FCC Test Report

Product Name	Notebook
Model No	U21
FCC ID.	JCK-U21

Applicant	GIGA-BYTE TECHNOLOGY CO., LTD.
Address	No.6, Bao Chiang Road, Hsin-Tien Dist., New Taipei City 231,Taiwan

Date of Receipt	July 13, 2013
Issue Date	Aug. 05, 2013
Report No.	136255R-RFUSP42V01
Report Version	V1.0

Testing Laboratory
0914

Test Report Certification

Issue Date: Aug. 05, 2013
Report No.: 136255R-RFUSP42V01

Product Name	Notebook
Applicant	GIGA-BYTE TECHNOLOGY CO., LTD.
Address	No.6, Bao Chiang Road, Hsin-Tien Dist., New Taipei City 231,Taiwan
Manufacturer	1. GIGA-BYTE TECHNOLOGY CO., LTD. (GBT) 2. G-STYLE Ltd.
Model No.	U21
FCC ID.	JCK-U21
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	GIGABYTE
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2012 ANSI C63.4: 2003, ANSI C63.10: 2009
Test Result	Complied

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

Documented By : Genie Chang

(Senior Adm. Specialist / Genie Chang)

Tested By : Andy Lin

(Assistant Engineer / Andy Lin)

Approved By :

(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Notebook
Trade Name	GIGABYTE
Model No.	U21
FCC ID.	JCK-U21
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW, 2422-2452MHz for 802.11n-40BW
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 300Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	PIFA Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter	MFR: DELTA, M/N: ADP-65WH BB Input: AC 100-240V, 1.5A, 50-60Hz Output: DC 19V, 3.42A Cable Out: Non-Shielded, 1.7m, with one ferrite core bonded.
Contain Module	Intel / 7260HMW BN

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Aristotle	RFA-22-P325 (Main)(Aux)	PIFA	2.2 dBi for 2.4 GHz

Note:

1. 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		

802.11n-40MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
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		

Note:

1. The EUT is a Notebook with a built-in 2.4GHz WLAN and Bluetooth transceiver, this report for WLAN.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (802.11b is chain A、802.11g is chain A、802.11n is chain A+ chain B)
4. 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)
5. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/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 (802.11n MCS8 14.4Mbps 20M-BW)
	Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)

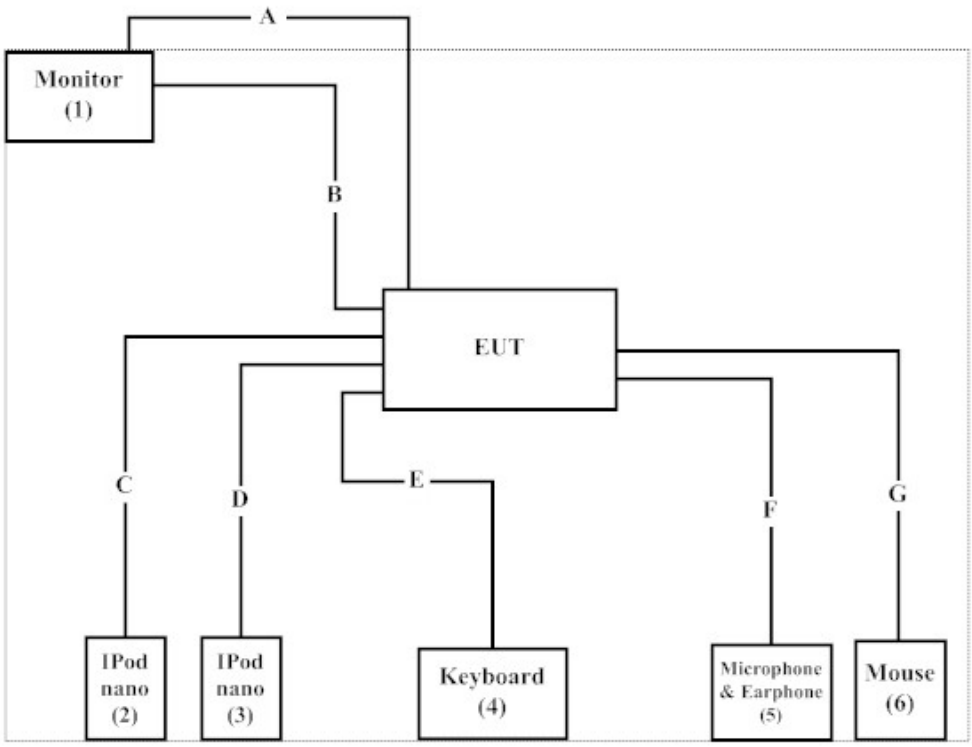
1.3. Tested System Details

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	Dell	ST2320LF	CN-OMM2NN6-72872-22 I-C9WS	Non-Shielded, 1.8m
2	IPod nano	Apple	A1199	YM733325VQ5	N/A
3	IPod nano	Apple	A1199	5U728909VQ5	N/A
4	Keyboard	Logitech	Y-UR83	SY848UK	N/A
5	Microphone & Earphone	PCHOME	N/A	N/A	N/A
6	USB Mouse	Logitech	M-BT85	LN5488800D8	N/A

Signal Cable Type		Signal cable Description
A	VGA Card	Shielded, 1.6m, with two ferrite cores bonded.
B	HDMI Card	Shielded, 1.8m
C	IPod Cable	Non-Shielded, 1.2m
D	IPod Cable	Non-Shielded, 1.2m
E	Keyboard Cable	Non-Shielded, 1.8m
F	Microphone & Earphone Cable	Non-Shielded, 1.2m
G	Mouse Cable	Non-Shielded, 1.8m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4

(2) Execute software “DRTU-v1.6.1” 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
Columbia, MD 21046
Registration Number: 92195

Site Name: Quietek Corporation
Site Address: No.5-22, Ruishukeng,
Linkou Dist. New Taipei City 24451,
Taiwan, R.O.C.
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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

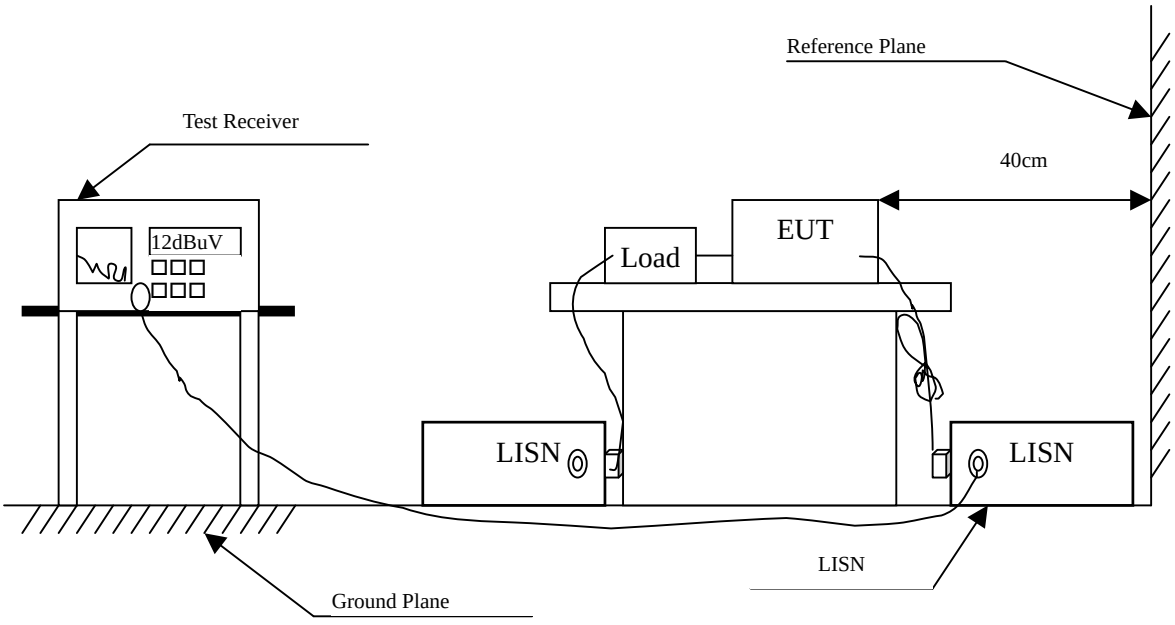
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2012	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2013	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2013	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2013	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2013	
	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 C63.10: 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 : Notebook
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.162	9.697	40.730	50.427	-15.230	65.657
0.177	9.698	39.290	48.988	-16.241	65.229
0.220	9.700	32.160	41.860	-22.140	64.000
0.267	9.702	26.520	36.222	-26.435	62.657
0.435	9.709	21.260	30.969	-26.888	57.857
1.209	9.745	18.930	28.675	-27.325	56.000
Average					
0.162	9.697	15.240	24.937	-30.720	55.657
0.177	9.698	19.960	29.658	-25.571	55.229
0.220	9.700	0.890	10.590	-43.410	54.000
0.267	9.702	0.930	10.632	-42.025	52.657
0.435	9.709	6.220	15.929	-31.928	47.857
1.209	9.745	11.940	21.685	-24.315	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 : Notebook
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.150	9.676	44.500	54.176	-11.824	66.000
0.170	9.677	39.840	49.517	-15.912	65.429
0.197	9.679	35.420	45.099	-19.558	64.657
0.216	9.679	34.200	43.879	-20.235	64.114
0.427	9.689	21.720	31.409	-26.677	58.086
19.884	10.021	15.130	25.151	-34.849	60.000
Average					
0.150	9.676	11.700	21.376	-34.624	56.000
0.170	9.677	20.900	30.577	-24.852	55.429
0.197	9.679	5.070	14.749	-39.908	54.657
0.216	9.679	30.950	40.629	-13.485	54.114
0.427	9.689	6.730	16.419	-31.667	48.086
19.884	10.021	8.370	18.391	-31.609	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

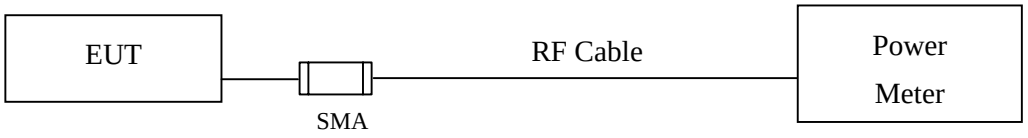
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2013
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2013

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 peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 section 9.1.3 PKPM1 Peak power meter method.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Notebook
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	15.41	--	--	--	17.88	<30dBm	Pass
06	2437	15.50	15.4	15.23	15.04	18.19	<30dBm	Pass
11	2462	15.48	--	--	--	18.06	<30dBm	Pass

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

Chain B

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	14.00	--	--	--	16.59	<30dBm	Pass
06	2437	13.98	13.82	13.66	13.45	16.54	<30dBm	Pass
11	2462	13.94	--	--	--	16.51	<30dBm	Pass

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

Product : Notebook
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	13.41	--	--	--	--	--	--	--	18.92	<30dBm	Pass
06	2437	16.49	15.77	15.34	14.89	14.71	14.5	14.43	14.2	21.21	<30dBm	Pass
11	2462	13.49	--	--	--	--	--	--	--	19.07	<30dBm	Pass

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

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	12.00	--	--	--	--	--	--	--	17.62	<30dBm	Pass
06	2437	15.45	15.15	14.89	14.77	14.57	14.26	14.07	13.89	19.97	<30dBm	Pass
11	2462	13.5.0	--	--	--	--	--	--	--	18.98	<30dBm	Pass

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

Product : Notebook
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW)

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	9.6	--	--	--	--	--	--	--	15.11
06	2437	10.49	10.44	10.35	10.21	10.1	9.89	9.77	9.67	16.21
11	2462	10.53	--	--	--	--	--	--	--	16.14

Note: Peak Power Output Value =Reading value on 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	9.38	--	--	--	--	--	--	--	15.05
06	2437	10.45	10.37	10.21	10.08	9.97	9.89	9.64	9.55	16.14
11	2462	10.45	--	--	--	--	--	--	--	16.17

Note: Peak Power Output Value =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
01	2412	14.4	15.11	15.05	18.09	<30dBm	Pass
06	2437	14.4	16.21	16.14	19.19	<30dBm	Pass
11	2462	14.4	16.14	16.17	19.17	<30dBm	Pass

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

Product : Notebook
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)

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)								
03	2422	5.52	--	--	--	--	--	--	--	10.82
06	2437	10.02	9.88	9.71	9.53	9.41	9.38	9.22	9.13	15.43
09	2452	9.00	--	--	--	--	--	--	--	14.47

Note: Peak Power Output Value =Reading value on 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)								
03	2422	5.43	--	--	--	--	--	--	--	10.77
06	2437	9.91	9.68	9.51	9.39	9.27	9.21	9.17	9.11	15.43
09	2452	8.94	--	--	--	--	--	--	--	14.52

Note: Peak Power Output Value =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
03	2422	30	10.82	10.77	13.81	<30dBm	Pass
06	2437	30	15.43	15.43	18.44	<30dBm	Pass
09	2452	30	14.47	14.52	17.51	<30dBm	Pass

Note: Peak 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:

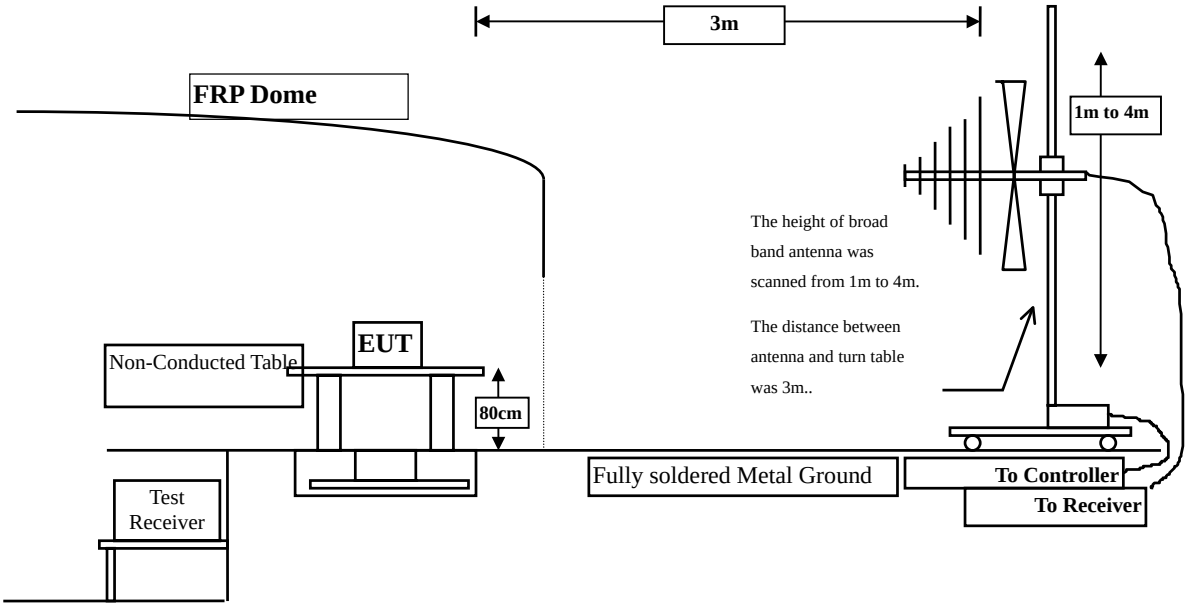
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2013
	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2013
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2013
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2013
	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.

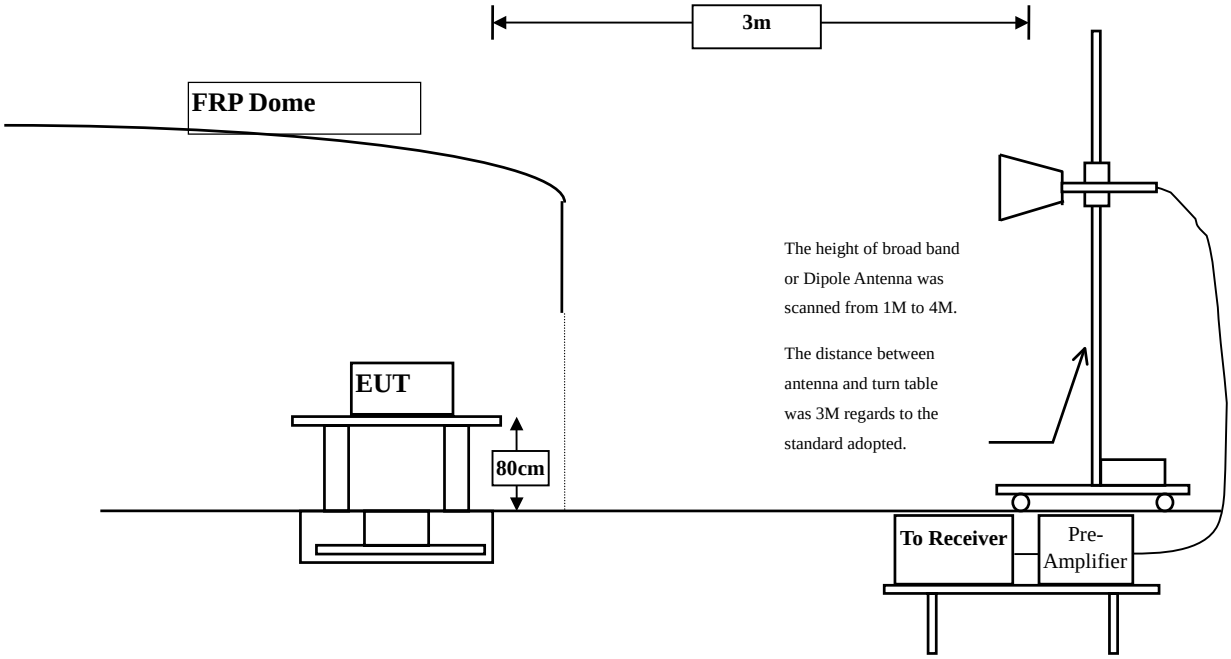
2. The test instruments marked with “X” are used to measure the final test results.

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	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of 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 C63.10: 2009 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~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 frequency range from 9kHz to 10th harmonics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Notebook
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	38.930	42.191	-31.809	74.000
7236.000	10.650	36.000	46.650	-27.350	74.000
9648.000	13.337	36.090	49.426	-24.574	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	37.710	44.131	-29.869	74.000
7236.000	11.495	36.510	48.005	-25.995	74.000
9648.000	13.807	37.170	50.976	-23.024	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 : Notebook
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:					
4824.000	6.421	37.710	44.131	-29.869	74.000
7236.000	11.495	36.510	48.005	-25.995	74.000
9648.000	13.807	37.170	50.976	-23.024	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	36.960	42.771	-31.229	74.000
7311.000	12.630	35.650	48.279	-25.721	74.000
9748.000	13.126	37.450	50.576	-23.424	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 : Notebook
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	38.530	41.387	-32.613	74.000
7386.000	12.127	36.160	48.288	-25.712	74.000
9848.000	12.852	36.910	49.763	-24.237	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	38.320	43.840	-30.160	74.000
7386.000	13.254	36.780	50.034	-23.966	74.000
9848.000	13.367	37.670	51.037	-22.963	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 : Notebook
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	37.860	41.121	-32.879	74.000
7236.000	10.650	35.470	46.120	-27.880	74.000
9648.000	13.337	35.310	48.646	-25.354	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	37.610	44.031	-29.969	74.000
7236.000	11.495	37.030	48.525	-25.475	74.000
9648.000	13.807	36.550	50.356	-23.644	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 : Notebook
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	36.920	39.957	-34.043	74.000
7311.000	11.795	35.670	47.464	-26.536	74.000
9748.000	12.635	36.550	49.185	-24.815	74.000
Average Detector:					
--					
Peak Detector:					
4874.000	5.812	38.320	44.131	-29.869	74.000
7311.000	12.630	36.940	49.569	-24.431	74.000
9748.000	13.126	37.230	50.356	-23.644	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 : Notebook
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	36.660	39.517	-34.483	74.000
7386.000	12.127	35.780	47.908	-26.092	74.000
9848.000	12.852	36.320	49.173	-24.827	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	38.320	43.840	-30.160	74.000
7386.000	13.254	36.700	49.954	-24.046	74.000
9848.000	13.367	37.540	50.907	-23.093	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 : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW)(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	39.800	43.061	-30.939	74.000
7236.000	10.650	36.180	46.830	-27.170	74.000
9648.000	13.337	35.960	49.296	-24.704	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	37.700	44.121	-29.879	74.000
7236.000	11.495	36.600	48.095	-25.905	74.000
9648.000	13.807	36.950	50.756	-23.244	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 : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (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	38.350	41.387	-32.613	74.000
7311.000	11.795	35.800	47.594	-26.406	74.000
9748.000	12.635	37.010	49.645	-24.355	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	36.610	42.421	-31.579	74.000
7311.000	12.630	35.670	48.299	-25.701	74.000
9748.000	13.126	36.980	50.106	-23.894	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 : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW) (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	38.510	41.367	-32.633	74.000
7386.000	12.127	36.620	48.748	-25.252	74.000
9848.000	12.852	36.810	49.663	-24.337	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	37.070	42.590	-31.410	74.000
7386.000	13.254	35.990	49.244	-24.756	74.000
9848.000	13.367	36.420	49.787	-24.213	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 : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)(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	38.320	41.491	-32.509	74.000
7266.000	11.162	36.890	48.052	-25.948	74.000
9688.000	12.964	37.500	50.465	-23.535	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4844.000	6.178	36.650	42.828	-31.172	74.000
7266.000	11.982	35.430	47.412	-26.588	74.000
9688.000	13.507	36.500	50.008	-23.992	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 : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW) (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	36.300	39.337	-34.663	74.000
7311.000	11.795	36.610	48.404	-25.596	74.000
9748.000	12.635	36.870	49.505	-24.495	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	36.420	42.231	-31.769	74.000
7311.000	12.630	35.900	48.529	-25.471	74.000
9748.000	13.126	37.770	50.896	-23.104	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 : Notebook
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)(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	38.060	40.975	-33.025	74.000
7356.000	11.995	36.830	48.824	-25.176	74.000
9808.000	12.475	36.030	48.505	-25.495	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4904.000	5.530	37.420	42.951	-31.049	74.000
7356.000	13.005	36.420	49.424	-24.576	74.000
9808.000	12.901	37.560	50.461	-23.539	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 : Notebook
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					
288.020	-4.579	42.995	38.416	-7.584	46.000
385.020	-1.350	39.890	38.540	-7.460	46.000
449.040	-2.238	36.476	34.238	-11.762	46.000
629.460	1.560	30.364	31.924	-14.076	46.000
767.200	4.235	27.923	32.158	-13.842	46.000
906.880	5.848	33.800	39.648	-6.352	46.000
Vertical					
57.160	-4.403	37.340	32.937	-7.063	40.000
256.980	-7.573	44.782	37.209	-8.791	46.000
385.020	-2.820	40.075	37.255	-8.745	46.000
513.060	-0.670	31.345	30.675	-15.325	46.000
691.540	2.421	27.567	29.988	-16.012	46.000
906.880	2.498	35.429	37.927	-8.073	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.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Notebook
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					
385.020	-1.350	40.215	38.865	-7.135	46.000
449.040	-2.238	35.835	33.597	-12.403	46.000
629.460	1.560	30.056	31.616	-14.384	46.000
767.200	4.235	27.993	32.228	-13.772	46.000
906.880	5.848	32.972	38.820	-7.180	46.000
976.720	6.655	29.415	36.071	-17.929	54.000
Vertical					
256.980	-7.573	44.031	36.458	-9.542	46.000
321.000	-6.899	43.204	36.305	-9.695	46.000
482.020	-3.985	34.526	30.541	-15.459	46.000
689.600	2.538	27.718	30.256	-15.744	46.000
771.080	3.115	27.696	30.811	-15.189	46.000
906.880	2.498	34.404	36.902	-9.098	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.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Notebook
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS8 14.4Mbps 20M-BW)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
167.740	-10.799	36.701	25.902	-17.598	43.500
513.060	1.550	29.307	30.857	-15.143	46.000
577.080	3.169	30.096	33.265	-12.735	46.000
707.060	2.919	27.721	30.640	-15.360	46.000
767.200	4.235	28.279	32.514	-13.486	46.000
976.720	6.655	28.099	34.755	-19.245	54.000
Vertical					
192.960	-9.878	38.184	28.306	-15.194	43.500
321.000	-6.899	42.204	35.305	-10.695	46.000
627.520	-3.120	30.744	27.624	-18.376	46.000
703.180	0.139	30.348	30.486	-15.514	46.000
773.020	2.746	28.106	30.852	-15.148	46.000
906.880	2.498	35.545	38.043	-7.957	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.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Notebook
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS8 30Mbps 40M-BW)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
482.020	-0.505	31.521	31.016	-14.984	46.000
577.080	3.169	28.049	31.218	-14.782	46.000
629.460	1.560	29.681	31.241	-14.759	46.000
771.080	4.215	27.763	31.978	-14.022	46.000
906.880	5.848	33.882	39.730	-6.270	46.000
976.720	6.655	28.308	34.964	-19.036	54.000
Vertical					
216.240	-8.317	41.182	32.865	-13.135	46.000
288.020	-8.189	44.019	35.830	-10.170	46.000
352.040	-3.833	43.092	39.259	-6.741	46.000
385.020	-2.820	39.600	36.780	-9.220	46.000
513.060	-0.670	31.331	30.661	-15.339	46.000
703.180	0.139	28.712	28.850	-17.150	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.
8. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF antenna conducted test

5.1. Test Equipment

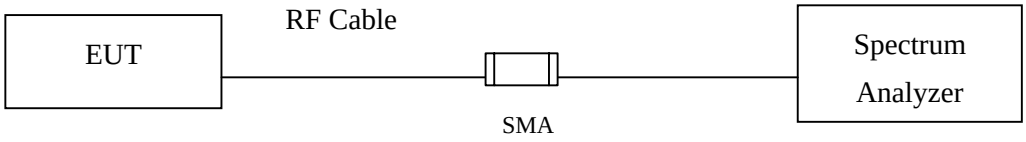
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

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 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

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

5.5. Uncertainty

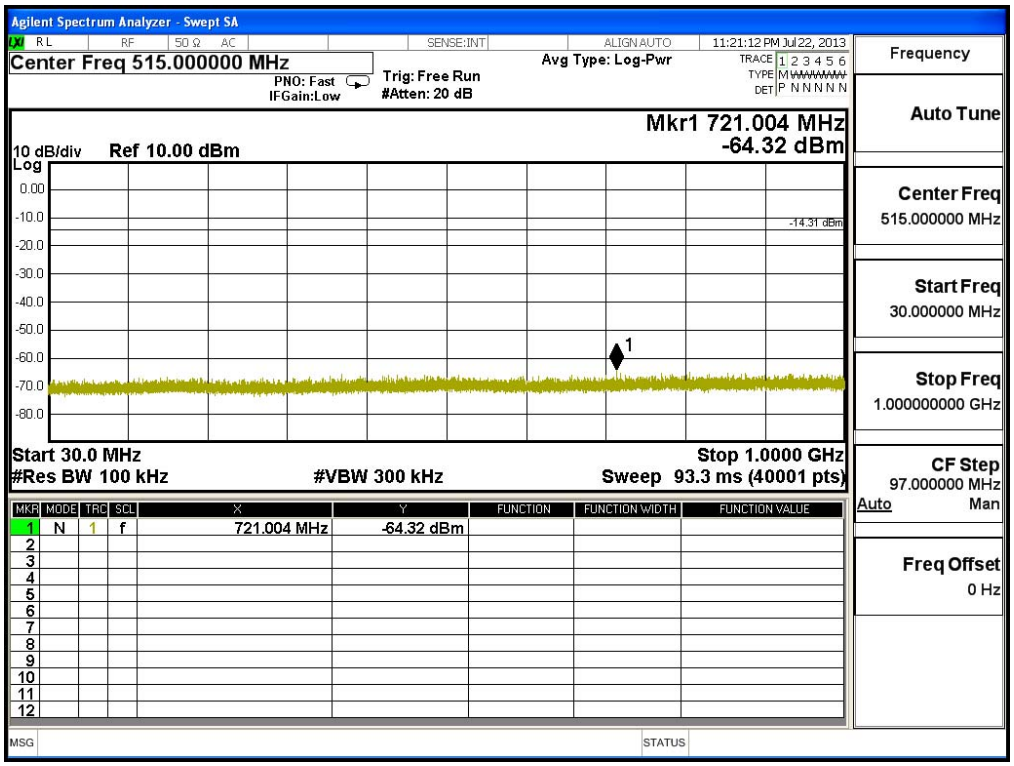
The measurement uncertainty

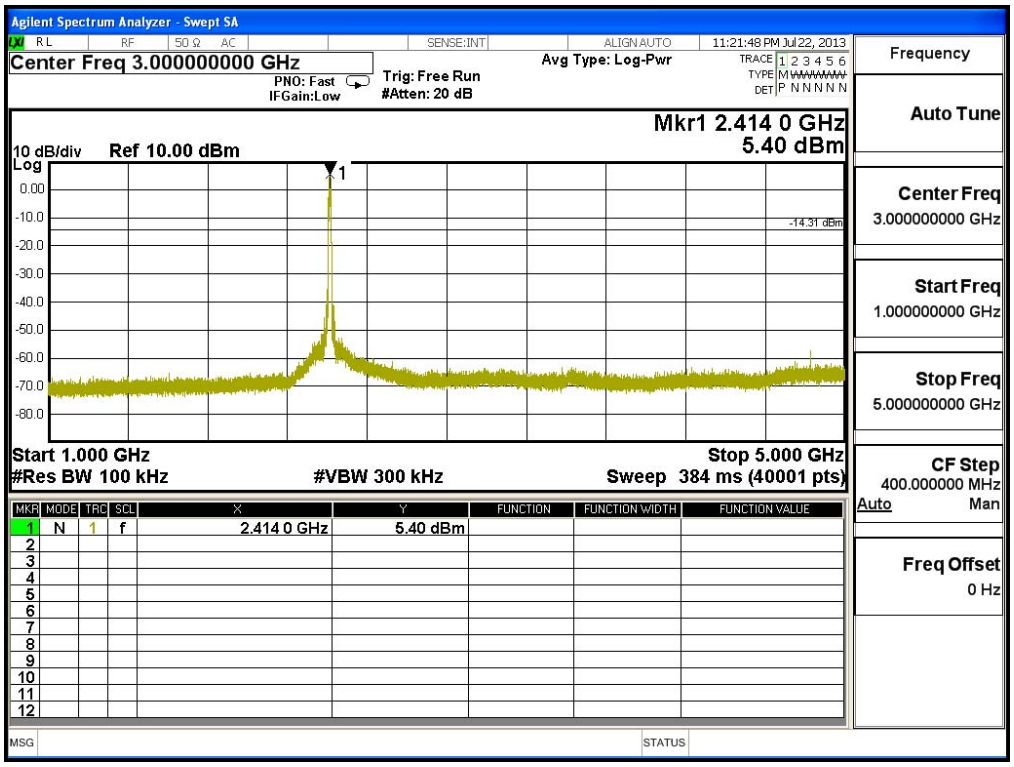
Conducted is defined as ± 1.27dB

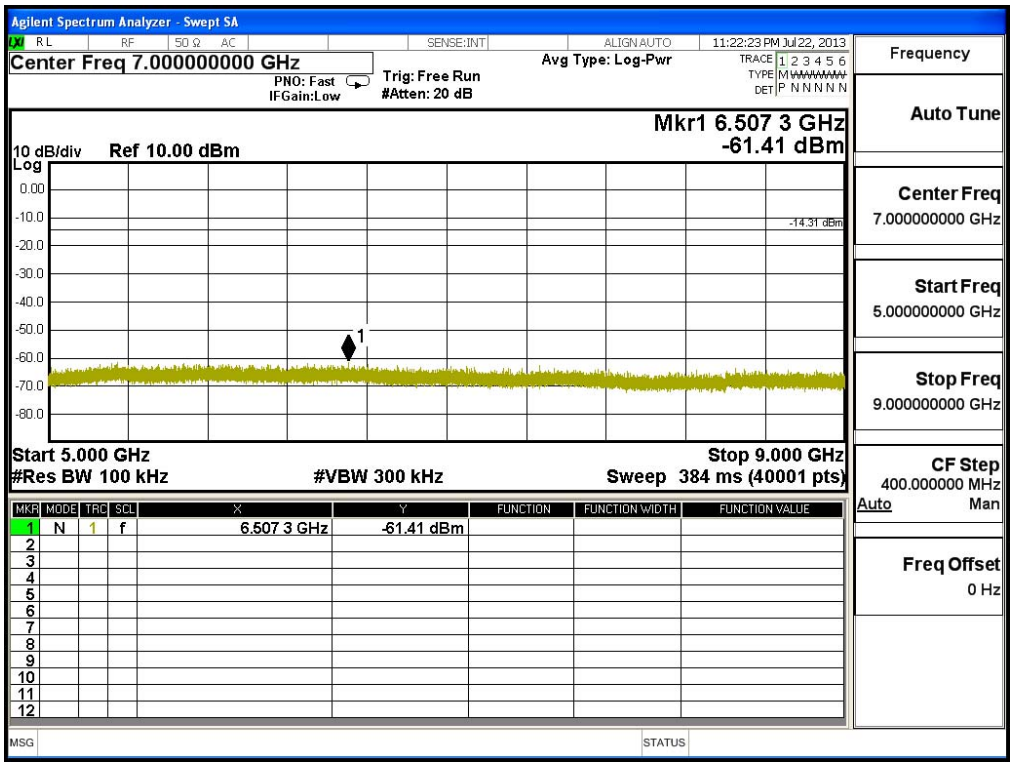
5.6. Test Result of RF antenna conducted test

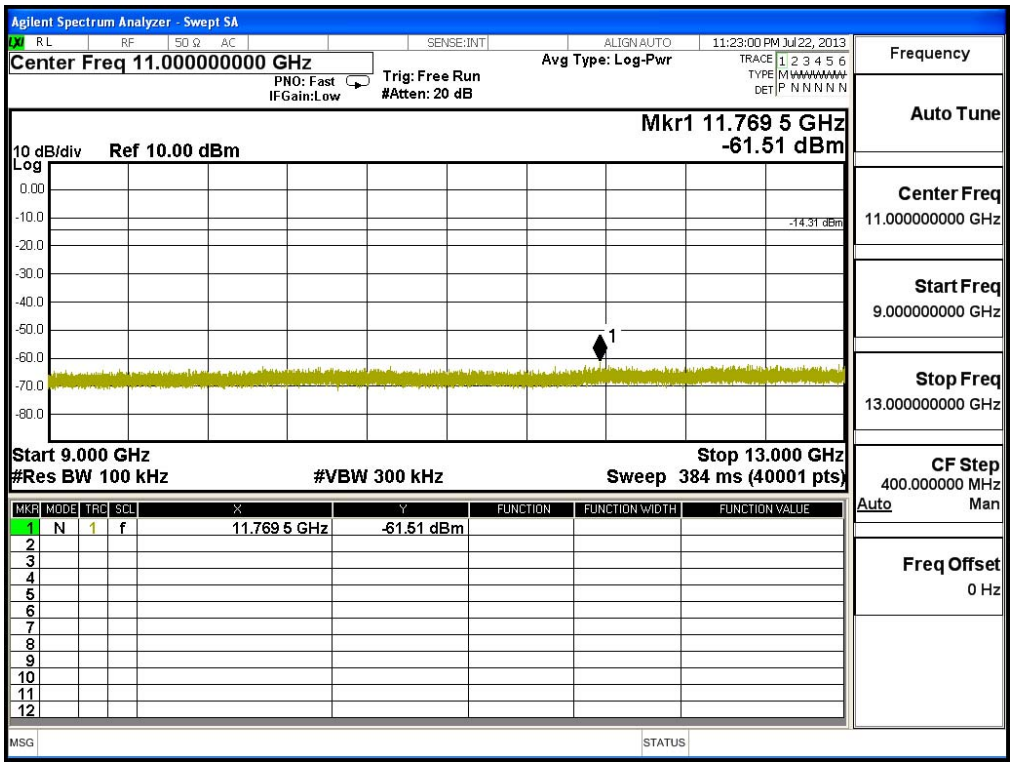
Product : Notebook
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

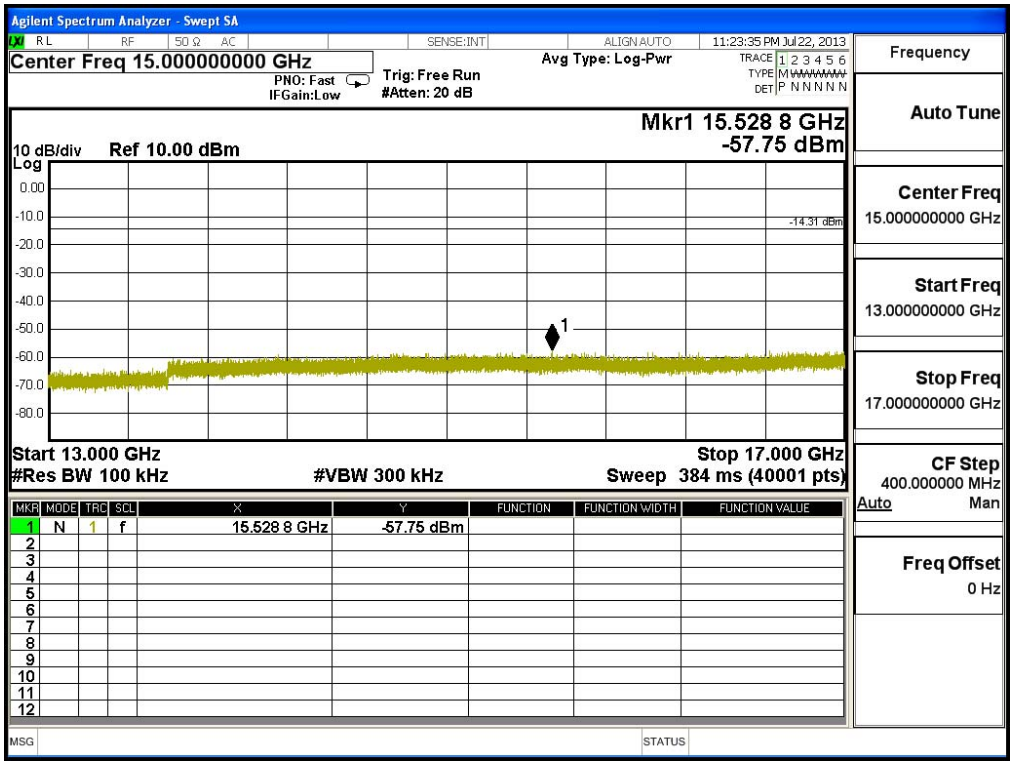
Channel 01 (2412MHz)

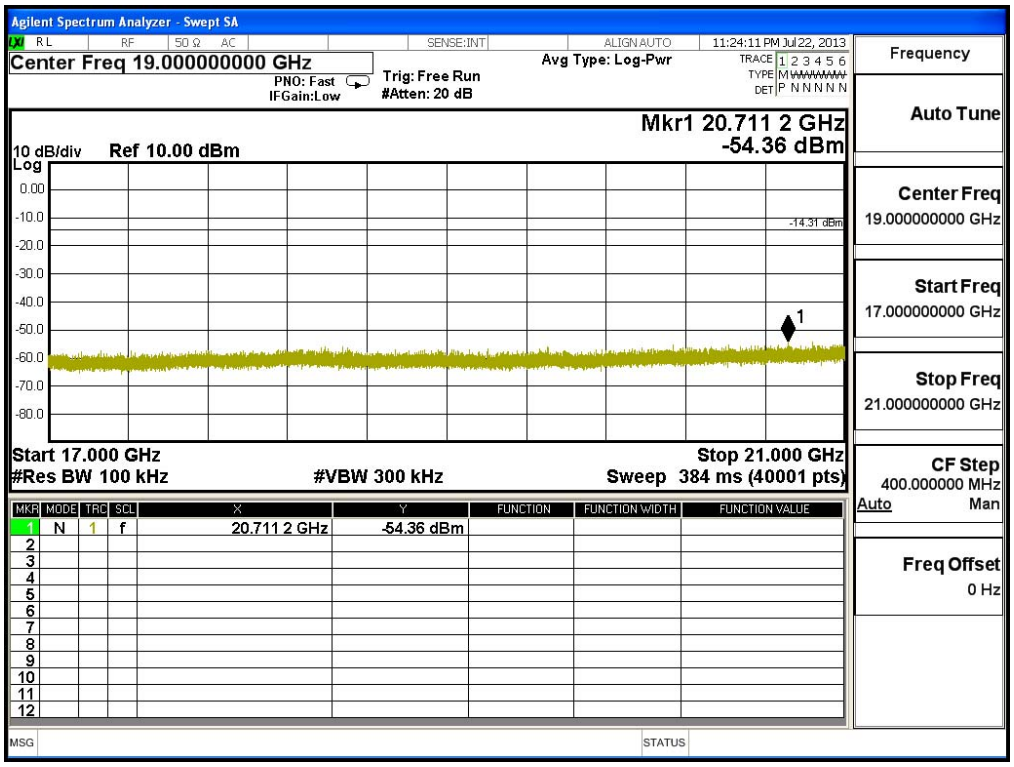


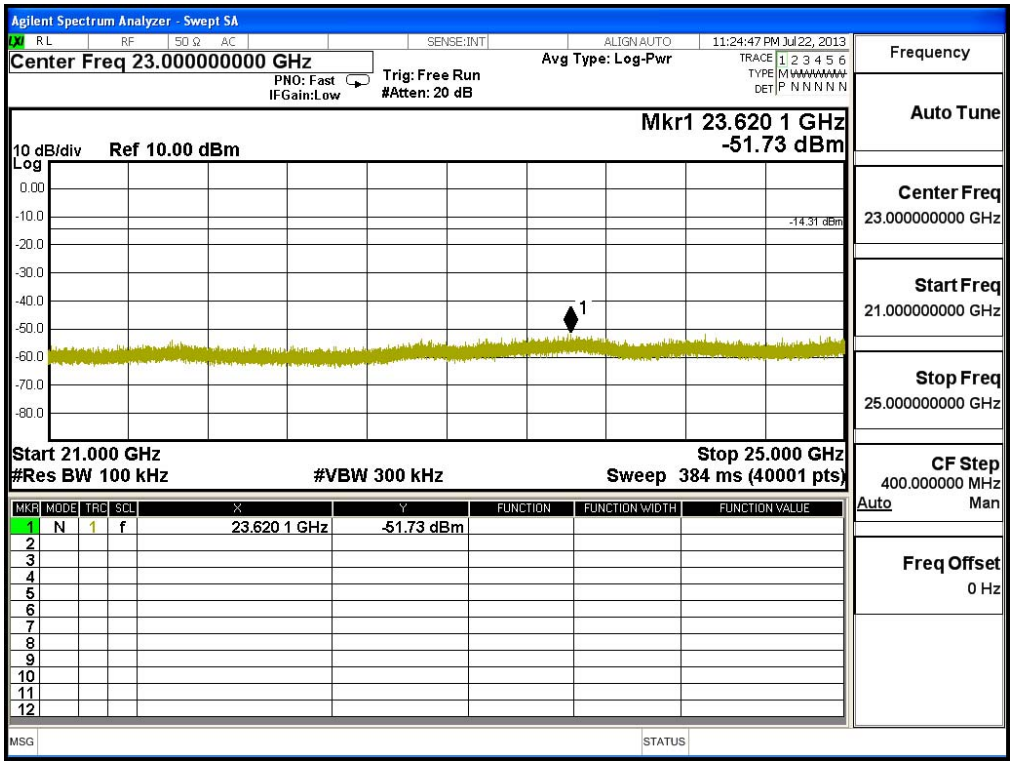

Agilent Spectrum Analyzer - Swept SA
Center Freq 3.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:21:48 PM Jul 22, 2013
Mkr1 2.414 0 GHz
5.40 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.31 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 2.414 0 GHz 5.40 dBm
Frequency
Auto Tune
Center Freq
3.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:22:23 PM Jul 22, 2013
Mkr1 6.507 3 GHz
-61.41 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.31 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 6.507 3 GHz -61.41 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

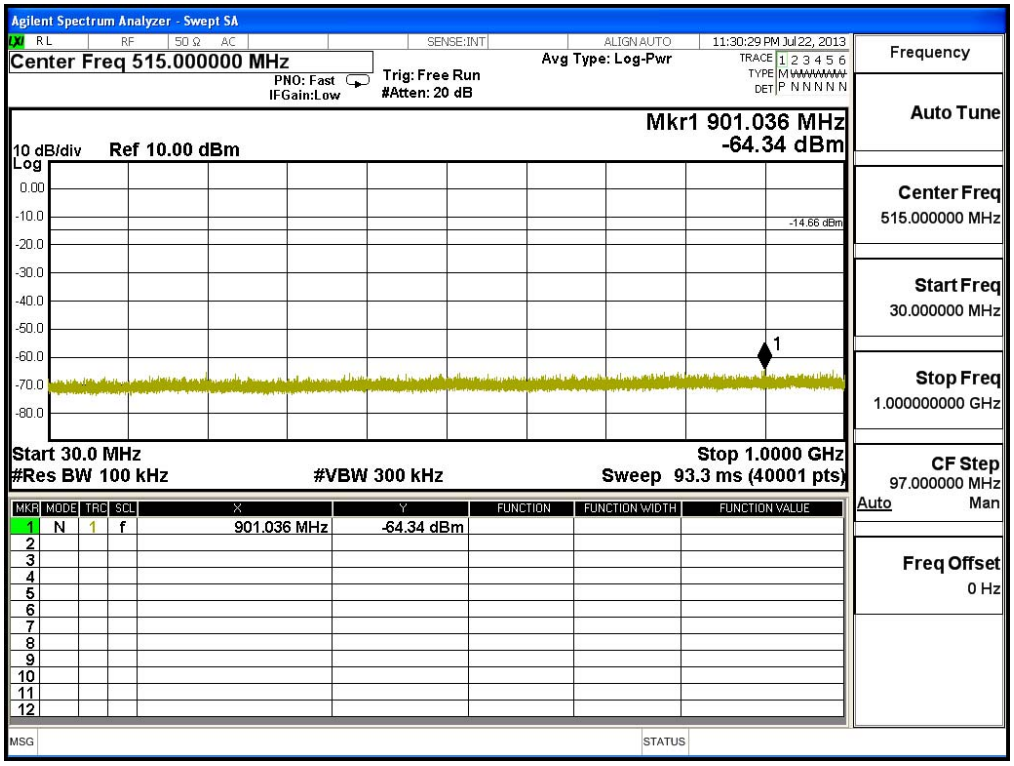

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:23:00 PM Jul 22, 2013
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 11.769 5 GHz
-61.51 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-14.31 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 11.769 5 GHz -61.51 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

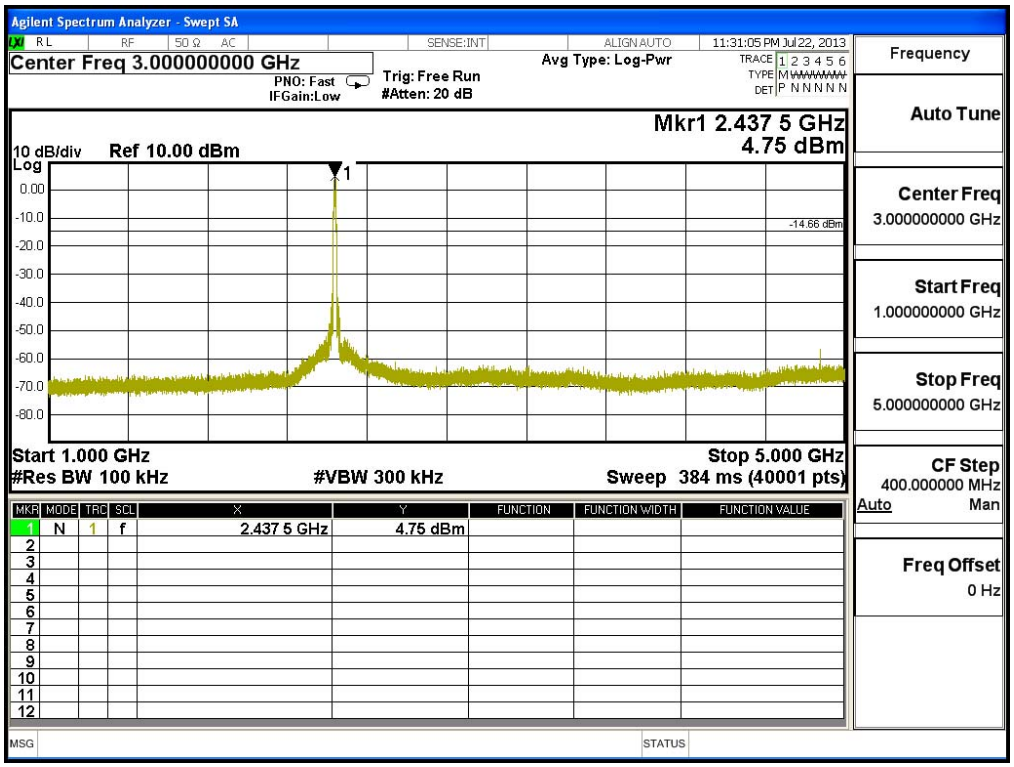

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:23:35 PM Jul 22, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 15.528 8 GHz
-57.75 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-14.31 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 15.528 8 GHz -57.75 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

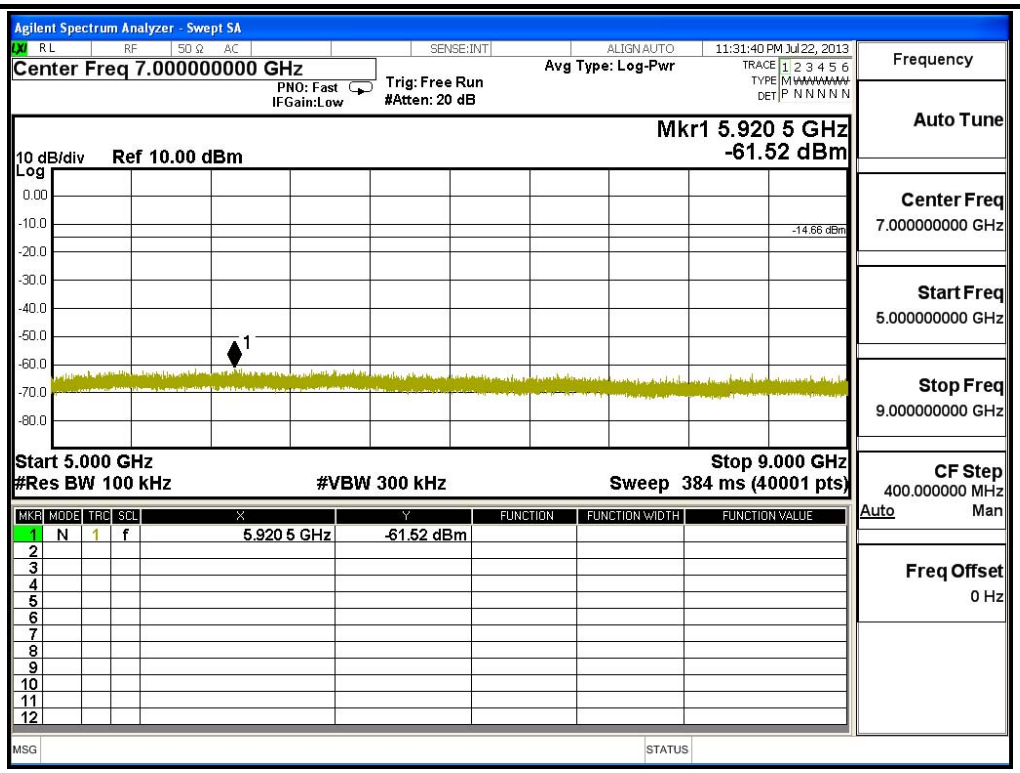

Agilent Spectrum Analyzer - Swept SA
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:24:11 PM Jul 22, 2013
Mkr1 20.711 2 GHz
-54.36 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.31 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 20.711 2 GHz -54.36 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

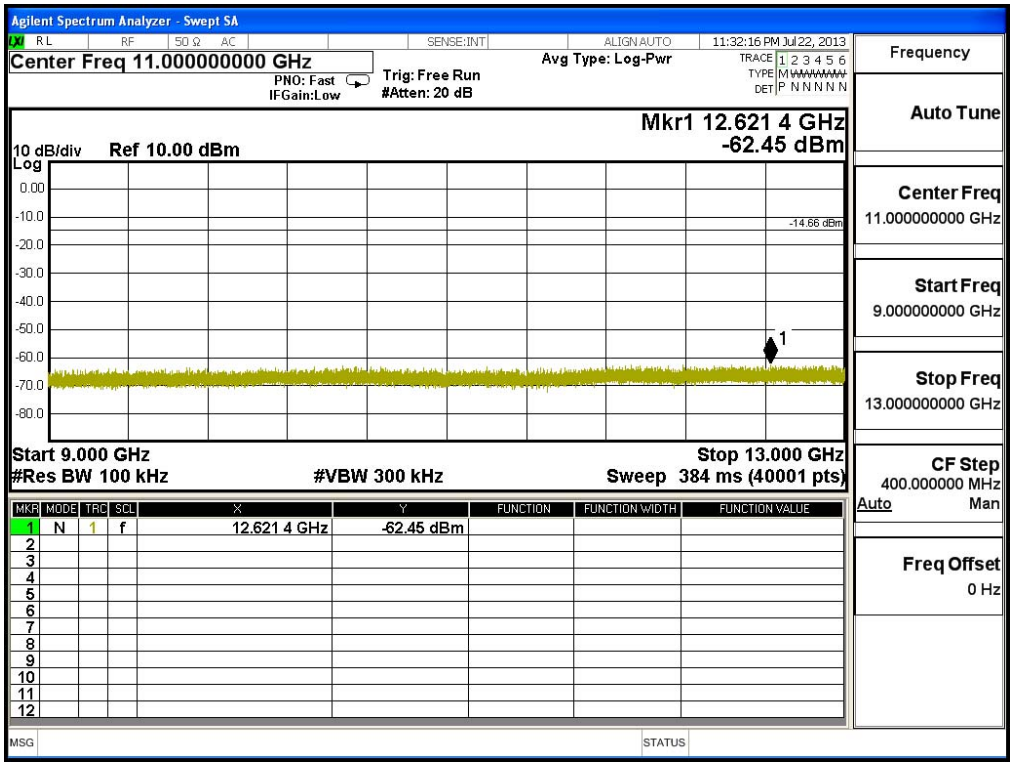

Agilent Spectrum Analyzer - Swept SA
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:24:47 PM Jul 22, 2013
Mkr1 23.620 1 GHz
-51.73 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.31 dBm
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 23.620 1 GHz -51.73 dBm
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

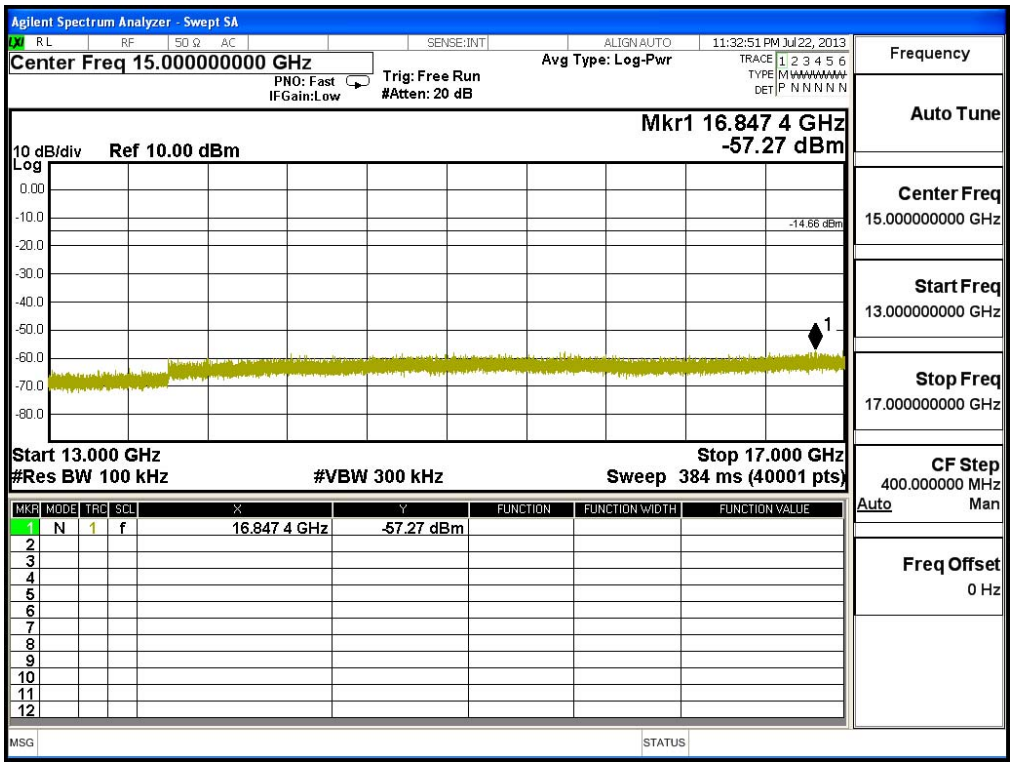
Channel 06 (2437MHz)

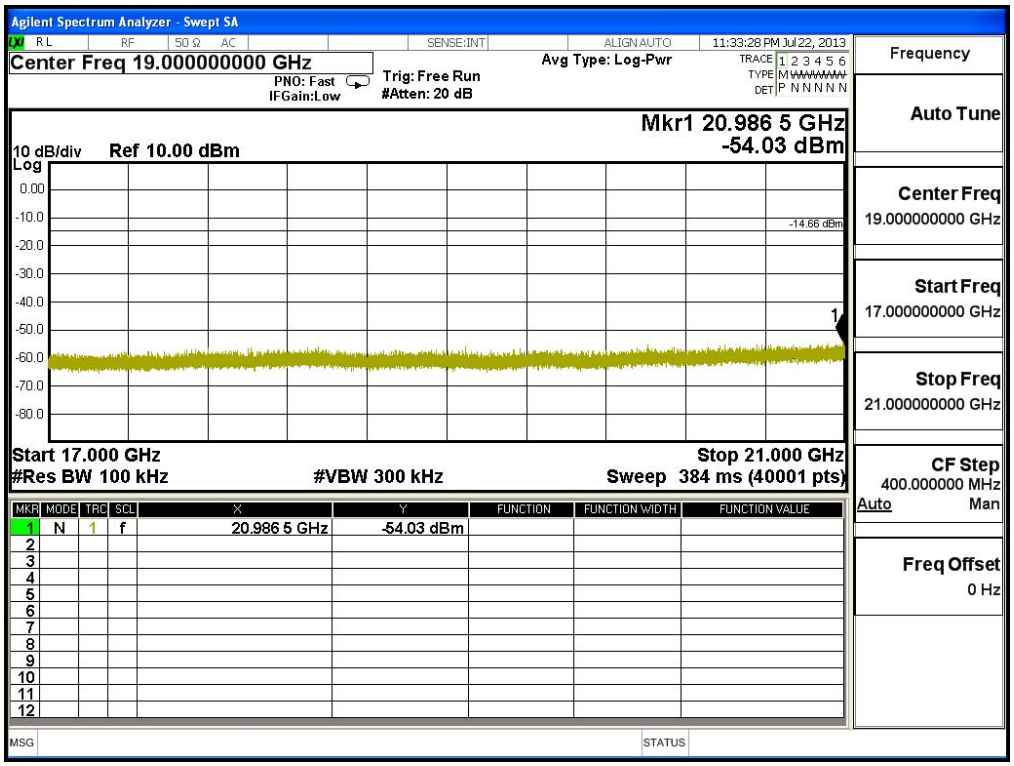


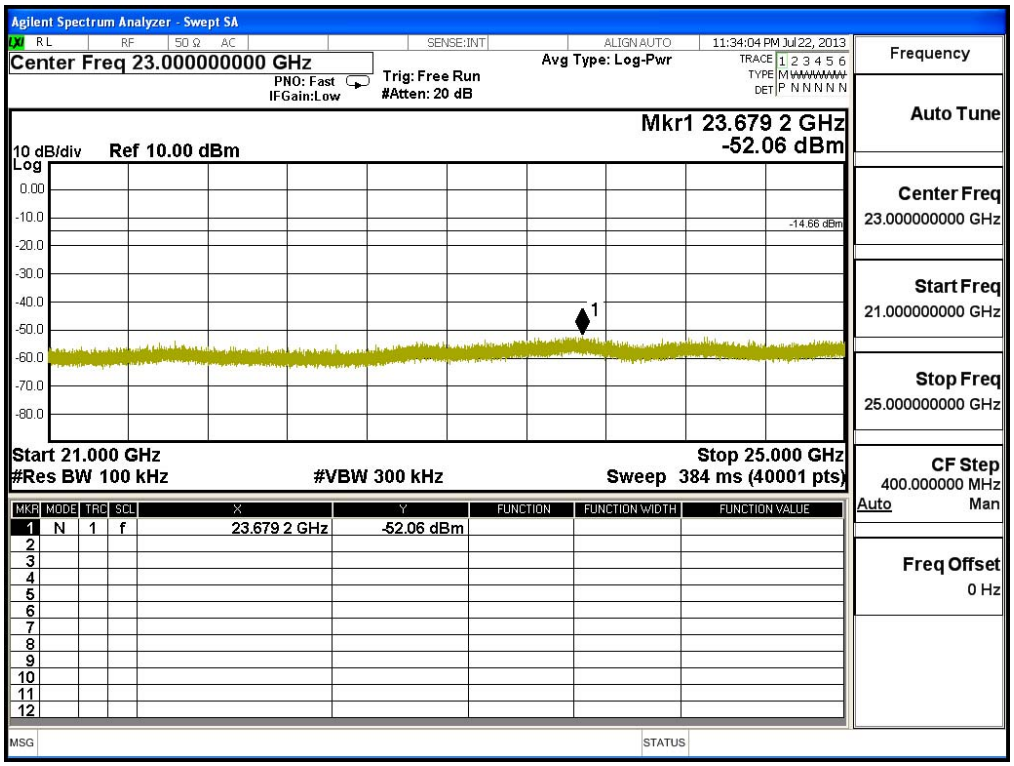



Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:31:40 PM Jul 22, 2013
Mkr1 5.920 5 GHz
-61.52 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.66 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 5.920 5 GHz -61.52 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

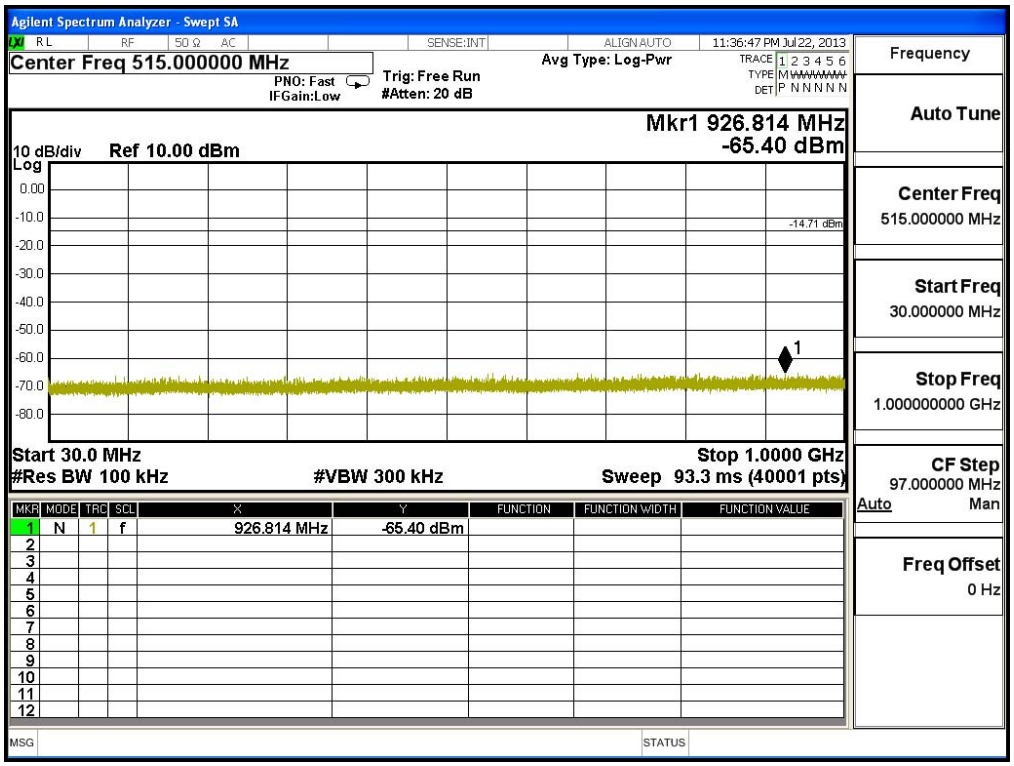

Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:32:16 PM Jul 22, 2013
Mkr1 12.621 4 GHz
-62.45 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.66 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.621 4 GHz -62.45 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

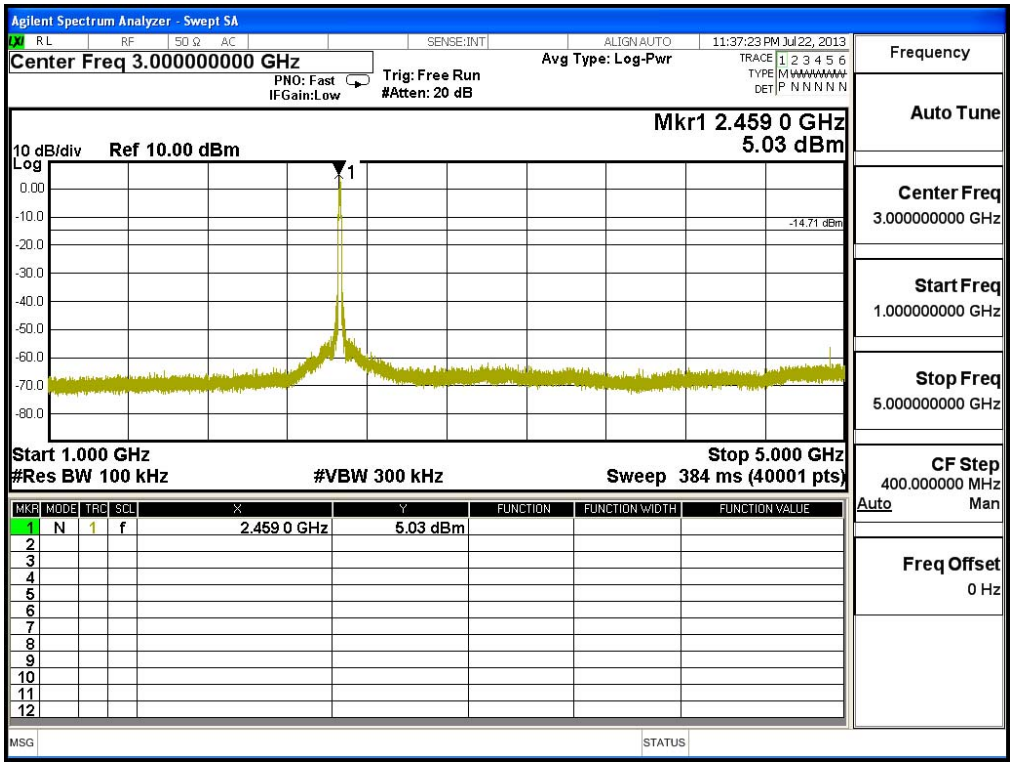

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:32:51 PM Jul 22, 2013
Mkr1 16.847 4 GHz
-57.27 dBm
10 dB/div
Ref 10.00 dBm
Log
-14.66 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 16.847 4 GHz -57.27 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

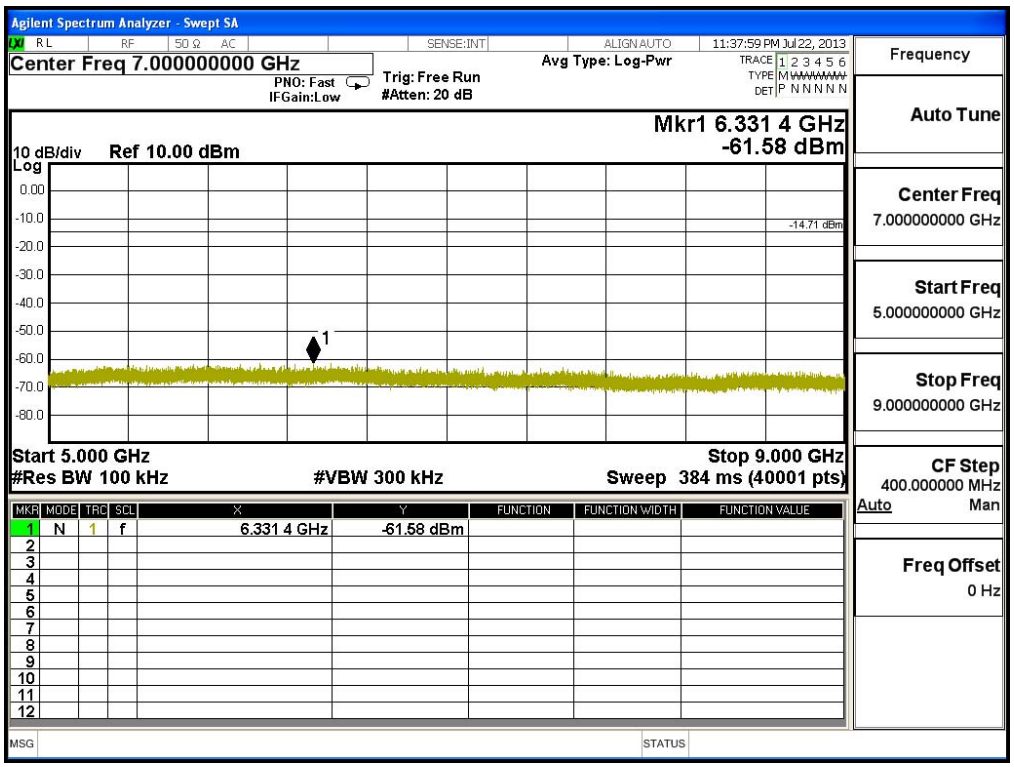

Agilent Spectrum Analyzer - Swept SA
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:33:28 PM Jul 22, 2013
Mkr1 20.986 5 GHz
-54.03 dBm
10 dB/div
Ref 10.00 dBm
Log
-14.66 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 20.986 5 GHz -54.03 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

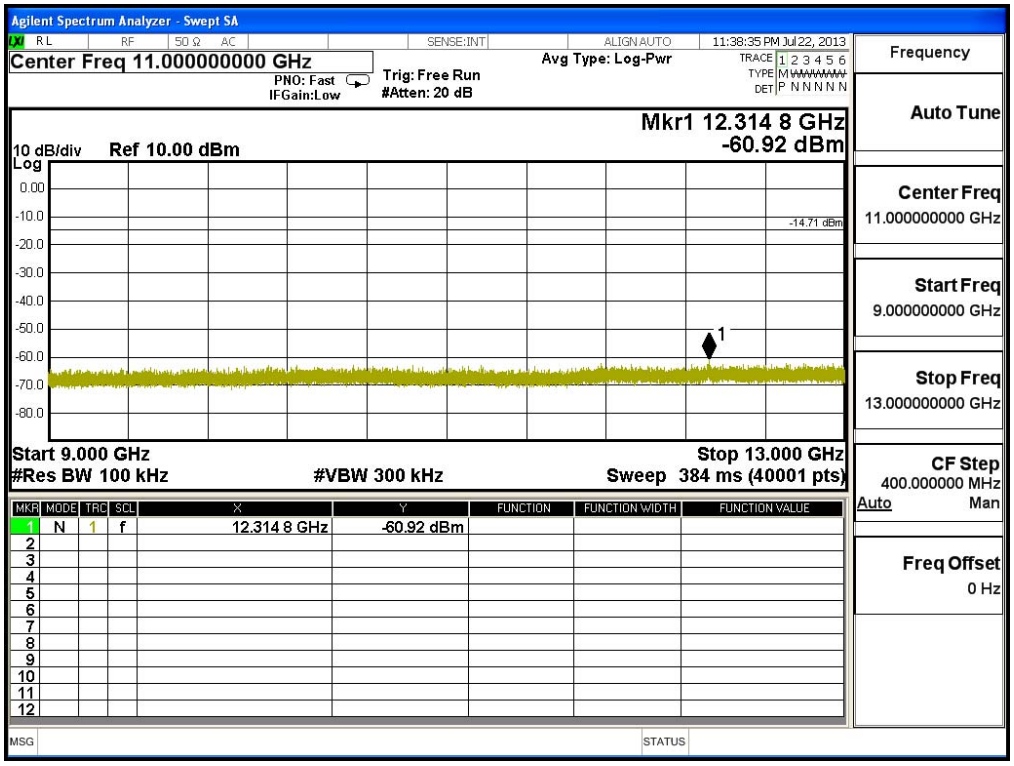

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:34:04 PM Jul 22, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.679 2 GHz
-52.06 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-14.66 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.679 2 GHz -52.06 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

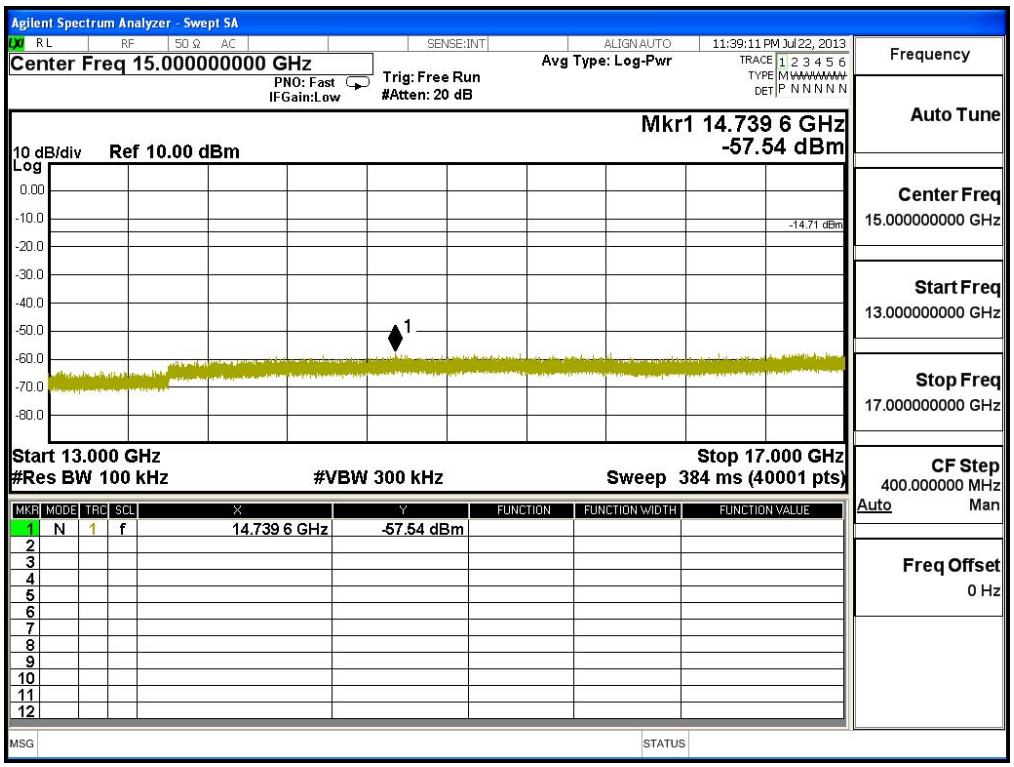
Channel 11 (2462MHz)

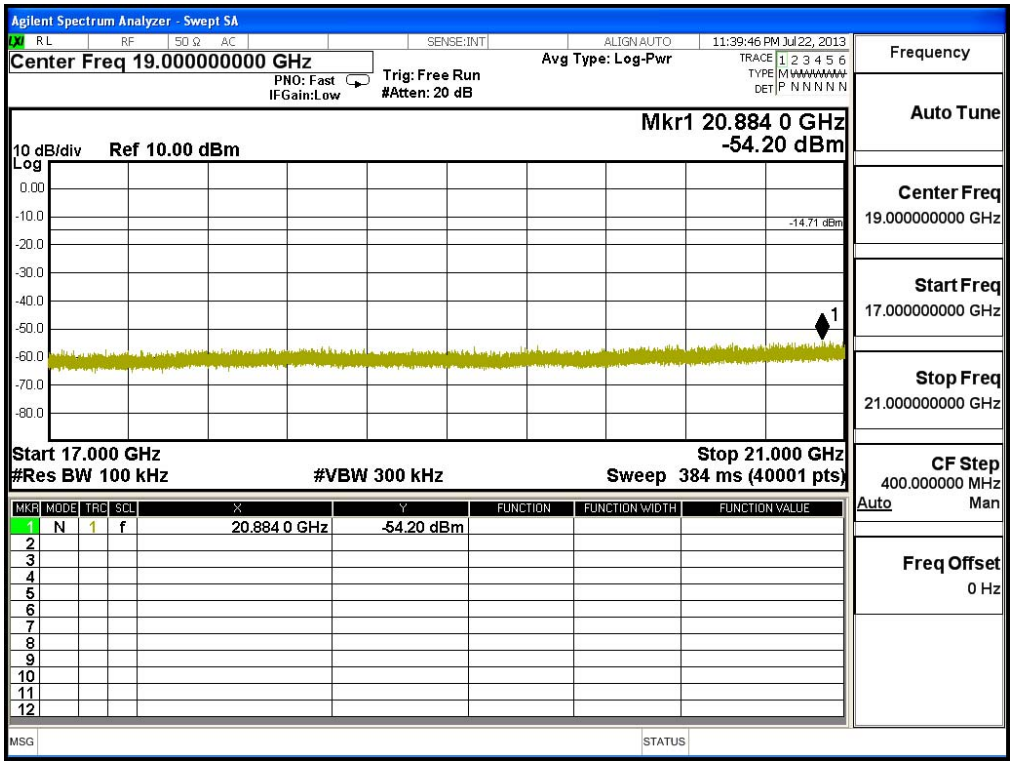


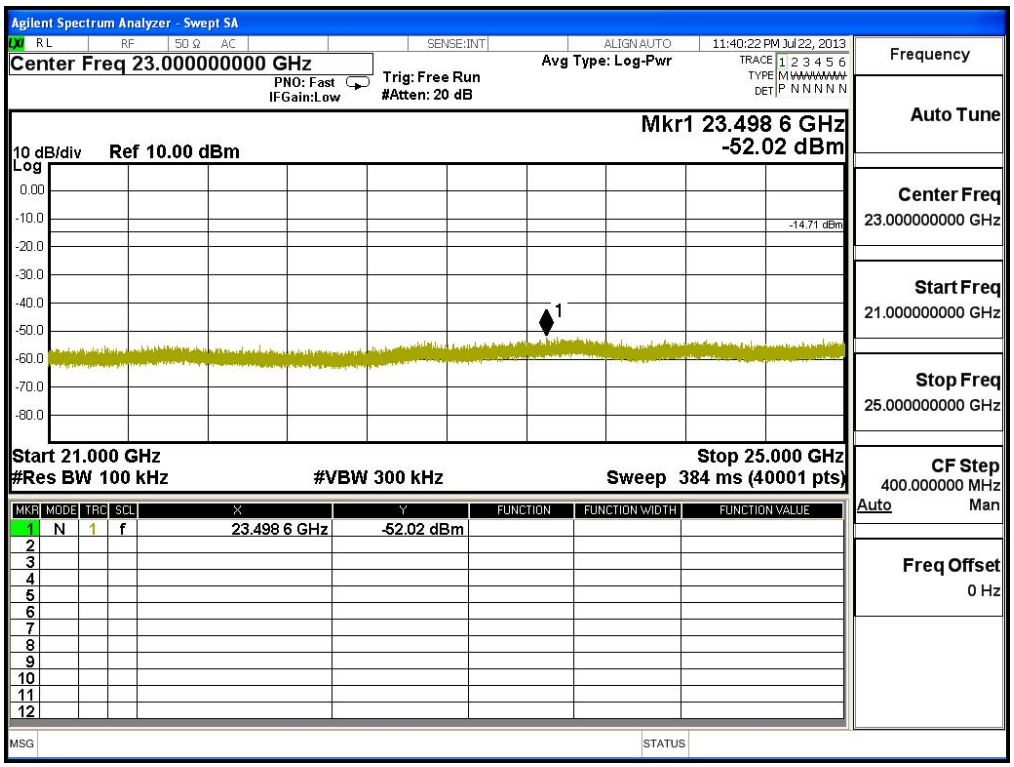



Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:37:59 PM Jul 22, 2013
Mkr1 6.331 4 GHz
-61.58 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.71 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 6.331 4 GHz -61.58 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:38:35 PM Jul 22, 2013
Mkr1 12.314 8 GHz
-60.92 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.71 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.314 8 GHz -60.92 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

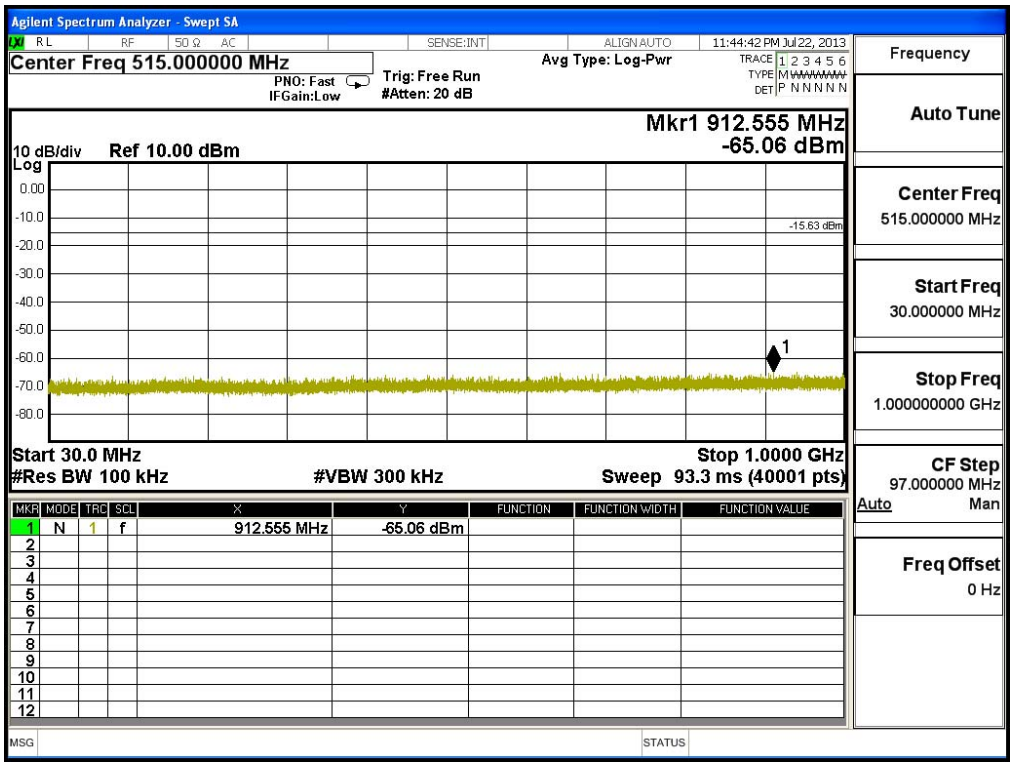

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:39:11 PM Jul 22, 2013
Mkr1 14.739 6 GHz
-57.54 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.71 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 14.739 6 GHz -57.54 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

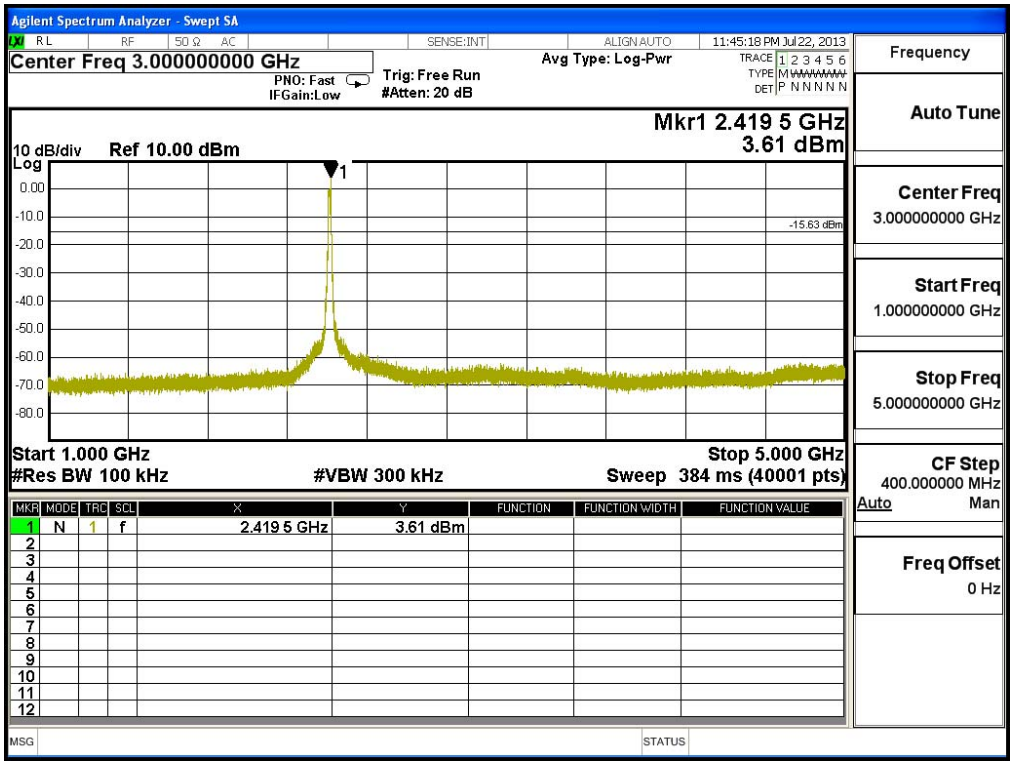

Agilent Spectrum Analyzer - Swept SA
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:39:46 PM Jul 22, 2013
Mkr1 20.884 0 GHz
-54.20 dBm
10 dB/div
Log
Ref 10.00 dBm
-14.71 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 20.884 0 GHz -54.20 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

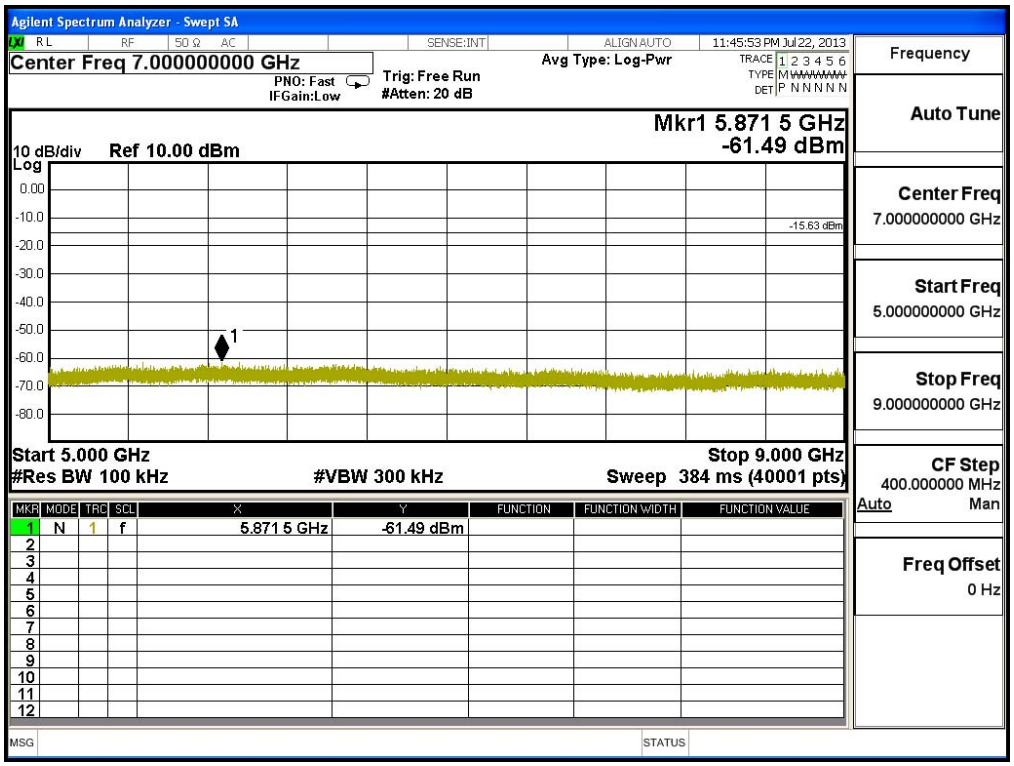

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:40:22 PM Jul 22, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.498 6 GHz
-52.02 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-14.71 dBm
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.498 6 GHz -52.02 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

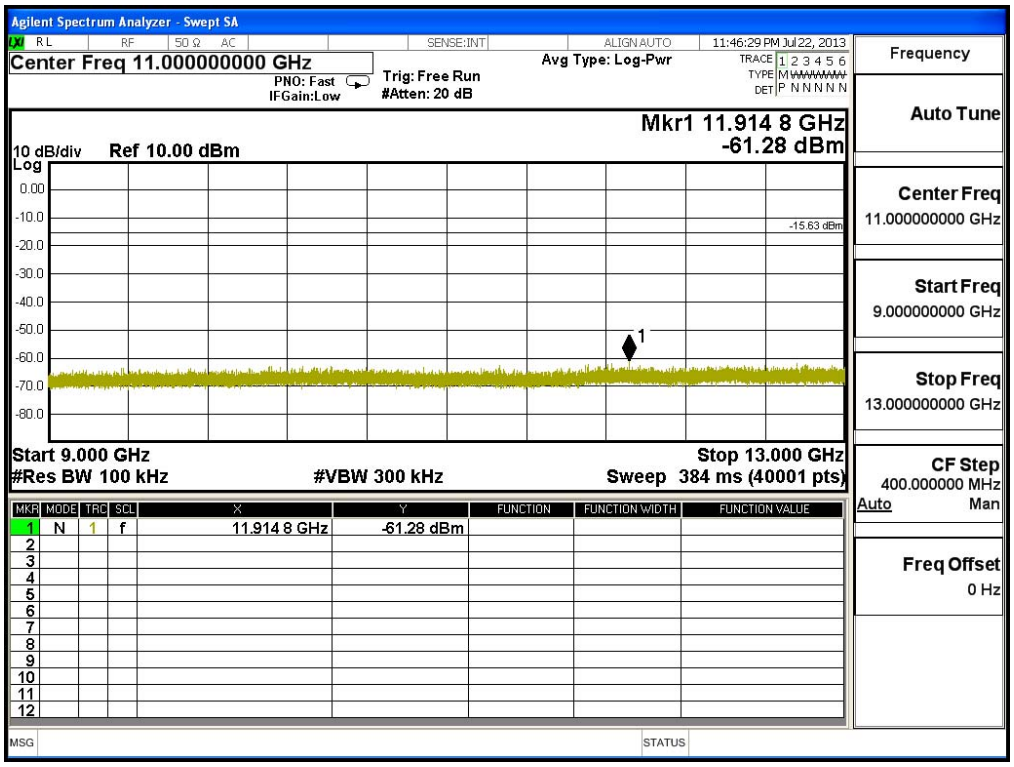
Product : Notebook
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

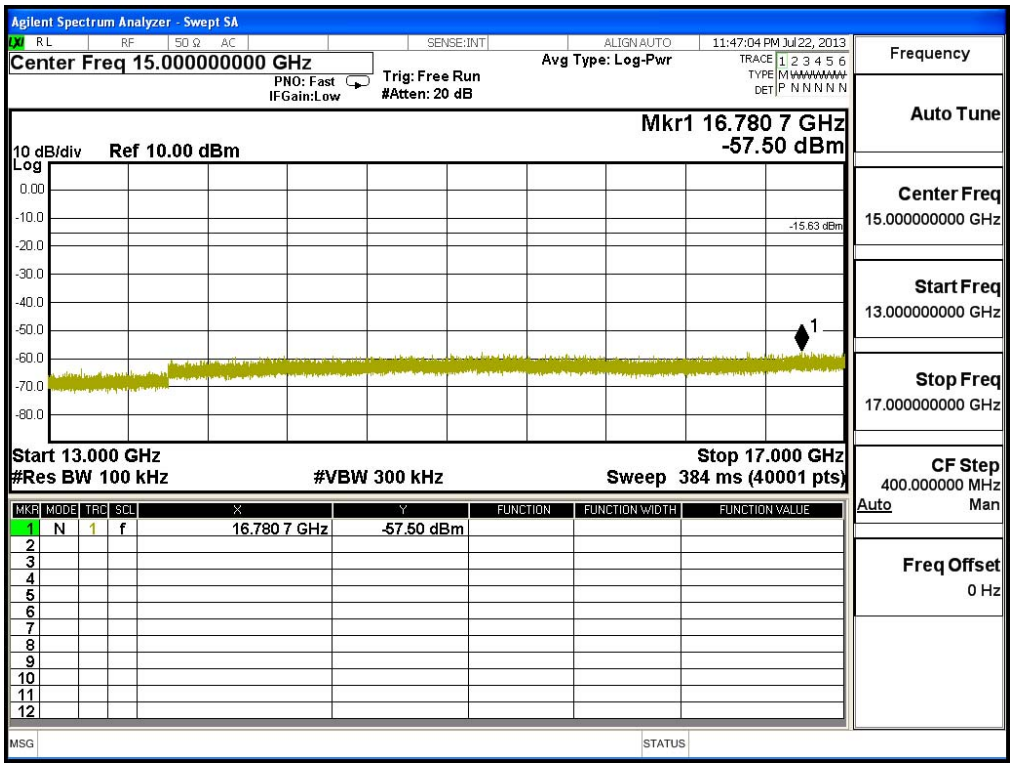
Channel 01 (2412MHz)




Agilent Spectrum Analyzer - Swept SA
Center Freq 3.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:45:18 PM Jul 22, 2013
Mkr1 2.419 5 GHz
3.61 dBm
10 dB/div
Log
Ref 10.00 dBm
-15.63 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 2.419 5 GHz 3.61 dBm
Frequency
Auto Tune
Center Freq
3.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:45:53 PM Jul 22, 2013
Mkr1 5.871 5 GHz
-61.49 dBm
10 dB/div
Log
Ref 10.00 dBm
-15.63 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 5.871 5 GHz -61.49 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:46:29 PM Jul 22, 2013
Mkr1 11.914 8 GHz
-61.28 dBm
10 dB/div
Log
Ref 10.00 dBm
-15.63 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 11.914 8 GHz -61.28 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
11:47:04 PM Jul 22, 2013
Mkr1 16.780 7 GHz
-57.50 dBm
10 dB/div
Log
Ref 10.00 dBm
-15.63 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 16.780 7 GHz -57.50 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz