Test Report

Product Name	Wireless Music System
Model No	A5
FCC ID.	PPQ-A5

Applicant	Lite-On Technology Corp.
Address	4F, 90, Chien 1 Road, Chung-Ho, Taipei Hsien 235, Taiwan, R.O.C.

Date of Receipt	Apr. 05, 2012
Issue Date	Apr. 20, 2012
Report No.	124188R-RFUSP42V01
Report Version	V1.0

Testing Laboratory
0914

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

Test Report Certification

Issue Date: Apr. 20, 2012
Report No.: 124188R-RFUSP42V01

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

Product Name	Wireless Music System
Applicant	Lite-On Technology Corp.
Address	4F, 90, Chien 1 Road, Chung-Ho, Taipei Hsien 235, Taiwan, R.O.C.
Manufacturer	DONG GUAN G-COM COMPUTER CO., LTD
Model No.	A5
FCC ID.	PPQ-A5
EUT Rated Voltage	DC 16V
EUT Test Voltage	AC 120V/60Hz
Trade Name	Bowers & Wilkins
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010 ANSI C63.4: 2003
Test Result	Complied

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Approved By :
(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Wireless Music System
Trade Name	Bowers & Wilkins
Model No.	A5
FCC ID.	PPQ-A5
Frequency Range	2412-2462MHz for 802.11b/g
Number of Channels	802.11b/g: 11
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	PIFA
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Adapter	MFR: SIL, M/N: SSA-60W-12 160300 Input: AC 100-240V ~ 50/60Hz, 1.5A Output: DC 16V, 3A Cable Out: Non-shielded, 2.0m, with one ferrite core bonded.
Power Cable	MFR: SINOFAIR, M/N: NL-2729, Non-shielded, 0.5m
	MFR: KENIC, M/N: KE-01, Non-shielded, 1m
	MFR: KENIC, M/N: KE-16, Non-shielded, 1m
	MFR: KENIC, M/N: KE-51, Non-shielded, 1m

Antenna List

No.	Manufacturer	Model No.	Peak Gain
1	MAG. LAYERS	MSA-3610-2G4C1-A1 MSA-3610-2G4C1-A2	3.72 dBi for 2.4GHz

Note: The antenna of EUT is conform to FCC 15.203.

802.11b/g Center Frequency of Each Channel:

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

Note:

1. The EUT is a Wireless Music System with a built-in 2.4GHz 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)
4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g 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)

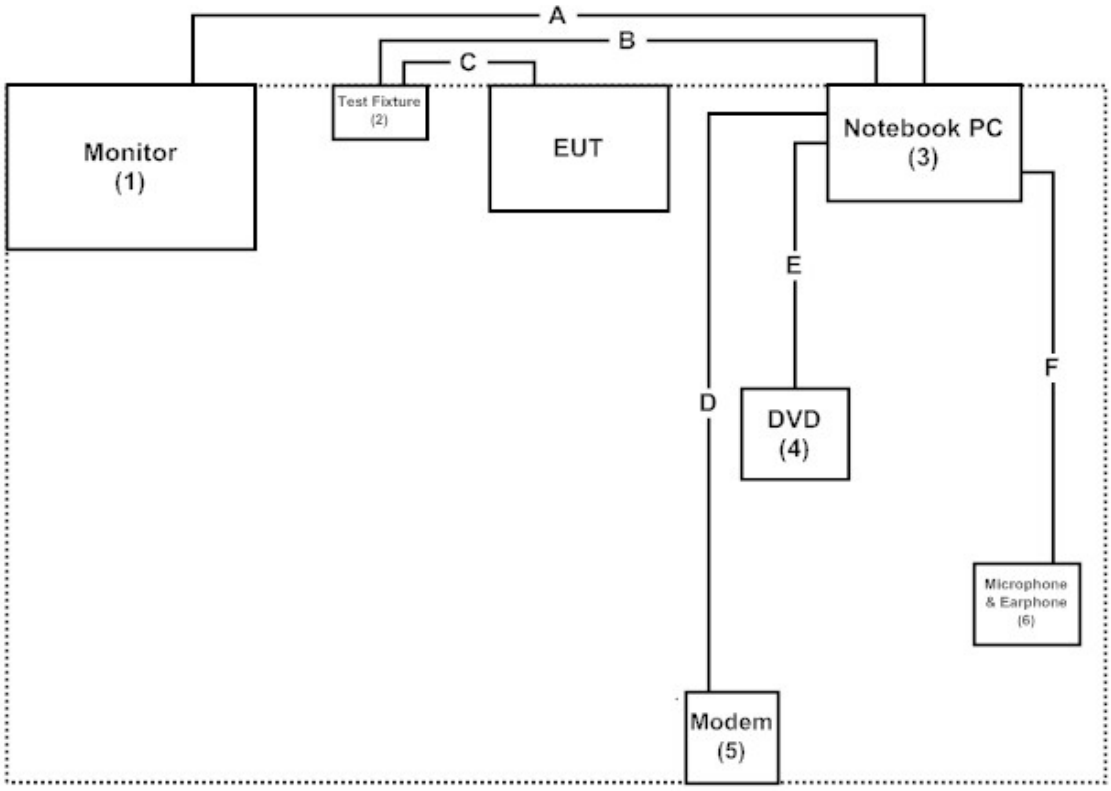
1.3. Tested System Details

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.	FCC ID	Power Cord
1	Monitor	LG	W2261VT	907YHZK07373	DoC	Non-Shielded, 1.8m
2	Test Fixture	Lite-On	N/A	N/A	N/A	N/A
3	Notebook PC	DELL	PPT	N/A	DoC	Non-Shielded, 0.8m
4	DVD Rom	DELL	PD01S	N/A	N/A	N/A
5	Modem	ACEEX	DM-1414	0102027558	IFAXDM1414	Non-Shielded, 1.8m
6	Microphone & Earphone	PCHOME	N/A	N/A	N/A	N/A

Signal Cable Type		Signal cable Description
A	D-SUB Cable	Non-Shielded, 1.8m, with two ferrite cores bonded.
B	USB Cable	Non-Shielded, 1.0m
C	Audio Cable	Non-Shielded, 1.0m
D	RS-232 Cable	Non-Shielded, 1.5m
E	DVD Cable	Non-Shielded, 0.5m
F	Microphone & Earphone Cable	Non-Shielded, 1.2m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in section 1.4.
(2) Execute command on the notebook.
(3) Configure the test mode, the test channel, and the data rate.
(4) 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, Ruishukeng,
Linkou Dist. New Taipei City 24451,
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

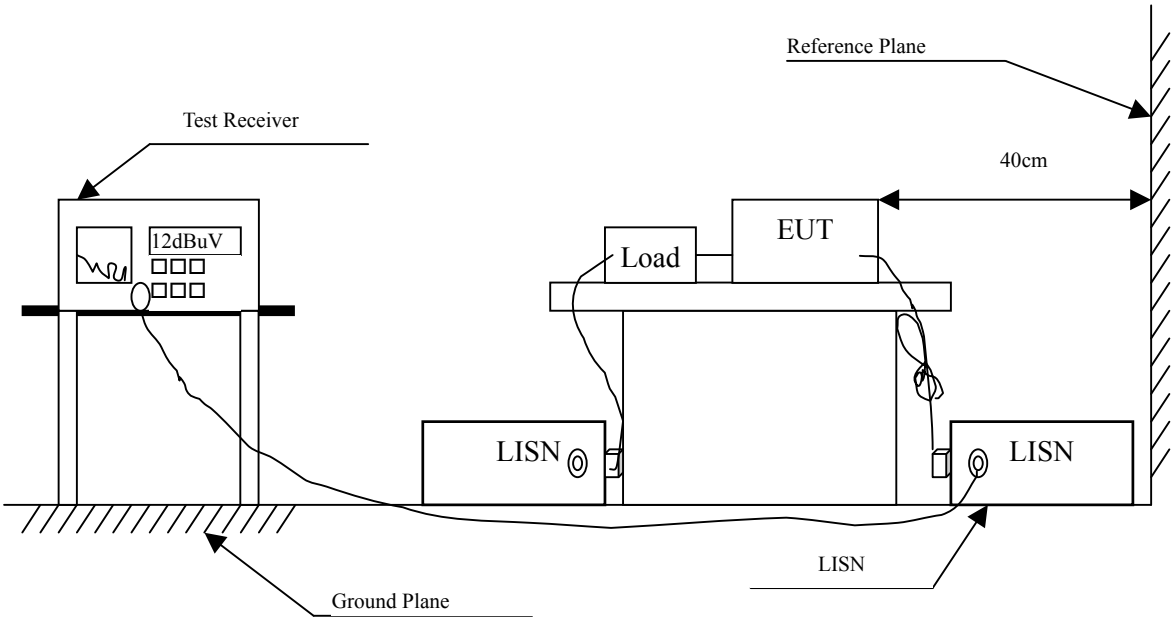
2.1. Test Equipment

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

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

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.4. Test Procedure

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

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 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 : Wireless Music System
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.158	9.691	31.500	41.191	-24.580	65.771
0.361	9.820	23.880	33.700	-26.271	59.971
2.873	9.850	26.280	36.130	-19.870	56.000
4.584	9.860	33.030	42.890	-13.110	56.000
5.845	9.878	19.760	29.638	-30.362	60.000
24.013	10.170	11.710	21.880	-38.120	60.000
Average					
0.158	9.691	17.780	27.471	-28.300	55.771
0.361	9.820	17.820	27.640	-22.331	49.971
2.873	9.850	21.760	31.610	-14.390	46.000
4.584	9.860	28.600	38.460	-7.540	46.000
5.845	9.878	15.610	25.488	-24.512	50.000
24.013	10.170	2.000	12.170	-37.830	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 : Wireless Music System
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.170	9.784	28.800	38.584	-26.845	65.429
0.478	9.826	24.070	33.896	-22.733	56.629
3.091	9.870	27.320	37.190	-18.810	56.000
4.556	9.870	33.190	43.060	-12.940	56.000
5.869	9.888	28.160	38.048	-21.952	60.000
24.002	10.280	15.910	26.190	-33.810	60.000
Average					
0.170	9.784	15.000	24.784	-30.645	55.429
0.478	9.826	17.640	27.466	-19.163	46.629
3.091	9.870	22.810	32.680	-13.320	46.000
4.556	9.870	27.540	37.410	-8.590	46.000
5.869	9.888	22.740	32.628	-17.372	50.000
24.002	10.280	11.710	21.990	-28.010	50.000

Note:

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

3. Peak Power Output

3.1. Test Equipment

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

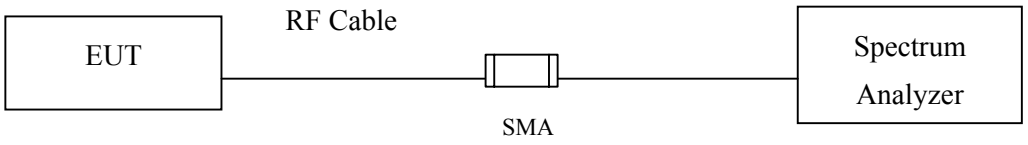
Note:

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

3.2. Test Setup

Average Power For different Data Rate (Mbps)

Peak Power Measurement



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

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

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Wireless Music System
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	17.41	--	--	--	18.07	<30dBm	Pass
06	2437	17.68	17.61	17.58	17.52	18.65	<30dBm	Pass
11	2462	15.12	--	--	--	18.51	<30dBm	Pass

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

Figure Channel 1:

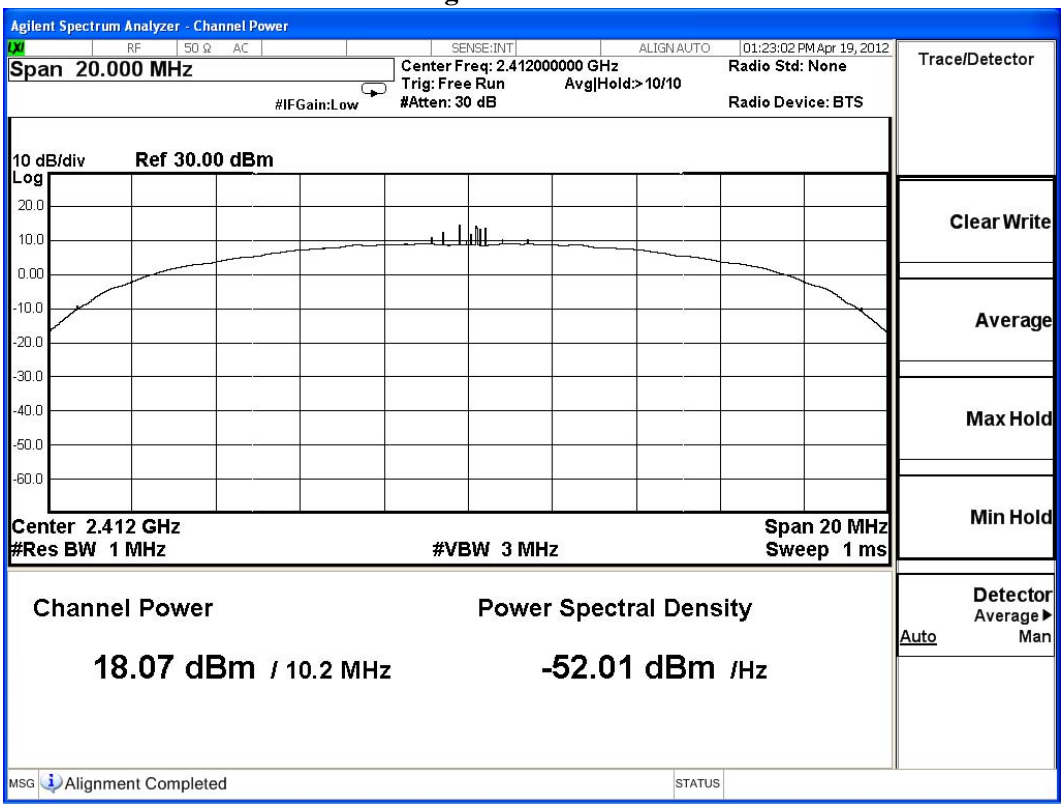


Figure Channel 6:

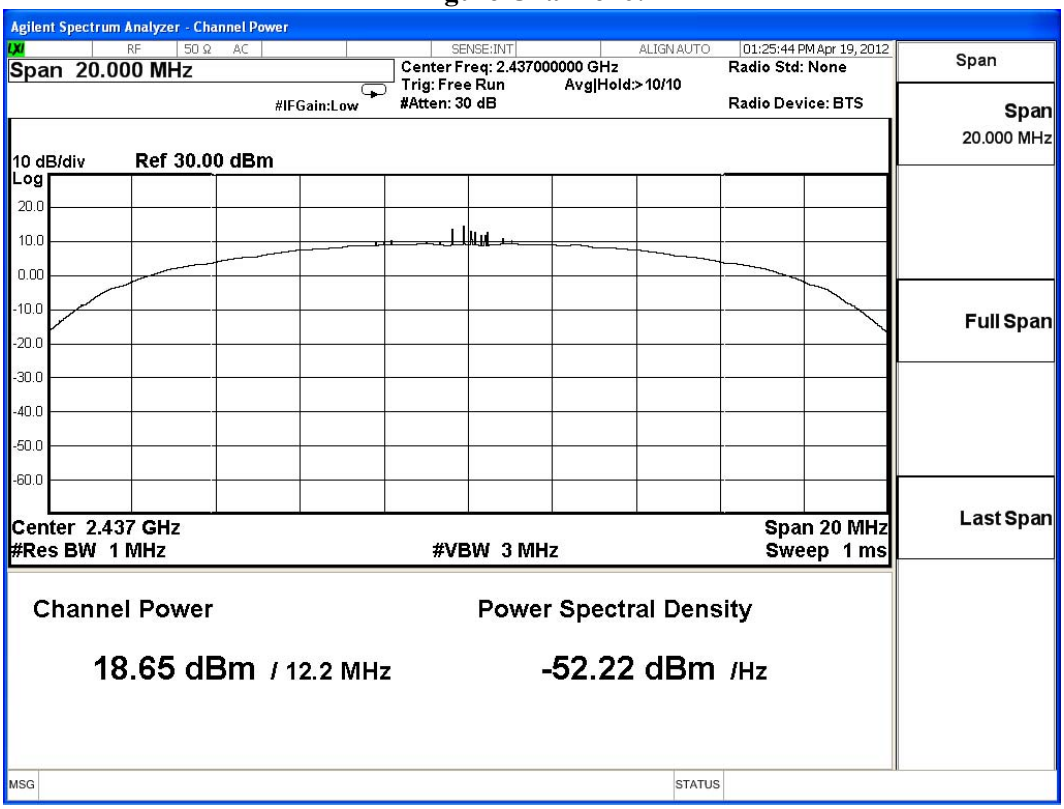
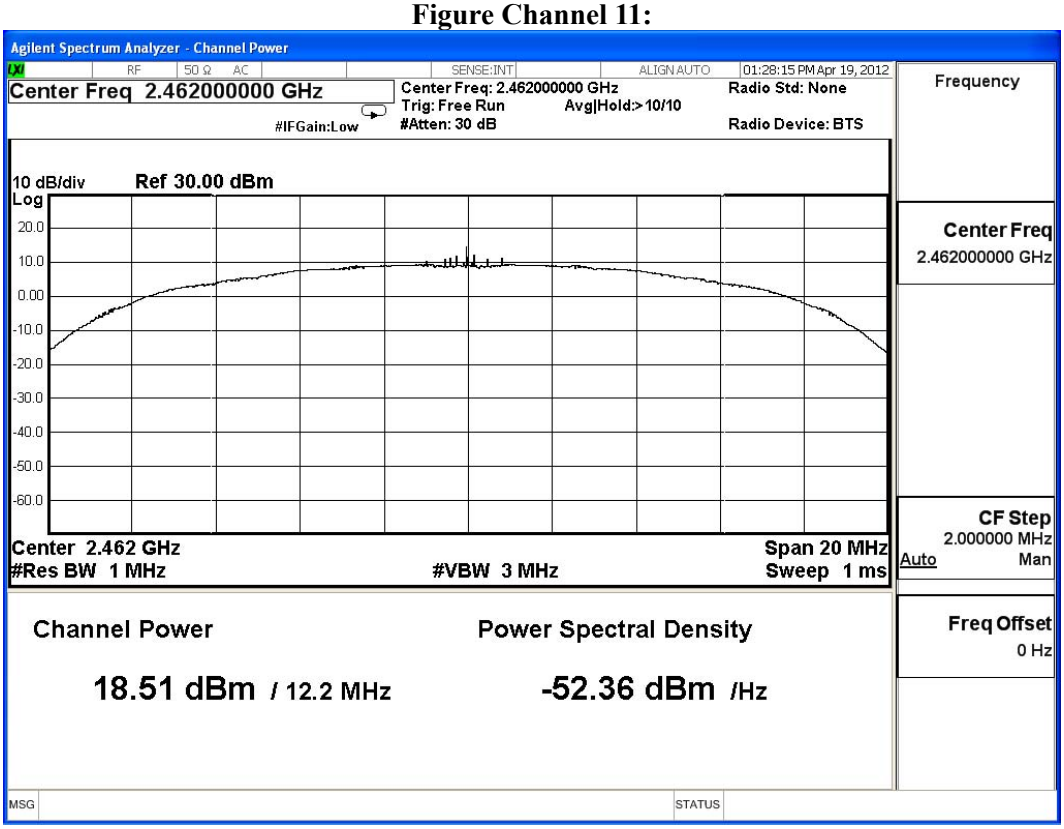


Figure Channel 11:



Product : Wireless Music System
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	15.67	--	--	--	--	--	--	--	20.83	<30dBm	Pass
06	2437	15.79	15.74	15.71	15.69	15.65	15.61	15.59	15.57	21.01	<30dBm	Pass
11	2462	12.59	--	--	--	--	--	--	--	18.05	<30dBm	Pass

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

Figure Channel 1:

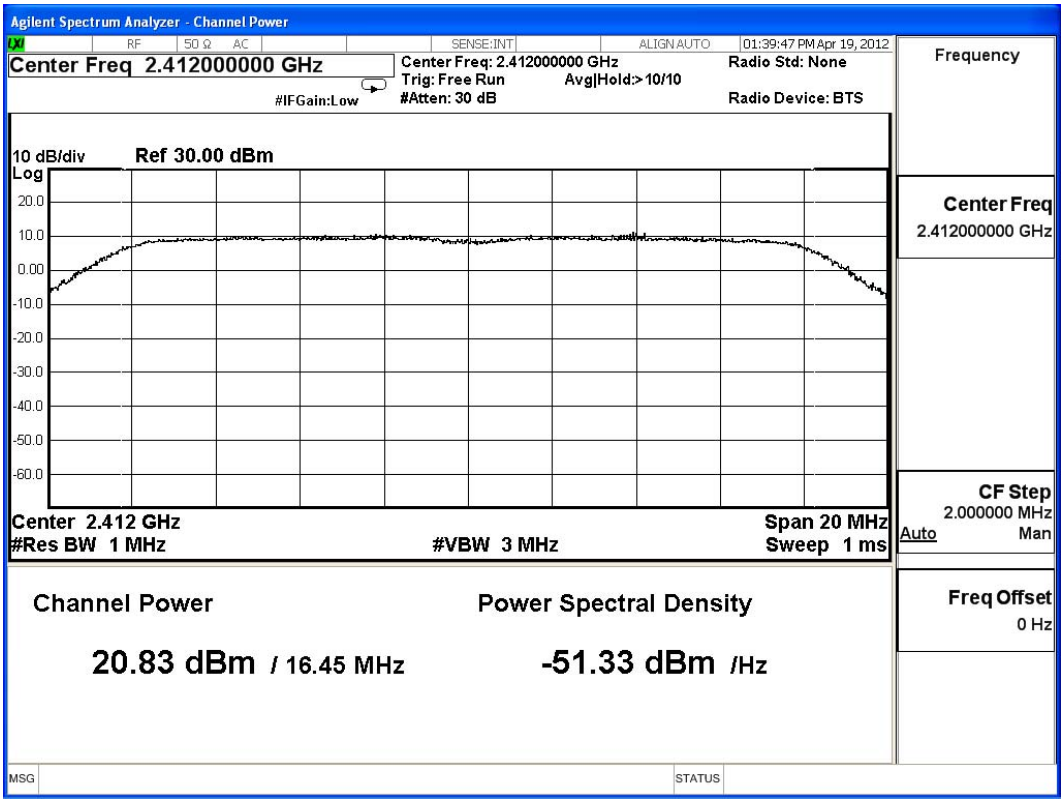


Figure Channel 6:

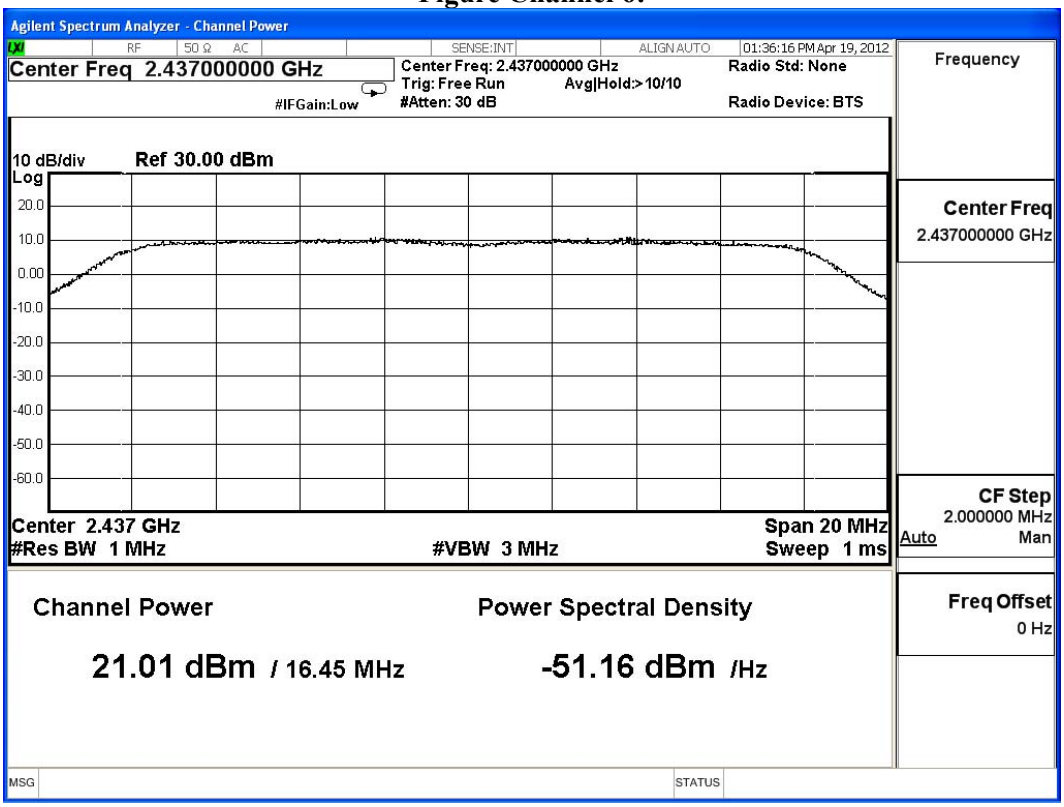


Figure Channel 11:

4. Radiated Emission

4.1. Test Equipment

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

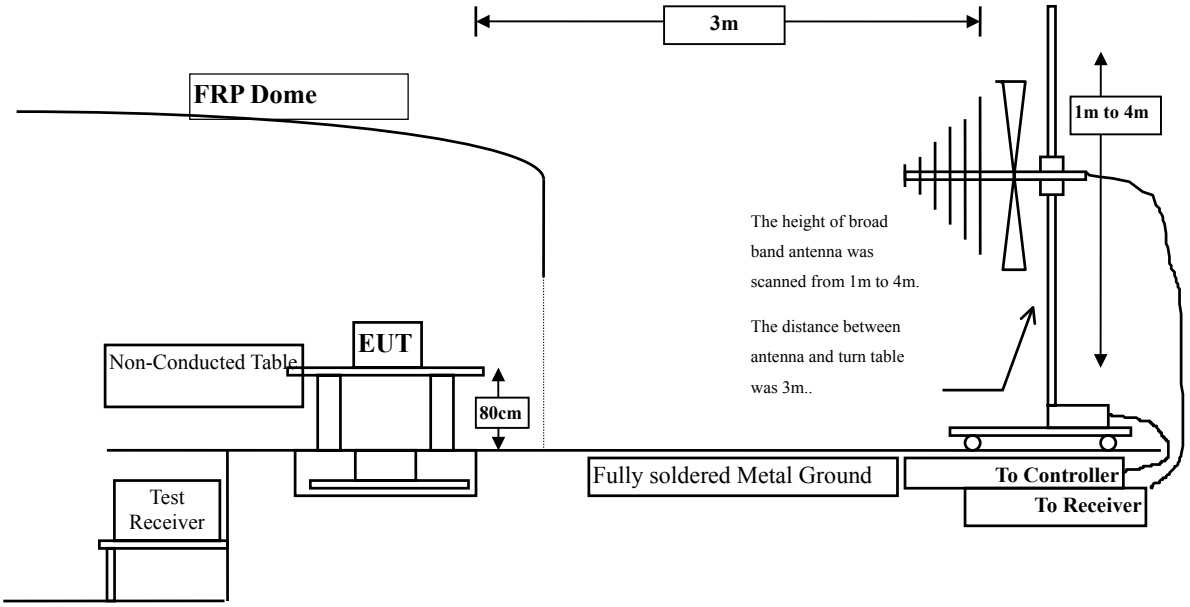
Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2011
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2011
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2011
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2011
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2012
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

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

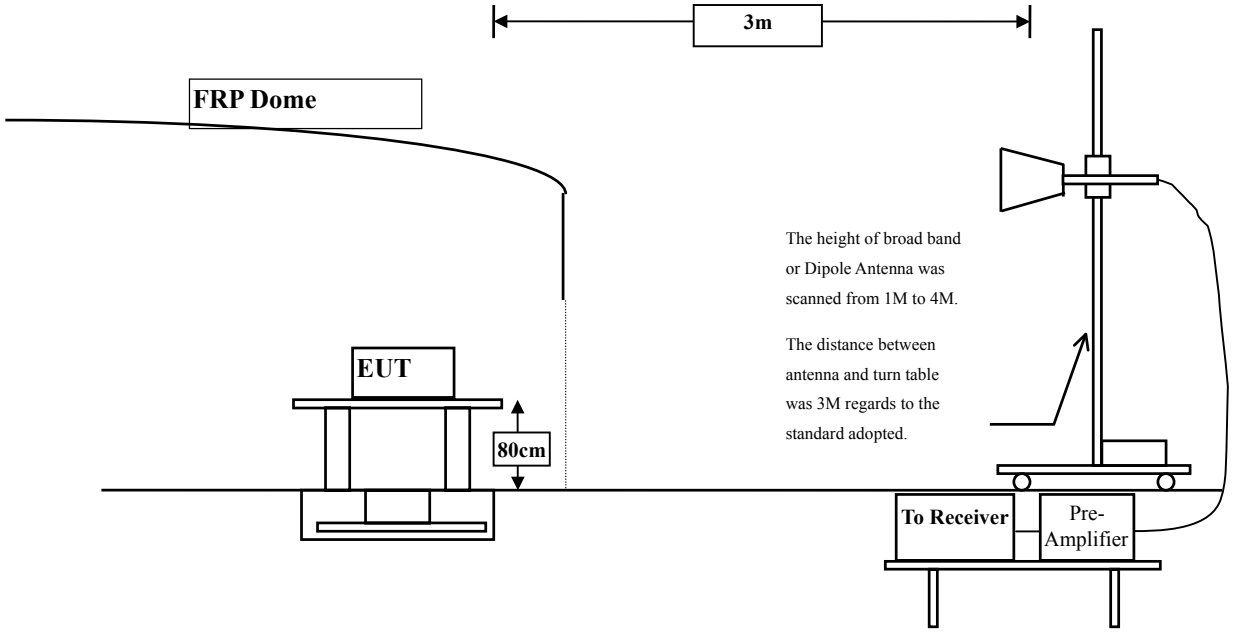
2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

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

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.
The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.
Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.
The measurement is divided into the Preliminary Measurement and the Final Measurement.
The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.
The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.
The frequency range from 30MHz to 10th harminics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Wireless Music System
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	40.090	43.351	-30.649	74.000
7236.000	10.650	36.050	46.700	-27.300	74.000
9648.000	13.337	36.410	49.746	-24.254	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	45.300	51.721	-22.279	74.000
7236.000	11.495	35.990	47.485	-26.515	74.000
9648.000	13.807	36.100	49.906	-24.094	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 : Wireless Music System
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	38.880	41.917	-32.083	74.000
7311.000	11.795	35.590	47.384	-26.616	74.000
9748.000	12.635	40.250	52.885	-21.115	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	43.080	48.891	-25.109	74.000
7311.000	12.630	35.450	48.079	-25.921	74.000
9748.000	13.126	39.570	52.696	-21.304	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
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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 : Wireless Music System
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	38.770	41.627	-32.373	74.000
7386.000	12.127	35.160	47.288	-26.712	74.000
9848.000	12.852	38.980	51.833	-22.167	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.350	46.870	-27.130	74.000
7386.000	13.254	35.660	48.914	-25.086	74.000
9848.000	13.367	36.620	49.987	-24.013	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 : Wireless Music System
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	38.530	41.791	-32.209	74.000
7236.000	10.650	36.620	47.270	-26.730	74.000
9648.000	13.337	36.450	49.786	-24.214	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	46.880	53.301	-20.699	74.000
7236.000	11.495	36.530	48.025	-25.975	74.000
9648.000	13.807	36.780	50.586	-23.414	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 : Wireless Music System
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	38.780	41.817	-32.183	74.000
7311.000	11.795	35.610	47.404	-26.596	74.000
9748.000	12.635	38.100	50.735	-23.265	74.000
Average Detector:					
--					
Peak Detector:					
4874.000	5.812	45.850	51.661	-22.339	74.000
7311.000	12.630	35.410	48.039	-25.961	74.000
9748.000	13.126	36.760	49.886	-24.114	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 : Wireless Music System
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	37.850	40.707	-33.293	74.000
7386.000	12.127	35.060	47.188	-26.812	74.000
9848.000	12.852	36.730	49.583	-24.417	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.770	47.290	-26.710	74.000
7386.000	13.254	35.040	48.294	-25.706	74.000
9848.000	13.367	36.550	49.917	-24.083	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 : Wireless Music System
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					
70.740	-12.921	46.018	33.097	-6.903	40.000
142.520	-10.427	46.296	35.869	-7.631	43.500
499.480	0.048	34.290	34.338	-11.662	46.000
875.840	5.271	29.588	34.859	-11.141	46.000
949.560	6.695	29.332	36.027	-9.973	46.000
998.060	8.386	33.691	42.077	-11.923	54.000
Vertical					
365.620	-2.179	38.488	36.309	-9.691	46.000
499.480	-0.852	34.171	33.319	-12.681	46.000
747.800	2.166	33.763	35.929	-10.071	46.000
829.280	2.864	31.312	34.176	-11.824	46.000
961.200	7.260	31.501	38.761	-15.239	54.000
996.120	4.019	40.180	44.199	-9.801	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 : Wireless Music System
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					
142.520	-10.427	45.762	35.335	-8.165	43.500
431.580	-2.099	37.030	34.931	-11.069	46.000
499.480	0.048	35.281	35.329	-10.671	46.000
875.840	5.271	29.024	34.295	-11.705	46.000
972.840	6.802	27.405	34.207	-19.793	54.000
996.120	7.669	36.191	43.860	-10.140	54.000
Vertical					
167.740	-8.239	40.716	32.477	-11.023	43.500
499.480	-0.852	34.193	33.341	-12.659	46.000
749.740	2.510	36.383	38.893	-7.107	46.000
901.060	3.331	27.921	31.252	-14.748	46.000
961.200	7.260	29.949	37.209	-16.791	54.000
996.120	4.019	39.857	43.876	-10.124	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.

5. RF antenna conducted test

5.1. Test Equipment

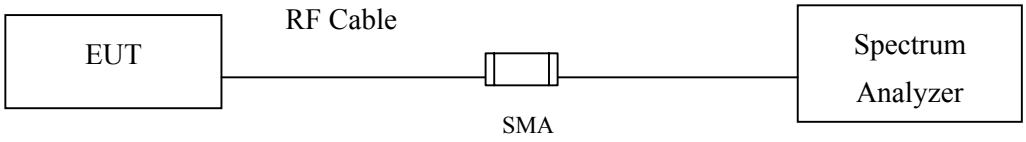
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2011
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2011
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

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

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

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

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

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

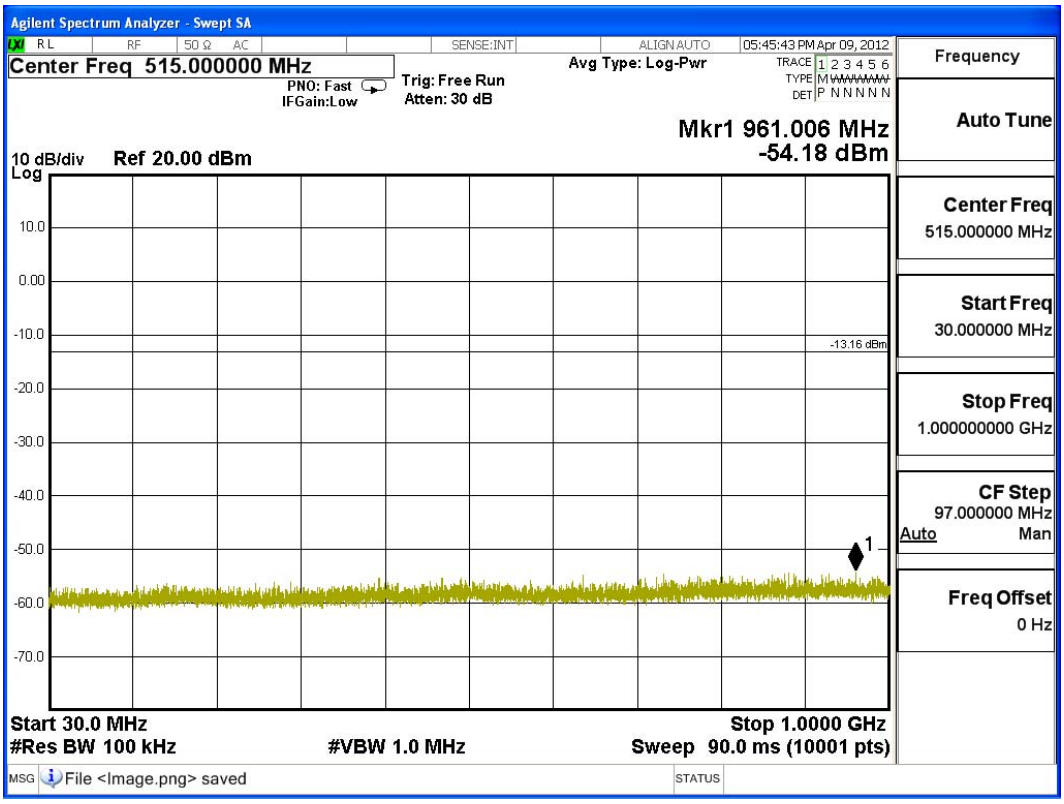
5.5. Uncertainty

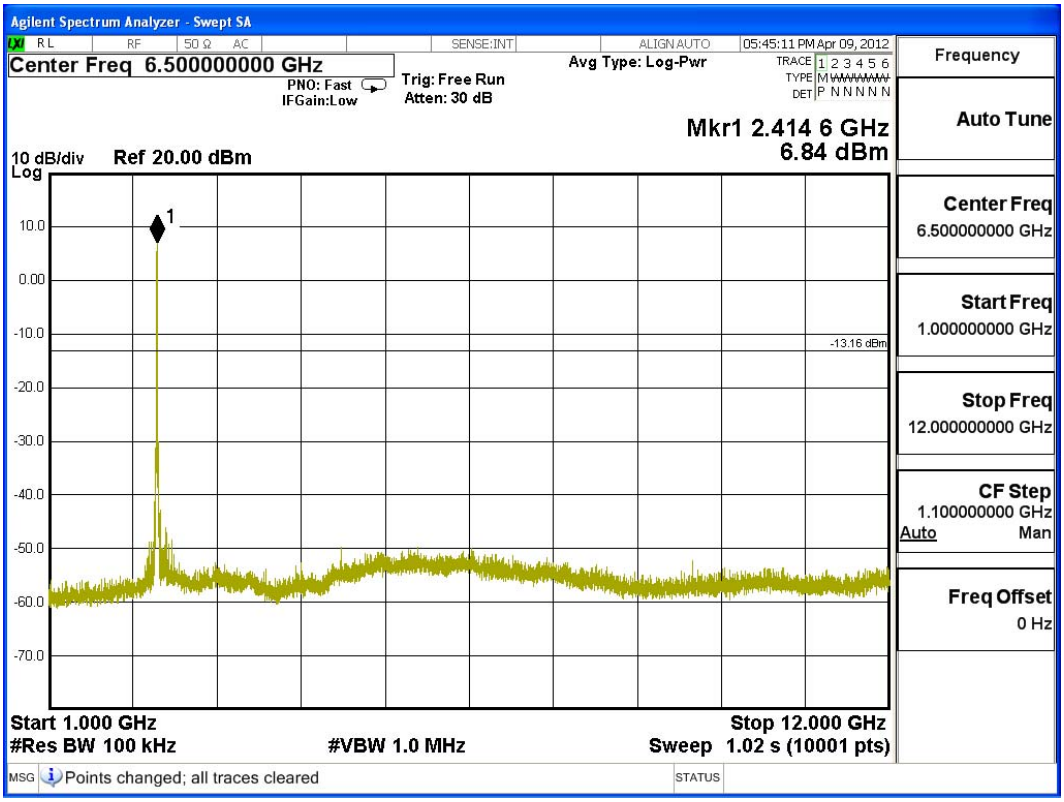
The measurement uncertainty
Conducted is defined as ± 1.27dB

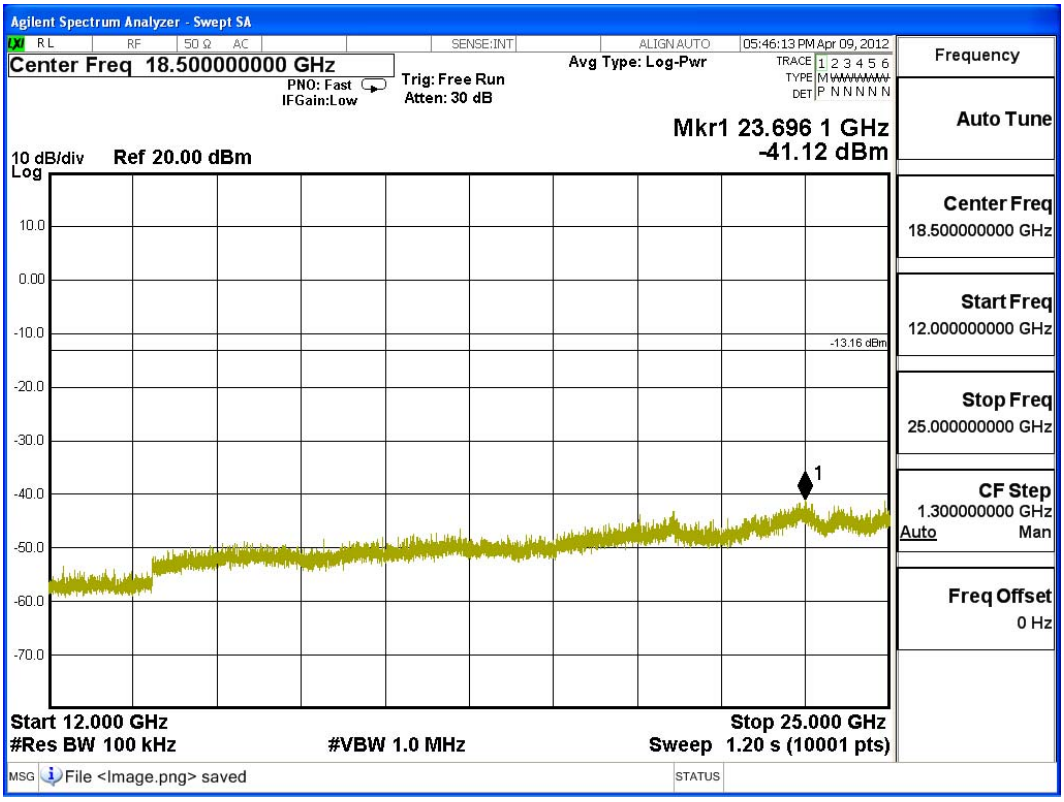
5.6. Test Result of RF antenna conducted test

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

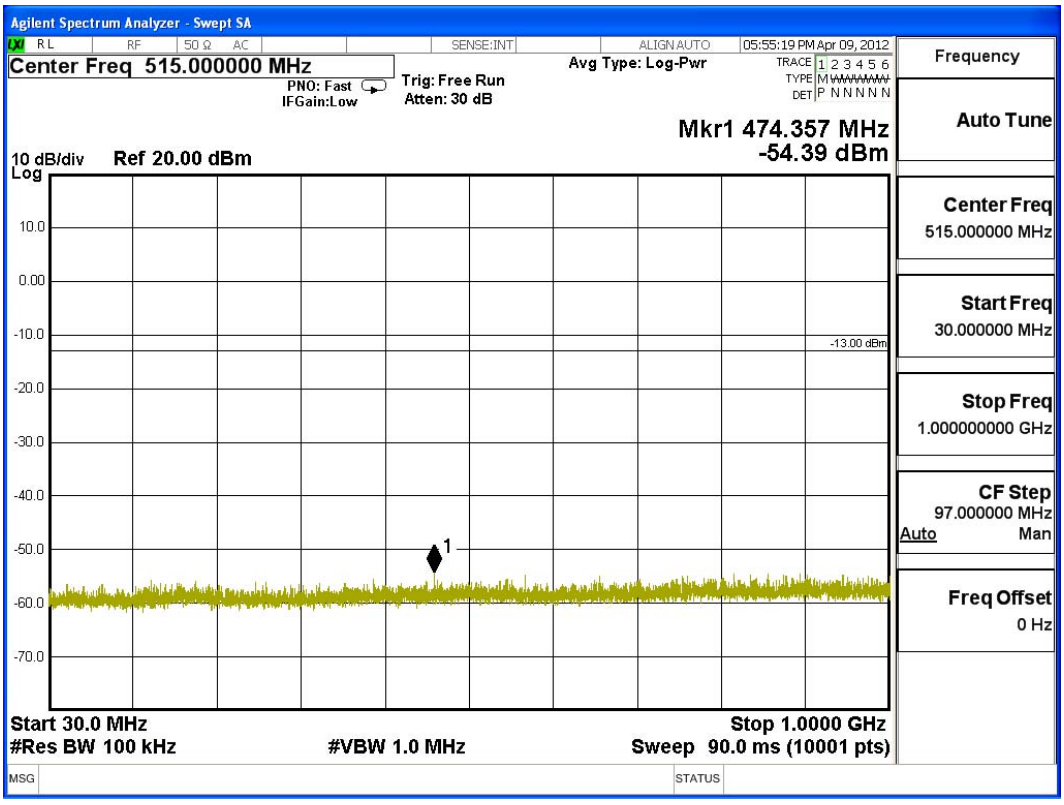
Channel 01 (2412MHz)

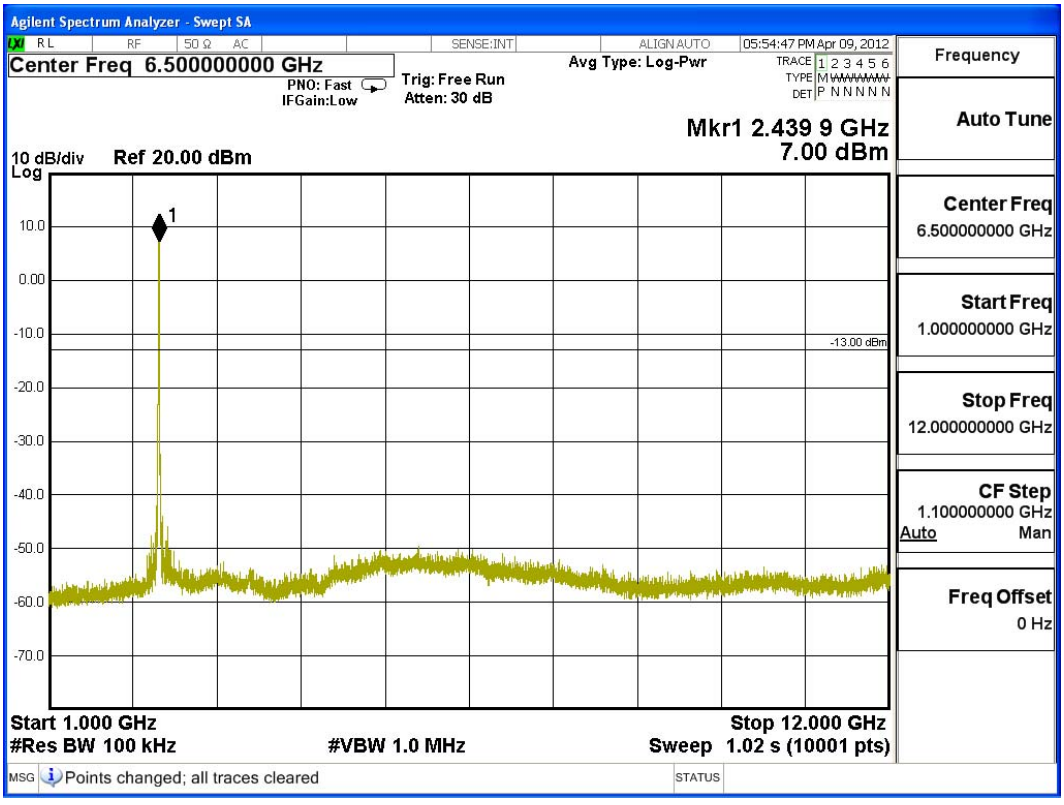


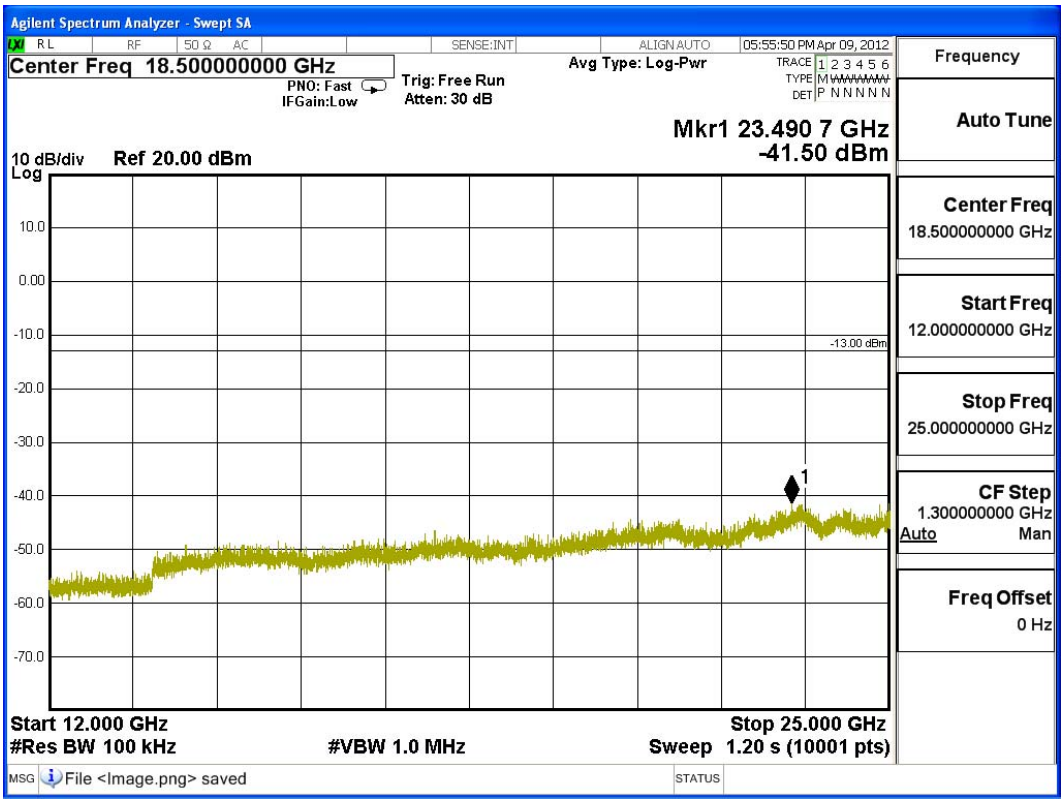

Agilent Spectrum Analyzer - Swept SA
Center Freq 6.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
05:45:11 PM Apr 09, 2012
Mkr1 2.414 6 GHz
6.84 dBm
10 dB/div
Log
Ref 20.00 dBm
-13.16 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
Points changed; all traces cleared
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 18.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
05:46:13 PM Apr 09, 2012
Mkr1 23.696 1 GHz
-41.12 dBm
10 dB/div
Log
Ref 20.00 dBm
-13.16 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
File <Image.png> saved
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

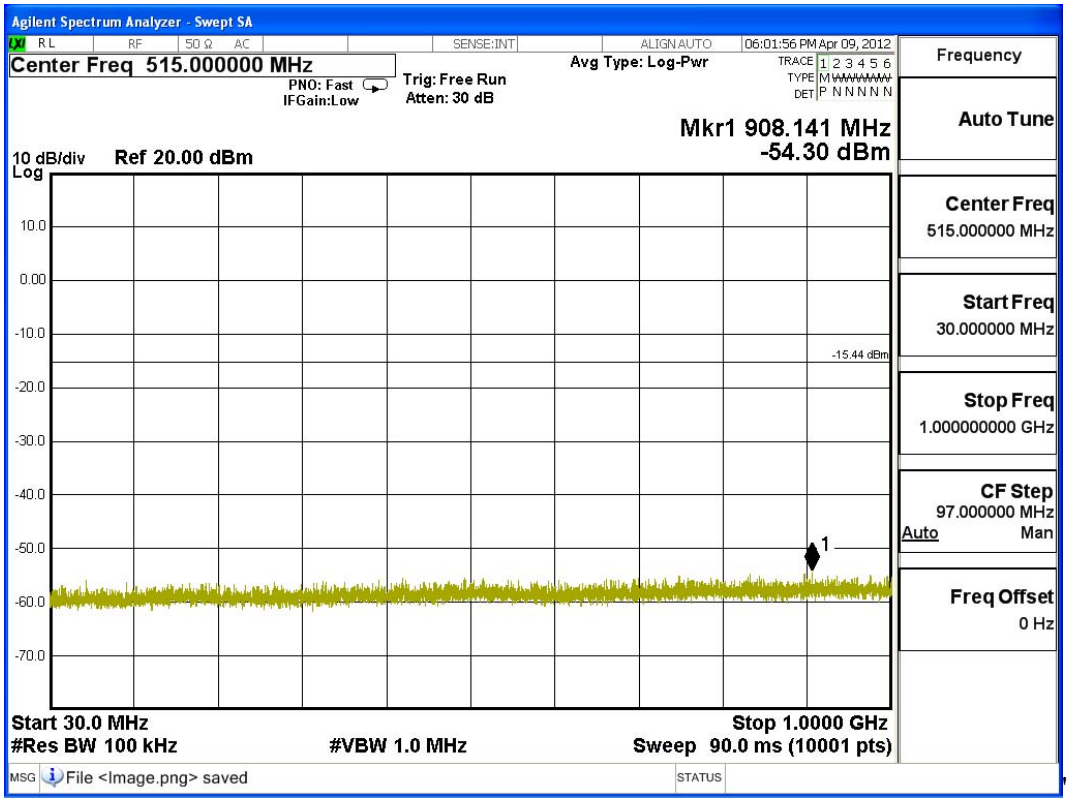
Channel 06 (2437MHz)

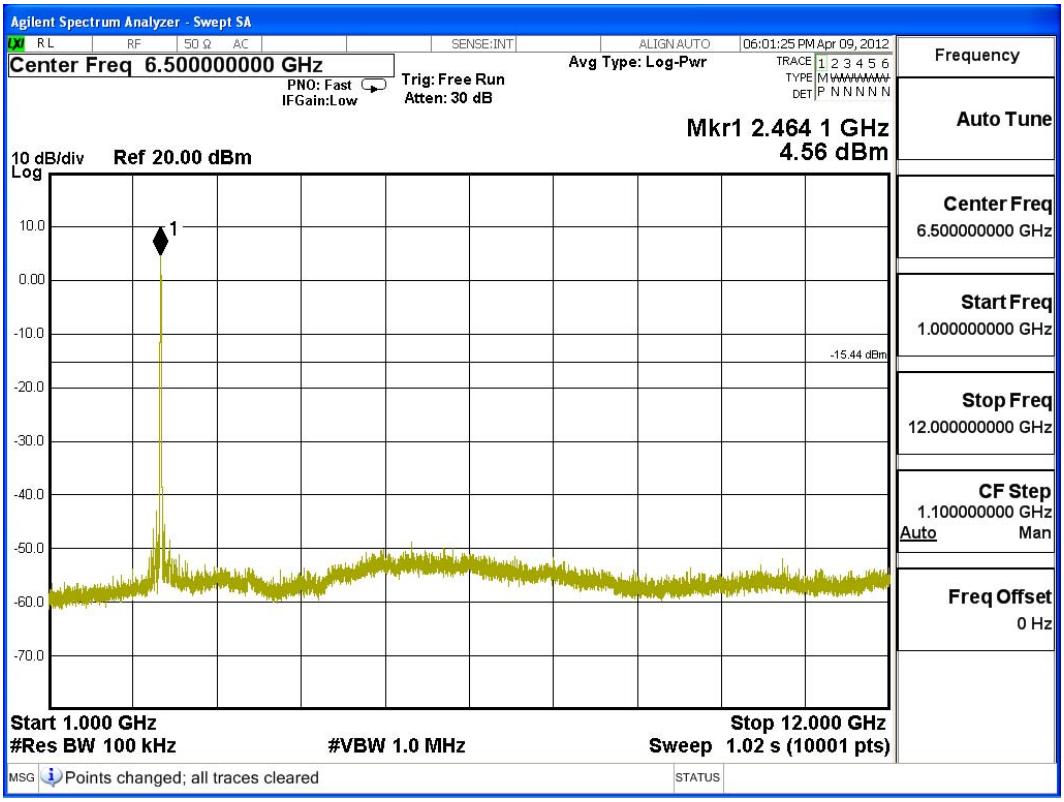


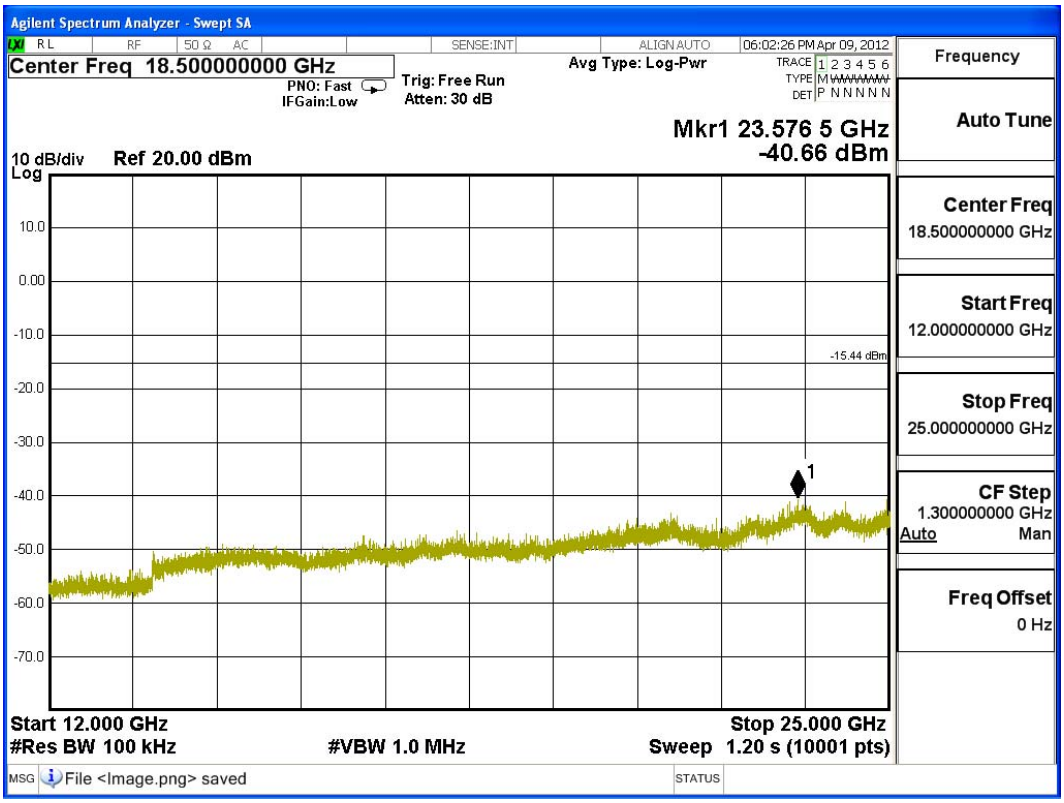



Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:55:50 PM Apr 09, 2012
Center Freq 18.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.490 7 GHz
-41.50 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-13.00 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
File <Image.png> saved
STATUS
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

Channel 11 (2462MHz)

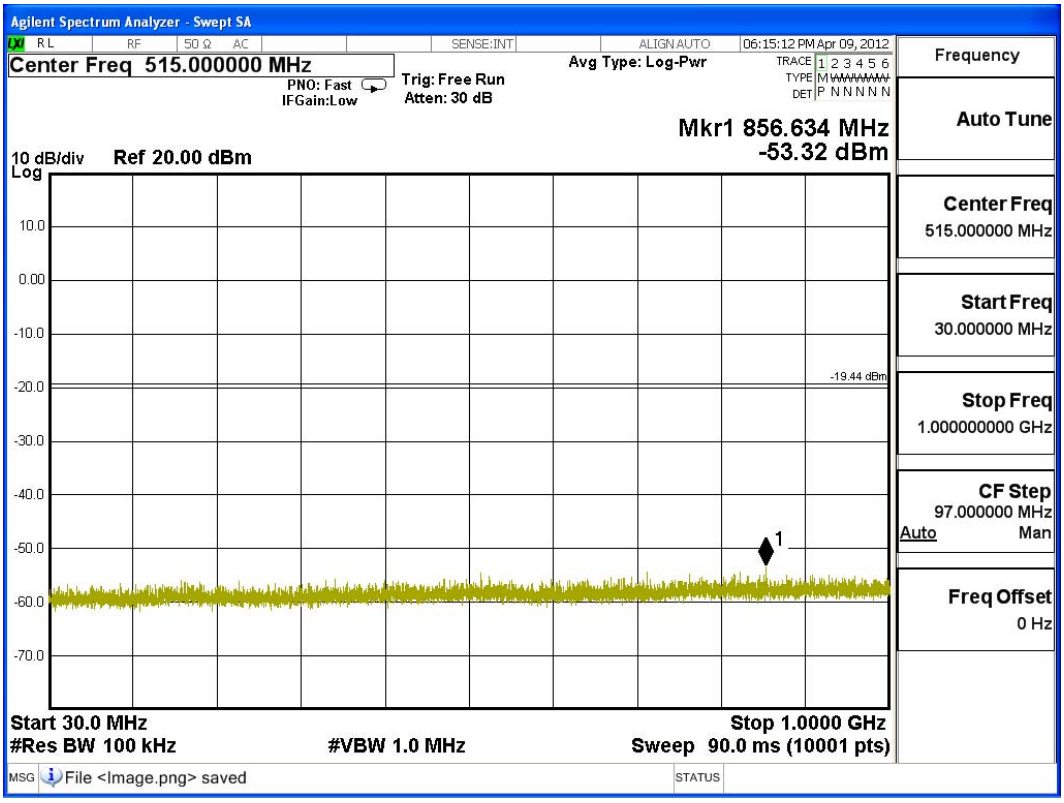


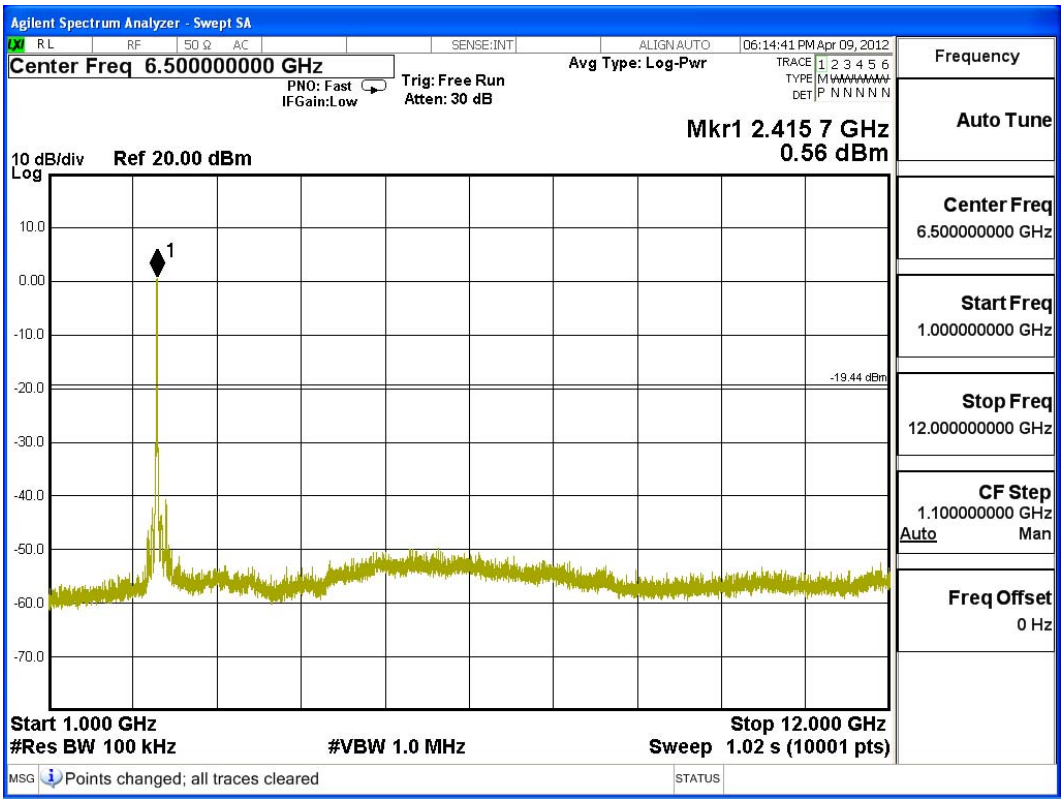


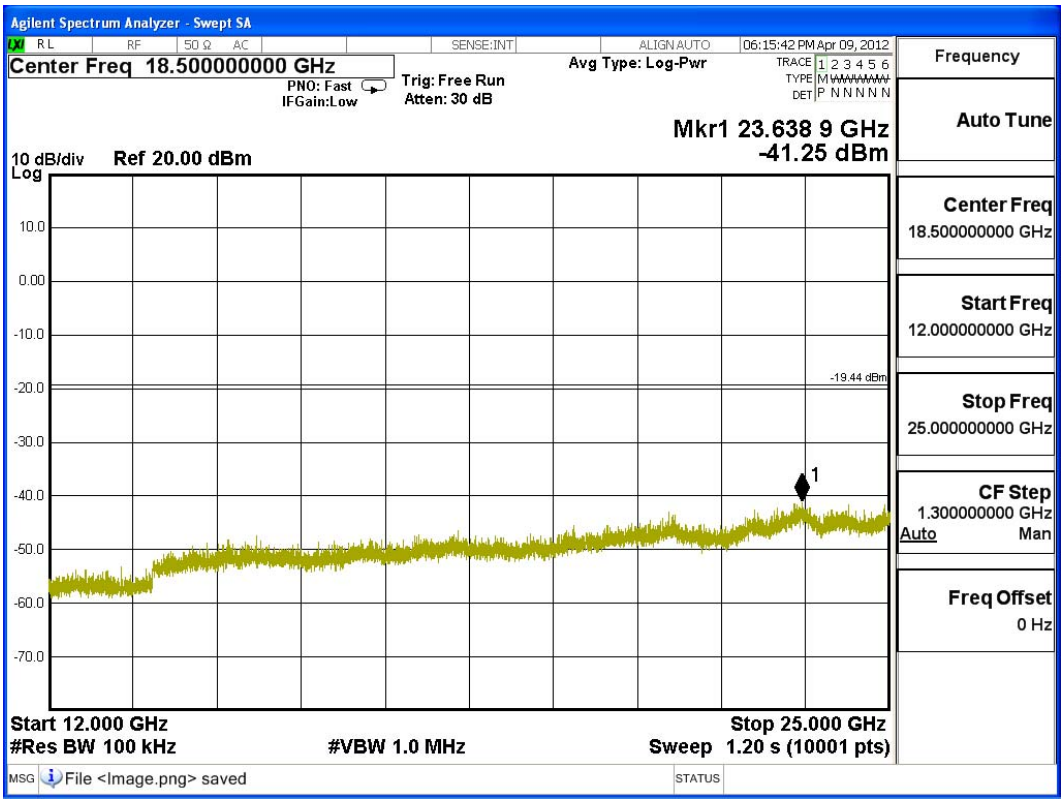

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:02:26 PM Apr 09, 2012
Center Freq 18.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.576 5 GHz
-40.66 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-15.44 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
File <Image.png> saved
STATUS
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

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

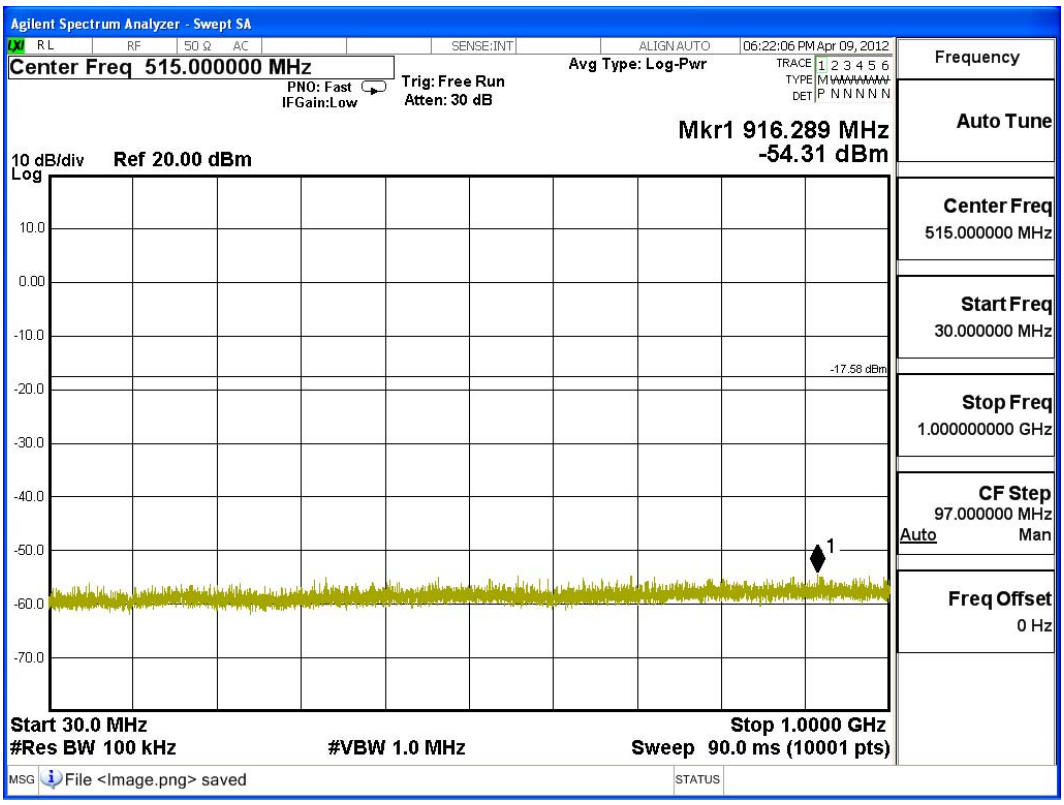
Channel 01 (2412MHz)

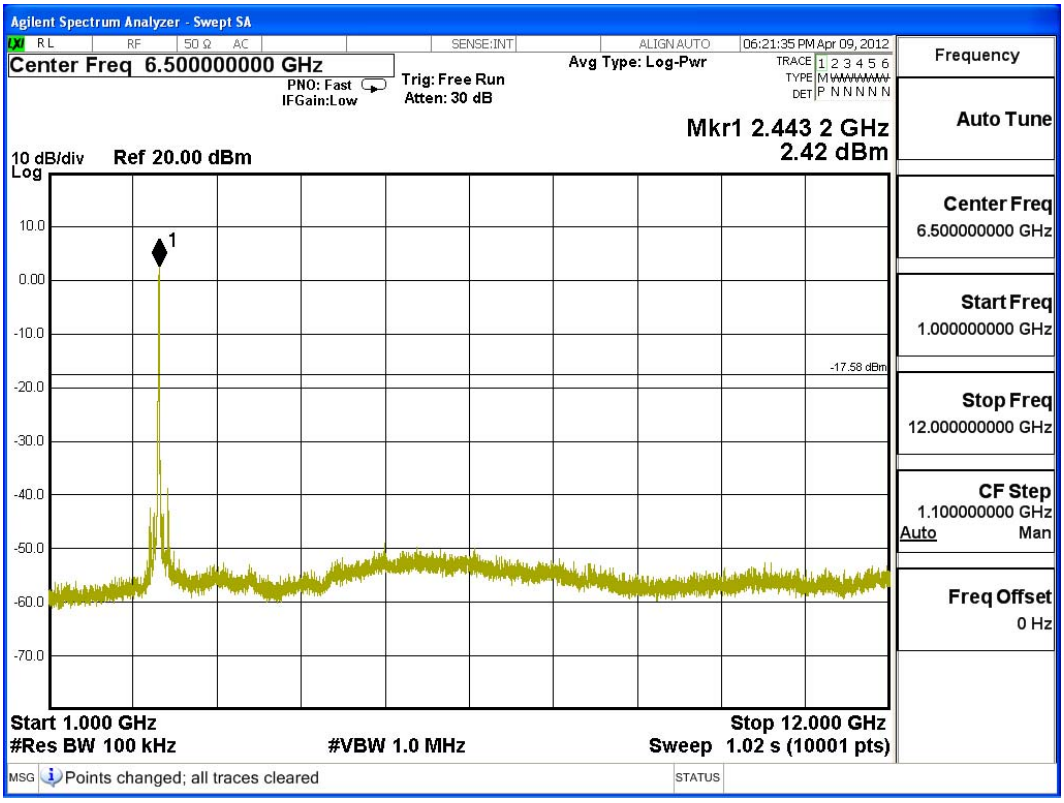


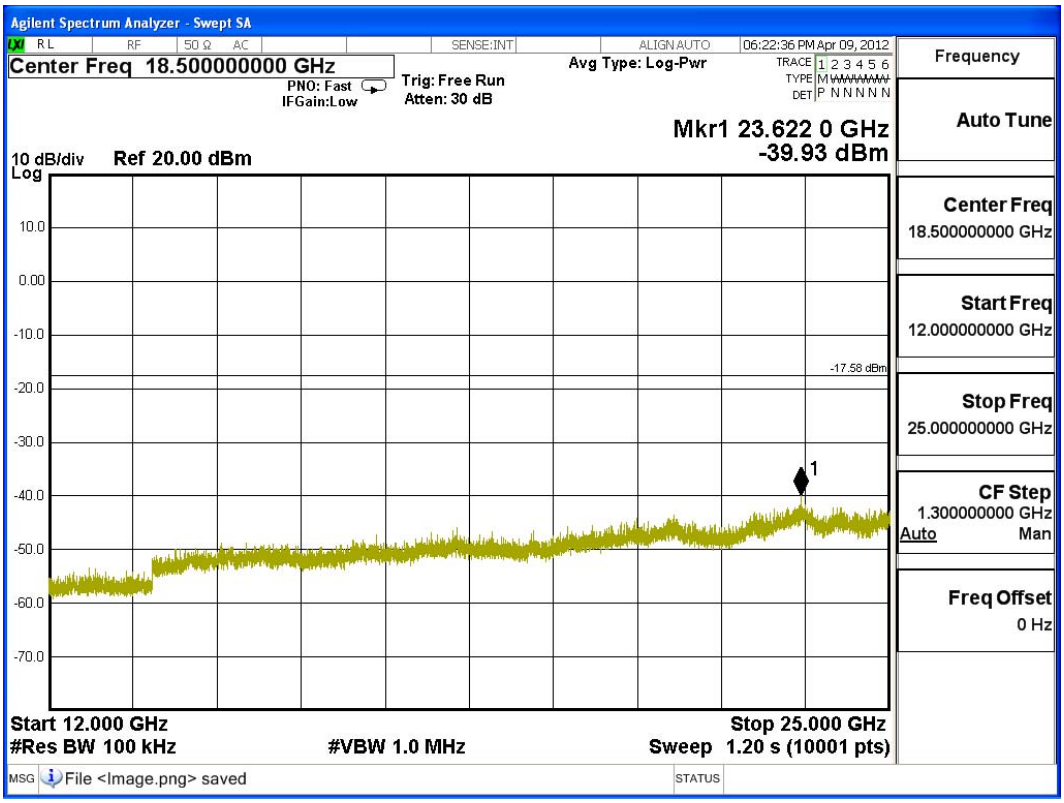

Agilent Spectrum Analyzer - Swept SA
Center Freq 6.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
06:14:41 PM Apr 09, 2012
Mkr1 2.415 7 GHz
0.56 dBm
10 dB/div
Log
Ref 20.00 dBm
-19.44 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 12.000 GHz
Sweep 1.02 s (10001 pts)
Points changed; all traces cleared
Frequency
Auto Tune
Center Freq
6.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.000000000 GHz
CF Step
1.100000000 GHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 18.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
06:15:42 PM Apr 09, 2012
Mkr1 23.638 9 GHz
-41.25 dBm
10 dB/div
Log
Ref 20.00 dBm
-19.44 dBm
Start 12.000 GHz
#Res BW 100 kHz
#VBW 1.0 MHz
Stop 25.000 GHz
Sweep 1.20 s (10001 pts)
File <Image.png> saved
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

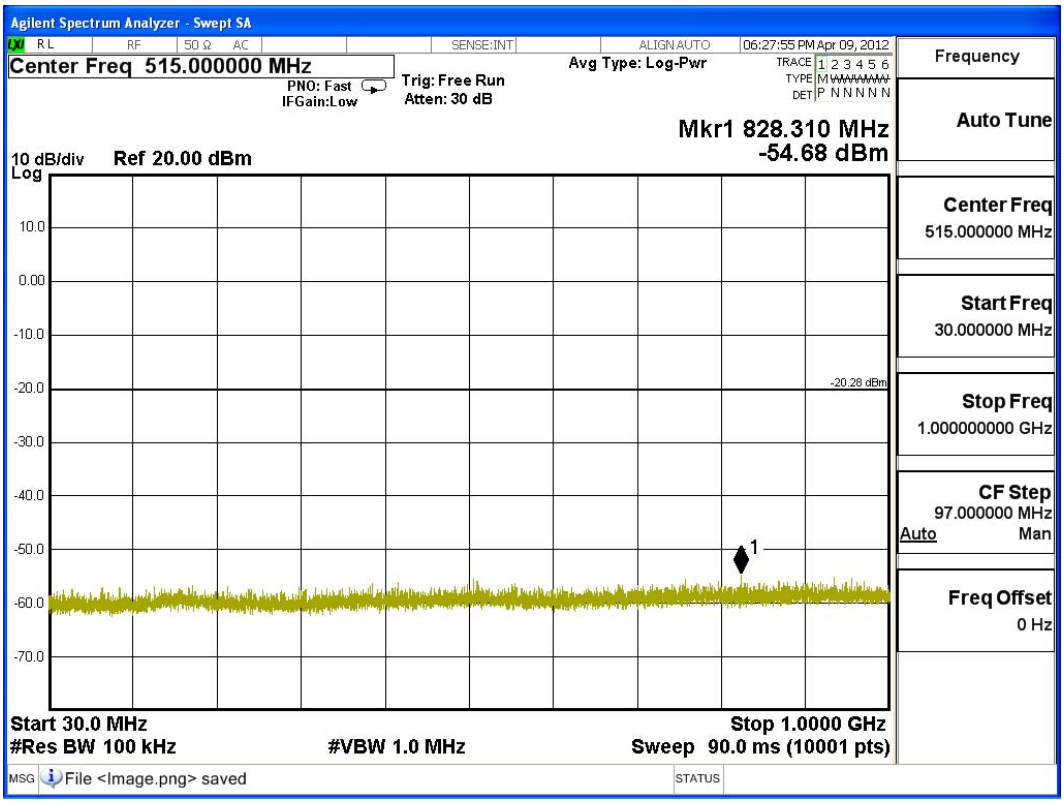
Channel 06 (2437MHz)

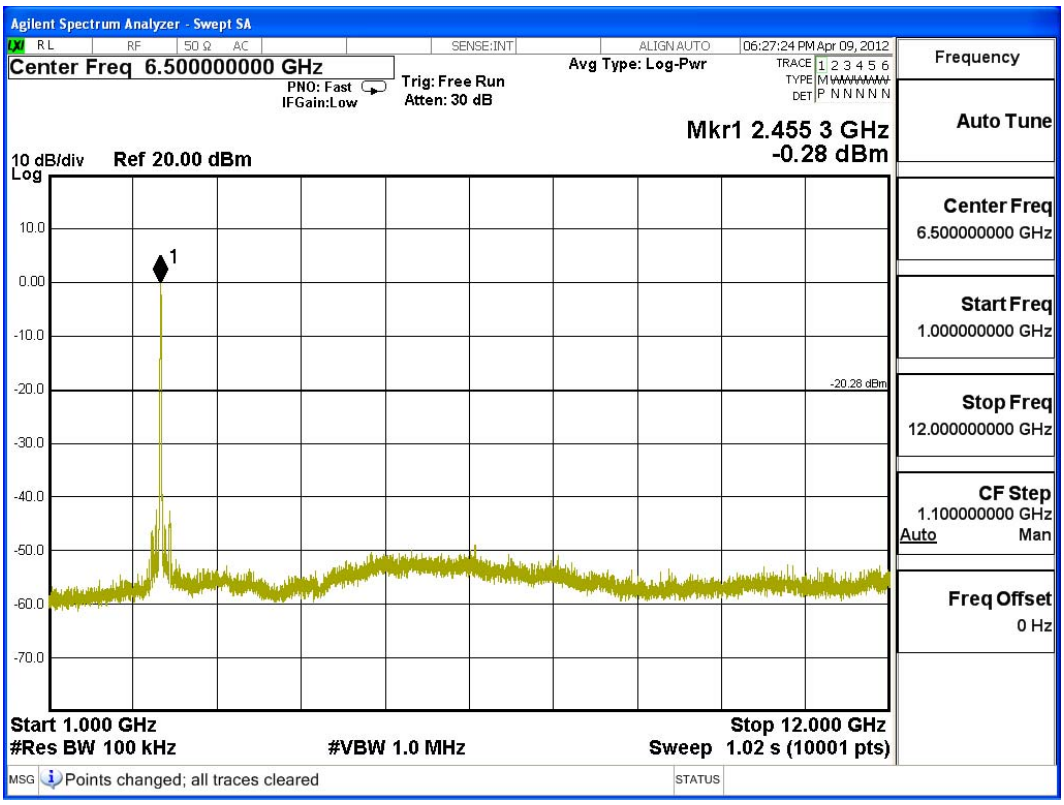


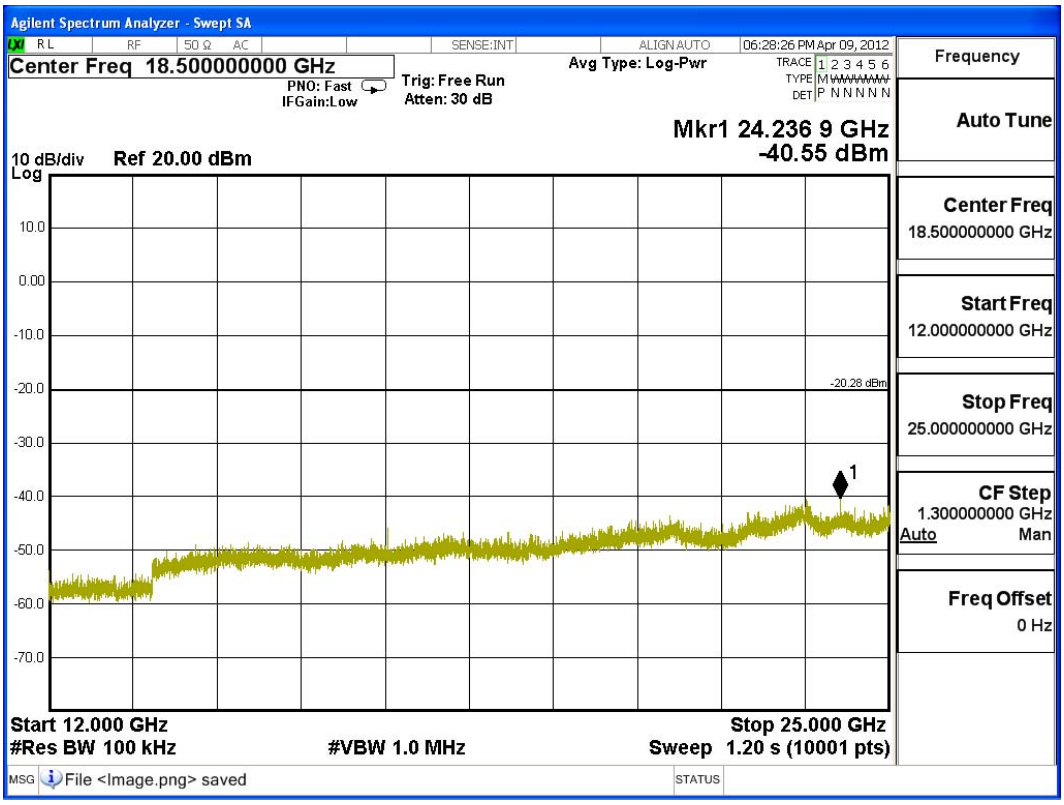



Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:22:36 PM Apr 09, 2012
Center Freq 18.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 23.622 0 GHz
-39.93 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-17.58 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
File <Image.png> saved
STATUS
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz

Channel 11 (2462MHz)






Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:28:26 PM Apr 09, 2012
Center Freq 18.500000000 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 24.236 9 GHz
-40.55 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
-20.28 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
File <Image.png> saved
STATUS
Frequency
Auto Tune
Center Freq
18.500000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.300000000 GHz
Auto
Man
Freq Offset
0 Hz