FCC Test Report

Product Name ： WiFi Module

Model No. ： WACIO_GP_XXX(XXX=001~100)

FCC ID. ： 2AEL6WACIOGP001

Applicant ： Phytrex Technology Corp.

Address ： 3F-2, No. 189, Sec. 2 Keelung Rd.,
Taipei, 11054. Taiwan

Date of Receipt ： 2015/03/28

Issued Date ： 2015/05/12

Report No. ： 1540306R-RFUSP02V00

Report Version ： V1.0

Testing Laboratory
3024

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Test Report Certification

Issued Date : 2015/05/12
Report No. : 1540306R-RFUSP02V00

Product Name	:	WiFi Module
Applicant	:	Phytrex Technology Corp.
Address	:	3F-2, No. 189, Sec. 2 Keelung Rd., Taipei, 11054. Taiwan
Manufacturer	:	Phytrex Technology Corp.
Model No.	:	WACIO_GP_XXX(XXX=001~100)
FCC ID.	:	2AEL6WACIOGP001
EUT Test Voltage	:	DC3.3V
Trade Name	:	Phytrex
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2014 ANSI C63.10: 2009
Test Result	:	Complied

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Documented By : Carol Tsai

(Carol Tsai / Engineering Adm. Assistant)

Reviewed By : Ken Huang

(Ken Huang / Engineer)

Approved By : Roy Wang

(Roy Wang / Director)

Laboratory Information

We, **QuieTek Corporation**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	**:**	**TAF, Accreditation Number: 3024**
USA	**:**	**FCC, Registration Number: 365520**
Canada	**:**	**IC, Submission No: 150981**

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/english/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/index_en.aspx
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1. General Information

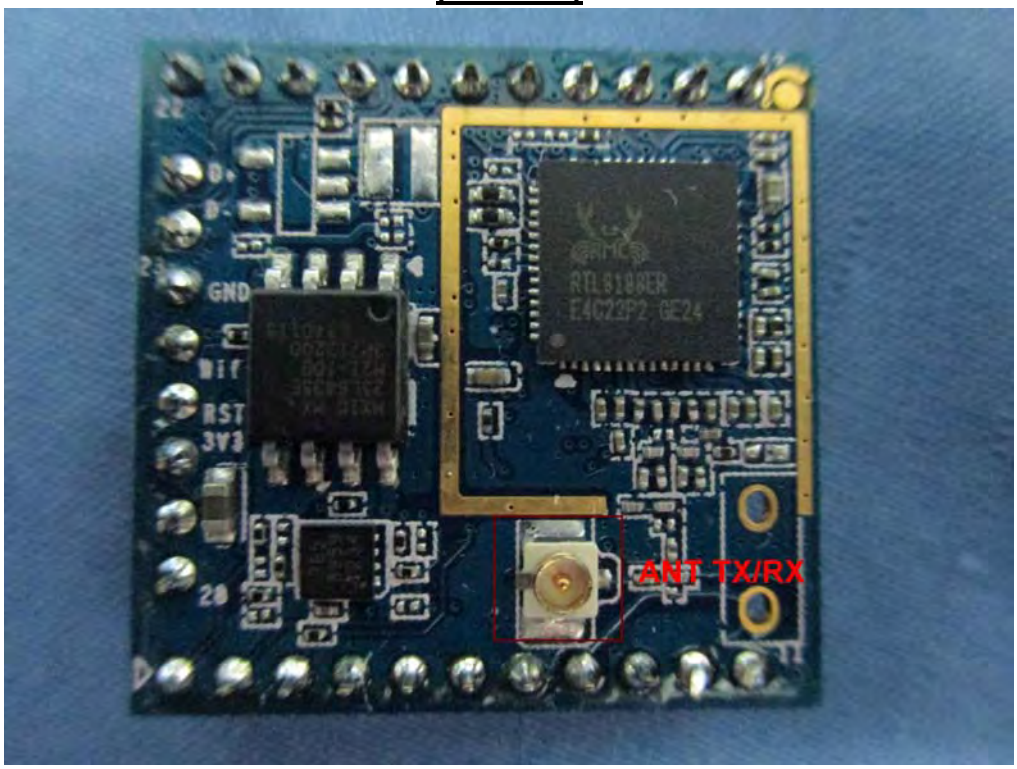
1.1. EUT Description

Product Name	WiFi Module
Product Type	WLAN (1TX, 1RX)
Trade Name	Phytrex
Model No.	WACIO_GP_XXX(XXX=001~100)
Frequency Range/Channel Number -IEEE 802.11b/g & IEEE 802.11n (20MHz)	2412~2462MHz / 11 Channels
Frequency Range/Channel Number - IEEE 802.11n (40MHz)	2422~2452MHz / 7 Channels
Type of Modulation (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Type of Modulation (IEEE 802.11g/n)	Orthogonal Frequency Division Multiplexing (OFDM)
Data Speed (IEEE 802.11b)	1, 2, 5.5, 11Mbps
Data Speed (IEEE 802.11g)	6, 9, 18, 24, 36, 48, 54Mbps
Data Speed (IEEE 802.11n)	Support a subset of the combination of GI, MCS 0~MCS 7 and bandwidth defined in 802.11n
Antenna Gain	2dBi
Antenna Type	Dipole Antenna

ANT-TX / RX & Bandwidth

ANT-TX / RX	TX		RX	
Mode/ Channel Bandwidth	20MHz	40MHz	20MHz	40MHz
IEEE802.11b	✓		✓	
IEEE802.11g	✓		✓	
IEEE802.11n	✓	✓	✓	✓

(1TX /1RX)



IEEE 802.11n

MCS Index	Modulation	R	N_{BPSCS}	N_{CBPS}		N_{DBPS}		Data Rate(Mb/s)			
								800ns GI		400ns GI	
				20MHz	40MHz	20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.2	15.0
1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.4	30.0
2	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.7	45.0
3	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.9	60.0
4	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.3	90.0
5	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.8	120.0
6	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.0	135.0
7	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.2	150.0
Note 1: Support of 400ns GI is optional on transmit and receive.											

Table 1 – MCS parameters for TX Antenna number = 1

Symbol	Explanation
R	Code rate
N_{BPSC}	Number of coded bits per single carrier
N_{CBPS}	Number of coded bits per symbol
N_{DBPS}	Number of data bits per symbol
GI	guard interval

IEEE 802.11b/g & IEEE 802.11n (20MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
001	2412 MHz	002	2417 MHz	003	2422 MHz	004	2427 MHz
005	2432 MHz	006	2437 MHz	007	2442 MHz	008	2447 MHz
009	2452 MHz	010	2457 MHz	011	2462 MHz		

IEEE 802.11n (40MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
003	2422 MHz	004	2427 MHz	005	2432 MHz	006	2437 MHz
007	2442 MHz	008	2447 MHz	009	2452 MHz		

Note:

1. This device is a WiFi Module including 2.4GHz b/g/n (1x1) transmitting and receiving function.
2. The model number “XXX” can be 001~100, “XXX” for different market purpose.
3. These test results on a sample of the device are for the purpose of demonstrating Compliance with Part 15 Subpart C Paragraph 15.247.
4. Regards to the frequency band operation; the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
5. This device is a composite device in accordance with Part 15 regulations. The receiving function receiving was tested and its test report number is 1540306R-RFUSP01V00 under Declaration of Conformity.

1.2. Test Mode

QuieTek has verified the construction and function in typical operation. The preliminary tests were performed in different data rate, and to find the worst condition, which was shown in this test report. The following table is the final test mode.

TX	Mode 1: Transmit

Test Items	Mode	Modulation	Channel	Antenna	Result
Conducted Emission	1	11n(40MHz)	6	0	NA
Peak Power Output	1	b/g	1/ 6/ 11	0	Complies
	1	11n(20MHz)	1/ 6/ 11	0	Complies
	1	11n(40MHz)	3/ 6/ 9	0	Complies
Radiated Emission	1	b/g	1/ 6/ 11	0	Complies
	1	11n(20MHz)	1/ 6/ 11	0	Complies
	1	11n(40MHz)	3/ 6/ 9	0	Complies
RF antenna conducted test	1	b/g	1/ 6/ 11	0	Complies
	1	11n(20MHz)	1/ 6/ 11	0	Complies
	1	11n(40MHz)	3/ 6/ 9	0	Complies
Radiated Emission Band Edge	1	b/g	1/ 11	0	Complies
	1	11n(20MHz)	1/ 11	0	Complies
	1	11n(40MHz)	3/ 9	0	Complies
Occupied Bandwidth	1	b/g	1/ 6/ 11	0	Complies
	1	11n(20MHz)	1/ 6/ 11	0	Complies
	1	11n(40MHz)	3/ 6/ 9	0	Complies
Power Density	1	b/g	1/ 6/ 11	0	Complies
	1	11n(20MHz)	1/ 6/ 11	0	Complies
	1	11n(40MHz)	3/ 6/ 9	0	Complies

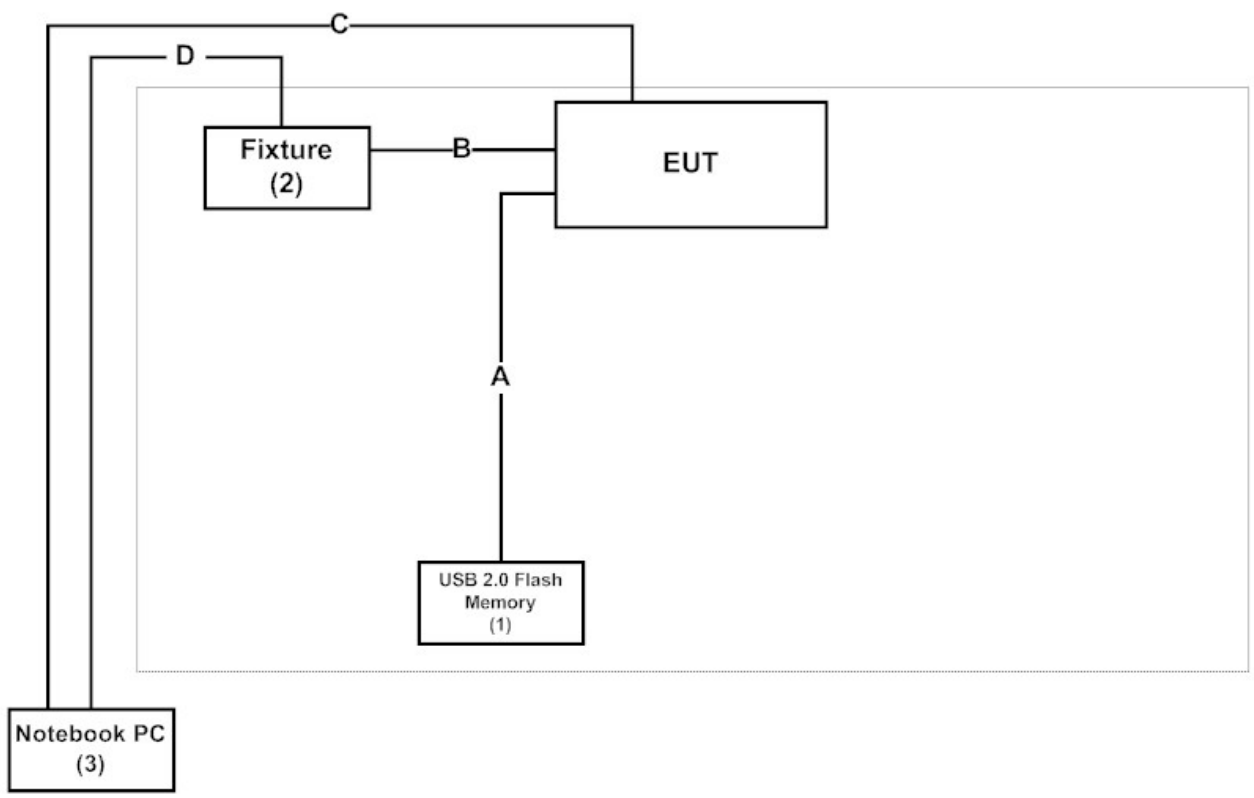
1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	USB 2.0 Flash Memory	Apacer	AH223	N/A	DoC	--
2	Fixture	Phytrex	N/A	N/A	DoC	--
3	Notebook PC	DELL	Vostro3400	7F808N1	DoC	Non-Shielded, 1.8m

1.4. Configuration of tested System

EMI Connection Diagram



Signal Cable Type		Signal cable Description
A	USB 2.0 Flash Memory Cable	Shielded, 1m
B	Signal Cable	Non-Shielded, 0.4m
C	LAN Cable	Non-Shielded, 3m
D	USB Cable	Shielded, 1.5m

1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4.
2	Execute the test program “MP_Test” for 2.4G function on the Notebook.
3	Configure the test mode, the test channel, and the data rate.
4	Press “Start TX” to start the continuous transmitting.
5	Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 C 15.207 Conducted Emission	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Peak Power Output	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 RF antenna conducted test	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Band Edge	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Power Density	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000

2. Conducted Emission

2.1. Test Equipment

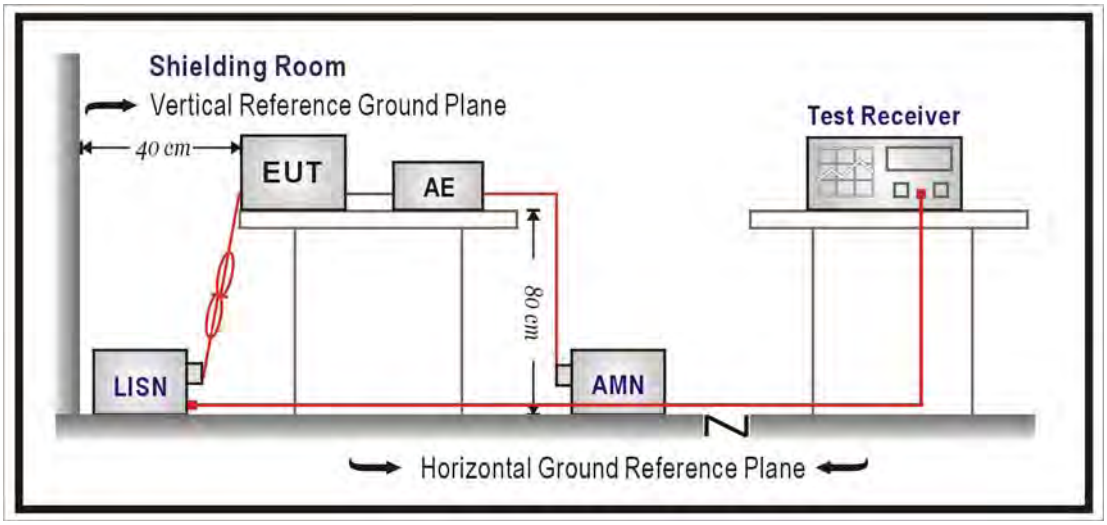
The following test equipments are used during the test:

Conducted Emission / SR2

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Artificial Mains Network	R&S	ENV4200	848411/010	2016/01/25
LISN	R&S	ENV216	100092	2015/08/24
Test Receiver	R&S	ESCS 30	825442/014	2015/07/13

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

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

Remarks: In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of KDB558074 v03r02 for compliance to FCC 47CFR 15.247 requirements.
The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.)
Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

2.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2014

2.6. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

2.7. Test Result

Owing to the DC operation of EUT, this test item is not performed.

3. Peak Power Output

3.1. Test Equipment

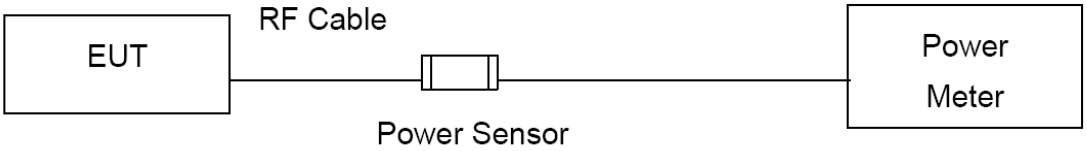
The following test equipments are used during the test:

Peak Power / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Power Meter	Agilent	N1911A	MY45101353	2015/10/31
Power Sensor	Agilent	N1921A	MY45241670	2015/10/31

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

3.2. Test Setup



3.3. Test procedures

The EUT was tested according to DTS test procedure section 9.1.2 of KDB558074 v03r02 measurement to FCC 47CFR 15.247 requirements.

3.4. Limits

The maximum peak power shall be less 1 Watt.

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2014

3.6. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB.

3.7. Test Result

Product	WiFi Module		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2014/05/07	Test Site	SR7

IEEE 802.11b (Ant 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	22.800	30	Pass
6	2437	23.500	30	Pass
11	2462	22.000	30	Pass

The worst emission of data rate is 1Mbps.

Peak Power Output (dBm)						
Channel No	Frequency (MHz)	Data Rate (Mbps)				Required Limit
		1	2	5.5	11	
1	2412	22.80	--	--	--	30dBm
6	2437	23.50	23.46	23.40	23.36	30dBm
11	2462	22.00	--	--	--	30dBm

Product	WiFi Module		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2014/05/07	Test Site	SR7

IEEE 802.11g (Ant 0)				
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
1	2412	24.000	30	Pass
6	2437	24.500	30	Pass
11	2462	21.500	30	Pass

The worst emission of data rate is 6 Mbps.

Peak Power Output (dBm)									
Channel No	Frequency (MHz)	Data Rate							Required Limit
		6	12	18	24	36	48	54	
1	2412	24.00	--	--	--	--	--	--	30dBm
6	2437	24.50	24.45	24.39	24.32	24.27	24.21	24.17	30dBm
11	2462	21.50	--	--	--	--	--	--	30dBm

Product	WiFi Module		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2014/05/07	Test Site	SR7

IEEE 802.11n 20MHz (Ant 0)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	23.800	30	Pass
6	2437	24.600	30	Pass
11	2462	21.800	30	Pass

The worst emission of data rate is 6.5 Mbps.

Peak Power Output (dBm)										
MCS Index		0	1	2	3	4	5	6	7	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		6.5	13	19.5	26	39	52	58.5	65	
1	2412	23.80	--	--	--	--	--	--	--	30dBm
6	2437	24.60	24.50	24.44	24.39	24.32	24.27	24.22	24.16	30dBm
11	2462	21.80	--	--	--	--	--	--	--	30dBm

Product	WiFi Module		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2014/05/07	Test Site	SR7

IEEE 802.11n 40MHz (Ant 0)

Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)	Result
1	2422	23.500	30	Pass
6	2437	24.200	30	Pass
11	2452	22.300	30	Pass

The worst emission of data rate is 13.5 Mbps.

Peak Power Output (dBm)											
MCS Index		0	1	2	3	4	5	6	7		Required Limit
Channel No	Frequency (MHz)	Data Rate									
		13.5	27	40.5	54	81	108	121.5	+135		
3	2422	23.50	--	--	--	--	--	--	--		30dBm
6	2437	24.20	24.15	24.10	24.06	24.00	23.95	23.90	23.86		30dBm
9	2452	22.30	--	--	--	--	--	--	--		30dBm

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the test:

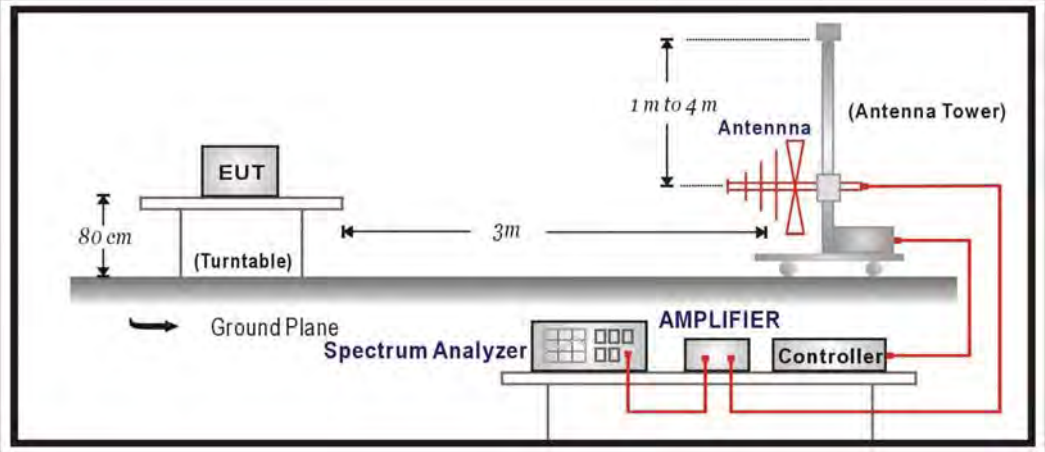
Radiated Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	SCHAFFNER	CBL6112B	2895(CB1)	2015/08/14
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2016/01/26
Pre-Amplifier	EMCI	EMC0031835	980233	2016/01/18
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2016/01/18
Spectrum Analyzer	Agilent	E4440A	MY46187335	2016/01/07
k Type Cable	Huber Suhner	Sucoflex 102	25623/2	2016/01/26

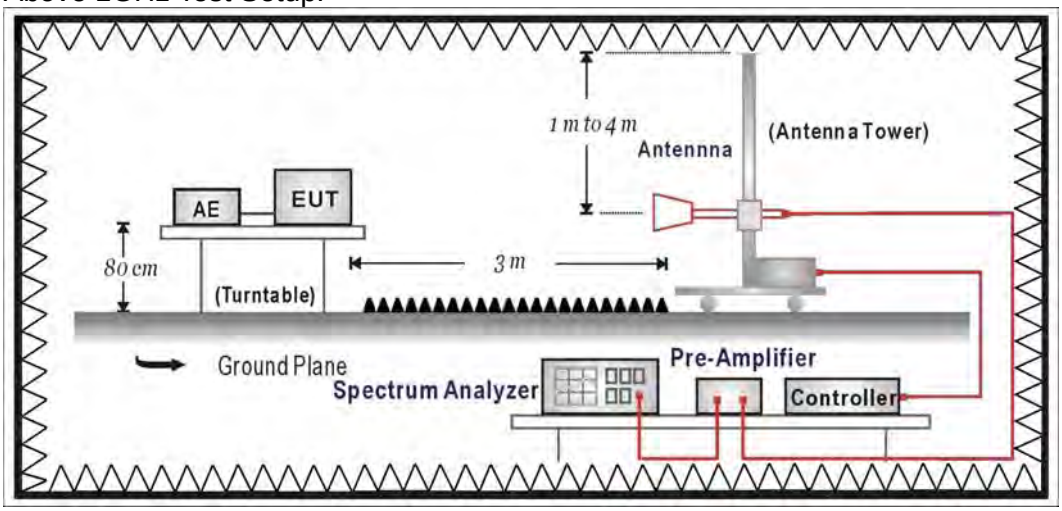
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



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 Limits		
Frequency MHz	dBuV/m	dBuV/m
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 C63.10: 2009 and tested according to DTS test procedure of KDB558074 v03r02 for compliance to FCC 47CFR 15.247 requirements.
The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2009 on radiated measurement.
On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2014

4.6. Uncertainty

The measurement uncertainty

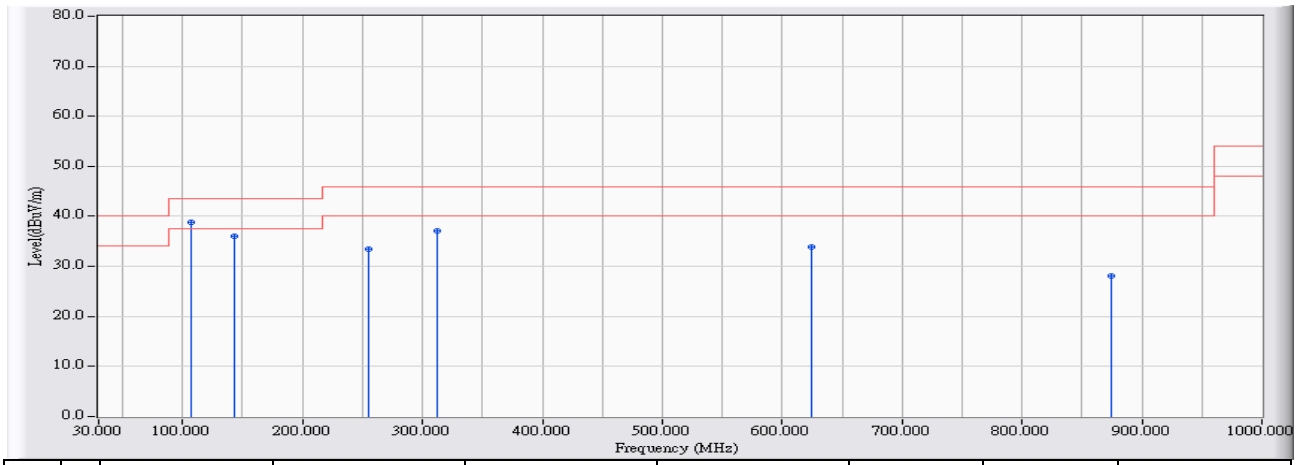
30MHz～1GHz as ±3.43dB

1GHz～26.5Ghz as ±3.65dB

4.7. Test Result

30MHz-1GHz Spurious

Site : CB1	**Time : 2015/04/28 - 15:20**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2437MHz**

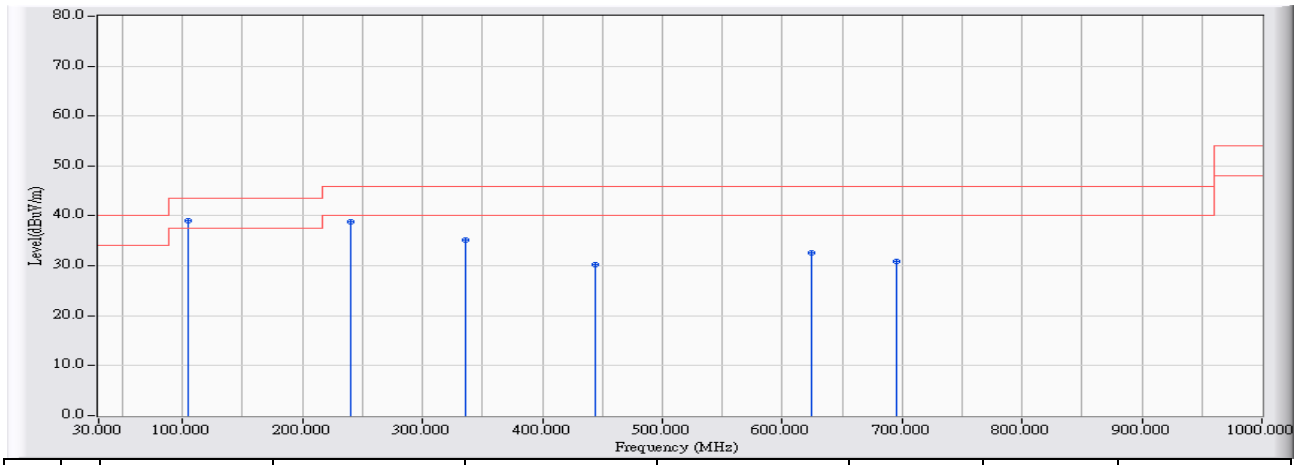


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	106.592	10.165	28.570	38.734	-4.766	43.500	QUASIPEAK
2		142.949	9.985	25.962	35.947	-7.553	43.500	QUASIPEAK
3		254.928	11.969	21.473	33.442	-12.558	46.000	QUASIPEAK
4		312.129	13.043	24.053	37.096	-8.904	46.000	QUASIPEAK
5		624.798	17.610	16.327	33.937	-12.063	46.000	QUASIPEAK
6		874.933	19.407	8.670	28.077	-17.923	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2015/04/28 - 15:25**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2437MHz**

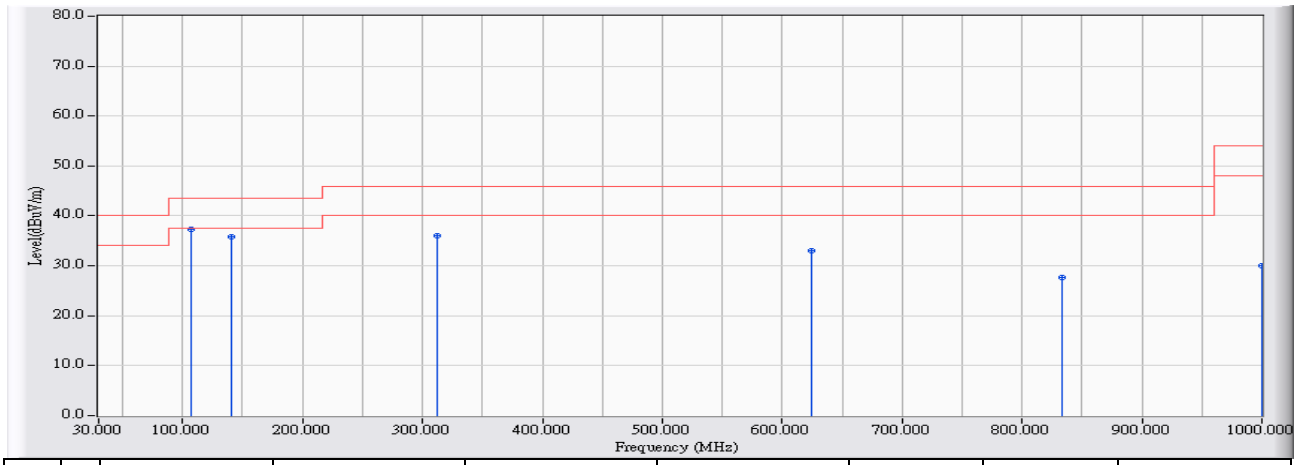


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	104.653	10.070	28.958	39.028	-4.472	43.500	QUASIPEAK
2		239.900	11.133	27.674	38.806	-7.194	46.000	QUASIPEAK
3		335.397	13.603	21.623	35.225	-10.775	46.000	QUASIPEAK
4		443.498	16.037	14.289	30.326	-15.674	46.000	QUASIPEAK
5		624.798	17.610	15.008	32.618	-13.382	46.000	QUASIPEAK
6		695.572	17.969	12.889	30.859	-15.141	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2015/04/28 - 15:30**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2437MHz**

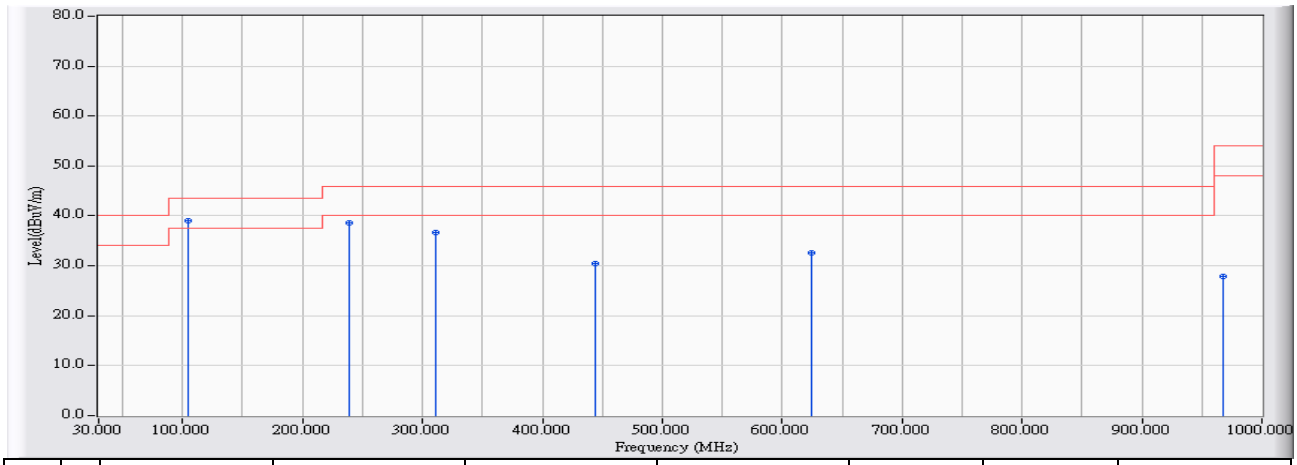


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	106.592	10.165	27.080	37.244	-6.256	43.500	QUASIPEAK
2		141.009	10.082	25.812	35.894	-7.606	43.500	QUASIPEAK
3		312.129	13.043	23.069	36.112	-9.888	46.000	QUASIPEAK
4		624.798	17.610	15.412	33.022	-12.978	46.000	QUASIPEAK
5		833.243	19.300	8.367	27.667	-18.333	46.000	QUASIPEAK
6		999.515	20.285	9.739	30.024	-23.976	54.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2015/04/28 - 15:35**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2437MHz**

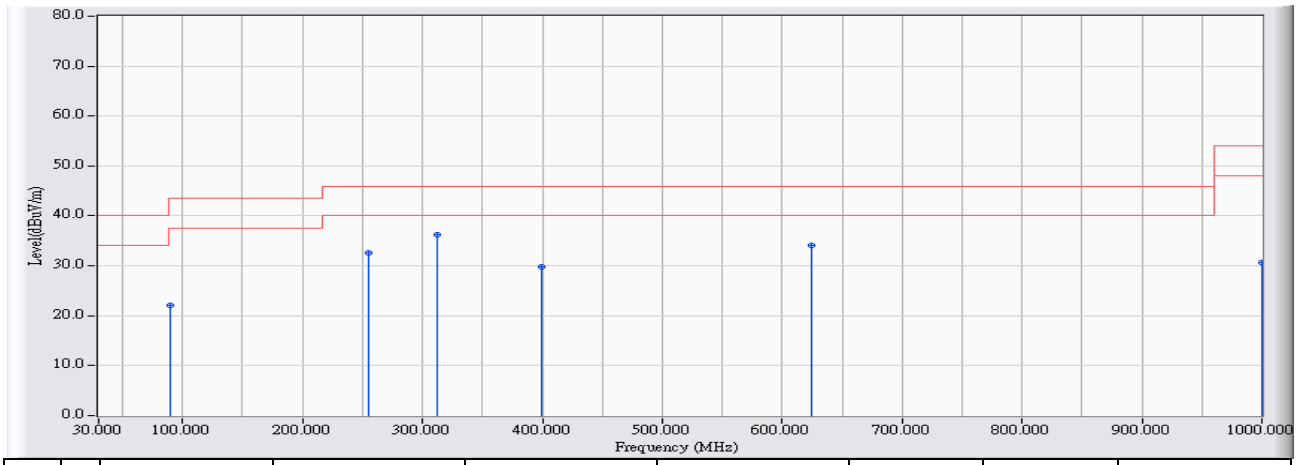


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	104.653	10.070	28.917	38.987	-4.513	43.500	QUASIPEAK
2		239.415	11.096	27.589	38.685	-7.315	46.000	QUASIPEAK
3		311.644	13.031	23.668	36.700	-9.300	46.000	QUASIPEAK
4		443.498	16.037	14.374	30.411	-15.589	46.000	QUASIPEAK
5		624.798	17.610	14.961	32.571	-13.429	46.000	QUASIPEAK
6		967.521	20.024	7.934	27.958	-26.042	54.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2015/04/28 - 15:40**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2437MHz**

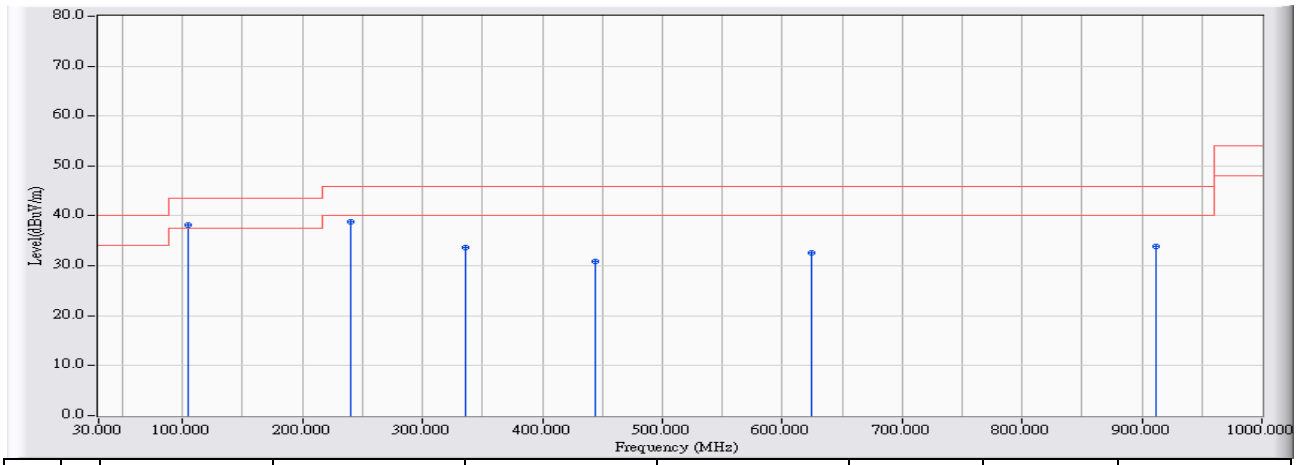


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		90.110	7.527	14.663	22.190	-21.310	43.500	QUASIPEAK
2		254.928	11.969	20.705	32.674	-13.326	46.000	QUASIPEAK
3	*	312.129	13.043	23.193	36.236	-9.764	46.000	QUASIPEAK
4		399.870	15.150	14.681	29.832	-16.168	46.000	QUASIPEAK
5		624.798	17.610	16.446	34.056	-11.944	46.000	QUASIPEAK
6		999.515	20.285	10.286	30.571	-23.429	54.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2015/04/28 - 15:45**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2437MHz**

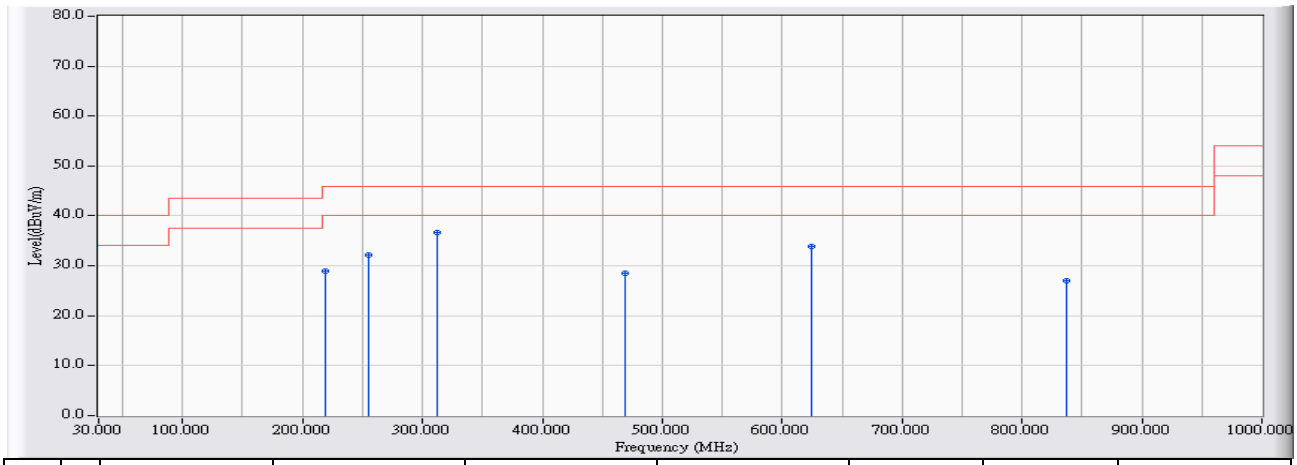


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	104.653	10.070	28.180	38.250	-5.250	43.500	QUASIPEAK
2		239.900	11.133	27.670	38.802	-7.198	46.000	QUASIPEAK
3		335.397	13.603	19.994	33.596	-12.404	46.000	QUASIPEAK
4		443.498	16.037	14.753	30.790	-15.210	46.000	QUASIPEAK
5		624.798	17.610	15.062	32.672	-13.328	46.000	QUASIPEAK
6		911.289	19.565	14.364	33.928	-12.072	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2015/04/28 - 15:50**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2437MHz**

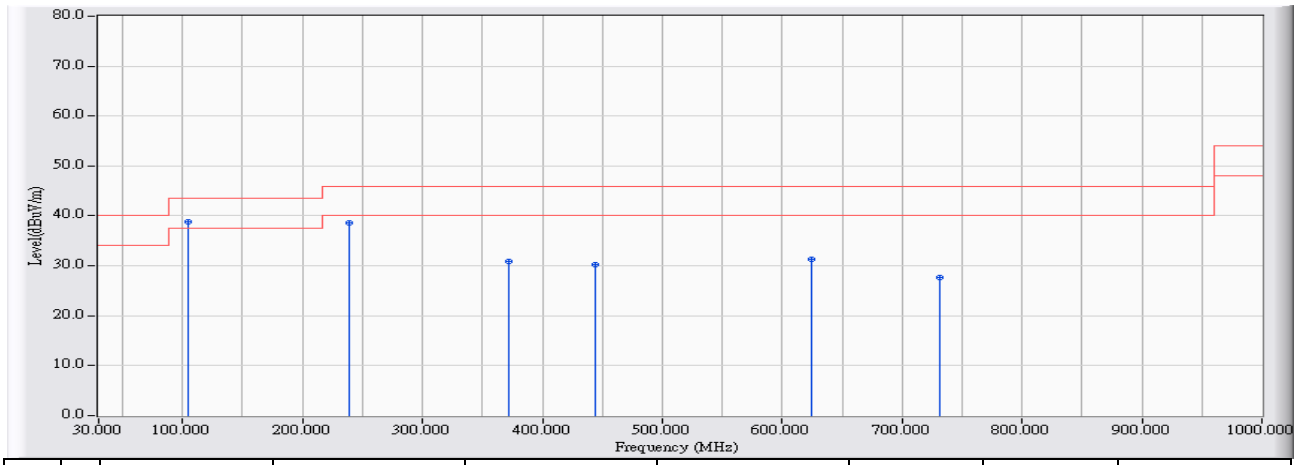


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		219.540	9.618	19.298	28.916	-17.084	46.000	QUASIPEAK
2		254.928	11.969	20.222	32.191	-13.809	46.000	QUASIPEAK
3	*	312.129	13.043	23.691	36.734	-9.266	46.000	QUASIPEAK
4		468.706	16.548	11.929	28.477	-17.523	46.000	QUASIPEAK
5		624.798	17.610	16.298	33.908	-12.092	46.000	QUASIPEAK
6		836.637	19.308	7.794	27.103	-18.897	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2015/04/28 - 15:55**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2437MHz**



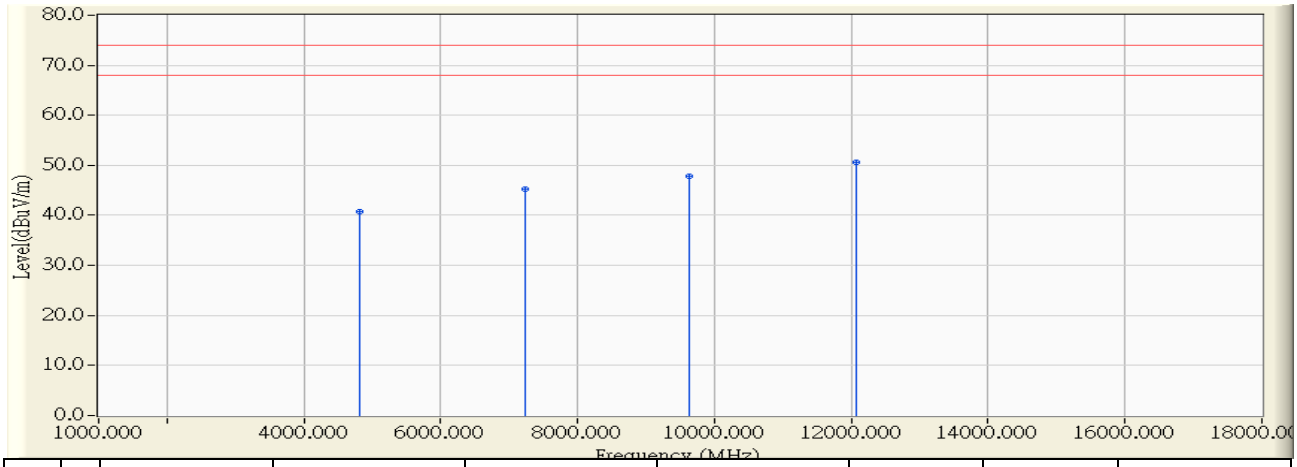
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	104.653	10.070	28.670	38.740	-4.760	43.500	QUASIPEAK
2		239.415	11.096	27.443	38.539	-7.461	46.000	QUASIPEAK
3		371.754	14.476	16.473	30.949	-15.051	46.000	QUASIPEAK
4		443.498	16.037	14.249	30.286	-15.714	46.000	QUASIPEAK
5		624.798	17.610	13.779	31.389	-14.611	46.000	QUASIPEAK
6		731.444	18.376	9.269	27.646	-18.354	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Above 1GHz Spurious

Site : CB1	**Time : 2015/03/28 - 10:42**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2412MHz**

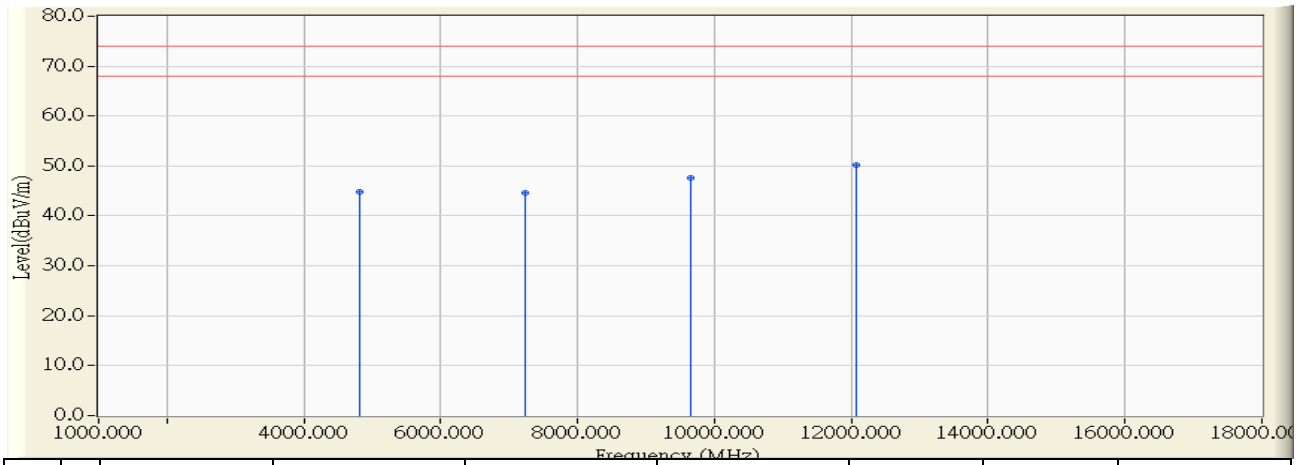


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-1.575	42.360	40.785	-33.215	74.000	PEAK
2		7232.312	6.974	38.330	45.304	-28.696	74.000	PEAK
3		9641.153	8.633	39.220	47.853	-26.147	74.000	PEAK
4	*	12064.480	11.564	39.140	50.705	-23.295	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 10:48**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2412MHz**

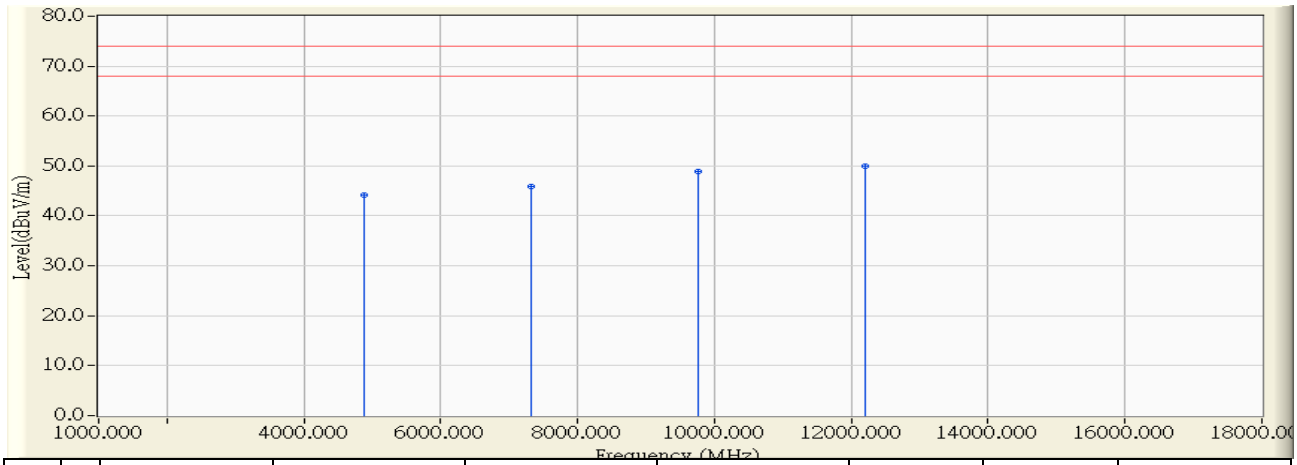


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-0.678	45.600	44.922	-29.078	74.000	PEAK
2		7234.970	6.480	38.180	44.660	-29.340	74.000	PEAK
3		9654.180	8.197	39.450	47.648	-26.352	74.000	PEAK
4	*	12063.000	11.146	38.980	50.126	-23.874	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 10:55**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2437MHz**

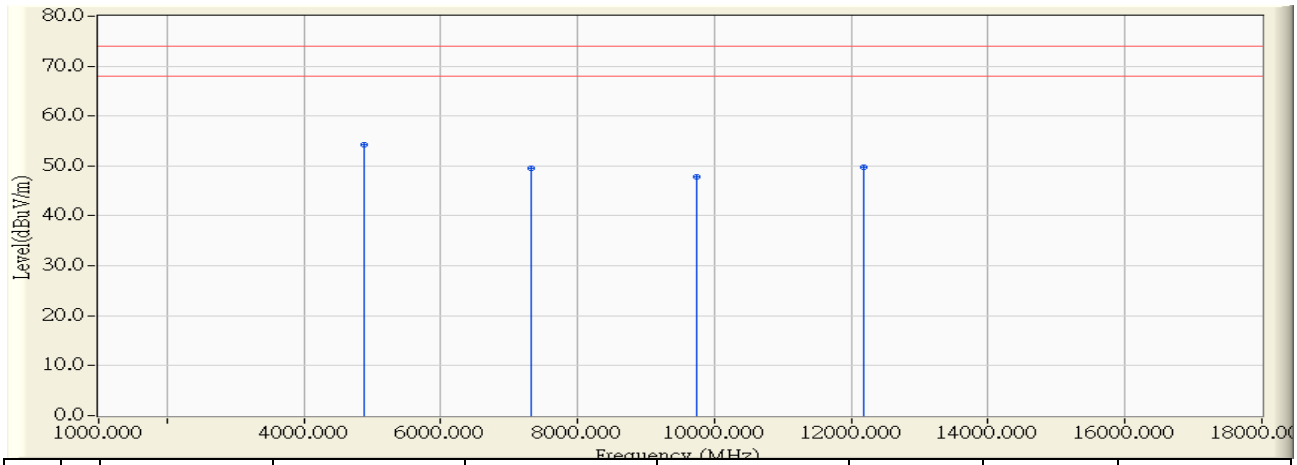


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4873.770	-1.454	45.540	44.086	-29.914	74.000	PEAK
2		7310.900	7.144	38.740	45.884	-28.116	74.000	PEAK
3		9755.376	9.259	39.670	48.929	-25.071	74.000	PEAK
4	*	12194.000	11.441	38.470	49.911	-24.089	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:01**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2437MHz**

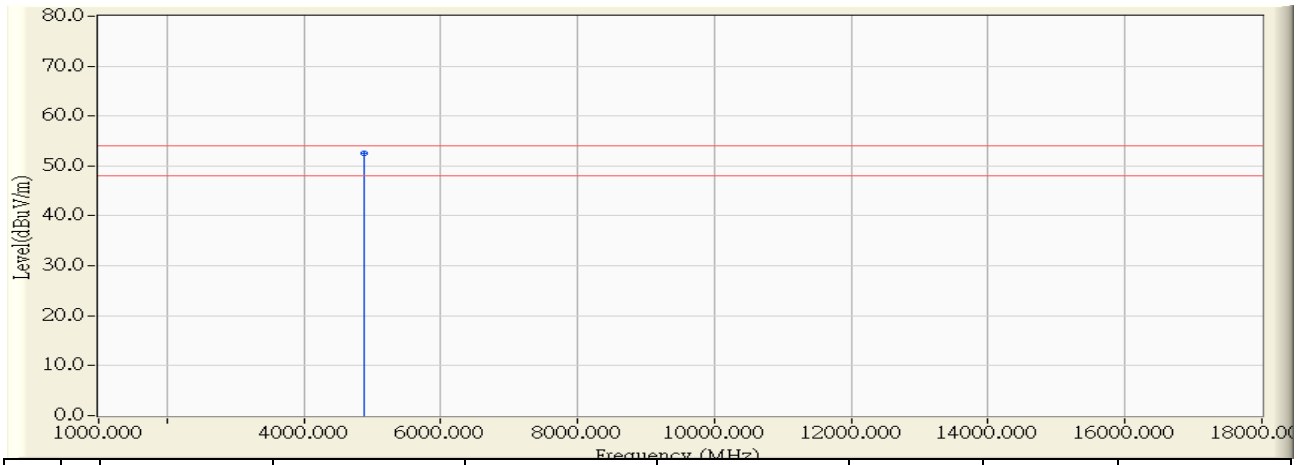


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4873.910	-0.681	54.940	54.259	-19.741	74.000	PEAK
2		7311.000	6.644	42.860	49.504	-24.496	74.000	PEAK
3		9750.369	8.580	39.190	47.770	-26.230	74.000	PEAK
4		12186.000	11.151	38.520	49.672	-24.328	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:03**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2437MHz**

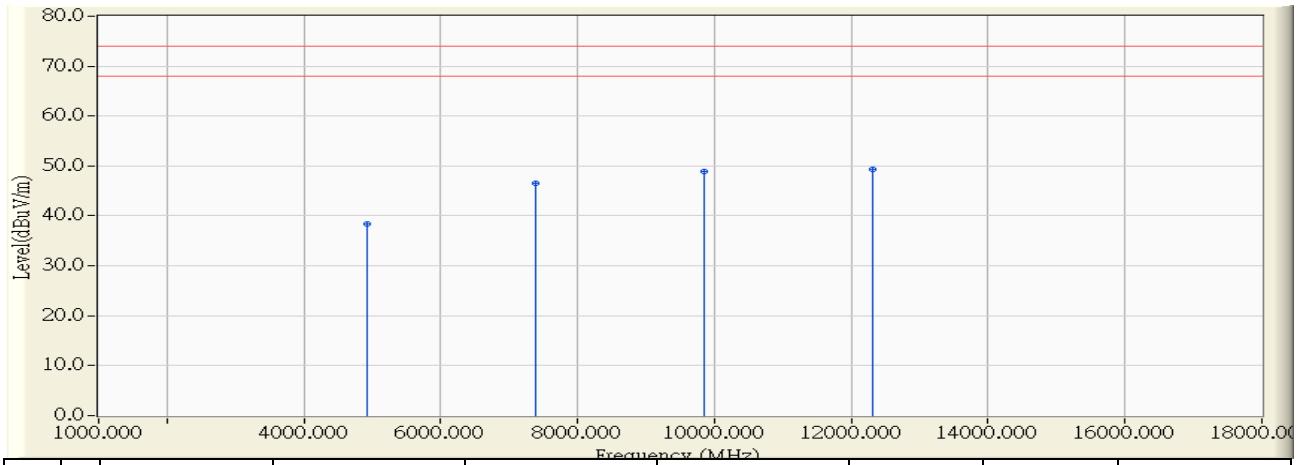


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4874.000	-0.681	53.300	52.619	-1.381	54.000	AVERAGE

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:10**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2462MHz**

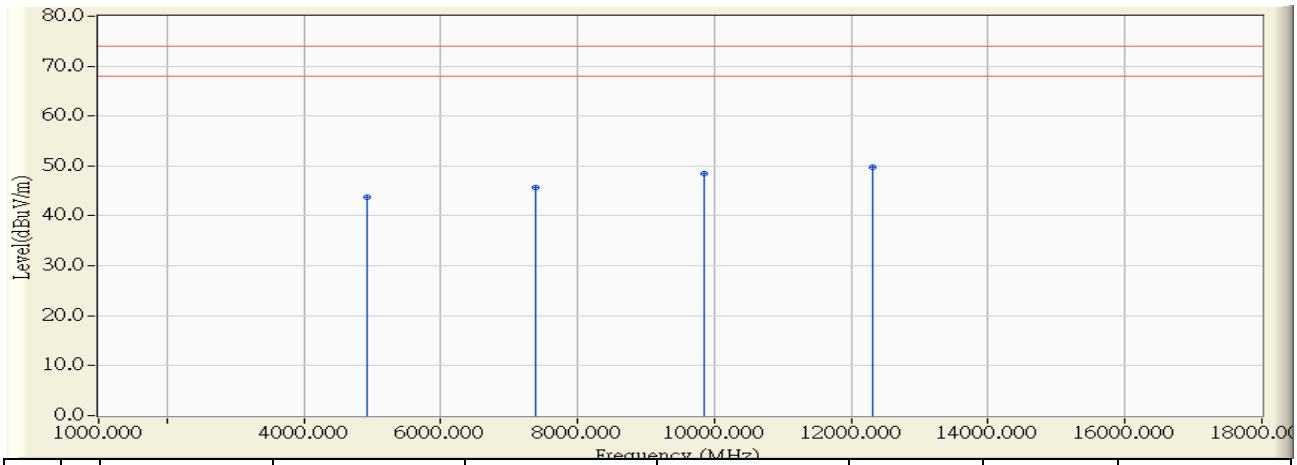


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4923.800	-1.332	39.760	38.428	-35.572	74.000	PEAK
2		7383.000	7.300	39.170	46.470	-27.530	74.000	PEAK
3		9848.030	9.766	39.100	48.866	-25.134	74.000	PEAK
4	*	12315.750	11.325	37.980	49.305	-24.695	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:16**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2462MHz**

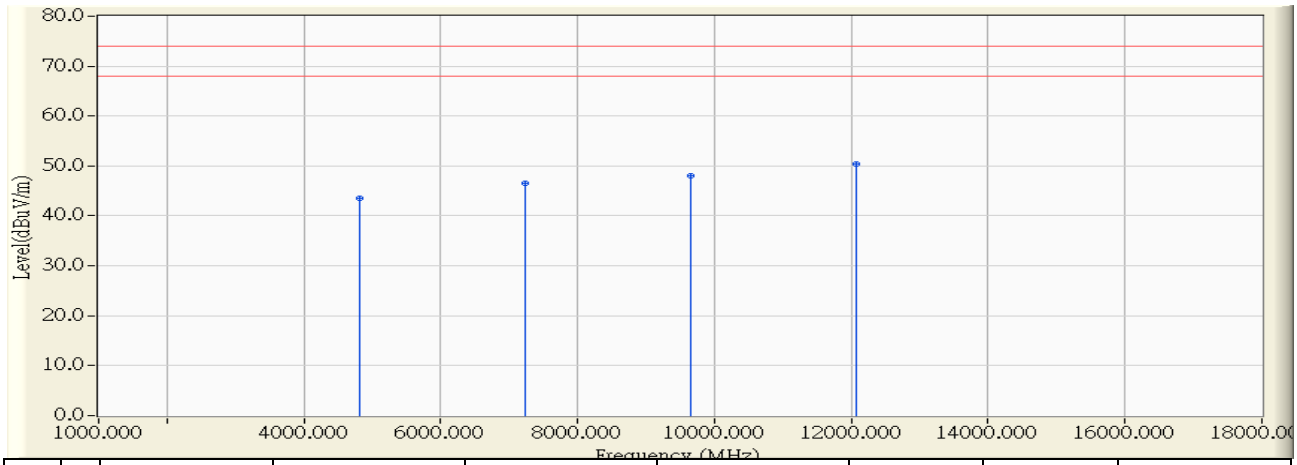


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4923.780	-0.684	44.450	43.766	-30.234	74.000	PEAK
2		7383.450	6.801	38.960	45.761	-28.239	74.000	PEAK
3		9853.840	8.991	39.480	48.472	-25.528	74.000	PEAK
4	*	12305.000	11.157	38.630	49.787	-24.213	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:23**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2412MHz**

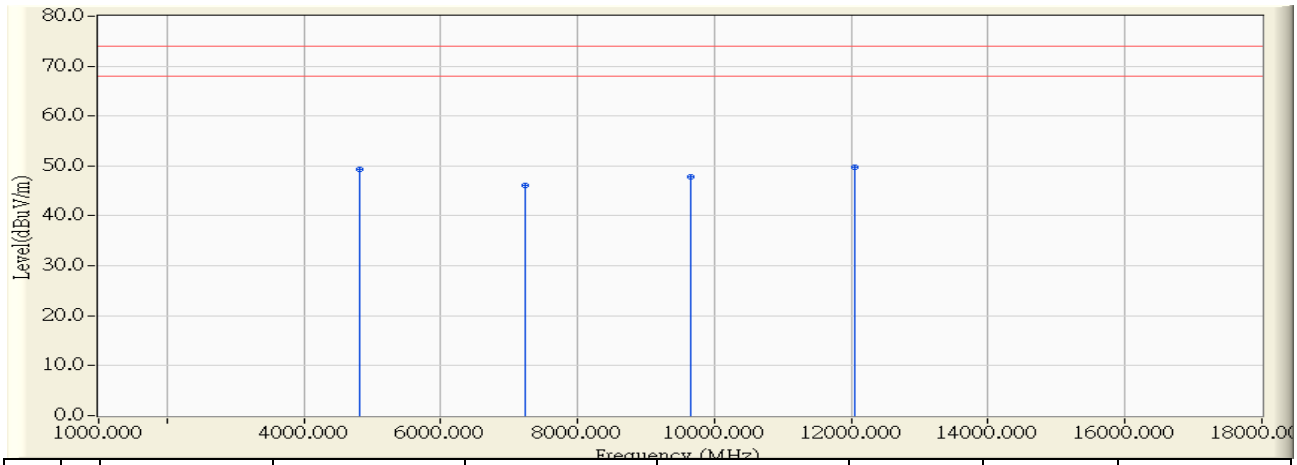


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4823.890	-1.575	45.040	43.465	-30.535	74.000	PEAK
2		7236.070	6.982	39.480	46.462	-27.538	74.000	PEAK
3		9648.000	8.671	39.340	48.011	-25.989	74.000	PEAK
4	*	12065.000	11.565	38.750	50.314	-23.686	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:29**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2412MHz**

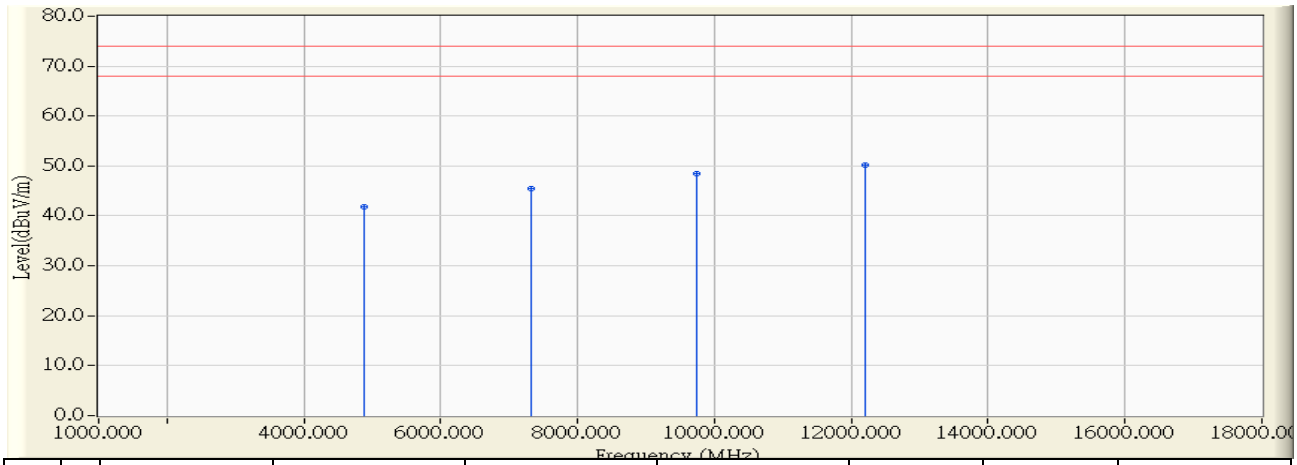


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.060	-0.678	50.090	49.412	-24.588	74.000	PEAK
2		7235.940	6.982	39.210	46.192	-27.808	74.000	PEAK
3		9656.076	8.714	39.060	47.775	-26.225	74.000	PEAK
4	*	12055.250	11.574	38.220	49.794	-24.206	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:35**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2437MHz**

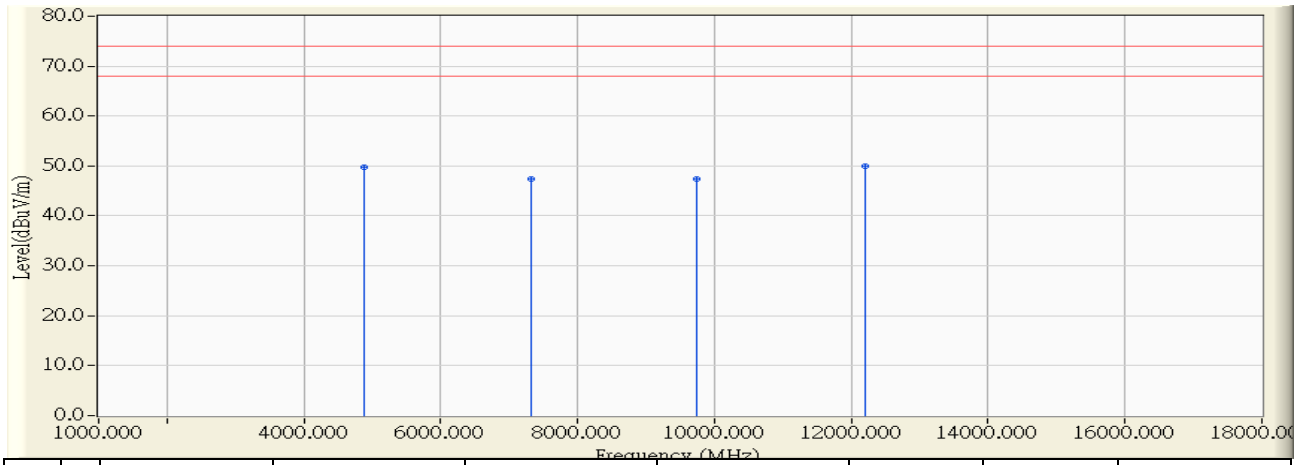


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.620	-1.452	43.270	41.818	-32.182	74.000	PEAK
2		7318.996	7.162	38.410	45.572	-28.428	74.000	PEAK
3		9733.147	9.137	39.250	48.387	-25.613	74.000	PEAK
4	*	12193.000	11.442	38.820	50.262	-23.738	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:42**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2437MHz**

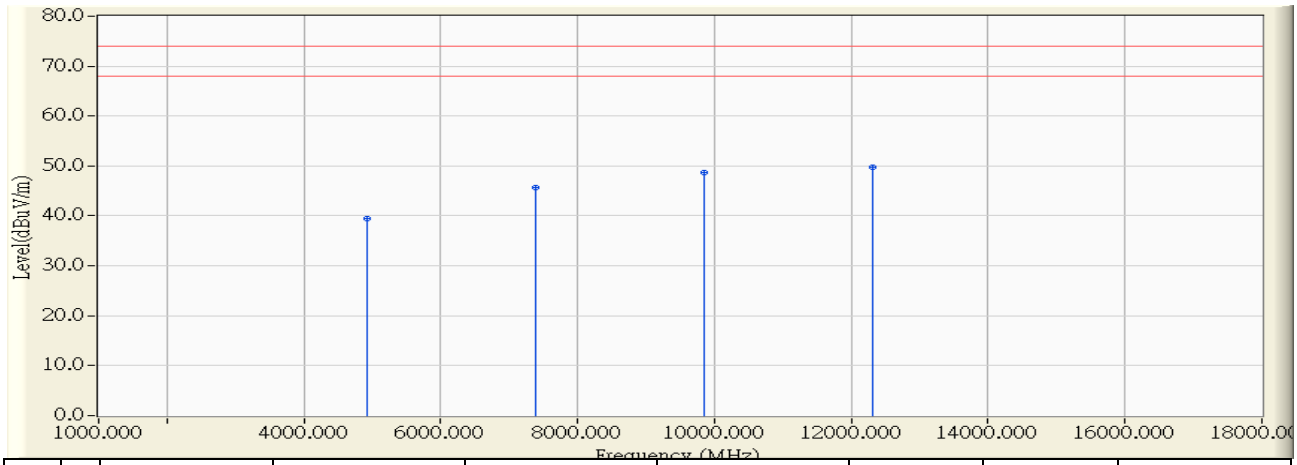


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4884.000	-0.682	50.530	49.849	-24.151	74.000	PEAK
2		7319.936	6.664	40.810	47.474	-26.526	74.000	PEAK
3		9746.300	8.564	38.790	47.354	-26.646	74.000	PEAK
4	*	12194.000	11.152	38.840	49.992	-24.008	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:49**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2462MHz**

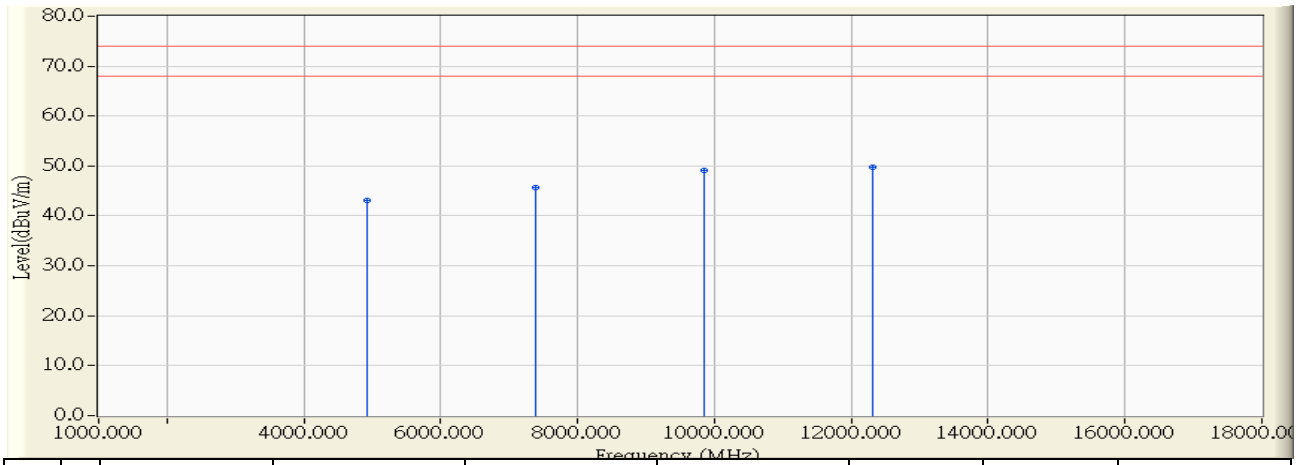


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.060	-1.331	40.770	39.439	-34.561	74.000	PEAK
2		7384.670	7.304	38.480	45.784	-28.216	74.000	PEAK
3		9840.800	9.726	38.910	48.636	-25.364	74.000	PEAK
4	*	12305.000	11.335	38.510	49.845	-24.155	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 11:56**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2462MHz**

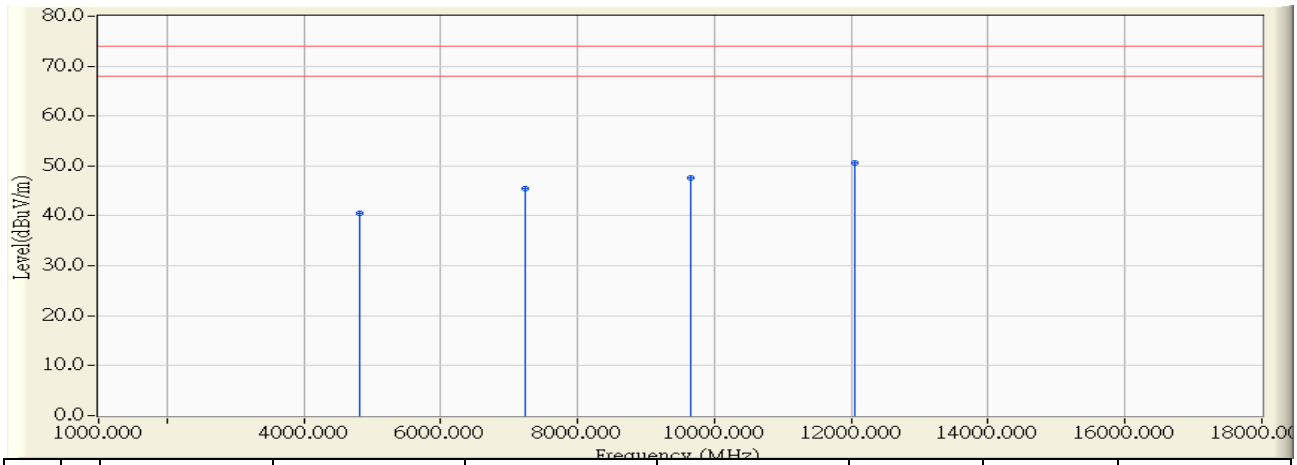


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4923.860	-0.684	43.820	43.136	-30.864	74.000	PEAK
2		7395.875	6.828	38.810	45.638	-28.362	74.000	PEAK
3		9838.045	9.711	39.440	49.151	-24.849	74.000	PEAK
4	*	12316.770	11.324	38.380	49.704	-24.296	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 13:10**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2412MHz**

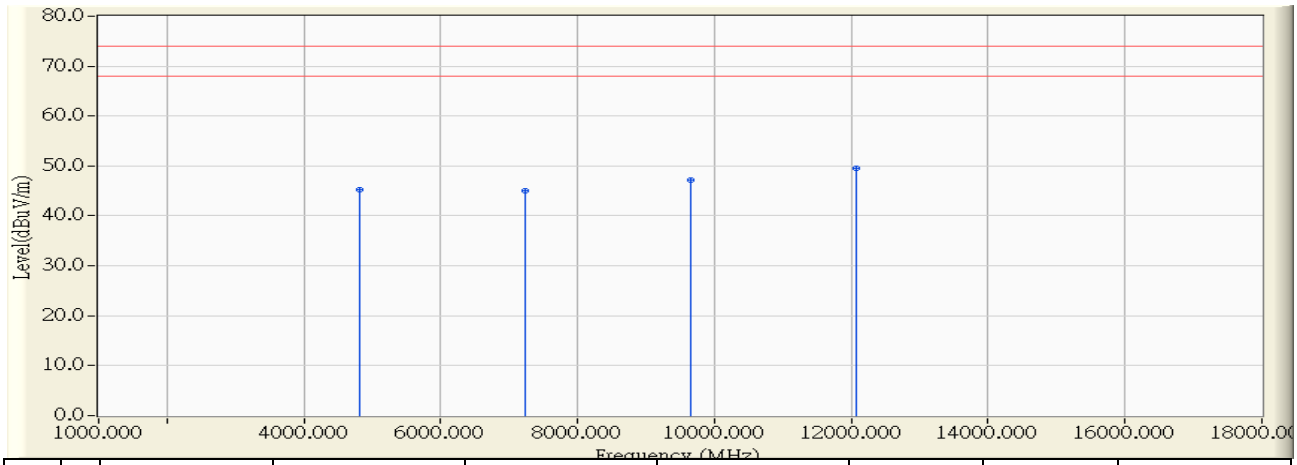


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4823.850	-1.575	42.110	40.535	-33.465	74.000	PEAK
2		7239.420	6.990	38.460	45.449	-28.551	74.000	PEAK
3		9646.590	8.663	38.970	47.633	-26.367	74.000	PEAK
4	*	12053.713	11.576	39.050	50.625	-23.375	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 13:18**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2412MHz**

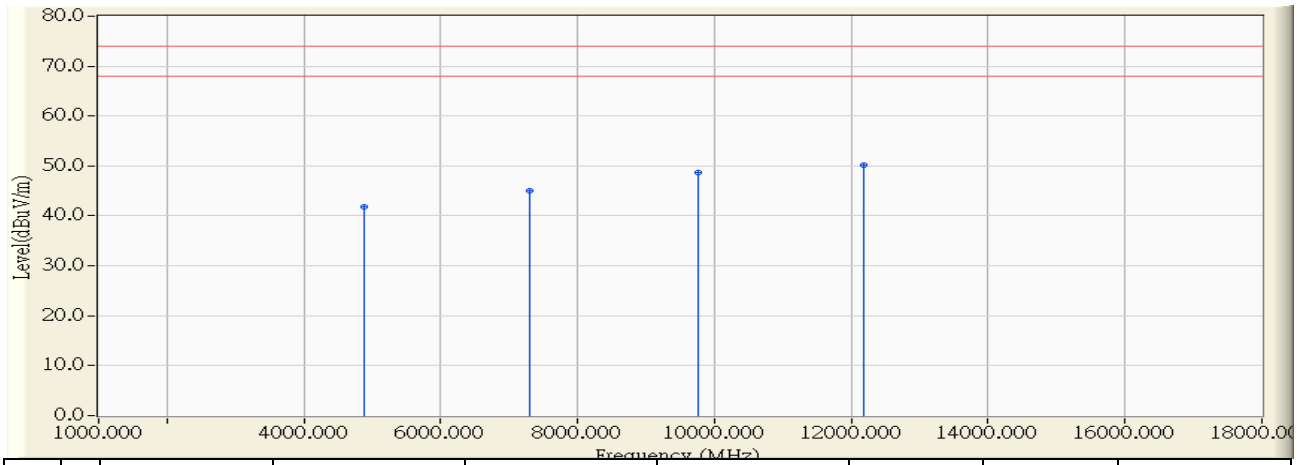


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	-0.678	45.860	45.182	-28.818	74.000	PEAK
2		7233.190	6.476	38.590	45.066	-28.934	74.000	PEAK
3		9644.490	8.160	38.920	47.079	-26.921	74.000	PEAK
4	*	12067.000	11.146	38.380	49.526	-24.474	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 13:26**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2437MHz**

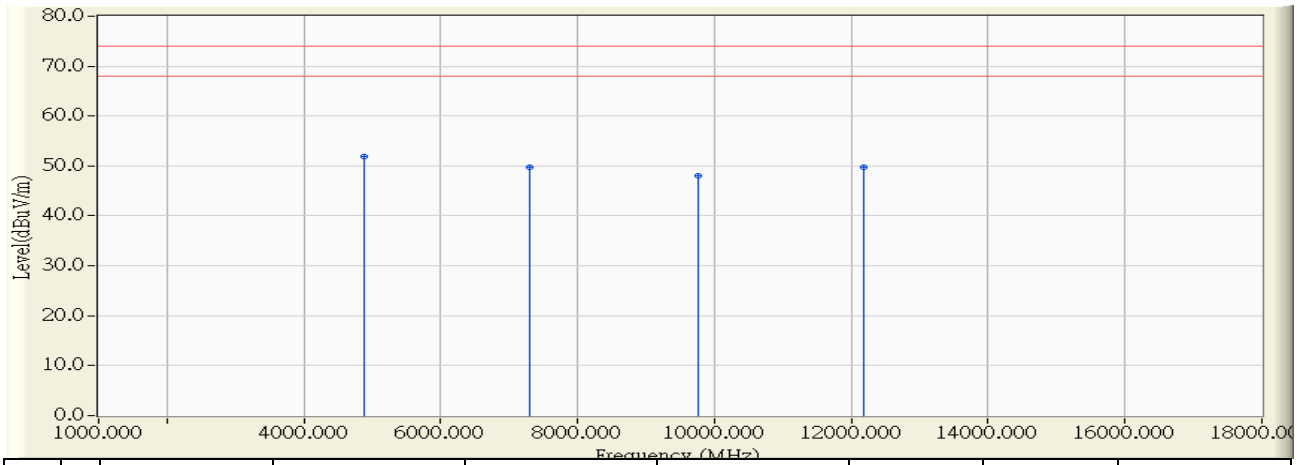


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4873.520	-1.454	43.270	41.816	-32.184	74.000	PEAK
2		7307.242	7.135	37.970	45.106	-28.894	74.000	PEAK
3		9755.276	9.258	39.500	48.758	-25.242	74.000	PEAK
4	*	12172.000	11.462	38.820	50.282	-23.718	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 13:34**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2437MHz**

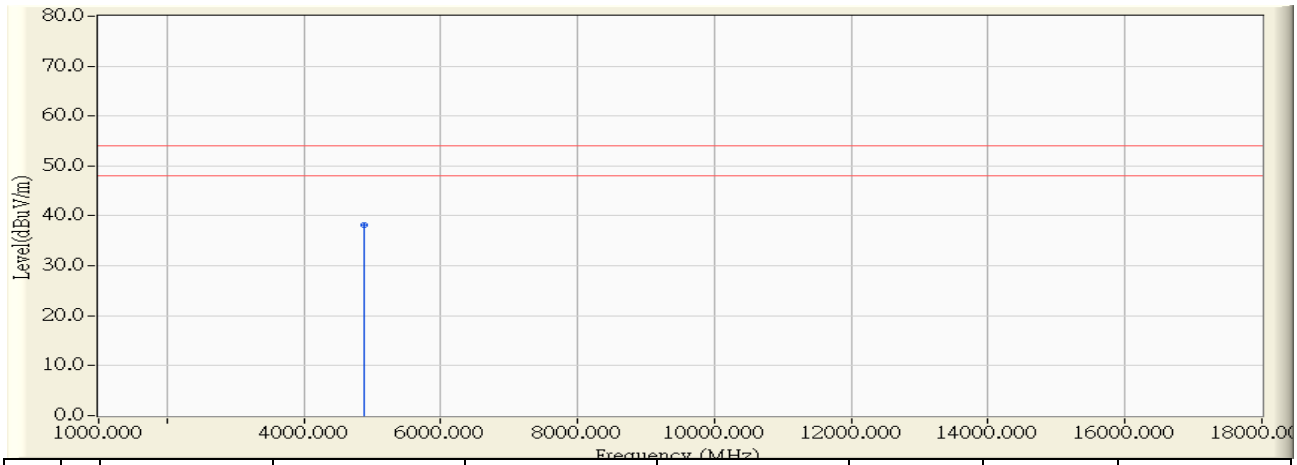


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4873.500	-0.680	52.630	51.949	-22.051	74.000	PEAK
2		7308.960	6.640	43.110	49.750	-24.250	74.000	PEAK
3		9764.070	8.634	39.370	48.005	-25.995	74.000	PEAK
4		12181.000	11.151	38.650	49.801	-24.199	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 13:40**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2437MHz**

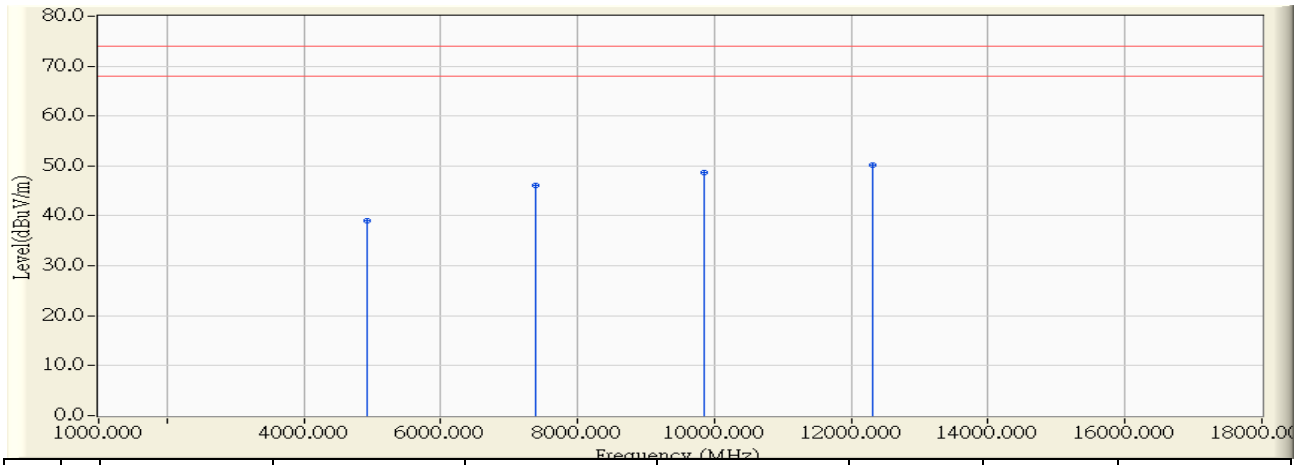


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4874.060	-0.681	38.830	38.149	-15.851	54.000	AVERAGE

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 13:47**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2462MHz**

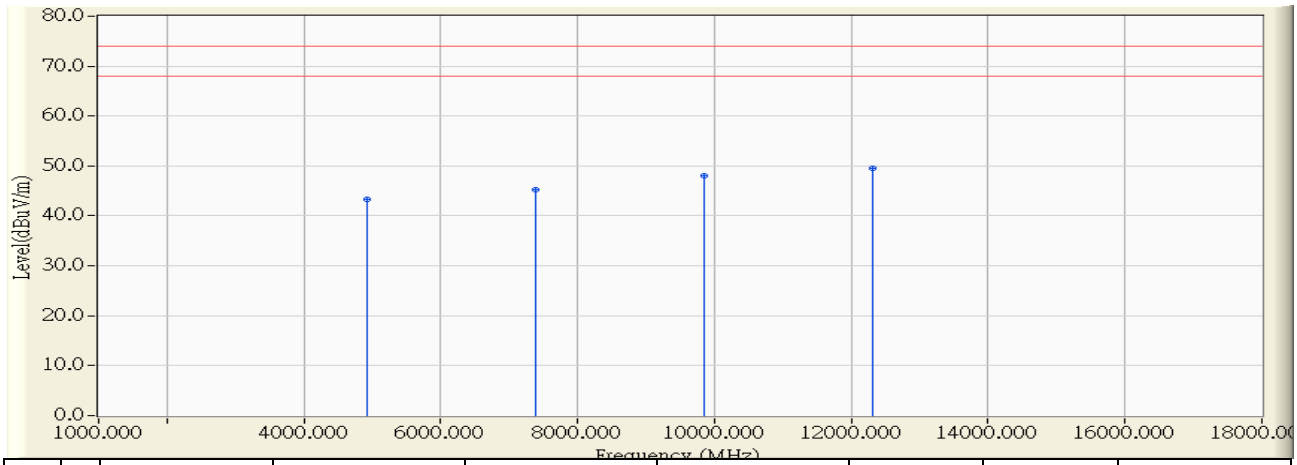


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.060	-1.331	40.430	39.099	-34.901	74.000	PEAK
2		7384.440	7.304	38.750	46.053	-27.947	74.000	PEAK
3		9848.380	9.768	38.950	48.718	-25.282	74.000	PEAK
4	*	12305.280	11.335	38.830	50.165	-23.835	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 13:54**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2462MHz**

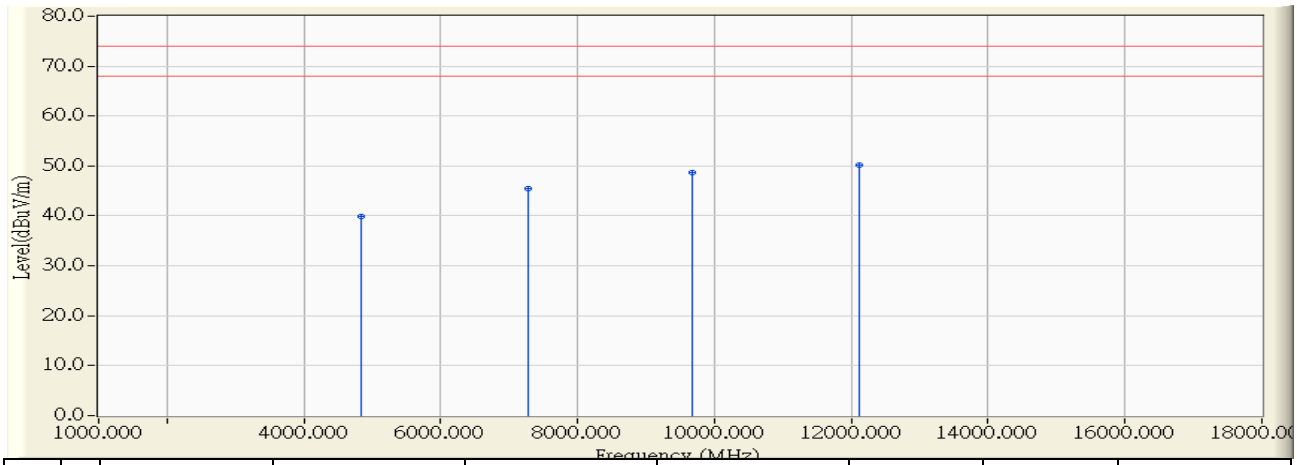


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	-0.684	43.970	43.286	-30.714	74.000	PEAK
2		7390.948	6.817	38.450	45.267	-28.733	74.000	PEAK
3		9839.000	8.932	39.150	48.083	-25.917	74.000	PEAK
4	*	12318.536	11.157	38.280	49.437	-24.563	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 14:02**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2422MHz**

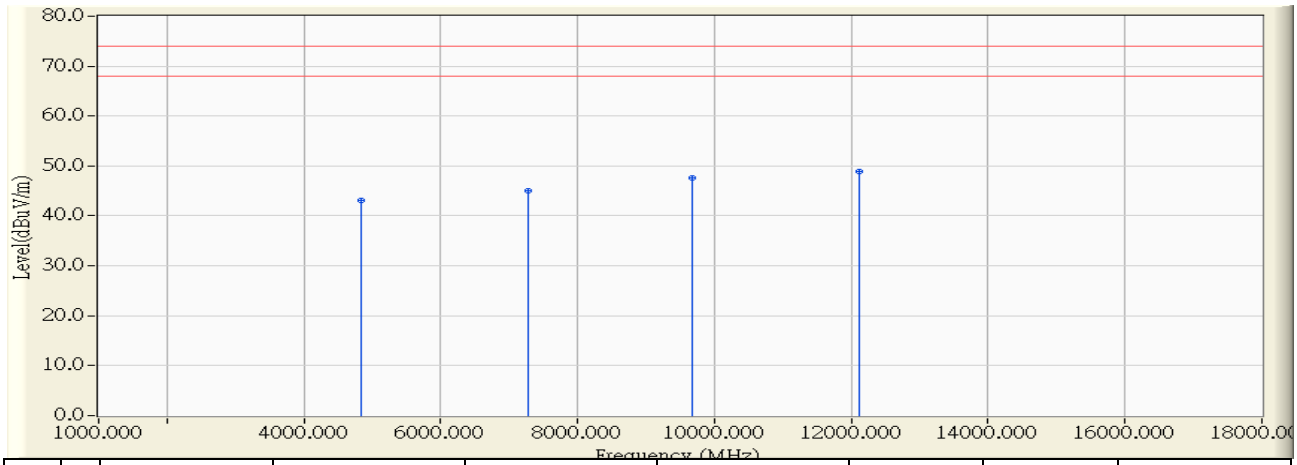


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4844.000	-1.526	41.360	39.834	-34.166	74.000	PEAK
2		7272.557	7.061	38.350	45.411	-28.589	74.000	PEAK
3		9684.000	8.868	39.750	48.618	-25.382	74.000	PEAK
4	*	12118.864	11.513	38.680	50.193	-23.807	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 14:10**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2422MHz**

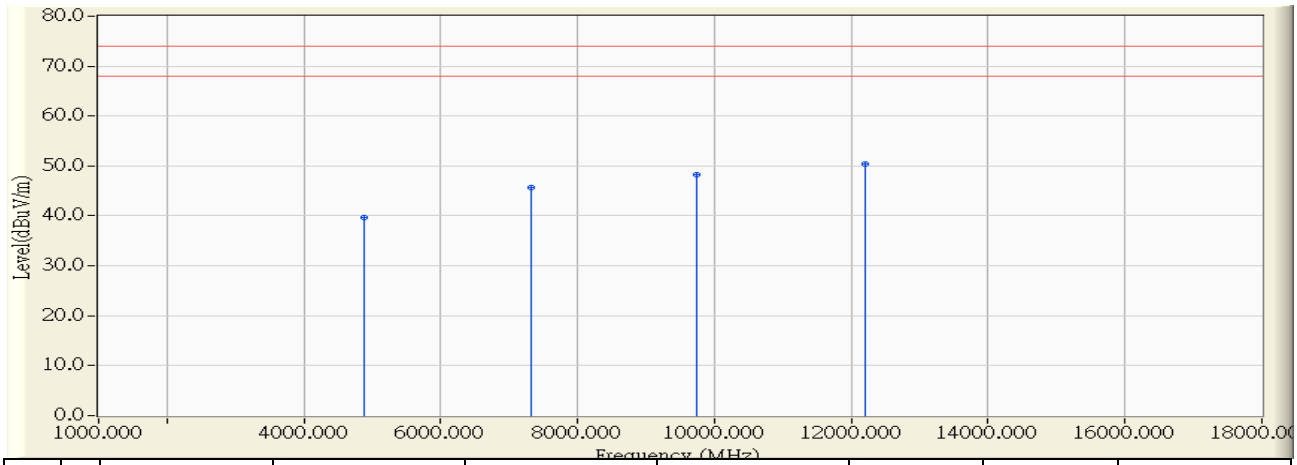


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4844.040	-0.679	43.840	43.161	-30.839	74.000	PEAK
2		7268.669	6.553	38.470	45.023	-28.977	74.000	PEAK
3		9681.633	8.306	39.200	47.507	-26.493	74.000	PEAK
4	*	12116.517	11.149	37.760	48.909	-25.091	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 14:17**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2437MHz**

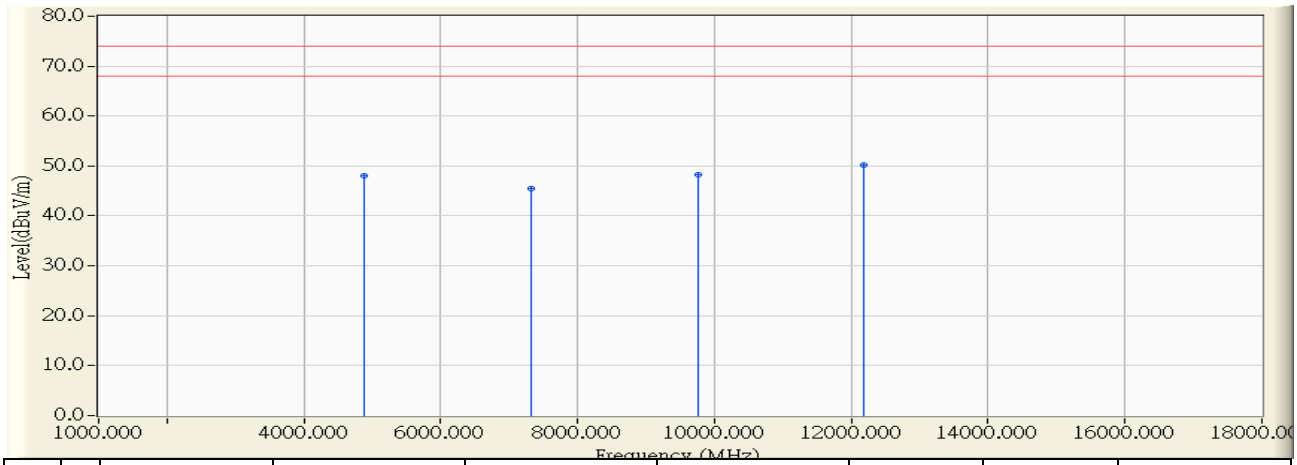


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4873.960	-1.453	41.210	39.757	-34.243	74.000	PEAK
2		7326.510	7.178	38.550	45.728	-28.272	74.000	PEAK
3		9729.080	9.114	39.120	48.235	-25.765	74.000	PEAK
4	*	12195.000	11.440	38.870	50.310	-23.690	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 – 14:24**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2437MHz**

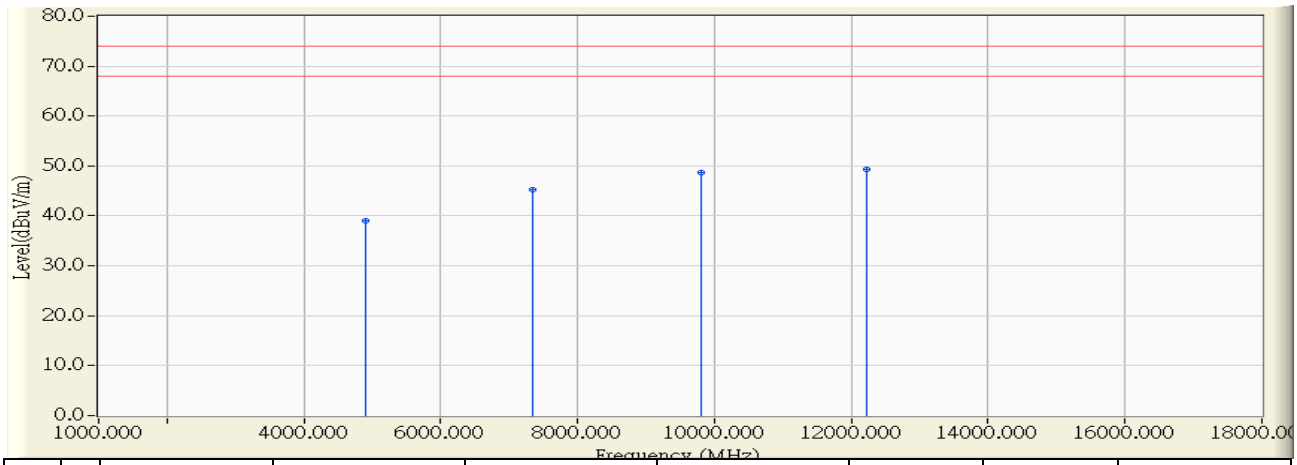


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.140	-0.681	48.760	48.079	-25.921	74.000	PEAK
2		7319.490	6.663	38.770	45.433	-28.567	74.000	PEAK
3		9764.650	8.638	39.560	48.197	-25.803	74.000	PEAK
4	*	12176.740	11.152	38.990	50.141	-23.859	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 14:31**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2452MHz**

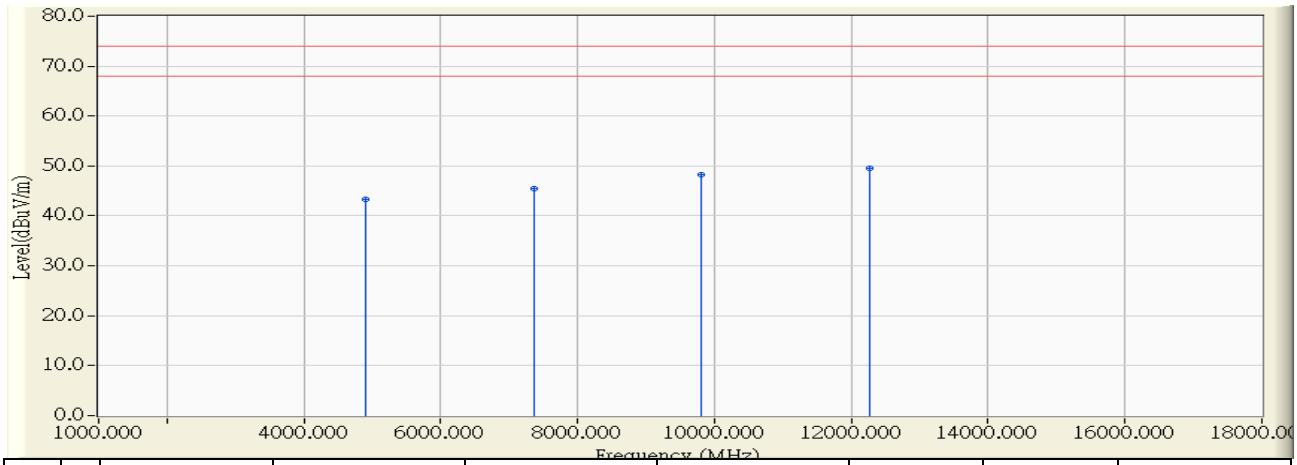


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4903.560	-1.381	40.370	38.989	-35.011	74.000	PEAK
2		7350.027	7.229	38.080	45.309	-28.691	74.000	PEAK
3		9799.000	9.497	39.100	48.598	-25.402	74.000	PEAK
4	*	12233.807	11.403	37.830	49.233	-24.767	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/03/28 - 14:40**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2452MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4904.000	-0.683	44.060	43.377	-30.623	74.000	PEAK
2		7361.417	6.753	38.640	45.393	-28.607	74.000	PEAK
3		9804.435	8.796	39.490	48.285	-25.715	74.000	PEAK
4	*	12262.000	11.155	38.370	49.525	-24.475	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 18GHz were not included is because their levels are too low.

5. RF antenna conducted test

5.1. Test Equipment

The following test equipments are used during the test:

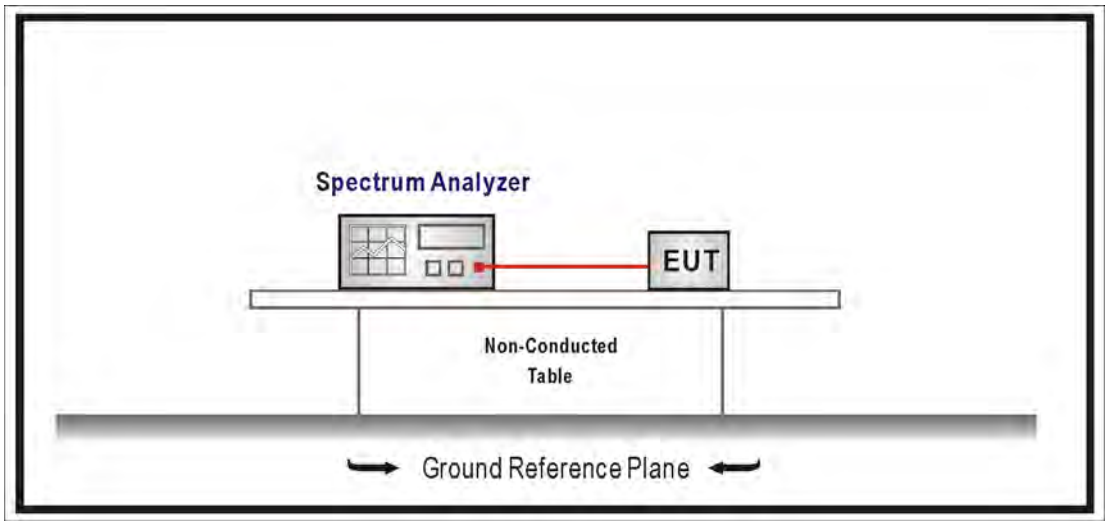
RF antenna conducted test / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2015/07/14

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

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 an RF conducted or 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 setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of KDB558074 v03r02 for compliance to FCC 47CFR 15.247 requirements
Set RBW = 100 kHz, Set VBW≧3xRBW, scan up through 10th harmonic.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2014

5.6. Uncertainty

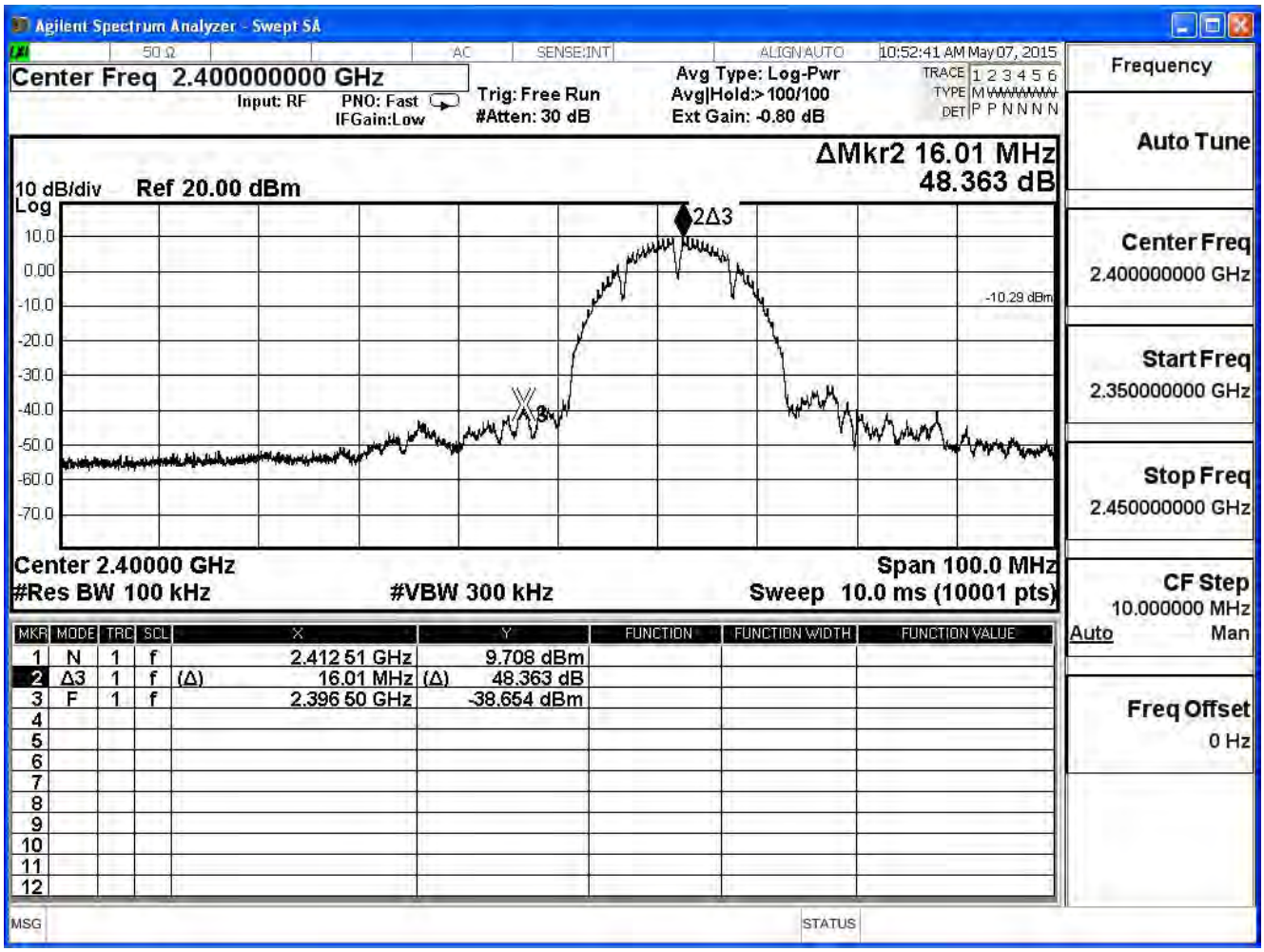
Conducted is defined as ± 1.27dB

5.7. Test Result

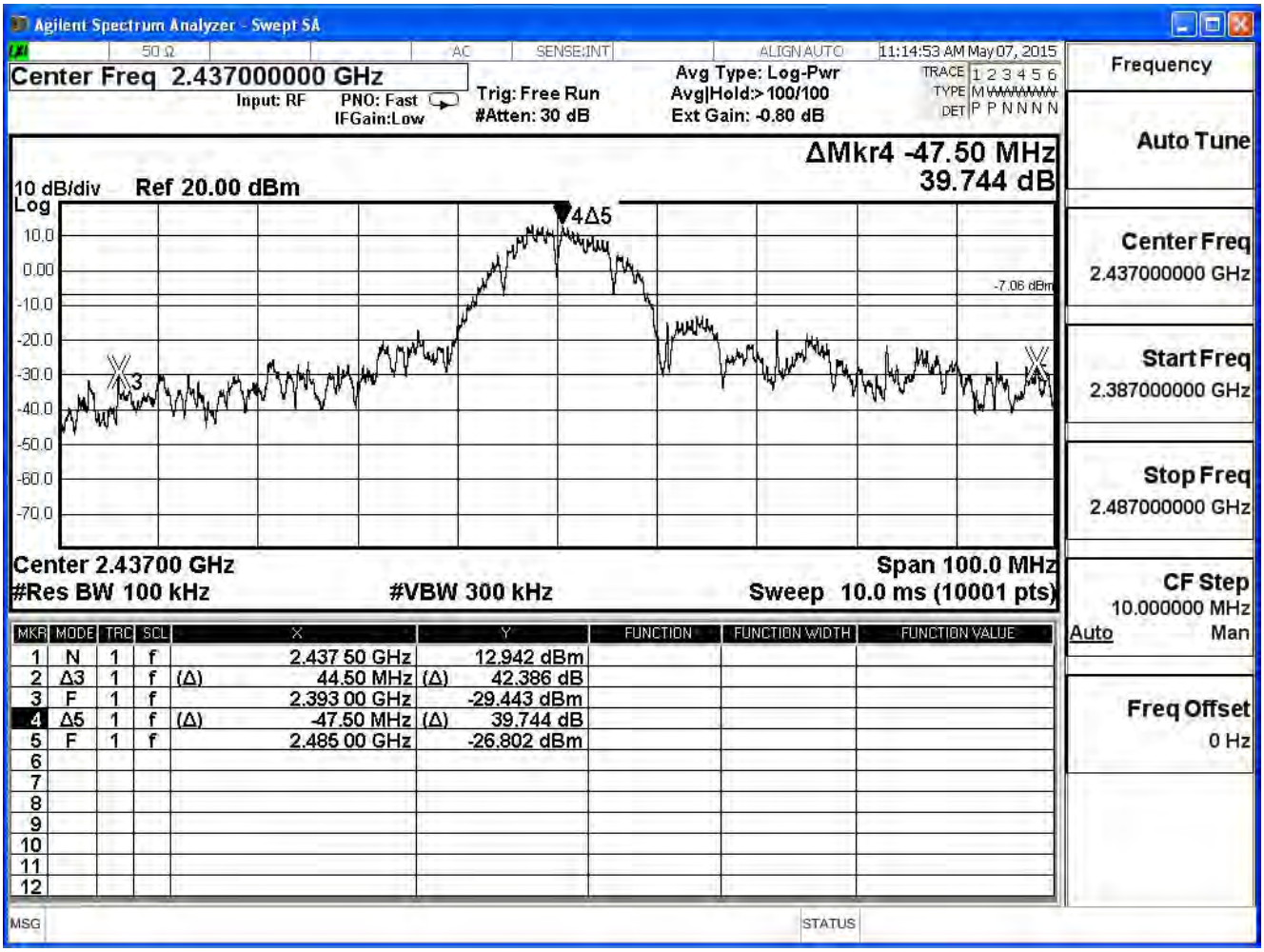
Product	WiFi Module		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2014/05/07	Test Site	SR7

IEEE 802.11b (Ant 0), Duty Cycle: 1				
Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
1	2412	48.363	≧20	Pass
6	2437	39.744	≧20	Pass
11	2462	47.214	≧20	Pass

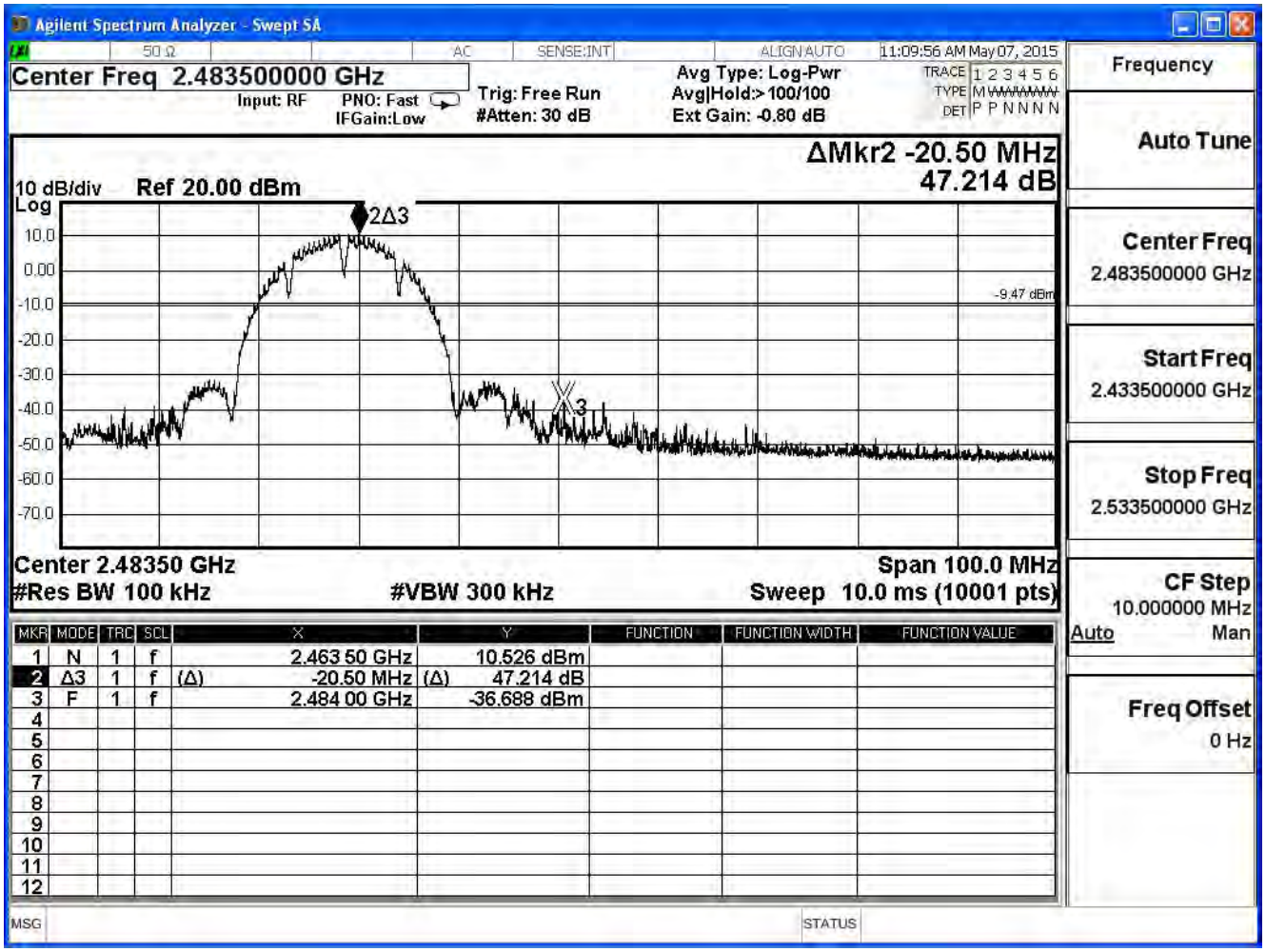
Channel 01 (2412MHz)



Channel 06 (2437MHz)



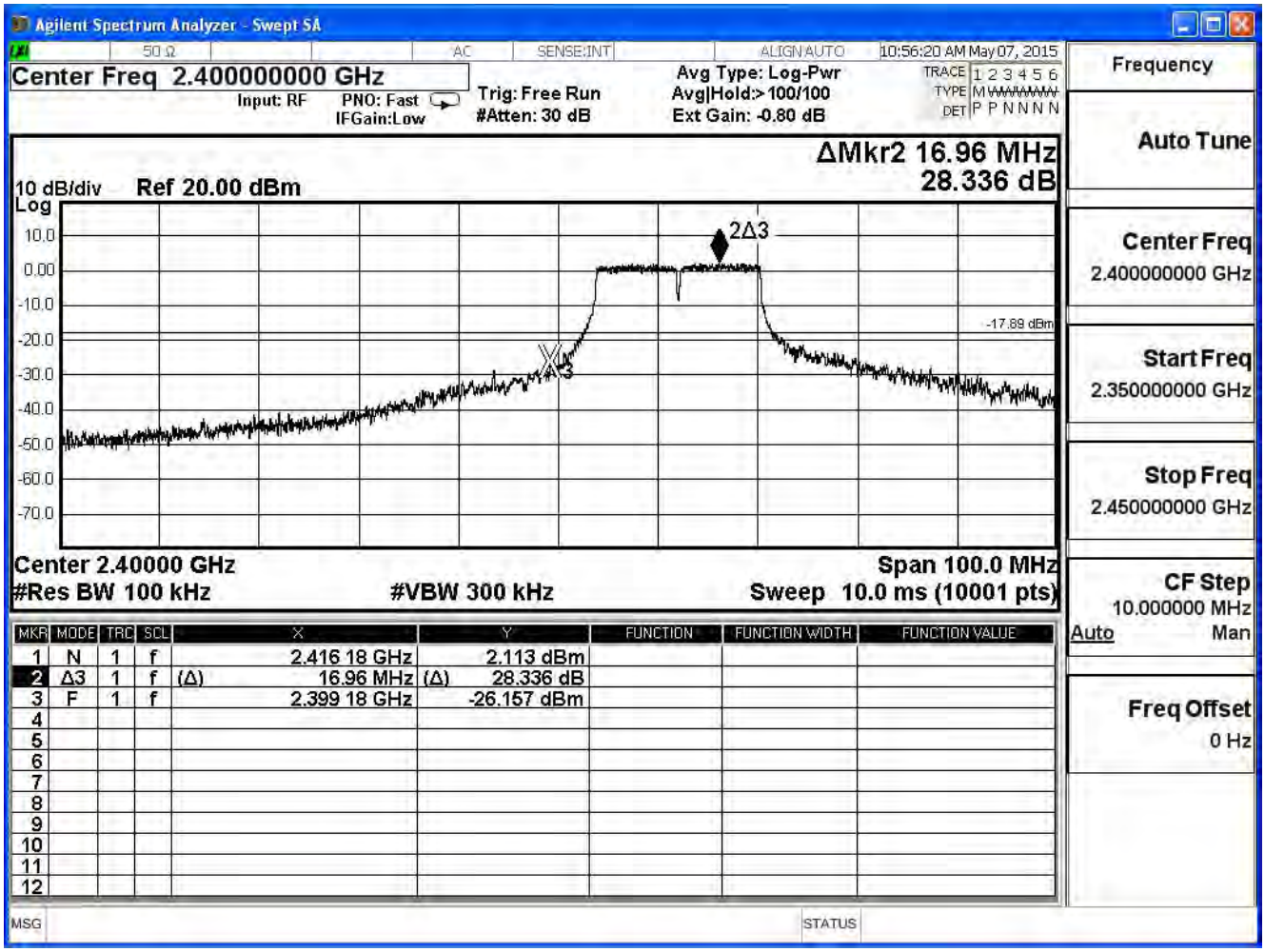
Channel 11 (2462MHz)



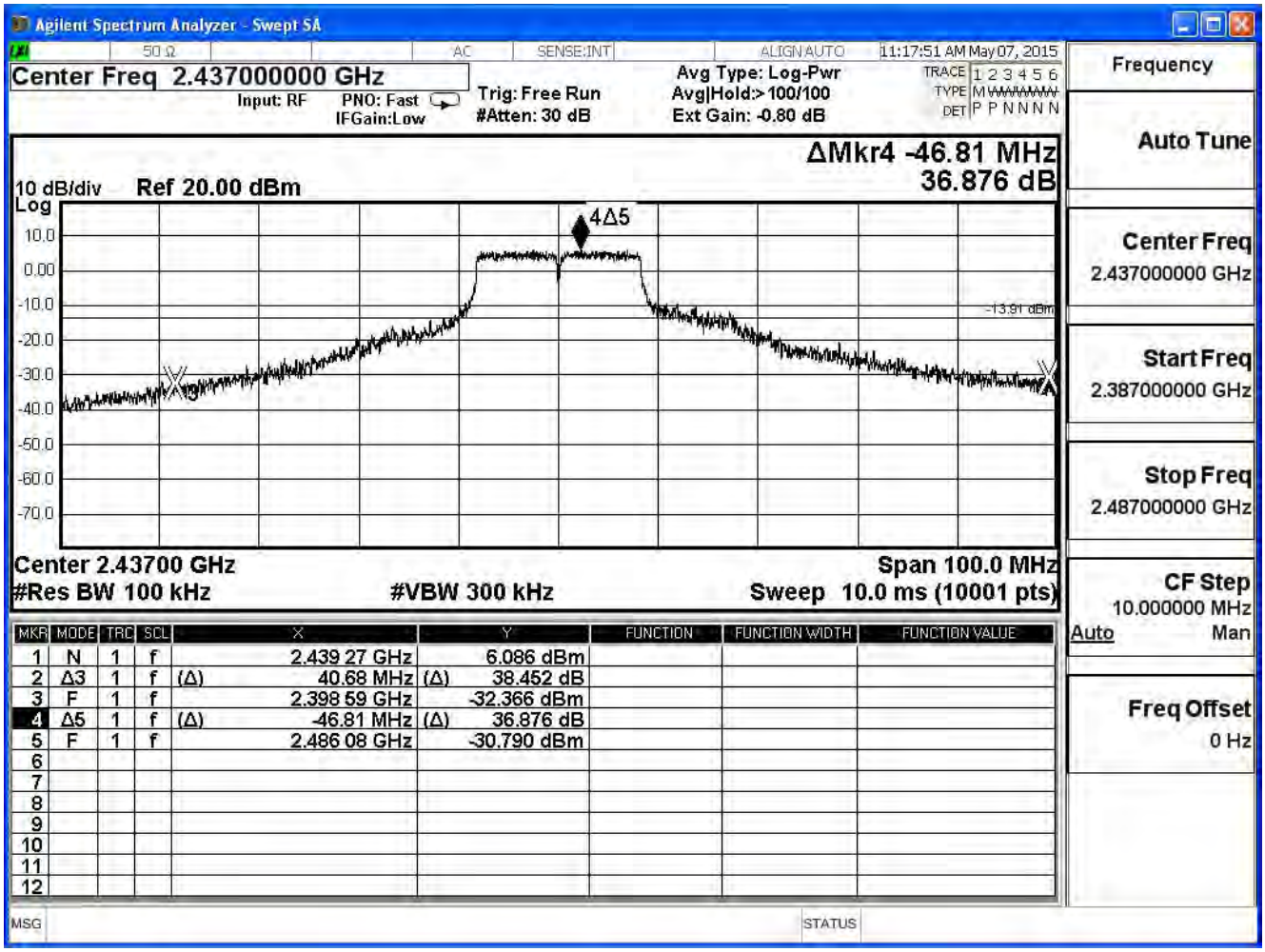
Product	WiFi Module		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2014/05/07	Test Site	SR7

IEEE 802.11g (Ant 0), Duty Cycle: 1				
Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
1	2412	28.336	≧20	Pass
6	2437	36.876	≧20	Pass
11	2462	47.292	≧20	Pass

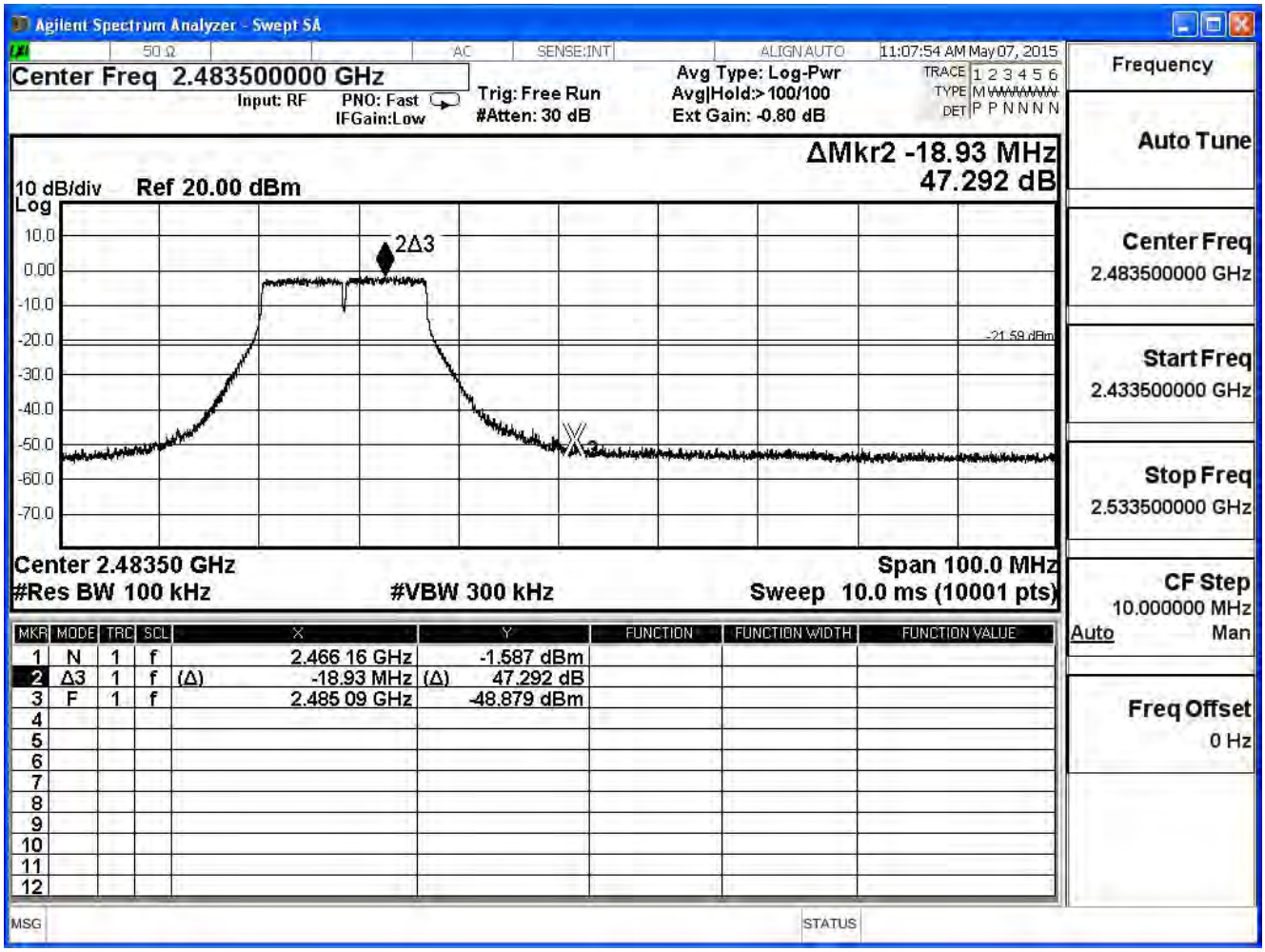
Channel 01 (2412MHz)



Channel 06 (2437MHz)



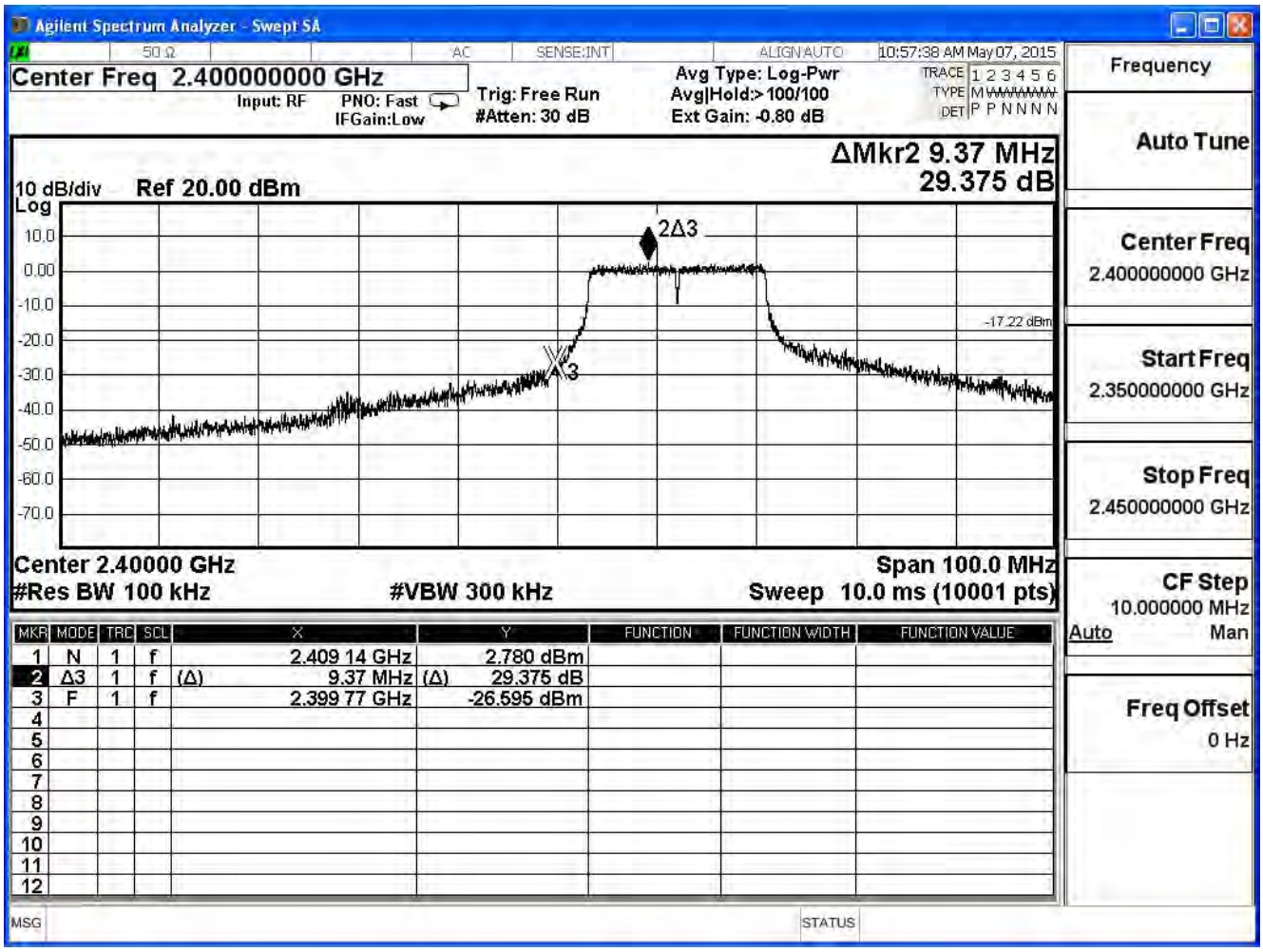
Channel 11 (2462MHz)



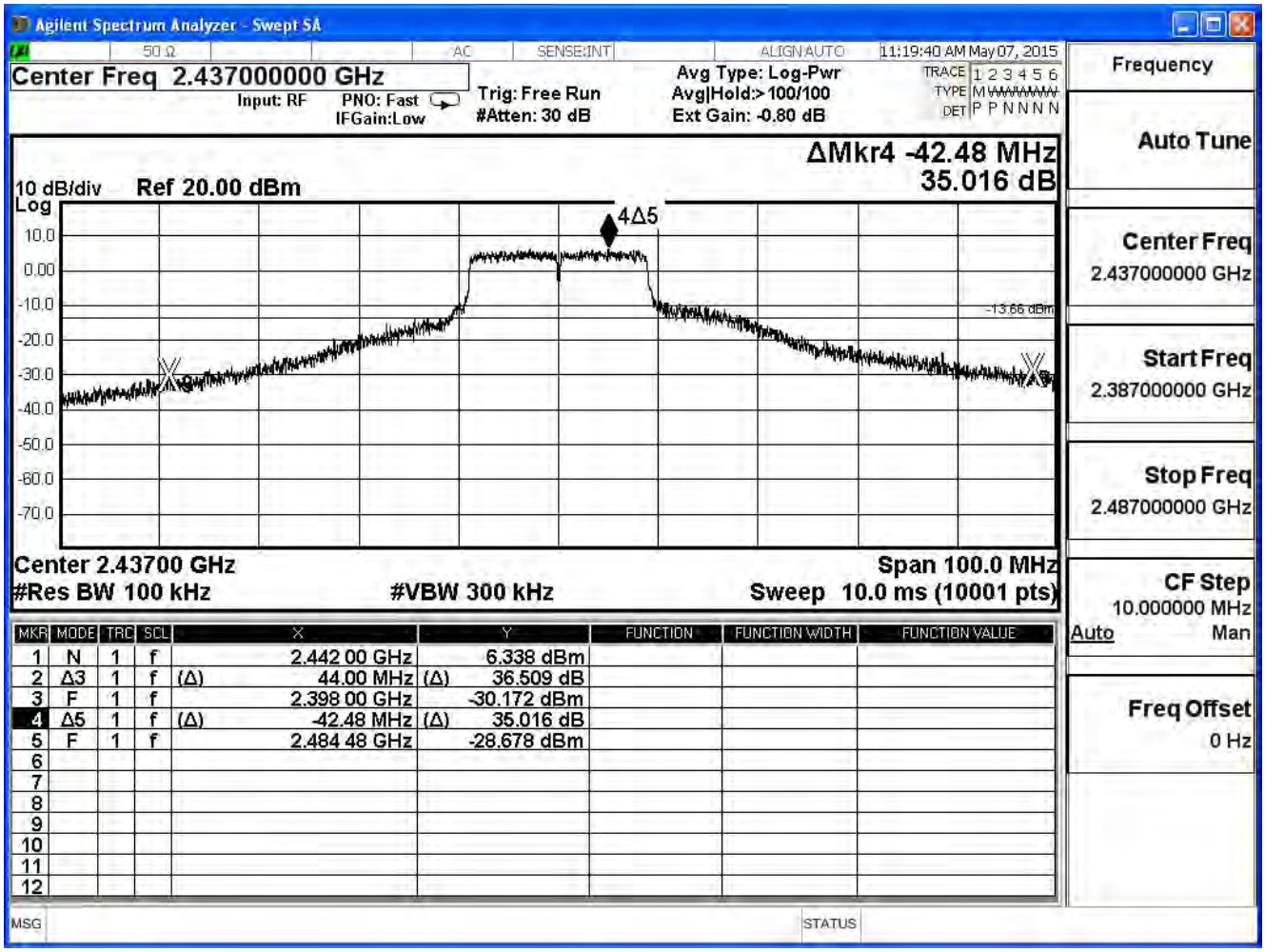
Product	WiFi Module		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2014/05/07	Test Site	SR7

IEEE 802.11n (20MHz) (Ant 0), Duty Cycle: 1				
Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
1	2412	29.375	≧20	Pass
6	2437	35.016	≧20	Pass
11	2462	47.739	≧20	Pass

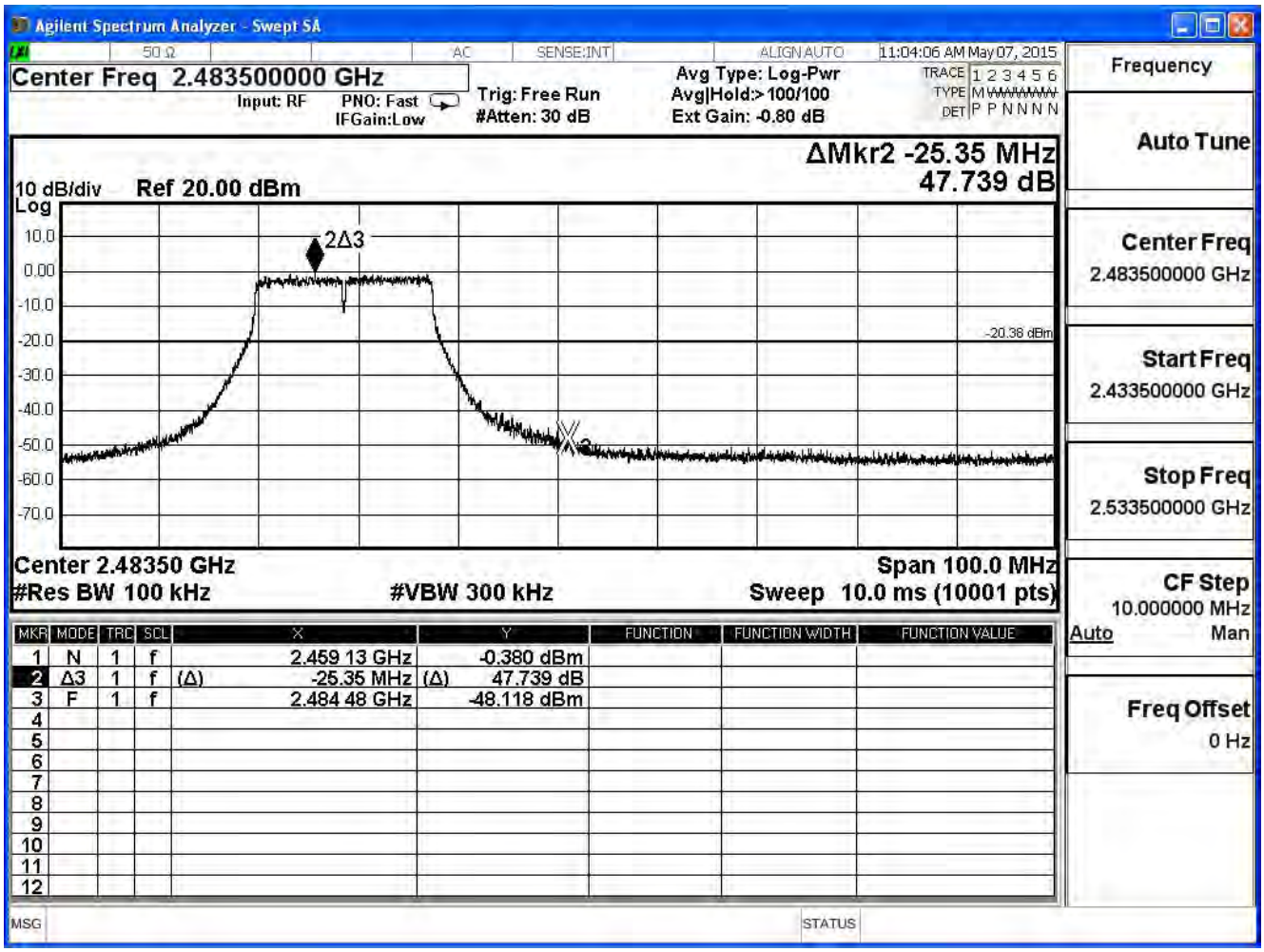
Channel 1 (2412MHz)



Channel 6 (2437MHz)



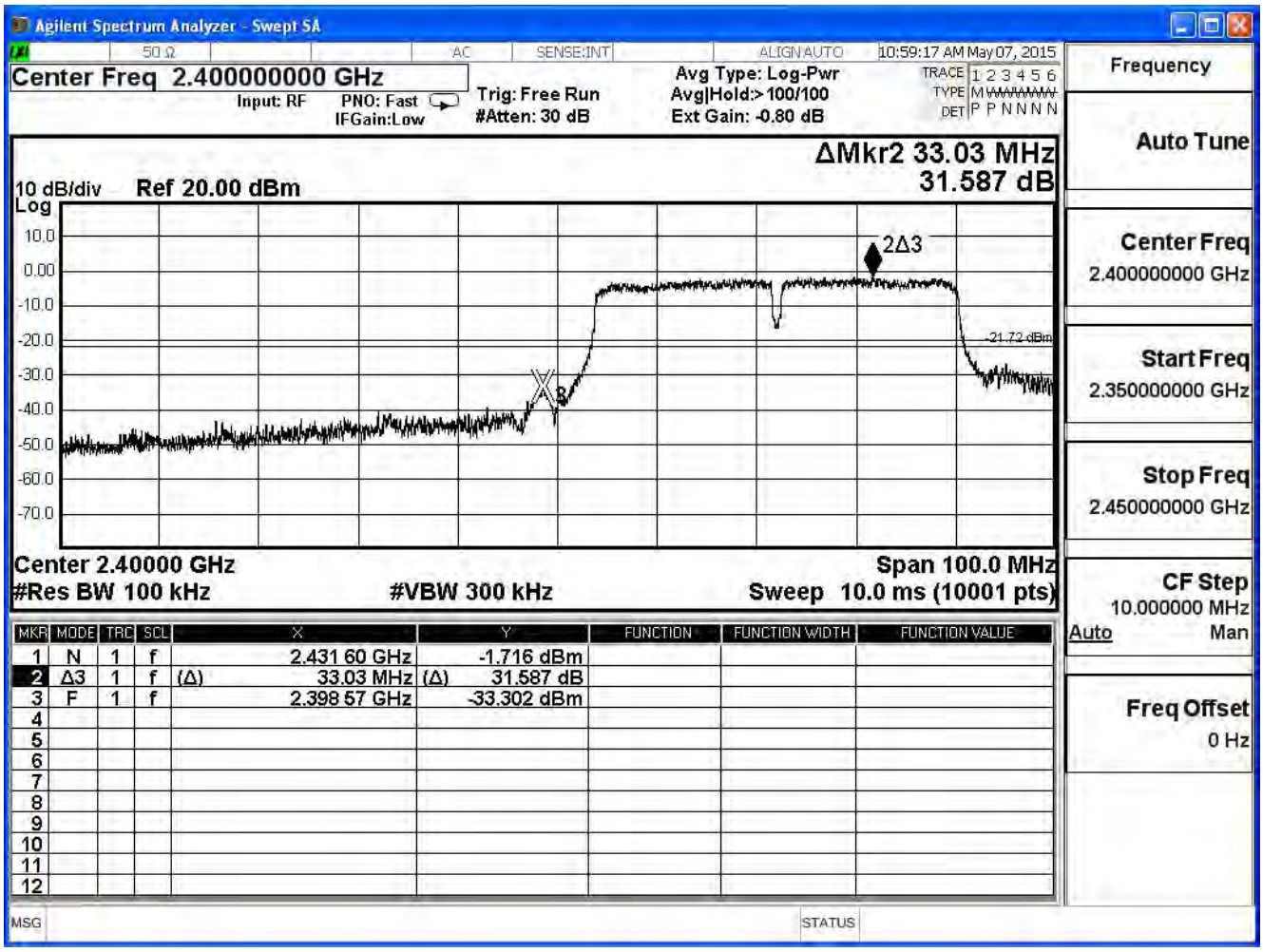
Channel 11 (2462MHz)



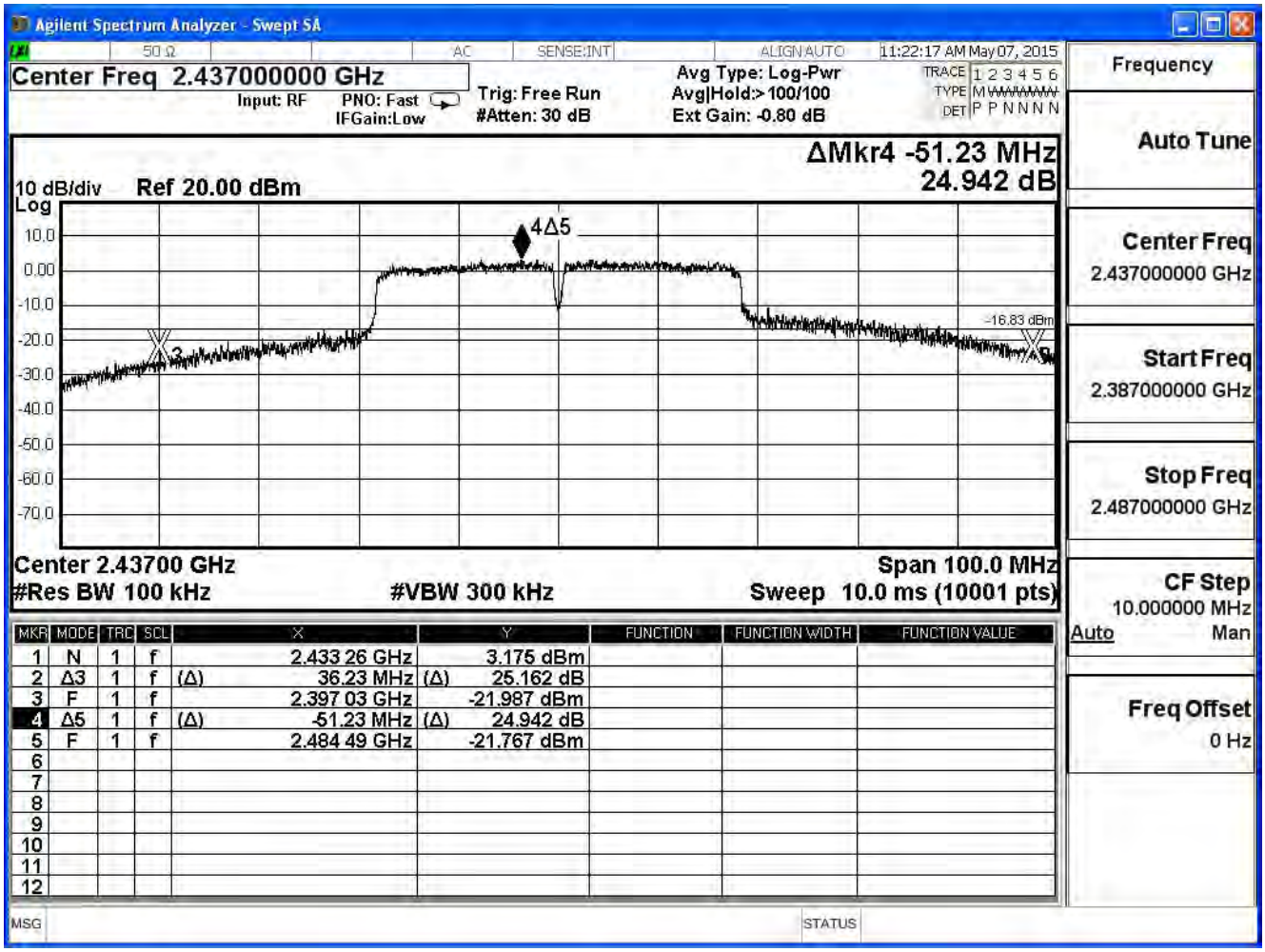
Product	WiFi Module		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit		
Date of Test	2014/05/07	Test Site	SR7

IEEE 802.11n (20MHz) (Ant 0), Duty Cycle: 1				
Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
3	2422	31.587	≧20	Pass
6	2437	24.942	≧20	Pass
9	2452	39.026	≧20	Pass

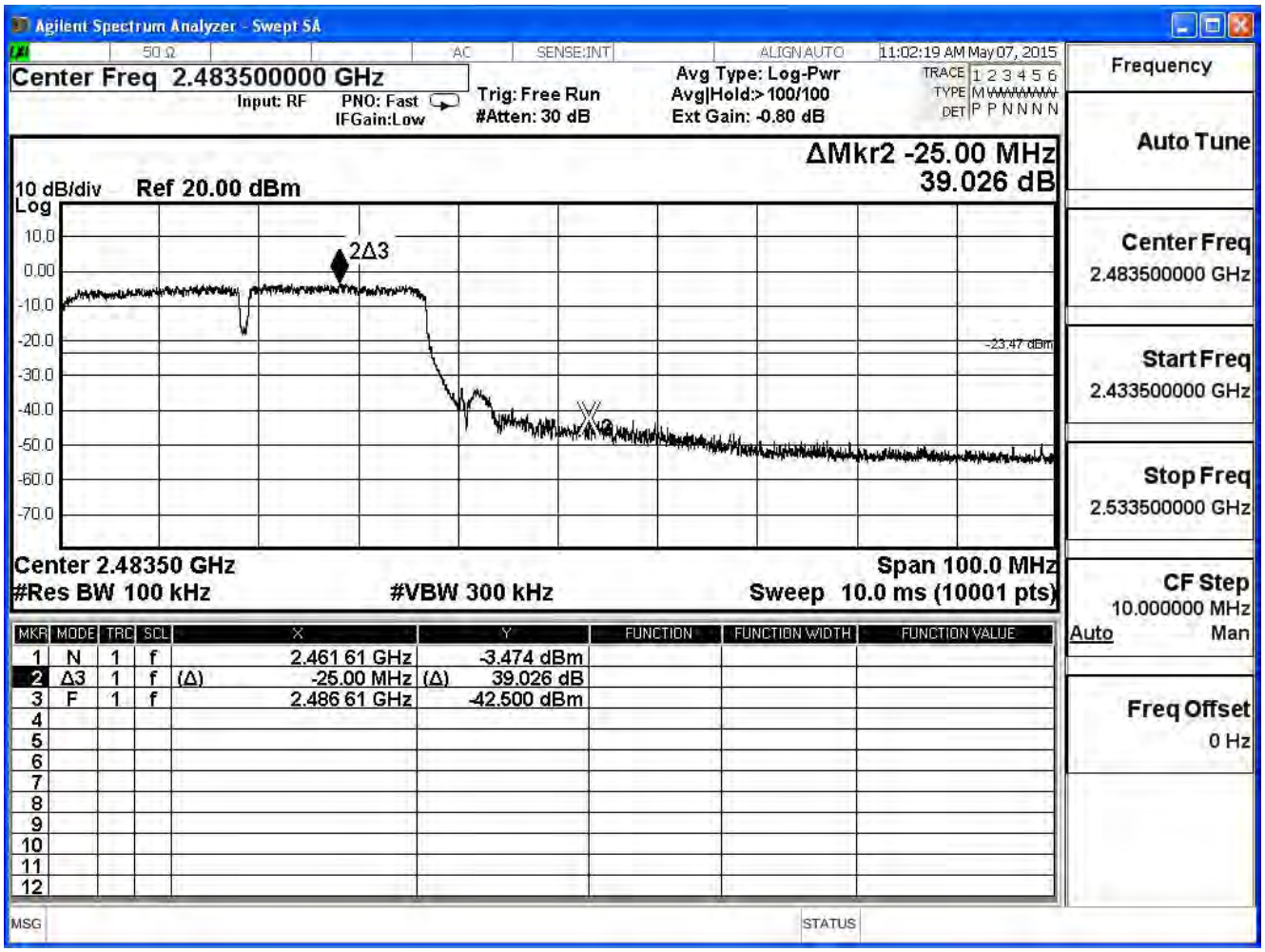
Channel 1 (2412MHz)



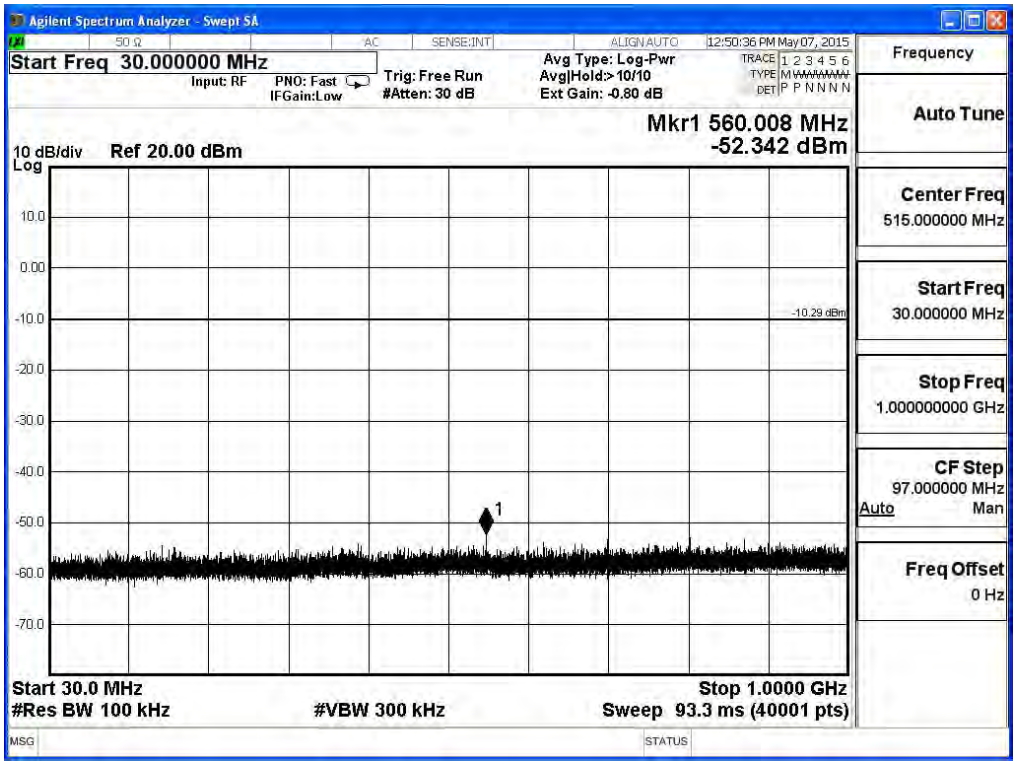
Channel 6 (2437MHz)



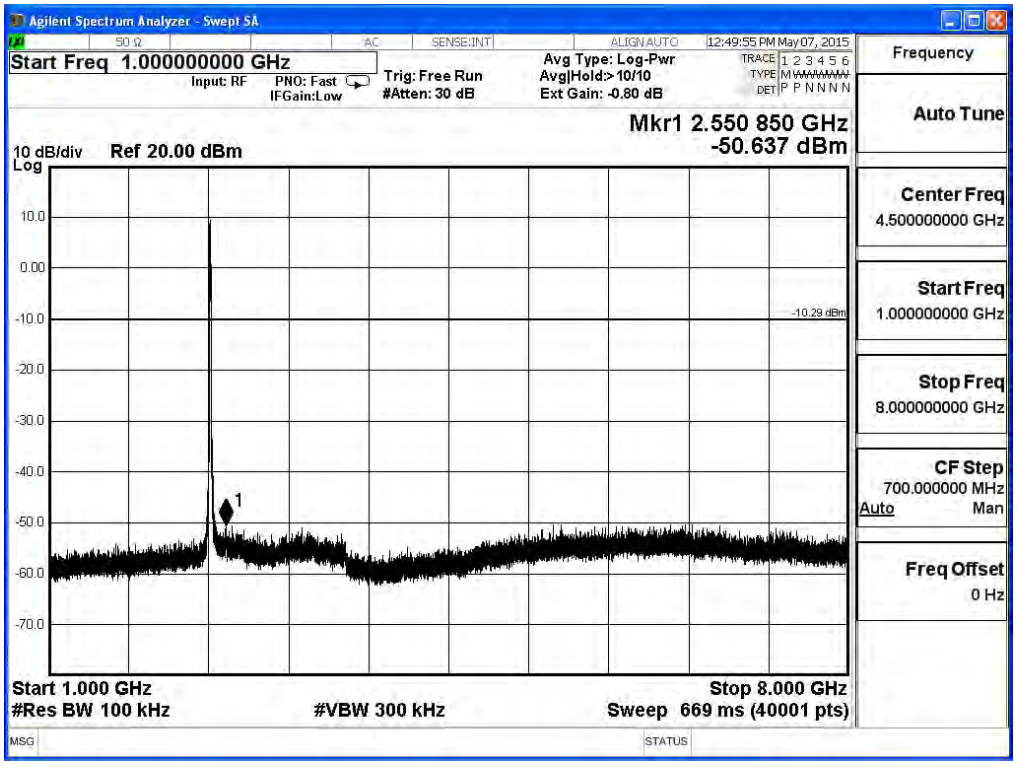
Channel 11 (2462MHz)



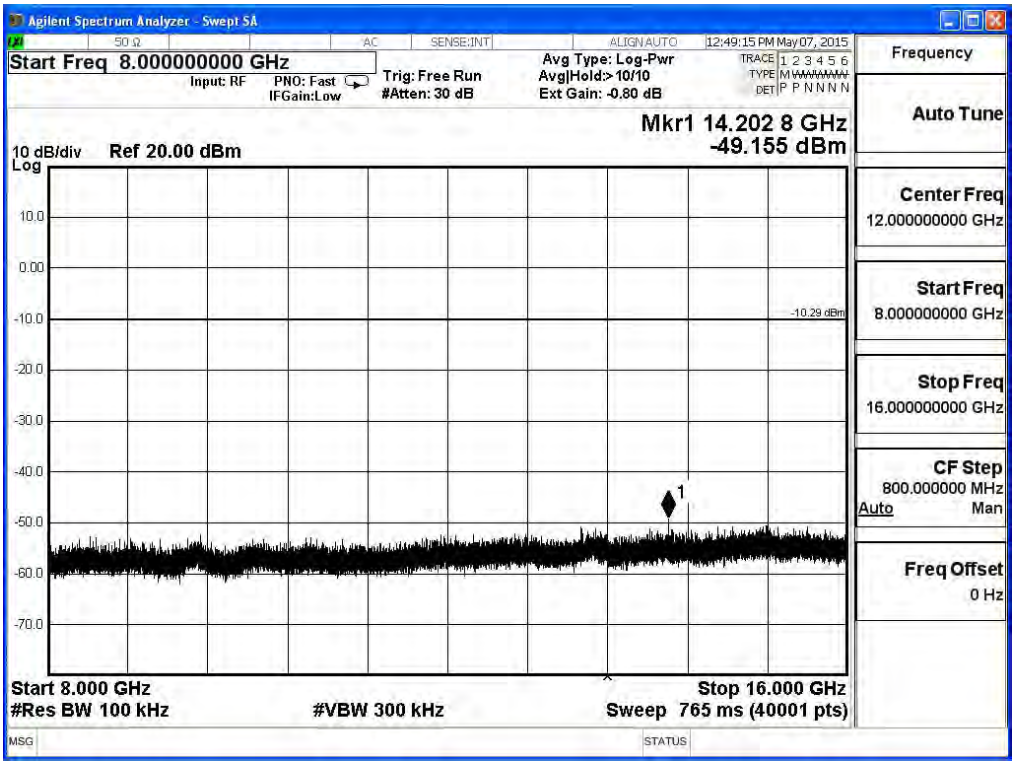
2412MHz (30MHz-1GHz)-802.11b (Ant 0)



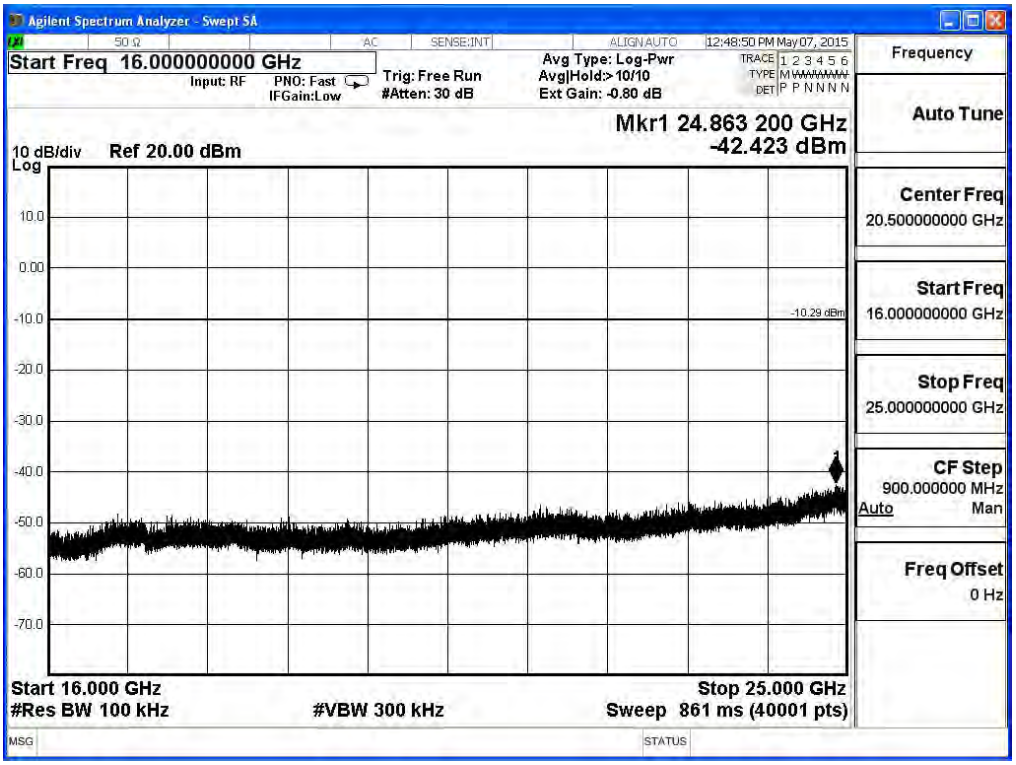
2412MHz (1GHz-8GHz) -802.11b (Ant 0)



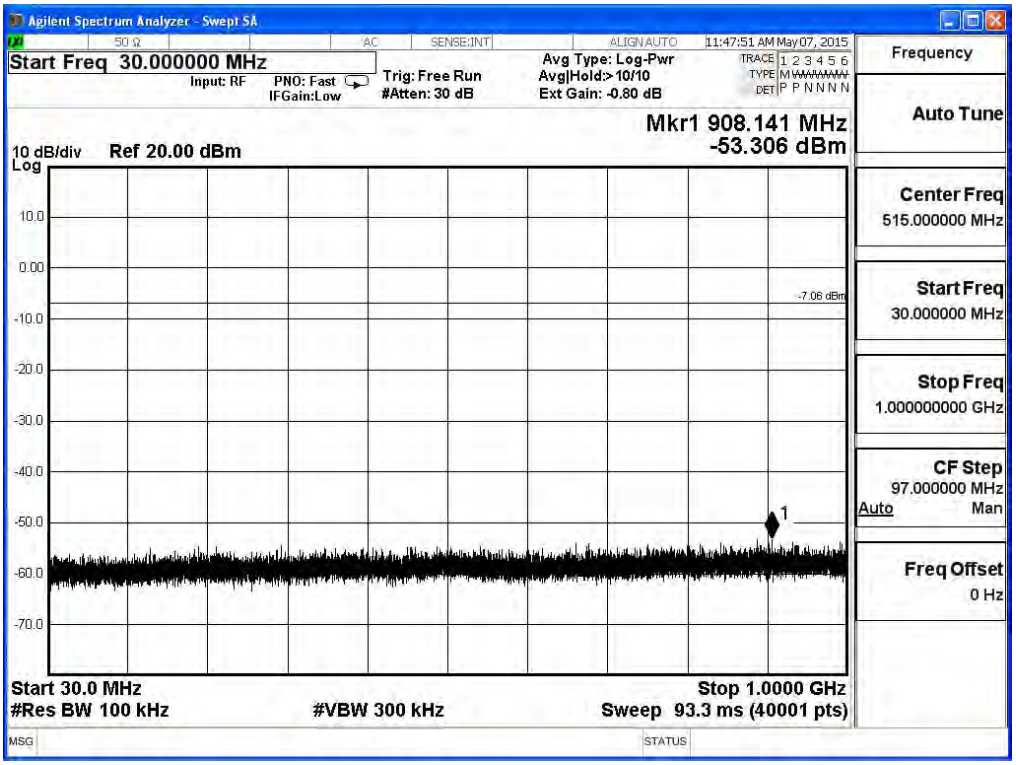
2412MHz (8GHz-16GHz)-802.11b (Ant 0)



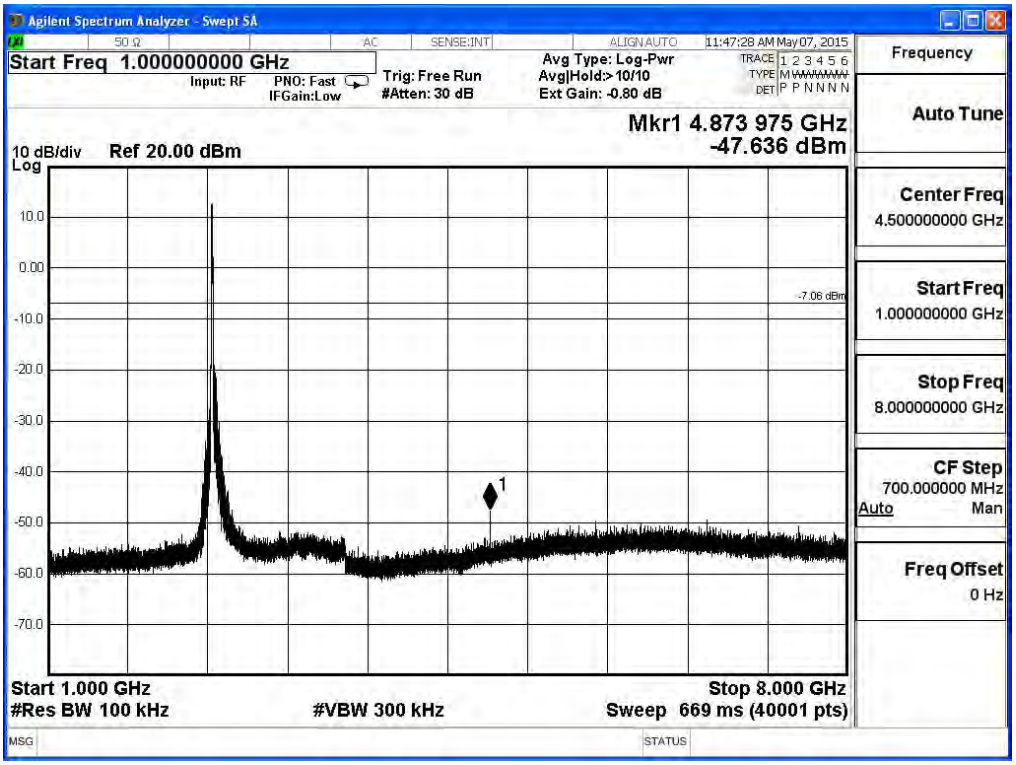
2412MHz (16GHz-25GHz) -802.11b (Ant 0)



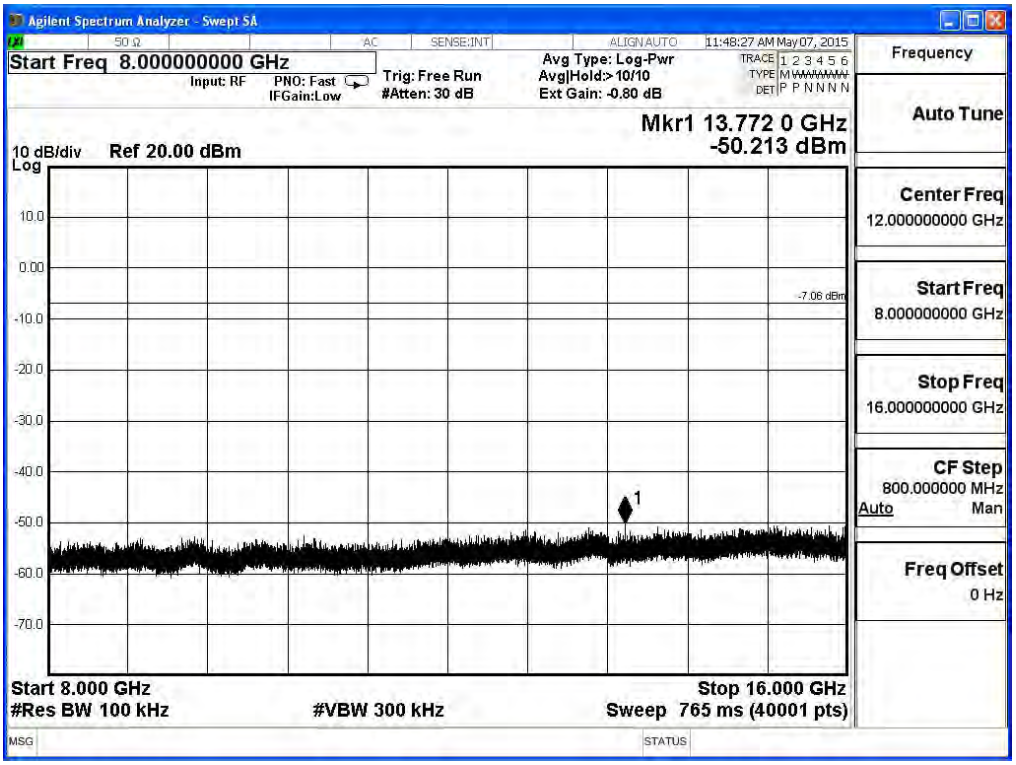
2437MHz (30MHz-1GHz) -802.11b (Ant 0)



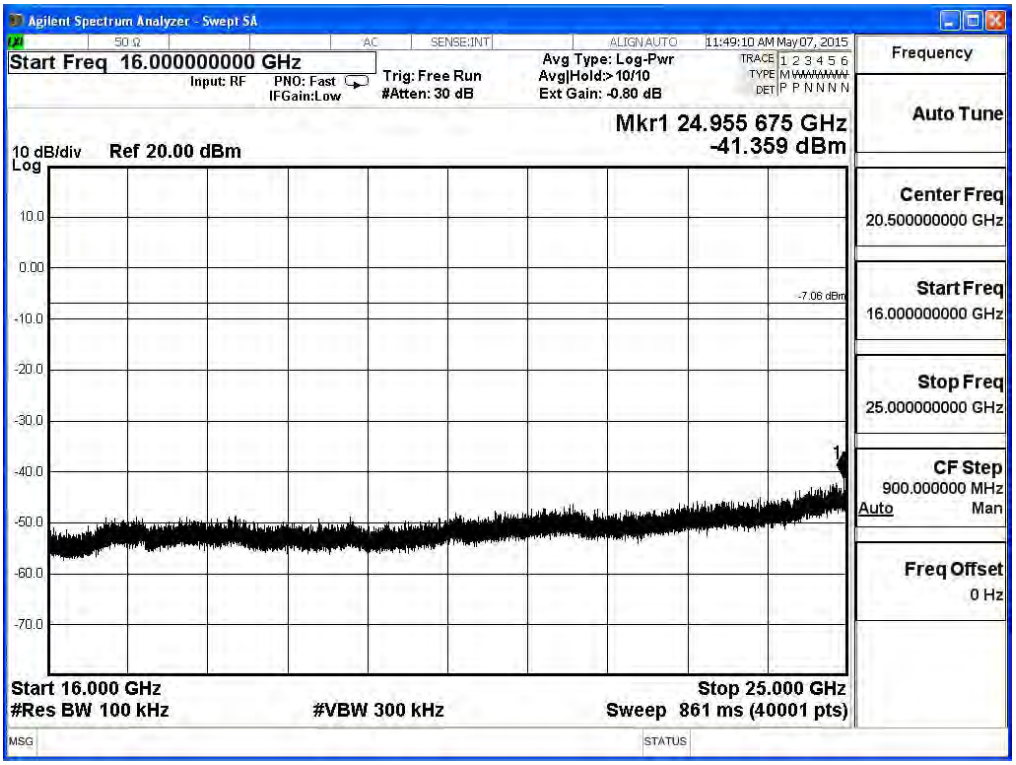
2437MHz (1GHz-8GHz)-802.11b (Ant 0)



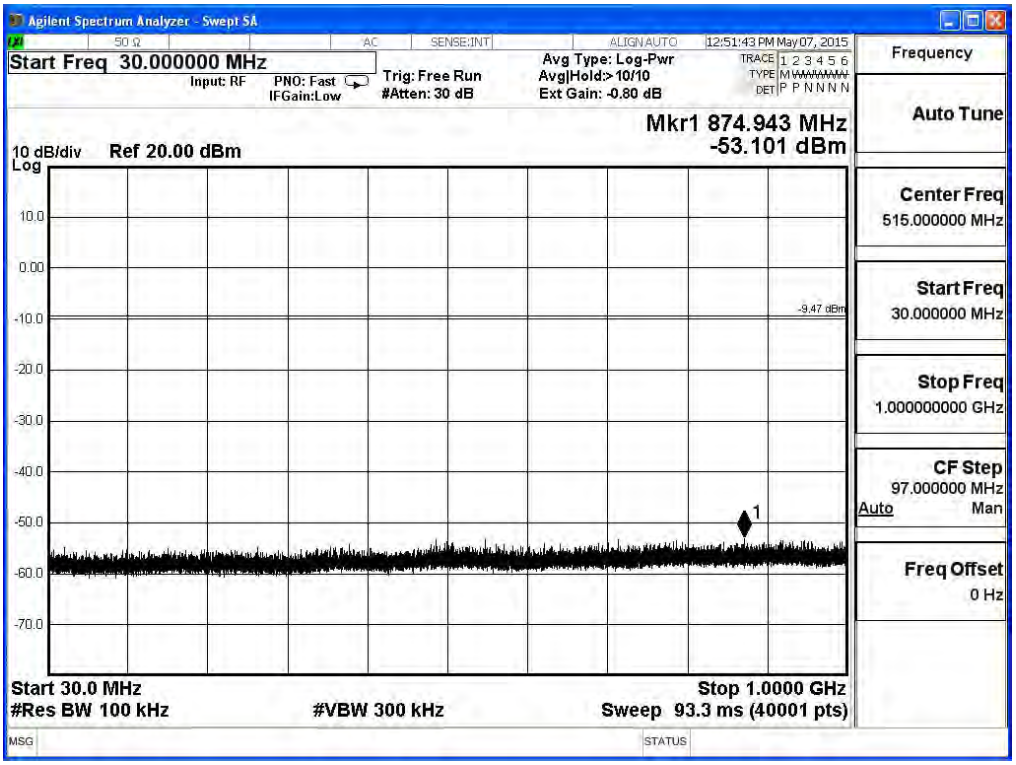
2437MHz (8GHz-16GHz) -802.11b (Ant 0)



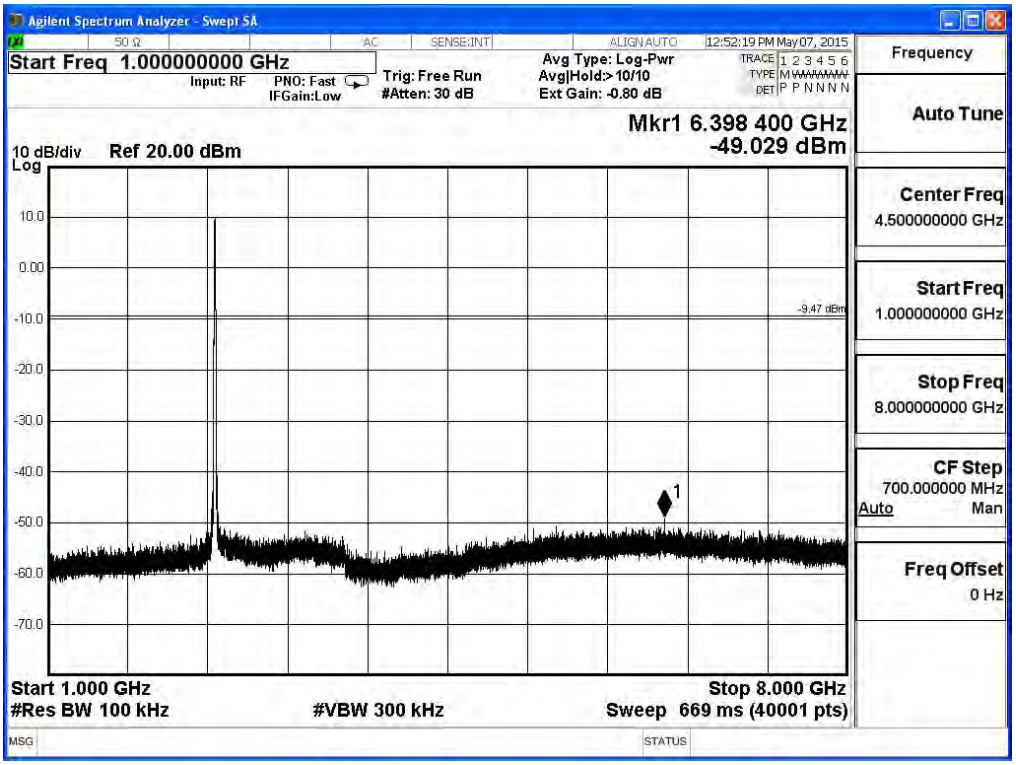
2437MHz (16GHz-25GHz)-802.11b (Ant 0)



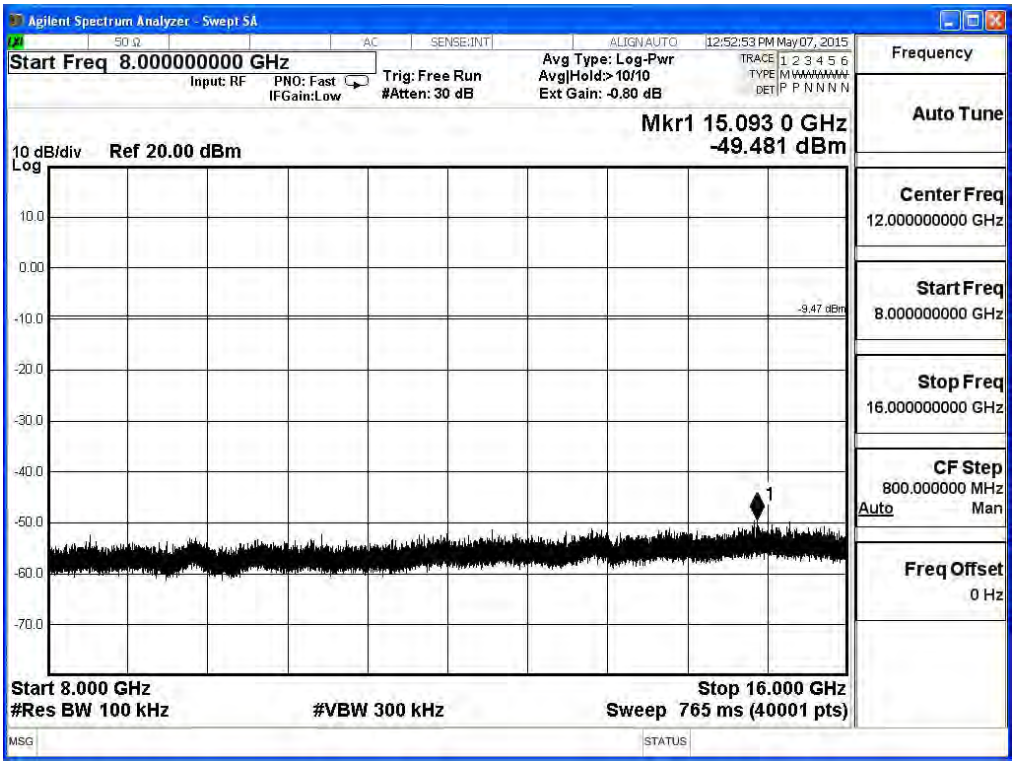
2462MHz (30MHz-1GHz)-802.11b (Ant 0)



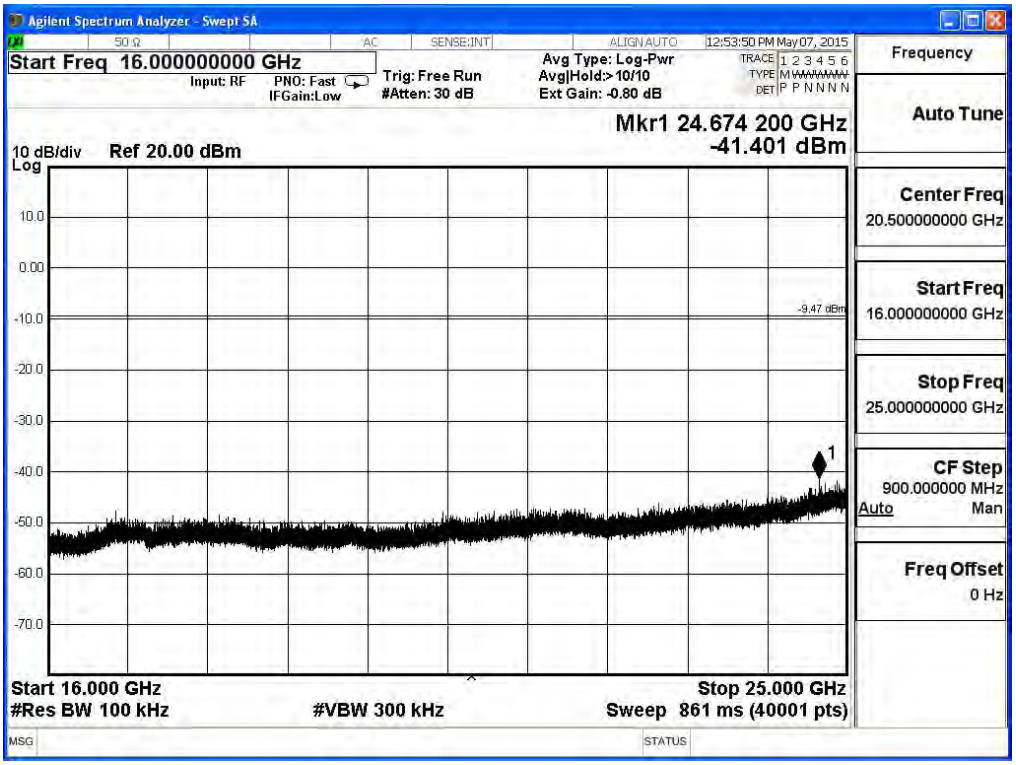
2462MHz (1GHz-8GHz) -802.11b (Ant 0)



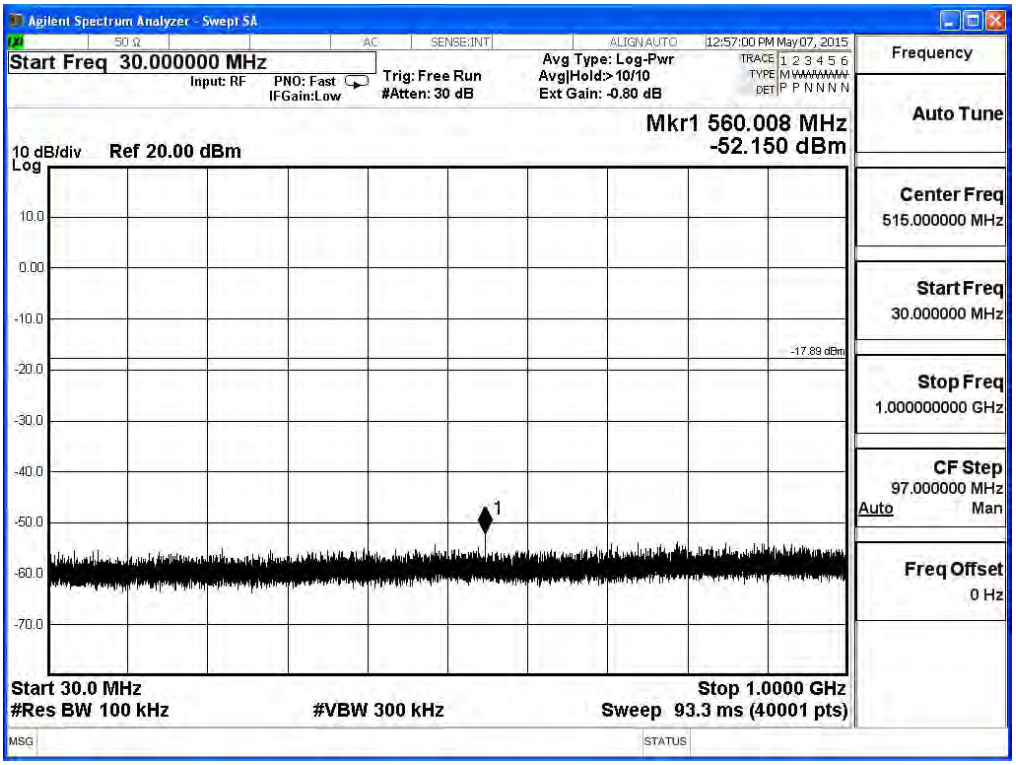
2462MHz (8GHz-16GHz)-802.11b (Ant 0)



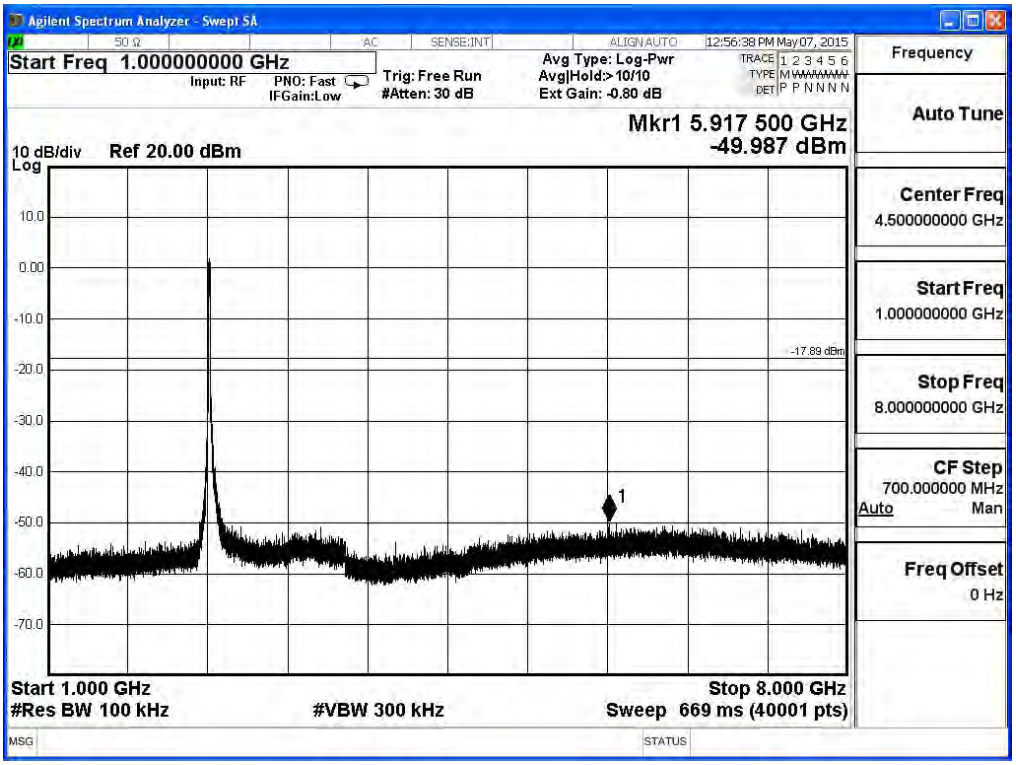
2462MHz (16GHz-25GHz) -802.11b (Ant 0)



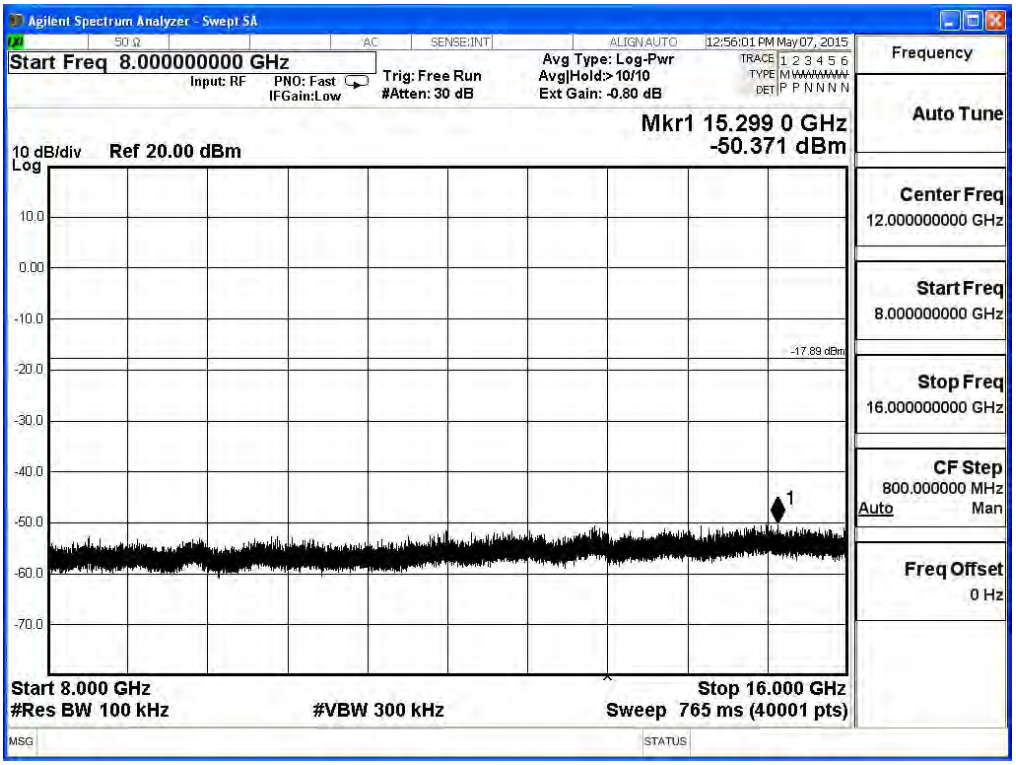
2412MHz (30MHz-1GHz) -802.11g (Ant 0)



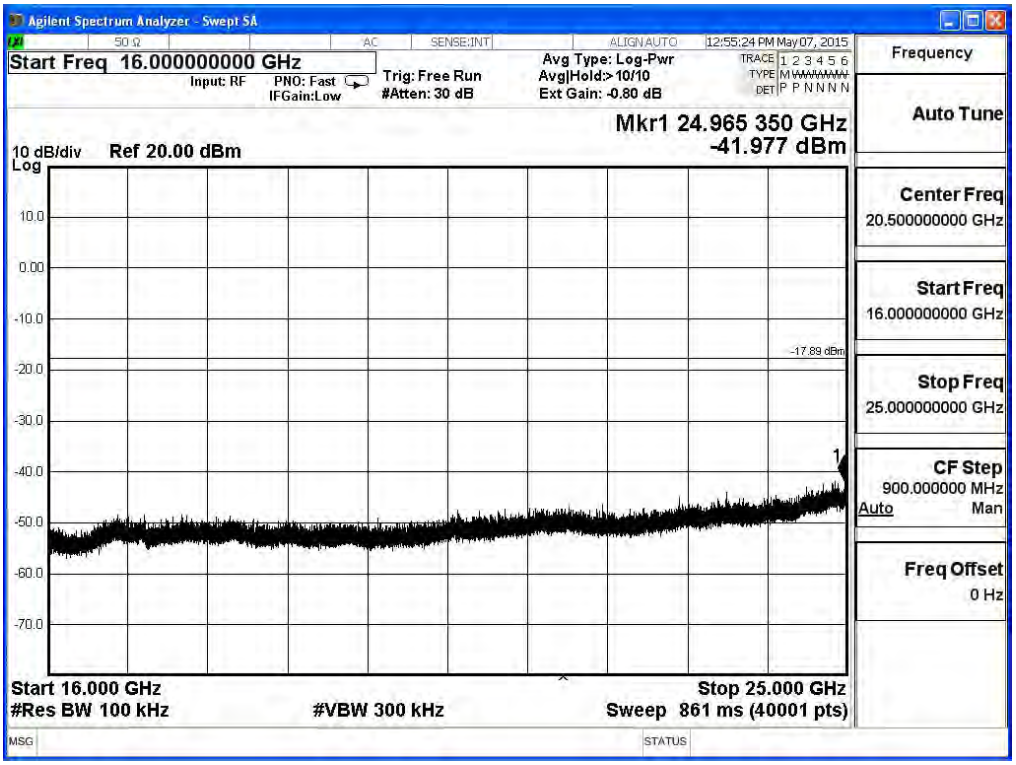
2412MHz (1GHz-8GHz)-802.11g (Ant 0)



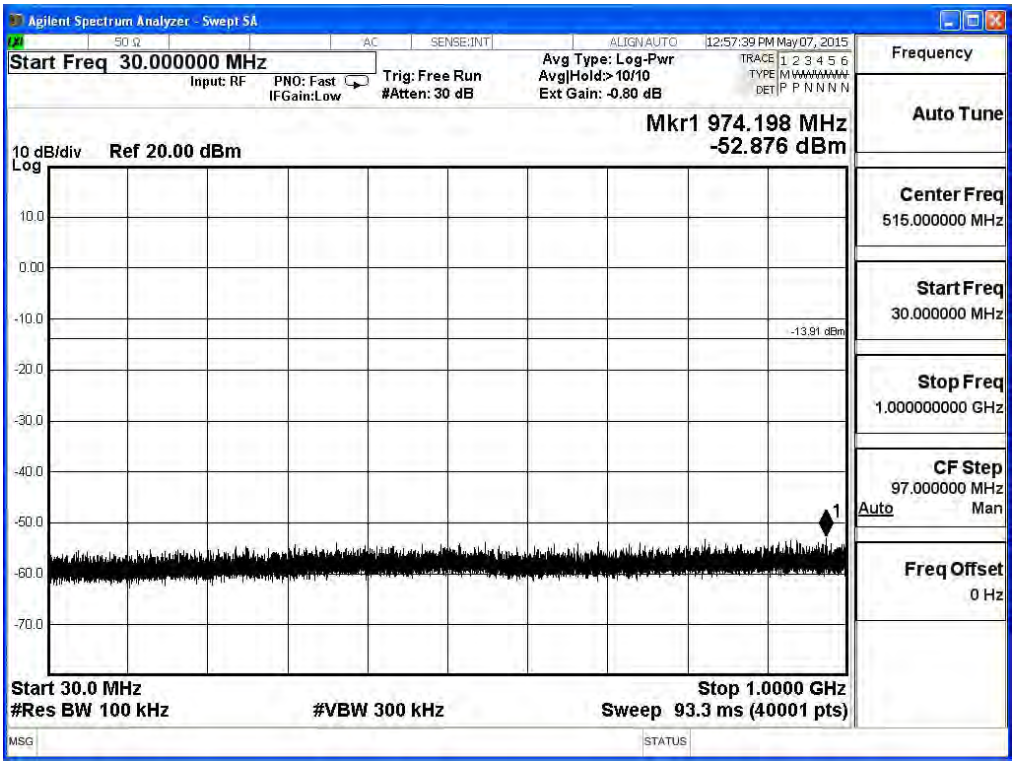
2412MHz (8GHz-16GHz) -802.11g (Ant 0)



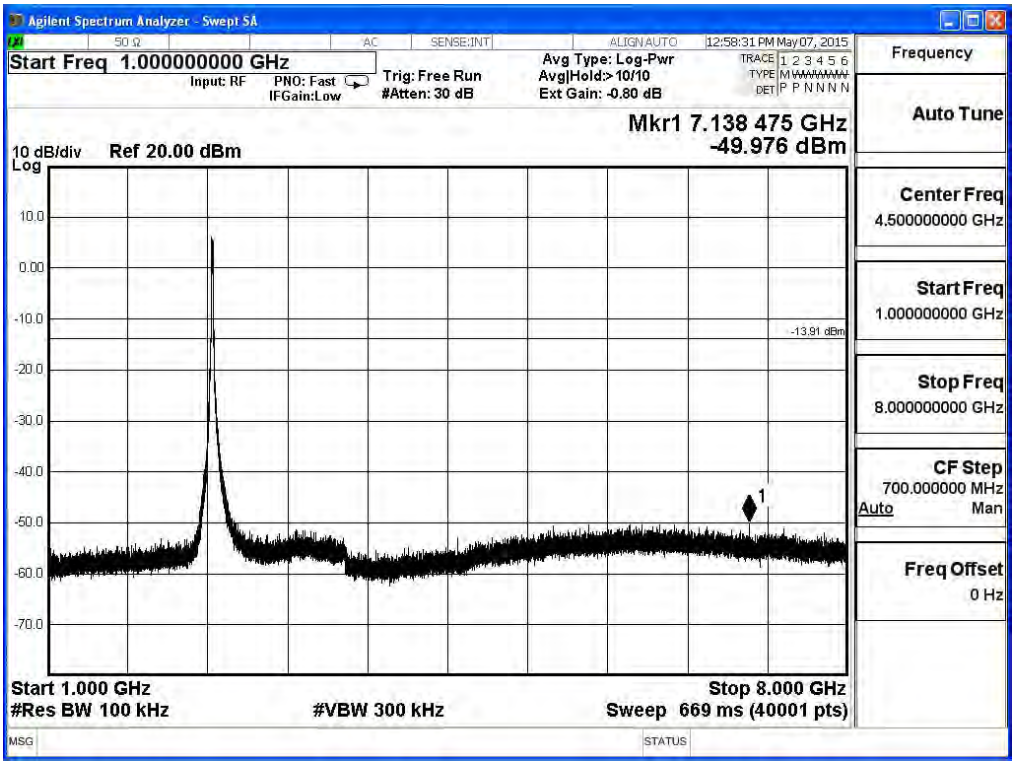
2412MHz (16GHz-25GHz)-802.11g (Ant 0)



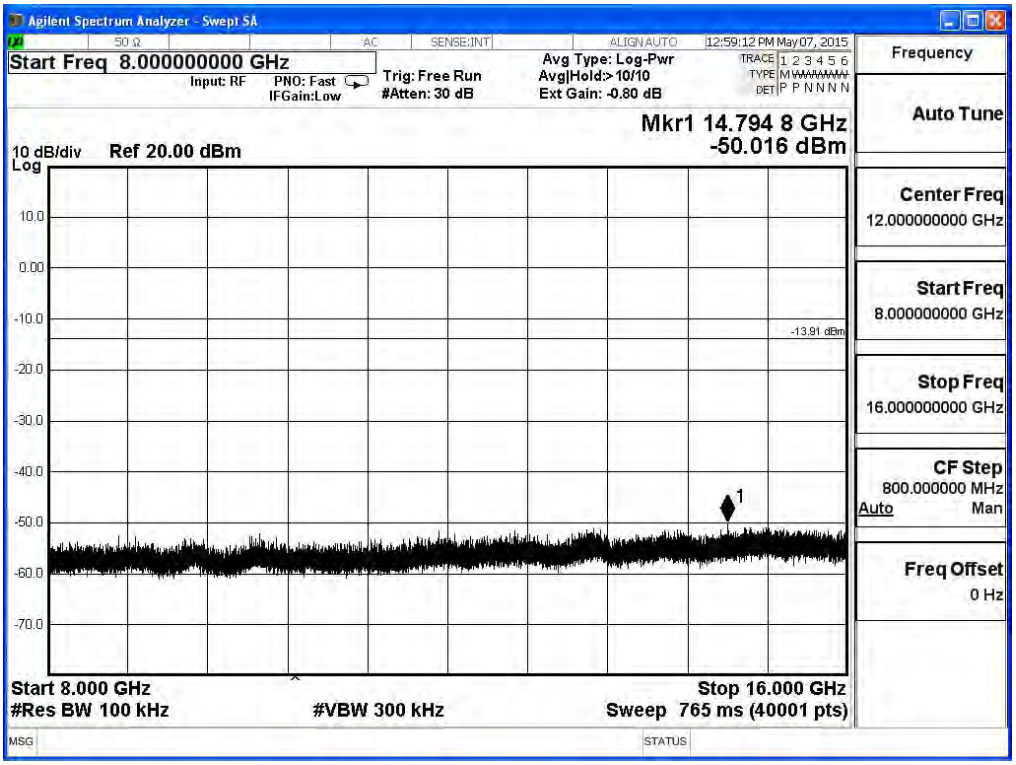
2437MHz (30MHz-1GHz)-802.11g (Ant 0)



2437MHz (1GHz-8GHz) -802.11g (Ant 0)



2437MHz (8GHz-16GHz)-802.11g (Ant 0)



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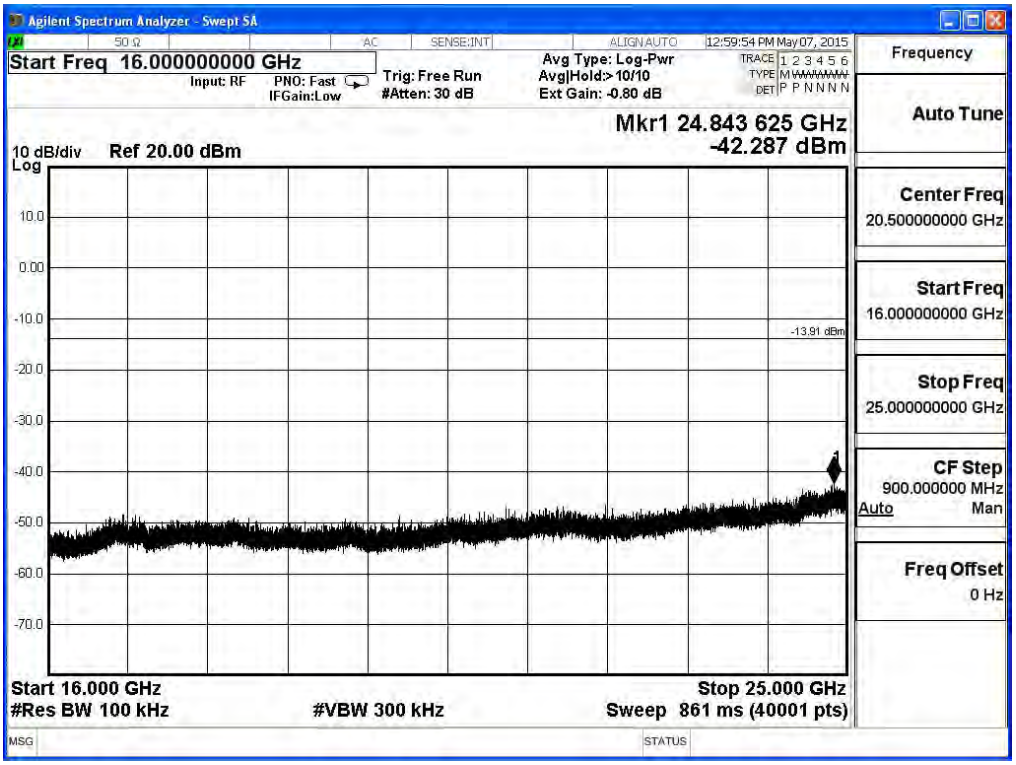
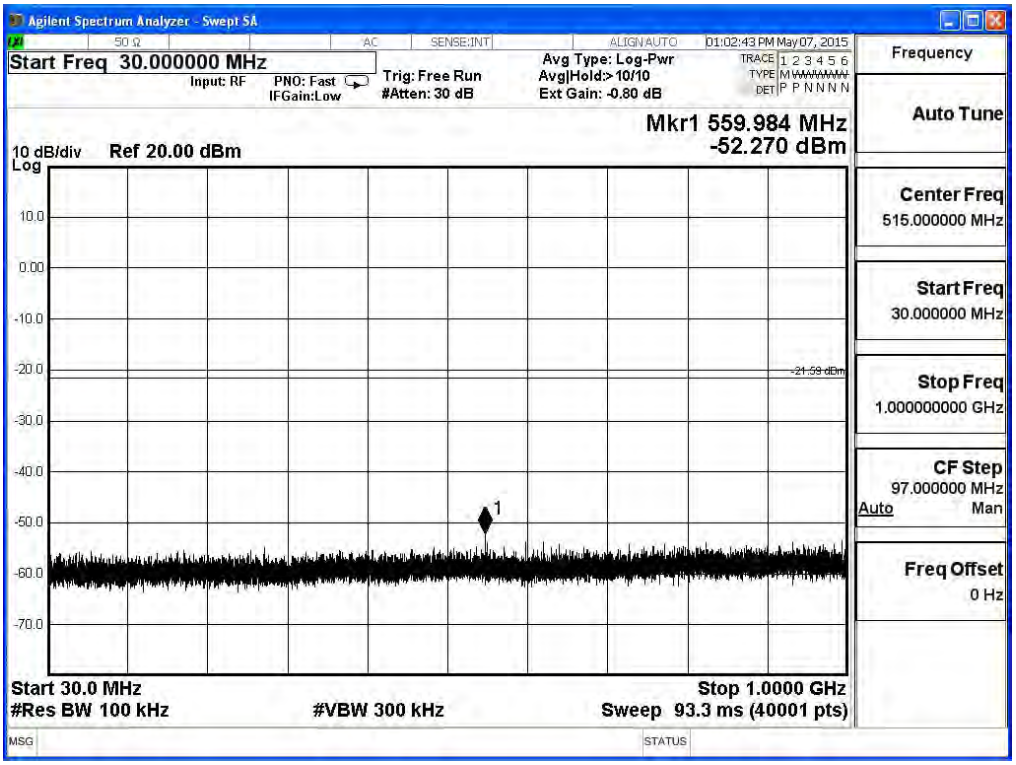
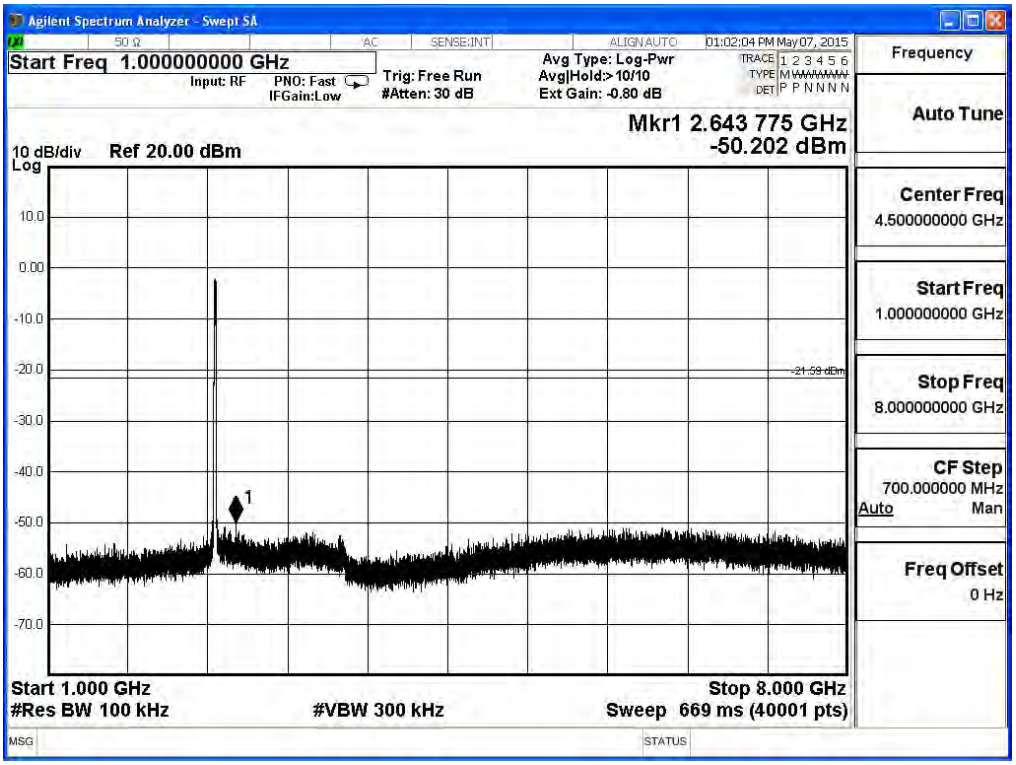


2462MHz (30MHz-1GHz) -802.11g (Ant 0)



2462MHz (1GHz-8GHz)-802.11g (Ant 0)



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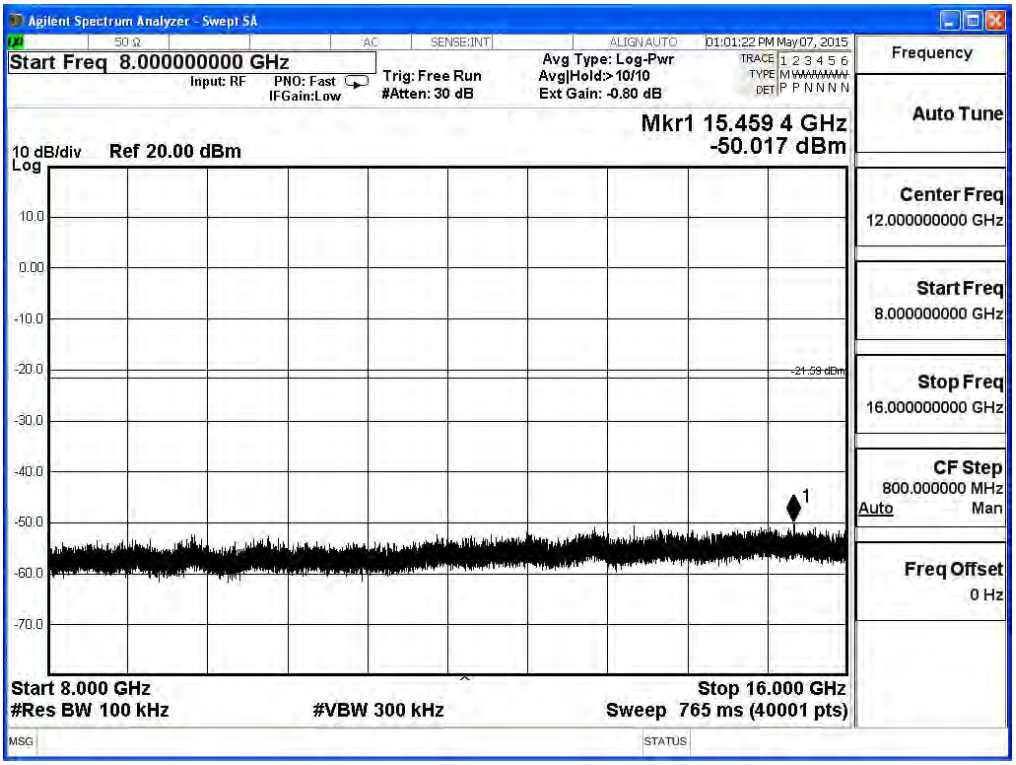
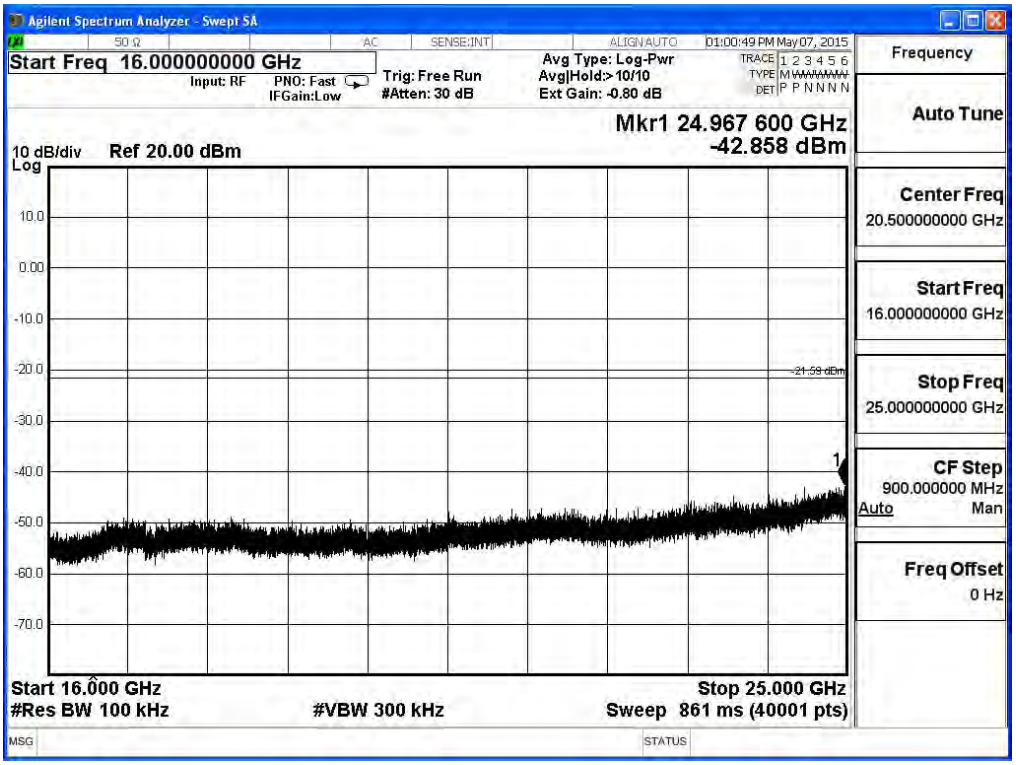
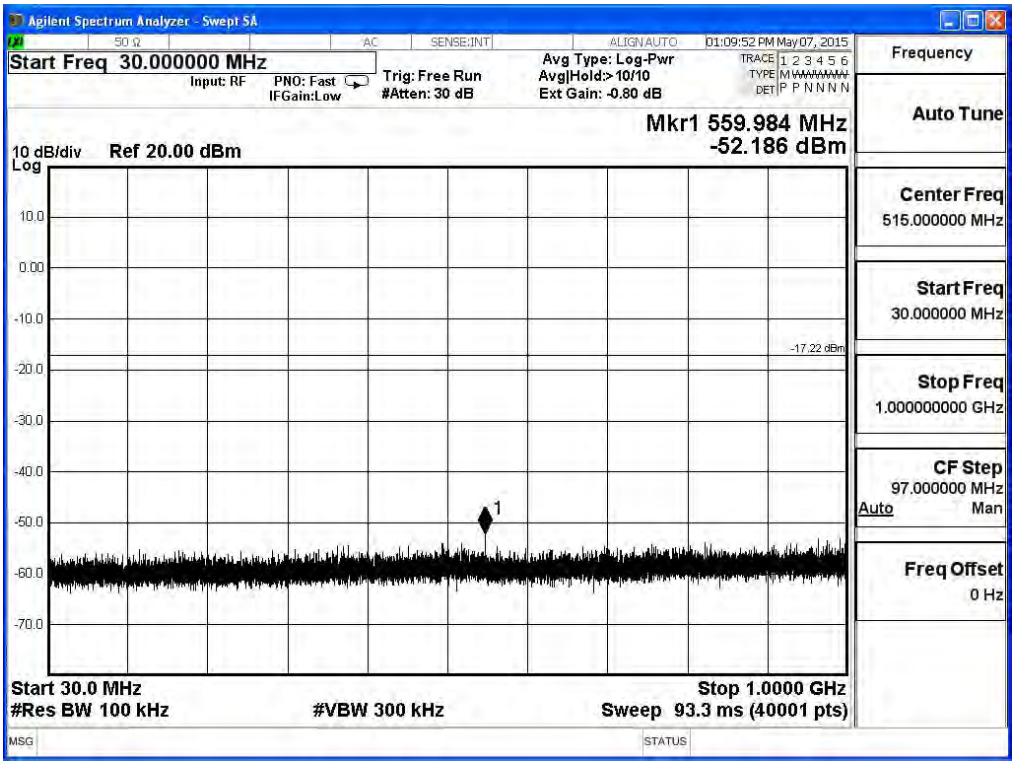


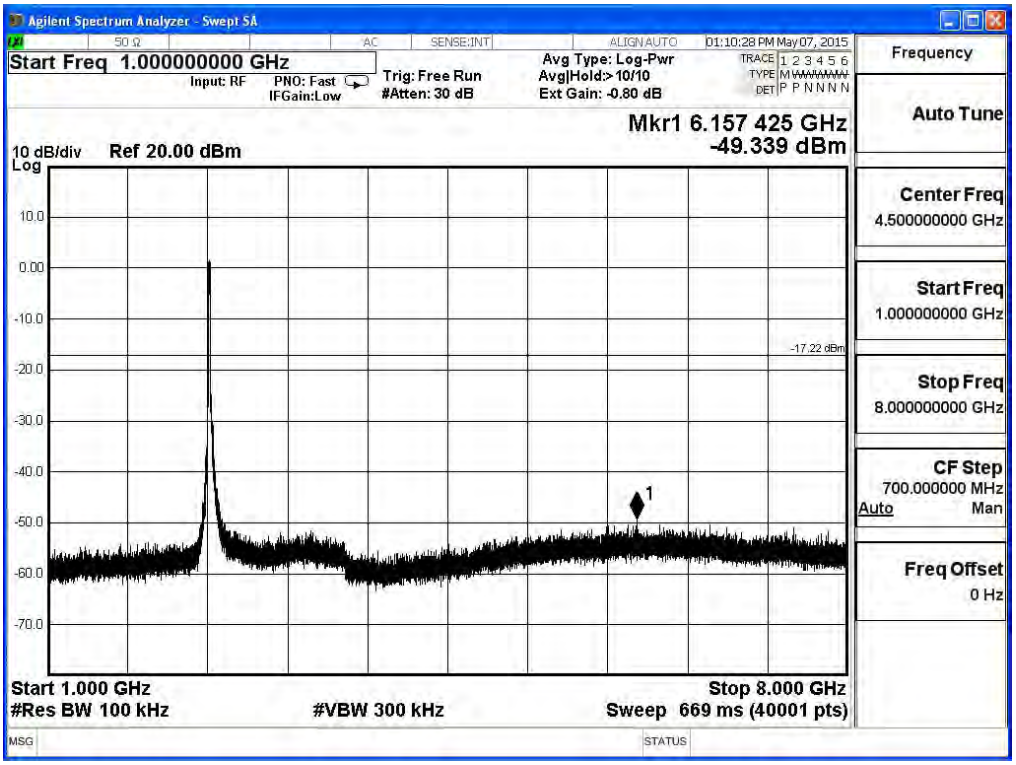
2462MHz (16GHz-25GHz)-802.11g (Ant 0)



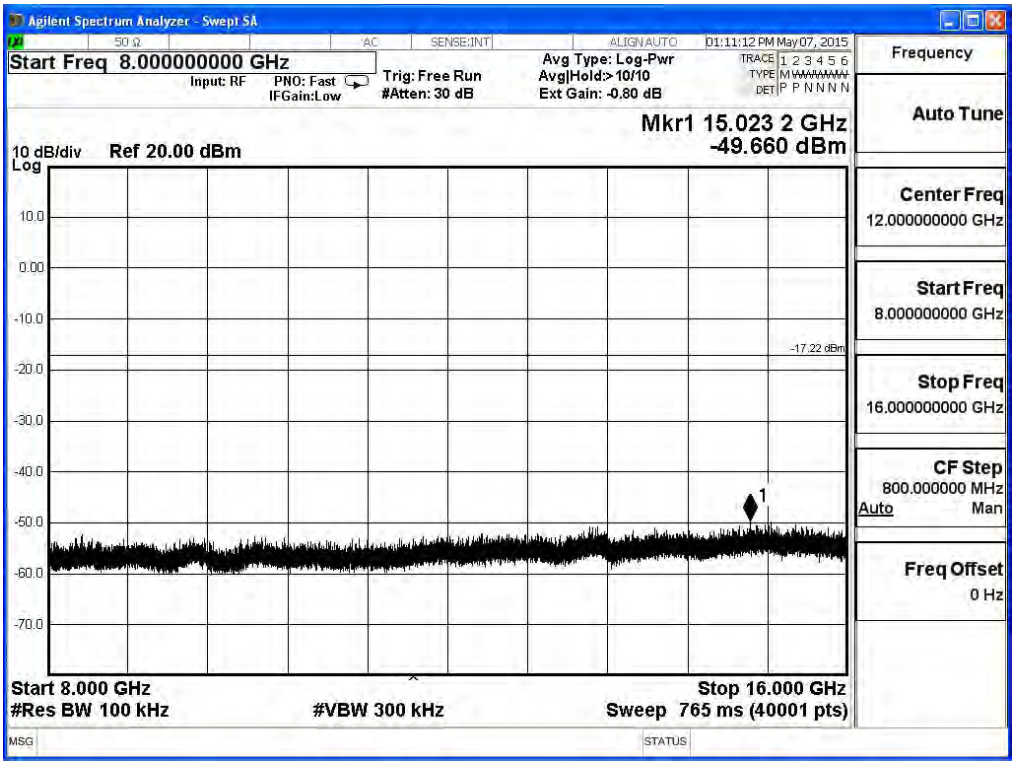
2412MHz (30MHz-1GHz)-802.11n(20MHz) (Ant 0)



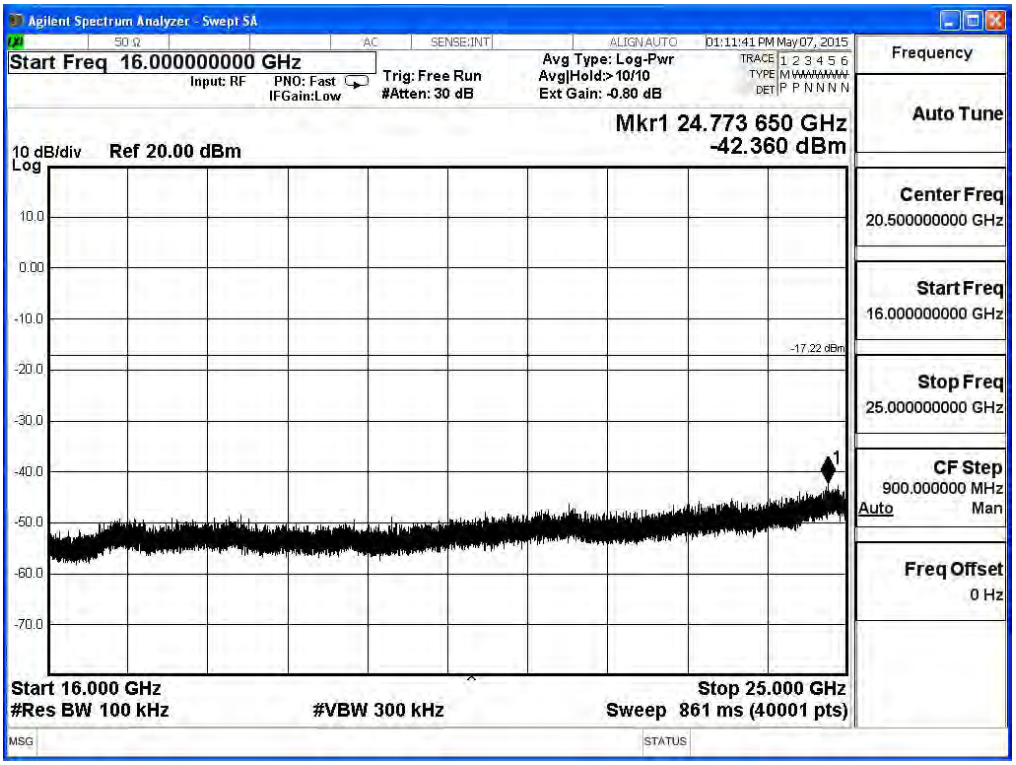
2412MHz (1GHz-8GHz) -802.11n(20MHz) (Ant 0)



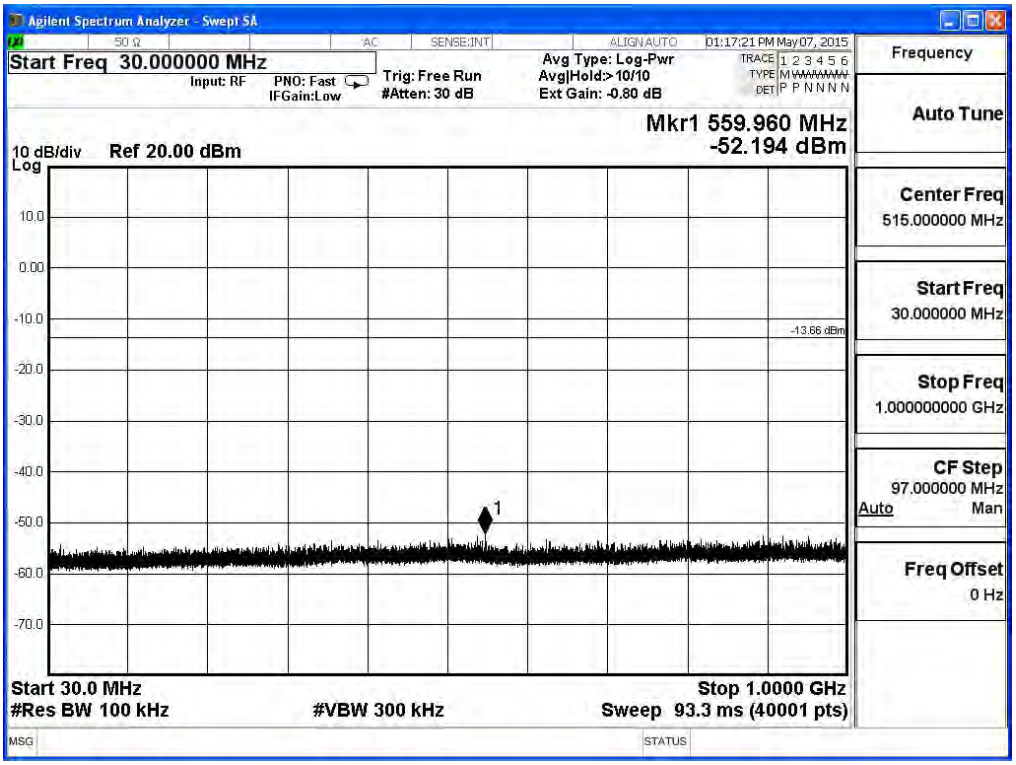
2412MHz (8GHz-16GHz)-802.11n(20MHz) (Ant 0)



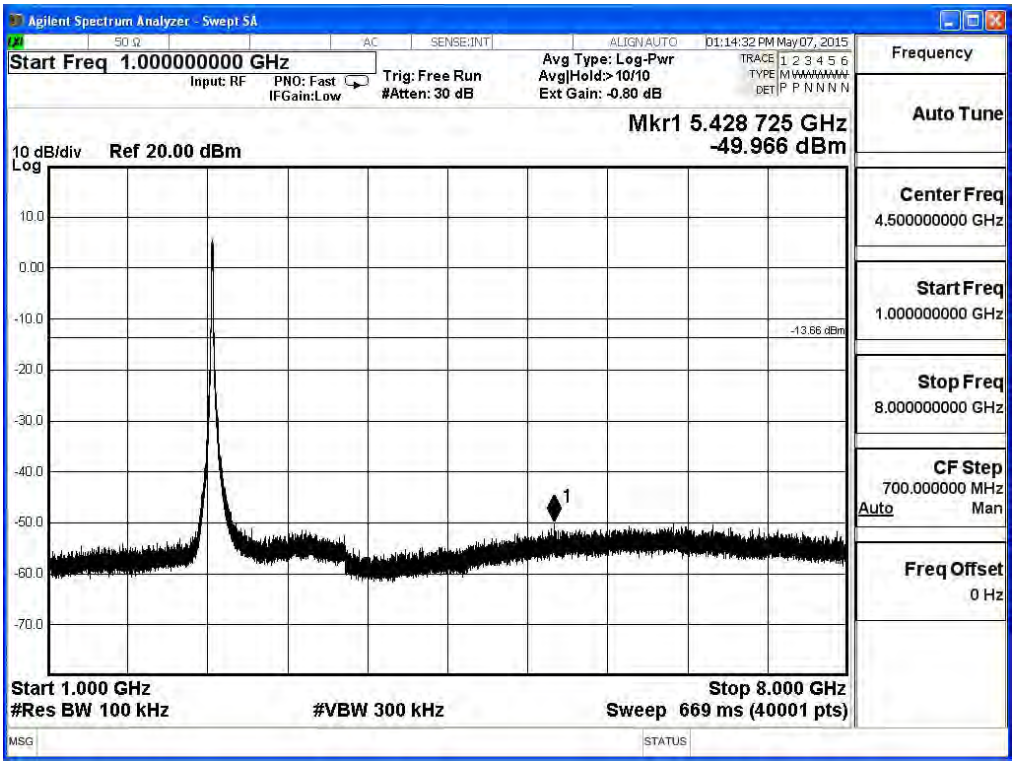
2412MHz (16GHz-25GHz) -802.11n(20MHz) (Ant 0)



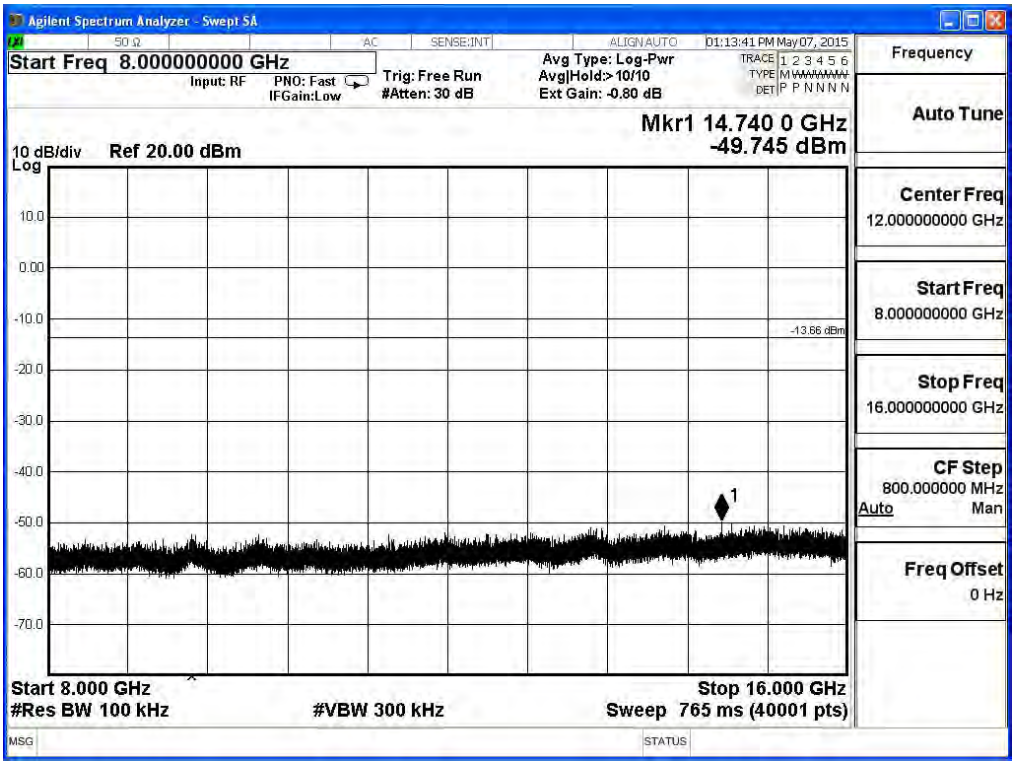
2437MHz (30MHz-1GHz) -802.11n(20MHz) (Ant 0)



2437MHz (1GHz-8GHz) -802.11n(20MHz) (Ant 0)



2437MHz (8GHz-16GHz) -802.11n(20MHz) (Ant 0)



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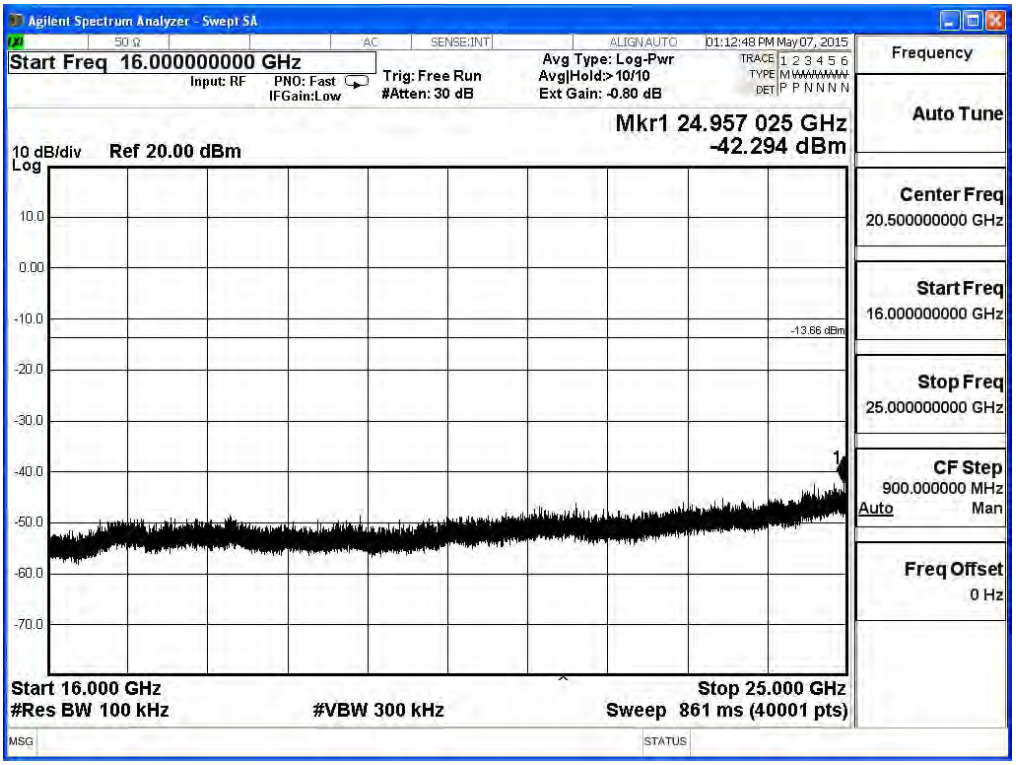
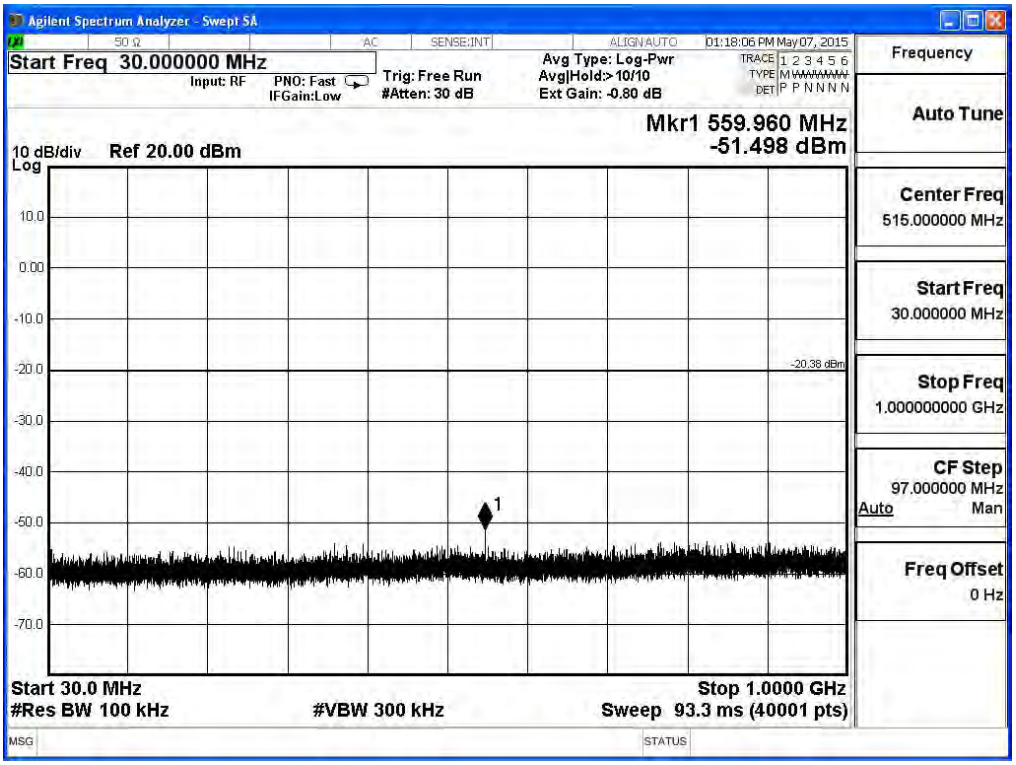
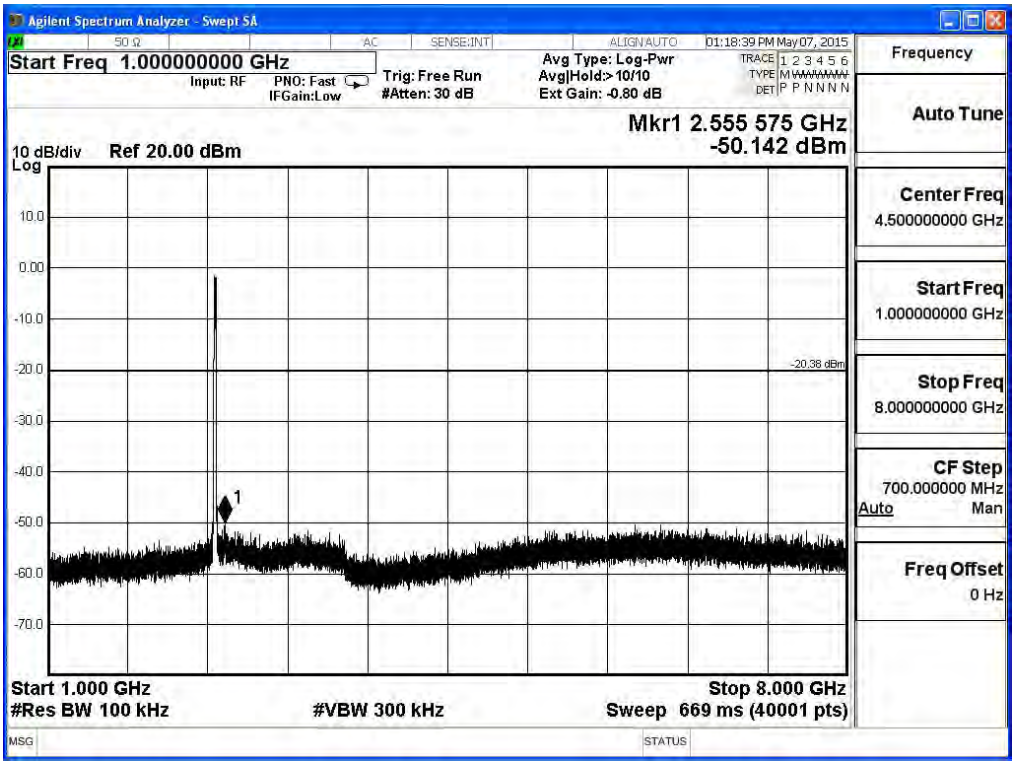


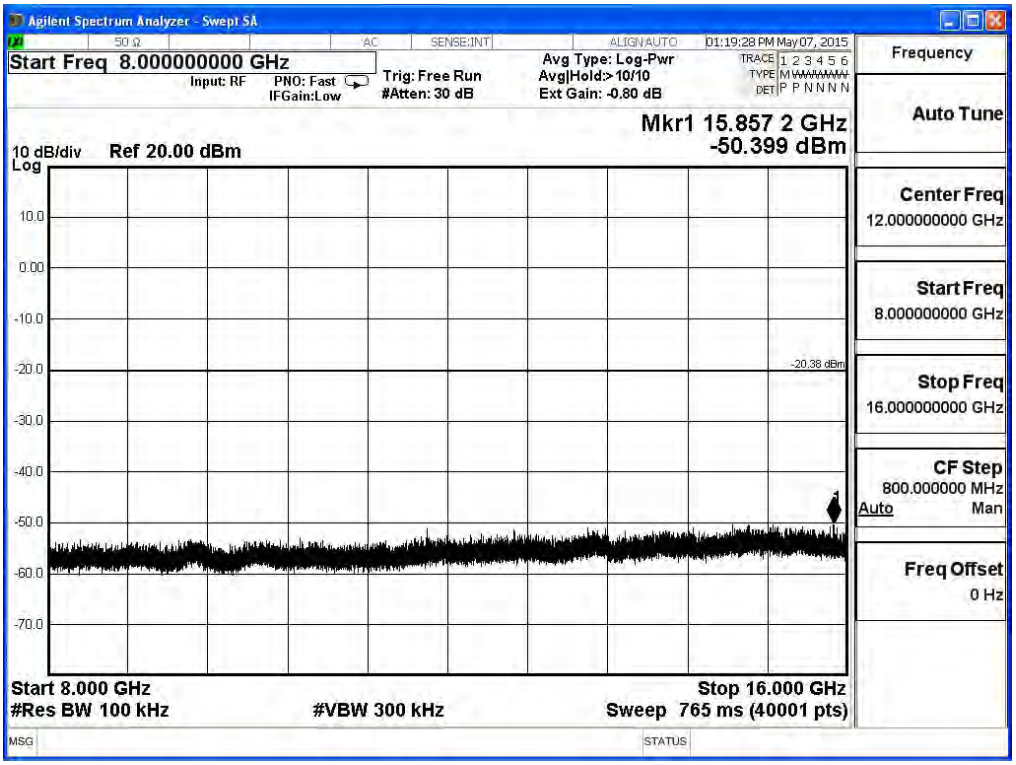
2462MHz (30MHz-1GHz)-802.11n(20MHz) (Ant 0)



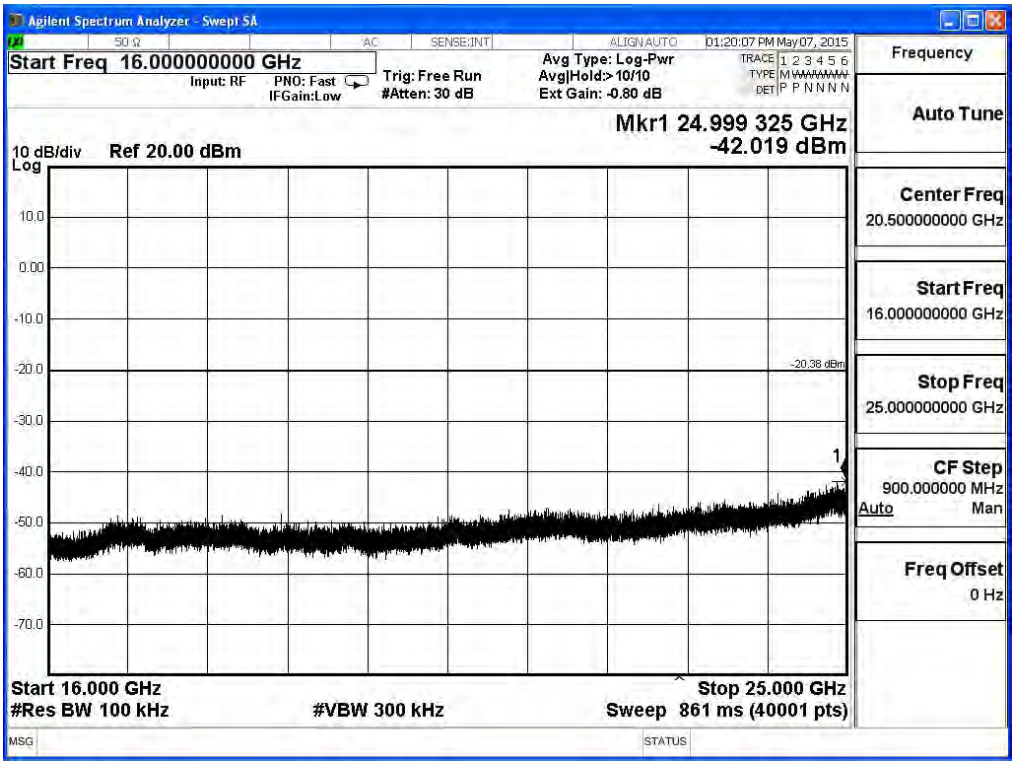
2462MHz (1GHz-8GHz) -802.11n(20MHz) (Ant 0)



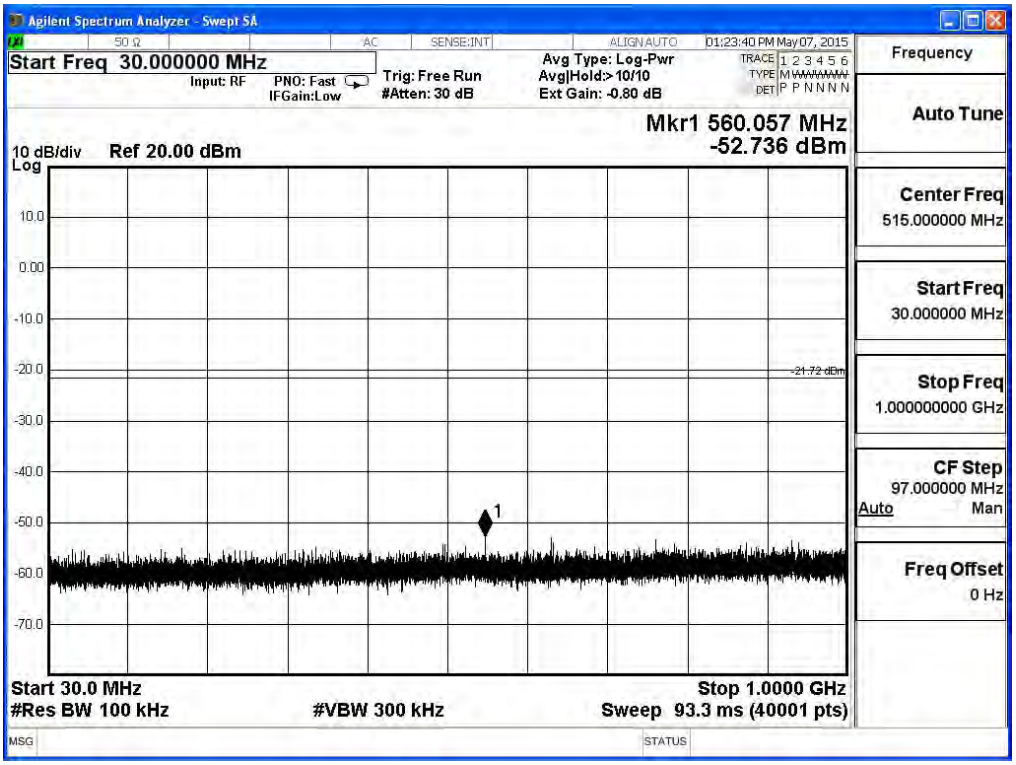
2462MHz (8GHz-16GHz)-802.11n(20MHz) (Ant 0)



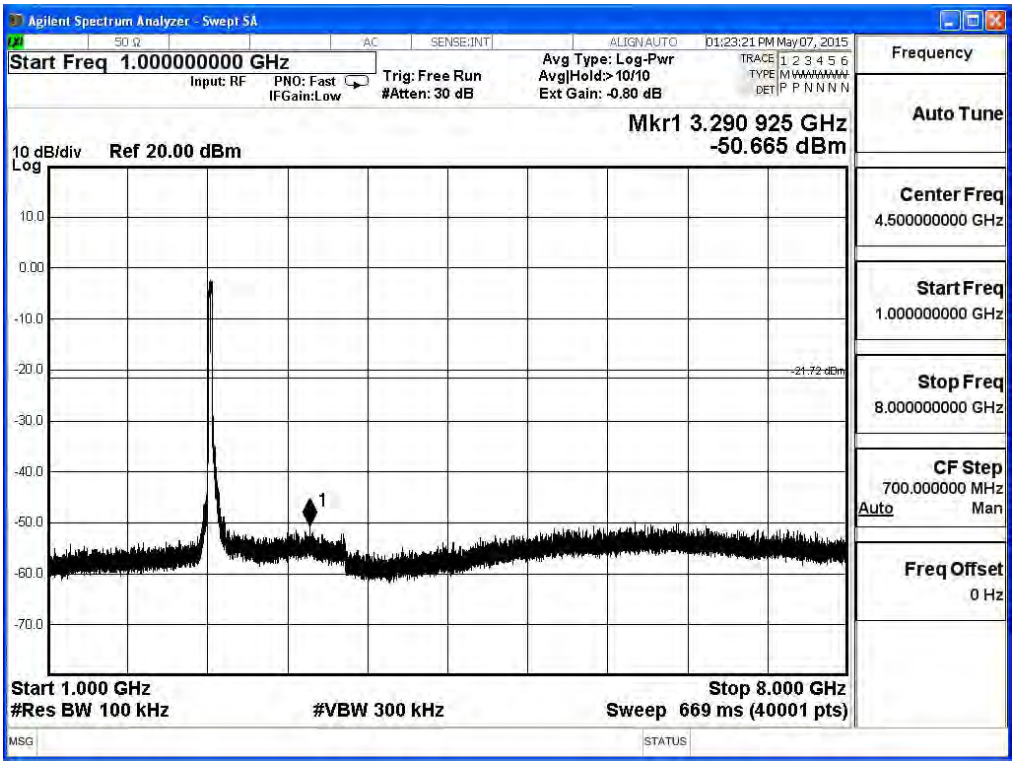
2462MHz (16GHz-25GHz) -802.11n(20MHz) (Ant 0)



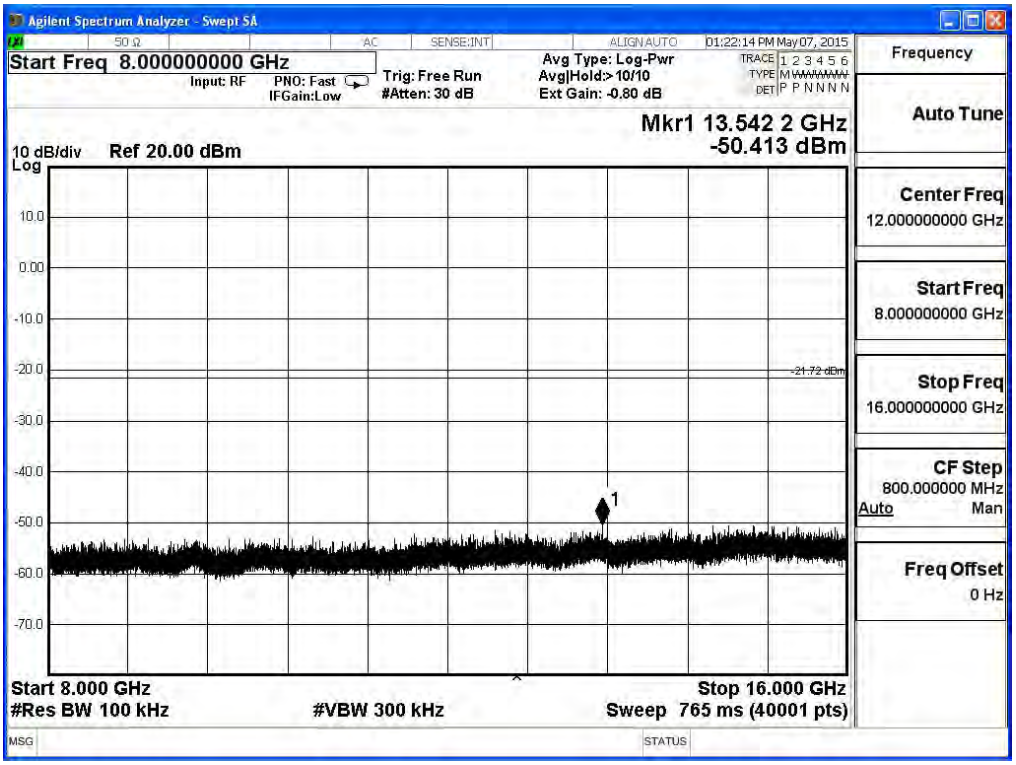
2422MHz (30MHz-1GHz)-802.11n(40MHz) (Ant 0)



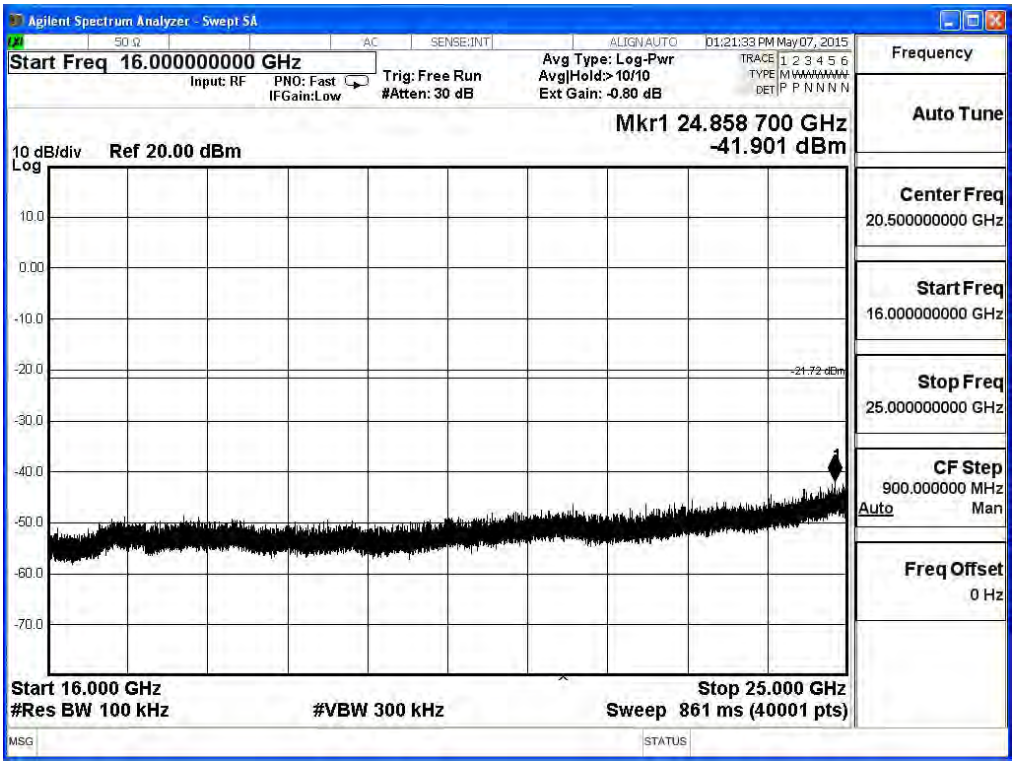
2422MHz (1GHz-8GHz) -802.11n(40MHz) (Ant 0)



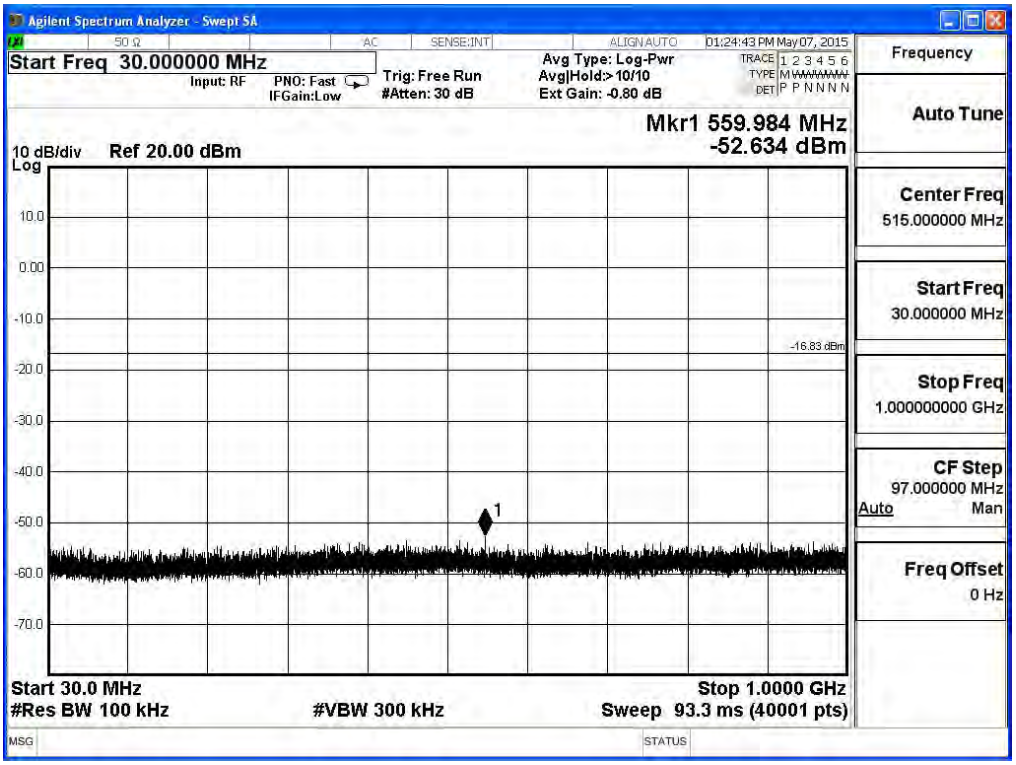
2422MHz (8GHz-16GHz)-802.11n(40MHz) (Ant 0)



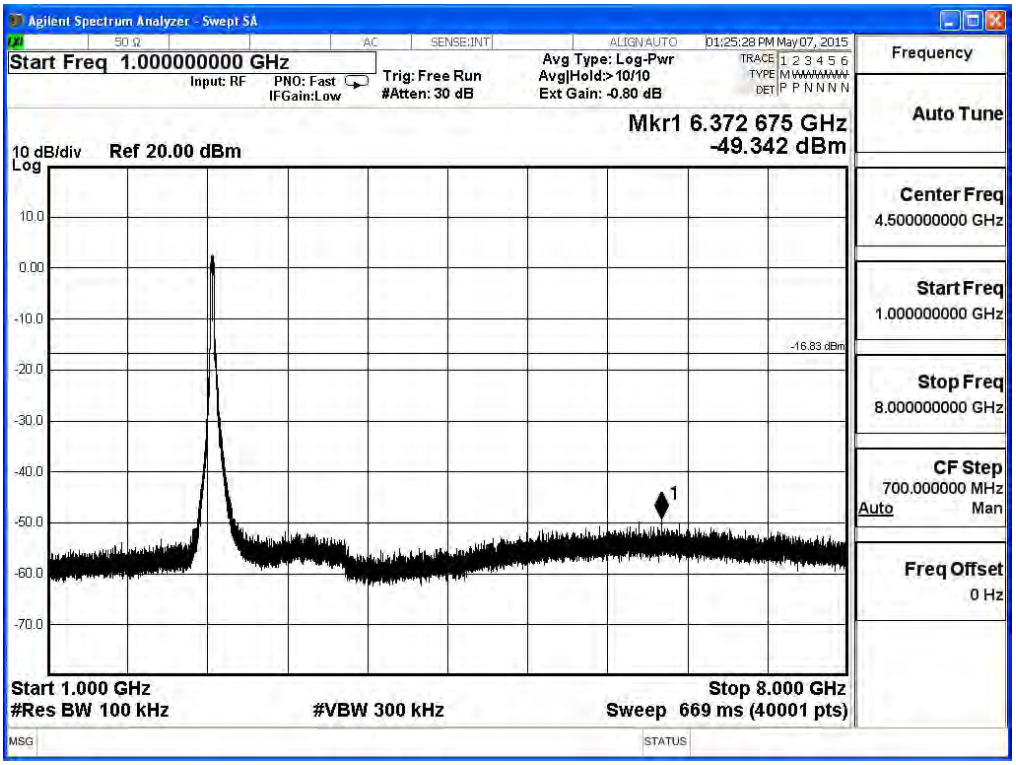
2422MHz (16GHz-25GHz) -802.11n(40MHz) (Ant 0)



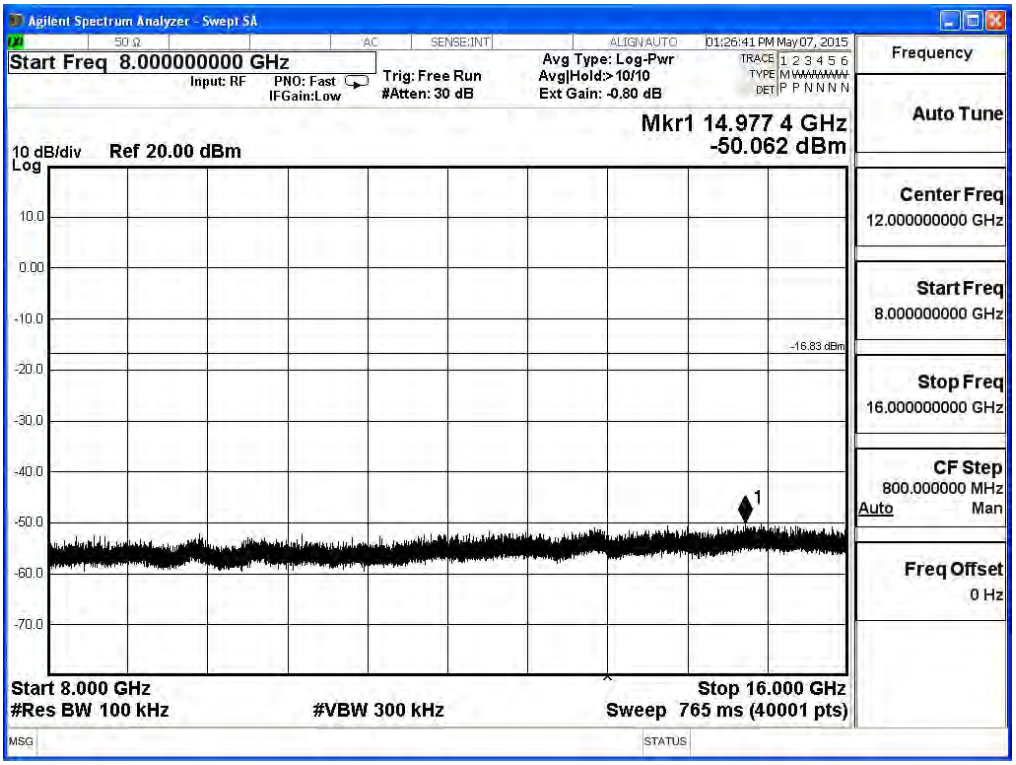
2437MHz (30MHz-1GHz) -802.11n(40MHz) (Ant 0)



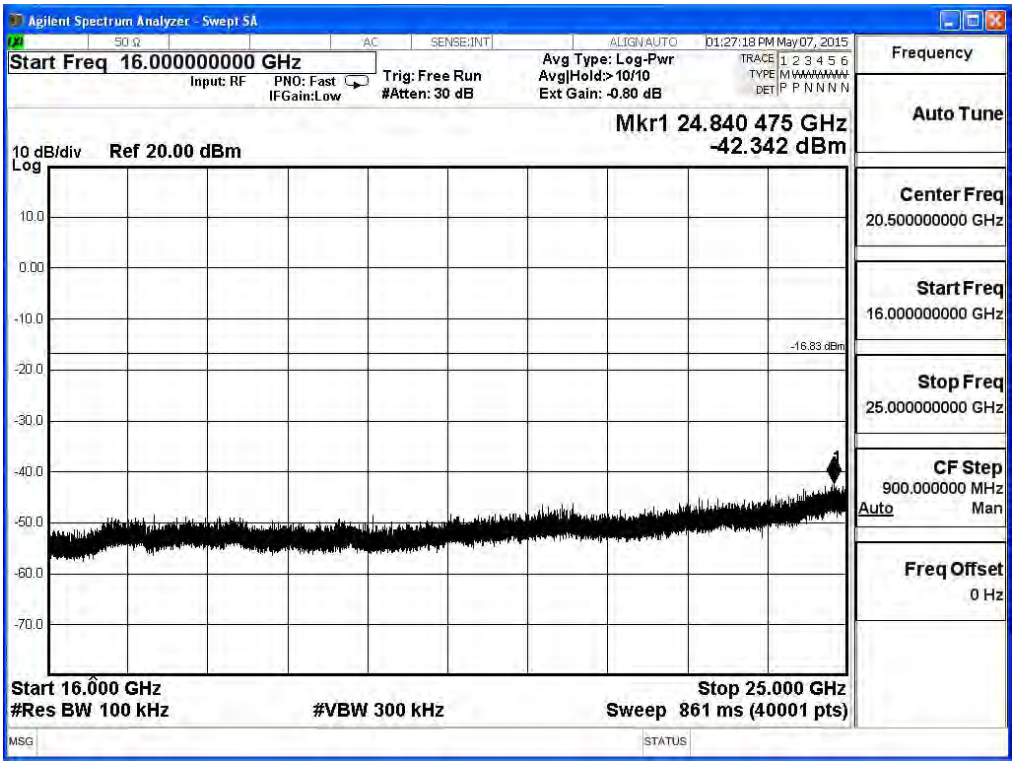
2437MHz (1GHz-8GHz) -802.11n(40MHz) (Ant 0)



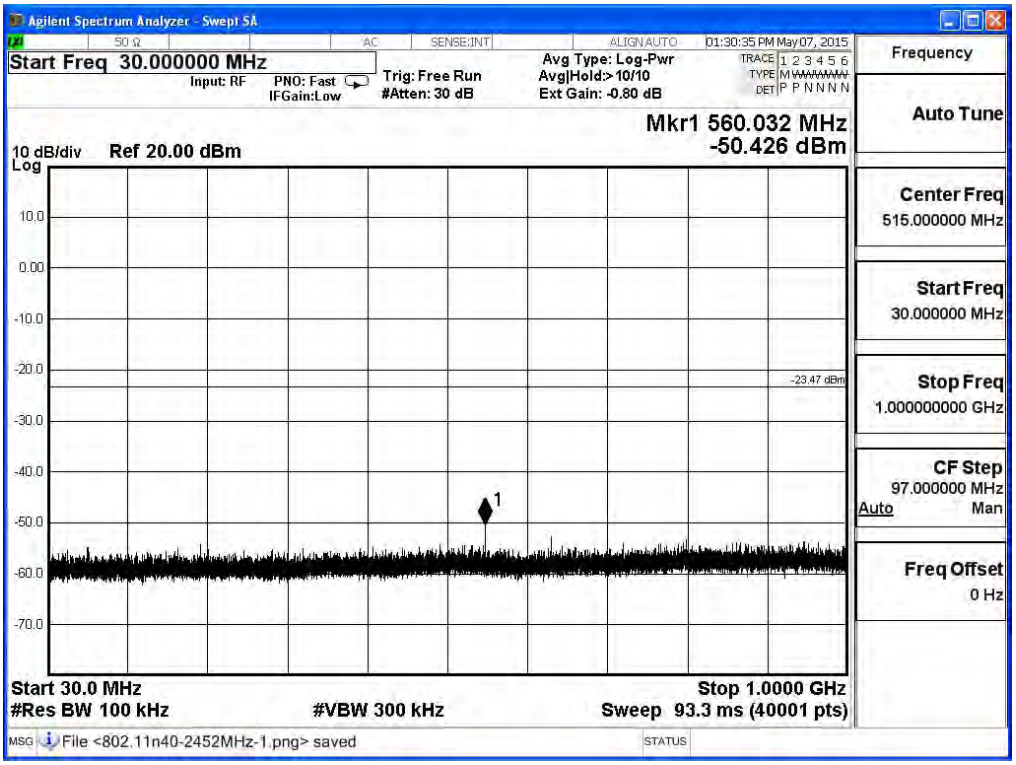
2437MHz (8GHz-16GHz) -802.11n(40MHz) (Ant 0)



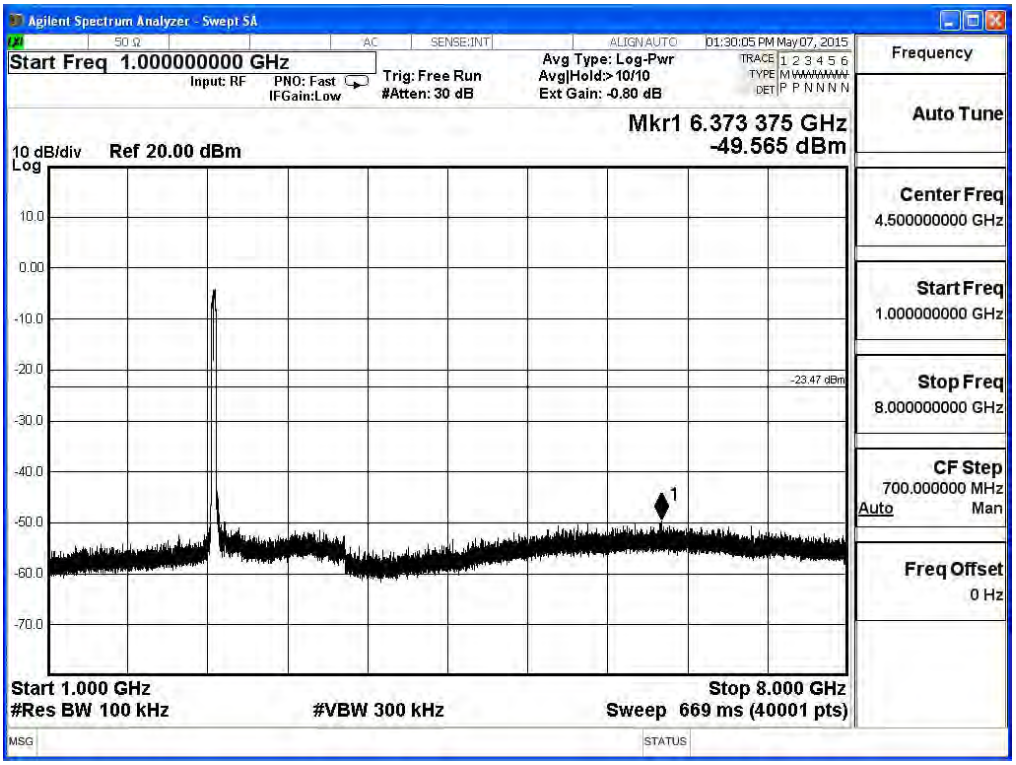
2437MHz (16GHz-25GHz) -802.11n(40MHz) (Ant 0)



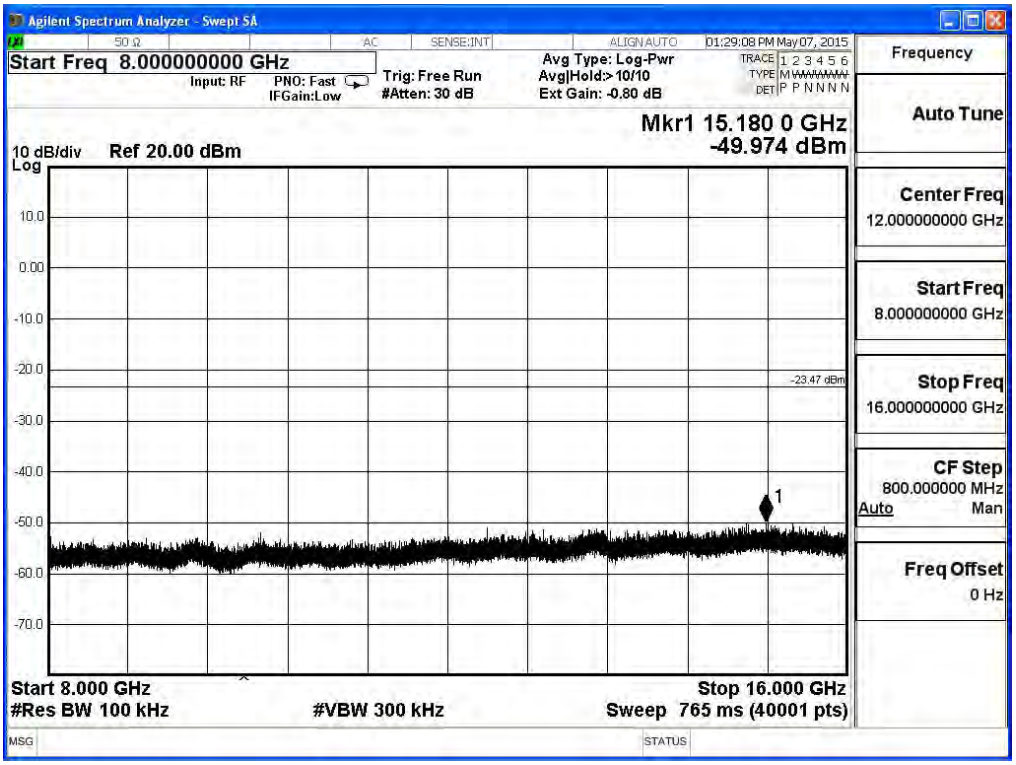
2452MHz (30MHz-1GHz)-802.11n(40MHz) (Ant 0)



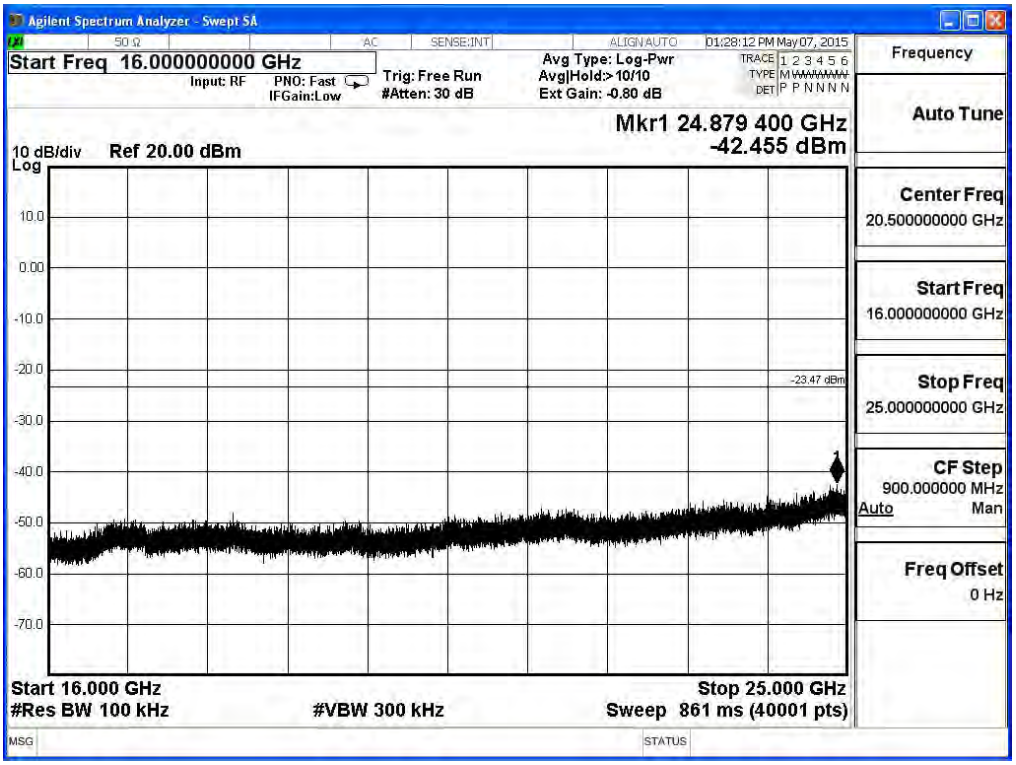
2452MHz (1GHz-8GHz) -802.11n(40MHz) (Ant 0)



2452MHz (8GHz-16GHz)-802.11n(40MHz) (Ant 0)



2452MHz (16GHz-25GHz) -802.11n(40MHz) (Ant 0)



6. Radiated Emission Band Edge

6.1. Test Equipment

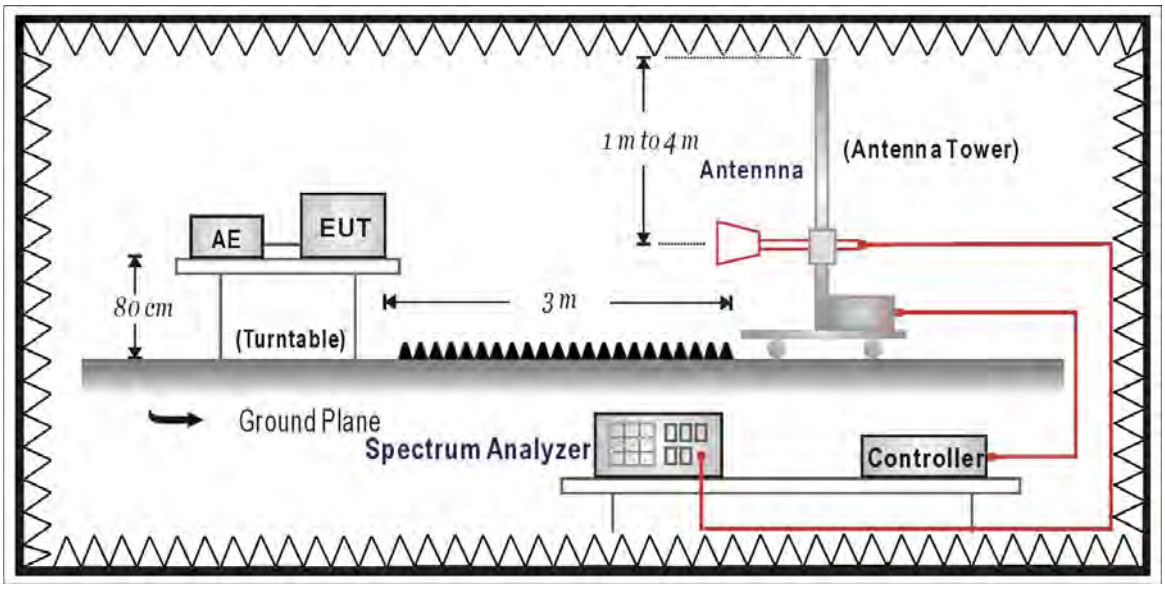
The following test equipments are used during the test:

Radiated Emission Band Edge / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2016/01/26
Spectrum Analyzer	Agilent	E4440A	MY46187335	2016/01/07
k Type Cable	Huber Suhner	Sucoflex 102	25623/2	2016/01/26

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

6.2. Test Setup



6.3. 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.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of KDB558074 v03r02 for compliance to FCC 47CFR 15.247 requirements.
The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 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 can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2009 on radiated measurement.

6.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2014

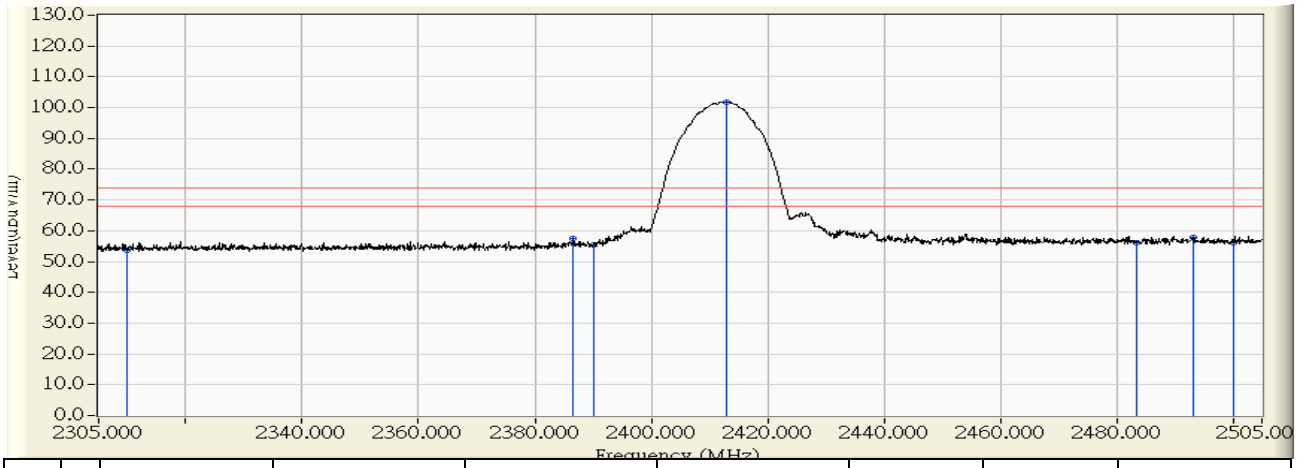
6.6. Uncertainty

The measurement uncertainty
± 3.9 dB above 1GHz

6.7. Test Result

Radiated is defined as

Site : CB1	**Time : 2015/03/28 - 08:00**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2412MHz**

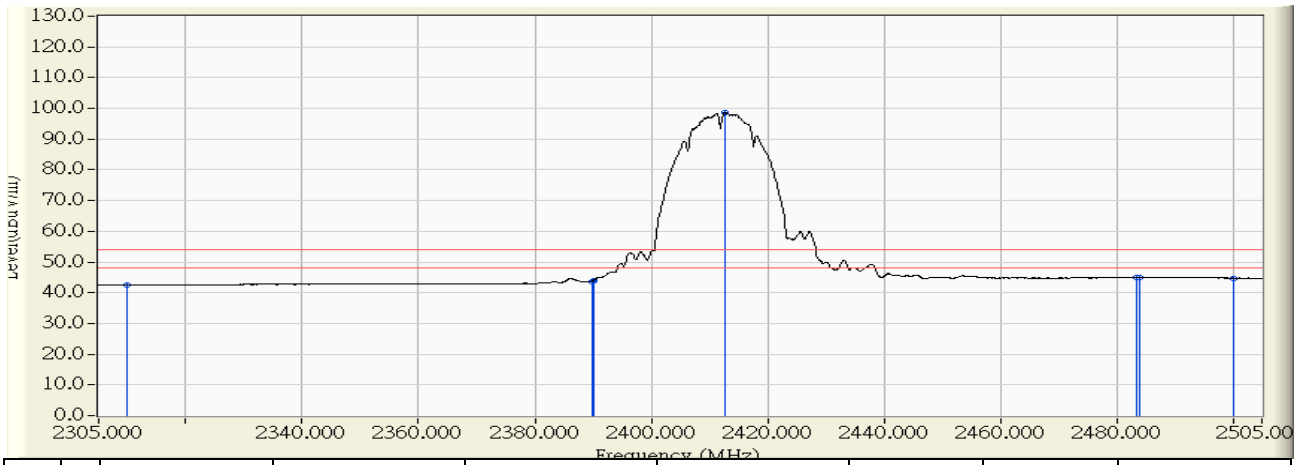


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	24.713	53.611	-20.389	74.000	PEAK
2		2386.559	29.731	27.679	57.410	-16.590	74.000	PEAK
3		2390.000	29.768	25.661	55.429	-18.571	74.000	PEAK
4	*	2412.946	30.017	71.915	101.933	27.933	74.000	PEAK
5		2483.500	30.738	25.486	56.225	-17.775	74.000	PEAK
6		2493.106	30.746	27.065	57.811	-16.189	74.000	PEAK
7		2500.000	30.740	25.395	56.134	-17.866	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 08:02**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2412MHz**

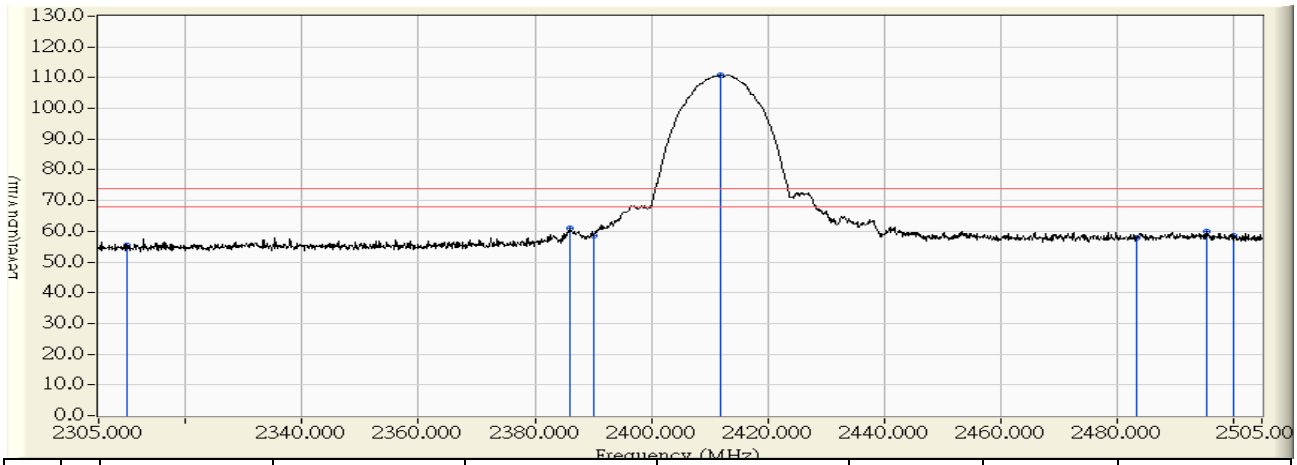


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	13.611	42.509	-11.491	54.000	AVERAGE
2		2389.758	29.766	13.893	43.658	-10.342	54.000	AVERAGE
3		2390.000	29.768	14.122	43.890	-10.110	54.000	AVERAGE
4	*	2412.746	30.016	68.760	98.775	44.775	54.000	AVERAGE
5		2483.500	30.738	14.095	44.834	-9.166	54.000	AVERAGE
6		2483.910	30.740	14.125	44.864	-9.136	54.000	AVERAGE
7		2500.000	30.740	14.018	44.757	-9.243	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 08:09**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2412MHz**

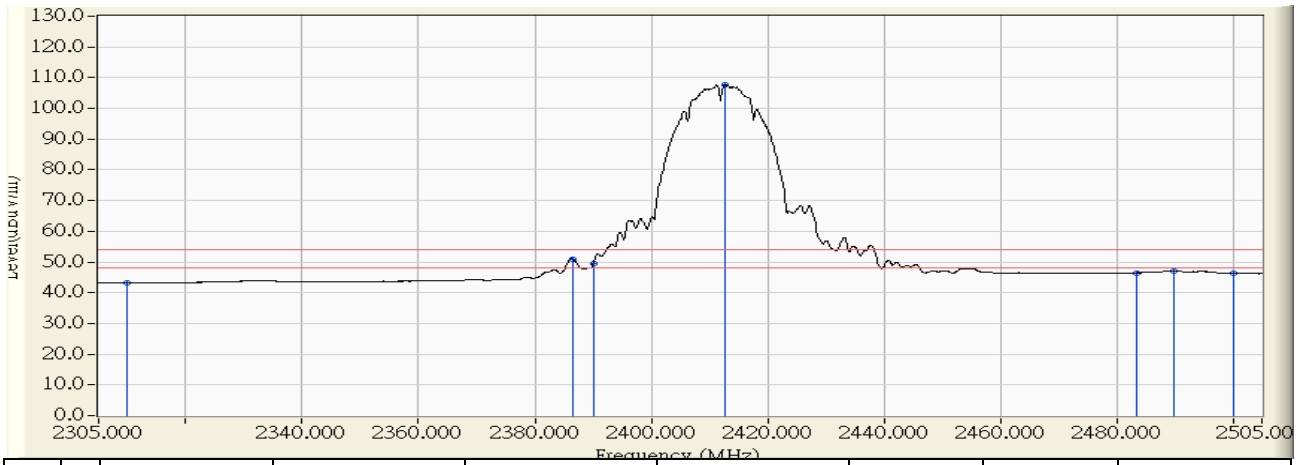


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	25.807	55.359	-18.641	74.000	PEAK
2		2386.059	30.532	30.517	61.048	-12.952	74.000	PEAK
3		2390.000	30.582	28.046	58.628	-15.372	74.000	PEAK
4	*	2411.946	30.865	80.125	110.990	36.990	74.000	PEAK
5		2483.500	31.739	26.186	57.926	-16.074	74.000	PEAK
6		2495.605	31.773	28.186	59.959	-14.041	74.000	PEAK
7		2500.000	31.774	26.782	58.555	-15.445	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 08:12**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2412MHz**

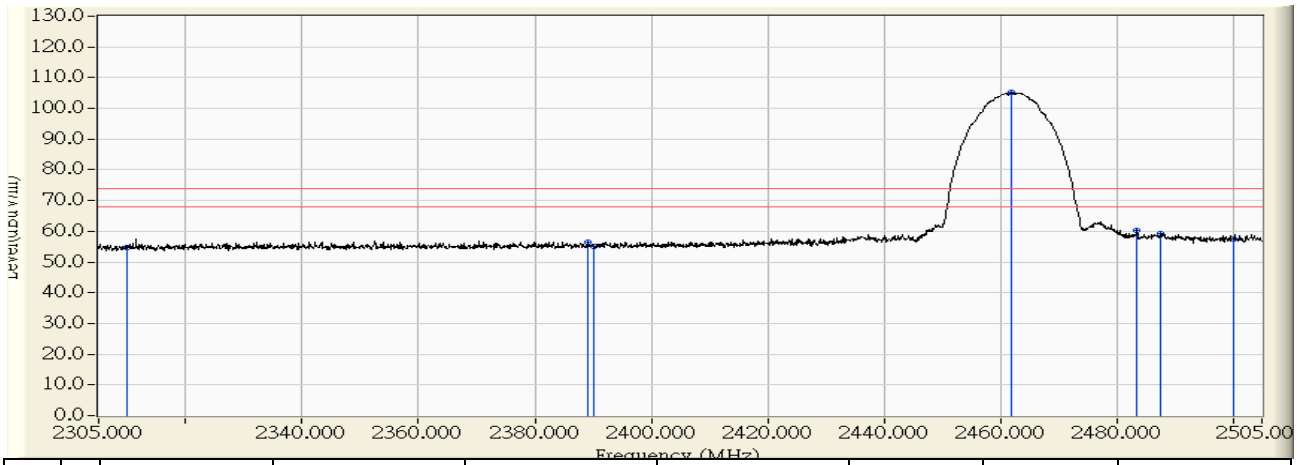


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	13.698	43.250	-10.750	54.000	AVERAGE
2		2386.459	30.536	20.512	51.049	-2.951	54.000	AVERAGE
3		2390.000	30.582	18.794	49.376	-4.624	54.000	AVERAGE
4	*	2412.746	30.875	76.983	107.858	53.858	54.000	AVERAGE
5		2483.500	31.739	14.705	46.445	-7.555	54.000	AVERAGE
6		2489.808	31.758	15.162	46.919	-7.081	54.000	AVERAGE
7		2500.000	31.774	14.509	46.282	-7.718	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 08:18**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2462MHz**

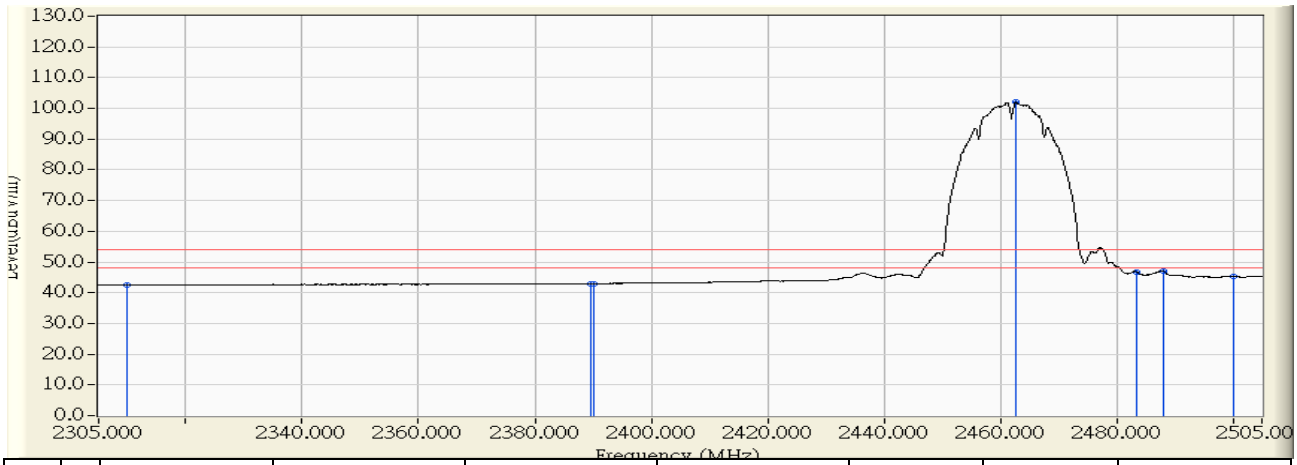


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	25.656	54.554	-19.446	74.000	PEAK
2		2389.158	29.759	26.867	56.626	-17.374	74.000	PEAK
3		2390.000	29.768	25.275	55.043	-18.957	74.000	PEAK
4	*	2462.021	30.552	74.553	105.104	31.104	74.000	PEAK
5		2483.500	30.738	29.640	60.379	-13.621	74.000	PEAK
6		2487.609	30.742	28.616	59.358	-14.642	74.000	PEAK
7		2500.000	30.740	26.758	57.497	-16.503	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 –08:19**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2462MHz**

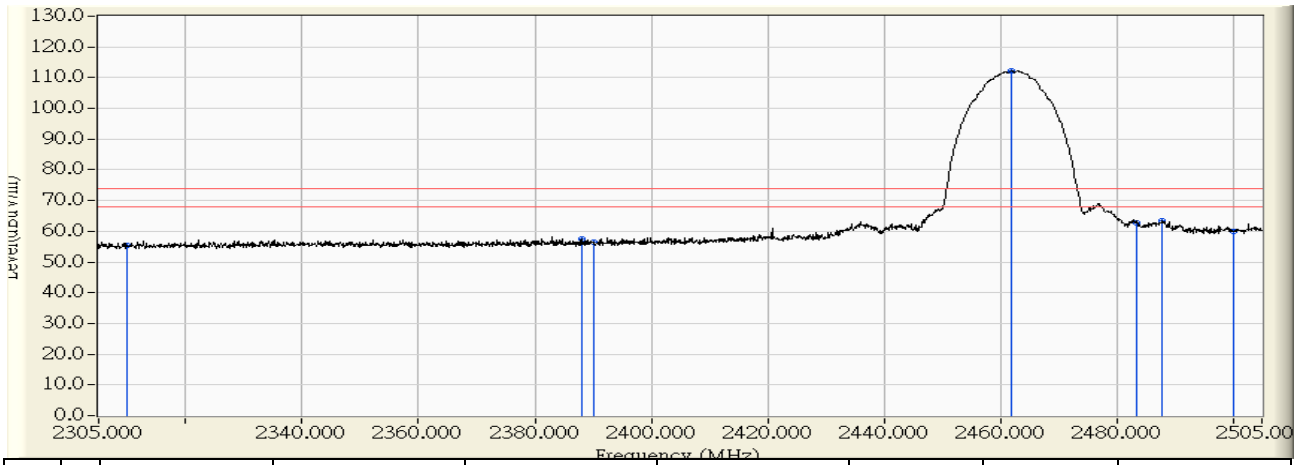


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	13.548	42.446	-11.554	54.000	AVERAGE
2		2389.558	29.764	13.196	42.959	-11.041	54.000	AVERAGE
3		2390.000	29.768	13.192	42.960	-11.040	54.000	AVERAGE
4	*	2462.721	30.558	71.398	101.957	47.957	54.000	AVERAGE
5		2483.500	30.738	15.915	46.654	-7.346	54.000	AVERAGE
6		2488.008	30.742	16.263	47.005	-6.995	54.000	AVERAGE
7		2500.000	30.740	14.424	45.163	-8.837	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 08:27**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2462MHz**

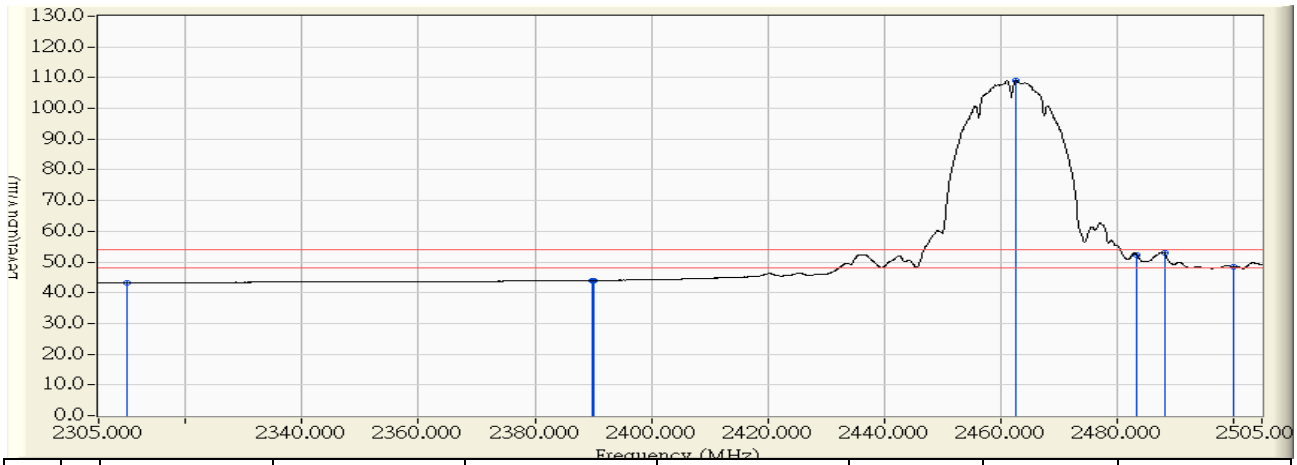


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	25.798	55.350	-18.650	74.000	PEAK
2		2388.158	30.558	26.830	57.388	-16.612	74.000	PEAK
3		2390.000	30.582	25.883	56.465	-17.535	74.000	PEAK
4	*	2462.021	31.510	80.627	112.136	38.136	74.000	PEAK
5		2483.500	31.739	31.013	62.753	-11.247	74.000	PEAK
6		2487.908	31.752	31.625	63.377	-10.623	74.000	PEAK
7		2500.000	31.774	28.081	59.854	-14.146	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 08:28**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11b_2462MHz**

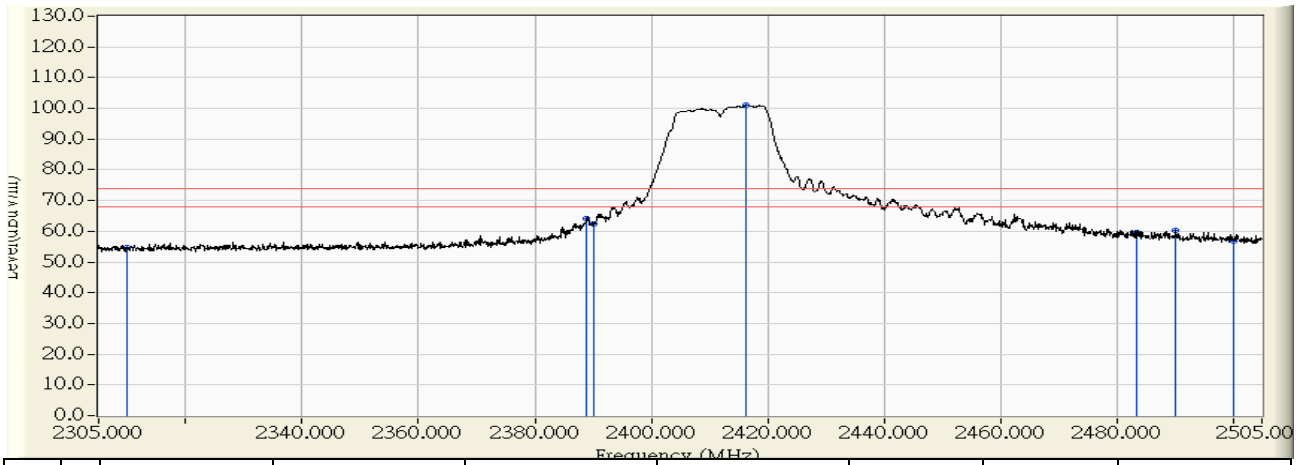


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	13.607	43.159	-10.841	54.000	AVERAGE
2		2389.758	30.579	13.405	43.984	-10.016	54.000	AVERAGE
3		2390.000	30.582	13.356	43.938	-10.062	54.000	AVERAGE
4	*	2462.721	31.518	77.516	109.034	55.034	54.000	AVERAGE
5		2483.500	31.739	20.608	52.348	-1.652	54.000	AVERAGE
6		2488.208	31.753	21.065	52.818	-1.182	54.000	AVERAGE
7		2500.000	31.774	16.589	48.362	-5.638	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 08:36**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2412MHz**

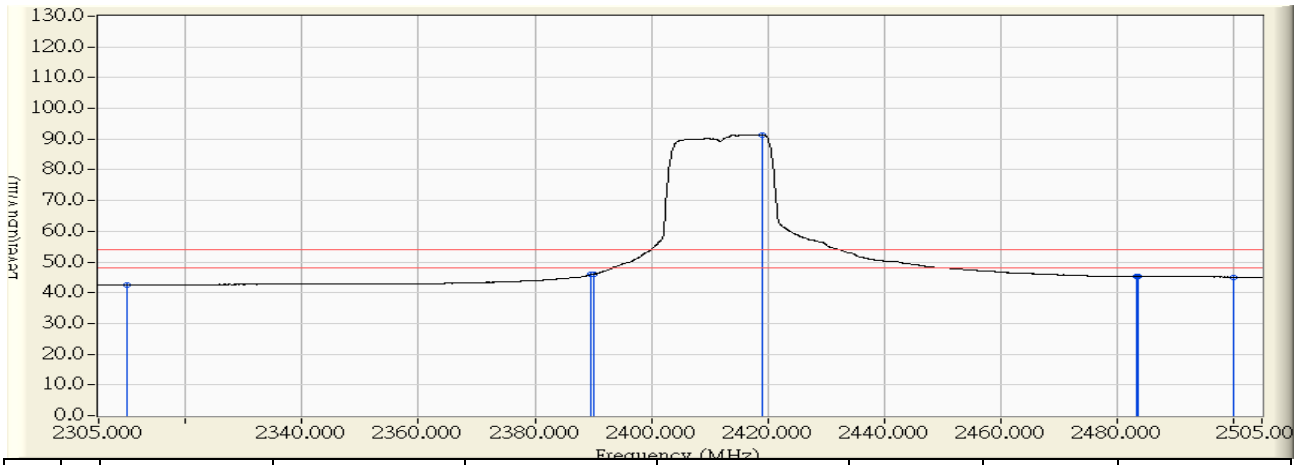


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	25.665	54.563	-19.437	74.000	PEAK
2		2388.858	29.756	34.483	64.239	-9.761	74.000	PEAK
3		2390.000	29.768	32.619	62.387	-11.613	74.000	PEAK
4	*	2416.344	30.054	70.901	100.955	26.955	74.000	PEAK
5		2483.500	30.738	28.978	59.717	-14.283	74.000	PEAK
6		2490.207	30.744	29.690	60.434	-13.566	74.000	PEAK
7		2500.000	30.740	26.143	56.882	-17.118	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 08:38**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2412MHz**

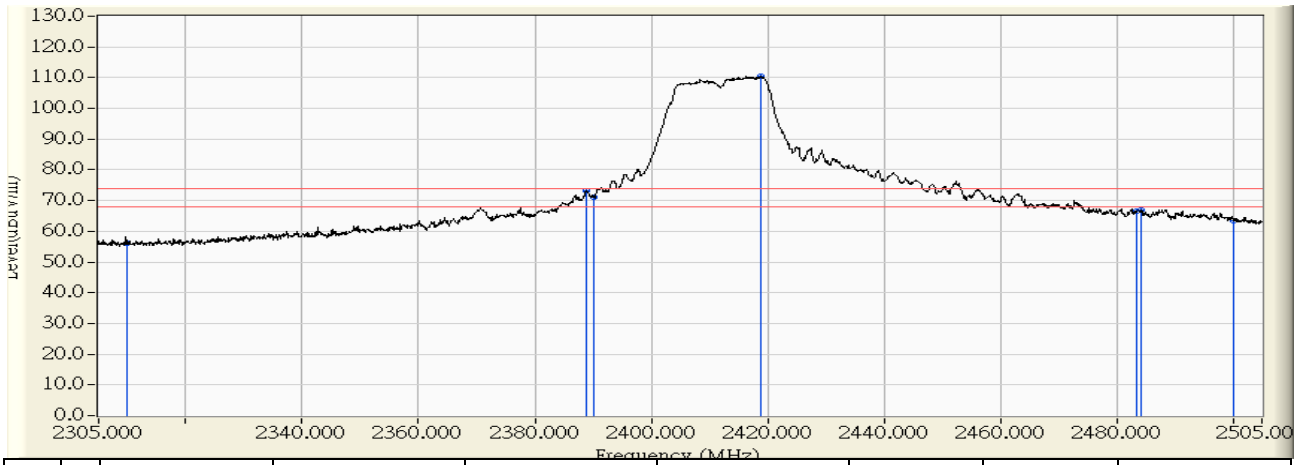


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	13.612	42.510	-11.490	54.000	AVERAGE
2		2389.558	29.764	16.102	45.865	-8.135	54.000	AVERAGE
3		2390.000	29.768	16.218	45.986	-8.014	54.000	AVERAGE
4	*	2419.043	30.084	61.402	91.486	37.486	54.000	AVERAGE
5		2483.500	30.738	14.595	45.334	-8.666	54.000	AVERAGE
6		2483.611	30.739	14.592	45.331	-8.669	54.000	AVERAGE
7		2500.000	30.740	14.310	45.049	-8.951	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 08:46**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2412MHz**

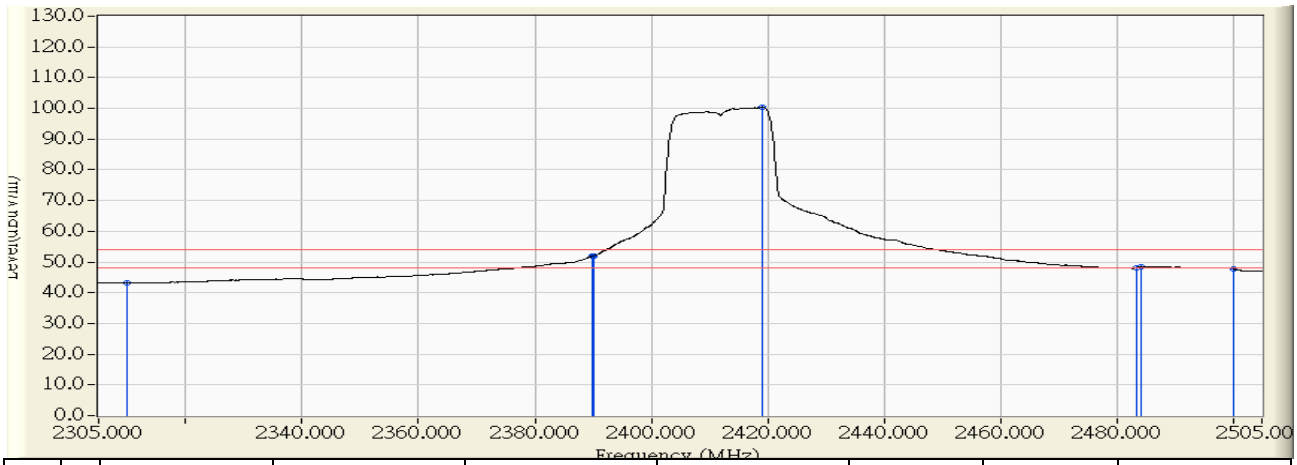


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	26.469	56.021	-17.979	74.000	PEAK
2		2388.958	30.569	42.672	73.241	-0.759	74.000	PEAK
3		2390.000	30.582	40.640	71.222	-2.778	74.000	PEAK
4	*	2418.743	30.952	79.579	110.531	36.531	74.000	PEAK
5		2483.500	31.739	34.857	66.597	-7.403	74.000	PEAK
6		2484.110	31.742	35.202	66.944	-7.056	74.000	PEAK
7		2500.000	31.774	31.793	63.566	-10.434	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 08:48**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2412MHz**

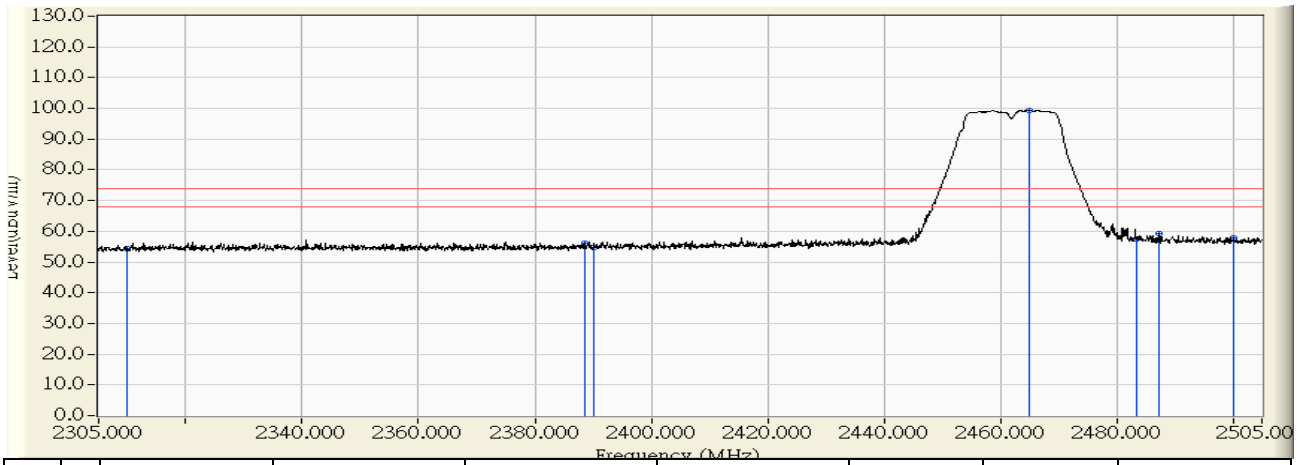


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	13.681	43.233	-10.767	54.000	AVERAGE
2		2389.758	30.579	21.259	51.838	-2.162	54.000	AVERAGE
3		2390.000	30.582	21.410	51.992	-2.008	54.000	AVERAGE
4	*	2419.143	30.957	69.335	100.292	46.292	54.000	AVERAGE
5		2483.500	31.739	16.430	48.170	-5.830	54.000	AVERAGE
6		2484.210	31.742	16.769	48.511	-5.489	54.000	AVERAGE
7		2500.000	31.774	16.095	47.868	-6.132	54.000	AVERAGE

. Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 08:56**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2462MHz**

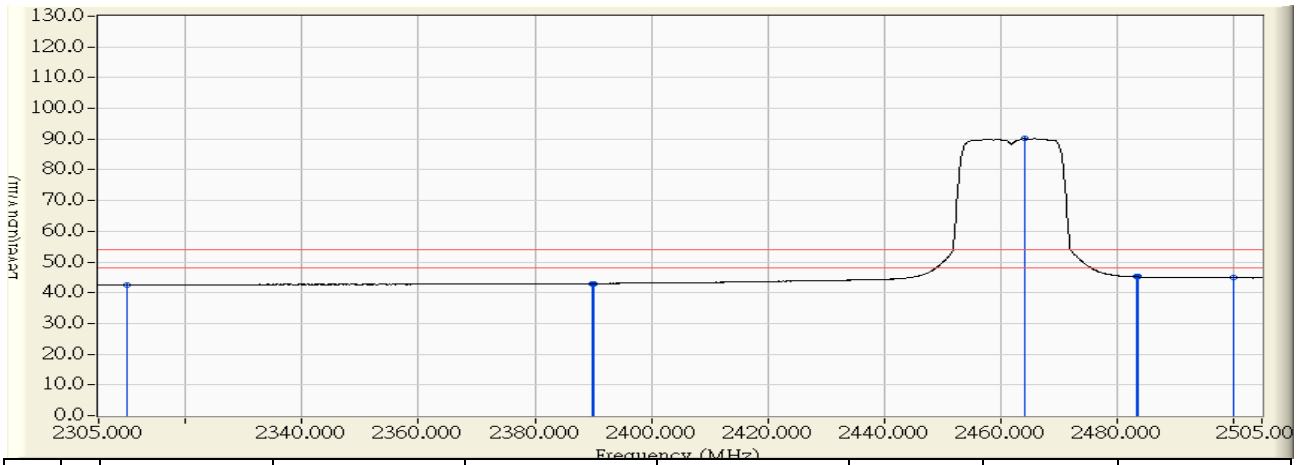


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	25.611	54.509	-19.491	74.000	PEAK
2		2388.558	29.753	26.432	56.184	-17.816	74.000	PEAK
3		2390.000	29.768	24.973	54.741	-19.259	74.000	PEAK
4	*	2465.020	30.584	68.826	99.410	25.410	74.000	PEAK
5		2483.500	30.738	26.825	57.564	-16.436	74.000	PEAK
6		2487.409	30.742	28.456	59.198	-14.802	74.000	PEAK
7		2500.000	30.740	27.049	57.788	-16.212	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 08:58**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2462MHz**

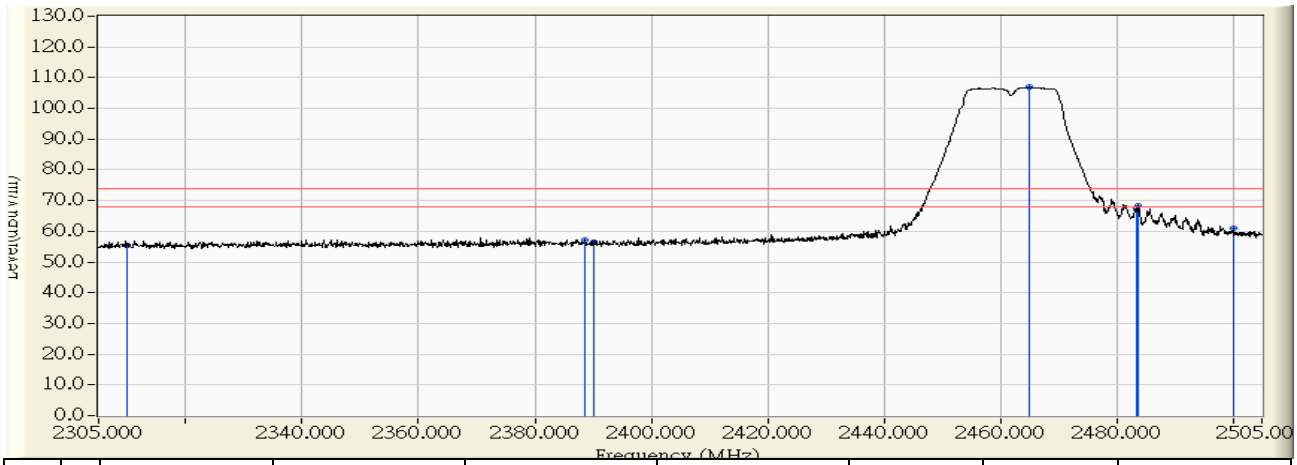


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	13.550	42.448	-11.552	54.000	AVERAGE
2		2389.758	29.766	13.222	42.987	-11.013	54.000	AVERAGE
3		2390.000	29.768	13.180	42.948	-11.052	54.000	AVERAGE
4	*	2464.120	30.574	59.574	90.148	36.148	54.000	AVERAGE
5		2483.500	30.738	14.451	45.190	-8.810	54.000	AVERAGE
6		2483.611	30.739	14.424	45.163	-8.837	54.000	AVERAGE
7		2500.000	30.740	14.077	44.816	-9.184	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 09:06**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2462MHz**

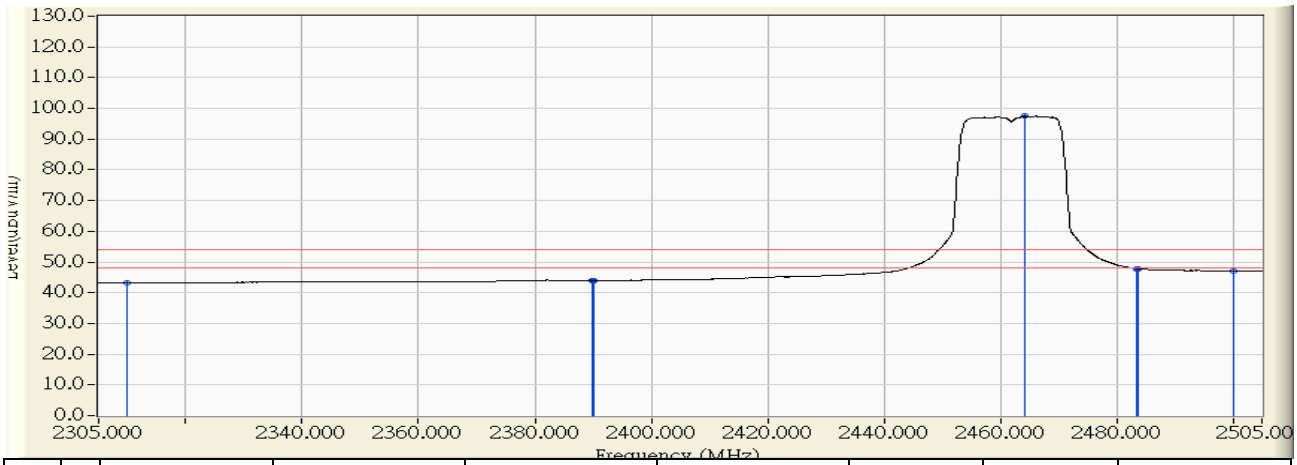


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	25.762	55.314	-18.686	74.000	PEAK
2		2388.658	30.565	26.652	57.217	-16.783	74.000	PEAK
3		2390.000	30.582	25.875	56.457	-17.543	74.000	PEAK
4	*	2465.020	31.548	75.348	106.896	32.896	74.000	PEAK
5		2483.500	31.739	35.633	67.373	-6.627	74.000	PEAK
6		2483.611	31.741	36.447	68.187	-5.813	74.000	PEAK
7		2500.000	31.774	29.206	60.979	-13.021	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 09:08**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11g_2462MHz**

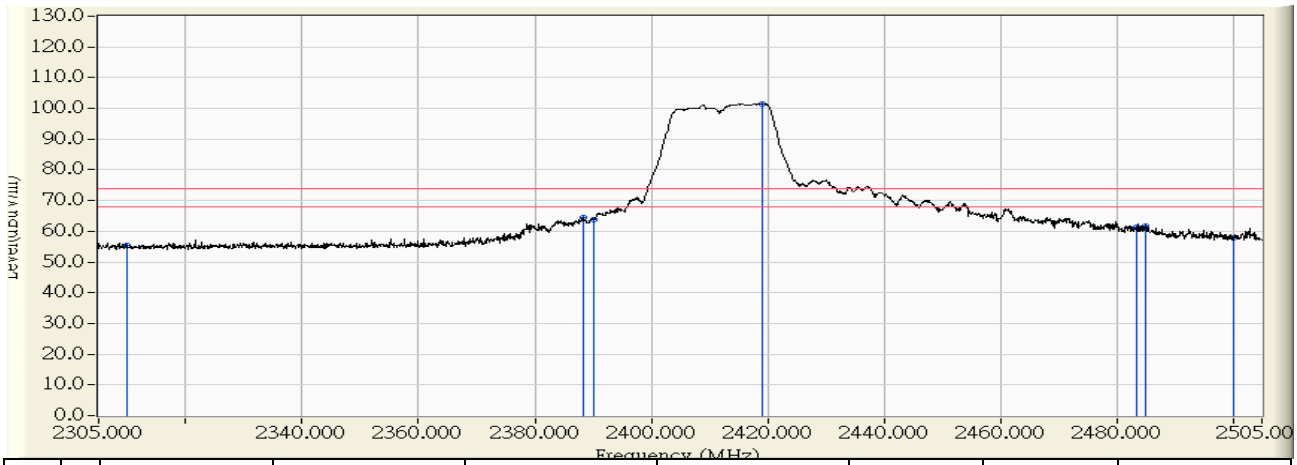


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	13.603	43.155	-10.845	54.000	AVERAGE
2		2389.758	30.579	13.433	44.012	-9.988	54.000	AVERAGE
3		2390.000	30.582	13.402	43.984	-10.016	54.000	AVERAGE
4	*	2464.120	31.536	65.895	97.431	43.431	54.000	AVERAGE
5		2483.500	31.739	16.174	47.914	-6.086	54.000	AVERAGE
6		2483.611	31.741	16.127	47.867	-6.133	54.000	AVERAGE
7		2500.000	31.774	15.226	46.999	-7.001	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 09:15**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2412MHz**

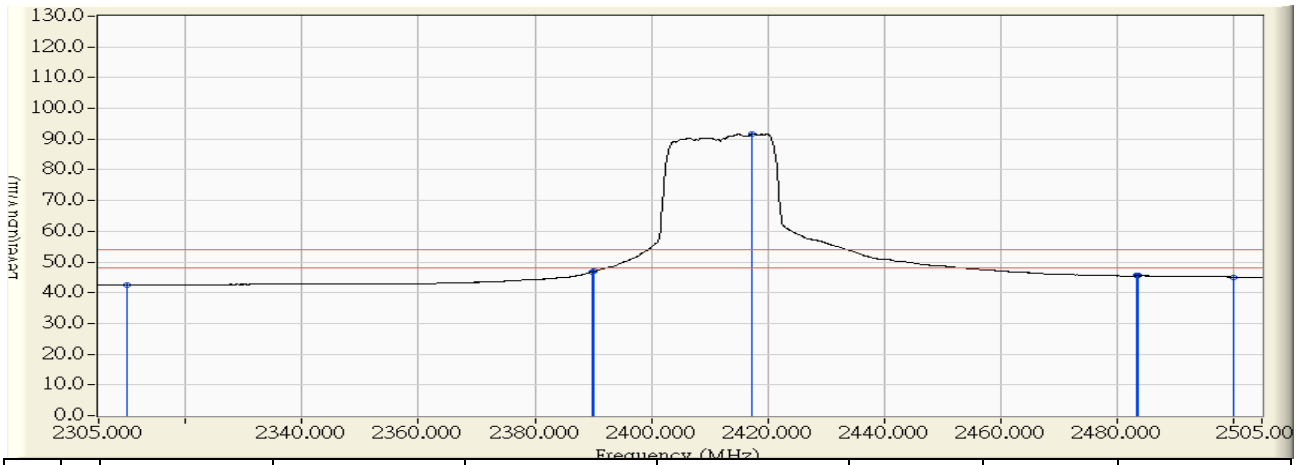


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	26.627	55.525	-18.475	74.000	PEAK
2		2388.258	29.749	34.880	64.629	-9.371	74.000	PEAK
3		2390.000	29.768	34.015	63.783	-10.217	74.000	PEAK
4	*	2419.043	30.084	71.465	101.549	27.549	74.000	PEAK
5		2483.500	30.738	30.577	61.316	-12.684	74.000	PEAK
6		2485.010	30.740	30.893	61.633	-12.367	74.000	PEAK
7		2500.000	30.740	27.067	57.806	-16.194	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 09:17**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2412MHz**

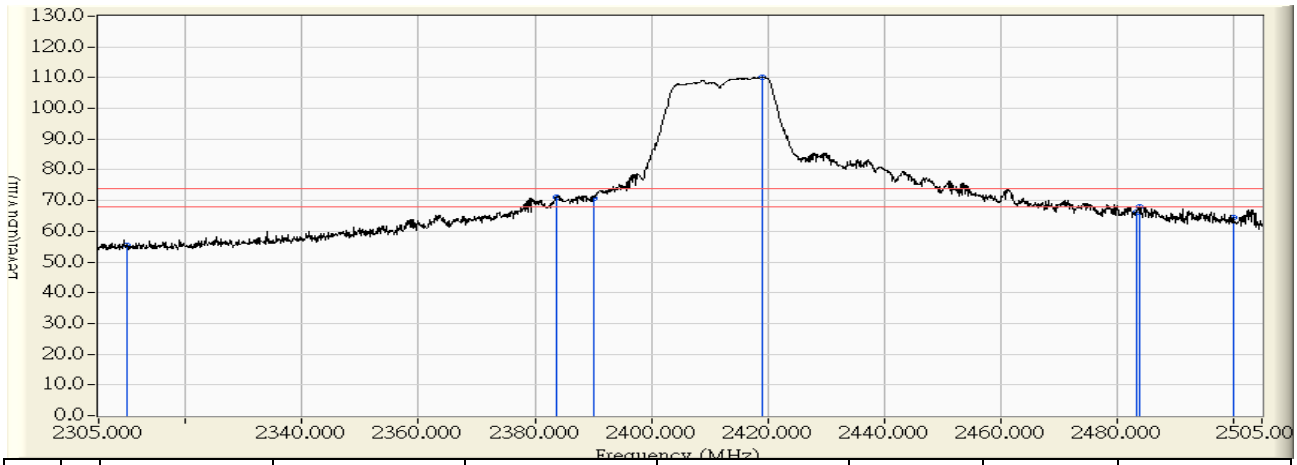


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	13.582	42.480	-11.520	54.000	AVERAGE
2		2389.958	29.767	17.100	46.868	-7.132	54.000	AVERAGE
3		2390.000	29.768	17.116	46.884	-7.116	54.000	AVERAGE
4	*	2417.244	30.064	61.531	91.595	37.595	54.000	AVERAGE
5		2483.500	30.738	14.776	45.515	-8.485	54.000	AVERAGE
6		2483.611	30.739	14.746	45.485	-8.515	54.000	AVERAGE
7		2500.000	30.740	14.345	45.084	-8.916	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 09:23**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2412MHz**

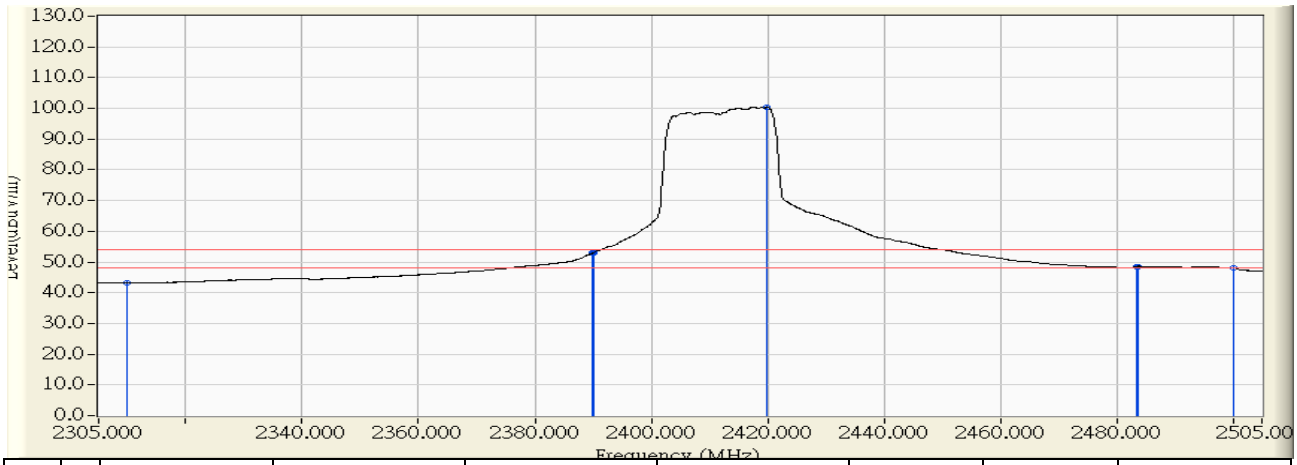


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	25.814	55.366	-18.634	74.000	PEAK
2		2383.761	30.502	40.741	71.243	-2.757	74.000	PEAK
3		2390.000	30.582	40.204	70.786	-3.214	74.000	PEAK
4	*	2419.043	30.956	79.215	110.171	36.171	74.000	PEAK
5		2483.500	31.739	34.516	66.256	-7.744	74.000	PEAK
6		2483.910	31.741	36.328	68.069	-5.931	74.000	PEAK
7		2500.000	31.774	32.584	64.357	-9.643	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 09:25**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2412MHz**

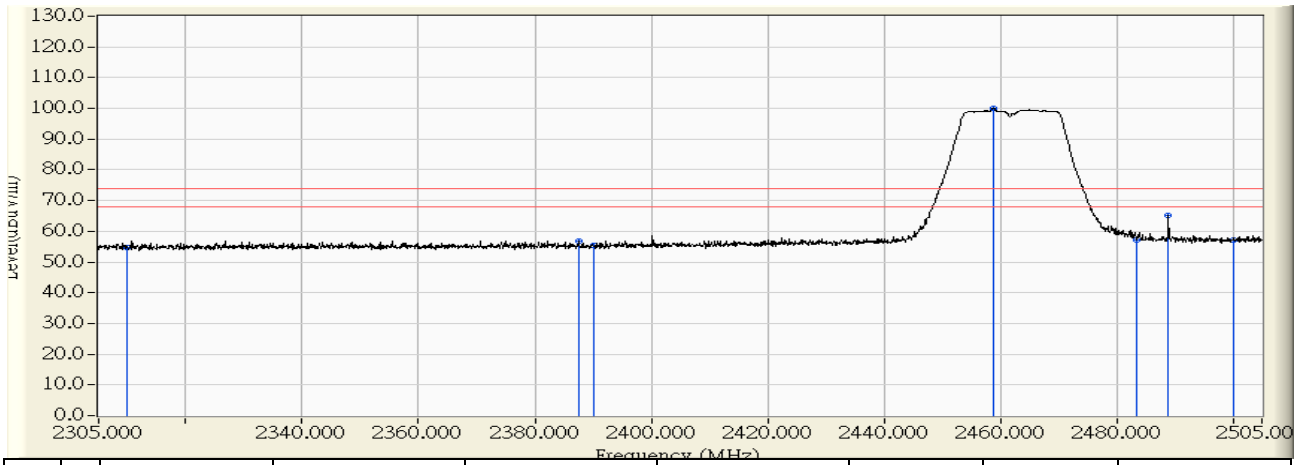


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	13.691	43.243	-10.757	54.000	AVERAGE
2		2389.858	30.580	22.273	52.853	-1.147	54.000	AVERAGE
3		2390.000	30.582	22.389	52.971	-1.029	54.000	AVERAGE
4	*	2419.942	30.967	69.438	100.405	46.405	54.000	AVERAGE
5		2483.500	31.739	16.830	48.570	-5.430	54.000	AVERAGE
6		2483.611	31.741	16.863	48.603	-5.397	54.000	AVERAGE
7		2500.000	31.774	16.329	48.102	-5.898	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 09:32**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2462MHz**

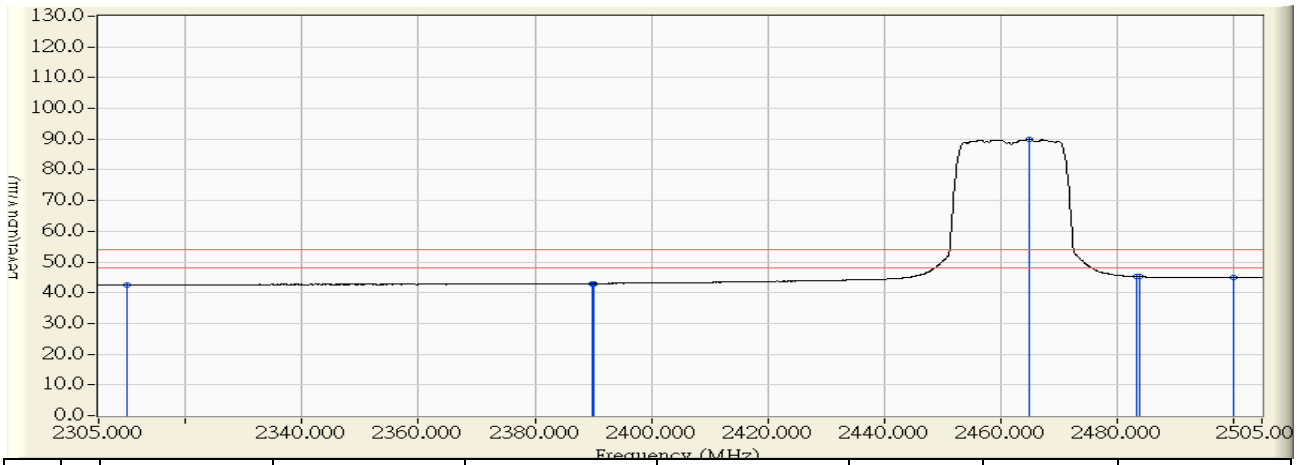


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	25.897	54.795	-19.205	74.000	PEAK
2		2387.459	29.740	27.021	56.761	-17.239	74.000	PEAK
3		2390.000	29.768	25.757	55.525	-18.475	74.000	PEAK
4	*	2458.923	30.517	69.591	100.108	26.108	74.000	PEAK
5		2483.500	30.738	26.456	57.195	-16.805	74.000	PEAK
6		2488.908	30.743	34.431	65.174	-8.826	74.000	PEAK
7		2500.000	30.740	26.323	57.062	-16.938	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 09:34**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2462MHz**

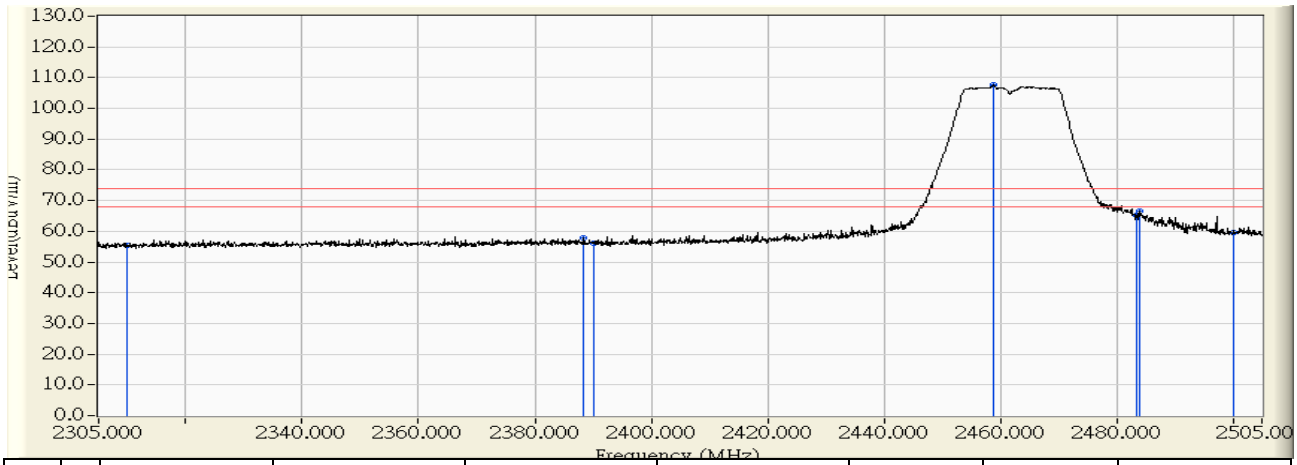


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	13.593	42.491	-11.509	54.000	AVERAGE
2		2389.758	29.766	13.209	42.974	-11.026	54.000	AVERAGE
3		2390.000	29.768	13.205	42.973	-11.027	54.000	AVERAGE
4	*	2465.120	30.585	59.420	90.005	36.005	54.000	AVERAGE
5		2483.500	30.738	14.511	45.250	-8.750	54.000	AVERAGE
6		2483.910	30.740	14.474	45.213	-8.787	54.000	AVERAGE
7		2500.000	30.740	14.122	44.861	-9.139	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 09:42**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2462MHz**

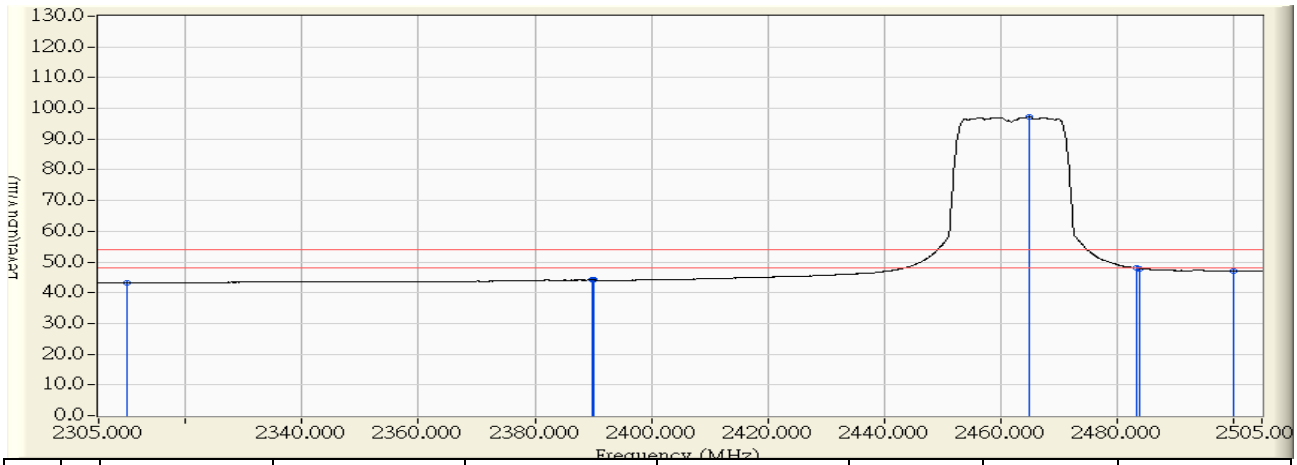


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	25.922	55.474	-18.526	74.000	PEAK
2		2388.358	30.561	27.342	57.903	-16.097	74.000	PEAK
3		2390.000	30.582	25.689	56.271	-17.729	74.000	PEAK
4	*	2458.723	31.467	76.137	107.604	33.604	74.000	PEAK
5		2483.500	31.739	33.475	65.215	-8.785	74.000	PEAK
6		2483.910	31.741	34.704	66.445	-7.555	74.000	PEAK
7		2500.000	31.774	27.989	59.762	-14.238	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 09:44**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n20_2462MHz**

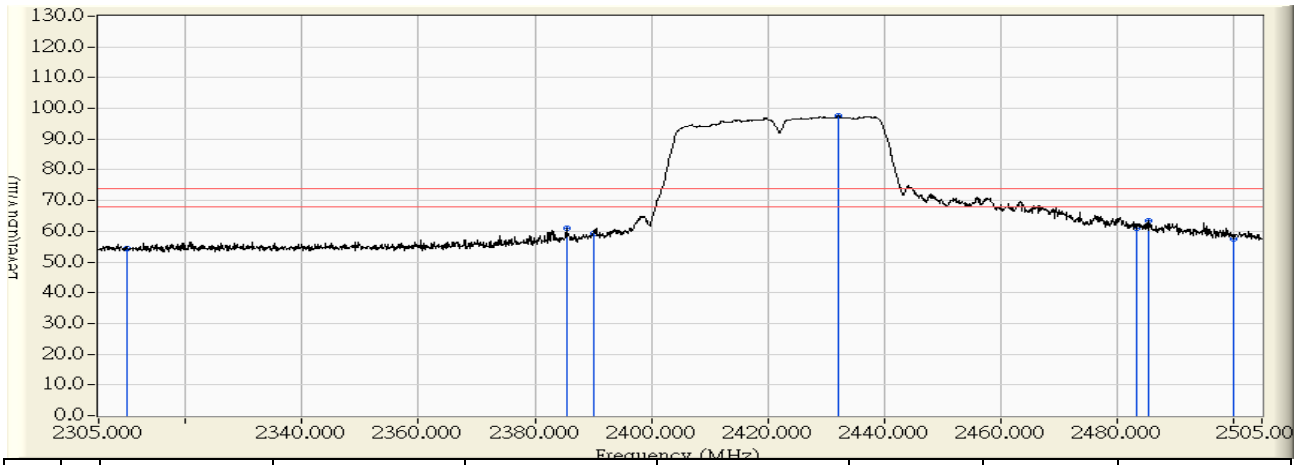


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	13.597	43.149	-10.851	54.000	AVERAGE
2		2389.758	30.579	13.528	44.107	-9.893	54.000	AVERAGE
3		2390.000	30.582	13.513	44.095	-9.905	54.000	AVERAGE
4	*	2465.120	31.549	65.688	97.237	43.237	54.000	AVERAGE
5		2483.500	31.739	16.278	48.018	-5.982	54.000	AVERAGE
6		2483.910	31.741	16.175	47.916	-6.084	54.000	AVERAGE
7		2500.000	31.774	15.216	46.989	-7.011	54.000	AVERAGE

. Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 09:52**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2422MHz**

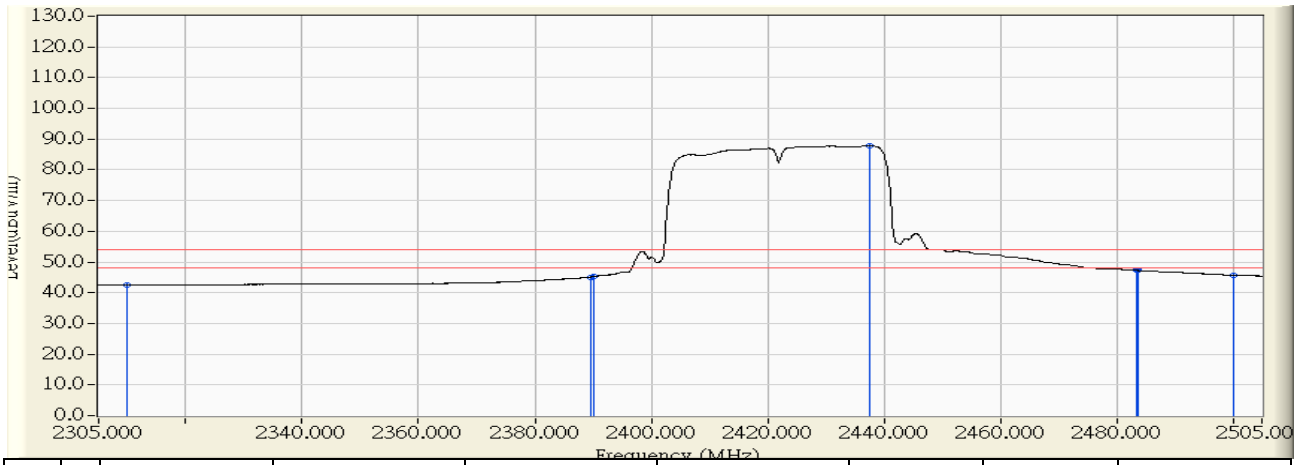


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	25.347	54.245	-19.755	74.000	PEAK
2		2385.460	29.719	31.184	60.903	-13.097	74.000	PEAK
3		2390.000	29.768	29.535	59.303	-14.697	74.000	PEAK
4	*	2432.136	30.227	67.478	97.704	23.704	74.000	PEAK
5		2483.500	30.738	30.261	61.000	-13.000	74.000	PEAK
6		2485.610	30.741	32.608	63.348	-10.652	74.000	PEAK
7		2500.000	30.740	26.707	57.446	-16.554	74.000	PEAK

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 - 09:54**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2422MHz**

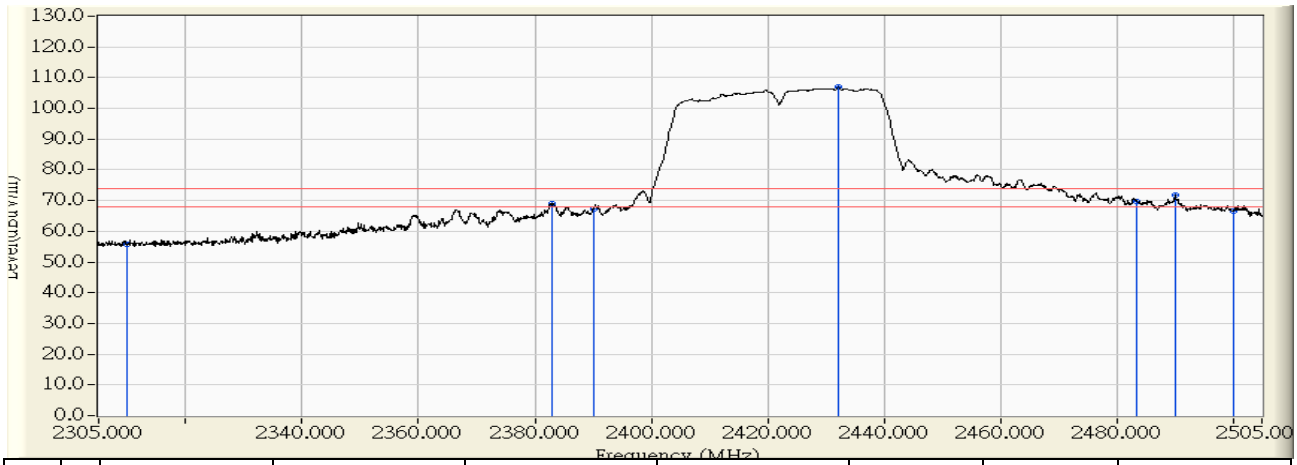


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	13.613	42.511	-11.489	54.000	AVERAGE
2		2389.558	29.764	15.334	45.097	-8.903	54.000	AVERAGE
3		2390.000	29.768	15.485	45.253	-8.747	54.000	AVERAGE
4	*	2437.634	30.286	57.607	87.893	33.893	54.000	AVERAGE
5		2483.500	30.738	16.528	47.267	-6.733	54.000	AVERAGE
6		2483.611	30.739	16.516	47.255	-6.745	54.000	AVERAGE
7		2500.000	30.740	15.019	45.758	-8.242	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 10:00**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2422MHz**

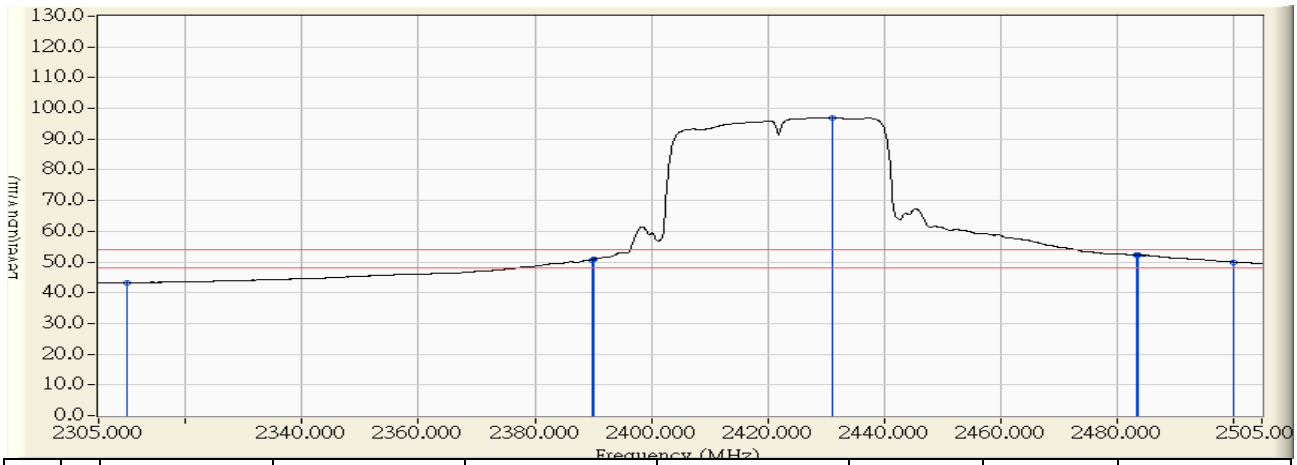


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	26.114	55.666	-18.334	74.000	PEAK
2		2382.961	30.492	38.633	69.125	-4.875	74.000	PEAK
3		2390.000	30.582	36.639	67.221	-6.779	74.000	PEAK
4	*	2432.236	31.126	75.835	106.961	32.961	74.000	PEAK
5		2483.500	31.739	37.958	69.698	-4.302	74.000	PEAK
6		2490.107	31.758	39.879	71.637	-2.363	74.000	PEAK
7		2500.000	31.774	34.719	66.492	-7.508	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 10:13**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2422MHz**

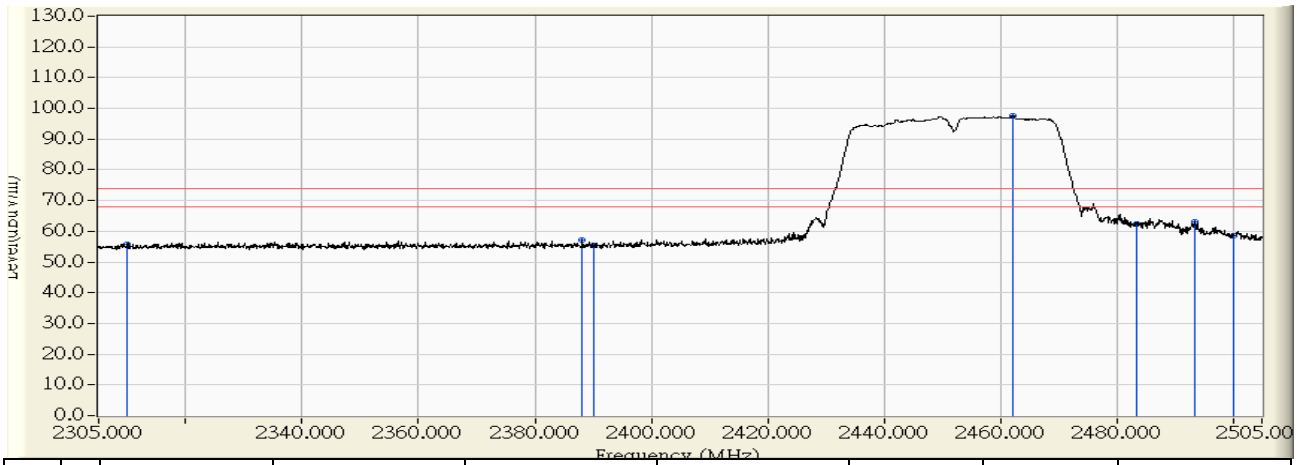


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	13.727	43.279	-10.721	54.000	AVERAGE
2		2389.758	30.579	20.077	50.656	-3.344	54.000	AVERAGE
3		2390.000	30.582	20.223	50.805	-3.195	54.000	AVERAGE
4	*	2431.237	31.112	65.852	96.965	42.965	54.000	AVERAGE
5		2483.500	31.739	20.443	52.183	-1.817	54.000	AVERAGE
6		2483.611	31.741	20.442	52.182	-1.818	54.000	AVERAGE
7		2500.000	31.774	18.240	50.013	-3.987	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 10:15**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2452MHz**

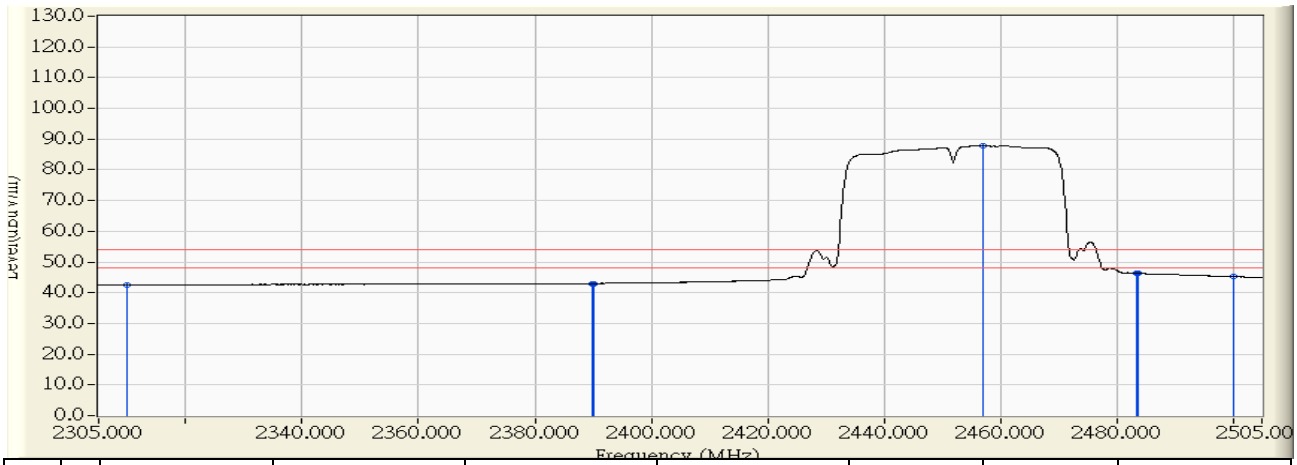


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	26.934	55.832	-18.168	74.000	PEAK
2		2388.058	29.747	27.241	56.988	-17.012	74.000	PEAK
3		2390.000	29.768	25.538	55.306	-18.694	74.000	PEAK
4	*	2462.221	30.553	67.125	97.678	23.678	74.000	PEAK
5		2483.500	30.738	31.514	62.253	-11.747	74.000	PEAK
6		2493.406	30.746	32.478	63.224	-10.776	74.000	PEAK
7		2500.000	30.740	27.677	58.416	-15.584	74.000	PEAK

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 10:16**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2452MHz**

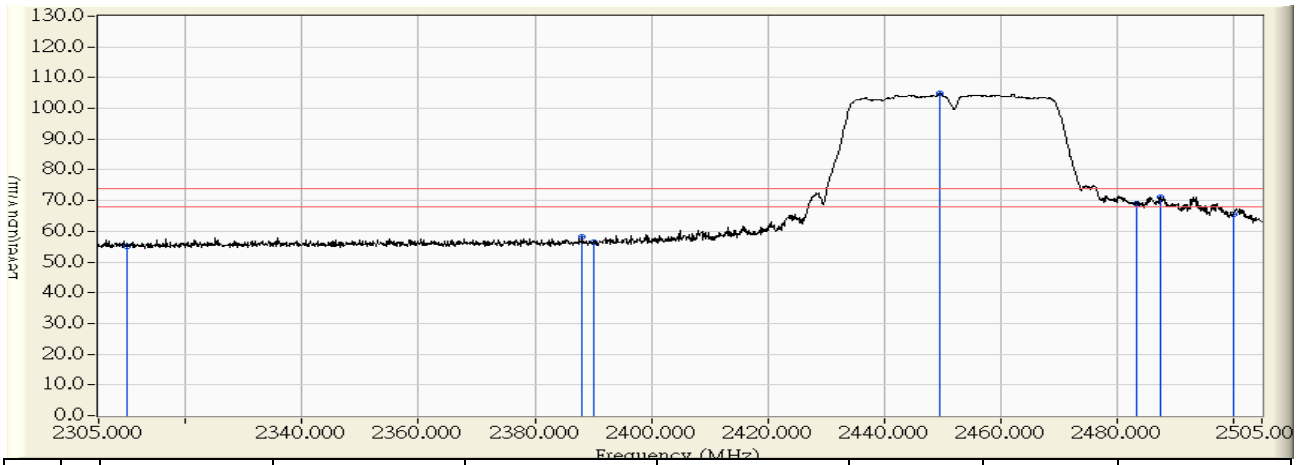


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.899	13.586	42.484	-11.516	54.000	AVERAGE
2		2389.758	29.766	13.236	43.001	-10.999	54.000	AVERAGE
3		2390.000	29.768	13.254	43.022	-10.978	54.000	AVERAGE
4	*	2457.024	30.497	57.241	87.738	33.738	54.000	AVERAGE
5		2483.500	30.738	15.638	46.377	-7.623	54.000	AVERAGE
6		2483.611	30.739	15.643	46.382	-7.618	54.000	AVERAGE
7		2500.000	30.740	14.495	45.234	-8.766	54.000	AVERAGE

Note:

1. All readings 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. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 10:24**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2452MHz**

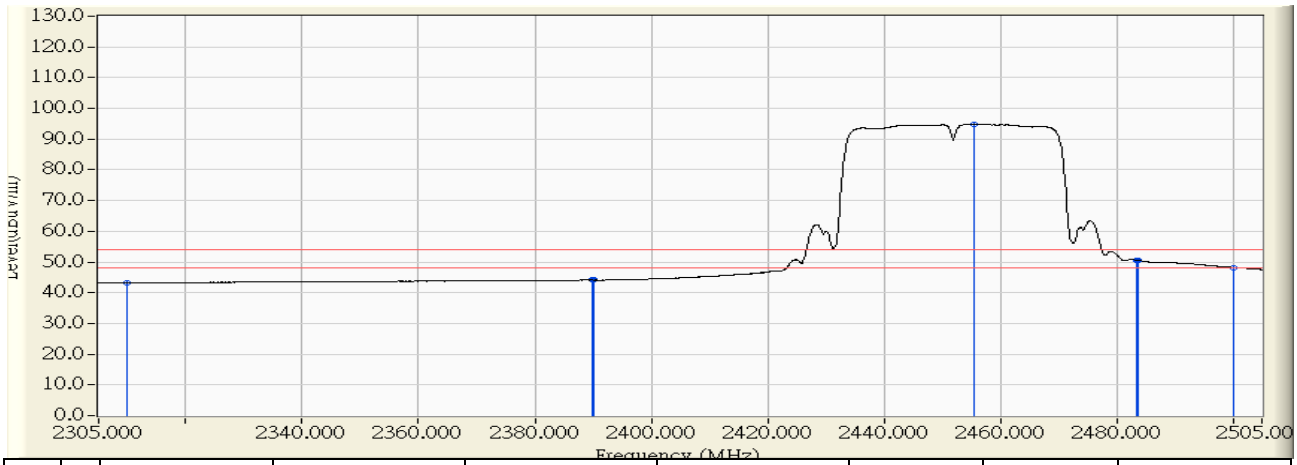


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	25.473	55.025	-18.975	74.000	PEAK
2		2388.058	30.557	27.773	58.330	-15.670	74.000	PEAK
3		2390.000	30.582	25.924	56.506	-17.494	74.000	PEAK
4	*	2449.528	31.348	73.461	104.809	30.809	74.000	PEAK
5		2483.500	31.739	37.254	68.994	-5.006	74.000	PEAK
6		2487.609	31.751	39.485	71.236	-2.764	74.000	PEAK
7		2500.000	31.774	33.720	65.493	-8.507	74.000	PEAK

. Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2015/03/28 – 10:26**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 3.3V**
EUT : WiFi Module	**Note : 802.11n40_2452MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.553	13.637	43.189	-10.811	54.000	AVERAGE
2		2389.758	30.579	13.543	44.122	-9.878	54.000	AVERAGE
3		2390.000	30.582	13.509	44.091	-9.909	54.000	AVERAGE
4	*	2455.425	31.424	63.361	94.785	40.785	54.000	AVERAGE
5		2483.500	31.739	18.846	50.586	-3.414	54.000	AVERAGE
6		2483.611	31.741	18.820	50.560	-3.440	54.000	AVERAGE
7		2500.000	31.774	16.487	48.260	-5.740	54.000	AVERAGE

Note:

1. All readings 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. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Occupied Bandwidth

7.1. Test Equipment

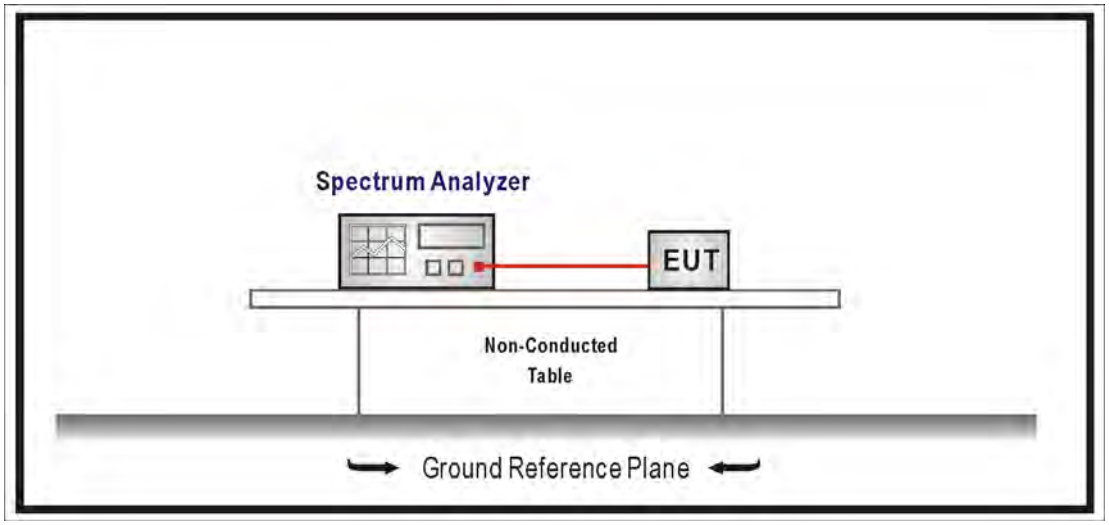
The following test equipments are used during the test:

Occupied Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2015/07/14

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Test Procedures

The EUT was setup according to ANSI C63.10: 2009; tested according to DTS test procedure section 8.1 of KDB558074 v03r02 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100KHz, VBW≧3xRBW, Sweep time=Auto, Set Peak detector.

7.4. Limits

The 6 dB bandwidth must be greater than 500 kHz.

7.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2014

7.6. Uncertainty

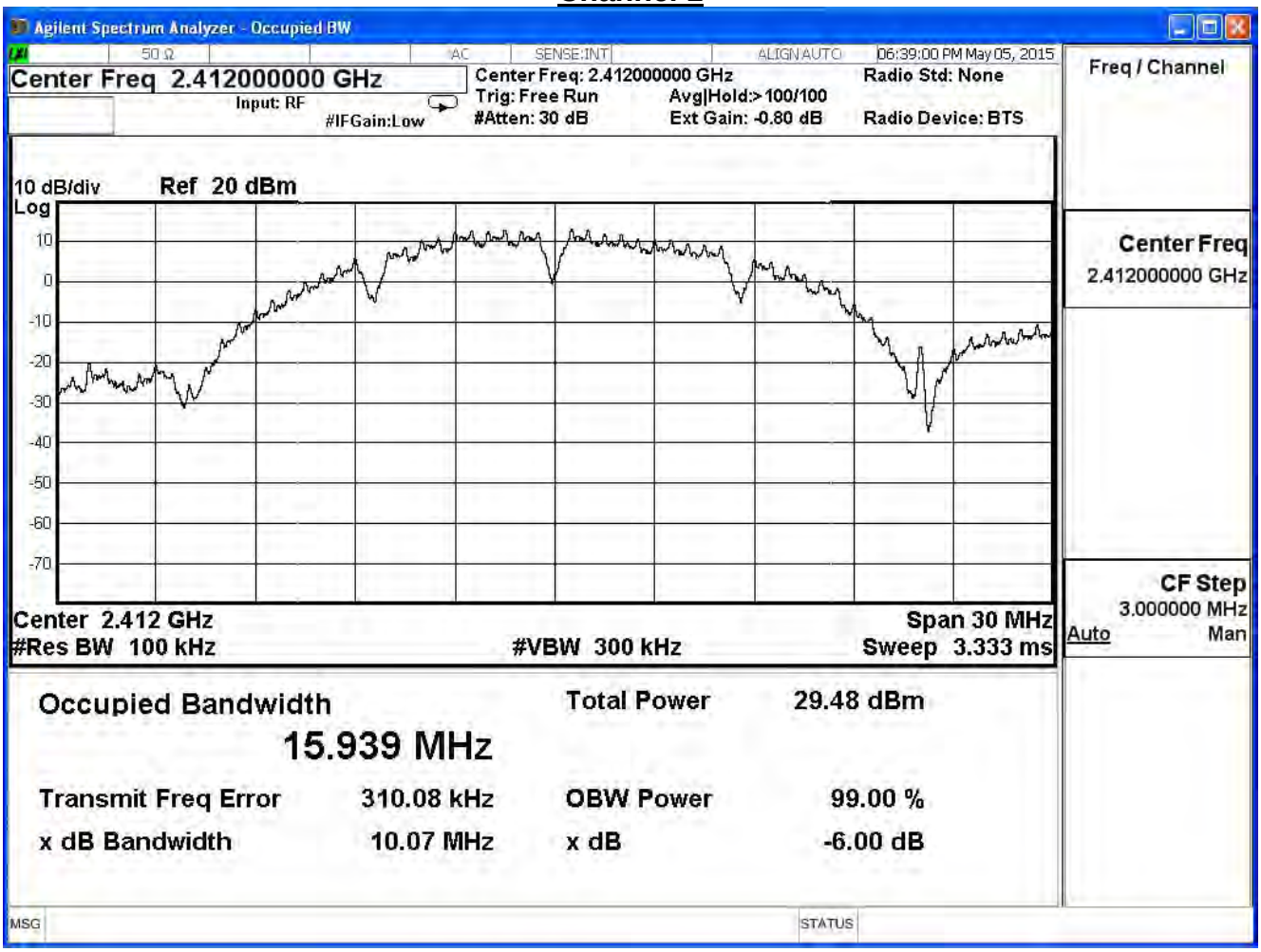
The measurement uncertainty is defined as ±150Hz

7.7. Test Result

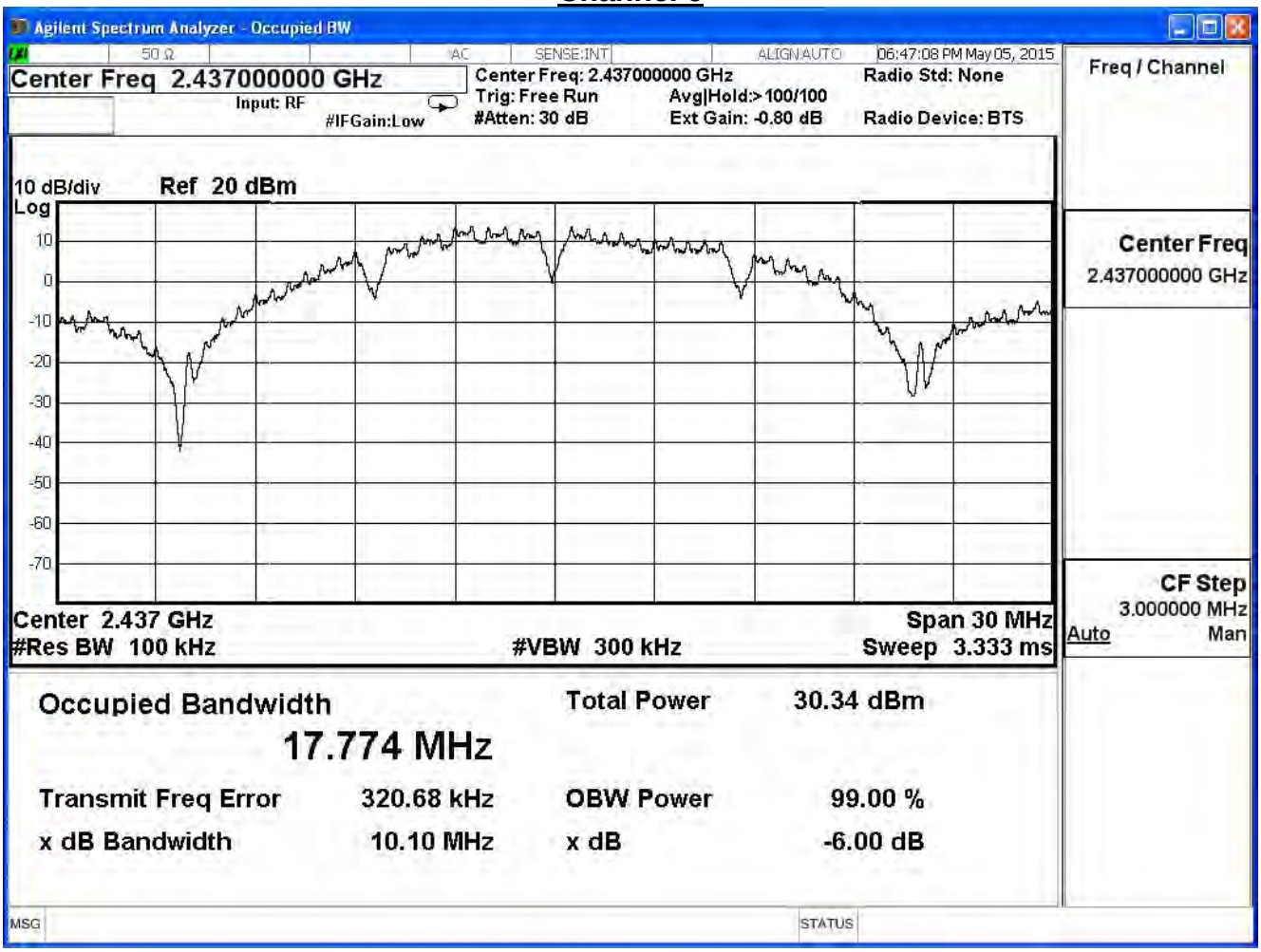
Product	WiFi Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/05	Test Site	SR7

802.11 b (Ant 0)				
Channel No.	Frequency (MHz)	Measure Level(MHz)	Limit (MHz)	Result
1	2412	10.070	≧0.5	Pass
6	2437	10.100	≧0.5	Pass
11	2472	10.080	≧0.5	Pass

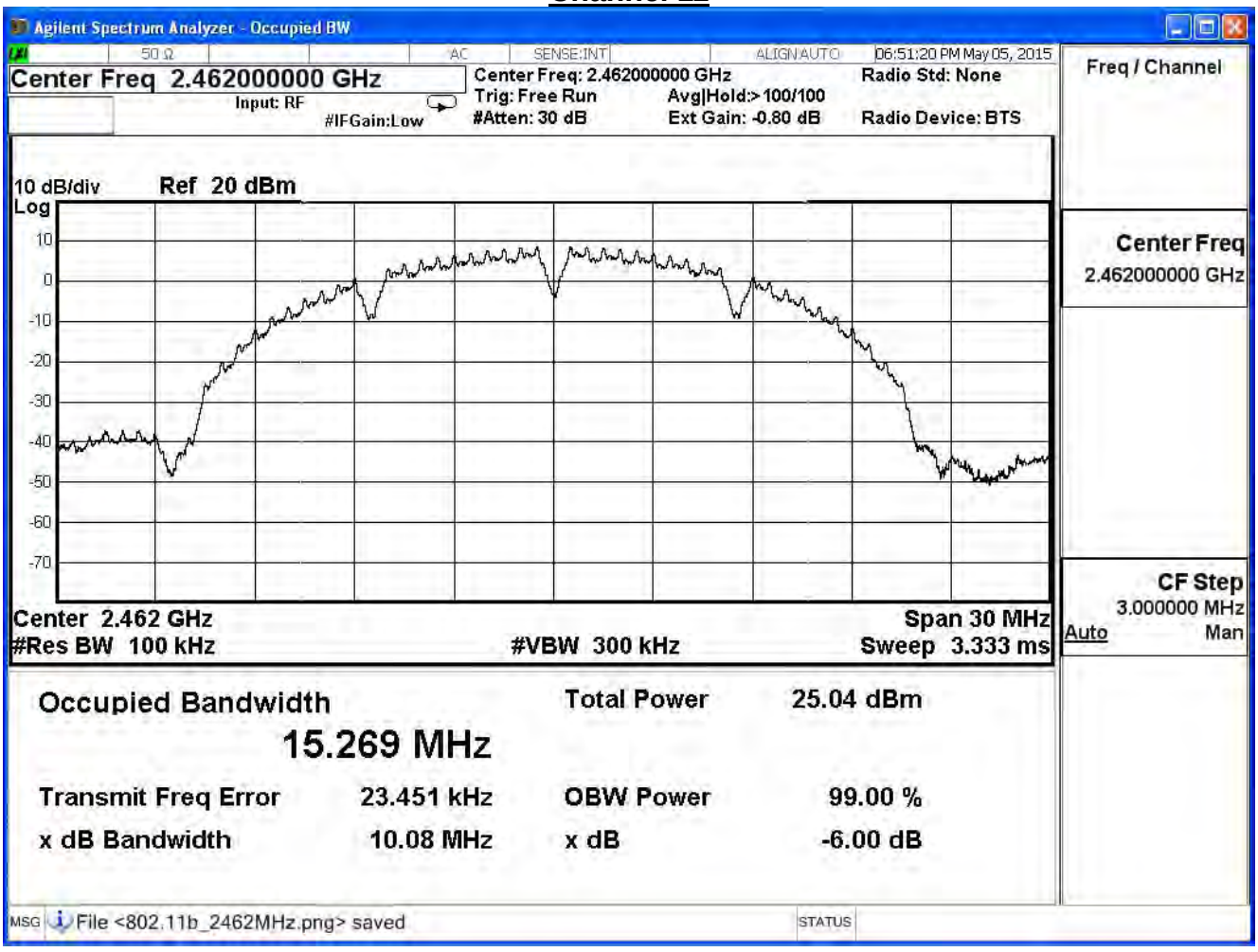
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:47:08 PM May 05, 2015
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -0.80 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 30 MHz
Sweep 3.333 ms
CF Step
3.000000 MHz
Auto
Man
Occupied Bandwidth
17.774 MHz
Total Power
30.34 dBm
Transmit Freq Error
320.68 kHz
OBW Power
99.00 %
x dB Bandwidth
10.10 MHz
x dB
-6.00 dB
MSG
STATUS

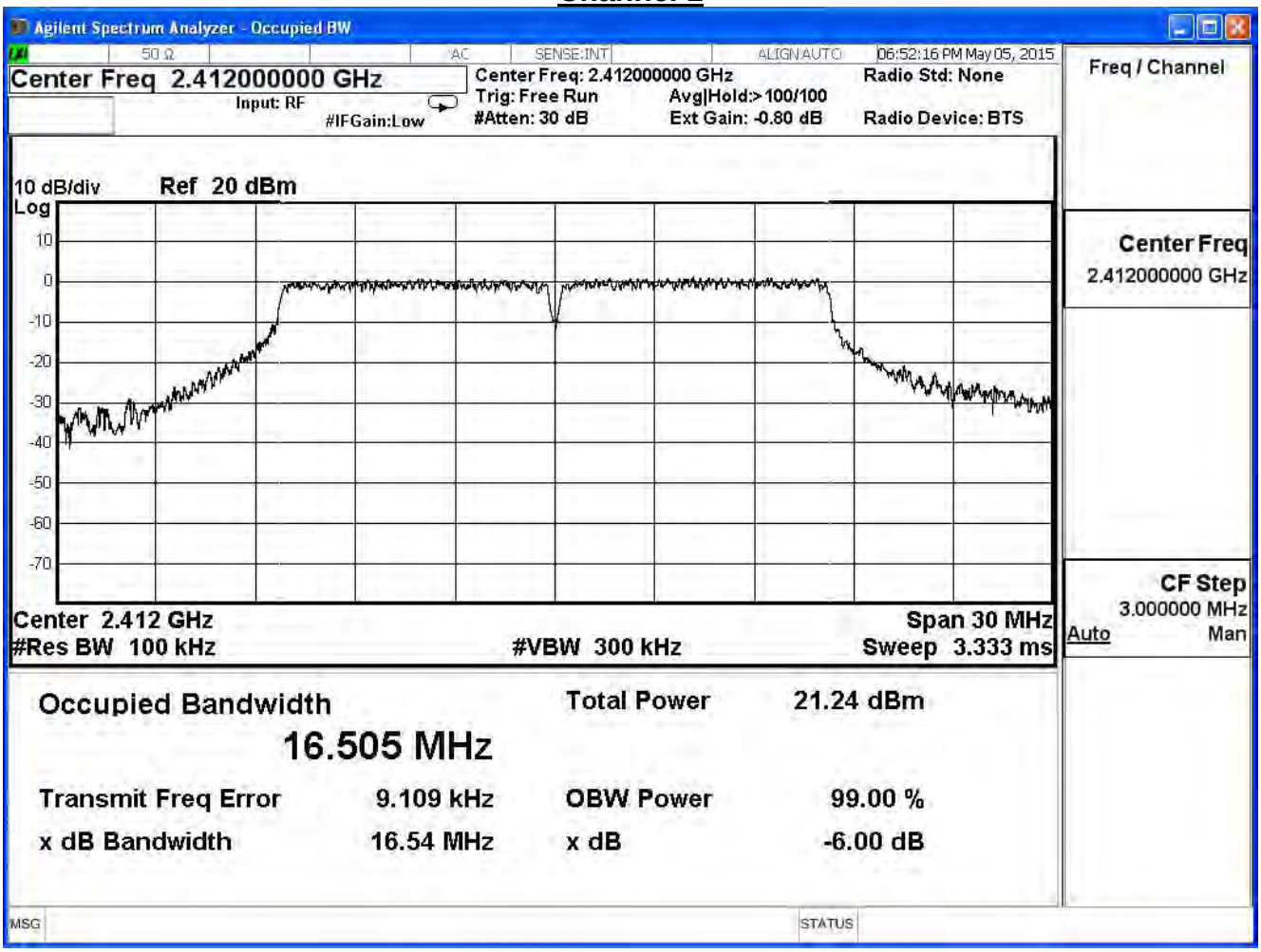
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:51:20 PM May 05, 2015
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -0.80 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 30 MHz
Sweep 3.333 ms
CF Step
3.000000 MHz
Auto
Man
Occupied Bandwidth
15.269 MHz
Total Power 25.04 dBm
Transmit Freq Error 23.451 kHz
OBW Power 99.00 %
x dB Bandwidth 10.08 MHz
x dB -6.00 dB
MSG
File <802.11b_2462MHz.png> saved
STATUS

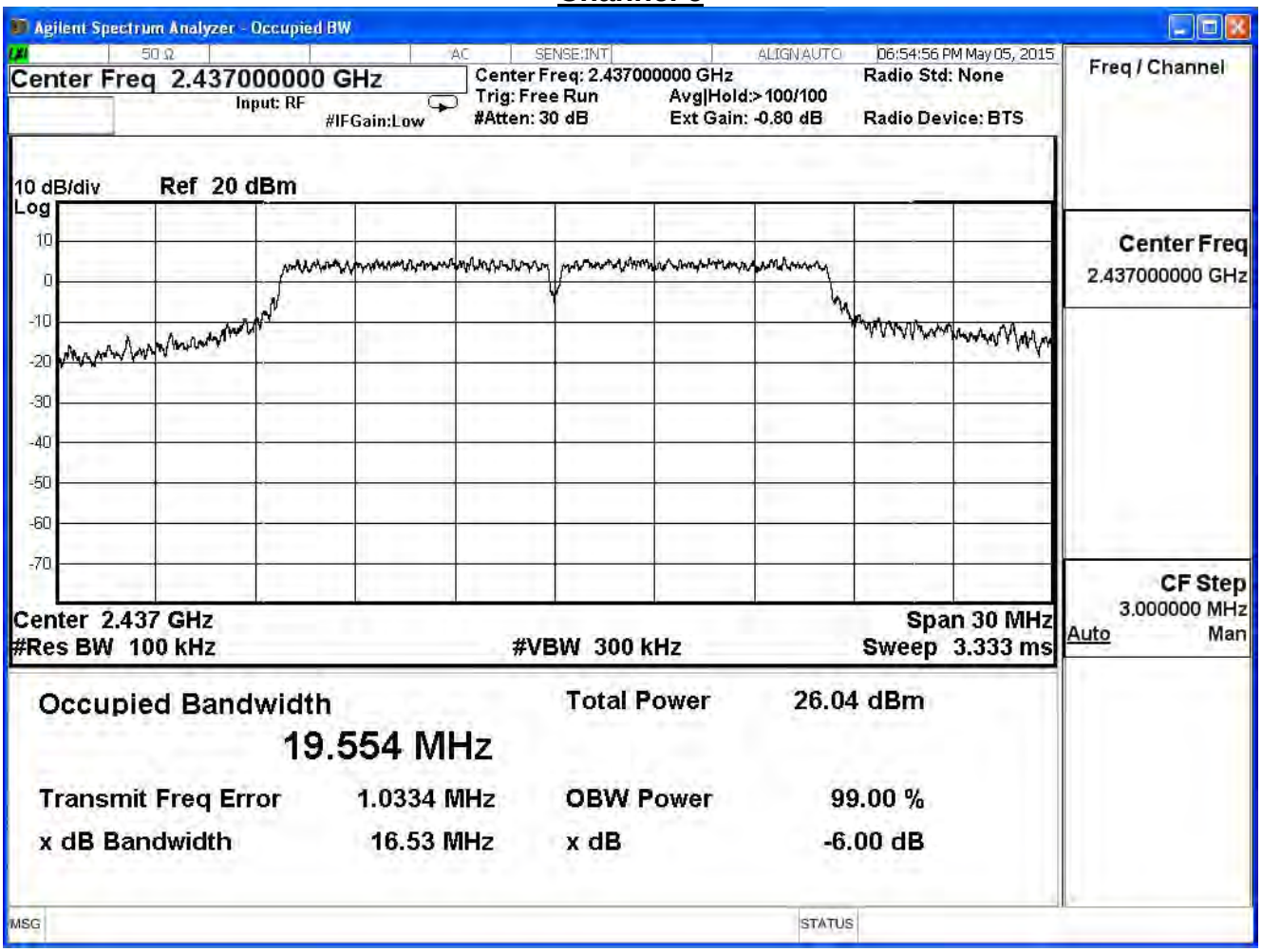
Product	WiFi Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/05	Test Site	SR7

IEEE 802.11g (Ant 0)				
Channel No.	Frequency (MHz)	Measure Level(MHz)	Limit (MHz)	Result
1	2412	16.540	≧0.5	Pass
6	2437	16.530	≧0.5	Pass
11	2472	16.570	≧0.5	Pass

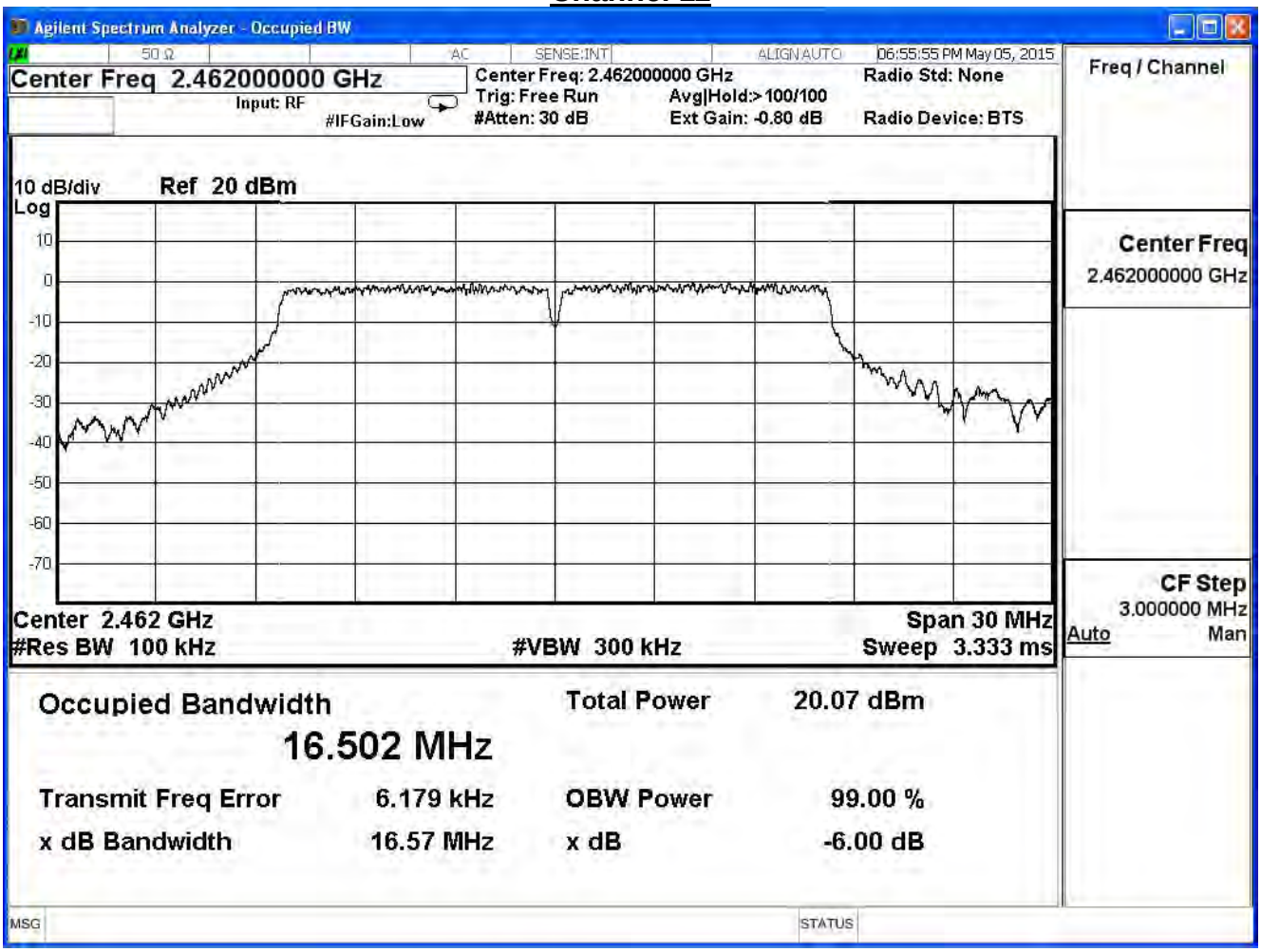
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:54:56 PM May 05, 2015
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -0.80 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 30 MHz
Sweep 3.333 ms
CF Step
3.000000 MHz
Auto
Man
Occupied Bandwidth
19.554 MHz
Total Power
26.04 dBm
Transmit Freq Error
1.0334 MHz
OBW Power
99.00 %
x dB Bandwidth
16.53 MHz
x dB
-6.00 dB
MSG
STATUS

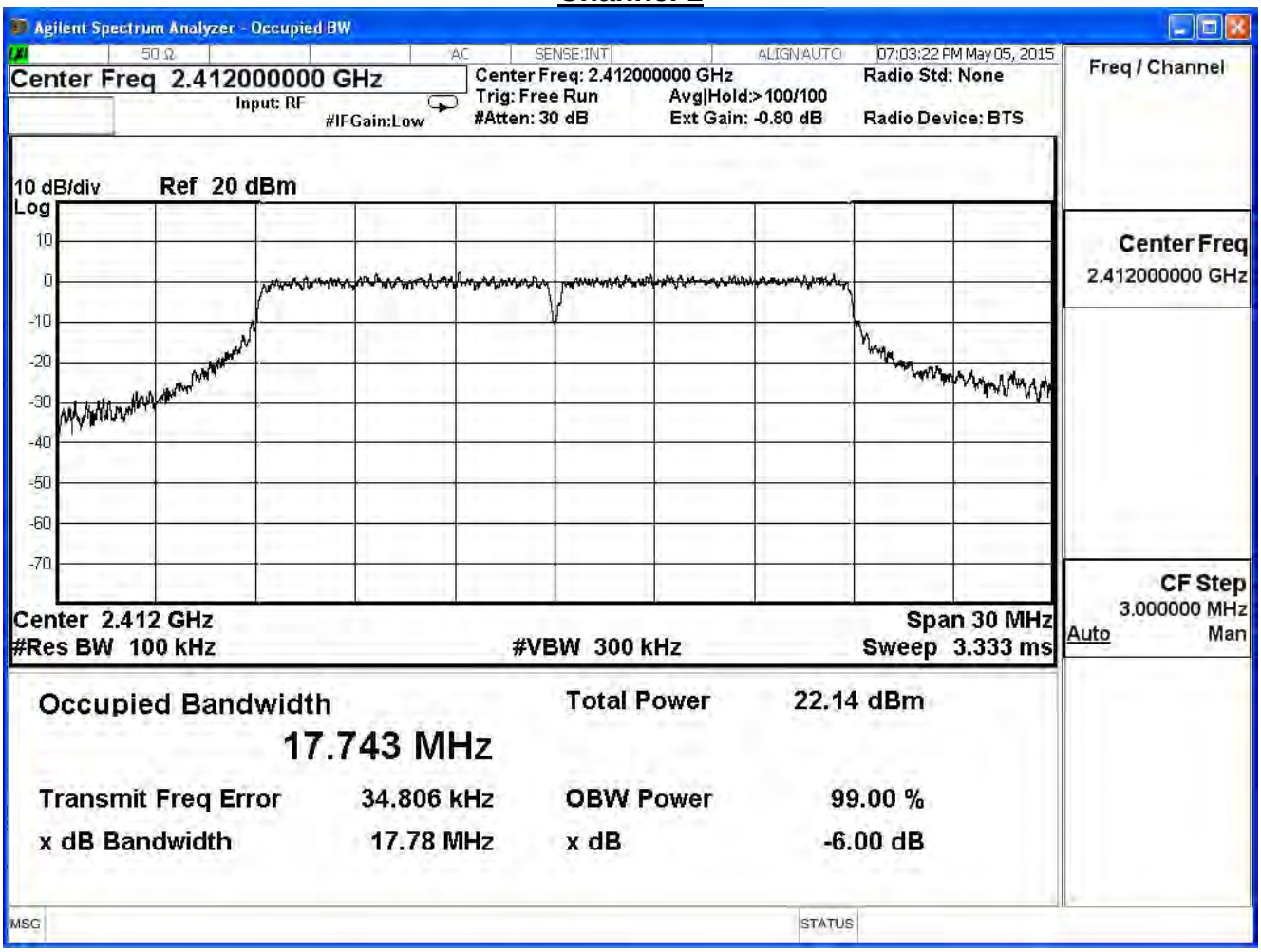
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:55:55 PM May 05, 2015
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -0.80 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 30 MHz
Sweep 3.333 ms
CF Step
3.000000 MHz
Auto
Man
Occupied Bandwidth
16.502 MHz
Total Power
20.07 dBm
Transmit Freq Error
6.179 kHz
OBW Power
99.00 %
x dB Bandwidth
16.57 MHz
x dB
-6.00 dB
MSG
STATUS

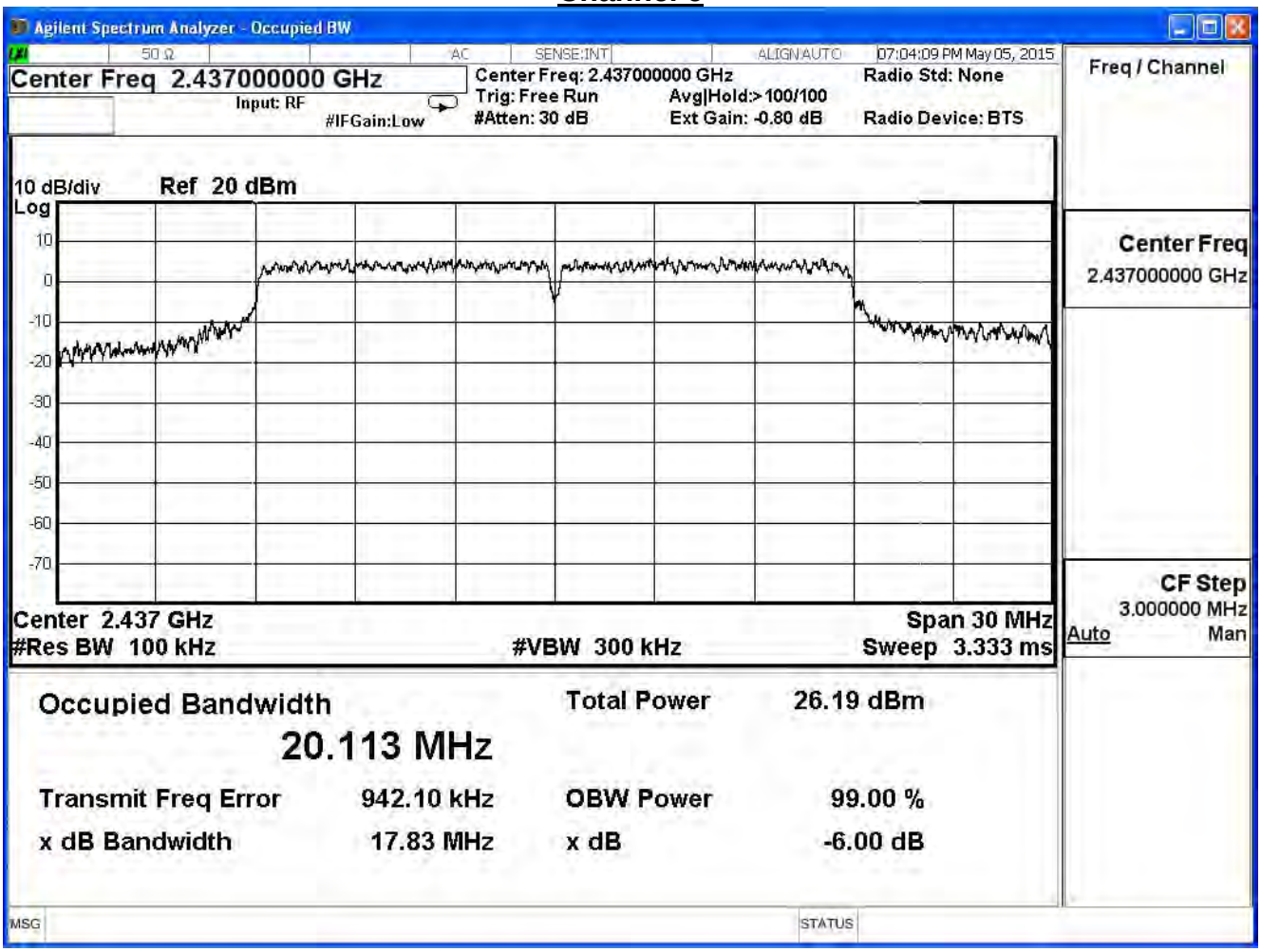
Product	WiFi Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/05	Test Site	SR7

IEEE 802.11n (20MHz) (Ant 0)				
Channel No.	Frequency (MHz)	Measure Level(MHz)	Limit (MHz)	Result
1	2412	17.780	≧0.5	Pass
6	2437	17.830	≧0.5	Pass
11	2472	17.780	≧0.5	Pass

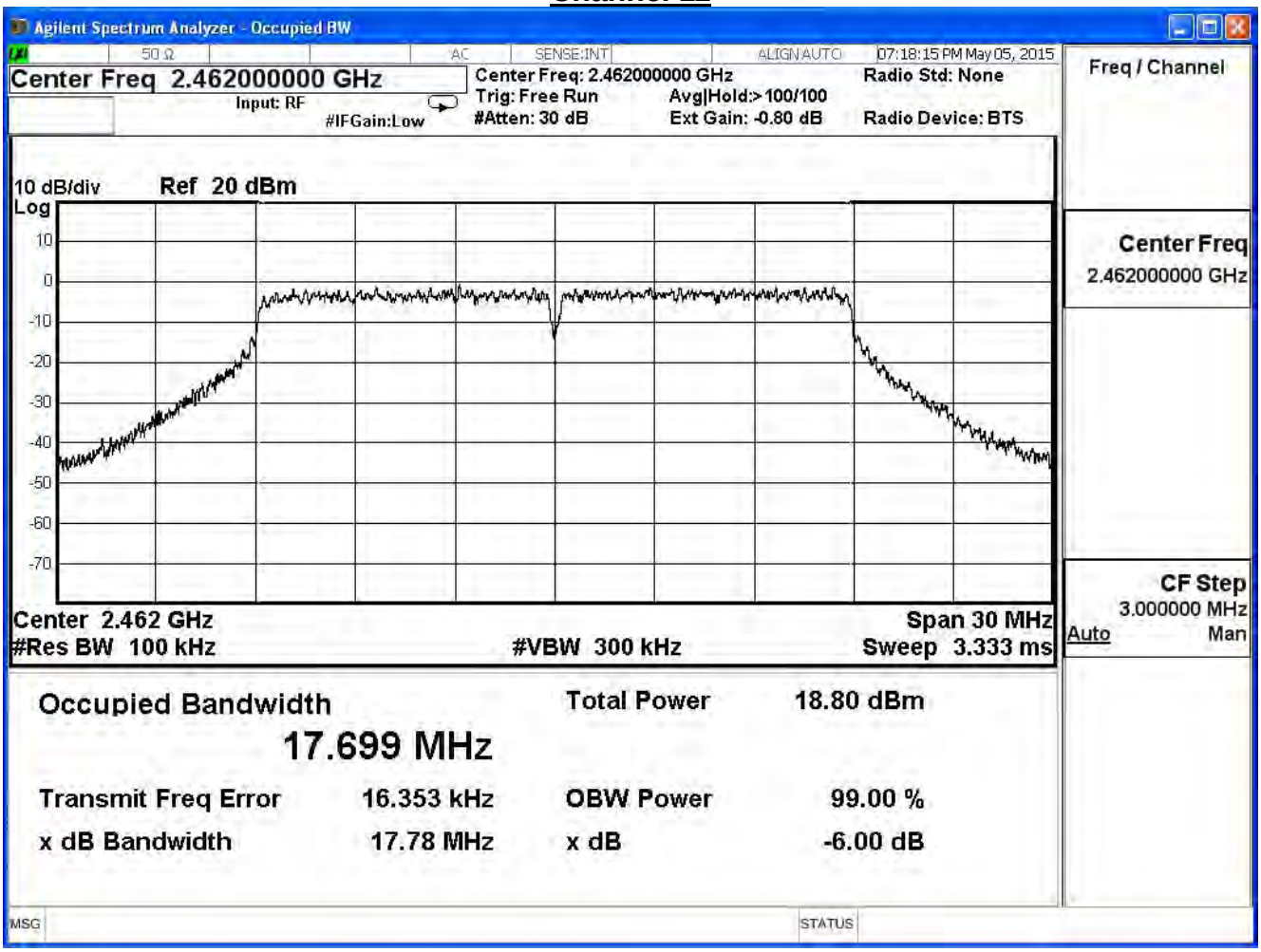
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:04:09 PM May 05, 2015
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -0.80 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 30 MHz
Sweep 3.333 ms
CF Step
3.000000 MHz
Auto
Man
Occupied Bandwidth
20.113 MHz
Total Power
26.19 dBm
Transmit Freq Error
942.10 kHz
OBW Power
99.00 %
x dB Bandwidth
17.83 MHz
x dB
-6.00 dB
MSG
STATUS

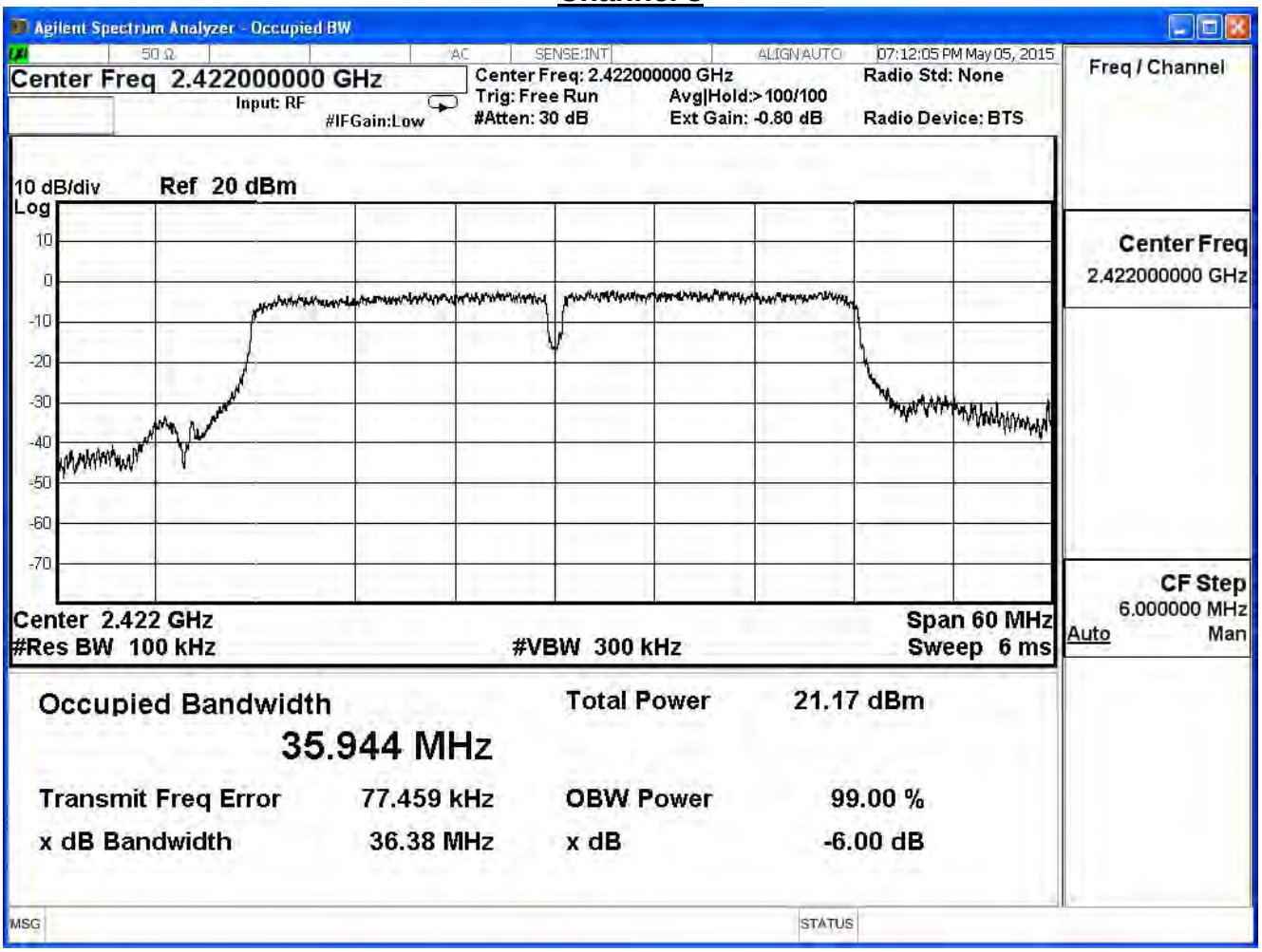
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:18:15 PM May 05, 2015
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -0.80 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 30 MHz
Sweep 3.333 ms
CF Step
3.000000 MHz
Auto
Man
Occupied Bandwidth
17.699 MHz
Total Power 18.80 dBm
Transmit Freq Error 16.353 kHz
OBW Power 99.00 %
x dB Bandwidth 17.78 MHz
x dB -6.00 dB
MSG
STATUS

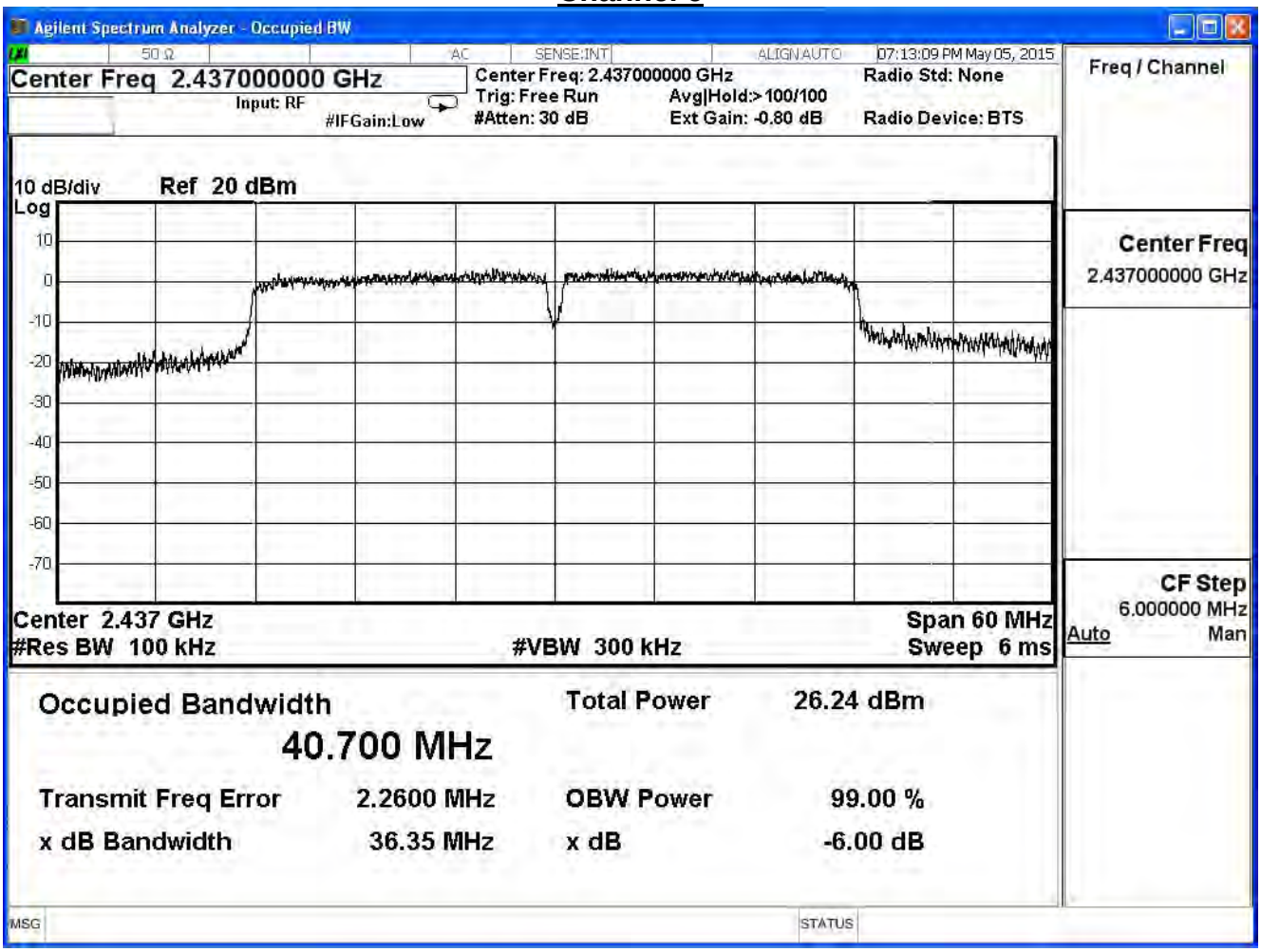
Product	WiFi Module		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/05	Test Site	SR7

IEEE 802.11n (40MHz) (Ant 0)				
Channel No.	Frequency (MHz)	Measure Level(MHz)	Limit (MHz)	Result
3	2422	36.380	≧0.5	Pass
6	2437	36.350	≧0.5	Pass
9	2462	36.360	≧0.5	Pass

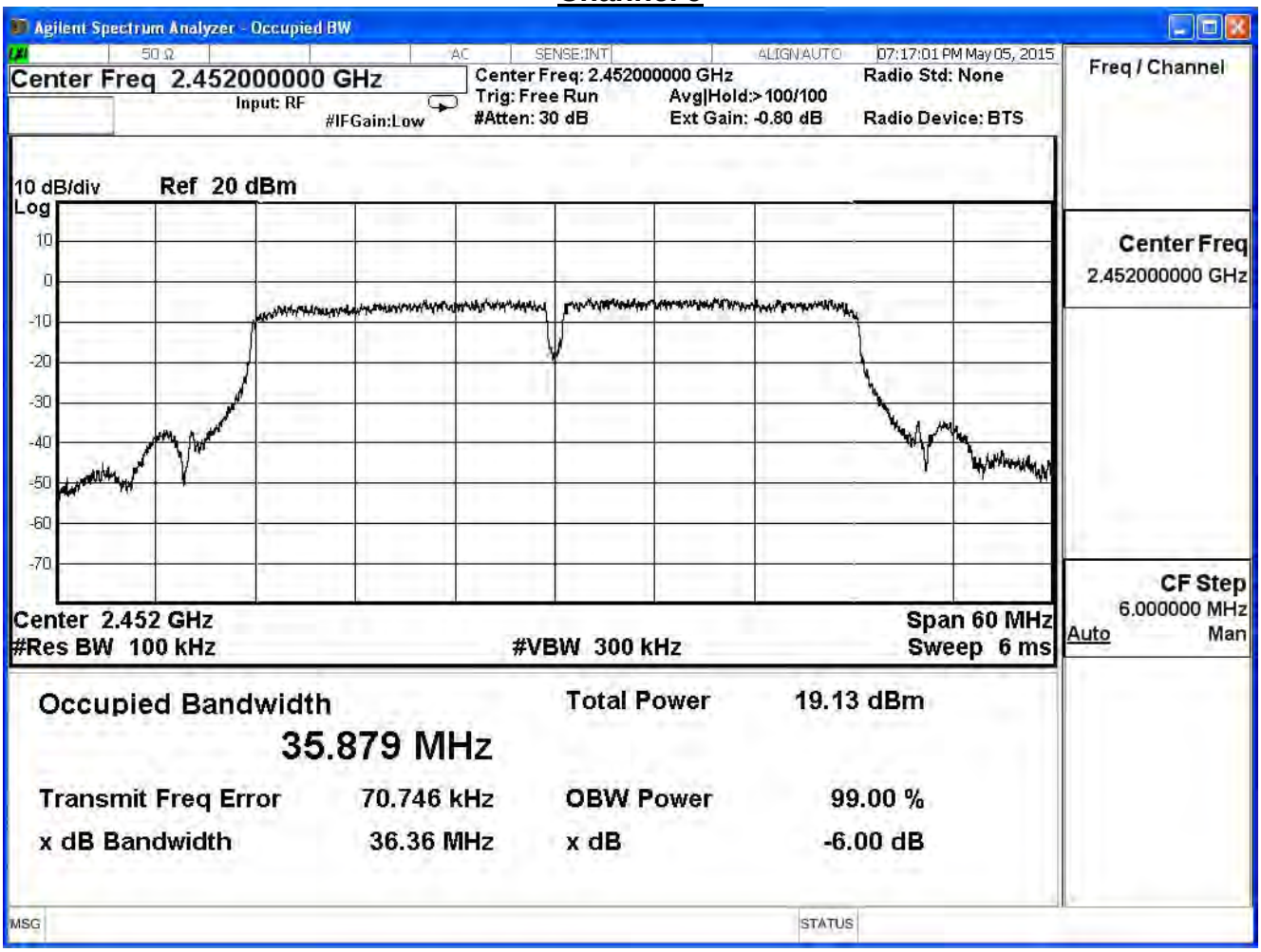
Channel 3



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:13:09 PM May 05, 2015
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -0.80 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 60 MHz
Sweep 6 ms
CF Step
6.000000 MHz
Auto
Man
Occupied Bandwidth
40.700 MHz
Total Power
26.24 dBm
Transmit Freq Error
2.2600 MHz
OBW Power
99.00 %
x dB Bandwidth
36.35 MHz
x dB
-6.00 dB
MSG
STATUS

Channel 9


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:17:01 PM May 05, 2015
Center Freq 2.452000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.452000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -0.80 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 20 dBm
10
0
-10
-20
-30
-40
-50
-60
-70
Center Freq
2.452000000 GHz
Center 2.452 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 60 MHz
Sweep 6 ms
CF Step
6.000000 MHz
Auto
Man
Occupied Bandwidth
35.879 MHz
Total Power
19.13 dBm
Transmit Freq Error
70.746 kHz
OBW Power
99.00 %
x dB Bandwidth
36.36 MHz
x dB
-6.00 dB
MSG
STATUS

8. Power Density

8.1. Test Equipment

The following test equipment is used during the test:

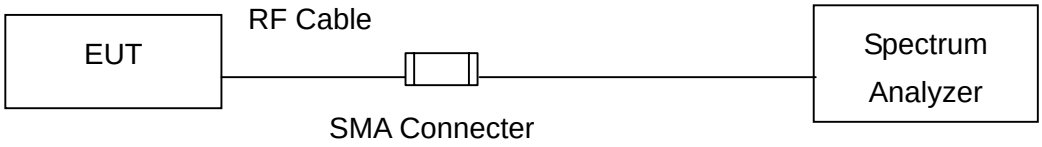
Power Density / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2015/07/14

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

8.2. Test Setup

IEEE 802.11 b / g / n (20M / 40M) MODE



8.3. Limits

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8dBm in any 3kHz band during any time interval of continuous transmission.

8.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2009; tested according to DTS test procedure Section 10.2 of KDB558074 v03r02, Set the 3KHz≦RBW≦100KHz, Set the VBW≧3xRBW, Sweep time=Auto, Set Peak detector, Trace Max Hold.

.

8.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2014

8.6. Uncertainty

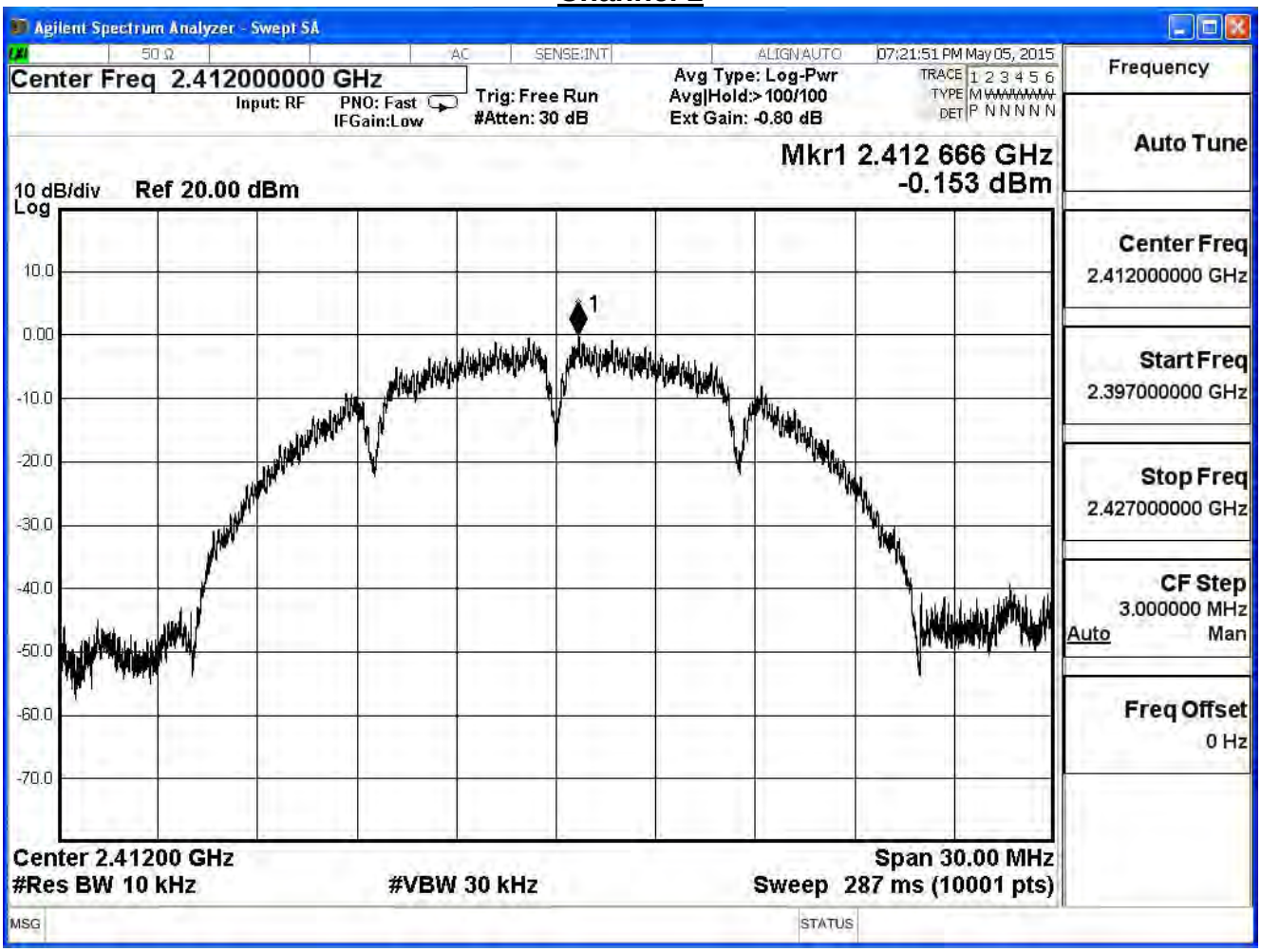
The measurement uncertainty is defined as ±1.27dB.

8.7. Test Result

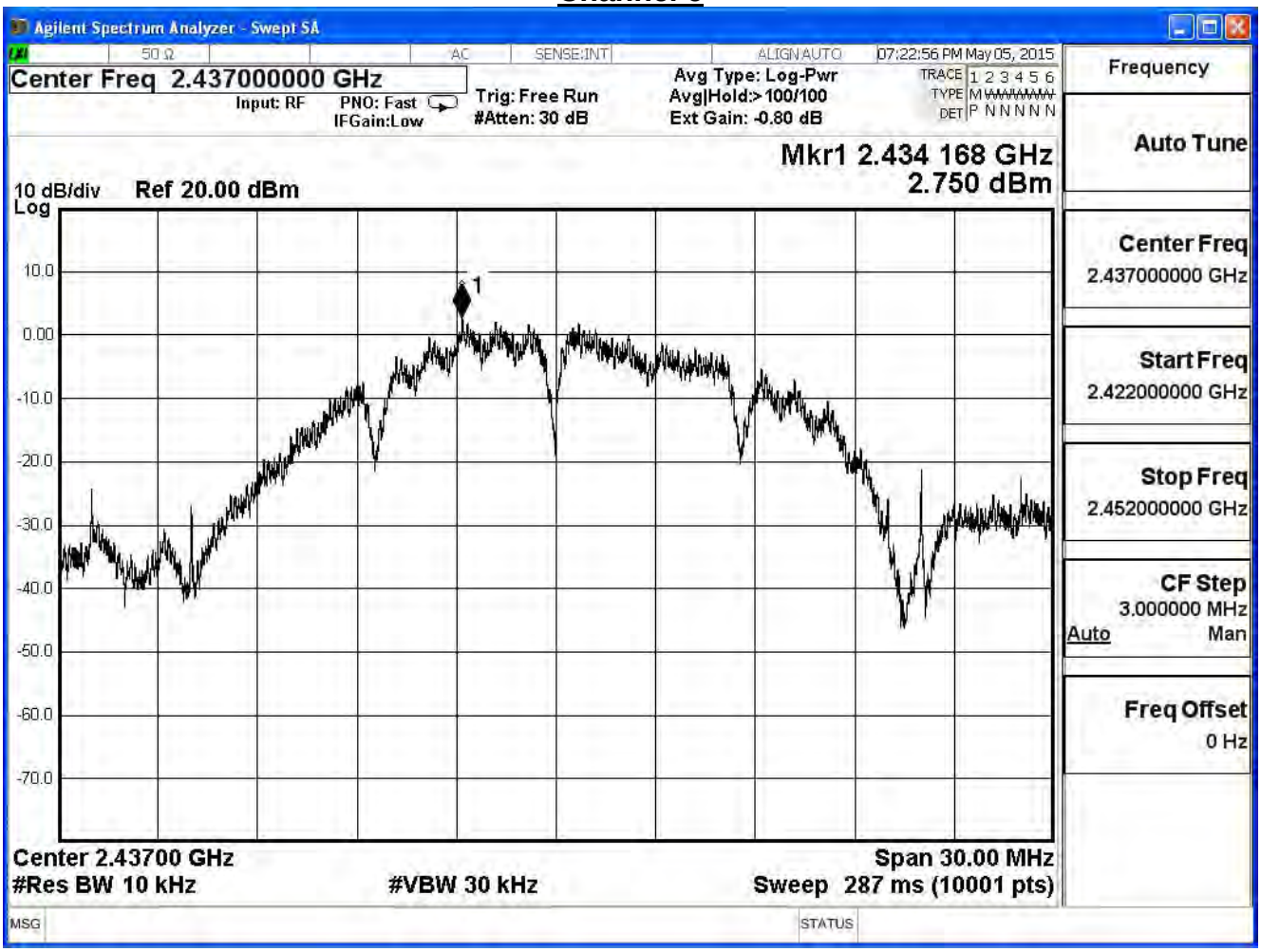
Product	WiFi Module		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/05	Test Site	SR7

IEEE 802.11b (Ant 0)				
Channel No.	Frequency (MHz)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	-0.153	≦8	Pass
6	2437	2.750	≦8	Pass
11	2462	0.090	≦8	Pass

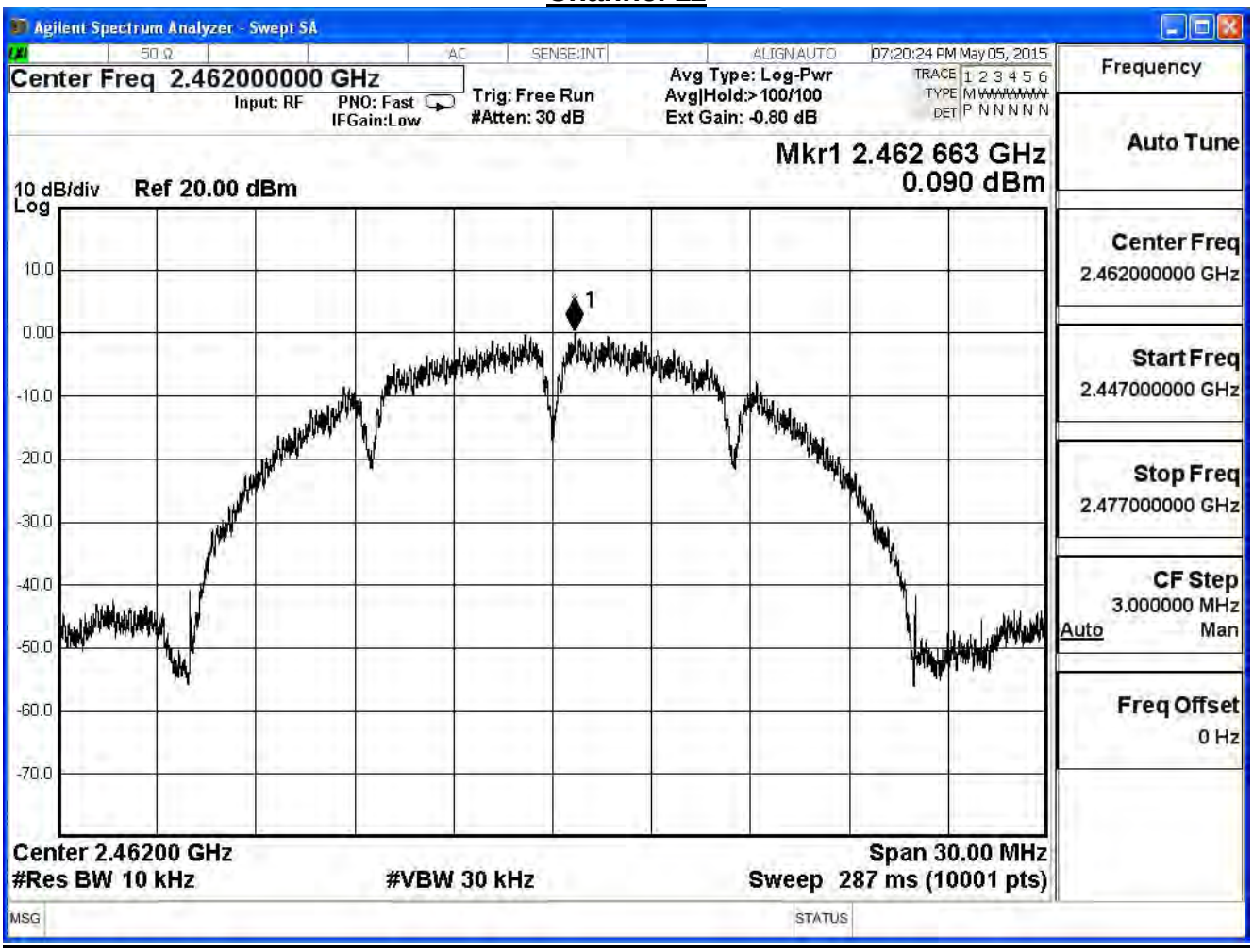
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:22:56 PM May 05, 2015
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.80 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.434 168 GHz
2.750 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.43700 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 30.00 MHz
Sweep 287 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.422000000 GHz
Stop Freq
2.452000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

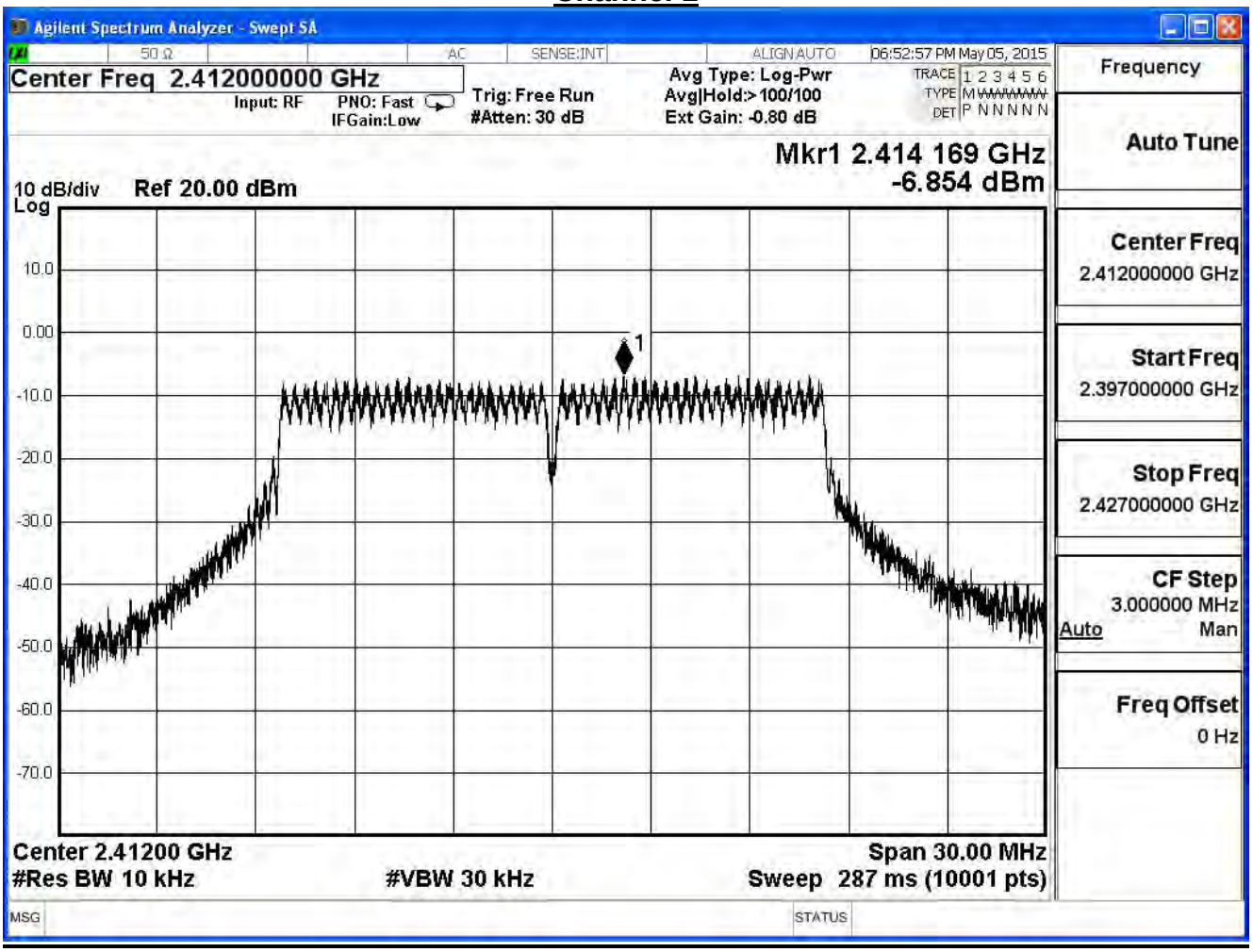
Channel 11


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:20:24 PM May 05, 2015
Center Freq 2.462000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.80 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.462 663 GHz
0.090 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.46200 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 30.00 MHz
Sweep 287 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.447000000 GHz
Stop Freq
2.477000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

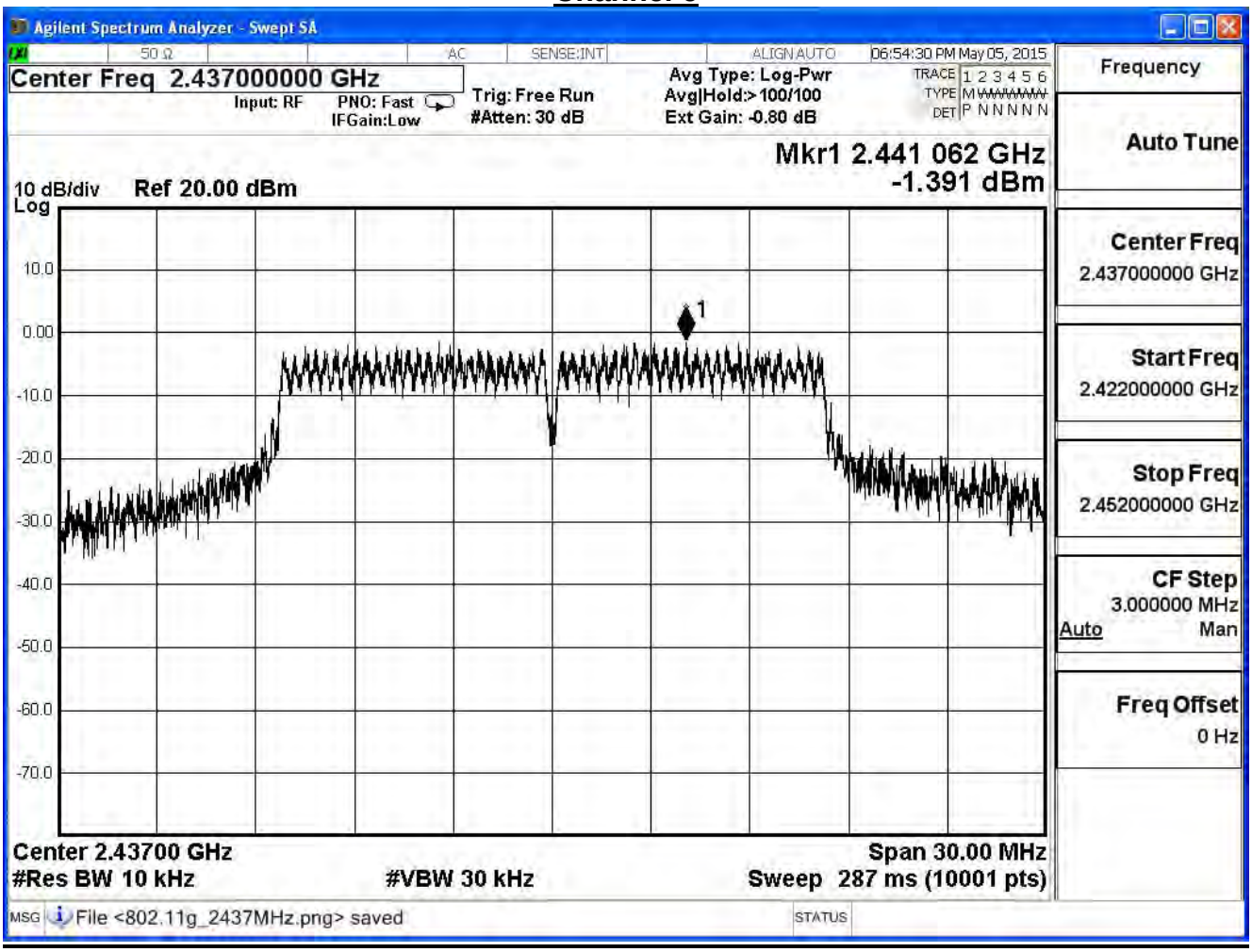
Product	WiFi Module		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/05	Test Site	SR7

IEEE 802.11g (Ant 0)				
Channel No.	Frequency (MHz)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	-6.854	≦8	Pass
6	2437	-1.391	≦8	Pass
11	2462	-9.291	≦8	Pass

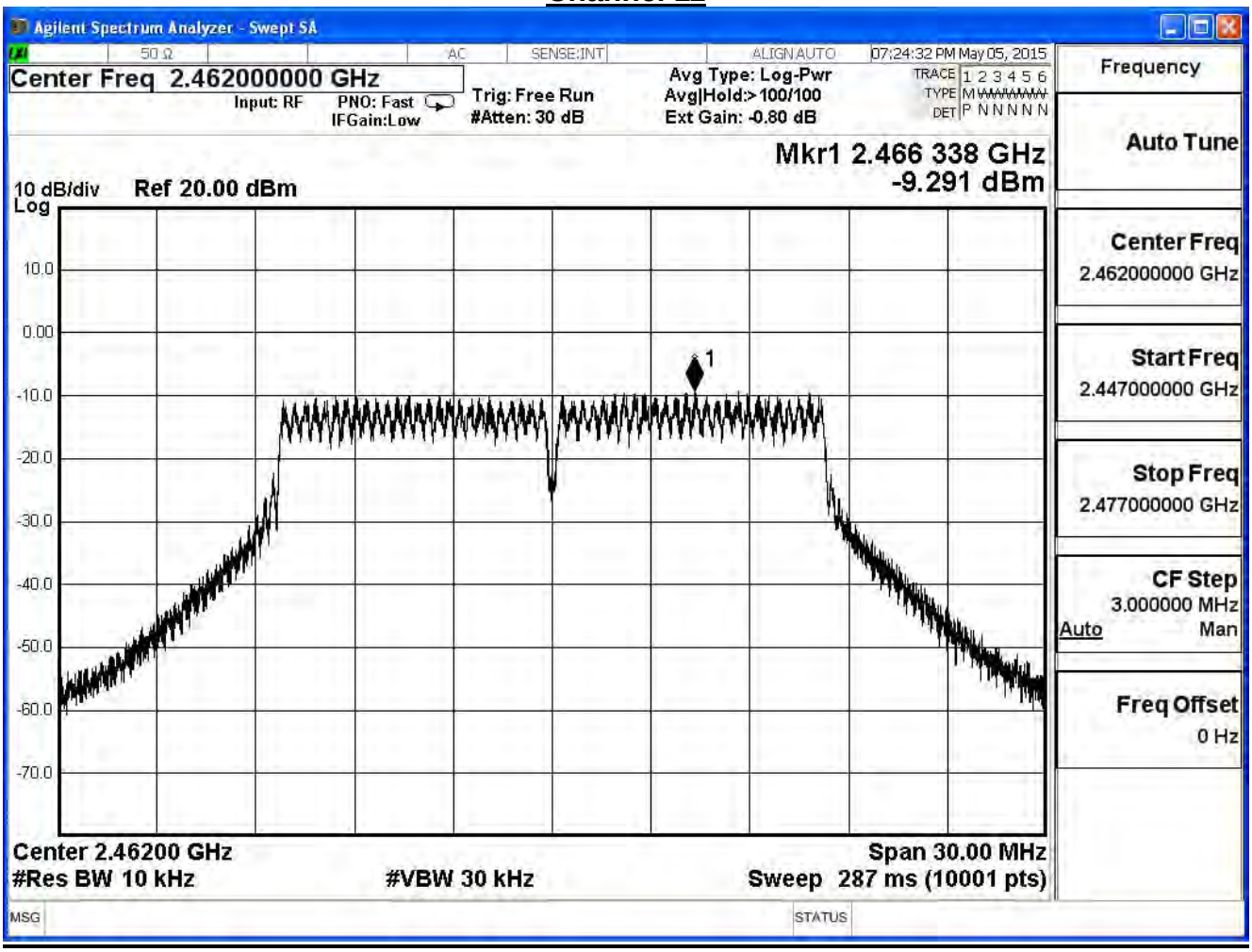
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:54:30 PM May 05, 2015
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.80 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.441 062 GHz
-1.391 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.43700 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 30.00 MHz
Sweep 287 ms (10001 pts)
MSG
File <802.11g_2437MHz.png> saved
STATUS
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.422000000 GHz
Stop Freq
2.452000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

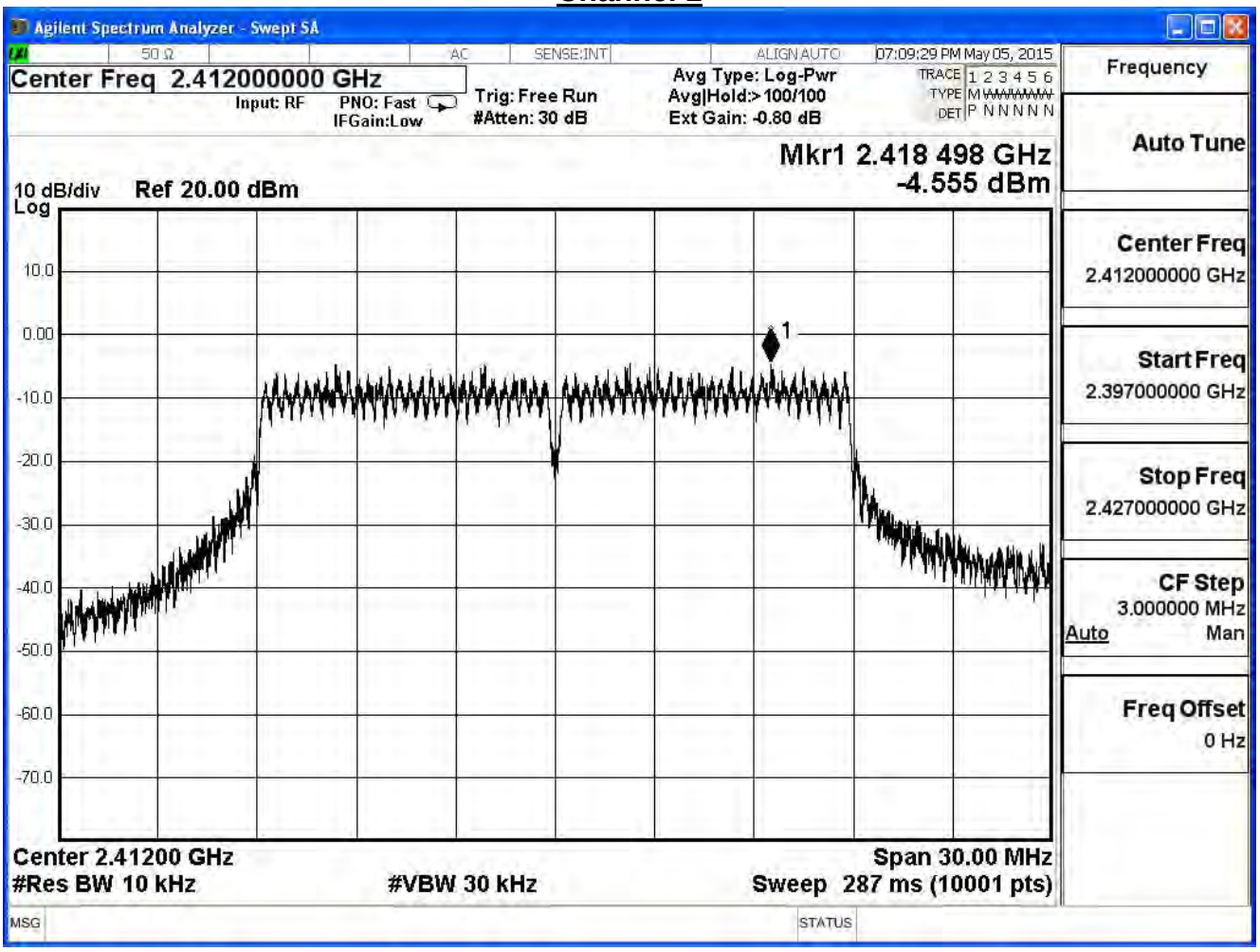
Channel 11


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:24:32 PM May 05, 2015
Center Freq 2.462000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.80 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.466 338 GHz
-9.291 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.46200 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 30.00 MHz
Sweep 287 ms (10001 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.447000000 GHz
Stop Freq
2.477000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

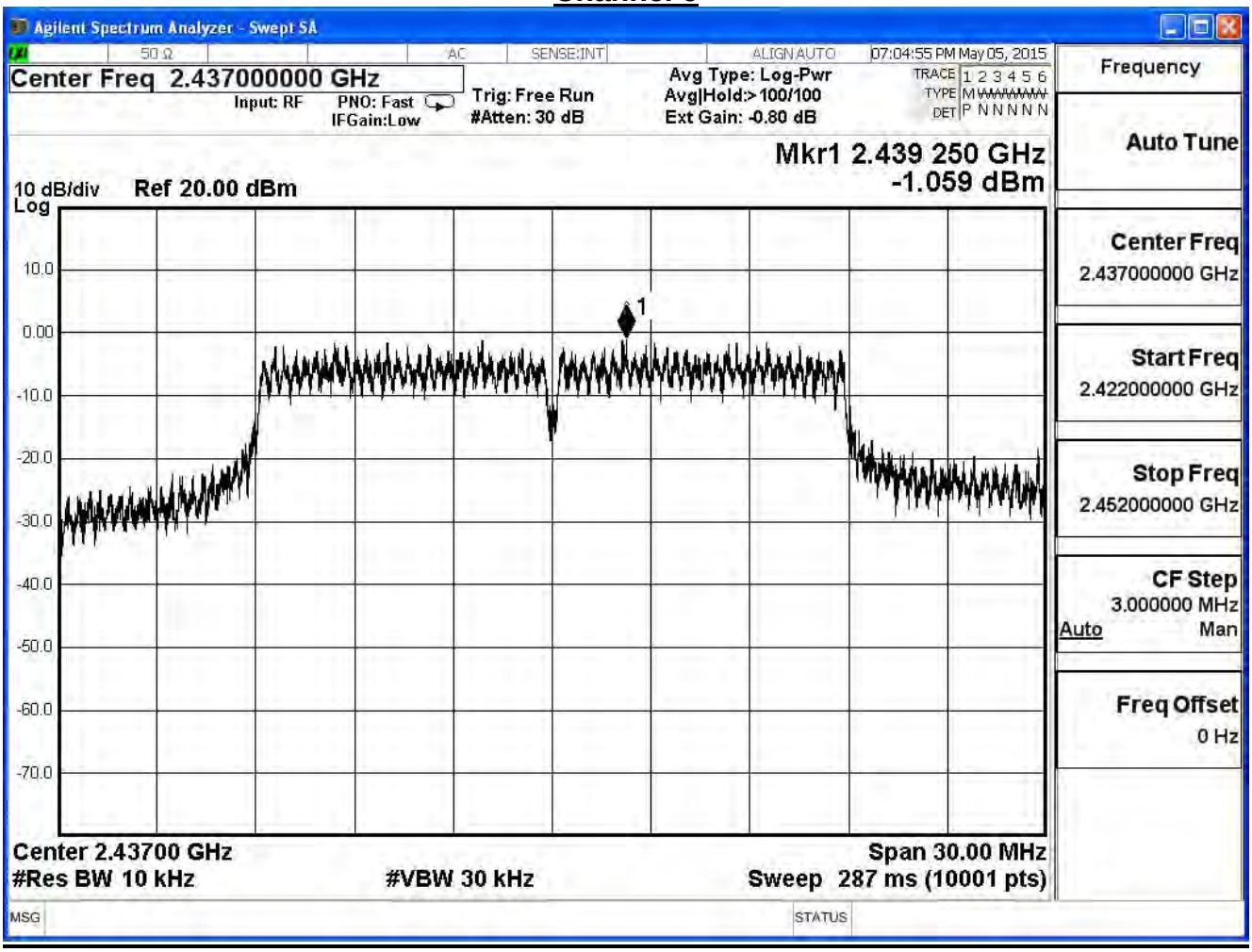
Product	WiFi Module		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/05	Test Site	SR7

IEEE802.11n_20MHz (Ant 0)				
Channel No.	Frequency (MHz)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	-4.555	≦8	Pass
6	2437	-1.059	≦8	Pass
11	2462	-7.692	≦8	Pass

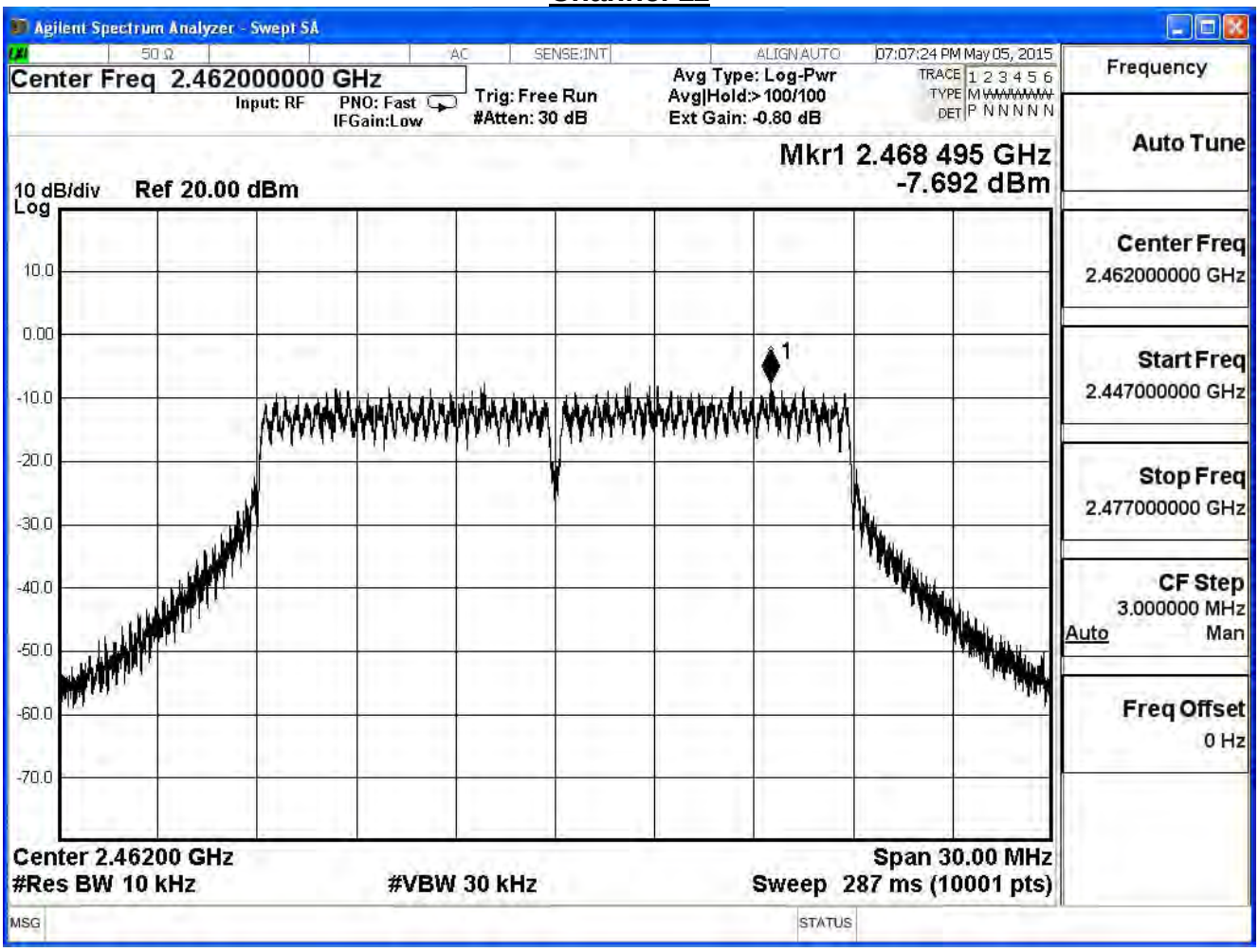
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:04:55 PM May 05, 2015
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.80 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.439 250 GHz
-1.059 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.43700 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 30.00 MHz
Sweep 287 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.422000000 GHz
Stop Freq
2.452000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

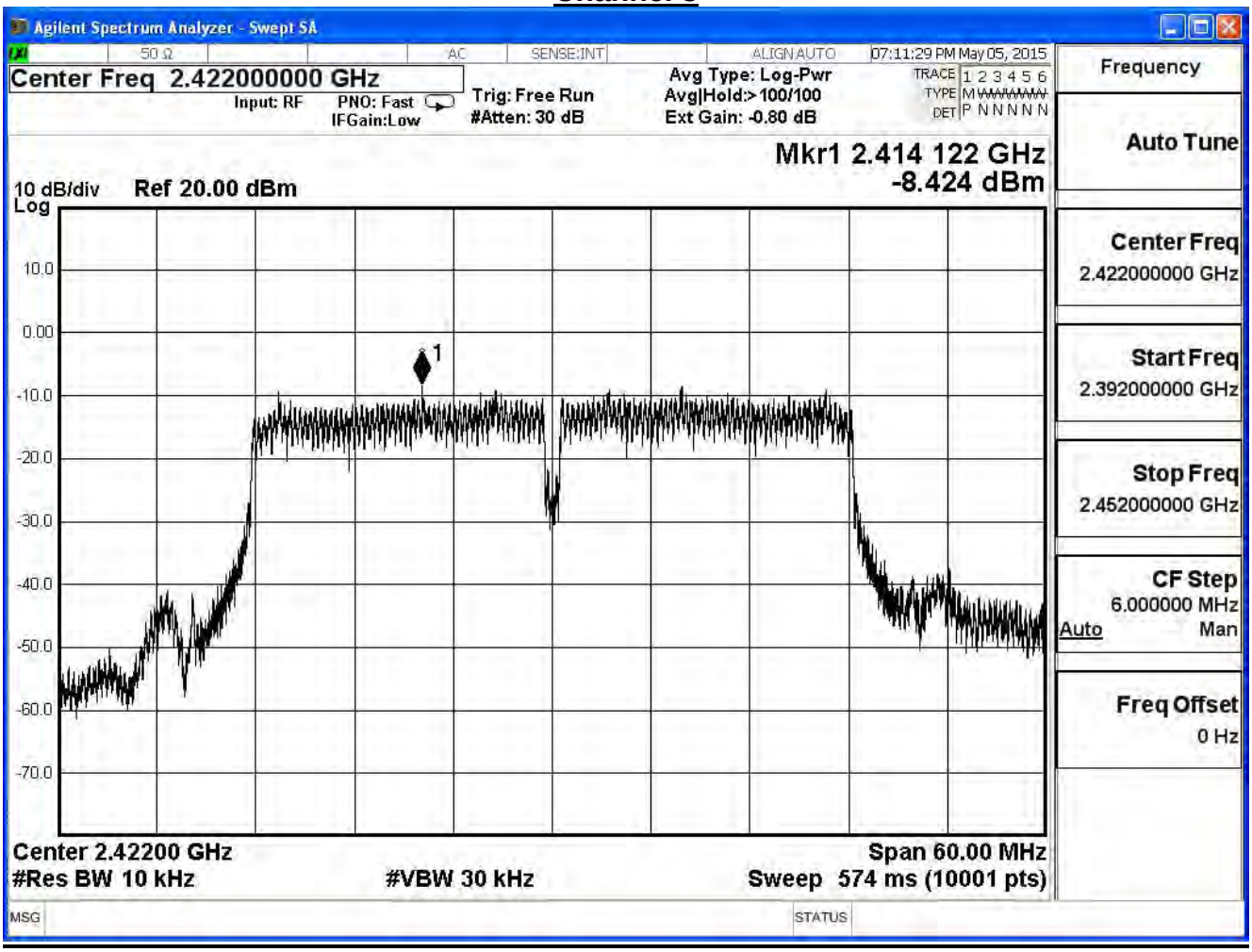
Channel 11


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:07:24 PM May 05, 2015
Center Freq 2.462000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.80 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.468 495 GHz
-7.692 dBm
10 dB/div Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.46200 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 30.00 MHz
Sweep 287 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.447000000 GHz
Stop Freq
2.477000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

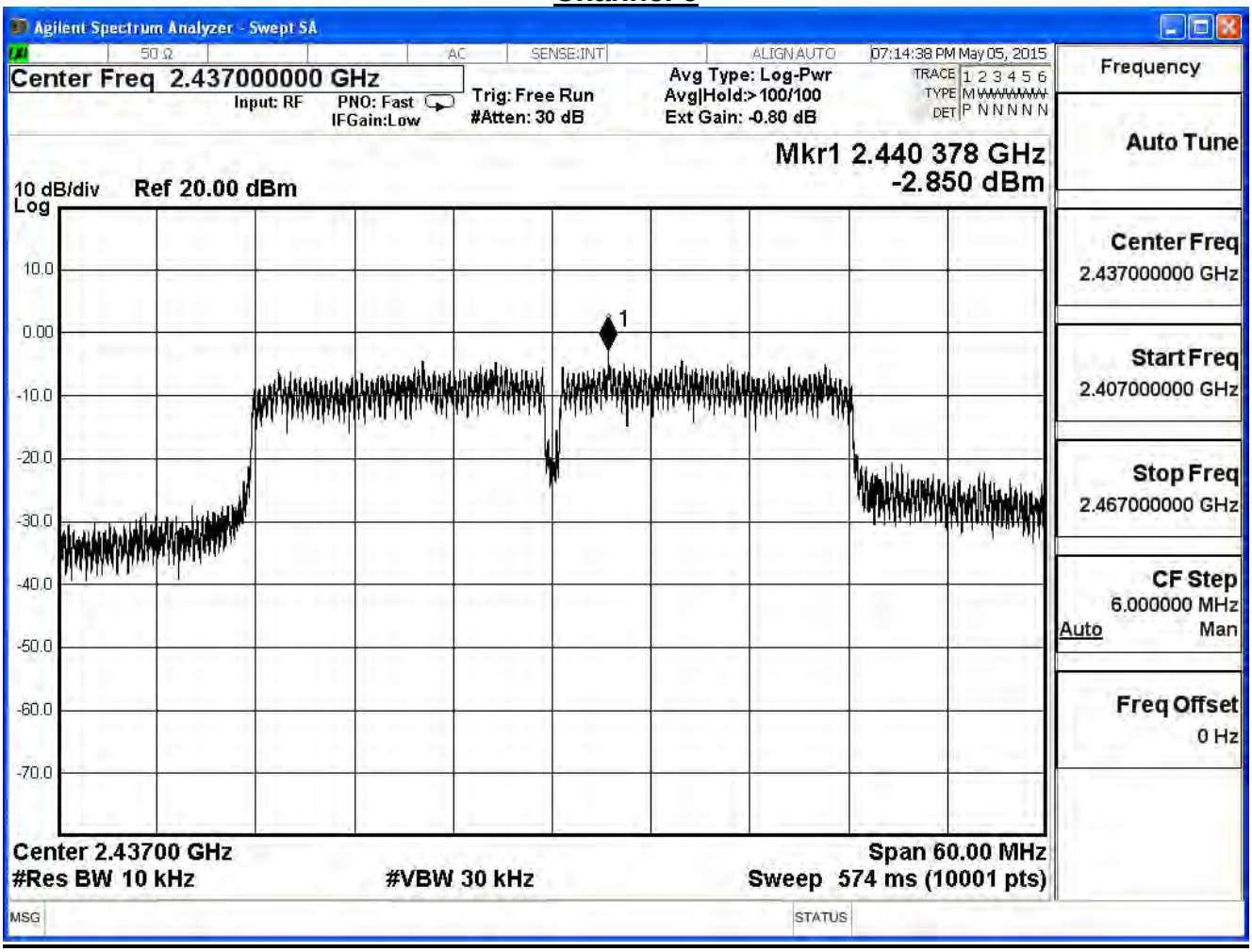
Product	WiFi Module		
Test Item	Power Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/05	Test Site	SR7

IEEE802.11n_40MHz (Ant 0)				
Channel No.	Frequency (MHz)	Measure Level(dBm)	Limit (dBm)	Result
3	2422	-8.424	≦8	Pass
6	2437	-2.850	≦8	Pass
9	2452	-9.640	≦8	Pass

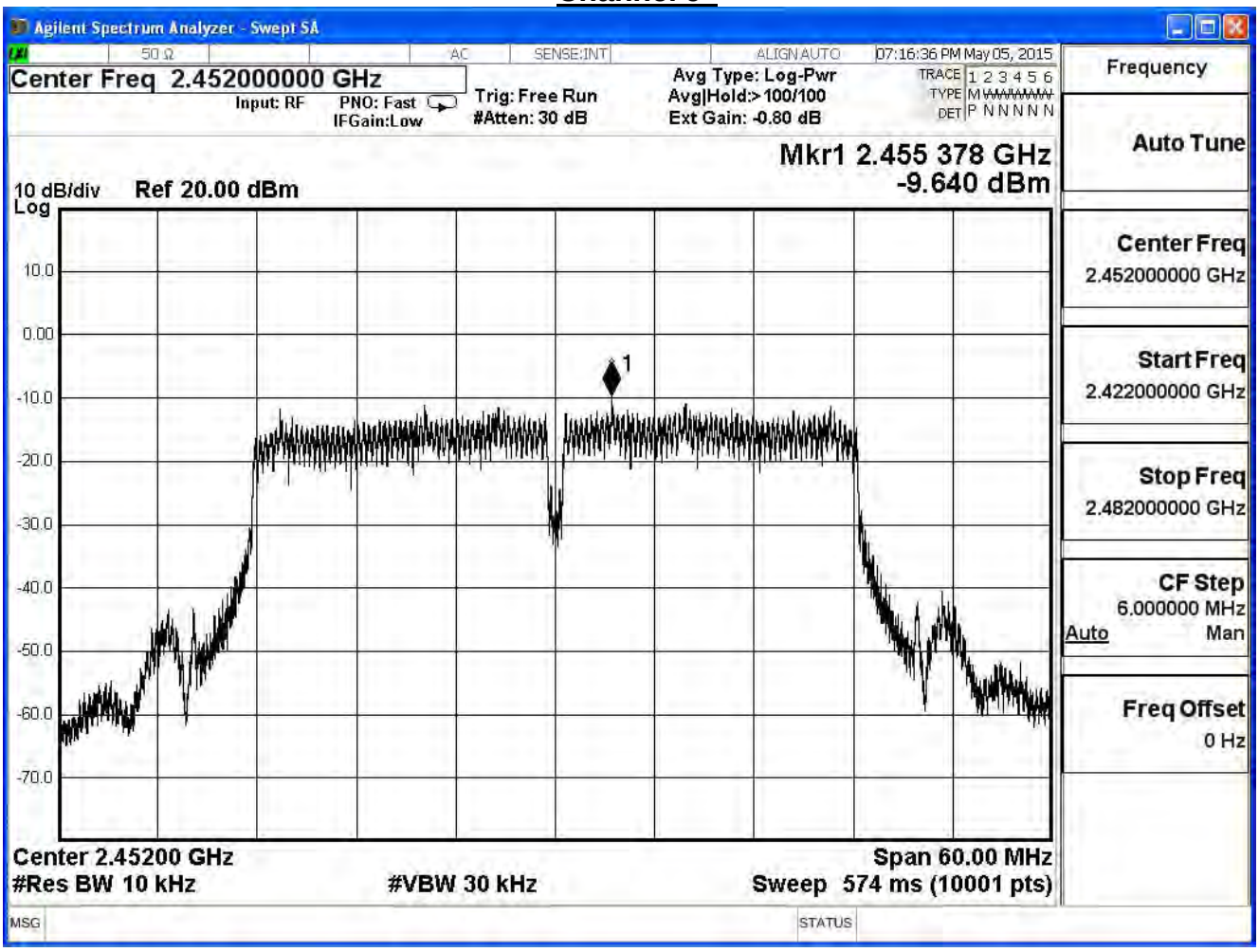
Channel 3



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:14:38 PM May 05, 2015
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.80 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.440 378 GHz
-2.850 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.43700 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 60.00 MHz
Sweep 574 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.407000000 GHz
Stop Freq
2.467000000 GHz
CF Step
6.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 9


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:16:36 PM May 05, 2015
Center Freq 2.452000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.80 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.455 378 GHz
-9.640 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 2.45200 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 60.00 MHz
Sweep 574 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.452000000 GHz
Start Freq
2.422000000 GHz
Stop Freq
2.482000000 GHz
CF Step
6.000000 MHz
Auto
Man
Freq Offset
0 Hz