

FC

Test Report

Product Name	802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
Model No	WN6508A
FCC ID.	PPQ-WN6508A

Applicant	LITE-ON TECHNOLOGY CORP.
Address	4F, 90, Chien 1 Road, Chung Ho, Taipei Hsien 235, Taiwan, R.O.C.

Date of Receipt	June 01, 2012
Issue Date	June 07, 2012
Report No.	126112R-RFUSP28V01
Report Version	V1.0



The test results relate only to the samples tested.

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Test Report Certification

Issue Date: June 07, 2012

Report No.: 126112R-RFUSP28V01

**Accredited by NIST (NVLAP)**

NVLAP Lab Code: 200533-0

Product Name	802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
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.	WN6508A
EUT Rated Voltage	DC 3.3V (Power by PCI Express)
EUT Test Voltage	AC 120V/60Hz
Trade Name	LITE-ON
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010 ANSI C63.4: 2003
Test Result	Complied

The test results relate only to the samples tested.

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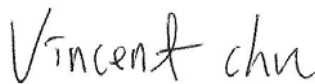
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Documented By :



(Senior Adm. Specialist / Genie Chang)

Tested By :



(Assistant Engineer / Vincent Chu)

Approved By :



(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
Trade Name	LITE-ON
Model No.	WN6508A
FCC ID.	PPQ-WN6508A
Frequency Range	802.11b/g/n-20MHz:2412-2462MHz,802.11n-40MHz:2422-2452MHz 802.11a/n-20MHz:5745-5825MHz ,802.11n-40MHz:5755-5795MHz
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7 802.11a/n-20MHz: 5, n-40MHz: 2
Data Speed	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps, 802.11n: up to 450Mbps
Channel separation	802.11b/g/n-20MHz: 5 MHz, 802.11a/n-20MHz: 20MHz 802.11n-40MHz: 40MHz
Type of Modulation	802.11b:DSSS DBPSK, DQPSK, CCK 802.11a/g/n: OFDM BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Dipole
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	TONGYU	TT-245802-601	2.15dBi in 2.4GHz 3.00dBi in 5.725~5.850GHz

Note: The antenna of EUT is conform to FCC 15.203

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

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

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

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

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

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

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

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

Note:

1. This device is a 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module with a built-in 2.4GHz and 5GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps 、802.11g is 6Mbps 、802.11n(20M-BW) is 21.7Mbps and 、802.11n(40M-BW) is 45Mbps).
4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11a/b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit - 802.11a 6Mbps
	Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band)
	Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band)
	Mode 6: Transmit - 802.11n-20BW_21.7Mbps(5G Band)
	Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band)

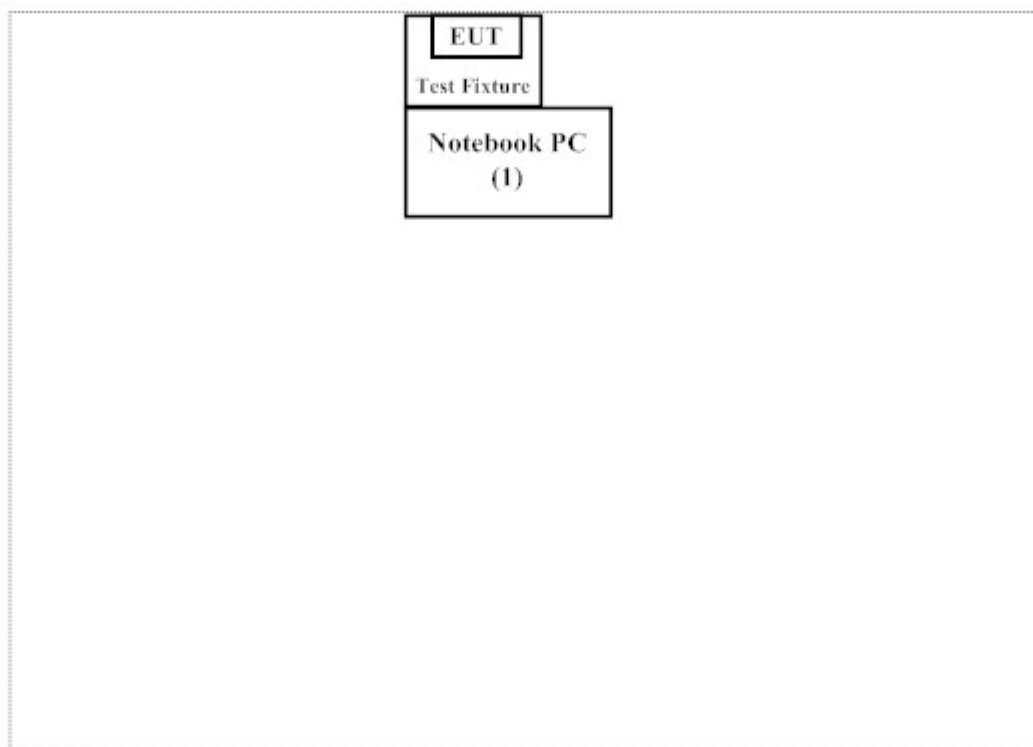
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
(1) Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
(2) Test Fixture	LITE-ON	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
N/A	

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute "Art2.exe" program on the Notebook
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press "OK" to start the continuous transmission.
- (5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from

Quietek Corporation's Web Site : <http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web

site : <http://www.quietek.com/>

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

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation
Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
Lin-Kou Shiang, Taipei,
Taiwan, R.O.C.
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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

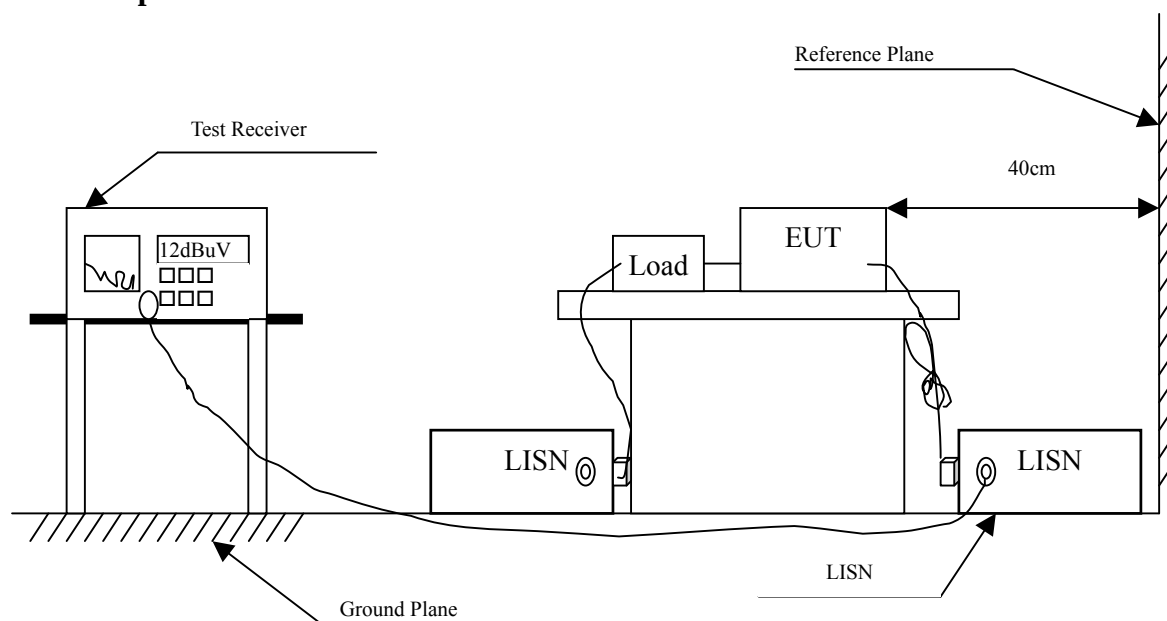
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2011	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2012	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2012	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2012	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2012	
	No.1 Shielded Room				

Note:

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

2.2. Test Setup



2.3. Limits

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

2.4. Test Procedure

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

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

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 1					
Quasi-Peak					
0.181	9.699	34.800	44.499	-20.615	65.114
0.271	9.649	31.440	41.089	-21.454	62.543
0.498	9.640	18.440	28.080	-27.977	56.057
0.572	9.640	13.120	22.760	-33.240	56.000
0.771	9.658	25.490	35.148	-20.852	56.000
26.795	9.970	7.130	17.100	-42.900	60.000
Average					
0.181	9.699	16.760	26.459	-28.655	55.114
0.271	9.649	27.110	36.759	-15.784	52.543
0.498	9.640	8.320	17.960	-28.097	46.057
0.572	9.640	2.840	12.480	-33.520	46.000
0.771	9.658	22.440	32.098	-13.902	46.000
26.795	9.970	0.180	10.150	-39.850	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band) (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level	dB	dBuV
	dB	dBuV	dBuV		
Line 2					
Quasi-Peak					
0.173	9.710	27.730	37.440	-27.903	65.343
0.189	9.694	25.510	35.204	-29.682	64.886
0.232	9.665	20.290	29.955	-33.702	63.657
0.775	9.679	19.160	28.839	-27.161	56.000
1.291	9.690	18.770	28.460	-27.540	56.000
17.404	10.030	8.390	18.420	-41.580	60.000
Average					
0.173	9.710	15.240	24.950	-30.393	55.343
0.189	9.694	7.060	16.754	-38.132	54.886
0.232	9.665	14.110	23.775	-29.882	53.657
0.775	9.679	15.310	24.989	-21.011	46.000
1.291	9.690	11.540	21.230	-24.770	46.000
17.404	10.030	1.320	11.350	-38.650	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band) (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.177	9.702	32.480	42.182	-23.047	65.229
0.259	9.653	30.010	39.663	-23.223	62.886
0.423	9.640	18.930	28.570	-29.630	58.200
0.548	9.640	21.450	31.090	-24.910	56.000
0.775	9.659	25.320	34.979	-21.021	56.000
1.201	9.670	21.110	30.780	-25.220	56.000
Average					
0.177	9.702	15.970	25.672	-29.557	55.229
0.259	9.653	16.260	25.913	-26.973	52.886
0.423	9.640	11.190	20.830	-27.370	48.200
0.548	9.640	14.530	24.170	-21.830	46.000
0.775	9.659	24.040	33.699	-12.301	46.000
1.201	9.670	14.210	23.880	-22.120	46.000

Note:

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

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band) (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.220	9.673	27.410	37.083	-26.917	64.000
0.267	9.651	23.920	33.571	-29.086	62.657
0.384	9.650	20.690	30.340	-28.974	59.314
0.548	9.650	18.490	28.140	-27.860	56.000
0.775	9.679	22.060	31.739	-24.261	56.000
1.095	9.690	14.920	24.610	-31.390	56.000
Average					
0.220	9.673	23.500	33.173	-20.827	54.000
0.267	9.651	14.640	24.291	-28.366	52.657
0.384	9.650	12.050	21.700	-27.614	49.314
0.548	9.650	10.170	19.820	-26.180	46.000
0.775	9.679	15.970	25.649	-20.351	46.000
1.095	9.690	7.450	17.140	-28.860	46.000

Note:

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

3. Peak Power Output

3.1. Test Equipment

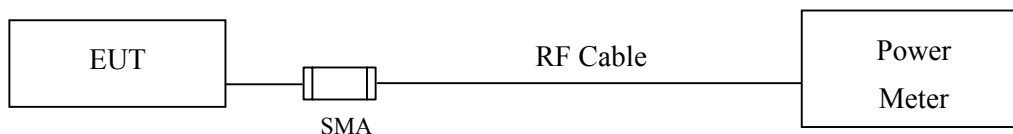
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2012
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2012
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
	Spectrum Analyzer	Agilent	N9010A / MY48030495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

Note:

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

3.2. Test Setup

Average Power For different Data Rate (Mbps)



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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	20.57	--	--	--	22.81	<30dBm	Pass
06	2437	20.47	20.44	20.43	20.41	22.69	<30dBm	Pass
11	2462	20	--	--	--	22.31	<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

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	16.62	--	--	--	--	--	--	--	24.88	<30dBm	Pass
06	2437	18	17.95	17.92	17.89	17.87	17.85	17.83	17.8	25.66	<30dBm	Pass
11	2462	15.22	--	--	--	--	--	--	--	24.24	<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

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
149	5745	17.12	--	--	--	--	--	--	--	23.19	<30dBm	Pass
157	5785	17.4	17.38	17.37	17.36	17.36	17.34	17.31	17.31	22.94	<30dBm	Pass
165	5825	17.41	--	--	--	--	--	--	--	22.64	<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

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		21.7	43.3	65	86.7	130	173.3	195	216.7	
		Measurement Level (dBm)								
01	2412	13.97	--	--	--	--	--	--	--	23.63
06	2437	15.21	15.2	15.19	15.17	15.15	15.13	15.12	15.1	24.04
11	2462	13.21	--	--	--	--	--	--	--	23.05

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		21.7	43.3	65	86.7	130	173.3	195	216.7	21.7
		Measurement Level (dBm)								
01	2412	13.56	--	--	--	--	--	--	--	23.13
06	2437	14.7	14.69	14.66	14.65	14.64	14.63	14.62	14.6	23.67
11	2462	12.31	--	--	--	--	--	--	--	22.08

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

CHAIN C

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		21.7	43.3	65	86.7	130	173.3	195	216.7	
		Measurement Level (dBm)								
01	2412	13.2	--	--	--	--	--	--	--	22.75
06	2437	14.56	14.55	14.54	14.51	14.5	14.49	14.47	14.46	23.67
11	2462	12.1	--	--	--	--	--	--	--	22.26

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

CHAIN A+B+C

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Chain A+B+C Power (dBm)	Limit (dBm)	Result
1	2412	HT8	23.63	23.13	22.75	27.96	<30dBm	Pass
6	2437	HT8	24.04	23.67	23.67	28.57	<30dBm	Pass
11	2462	HT8	23.05	22.08	22.26	27.26	<30dBm	Pass

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

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		45	90	135	180	270	360	405	450	45
		Measurement Level (dBm)								
3	2422	13.3	--	--	--	--	--	--	--	23.01
6	2437	15.86	15.75	15.62	15.58	15.46	15.38	15.29	15.18	24.4
9	2452	11.64	--	--	--	--	--	--	--	21.89

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		45	90	135	180	270	360	405	450	45
		Measurement Level (dBm)								
3	2422	12.77	--	--	--	--	--	--	--	22.39
6	2437	14.91	14.9	14.88	14.87	14.85	14.84	14.82	14.8	23.65
9	2452	10.38	--	--	--	--	--	--	--	21.07

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

CHAIN C

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		45	90	135	180	270	360	405	450	45
		Measurement Level (dBm)								
3	2422	12.42	--	--	--	--	--	--	--	22.17
6	2437	14.5	14.48	14.47	14.46	14.44	14.43	14.4	14.39	23.36
9	2452	10.75	--	--	--	--	--	--	--	21.02

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

CHAIN A+B+C

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Chain A+B+C Power (dBm)	Limit (dBm)	Result
3	2422	HT8	23.01	22.39	22.17	27.31	<30dBm	Pass
6	2437	HT8	24.40	23.65	23.36	28.60	<30dBm	Pass
9	2452	HT8	21.89	21.07	21.02	26.12	<30dBm	Pass

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

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_21.7Mbps(5G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		21.7	43.3	65	86.7	130	173.3	195	216.7	21.7
		Measurement Level (dBm)								
149	5745	16.47	--	--	--	--	--	--	--	22.73
157	5785	16.39	16.38	16.37	16.35	16.34	16.32	16.32	16.3	22.61
165	5825	16.55	--	--	--	--	--	--	--	22.31

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		21.7	43.3	65	86.7	130	173.3	195	216.7	21.7
		Measurement Level (dBm)								
149	5745	16.96	--	--	--	--	--	--	--	22.14
157	5785	17.11	17.1	17.09	17.08	17.05	17.05	17.03	17.02	21.99
165	5825	16.4	--	--	--	--	--	--	--	22.51

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

CHAIN C

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		21.7	43.3	65	86.7	130	173.3	195	216.7	
		Measurement Level (dBm)								
149	5745	17.28	--	--	--	--	--	--	--	22.64
157	5785	17.42	17.4	17.39	17.38	17.35	17.33	17.33	17.31	22.12
165	5825	17.04	--	--	--	--	--	--	--	22.12

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

CHAIN A+B+C

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Chain A+B+C Power (dBm)	Limit (dBm)	Result
149	5745	HT8	22.73	22.14	22.64	27.28	<30dBm	Pass
157	5785	HT8	22.61	21.99	22.12	27.02	<30dBm	Pass
165	5825	HT8	22.31	22.51	22.12	27.09	<30dBm	Pass

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

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band)

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		45	90	135	180	270	360	405	450	45
		Measurement Level (dBm)								
151	5755	15.45	--	--	--	--	--	--	--	22.73
159	5795	15.72	15.7	15.69	15.67	15.66	15.64	15.62	15.61	22.49

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		45	90	135	180	270	360	405	450	45
		Measurement Level (dBm)								
151	5755	16.51	--	--	--	--	--	--	--	22.2
159	5795	16.42	16.41	16.39	16.37	16.36	16.34	16.33	16.31	22.01

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

CHAIN C

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power
		45	90	135	180	270	360	405	450	
		Measurement Level (dBm)								
151	5755	16.25	--	--	--	--	--	--	--	22.35
159	5795	16.44	16.42	16.41	16.39	16.38	16.36	16.35	16.33	22.24

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

CHAIN A+B+C

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain C Power (dBm)	Chain A+B+C Power (dBm)	Limit (dBm)	Result
151	5755	HT8	22.73	22.20	22.35	27.20	<30dBm	Pass
159	5795	HT8	22.49	22.01	22.24	27.02	<30dBm	Pass

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

4. Radiated Emission

4.1. Test Equipment

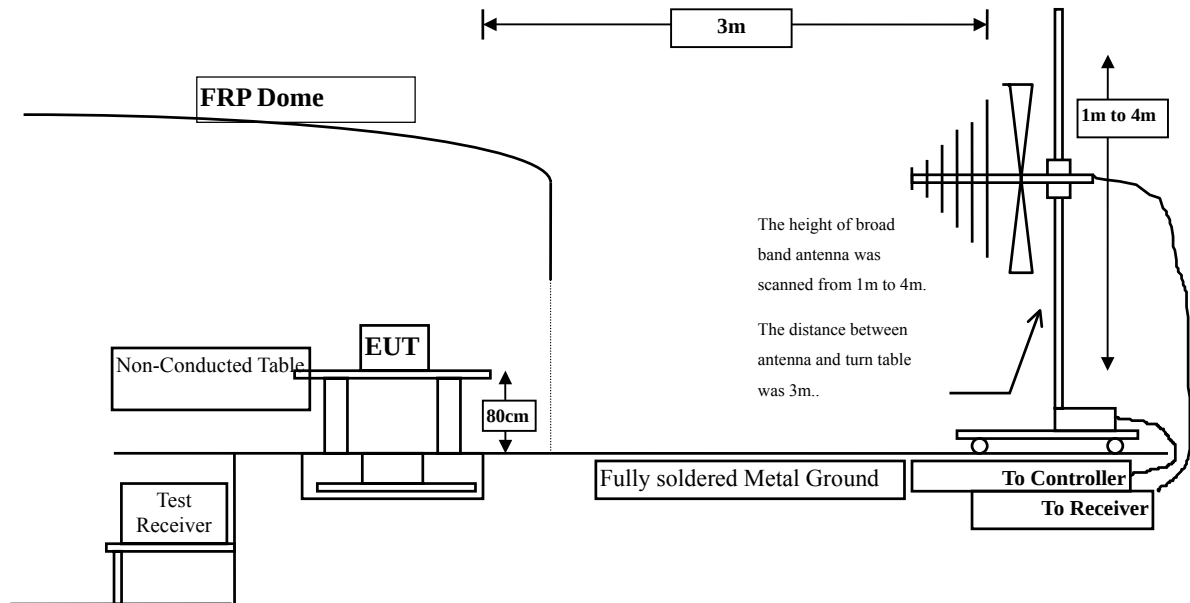
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2011
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2012
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2011
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 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

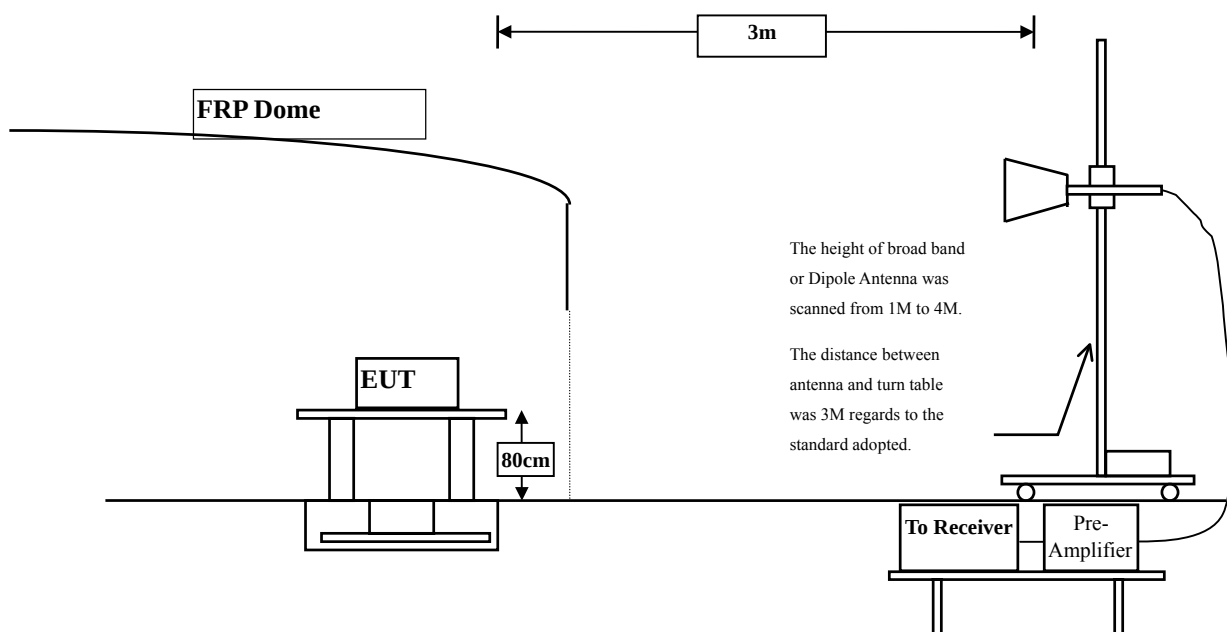
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

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 measurement frequency range from 30MHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	0.428	40.380	40.809	-33.191	74.000
7236.000	7.177	38.350	45.527	-28.473	74.000
9648.000	8.019	38.820	46.840	-27.160	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	0.836	47.040	47.877	-26.123	74.000
7236.000	7.676	41.700	49.376	-24.624	74.000
9648.000	8.556	36.050	44.607	-29.393	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	33.171	38.920	38.997	-35.003	74.000
7311.000	38.753	36.540	44.052	-29.948	74.000
9748.000	39.562	38.070	45.700	-28.300	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	47.460	47.992	-26.008	74.000
7311.000	8.089	39.590	47.679	-26.321	74.000
9748.000	8.266	38.160	46.427	-27.573	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	0.191	38.310	38.501	-35.499	74.000
7386.000	8.373	37.770	46.144	-27.856	74.000
9848.000	7.964	38.260	46.224	-27.776	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	47.550	48.355	-25.645	74.000
7386.000	9.180	38.710	47.890	-26.110	74.000
9848.000	8.801	38.680	47.481	-26.519	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

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

Horizontal

Peak Detector:

4824.000	0.428	40.570	40.999	-33.001	74.000
7236.000	7.177	37.970	45.147	-28.853	74.000
9648.000	8.019	38.300	46.320	-27.680	74.000

Average

Detector:

--

Vertical

Peak Detector:

4824.000	0.836	44.120	44.957	-29.043	74.000
7236.000	7.676	38.790	46.466	-27.534	74.000
9648.000	8.556	38.300	46.857	-27.143	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	0.076	43.100	43.177	-30.823	74.000
7311.000	7.512	38.330	45.842	-28.158	74.000
9748.000	7.630	38.180	45.810	-28.190	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4874.000	0.532	50.030	50.562	-23.438	74.000
7311.000	8.089	39.780	47.869	-26.131	74.000
9748.000	8.266	39.740	48.007	-25.993	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	0.191	40.130	40.321	-33.679	74.000
7386.000	8.373	38.060	46.434	-27.566	74.000
9848.000	7.964	38.290	46.254	-27.746	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	42.250	43.055	-30.945	74.000
7386.000	9.180	38.210	47.390	-26.610	74.000
9848.000	8.801	38.320	47.121	-26.879	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5745 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	17.106	40.750	57.857	-16.143	74.000
Average					
Detector:					
11490.000	17.106	25.620	42.727	-11.273	54.000
Vertical					
Peak Detector:					
11490.000	18.034	44.850	62.885	-11.115	74.000
Average					
Detector:					
11490.000	18.034	28.990	47.025	-6.975	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	16.809	45.750	62.559	-11.441	74.000
Average					
Detector:					
11570.000	16.809	29.420	46.229	-7.771	54.000
Vertical					
Peak Detector:					
11570.000	17.698	45.170	62.868	-11.132	74.000
Average					
Detector:					
11570.000	17.698	29.950	47.648	-6.352	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5825 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11650.000	16.158	46.590	62.748	-11.252	74.000
Average					
Detector:					
11650.000	16.158	29.900	46.058	-7.942	54.000
Vertical					
Peak Detector:					
11650.000	17.274	48.220	65.495	-8.505	74.000
Average					
Detector:					
11650.000	17.274	31.480	48.755	-5.245	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band) (2412MHz)

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

Horizontal

Peak Detector:

4824.000	0.428	40.240	40.669	-33.331	74.000
7236.000	7.177	38.010	45.187	-28.813	74.000
9648.000	8.019	38.890	46.910	-27.090	74.000

Average

Detector:

--

Vertical

Peak Detector:

4824.000	0.836	41.670	42.507	-31.493	74.000
7236.000	7.676	38.590	46.266	-27.734	74.000
9648.000	8.556	37.670	46.227	-27.773	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band) (2437 MHz)

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

Horizontal

Peak Detector:

4874.000	0.076	40.870	40.947	-33.053	74.000
7311.000	7.512	38.120	45.632	-28.368	74.000
9748.000	7.630	38.590	46.220	-27.780	74.000

Average

Detector:

--

Vertical

Peak Detector:

4874.000	0.532	47.540	48.072	-25.928	74.000
7311.000	8.089	38.980	47.069	-26.931	74.000
9748.000	8.266	38.630	46.897	-27.103	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band) (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	0.191	39.870	40.061	-33.939	74.000
7386.000	8.373	38.070	46.444	-27.556	74.000
9848.000	7.964	38.740	46.704	-27.296	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
4924.000	0.805	40.070	40.875	-33.125	74.000
7386.000	9.180	37.540	46.720	-27.280	74.000
9848.000	8.801	38.270	47.071	-26.929	74.000
Average					
Detector:					
--					

Note:

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

Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band) (2422MHz)

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

Horizontal

Peak Detector:

4844.000	0.280	40.340	40.621	-33.379	74.000
7266.000	7.106	38.610	45.716	-28.284	74.000
9688.000	7.663	37.990	45.653	-28.347	74.000

Average

Detector:

--

Vertical

Peak Detector:

4844.000	0.707	40.570	41.278	-32.722	74.000
7266.000	7.626	38.500	46.126	-27.874	74.000
9688.000	8.284	37.860	46.144	-27.856	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band) (2437 MHz)

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

Horizontal

Peak Detector:

4874.000	0.076	40.230	40.307	-33.693	74.000
7311.000	7.512	37.890	45.402	-28.598	74.000
9748.000	7.630	37.910	45.540	-28.460	74.000

Average

Detector:

--

Vertical

Peak Detector:

4874.000	0.532	41.920	42.452	-31.548	74.000
7311.000	8.089	38.350	46.439	-27.561	74.000
9748.000	8.266	38.430	46.697	-27.303	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band) (2452 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4904.000	0.000	38.230	38.231	-35.769	74.000
7356.000	8.308	35.940	44.248	-29.752	74.000
9808.000	7.850	35.720	43.570	-30.430	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4904.000	0.513	37.940	38.454	-35.546	74.000
7356.000	9.022	35.900	44.922	-29.078	74.000
9808.000	8.512	35.670	44.182	-29.818	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_21.7Mbps(5G Band) (5745MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	17.106	40.750	57.857	-16.143	74.000
Average					
Detector:					
11490.000	17.106	25.620	42.727	-11.273	54.000
Vertical					
Peak Detector:					
11490.000	18.034	44.850	62.885	-11.115	74.000
Average					
Detector:					
11490.000	18.034	28.990	47.025	-6.975	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_21.7Mbps(5G Band) (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	16.809	45.750	62.559	-11.441	74.000
Average					
Detector:					
11570.000	16.809	29.420	46.229	-7.771	54.000
Vertical					
Peak Detector:					
11570.000	17.698	45.170	62.868	-11.132	74.000
Average					
Detector:					
11570.000	17.698	29.950	47.648	-6.352	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_21.7Mbps(5G Band) (5825 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
11650.000	16.158	46.590	62.748	-11.252	74.000
Average Detector:					
11650.000	16.158	29.900	46.058	-7.942	54.000
Vertical					
Peak Detector:					
11650.000	17.274	48.220	65.495	-8.505	74.000
Average Detector:					
11650.000	17.274	31.480	48.755	-5.245	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band) (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	17.124	36.510	53.634	-20.366	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11510.000	18.081	43.270	61.351	-12.649	74.000
Average					
Detector:					
11510.000	18.081	27.660	45.741	-8.259	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band) (5795 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11590.000	16.701	36.890	53.590	-20.410	74.000
Average					
Detector:					
--					
Vertical					
Peak Detector:					
11590.000	17.567	45.640	63.206	-10.794	74.000
Average					
Detector:					
11590.000	17.567	29.590	47.156	-6.844	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
134.760	-7.473	46.152	38.679	-4.821	43.500
431.580	0.757	38.920	39.677	-6.323	46.000
538.280	3.316	37.563	40.879	-5.121	46.000
600.360	3.472	35.253	38.725	-7.275	46.000
798.240	6.409	32.973	39.381	-6.619	46.000
939.860	6.750	29.896	36.646	-9.354	46.000
Vertical					
111.480	-3.439	41.364	37.926	-5.574	43.500
299.660	-4.061	42.650	38.589	-7.411	46.000
666.320	-0.951	38.503	37.552	-8.448	46.000
796.300	2.639	35.500	38.139	-7.861	46.000
901.060	1.858	34.489	36.347	-9.653	46.000
957.320	3.015	32.621	35.636	-10.364	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
132.820	-7.442	44.734	37.292	-6.208	43.500
464.560	2.914	37.107	40.021	-5.979	46.000
526.640	3.112	38.522	41.634	-4.366	46.000
598.420	3.524	35.006	38.530	-7.470	46.000
800.180	6.417	31.970	38.387	-7.613	46.000
850.620	6.773	32.905	39.678	-6.322	46.000
Vertical					
179.380	-0.824	37.075	36.251	-7.249	43.500
299.660	-4.061	42.613	38.552	-7.448	46.000
664.380	-0.978	38.375	37.397	-8.603	46.000
798.240	2.629	35.334	37.962	-8.038	46.000
901.060	1.858	35.497	37.355	-8.645	46.000
957.320	3.015	30.868	33.883	-12.117	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps (5785MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
134.760	-7.473	45.851	38.378	-5.122	43.500
462.620	3.589	37.276	40.865	-5.135	46.000
598.420	3.524	35.198	38.722	-7.278	46.000
666.320	1.879	36.476	38.355	-7.645	46.000
800.180	6.417	33.109	39.526	-6.474	46.000
957.320	6.615	29.553	36.168	-9.832	46.000
Vertical					
111.480	-3.439	41.499	38.061	-5.439	43.500
299.660	-4.061	42.259	38.198	-7.802	46.000
666.320	-0.951	38.277	37.326	-8.674	46.000
796.300	2.639	35.926	38.565	-7.435	46.000
897.180	0.937	36.630	37.567	-8.433	46.000
957.320	3.015	31.693	34.708	-11.292	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
134.760	-7.473	45.366	37.893	-5.607	43.500
383.080	1.305	37.909	39.214	-6.786	46.000
524.700	3.140	37.739	40.879	-5.121	46.000
598.420	3.524	35.620	39.144	-6.856	46.000
831.220	7.121	31.915	39.036	-6.964	46.000
941.800	6.790	29.752	36.542	-9.458	46.000
Vertical					
134.760	-4.093	38.805	34.712	-8.788	43.500
299.660	-4.061	41.896	37.835	-8.165	46.000
598.420	1.114	34.180	35.294	-10.706	46.000
802.120	2.966	35.540	38.506	-7.494	46.000
877.780	0.847	39.342	40.189	-5.811	46.000
965.080	3.832	31.543	35.375	-18.625	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 5: Transmit - 802.11n-40BW_45Mbps(2.4G Band) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
134.760	-7.473	45.329	37.856	-5.644	43.500
450.980	0.835	41.022	41.857	-4.143	46.000
524.700	3.140	38.312	41.452	-4.548	46.000
600.360	3.472	36.240	39.712	-6.288	46.000
831.220	7.121	31.940	39.061	-6.939	46.000
959.260	6.640	29.877	36.517	-9.483	46.000
Vertical					
88.200	-4.076	37.627	33.551	-9.949	43.500
297.720	-4.356	43.001	38.645	-7.355	46.000
600.360	1.302	33.780	35.082	-10.918	46.000
800.180	2.637	34.786	37.423	-8.577	46.000
897.180	0.937	35.841	36.778	-9.222	46.000
965.080	3.832	33.634	37.466	-16.534	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 6: Transmit - 802.11n-20BW_21.7Mbps(5G Band) (5785 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
134.760	-7.473	45.210	37.737	-5.763	43.500
365.620	0.382	42.174	42.556	-3.444	46.000
536.340	3.239	37.783	41.022	-4.978	46.000
800.180	6.417	31.655	38.072	-7.928	46.000
833.160	6.616	33.366	39.982	-6.018	46.000
955.380	6.596	30.199	36.795	-9.205	46.000
Vertical					
111.480	-3.439	40.500	37.062	-6.438	43.500
299.660	-4.061	41.931	37.870	-8.130	46.000
359.800	-1.316	37.850	36.534	-9.466	46.000
598.420	1.114	33.735	34.849	-11.151	46.000
796.300	2.639	34.991	37.630	-8.370	46.000
957.320	3.015	32.241	35.256	-10.744	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 : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 7: Transmit - 802.11n-40BW_45Mbps(5G Band) (5755MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
134.760	-7.473	45.597	38.124	-5.376	43.500
359.800	-0.226	41.537	41.311	-4.689	46.000
460.680	4.030	35.894	39.924	-6.076	46.000
600.360	3.472	36.160	39.632	-6.368	46.000
854.500	7.380	32.122	39.502	-6.498	46.000
930.160	7.530	30.408	37.938	-8.062	46.000
Vertical					
111.480	-3.439	41.112	37.674	-5.826	43.500
299.660	-4.061	42.357	38.296	-7.704	46.000
600.360	1.302	33.112	34.414	-11.586	46.000
664.380	-0.978	38.036	37.058	-8.942	46.000
796.300	2.639	35.199	37.838	-8.162	46.000
901.060	1.858	35.042	36.900	-9.100	46.000

Note:

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

5. RF antenna conducted test

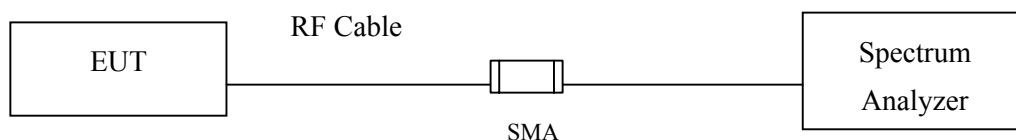
5.1. Test Equipment

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

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

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 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

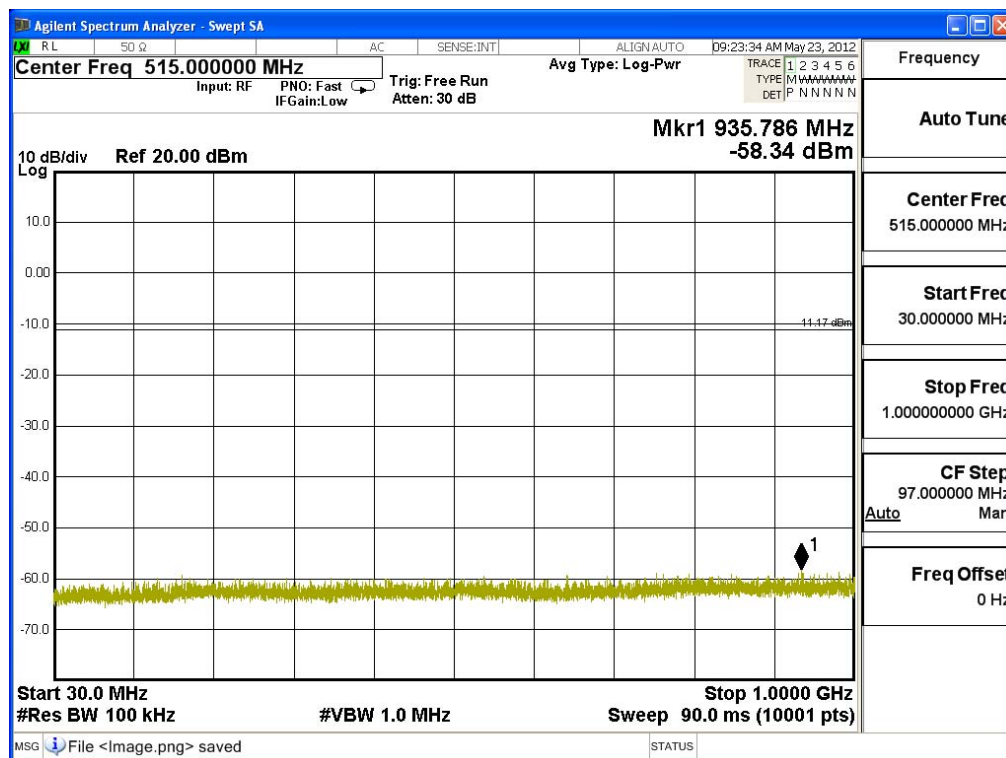
The measurement uncertainty

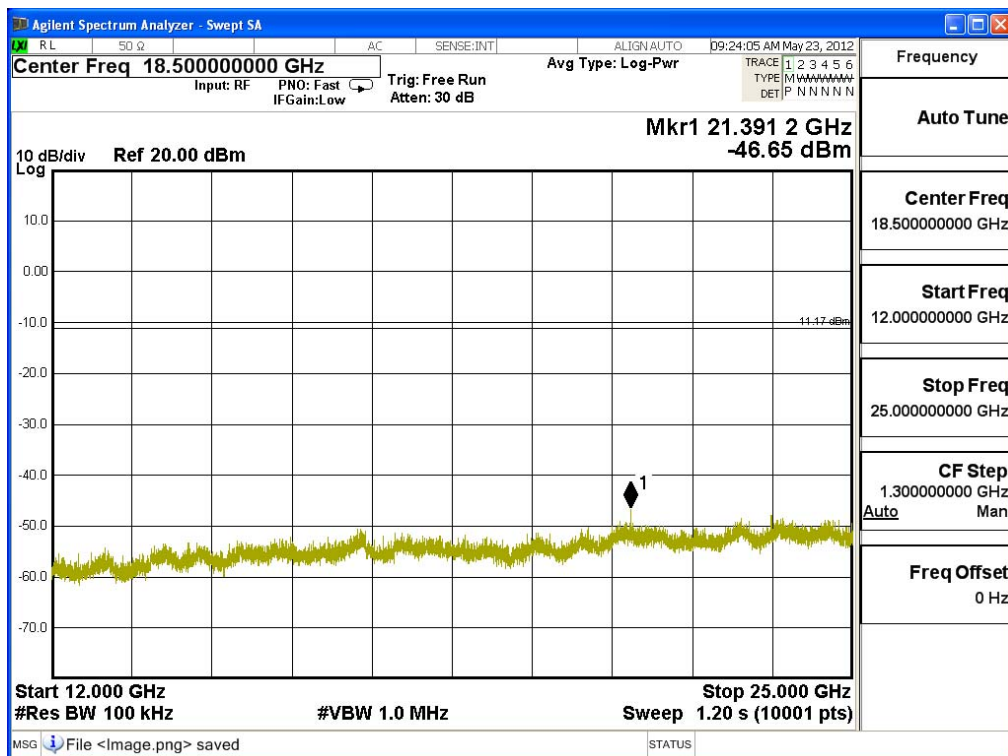
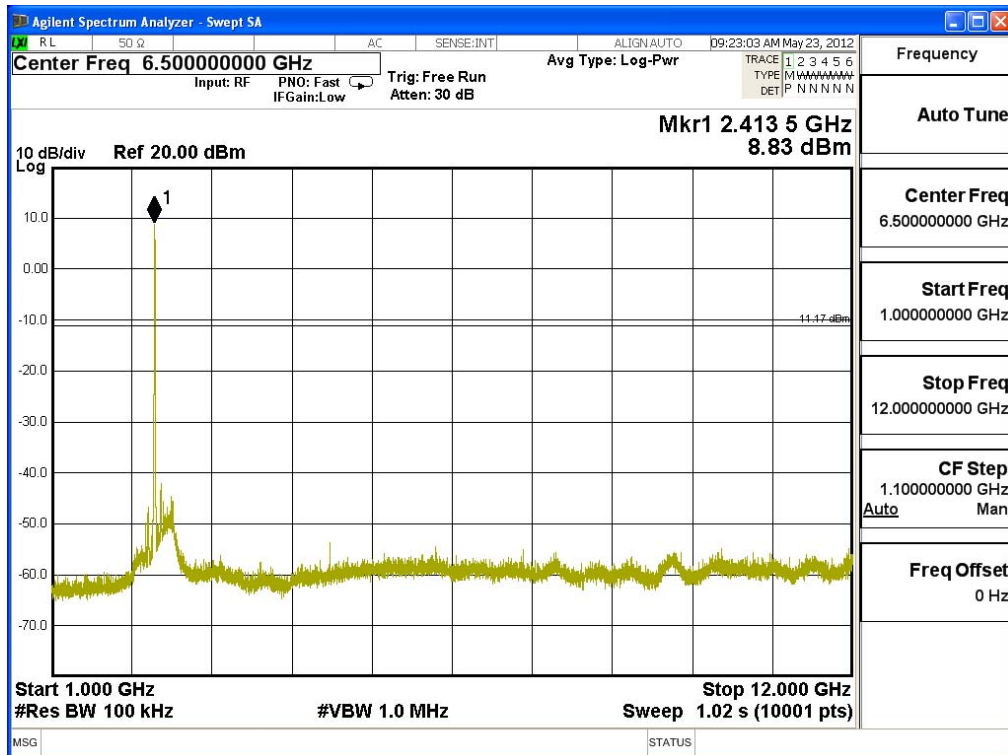
Conducted is defined as $\pm 1.27\text{dB}$

5.6. Test Result of RF antenna conducted test

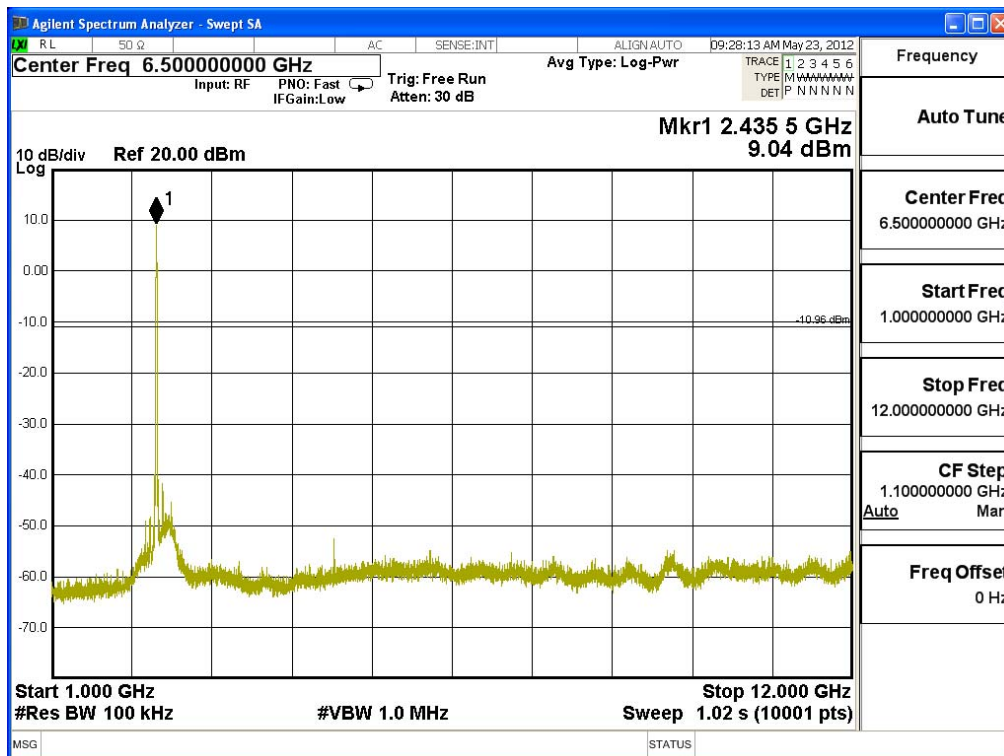
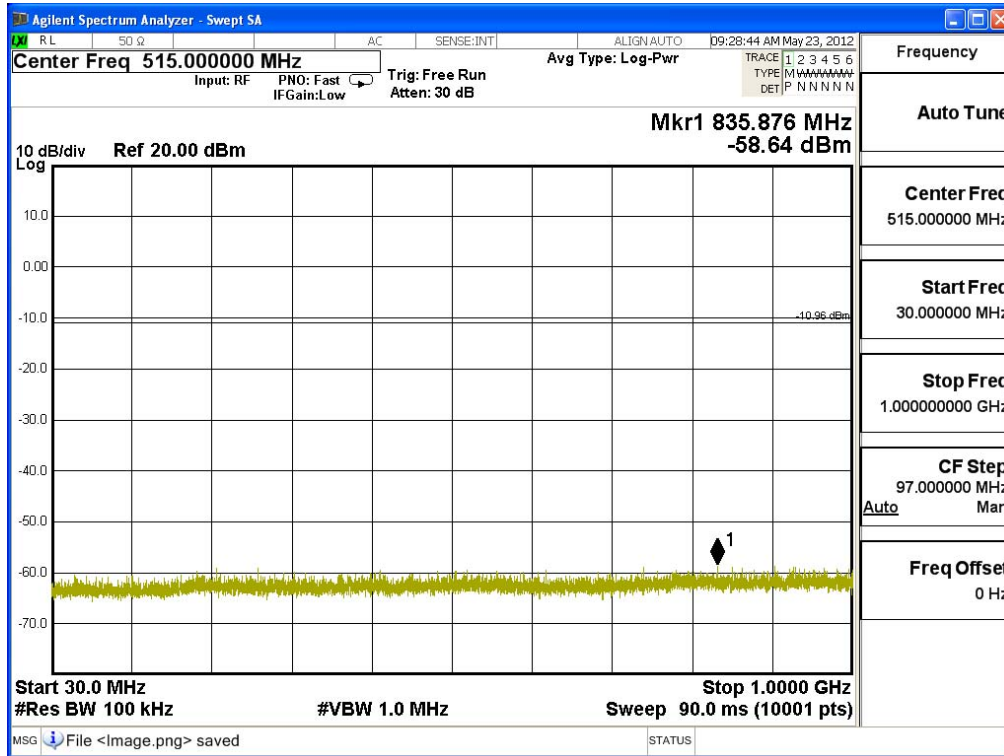
Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

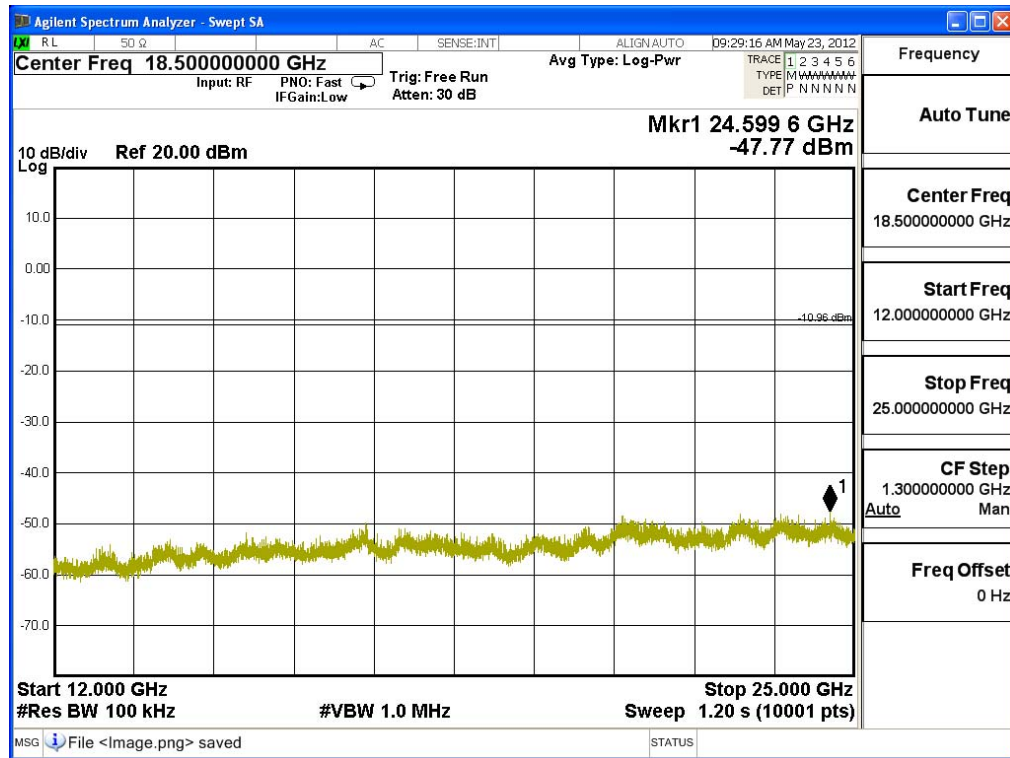
Channel 01 (2412MHz) 30MHz-25GHz-Chain A



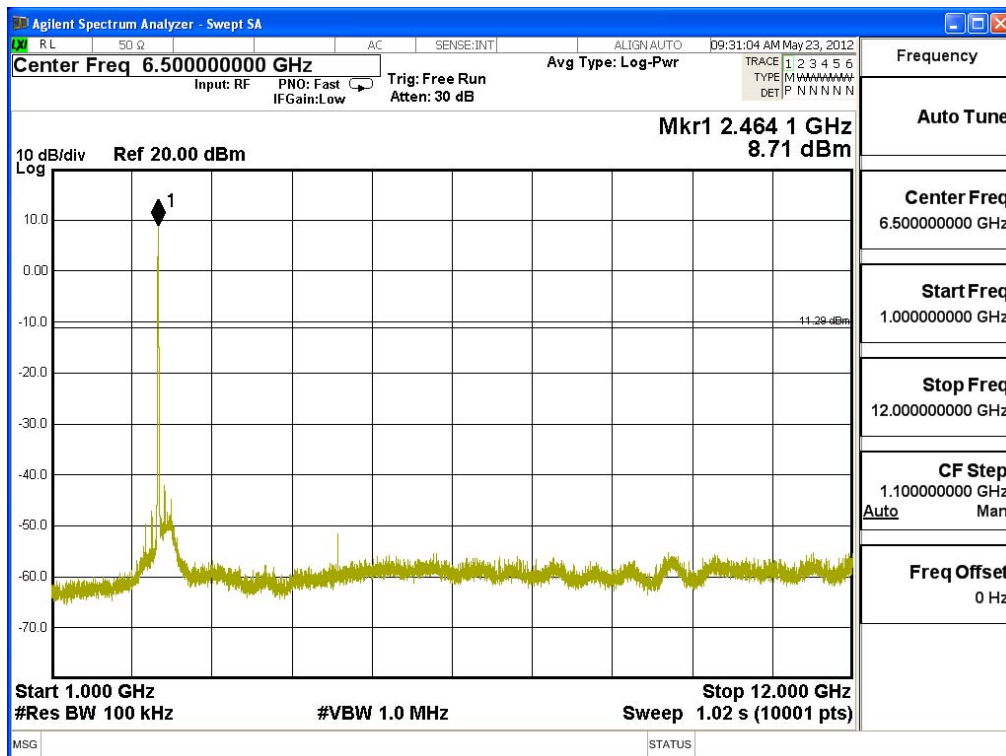
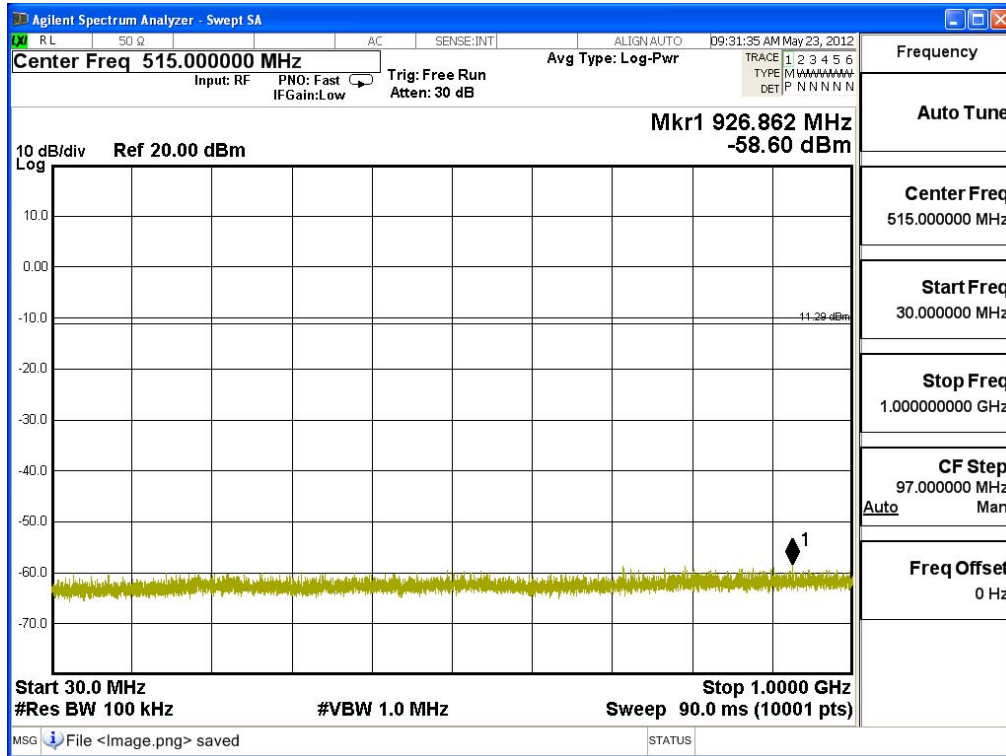


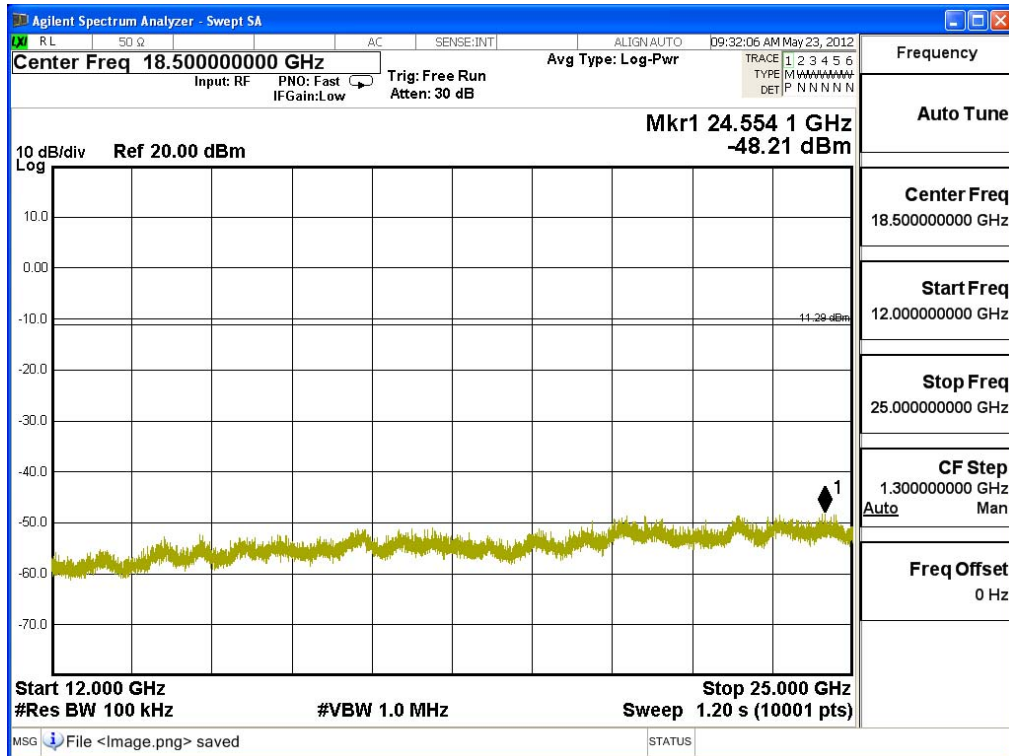
Channel 06 (2437MHz) 30MHz -25GHz-Chain A





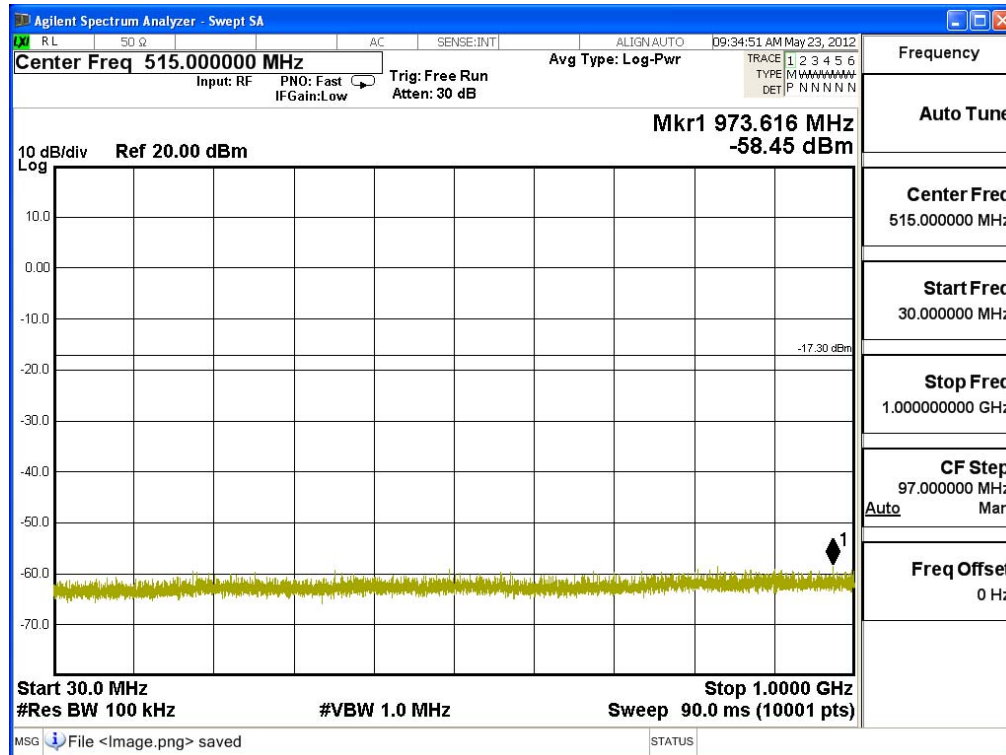
Channel 11 (2462MHz) 30MHz -25GHz-Chain A

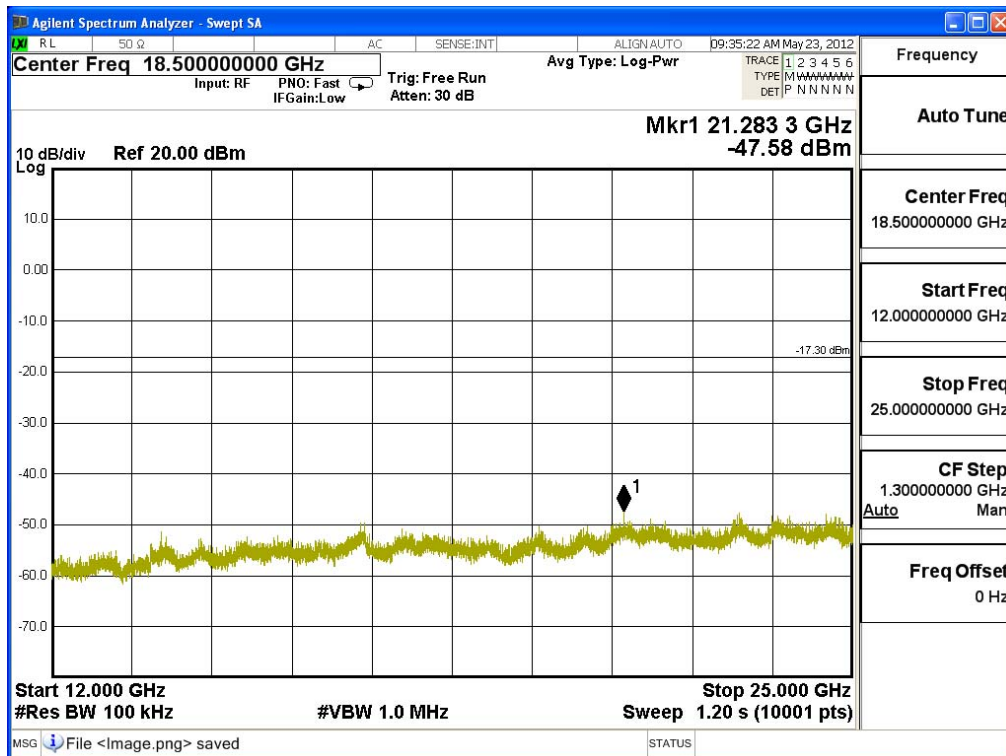
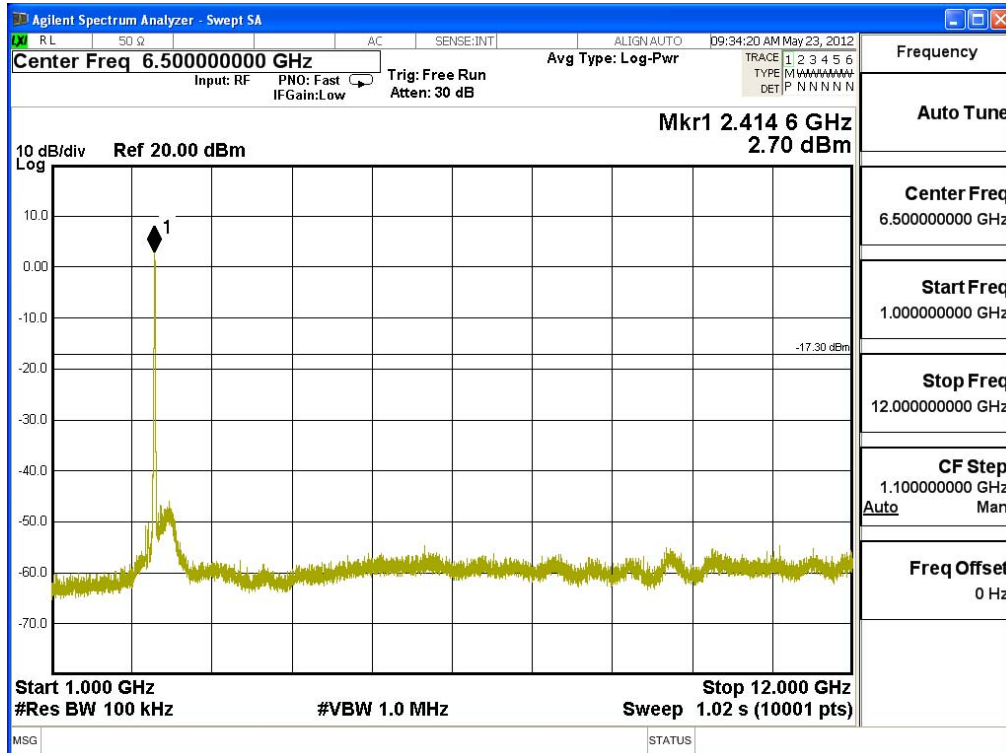




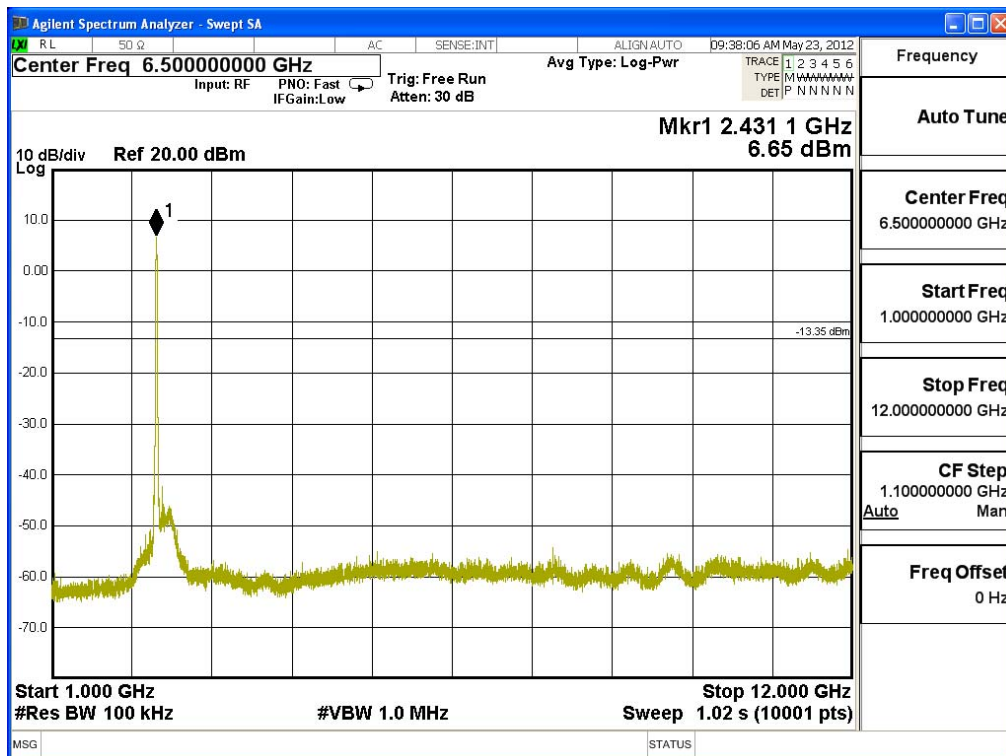
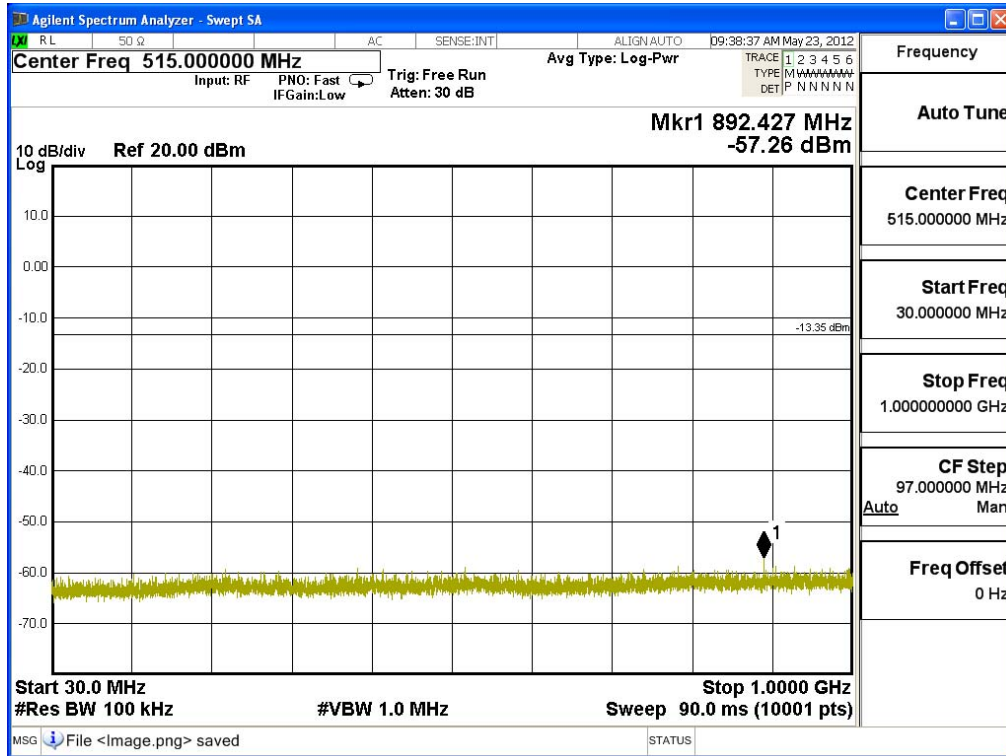
Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

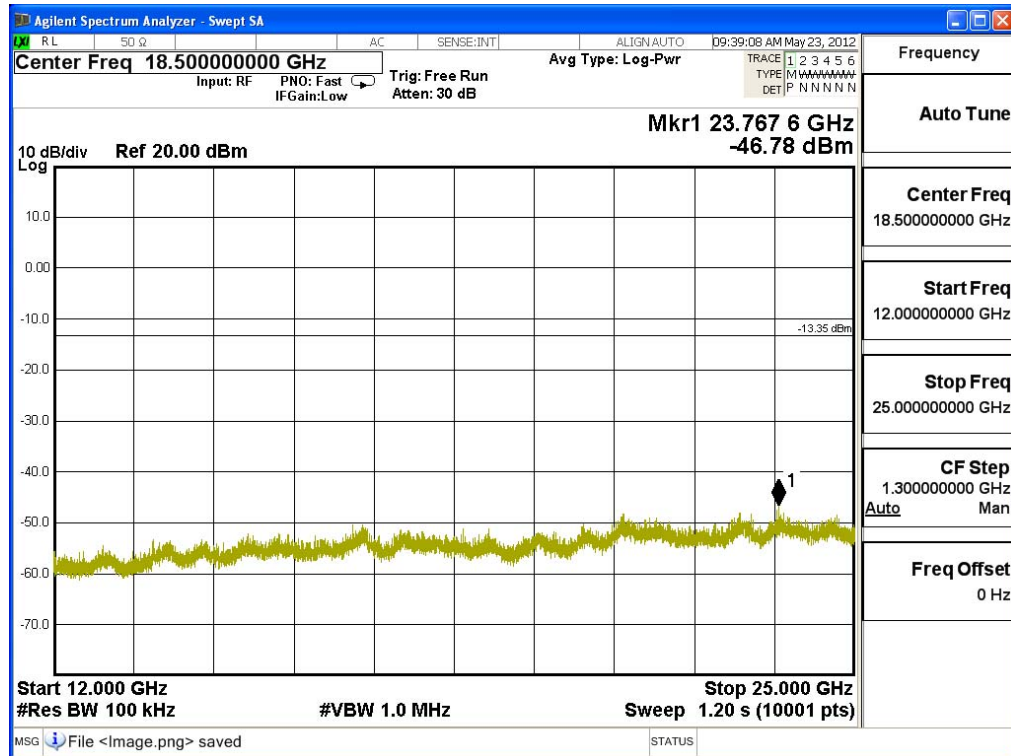
Channel 01 (2412MHz) 30MHz -25GHz-Chain A



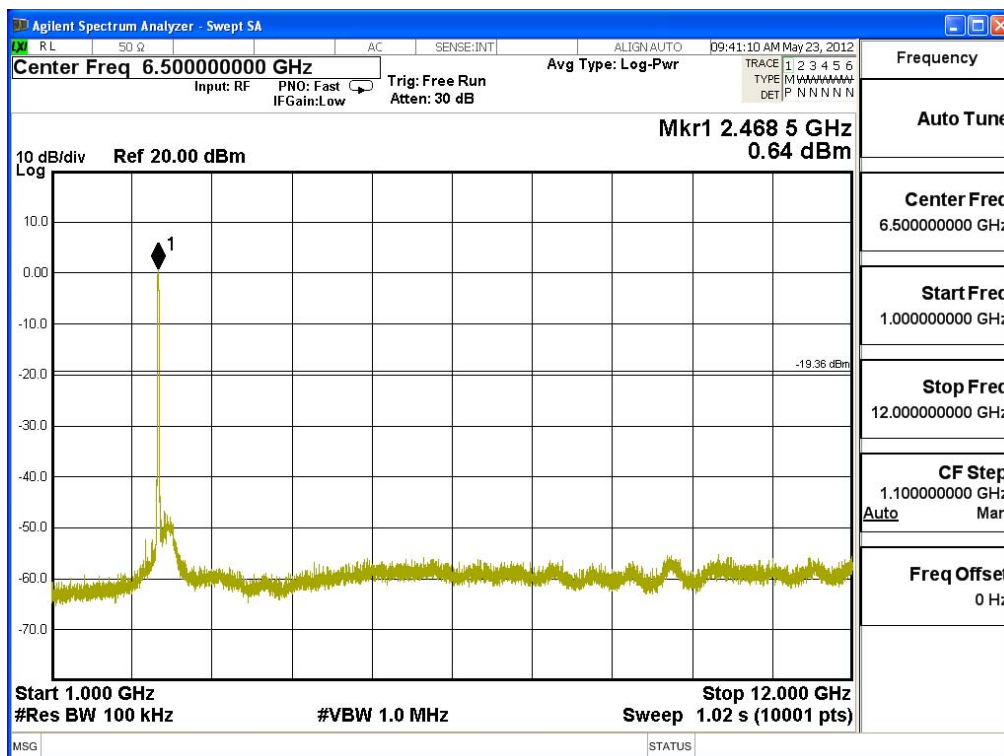
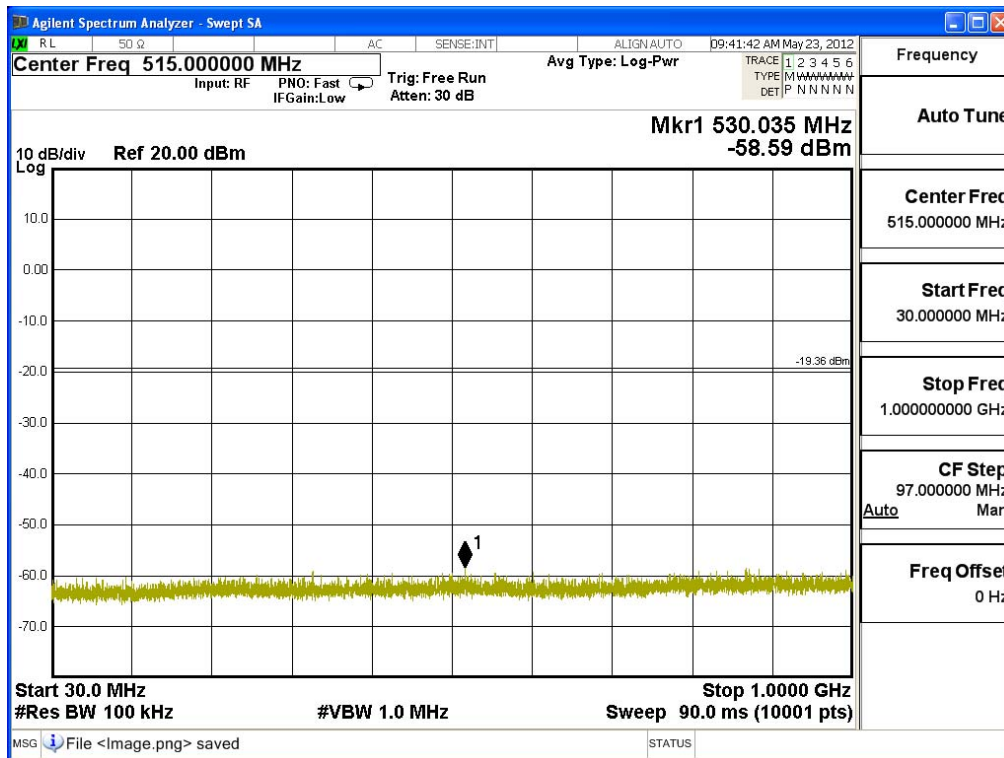


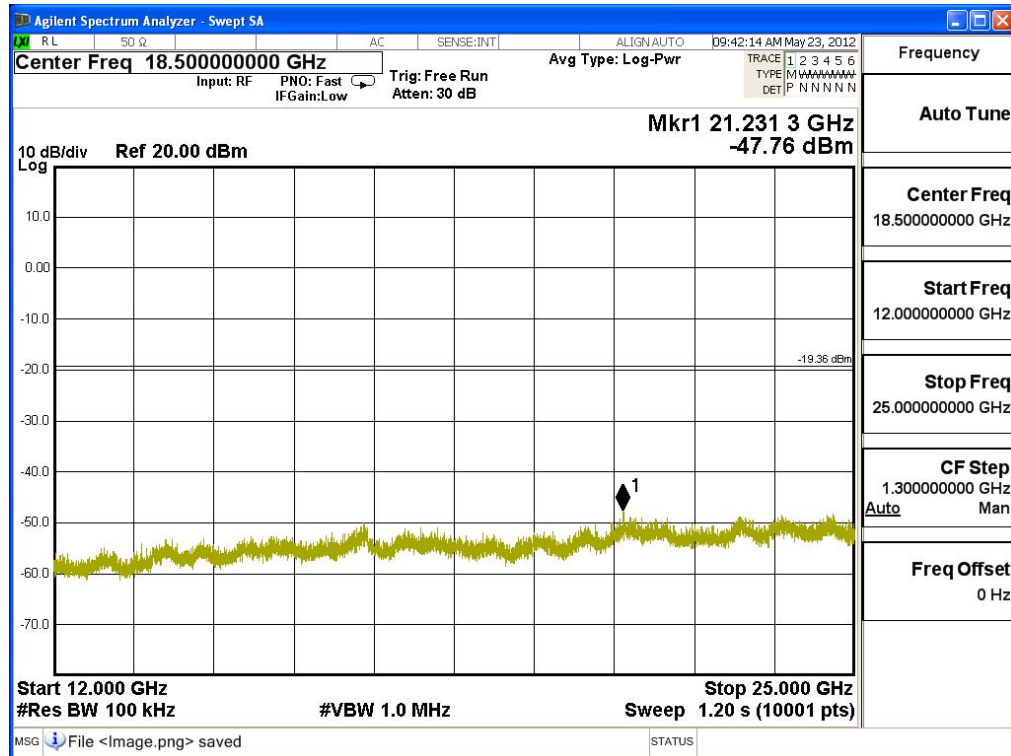
Channel 06 (2437MHz) 30MHz -25GHz-Chain A





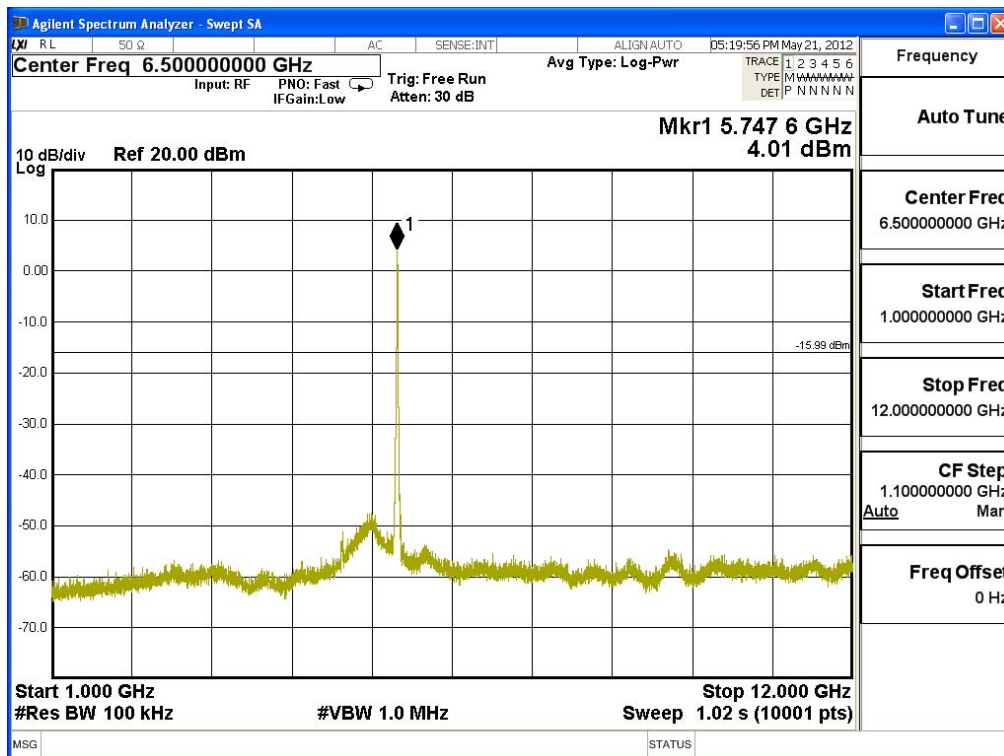
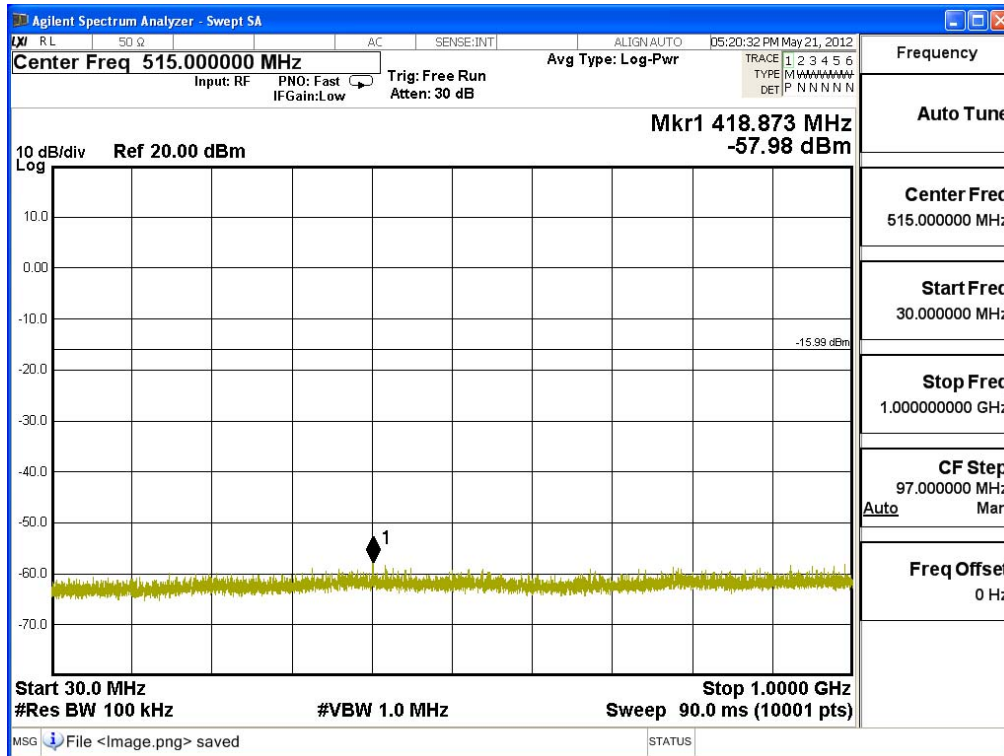
Channel 11 (2462MHz) 30MHz -25GHz-Chain A

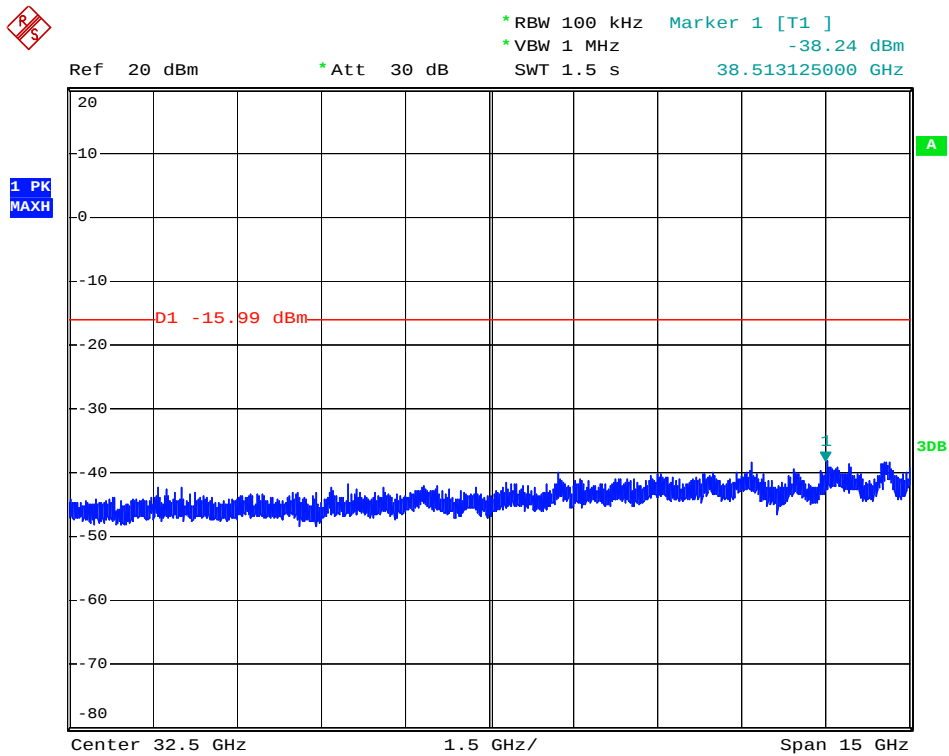
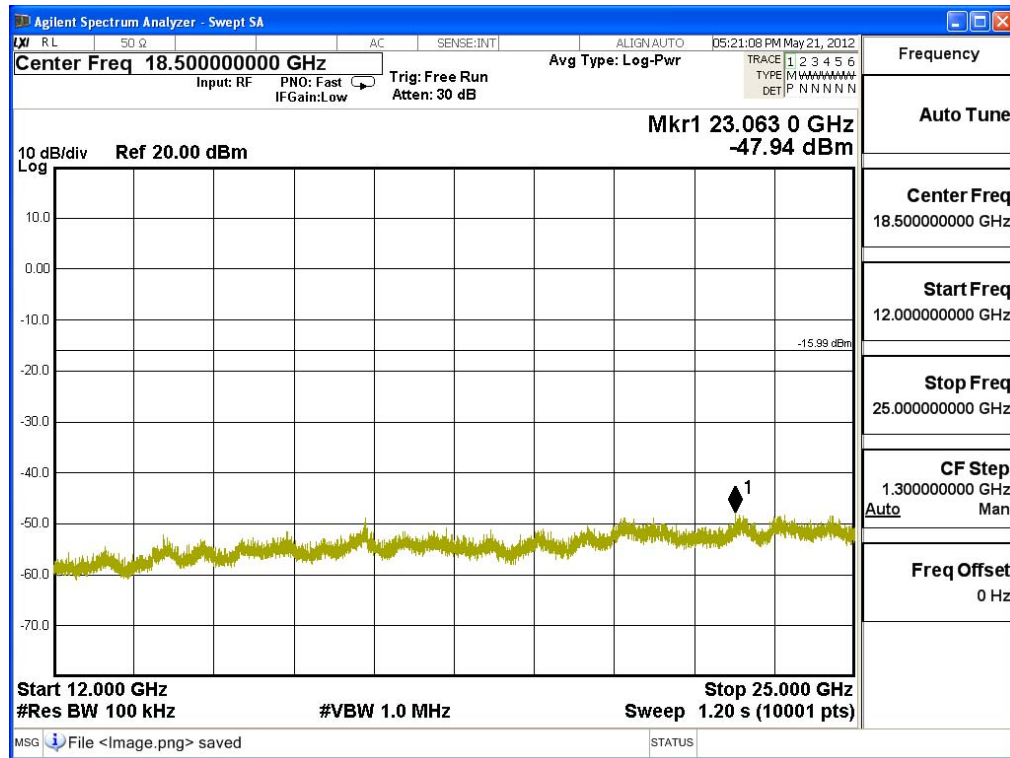




Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit - 802.11a 6Mbps

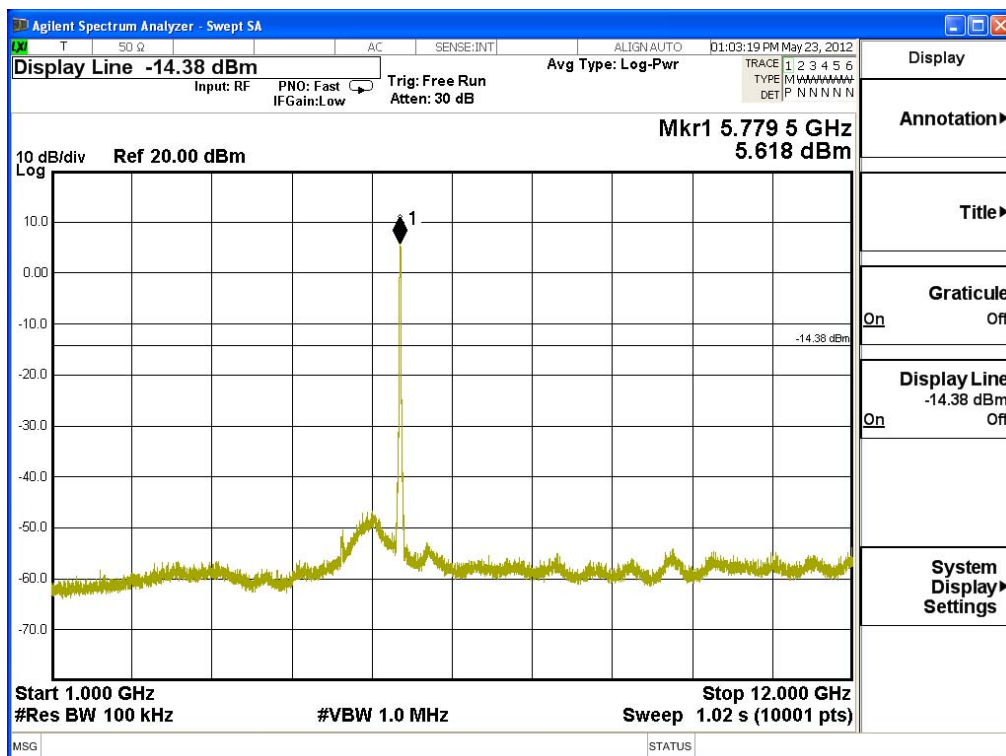
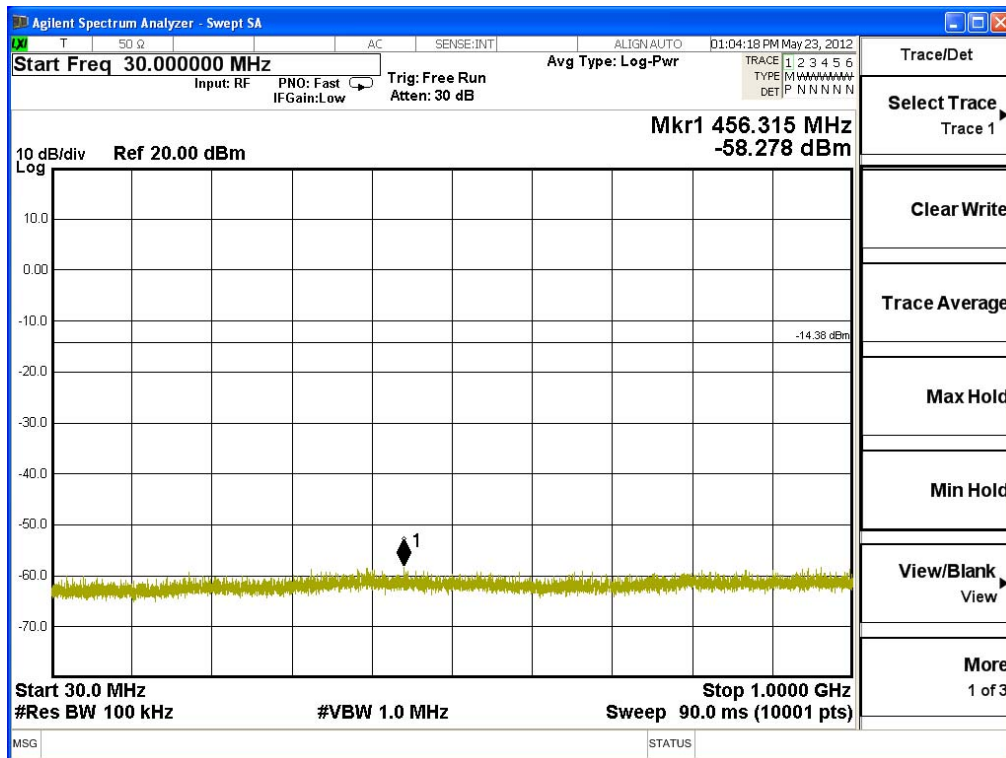
Channel 149 (5745MHz) 30MHz -40GHz-Chain A

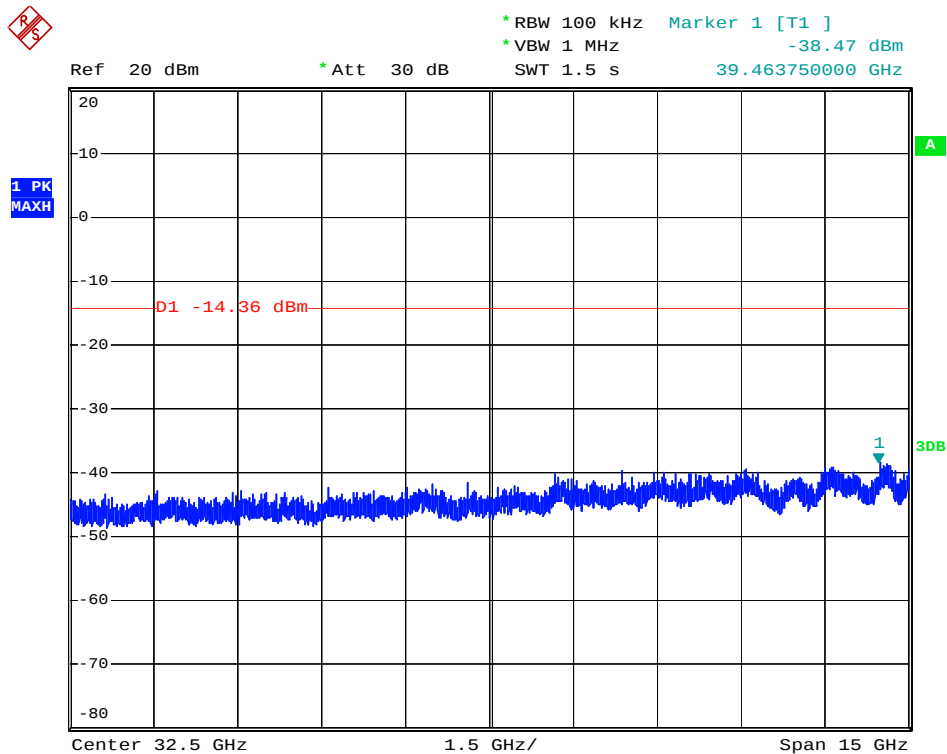
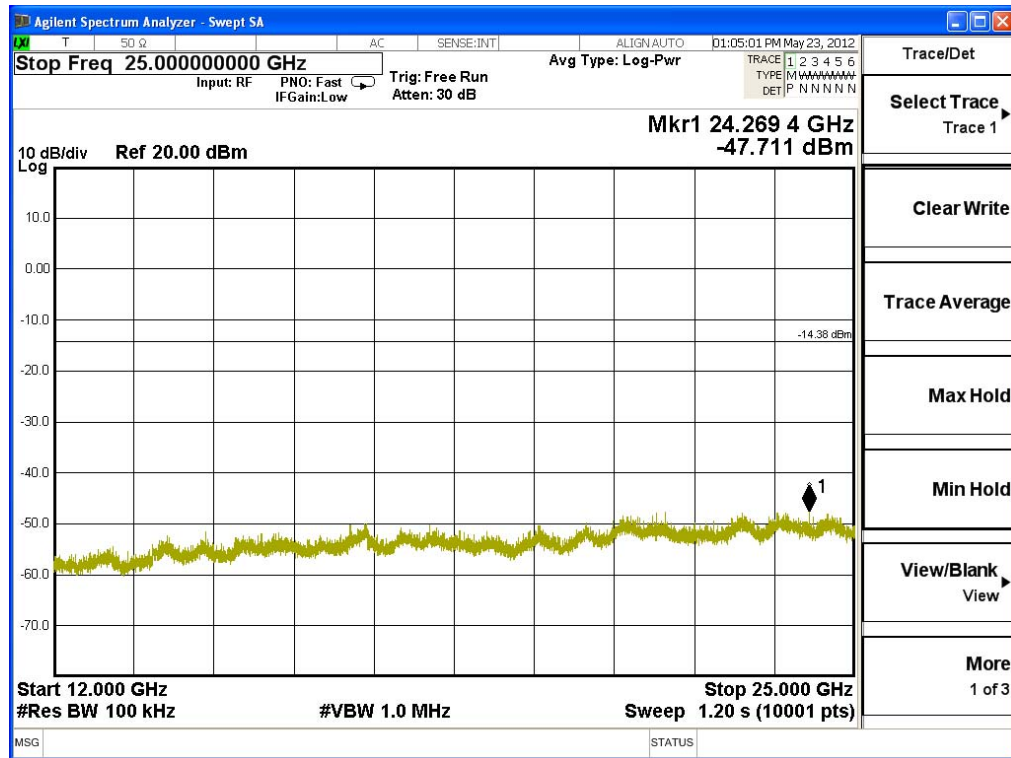




Date: 24.MAY.2012 10:31:43

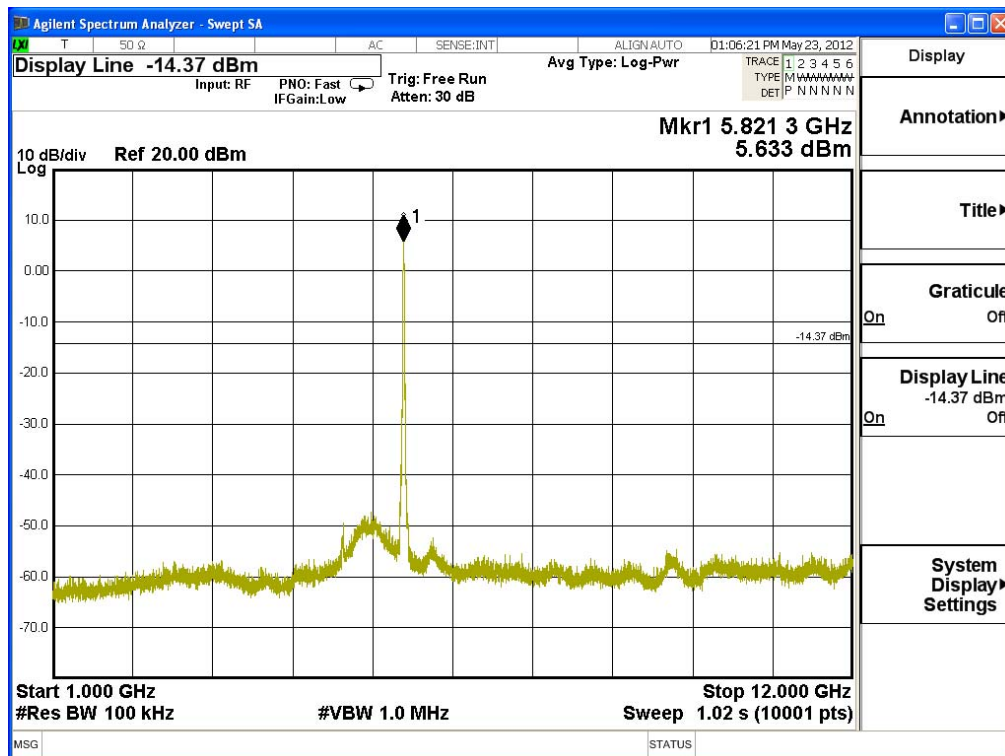
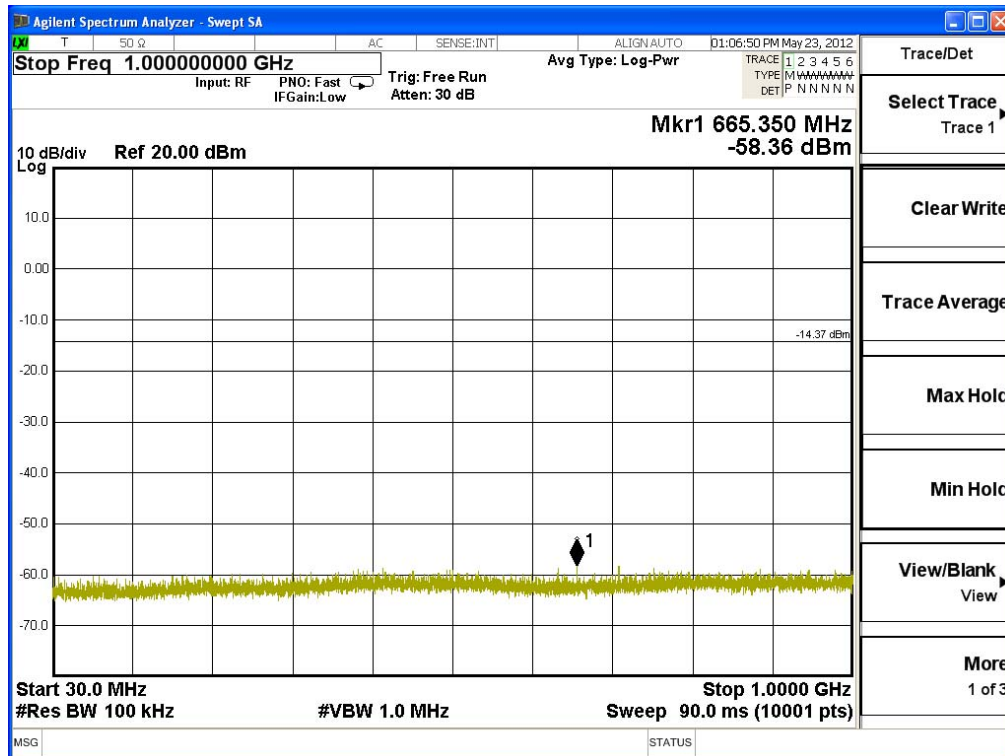
Channel 157 (5785MHz) 30MHz -40GHz-Chain A

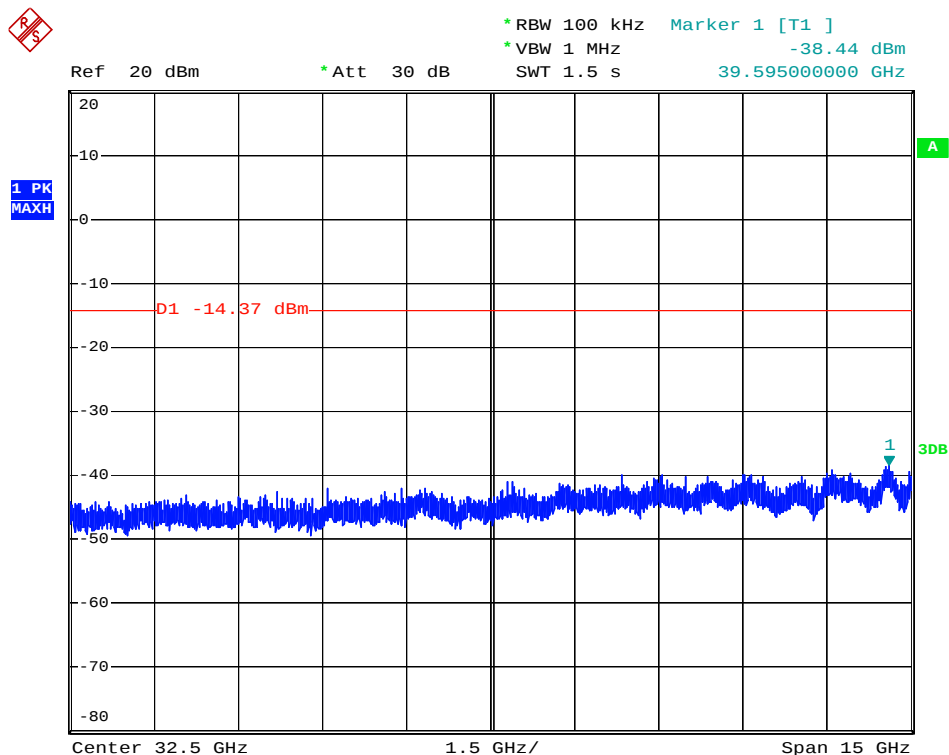
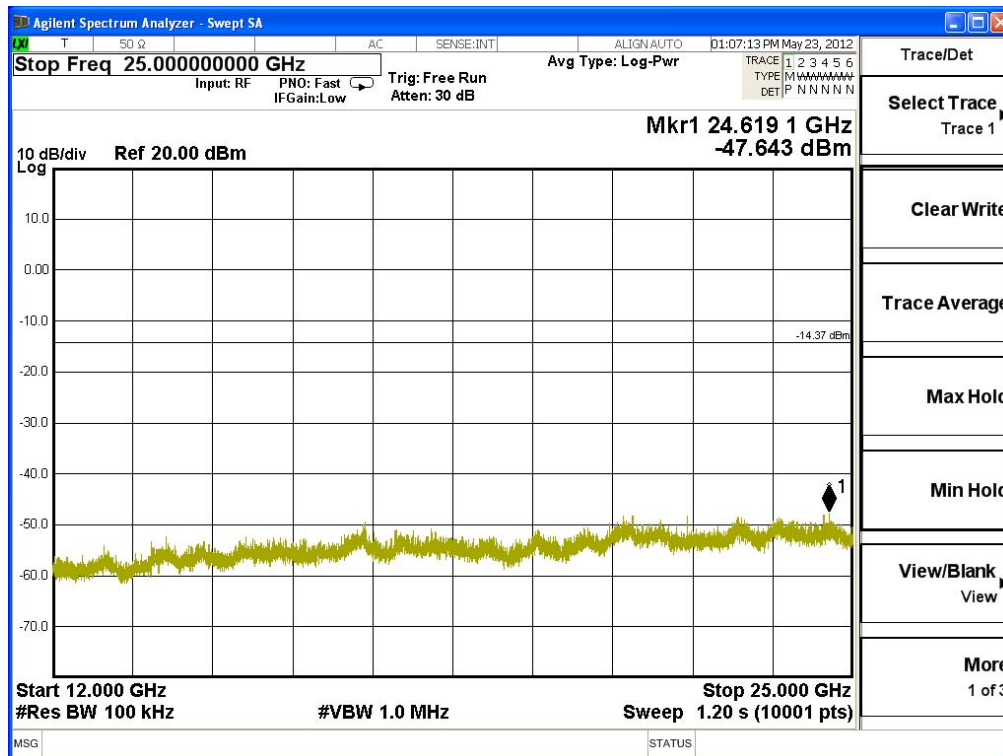




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Channel 165 (5825MHz) 30MHz -40GHz-Chain A

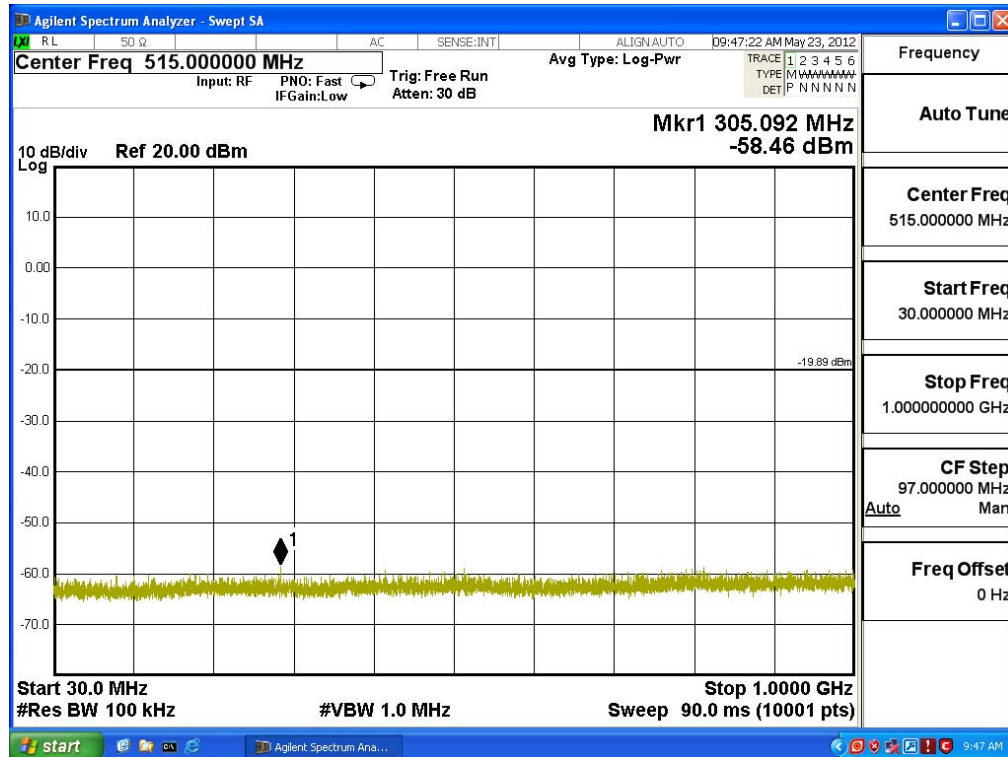


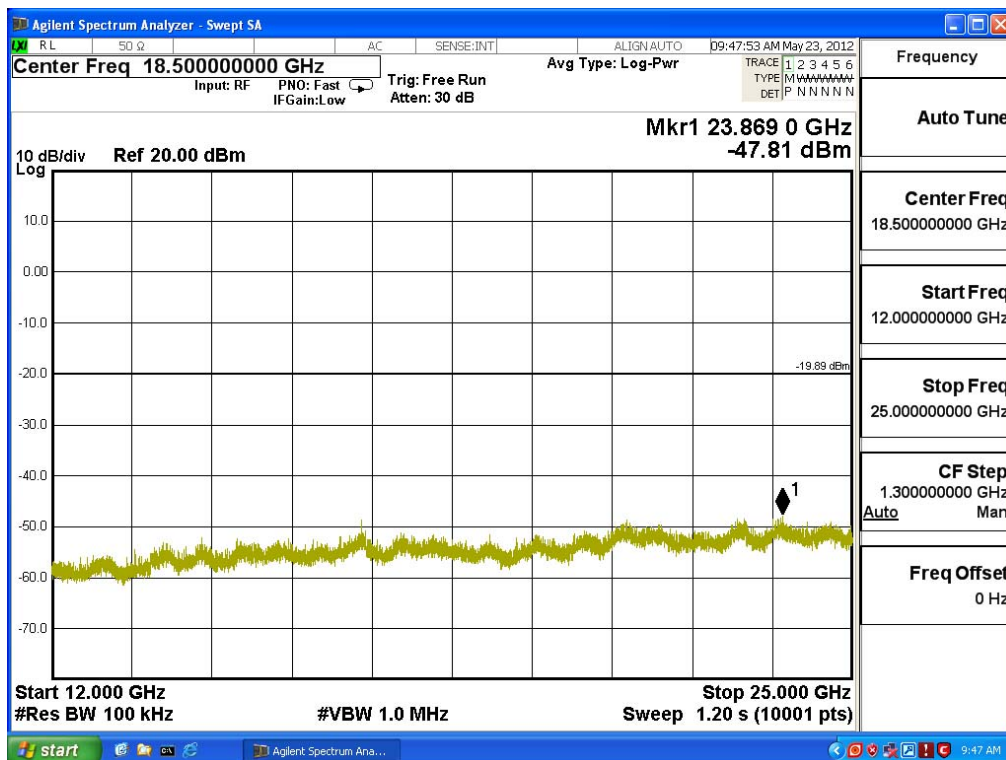
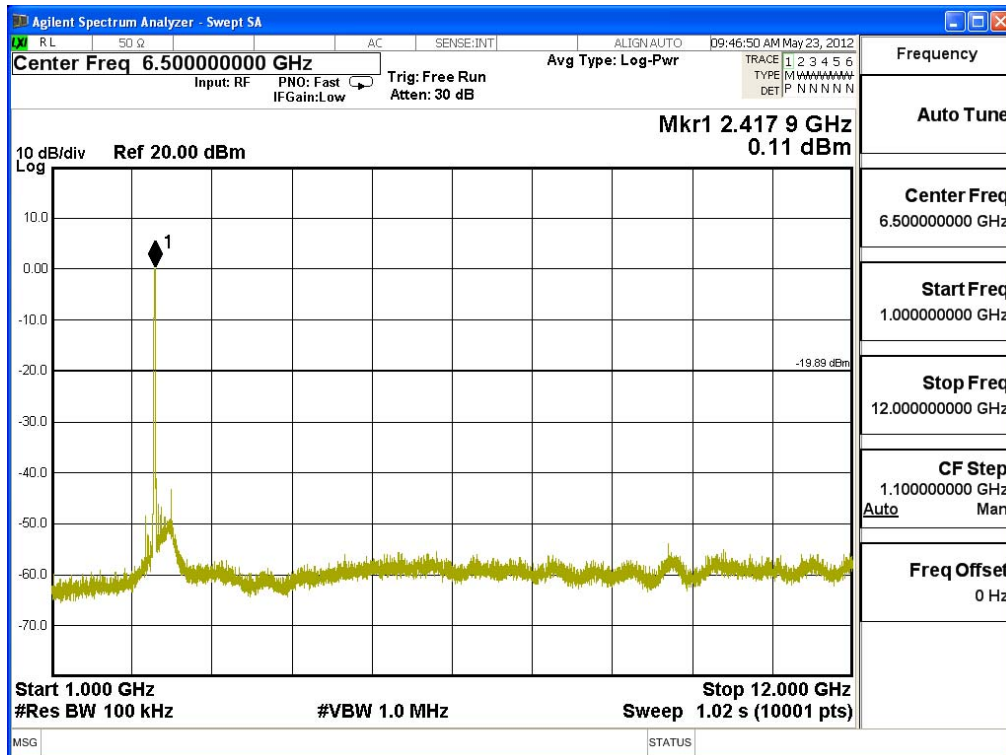


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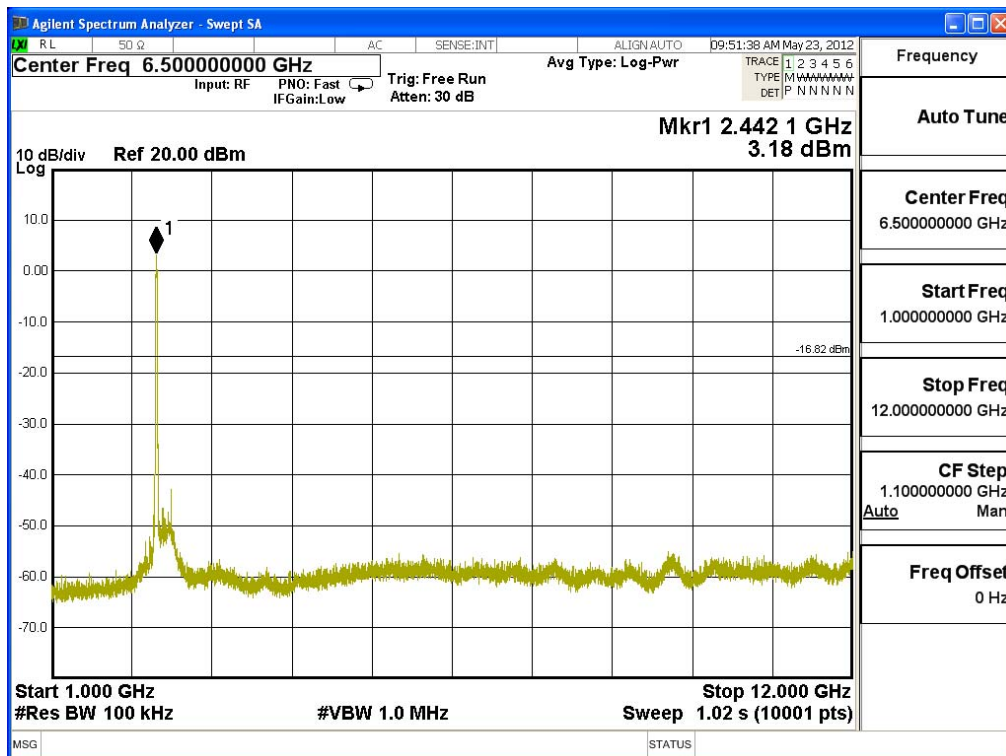
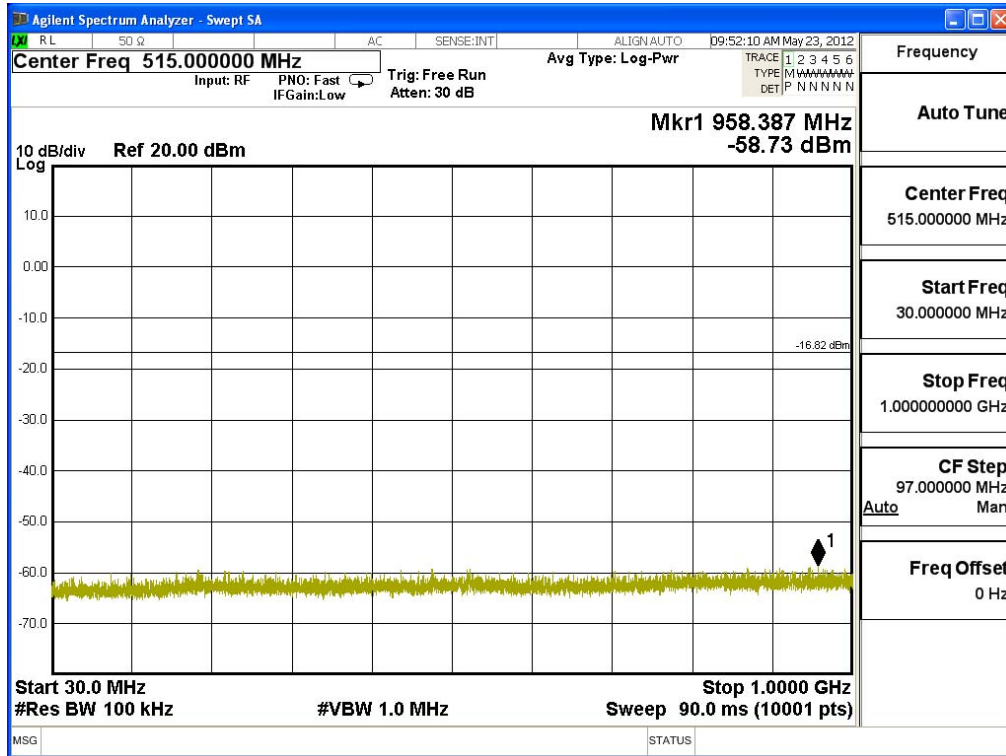
Product : 802.11 a/b/g/n, 2.4G/5G 3T3R Wireless Module
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit - 802.11n-20BW_21.7Mbps(2.4G Band)

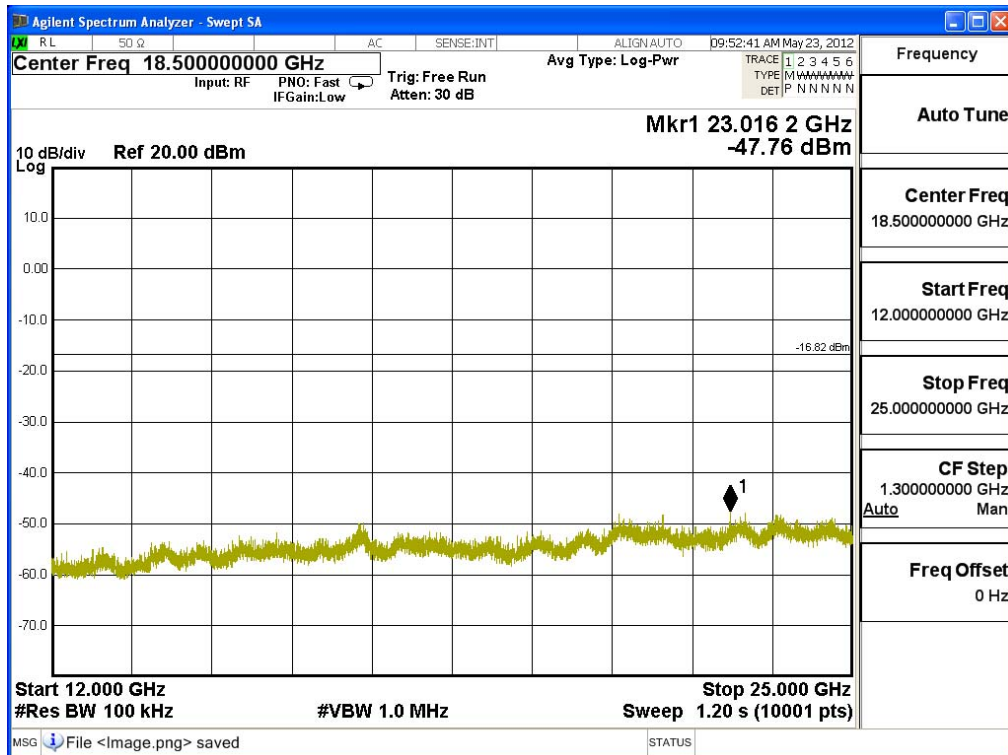
Channel 01 (2412MHz) 30MHz -25GHz-Chain A





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





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

