Test Report

Product Name	Nport Device Server
Model No	NPort W2250A, NPort W2150A, NPort W2250A-T, NPort W2150A-T
FCC ID.	SLE-W2X50A

Applicant	Moxa Inc.
Address	Fl.4, No. 135, Lane 235, Pao-Chiao Rd., Shing Tien City, Taipei, Taiwan, R.O.C.

Date of Receipt	Apr. 13, 2012
Issue Date	Apr. 24, 2012
Report No.	124312R-RFUSP42V01
Report Version	V1.0

Testing Laboratory
0914

Test Report Certification

Issue Date: Apr. 24, 2012
Report No.: 124312R-RFUSP42V01

Product Name	Nport Device Server
Applicant	Moxa Inc.
Address	Fl.4, No. 135, Lane 235, Pao-Chiao Rd., Shing Tien City, Taipei, Taiwan, R.O.C.
Manufacturer	Moxa Inc.
Model No.	NPort W2250A, NPort W2150A, NPort W2250A-T, NPort W2150A-T
EUT Rated Voltage	AC 110~230V, DC 24V
EUT Test Voltage	AC 120V/60Hz
Trade Name	MOXA
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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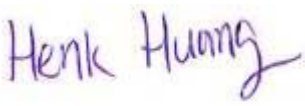
Documented By : 

(Adm. Specialist / Joanne Lin)

Tested By : 

(Engineer / Henk Huang)

Approved By : 

(Manager / Vincent Lin)

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Attachment 1: EUT Test Photographs
Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Nport Device Server
Trade Name	MOXA
Model No.	NPort W2250A, NPort W2150A, NPort W2250A-T, NPort W2150A-T
FCC ID.	SLE-W2X50A
Frequency Range	802.11b/g: 2412-2462MHz 802.11a: 5745-5805MHz
Number of Channels	802.11b/g: 11 802.11a: 4
Data Speed	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps
Channel separation	802.11b/g: 5 MHz, 802.11a: 20MHz
Type of Modulation	802.11b:DSSS DBPSK, DQPSK, CCK 802.11a/g: OFDM BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Dipole
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter (Optional)	MFR: ENG, M/N: 3A-066WP12 Input: AC 100-240V, 50-60Hz, 0.3 A Output: DC 12V, 0.5A Cable Out: Non-Shielded, 1.5m

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	KINSUN	6602D03081	1.21dBi in 2.4GHz 1.73dBi in 5GHz

Note: The antenna of EUT is conform to FCC 15.203

802.11b/g 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 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

Note:

1. This device is a Nport Device Server with a built-in 2.4GHz and 5GHz WLAN transceiver.
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).
4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11a/b/g transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
5. The different of each model is shown as below:

Model Number	Description
NPort W2250A, NPort W2150A	Without extreme temperatures
NPort W2250A-T, NPort W2150A-T	With extreme temperatures

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11a 6Mbps)

1.3. Tested System Details

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

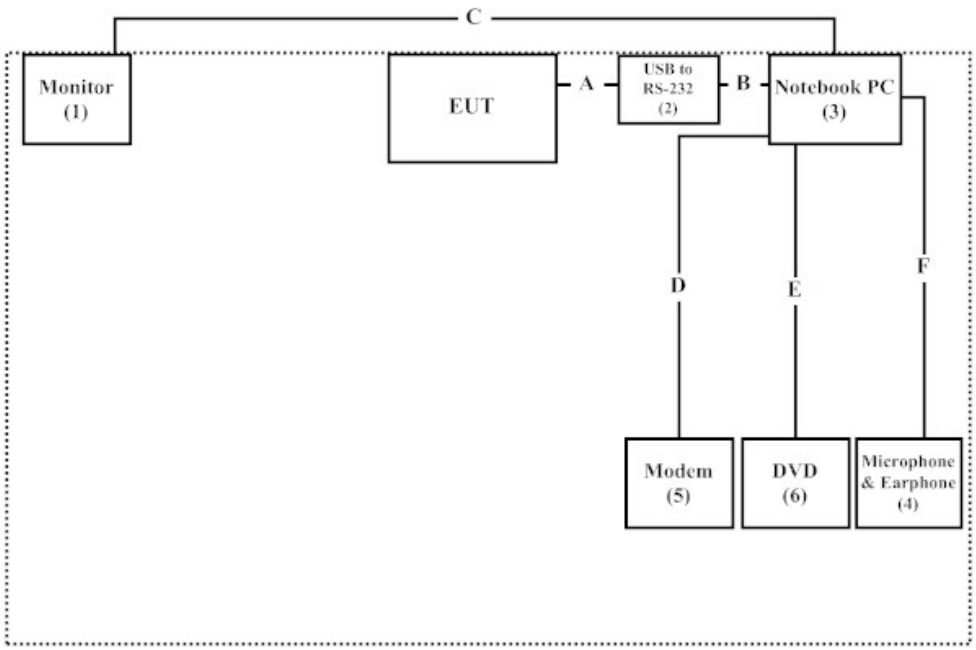
ITEM		AC			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Monitor	LG	W2261VT	907YHZK07373	Non-Shielded, 1.8m
2	USB to RS-232	MOXA	Uport 1150I	N/A	N/A
3	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
4	Microphone & Earphone	PCHOME	N/A	N/A	N/A
5	Modem	ACEEX	DM-1414	0102027558	N/A
6	DVD	DELL	PD01S	N/A	N/A

ITEM		DC			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Monitor	LG	W2261VT	907YHZK07373	Non-Shielded, 1.8m
2	USB to RS-232	MOXA	Uport 1150I	N/A	N/A
3	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
4	Microphone & Earphone	PCHOME	N/A	N/A	N/A
5	Modem	ACEEX	DM-1414	0102027558	N/A
6	DVD	DELL	PD01S	N/A	N/A
7	Power Supply	Agilent	E3646A	N/A	N/A

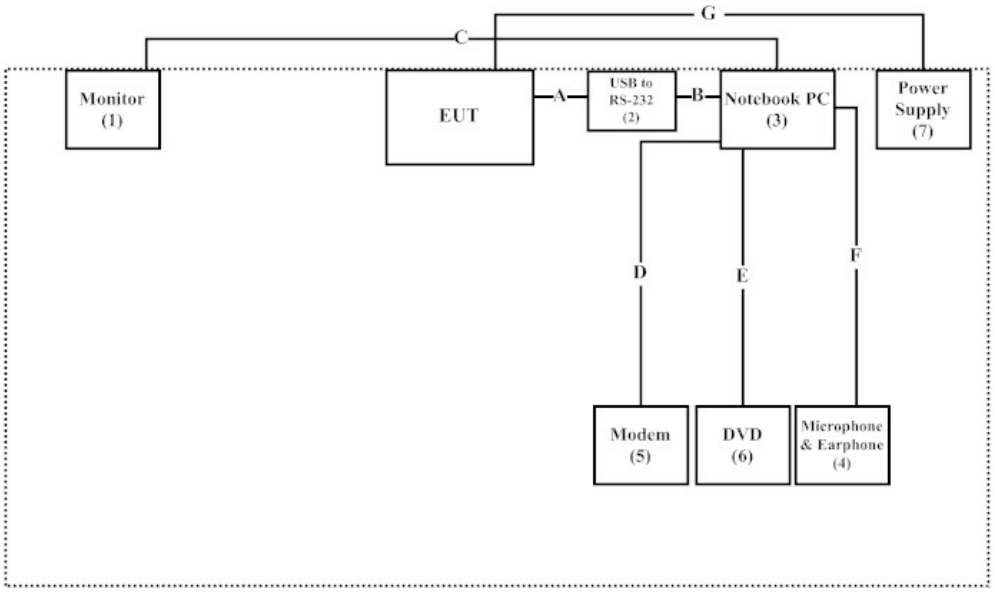
Signal Cable Type		Signal cable Description
A	RS-232 to Single Cable	Non-Shielded, 0.7m
B	USB Cable	Non-Shielded, 1m
C	D-SUB Cable	Non-Shielded, 1.8m, with two ferrite cores bonded.
D	Modem Cable	Non-Shielded, 1.5m
E	DVD Cable	Non-Shielded, 0.5m
F	Microphone & Earphone Cable	Non-Shielded, 1.2m
G	Power Cable	Non-Shielded, 1m

1.4. Configuration of Tested System

AC



DC



1.5. EUT Exercise Software

(1) Connect EUT and Notebook via RS-232 Cable
(2) Execute Telnet program on the Notebook
(3) Configure the test mode, the test channel, and the data rate.
(4) Press “OK” to start the continuous transmission.
(5) 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
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Registration Number: 92195

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

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

FCC Accreditation Number: TW1014

2. Conducted Emission

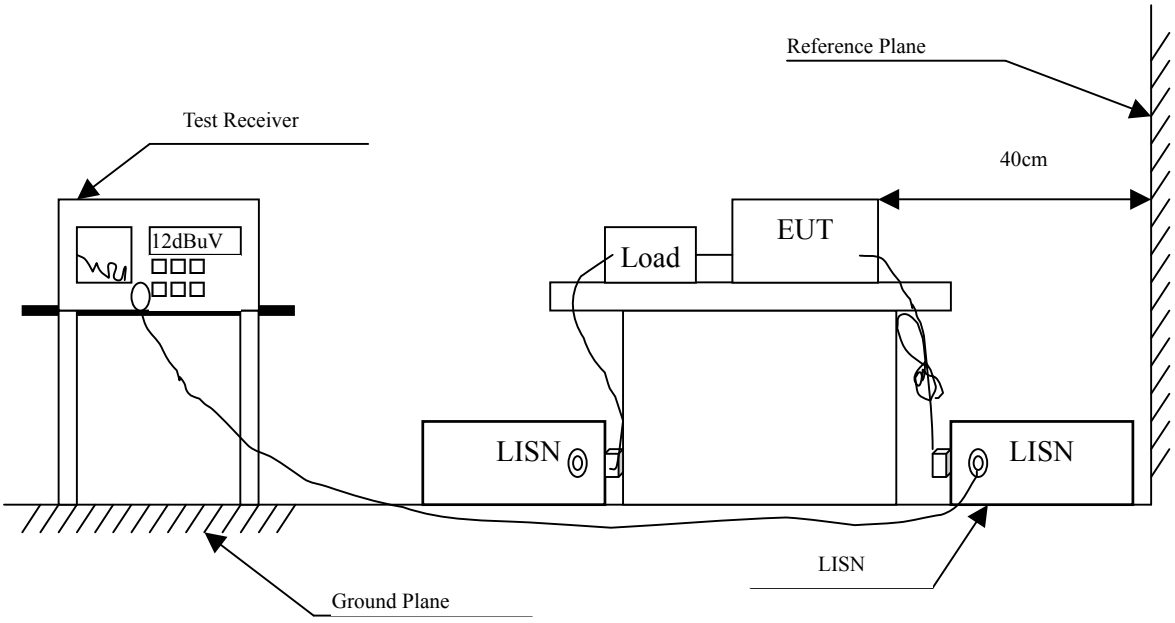
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2011	
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	
X	DC Power Supply	Agilent	E3646A	Mar, 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 : Nport Device Server
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)-AC Power Adapter

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.267	9.840	35.620	45.460	-17.197	62.657
0.494	9.840	44.760	54.600	-1.571	56.171
0.584	9.840	42.640	52.480	-3.520	56.000
1.205	9.850	34.890	44.740	-11.260	56.000
1.916	9.860	33.850	43.710	-12.290	56.000
12.845	10.081	32.650	42.731	-17.269	60.000
Average					
0.267	9.840	27.210	37.050	-15.607	52.657
0.494	9.840	36.280	46.120	-0.051	46.171
0.584	9.840	32.520	42.360	-3.640	46.000
1.205	9.850	24.480	34.330	-11.670	46.000
1.916	9.860	24.410	34.270	-11.730	46.000
12.845	10.081	22.630	32.711	-17.289	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 : Nport Device Server
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)-AC Power Adapter

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.271	9.840	35.450	45.290	-17.253	62.543
0.494	9.840	44.660	54.500	-1.671	56.171
0.537	9.840	44.730	54.570	-1.430	56.000
0.744	9.840	37.520	47.360	-8.640	56.000
4.423	9.880	29.770	39.650	-16.350	56.000
12.548	10.135	31.380	41.515	-18.485	60.000
Average					
0.271	9.840	28.570	38.410	-14.133	52.543
0.494	9.840	35.720	45.560	-0.611	46.171
0.537	9.840	35.070	44.910	-1.090	46.000
0.744	9.840	28.950	38.790	-7.210	46.000
4.423	9.880	20.540	30.420	-15.580	46.000
12.548	10.135	20.890	31.025	-18.975	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 : Nport Device Server
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11a 6Mbps) (5785MHz)-AC Power Adapter

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.271	9.840	36.970	46.810	-15.733	62.543
0.463	9.840	41.510	51.350	-5.707	57.057
0.505	9.840	45.050	54.890	-1.110	56.000
0.970	9.850	39.620	49.470	-6.530	56.000
2.306	9.860	33.880	43.740	-12.260	56.000
13.048	10.085	33.200	43.285	-16.715	60.000
Average					
0.271	9.840	28.930	38.770	-13.773	52.543
0.463	9.840	31.610	41.450	-5.607	47.057
0.505	9.840	35.960	45.800	-0.200	46.000
0.970	9.850	30.110	39.960	-6.040	46.000
2.306	9.860	24.460	34.320	-11.680	46.000
13.048	10.085	21.700	31.785	-18.215	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 : Nport Device Server
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11a 6Mbps) (5785MHz)-AC Power Adapter

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.181	9.840	33.680	43.520	-21.594	65.114
0.505	9.840	44.530	54.370	-1.630	56.000
0.873	9.840	37.040	46.880	-9.120	56.000
1.587	9.850	35.110	44.960	-11.040	56.000
3.837	9.870	31.880	41.750	-14.250	56.000
11.795	10.112	29.440	39.552	-20.448	60.000
Average					
0.181	9.840	27.180	37.020	-18.094	55.114
0.505	9.840	35.170	45.010	-0.990	46.000
0.873	9.840	28.000	37.840	-8.160	46.000
1.587	9.850	25.720	35.570	-10.430	46.000
3.837	9.870	22.260	32.130	-13.870	46.000
11.795	10.112	18.810	28.922	-21.078	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 : Nport Device Server
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)-DC Power Supply

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.470	9.840	25.560	35.400	-21.457	56.857
0.732	9.850	14.590	24.440	-31.560	56.000
2.591	9.860	24.330	34.190	-21.810	56.000
7.537	9.948	21.820	31.768	-28.232	60.000
16.248	10.130	17.600	27.730	-32.270	60.000
23.900	10.150	27.210	37.360	-22.640	60.000
Average					
0.470	9.840	15.500	25.340	-21.517	46.857
0.732	9.850	6.540	16.390	-29.610	46.000
2.591	9.860	23.130	32.990	-13.010	46.000
7.537	9.948	13.540	23.488	-26.512	50.000
16.248	10.130	6.410	16.540	-33.460	50.000
23.900	10.150	24.970	35.120	-14.880	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 : Nport Device Server
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)-DC Power Supply

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.443	9.840	29.560	39.400	-18.229	57.629
0.685	9.840	16.030	25.870	-30.130	56.000
2.591	9.860	23.440	33.300	-22.700	56.000
8.705	10.014	23.890	33.904	-26.096	60.000
16.330	10.240	18.860	29.100	-30.900	60.000
23.896	10.330	28.780	39.110	-20.890	60.000
Average					
0.443	9.840	17.410	27.250	-20.379	47.629
0.685	9.840	7.330	17.170	-28.830	46.000
2.591	9.860	22.470	32.330	-13.670	46.000
8.705	10.014	9.550	19.564	-30.436	50.000
16.330	10.240	8.060	18.300	-31.700	50.000
23.896	10.330	24.890	35.220	-14.780	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 : Nport Device Server
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11a 6Mbps) (5785MHz)-DC Power Supply

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.447	9.840	21.800	31.640	-25.874	57.514
0.713	9.844	12.570	22.414	-33.586	56.000
2.591	9.860	24.800	34.660	-21.340	56.000
7.877	9.956	23.240	33.196	-26.804	60.000
16.584	10.130	18.780	28.910	-31.090	60.000
23.900	10.150	27.250	37.400	-22.600	60.000
Average					
0.447	9.840	12.670	22.510	-25.004	47.514
0.713	9.844	4.800	14.644	-31.356	46.000
2.591	9.860	24.480	34.340	-11.660	46.000
7.877	9.956	11.710	21.666	-28.334	50.000
16.584	10.130	7.120	17.250	-32.750	50.000
23.900	10.150	25.040	35.190	-14.810	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 : Nport Device Server
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11a 6Mbps) (5785MHz)-DC Power Supply

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.224	9.840	21.270	31.110	-32.776	63.886
0.459	9.840	28.160	38.000	-19.171	57.171
0.697	9.840	19.920	29.760	-26.240	56.000
2.595	9.860	23.200	33.060	-22.940	56.000
8.541	10.011	22.620	32.631	-27.369	60.000
23.896	10.330	28.720	39.050	-20.950	60.000
Average					
0.224	9.840	21.230	31.070	-22.816	53.886
0.459	9.840	18.070	27.910	-19.261	47.171
0.697	9.840	10.540	20.380	-25.620	46.000
2.595	9.860	22.420	32.280	-13.720	46.000
8.541	10.011	8.820	18.831	-31.169	50.000
23.896	10.330	24.970	35.300	-14.700	50.000

Note:

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

3. Peak Power Output

3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2011
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2011
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2011
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2011
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

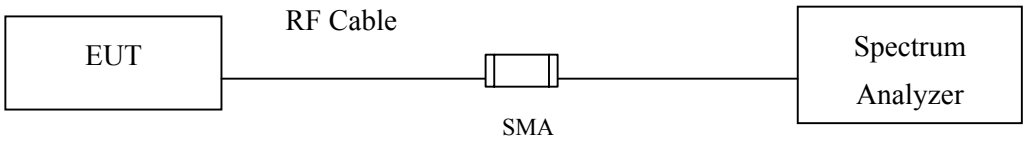
Note:

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

3.2. Test Setup

Average Power For different Data Rate (Mbps)

Peak Power Measurement



3.3. Limits

The maximum peak power shall be less 1 Watt.

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 Peak Power Output

Product : Nport Device Server
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	15.34	--	--	--	17.29	<30dBm	Pass
06	2437	15.23	15.21	15.14	15.12	17.46	<30dBm	Pass
11	2462	14.61	--	--	--	16.95	<30dBm	Pass

Note:
1. Peak Power Output Value =Reading value on Spectrum Analyzer + cable loss
   (Use the spectrum analyzer's integrated channel power measurement function)
2. Average Power for different data rate = Reading value on Power Meter +cable loss

Figure Channel 1:

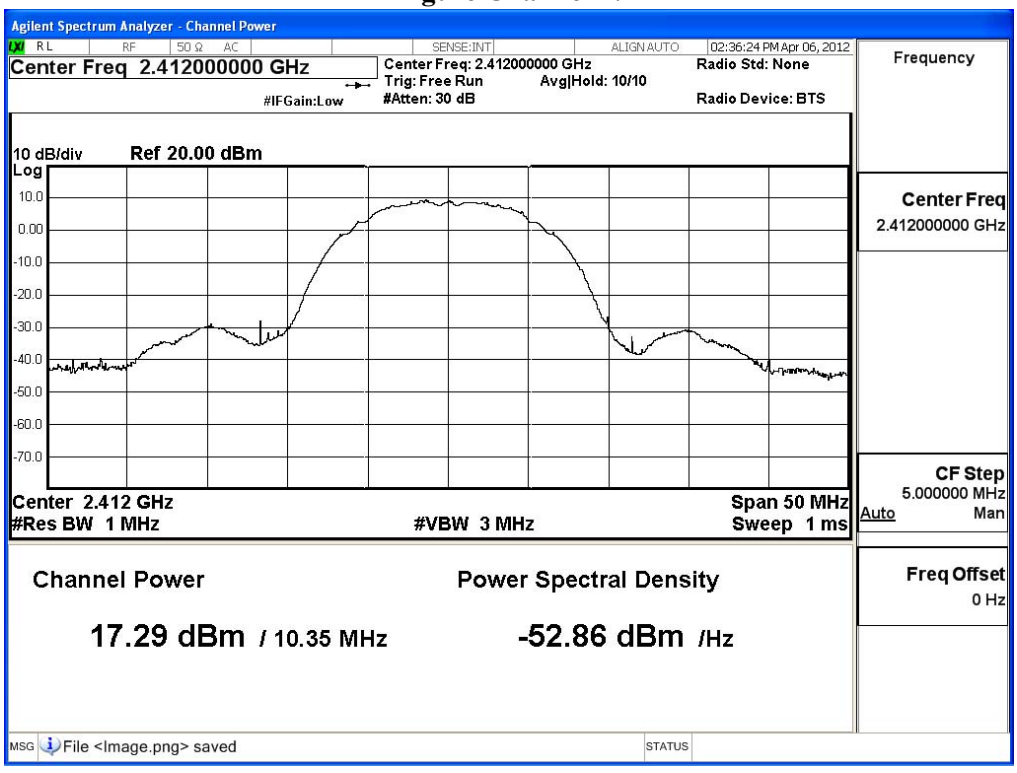


Figure Channel 6:

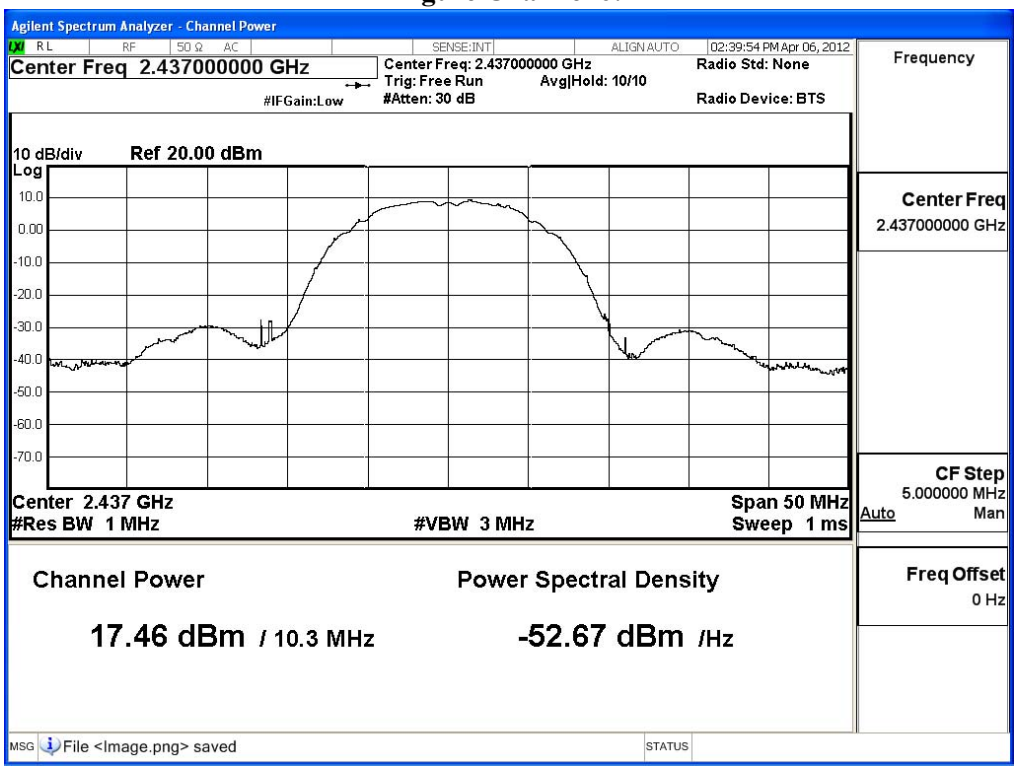
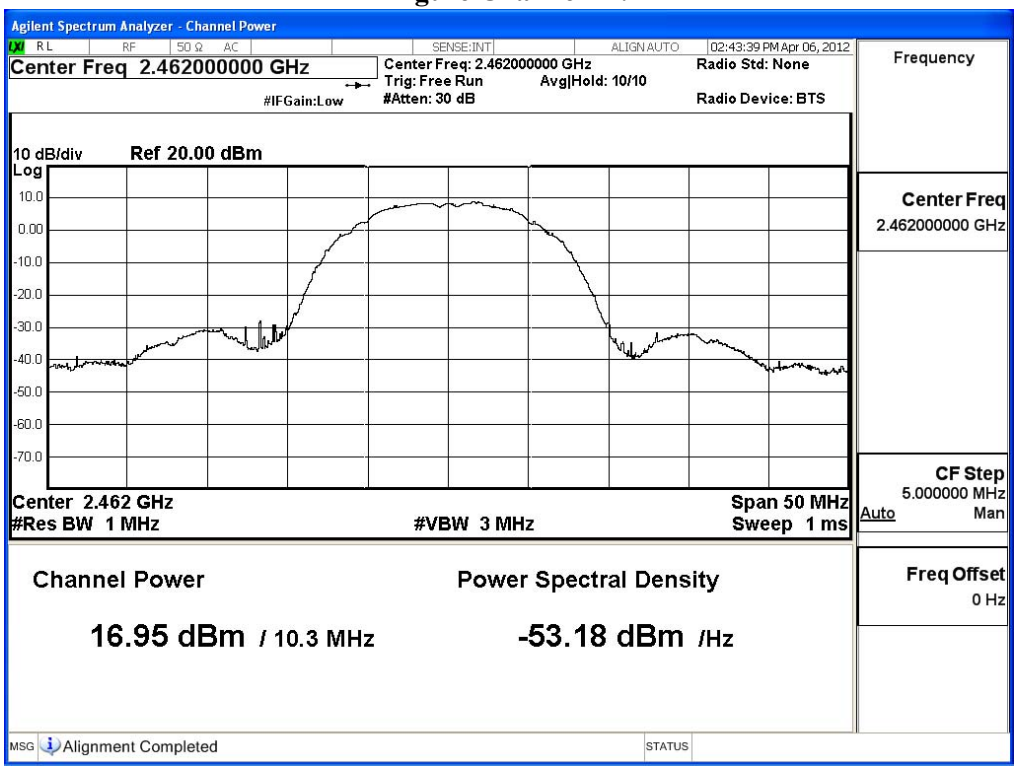


Figure Channel 11:



Product : Nport Device Server
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	12.71	--	--	--	--	--	--	--	19.62	<30dBm	Pass
06	2437	14.58	14.57	14.51	14.49	14.47	14.44	14.43	14.39	21.99	<30dBm	Pass
11	2462	12.56	--	--	--	--	--	--	--	19.25	<30dBm	Pass

Note:
1. Peak Power Output Value =Reading value on Spectrum Analyzer + cable loss
   (Use the spectrum analyzer's integrated channel power measurement function)
2. Average Power for different data rate = Reading value on Power Meter +cable loss

Figure Channel 1:

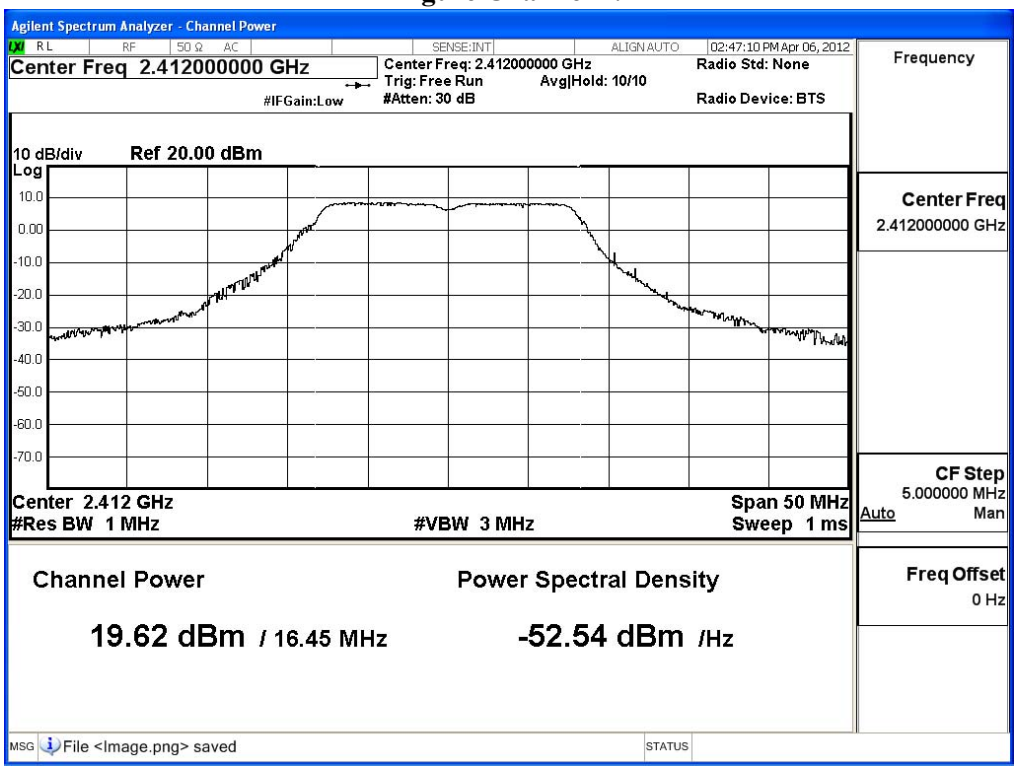


Figure Channel 6:

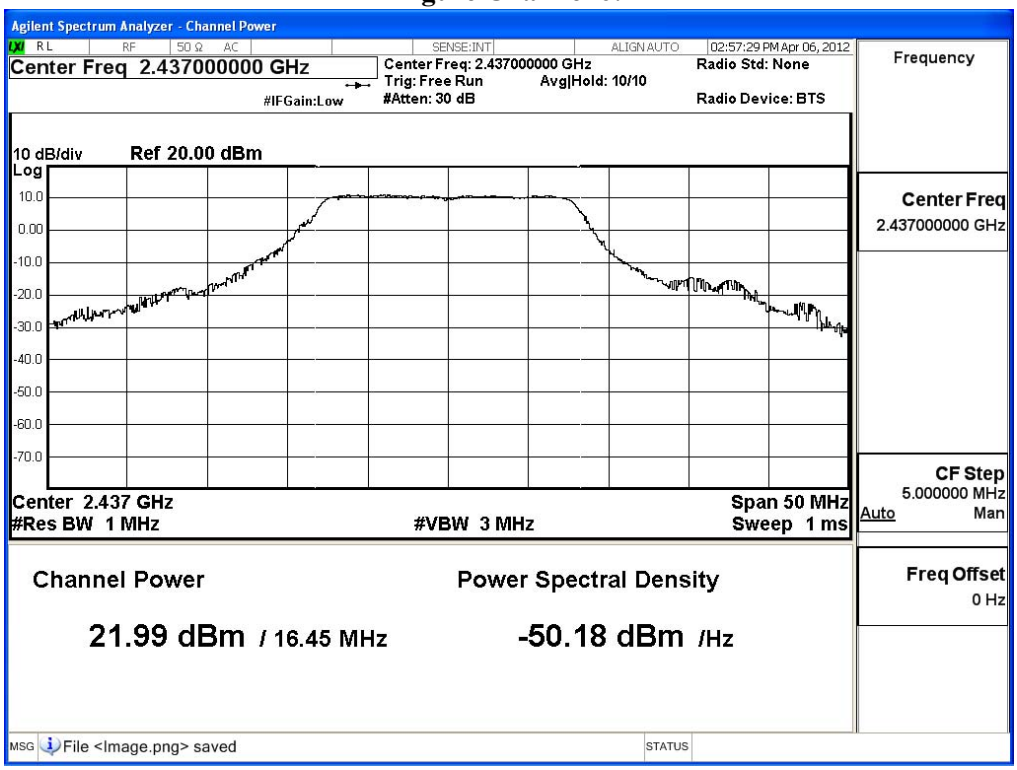
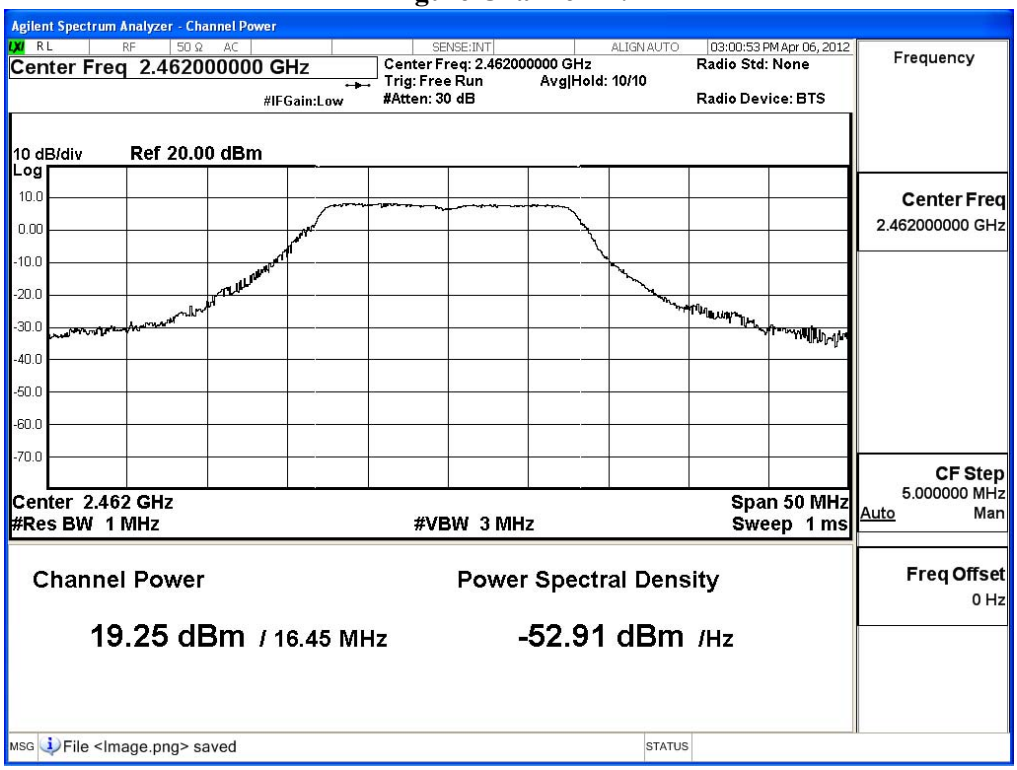


Figure Channel 11:



Product : Nport Device Server
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11a 6Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
149	5745	13.35	--	--	--	--	--	--	--	19.75	<30dBm	Pass
157	5785	15.59	15.55	15.48	15.41	15.39	15.37	15.33	15.31	19.65	<30dBm	Pass
165	5805	13.21	--	--	--	--	--	--	--	19.37	<30dBm	Pass

Note:
1. Peak Power Output Value =Reading value on Spectrum Analyzer + cable loss
   (Use the spectrum analyzer's integrated channel power measurement function)
2. Average Power for different data rate = Reading value on Power Meter +cable loss

Figure Channel 149:

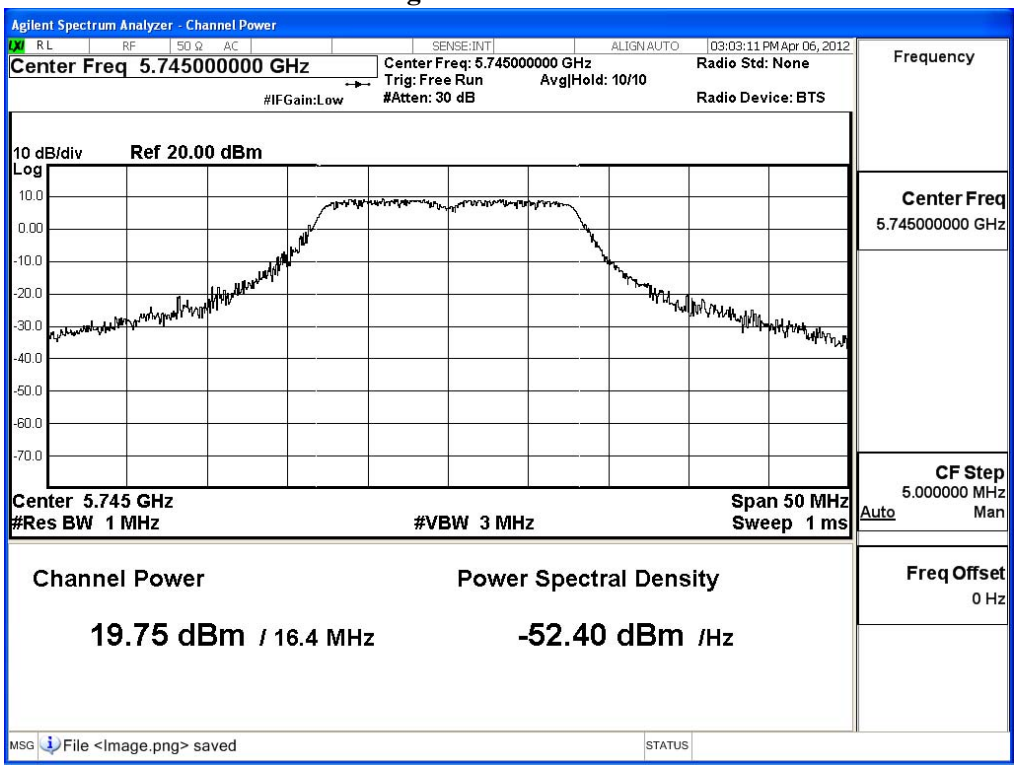


Figure Channel 157:

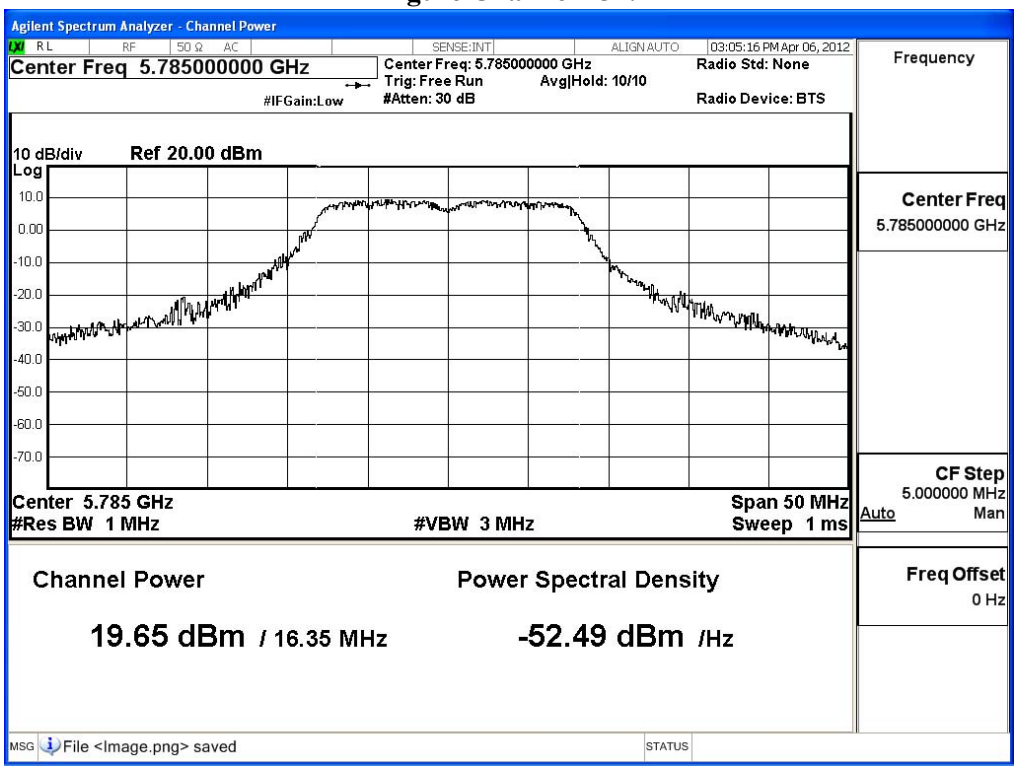
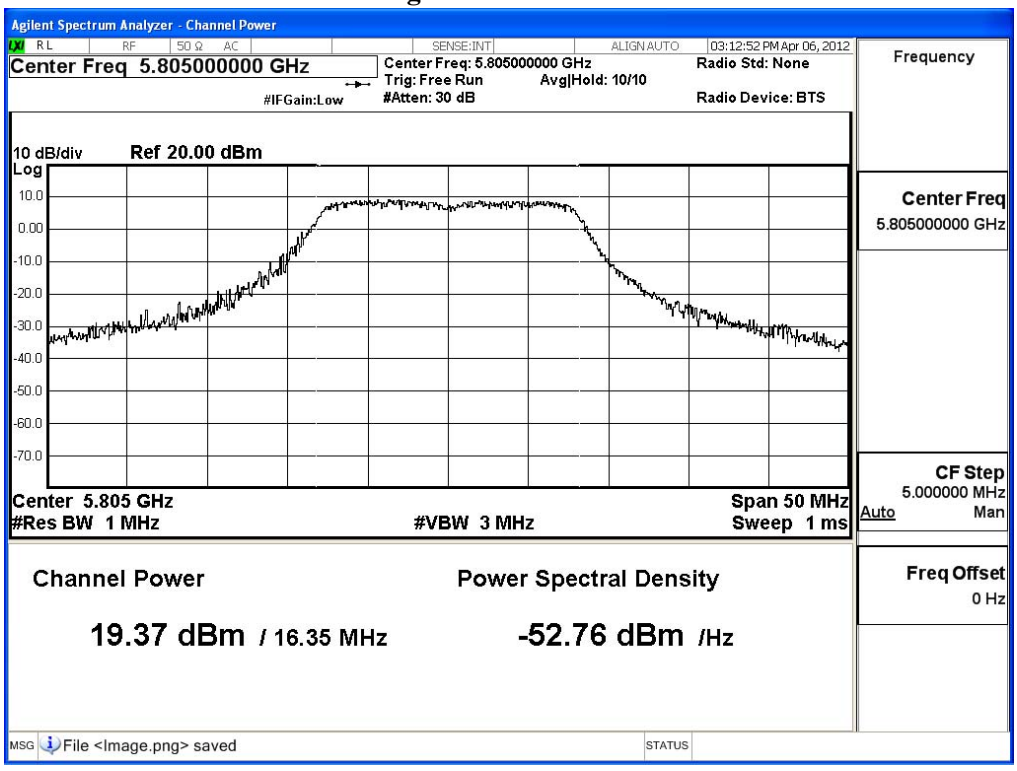


Figure Channel 165:



4. Radiated Emission

4.1. Test Equipment

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

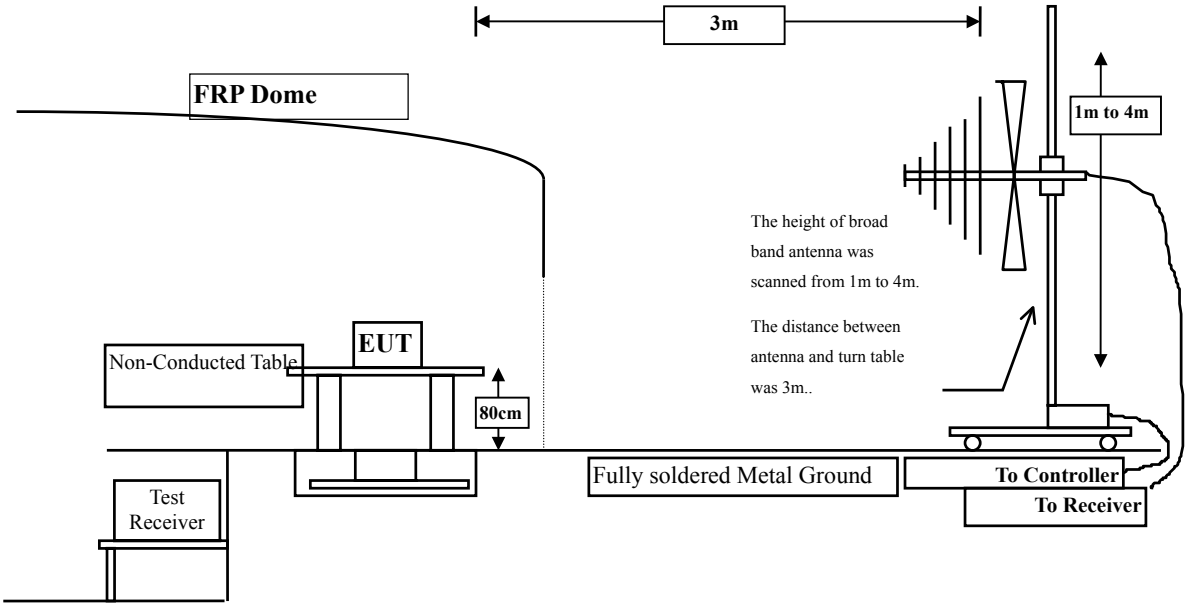
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2011
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2011
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2011
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2011
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2011
	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.

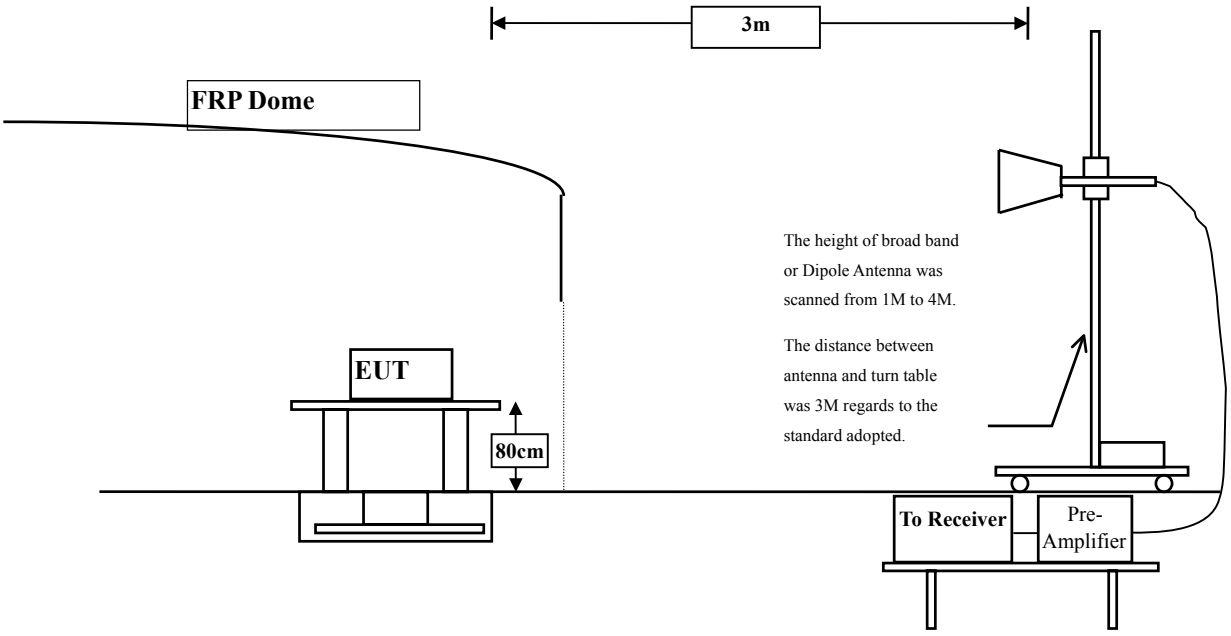
2. The test instruments marked with "X" are used to measure the final test results.

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 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	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 form 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 : Nport Device Server
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	37.880	41.141	-32.859	74.000
7236.000	10.650	36.770	47.420	-26.580	74.000
9648.000	13.337	36.260	49.596	-24.404	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	38.930	45.351	-28.649	74.000
7236.000	11.495	37.730	49.225	-24.775	74.000
9648.000	13.807	37.430	51.236	-22.764	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 : Nport Device Server
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.510	40.547	-33.453	74.000
7311.000	11.795	35.350	47.144	-26.856	74.000
9748.000	12.635	36.650	49.285	-24.715	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	37.960	43.771	-30.229	74.000
7311.000	12.630	36.750	49.379	-24.621	74.000
9748.000	13.126	36.890	50.016	-23.984	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 : Nport Device Server
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	37.740	40.597	-33.403	74.000
7386.000	12.127	35.180	47.308	-26.692	74.000
9848.000	12.852	36.380	49.233	-24.767	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	39.290	44.810	-29.190	74.000
7386.000	13.254	35.830	49.084	-24.916	74.000
9848.000	13.367	36.980	50.347	-23.653	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 : Nport Device Server
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	37.560	40.821	-33.179	74.000
7236.000	10.650	36.850	47.500	-26.500	74.000
9648.000	13.337	36.610	49.946	-24.054	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	37.840	44.261	-29.739	74.000
7236.000	11.495	37.550	49.045	-24.955	74.000
9648.000	13.807	35.890	49.696	-24.304	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 : Nport Device Server
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.300	40.337	-33.663	74.000
7311.000	11.795	35.880	47.674	-26.326	74.000
9748.000	12.635	36.470	49.105	-24.895	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	38.080	43.891	-30.109	74.000
7311.000	12.630	35.190	47.819	-26.181	74.000
9748.000	13.126	36.440	49.566	-24.434	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 : Nport Device Server
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	37.470	40.327	-33.673	74.000
7386.000	12.127	35.040	47.168	-26.832	74.000
9848.000	12.852	36.530	49.383	-24.617	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	37.900	43.420	-30.580	74.000
7386.000	13.254	35.620	48.874	-25.126	74.000
9848.000	13.367	36.750	50.117	-23.883	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 : Nport Device Server
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11a 6Mbps) (5745 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	17.106	35.680	52.787	-21.213	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11490.000	18.034	35.540	53.575	-20.425	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 : Nport Device Server
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11a 6Mbps) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11570.000	16.809	35.300	52.109	-21.891	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11570.000	17.698	35.055	52.753	-21.247	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 : Nport Device Server
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11a 6Mbps) (5805 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11610.000	16.554	34.350	50.903	-23.097	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11610.000	17.460	34.570	52.030	-21.970	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 : Nport Device Server
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)-AC Power Adapter

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
109.540	-7.488	42.721	35.233	-8.267	43.500
198.780	-10.661	44.531	33.870	-9.630	43.500
348.160	-2.268	42.856	40.588	-5.412	46.000
608.120	4.384	36.954	41.338	-4.662	46.000
767.200	4.235	32.312	36.547	-9.453	46.000
996.120	7.669	37.811	45.480	-8.520	54.000
Vertical					
146.400	-6.248	41.858	35.610	-7.890	43.500
276.380	-8.653	43.650	34.997	-11.003	46.000
501.420	-0.795	37.378	36.583	-9.417	46.000
776.900	2.373	34.467	36.840	-9.160	46.000
866.140	0.656	30.257	30.913	-15.087	46.000
967.020	8.071	27.390	35.461	-18.539	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 : Nport Device Server
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)-AC Power Adapter

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
109.540	-7.488	42.664	35.176	-8.324	43.500
276.380	-5.783	44.245	38.462	-7.538	46.000
348.160	-2.268	42.247	39.979	-6.021	46.000
516.940	1.654	37.372	39.026	-6.974	46.000
740.040	3.183	33.988	37.171	-8.829	46.000
932.100	6.922	27.598	34.520	-11.480	46.000
Vertical					
119.240	-3.541	35.892	32.351	-11.149	43.500
276.380	-8.653	44.068	35.415	-10.585	46.000
383.080	-2.184	33.176	30.992	-15.008	46.000
542.160	-0.269	36.960	36.691	-9.309	46.000
747.800	2.166	35.244	37.410	-8.590	46.000
932.100	6.152	29.082	35.234	-10.766	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 : Nport Device Server
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11a 6Mbps) (5785MHz)-AC Power Adapter

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
109.540	-7.488	43.145	35.657	-7.843	43.500
260.860	-5.032	42.952	37.920	-8.080	46.000
421.880	-3.214	36.480	33.266	-12.734	46.000
600.360	3.977	36.608	40.585	-5.415	46.000
771.080	4.215	33.654	37.869	-8.131	46.000
924.340	6.240	25.683	31.923	-14.077	46.000
Vertical					
92.080	-3.339	38.021	34.682	-8.818	43.500
198.780	-8.221	43.986	35.765	-7.735	43.500
377.260	-1.765	34.590	32.825	-13.175	46.000
509.180	-0.158	36.325	36.167	-9.833	46.000
683.780	1.968	31.848	33.816	-12.184	46.000
932.100	6.152	30.362	36.514	-9.486	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 : Nport Device Server
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)-DC Power Supply

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
154.160	-10.091	47.959	37.868	-5.632	43.500
293.840	-3.868	39.087	35.220	-10.780	46.000
447.100	-2.726	42.125	39.399	-6.601	46.000
584.840	3.391	37.597	40.988	-5.012	46.000
689.600	3.628	36.134	39.762	-6.238	46.000
821.520	5.961	35.611	41.572	-4.428	46.000
Vertical					
117.300	-3.106	41.729	38.623	-4.877	43.500
255.040	-7.648	44.324	36.676	-9.324	46.000
365.620	-2.179	39.622	37.443	-8.557	46.000
705.120	0.115	40.740	40.855	-5.145	46.000
821.520	3.381	32.714	36.095	-9.905	46.000
970.900	7.302	29.176	36.478	-17.522	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 : Nport Device Server
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)-DC Power Supply

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
198.780	-10.661	47.841	37.180	-6.320	43.500
365.620	-1.329	42.137	40.808	-5.192	46.000
460.680	1.589	39.651	41.240	-4.760	46.000
604.240	4.770	38.544	43.314	-2.686	46.000
776.900	4.183	36.406	40.589	-5.411	46.000
998.060	8.386	35.511	43.897	-10.103	54.000
Vertical					
132.820	-4.440	39.794	35.354	-8.146	43.500
307.420	-6.821	41.816	34.995	-11.005	46.000
398.600	-4.678	35.280	30.602	-15.398	46.000
577.080	-5.661	39.006	33.345	-12.655	46.000
784.660	3.012	32.675	35.687	-10.313	46.000
932.100	6.152	30.126	36.278	-9.722	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 : Nport Device Server
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11a 6Mbps) (5785 MHz)-DC Power Supply

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
198.780	-10.661	46.288	35.627	-7.873	43.500
369.500	-1.098	40.327	39.229	-6.771	46.000
450.980	-1.756	42.222	40.467	-5.533	46.000
577.080	3.169	39.278	42.447	-3.553	46.000
691.540	3.681	36.098	39.779	-6.221	46.000
827.340	6.302	33.406	39.708	-6.292	46.000
Vertical					
138.640	-5.795	38.394	32.599	-10.901	43.500
274.440	-8.718	46.477	37.759	-8.241	46.000
520.820	-0.298	34.447	34.149	-11.851	46.000
687.660	2.444	35.153	37.597	-8.403	46.000
790.480	2.913	33.240	36.152	-9.848	46.000
926.280	5.821	29.506	35.327	-10.673	46.000

Note:

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

5. RF antenna conducted test

5.1. Test Equipment

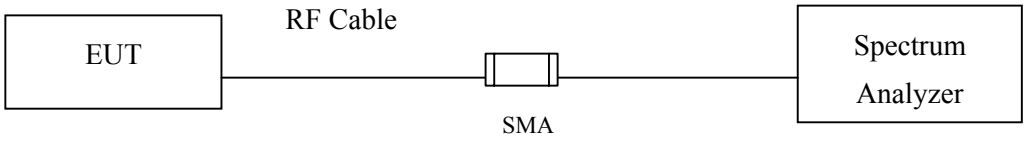
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2011
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2011
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

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 20 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.

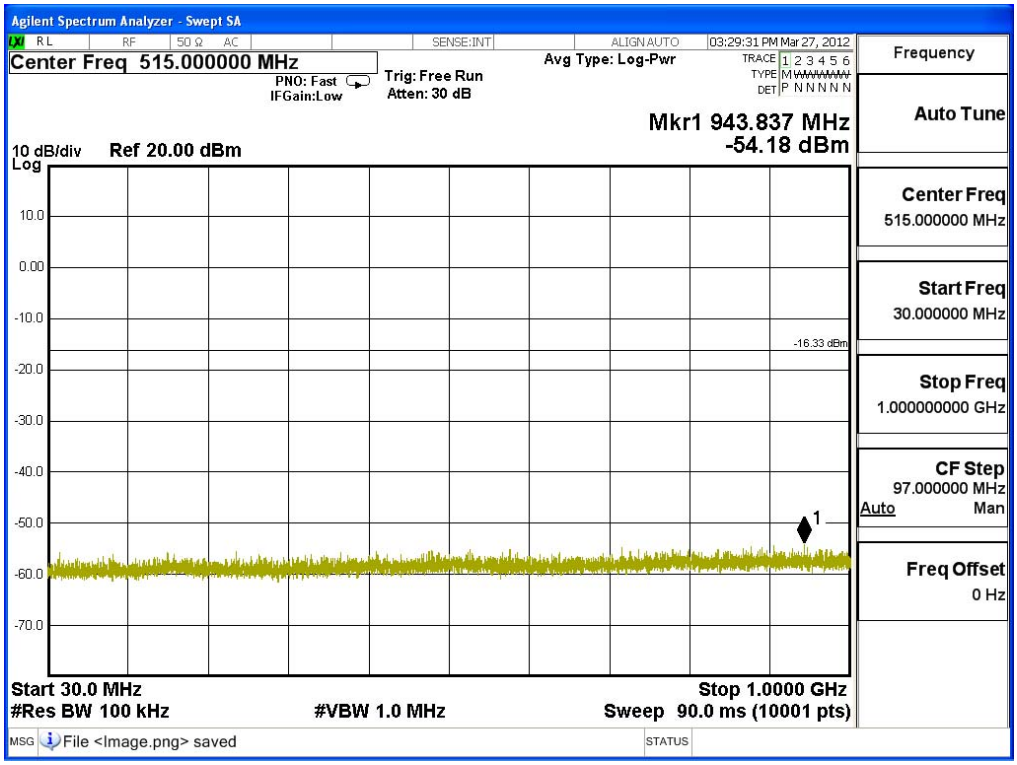
5.5. Uncertainty

The measurement uncertainty
Conducted is defined as ± 1.27dB

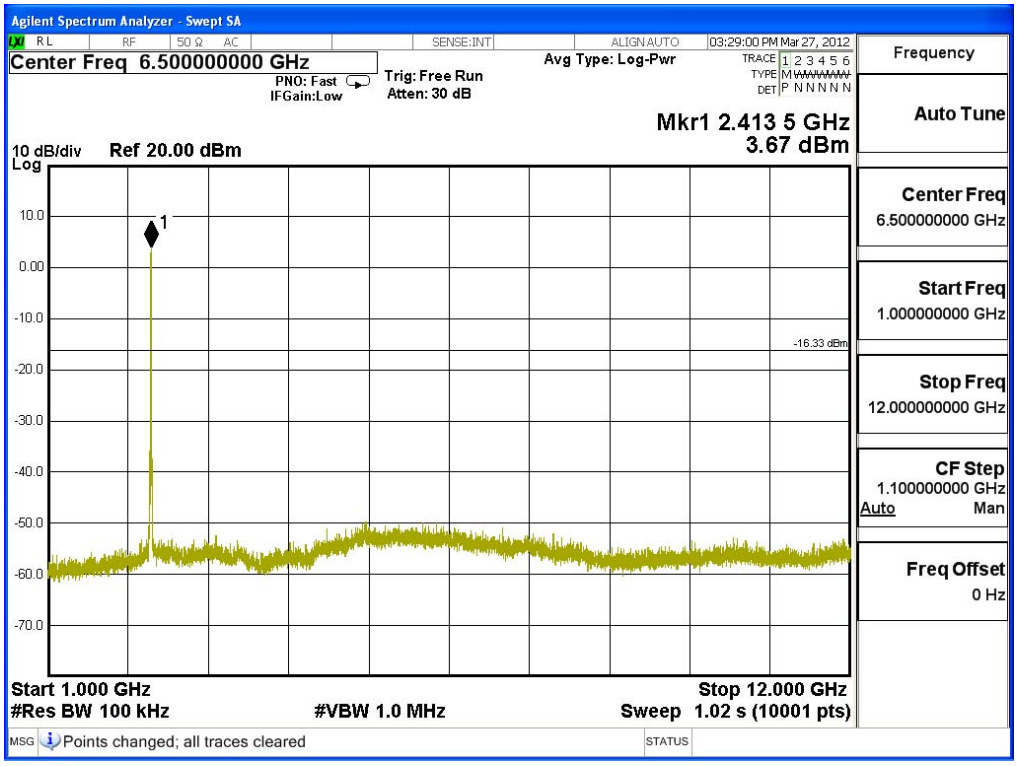
5.6. Test Result of RF antenna conducted test

Product : Nport Device Server
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

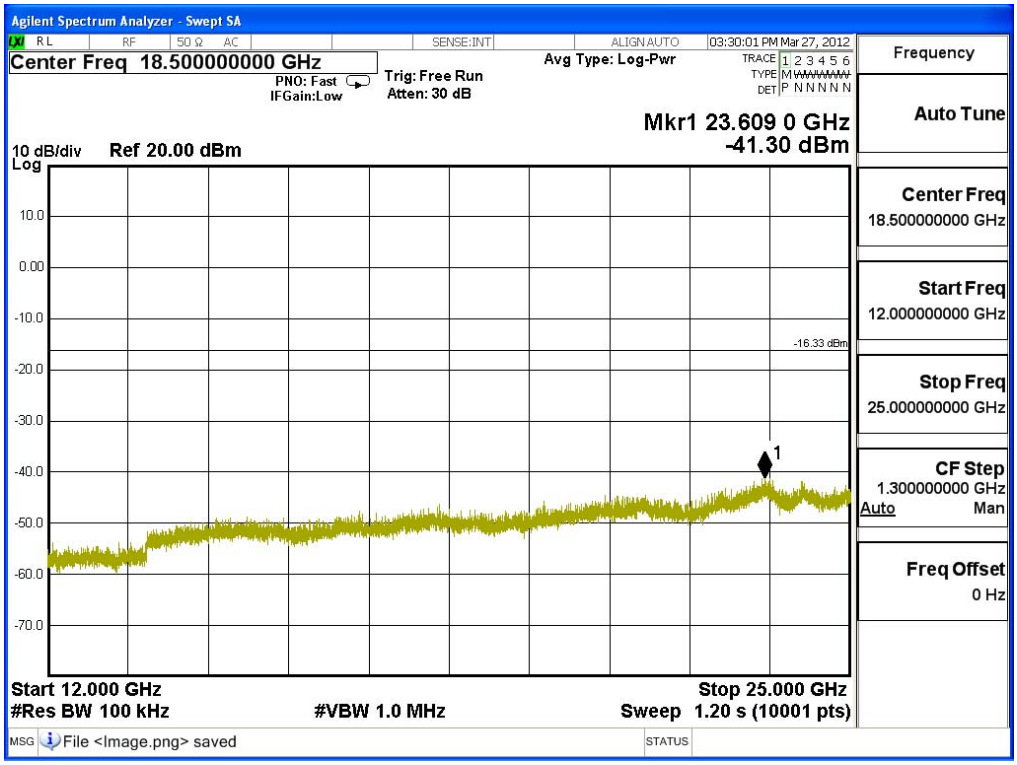
Channel 01 (2412MHz) 30MHz-1GHz



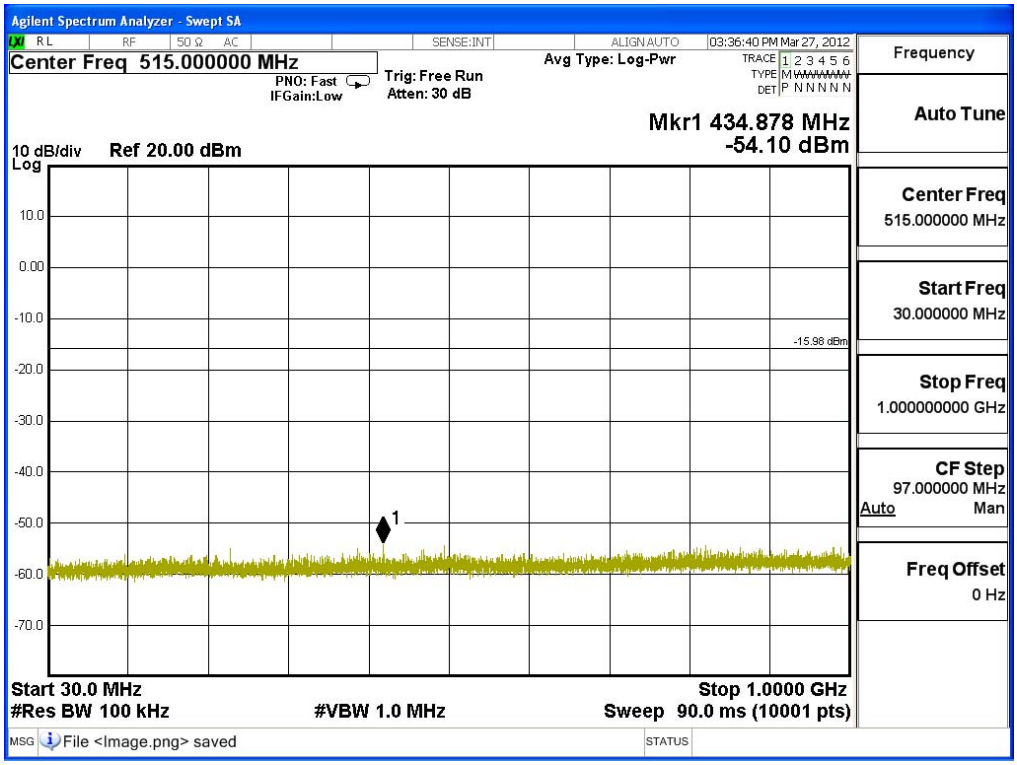
Channel 01 (2412MHz) 1GHz-12GHz



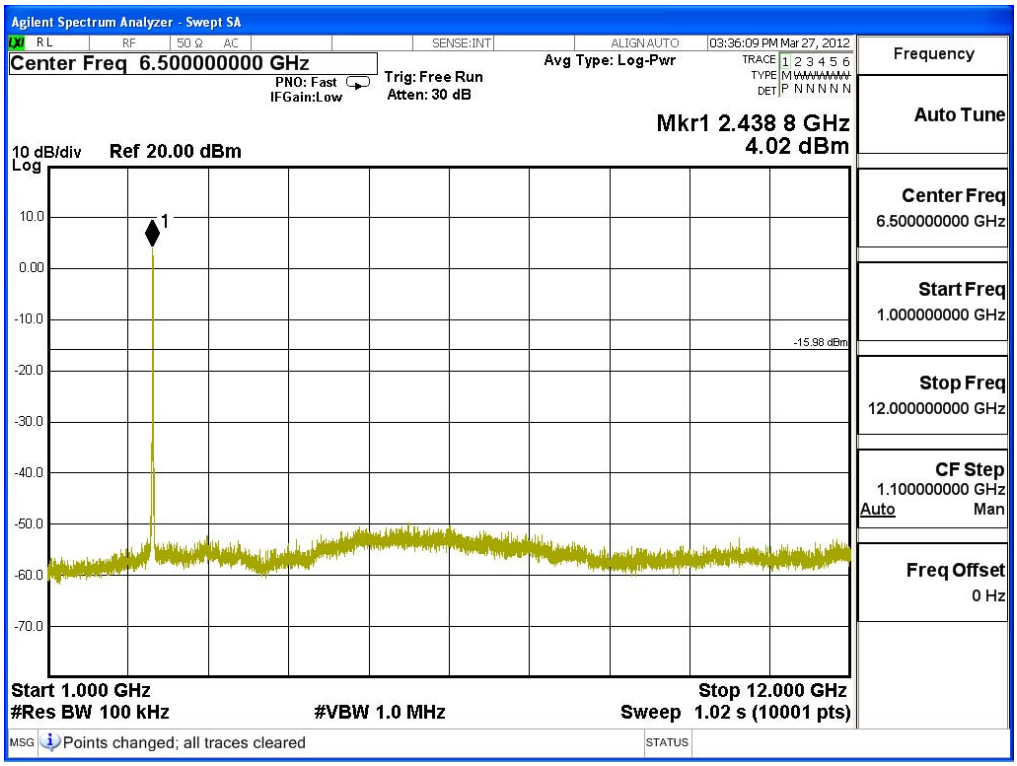
Channel 01 (2412MHz) 12GHz-25GHz



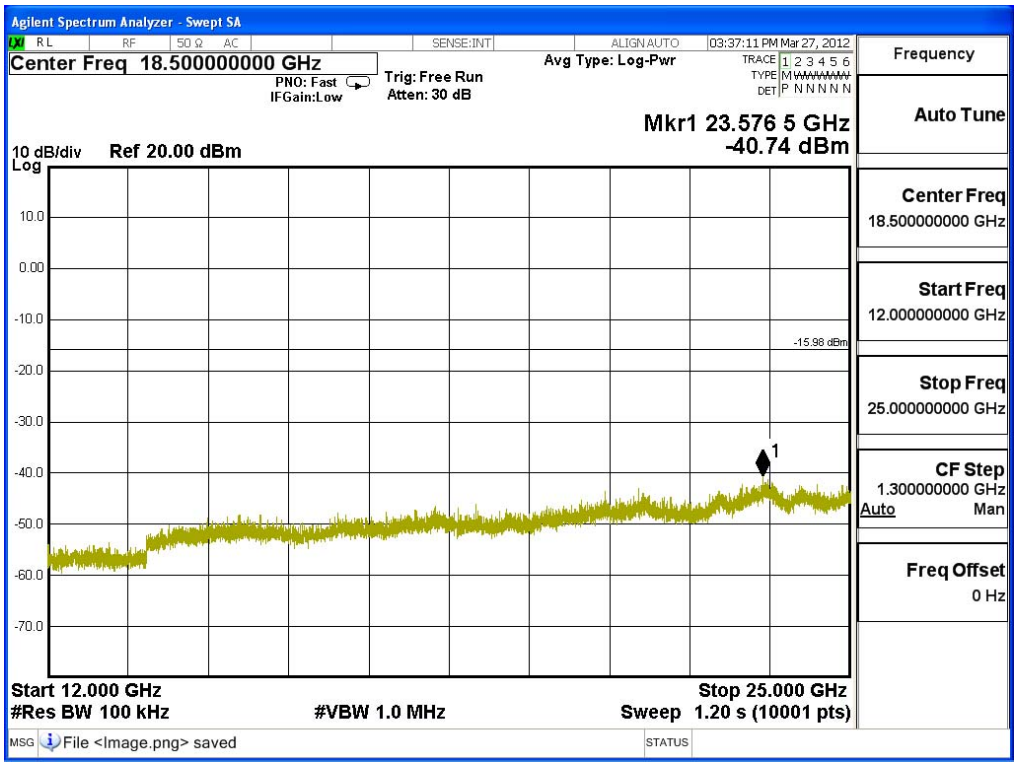
Channel 06 (2437MHz) 30MHz -1GHz



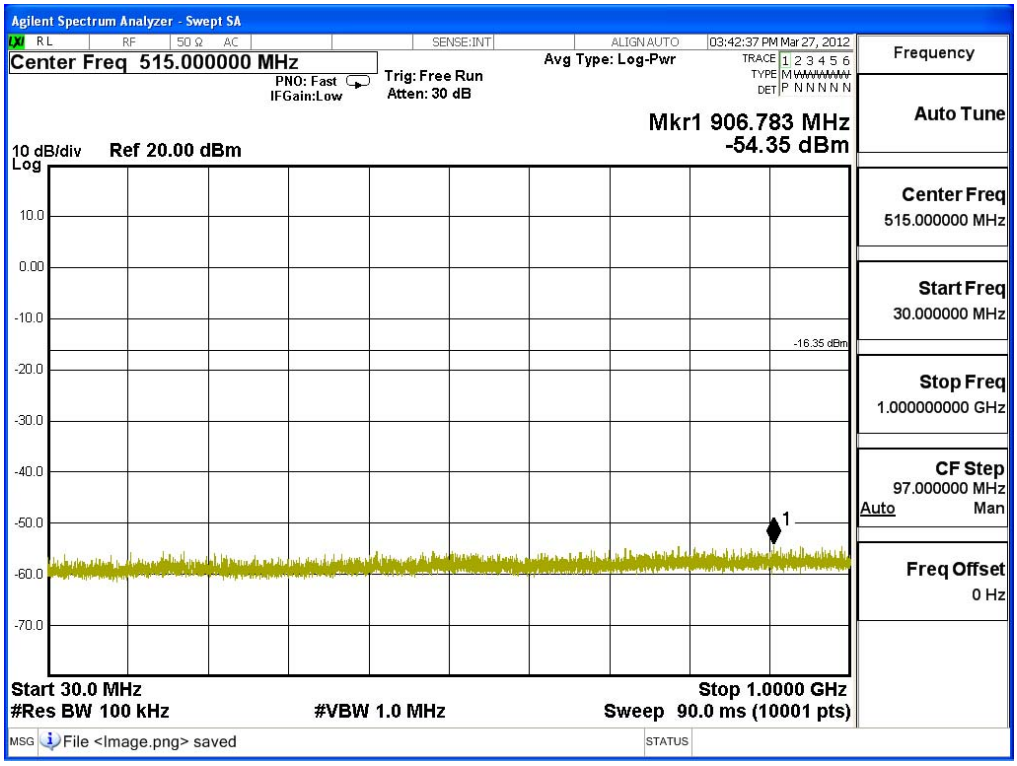
Channel 06 (2437MHz) 1GHz -12GHz



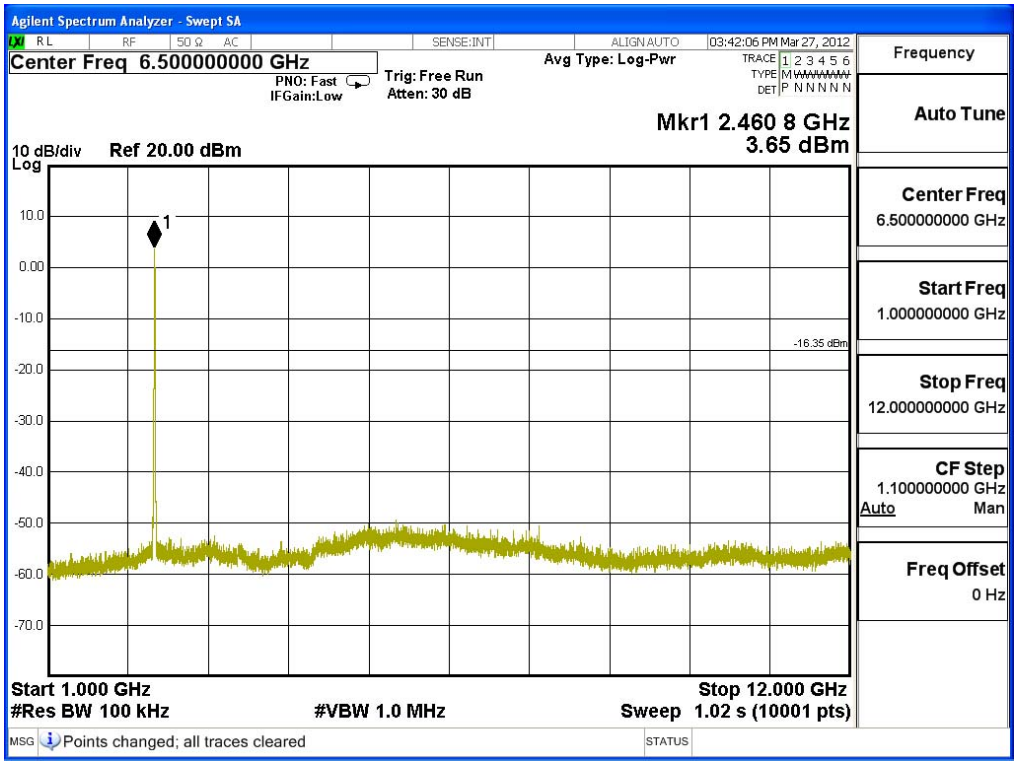
Channel 06 (2437MHz) 12GHz -25GHz



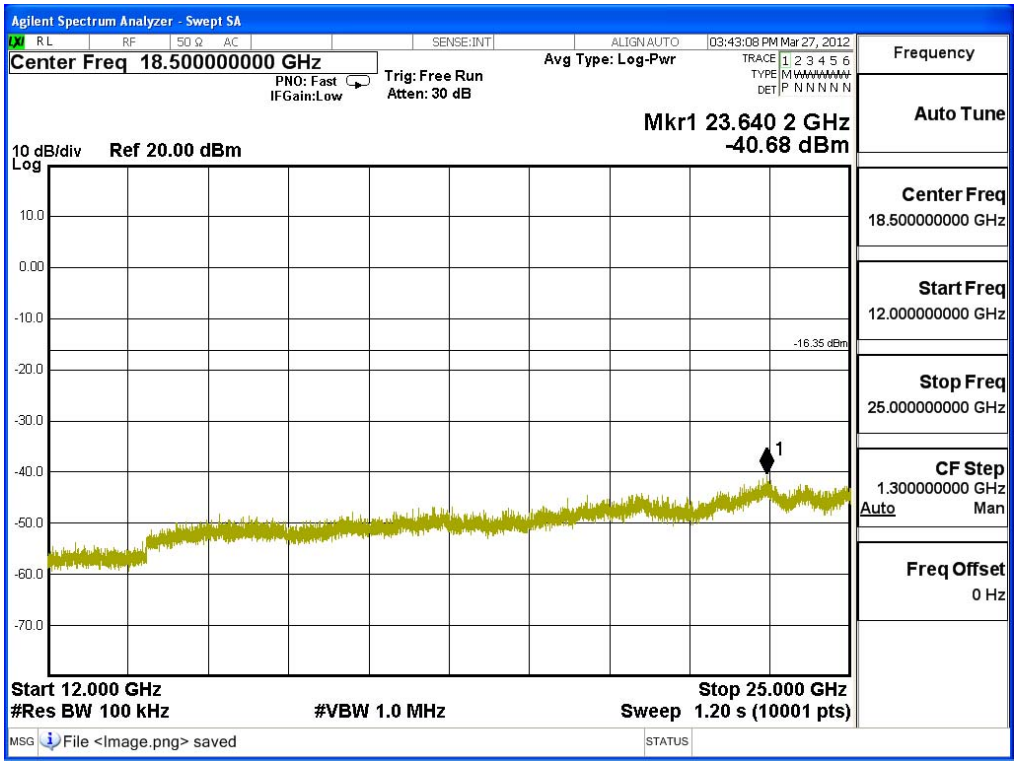
Channel 11 (2462MHz) 30MHz -1GHz



Channel 11 (2462MHz) 1GHz -12GHz

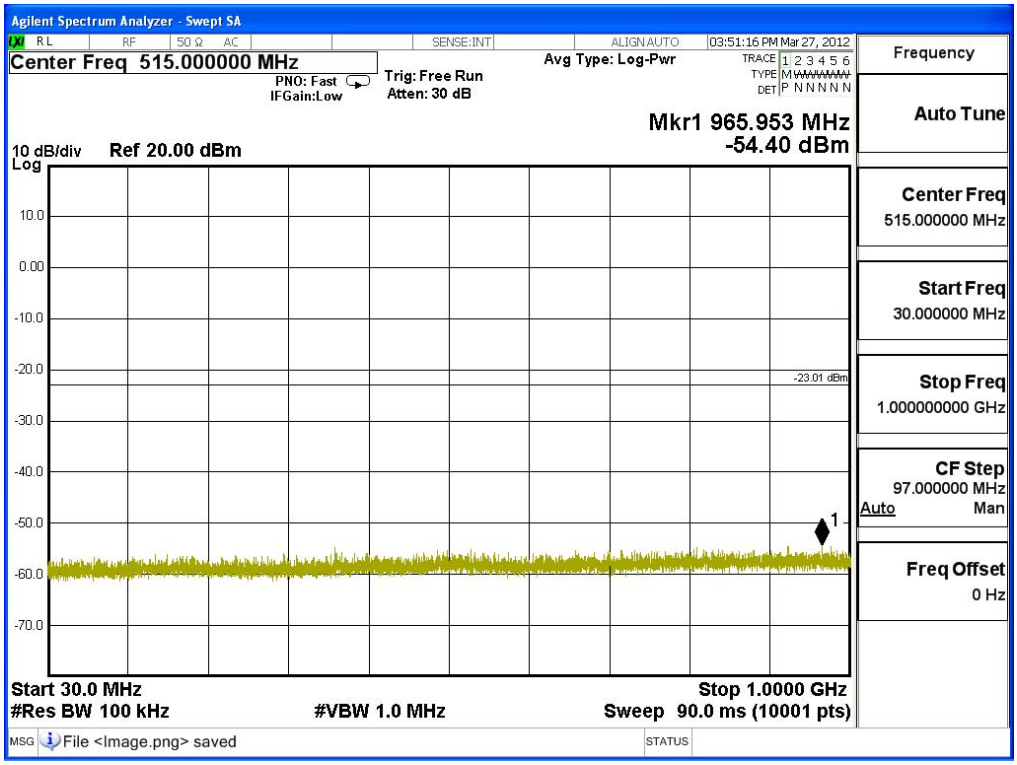


Channel 11 (2462MHz) 12GHz -25GHz

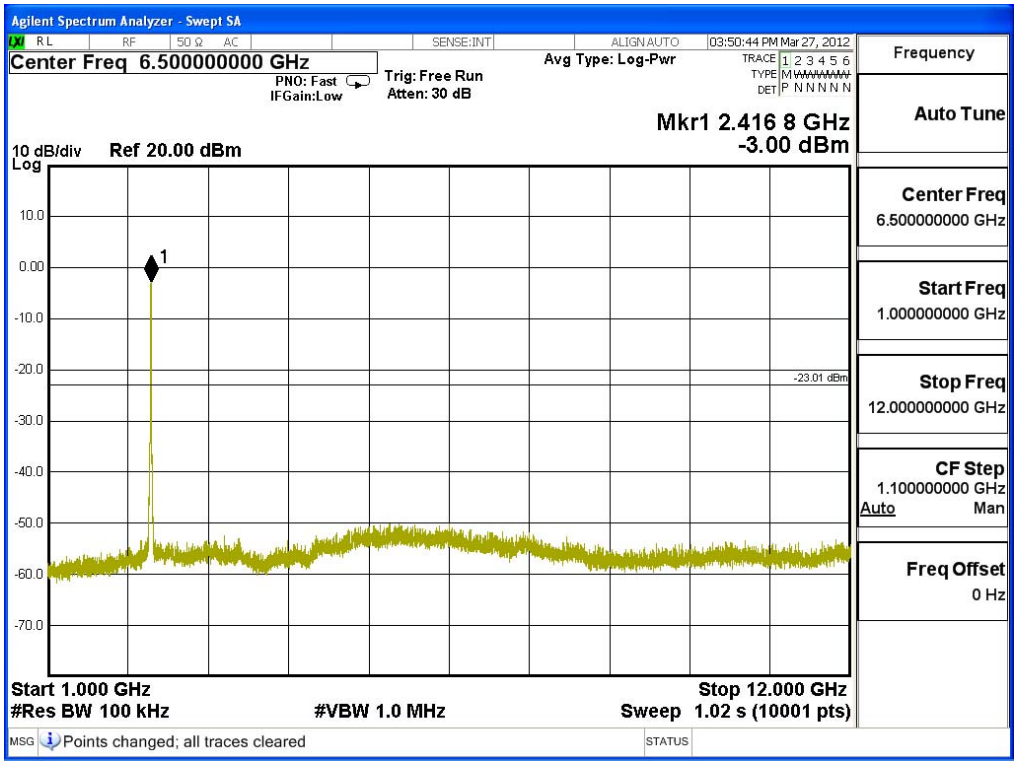


Product : Nport Device Server
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

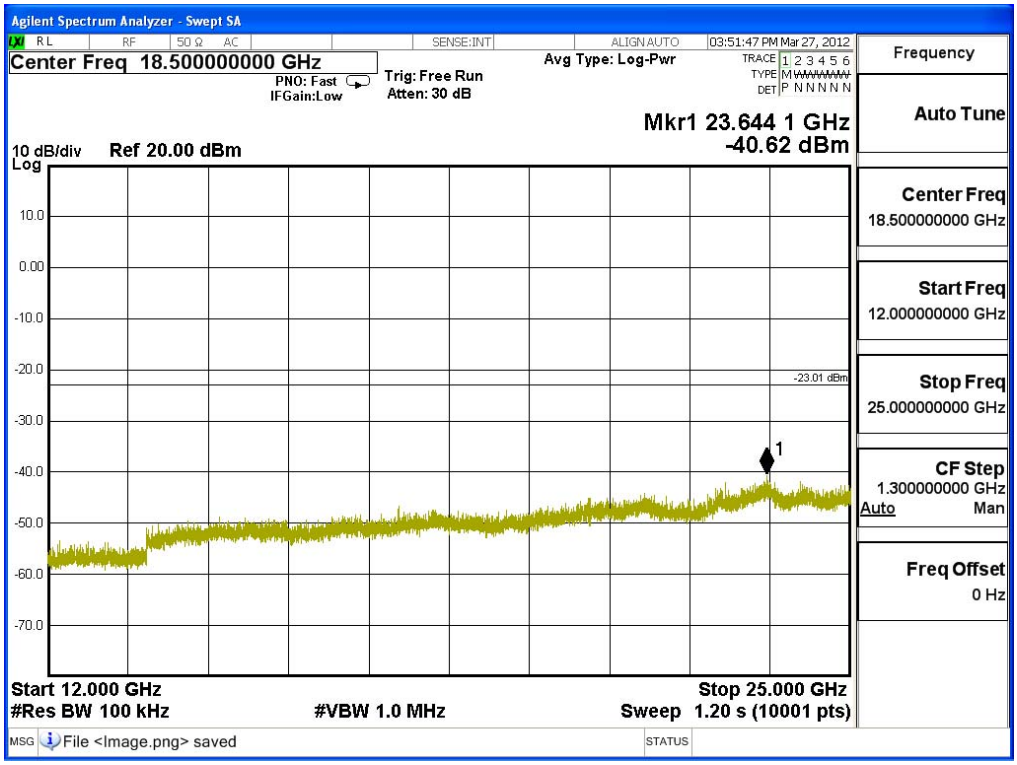
Channel 01 (2412MHz) 30MHz -1GHz



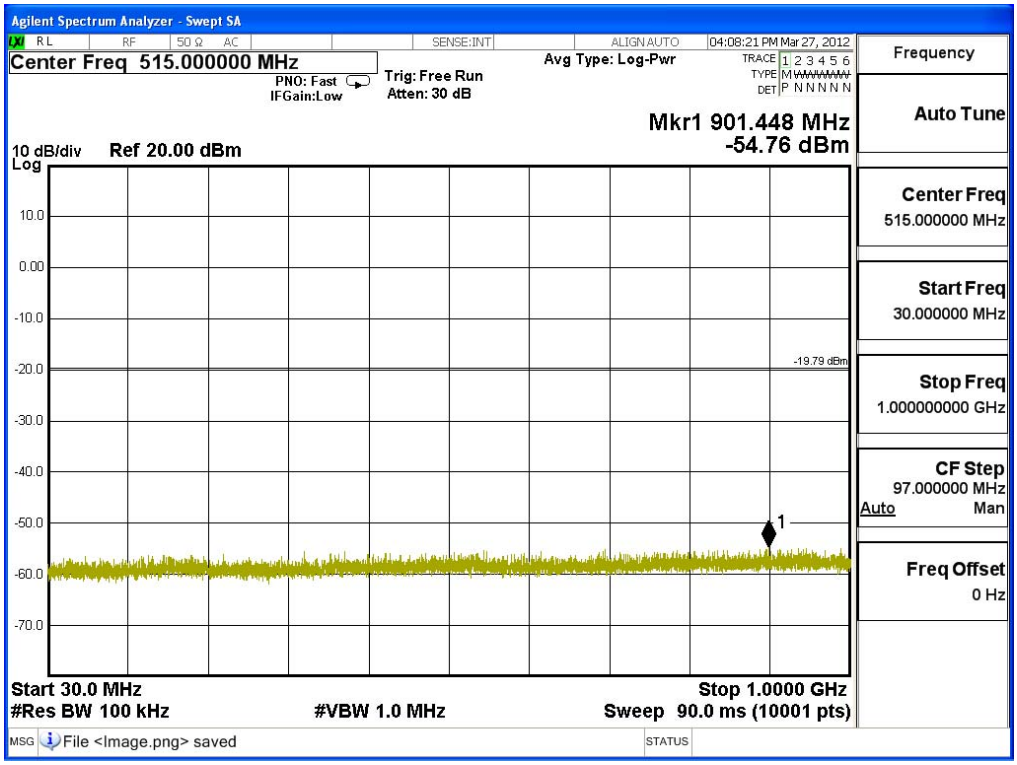
Channel 01 (2412MHz) 1GHz -12GHz



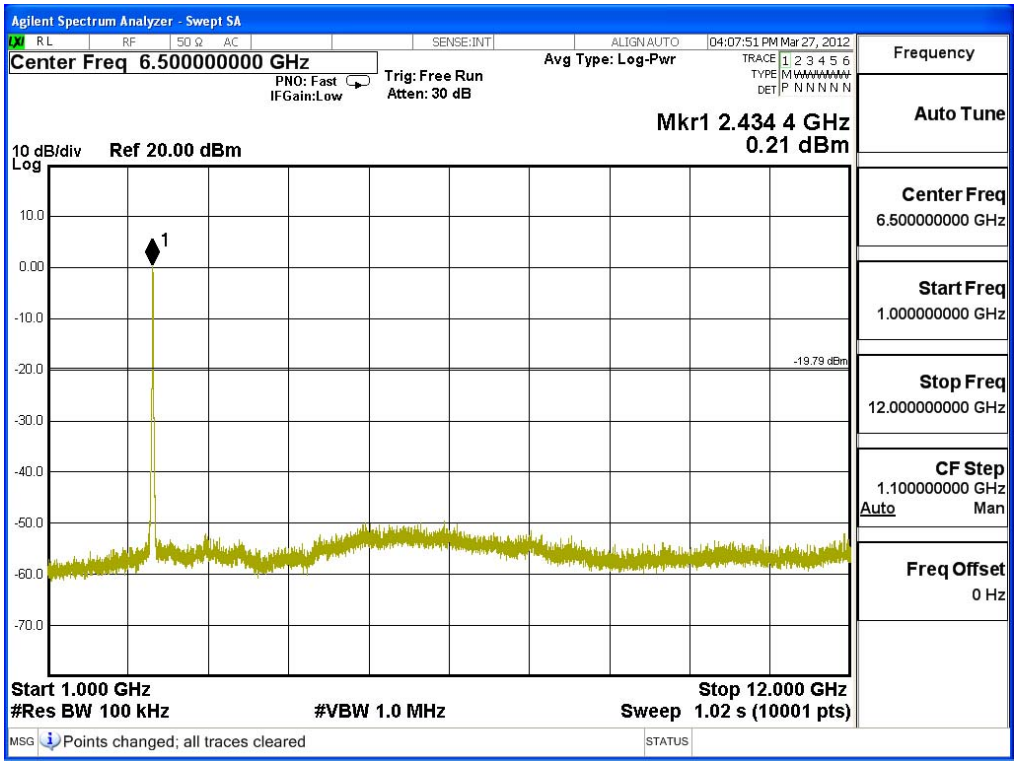
Channel 01 (2412MHz) 12GHz -25GHz



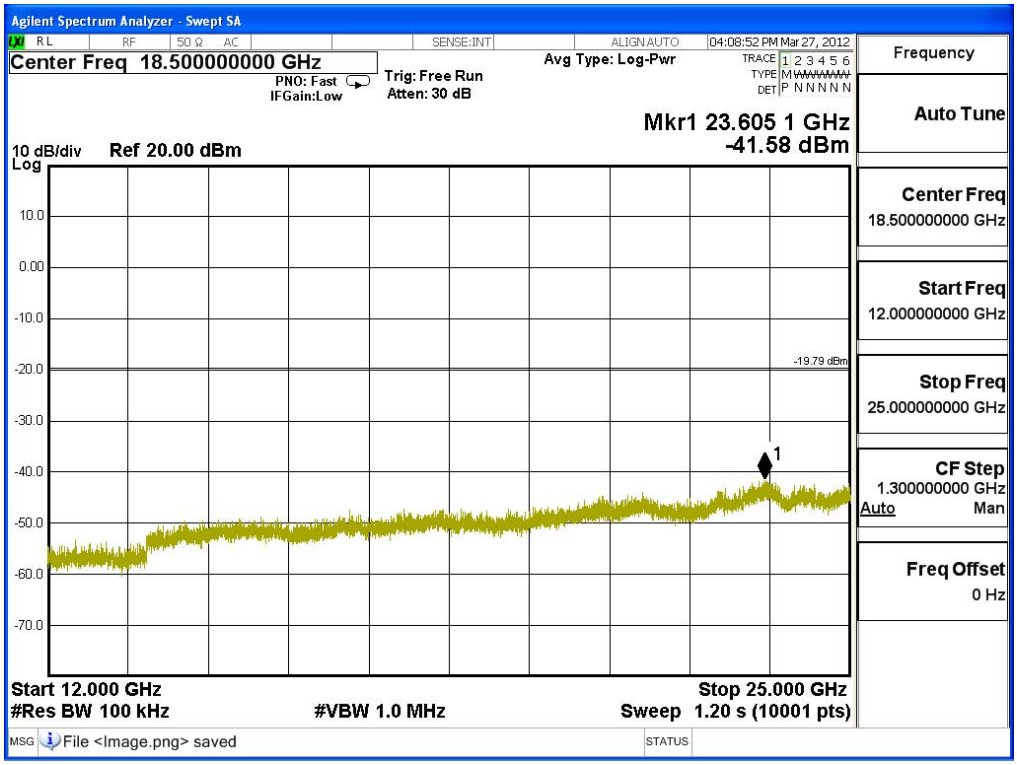
Channel 06 (2437MHz) 30MHz -1GHz



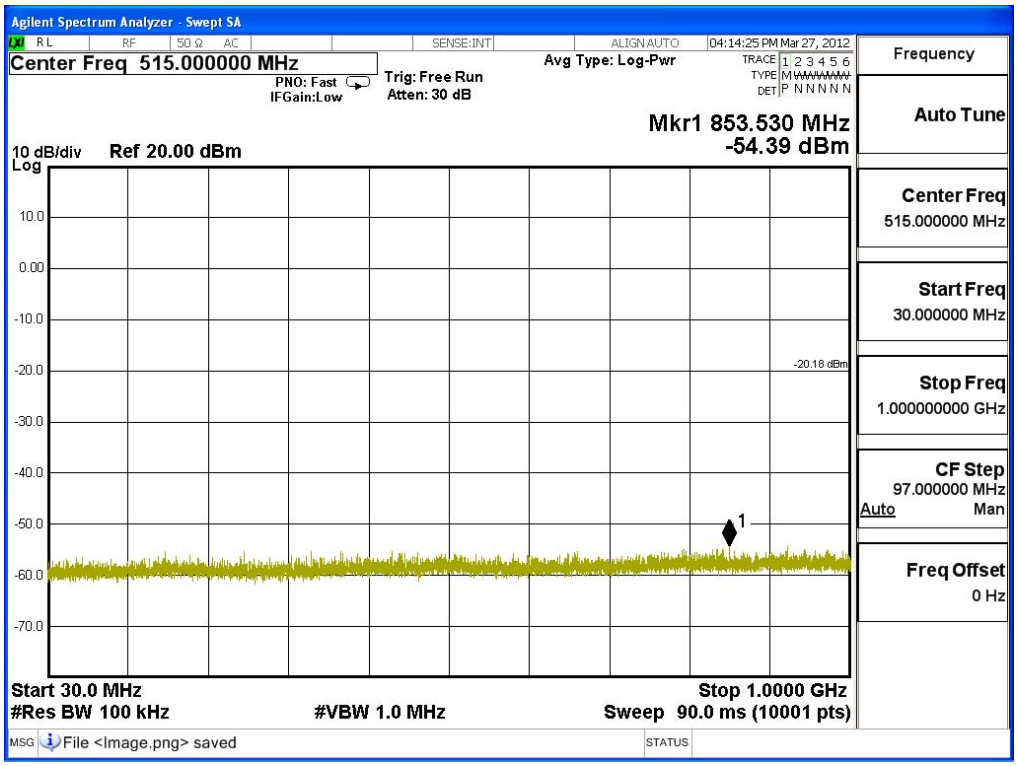
Channel 06 (2437MHz) 1GHz -12GHz



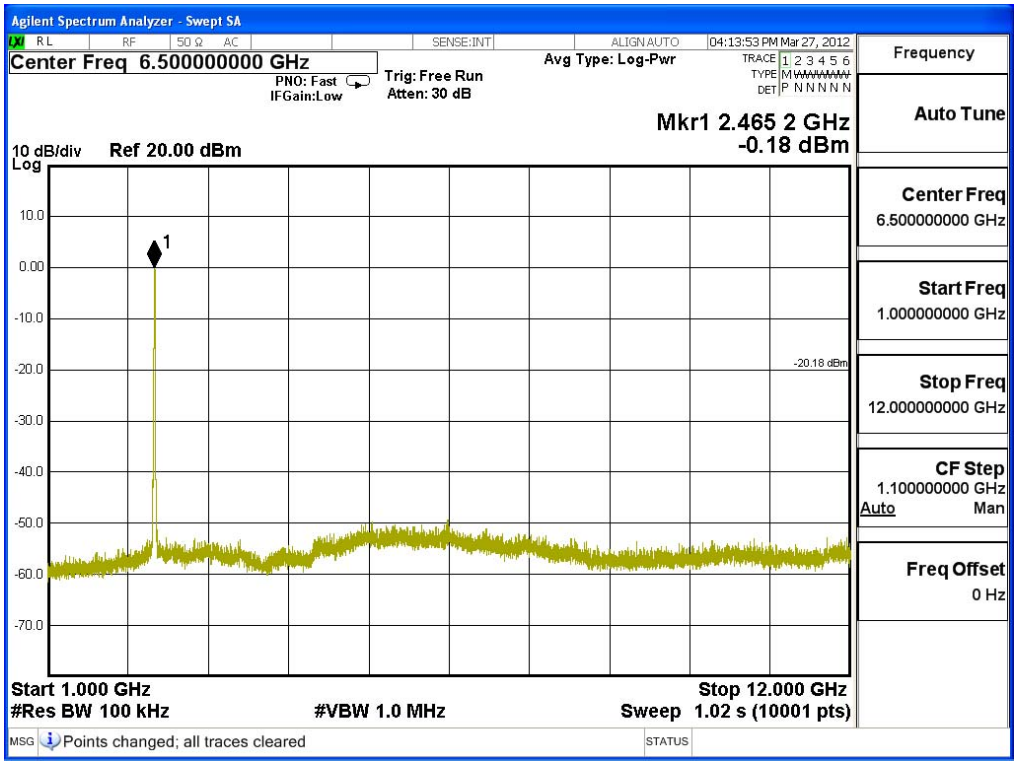
Channel 06 (2437MHz) 12GHz -25GHz



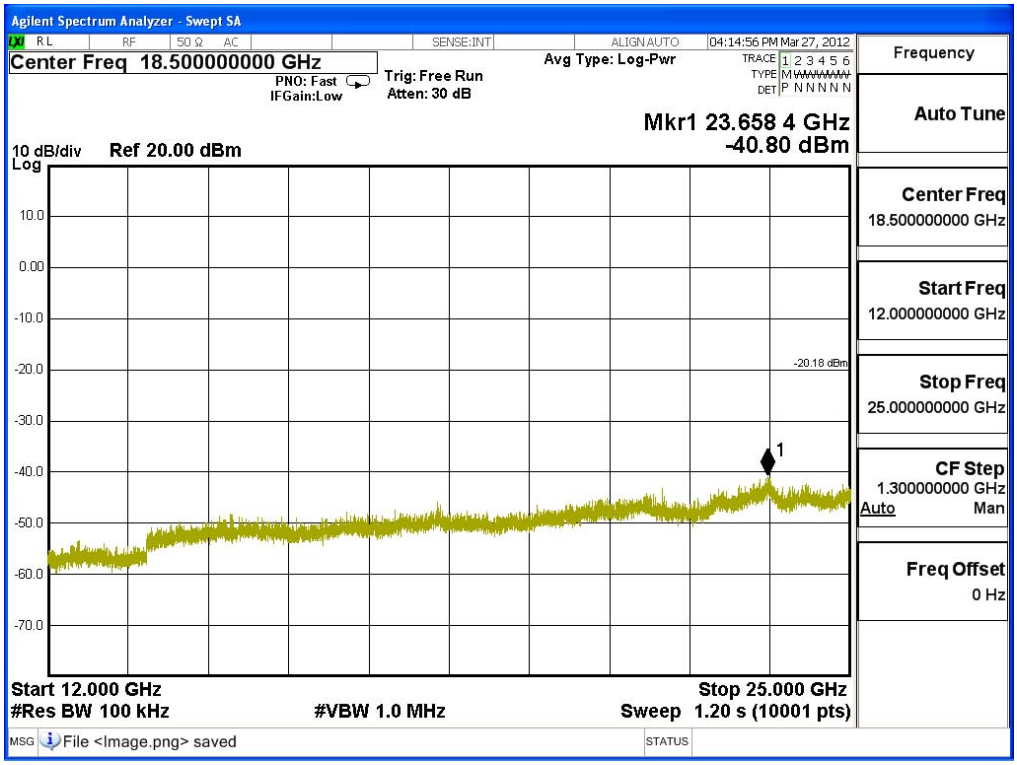
Channel 11 (2462MHz) 30MHz -1GHz



Channel 11 (2462MHz) 1GHz -12GHz

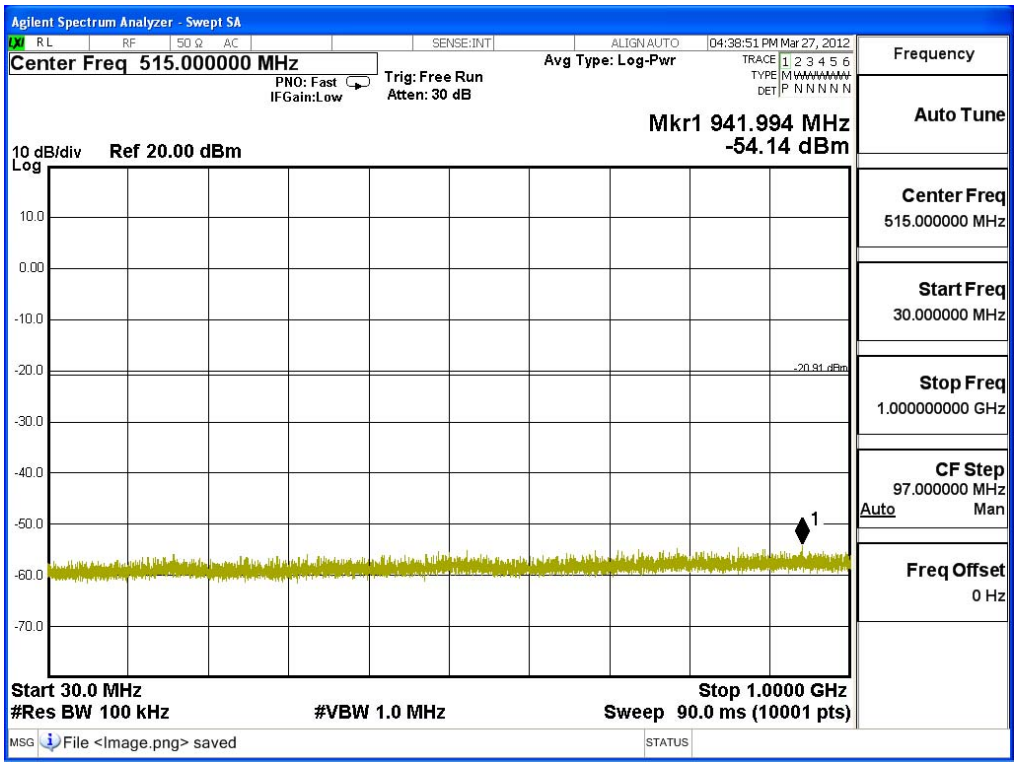


Channel 11 (2462MHz) 12GHz -25GHz

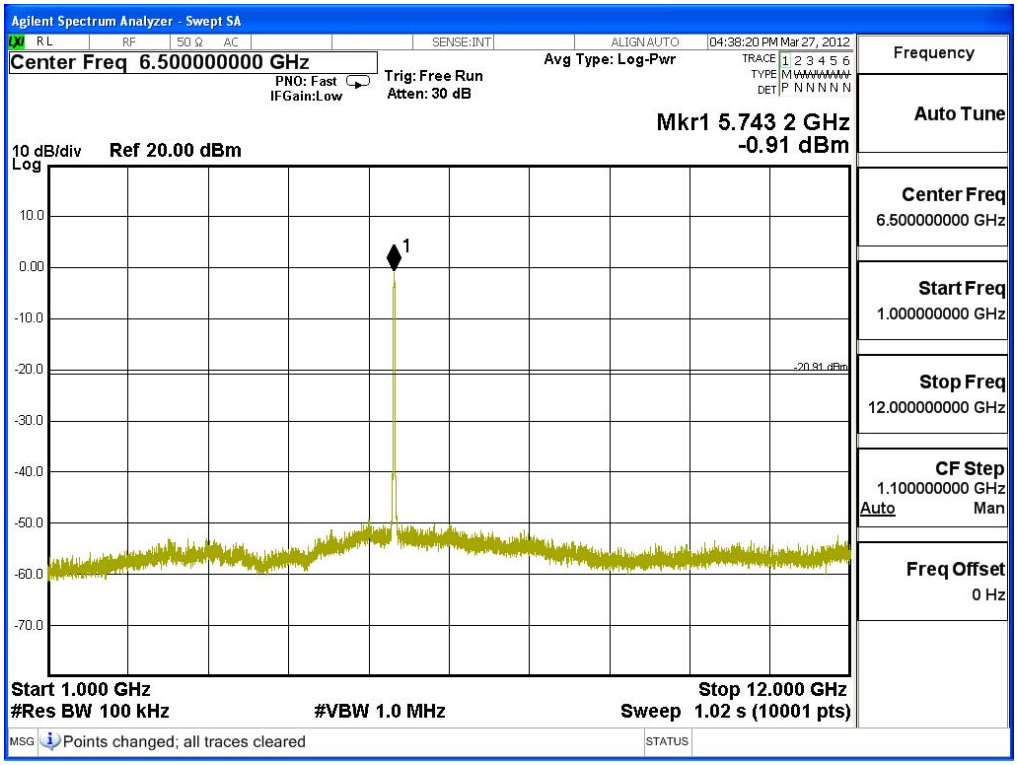


Product : Nport Device Server
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11a 6Mbps)

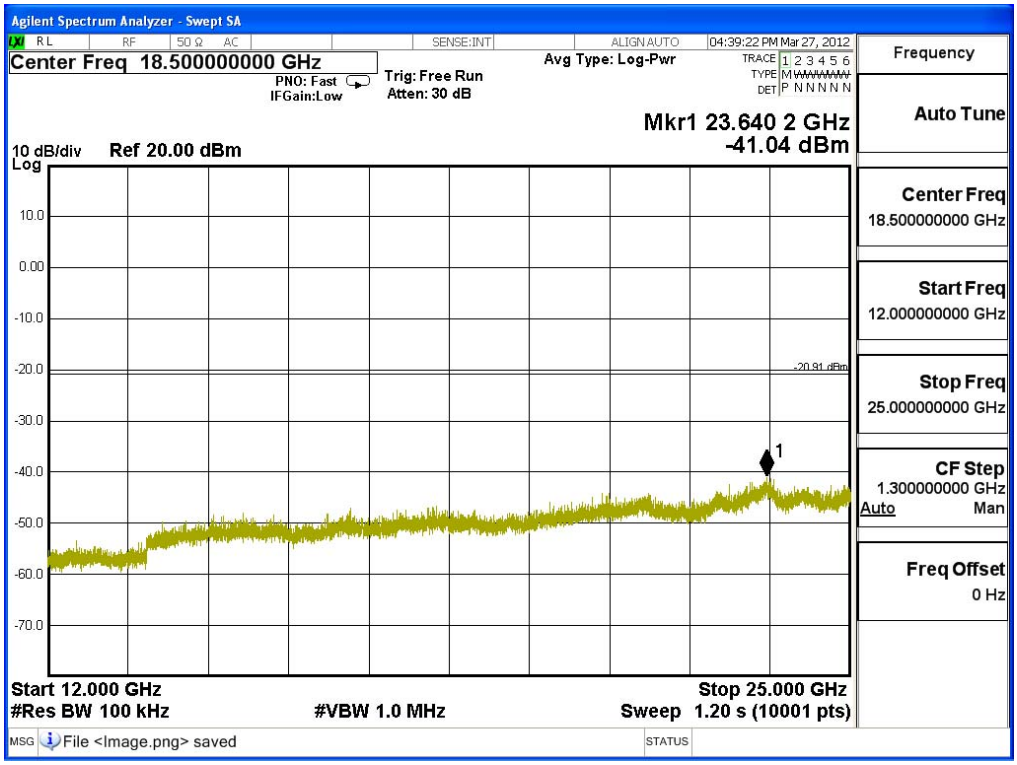
Channel 149 (5745MHz) 30MHz -1GHz



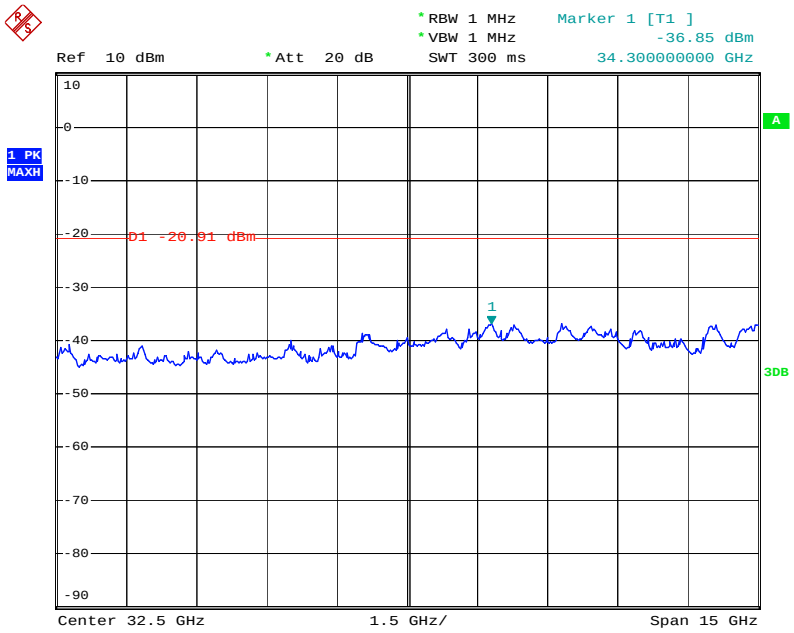
Channel 149 (5745MHz) 1GHz -12GHz



Channel 149 (5745MHz) 12GHz -25GHz



Channel 149 (5745MHz) 25GHz -40GHz



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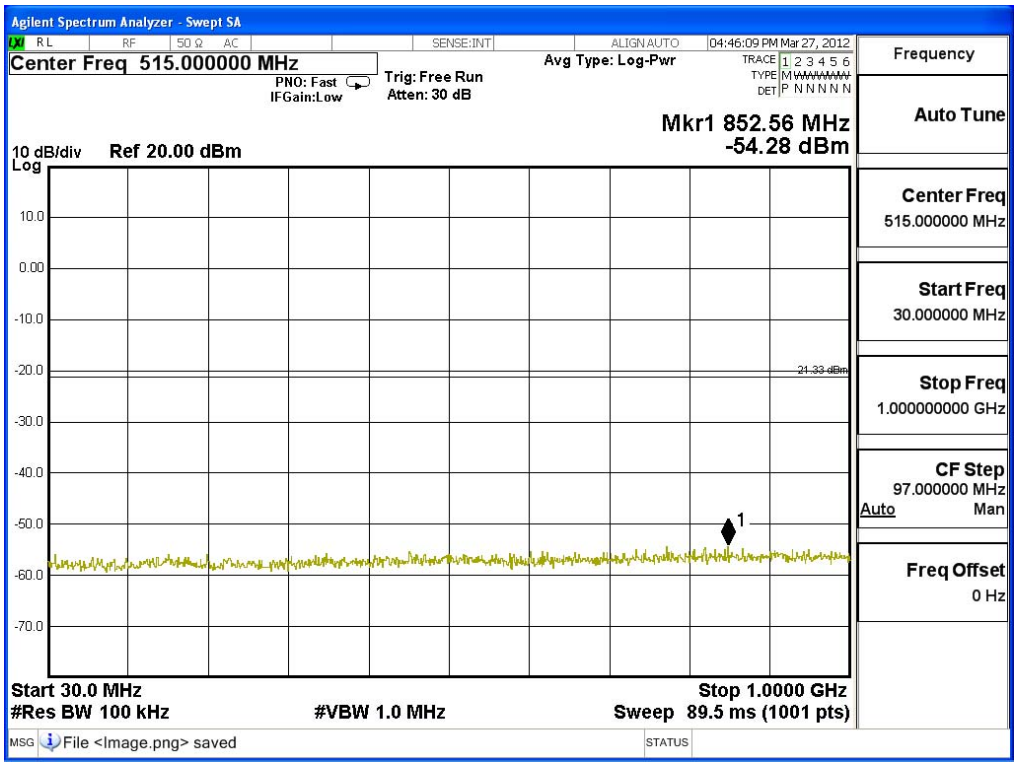
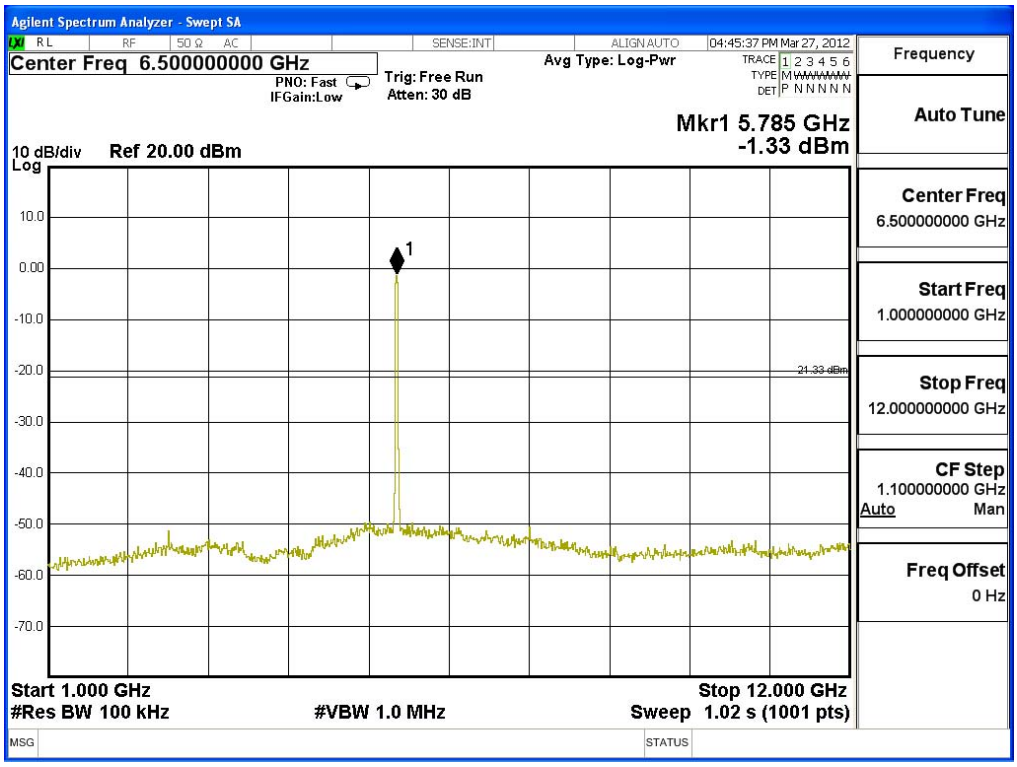
Channel 157 (5785MHz) 30MHz -1GHz



Channel 157 (5785MHz) 1GHz -12GHz



Channel 157 (5785MHz) 12GHz -25GHz