

FC

Test Report

Product Name	Home Controller
Model No	C4-HC800-BL, SCH-CONTROL-800
FCC ID.	R33C4HC800

Applicant	Control4 corporation
Address	11734 S. Election Drive Suite 200 Draper Utah United States 84020

Date of Receipt	Nov. 14, 2011
Issue Date	Dec. 20, 2011
Report No.	11B334R-RFUSP42V01
Report Version	V2.0

The test results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Issue Date: Dec. 20, 2011

Report No.: 11B334R-RFUSP42V01



Accredited by NIST (NVLAP)

NVLAP Lab Code: 200533-0

Product Name	Home Controller
Applicant	Control4 corporation
Address	11734 S. Election Drive Suite 200 Draper Utah United States 84020
Manufacturer	Lite-On Technology Corp.
Model No.	C4-HC800-BL, SCH-CONTROL-800
FCC ID.	R33C4HC800
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	Control4, Cisco
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010 ANSI C63.4: 2003
Test Result	Complied



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Testing Laboratory

0914

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Home Controller
Trade Name	Control4, Cisco
Model No.	C4-HC800-BL, SCH-CONTROL-800
FCC ID.	R33C4HC800
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 150Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	Dielectric Patch Antenna / Dipole Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
Power Adapter (1)	MFR: FSP, M/N: FSP065-RAC Input: AC 100-240V, 1.5A, 50-60Hz Output: DC 19V $\approx$ 3.42A Cable Out: Non-Shielded, 1.6m, with one ferrite core bonded.
Power Adapter (2)	MFR: Seasonic, M/N: SSA-0651D-19 Input: AC 100-240V, 2A, 50/60Hz Output: DC 19V / 3.43A Cable Out: Non-Shielded, 1.2m, with one ferrite core bonded.

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	CIROCOMM	03A153040379240	Dielectric Patch antenna	-5 dBi for 2.4 GHz
2	CIROCOMM	03N15G4V0Wh0140	Dipole Antenna	2 dBi for 2.4 GHz

Note:

- The antenna of EUT is conform to FCC 15.203.

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

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

802.11n-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 Home Controller 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 、802.11n(20M-BW) is 7.2Mbps and 、
802.11n(40M-BW) is 15Mbps)
4. 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.
5. The different of each model is shown as below:

Model Number	Description
C4-HC800-BL	Control4
SCH-CONTROL-800	Cisco

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
	Mode 4: Transmit (802.11n MCS0 15Mbps 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	SONY	KDL-20S4000	1510355	Non-Shielded, 1.8m
2 Monitor	DELL	U2410	CN-0J257M-728-01I-04PL	Non-Shielded, 1.8m
3 Cambridge SoundWorks	Creative	S80130	AM01303200000941	Non-Shielded, 1.9m
4 SATA HDD	Onnto	ST-M10	A01926-F03-0010	Non-Shielded, 1.8m With Core*1
5 USB Mouse	Logitech	M-U0003	LZ024HR	N/A
6 Modem	ACEEX	DM-1414	0102027553	Non-Shielded, 1.8m
7 iPod nano	Apple	A1236	YM827ENKY0P	N/A
8 Microphone & Earphone	Ergotech	ET-E201	N/A	N/A
9 Modem	ACEEX	DM-1414	0102027559	Non-Shielded, 1.8m
10 Notebook PC	DELL	D630	00144-023-351-283	Non-Shielded, 0.8m

Test Mode: Dielectric Patch Antenna

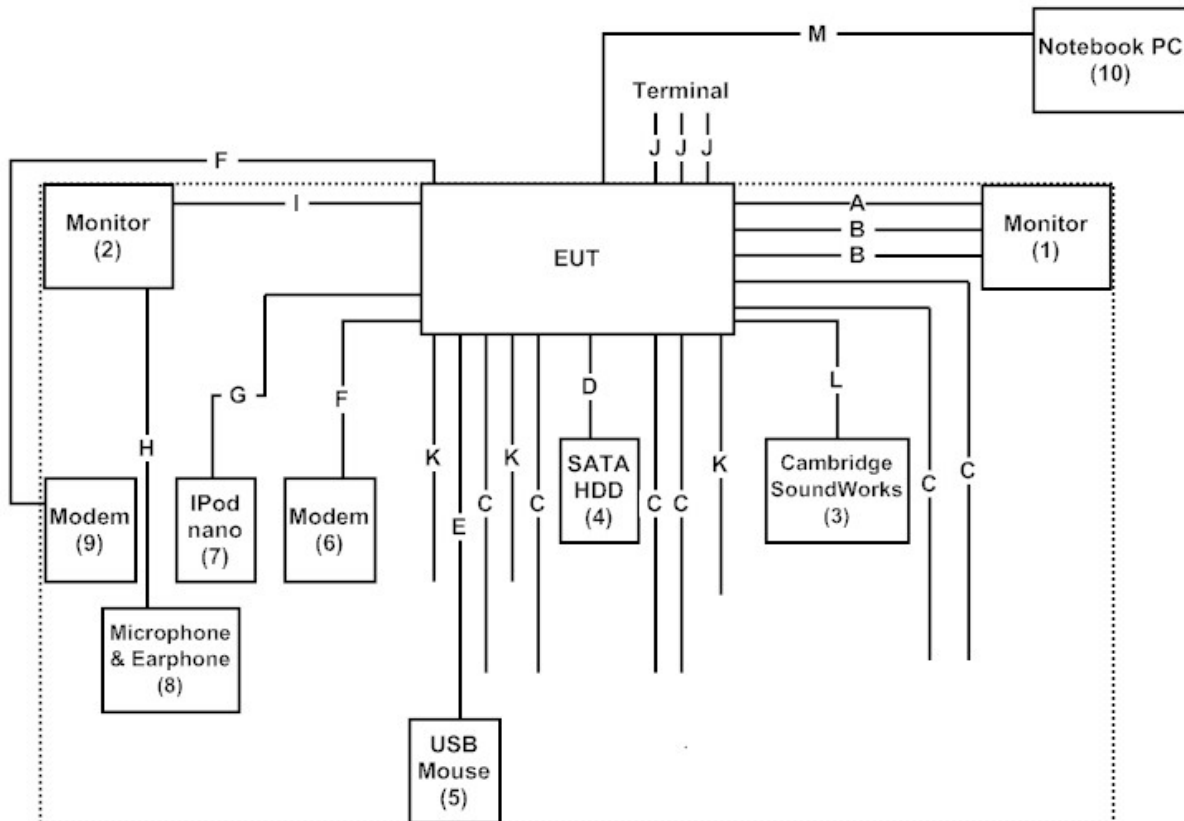
Signal Cable Type	Signal cable Description
A YPbPr Cable	Non-Shielded, 1.5m
B RCA Cable	Non-Shielded, 1.5m, two PCS.
C IR Cable	Non-Shielded, 3.0m, six PCS.
D e-SATA Cable	Shielded, 1.2m
E USB Mouse Cable	Shielded, 1.8m
F RS-232 Cable	Shielded, 1.5m, two PCS.
G Audio Cable	Non-Shielded, 1.6m
H Microphone & Earphone Cable	Non-Shielded, 1.6m
I HDMI Cable	Shielded, 1.8m
J Terminal Cable	Non-Shielded, 0.1m, three PCS.
K Antenna Cable	Non-Shielded, 3.0m, three PCS.
L SPIDF Cable	Shielded, 1.2m
M LAN Cable	Non-Shielded, 3.0m

Test Mode: Dipole Antenna

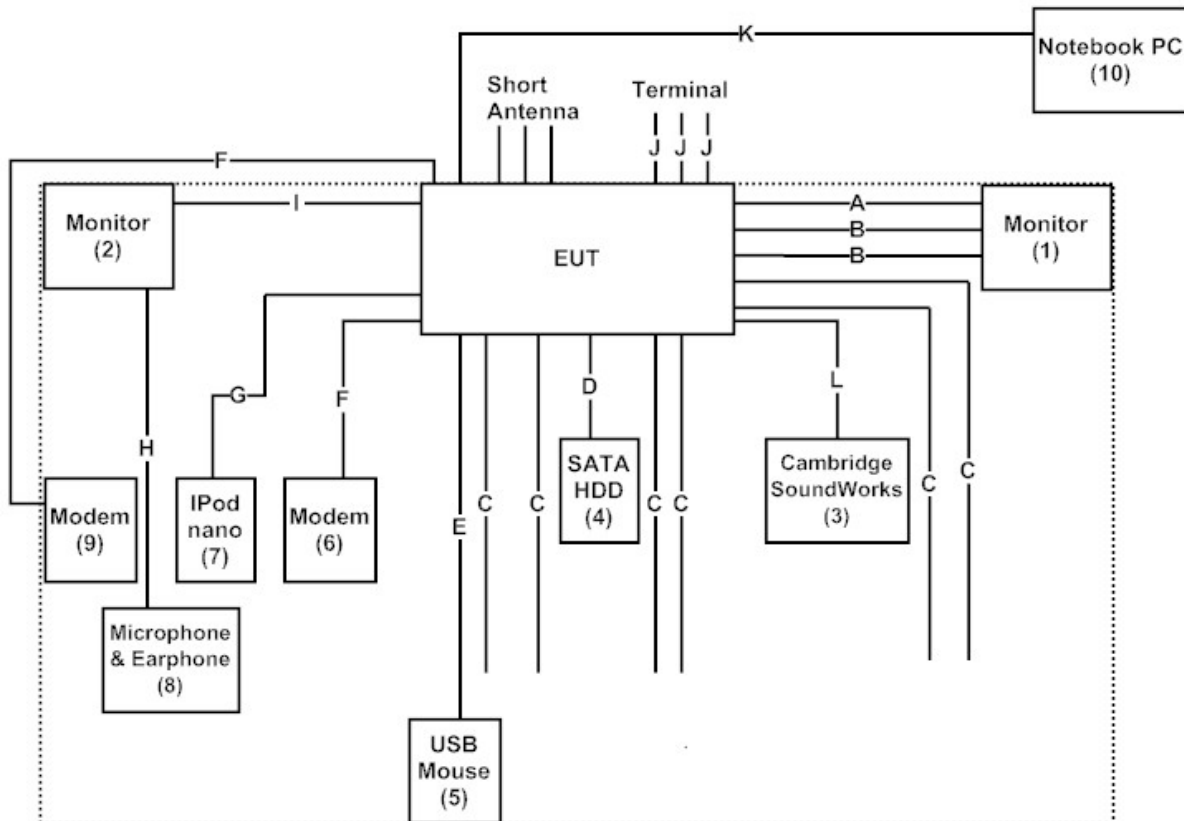
Signal Cable Type		Connection Diagram
A	YPbPr Cable	Non-Shielded, 1.5m
B	RCA Cable	Non-Shielded, 1.5m, two PCS.
C	IR Cable	Non-Shielded, 3.0m, six PCS.
D	e-SATA Cable	Shielded, 1.2m
E	USB Mouse Cable	Shielded, 1.8m
F	RS-232 Cable	Shielded, 1.5m, two PCS.
G	Audio Cable	Non-Shielded, 1.6m
H	Microphone & Earphone Cable	Non-Shielded, 1.6m
I	HDMI Cable	Shielded, 1.8m
J	Terminal Cable	Non-Shielded, 0.1m, three PCS.
K	LAN Cable	Non-Shielded, 3.0m
L	SPIDF Cable	Shielded, 1.2m

1.4. Configuration of Tested System

Dielectric Patch Antenna



Dipole Antenna



1.5. EUT Exercise Software

- (1) Setup the EUT and peripherals as shown in Section 1.4
- (2) Execute “Realtek 11n single chip USB WLAN MP Diagnostic Program (Ver0.0034.1012.2009)” on the Notebook.
- (3) Configure the test mode, the test channel, and the data rate to start the continuous transmit
- (4) 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
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Registration Number: 92195



Accreditation on NVLAP
NVLAP Lab Code: 200533-0



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FCC Accreditation Number: TW1014



2. Conducted Emission

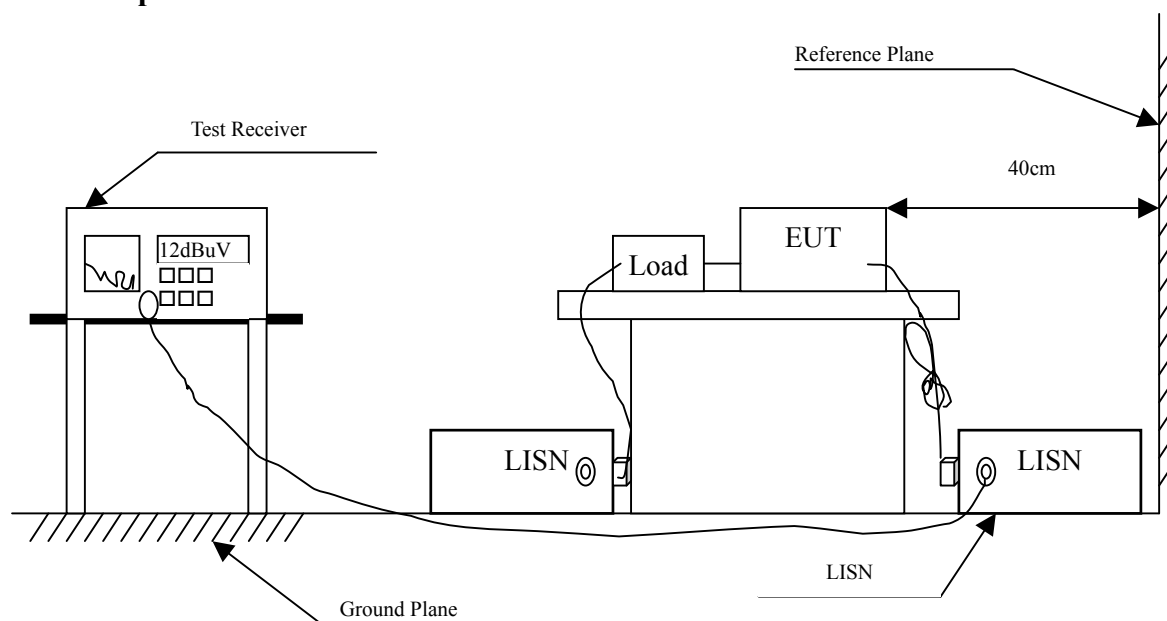
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2011	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2011	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2011	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2011	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2011	
	No.1 Shielded Room				

Note:

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

2.2. Test Setup



2.3. Limits

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

2.4. Test Procedure

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

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Home Controller
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)
 (Seasonic/ SSA-0651D-19)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.150	9.843	39.640	49.483	-16.517	66.000
0.205	9.840	28.090	37.930	-26.499	64.429
0.361	9.840	26.490	36.330	-23.641	59.971
0.478	9.840	40.680	50.520	-6.109	56.629
4.185	9.870	15.030	24.900	-31.100	56.000
12.416	10.063	21.170	31.233	-28.767	60.000
Average					
0.150	9.843	27.110	36.953	-19.047	56.000
0.205	9.840	15.540	25.380	-29.049	54.429
0.361	9.840	20.290	30.130	-19.841	49.971
0.478	9.840	30.630	40.470	-6.159	46.629
4.185	9.870	4.420	14.290	-31.710	46.000
12.416	10.063	18.800	28.863	-21.137	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 : Home Controller
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)
 (Seasonic/ SSA-0651D-19)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.185	9.840	32.830	42.670	-22.330	65.000
0.357	9.840	25.400	35.240	-24.846	60.086
0.494	9.840	39.110	48.950	-7.221	56.171
0.654	9.840	21.110	30.950	-25.050	56.000
11.923	10.114	20.920	31.034	-28.966	60.000
25.752	10.340	24.660	35.000	-25.000	60.000
Average					
0.185	9.840	21.240	31.080	-23.920	55.000
0.357	9.840	19.760	29.600	-20.486	50.086
0.494	9.840	29.030	38.870	-7.301	46.171
0.654	9.840	15.910	25.750	-20.250	46.000
11.923	10.114	19.330	29.444	-20.556	50.000
25.752	10.340	20.010	30.350	-19.650	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 : Home Controller
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)
 (FSP/ FSP065-RAC)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.189	9.840	37.120	46.960	-17.926	64.886
0.283	9.840	28.320	38.160	-24.040	62.200
0.466	9.840	34.760	44.600	-12.371	56.971
0.689	9.840	36.150	45.990	-10.010	56.000
1.646	9.860	30.090	39.950	-16.050	56.000
9.173	9.994	23.790	33.784	-26.216	60.000
Average					
0.189	9.840	25.500	35.340	-19.546	54.886
0.283	9.840	14.590	24.430	-27.770	52.200
0.466	9.840	26.380	36.220	-10.751	46.971
0.689	9.840	21.410	31.250	-14.750	46.000
1.646	9.860	14.570	24.430	-21.570	46.000
9.173	9.994	14.790	24.784	-25.216	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 : Home Controller
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)
 (FSP/ FSP065-RAC)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.197	9.840	39.470	49.310	-15.347	64.657
0.291	9.840	27.950	37.790	-24.181	61.971
0.517	9.840	36.350	46.190	-9.810	56.000
0.713	9.840	35.660	45.500	-10.500	56.000
1.603	9.850	28.860	38.710	-17.290	56.000
7.955	9.987	23.480	33.467	-26.533	60.000
Average					
0.197	9.840	26.680	36.520	-18.137	54.657
0.291	9.840	12.990	22.830	-29.141	51.971
0.517	9.840	28.300	38.140	-7.860	46.000
0.713	9.840	21.960	31.800	-14.200	46.000
1.603	9.850	11.840	21.690	-24.310	46.000
7.955	9.987	19.860	29.847	-20.153	50.000

Note:

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

3. Peak Power Output

3.1. Test Equipment

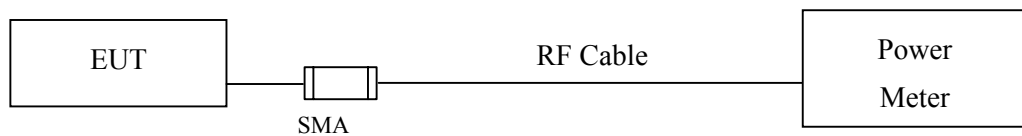
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2011
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2011

Note:

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

3.2. Test Setup

Conducted Measurement



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Home Controller
 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	13.21	--	--	--	15.54	<30dBm	Pass
06	2437	12.2	12.04	11.88	11.74	14.63	<30dBm	Pass
11	2462	13.52	--	--	--	15.88	<30dBm	Pass

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

Product : Home Controller
 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	10.91	--	--	--	--	--	--	--	19.55	<30dBm	Pass
06	2437	10.11	10.05	9.94	9.88	9.76	9.64	9.58	9.52	19.19	<30dBm	Pass
11	2462	11.24	--	--	--	--	--	--	--	19.83	<30dBm	Pass

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

Product : Home Controller
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2			
		Measurement Level (dBm)										
01	2412	10.31	--	--	--	--	--	--	--	19.5	<30dBm	Pass
06	2437	9.07	8.98	8.91	8.83	8.76	8.69	8.57	8.51	18.73	<30dBm	Pass
11	2462	9.8	--	--	--	--	--	--	--	19.31	<30dBm	Pass

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

Product : Home Controller
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		15	30	45	60	90	120	135	150	15		
		Measurement Level (dBm)										
03	2422	9.55	--	--	--	--	--	--	--	18.18	<30dBm	Pass
06	2437	9.27	9.21	9.12	9.06	8.97	8.91	8.85	8.77	18.11	<30dBm	Pass
09	2452	9.31	--	--	--	--	--	--	--	18.37	<30dBm	Pass

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

4. Radiated Emission

4.1. Test Equipment

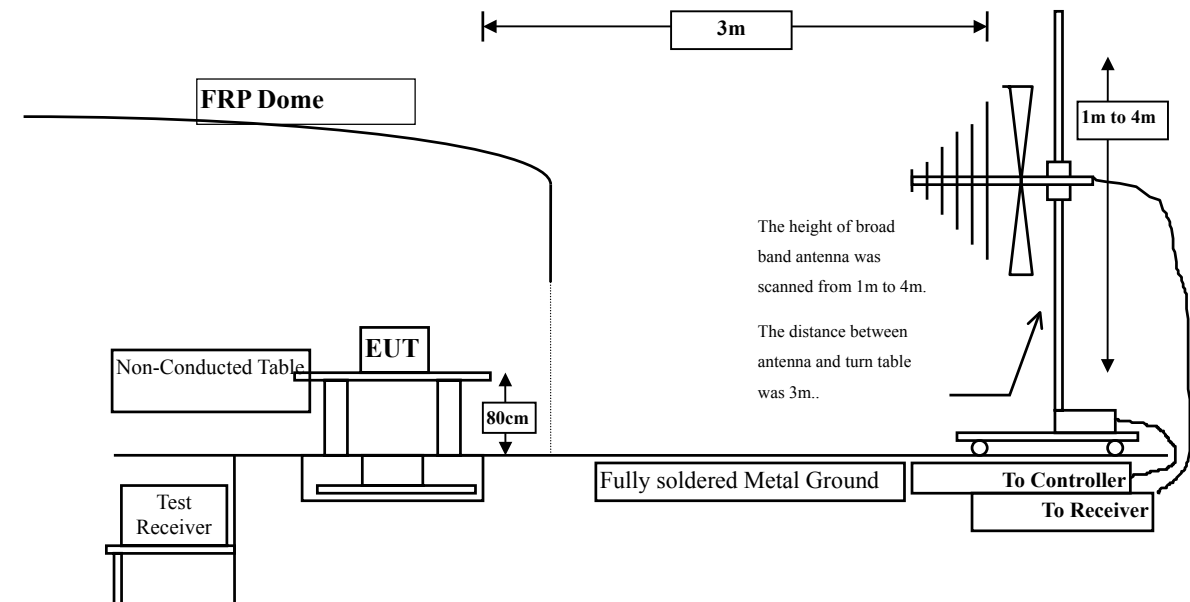
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 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., 2011
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

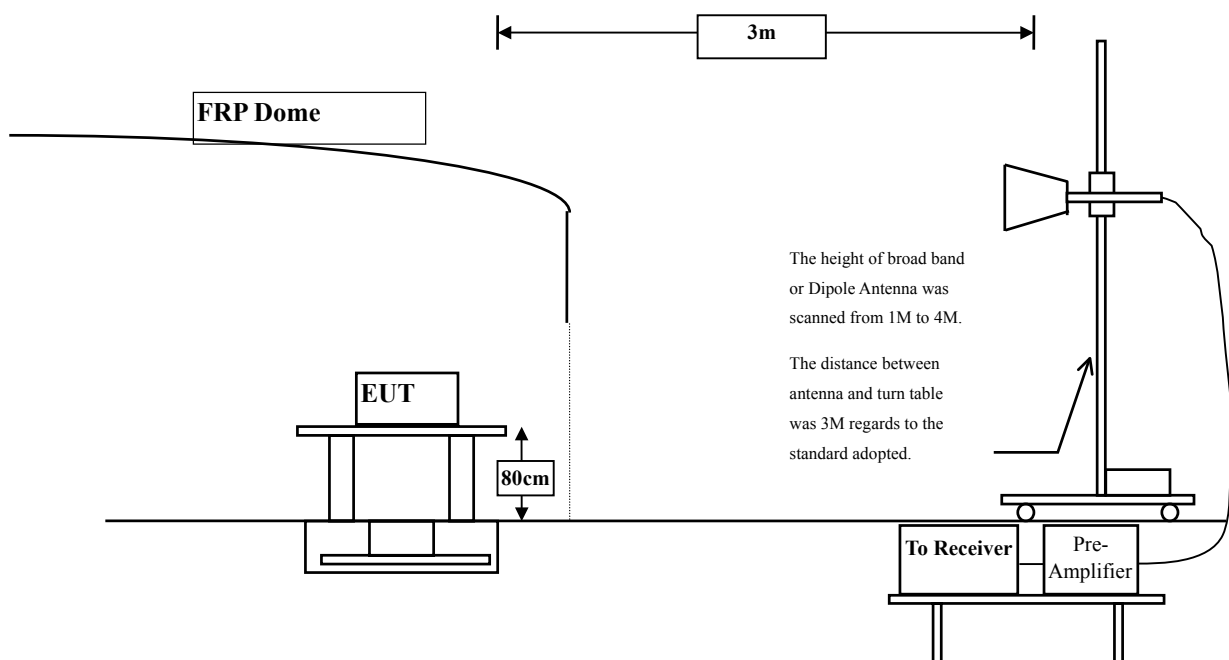
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

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

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

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 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 harmonics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4824.000	3.261	37.280	40.541	-33.459	74.000
7236.000	10.650	36.680	47.330	-26.670	74.000
9648.000	13.337	36.160	49.496	-24.504	74.000

Average Detector:

--

Vertical

Peak Detector:

4824.000	6.421	38.620	45.041	-28.959	74.000
7236.000	11.495	36.150	47.645	-26.355	74.000
9648.000	13.807	36.110	49.916	-24.084	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.100	40.137	-33.863	74.000
7311.000	11.795	35.300	47.094	-26.906	74.000
9748.000	12.635	36.420	49.055	-24.945	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	37.880	43.691	-30.309	74.000
7311.000	12.630	35.330	47.959	-26.041	74.000
9748.000	13.126	36.470	49.596	-24.404	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4924.000	2.858	36.940	39.797	-34.203	74.000
7386.000	12.127	35.110	47.238	-26.762	74.000
9848.000	12.852	36.130	48.983	-25.017	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	37.520	43.040	-30.960	74.000
7386.000	13.254	34.630	47.884	-26.116	74.000
9848.000	13.367	36.140	49.507	-24.493	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4824.000	3.261	37.260	40.521	-33.479	74.000
7236.000	10.650	36.210	46.860	-27.140	74.000
9648.000	13.337	36.060	49.396	-24.604	74.000

Average Detector:

--

Vertical

Peak Detector:

4824.000	6.421	37.570	43.991	-30.009	74.000
7236.000	11.495	36.020	47.515	-26.485	74.000
9648.000	13.807	35.650	49.456	-24.544	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	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	34.900	46.694	-27.306	74.000
9748.000	12.635	36.480	49.115	-24.885	74.000

Average Detector:

--

Peak Detector:

4874.000	5.812	36.640	42.451	-31.549	74.000
7311.000	12.630	35.340	47.969	-26.031	74.000
9748.000	13.126	36.690	49.816	-24.184	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	36.780	39.637	-34.363	74.000
7386.000	12.127	34.440	46.568	-27.432	74.000
9848.000	12.852	36.430	49.283	-24.717	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	37.490	43.010	-30.990	74.000
7386.000	13.254	35.050	48.304	-25.696	74.000
9848.000	13.367	36.480	49.847	-24.153	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)
 (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	37.120	40.381	-33.619	74.000
7236.000	10.650	35.880	46.530	-27.470	74.000
9648.000	13.337	35.640	48.976	-25.024	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	37.290	43.711	-30.289	74.000
7236.000	11.495	35.710	47.205	-26.795	74.000
9648.000	13.807	35.410	49.216	-24.784	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz)
 (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4874.000	3.038	37.920	40.957	-33.043	74.000
7311.000	11.795	35.180	46.974	-27.026	74.000
9748.000	12.635	36.190	48.825	-25.175	74.000

Average Detector:

--

Vertical

Peak Detector:

4874.000	5.812	36.860	42.671	-31.329	74.000
7311.000	12.630	34.900	47.529	-26.471	74.000
9748.000	13.126	36.080	49.206	-24.794	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4924.000	2.858	37.100	39.957	-34.043	74.000
7386.000	12.127	35.010	47.138	-26.862	74.000
9848.000	12.852	36.000	48.853	-25.147	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	37.400	42.920	-31.080	74.000
7386.000	13.254	34.440	47.694	-26.306	74.000
9848.000	13.367	35.990	49.357	-24.643	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2422MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4844.000	3.171	37.510	40.681	-33.319	74.000
7266.000	11.162	35.180	46.342	-27.658	74.000
9688.000	12.964	36.410	49.375	-24.625	74.000

Average Detector:

--

Vertical

Peak Detector:

4844.000	6.178	37.490	43.668	-30.332	74.000
7266.000	11.982	35.250	47.232	-26.768	74.000
9688.000	13.507	36.160	49.668	-24.332	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz)
 (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4874.000	3.038	37.010	40.047	-33.953	74.000
7311.000	11.795	35.150	46.944	-27.056	74.000
9748.000	12.635	36.430	49.065	-24.935	74.000

Average Detector:

--

Vertical

Peak Detector:

4874.000	5.812	37.390	43.201	-30.799	74.000
7311.000	12.630	35.350	47.979	-26.021	74.000
9748.000	13.126	36.380	49.506	-24.494	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2452 MHz)
 (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4904.000	2.914	37.380	40.295	-33.705	74.000
7356.000	11.995	35.270	47.264	-26.736	74.000
9808.000	12.475	36.010	48.485	-25.515	74.000

Average Detector:

--

Vertical

Peak Detector:

4904.000	5.530	37.140	42.671	-31.329	74.000
7356.000	13.005	35.120	48.124	-25.876	74.000
9808.000	12.901	35.730	48.631	-25.369	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4824.000	3.261	37.810	41.071	-32.929	74.000
7236.000	10.650	36.250	46.900	-27.100	74.000
9648.000	13.337	36.290	49.626	-24.374	74.000

Average Detector:

--

Vertical

Peak Detector:

4824.000	6.421	43.170	49.591	-24.409	74.000
7236.000	11.495	36.070	47.565	-26.435	74.000
9648.000	13.807	35.920	49.726	-24.274	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.320	40.357	-33.643	74.000
7311.000	11.795	35.910	47.704	-26.296	74.000
9748.000	12.635	36.040	48.675	-25.325	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	41.820	47.631	-26.369	74.000
7311.000	12.630	34.880	47.509	-26.491	74.000
9748.000	13.126	36.800	49.926	-24.074	74.000
Average Detector:					
--					

Note:

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

Product : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4924.000	2.858	37.020	39.877	-34.123	74.000
7386.000	12.127	35.110	47.238	-26.762	74.000
9848.000	12.852	36.350	49.203	-24.797	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	39.040	44.560	-29.440	74.000
7386.000	13.254	35.120	48.374	-25.626	74.000
9848.000	13.367	36.000	49.367	-24.633	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4824.000	3.261	37.170	40.431	-33.569	74.000
7236.000	10.650	35.700	46.350	-27.650	74.000
9648.000	13.337	36.040	49.376	-24.624	74.000

Average Detector:

--

Vertical

Peak Detector:

4824.000	6.421	39.060	45.481	-28.519	74.000
7236.000	11.495	36.290	47.785	-26.215	74.000
9648.000	13.807	36.040	49.846	-24.154	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4874.000	3.038	37.010	40.047	-33.953	74.000
7311.000	11.795	35.210	47.004	-26.996	74.000
9748.000	12.635	35.660	48.295	-25.705	74.000

Average Detector:

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Peak Detector:

4874.000	5.812	37.520	43.331	-30.669	74.000
7311.000	12.630	34.650	47.279	-26.721	74.000
9748.000	13.126	36.430	49.556	-24.444	74.000

Average Detector:

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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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	36.940	39.797	-34.203	74.000
7386.000	12.127	34.530	46.658	-27.342	74.000
9848.000	12.852	36.110	48.963	-25.037	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	37.700	43.220	-30.780	74.000
7386.000	13.254	35.580	48.834	-25.166	74.000
9848.000	13.367	35.870	49.237	-24.763	74.000

Average Detector:

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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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4824.000	3.261	37.240	40.501	-33.499	74.000
7236.000	10.650	36.590	47.240	-26.760	74.000
9648.000	13.337	36.280	49.616	-24.384	74.000

Average Detector:

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Vertical

Peak Detector:

4824.000	6.421	40.060	46.481	-27.519	74.000
7236.000	11.495	36.090	47.585	-26.415	74.000
9648.000	13.807	35.850	49.656	-24.344	74.000

Average Detector:

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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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4874.000	3.038	36.760	39.797	-34.203	74.000
7311.000	11.795	35.150	46.944	-27.056	74.000
9748.000	12.635	36.300	48.935	-25.065	74.000

Average Detector:

--

Vertical

Peak Detector:

4874.000	5.812	36.940	42.751	-31.249	74.000
7311.000	12.630	35.050	47.679	-26.321	74.000
9748.000	13.126	36.410	49.536	-24.464	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4924.000	2.858	36.730	39.587	-34.413	74.000
7386.000	12.127	35.120	47.248	-26.752	74.000
9848.000	12.852	35.840	48.693	-25.307	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	37.570	43.090	-30.910	74.000
7386.000	13.254	34.980	48.234	-25.766	74.000
9848.000	13.367	35.860	49.227	-24.773	74.000

Average Detector:

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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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2422MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4844.000	3.171	36.630	39.801	-34.199	74.000
7266.000	11.162	35.280	46.442	-27.558	74.000
9688.000	12.964	36.350	49.315	-24.685	74.000

Average Detector:

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Vertical

Peak Detector:

4844.000	6.178	37.870	44.048	-29.952	74.000
7266.000	11.982	36.290	48.272	-25.728	74.000
9688.000	13.507	36.240	49.748	-24.252	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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.520	40.557	-33.443	74.000
7311.000	11.795	34.540	46.334	-27.666	74.000
9748.000	12.635	36.300	48.935	-25.065	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	37.550	43.361	-30.639	74.000
7311.000	12.630	35.920	48.549	-25.451	74.000
9748.000	13.126	36.120	49.246	-24.754	74.000

Average Detector:

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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 : Home Controller
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2452 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m

Horizontal

Peak Detector:

4904.000	2.914	37.500	40.415	-33.585	74.000
7356.000	11.995	34.830	46.824	-27.176	74.000
9808.000	12.475	36.280	48.755	-25.245	74.000

Average Detector:

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Vertical

Peak Detector:

4904.000	5.530	36.480	42.011	-31.989	74.000
7356.000	13.005	34.900	47.904	-26.096	74.000
9808.000	12.901	36.110	49.011	-24.989	74.000

Average Detector:

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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 : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Normal Operation (Seasonic/ SSA-0651D-19)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
120.230	-9.799	40.672	30.873	-12.627	43.500
233.250	-8.552	39.723	31.171	-14.829	46.000
250.000	-5.922	42.293	36.371	-9.629	46.000
366.500	-1.273	35.902	34.630	-11.370	46.000
500.000	0.076	35.933	36.010	-9.990	46.000
750.000	3.360	31.702	35.062	-10.938	46.000
Vertical					
110.530	-0.610	35.661	35.051	-8.449	43.500
144.000	-6.259	40.449	34.190	-9.310	43.500
192.000	-10.137	42.618	32.480	-11.020	43.500
250.000	-7.517	47.516	39.998	-6.002	46.000
500.000	-0.813	38.855	38.042	-7.958	46.000
750.000	2.553	35.708	38.261	-7.739	46.000

Note:

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

Product : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Normal Operation (FSP/ FSP065-RAC)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
119.130	-9.596	39.528	29.932	-13.568	43.500
233.250	-8.552	39.832	31.280	-14.720	46.000
250.000	-5.922	42.193	36.271	-9.729	46.000
366.500	-1.273	36.101	34.829	-11.171	46.000
456.000	-0.418	34.275	33.857	-12.143	46.000
500.000	0.076	35.638	35.715	-10.285	46.000
750.000	3.360	30.903	34.263	-11.737	46.000
Vertical					
110.560	-0.621	35.573	34.952	-8.548	43.500
144.000	-6.259	40.427	34.168	-9.332	43.500
174.470	-8.328	37.730	29.402	-14.098	43.500
192.000	-10.137	42.217	32.079	-11.421	43.500
250.000	-7.517	47.816	40.298	-5.702	46.000
456.000	-5.024	41.095	36.071	-9.929	46.000
510.000	-0.096	38.584	38.488	-7.512	46.000
750.000	2.553	35.506	38.059	-7.941	46.000

Note:

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

Product : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
49.400	-11.018	41.339	30.321	-9.679	40.000
165.800	-11.079	39.043	27.964	-15.536	43.500
371.440	-1.097	36.463	35.366	-10.634	46.000
499.480	0.048	33.459	33.507	-12.493	46.000
699.300	2.875	35.176	38.051	-7.949	46.000
831.220	6.121	23.347	29.468	-16.532	46.000
Vertical					
55.220	-4.699	40.240	35.541	-4.459	40.000
111.480	-0.954	37.127	36.173	-7.327	43.500
371.440	-2.737	32.914	30.177	-15.823	46.000
499.480	-0.852	34.923	34.071	-11.929	46.000
749.740	2.510	33.311	35.821	-10.179	46.000
961.200	7.260	27.717	34.977	-19.023	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 : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz) (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
64.920	-12.353	42.821	30.468	-9.532	40.000
249.220	-6.014	35.648	29.634	-16.366	46.000
371.440	-1.097	35.429	34.332	-11.668	46.000
499.480	0.048	34.605	34.653	-11.347	46.000
749.740	3.320	34.652	37.972	-8.028	46.000
961.200	6.450	26.946	33.396	-20.604	54.000
Vertical					
57.160	-4.403	41.135	36.732	-3.268	40.000
371.440	-2.737	31.771	29.034	-16.966	46.000
499.480	-0.852	35.227	34.375	-11.625	46.000
749.740	2.510	33.142	35.652	-10.348	46.000
844.800	3.181	25.523	28.704	-17.296	46.000
961.200	7.260	27.243	34.503	-19.497	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 : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz)
 (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
47.460	-9.151	45.348	36.198	-3.802	40.000
249.220	-6.014	35.157	29.143	-16.857	46.000
371.440	-1.097	34.851	33.754	-12.246	46.000
499.480	0.048	33.960	34.008	-11.992	46.000
749.740	3.320	34.214	37.534	-8.466	46.000
934.040	6.612	24.492	31.104	-14.896	46.000
Vertical					
59.100	-4.097	40.279	36.182	-3.818	40.000
256.980	-7.573	35.482	27.909	-18.091	46.000
499.480	-0.852	34.474	33.622	-12.378	46.000
749.740	2.510	32.751	35.261	-10.739	46.000
844.800	3.181	25.098	28.279	-17.721	46.000
961.200	7.260	28.168	35.428	-18.572	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 : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2437 MHz)
 (Dielectric Patch antenna)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
49.400	-11.018	41.847	30.829	-9.171	40.000
177.440	-10.879	38.773	27.894	-15.606	43.500
371.440	-1.097	33.416	32.319	-13.681	46.000
499.480	0.048	33.530	33.578	-12.422	46.000
749.740	3.320	34.338	37.658	-8.342	46.000
961.200	6.450	27.845	34.295	-19.705	54.000
Vertical					
62.980	-5.003	38.234	33.231	-6.769	40.000
175.500	-8.257	35.548	27.290	-16.210	43.500
371.440	-2.737	29.930	27.193	-18.807	46.000
499.480	-0.852	31.442	30.590	-15.410	46.000
749.740	2.510	32.873	35.383	-10.617	46.000
961.200	7.260	26.221	33.481	-20.519	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 : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
222.060	-10.439	44.736	34.297	-11.703	46.000
464.560	0.526	33.803	34.329	-11.671	46.000
743.920	3.326	36.315	39.641	-6.359	46.000
840.920	5.191	32.496	37.687	-8.313	46.000
893.300	5.369	34.218	39.587	-6.413	46.000
949.560	6.695	32.590	39.285	-6.715	46.000
Vertical					
150.280	-6.224	40.911	34.687	-8.813	43.500
371.440	-2.737	39.201	36.464	-9.536	46.000
499.480	-0.852	34.231	33.379	-12.621	46.000
743.920	1.246	38.832	40.078	-5.922	46.000
840.920	2.961	35.108	38.069	-7.931	46.000
916.580	1.524	34.730	36.254	-9.746	46.000

Note:

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

Product : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
191.020	-10.040	43.177	33.137	-10.363	43.500
371.440	-1.097	34.923	33.826	-12.174	46.000
594.540	3.927	29.208	33.135	-12.865	46.000
743.920	3.326	36.996	40.322	-5.678	46.000
891.360	5.888	36.472	42.360	-3.640	46.000
945.680	6.554	34.870	41.424	-4.576	46.000
Vertical					
220.120	-8.840	42.980	34.140	-11.860	46.000
371.440	-2.737	39.371	36.634	-9.366	46.000
513.060	-0.670	33.593	32.923	-13.077	46.000
804.060	3.587	32.371	35.958	-10.042	46.000
879.720	2.335	35.965	38.300	-7.700	46.000
932.100	6.152	32.624	38.776	-7.224	46.000

Note:

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

Product : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
249.220	-6.014	40.214	34.200	-11.800	46.000
371.440	-1.097	34.449	33.352	-12.648	46.000
520.820	1.762	35.275	37.037	-8.963	46.000
699.300	2.875	30.219	33.094	-12.906	46.000
840.920	5.191	32.828	38.019	-7.981	46.000
930.160	7.187	29.863	37.050	-8.950	46.000
Vertical					
159.980	-6.185	39.738	33.553	-9.947	43.500
371.440	-2.737	39.389	36.652	-9.348	46.000
520.820	-0.298	31.159	30.861	-15.139	46.000
743.920	1.246	38.328	39.574	-6.426	46.000
868.080	0.641	35.913	36.554	-9.446	46.000
937.920	6.076	28.003	34.079	-11.921	46.000

Note:

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

Product : Home Controller
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2437 MHz) (Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
175.500	-10.017	40.580	30.562	-12.938	43.500
371.440	-1.097	34.068	32.971	-13.029	46.000
520.820	1.762	32.471	34.233	-11.767	46.000
668.260	2.016	33.530	35.546	-10.454	46.000
848.680	5.776	30.459	36.234	-9.766	46.000
920.460	6.467	33.175	39.642	-6.358	46.000
Vertical					
220.120	-8.840	48.254	39.414	-6.586	46.000
371.440	-2.737	39.863	37.126	-8.874	46.000
499.480	-0.852	34.899	34.047	-11.953	46.000
743.920	1.246	36.532	37.778	-8.222	46.000
881.660	2.557	37.615	40.172	-5.828	46.000
949.560	6.615	35.383	41.998	-4.002	46.000

Note:

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

5. RF antenna conducted test

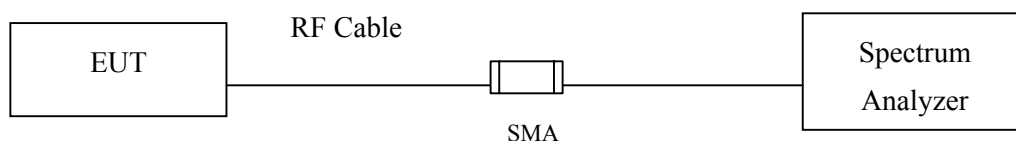
5.1. Test Equipment

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

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

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

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

5.4. Test Procedure

The EUT was tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

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

5.5. Uncertainty

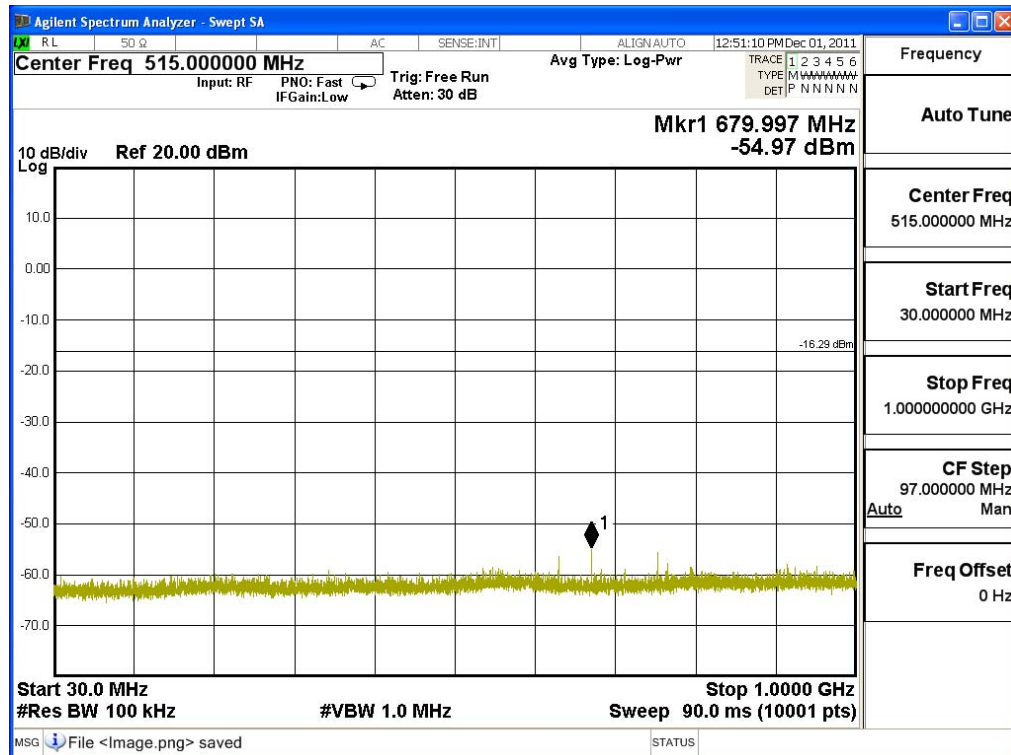
The measurement uncertainty

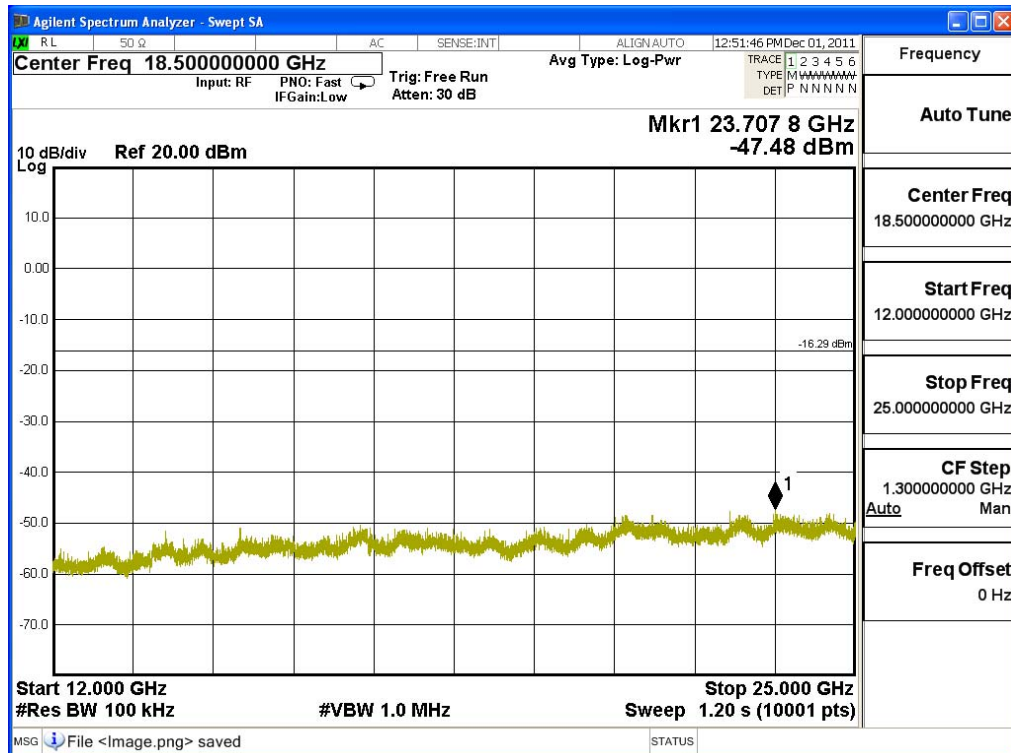
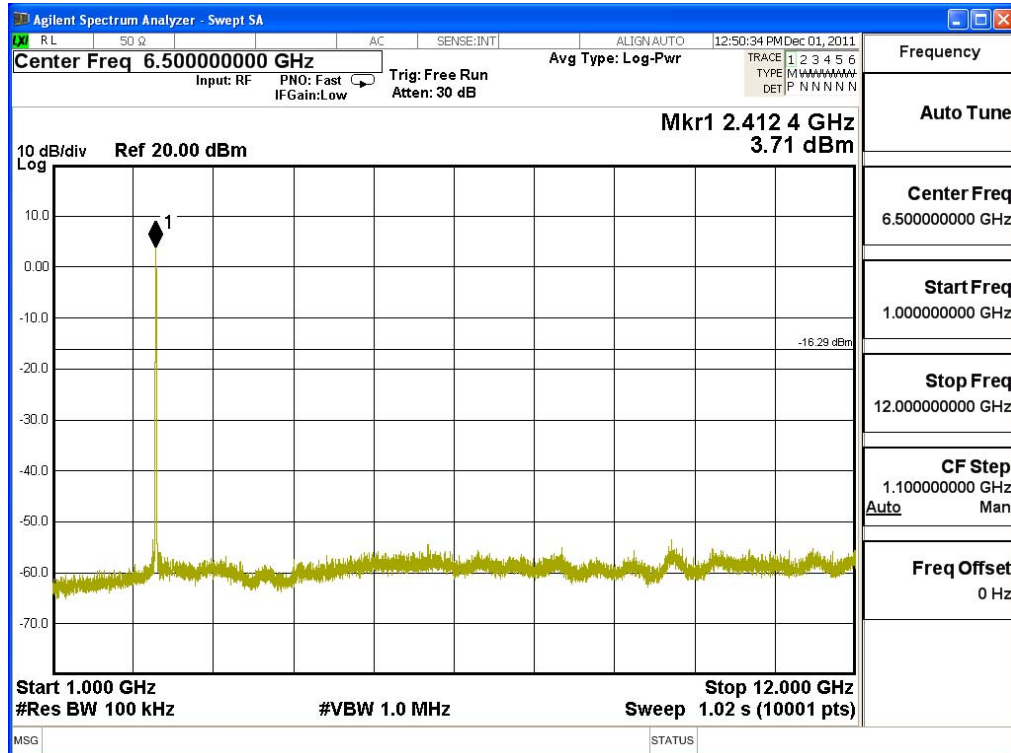
Conducted is defined as $\pm 1.27\text{dB}$

5.6. Test Result of RF antenna conducted test

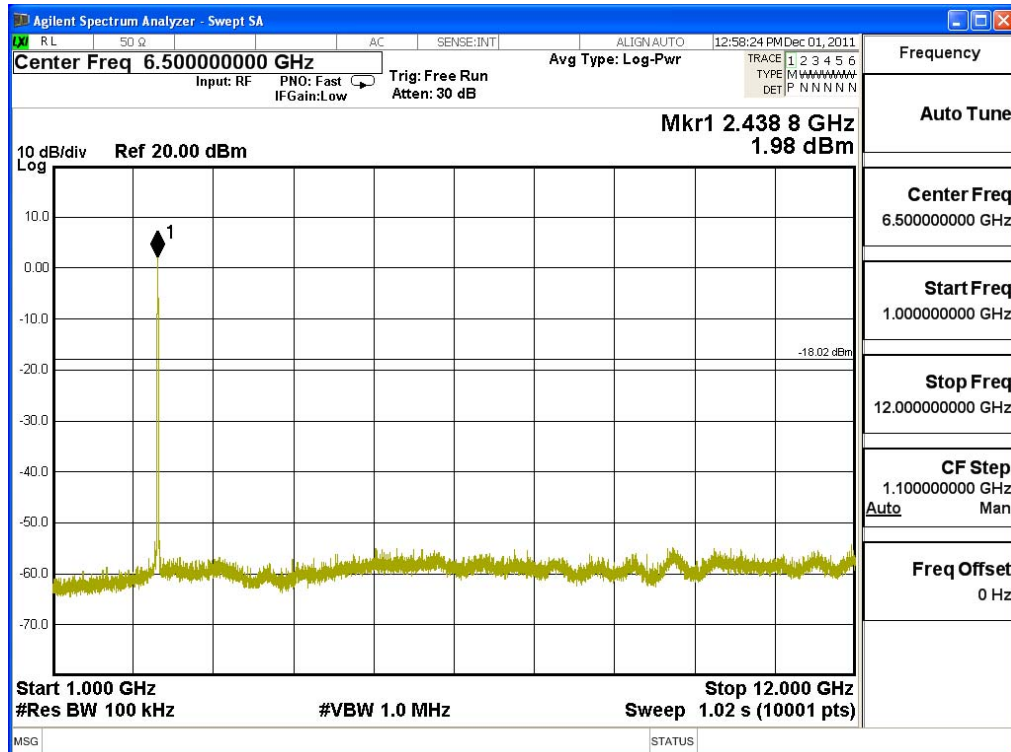
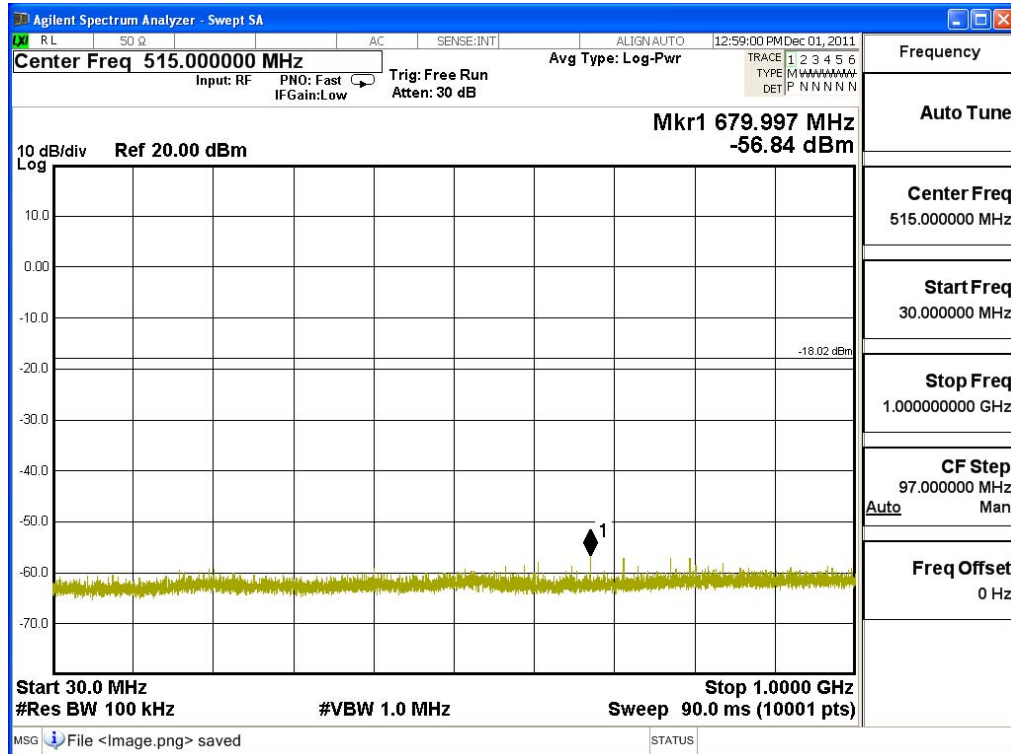
Product : Home Controller
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

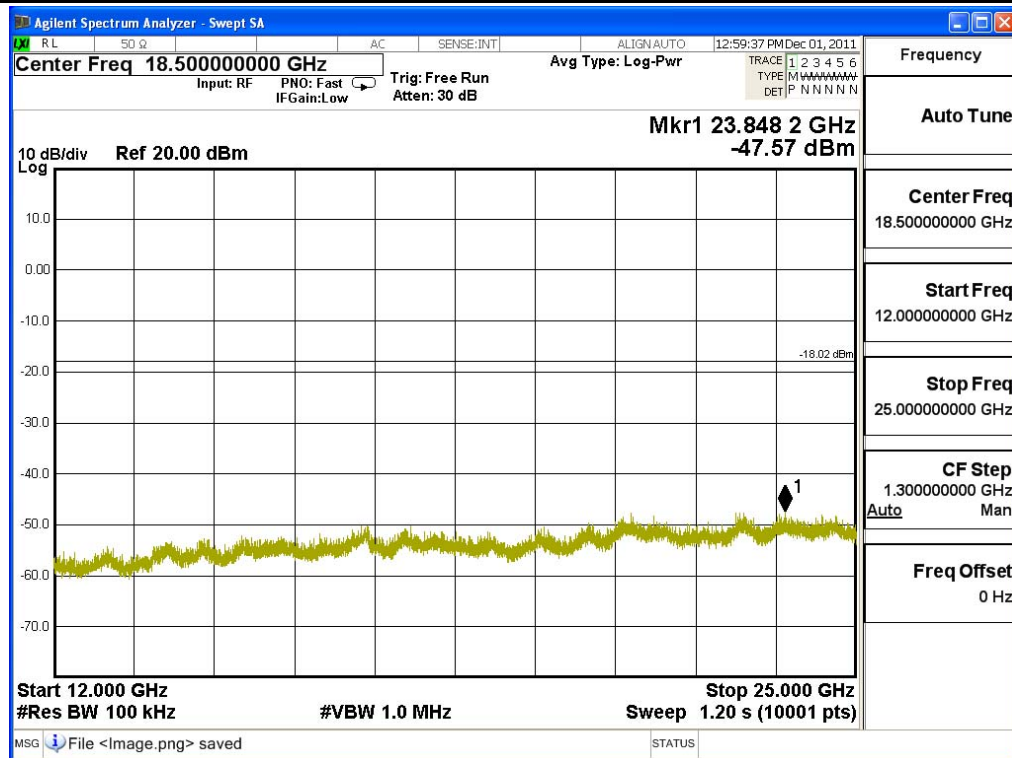
Channel 01 (2412MHz)



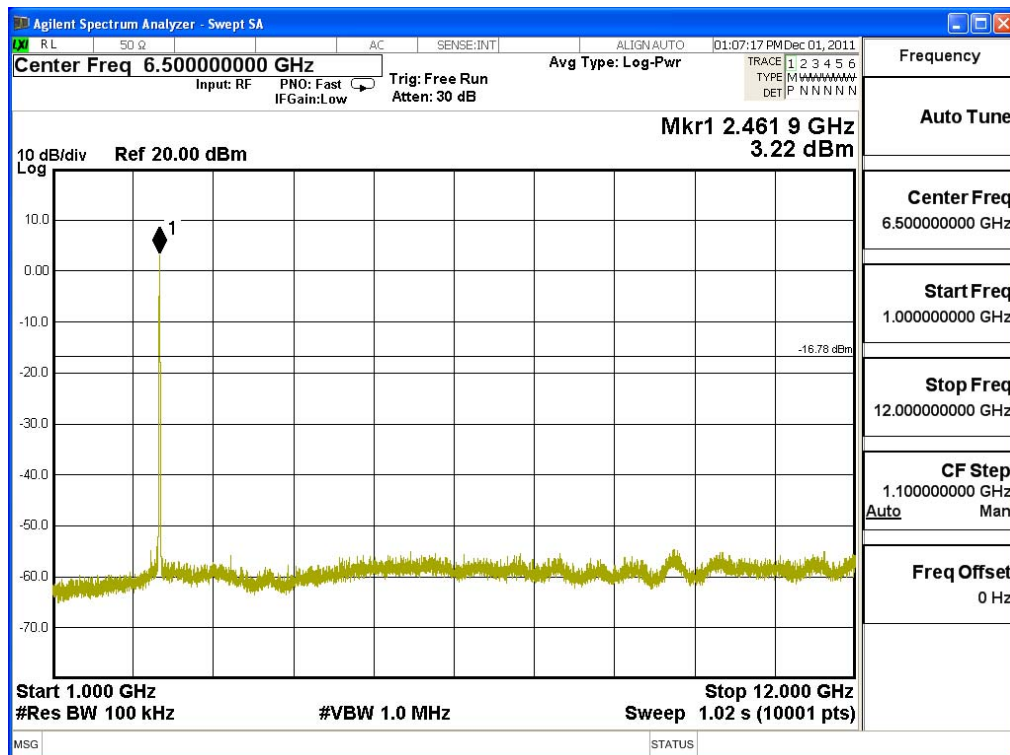
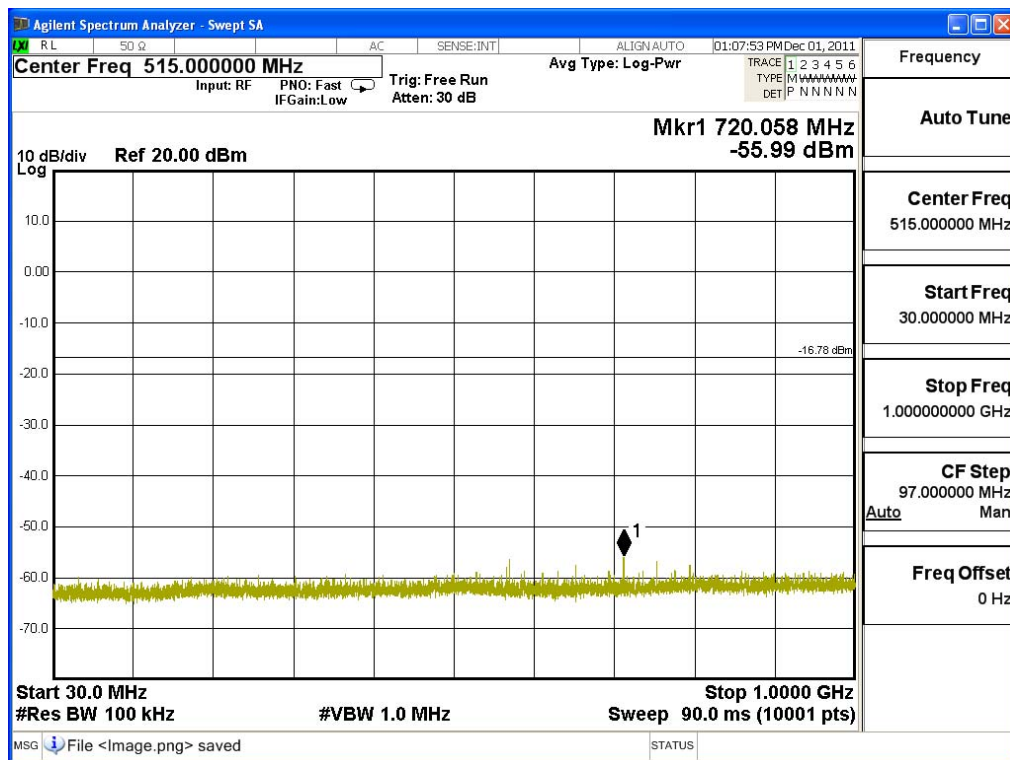


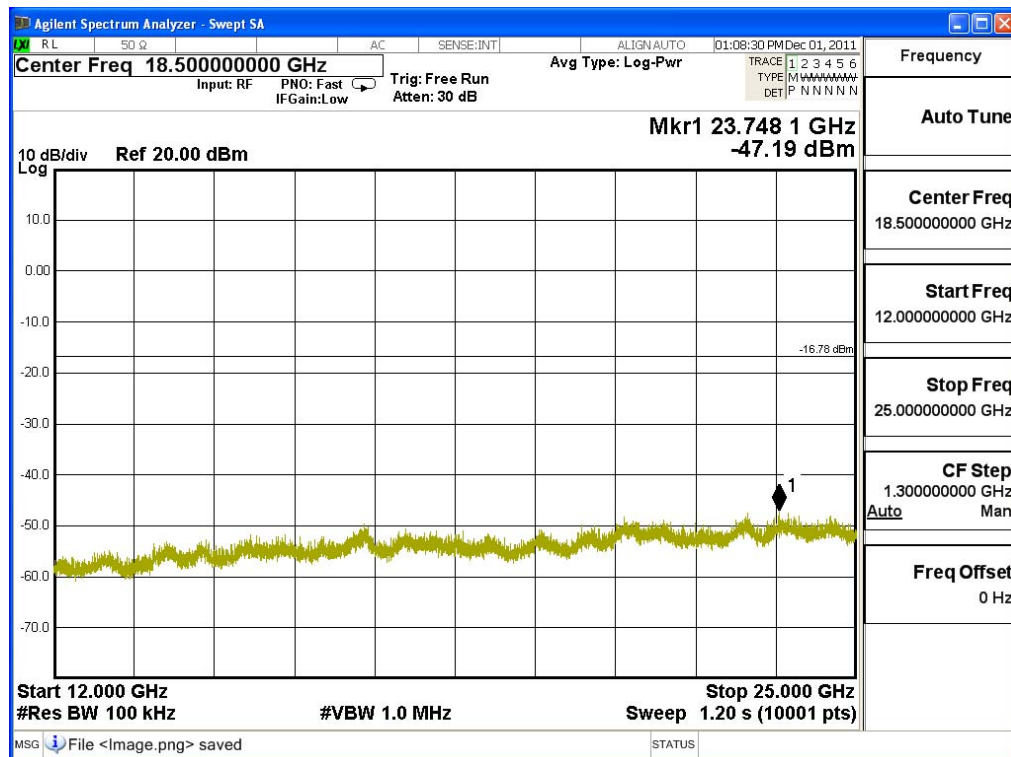
Channel 06 (2437MHz)





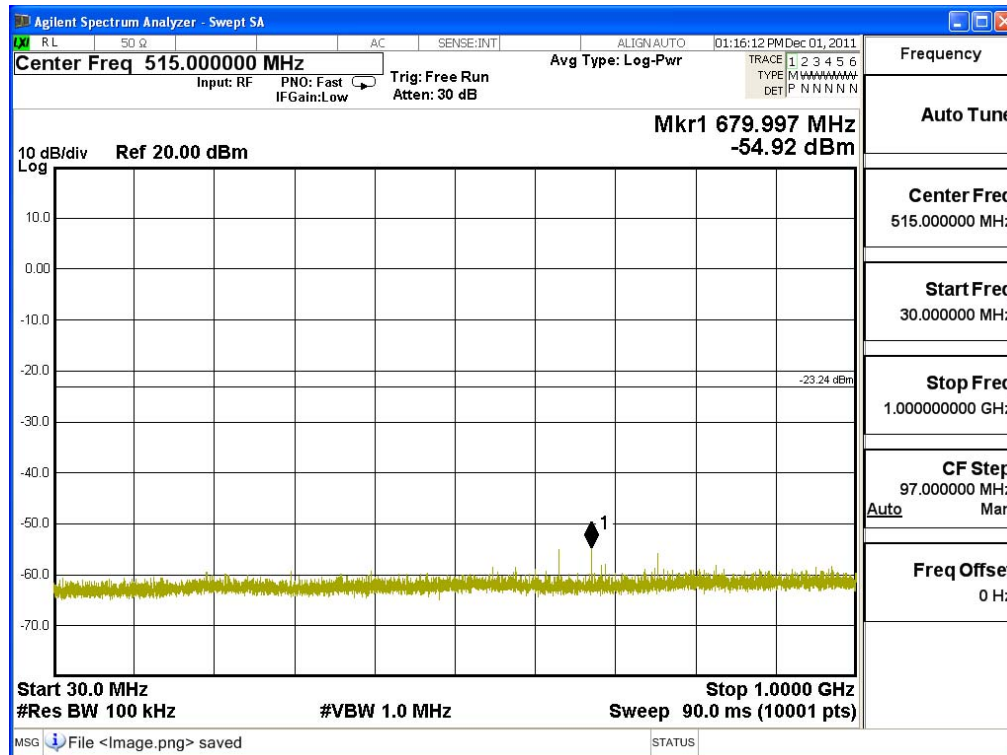
Channel 11 (2462MHz)

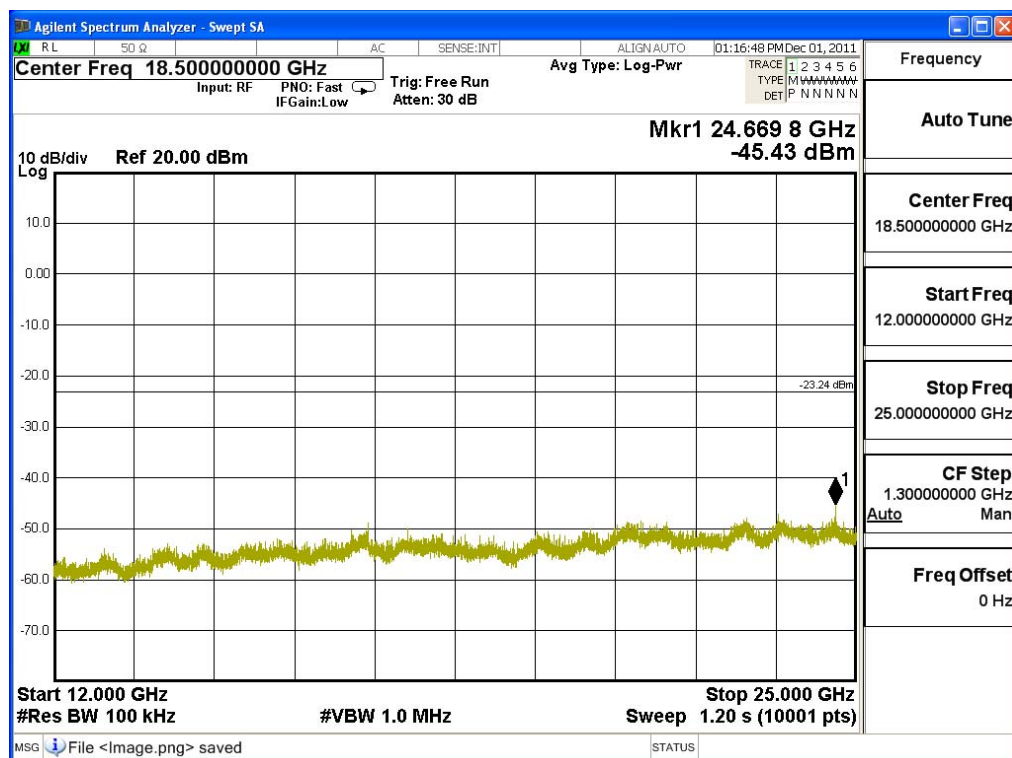
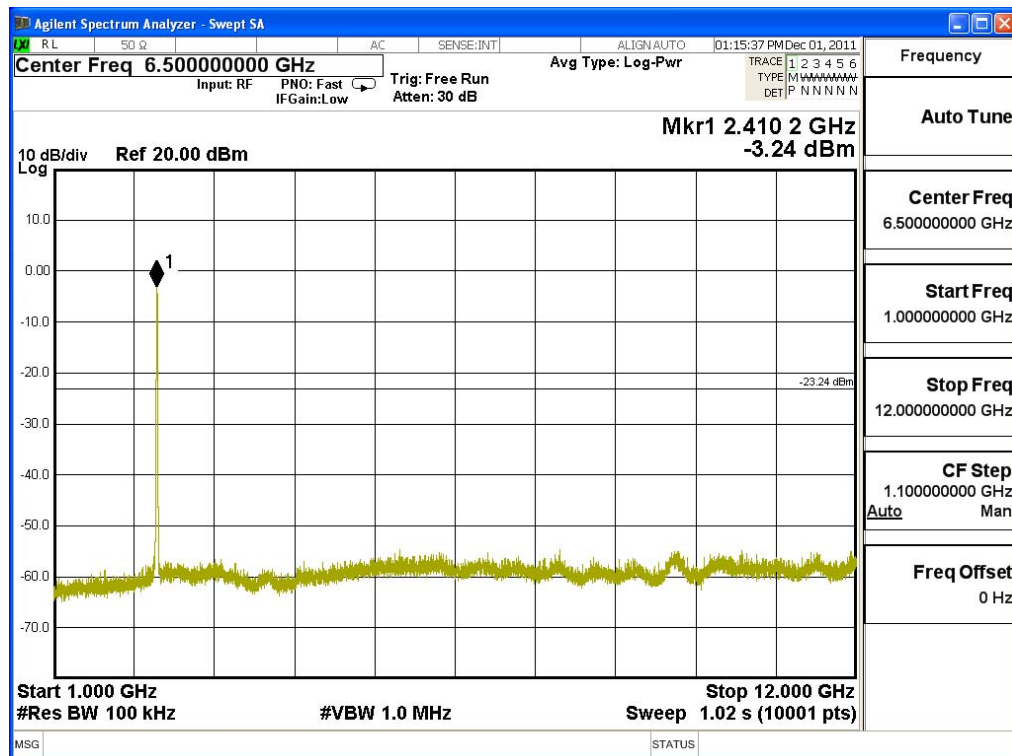




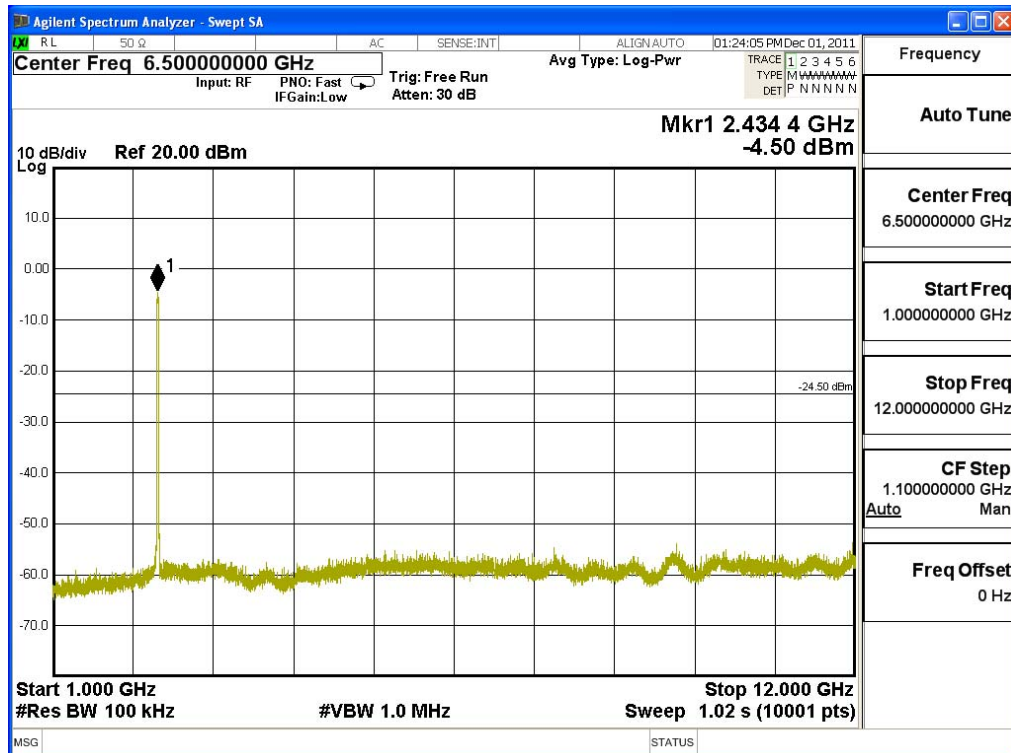
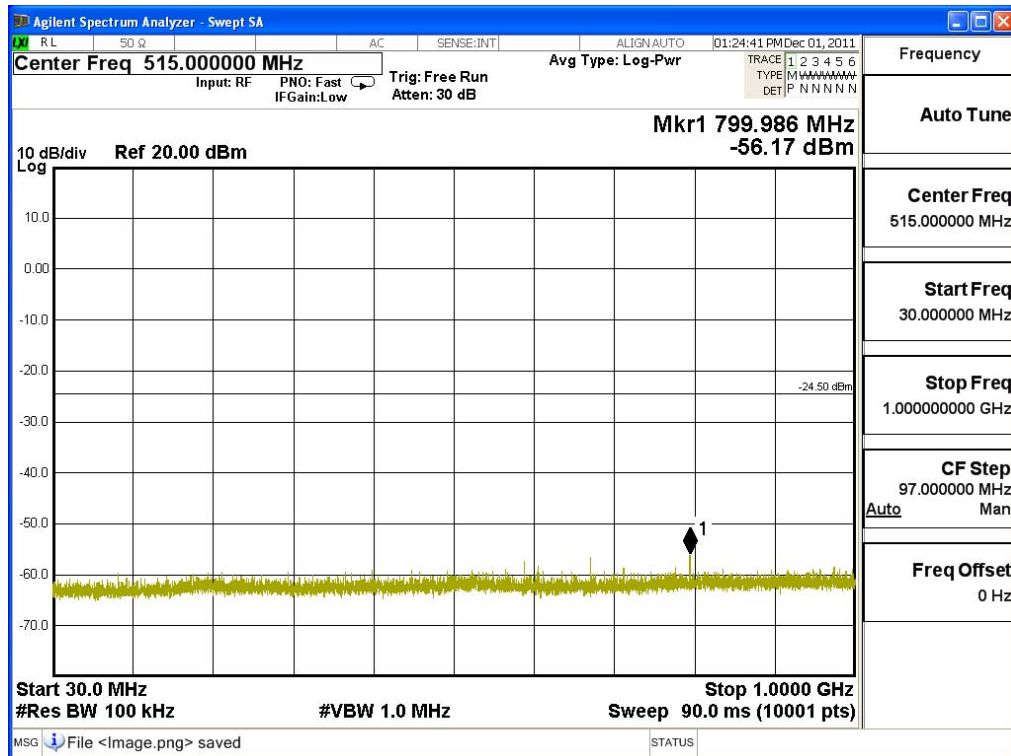
Product : Home Controller
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

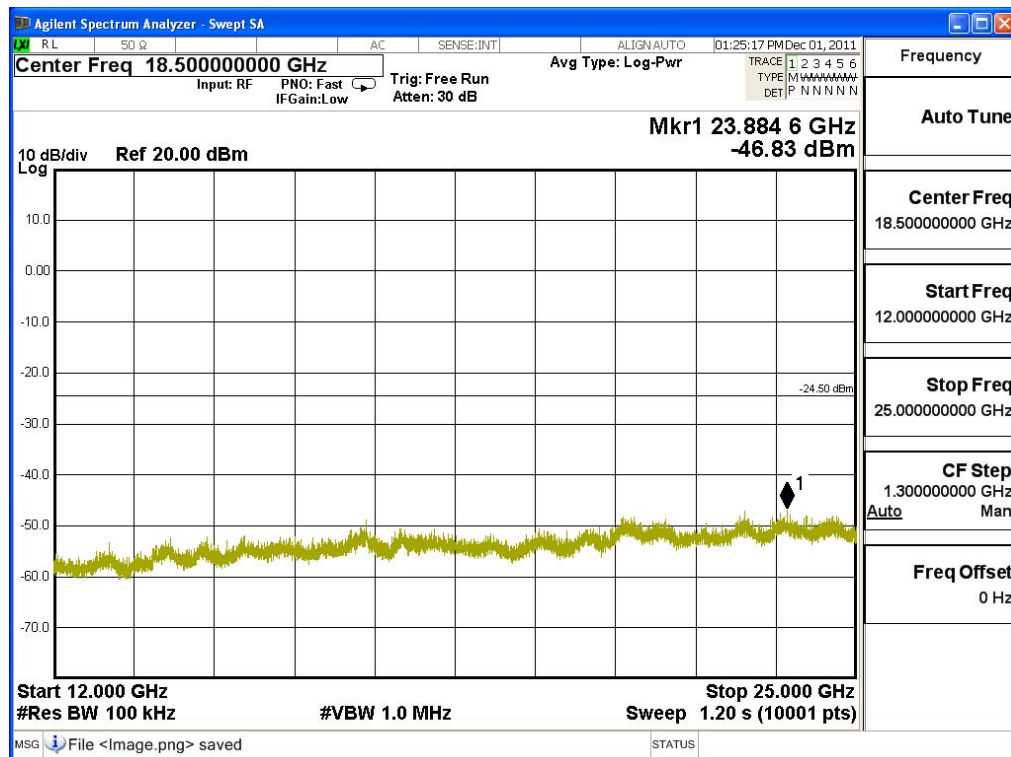
Channel 01 (2412MHz)



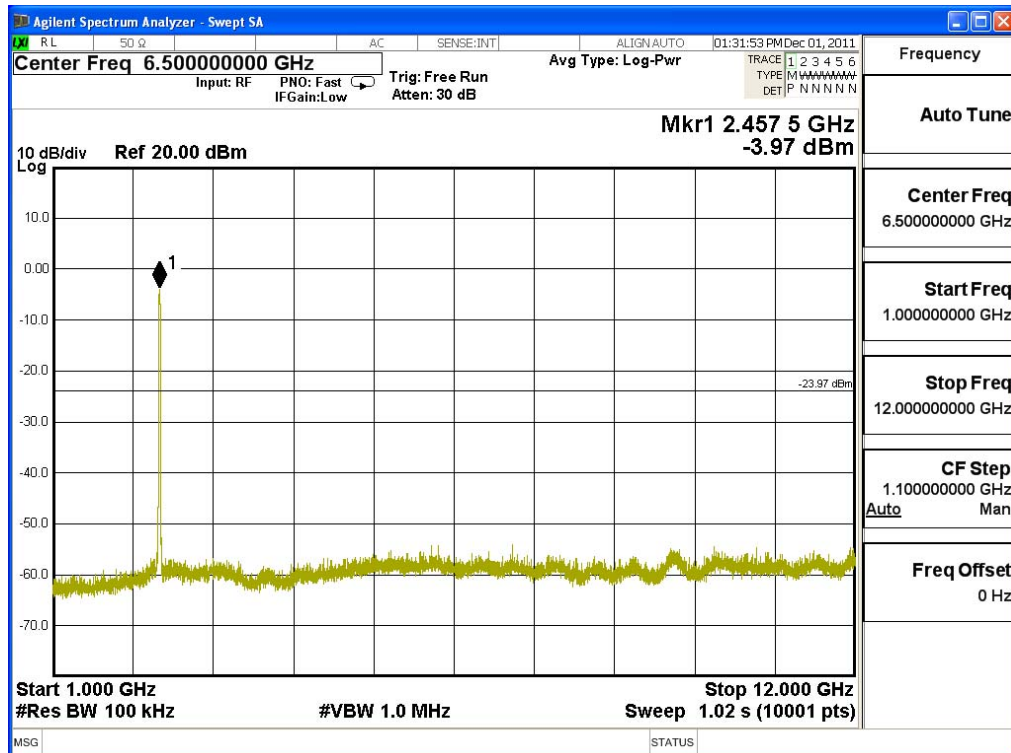
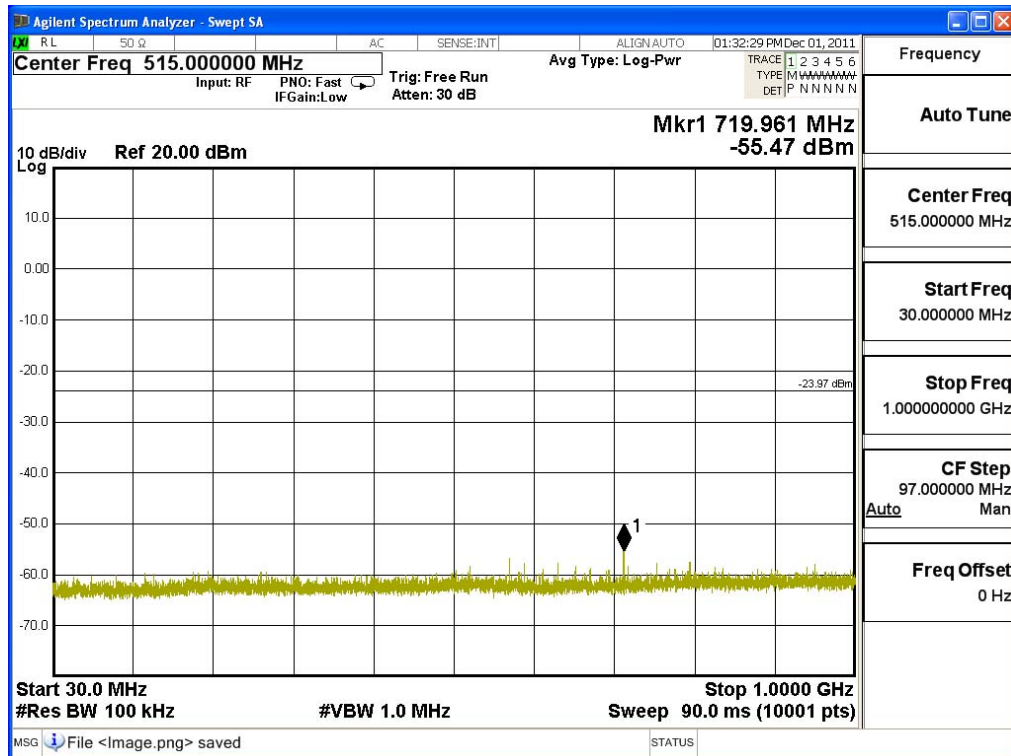


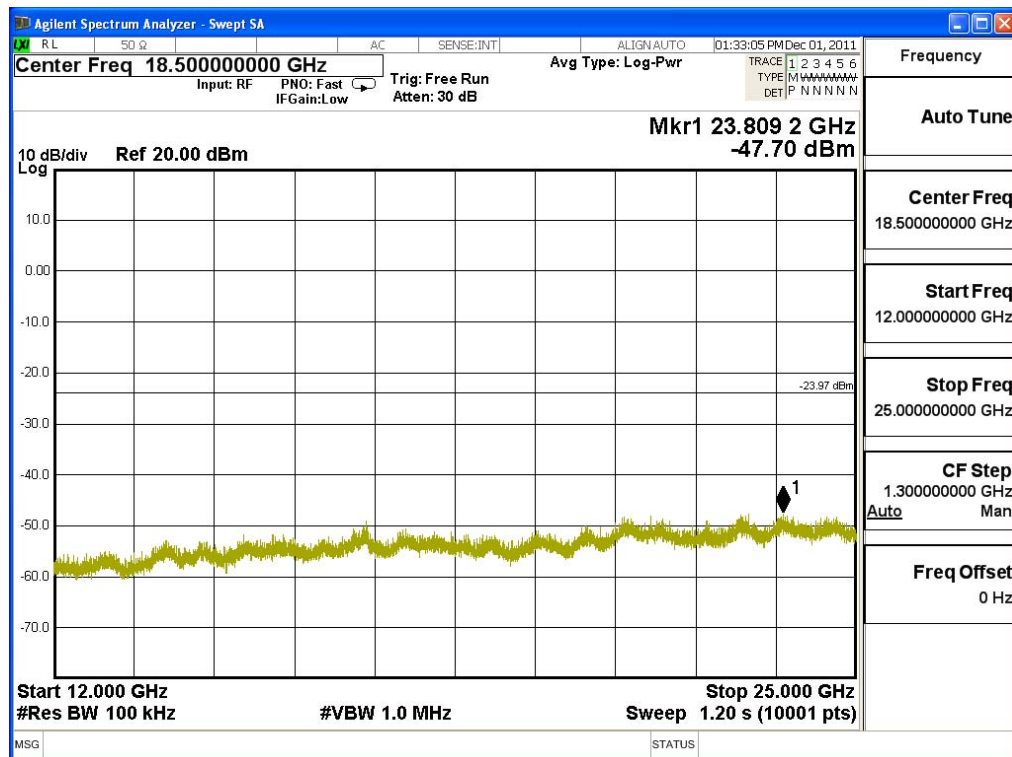
Channel 06 (2437MHz)





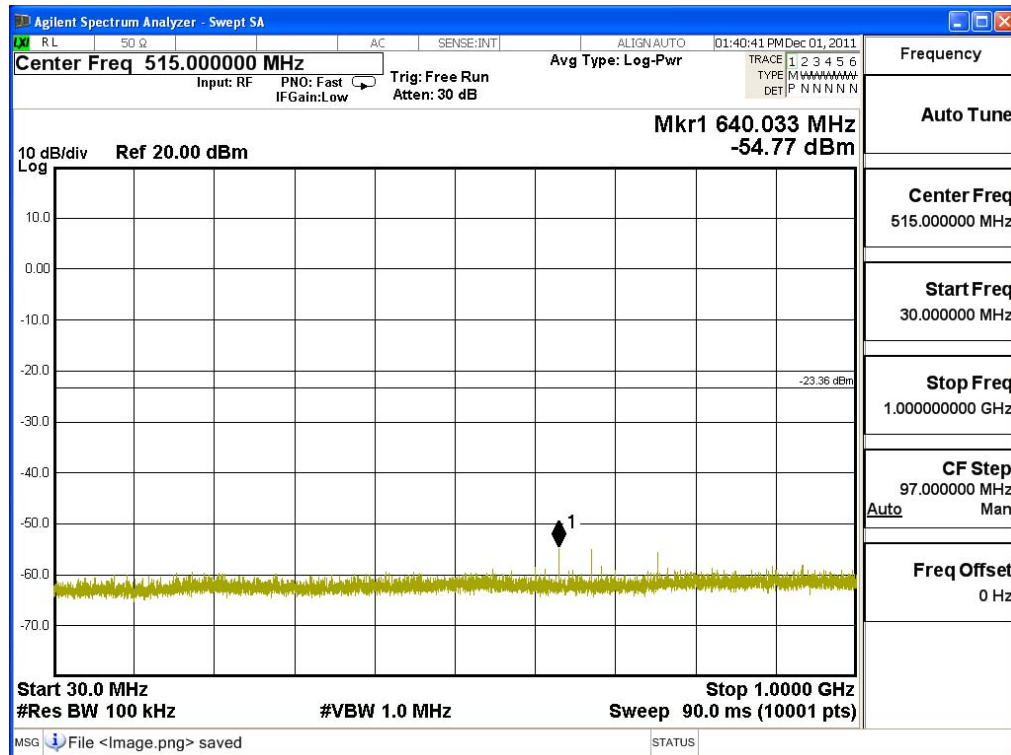
Channel 11 (2462MHz)

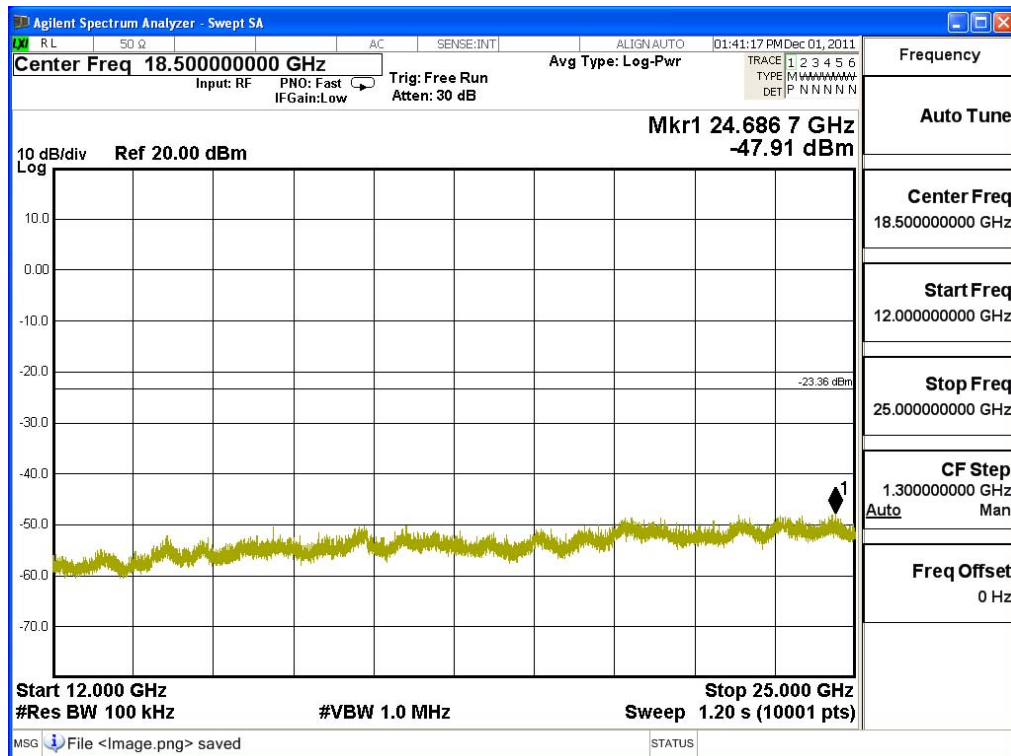
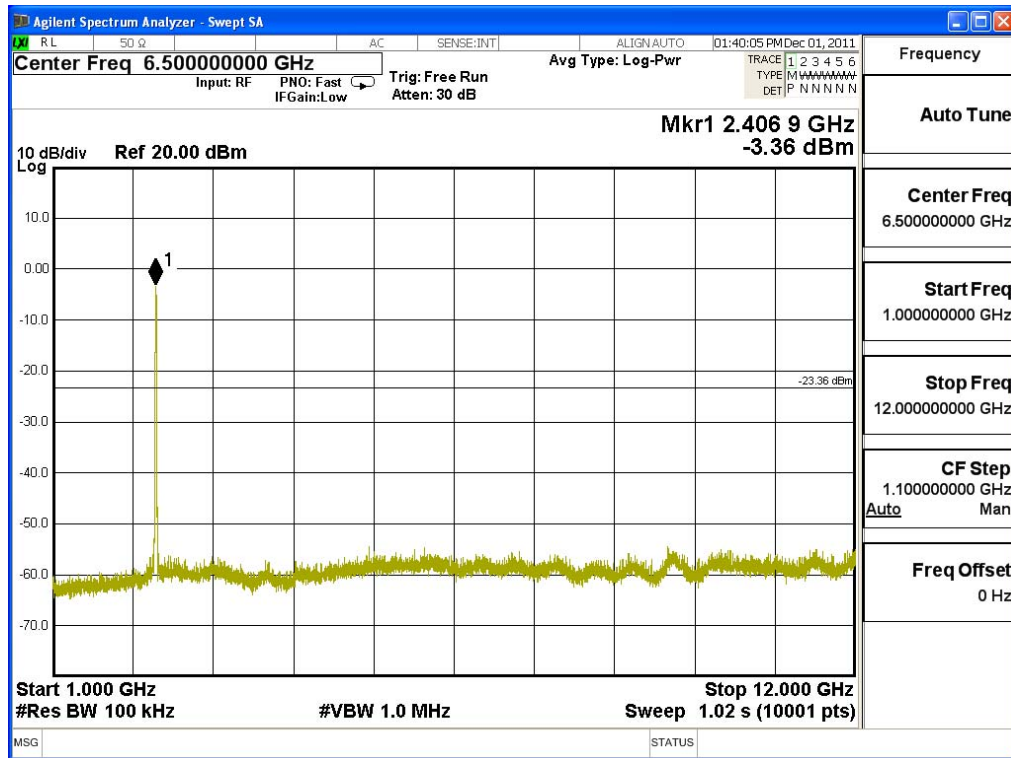




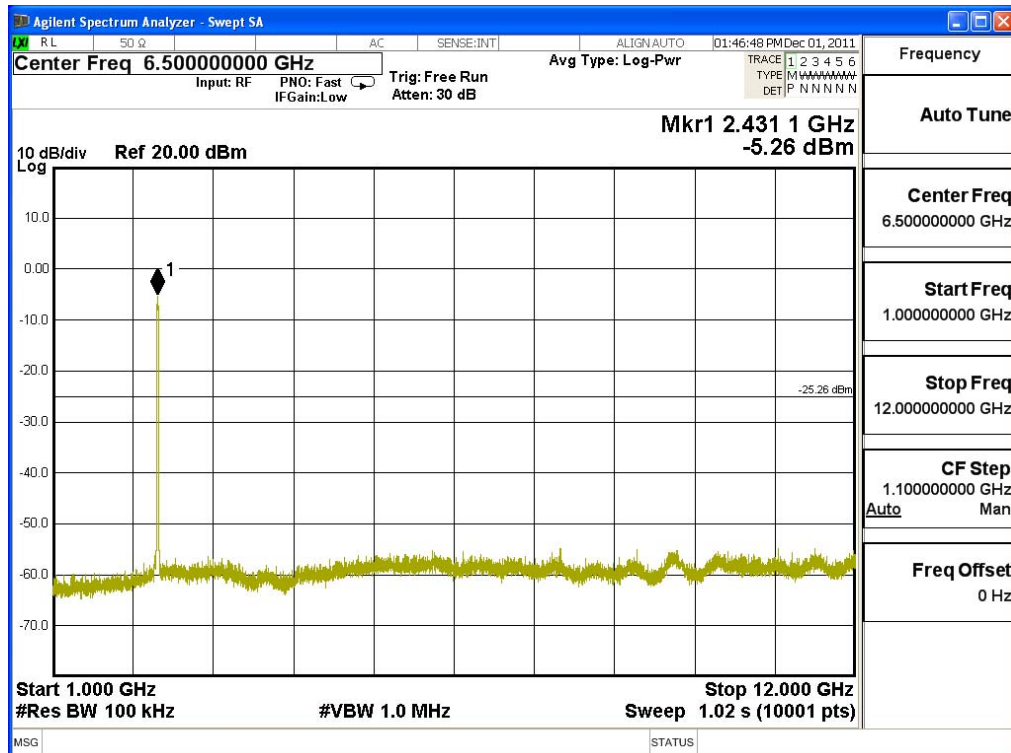
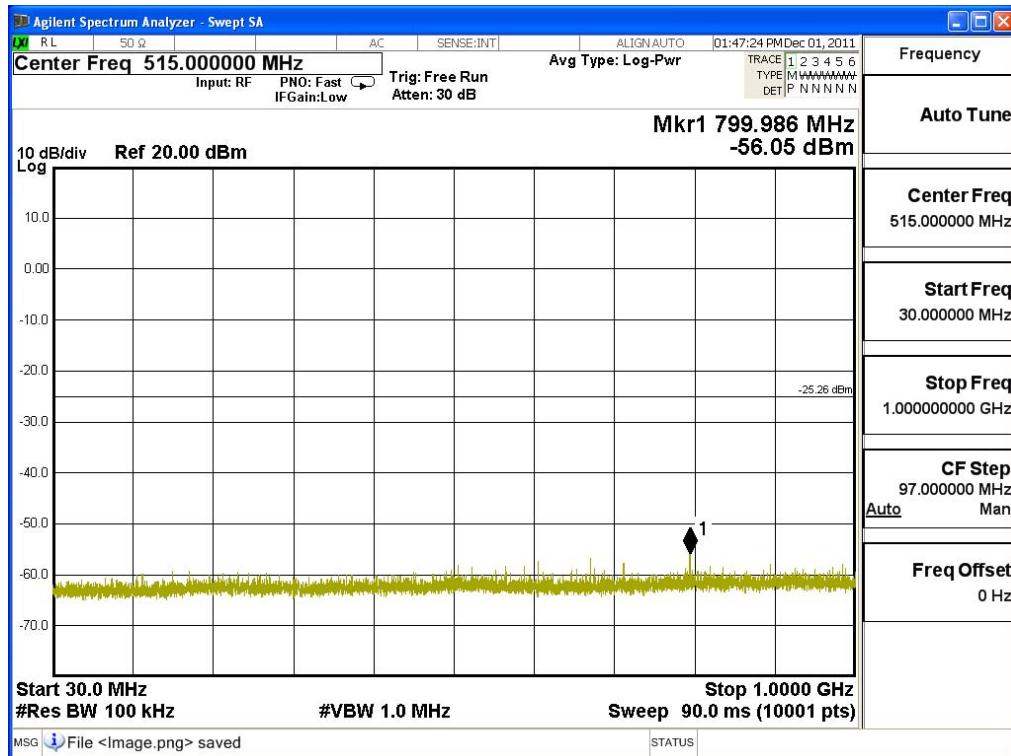
Product : Home Controller
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

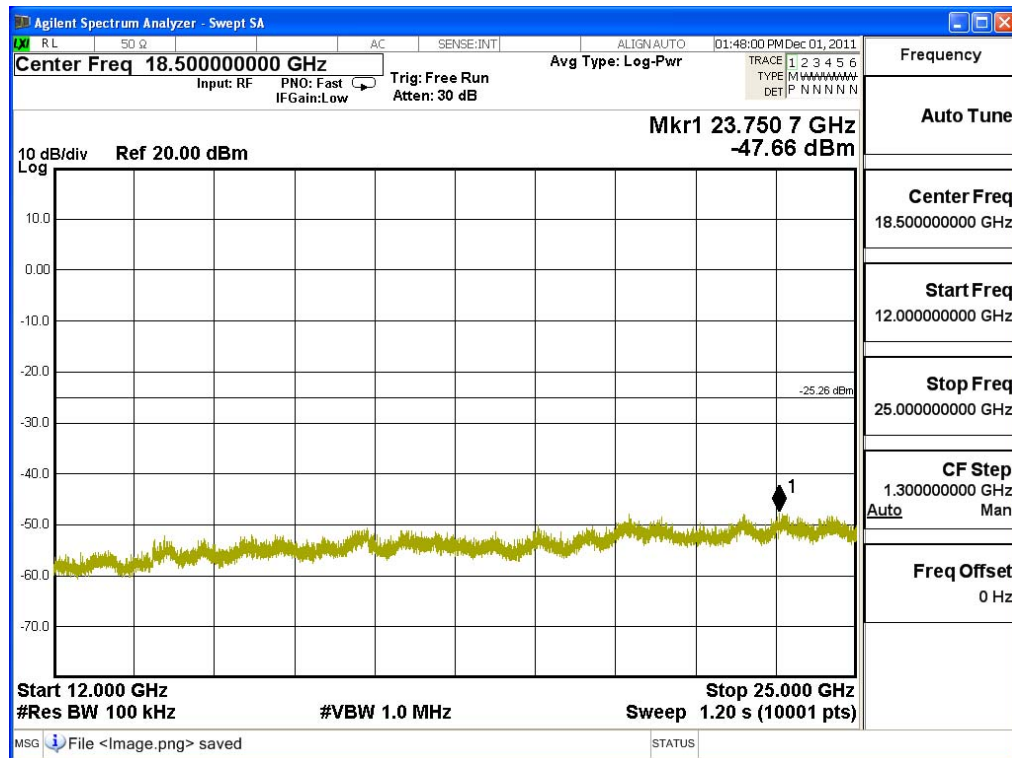
Channel 01 (2412MHz)



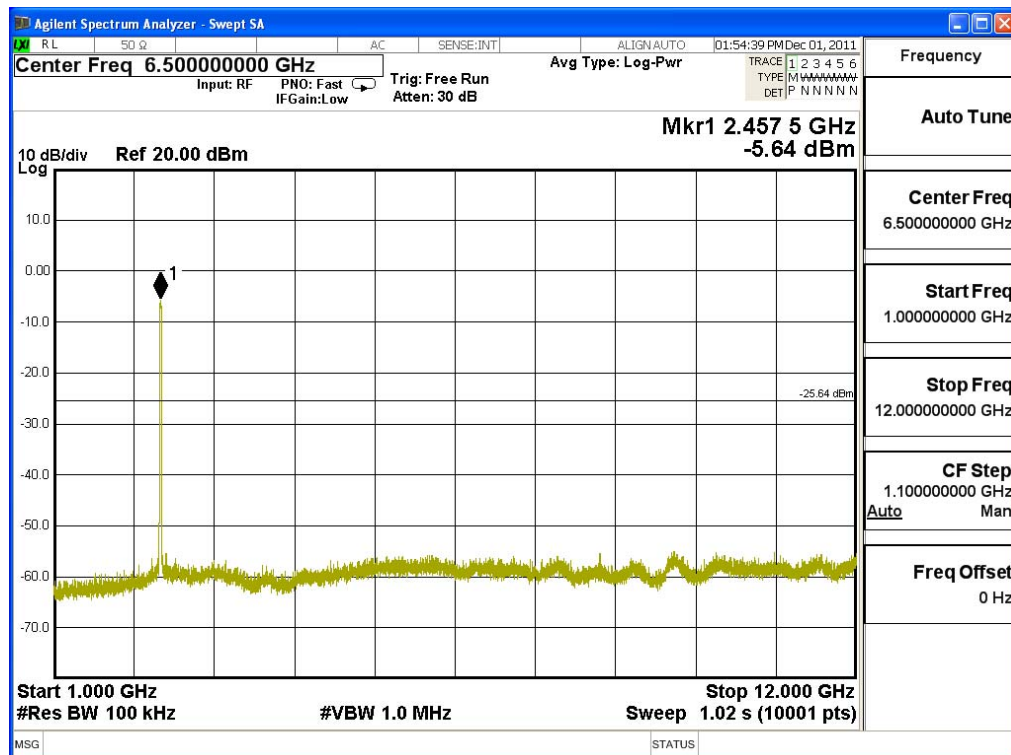
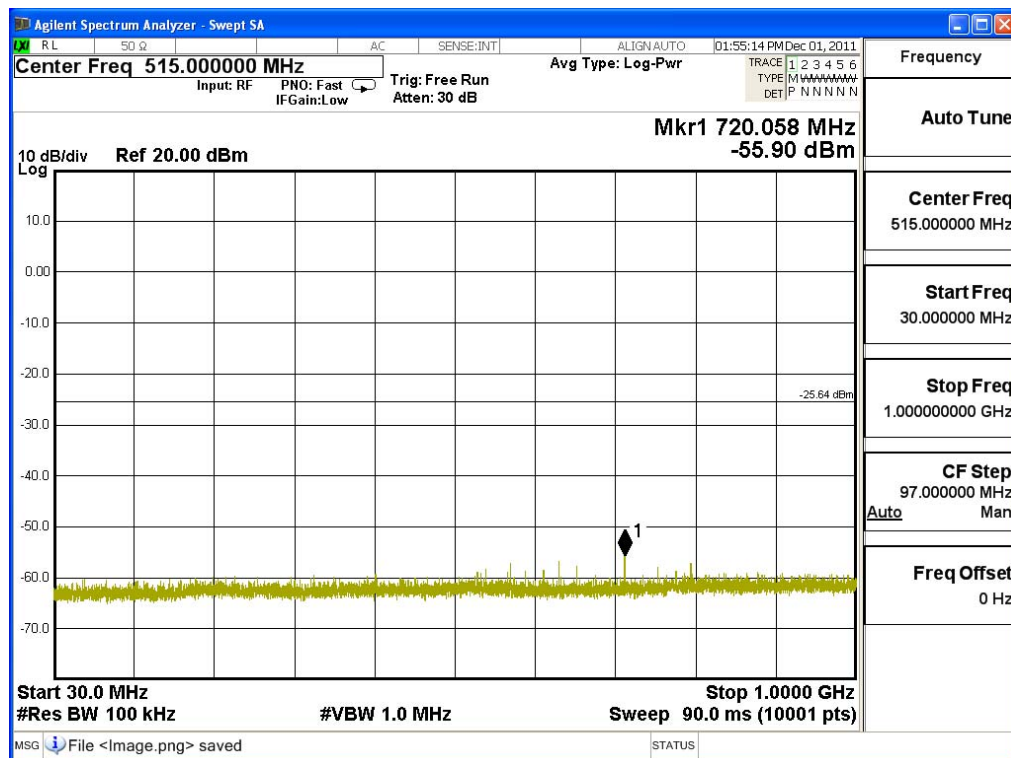


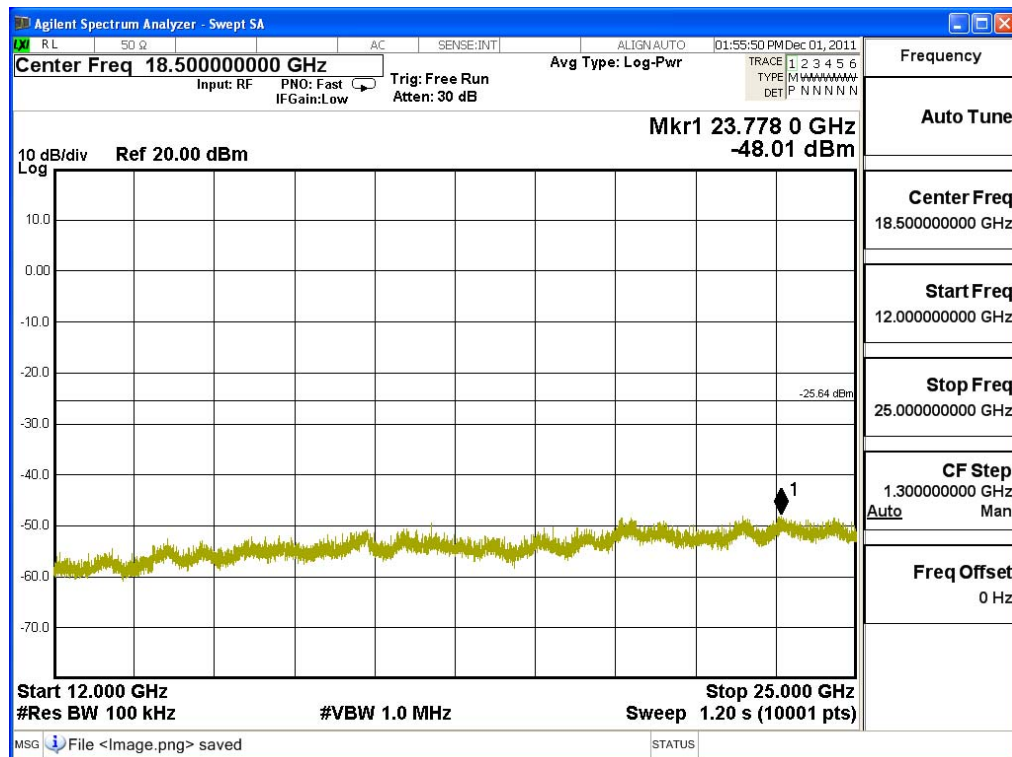
Channel 06 (2437MHz)





Channel 11 (2462MHz)





Product : Home Controller
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Channel 01 (2422MHz)

