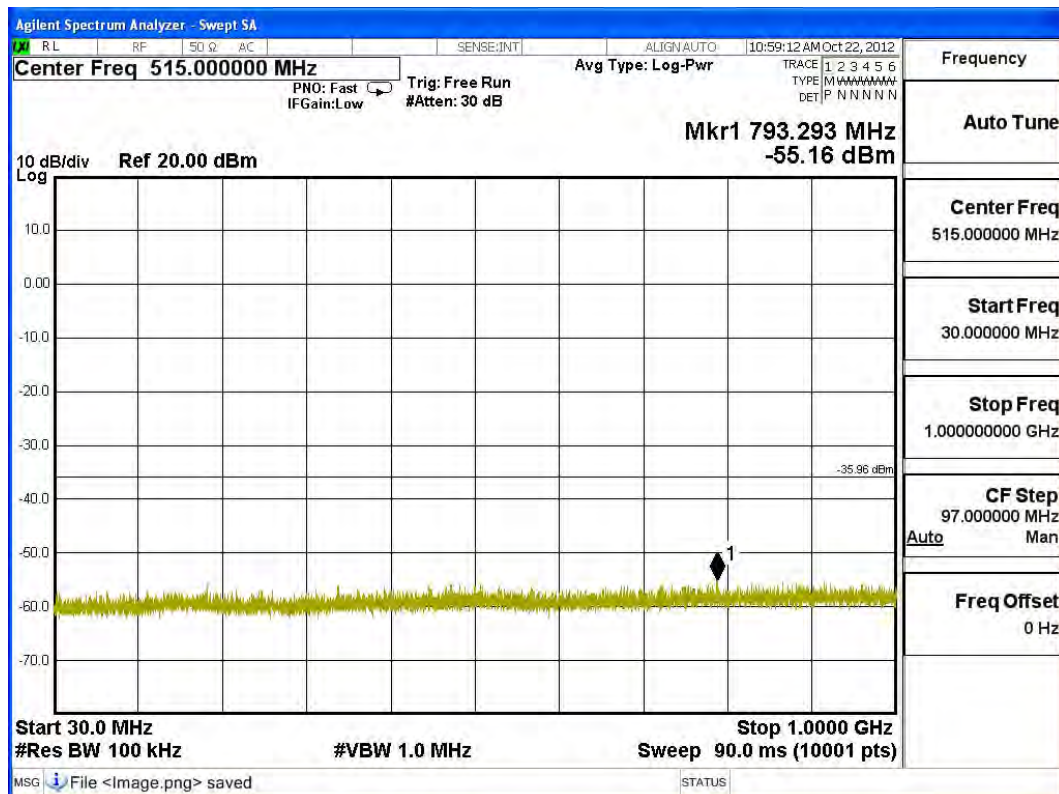


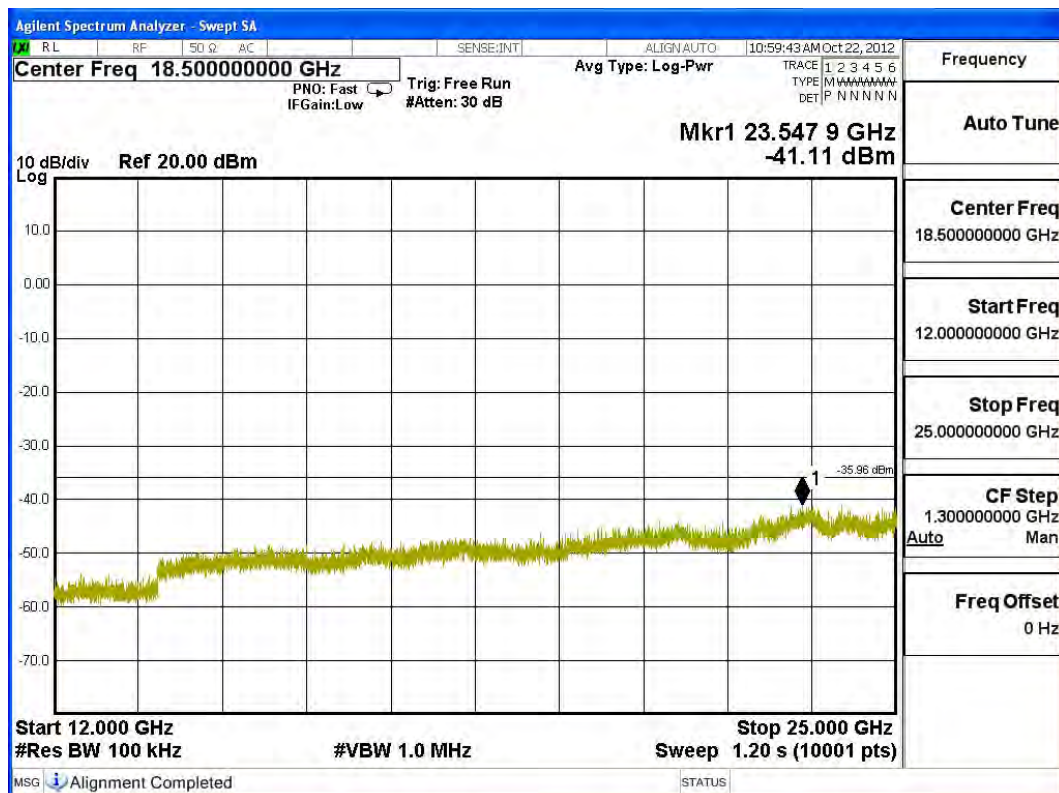
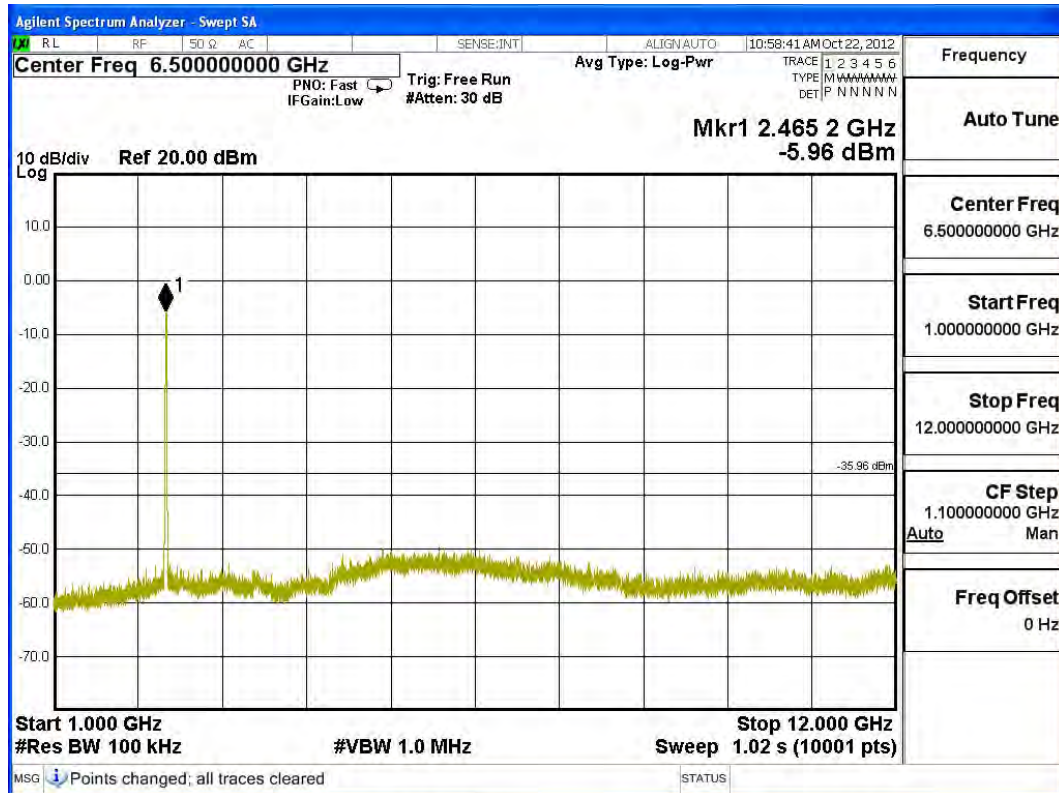
Channel 06 (2437MHz) 30MHz -25GHz-Chain B



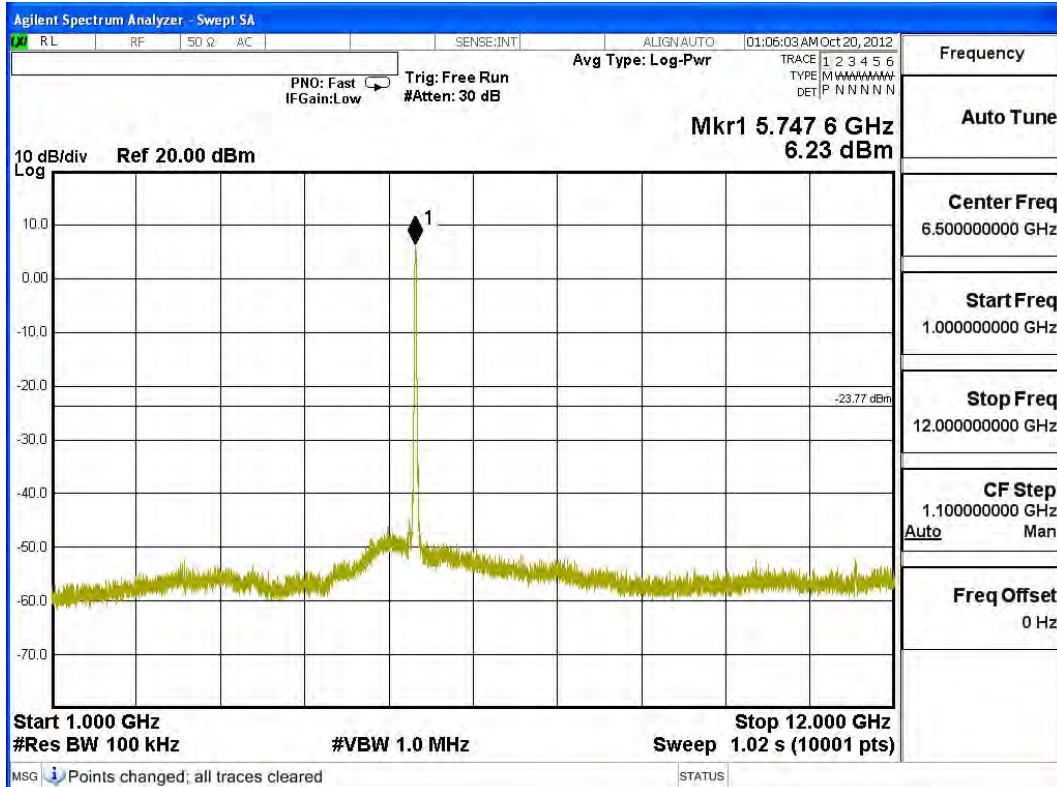
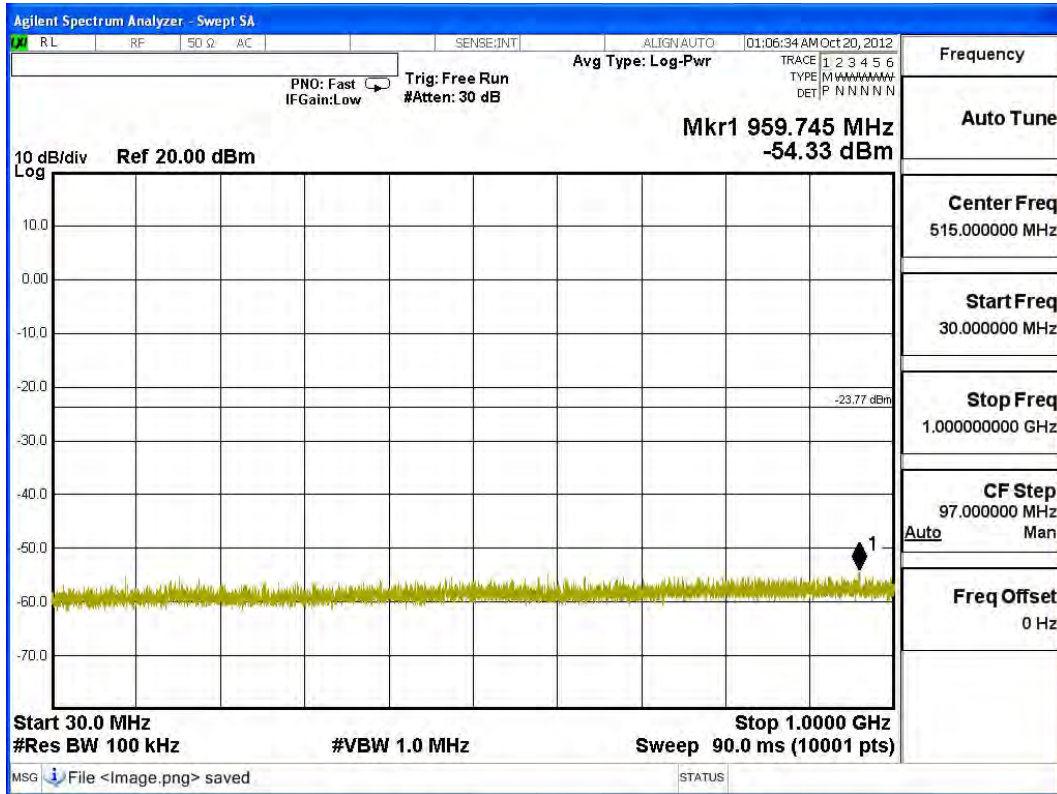


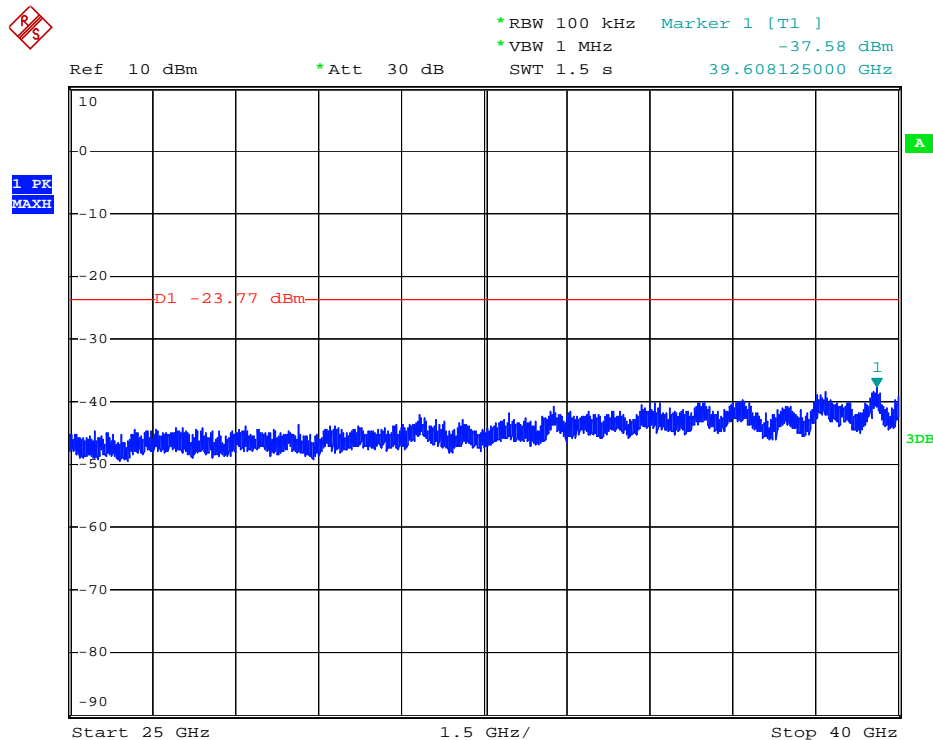
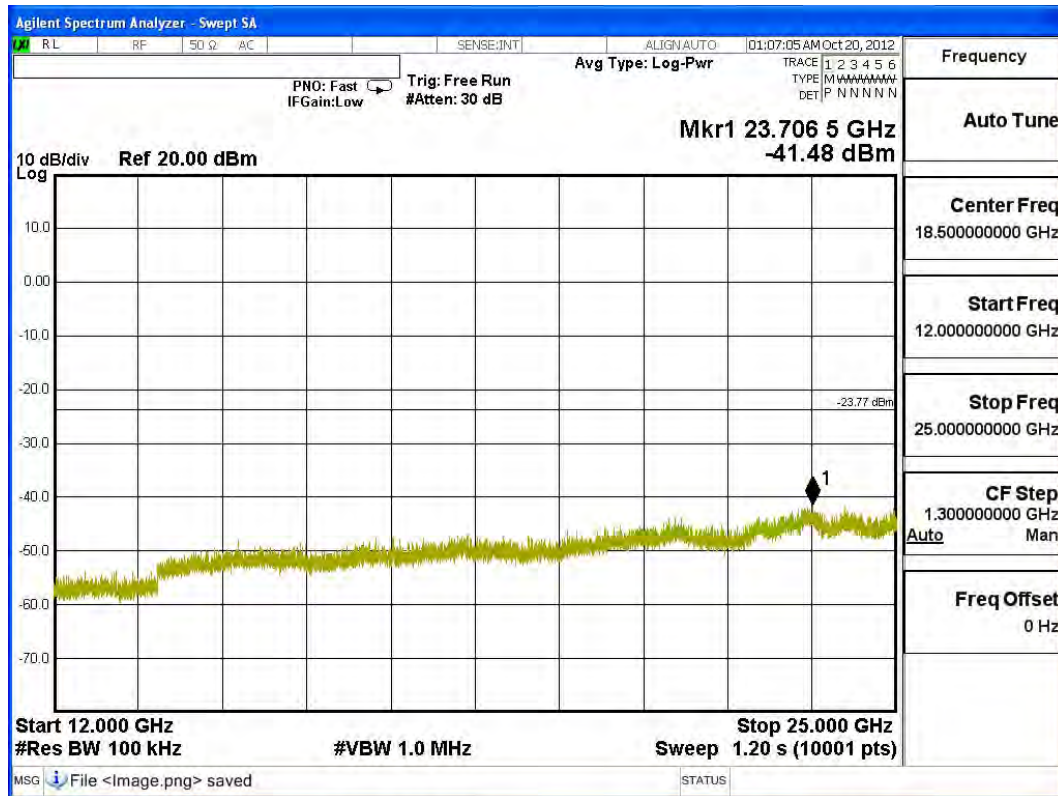
Channel 11 (2462MHz) 30MHz -25GHz-Chain B





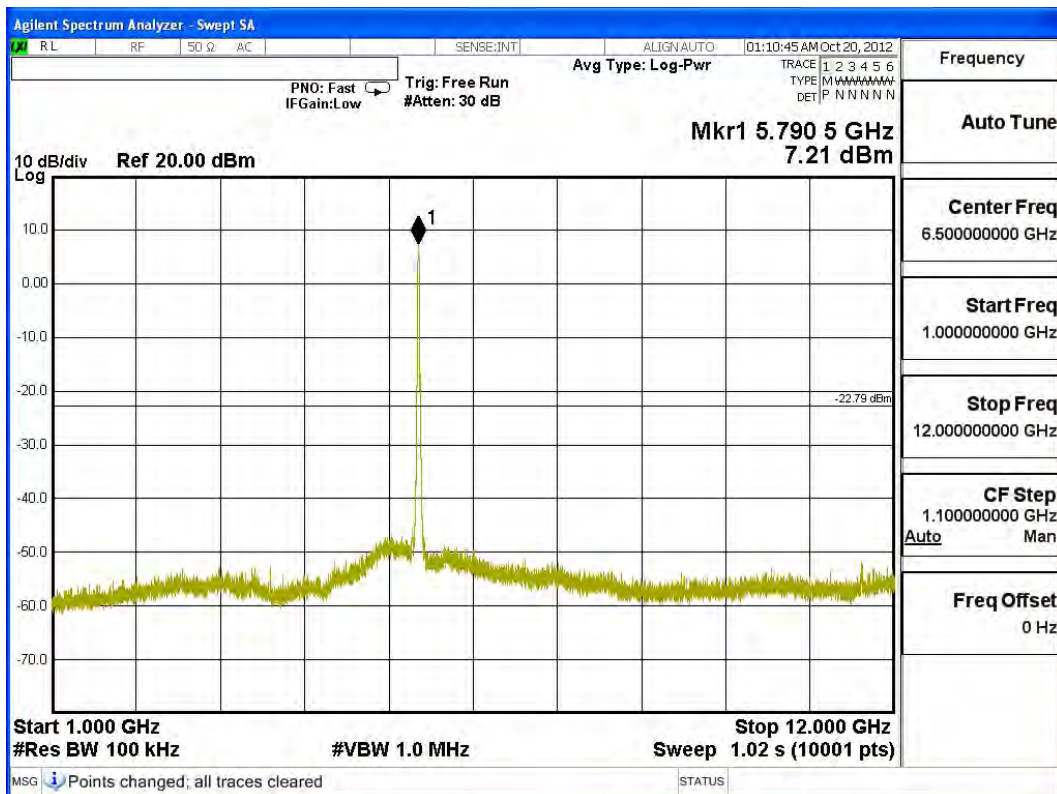
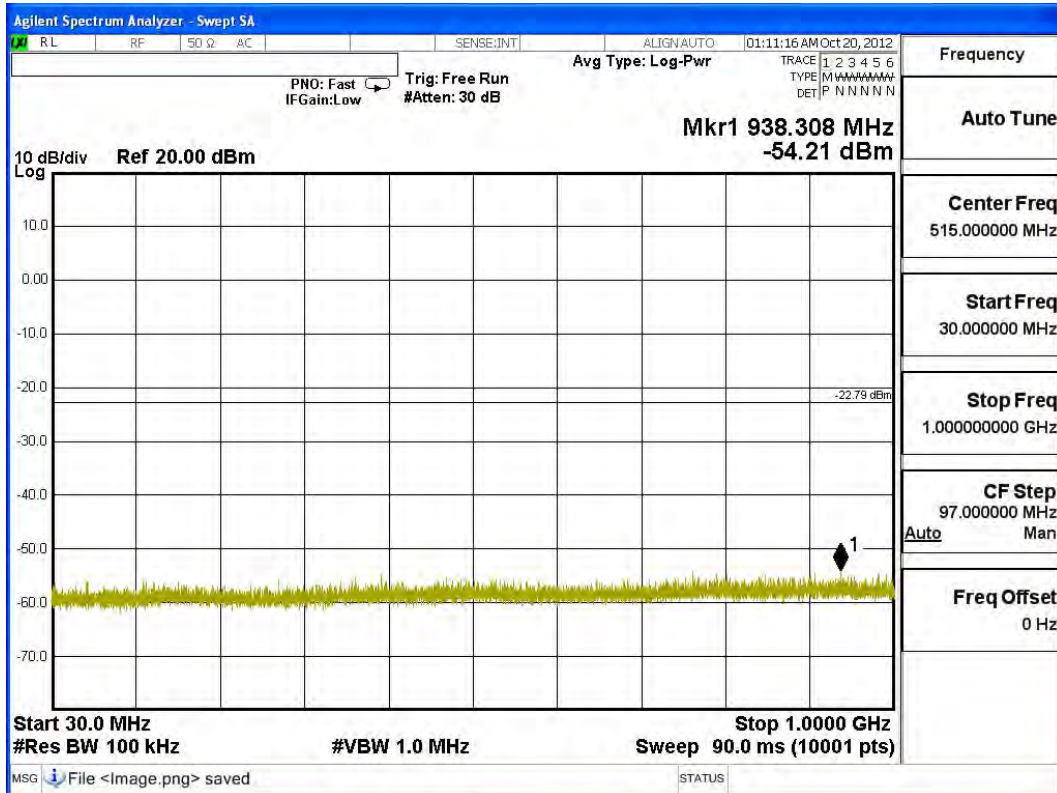
Product : SpectraGuardR Access Point / Sensor
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps(Dipole Antenna)
Channel 149 (5745MHz) 30MHz -40GHz-Chain A

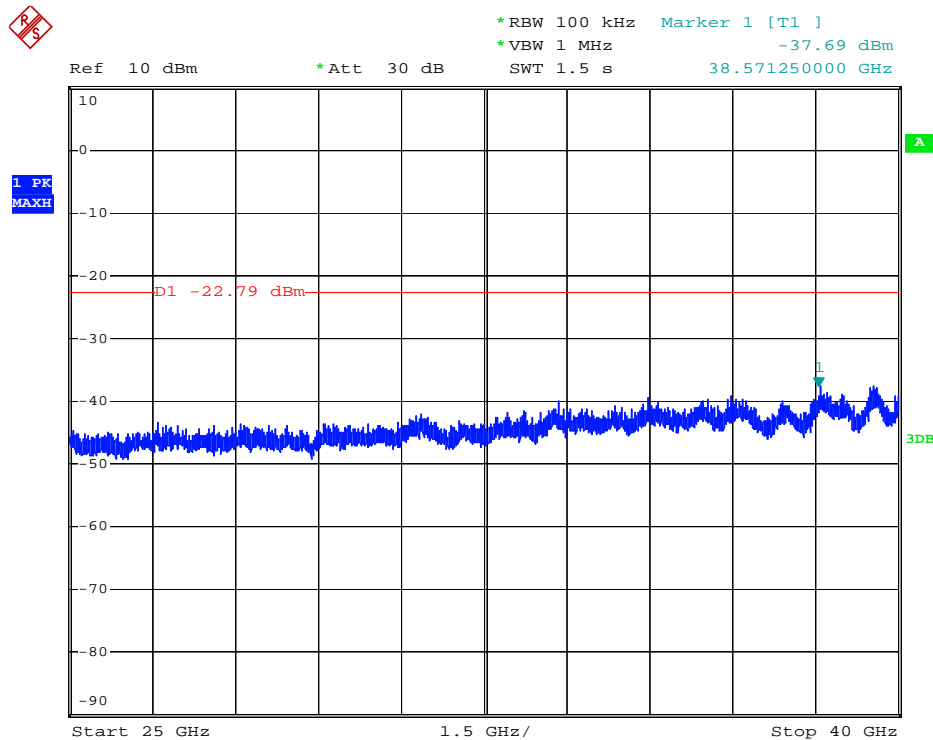
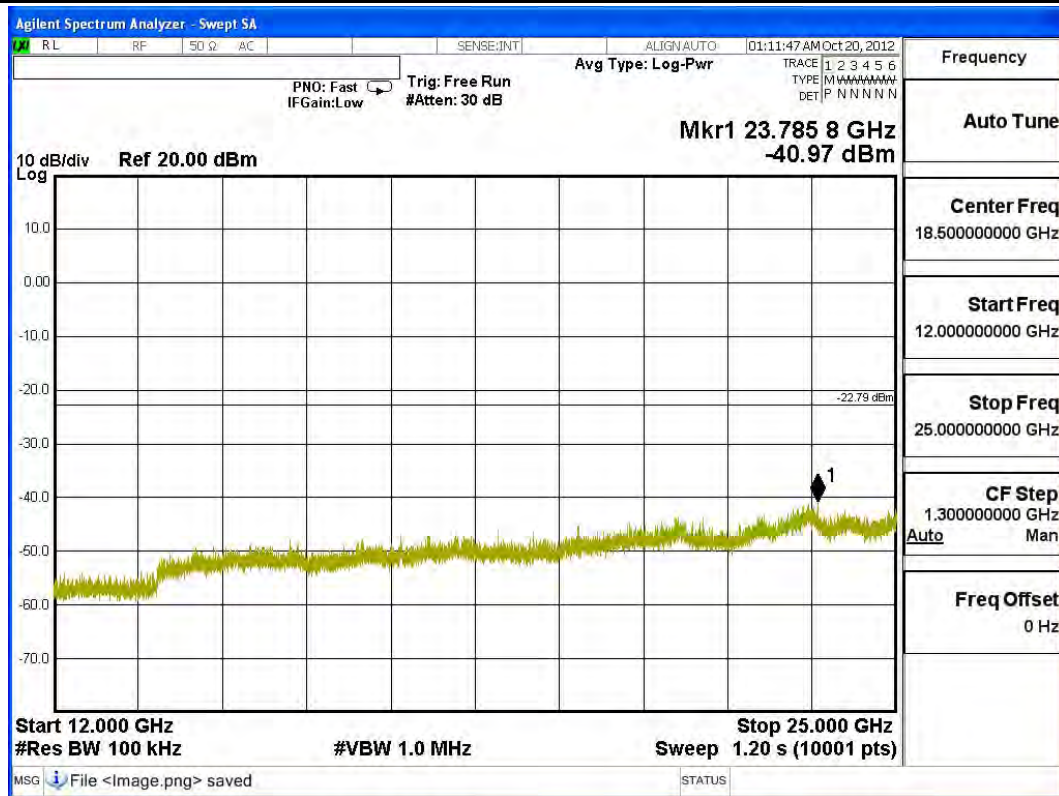




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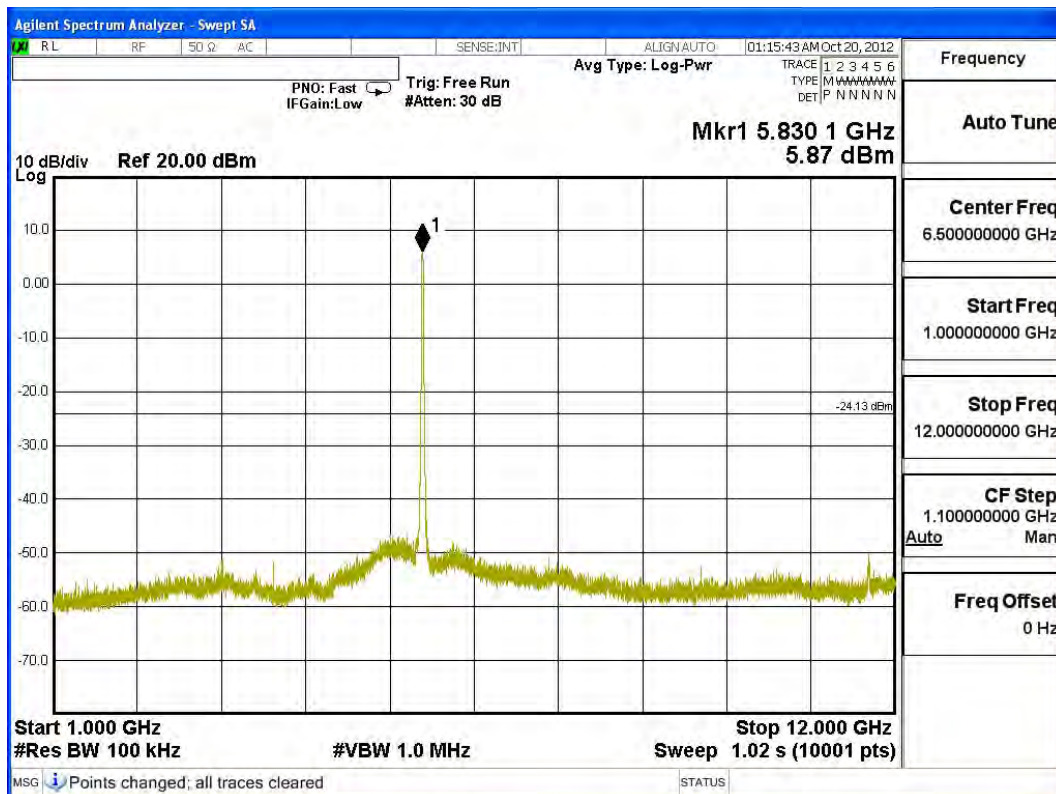
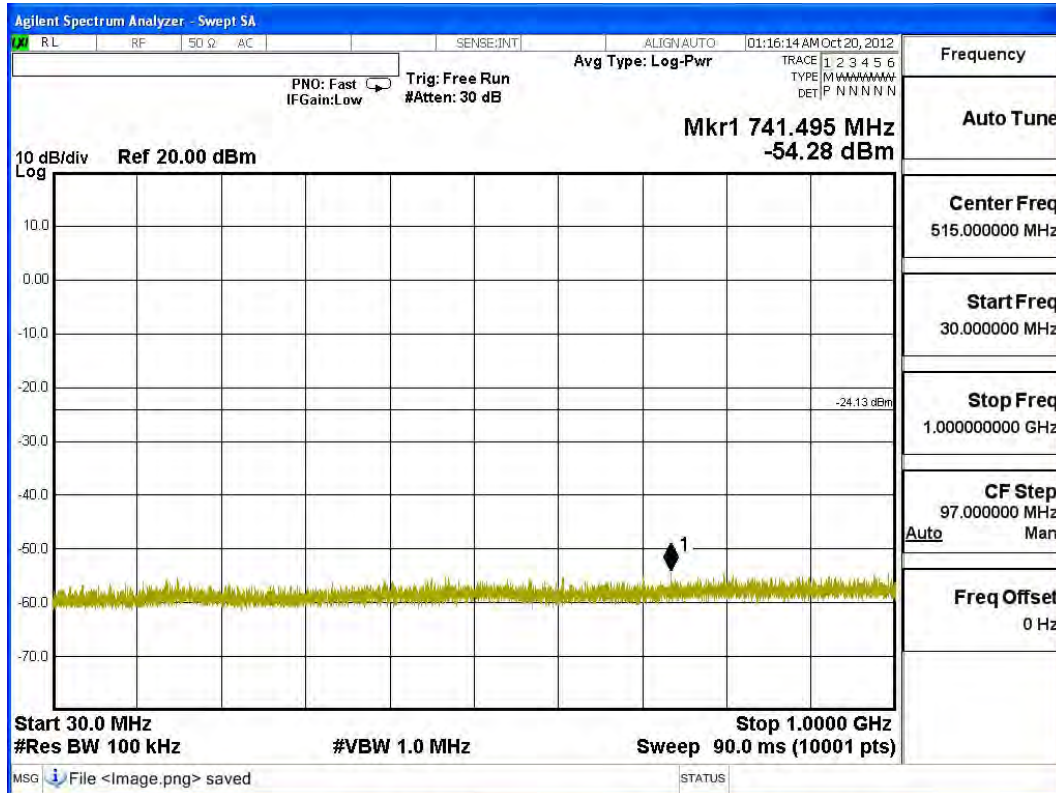
Channel 157 (5785MHz) 30MHz -40GHz-Chain A

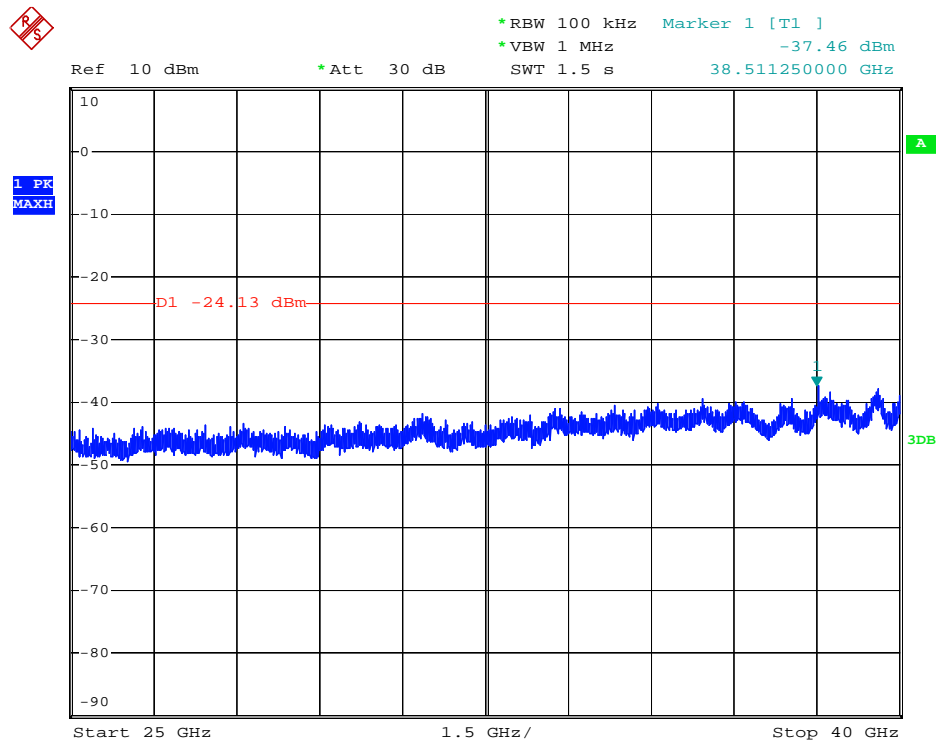




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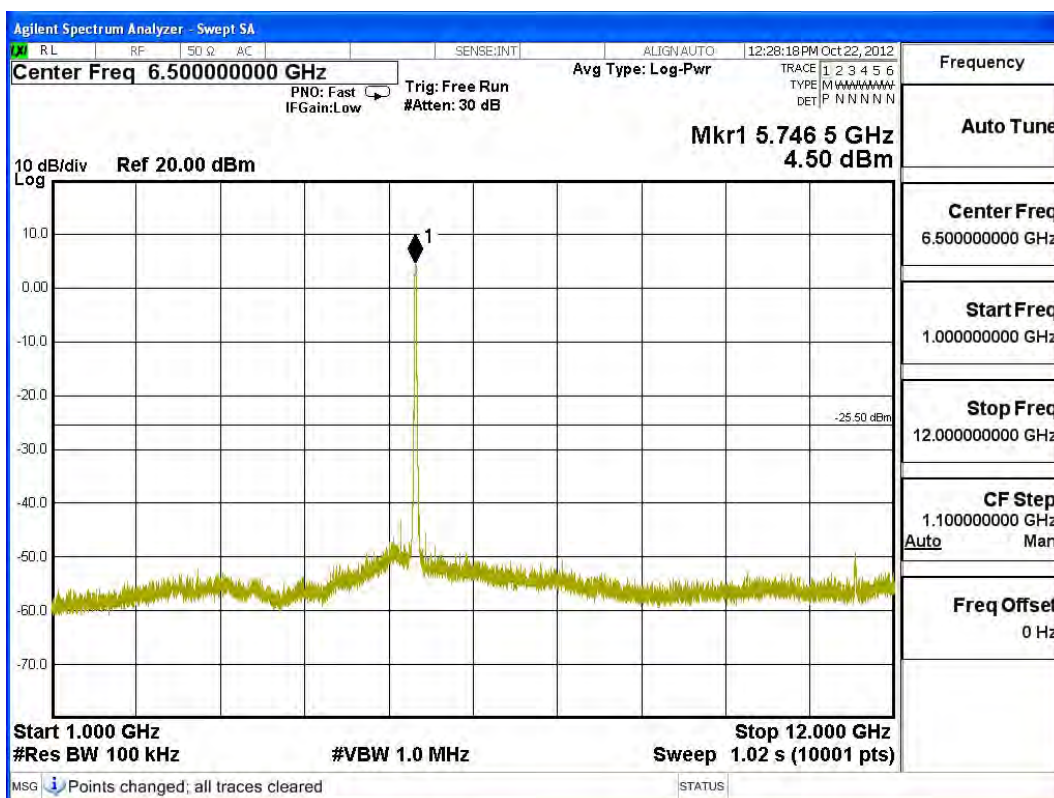
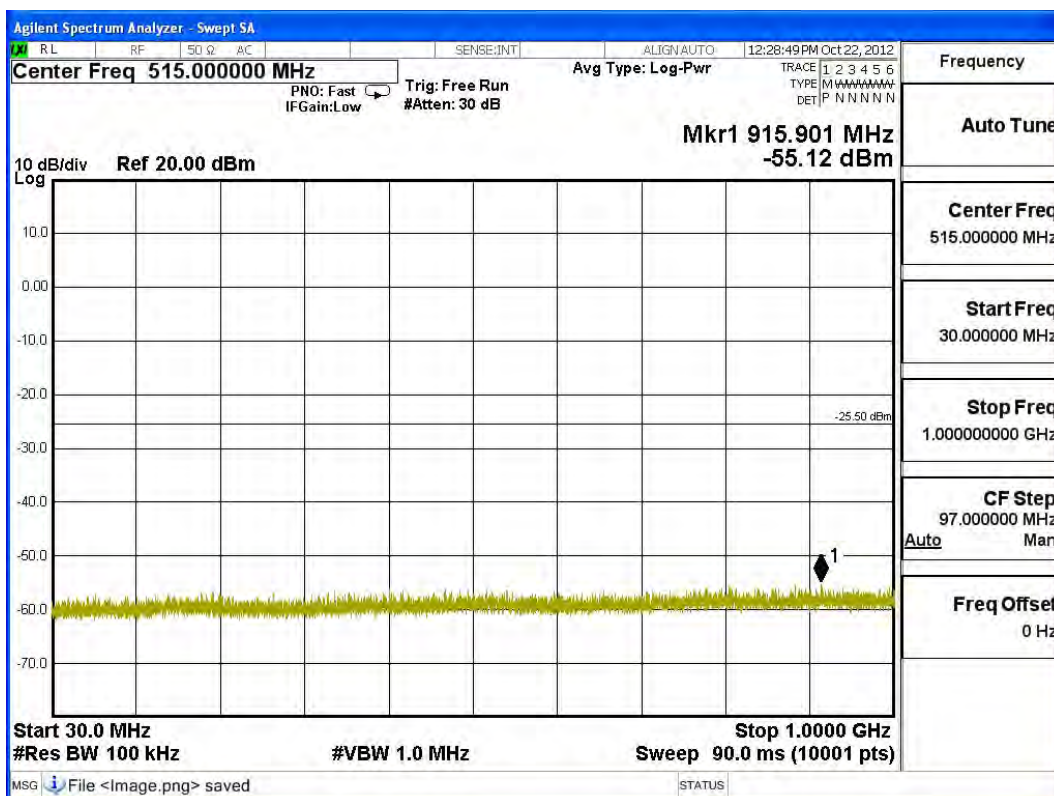
Channel 165 (5825MHz) 30MHz -40GHz-Chain A

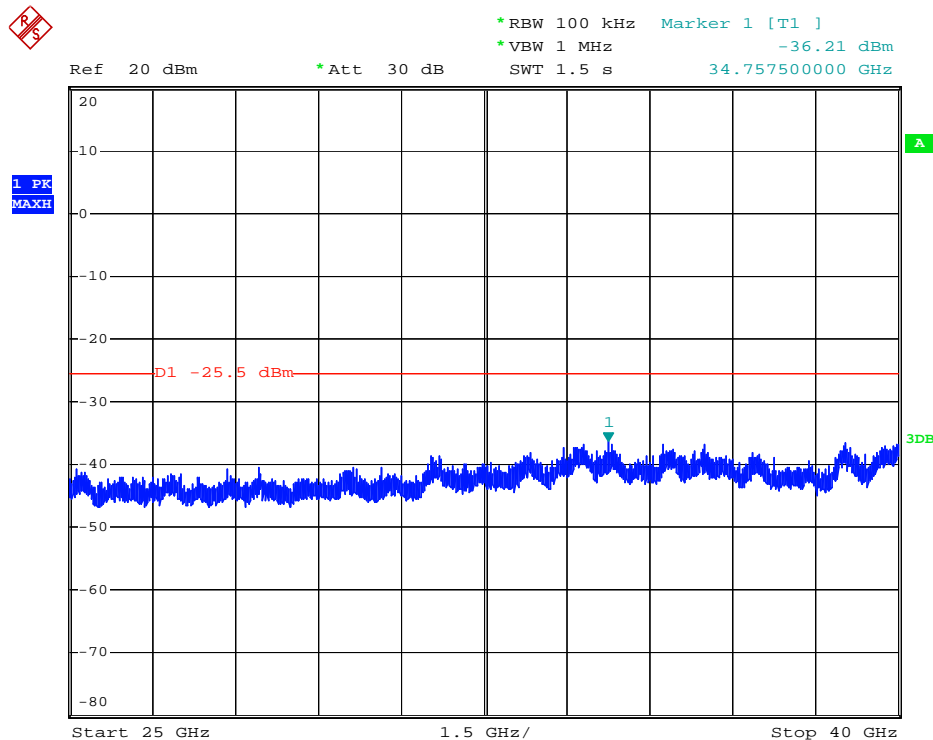
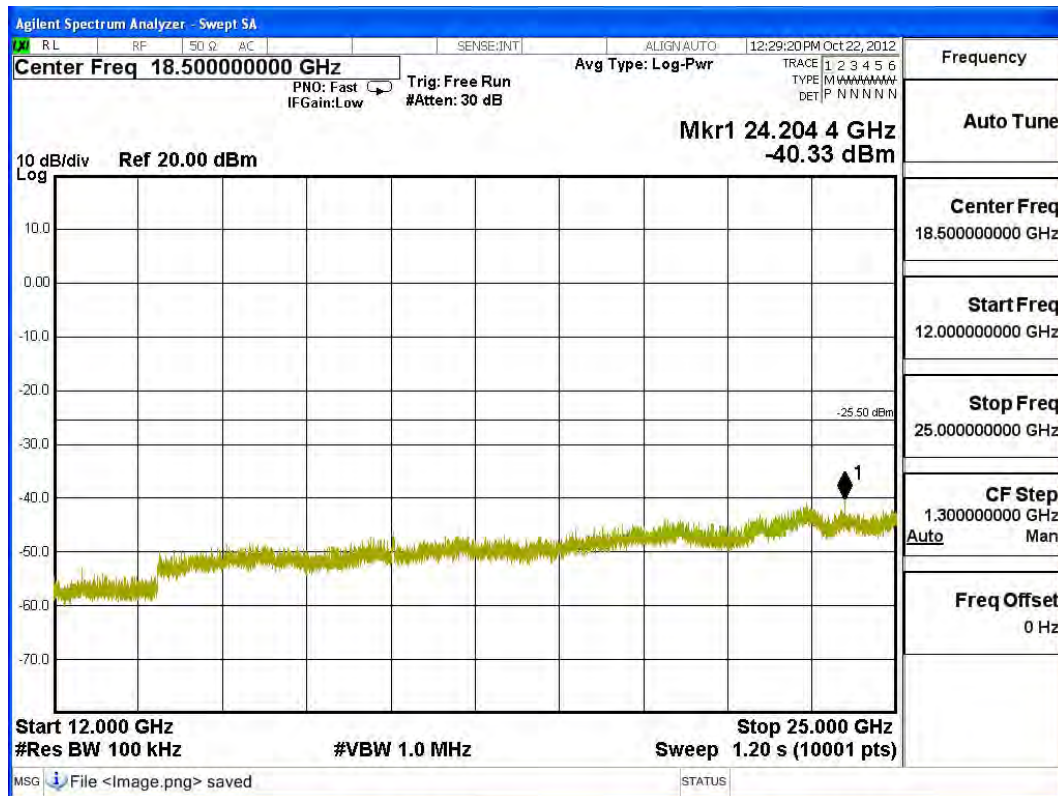




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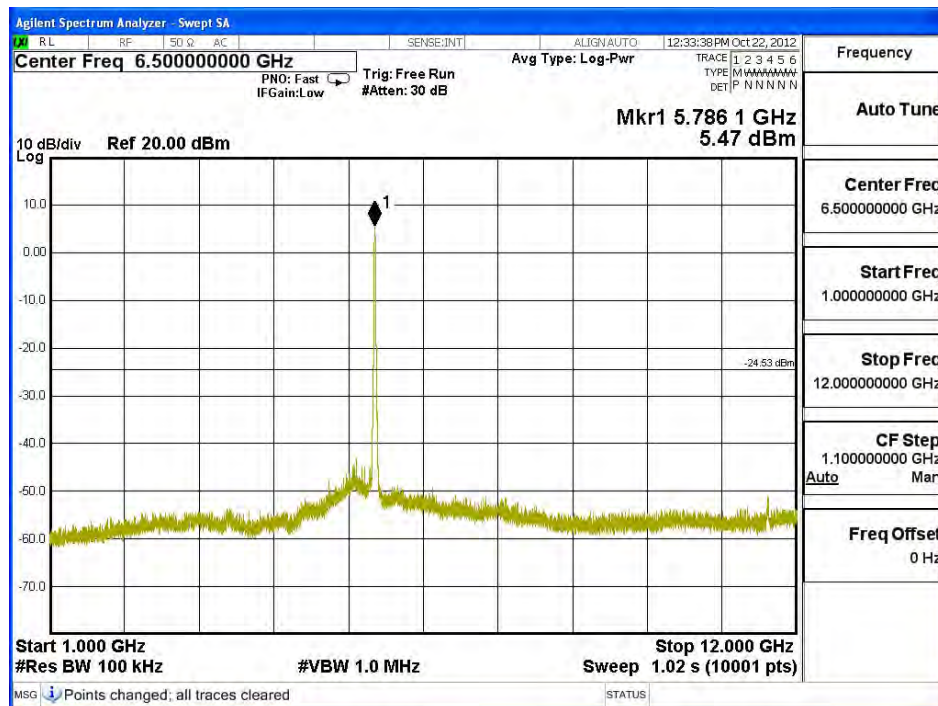
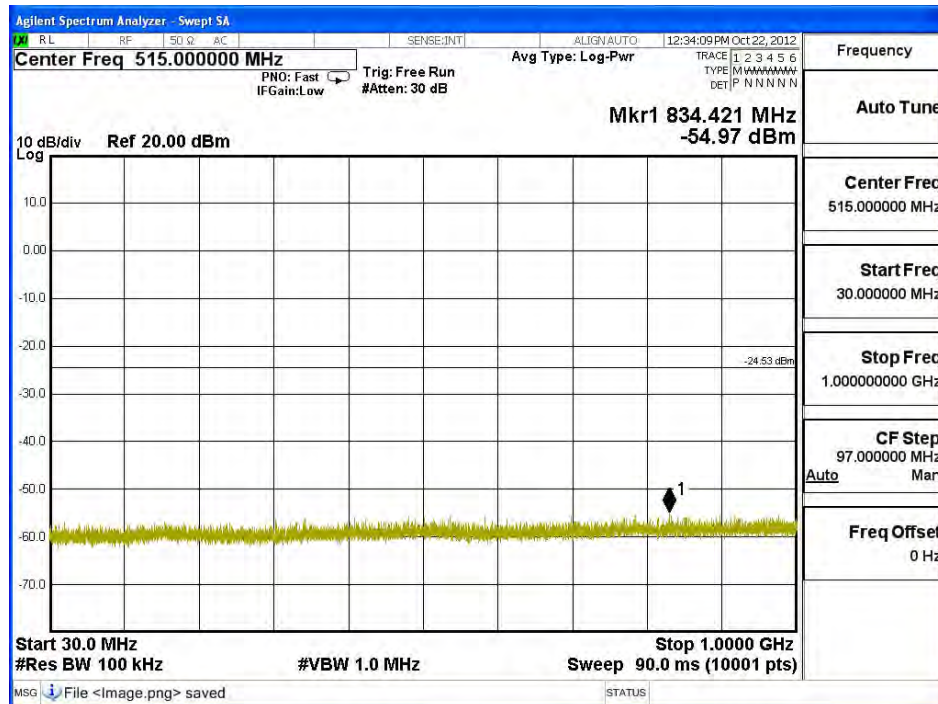
Channel 149 (5745MHz) 30MHz -40GHz-Chain B

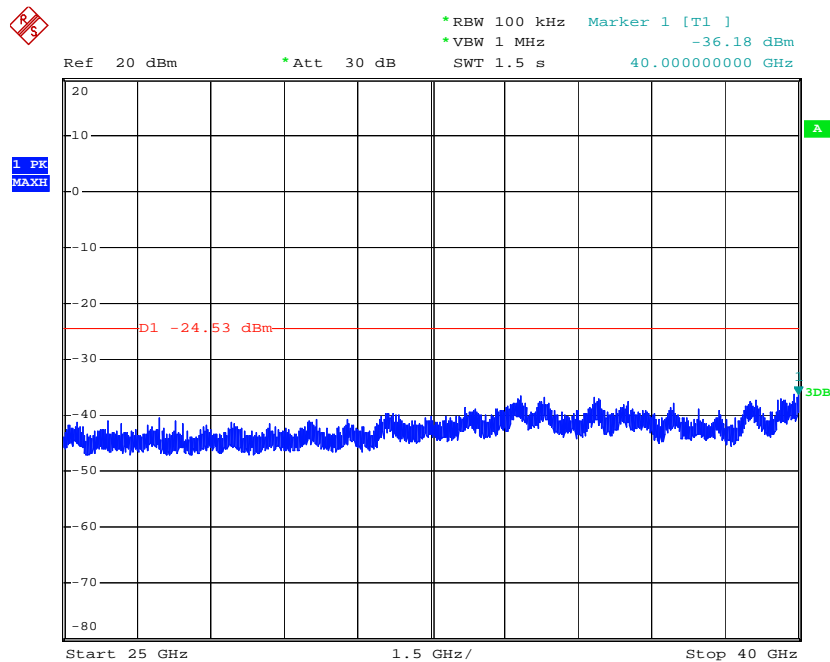
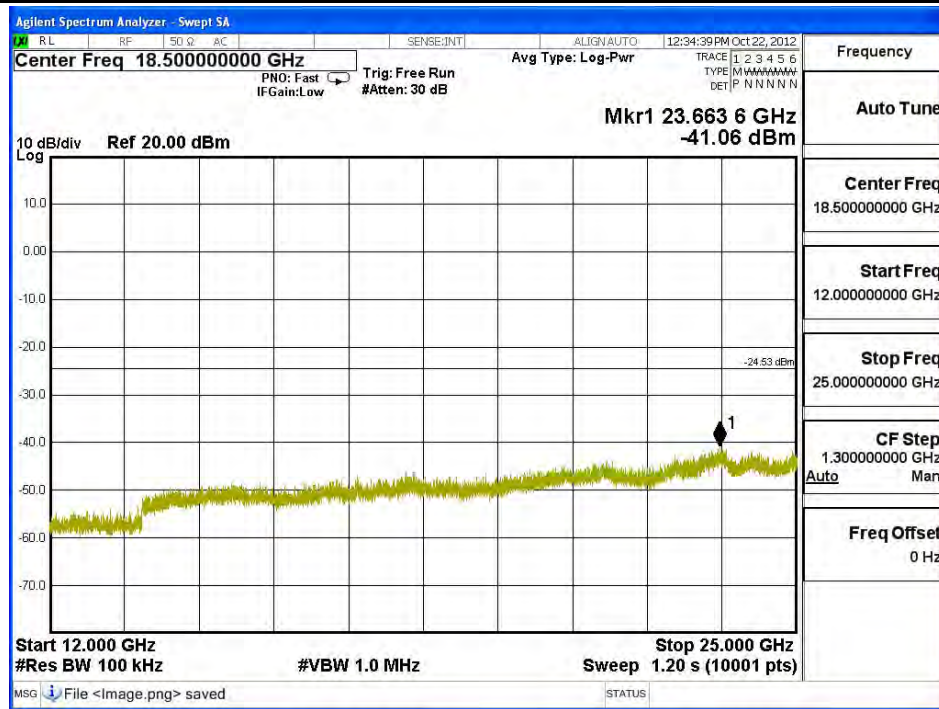




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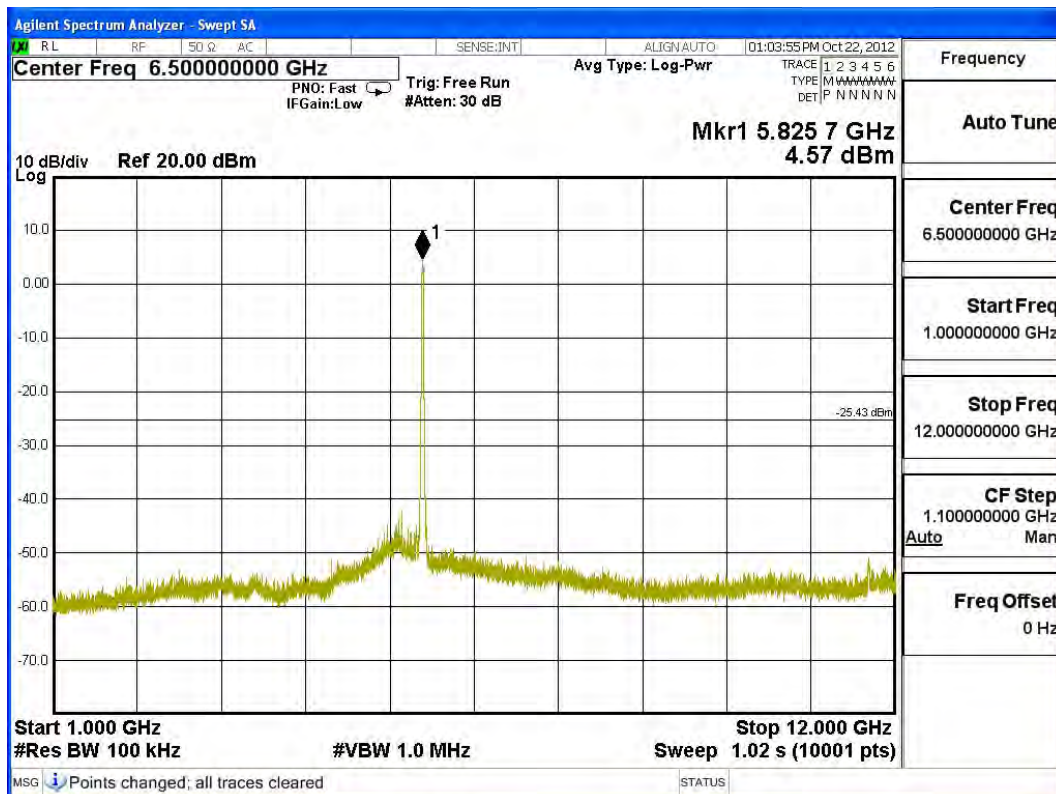
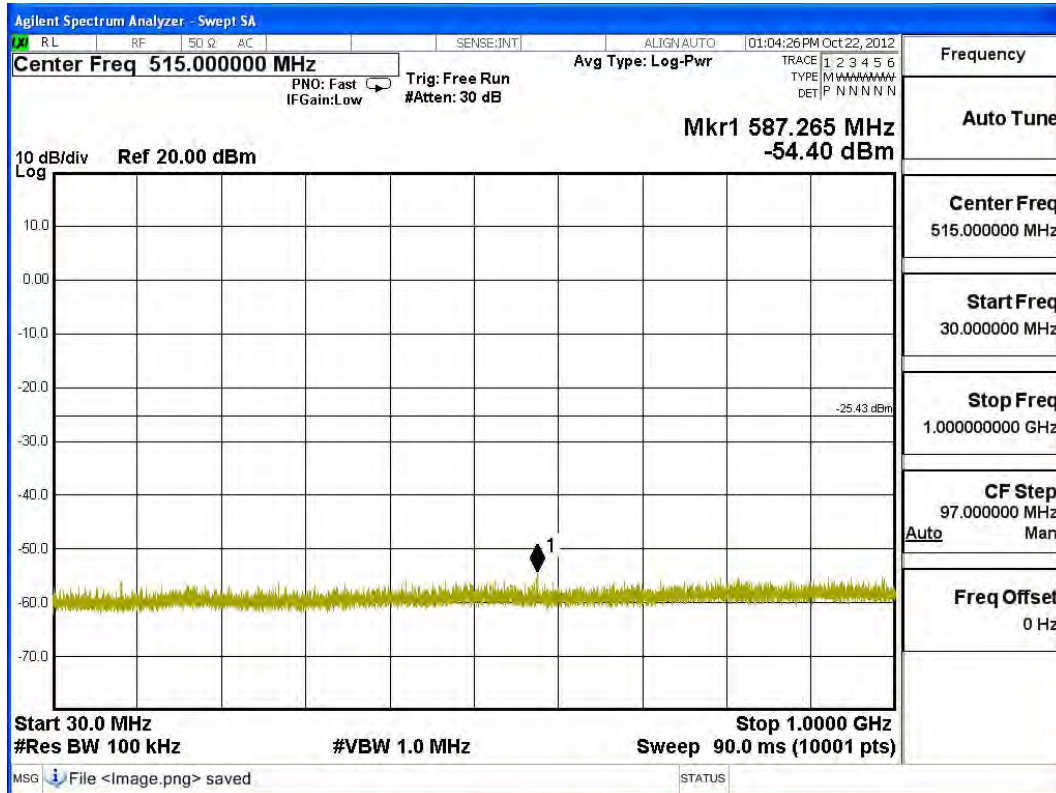
Channel 157 (5785MHz) 30MHz -40GHz-Chain B

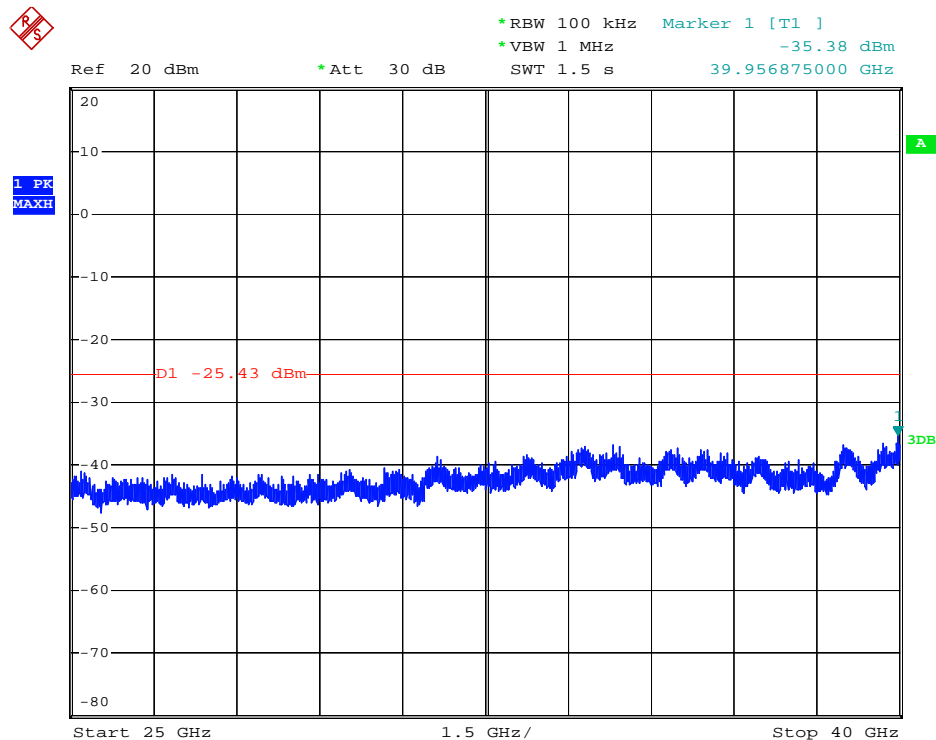
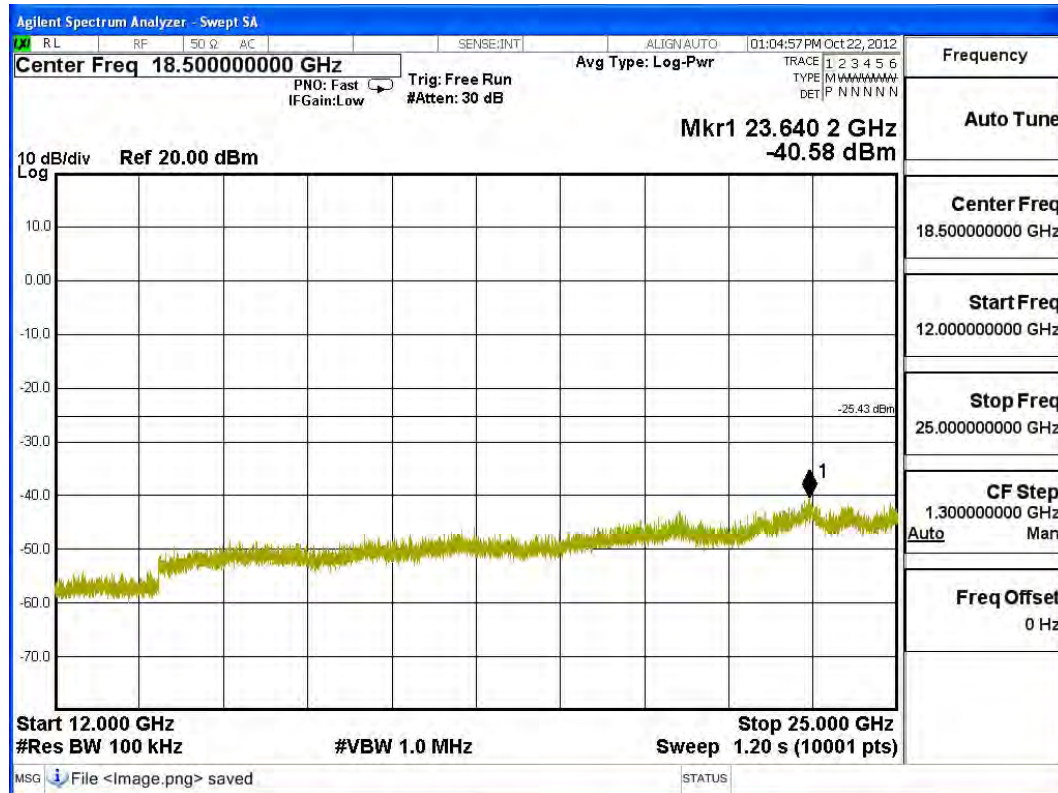




Date: 24.OCT.2012 03:58:00

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

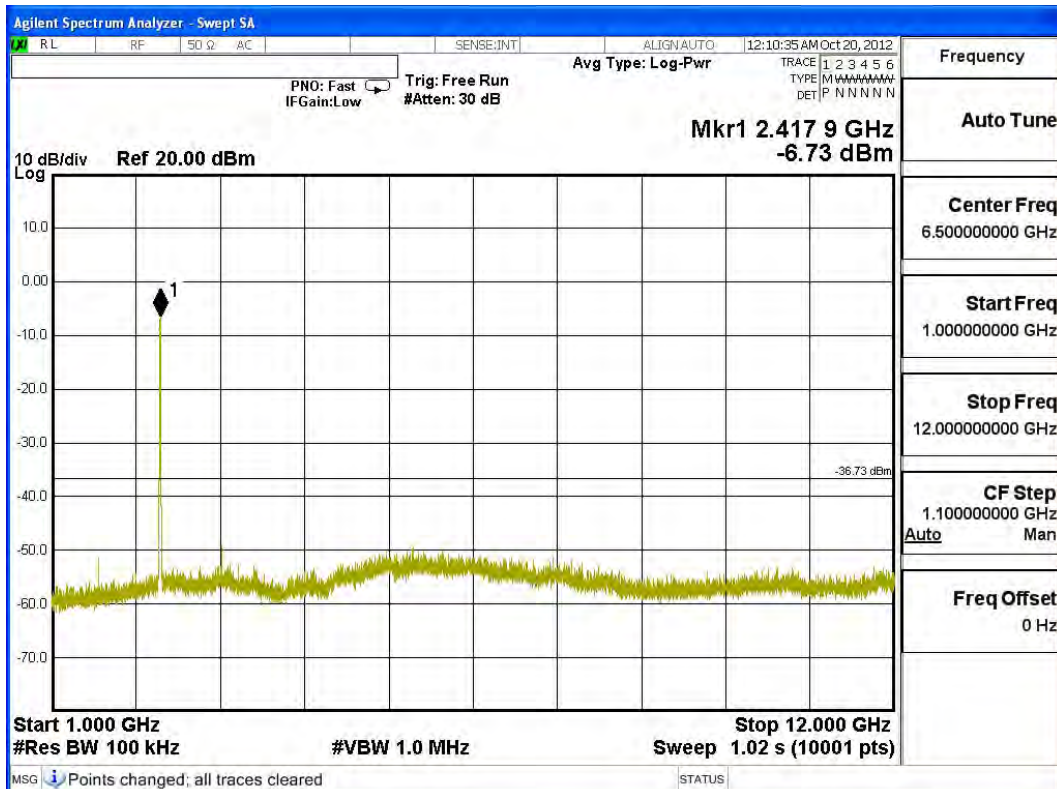
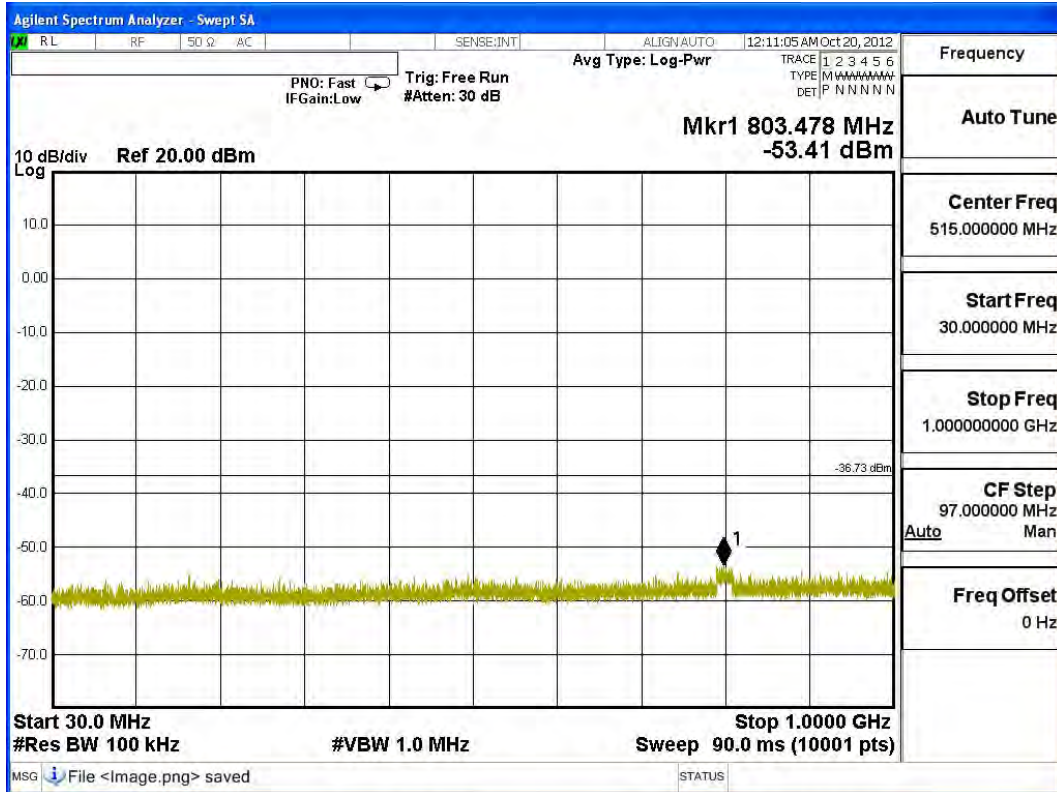


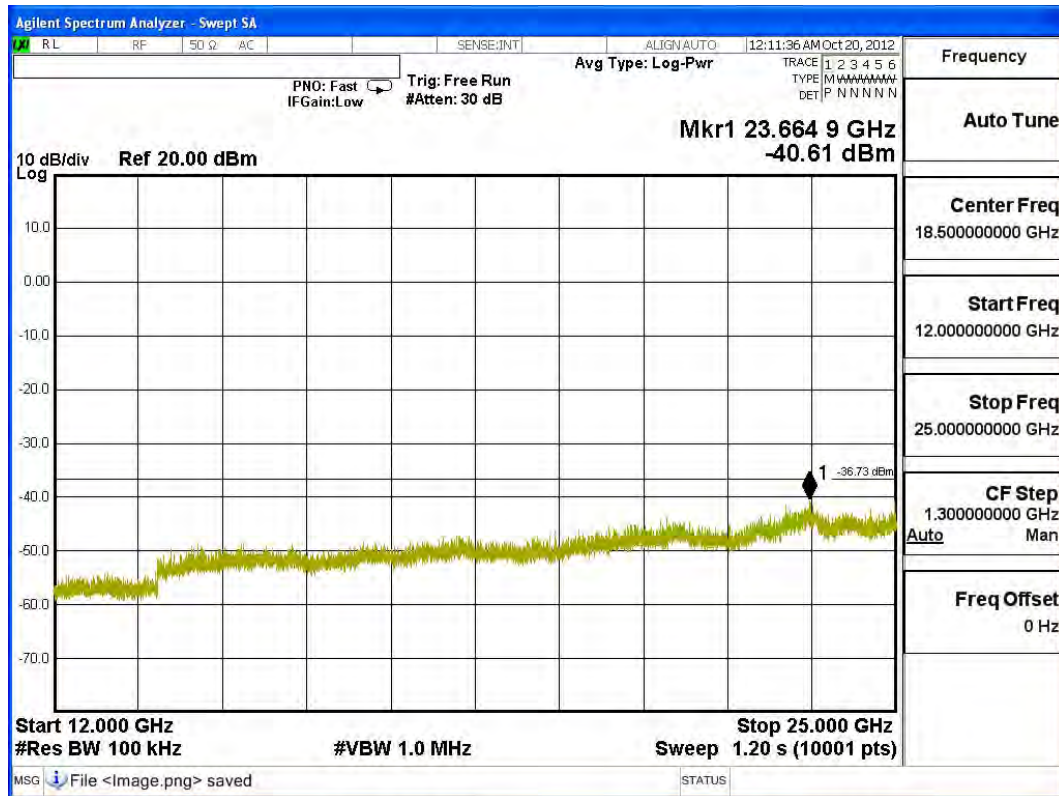


Date: 24.OCT.2012 03:58:40

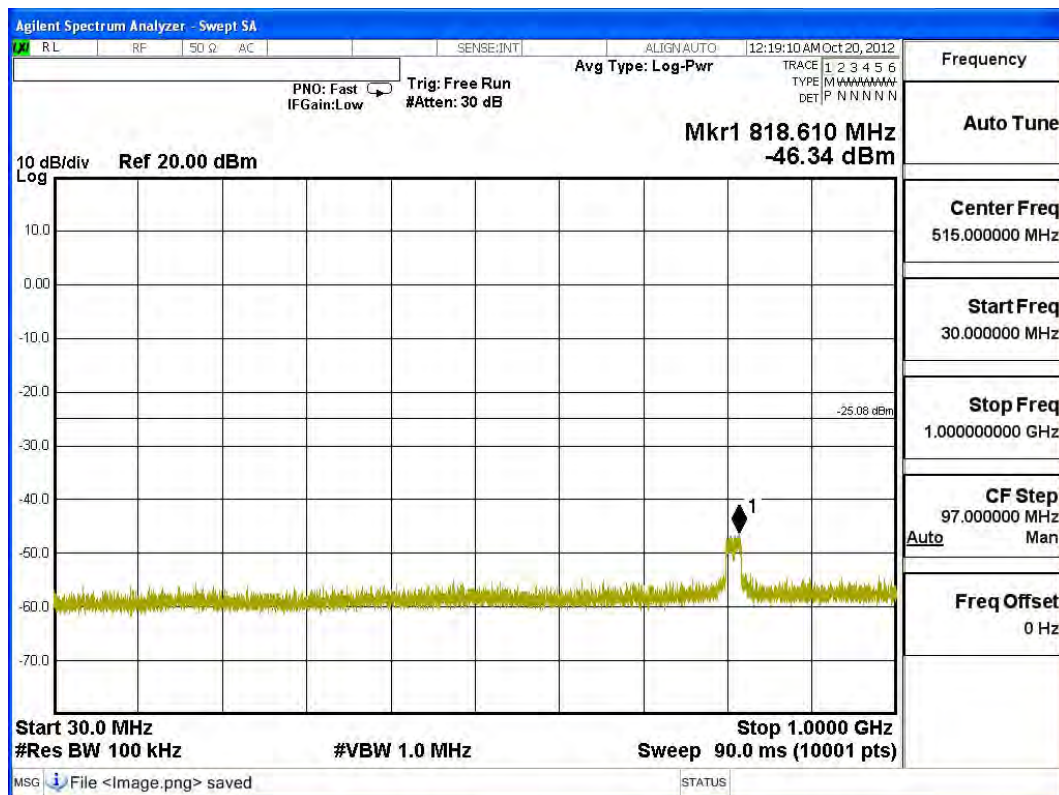
Product : SpectraGuardR Access Point / Sensor
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)(Dipole Antenna)

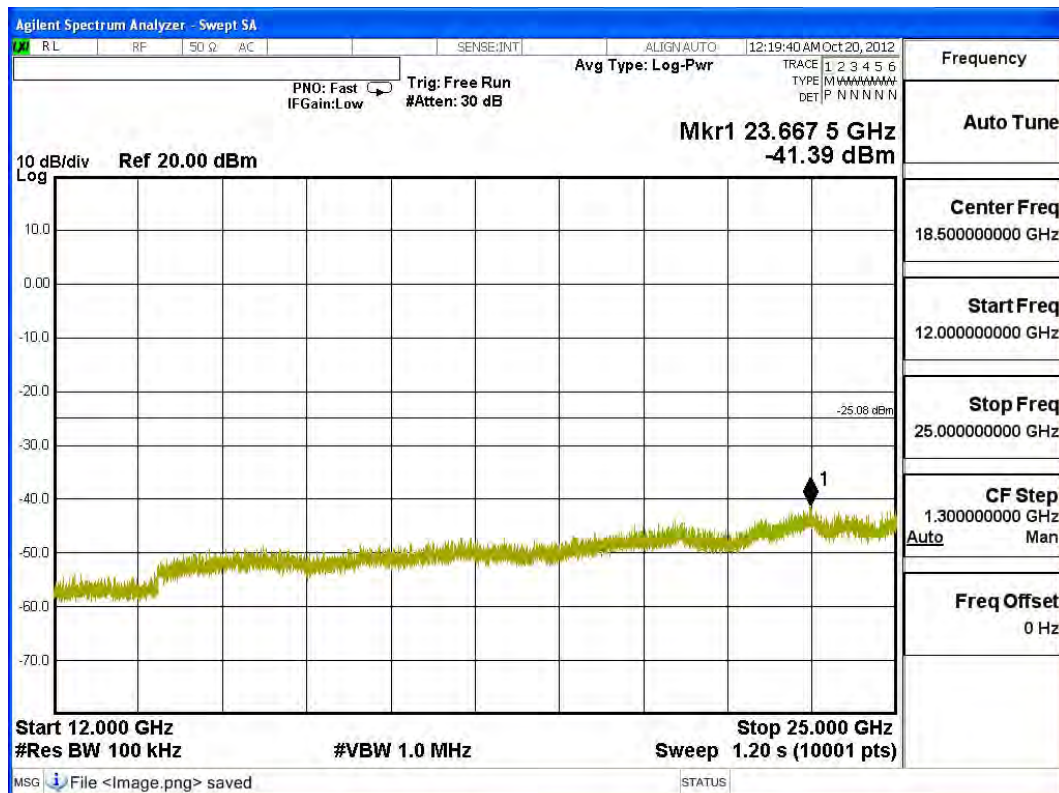
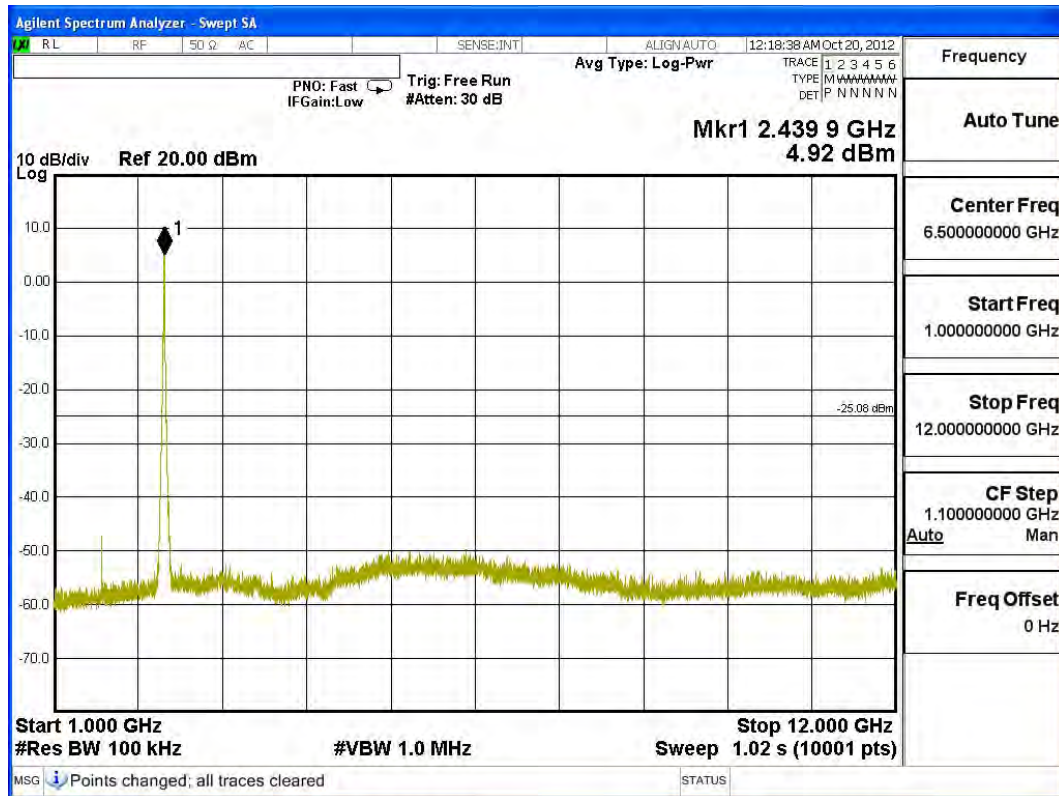
Channel 01 (2412MHz) 30MHz -25GHz-Chain A



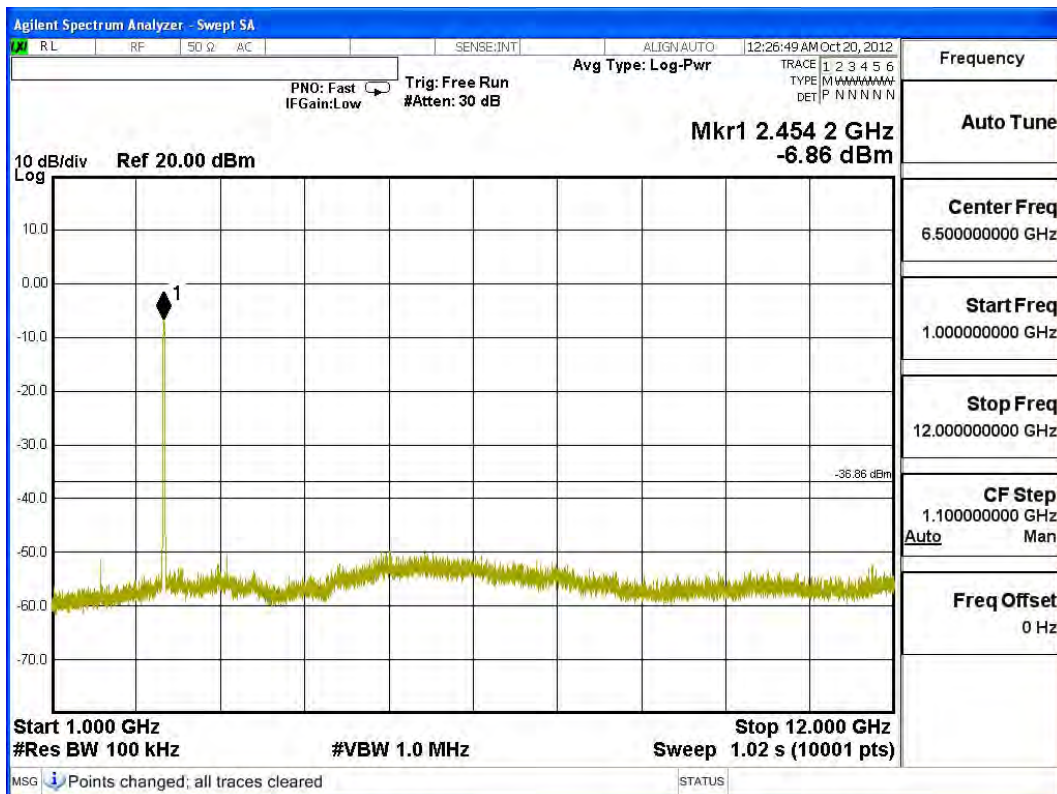
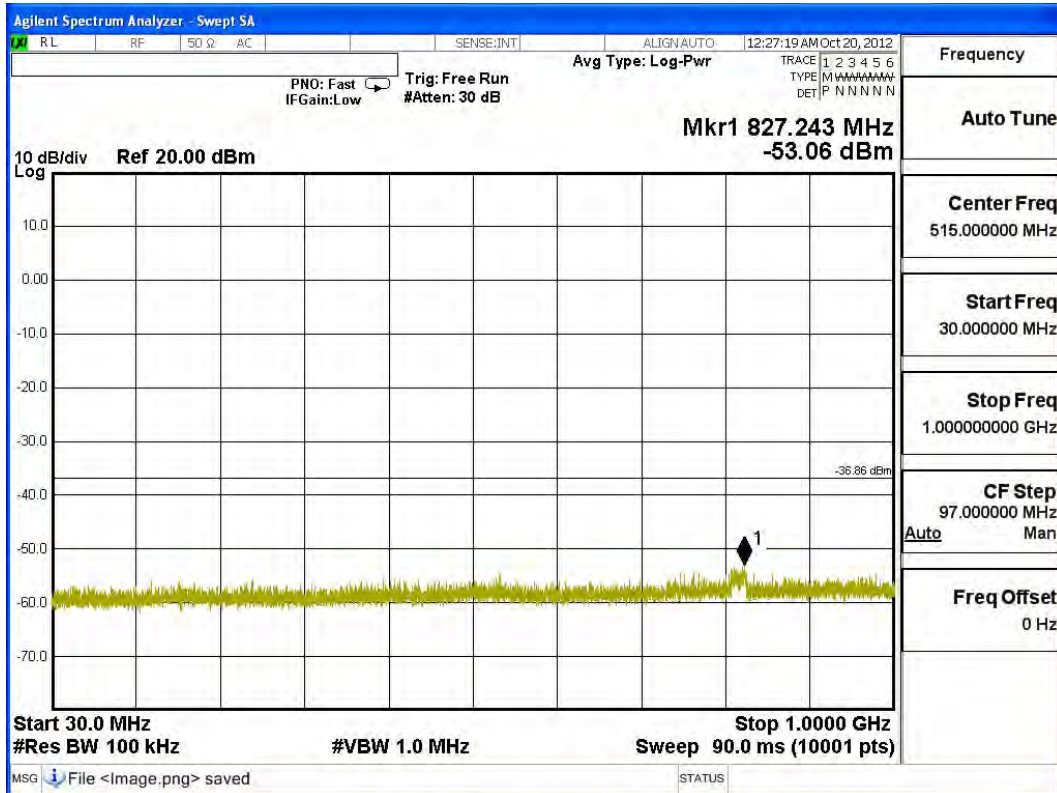


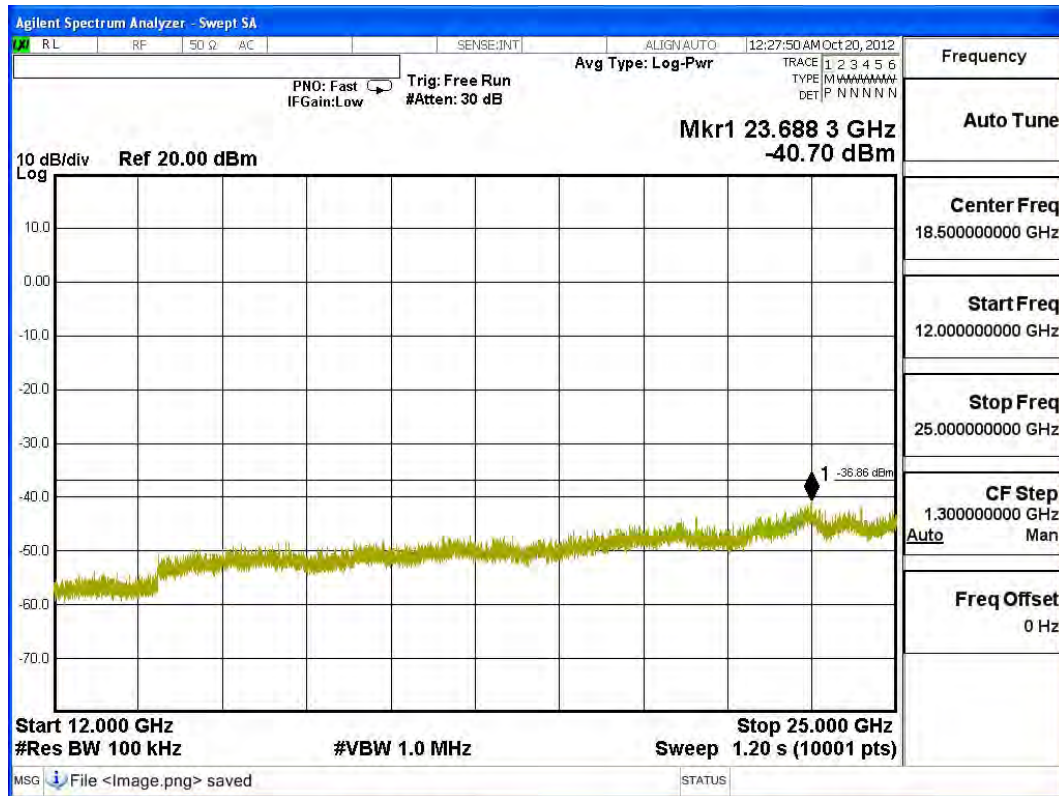
Channel 06 (2437MHz) 30MHz -25GHz-Chain A



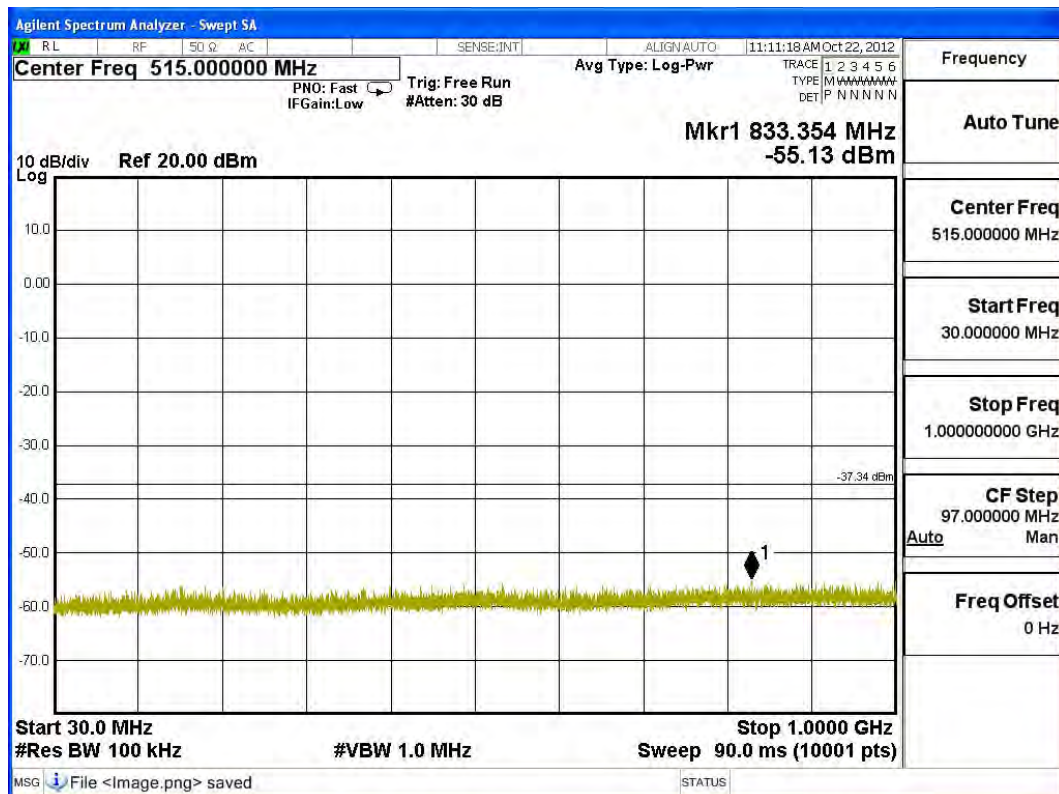


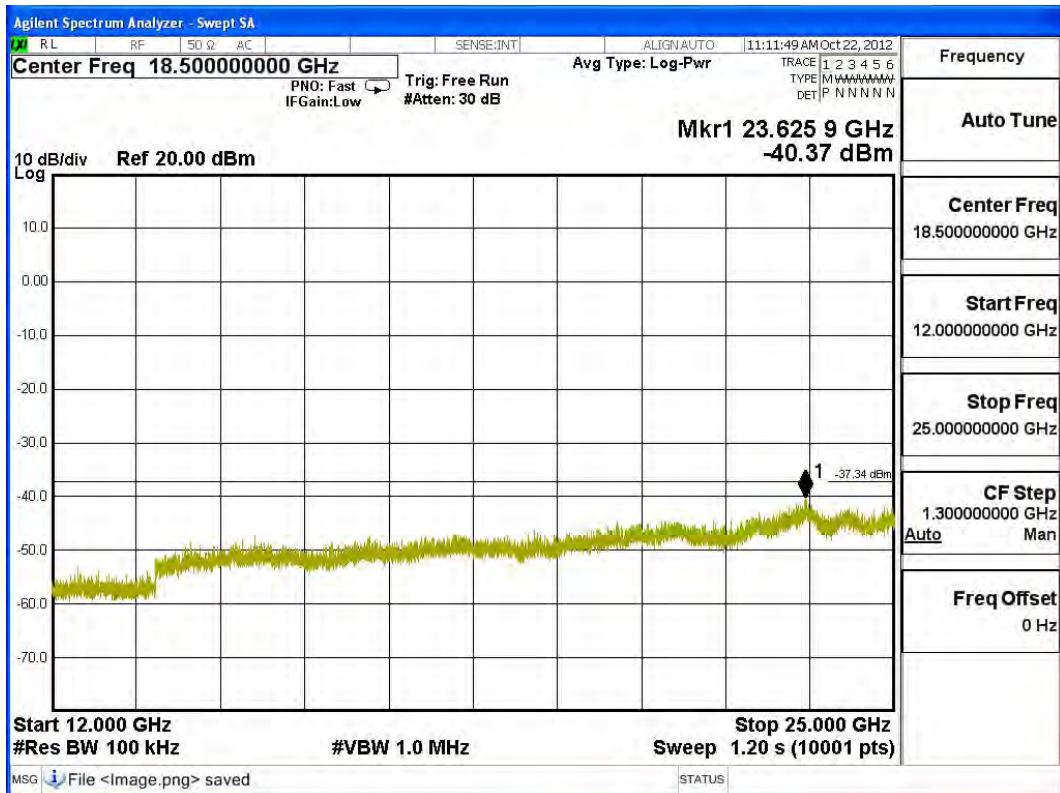
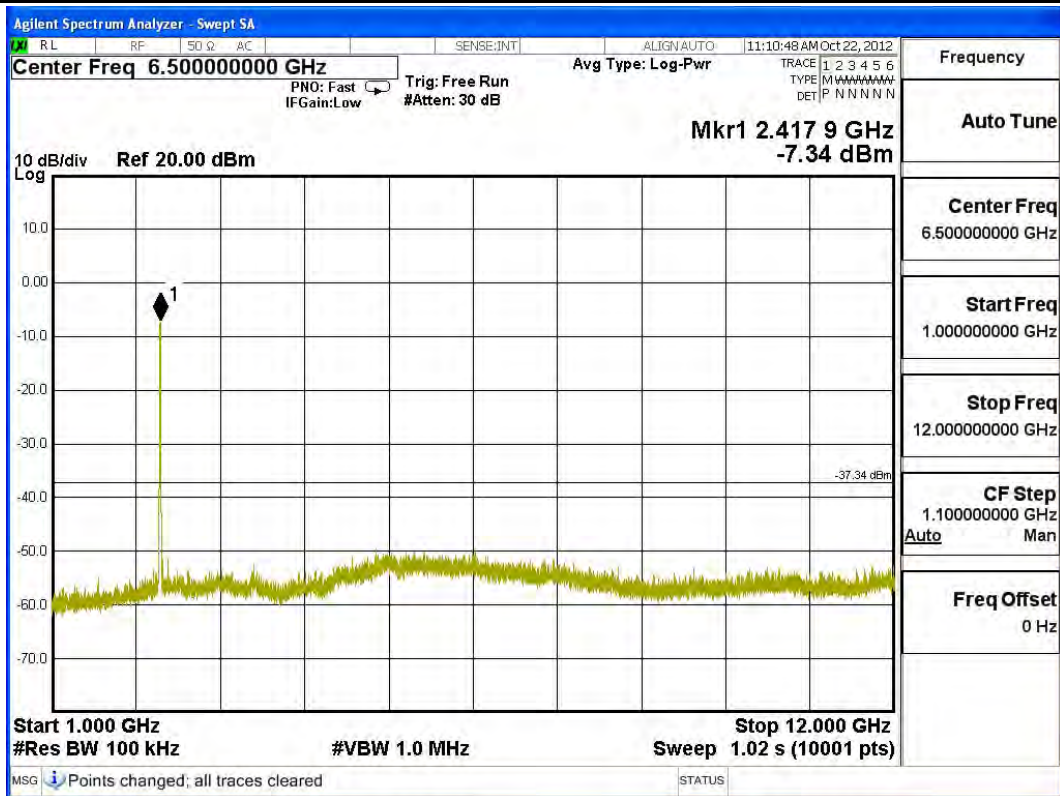
Channel 11 (2462MHz) 30MHz -25GHz-Chain A



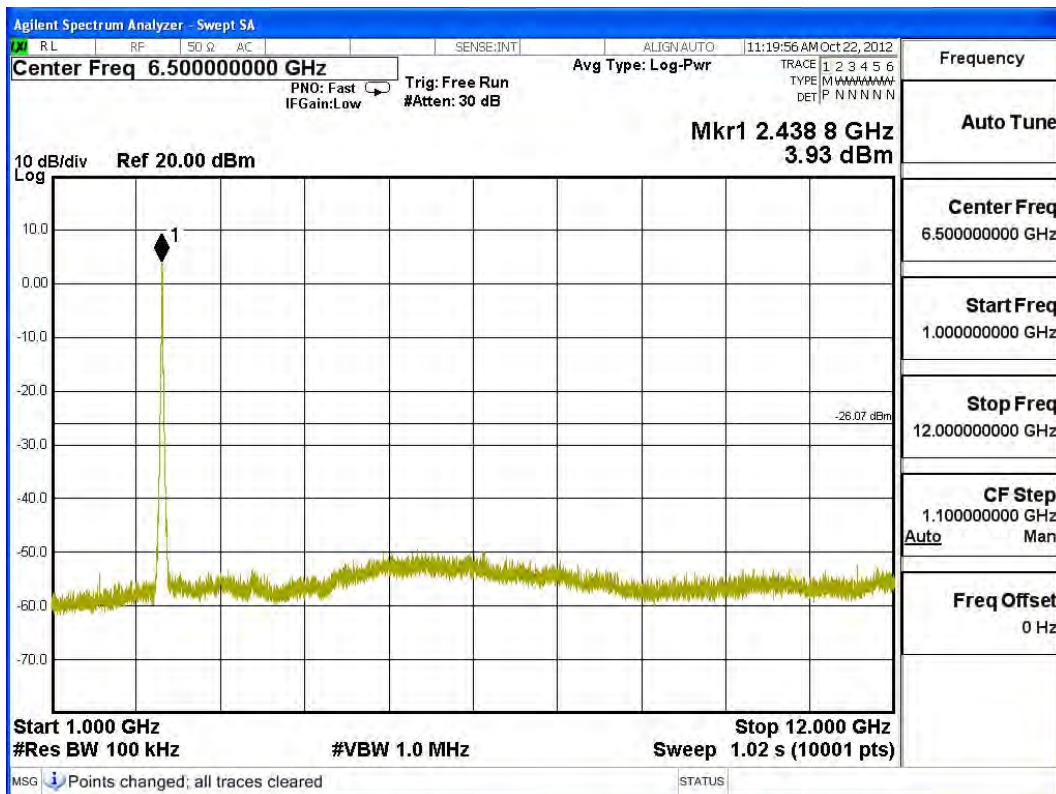
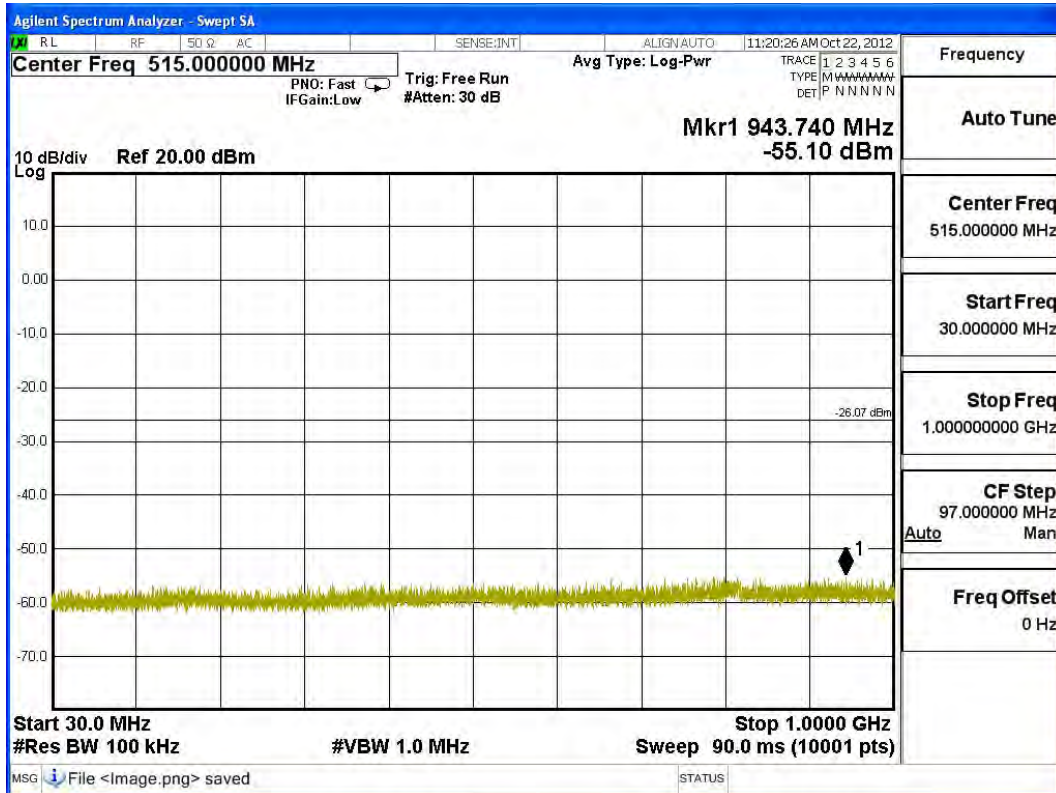


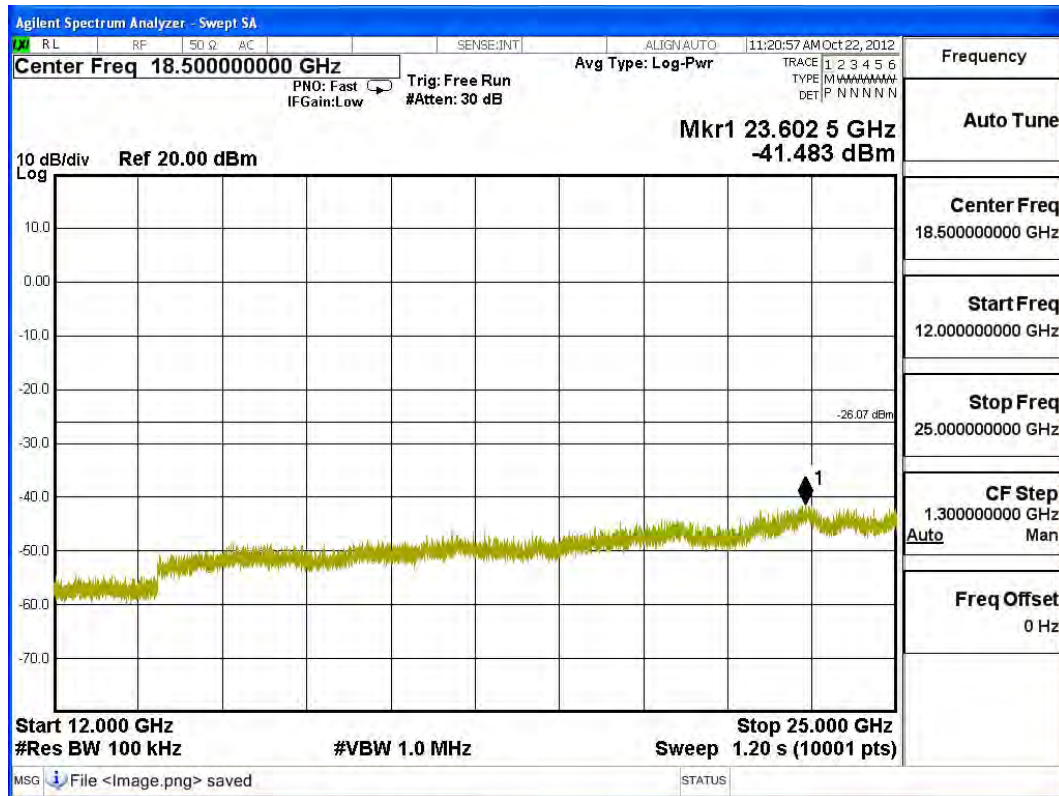
Channel 01 (2412MHz) 30MHz -25GHz-Chain B



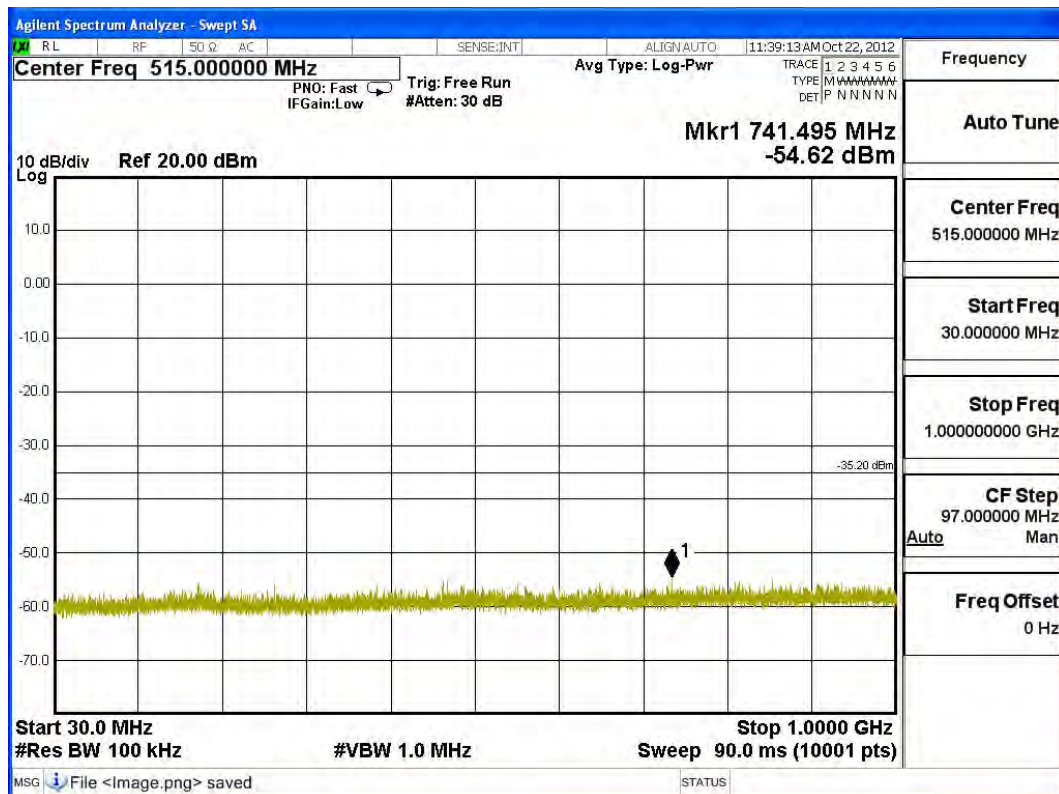


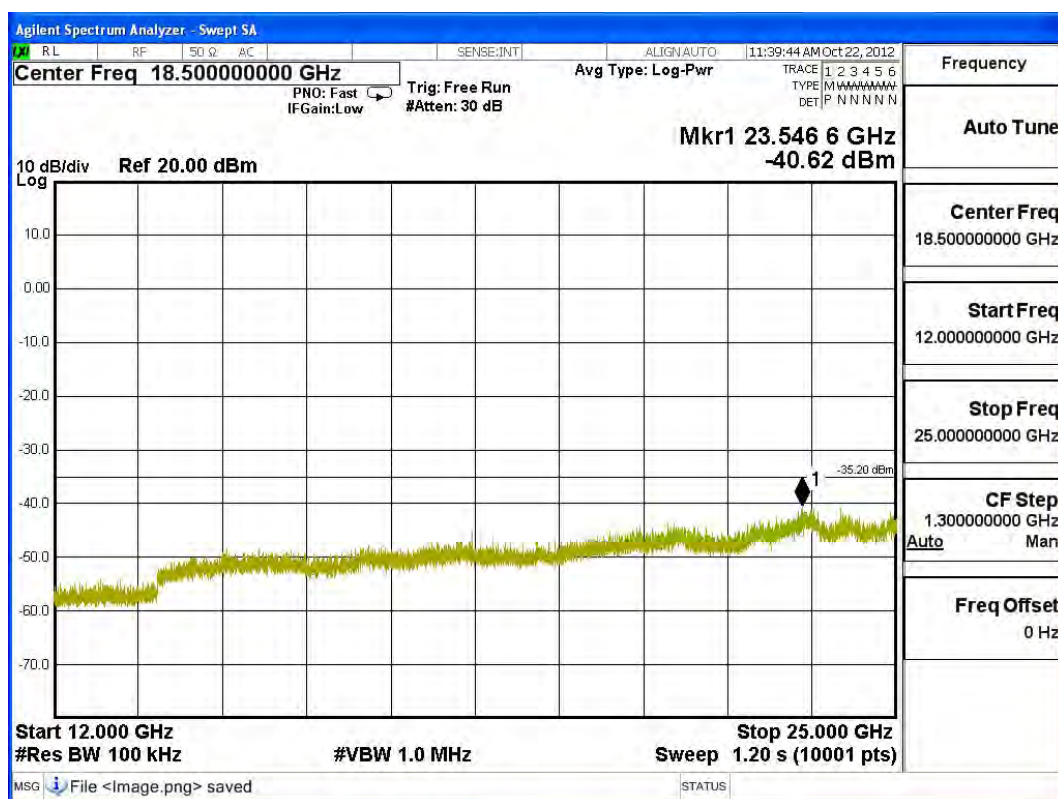
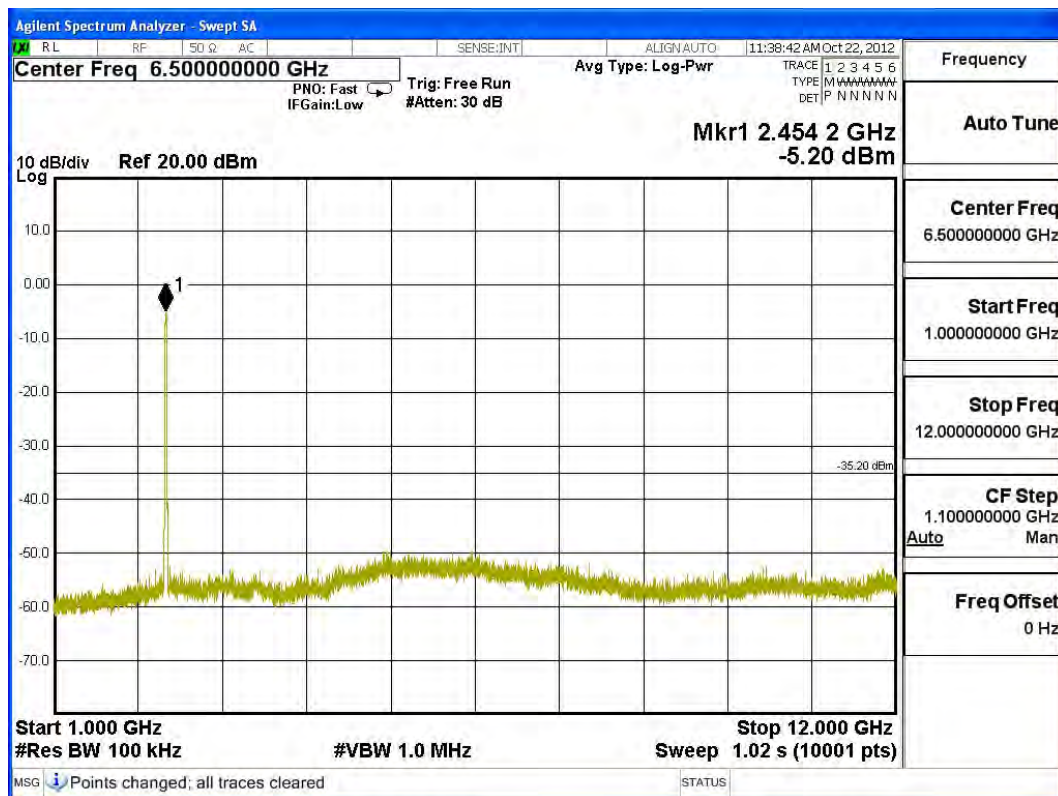
Channel 06 (2437MHz) 30MHz -25GHz-Chain B





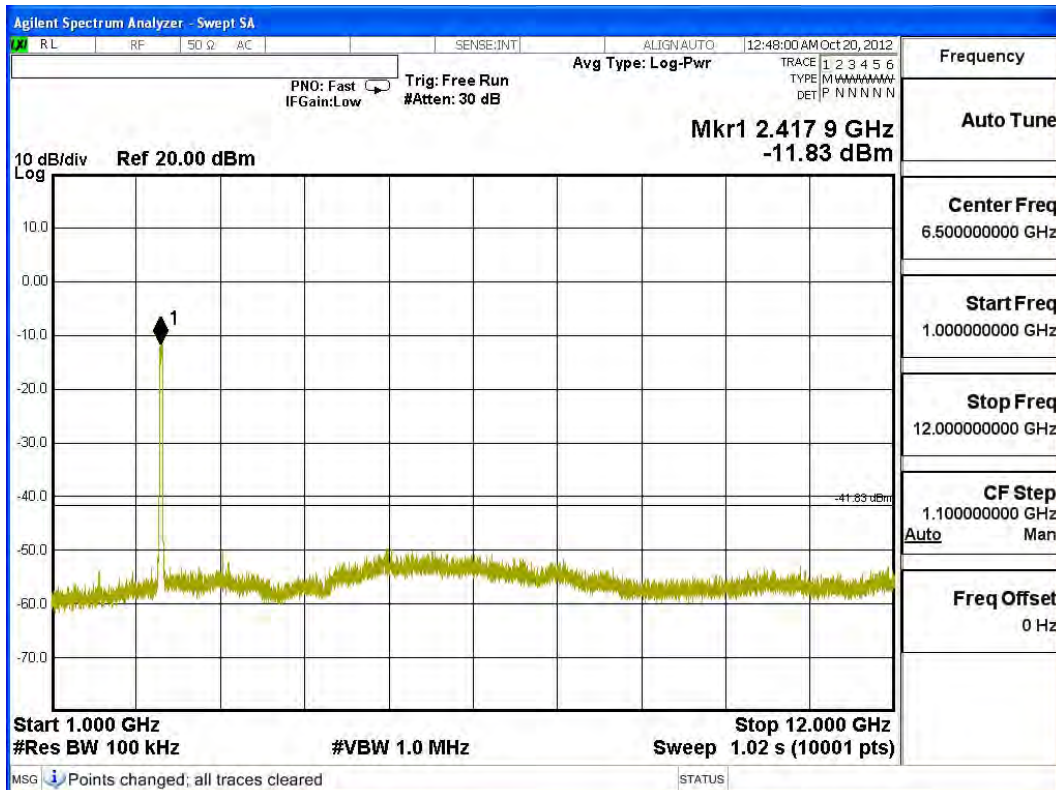
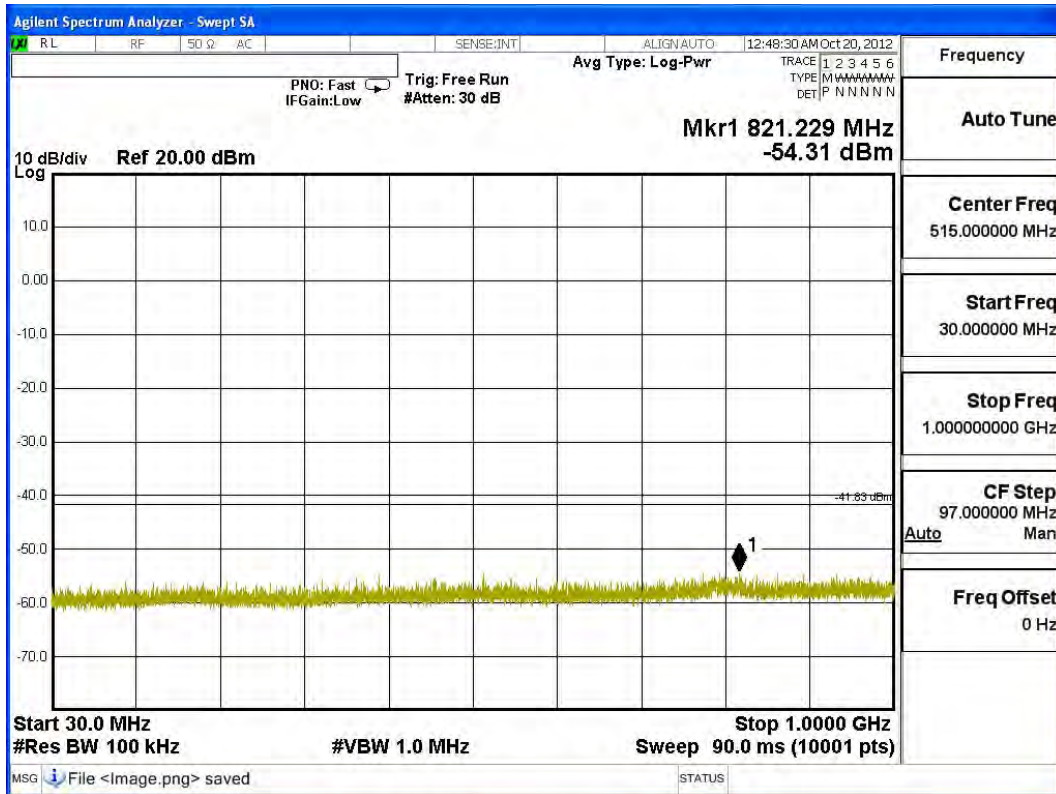
Channel 11 (2462MHz) 30MHz -25GHz-Chain B

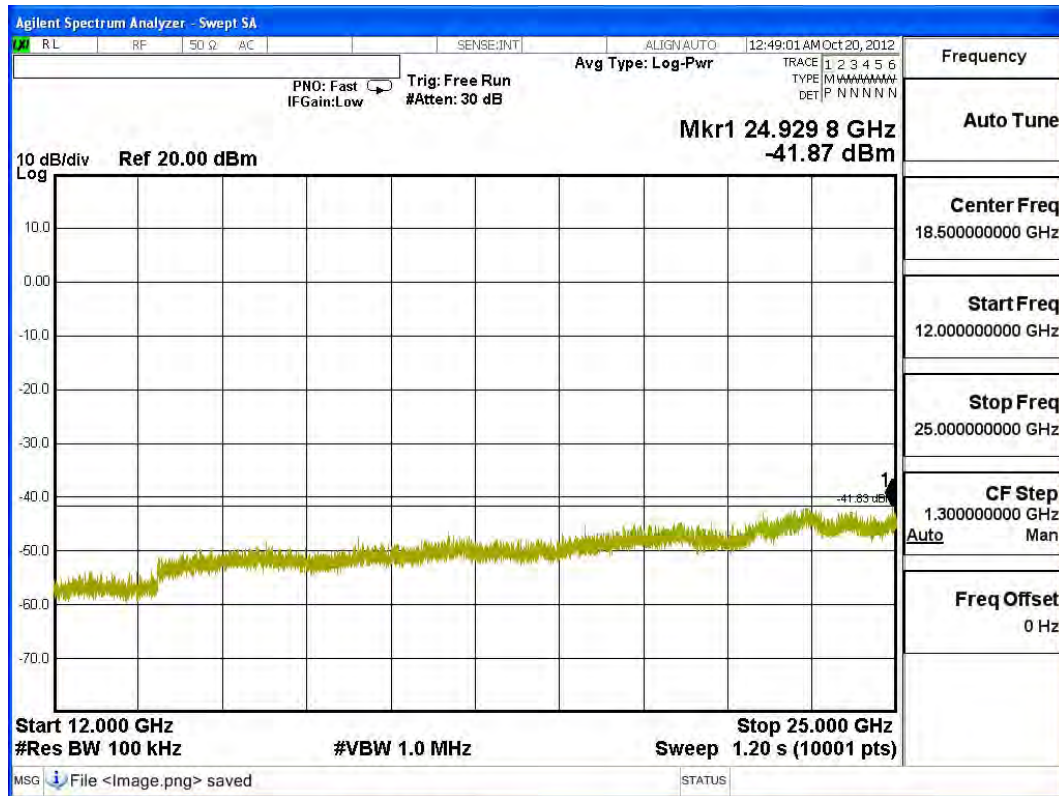




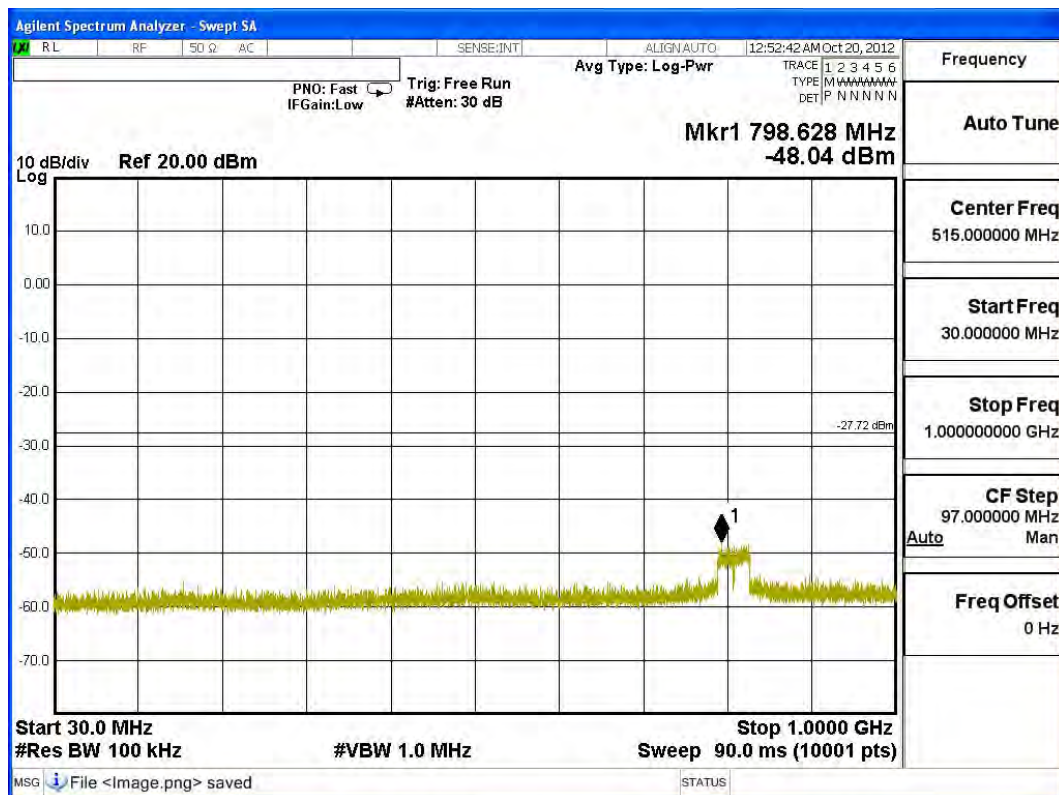
Product : SpectraGuardR Access Point / Sensor
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)(Dipole Antenna)

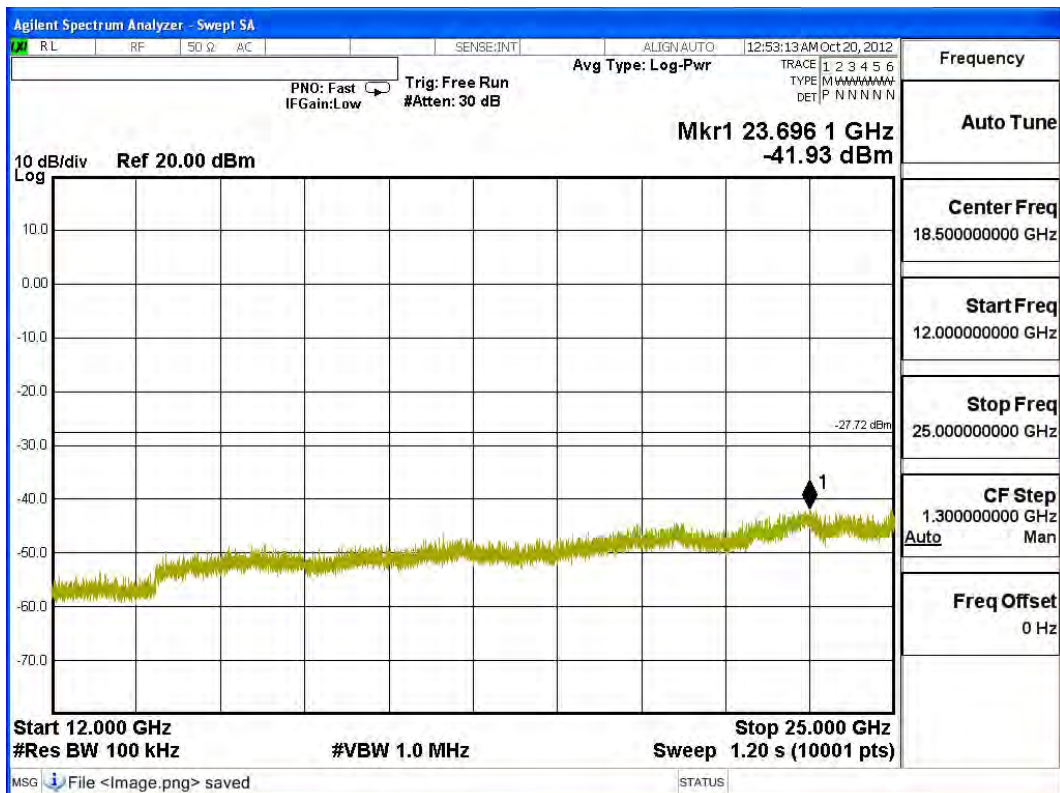
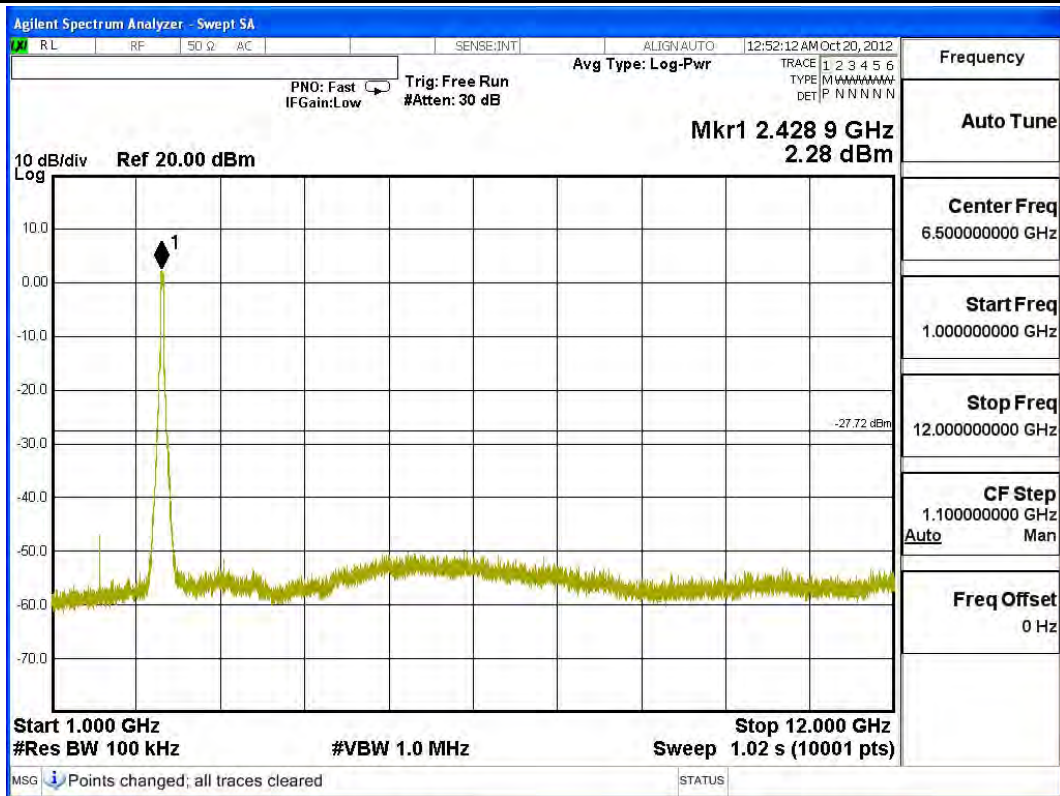
Channel 01 (2422MHz) 30MHz -25GHz-Chain A



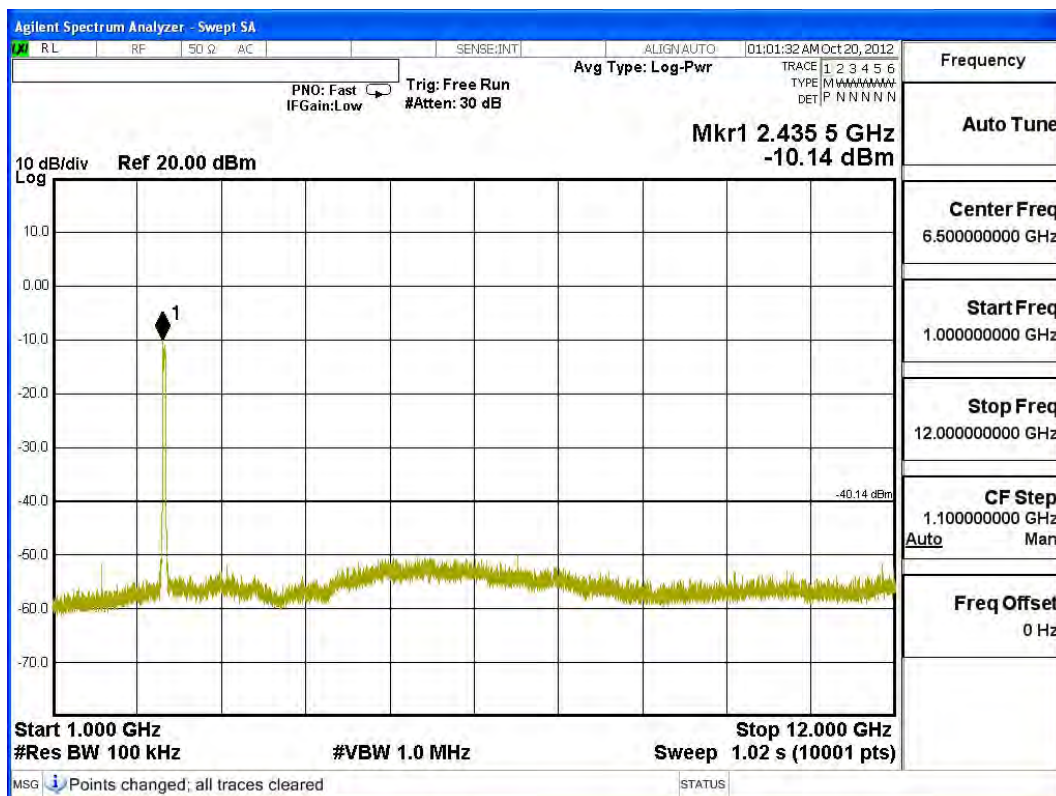
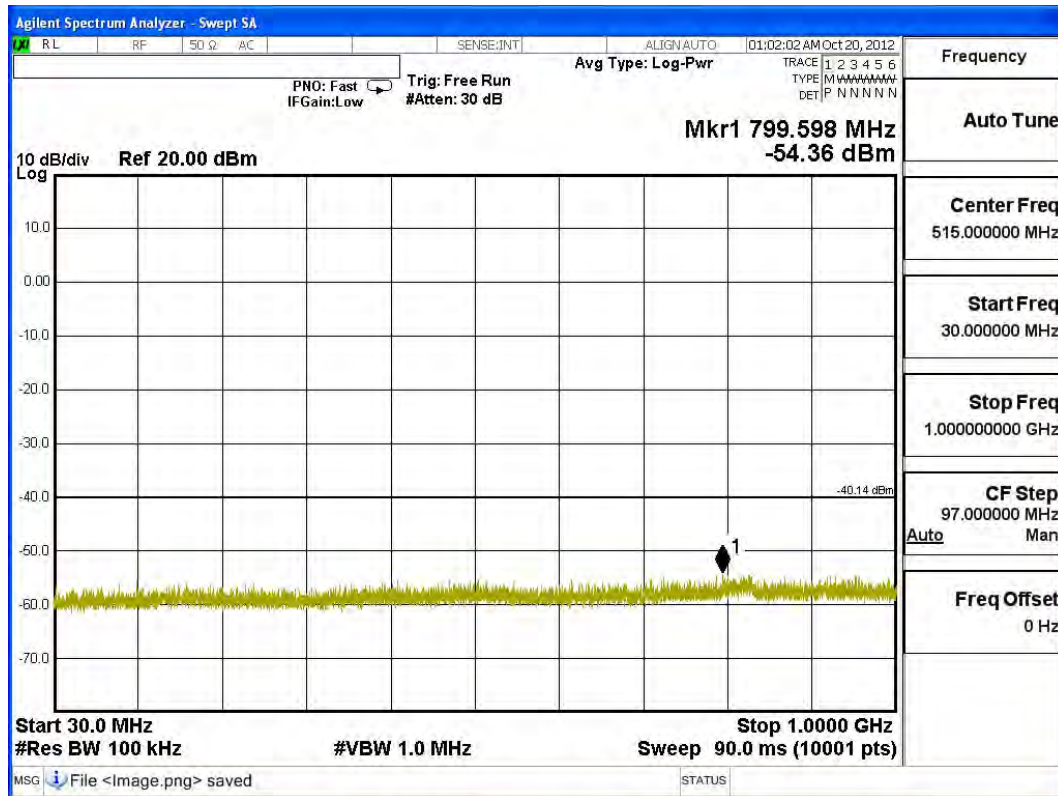


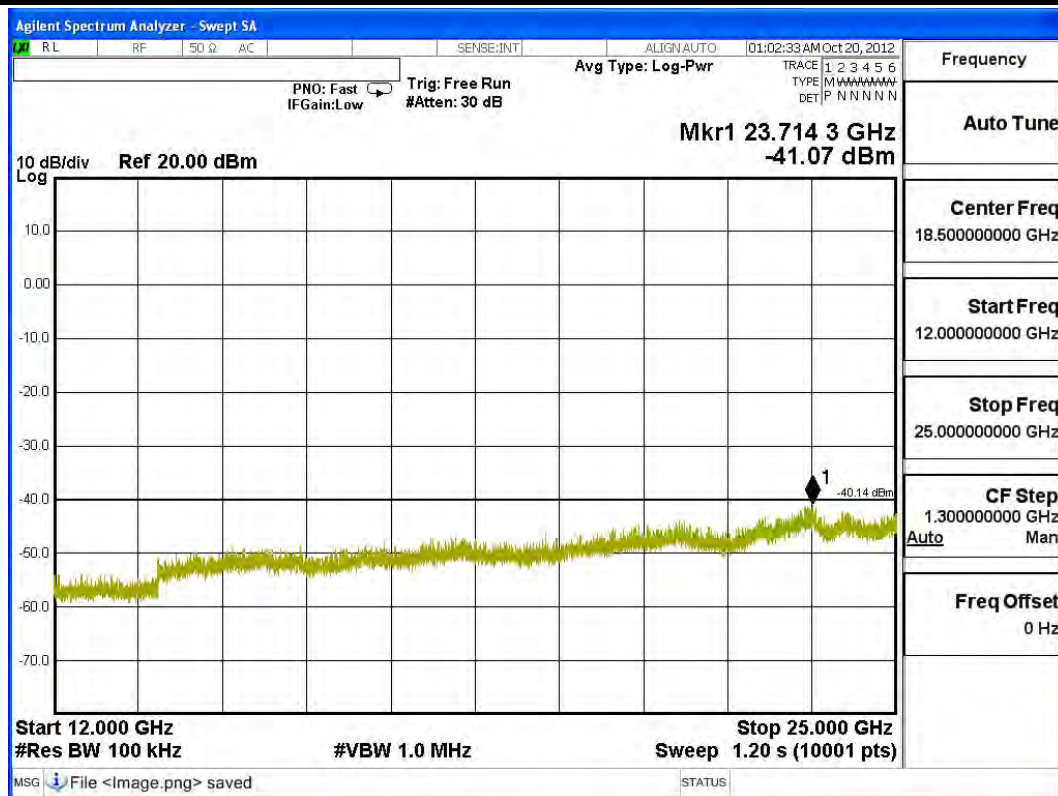
Channel 04 (2437MHz) 30MHz -25GHz-Chain A



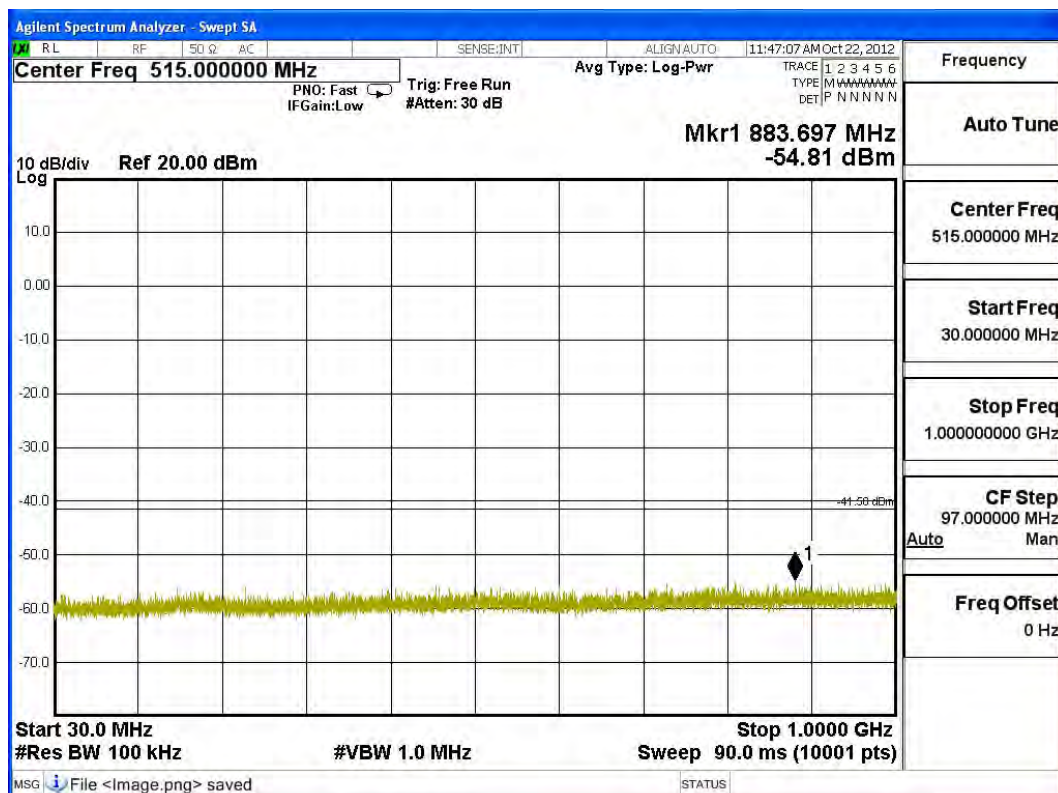


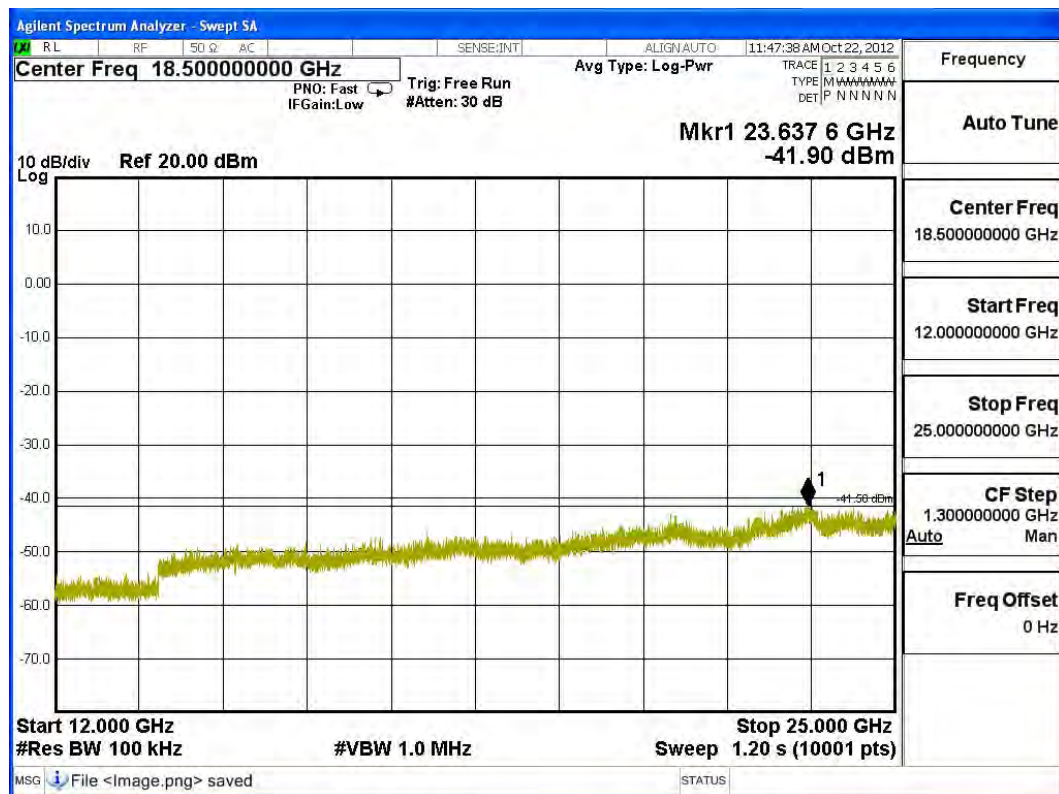
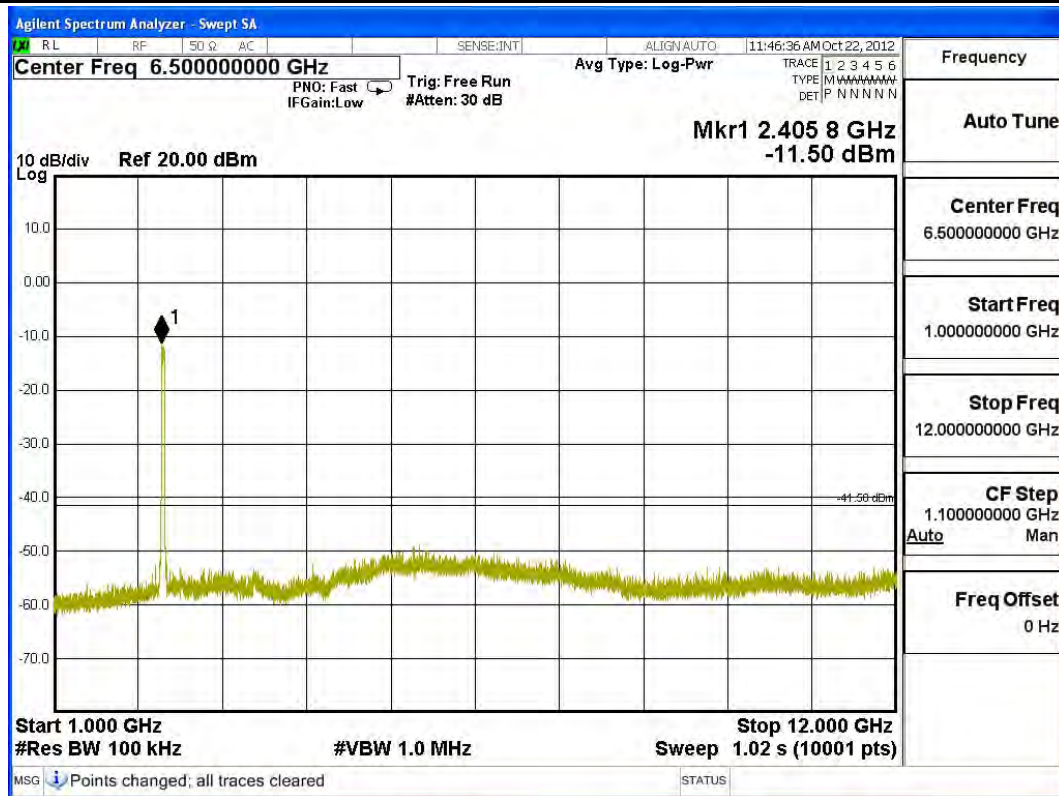
Channel 07 (2452MHz) 30MHz -25GHz-Chain A



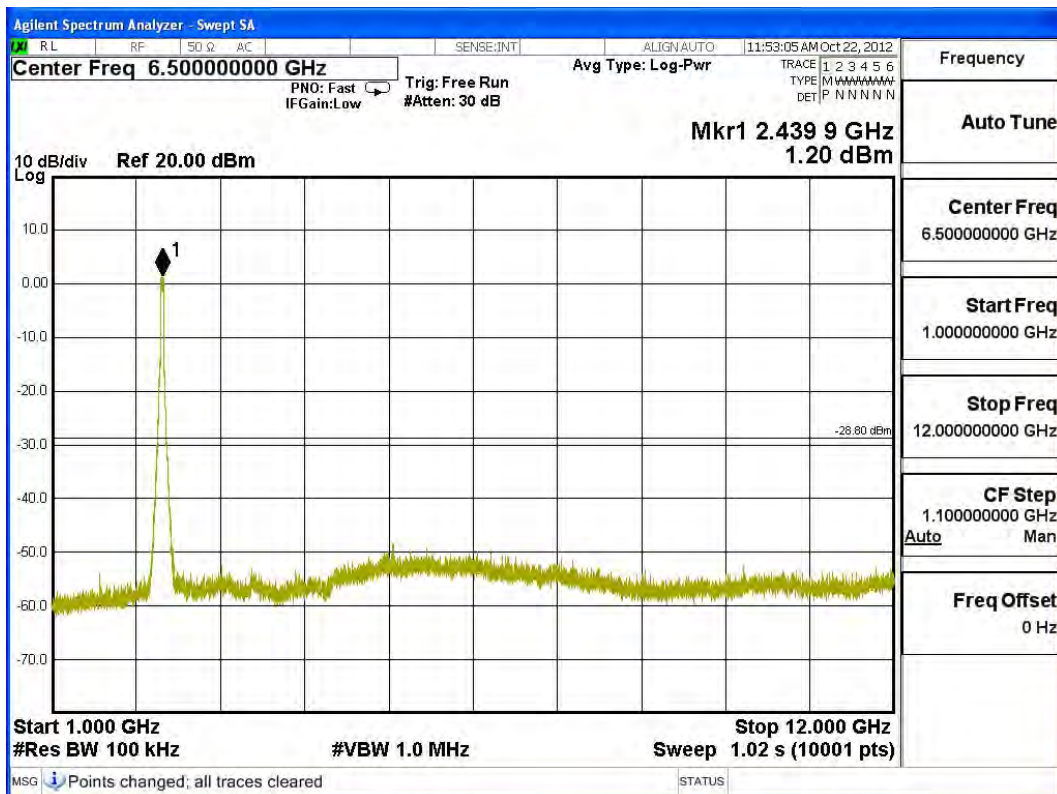
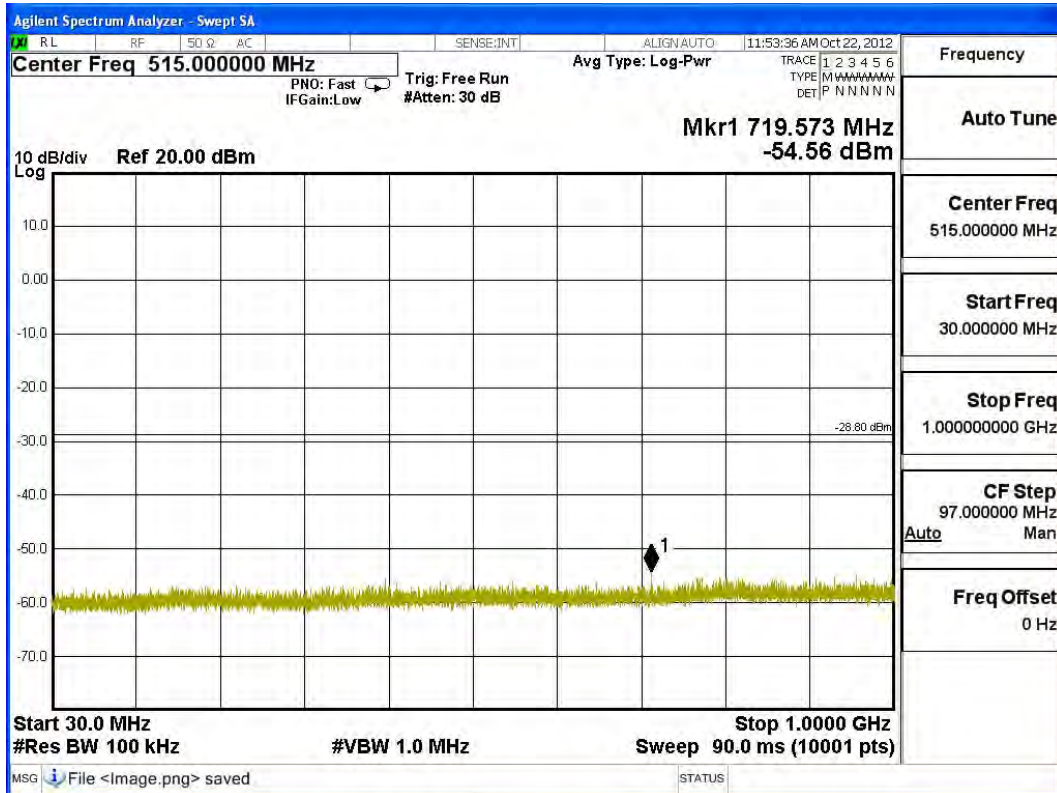


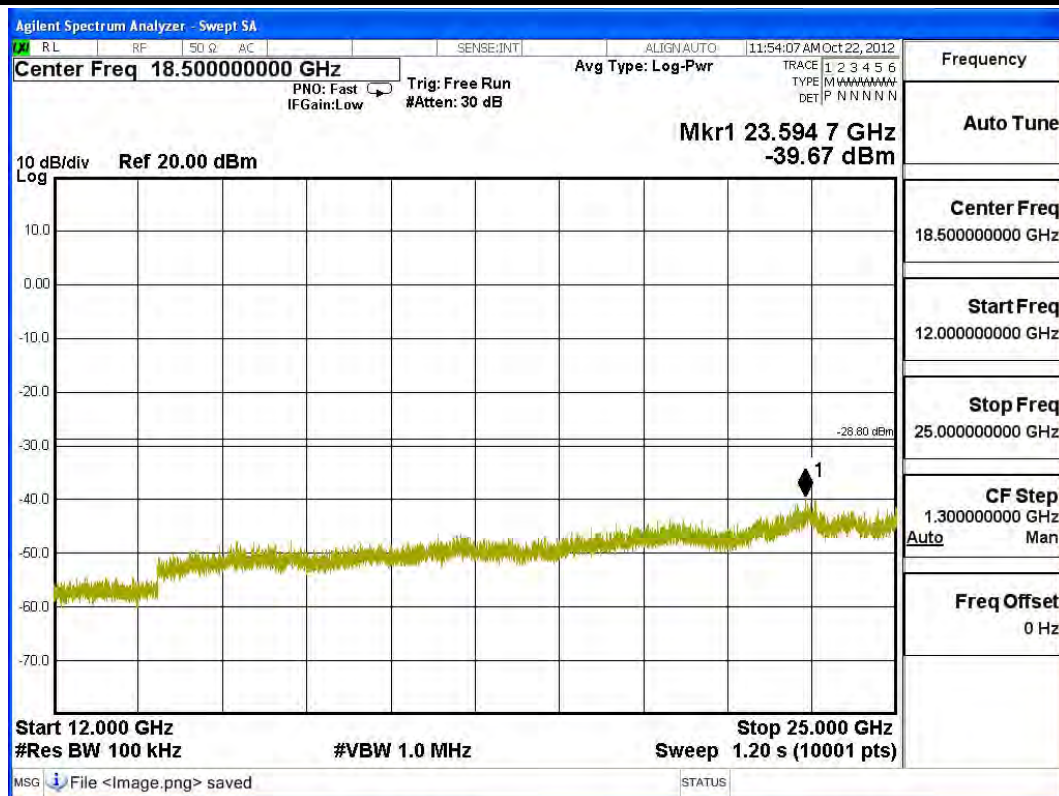
Channel 01 (2422MHz) 30MHz -25GHz-Chain B



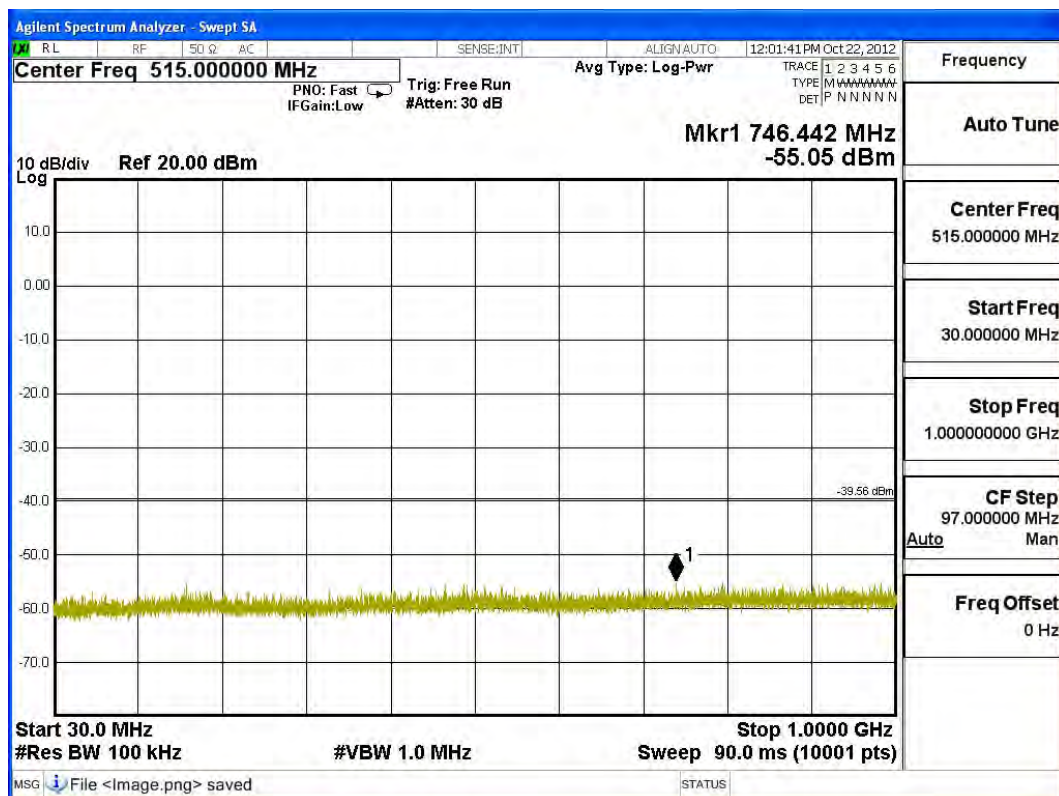


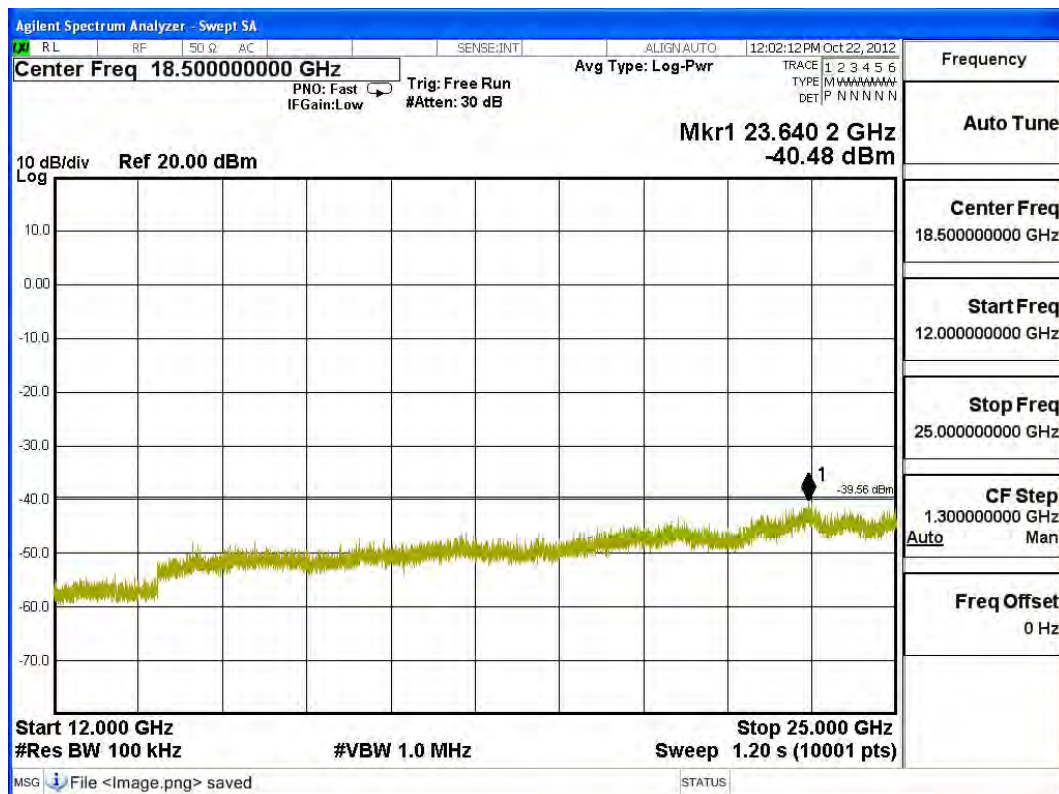
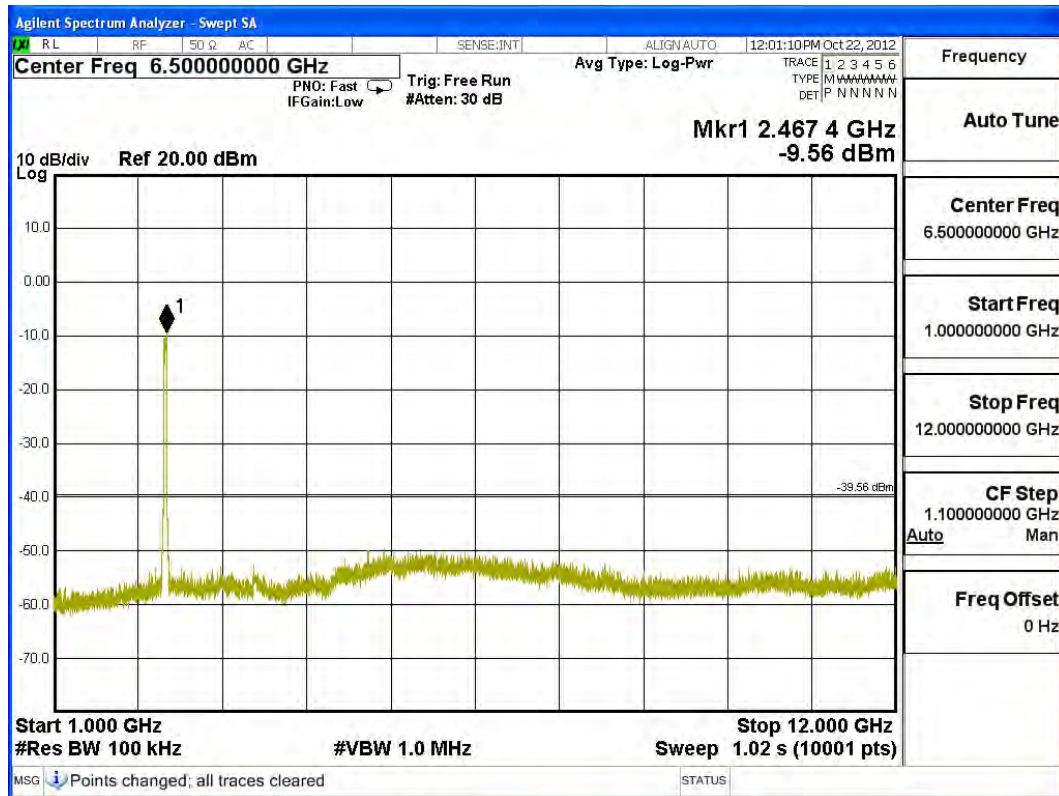
Channel 04 (2437MHz) 30MHz -25GHz-Chain B





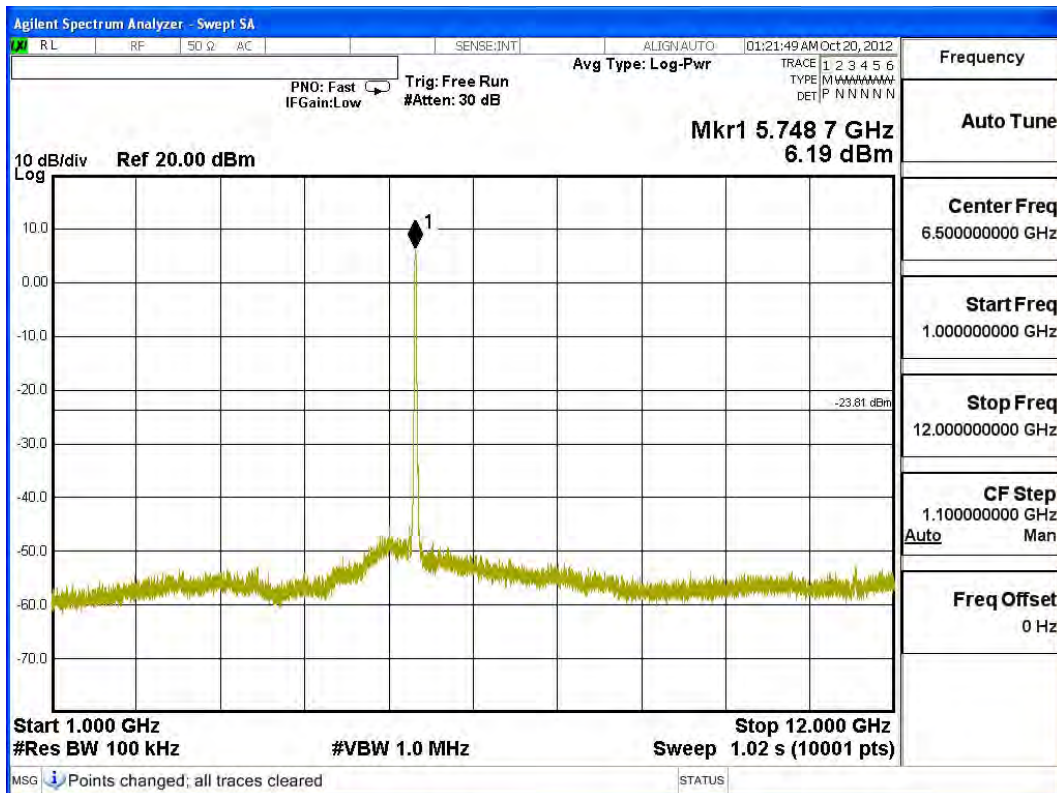
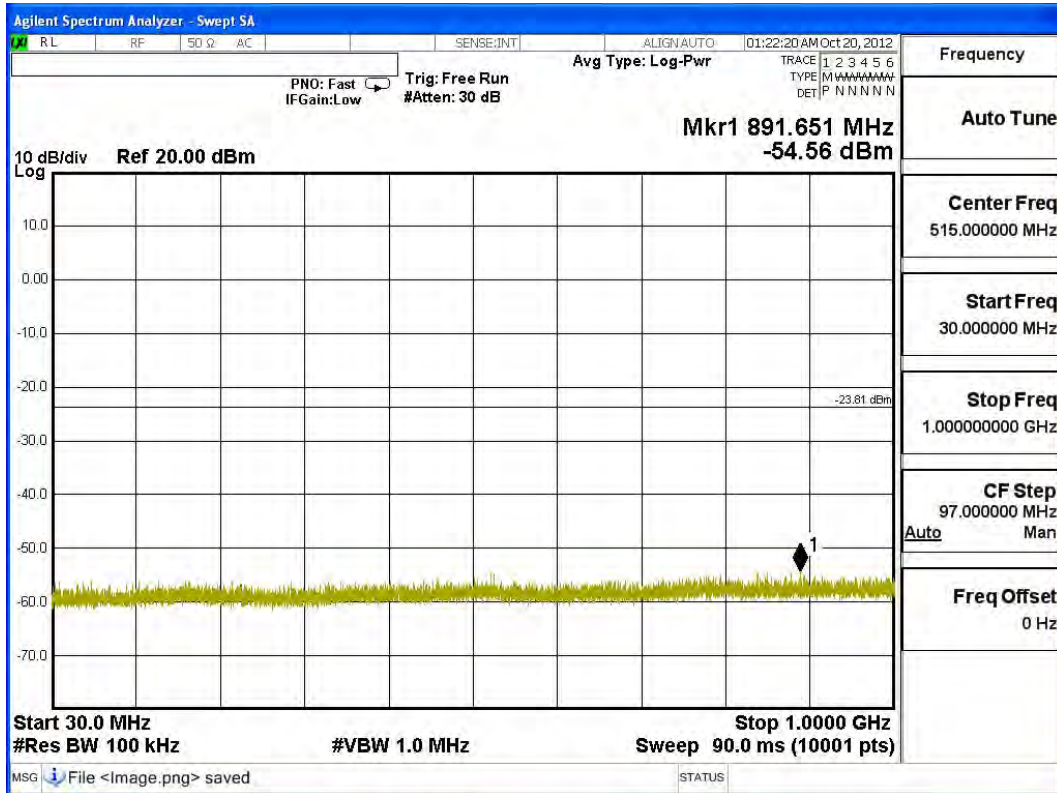
Channel 07 (2452MHz) 30MHz -25GHz-Chain B

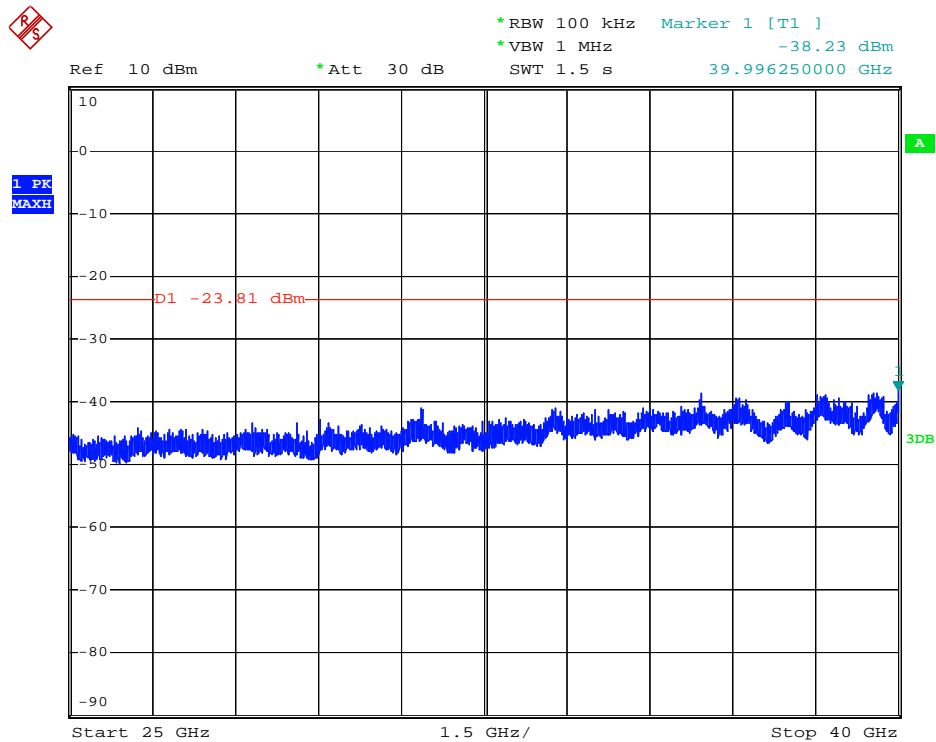
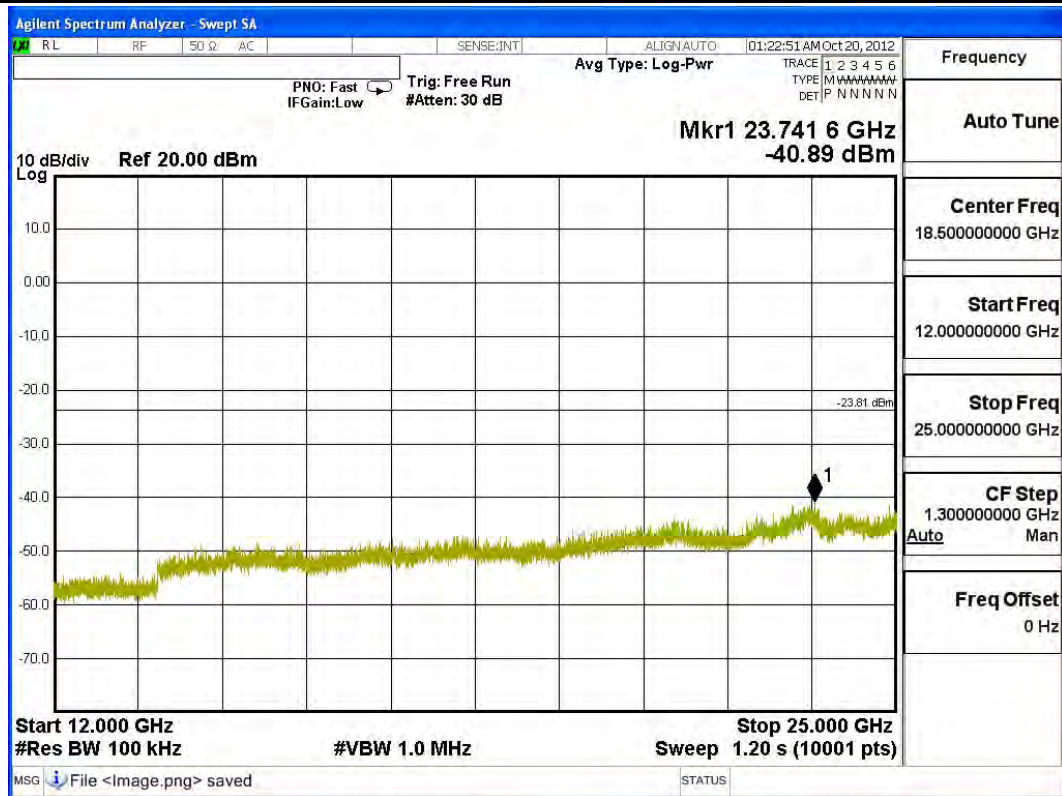




Product : SpectraGuardR Access Point / Sensor
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)(Dipole Antenna)

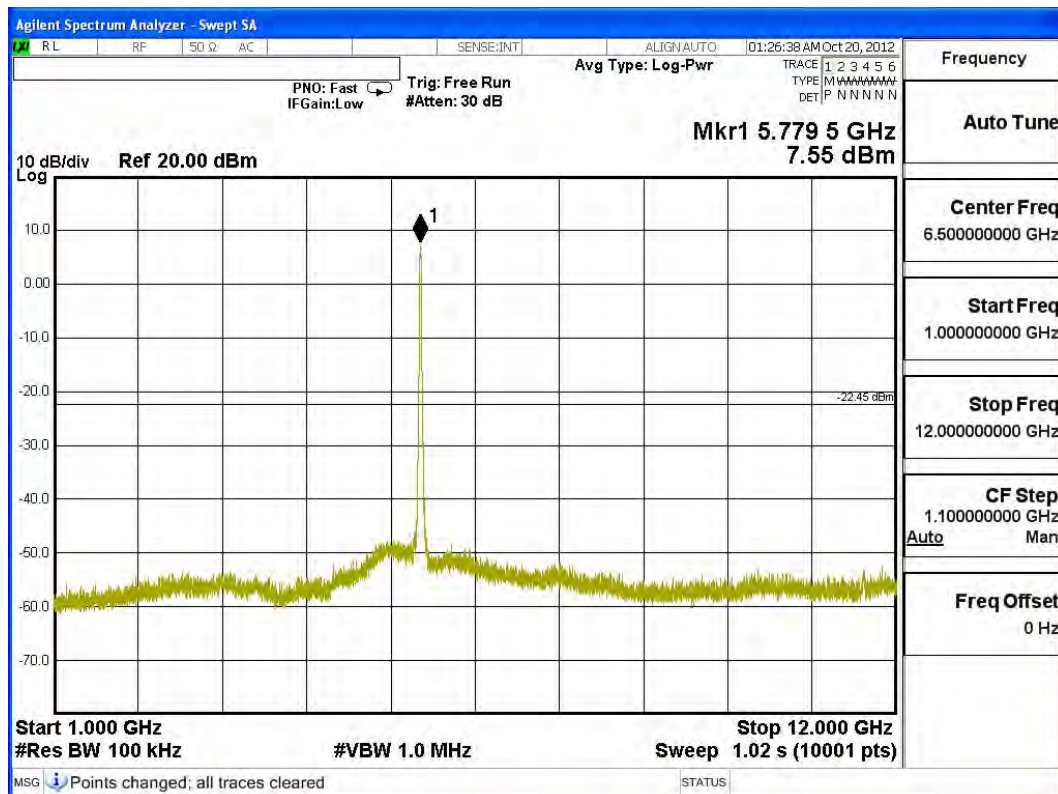
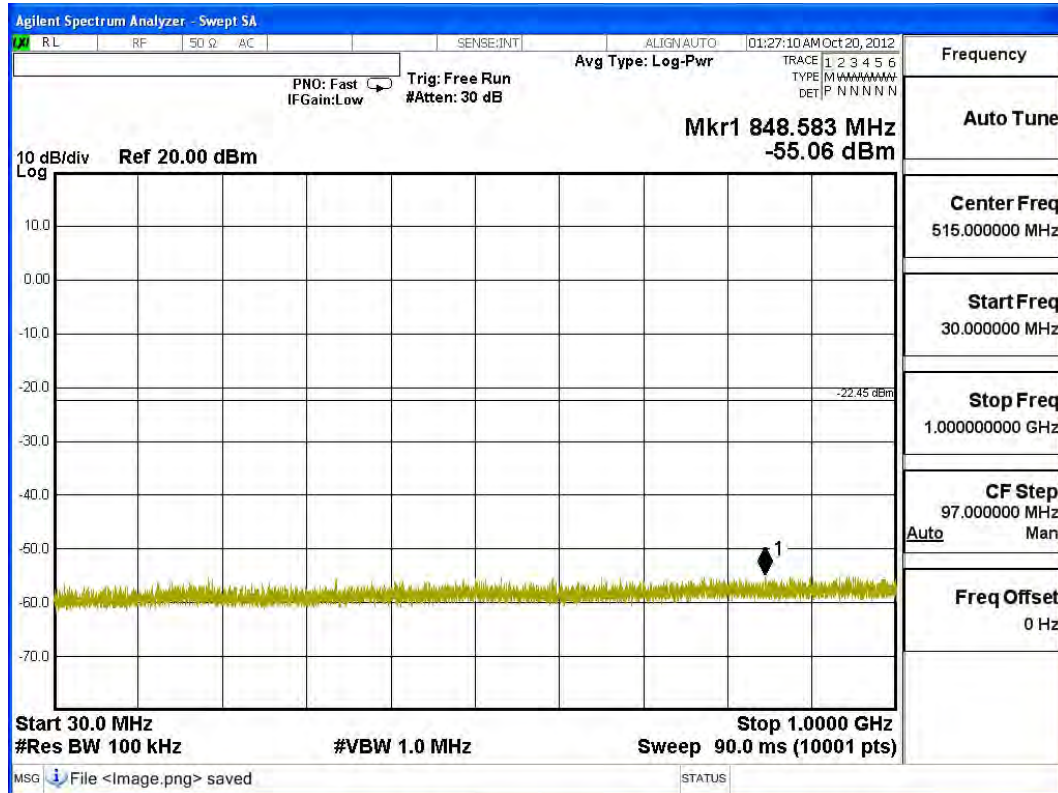
Channel 49 (5745MHz) 30MHz -40GHz-Chain A

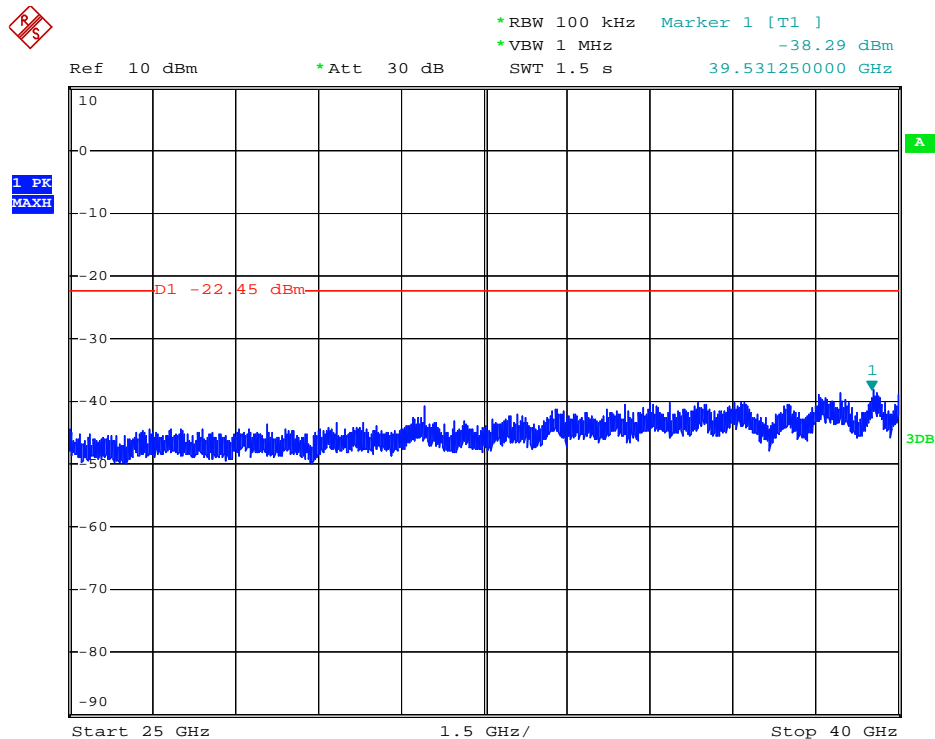
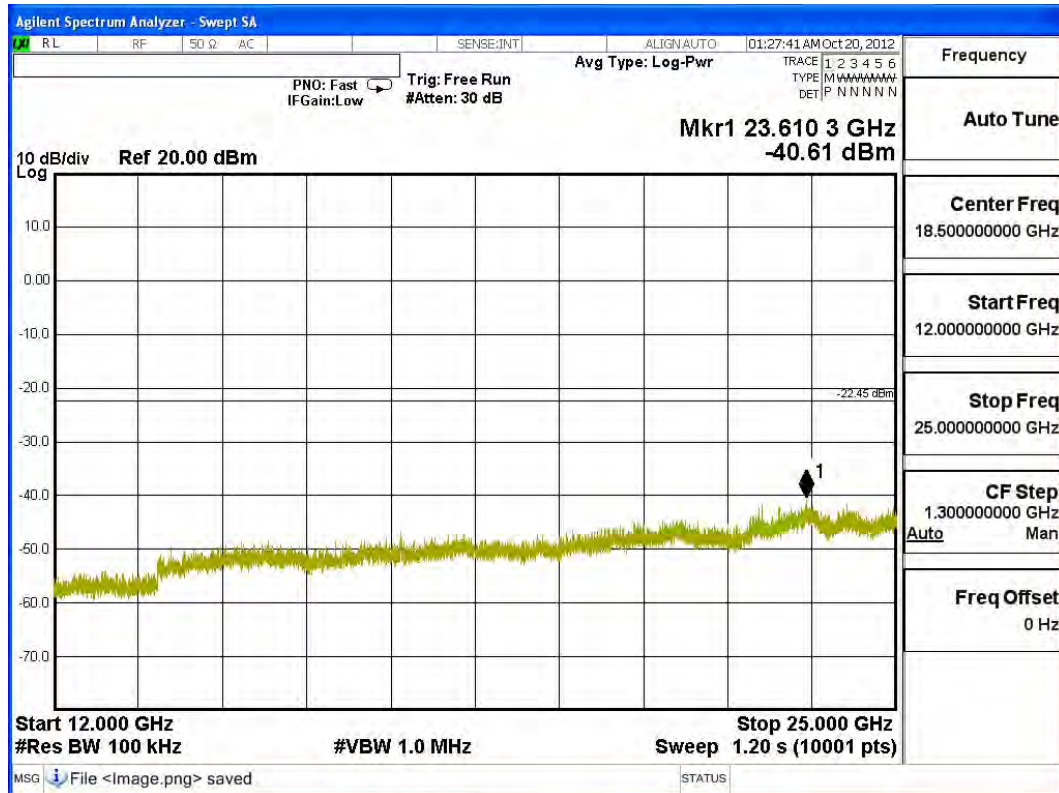




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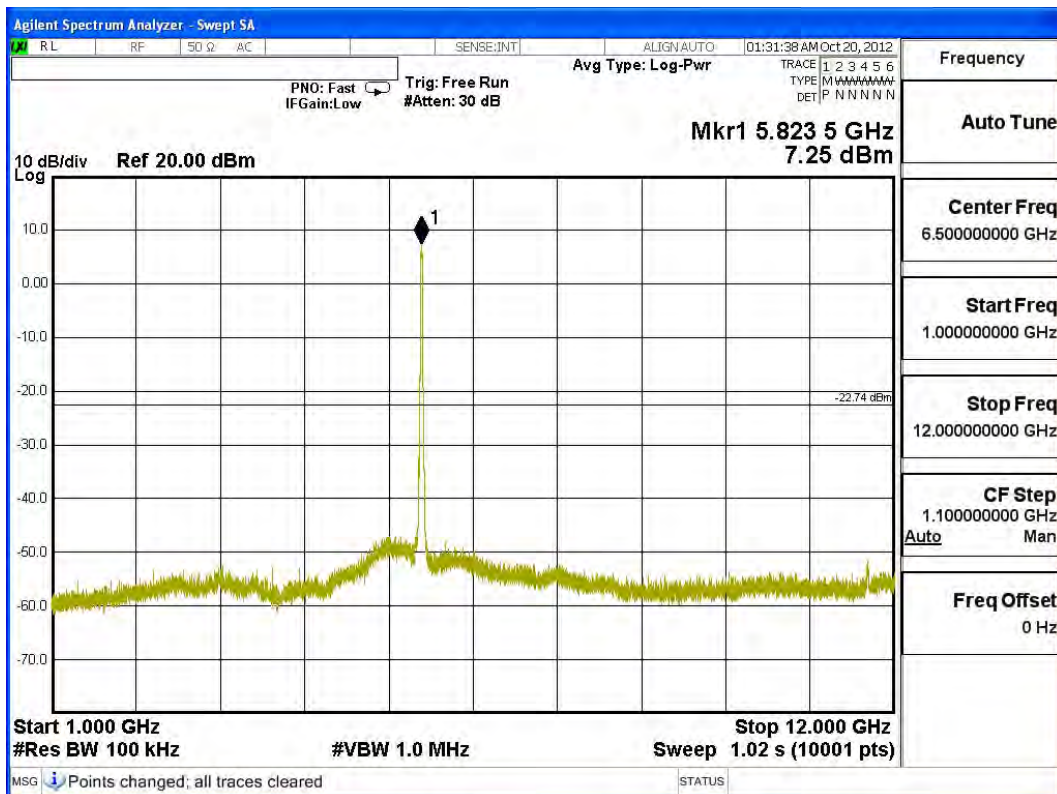
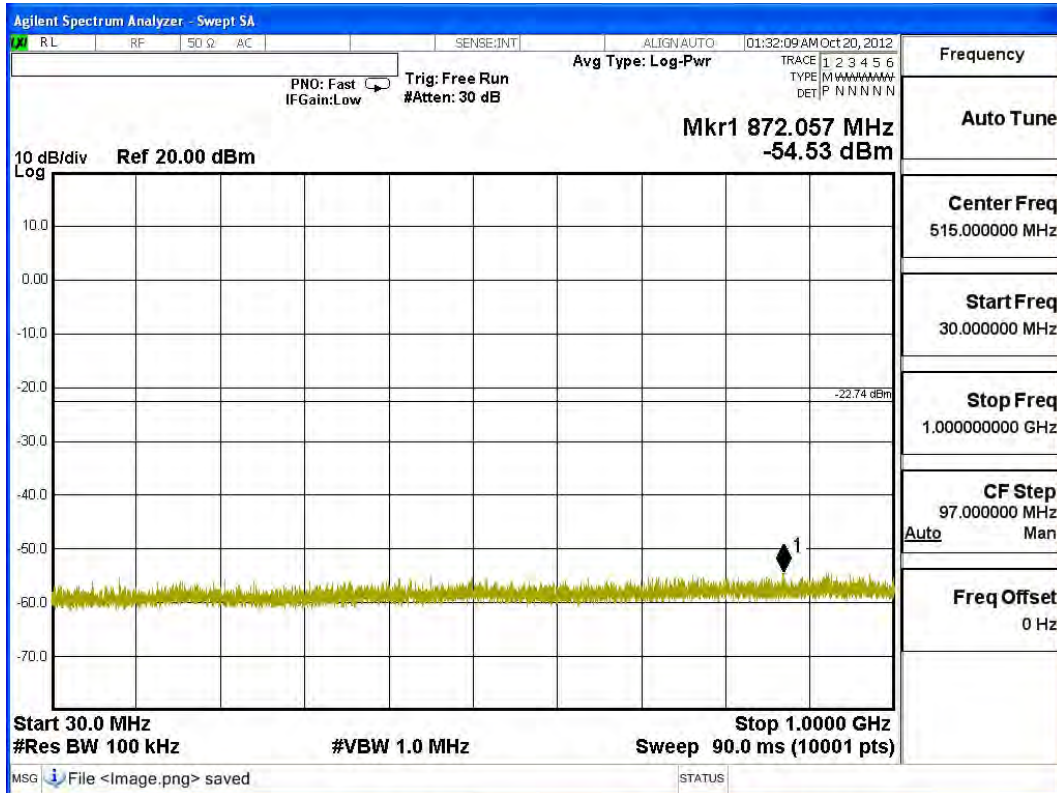
Channel 157 (5785MHz) 30MHz -40GHz-Chain A

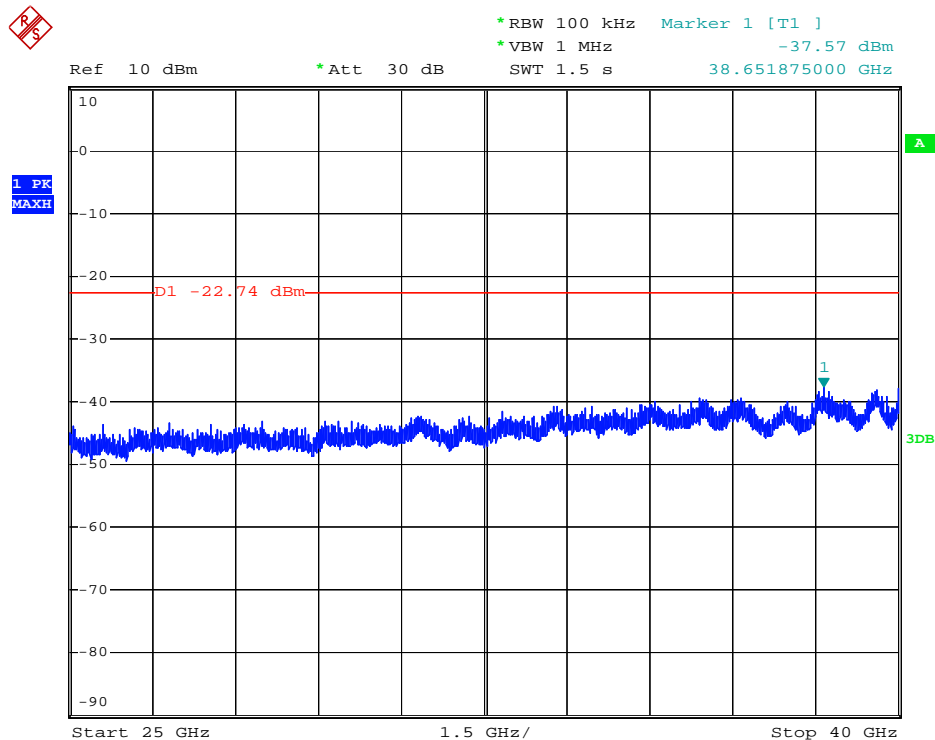
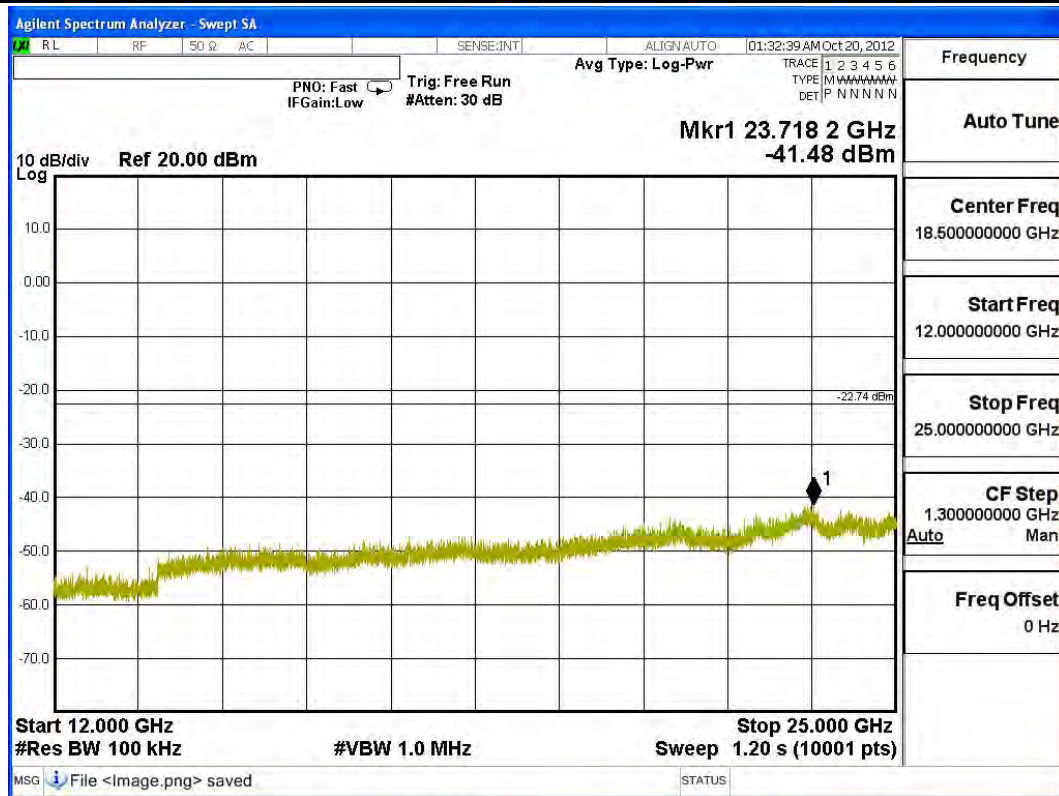




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Channel 165 (5825MHz) 30MHz -40GHz-Chain A





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