Test Report

Product Name	Plug-In PC.
Model No	PN1HXXXXXX(X=0~9,A~Z or Blank)
FCC ID.	FKGPN1H

Applicant	Twinhead International Corp
Address	10F,550 Rueiguand Rd Neihu,Taipei,Taiwan 114,ROC

Date of Receipt	Jul. 05, 2011
Issue Date	Aug. 29, 2011
Report No.	117148R-RFUSP42V01
Report Version	V1.0

Test Report Certification

Issue Date: Aug. 29, 2011
Report No.: 117148R-RFUSP42V01

Accredited by NIST (NVLAP)
NVLAP Lab Code: 200533-0

Product Name	Plug-In PC.
Applicant	Twinhead International Corp
Address	10F,550 Rueiguand Rd Neihu,Taipei,Taiwan 114,ROC
Manufacturer	Twinhead International Corp
Model No.	PN1HXXXXXX(X=0~9,A~Z or Blank)
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	Twinhead
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010 ANSI C63.4: 2009
Test Result	Complied

NVLAP Lab Code: 200533-0

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

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Tested By : Sabrina Tsai
(Engineer / Sabrina Tsai)

Approved By :
(Manager / Vincent Lin)

Testing Laboratory
0914

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Plug-In PC.
Trade Name	Twinhead
Model No.	PN1HXXXXXX(X=0~9,A~Z or Blank)
FCC ID.	FKGPN1H
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	Dipole
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter	MFR: Panasonic, M/N: CF-AA5713A M1 Input: AC 100-240V, 1.4-0.7A, 50/60Hz Output: DC 15.6V⎓7.05A Cable Out: Non-Shielded, 1.8m, with one ferrite core bonded.
Contain Module	Intel / 62205ANHMW

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	ARISTOTLE ENTERPRISES	RFA-25-C52M3-B70C463	2dBi

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 3:	2422 MHz	Channel 4:	2427 MHz	Channel 5:	2432 MHz	Channel 6:	2437 MHz
Channel 7:	2442 MHz	Channel 8:	2447 MHz	Channel 9:	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 Plug-In PC. 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、802.11g 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.

1.2. Operational Description

The EUT is a Plug-In PC with a built-in 2.4GHz and 5GHz WLAN transceiver. This device provided four kinds of transmitting speed 1, 2, 5.5 and 11Mbps and the device of RF carrier is DBPSK, DQPSK and CCK (IEEE 802.11b). The device provided of eight kinds of transmitting speed 6, 9, 12, 18, 24, 36, 48 and 54Mbps the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11a/g).

The device provided of eight kinds of transmitting speed 14.4,28.9,43.3,57.8,86.7,115.6,130 and 144.4Mbps in 802.11n(20M-BW) mode and 30,60,90,120,180,240,270 and 300 Mbps(40M-BW) the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11n), the IEEE 802.11n is Multiple In, Multiple Out" (MIMO) technology.

The device adapts direct sequence spread spectrum modulation. The antenna provides diversity function to improve the receiving function and the antennas to support 2(Transmit) × 2(Receive) MIMO technology.

This Plug-In PC, compliant with IEEE 802.11b/g/n, is a high-efficiency Wireless LAN adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without being bound to the network wires. Operation in 2.4GHz Direst Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM) radio transmission, the Plug-In PC Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b/g/n network.

The Device no radar detection and no ad-hoc operation in the DFS band, another information please refer to users manual.

Test Mode:	Mode 1: Transmit - 802.11b 1Mbps
	Mode 2: Transmit - 802.11g 6Mbps
	Mode 3: Transmit - 802.11a 6Mbps
	Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)
	Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)
	Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)
	Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band)

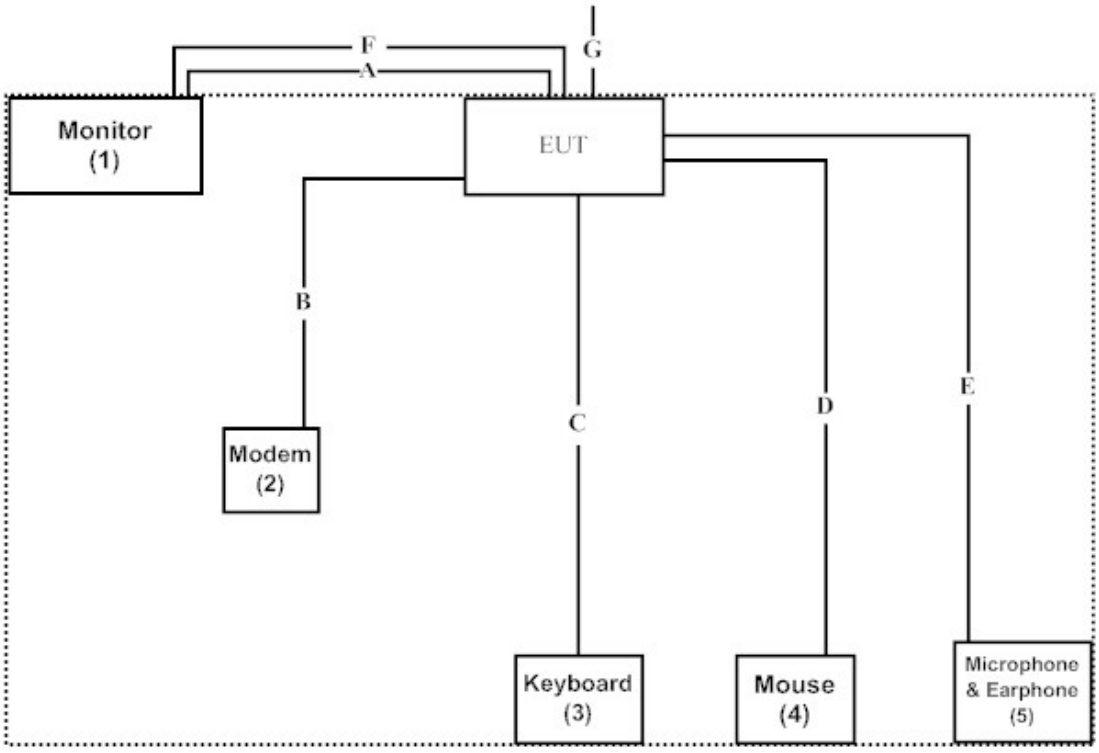
1.3. Tested System Details

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
(1)	Monitor	LG	W2261VT	907YHZK07373	N/A
(2)	Modem	ACEEX	DM-1414	0102027550	N/A
(3)	Keyboard	Logitech	Y-U0009	LZ027HU	N/A
(4)	USB Mouse	DELL	MO56UC	G0X01JHA	N/A
(5)	Microphone & Earphone	Ergotech	ET-E201	N/A	N/A

Signal Cable Type		Signal cable Description
A	VGA Cable	Shielded, 1.8m
B	Modem Cable	Shielded, 1.5m
C	USB Keyboard Cable	Shielded, 1.8m
D	USB Mouse Cable	Shielded, 1.8m
E	Microphone & Earphone Cable	Non-Shielded, 2.0m
F	HDMI Cable	Shielded, 1.2m
G	RJ45 Cable	Non-Shielded, 2.0m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4

(2) Execute “DRTU v1.2.12-0197” program on the EUT.

(3) Configure the test mode, the test channel, and the data rate.

(4) Press “OK” to start the continuous Transmit.

(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://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
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Registration Number: 92195

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

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2. Conducted Emission

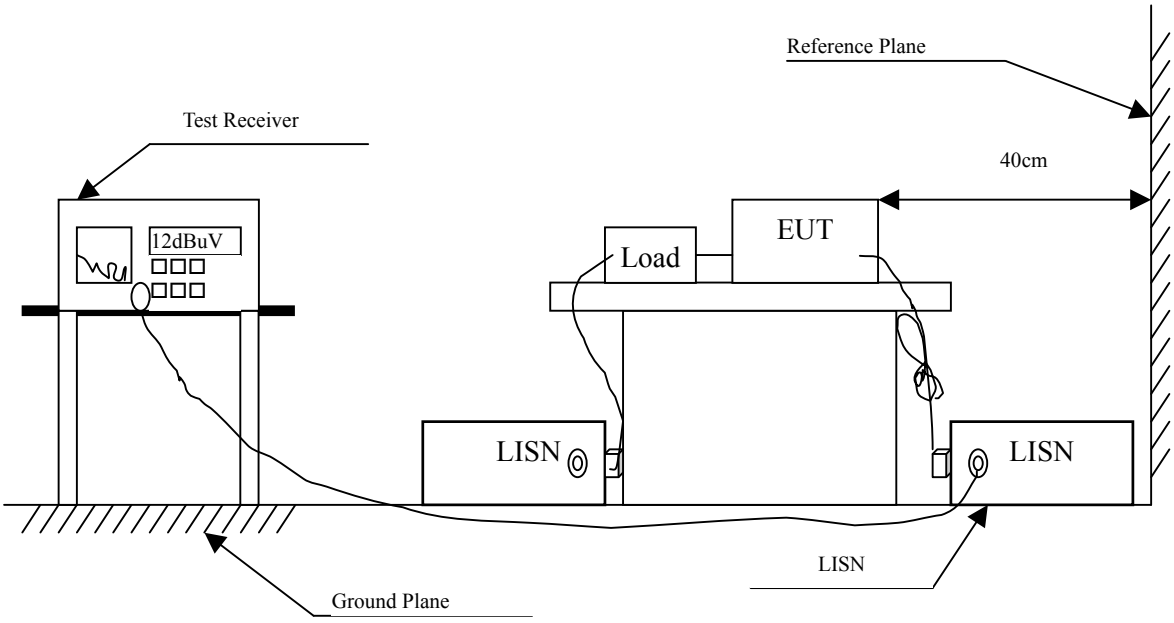
2.1. Test Equipment

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

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2011	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2011	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2011	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2011	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

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: 2009 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 : Plug-In PC.
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.205	9.703	27.800	37.503	-26.926	64.429
0.279	9.657	26.540	36.197	-26.117	62.314
0.412	9.646	26.700	36.346	-22.168	58.514
0.560	9.640	27.320	36.960	-19.040	56.000
1.166	9.670	28.780	38.450	-17.550	56.000
1.658	9.680	21.220	30.900	-25.100	56.000
Average					
0.205	9.703	20.740	30.443	-23.986	54.429
0.279	9.657	19.240	28.897	-23.417	52.314
0.412	9.646	18.040	27.686	-20.828	48.514
0.560	9.640	14.780	24.420	-21.580	46.000
1.166	9.670	17.250	26.920	-19.080	46.000
1.658	9.680	10.250	19.930	-26.070	46.000

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 : Plug-In PC.
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.162	9.751	25.860	35.611	-30.046	65.657
0.271	9.672	21.840	31.512	-31.031	62.543
0.420	9.650	22.660	32.310	-25.976	58.286
0.736	9.656	21.060	30.716	-25.284	56.000
1.677	9.680	21.420	31.100	-24.900	56.000
13.560	9.940	19.880	29.820	-30.180	60.000
Average					
0.162	9.751	10.300	20.051	-35.606	55.657
0.271	9.672	15.760	25.432	-27.111	52.543
0.420	9.650	13.300	22.950	-25.336	48.286
0.736	9.656	11.420	21.076	-24.924	46.000
1.677	9.680	12.330	22.010	-23.990	46.000
13.560	9.940	7.510	17.450	-32.550	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 : Plug-In PC.
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.185	9.719	22.640	32.359	-32.641	65.000
0.263	9.667	24.800	34.467	-28.304	62.771
0.416	9.644	26.360	36.004	-22.396	58.400
0.572	9.640	27.060	36.700	-19.300	56.000
0.724	9.632	26.100	35.732	-20.268	56.000
1.212	9.670	29.600	39.270	-16.730	56.000
Average					
0.185	9.719	5.310	15.029	-39.971	55.000
0.263	9.667	13.970	23.637	-29.134	52.771
0.416	9.644	16.590	26.234	-22.166	48.400
0.572	9.640	14.780	24.420	-21.580	46.000
0.724	9.632	13.070	22.702	-23.298	46.000
1.212	9.670	19.400	29.070	-16.930	46.000

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 : Plug-In PC.
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.263	9.677	19.700	29.377	-33.394	62.771
0.431	9.649	23.080	32.729	-25.242	57.971
0.677	9.650	22.260	31.910	-24.090	56.000
1.158	9.670	25.460	35.130	-20.870	56.000
2.048	9.680	22.540	32.220	-23.780	56.000
13.556	9.940	12.260	22.200	-37.800	60.000
Average					
0.263	9.677	10.080	19.757	-33.014	52.771
0.431	9.649	14.040	23.689	-24.282	47.971
0.677	9.650	14.040	23.690	-22.310	46.000
1.158	9.670	15.290	24.960	-21.040	46.000
2.048	9.680	12.750	22.430	-23.570	46.000
13.556	9.940	4.600	14.540	-35.460	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

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

Conducted 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 Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Plug-In PC.
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11b 1Mbps

CHAIN A

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	13.06	--	--	--	15.42	<30dBm	Pass
06	2437	12.57	12.52	12.5	12.41	14.95	<30dBm	Pass
11	2462	12.74	--	--	--	15.16	<30dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Plug-In PC.
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11g 6Mbps

CHAIN A

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	10.84	--	--	--	--	--	--	--	20.17	<30dBm	Pass
06	2437	14.08	14.01	13.84	13.82	13.76	13.68	13.6	13.52	21.45	<30dBm	Pass
11	2462	11.03	--	--	--	--	--	--	--	20.14	<30dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Plug-In PC.
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps

CHAIN A

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	14.45	--	--	--	--	--	--	--	21.22	<30dBm	Pass
157	5785	13.96	13.9	13.87	13.86	13.82	13.77	13.65	13.6	21.16	<30dBm	Pass
165	5825	13.96	--	--	--	--	--	--	--	21.11	<30dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Plug-In PC.
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
01	2412	9.55	--	--	--	--	--	--	--	18.64
06	2437	10.83	10.8	10.78	10.71	10.64	10.62	10.54	10.2	19.8
11	2462	10.02	--	--	--	--	--	--	--	19.2

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
01	2412	8.51	--	--	--	--	--	--	--	17.94
06	2437	9.91	9.87	9.81	9.75	9.7	9.64	9.61	9.47	18.98
11	2462	9.63	--	--	--	--	--	--	--	18.71

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
1	2412	HT8	18.64	17.94	21.31	<30dBm	Pass
6	2437	HT8	19.80	18.98	22.42	<30dBm	Pass
11	2462	HT8	19.20	18.71	21.97	<30dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Plug-In PC.
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
3	2422	8.74	--	--	--	--	--	--	--	18.91
6	2437	10.64	10.59	10.51	10.48	10.42	10.37	10.33	10.24	19.54
9	2452	10.32	--	--	--	--	--	--	--	19.63

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
3	2422	7.86	--	--	--	--	--	--	--	17.29
6	2437	8.82	8.78	8.71	8.67	8.61	8.55	8.51	8.5	17.92
9	2452	9.14	--	--	--	--	--	--	--	18.03

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
3	2422	HT8	18.91	17.29	21.19	<30dBm	Pass
6	2437	HT8	19.54	17.92	21.82	<30dBm	Pass
9	2452	HT8	19.63	18.03	21.91	<30dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Plug-In PC.
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
149	5745	11.52	--	--	--	--	--	--	--	19.77
157	5785	11.85	11.8	11.72	11.7	11.68	11.62	11.55	11.5	19.71
165	5825	12.18	--	--	--	--	--	--	--	19.91

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4
		Measurement Level (dBm)								
149	5745	11.2	--	--	--	--	--	--	--	20.06
157	5785	11.41	11.4	11.38	11.35	11.3	11.28	11.24	11.2	20.17
165	5825	12.14	--	--	--	--	--	--	--	20.43

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	HT8	19.77	20.06	22.93	<30dBm	Pass
157	5785	HT8	19.71	20.17	22.96	<30dBm	Pass
165	5825	HT8	19.91	20.43	23.19	<30dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

Product : Plug-In PC.
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
151	5755	11.42	--	--	--	--	--	--	--	20.17
159	5795	10.53	10.51	10.48	10.45	10.42	10.38	10.35	10.27	19.8

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		30	60	90	120	180	240	270	300	30
		Measurement Level (dBm)								
151	5755	10.3	--	--	--	--	--	--	--	19.21
159	5795	10.5	10.48	10.44	10.42	10.37	10.33	10.31	10.24	19.51

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	HT8	20.17	19.21	22.73	<30dBm	Pass
159	5795	HT8	19.80	19.51	22.67	<30dBm	Pass

Note: Peak Power Output Value =Reading value on peak power meter + cable loss

4. Radiated Emission

4.1. Test Equipment

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

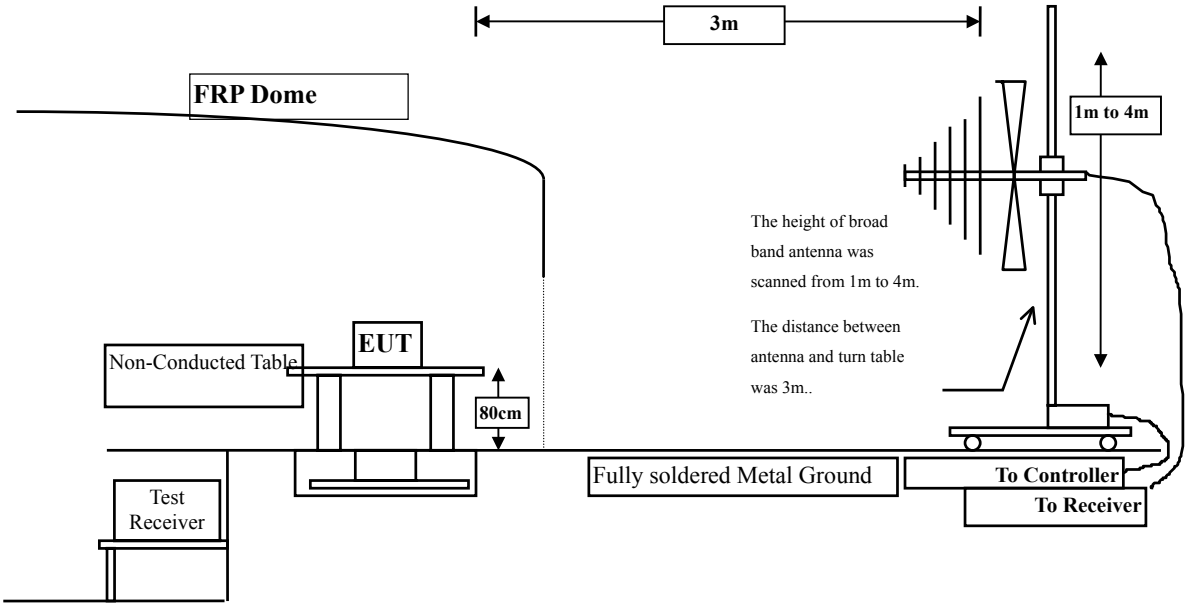
Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2010
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2010
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2011
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2011
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2010
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2011
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2011
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2010
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2011
	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.

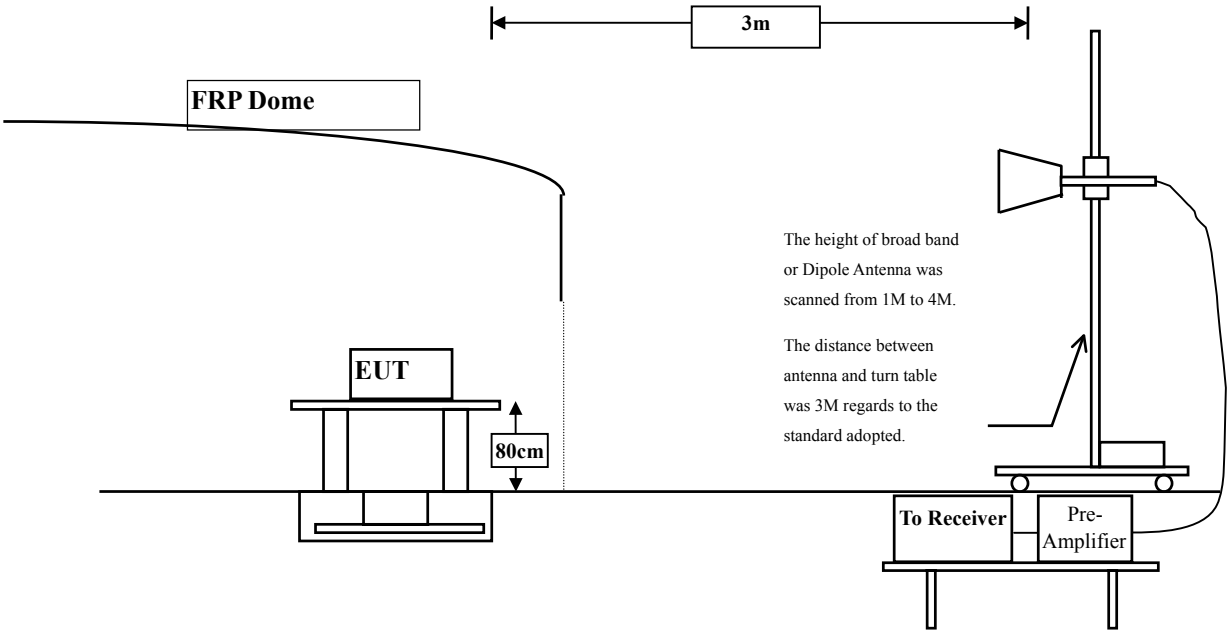
2. The test instruments marked with "X" are used to measure the final test results.

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, 2009 and tested according to DTS test procedure of Mar. 2005 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 C63.4:2009 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 : Plug-In PC.
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	37.620	40.881	-33.119	74.000
7236.000	10.650	36.560	47.210	-26.790	74.000
9648.000	13.337	36.500	49.836	-24.164	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	38.400	44.821	-29.179	74.000
7236.000	11.495	36.070	47.565	-26.435	74.000
9648.000	13.807	36.250	50.056	-23.944	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 : Plug-In PC.
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	37.550	40.587	-33.413	74.000
7311.000	11.795	35.300	47.094	-26.906	74.000
9748.000	12.635	37.140	49.775	-24.225	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	5.812	41.550	47.361	-26.639	74.000
7311.000	12.630	35.650	48.279	-25.721	74.000
9748.000	13.126	36.370	49.496	-24.504	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 : Plug-In PC.
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	37.320	40.177	-33.823	74.000
7386.000	12.127	34.960	47.088	-26.912	74.000
9848.000	12.852	36.330	49.183	-24.817	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4924.000	5.521	40.340	45.860	-28.140	74.000
7386.000	13.254	35.020	48.274	-25.726	74.000
9848.000	13.367	36.280	49.647	-24.353	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 : Plug-In PC.
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	37.250	40.511	-33.489	74.000
7236.000	10.650	35.880	46.530	-27.470	74.000
9648.000	13.337	36.310	49.646	-24.354	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	37.700	44.121	-29.879	74.000
7236.000	11.495	35.990	47.485	-26.515	74.000
9648.000	13.807	36.120	49.926	-24.074	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 : Plug-In PC.
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	37.260	40.297	-33.703	74.000
7311.000	11.795	35.490	47.284	-26.716	74.000
9748.000	12.635	36.380	49.015	-24.985	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	5.812	44.270	50.081	-23.919	74.000
7311.000	12.630	34.970	47.599	-26.401	74.000
9748.000	13.126	36.940	50.066	-23.934	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 : Plug-In PC.
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	37.290	40.147	-33.853	74.000
7386.000	12.127	35.130	47.258	-26.742	74.000
9848.000	12.852	37.110	49.963	-24.037	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4924.000	5.521	37.900	43.420	-30.580	74.000
7386.000	13.254	35.520	48.774	-25.226	74.000
9848.000	13.367	36.350	49.717	-24.283	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 : Plug-In PC.
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	34.870	51.977	-22.023	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11490.000	18.034	34.300	52.335	-21.665	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 : Plug-In PC.
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	35.570	52.379	-21.621	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11570.000	17.698	34.430	52.128	-21.872	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	16.158	34.150	50.308	-23.692	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11650.000	17.274	33.810	51.085	-22.915	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (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	37.230	40.491	-33.509	74.000
7236.000	10.650	35.840	46.490	-27.510	74.000
9648.000	13.337	36.310	49.646	-24.354	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	38.110	44.531	-29.469	74.000
7236.000	11.495	35.690	47.185	-26.815	74.000
9648.000	13.807	36.260	50.066	-23.934	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (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	37.110	40.147	-33.853	74.000
7311.000	11.795	35.270	47.064	-26.936	74.000
9748.000	12.635	36.080	48.715	-25.285	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	5.812	39.310	45.121	-28.879	74.000
7311.000	12.630	35.230	47.859	-26.141	74.000
9748.000	13.126	37.300	50.426	-23.574	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (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	37.120	39.977	-34.023	74.000
7386.000	12.127	34.820	46.948	-27.052	74.000
9848.000	12.852	36.490	49.343	-24.657	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4924.000	5.521	38.220	43.740	-30.260	74.000
7386.000	13.254	34.630	47.884	-26.116	74.000
9848.000	13.367	36.820	50.187	-23.813	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2422MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4844.000	3.171	37.090	40.261	-33.739	74.000
7266.000	11.162	36.150	47.312	-26.688	74.000
9688.000	12.964	36.480	49.445	-24.555	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4844.000	6.178	37.780	43.958	-30.042	74.000
7266.000	11.982	35.770	47.752	-26.248	74.000
9688.000	13.507	36.480	49.988	-24.012	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (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	37.170	40.207	-33.793	74.000
7311.000	11.795	35.350	47.144	-26.856	74.000
9748.000	12.635	37.110	49.745	-24.255	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4874.000	5.812	38.220	44.031	-29.969	74.000
7311.000	12.630	36.660	49.289	-24.711	74.000
9748.000	13.126	36.280	49.406	-24.594	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2452 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
4904.000	2.914	37.350	40.265	-33.735	74.000
7356.000	11.995	35.920	47.914	-26.086	74.000
9808.000	12.475	36.230	48.705	-25.295	74.000
Average Detector:					
--					
Vertical Peak Detector:					
4904.000	5.530	37.550	43.081	-30.919	74.000
7356.000	13.005	35.030	48.034	-25.966	74.000
9808.000	12.901	36.070	48.971	-25.029	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	17.106	34.910	52.017	-21.983	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11490.000	18.034	35.010	53.045	-20.955	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (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	34.980	51.789	-22.211	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11570.000	17.698	34.680	52.378	-21.622	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11650.000	16.158	34.370	50.528	-23.472	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11650.000	17.274	34.390	51.665	-22.335	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	17.124	35.190	52.314	-21.686	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11510.000	18.081	34.990	53.071	-20.929	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 : Plug-In PC.
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band) (5795 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal Peak Detector:					
11590.000	16.701	34.070	50.770	-23.230	74.000
Average Detector:					
--					
Vertical Peak Detector:					
11590.000	17.567	34.360	51.926	-22.074	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 : Plug-In PC.
Test Item : General 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					
163.860	-11.344	44.285	32.941	-10.559	43.500
336.520	-3.860	42.580	38.720	-7.280	46.000
536.340	2.195	34.958	37.153	-8.847	46.000
722.580	3.496	33.578	37.074	-8.926	46.000
806.000	4.968	33.663	38.631	-7.369	46.000
879.720	6.115	31.290	37.405	-8.595	46.000
Vertical					
111.480	-0.954	36.788	35.834	-7.666	43.500
220.120	-8.840	42.953	34.113	-11.887	46.000
371.440	-2.737	36.414	33.677	-12.323	46.000
542.160	-0.269	34.157	33.888	-12.112	46.000
693.480	2.168	35.851	38.019	-7.981	46.000
879.720	2.335	37.209	39.544	-6.456	46.000

Note:

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

Product : Plug-In PC.
Test Item : General 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					
173.560	-9.954	43.147	33.194	-10.306	43.500
365.620	-1.329	37.917	36.588	-9.412	46.000
532.460	1.957	39.574	41.531	-4.469	46.000
734.220	2.699	29.317	32.016	-13.984	46.000
879.720	6.115	31.024	37.139	-8.861	46.000
939.860	6.400	34.019	40.419	-5.581	46.000
Vertical					
150.280	-6.224	41.858	35.634	-7.866	43.500
365.620	-2.179	36.955	34.776	-11.224	46.000
540.220	0.121	35.808	35.929	-10.071	46.000
703.180	0.139	39.348	39.486	-6.514	46.000
804.060	3.587	34.067	37.654	-8.346	46.000
879.720	2.335	36.725	39.060	-6.940	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 : Plug-In PC.
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5785MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
163.860	-11.344	47.020	35.676	-7.824	43.500
365.620	-1.329	36.696	35.367	-10.633	46.000
540.220	2.551	35.739	38.290	-7.710	46.000
722.580	3.496	34.107	37.603	-8.397	46.000
806.000	4.968	34.422	39.390	-6.610	46.000
877.780	5.679	32.726	38.405	-7.595	46.000
Vertical					
105.660	-0.253	39.418	39.165	-4.335	43.500
336.520	-4.630	37.749	33.119	-12.881	46.000
536.340	-0.305	37.667	37.362	-8.638	46.000
685.720	2.319	25.400	27.718	-18.282	46.000
844.800	3.181	31.199	34.380	-11.620	46.000
941.800	6.585	34.284	40.869	-5.131	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 : Plug-In PC.
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
150.280	-10.194	45.218	35.024	-8.476	43.500
365.620	-1.329	36.845	35.516	-10.484	46.000
544.100	3.512	30.026	33.538	-12.462	46.000
724.520	3.485	32.232	35.717	-10.283	46.000
809.880	5.049	31.998	37.047	-8.953	46.000
914.640	6.083	31.701	37.784	-8.216	46.000
Vertical					
161.920	-6.696	42.460	35.765	-7.735	43.500
365.620	-2.179	36.136	33.957	-12.043	46.000
532.460	-0.563	38.679	38.116	-7.884	46.000
705.120	0.115	37.212	37.327	-8.673	46.000
866.140	0.656	36.997	37.653	-8.347	46.000
941.800	6.585	32.705	39.290	-6.710	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 : Plug-In PC.
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit - 802.11n-40BW_30Mbps(2.4G Band) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
150.280	-10.194	47.199	37.005	-6.495	43.500
336.520	-3.860	42.753	38.893	-7.107	46.000
547.980	3.252	32.821	36.073	-9.927	46.000
722.580	3.496	33.824	37.320	-8.680	46.000
866.140	5.596	31.820	37.416	-8.584	46.000
943.740	6.492	31.125	37.618	-8.382	46.000
Vertical					
103.720	-0.151	38.404	38.252	-5.248	43.500
336.520	-4.630	37.739	33.109	-12.891	46.000
518.880	-0.546	37.871	37.325	-8.675	46.000
709.000	0.058	37.879	37.937	-8.063	46.000
868.080	0.641	38.201	38.842	-7.158	46.000
939.860	6.450	32.751	39.201	-6.799	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 : Plug-In PC.
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
159.980	-11.775	44.768	32.993	-10.507	43.500
369.500	-1.098	35.858	34.760	-11.240	46.000
534.400	2.069	37.973	40.042	-5.958	46.000
728.400	3.452	31.851	35.303	-10.697	46.000
806.000	4.968	33.011	37.979	-8.021	46.000
885.540	6.102	31.590	37.692	-8.308	46.000
Vertical					
107.600	-0.318	36.642	36.324	-7.176	43.500
249.220	-7.634	40.760	33.126	-12.874	46.000
371.440	-2.737	35.940	33.203	-12.797	46.000
522.760	-0.334	41.798	41.464	-4.536	46.000
806.000	3.908	36.362	40.270	-5.730	46.000
941.800	6.585	32.303	38.888	-7.112	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 : Plug-In PC.
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 7: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
336.520	-3.860	42.708	38.848	-7.152	46.000
439.340	-2.009	34.905	32.896	-13.104	46.000
544.100	3.512	31.485	34.997	-11.003	46.000
722.580	3.496	33.778	37.274	-8.726	46.000
807.940	5.006	31.287	36.292	-9.708	46.000
910.760	6.164	30.260	36.425	-9.575	46.000
Vertical					
101.780	-0.021	40.684	40.662	-2.838	43.500
365.620	-2.179	34.712	32.533	-13.467	46.000
534.400	-0.571	40.674	40.103	-5.897	46.000
806.000	3.908	35.740	39.648	-6.352	46.000
879.720	2.335	39.193	41.528	-4.472	46.000
941.800	6.585	32.614	39.199	-6.801	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

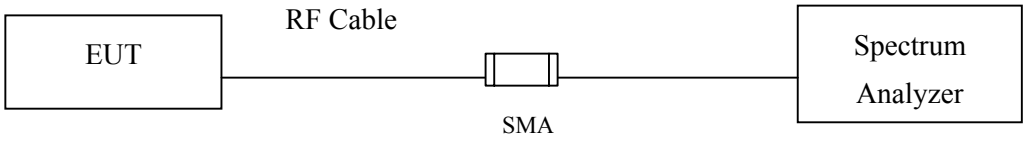
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2011
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2011
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2011

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 Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

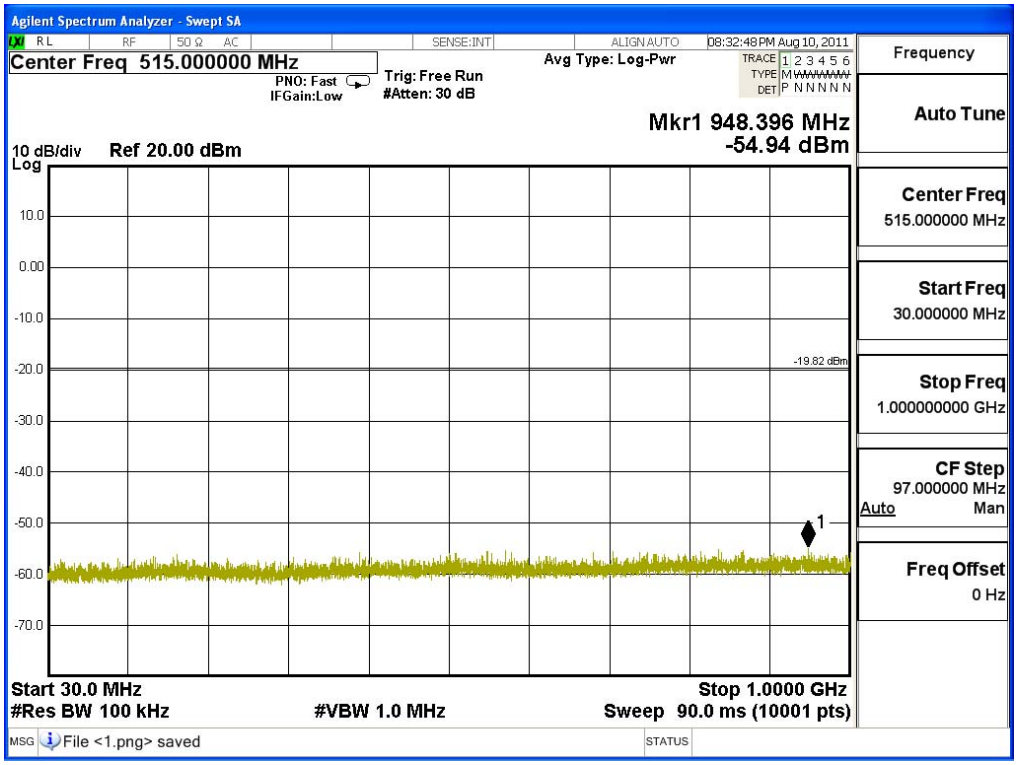
5.5. Uncertainty

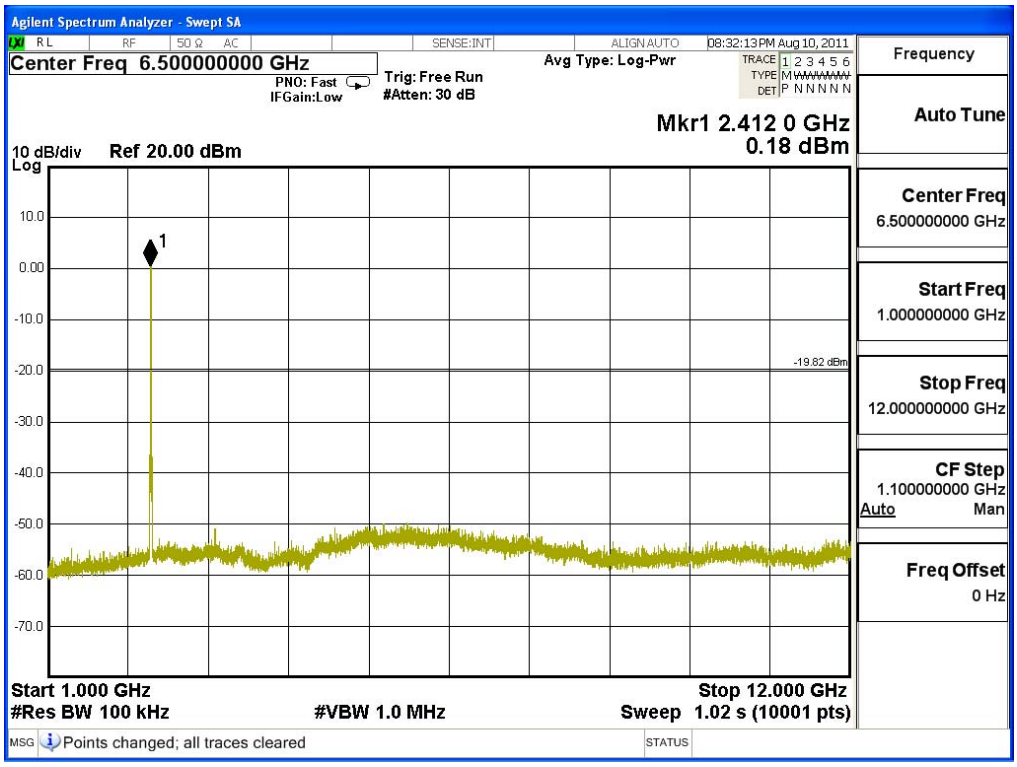
The measurement uncertainty
Conducted is defined as ± 1.27dB

5.6. Test Result of RF antenna conducted test

Product : Plug-In PC.
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11b 1Mbps

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

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IFGain:Low
Trig: Free Run
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Avg Type: Log-Pwr
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Mkr1 2.412 0 GHz
0.18 dBm
10 dB/div
Log
Ref 20.00 dBm
-19.82 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
Points changed; all traces cleared
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
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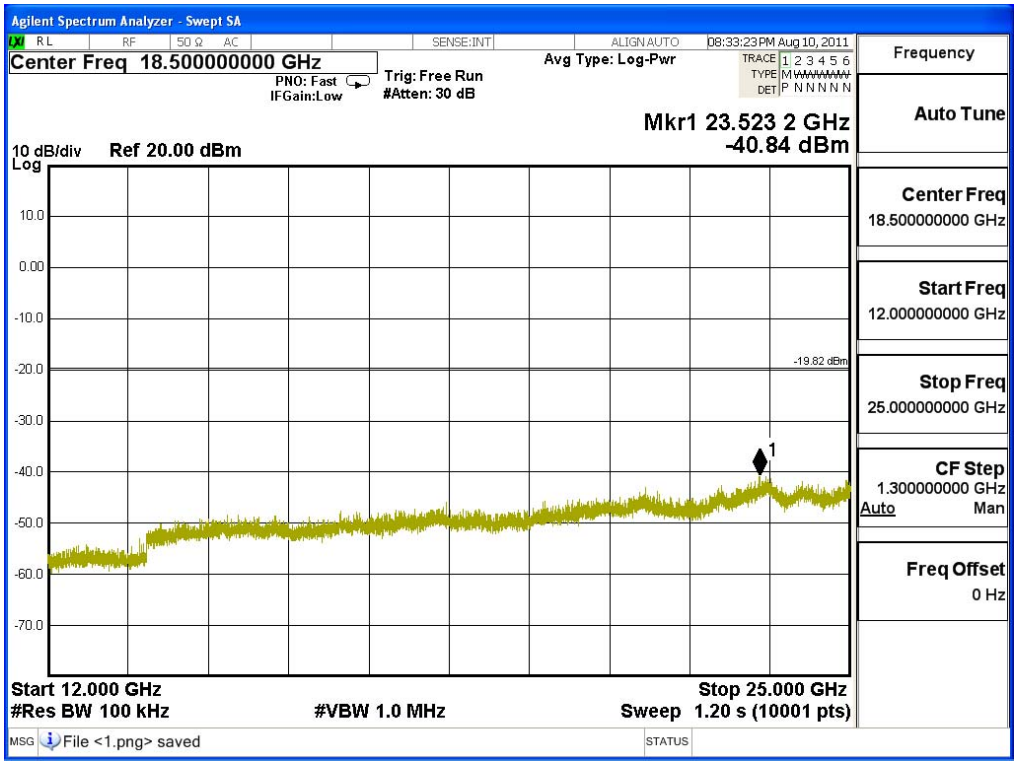
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PNO: Fast
IFGain:Low
Trig: Free Run
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Mkr1 23.523 2 GHz
-40.84 dBm
10 dB/div
Log
Ref 20.00 dBm
-19.82 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
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Auto Tune
Center Freq
18.500000000 GHz
Start Freq
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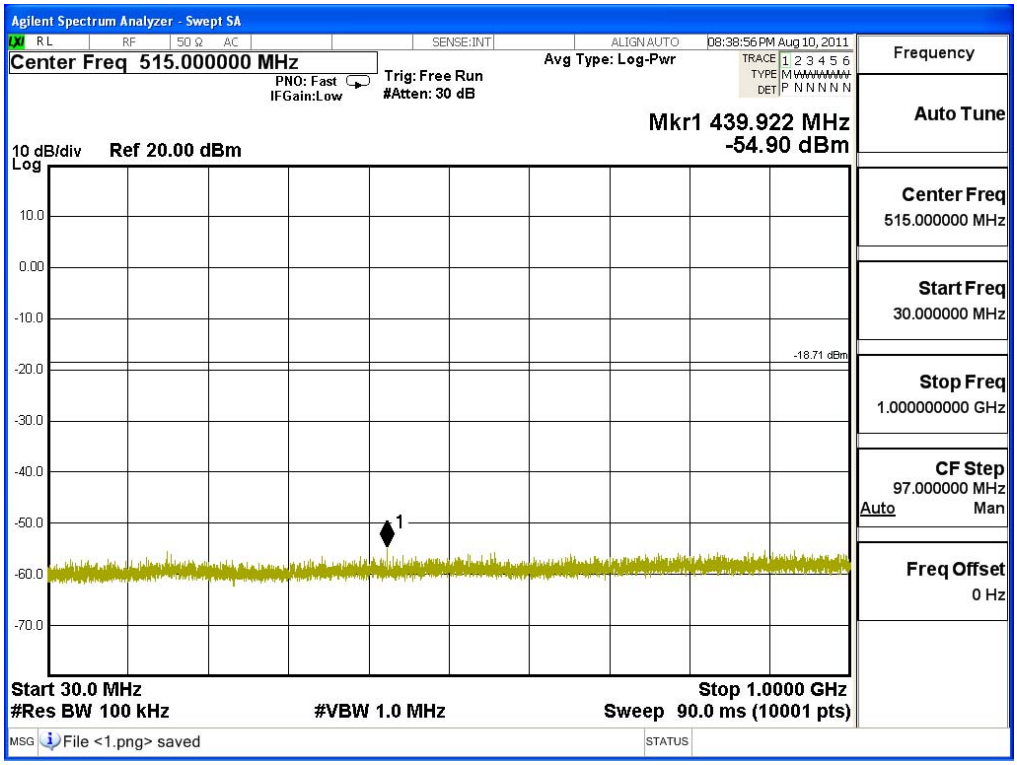
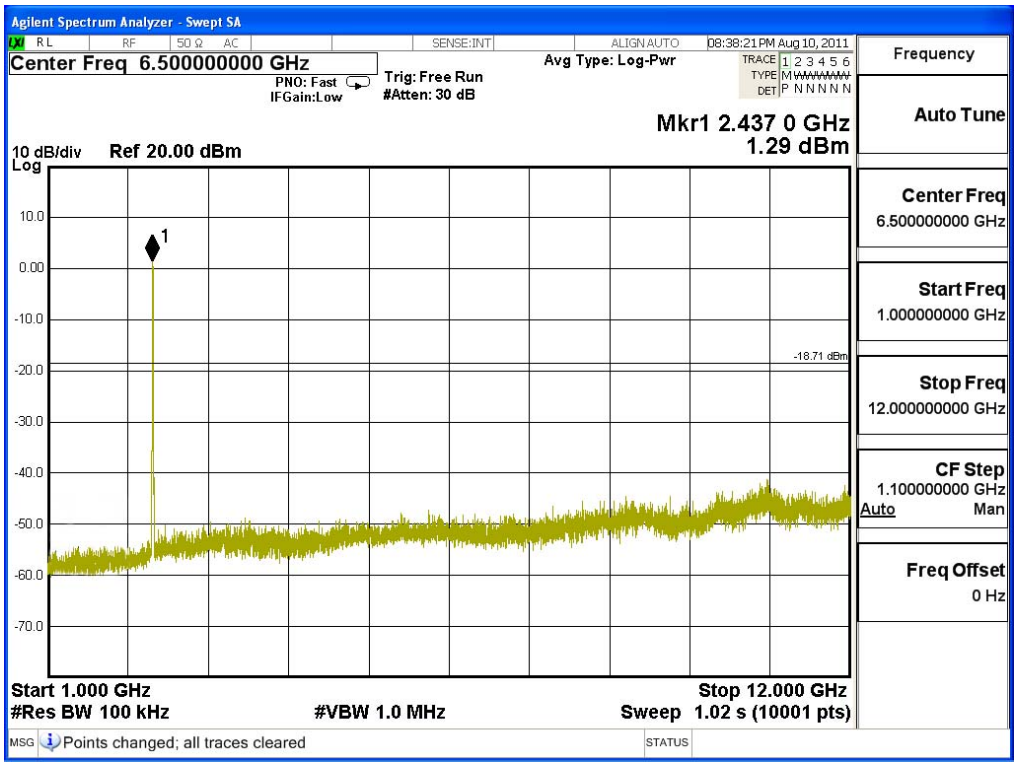
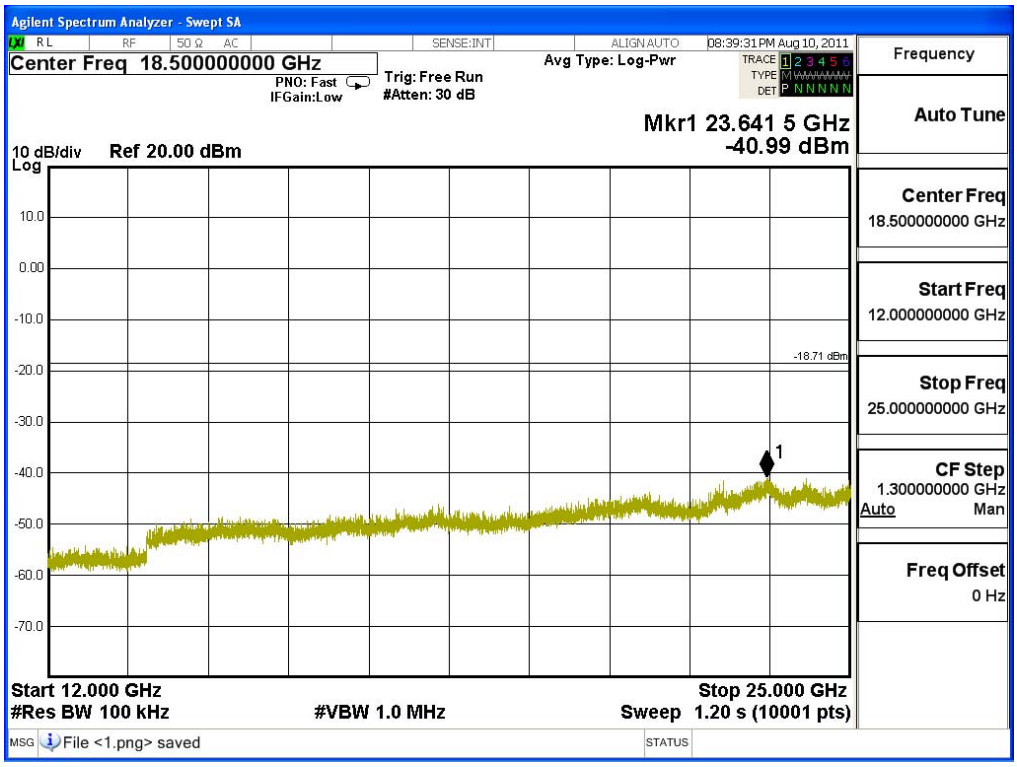
Auto
Man
Freq Offset
0 Hz

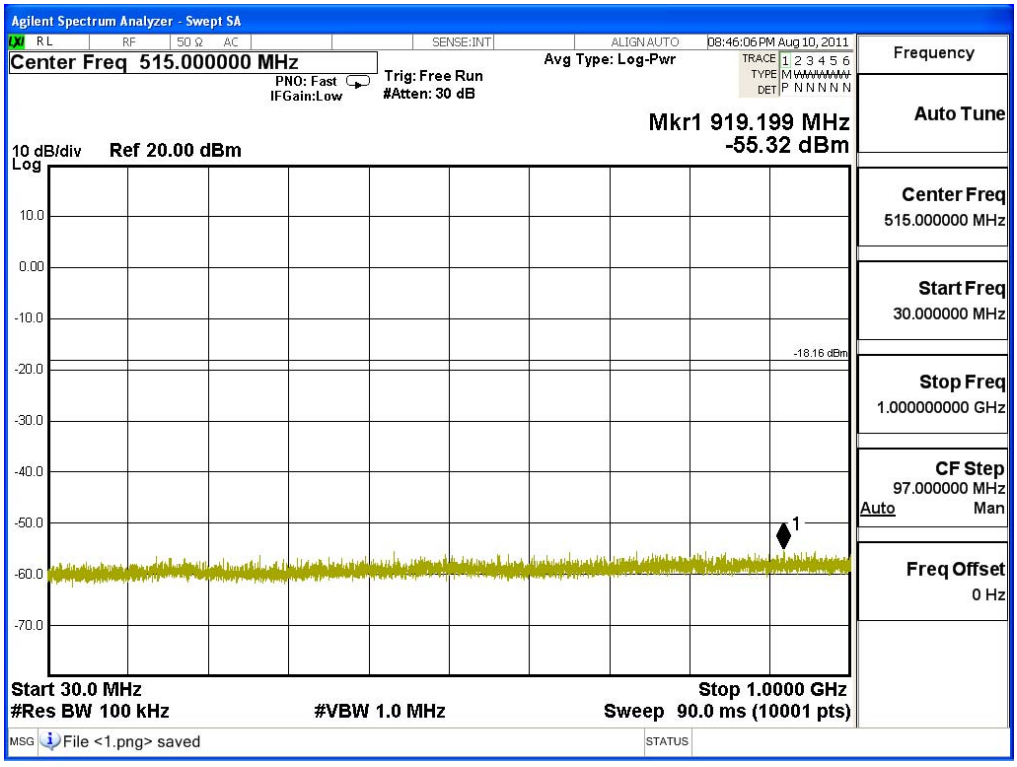
Channel 06 (2437MHz) 30MHz -25GHz-Chain A

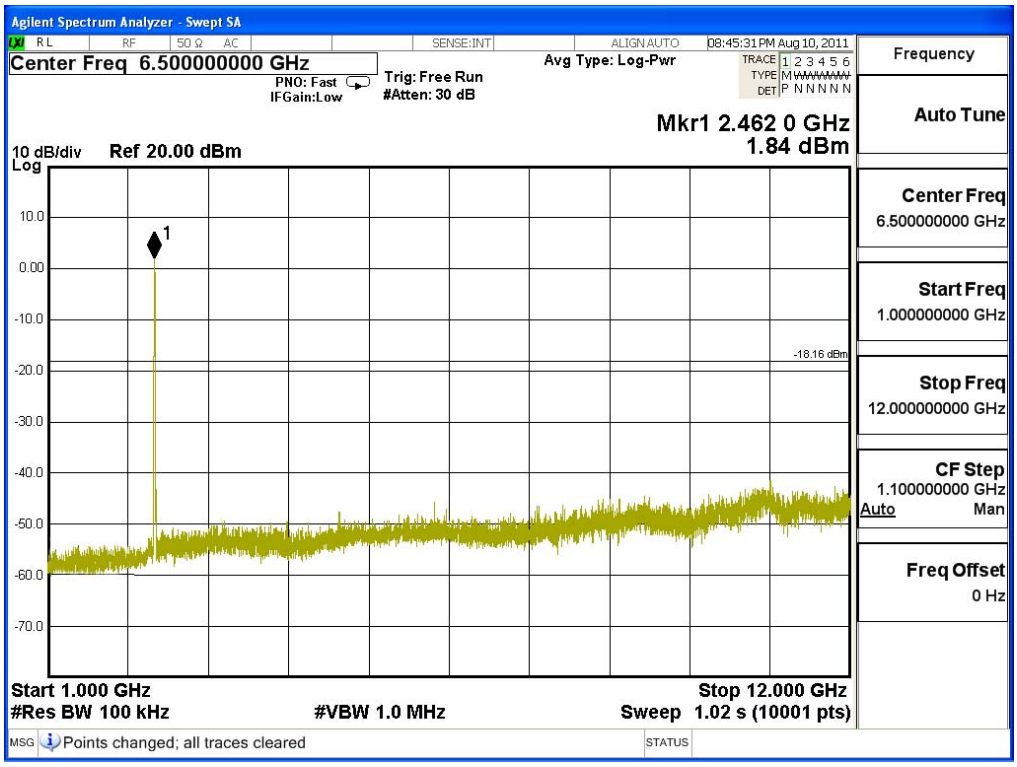


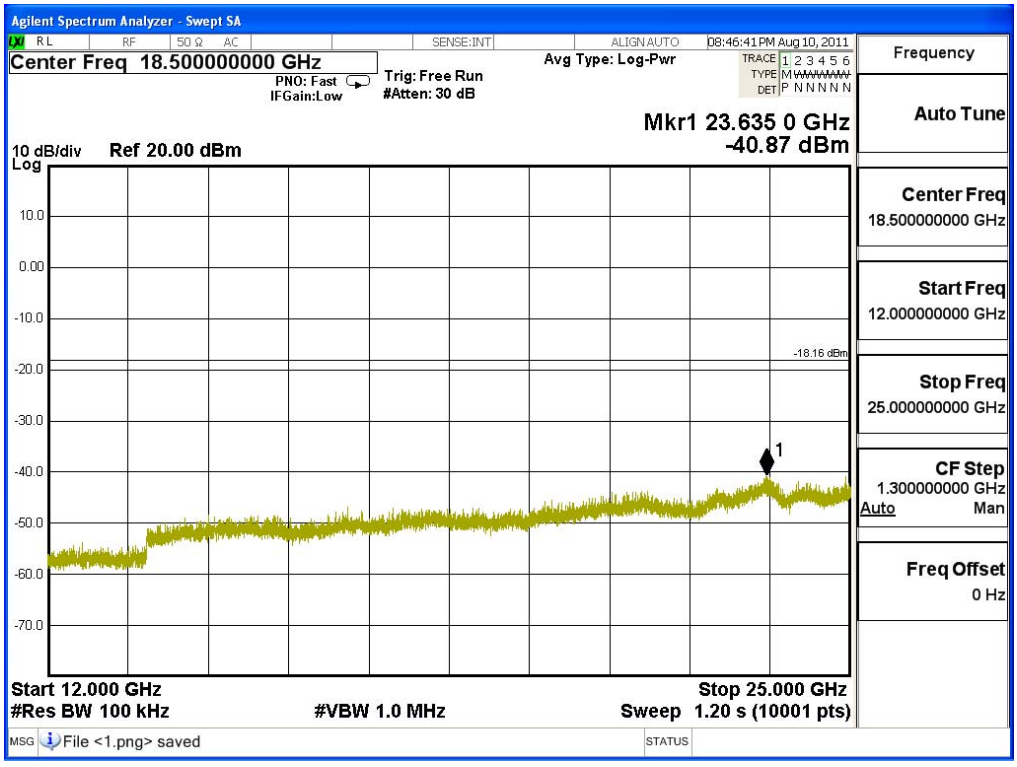




Channel 11 (2462MHz) 30MHz -25GHz-Chain A

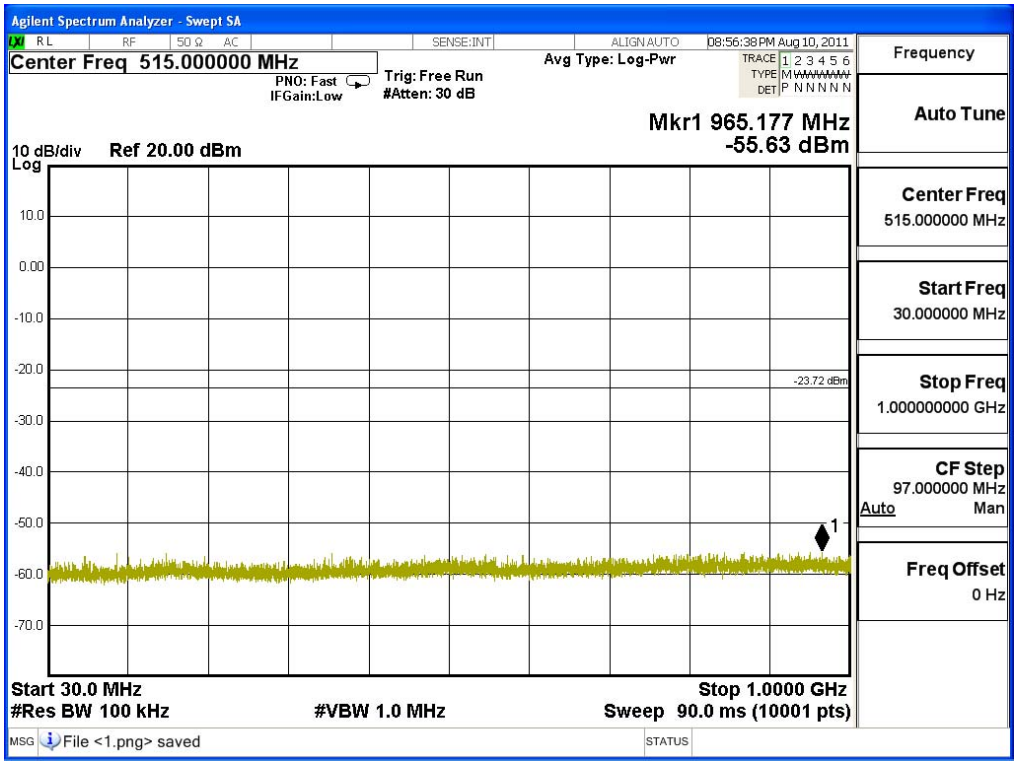


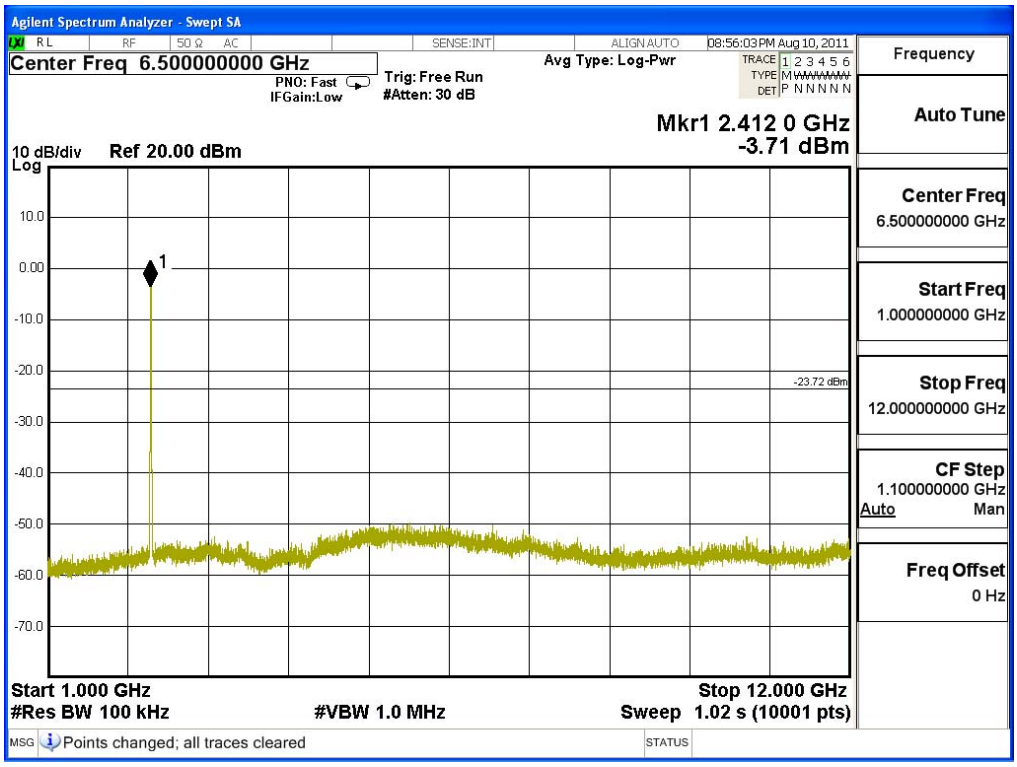

Agilent Spectrum Analyzer - Swept SA
Center Freq 6.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
08:45:31 PM Aug 10, 2011
Mkr1 2.462 0 GHz
1.84 dBm
10 dB/div
Log
Ref 20.00 dBm
-18.16 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
Points changed; all traces cleared
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz

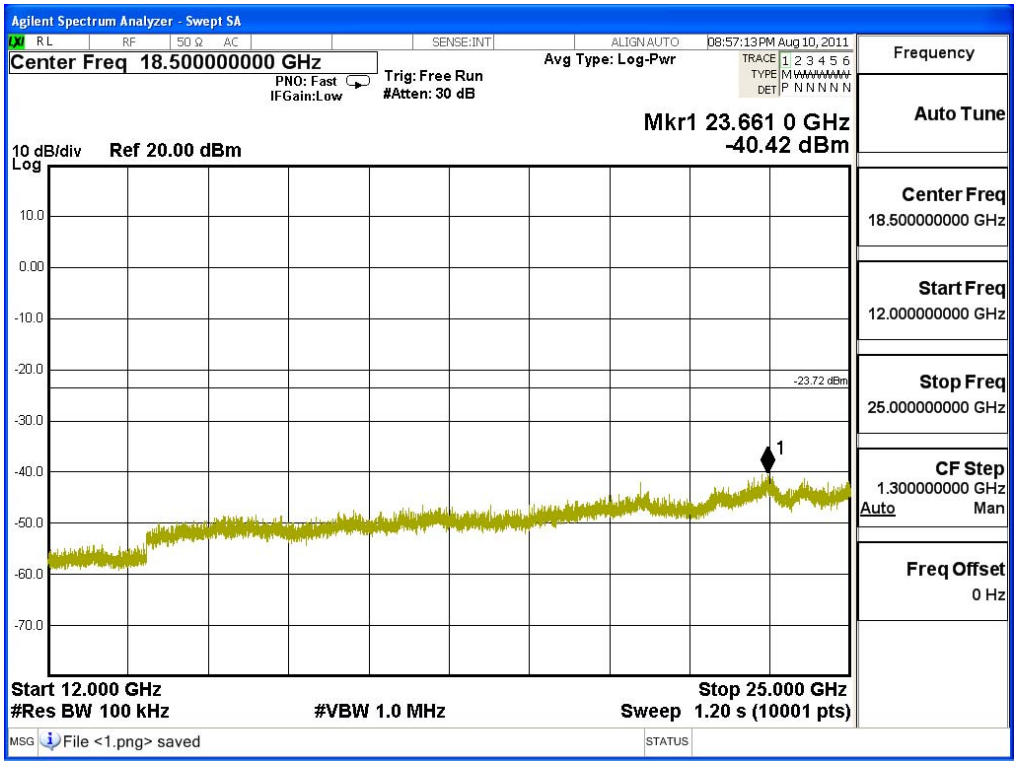

Agilent Spectrum Analyzer - Swept SA
Center Freq 18.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
08:46:41 PM Aug 10, 2011
Mkr1 23.635 0 GHz
-40.87 dBm
10 dB/div
Log
Ref 20.00 dBm
-18.16 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
File <1.png> saved
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

Product : Plug-In PC.
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11g 6Mbps

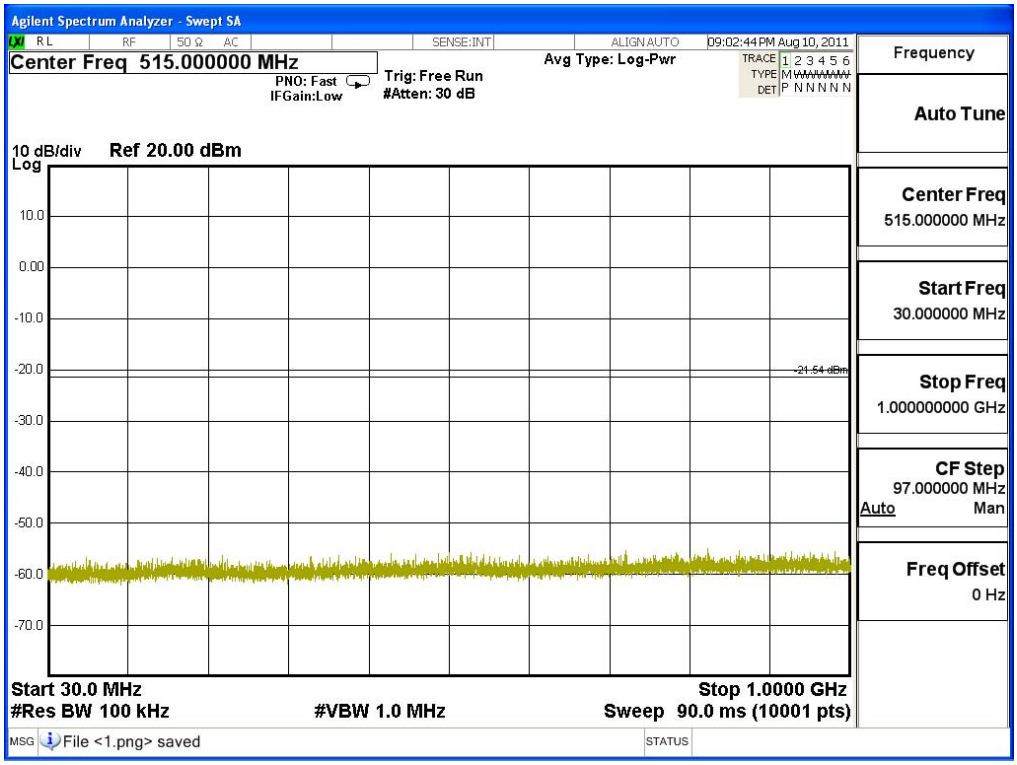
Channel 01 (2412MHz) 30MHz -25GHz-Chain A

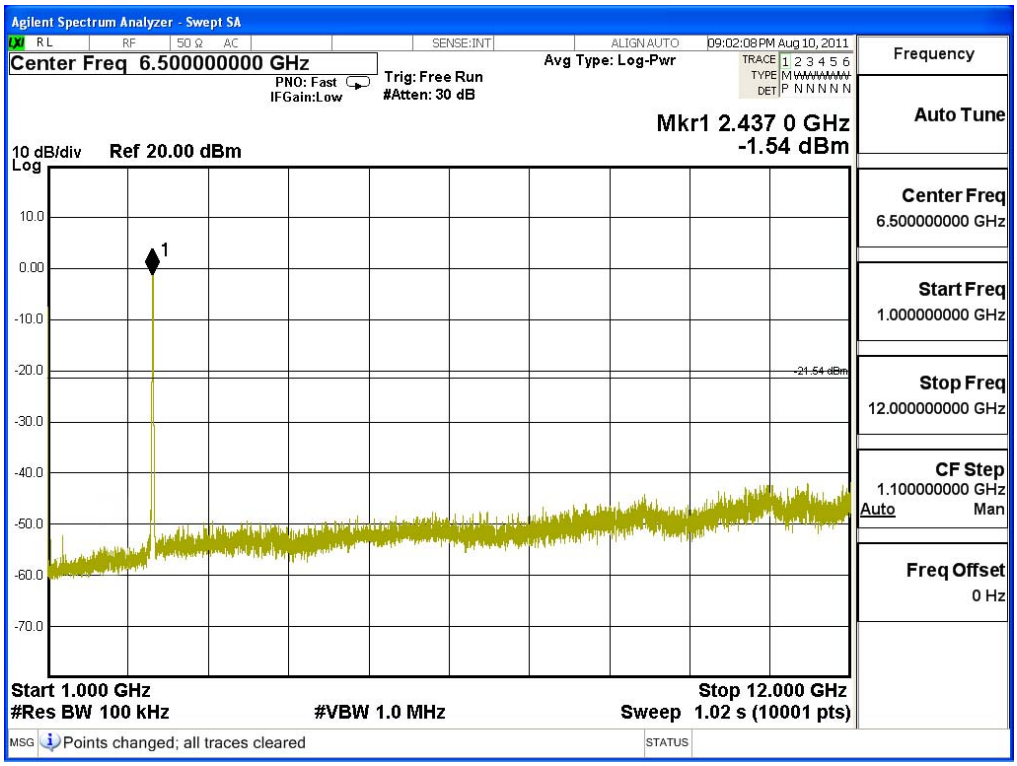


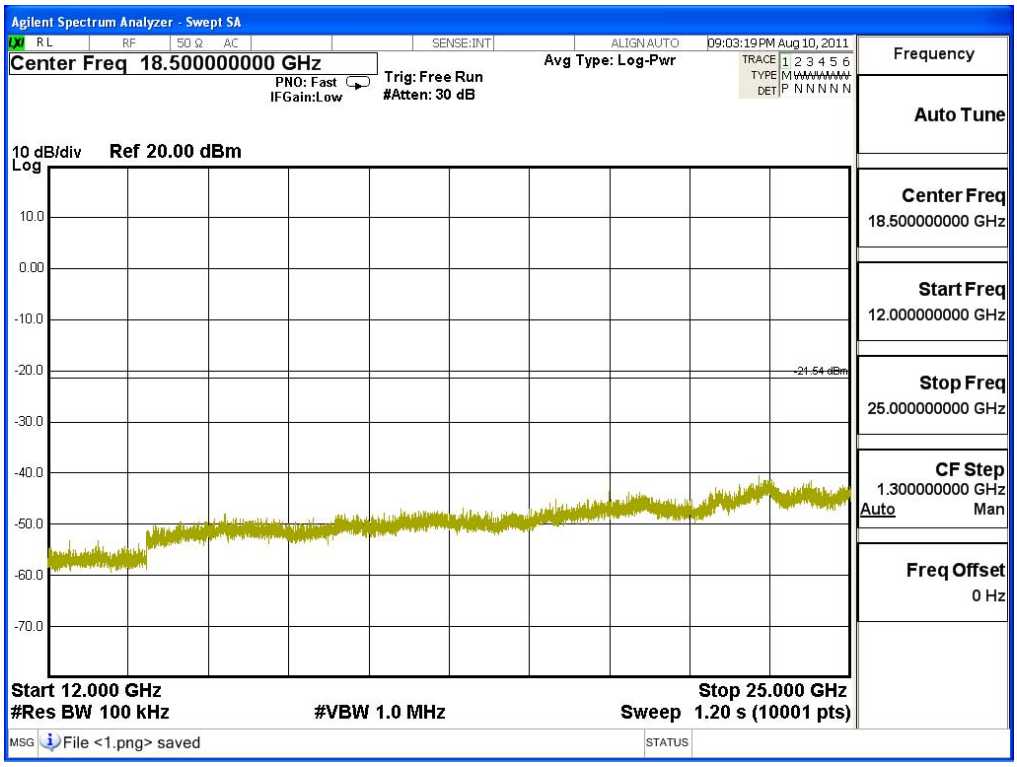

Agilent Spectrum Analyzer - Swept SA
Center Freq 6.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
08:56:03 PM Aug 10, 2011
Mkr1 2.412 0 GHz
-3.71 dBm
10 dB/div
Log
Ref 20.00 dBm
-23.72 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
Points changed; all traces cleared
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 18.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
08:57:13 PM Aug 10, 2011
Mkr1 23.661 0 GHz
-40.42 dBm
10 dB/div
Log
Ref 20.00 dBm
-23.72 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
File <1.png> saved
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

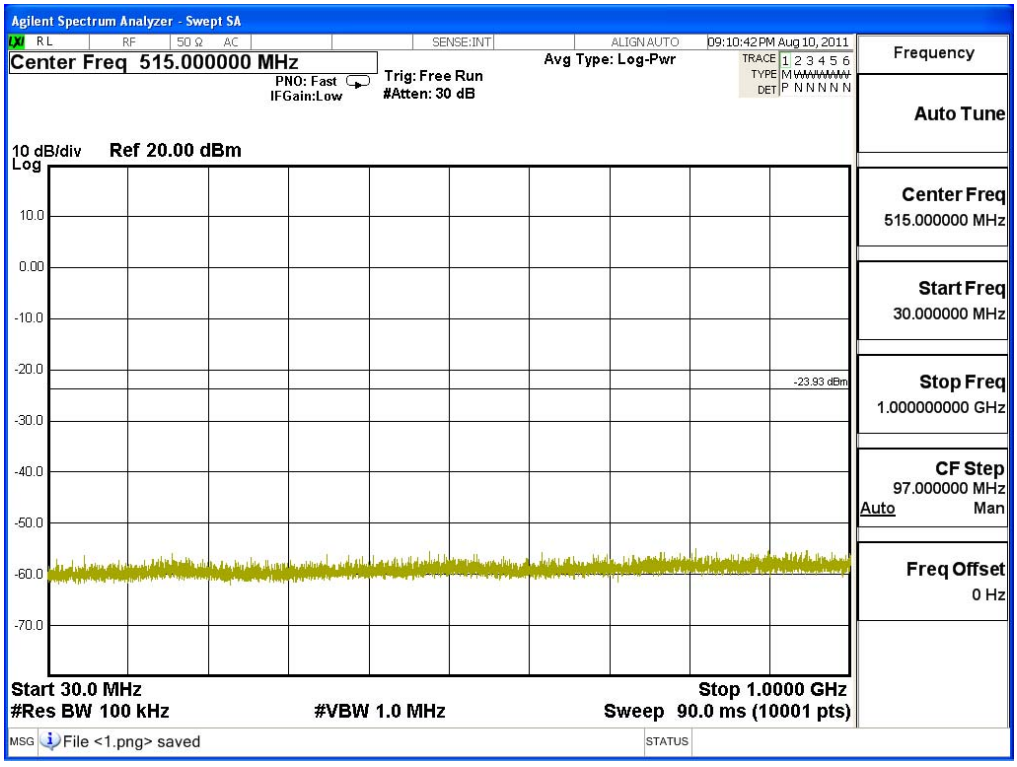
Channel 06 (2437MHz) 30MHz -25GHz-Chain A

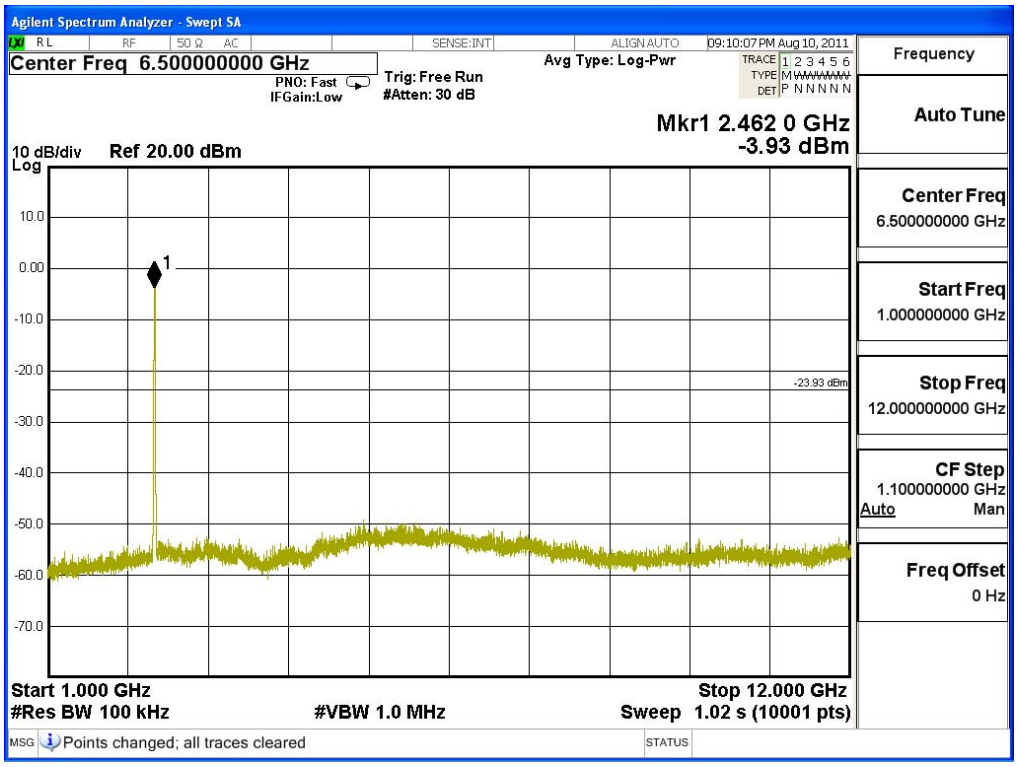


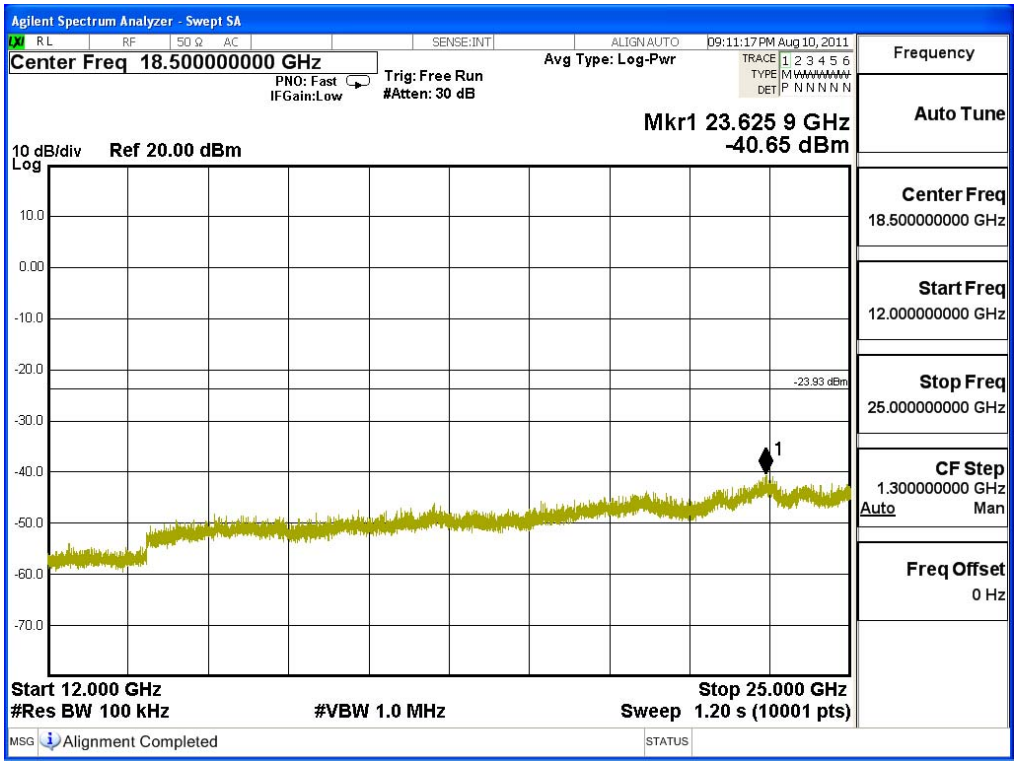




Channel 11 (2462MHz) 30MHz -25GHz-Chain A

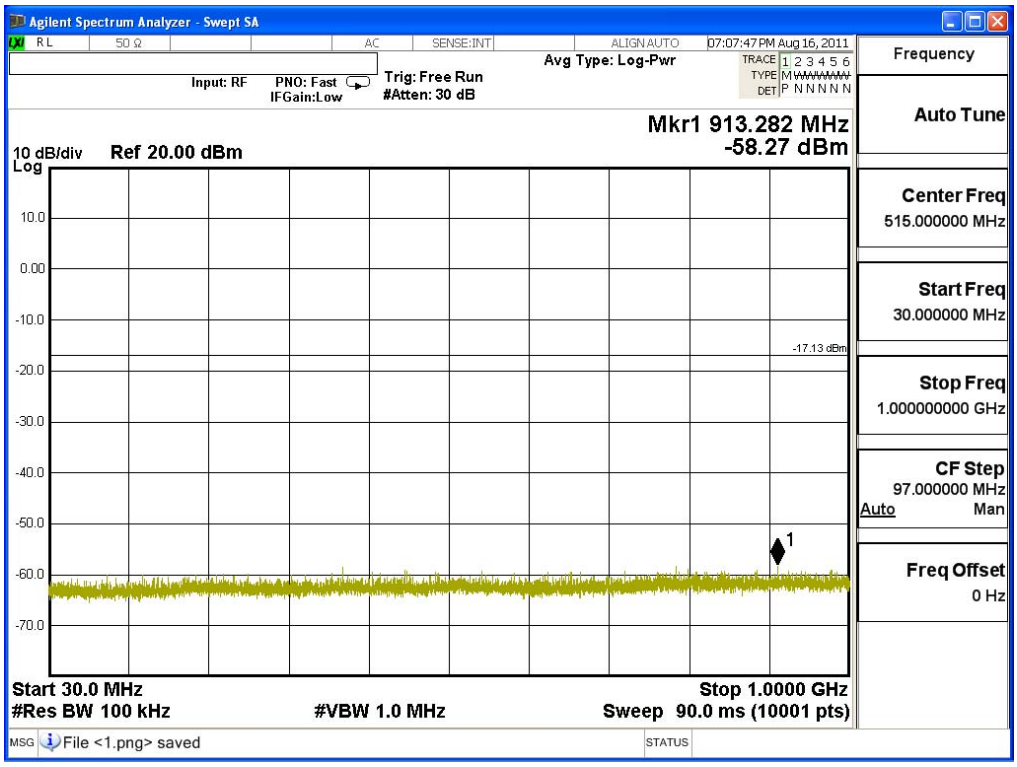


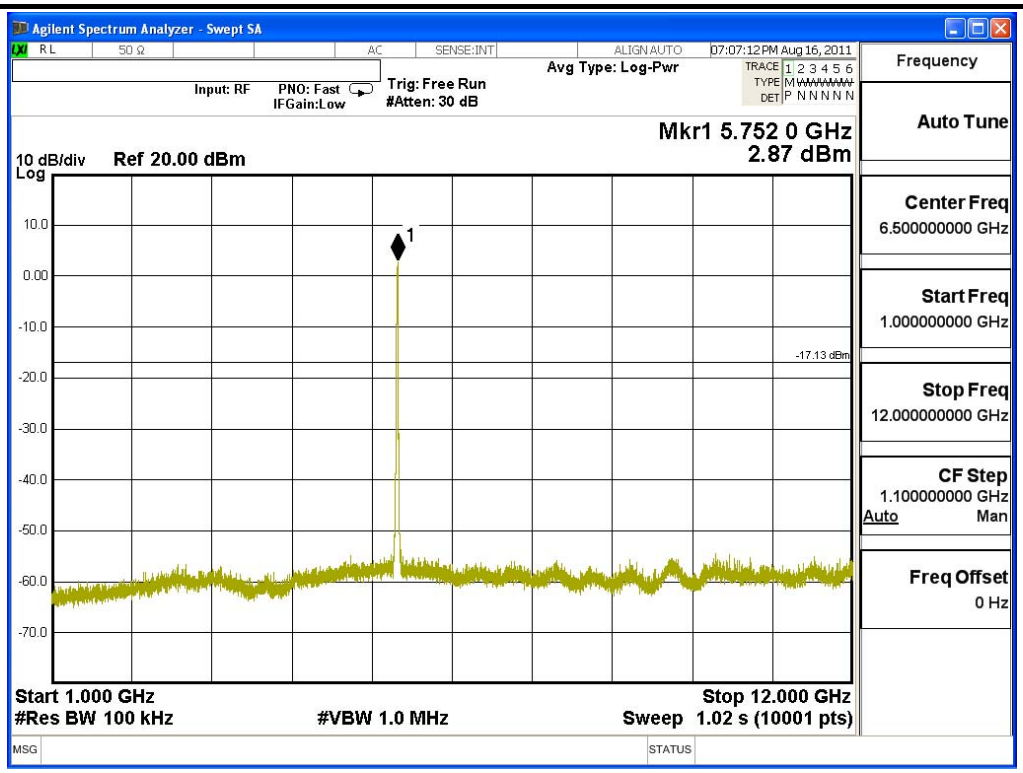

Agilent Spectrum Analyzer - Swept SA
Center Freq 6.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
09:10:07 PM Aug 10, 2011
Mkr1 2.462 0 GHz
-3.93 dBm
10 dB/div
Log
Ref 20.00 dBm
-23.93 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
Points changed; all traces cleared
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz

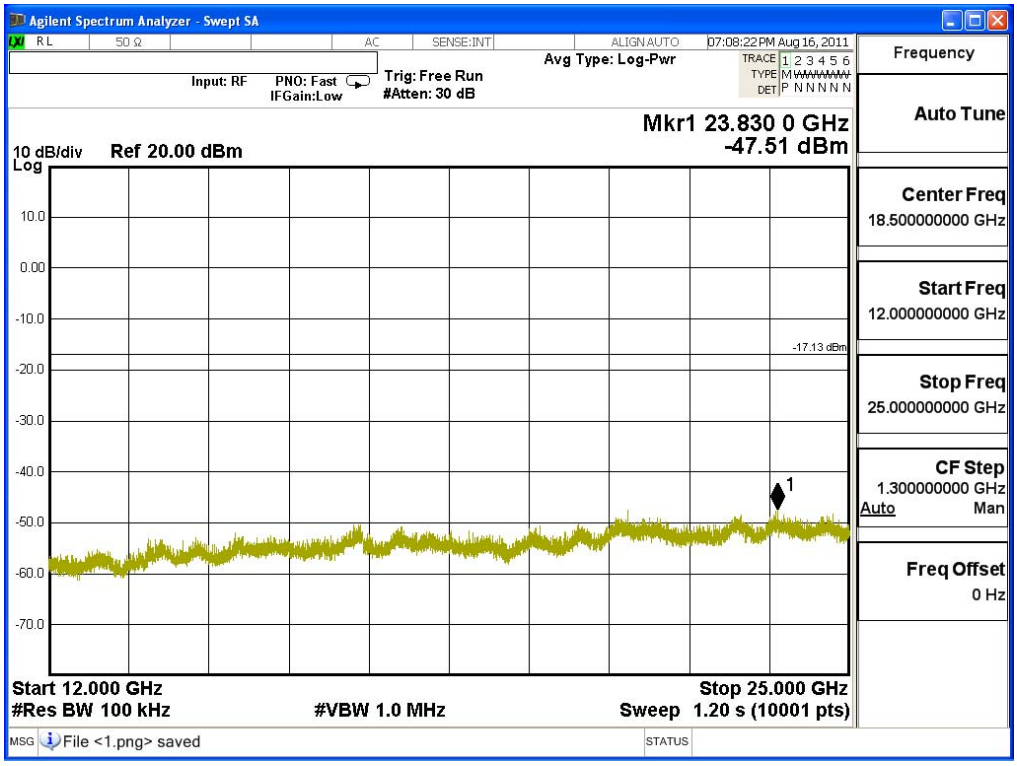

Agilent Spectrum Analyzer - Swept SA
Center Freq 18.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
09:11:17 PM Aug 10, 2011
Mkr1 23.625 9 GHz
-40.65 dBm
10 dB/div
Log
Ref 20.00 dBm
-23.93 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
Alignment Completed
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

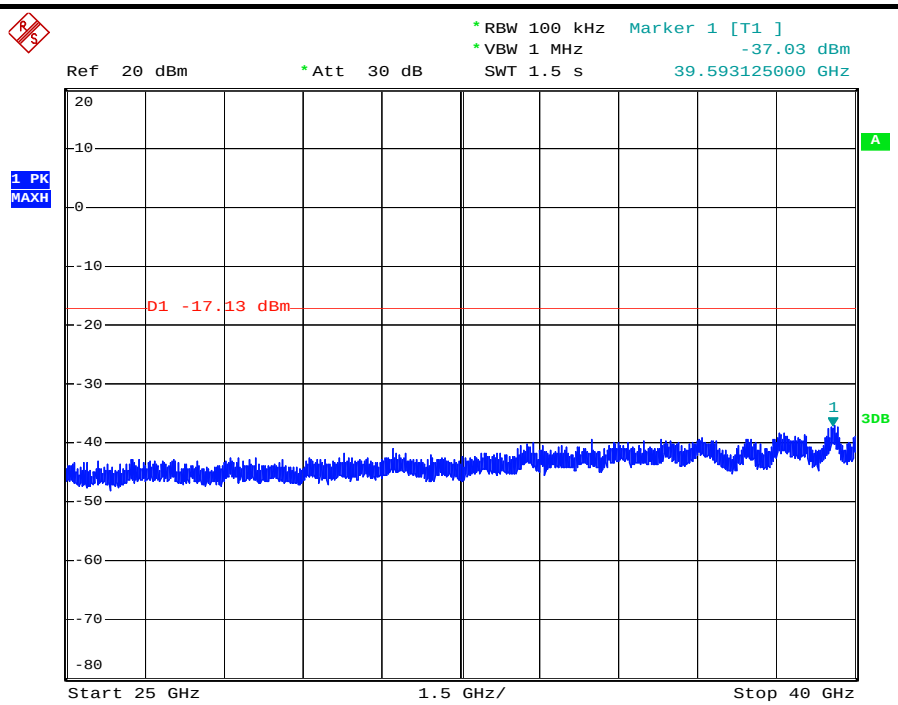
Product : Plug-In PC.
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit - 802.11a 6Mbps

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




Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:07:12 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Mkr1 5.752 0 GHz
2.87 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-17.13 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

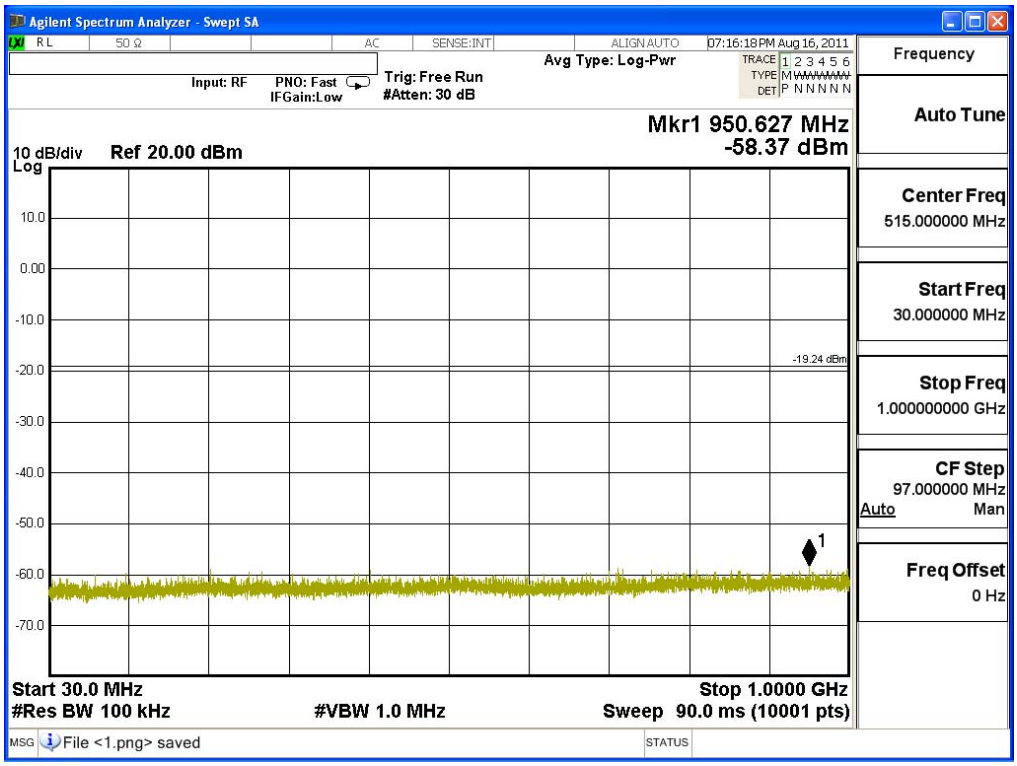

Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:08:22 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Mkr1 23.830 0 GHz
-47.51 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-17.13 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz
MSG
File <1.png> saved
STATUS

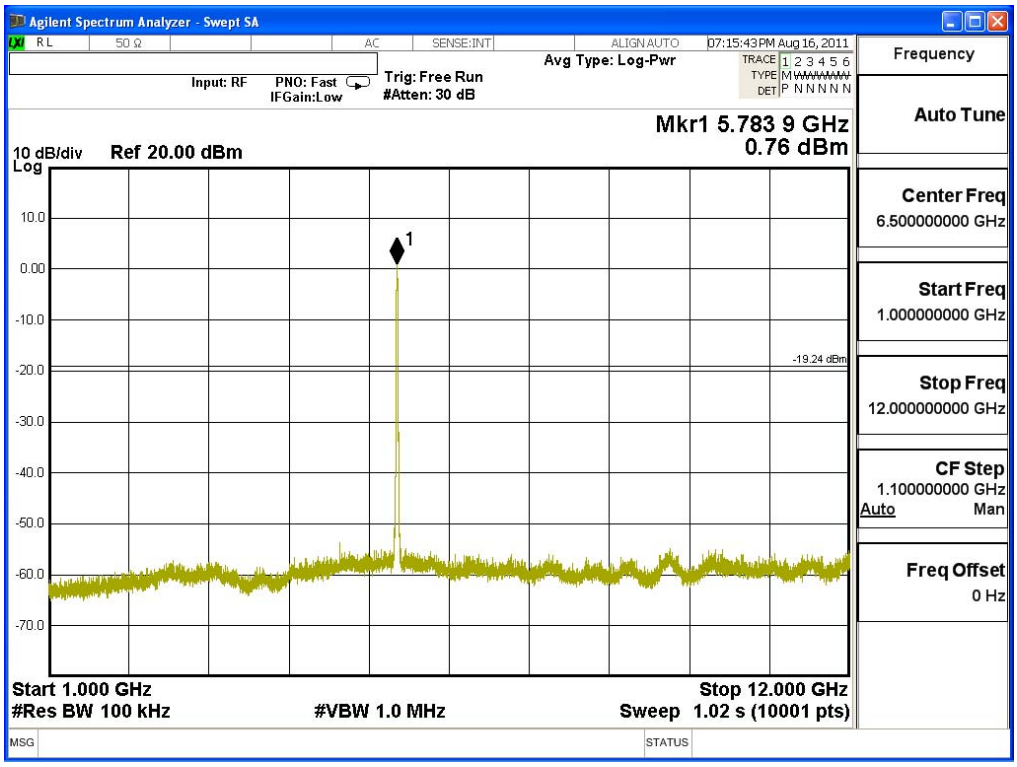


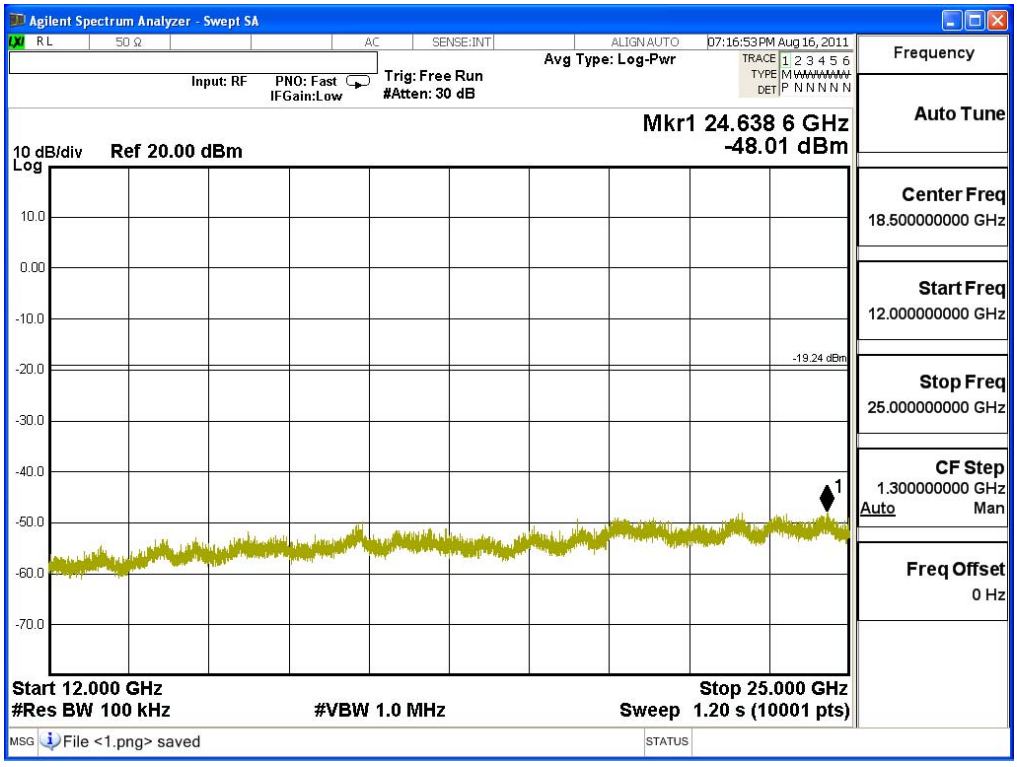
5190

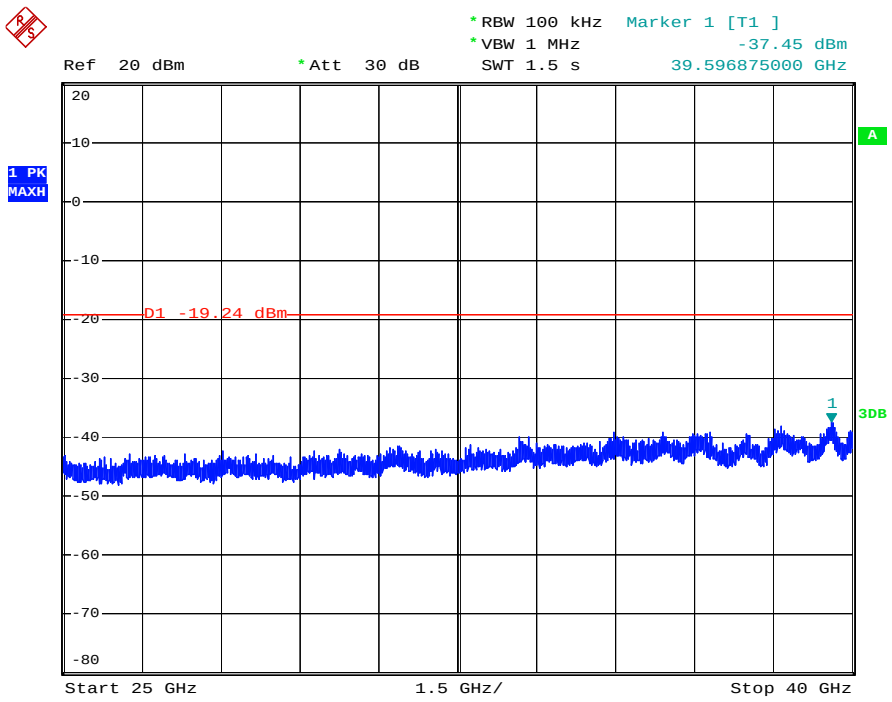
Date: 24.AUG.2011 06:47:33

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




Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:15:43 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Mkr1 5.783 9 GHz
0.76 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.24 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz

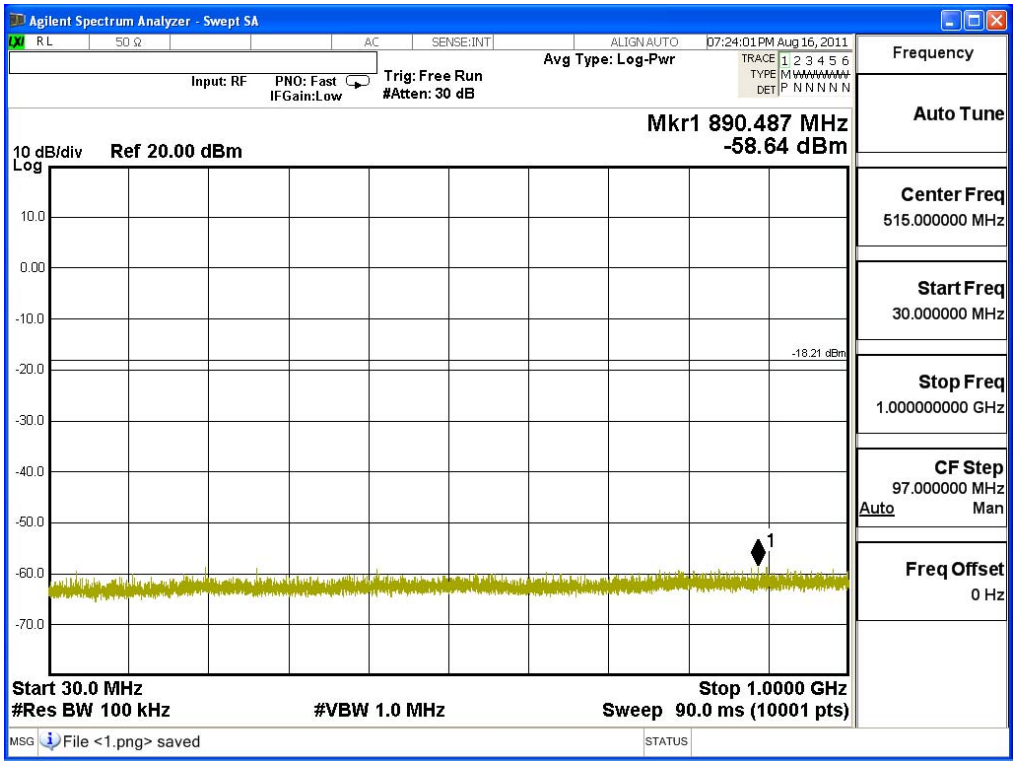

Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:16:53 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Mkr1 24.638 6 GHz
-48.01 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.24 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
File <1.png> saved
STATUS
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

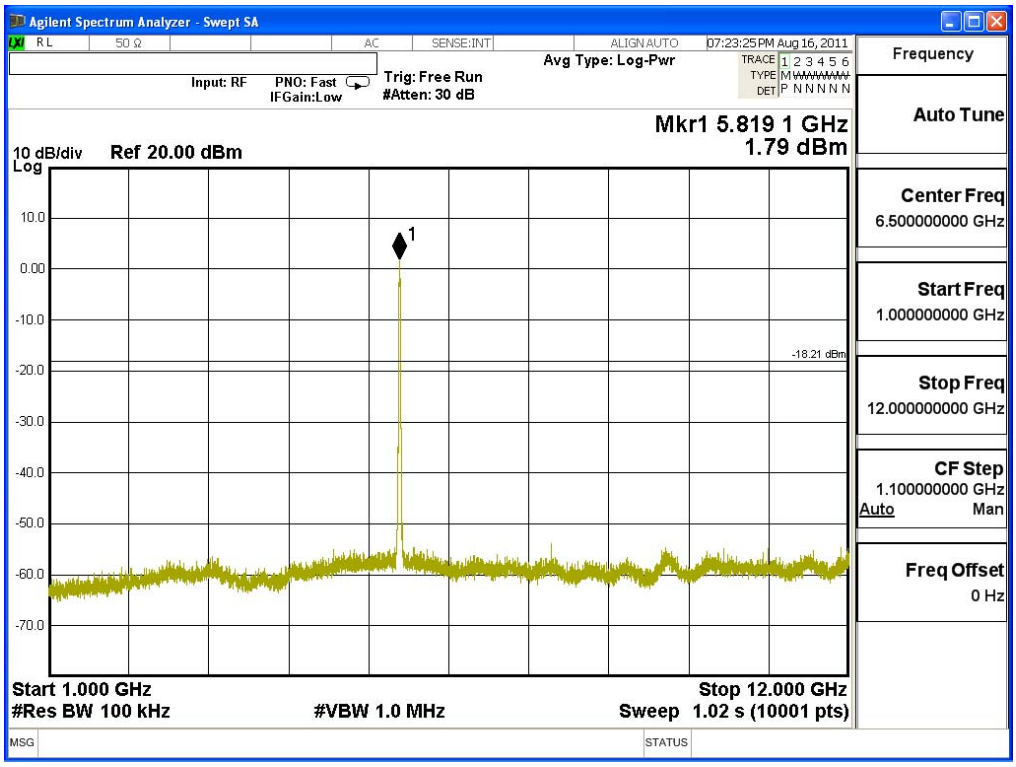


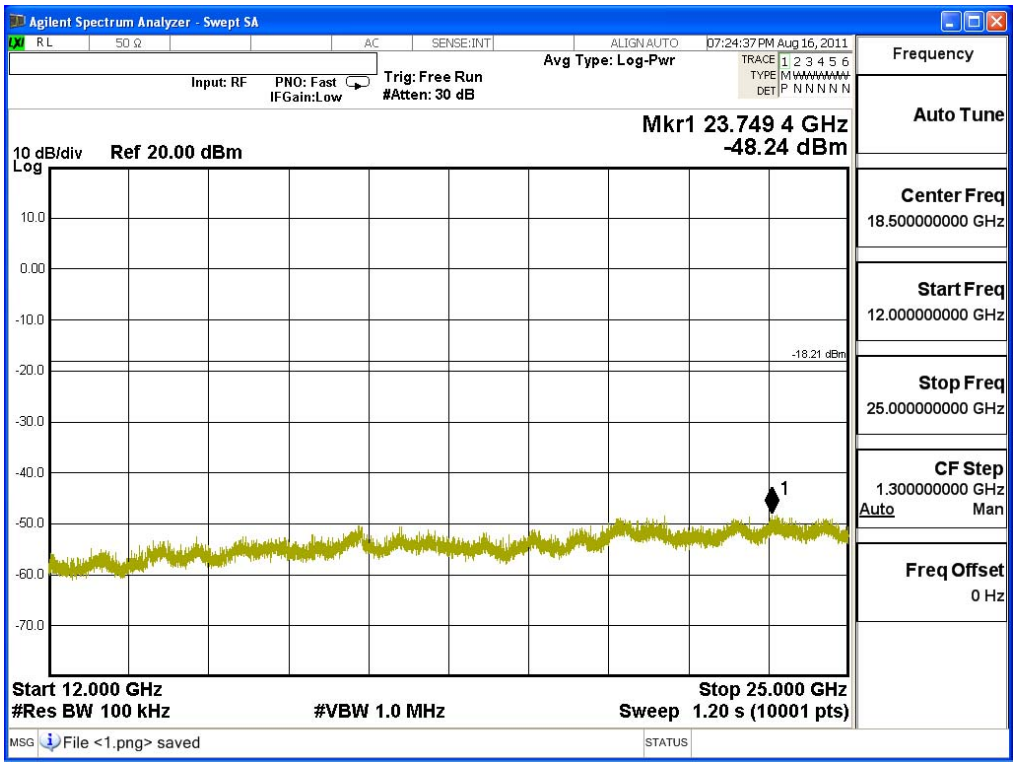
5190

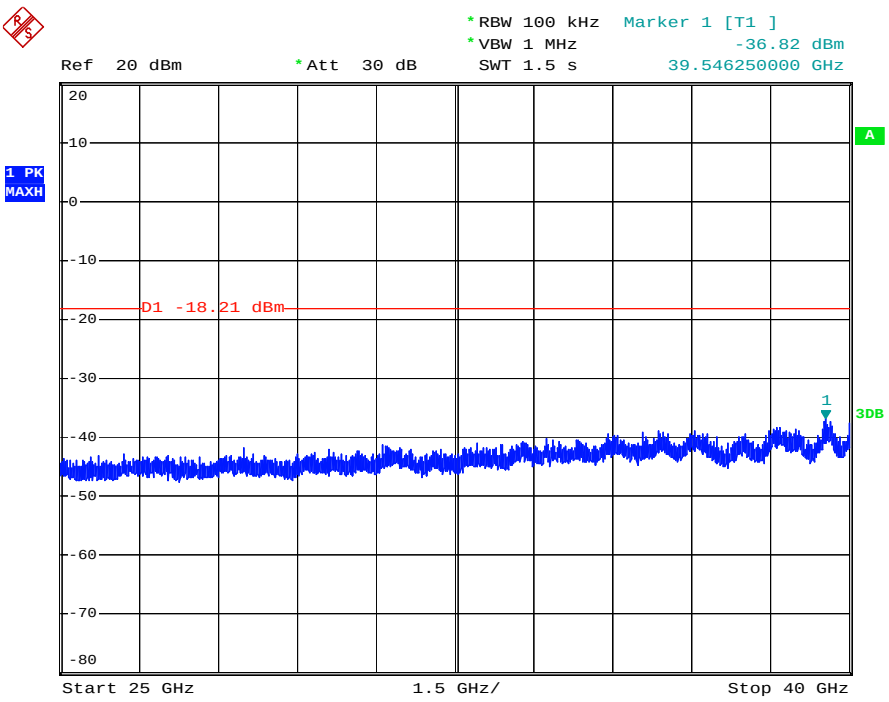
Date: 24.AUG.2011 06:50:10

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




Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:23:25 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Mkr1 5.819 1 GHz
1.79 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.21 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:24:37 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Mkr1 23.749 4 GHz
-48.24 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.21 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
File <1.png> saved
STATUS
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

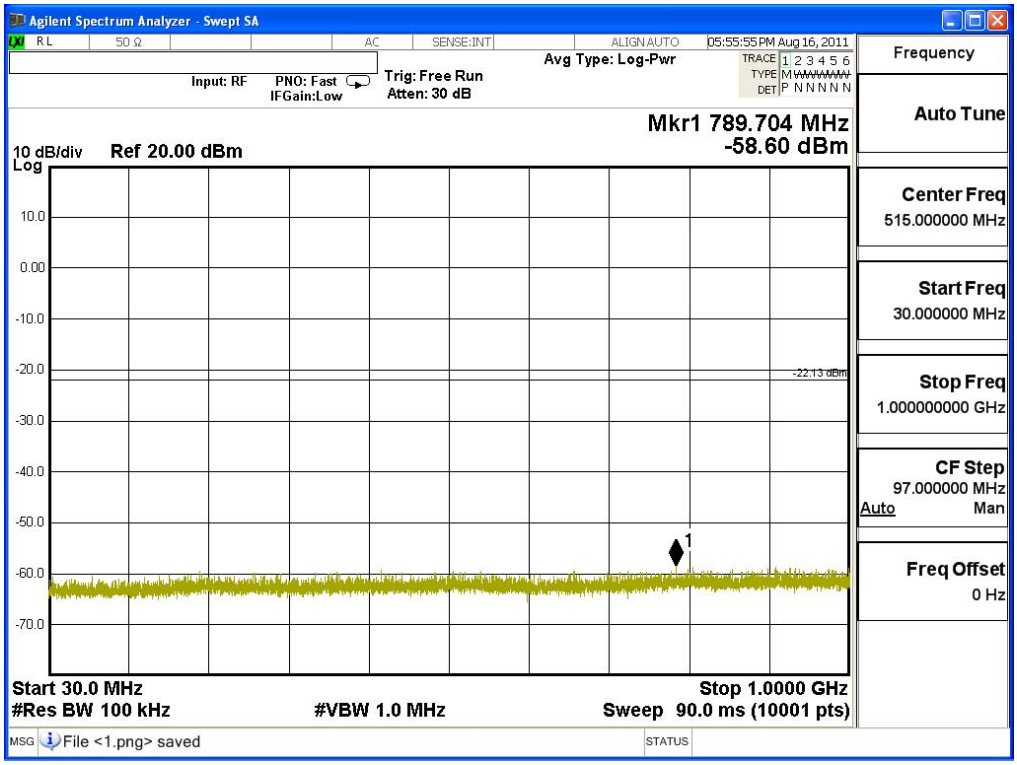


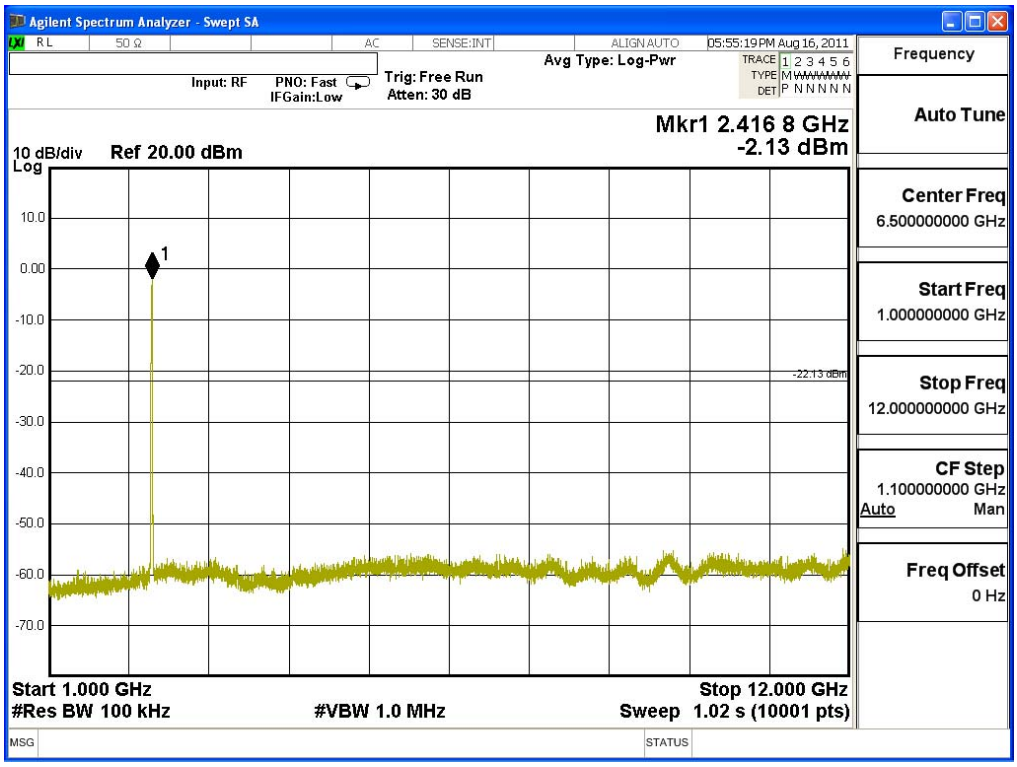
5190

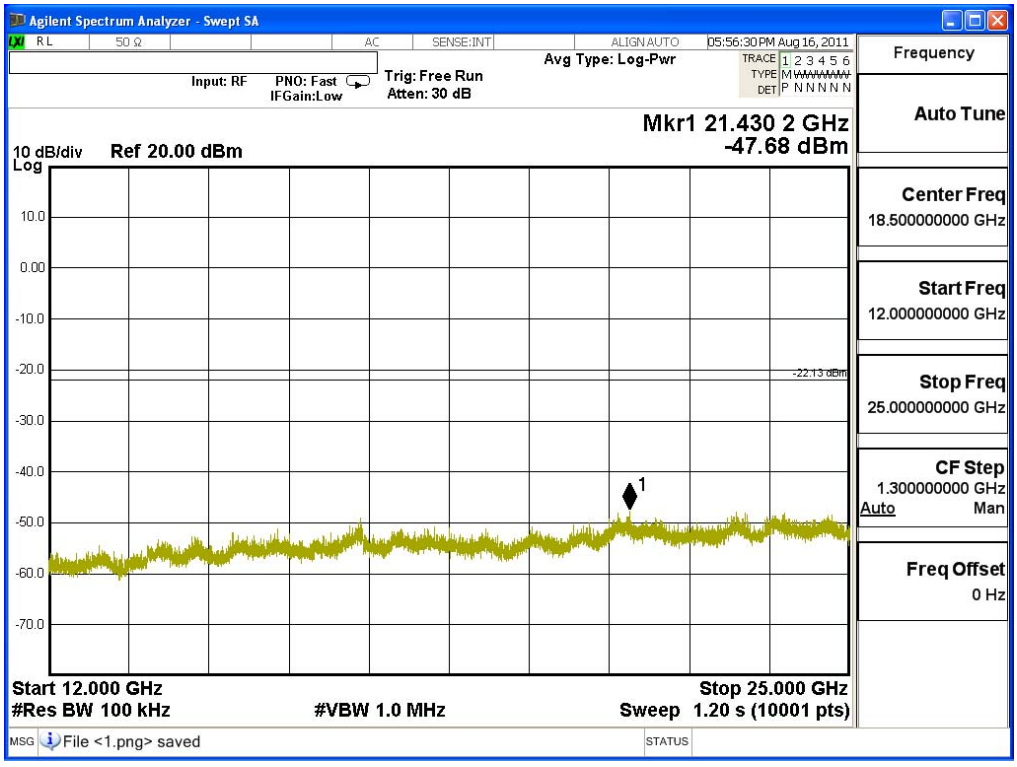
Date: 24.AUG.2011 06:51:37

Product : Plug-In PC.
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit - 802.11n-20BW_14.4Mbps(2.4G Band)

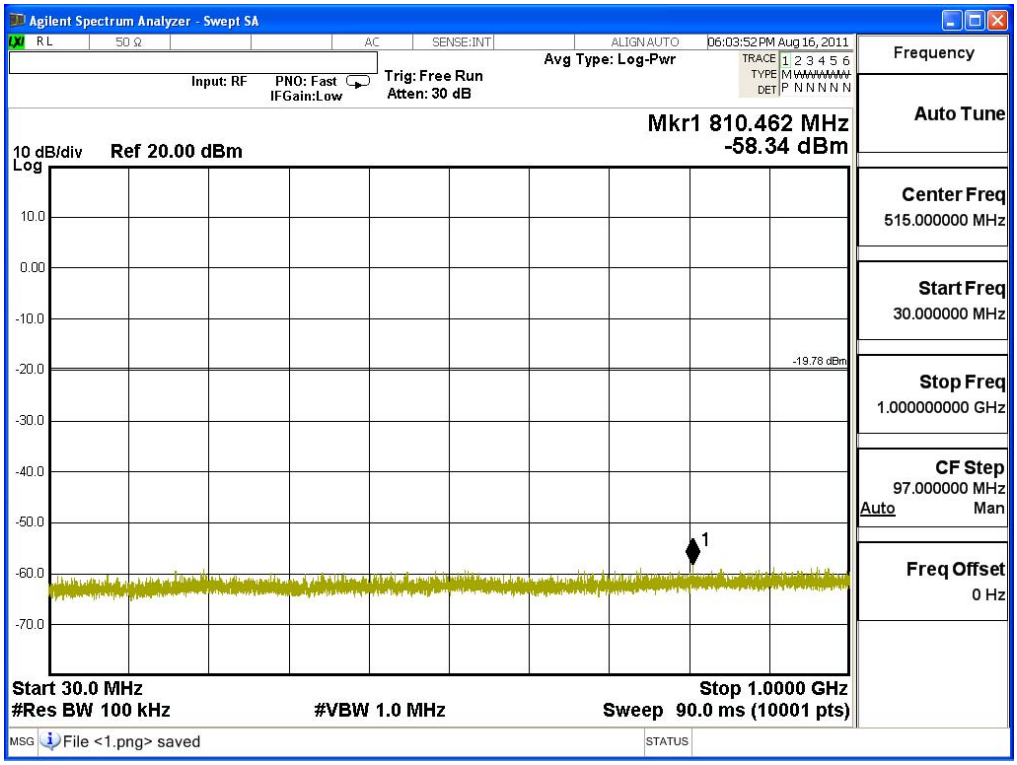
Channel 01 (2412MHz) 30MHz -25GHz-Chain A

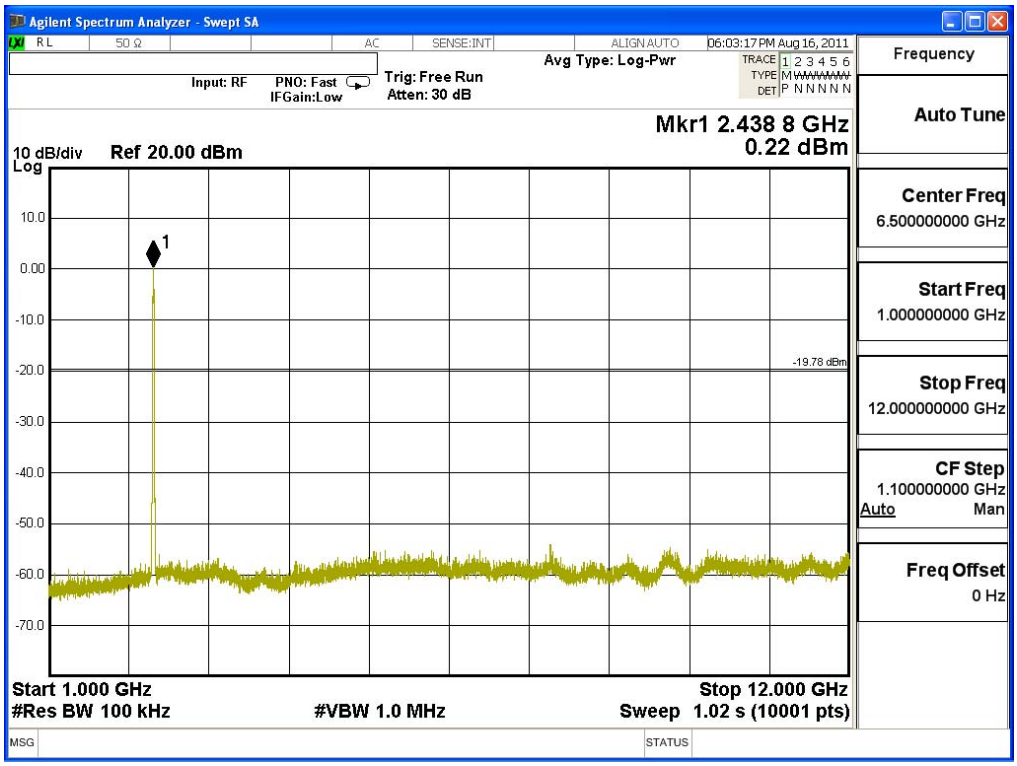


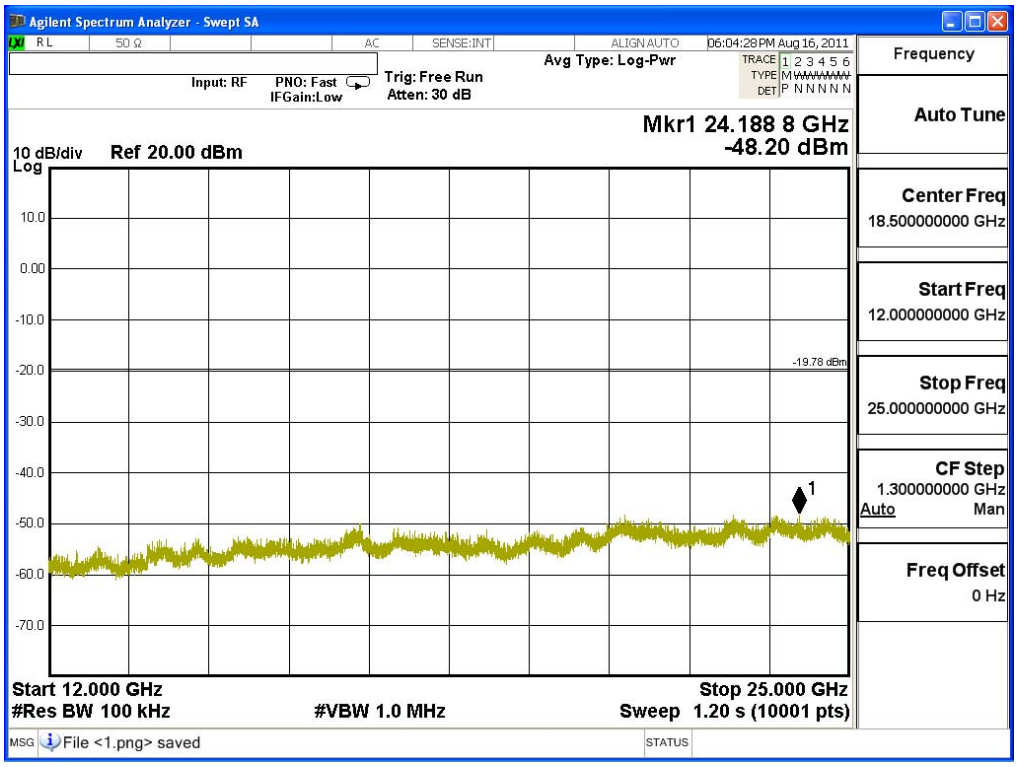

Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
05:55:19 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Mkr1 2.416 8 GHz
-2.13 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-22.13 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
05:56:30 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Mkr1 21.430 2 GHz
-47.68 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-22.13 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
File <1.png> saved
STATUS
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

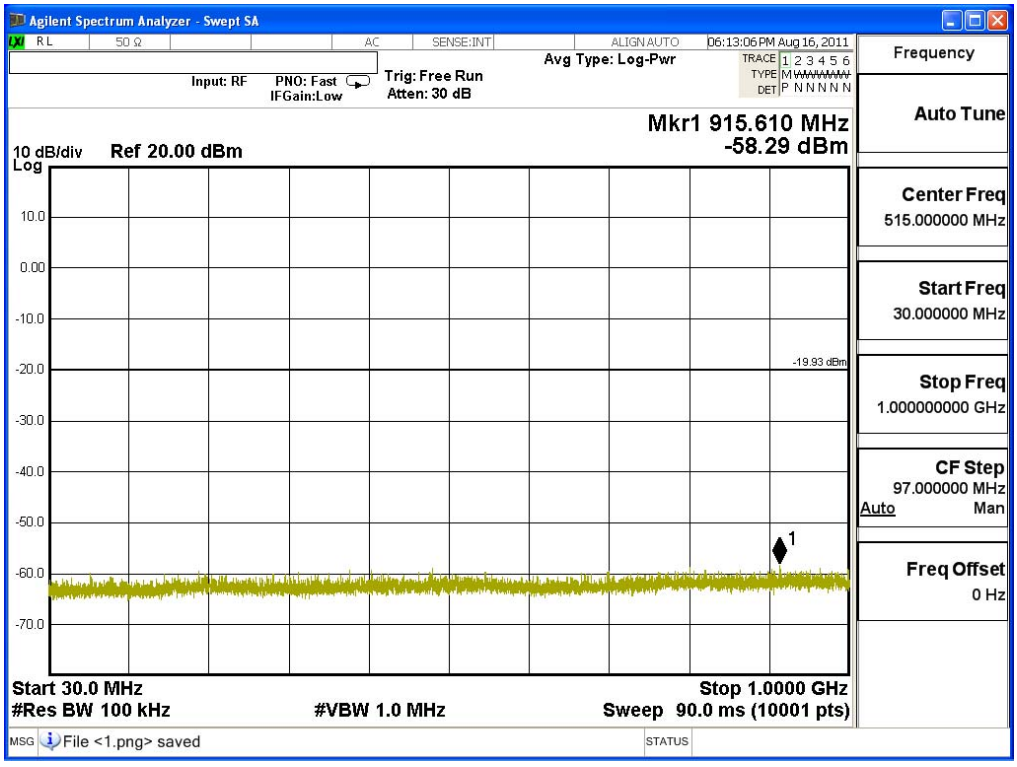
Channel 06 (2437MHz) 30MHz -25GHz-Chain A

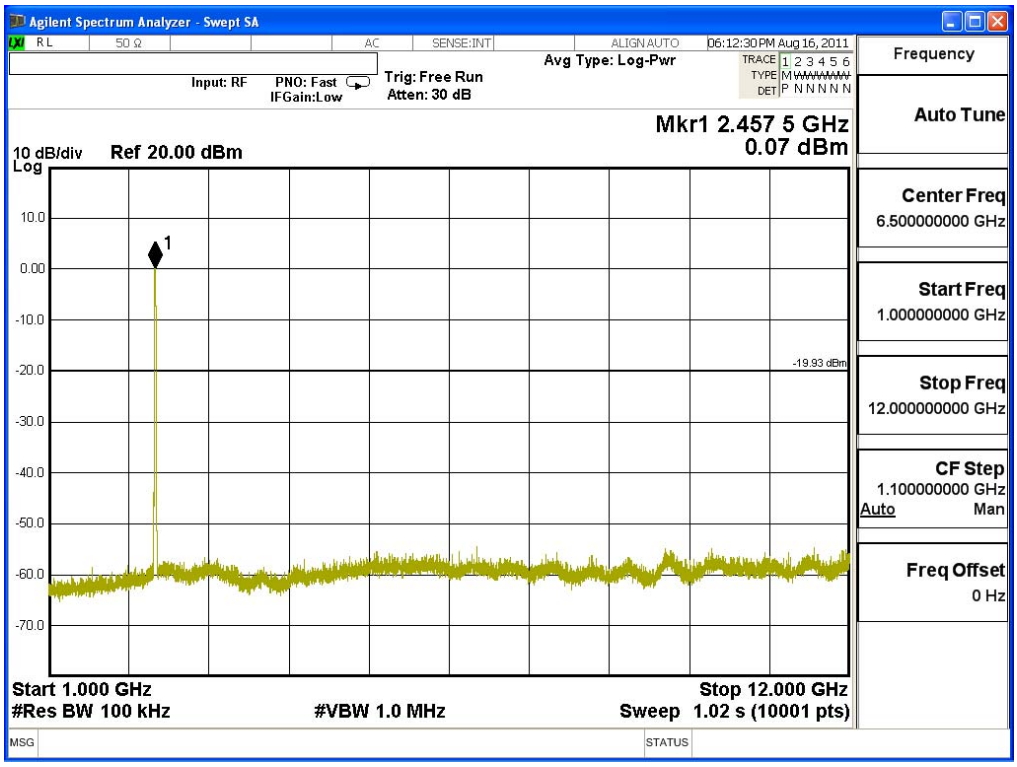


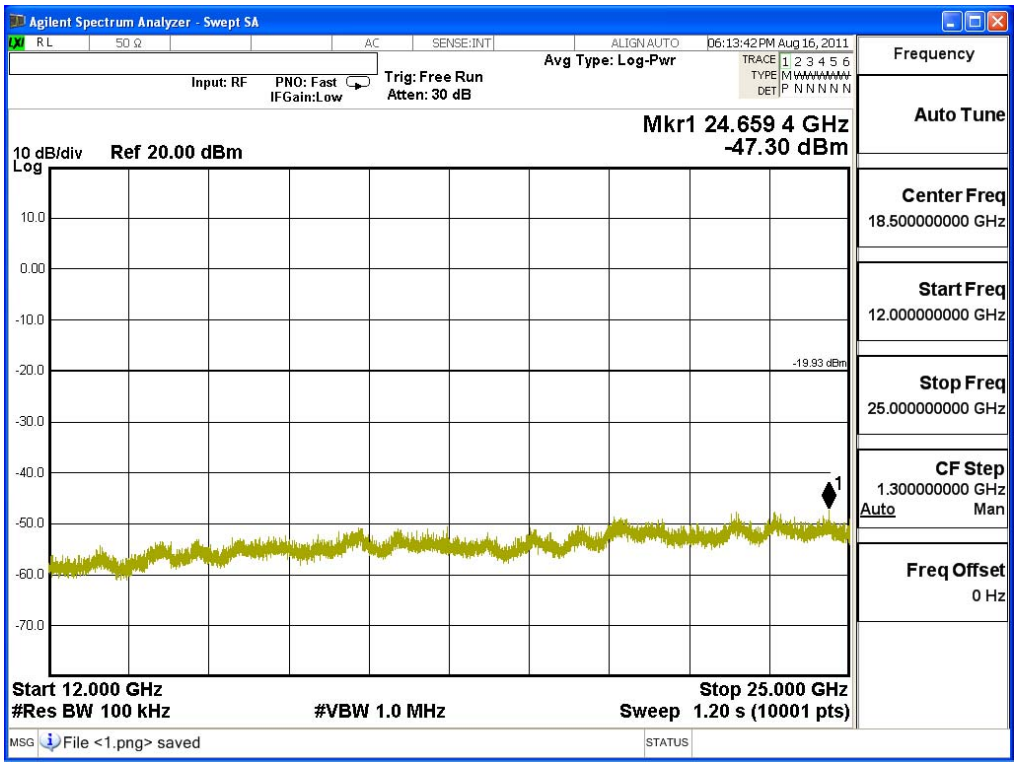




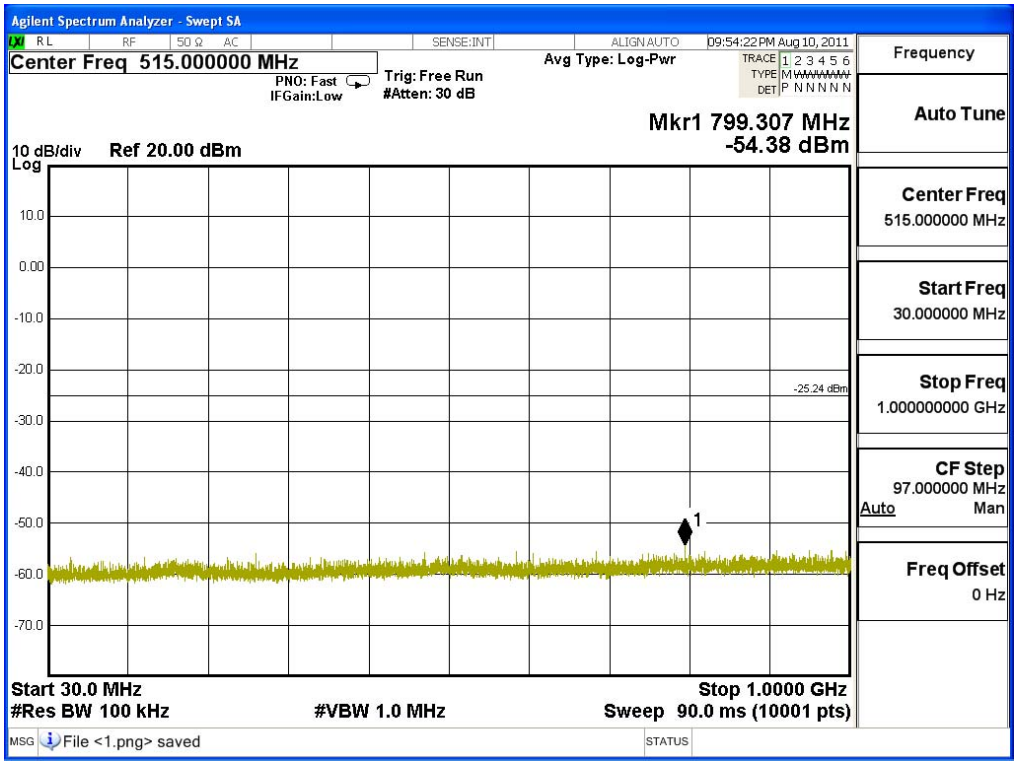
Channel 11 (2462MHz) 30MHz -25GHz-Chain A

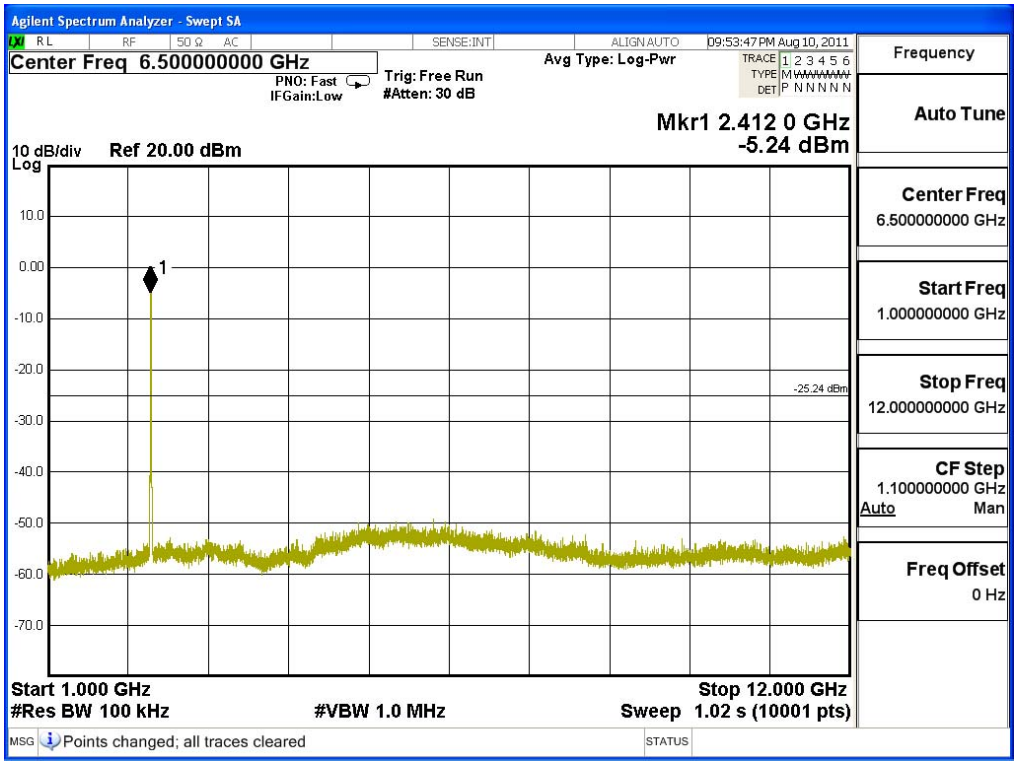


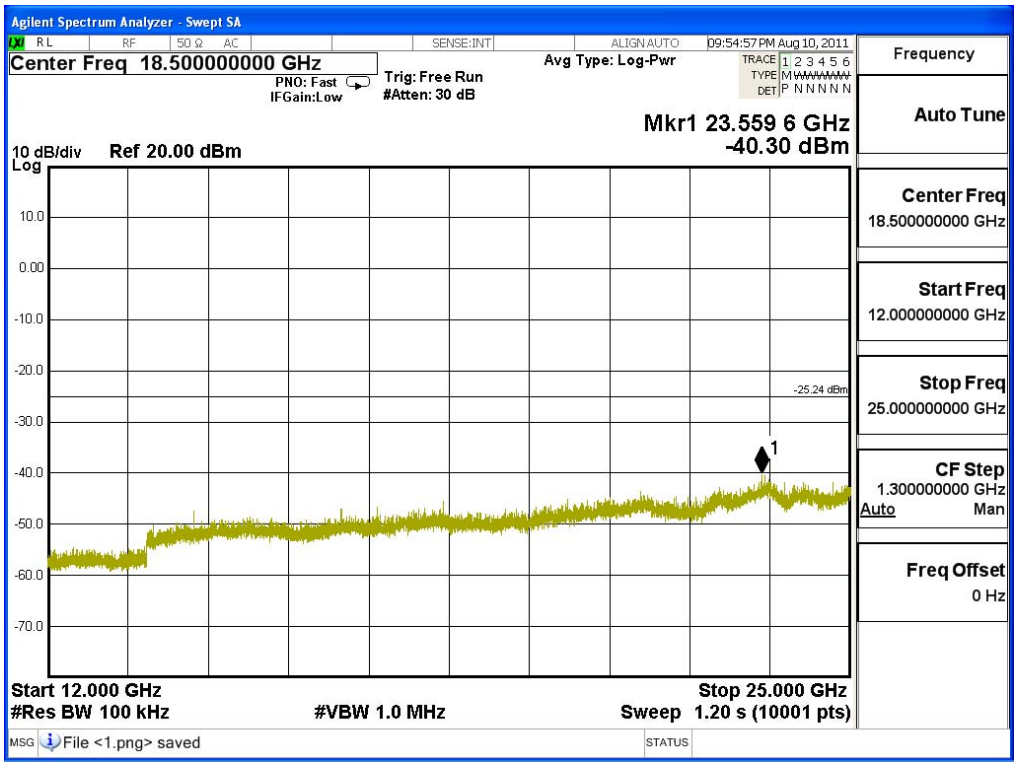

Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:12:30 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Mkr1 2.457 5 GHz
0.07 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.93 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:13:42 PM Aug 16, 2011
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Mkr1 24.659 4 GHz
-47.30 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.93 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
File <1.png> saved
STATUS
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

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







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