Test Report

Product Name	Router
Model No	Z1
FCC ID.	UDX-60024010

Applicant	Meraki Inc.
Address	660 Alabama St., San Francisco, CA, 94110

Date of Receipt	Aug. 30, 2012
Issue Date	Sep. 12, 2012
Report No.	129065R-RFUSP28V01
Report Version	V1.0

Testing Laboratory
0914

Test Report Certification

Issue Date: Sep. 12, 2012
Report No.: 129065R-RFUSP28V01

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

Product Name	Router
Applicant	Meraki Inc.
Address	660 Alabama St., San Francisco, CA, 94110
Manufacturer	Meraki Inc.
Model No.	Z1
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	Meraki
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.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

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(Senior Adm. Specialist / Rita Huang)

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(Engineer / Vincent Chu)

Approved By :

(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Router
Trade Name	Meraki
Model No.	Z1
FCC ID.	UDX-60024010
Frequency Range	802.11b/g/n-20MHz:2412-2462MHz,802.11n-40MHz:2422-2452MHz 802.11a/n-20MHz:5745-5825MHz ,802.11n-40MHz:5755-5795MHz
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7 802.11a/n-20MHz: 5, n-40MHz: 2
Data Speed	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps, 802.11n: up to 300Mbps
Channel separation	802.11b/g/n-20MHz: 5 MHz, 802.11a/n-20MHz: 20MHz 802.11n-40MHz: 40MHz
Type of Modulation	802.11b:DSSS DBPSK, DQPSK, CCK 802.11a/g/n: OFDM BPSK, QPSK, 16QAM, 64QAM
Antenna Type	PIFA
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Adapter	MFR: Powertron Electronics Corp., M/N: PA1015-2HU Input: 100-240V, 0.4A, 50-60Hz Output: 12V, 1.5A 18W Max Cable out: Non-Shielded, 1.5m

Antenna List

No.	Manufacturer	Part No.	Peak Gain	Note
1.	MAGLAYERS	MSA-3810-2G4C1-A29 MSA-3810-2G4C1-A39	2.8dBi in 2.4GHz	Use in 2.4GHz band
2.	MAGLAYERS	MSA-1610-5G0C1-A2 MSA-1610-5G0C1-A3	2dBi in 5.725~5.850GHz	Use in 5GHz band

Note: The antenna of EUT is conform to FCC 15.203

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

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

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

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

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

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

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

Channel	Frequency	Channel	Frequency
Channel 151:	5755 MHz	Channel 159:	5795 MHz

Note:

1. This device is a Router 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.

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)

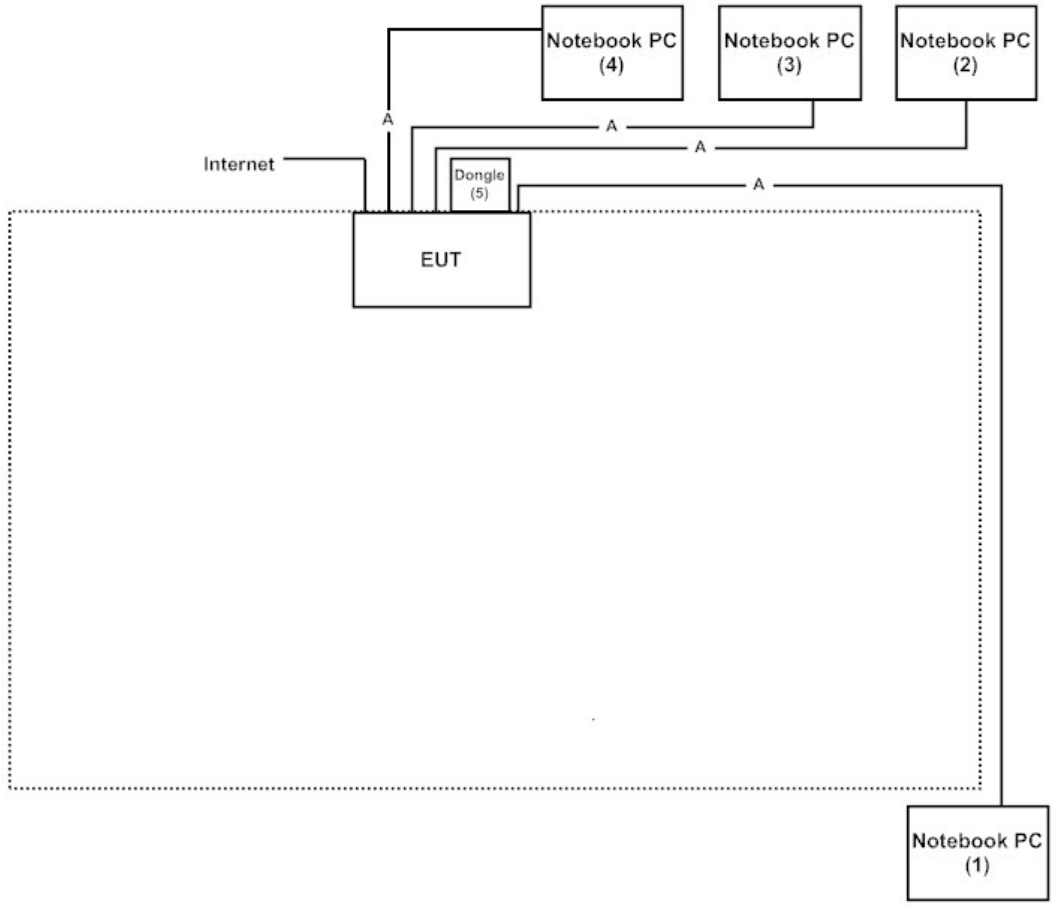
1.3. Tested System Details

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)	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
(2)	Notebook PC	DELL	PP04X	N/A	Non-Shielded, 0.8m
(3)	Notebook PC	DELL	PP04X	N/A	Non-Shielded, 0.8m
(4)	Notebook PC	DELL	D630	N/A	Non-Shielded, 0.8m
(5)	Dongle	Transend	N/A	N/A	N/A

Signal Cable Type		Signal cable Description
A	RJ-45 Cable	Non-Shielded, 3.0m *4PCS

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4

(2) Execute “Art.exe” 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) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

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

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

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

FCC Accreditation Number: TW1014

2. Conducted Emission

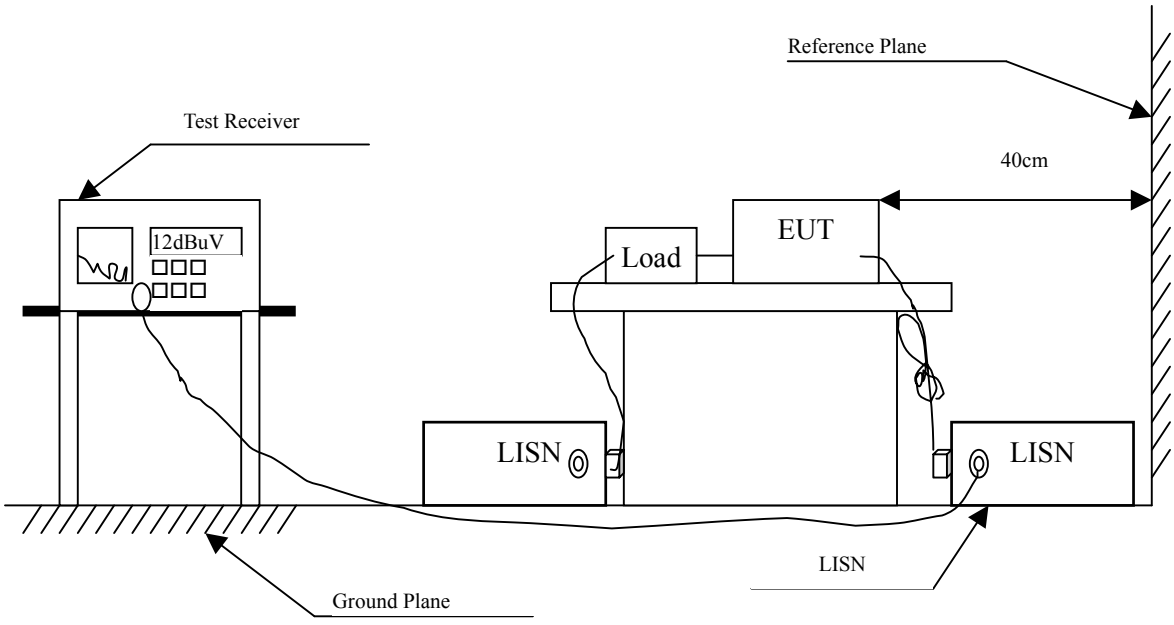
2.1. Test Equipment

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

Note:

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

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	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 : Router
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					
0.166	9.830	48.210	58.040	-7.503	65.543
0.197	9.830	42.520	52.350	-12.307	64.657
0.291	9.830	33.540	43.370	-18.601	61.971
0.502	9.830	30.560	40.390	-15.610	56.000
1.470	9.830	21.860	31.690	-24.310	56.000
12.154	10.041	27.200	37.241	-22.759	60.000
Average					
0.166	9.830	36.050	45.880	-9.663	55.543
0.197	9.830	27.090	36.920	-17.737	54.657
0.291	9.830	23.360	33.190	-18.781	51.971
0.502	9.830	23.630	33.460	-12.540	46.000
1.470	9.830	15.380	25.210	-20.790	46.000
12.154	10.041	22.040	32.081	-17.919	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 : Router
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					
0.170	9.837	46.830	56.667	-8.762	65.429
0.201	9.830	42.620	52.450	-12.093	64.543
0.252	9.830	37.190	47.020	-16.066	63.086
0.498	9.840	34.570	44.410	-11.647	56.057
1.349	9.850	28.410	38.260	-17.740	56.000
4.486	9.881	31.390	41.271	-14.729	56.000
Average					
0.170	9.837	32.060	41.897	-13.532	55.429
0.201	9.830	29.300	39.130	-15.413	54.543
0.252	9.830	26.260	36.090	-16.996	53.086
0.498	9.840	28.720	38.560	-7.497	46.057
1.349	9.850	22.610	32.460	-13.540	46.000
4.486	9.881	26.500	36.381	-9.619	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 : Router
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					
0.150	9.830	45.690	55.520	-10.480	66.000
0.197	9.830	41.500	51.330	-13.327	64.657
0.291	9.830	33.160	42.990	-18.981	61.971
0.541	9.830	28.580	38.410	-17.590	56.000
4.615	9.863	23.570	33.433	-22.567	56.000
12.564	10.048	28.460	38.508	-21.492	60.000
Average					
0.150	9.830	28.060	37.890	-18.110	56.000
0.197	9.830	24.350	34.180	-20.477	54.657
0.291	9.830	18.650	28.480	-23.491	51.971
0.541	9.830	15.900	25.730	-20.270	46.000
4.615	9.863	16.570	26.433	-19.567	46.000
12.564	10.048	23.210	33.258	-16.742	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 : Router
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					
0.189	9.830	45.430	55.260	-9.626	64.886
0.224	9.830	41.190	51.020	-12.866	63.886
0.314	9.840	32.260	42.100	-19.214	61.314
0.552	9.840	32.790	42.630	-13.370	56.000
2.013	9.860	30.020	39.880	-16.120	56.000
4.373	9.875	31.950	41.825	-14.175	56.000
Average					
0.189	9.830	31.100	40.930	-13.956	54.886
0.224	9.830	28.190	38.020	-15.866	53.886
0.314	9.840	21.180	31.020	-20.294	51.314
0.552	9.840	26.730	36.570	-9.430	46.000
2.013	9.860	23.570	33.430	-12.570	46.000
4.373	9.875	26.320	36.195	-9.805	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

3. Maximum Conducted Power

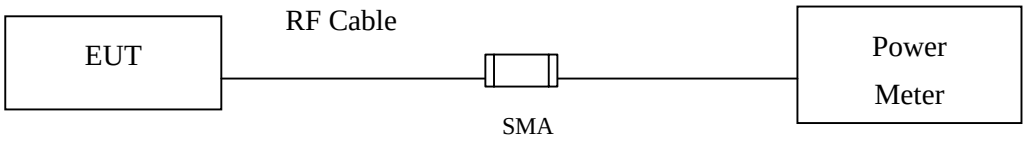
3.1. Test Equipment

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

Note:

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

3.2. Test Setup



3.3. Limits

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

3.4. Test Procedure

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

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Maximum Conducted Power

Product : Router
Test Item : Maximum Conducted Power
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)				Required Limit	Result
		1	2	5.5	11		
		Measurement Level (dBm)					
01	2412	19.22	--	--	--	<30dBm	Pass
06	2437	21.77	21.7	21.65	21.61	<30dBm	Pass
11	2462	17.96	--	--	--	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Required Limit	Result
		1	2	5.5	11		
		Measurement Level (dBm)					
01	2412	18.92	--	--	--	<30dBm	Pass
06	2437	21.52	21.49	21.41	21.35	<30dBm	Pass
11	2462	17.89	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on 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	1	19.22	18.92	22.08	<30dBm	Pass
6	2437	1	21.77	21.52	24.66	<30dBm	Pass
11	2462	1	17.96	17.89	20.94	<30dBm	Pass

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

Product : Router
Test Item : Maximum Conducted Power
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)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
01	2412	18.42	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	20.01	19.96	19.81	19.76	19.64	19.56	19.43	19.31	<30dBm	Pass
11	2462	18.35	--	--	--	--	--	--	--	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
01	2412	18.47	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	20.15	19.96	19.86	19.71	19.63	19.57	19.43	19.38	<30dBm	Pass
11	2462	18.16	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on 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	6	18.42	18.47	21.46	<30dBm	Pass
6	2437	6	20.01	20.15	23.09	<30dBm	Pass
11	2462	6	18.35	18.16	21.27	<30dBm	Pass

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

Product : Router
Test Item : Maximum Conducted Power
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)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	18.82	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	22.23	22.15	22.08	21.95	21.86	21.75	21.66	21.51	<30dBm	Pass
165	5825	18.93	--	--	--	--	--	--	--	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		6	9	12	18	24	36	48	54		
		Measurement Level (dBm)									
149	5745	18.91	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	21.12	21.03	20.95	20.84	20.76	20.64	20.51	20.42	<30dBm	Pass
165	5825	18.77	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on 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	6	18.82	18.91	21.88	<30dBm	Pass
157	5785	6	22.23	21.12	24.72	<30dBm	Pass
165	5825	6	18.93	18.77	21.86	<30dBm	Pass

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

Product : Router
Test Item : Maximum Conducted Power
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)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
01	2412	17.73	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	20	19.97	19.88	19.76	19.66	19.57	19.43	19.37	<30dBm	Pass
11	2462	17.18	--	--	--	--	--	--	--	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
01	2412	17.52	--	--	--	--	--	--	--	<30dBm	Pass
06	2437	20.14	20.08	19.93	19.84	19.77	19.66	19.57	19.47	<30dBm	Pass
11	2462	17.36	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on 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	17.73	17.52	20.64	<30dBm	Pass
6	2437	HT8	20.00	20.14	23.08	<30dBm	Pass
11	2462	HT8	17.18	17.36	20.28	<30dBm	Pass

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

Product : Router
Test Item : Maximum Conducted Power
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)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
3	2422	14.76	--	--	--	--	--	--	--	<30dBm	Pass
6	2437	19.03	18.96	18.86	18.72	18.63	18.54	18.47	18.38	<30dBm	Pass
9	2452	14.12	--	--	--	--	--	--	--	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
3	2422	14.76	--	--	--	--	--	--	--	<30dBm	Pass
6	2437	19.37	19.28	19.13	19.06	18.96	18.81	18.76	18.64	<30dBm	Pass
9	2452	13.7	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on 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	14.76	14.76	17.77	<30dBm	Pass
6	2437	HT8	19.03	19.37	22.21	<30dBm	Pass
9	2452	HT8	14.12	13.70	16.93	<30dBm	Pass

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

Product : Router
Test Item : Maximum Conducted Power
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)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
149	5745	18.96	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	21.94	21.86	21.74	21.69	21.58	21.42	21.36	21.22	<30dBm	Pass
165	5825	18.85	--	--	--	--	--	--	--	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4		
		Measurement Level (dBm)									
149	5745	18.86	--	--	--	--	--	--	--	<30dBm	Pass
157	5785	21.01	20.95	20.84	20.74	20.67	20.59	20.46	20.53	<30dBm	Pass
165	5825	18.94	--	--	--	--	--	--	--	<30dBm	Pass

Note: Average Power for different data rate = Reading value on 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	18.96	18.86	21.92	<30dBm	Pass
157	5785	HT8	21.94	21.01	24.51	<30dBm	Pass
165	5825	HT8	18.85	18.94	21.91	<30dBm	Pass

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

Product : Router
Test Item : Maximum Conducted Power
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)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
151	5755	18.03	--	--	--	--	--	--	--	<30dBm	Pass
159	5795	18.88	18.72	18.63	18.57	18.43	18.37	18.26	18.15	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Required Limit	Result
		30	60	90	120	180	240	270	300		
		Measurement Level (dBm)									
151	5755	18.01	--	--	--	--	--	--	--	<30dBm	Pass
159	5795	18.95	18.82	18.73	18.65	18.53	18.41	18.36	18.28	<30dBm	Pass

Note: Average Power for different data rate = Reading value on 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	19.41	19.35	22.39	<30dBm	Pass
159	5795	HT8	21.41	20.51	23.99	<30dBm	Pass

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

4. Radiated Emission

4.1. Test Equipment

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

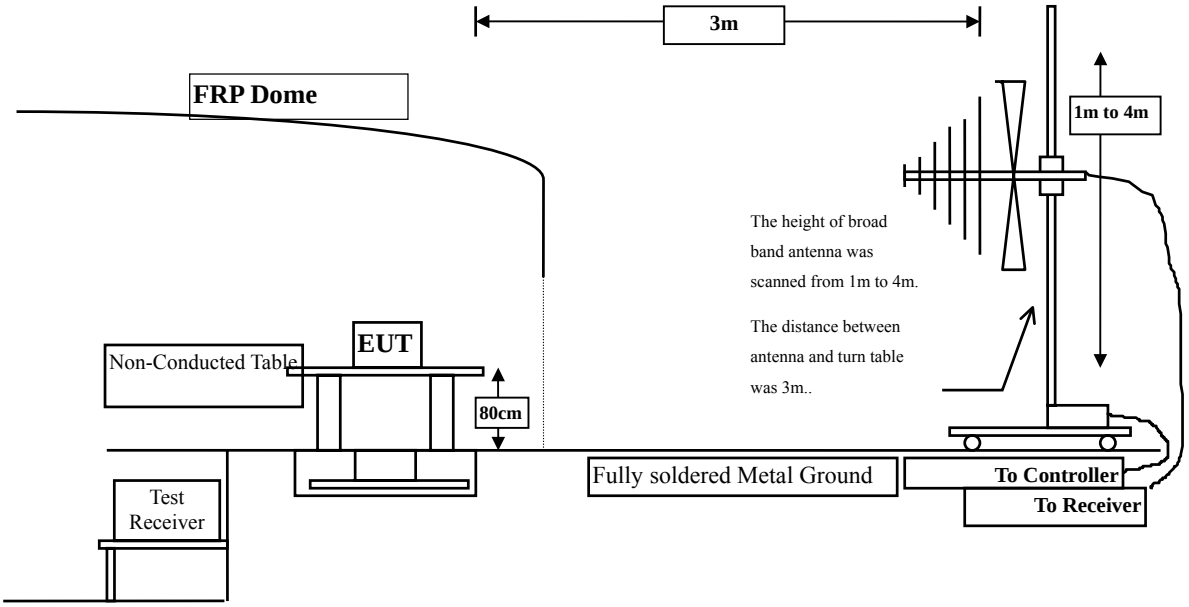
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2012
	X	Pre-Amplifier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

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

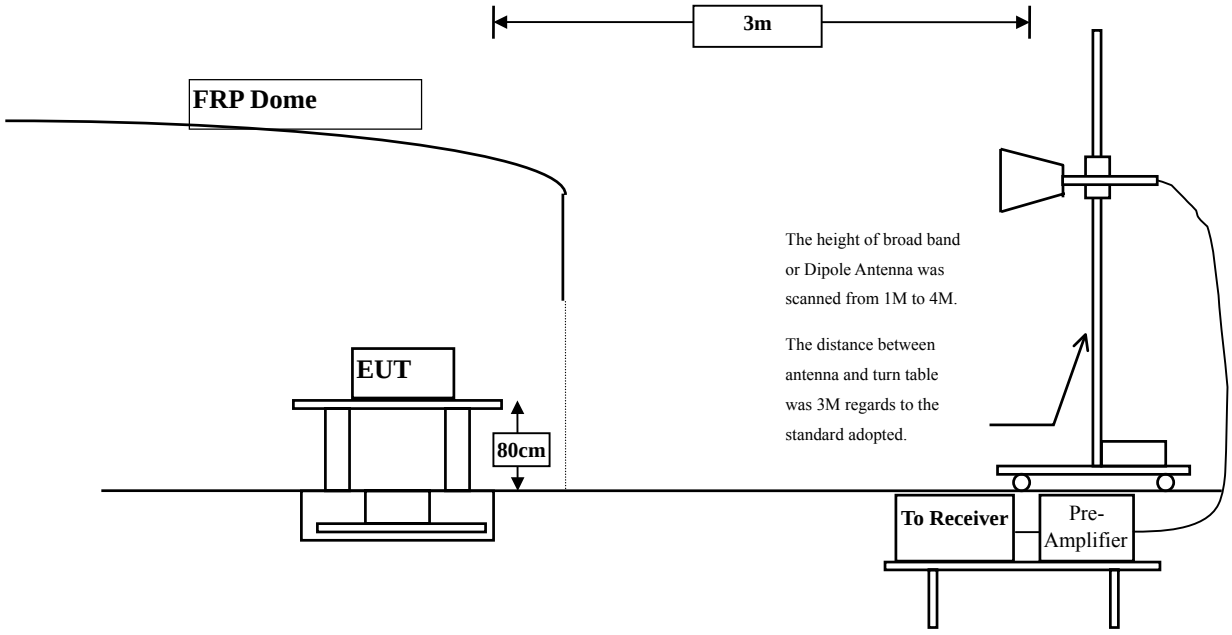
2. The test instruments marked with “X” are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

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

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

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.
The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.
Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.
The measurement is divided into the Preliminary Measurement and the Final Measurement.
The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.
The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.
The measurement frequency range 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 : Router
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	0.428	47.300	47.729	-26.271	74.000
7236.000	7.177	43.050	50.227	-23.773	74.000
9648.000	8.019	39.370	47.390	-26.610	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	0.836	50.240	51.077	-22.923	74.000
7236.000	7.676	41.550	49.226	-24.774	74.000
9648.000	8.556	41.530	50.087	-23.913	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 : Router
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	0.076	48.580	48.657	-25.343	74.000
7311.000	7.512	44.200	51.712	-22.288	74.000
9748.000	7.630	41.680	49.310	-24.690	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	52.230	52.762	-21.238	74.000
7311.000	8.089	46.060	54.149	-19.851	74.000
9748.000	8.266	44.670	52.937	-21.063	74.000
Average					
Detector:					
7311.000	8.089	39.200	47.289	-6.711	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 : Router
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	0.191	45.190	45.381	-28.619	74.000
7386.000	8.373	40.350	48.724	-25.276	74.000
9848.000	7.964	40.360	48.324	-25.676	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	48.710	49.515	-24.485	74.000
7386.000	9.180	38.790	47.970	-26.030	74.000
9848.000	8.801	41.220	50.021	-23.979	74.000
Average					
Detector:					
--					

Note:

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

Product : Router
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	0.428	48.240	48.669	-25.331	74.000
7236.000	7.177	49.540	56.717	-17.283	74.000
9648.000	8.019	38.900	46.920	-27.080	74.000
Average Detector:					
7236.000	7.177	29.110	36.287	-17.713	54.000
Vertical					
Peak Detector:					
4824.000	0.836	45.370	46.207	-27.793	74.000
7236.000	7.676	43.660	51.336	-22.664	74.000
9648.000	8.556	38.830	47.387	-26.613	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 : Router
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	0.076	52.040	52.117	-21.883	74.000
7311.000	7.512	50.230	57.742	-16.258	74.000
9748.000	7.630	39.790	47.420	-26.580	74.000
Average					
Detector:					
7311.000	7.512	32.500	40.012	-13.988	54.000
Vertical					
Peak Detector:					
4874.000	0.532	54.810	55.342	-18.658	74.000
7311.000	8.089	50.480	58.569	-15.431	74.000
9748.000	8.266	40.090	48.357	-25.643	74.000
Average					
Detector:					
4874.000	0.532	39.920	40.452	-13.548	54.000
7311.000	8.089	35.780	43.869	-10.131	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 : Router
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	0.191	46.240	46.431	-27.569	74.000
7386.000	8.373	44.200	52.574	-21.426	74.000
9848.000	7.964	40.160	48.124	-25.876	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	52.410	53.215	-20.785	74.000
7386.000	9.180	47.520	56.700	-17.300	74.000
9848.000	8.801	40.510	49.311	-24.689	74.000
Average					
Detector:					
7386.000	9.180	30.990	40.170	-13.830	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 : Router
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	13.004	48.210	61.214	-12.786	74.000
Average Detector:					
11490.000	13.004	34.050	47.054	-6.946	54.000
Vertical Peak Detector:					
11490.000	14.520	47.960	62.480	-11.520	74.000
Average Detector:					
11490.000	14.520	33.850	48.370	-5.630	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 : Router
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	13.207	48.340	61.547	-12.453	74.000
Average Detector:					
11570.000	13.207	34.490	47.697	-6.303	54.000
Vertical Peak Detector:					
11570.000	14.573	47.230	61.802	-12.198	74.000
Average Detector:					
11570.000	14.573	34.000	48.572	-5.428	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 : Router
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	11.504	46.430	57.934	-16.066	74.000
Average Detector:					
11650.000	11.504	32.650	44.154	-9.846	54.000
Vertical Peak Detector:					
11650.000	12.959	52.040	64.999	-9.001	74.000
Average Detector:					
11650.000	12.959	36.530	49.489	-4.511	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 : Router
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	0.428	48.810	49.239	-24.761	74.000
7236.000	7.177	45.560	52.737	-21.263	74.000
9648.000	8.019	39.700	47.720	-26.280	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	0.836	50.520	51.357	-22.643	74.000
7236.000	7.676	46.550	54.226	-19.774	74.000
9648.000	8.556	39.710	48.267	-25.733	74.000
Average Detector:					
7236.000	7.676	31.630	39.306	-14.694	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 : Router
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	0.076	50.590	50.667	-23.333	74.000
7311.000	7.512	50.120	57.632	-16.368	74.000
9748.000	7.630	38.760	46.390	-27.610	74.000
Average Detector:					
7311.000	7.512	33.110	40.622	-13.378	54.000
Vertical Peak Detector:					
4874.000	0.532	52.580	53.112	-20.888	74.000
7311.000	8.089	48.590	56.679	-17.321	74.000
9748.000	8.266	38.640	46.907	-27.093	74.000
Average Detector:					
7311.000	8.089	33.460	41.549	-12.451	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 : Router
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	0.191	45.960	46.151	-27.849	74.000
7386.000	8.373	42.570	50.944	-23.056	74.000
9848.000	7.964	39.800	47.764	-26.236	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	47.110	47.915	-26.085	74.000
7386.000	9.180	41.900	51.080	-22.920	74.000
9848.000	8.801	40.140	48.941	-25.059	74.000
Average					
Detector:					
--					

Note:

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

Product : Router
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	0.280	42.480	42.761	-31.239	74.000
7266.000	7.106	39.170	46.276	-27.724	74.000
9688.000	7.663	39.240	46.903	-27.097	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4844.000	0.707	45.260	45.968	-28.032	74.000
7266.000	7.626	40.630	48.256	-25.744	74.000
9688.000	8.284	39.490	47.774	-26.226	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 : Router
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	0.076	46.600	46.677	-27.323	74.000
7311.000	7.512	46.120	53.632	-20.368	74.000
9748.000	7.630	39.260	46.890	-27.110	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	49.360	49.892	-24.108	74.000
7311.000	8.089	44.140	52.229	-21.771	74.000
9748.000	8.266	40.080	48.347	-25.653	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 : Router
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	0.000	43.500	43.501	-30.499	74.000
7356.000	8.308	38.590	46.898	-27.102	74.000
9808.000	7.850	39.490	47.340	-26.660	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4904.000	0.513	44.160	44.674	-29.326	74.000
7356.000	9.022	38.540	47.562	-26.438	74.000
9808.000	8.512	39.460	47.972	-26.028	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 : Router
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	13.004	47.120	60.124	-13.876	74.000
Average					
Detector:					
11490.000	13.004	31.660	44.664	-9.336	54.000
Vertical					
Peak Detector:					
11490.000	14.520	48.740	63.260	-10.740	74.000
Average					
Detector:					
11490.000	14.520	31.930	46.450	-7.550	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 : Router
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	13.207	47.040	60.247	-13.753	74.000
Average Detector:					
11570.000	13.207	31.270	44.477	-9.523	54.000
Vertical Peak Detector:					
11570.000	14.573	50.260	64.832	-9.168	74.000
Average Detector:					
11570.000	14.573	32.800	47.372	-6.628	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 : Router
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	11.504	47.480	58.984	-15.016	74.000
Average Detector:					
11650.000	11.504	30.570	42.074	-11.926	54.000
Vertical Peak Detector:					
11650.000	12.959	51.440	64.399	-9.601	74.000
Average Detector:					
11650.000	12.959	35.120	48.079	-5.921	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 : Router
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	13.044	46.440	59.483	-14.517	74.000
Average					
Detector:					
11510.000	13.044	30.070	43.113	-10.887	54.000
Vertical					
Peak Detector:					
11510.000	14.536	46.620	61.156	-12.844	74.000
Average					
Detector:					
11510.000	14.536	29.580	44.116	-9.884	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 : Router
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	13.364	46.600	59.964	-14.036	74.000
Average Detector:					
11590.000	13.364	29.760	43.124	-10.876	54.000
Vertical Peak Detector:					
11590.000	14.687	50.650	65.337	-8.663	74.000
Average Detector:					
11590.000	14.687	32.310	46.997	-7.003	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 : Router
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					
111.480	-7.489	43.009	35.521	-7.979	43.500
249.220	-6.216	40.175	33.959	-12.041	46.000
359.800	-0.226	41.958	41.732	-4.268	46.000
375.320	0.918	38.818	39.736	-6.264	46.000
499.480	1.991	40.859	42.849	-3.151	46.000
875.840	5.816	26.408	32.224	-13.776	46.000
Vertical					
41.640	-6.175	43.119	36.945	-3.055	40.000
105.660	-7.676	47.878	40.201	-3.299	43.500
375.320	0.918	38.576	39.494	-6.506	46.000
499.480	1.991	39.928	41.918	-4.082	46.000
625.580	1.419	30.837	32.257	-13.743	46.000
875.840	5.816	26.515	32.331	-13.669	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 : Router
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					
107.600	-7.597	42.254	34.657	-8.843	43.500
249.220	-6.216	38.310	32.094	-13.906	46.000
499.480	1.991	40.364	42.354	-3.646	46.000
625.580	1.419	32.834	34.254	-11.746	46.000
875.840	5.816	27.405	33.221	-12.779	46.000
967.020	7.299	23.546	30.845	-23.155	54.000
Vertical					
43.580	-10.919	46.048	35.129	-4.871	40.000
105.660	-4.576	44.989	40.412	-3.088	43.500
249.220	-5.096	35.385	30.289	-15.711	46.000
499.480	-0.199	39.530	39.330	-6.670	46.000
625.580	0.299	30.755	31.055	-14.945	46.000
875.840	0.516	27.560	28.076	-17.924	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 : Router
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					
107.600	-7.597	42.689	35.092	-8.408	43.500
249.220	-6.216	39.604	33.388	-12.612	46.000
375.320	0.918	36.749	37.667	-8.333	46.000
499.480	1.991	40.893	42.883	-3.117	46.000
625.580	1.419	31.153	32.573	-13.427	46.000
914.640	6.410	29.881	36.291	-9.709	46.000
Vertical					
107.600	-4.027	44.160	40.133	-3.367	43.500
375.320	0.388	38.184	38.572	-7.428	46.000
499.480	-0.199	40.157	39.957	-6.043	46.000
625.580	0.299	29.634	29.934	-16.066	46.000
747.800	1.665	24.285	25.950	-20.050	46.000
875.840	0.516	26.008	26.524	-19.476	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 : Router
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					
117.300	-7.350	42.286	34.936	-8.564	43.500
249.220	-6.216	38.491	32.275	-13.725	46.000
499.480	1.991	40.311	42.301	-3.699	46.000
625.580	1.419	33.138	34.558	-11.442	46.000
831.220	7.121	25.342	32.463	-13.537	46.000
875.840	5.816	26.417	32.233	-13.767	46.000
Vertical					
109.540	-3.507	43.044	39.536	-3.964	43.500
249.220	-5.096	35.487	30.391	-15.609	46.000
499.480	-0.199	39.599	39.399	-6.601	46.000
625.580	0.299	30.999	31.299	-14.701	46.000
875.840	0.516	26.011	26.527	-19.473	46.000
965.080	3.832	22.403	26.235	-27.765	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 : Router
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					
113.420	-7.449	44.276	36.827	-6.673	43.500
249.220	-6.216	39.161	32.945	-13.055	46.000
499.480	1.991	40.699	42.689	-3.311	46.000
625.580	1.419	33.155	34.575	-11.425	46.000
875.840	5.816	26.467	32.283	-13.717	46.000
930.160	7.530	22.802	30.332	-15.668	46.000
Vertical					
43.580	-10.919	46.236	35.317	-4.683	40.000
107.600	-4.027	44.225	40.198	-3.302	43.500
249.220	-5.096	35.418	30.322	-15.678	46.000
499.480	-0.199	39.355	39.155	-6.845	46.000
625.580	0.299	30.213	30.513	-15.487	46.000
875.840	0.516	26.105	26.621	-19.379	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 : Router
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					
107.600	-7.597	43.673	36.076	-7.424	43.500
249.220	-6.216	39.036	32.820	-13.180	46.000
375.320	0.918	37.959	38.877	-7.123	46.000
499.480	1.991	40.888	42.878	-3.122	46.000
625.580	1.419	31.598	33.018	-12.982	46.000
875.840	5.816	25.402	31.218	-14.782	46.000
Vertical					
107.600	-4.027	44.524	40.497	-3.003	43.500
204.600	-5.473	37.844	32.371	-11.129	43.500
375.320	0.388	38.012	38.400	-7.600	46.000
499.480	-0.199	39.722	39.522	-6.478	46.000
600.360	1.302	28.576	29.878	-16.122	46.000
875.840	0.516	26.742	27.258	-18.742	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 : Router
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					
107.600	-7.597	43.541	35.944	-7.556	43.500
249.220	-6.216	38.311	32.095	-13.905	46.000
375.320	0.918	37.622	38.540	-7.460	46.000
499.480	1.991	40.875	42.865	-3.135	46.000
625.580	1.419	31.773	33.193	-12.807	46.000
831.220	7.121	24.840	31.961	-14.039	46.000
Vertical					
109.540	-3.507	43.806	40.298	-3.202	43.500
249.220	-5.096	35.100	30.004	-15.996	46.000
375.320	0.388	37.855	38.243	-7.757	46.000
499.480	-0.199	40.613	40.413	-5.587	46.000
625.580	0.299	29.987	30.287	-15.713	46.000
875.840	0.516	26.024	26.540	-19.460	46.000

Note:

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

5. RF antenna conducted test

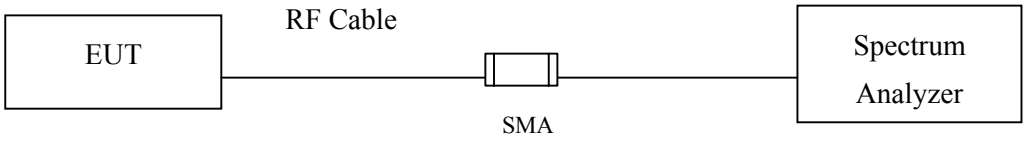
5.1. Test Equipment

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

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

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

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

5.4. Test Procedure

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

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

5.5. Uncertainty

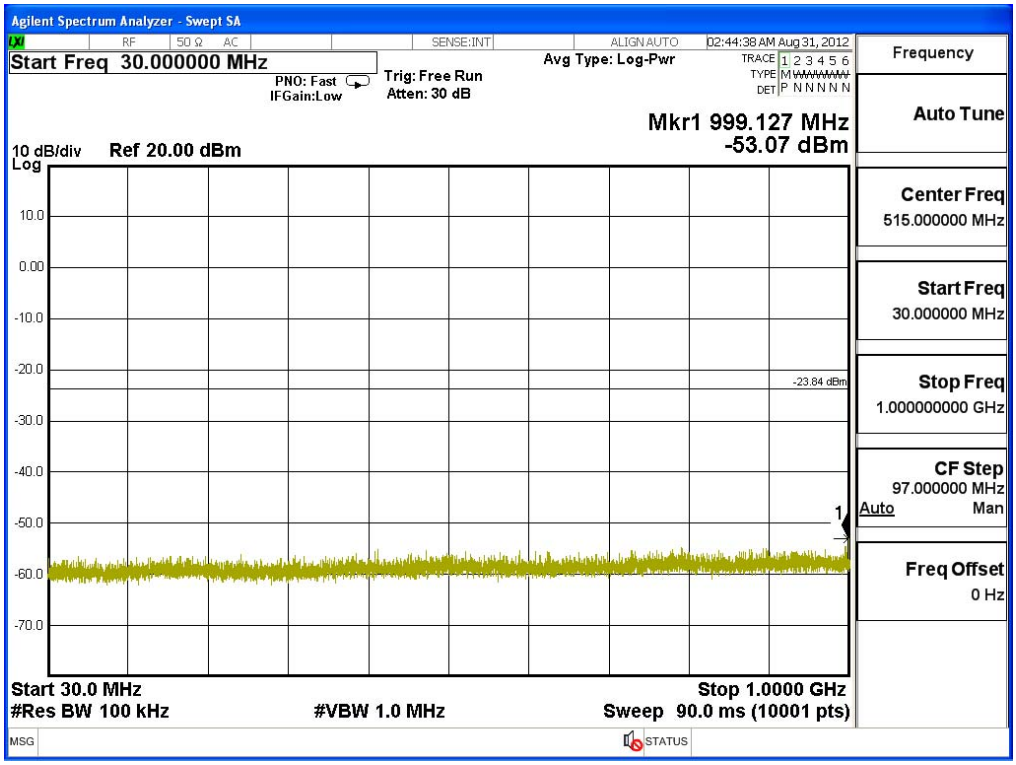
The measurement uncertainty

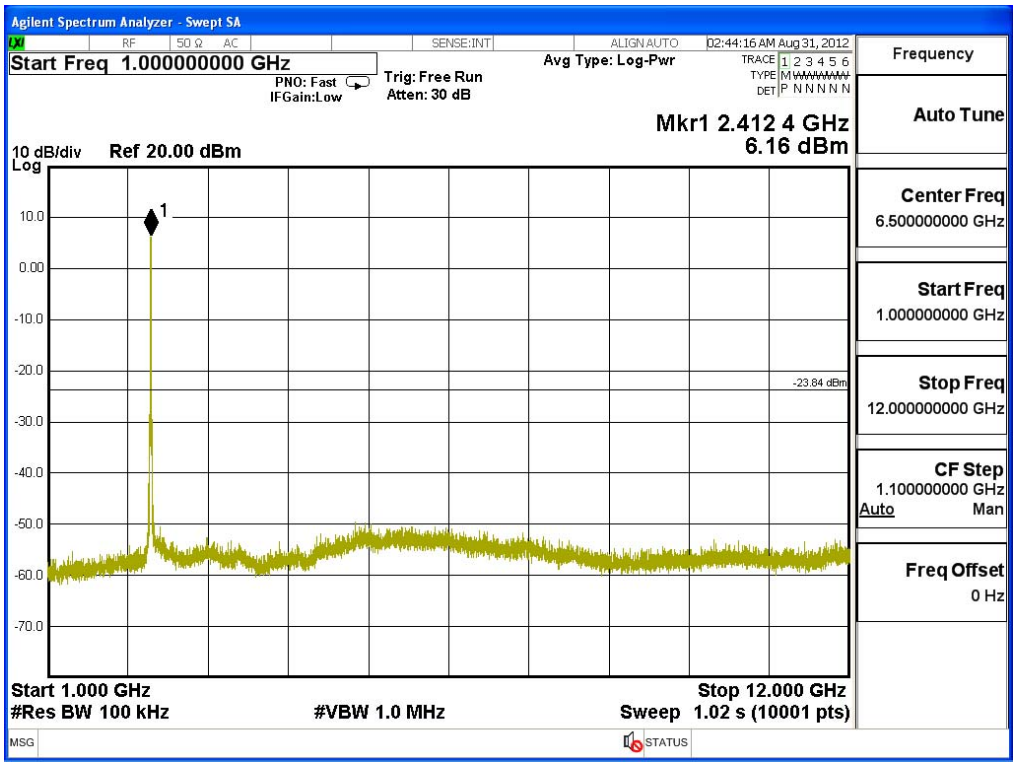
Conducted is defined as ± 1.27dB

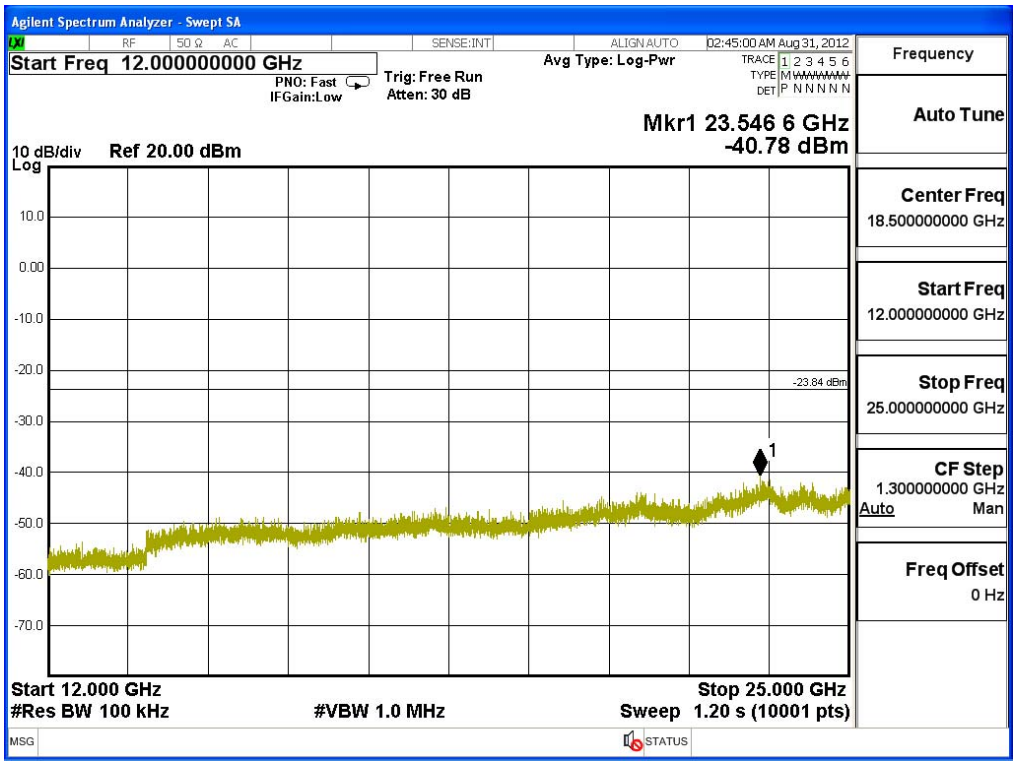
5.6. Test Result of RF antenna conducted test

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

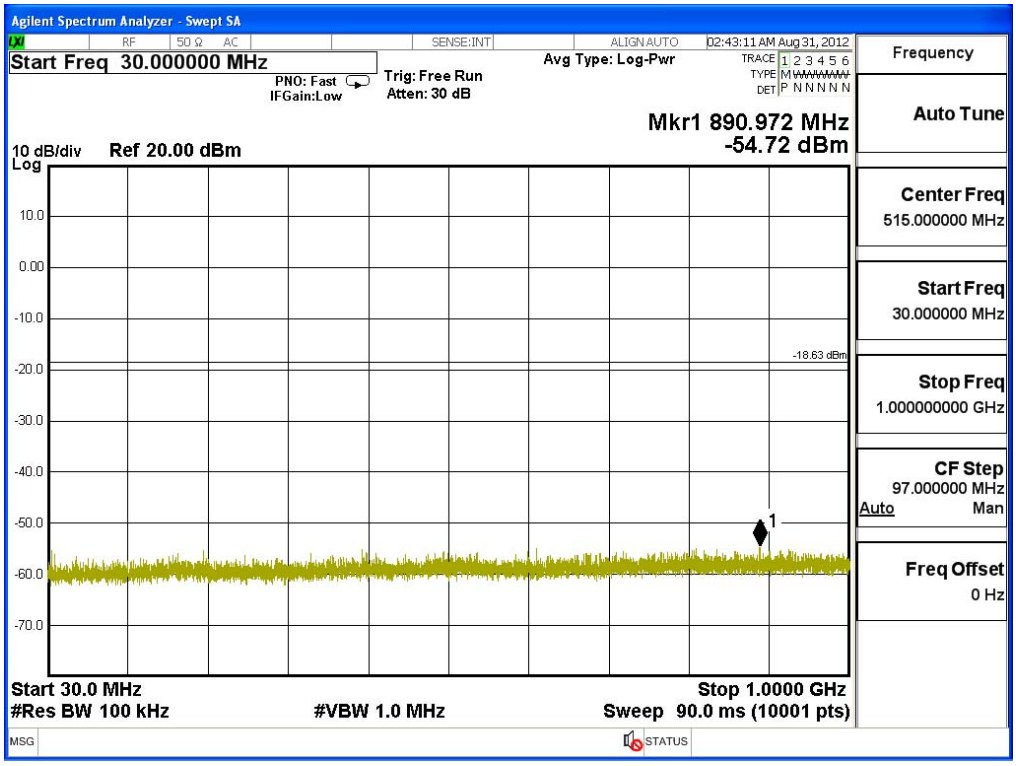
Channel 01 (2412MHz) 30MHz-25GHz-Chain A

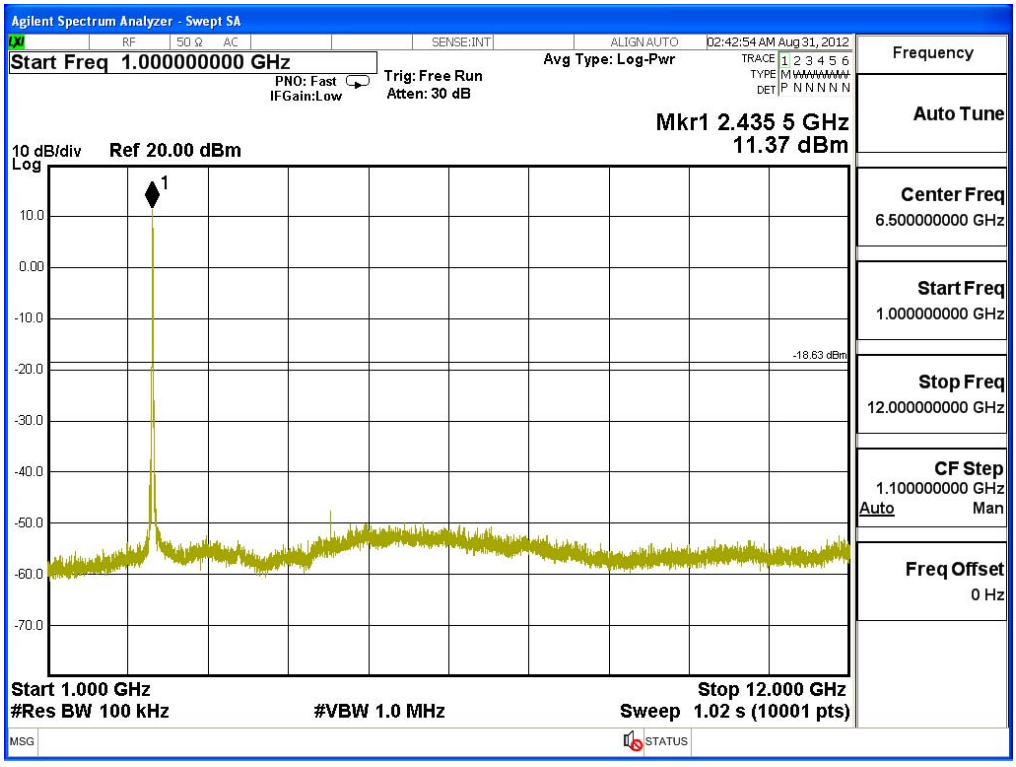


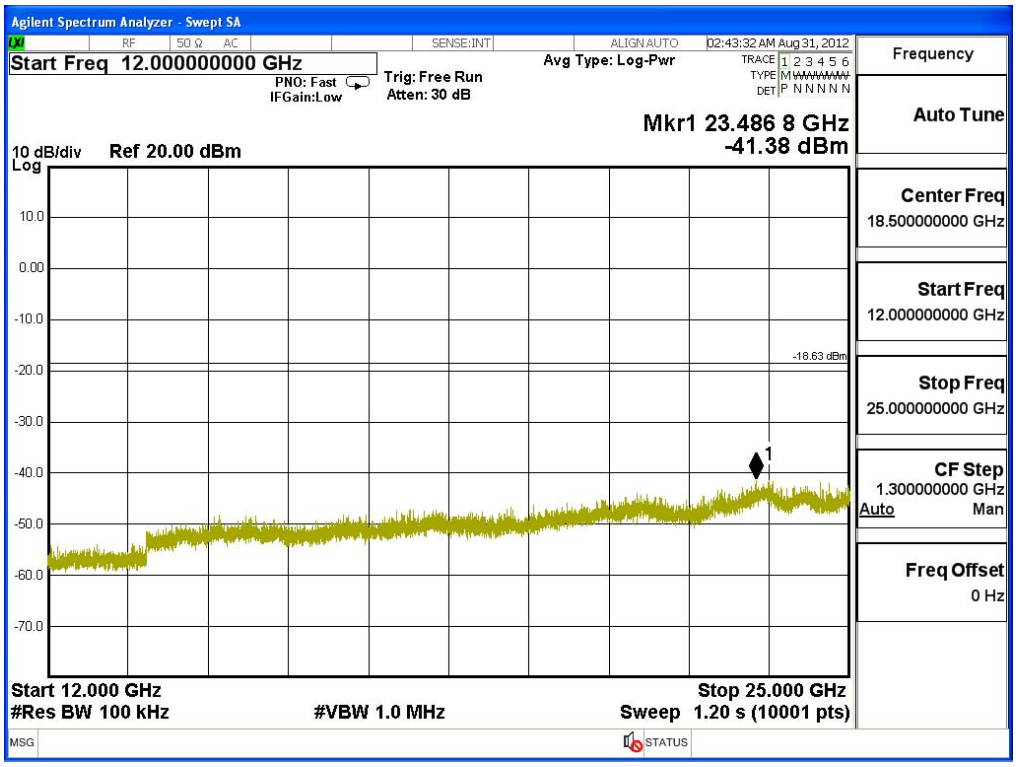

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
02:44:16 AM Aug 31, 2012
Mkr1 2.412 4 GHz
6.16 dBm
10 dB/div
Log
Ref 20.00 dBm
-23.84 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 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


Agilent Spectrum Analyzer - Swept SA
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
02:45:00 AM Aug 31, 2012
Mkr1 23.546 6 GHz
-40.78 dBm
10 dB/div
Log
Ref 20.00 dBm
-23.84 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

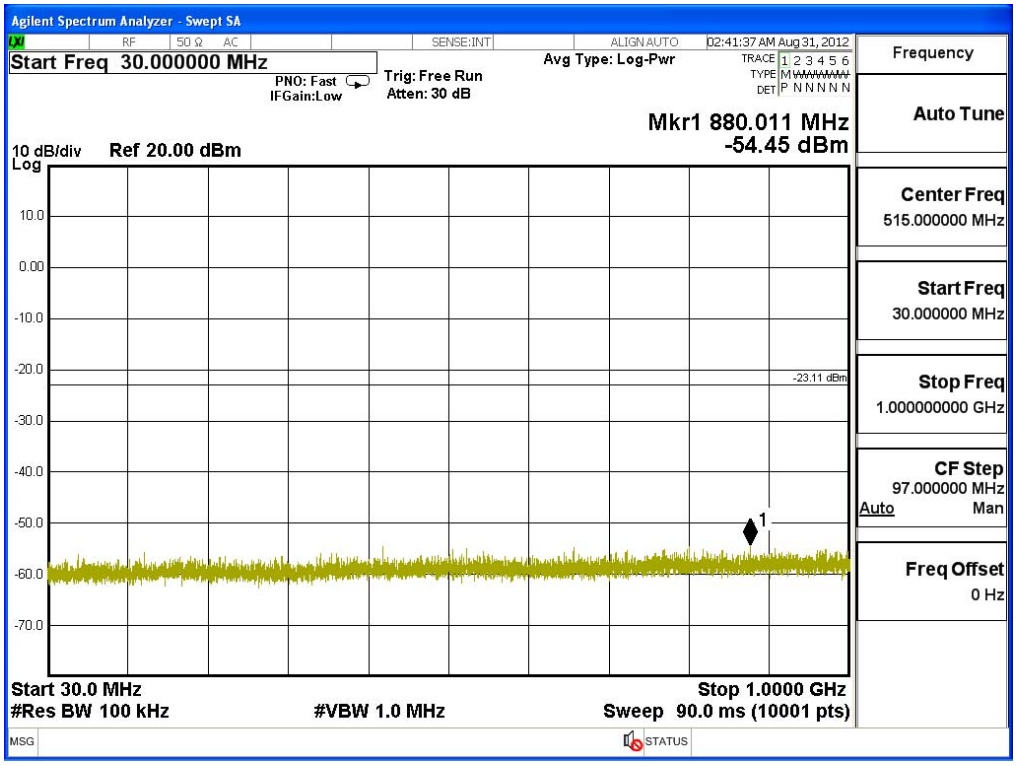
Channel 06 (2437MHz) 30MHz -25GHz-Chain A

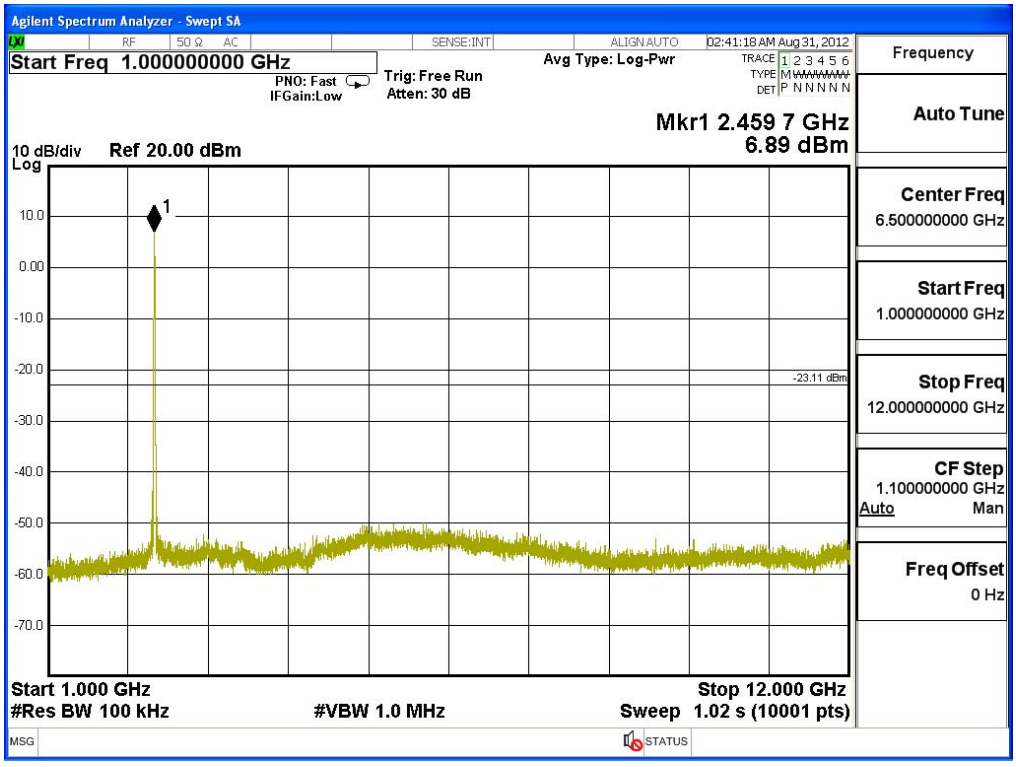


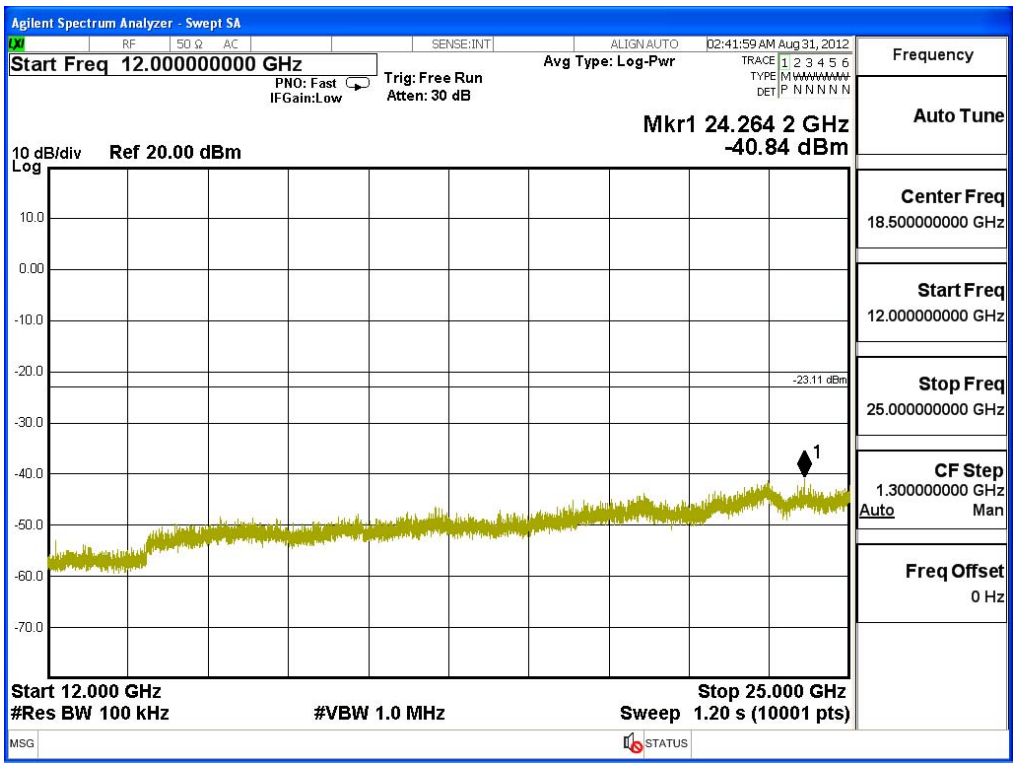



Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
02:43:32 AM Aug 31, 2012
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.486 8 GHz
-41.38 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.63 dBm
1
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
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

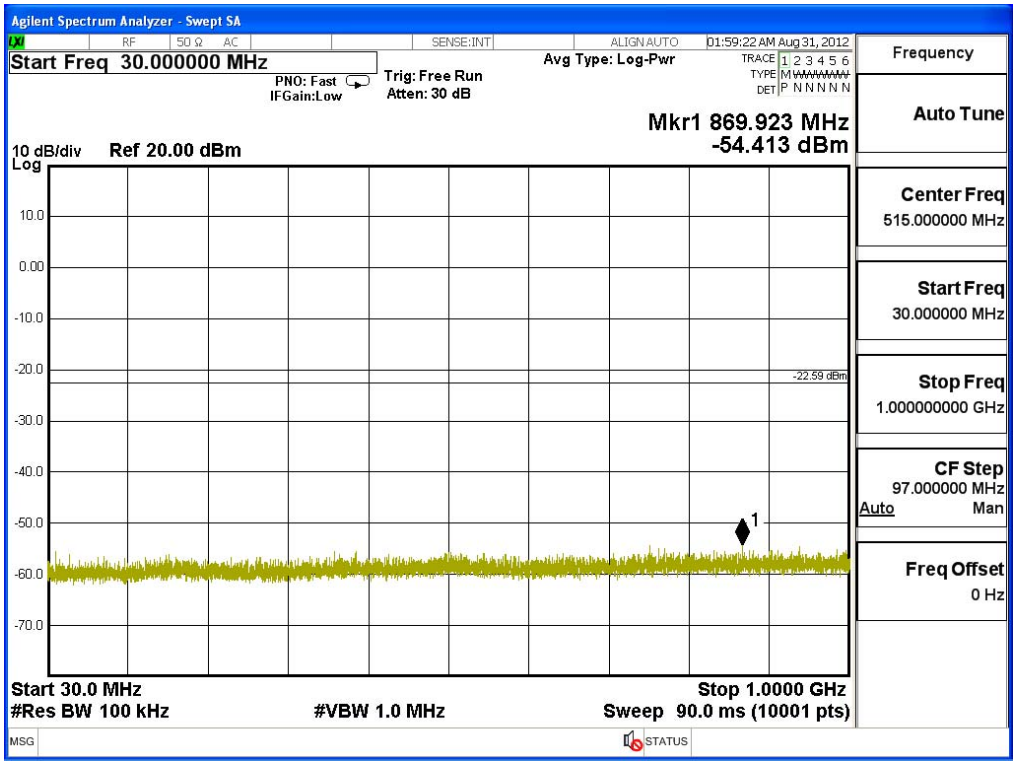
Channel 11 (2462MHz) 30MHz -25GHz-Chain A

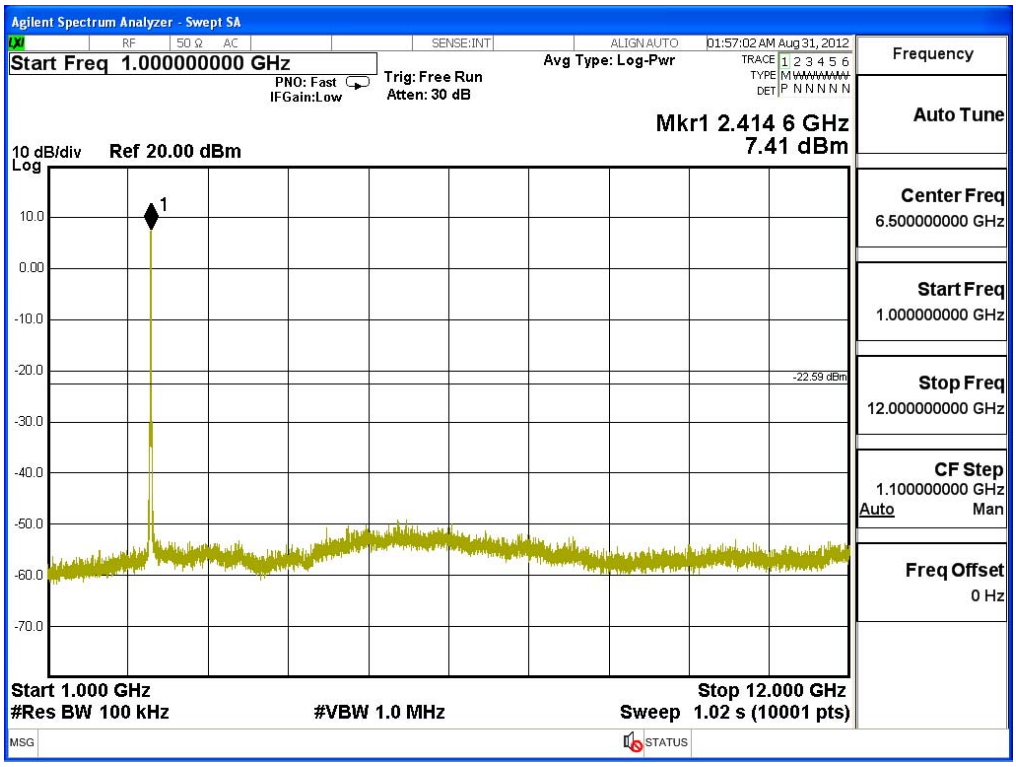


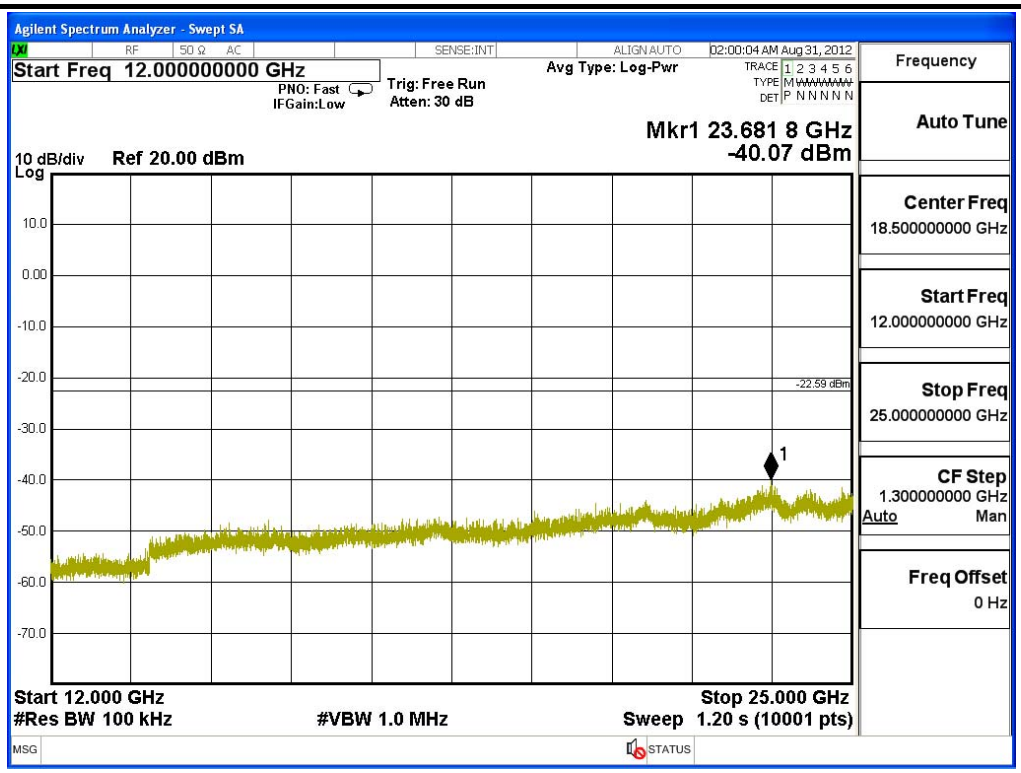



Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
02:41:59 AM Aug 31, 2012
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 24.264 2 GHz
-40.84 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-23.11 dBm
1
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
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

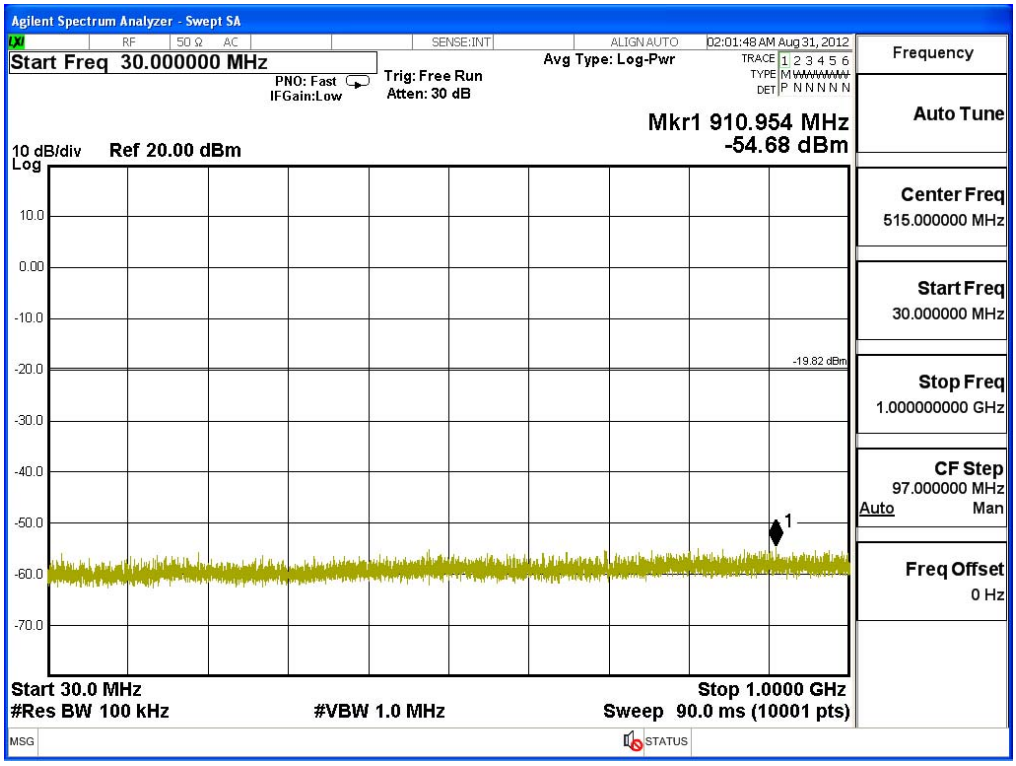
Channel 01 (2412MHz) 30MHz-25GHz-Chain B

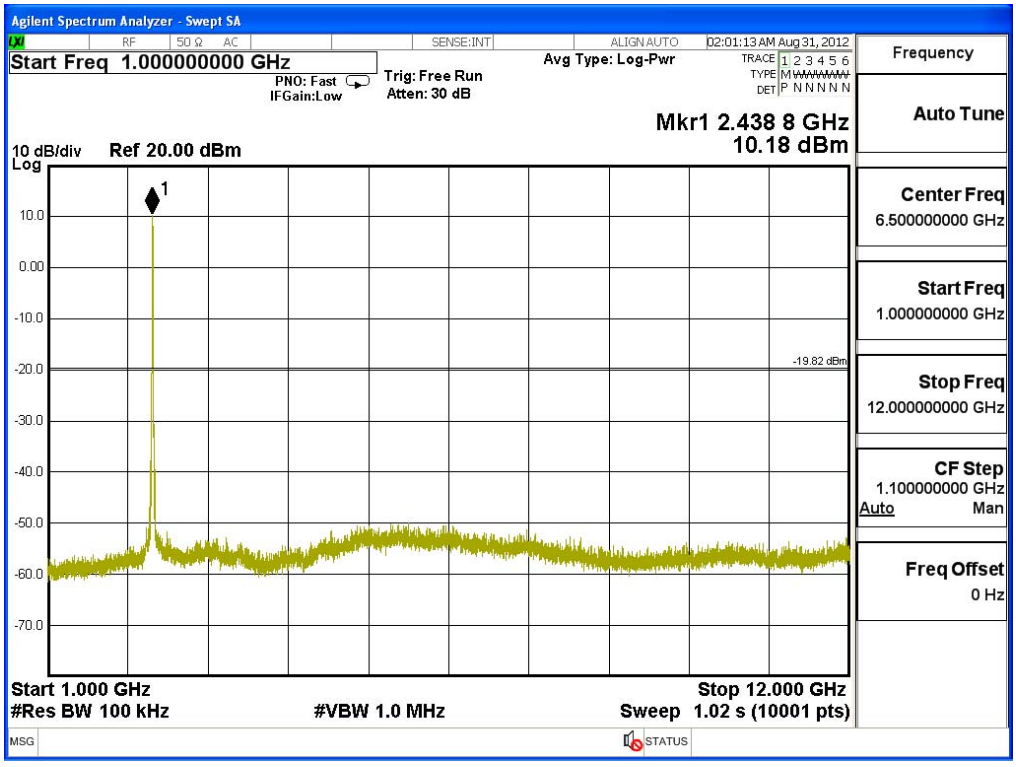


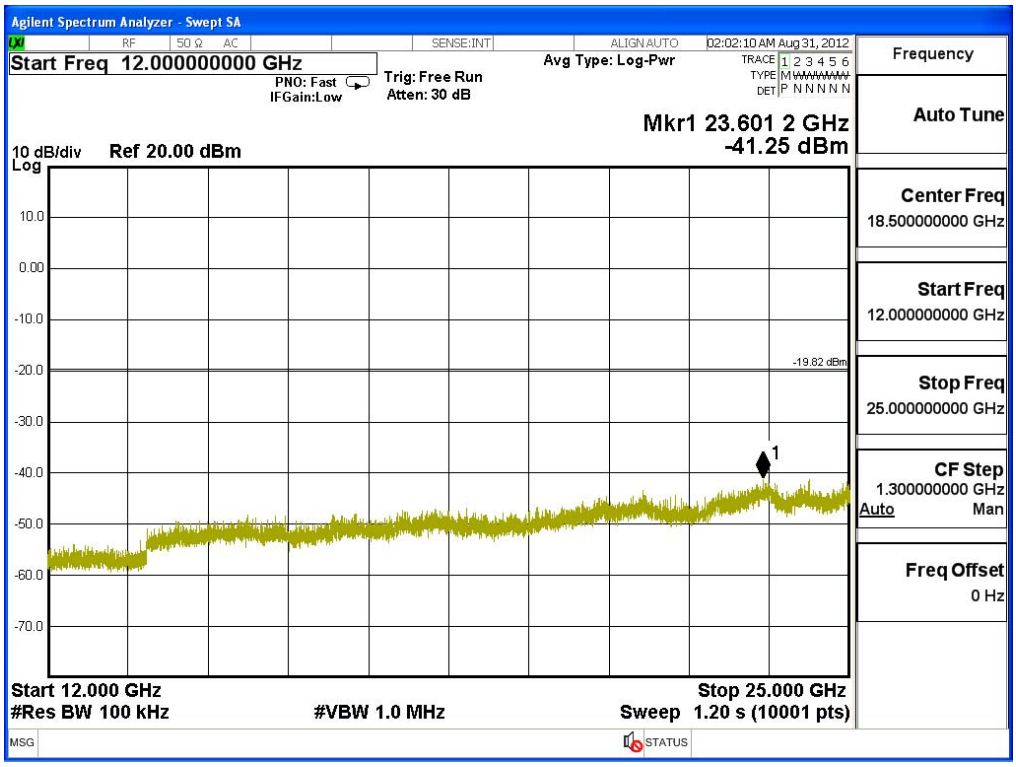



Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
02:00:04 AM Aug 31, 2012
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.681 8 GHz
-40.07 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-22.59 dBm
1
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
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

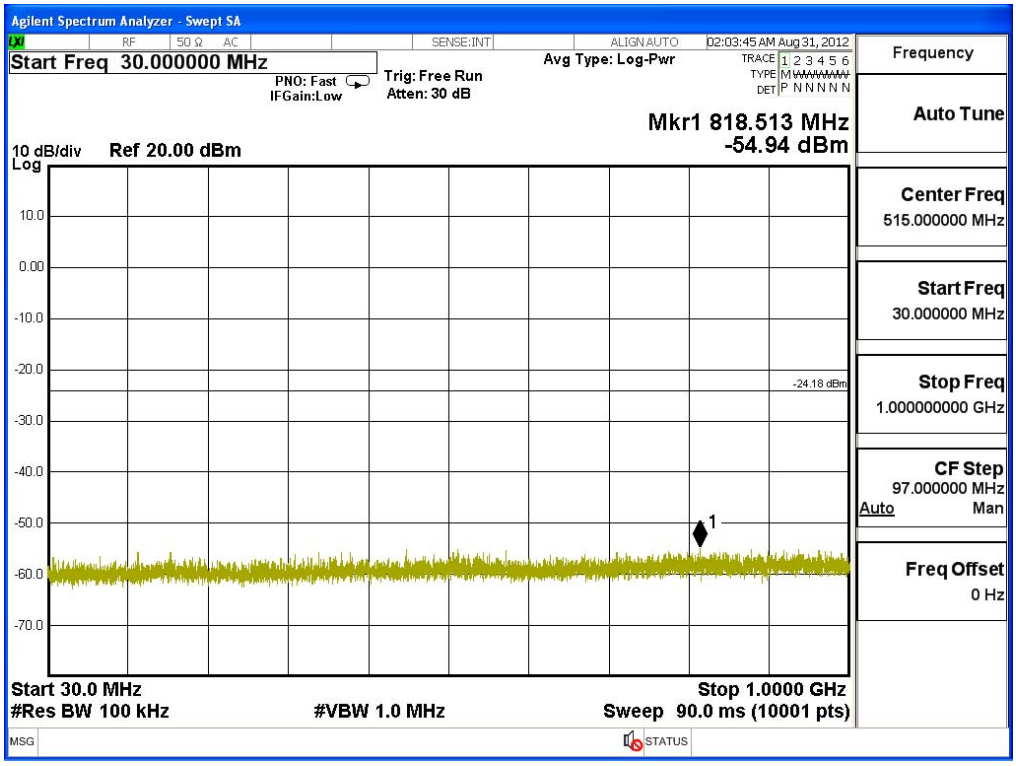
Channel 06 (2437MHz) 30MHz -25GHz-Chain B

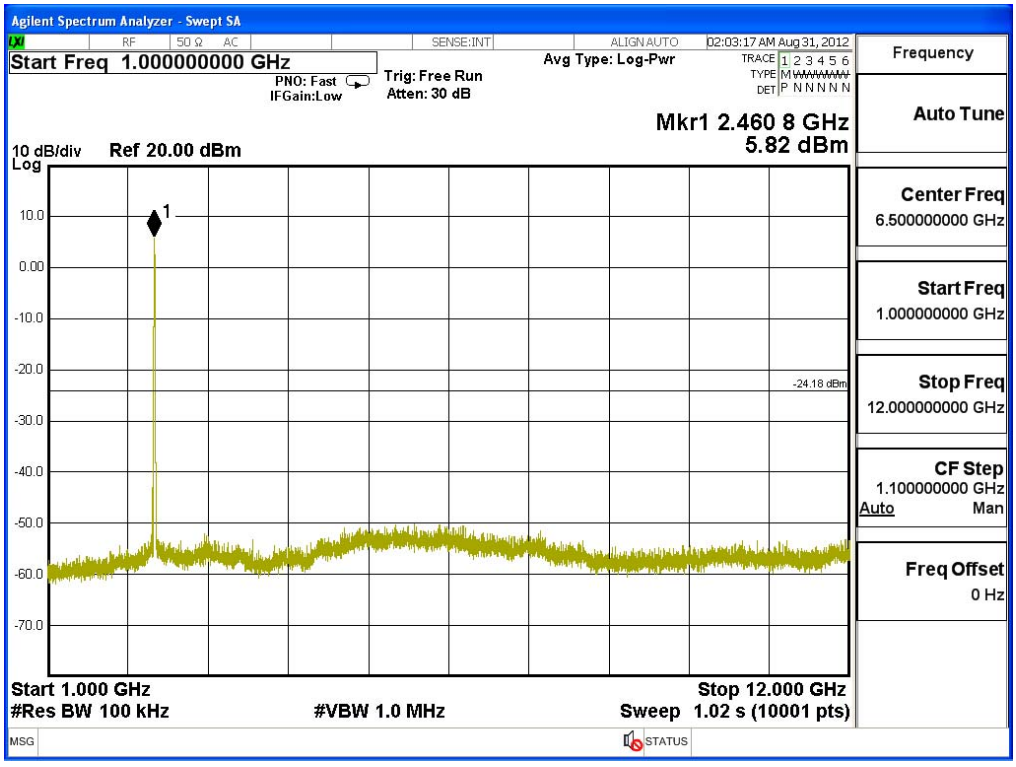


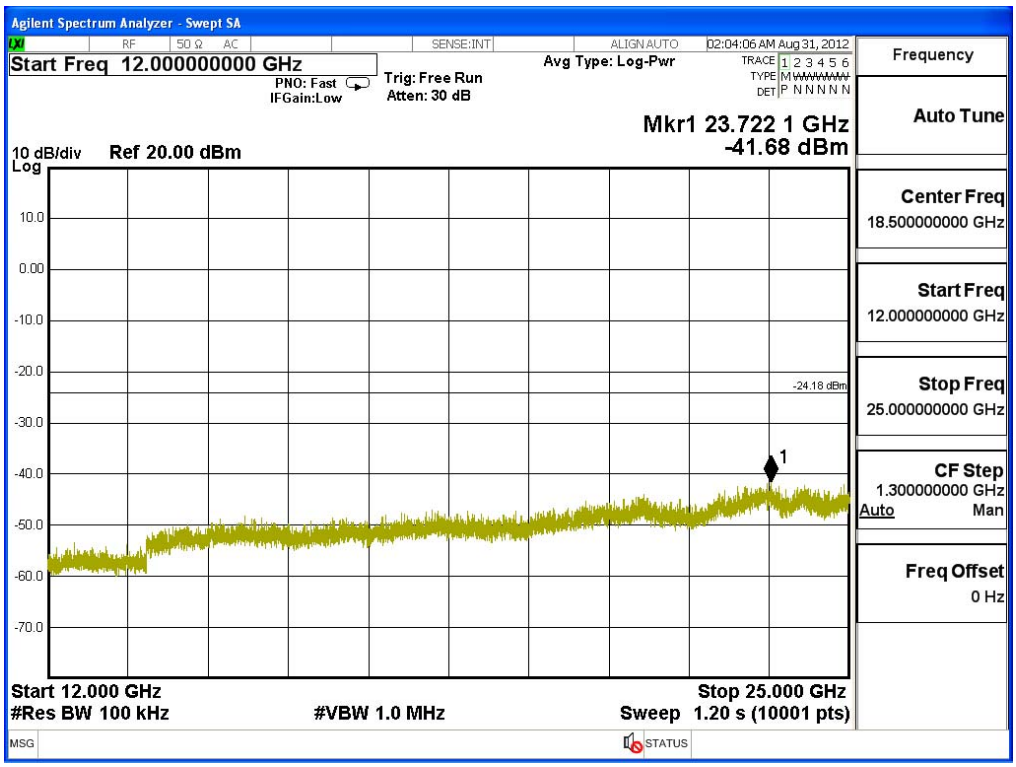



Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
02:02:10 AM Aug 31, 2012
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.601 2 GHz
-41.25 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.82 dBm
1
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
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 11 (2462MHz) 30MHz -25GHz-Chain B

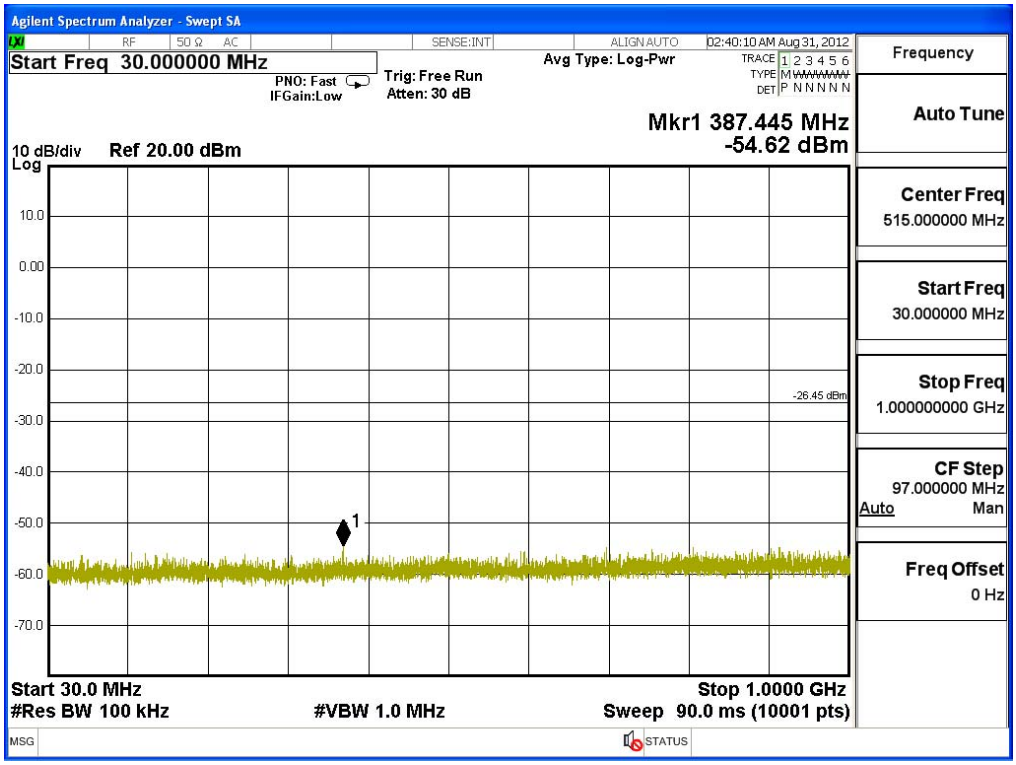


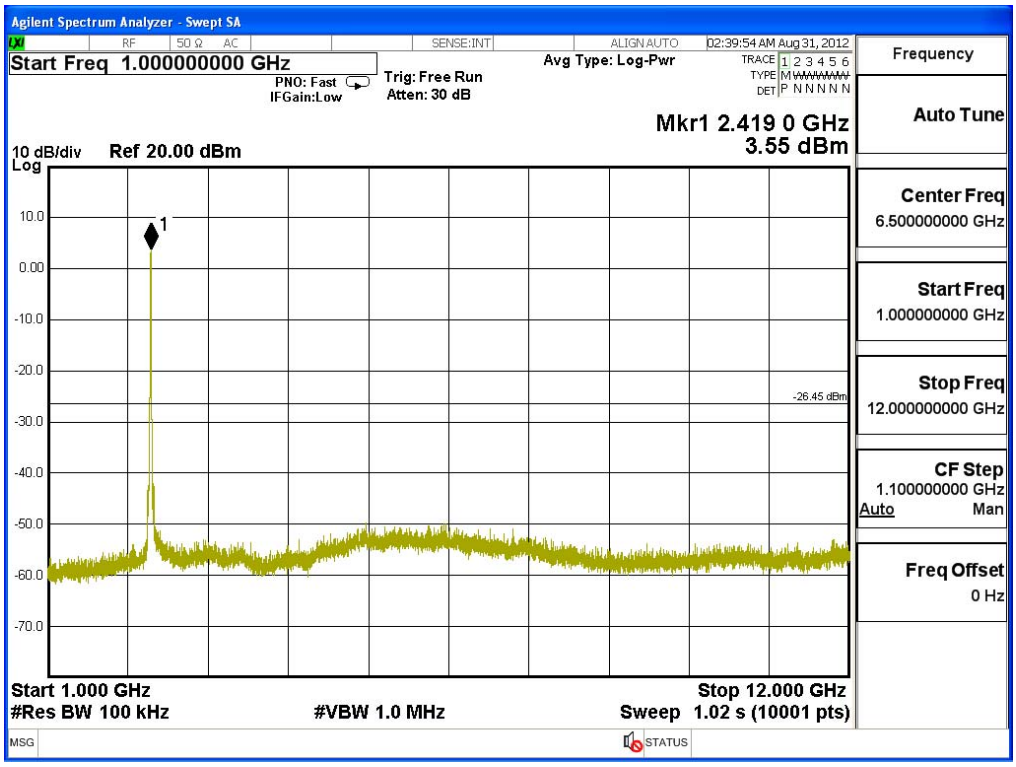


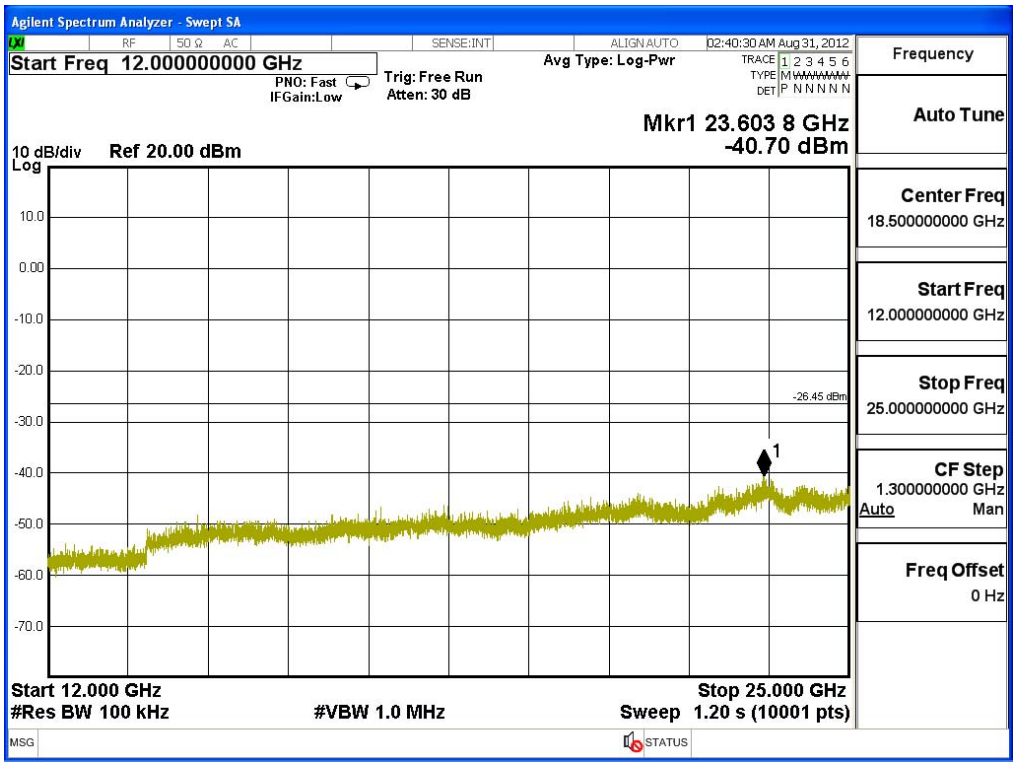

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
02:04:06 AM Aug 31, 2012
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.722 1 GHz
-41.68 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-24.18 dBm
1
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
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

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

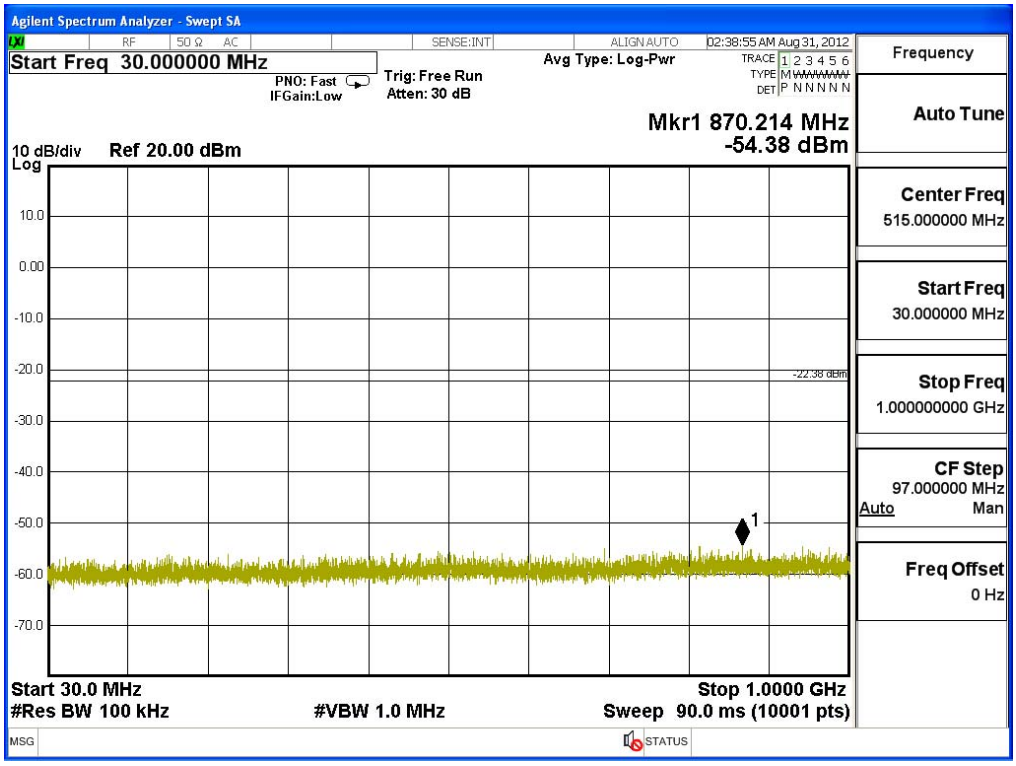
Channel 01 (2412MHz) 30MHz -25GHz-Chain A

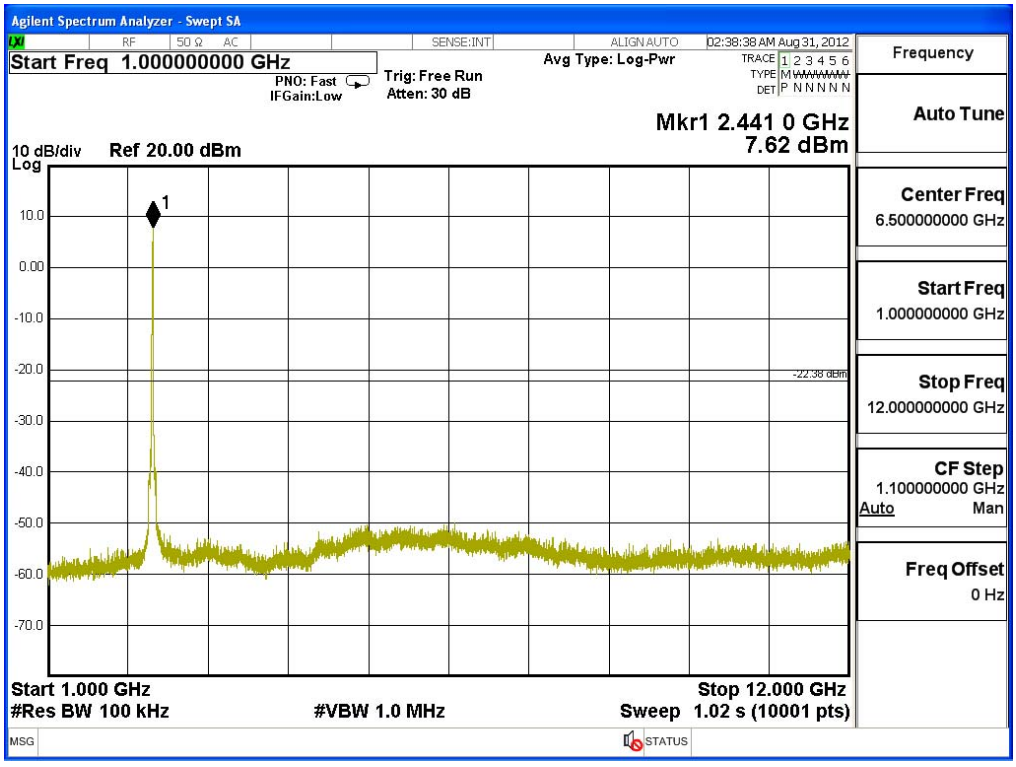


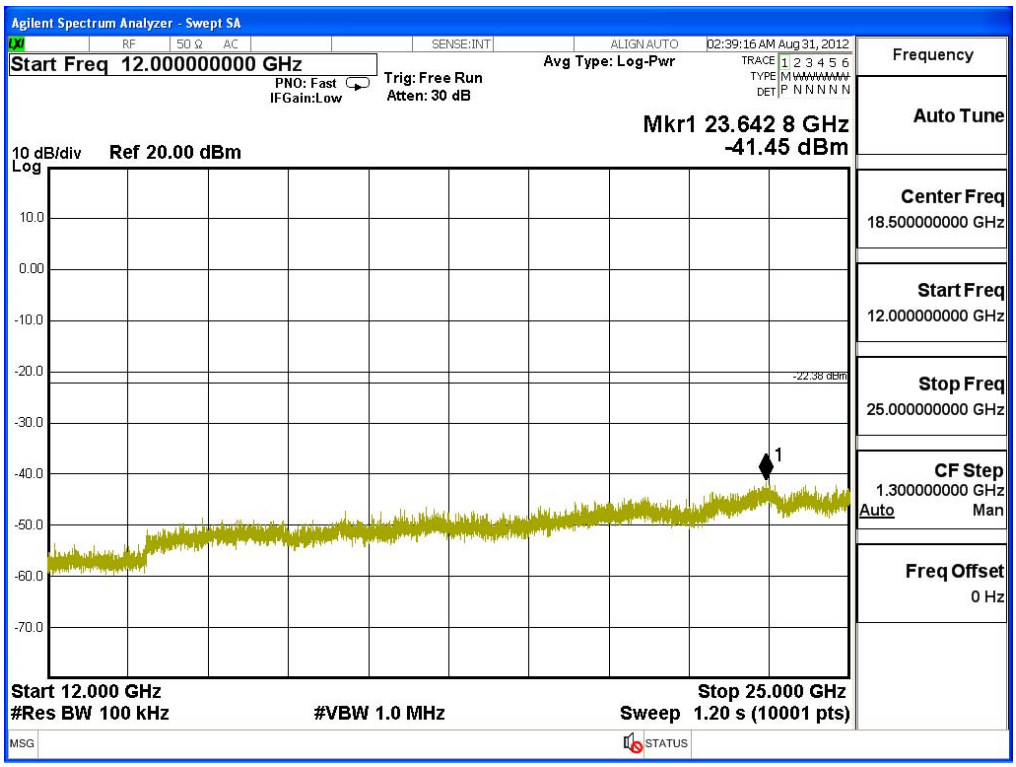

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
02:39:54 AM Aug 31, 2012
Mkr1 2.419 0 GHz
3.55 dBm
10 dB/div
Log
Ref 20.00 dBm
-26.45 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 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


Agilent Spectrum Analyzer - Swept SA
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
02:40:30 AM Aug 31, 2012
Mkr1 23.603 8 GHz
-40.70 dBm
10 dB/div
Log
Ref 20.00 dBm
-26.45 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

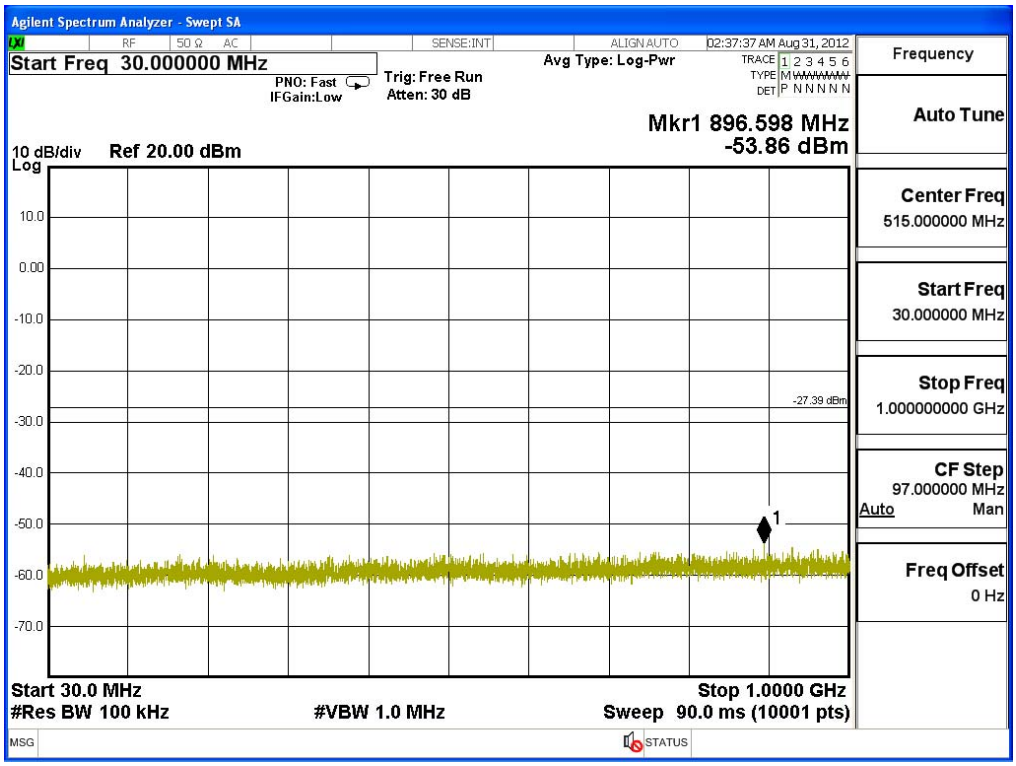
Channel 06 (2437MHz) 30MHz -25GHz-Chain A

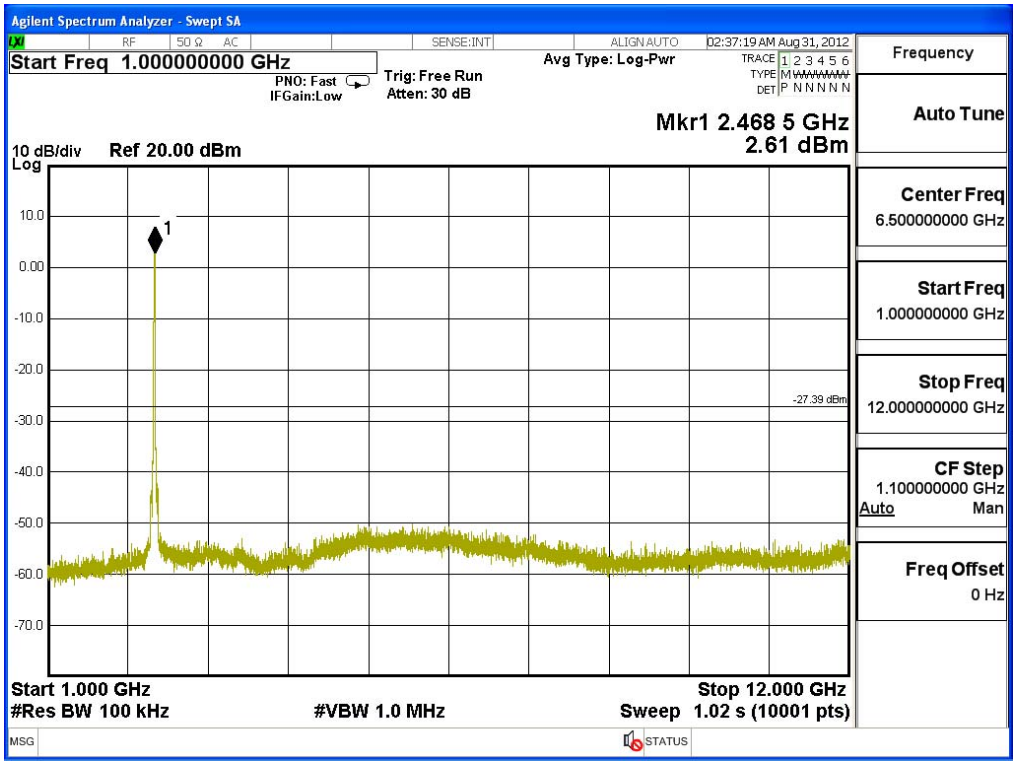


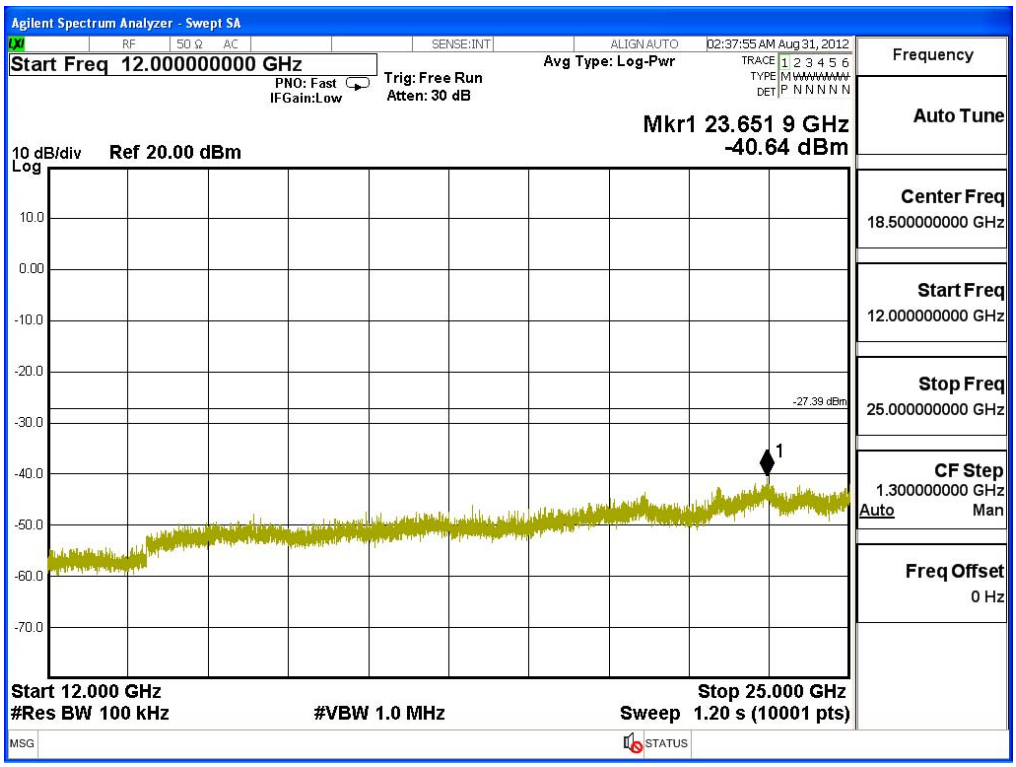



Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
02:39:16 AM Aug 31, 2012
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.642 8 GHz
-41.45 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-22.38 dBm
1
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
MSG
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

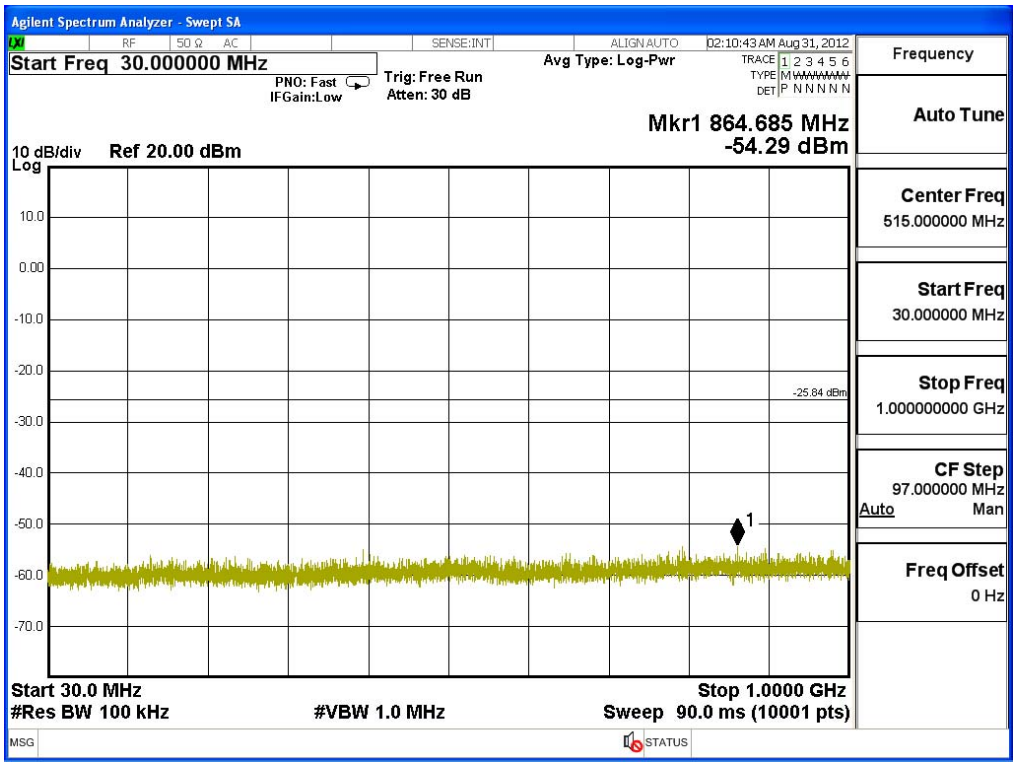
Channel 11 (2462MHz) 30MHz -25GHz-Chain A

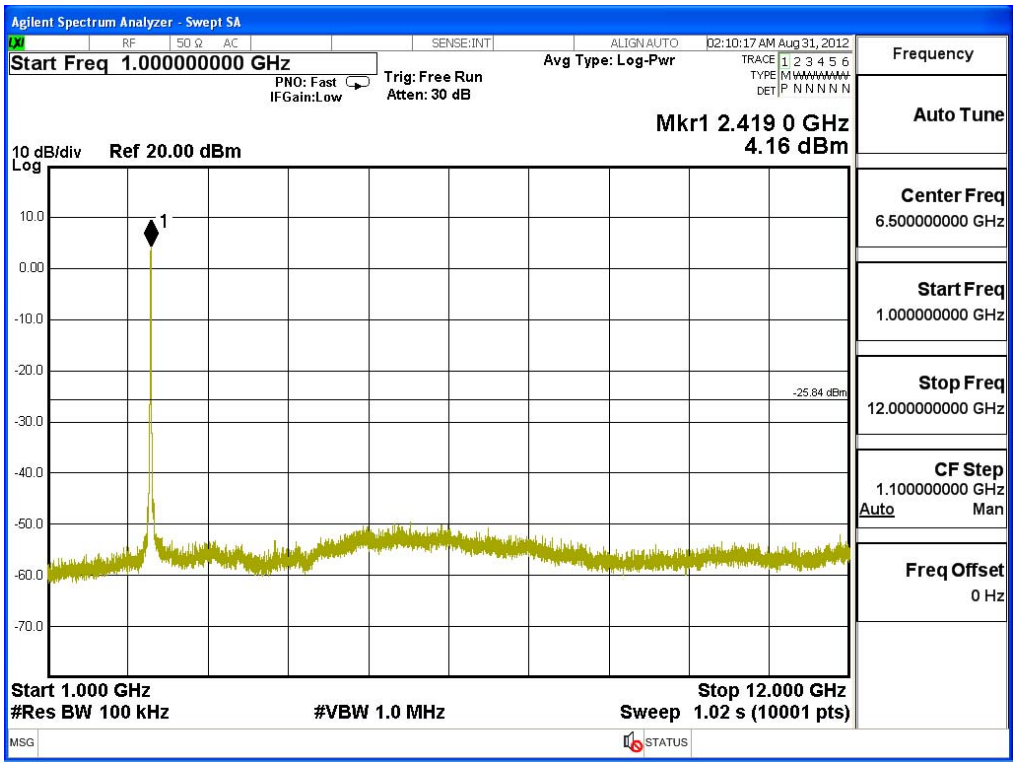


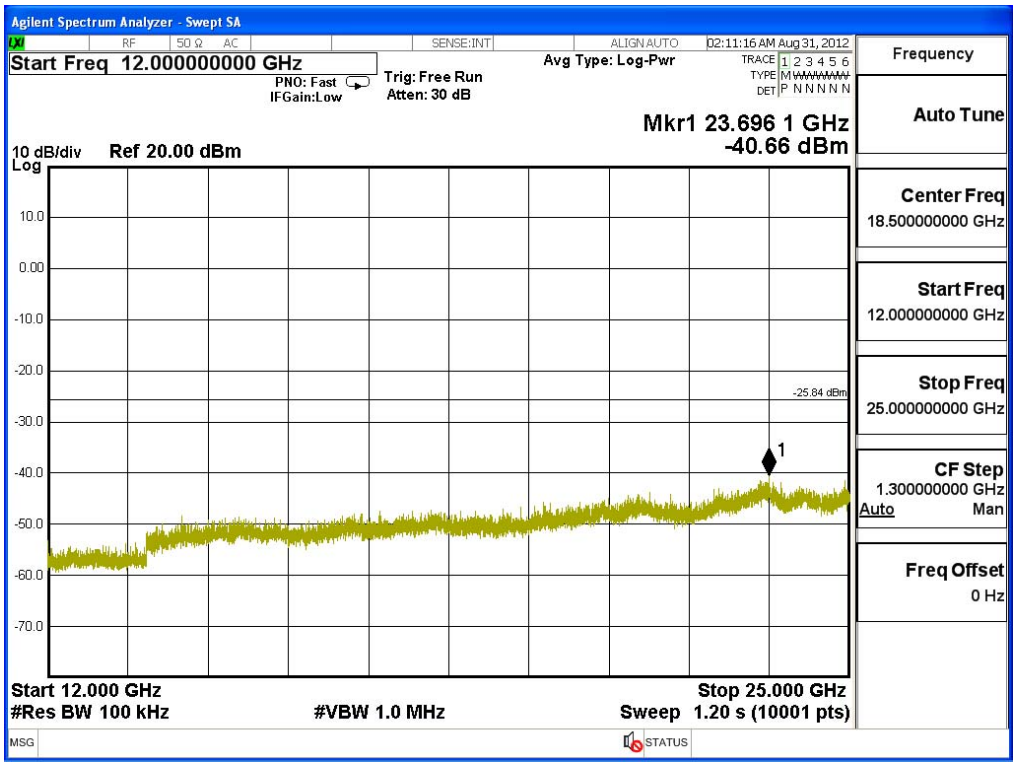




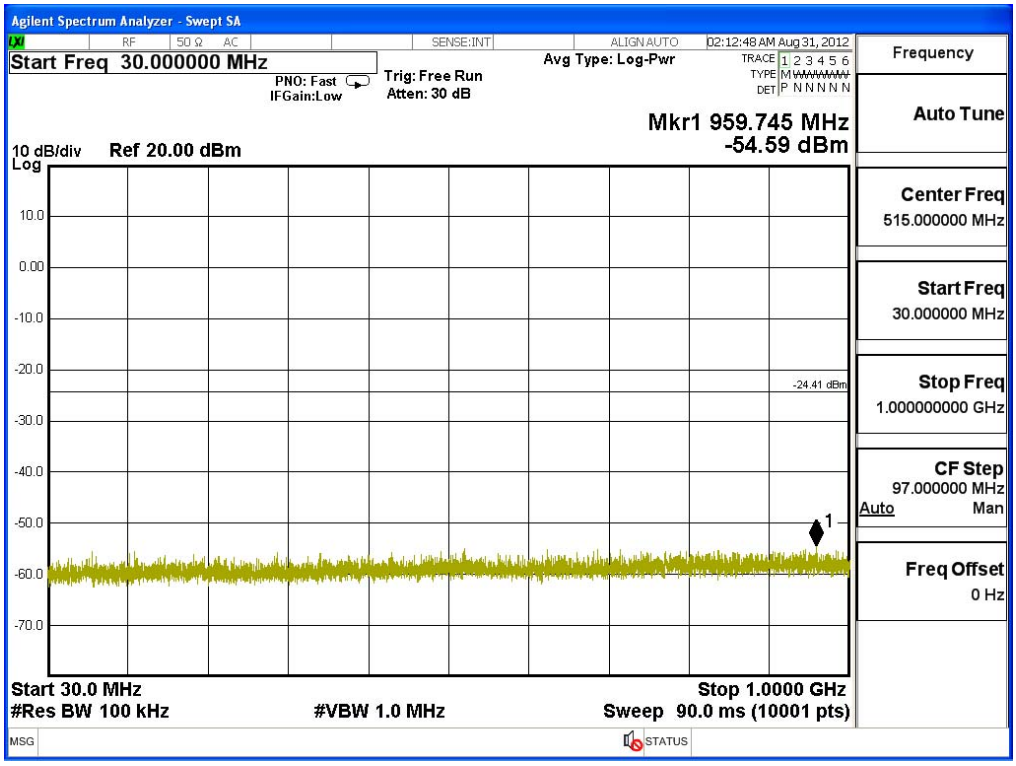
Channel 01 (2412MHz) 30MHz -25GHz-Chain B

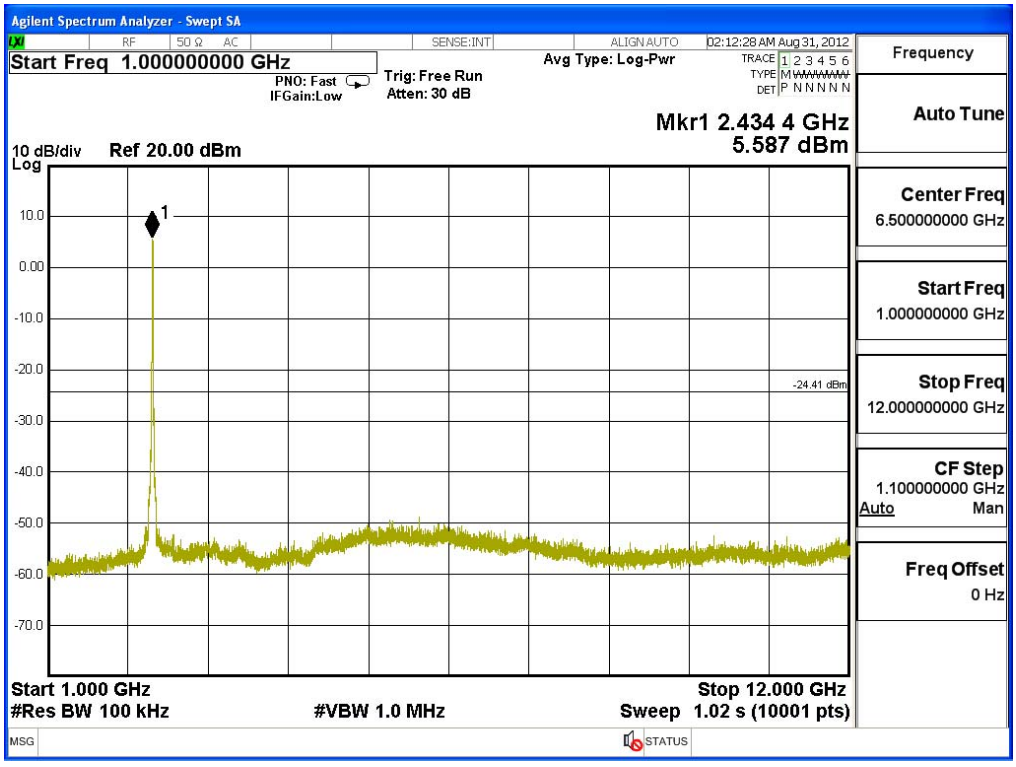


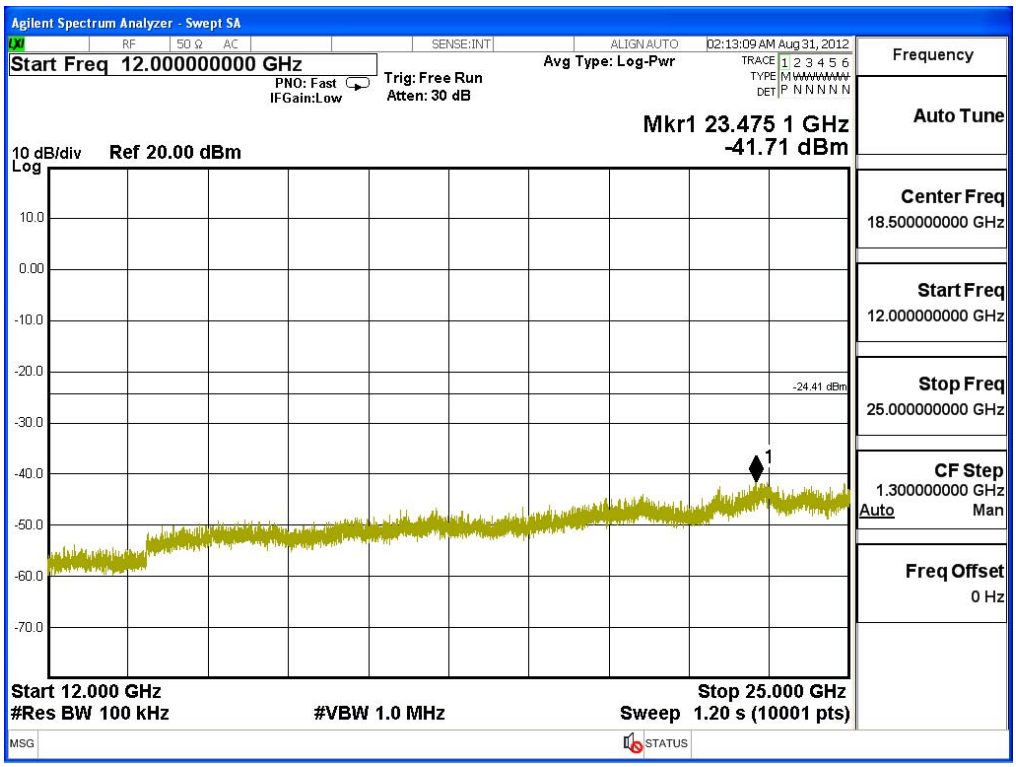

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
02:10:17 AM Aug 31, 2012
Mkr1 2.419 0 GHz
4.16 dBm
10 dB/div
Log
Ref 20.00 dBm
-25.84 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 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


Agilent Spectrum Analyzer - Swept SA
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
02:11:16 AM Aug 31, 2012
Mkr1 23.696 1 GHz
-40.66 dBm
10 dB/div
Log
Ref 20.00 dBm
-25.84 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

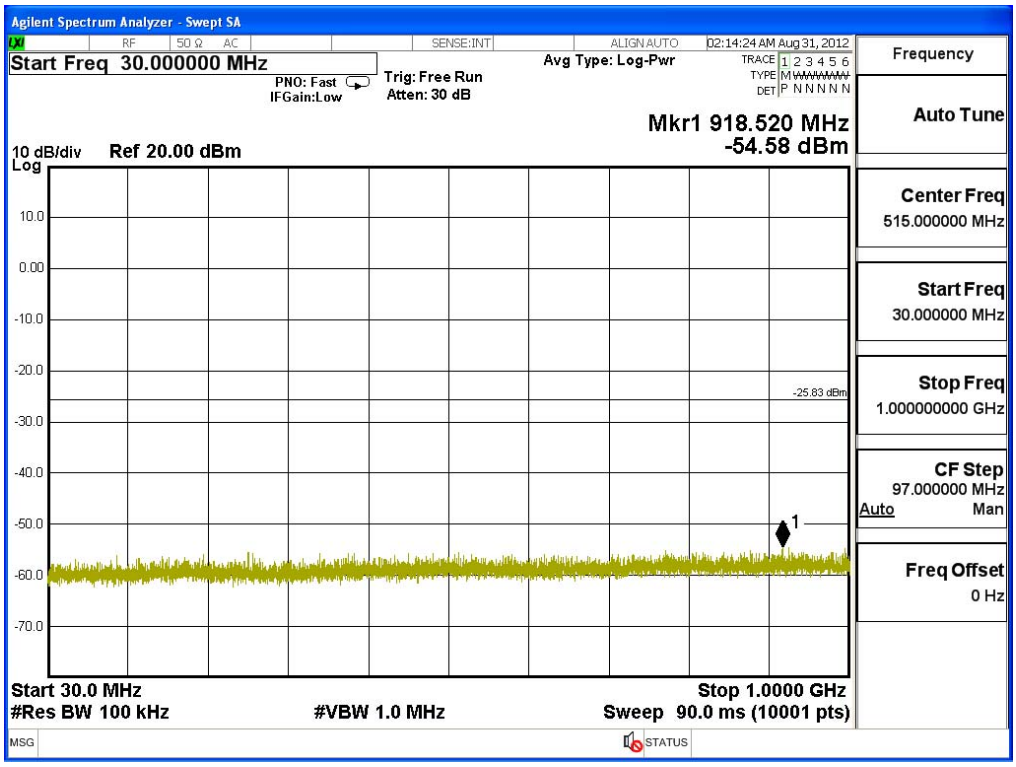
Channel 06 (2437MHz) 30MHz -25GHz-Chain B

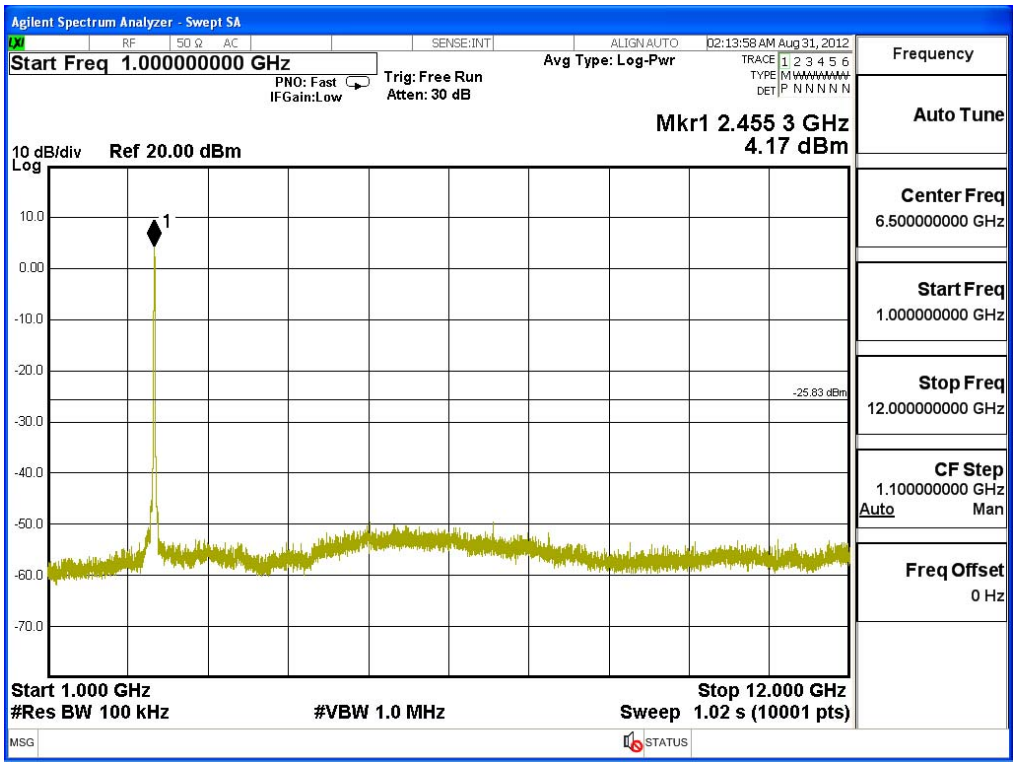


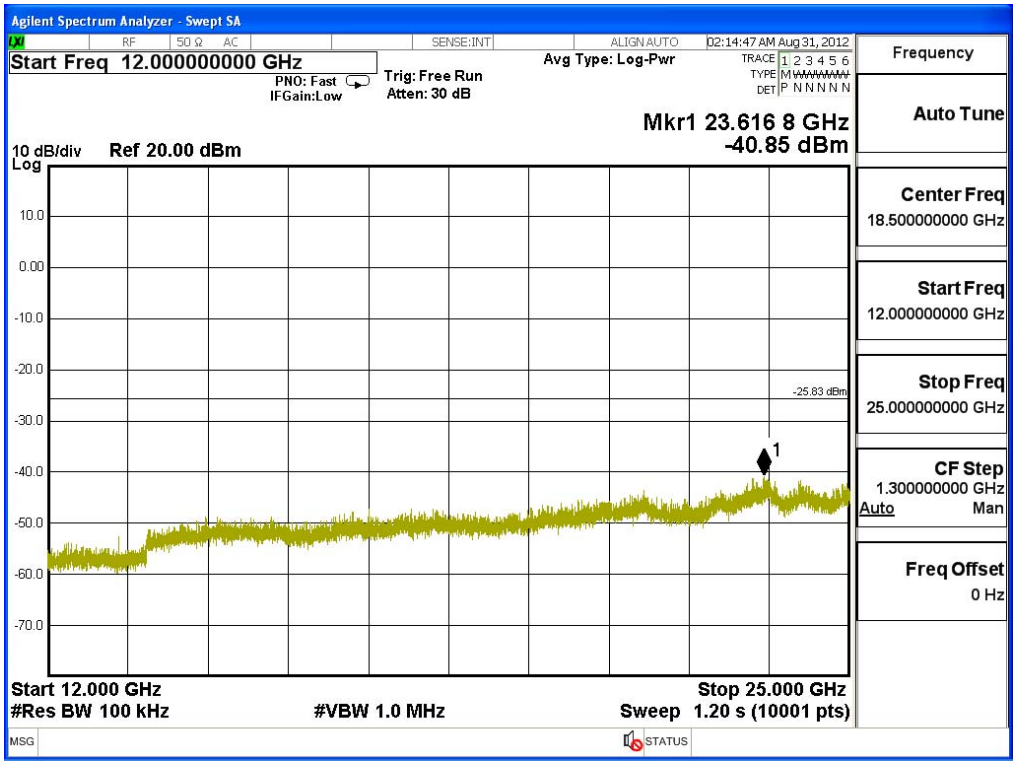




Channel 11 (2462MHz) 30MHz -25GHz-Chain B




Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
02:13:58 AM Aug 31, 2012
Mkr1 2.455 3 GHz
4.17 dBm
10 dB/div
Log
Ref 20.00 dBm
-25.83 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


Agilent Spectrum Analyzer - Swept SA
Start Freq 12.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
02:14:47 AM Aug 31, 2012
Mkr1 23.616 8 GHz
-40.85 dBm
10 dB/div
Log
Ref 20.00 dBm
-25.83 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