



TEST REPORT

APPLICANT : Savant Technologies LLC dba GE
Lighting, a Savant company

PRODUCT NAME : LED LAMP

MODEL NAME : CLEDA199LD1@

BRAND NAME : GE

FCC ID : PUU-A19-DMSWIV

STANDARD(S) : 47 CFR Part 15 Subpart C

RECEIPT DATE : 2021-04-25

TEST DATE : 2021-04-25 to 2021-05-25

ISSUE DATE : 2021-05-25

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Qijie Xiao

Approved by: *Stefan Sun.*
Stefan Sun

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Change History		
Version	Date	Reason for change
1.0	2021-05-25	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Savant Technologies LLC dba GE Lighting, a Savant company
Applicant Address:	1975 Noble Road Cleveland Ohio United States 44112
Manufacturer:	Xiamen Topstar lighting Co.,Ltd.
Manufacturer Address:	676 Meixi Avenue, Tong'an District, Xiamen, China

1.2. Equipment Under Test (EUT) Description

Product Name:	LED LAMP
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	C-8235 V2.3
Software Version:	C_Life_Blub_Single_Chip_Full_V1.0.135
Modulation Type:	DSSS, OFDM
Operating Frequency Range:	802.11b/g/n-20MHz: 2.412GHz - 2.462GHz
Antenna Type:	PIFA Antenna
Antenna Gain:	0dBi

Note 1: The EUT is operating at 2.4GHz ISM; it supports 802.11b, 802.11g, 802.11n and they are all tested in this report.

For 802.11b/g/n-20MHz (2.4GHz band), the frequencies allocated is $F \text{ (MHz)} = 2412 + 5 * (n - 1)$ ($1 \leq n \leq 11$). The lowest, middle, highest channel numbers of the EUT used and tested in this report are separately 1 (2412MHz), 6 (2437MHz) and 11 (2462MHz).

Note 2: The EUT connected to the serial port of the computer with a serial communication cable, we use the dedicated software to control the EUT continuous transmission.

Note 3: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



1.3. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 15	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result
1	15.203	Antenna Requirement	N/A	N/A	PASS
2	15.247(b)	Output Power	May 13, 2021	Stefan Sun	<u>PASS</u>
3	15.247(a)	Bandwidth	May 13, 2021	Stefan Sun	<u>PASS</u>
4	15.247(d)	Conducted Spurious Emission and Band Edge	May 24, 2021	Stefan Sun	<u>PASS</u>
5	15.247(e)	Power spectral density (PSD)	May 13, 2021	Stefan Sun	<u>PASS</u>
6	15.247(d)	Restricted Frequency Bands	Apr 25, 2021	Qijie Xiao	<u>PASS</u>
7	15.207	Conducted Emission	Apr 25, 2021	Qijie Xiao	<u>PASS</u>
8	15.209, 15.247(d)	Radiated Emission	Apr 25, 2021	Qijie Xiao	<u>PASS</u>

Note: The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10 2013 and KDB558074 D01 v05r02.

1.4. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106



2. 47 CFR Part 15C Requirements

2.1. Antenna requirement

2.1.1. Applicable Standard

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

2.1.2. Result: Compliant

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

2.2. Output Power

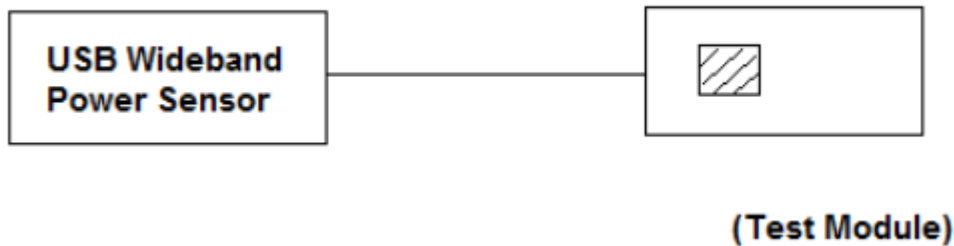
2.2.1. Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum peak conducted output power of the intentional radiator shall not exceed 1 Watt.

2.2.2. Test Description

The measured output power was calculated by the reading of the USB Wideband Power Sensor and calibration.

A. Test Setup:



The EUT (Equipment under the test) which is coupled to the USB Wideband Power Sensor; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

B. Equipments List:

Please refer ANNEX B(4).

2.2.3. Test Result

Duty Cycle Factor

Mode	Channel	Frequency (MHz)	T _{on} (ms)	T _(on+off) (ms)	Duty Cycle (%)	Duty Cycle Factor
802.11b	6	2437	100	100	100	0
802.11g	6	2437	100	100	100	0
802.11n-20MHz	6	2437	100	100	100	0
802.11n-40MHz	6	2437	100	100	100	0

**Output Average Power**

Mode	Channel	Frequency (MHz)	Output Average Power		Limit		Verdict
			dBm	W	dBm	W	
802.11 b	1	2412	16.57	0.045	30	1	PASS
	6	2437	18.46	0.070			PASS
	11	2462	16.76	0.047			PASS
802.11 g	1	2412	18.48	0.070			PASS
	6	2437	20.77	0.119			PASS
	11	2462	18.62	0.073			PASS
802.11 HT20	1	2412	18.01	0.063			PASS
	6	2437	20.34	0.108			PASS
	11	2462	18.18	0.066			PASS

Note: The duty cycle factor has been compensated into the test result

2.3. Bandwidth

2.3.1. Requirement

According to FCC section 15.247(a) (2), Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

2.3.2. Test Description

A. Test Set:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW. KDB558074 V05R02 Section 8.1 Option 1 was used in order to prove compliance.

B. Equipments List:

Please refer ANNEX B(4).



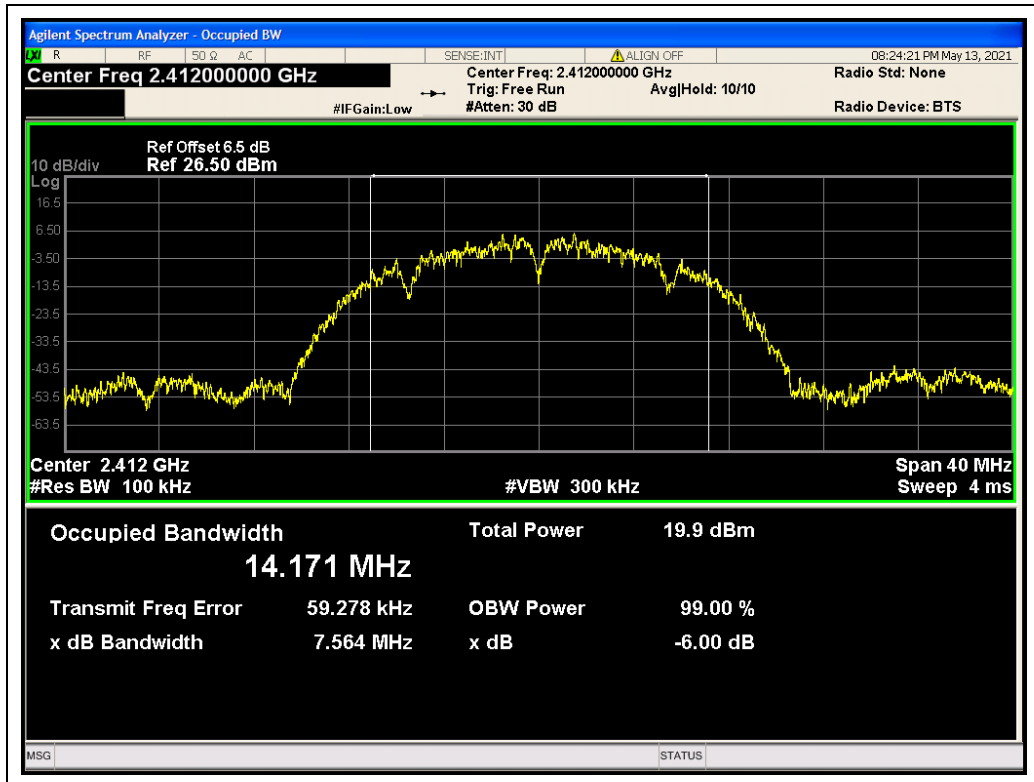
2.3.3. Test Result

802.11b Test mode

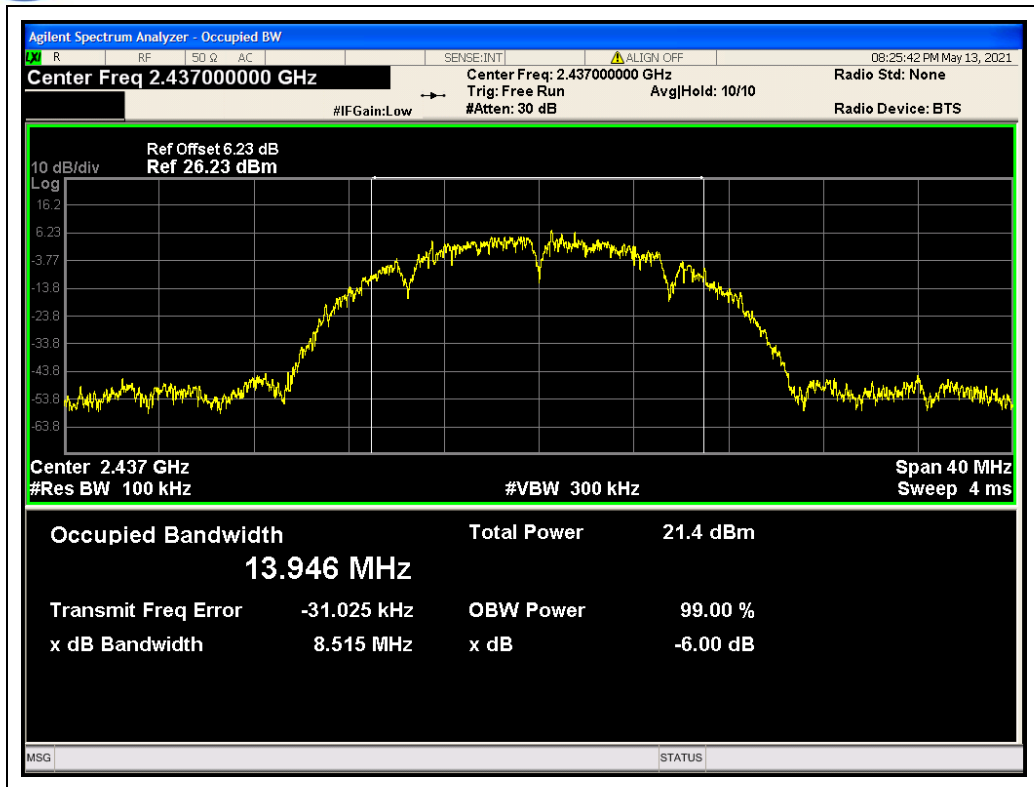
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits(kHz)	Result
1	2412	7.564	≥500	PASS
6	2437	8.515	≥500	PASS
11	2462	8.544	≥500	PASS

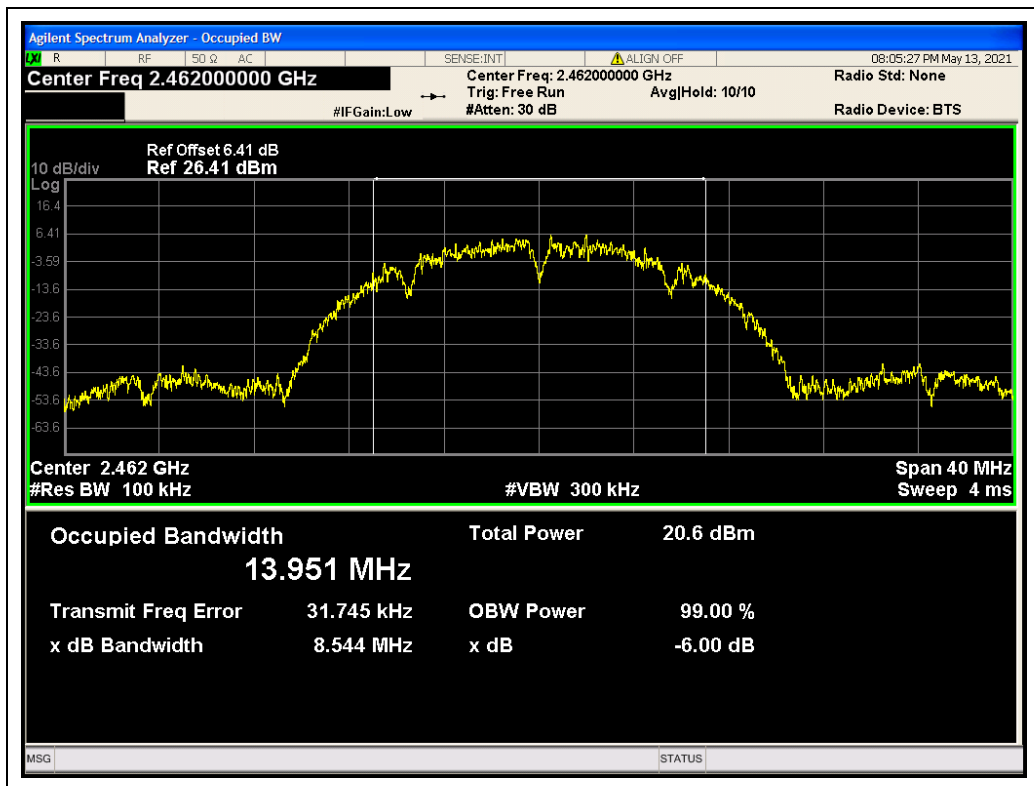
B. Test Plots



(Channel 1, 2412MHz, 802.11b)



(Channel 6, 2437 MHz, 802.11b)



(Channel 11, 2462MHz, 802.11b)

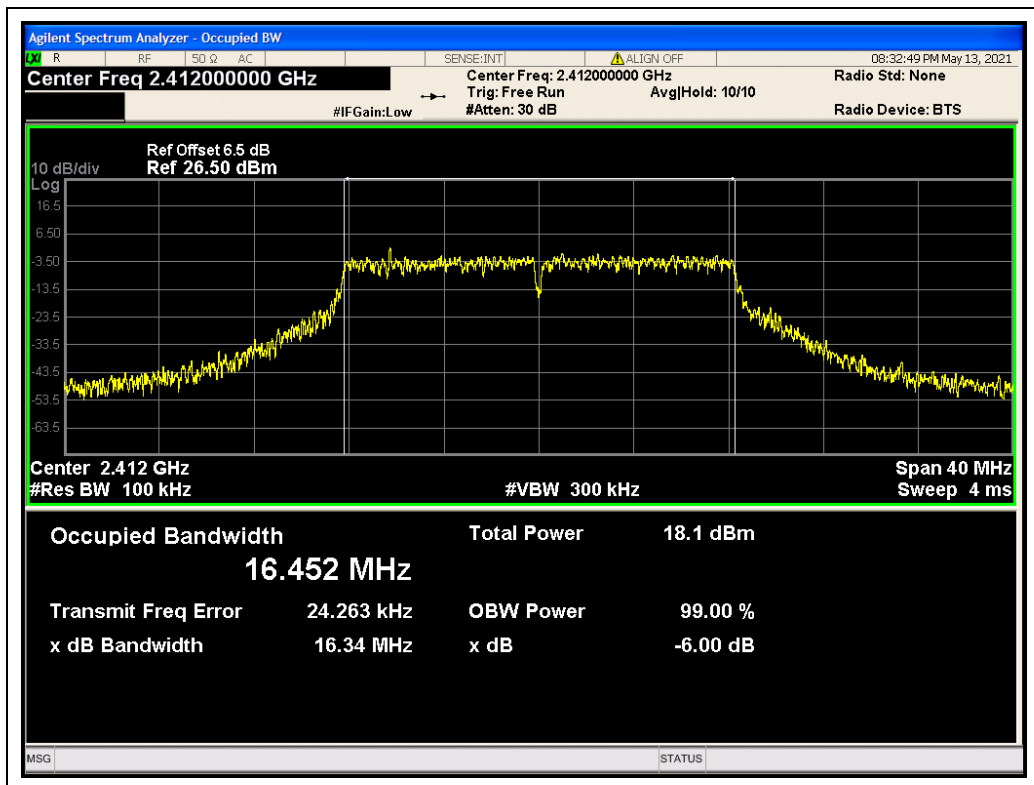


802.11g Test mode

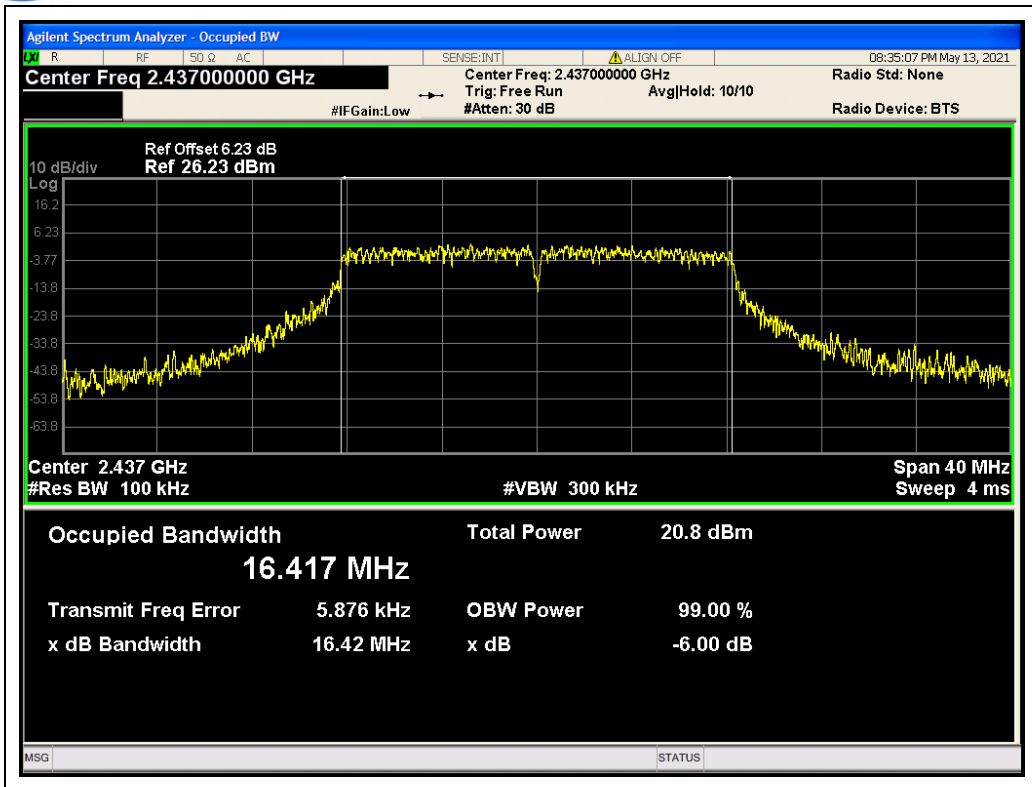
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	16.34	≥500	PASS
6	2437	16.42	≥500	PASS
11	2462	16.53	≥500	PASS

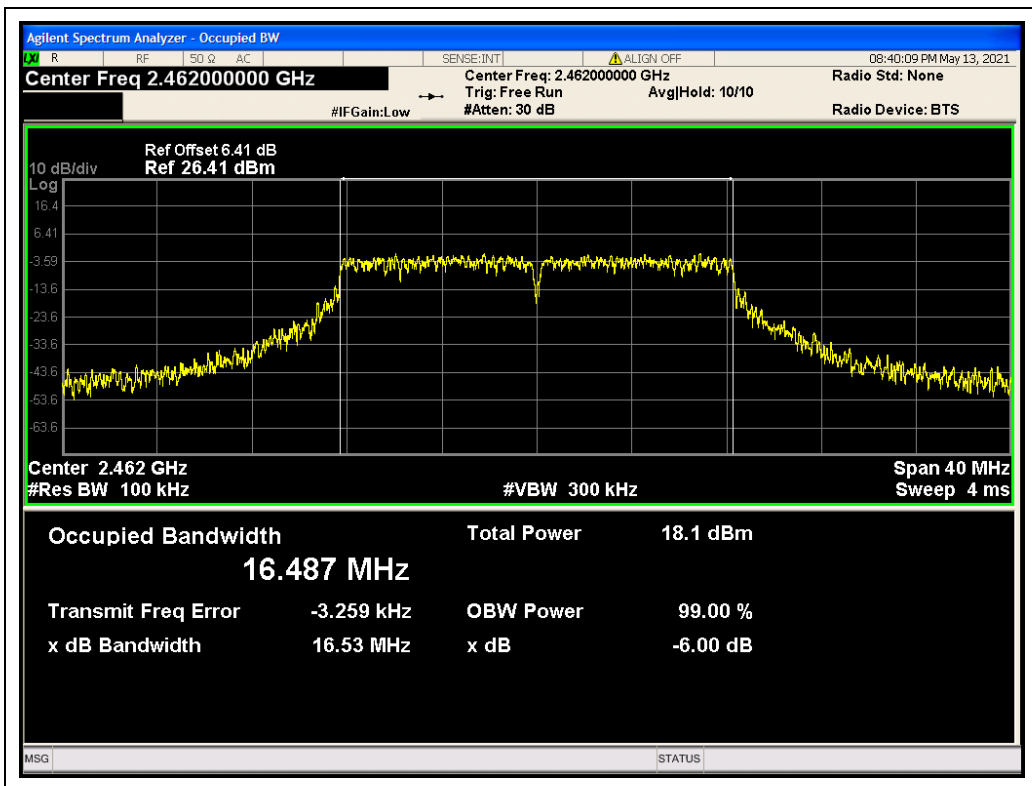
B. Test Plots:



(Channel 1, 2412MHz, 802.11g)



(Channel 6, 2437MHz, 802.11g)



(Channel 11, 2462MHz, 802.11g)

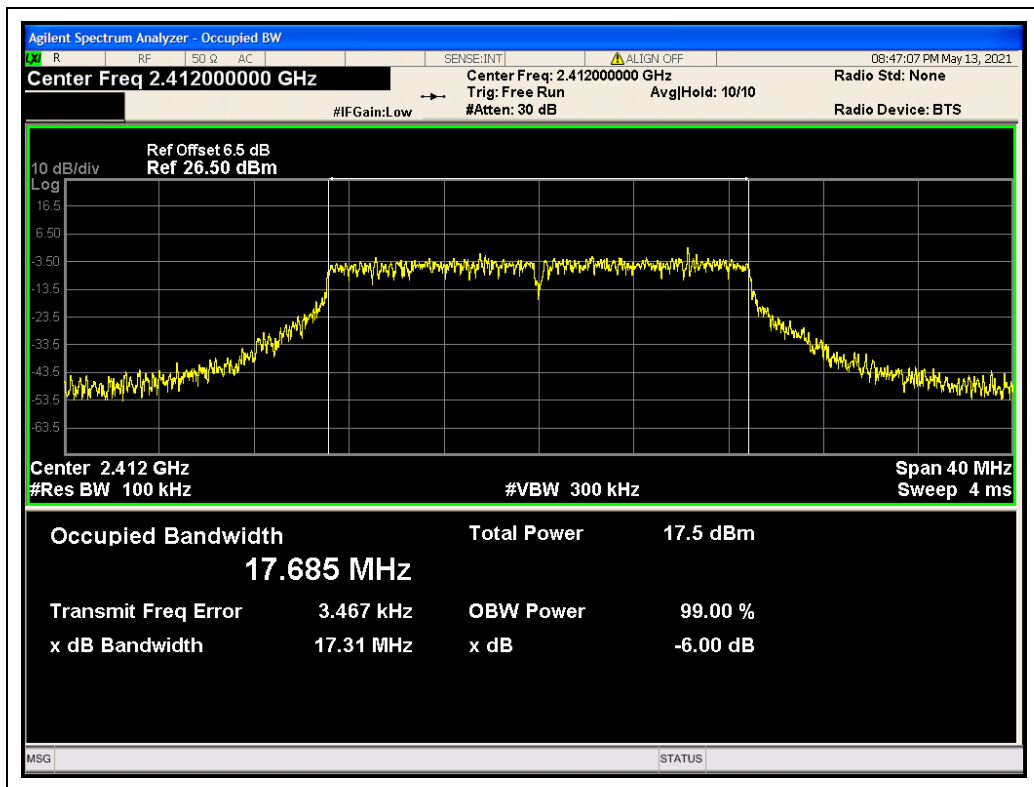


802.11n-20 Test mode

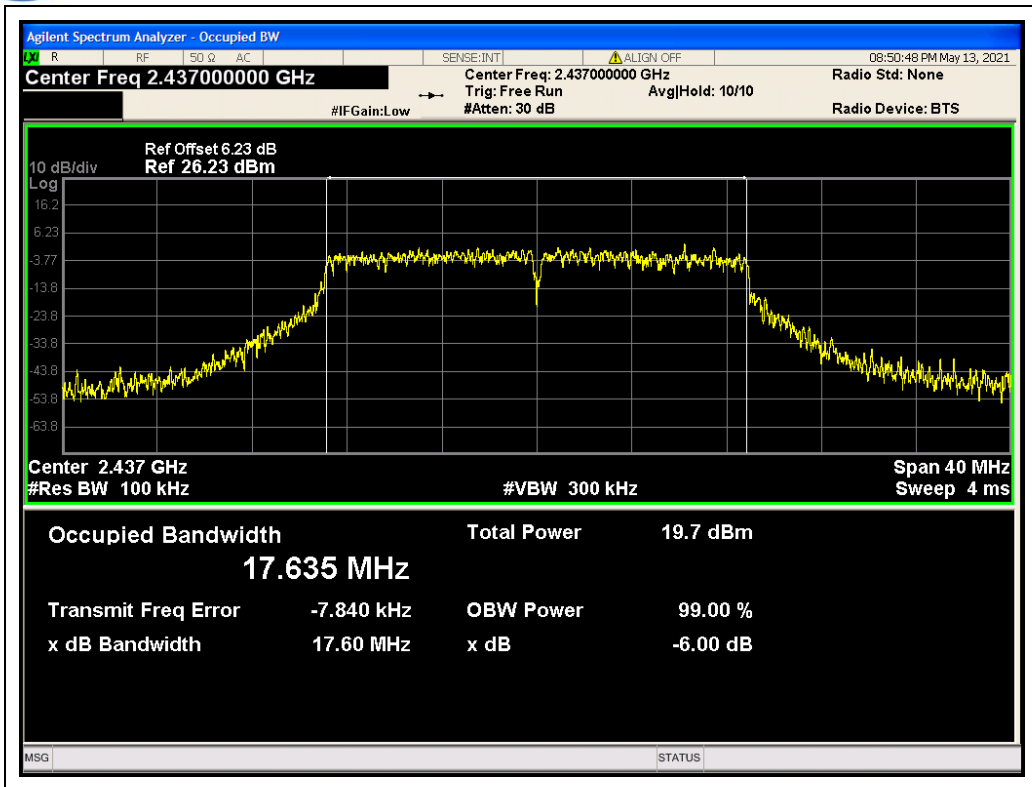
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)	Result
1	2412	17.31	≥500	PASS
6	2437	17.60	≥500	PASS
11	2462	17.56	≥500	PASS

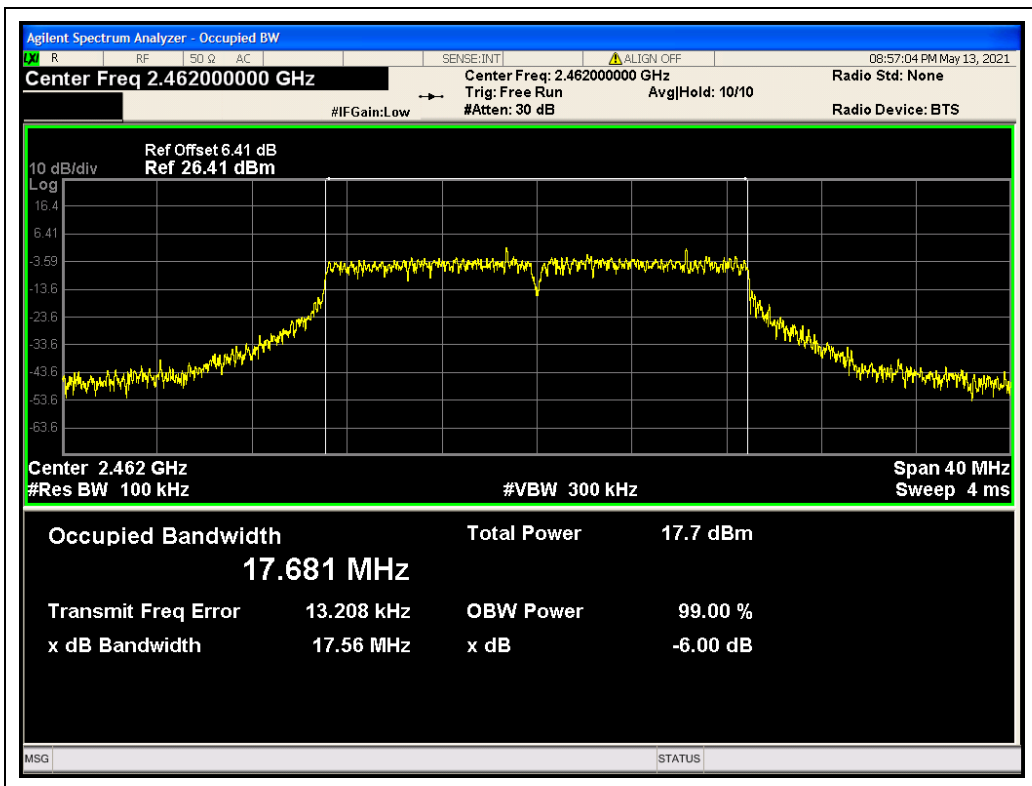
B. Test Plots:



(Channel 1, 2412MHz, 802.11n-20)



(Channel 6, 2437MHz, 802.11n-20)



(Channel 11, 2462MHz, 802.11n-20)

2.4. Conducted Spurious Emissions and Band Edge

2.4.1. Requirement

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

2.4.2. Test Description

A. Test Set:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

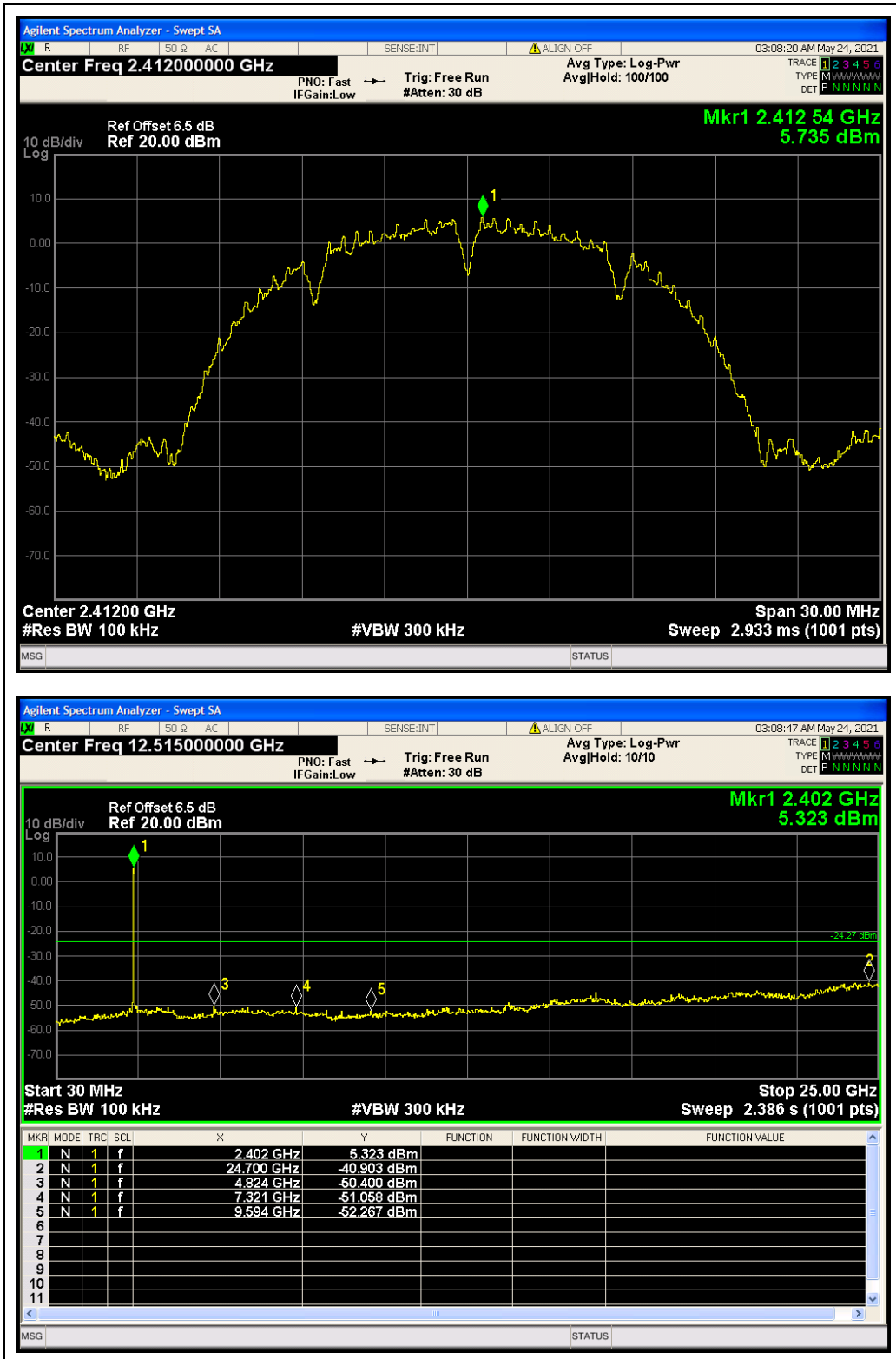
KDB 558074 D01 v05r02 Section 11.0 was used in order to prove compliance.

B. Equipments List:

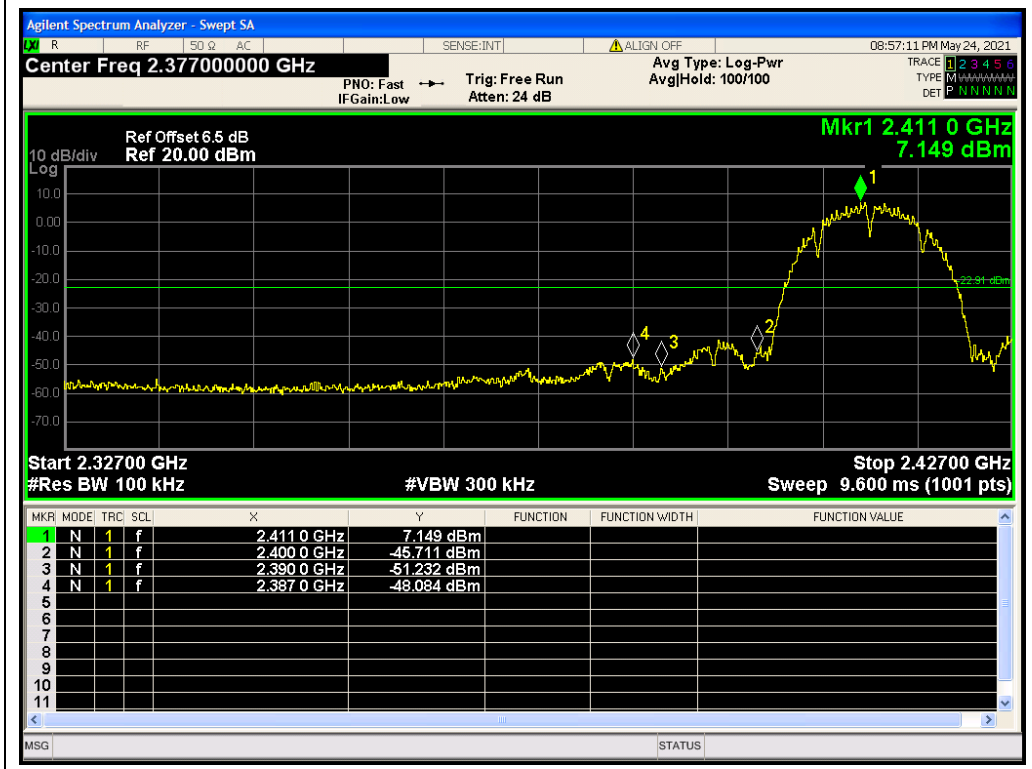
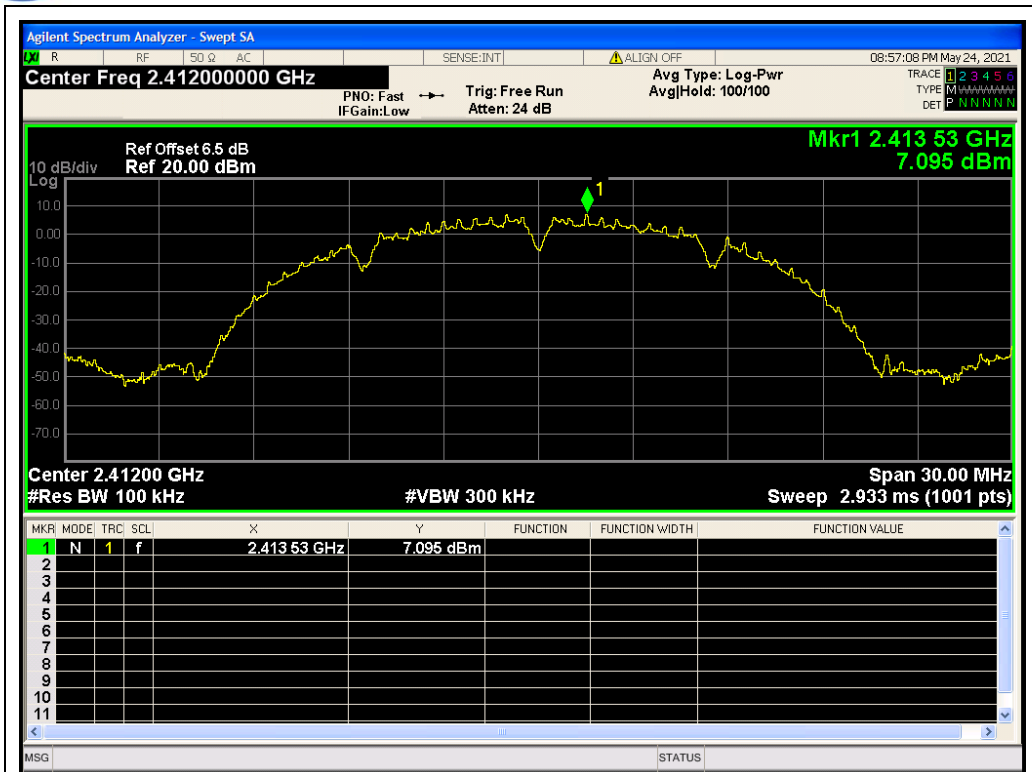
Please refer ANNEX B(4).



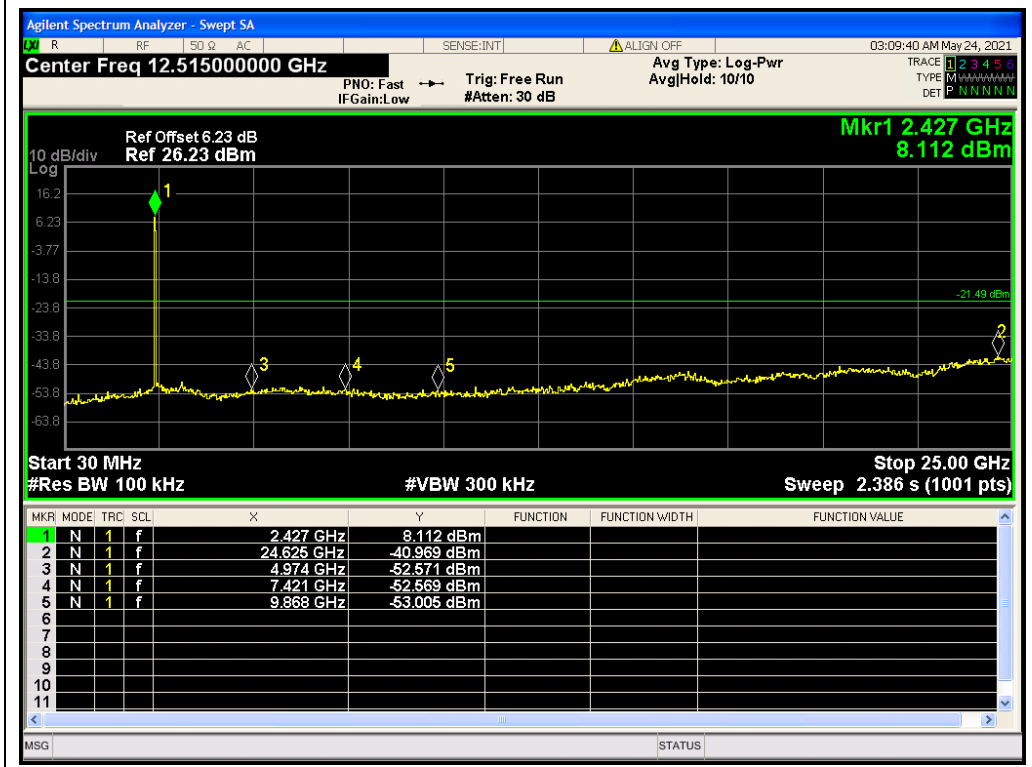
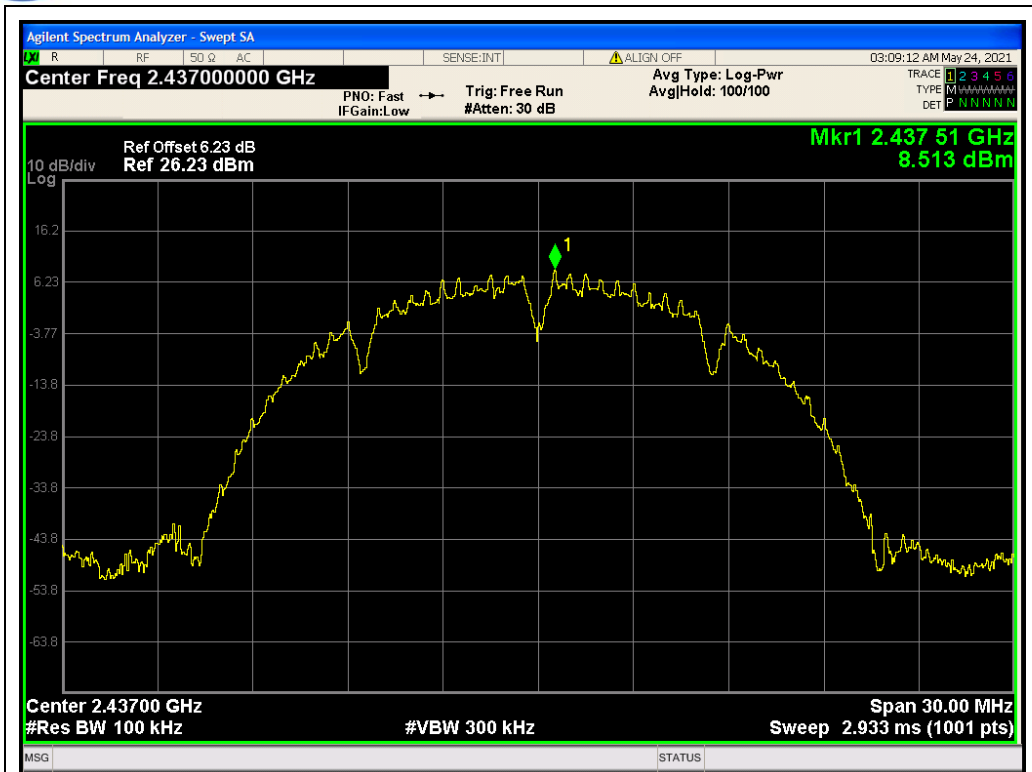
2.4.3. Test Result



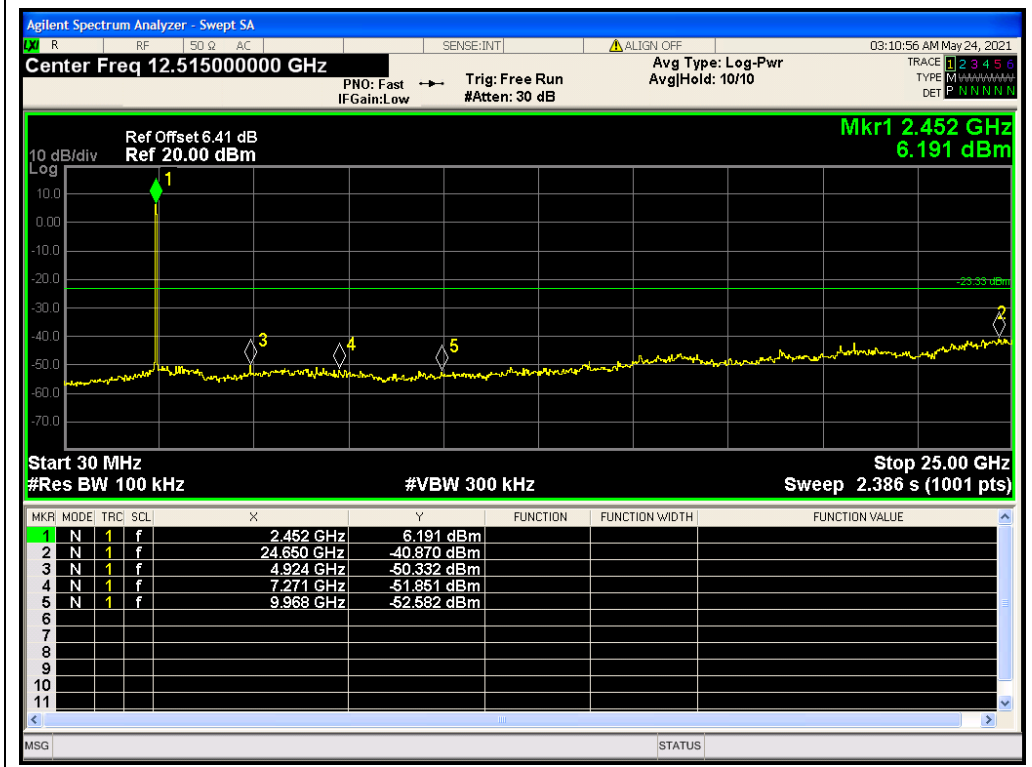
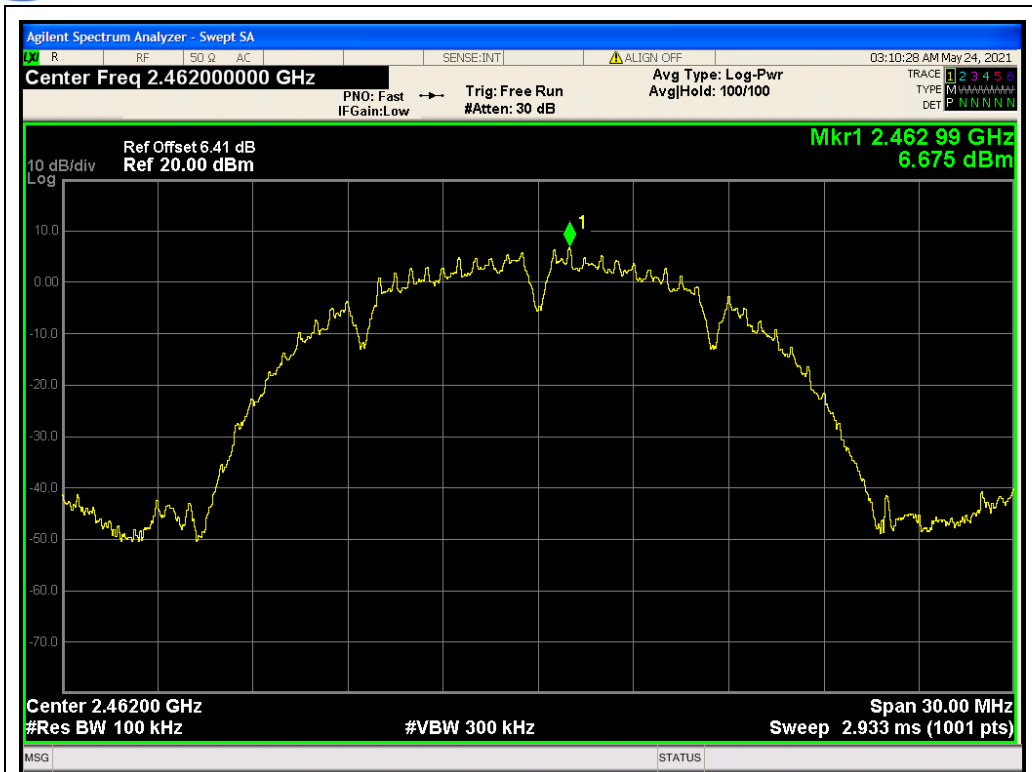
(802.11 b, Channel = 1, 30MHz to 25GHz)



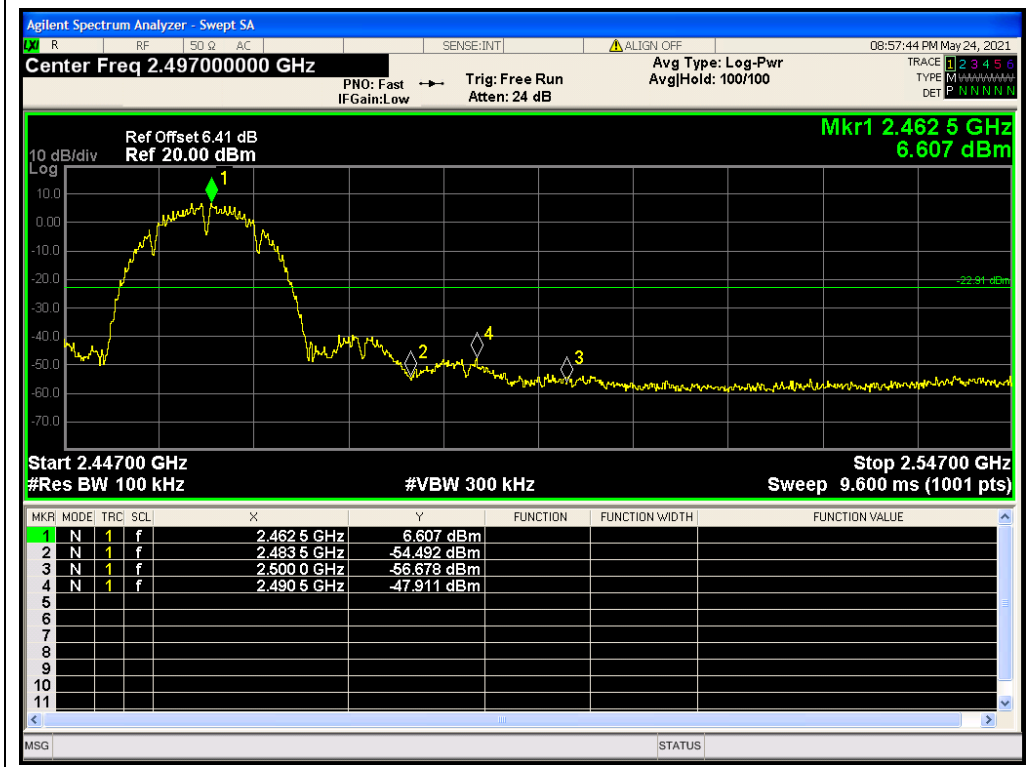
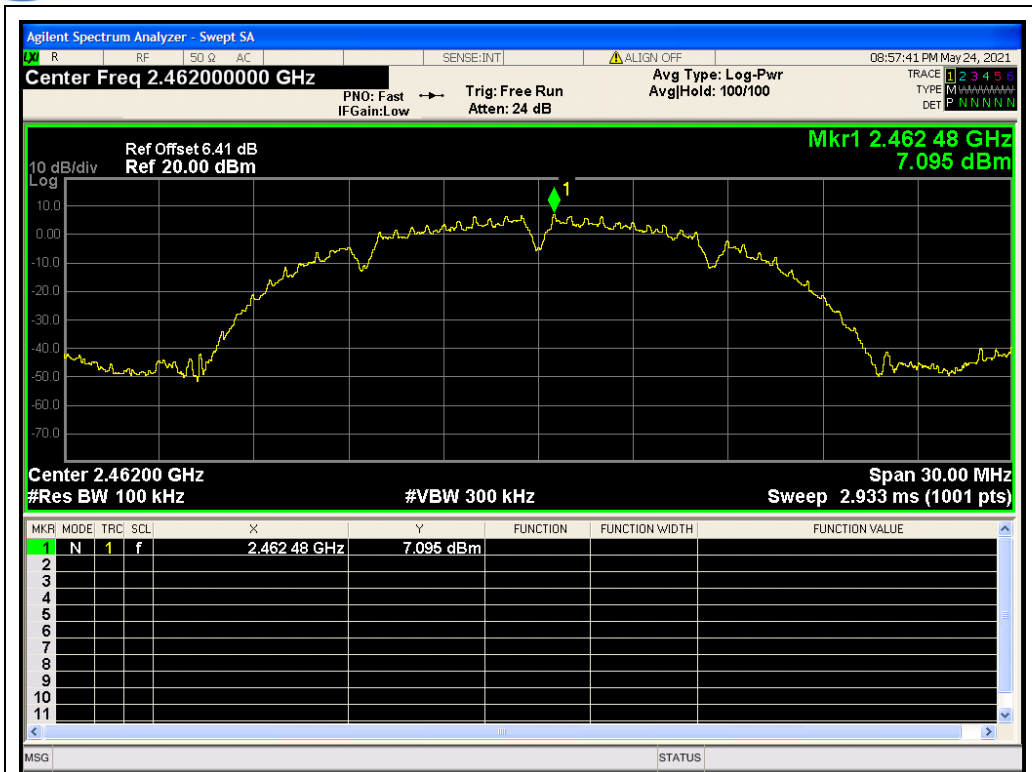
(802.11 b, Band Edge @ Channel = 1)



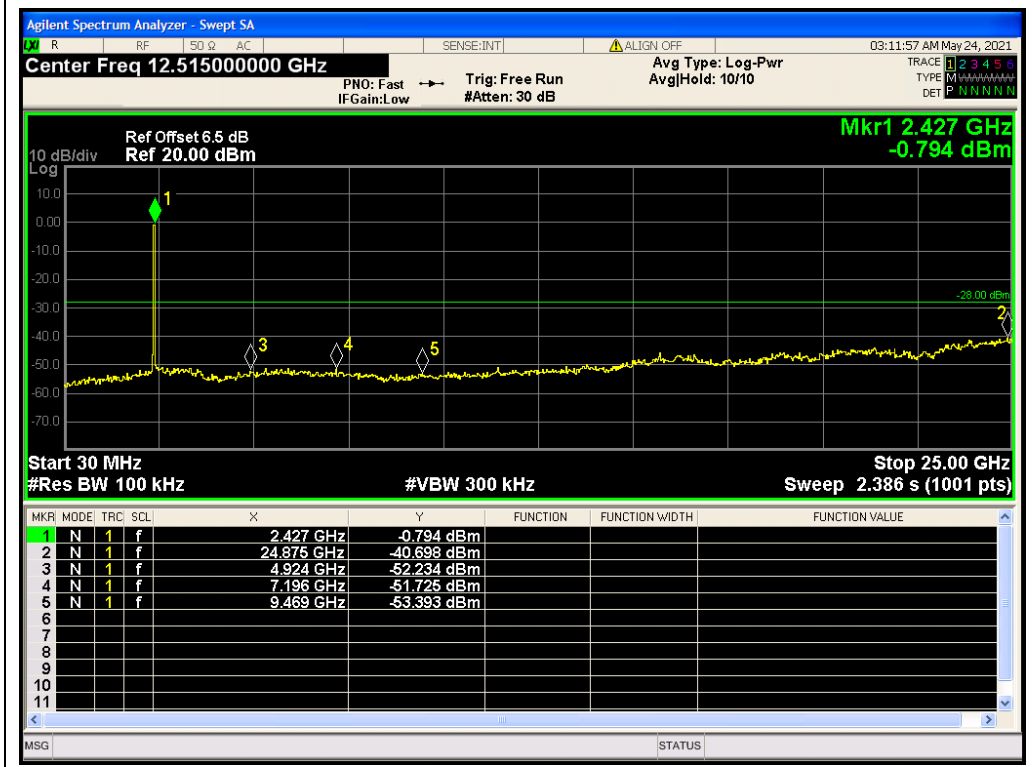
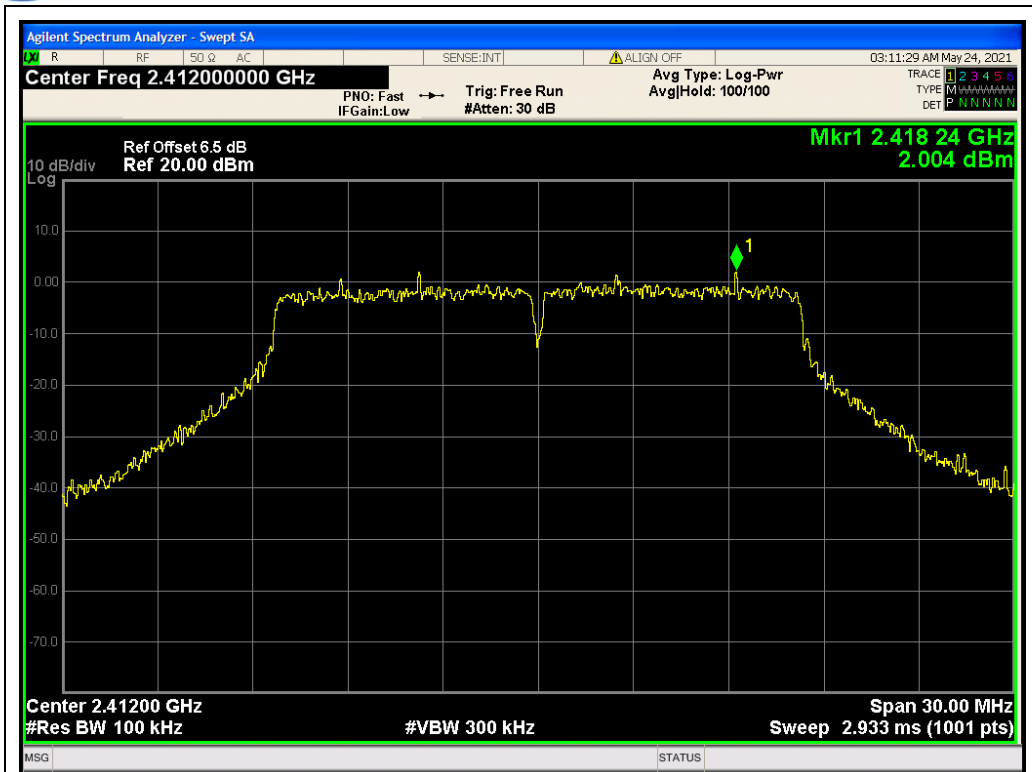
(802.11 b, Channel = 6, 30MHz to 25GHz)



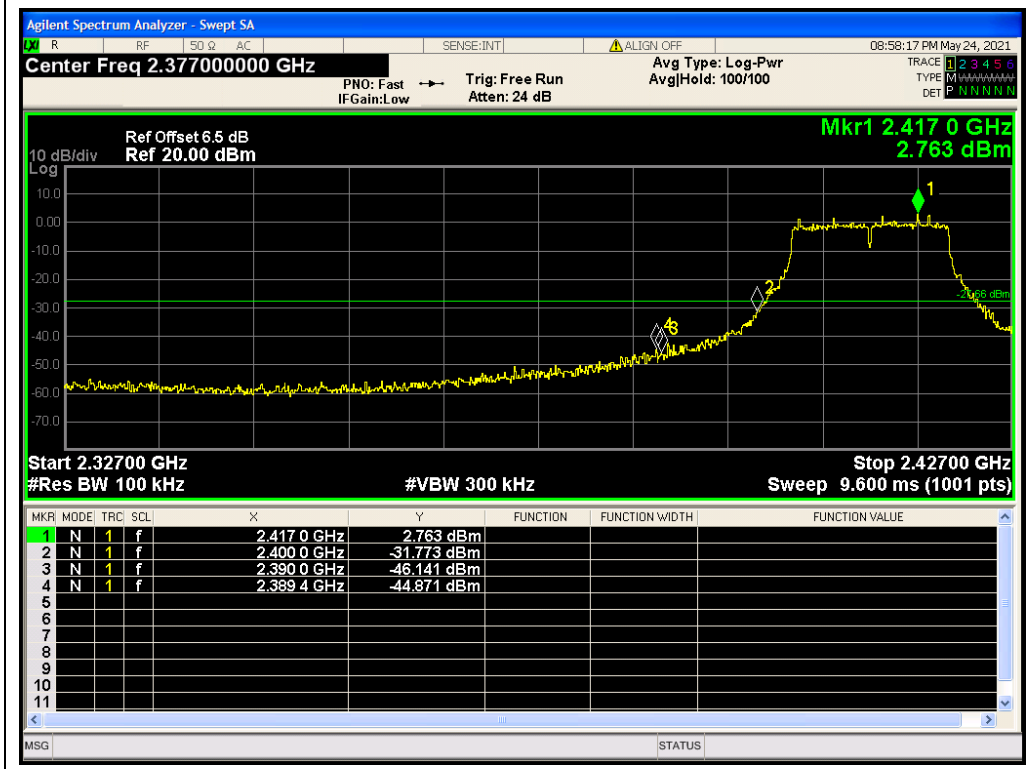
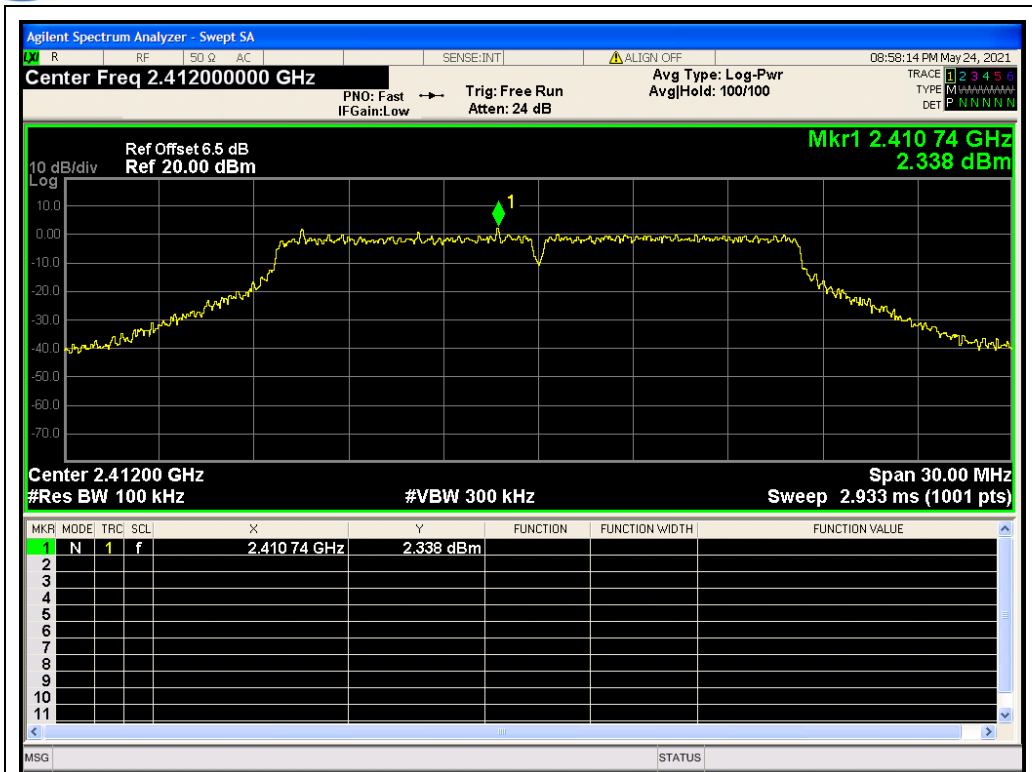
(802.11 b, Channel = 11, 30MHz to 25GHz)



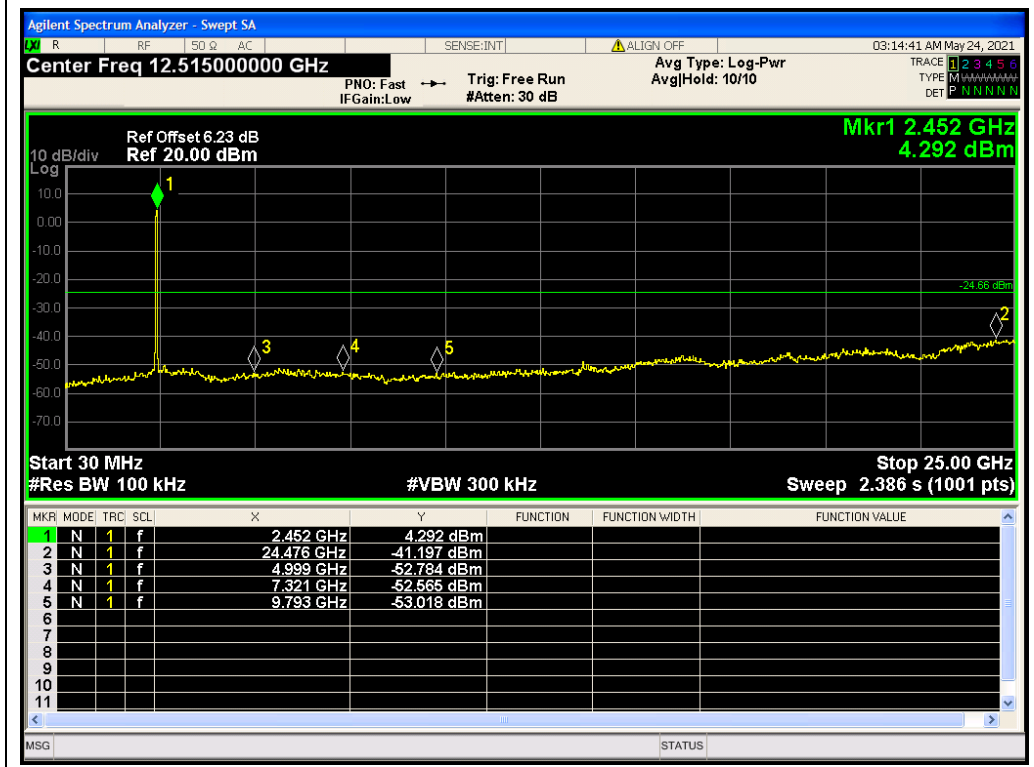
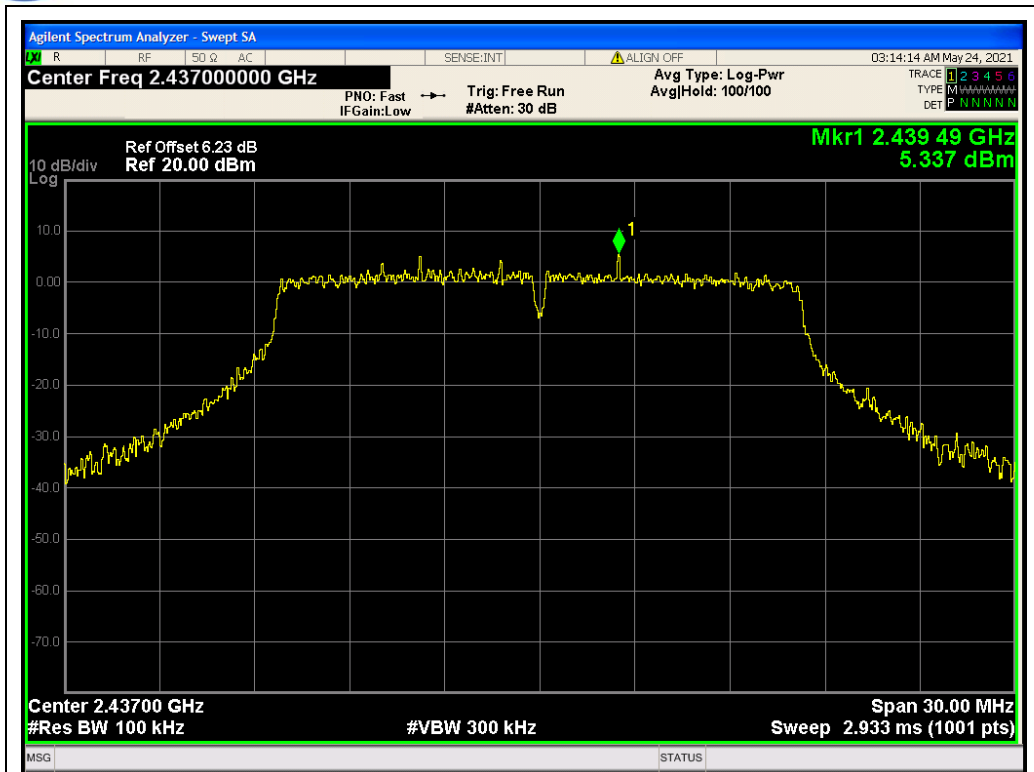
(802.11 b, Band Edge @ Channel = 11)



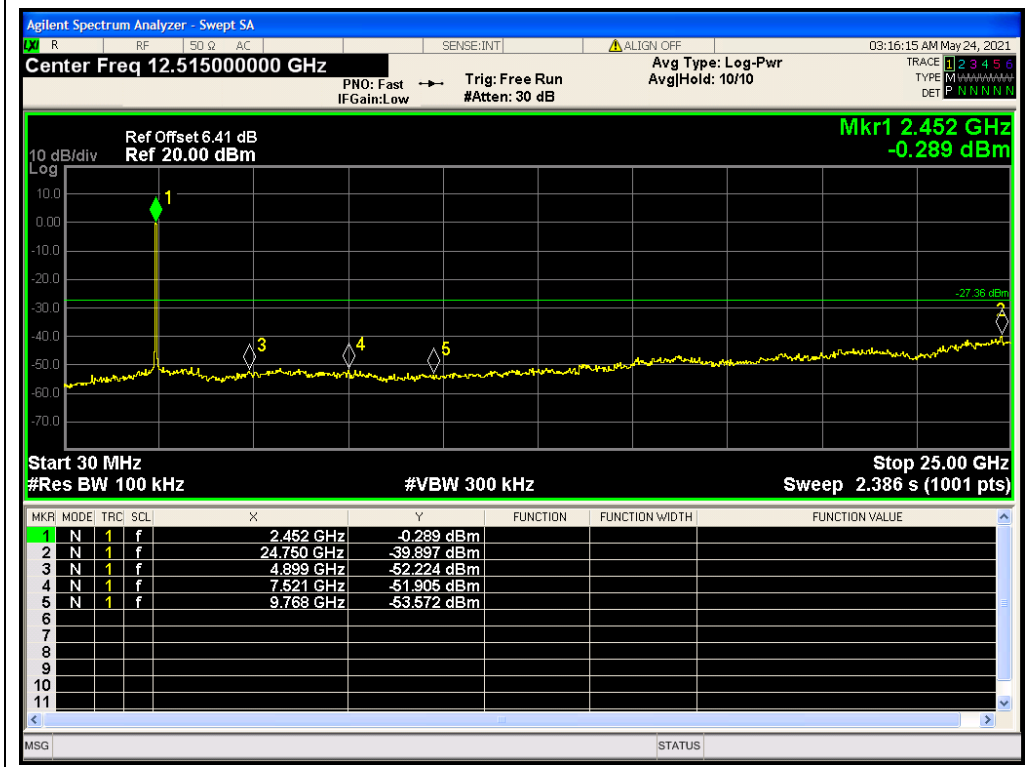
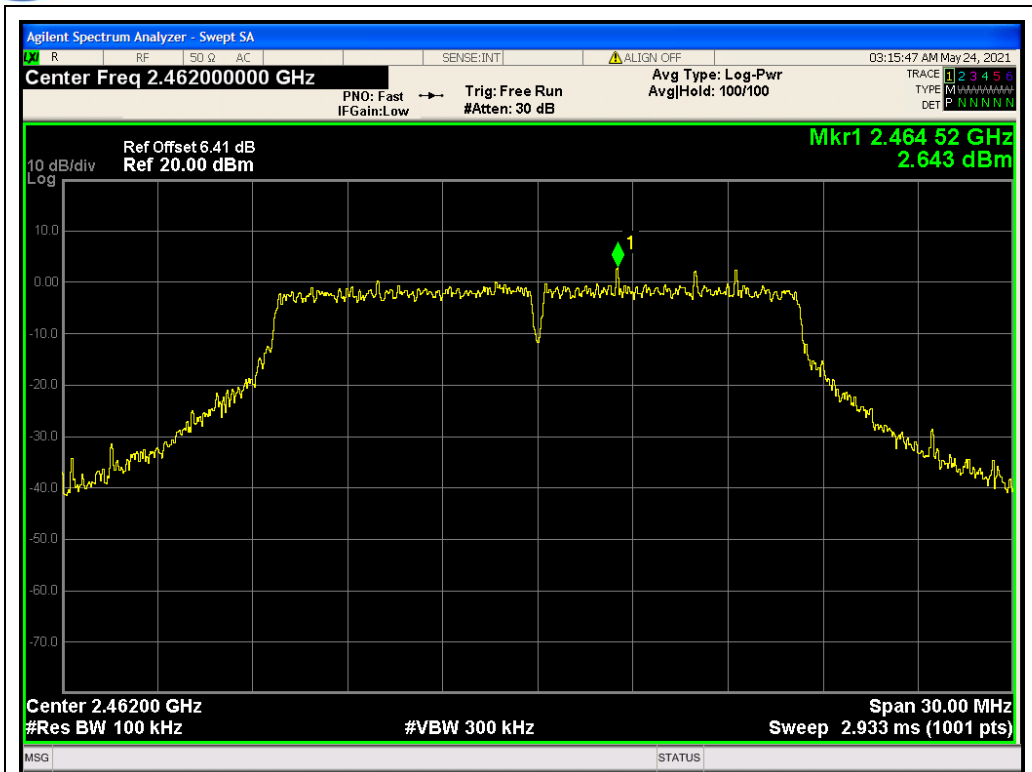
(802.11 g, Channel = 1, 30MHz to 25GHz)



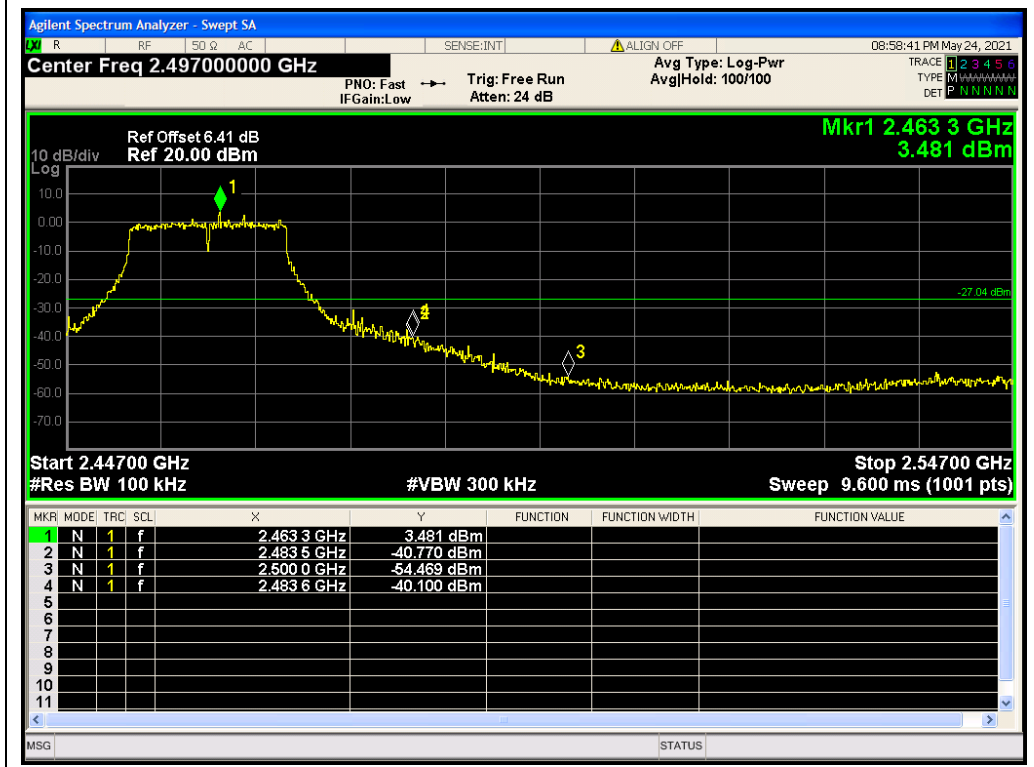
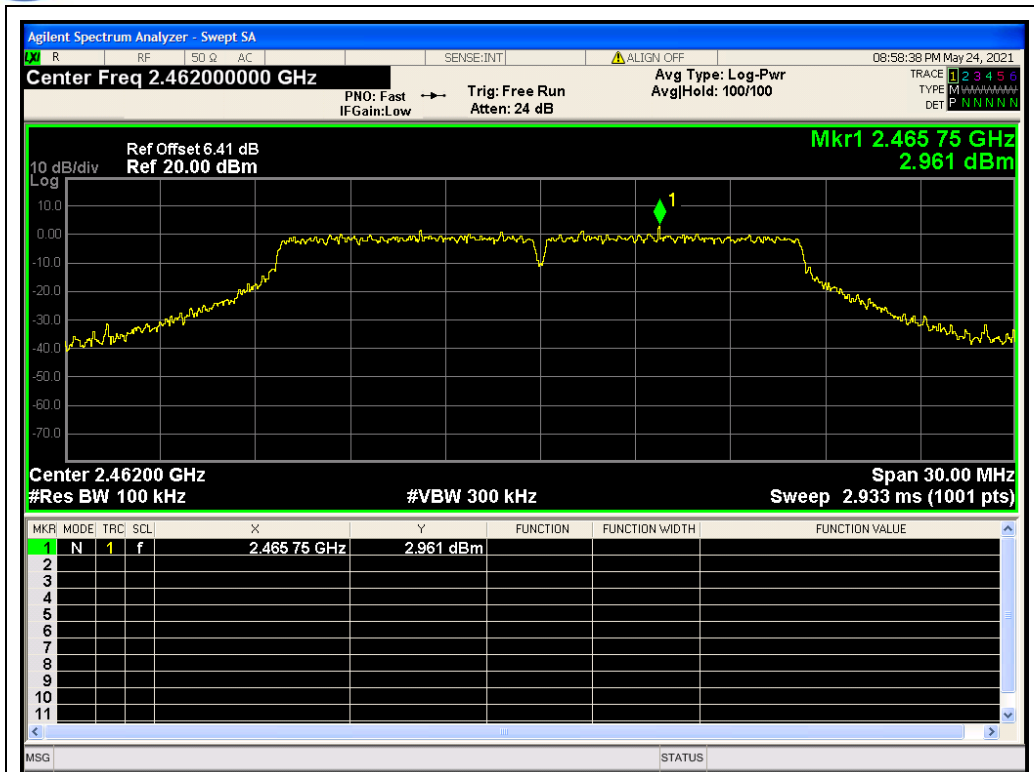
(802.11 g, Band Edge @ Channel = 1)



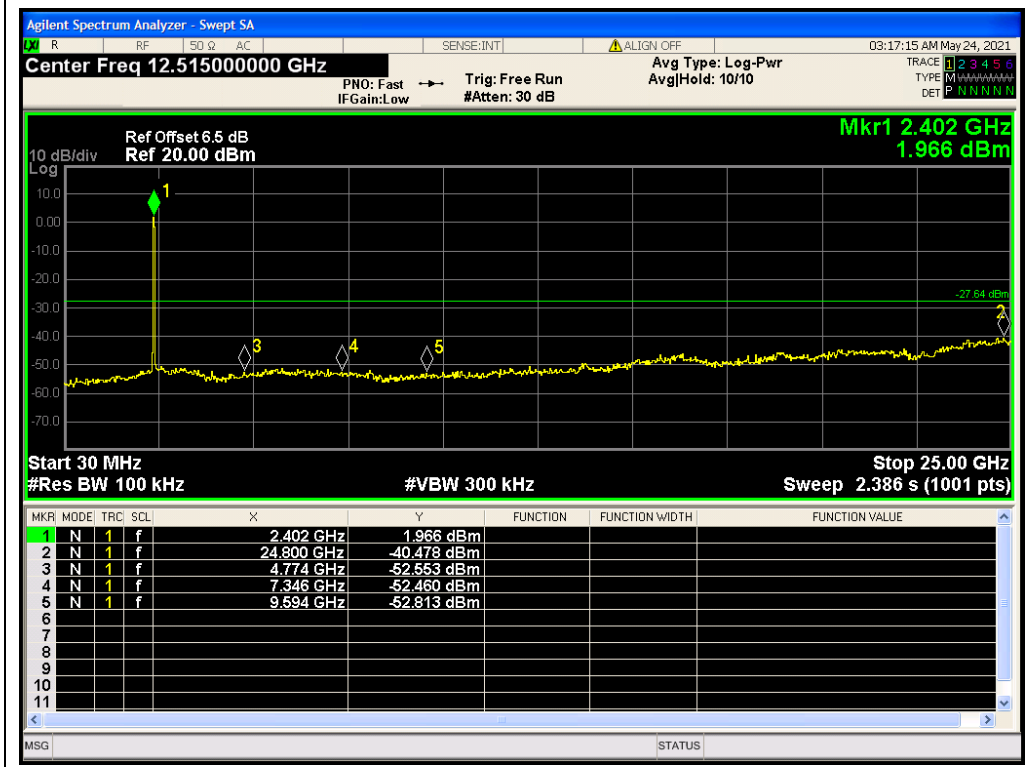
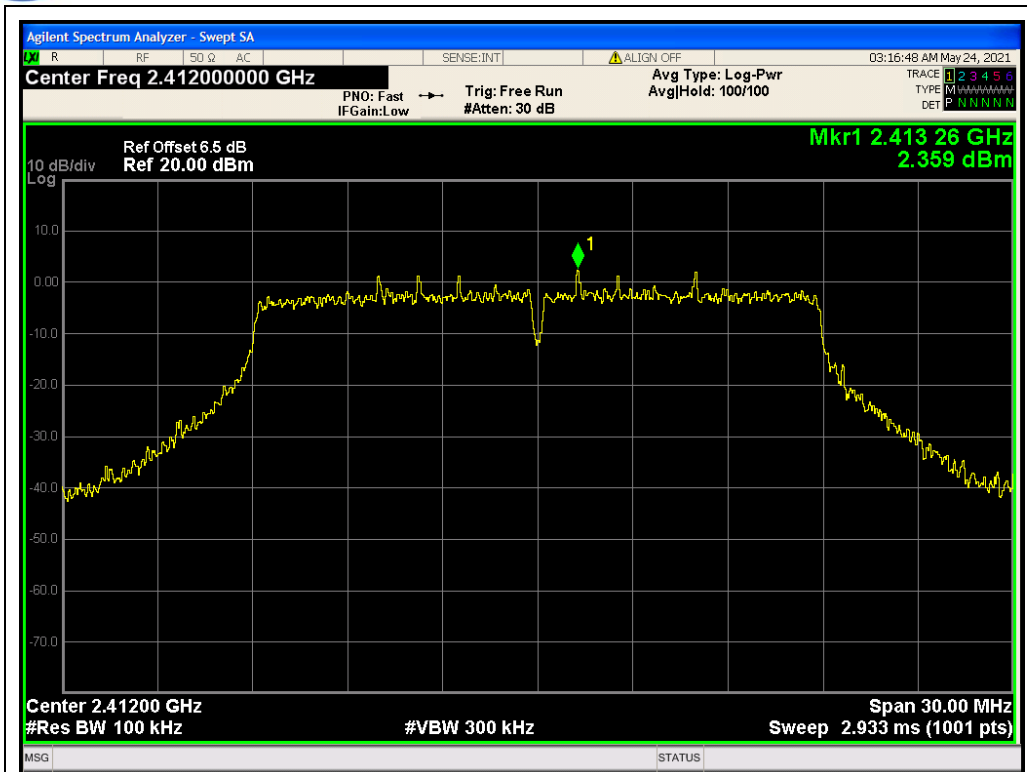
(802.11 g, Channel = 6, 30MHz to 25GHz)



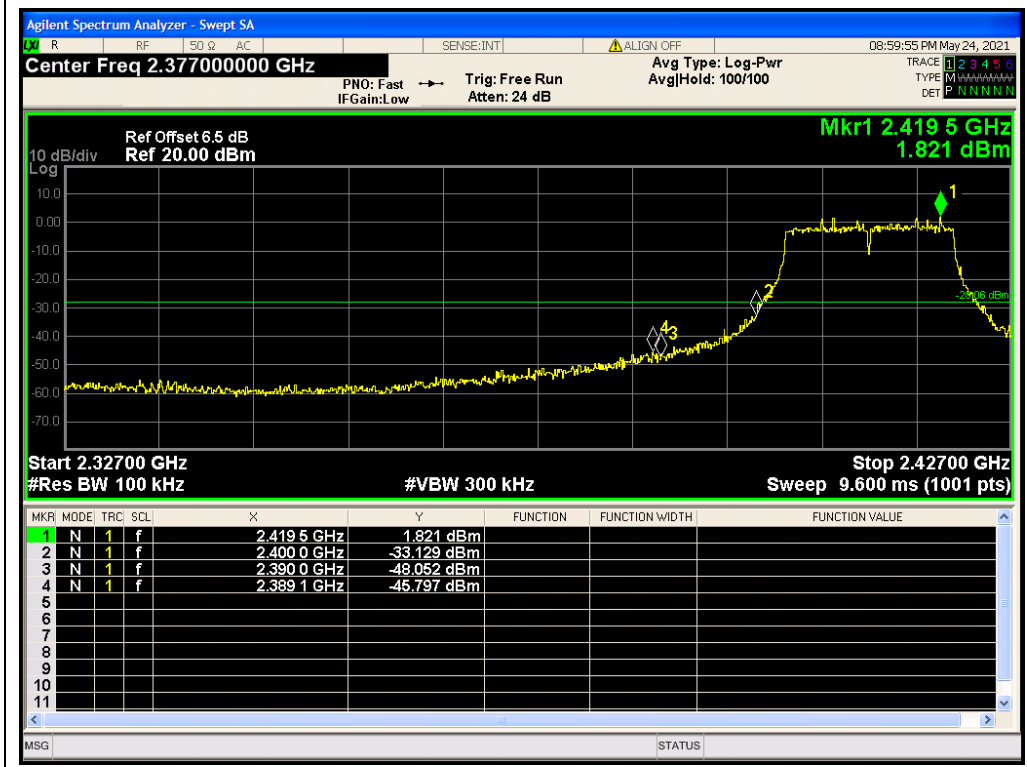
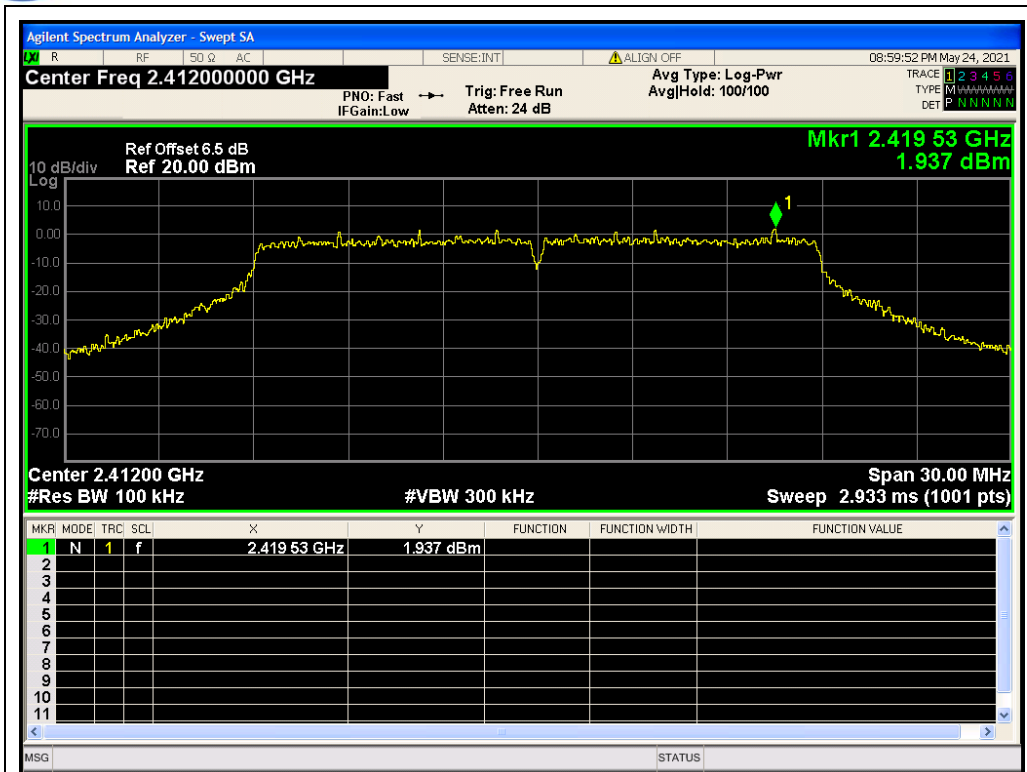
(802.11 g, Channel = 11, 30MHz to 25GHz)



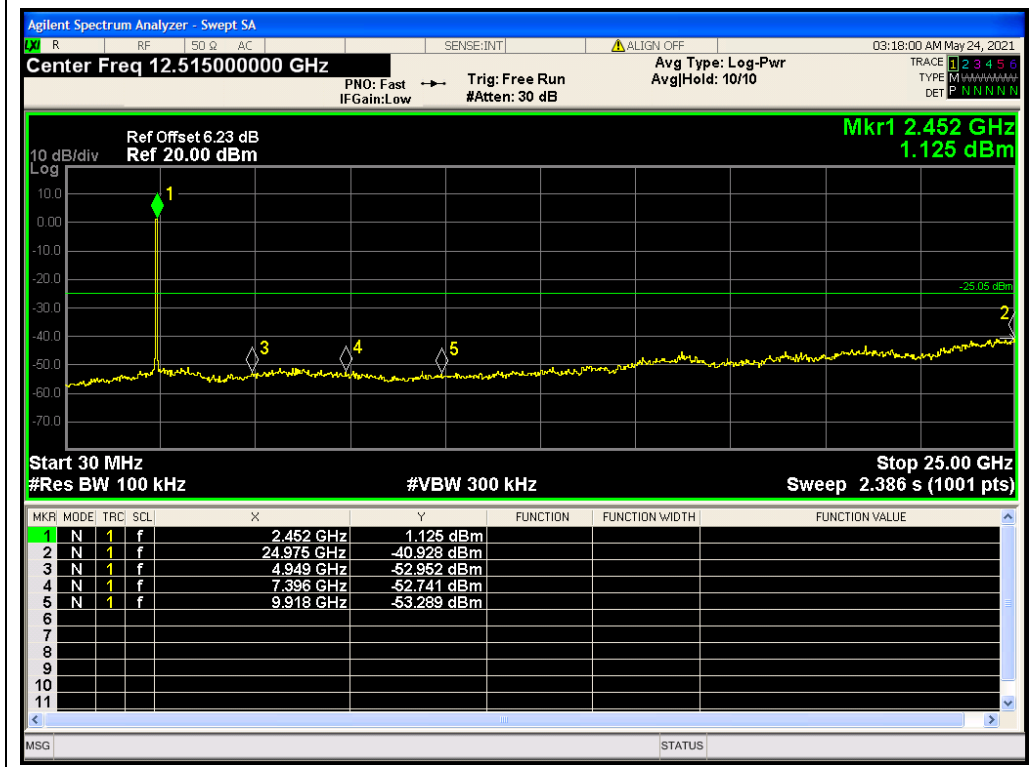
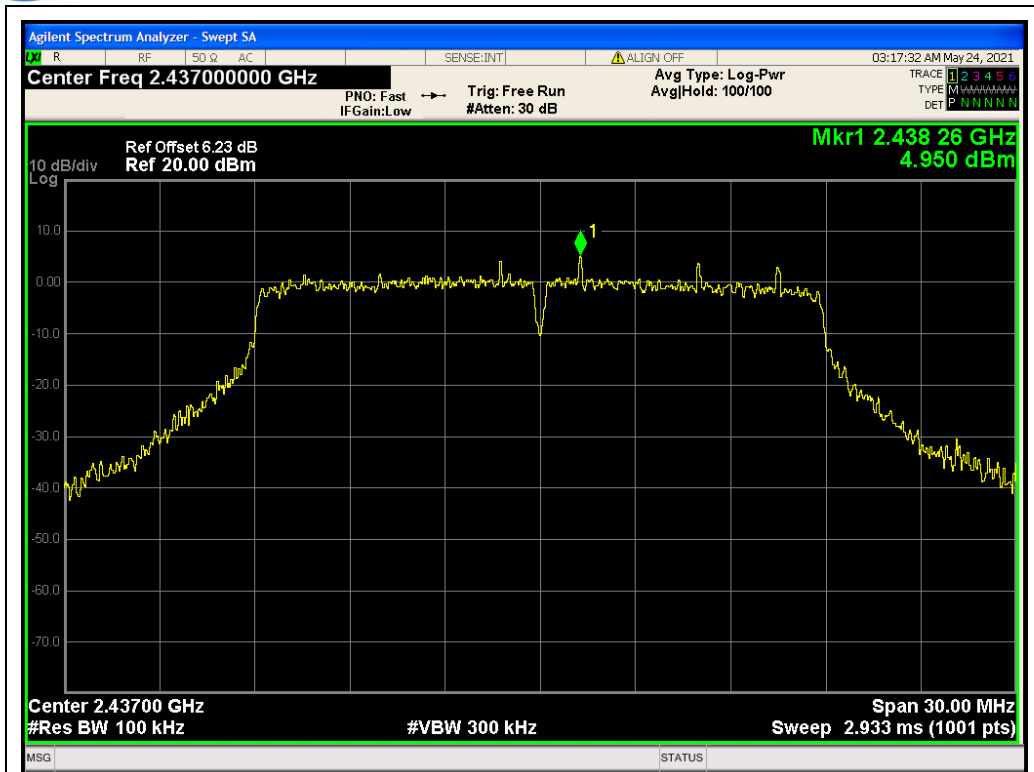
(802.11 g, Band Edge @ Channel = 11)



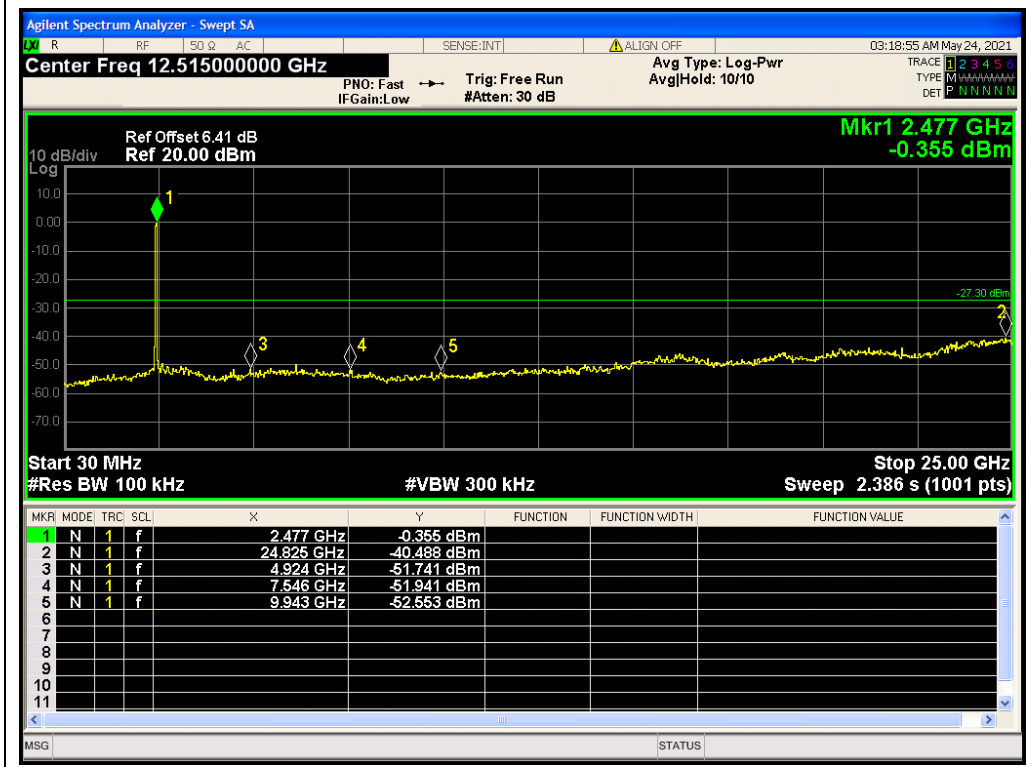
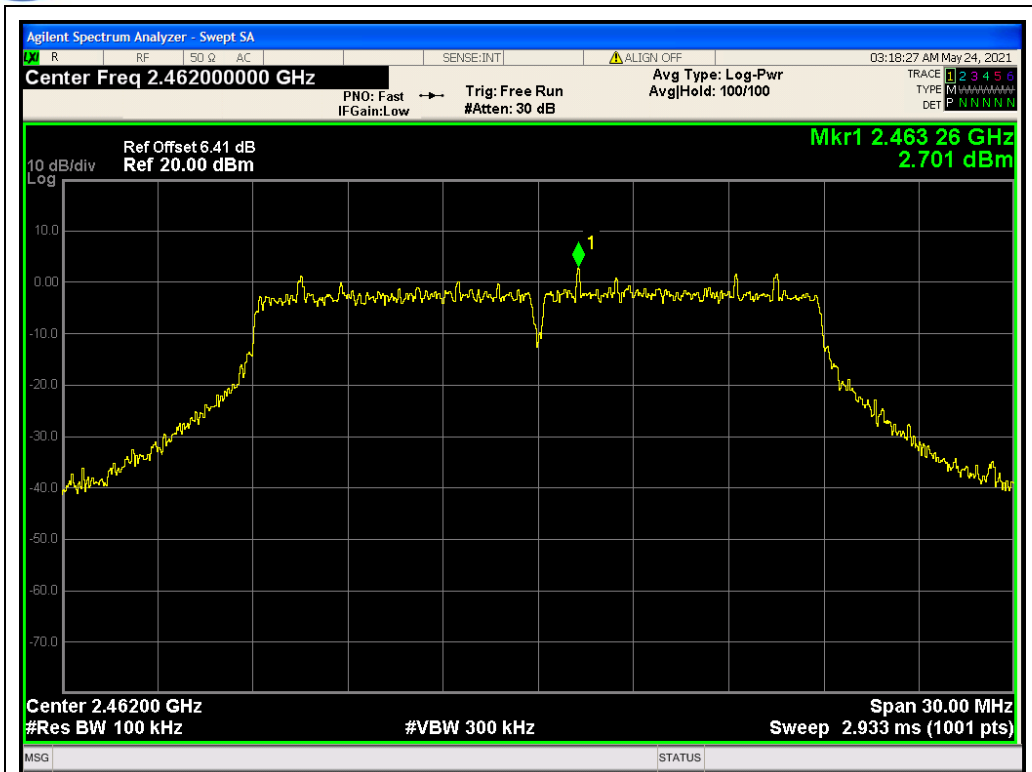
(802.11 HT20, Channel = 1, 30MHz to 25GHz)



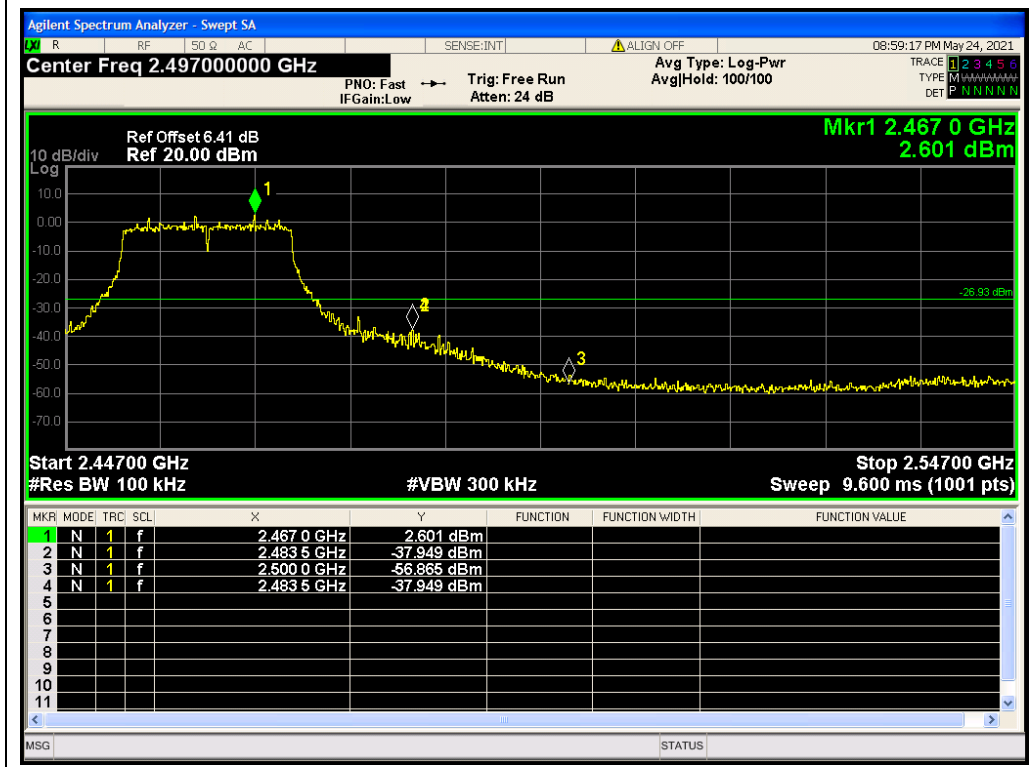
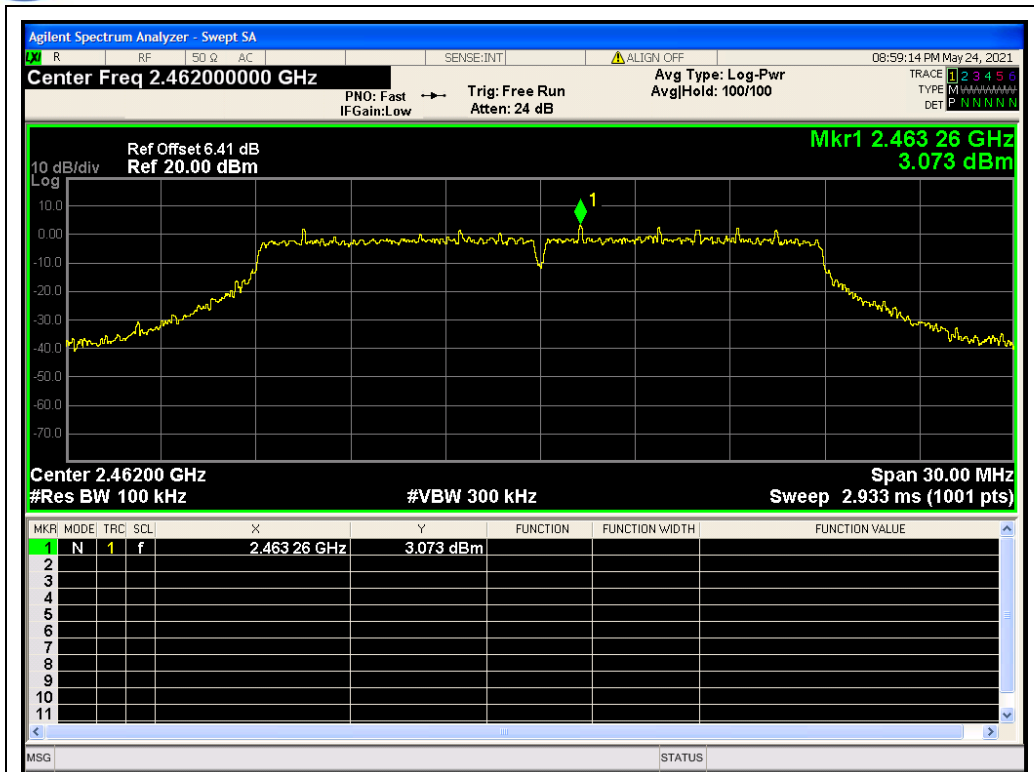
(802.11 HT20, Band Edge @ Channel = 1)



(802.11 HT20, Channel = 6, 30MHz to 25GHz)



(802.11 HT20, Channel = 11, 30MHz to 25GHz)



(802.11 HT20, Band Edge @ Channel = 11)

2.5. Power spectral density (PSD)

2.5.1. Requirement

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

2.5.2. Test Description

A. Test Set:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

KDB 558074 D01 v05r02 Section 10.2 was used in order to prove compliance.

B. Equipments List:

Please refer ANNEX B(4).



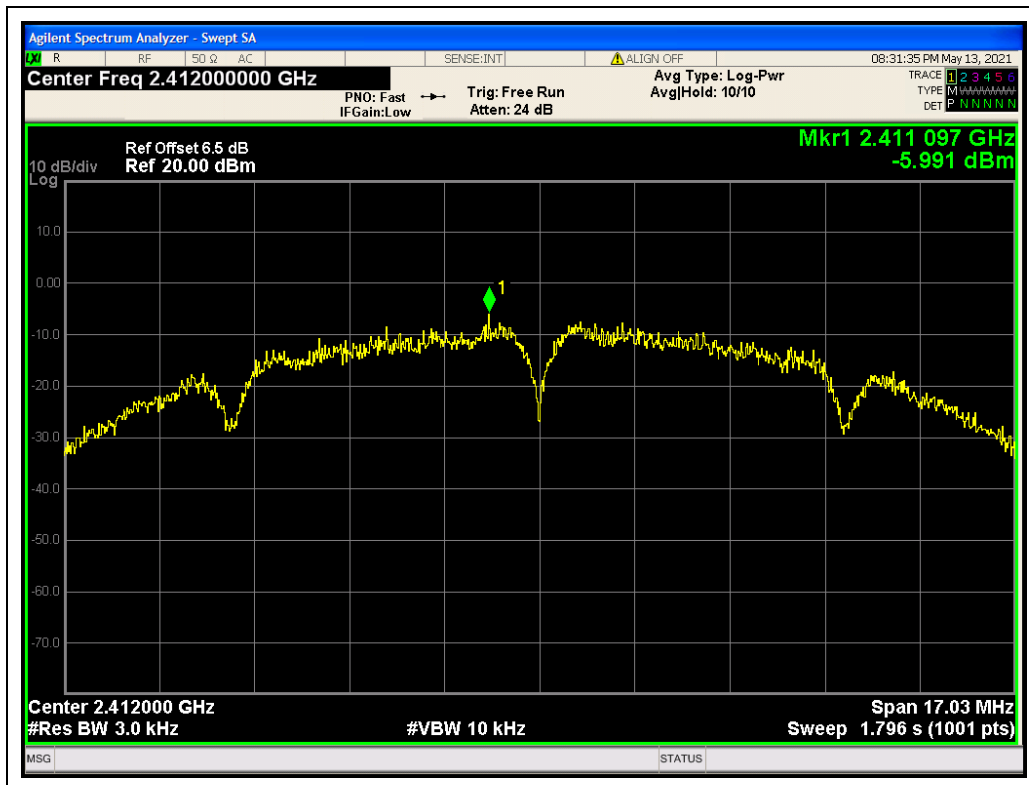
2.5.3. Test Result

802.11b Test mode

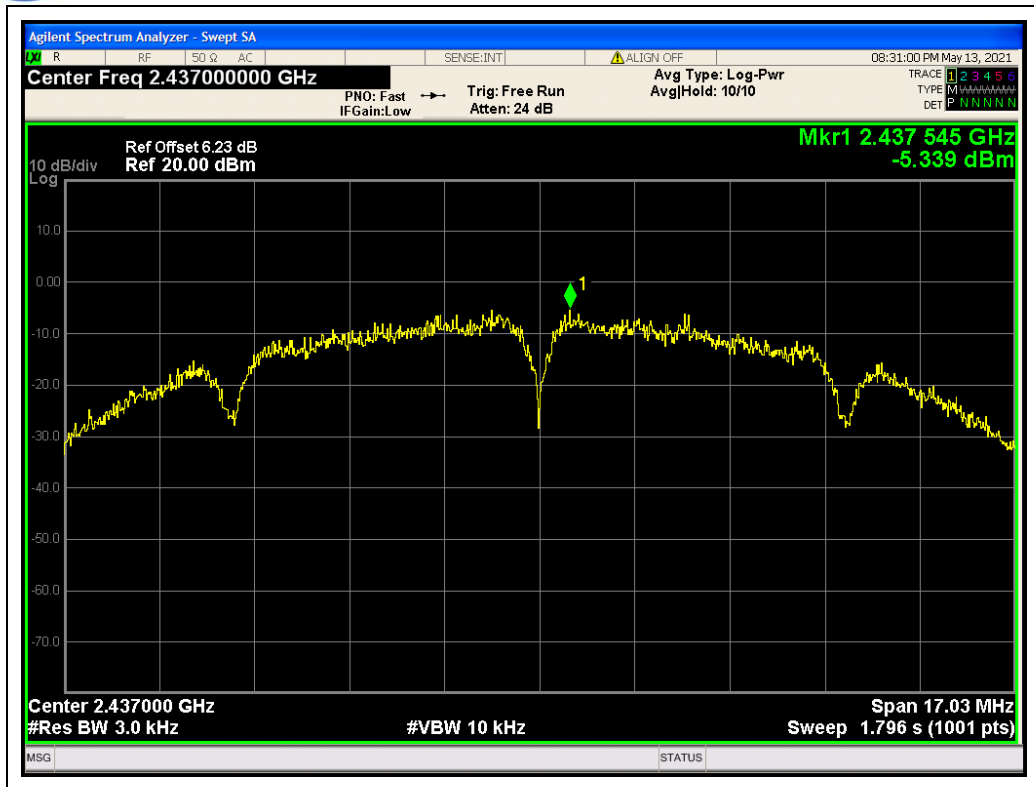
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-5.991	8	PASS
6	2437	-5.339	8	PASS
11	2462	-5.486	8	PASS

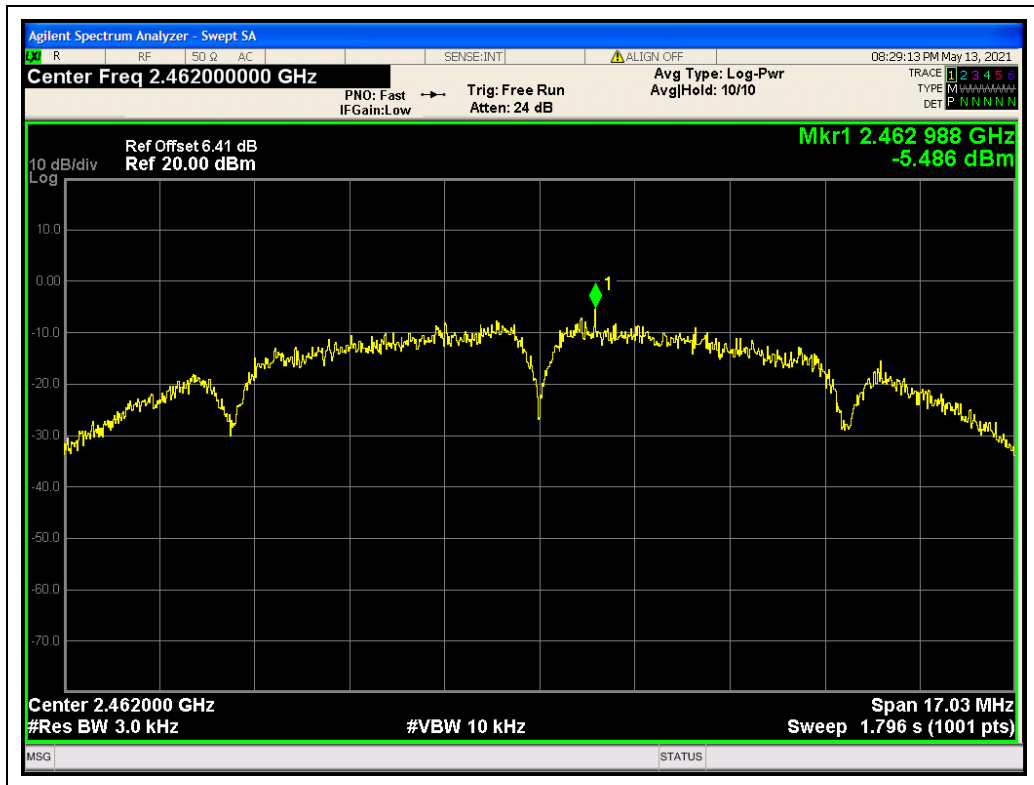
B. Test Plots:



(Channel = 1, 802.11b)



(Channel = 6, 802.11b)



(Channel = 11, 802.11b)

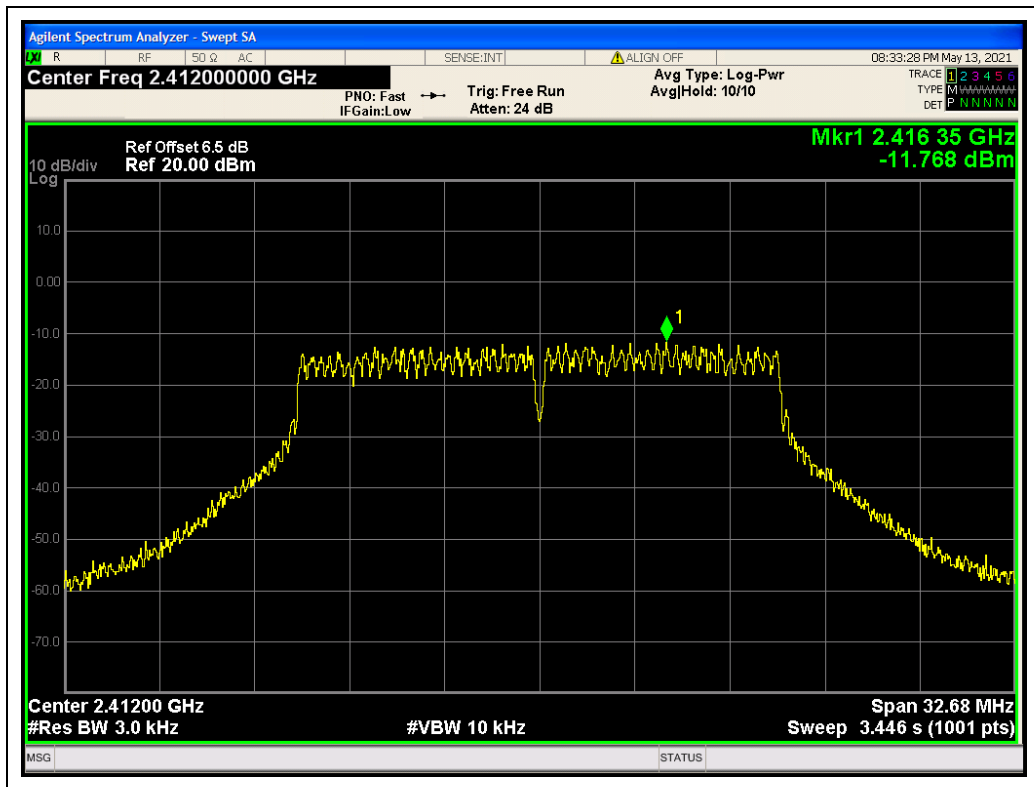


802.11g Test mode

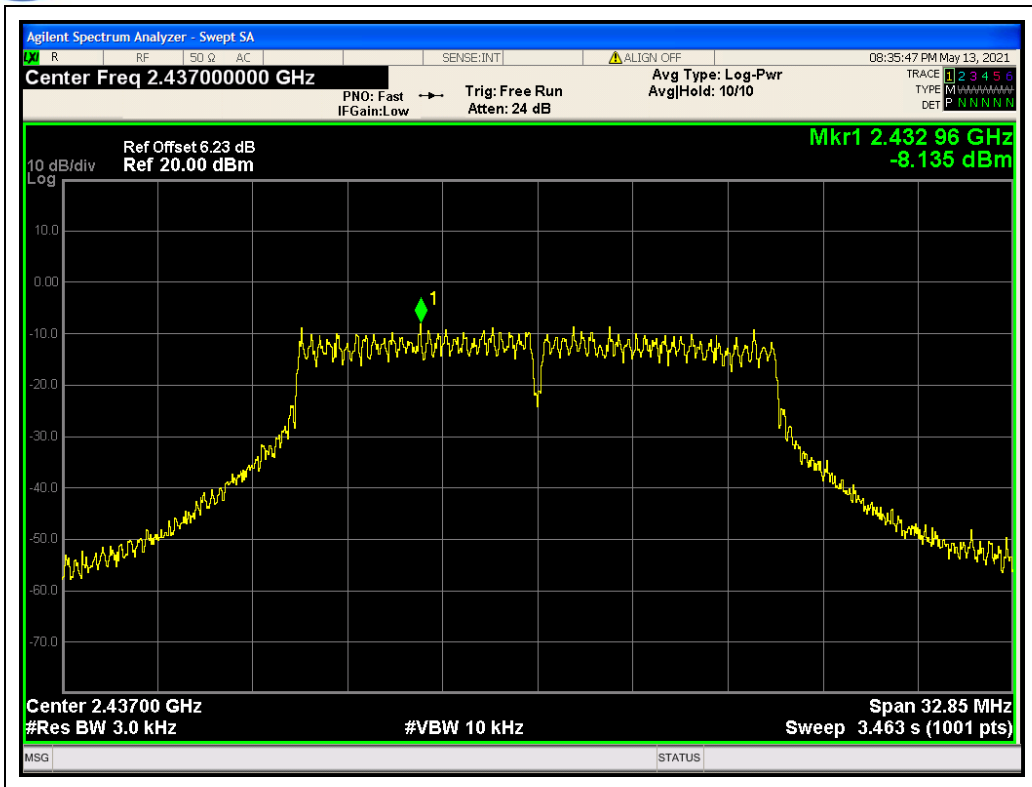
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-11.768	8	PASS
6	2437	-8.135	8	PASS
11	2462	-11.432	8	PASS

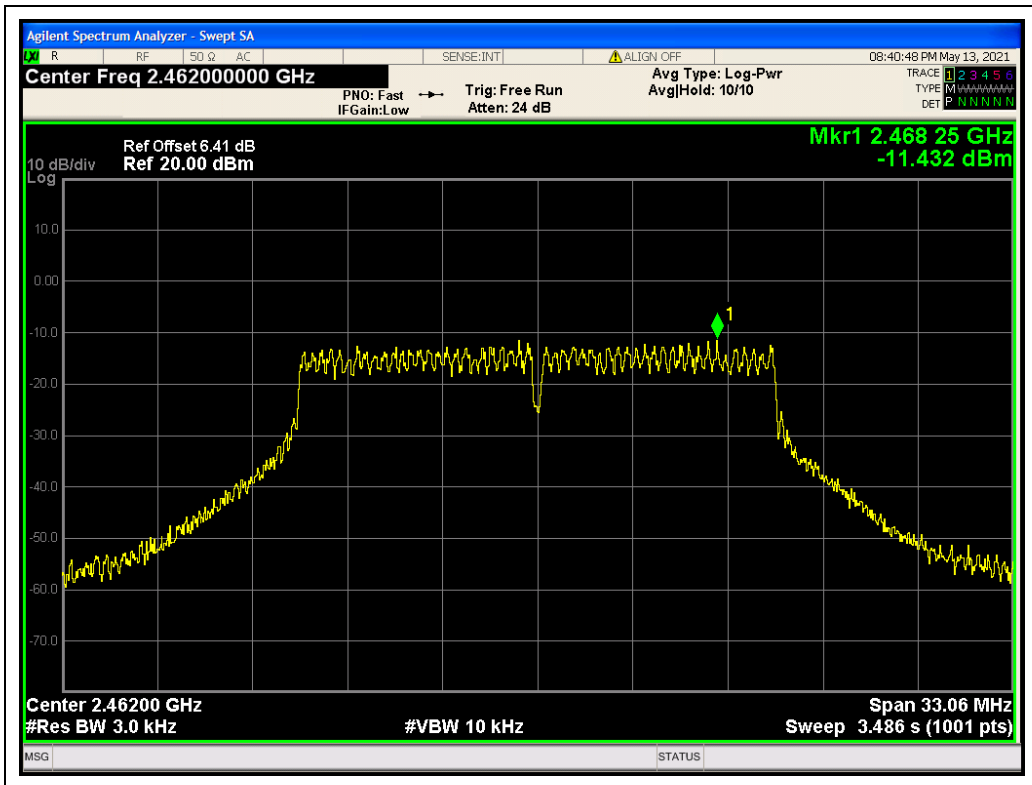
B. Test Plots:



(Channel = 1, 802.11g)



(Channel = 6, 802.11g)



(Channel = 11, 802.11g)

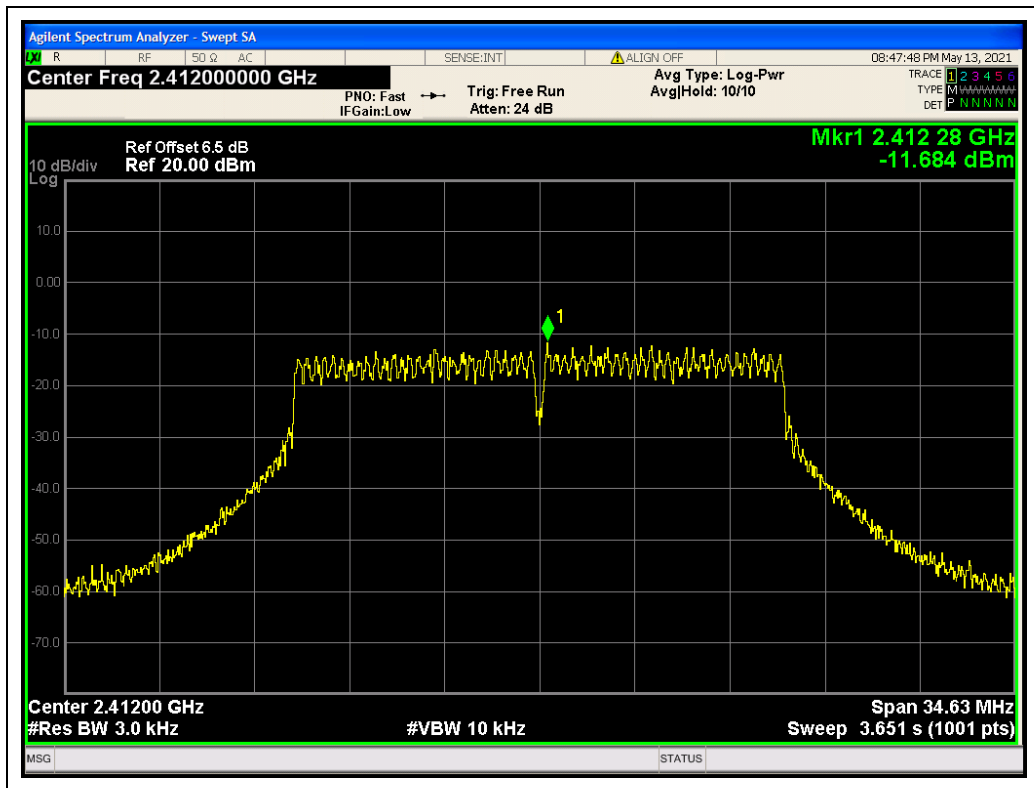


802.11n-20MHz Test mode

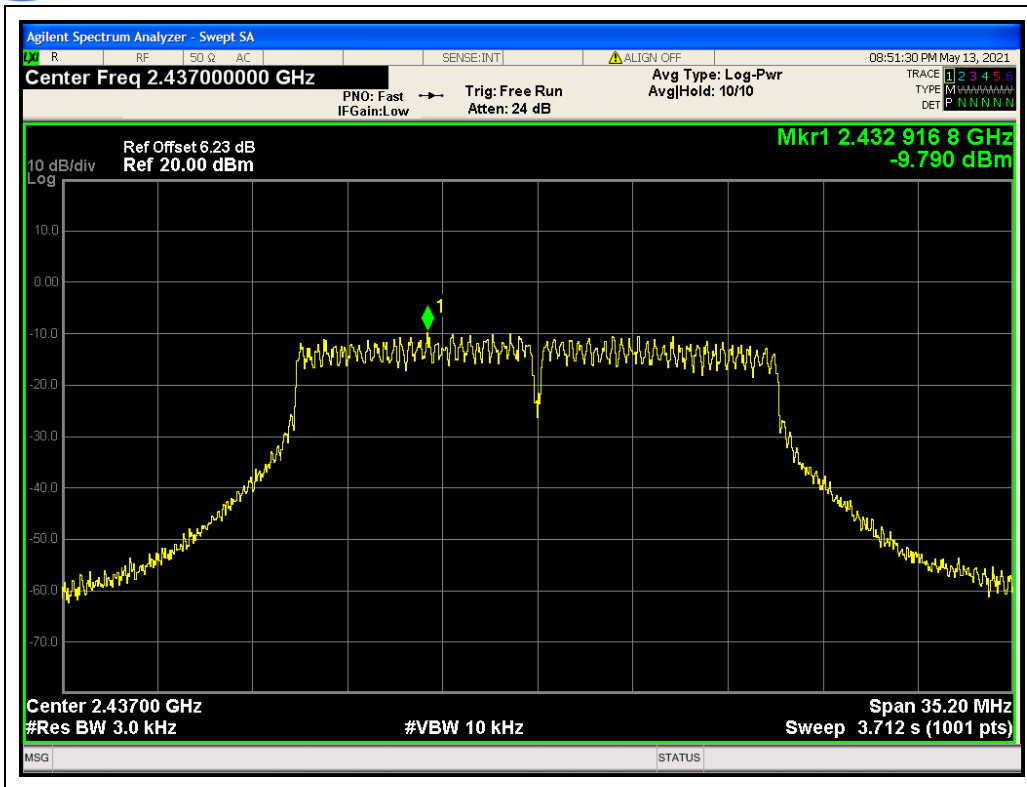
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-11.684	8	PASS
6	2437	-9.790	8	PASS
11	2462	-11.715	8	PASS

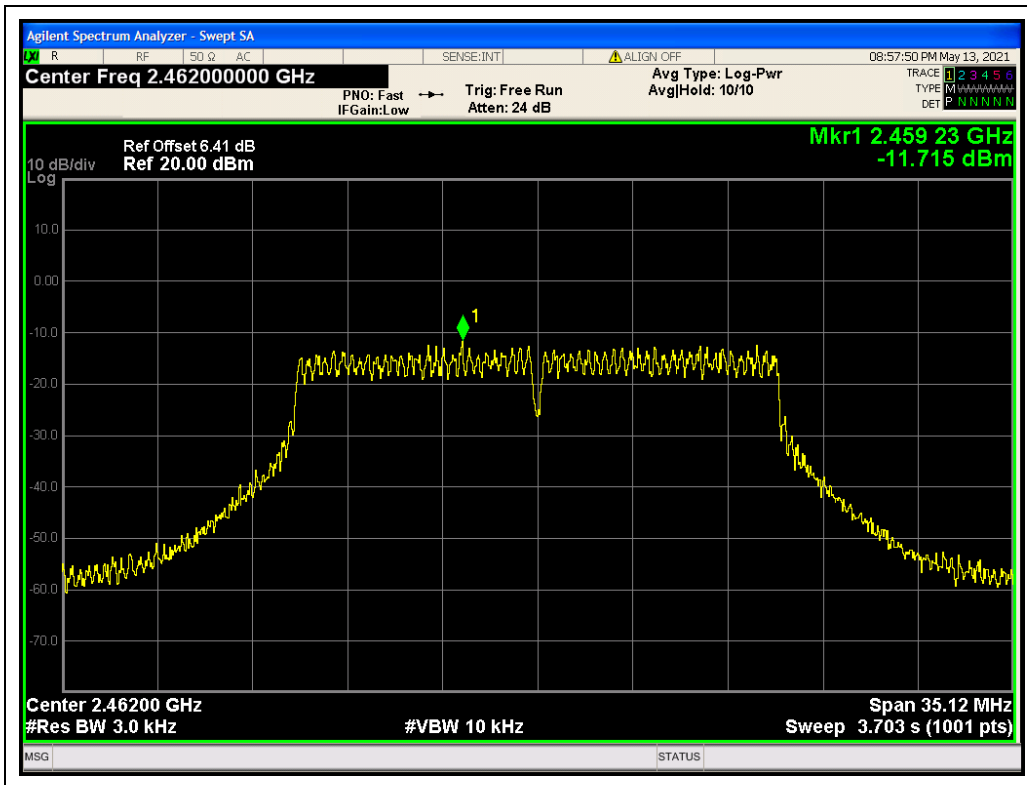
B. Test Plots:



(Channel = 1, 802.11n-20MHz)



(Channel = 6, 802.11n-20MHz)



(Channel = 11, 802.11n-20MHz)

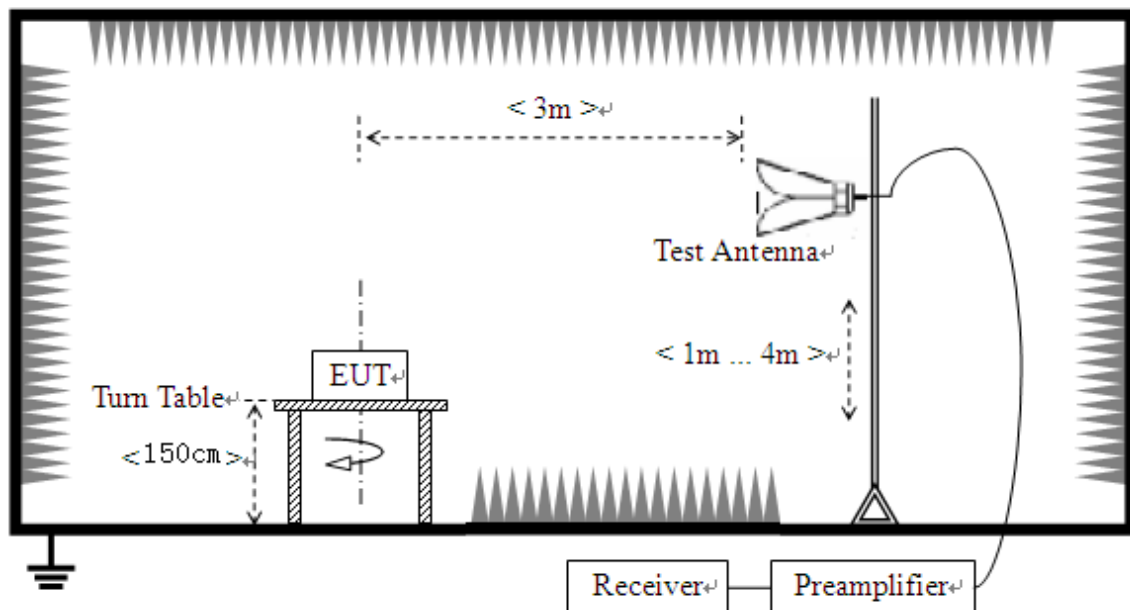
2.6. Restricted Frequency Bands

2.6.1. Requirement

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

2.6.2. Test Description

A. Test Setup



The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.

KDB 558074 D01 v05r02 Section 12.1 was used in order to prove compliance.



For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasipeak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

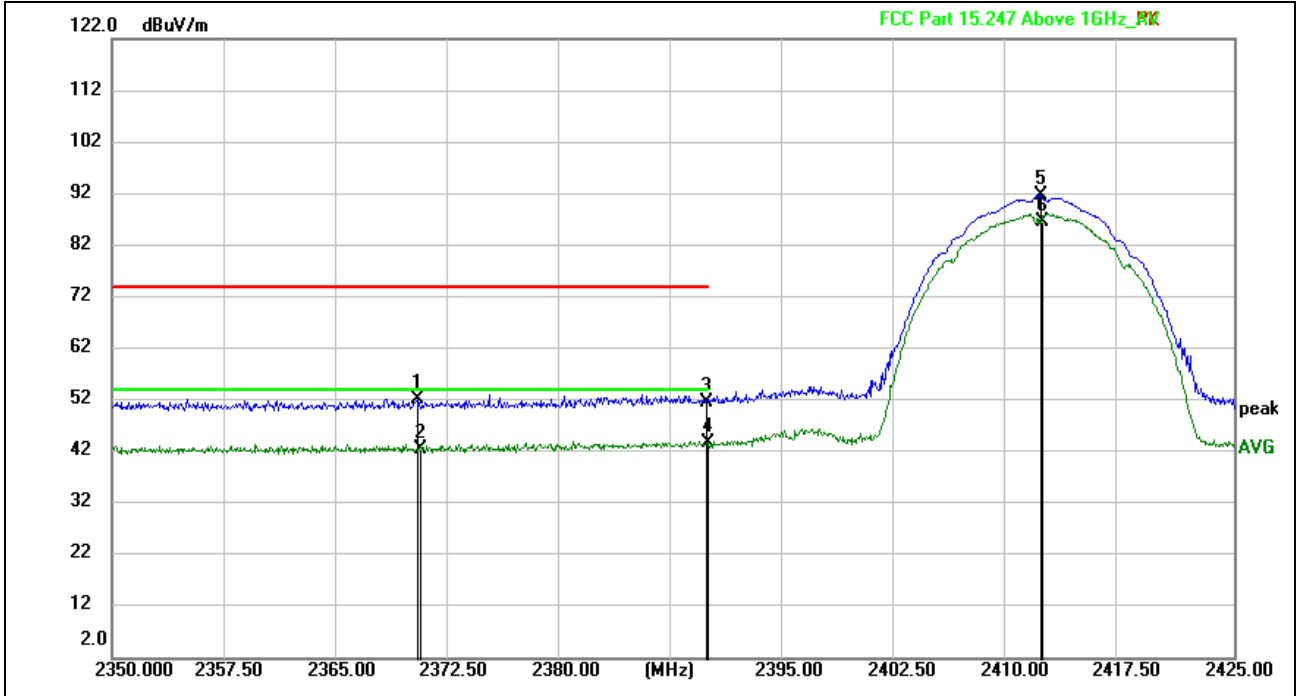
B. Equipments List:

Please refer ANNEX B(4).



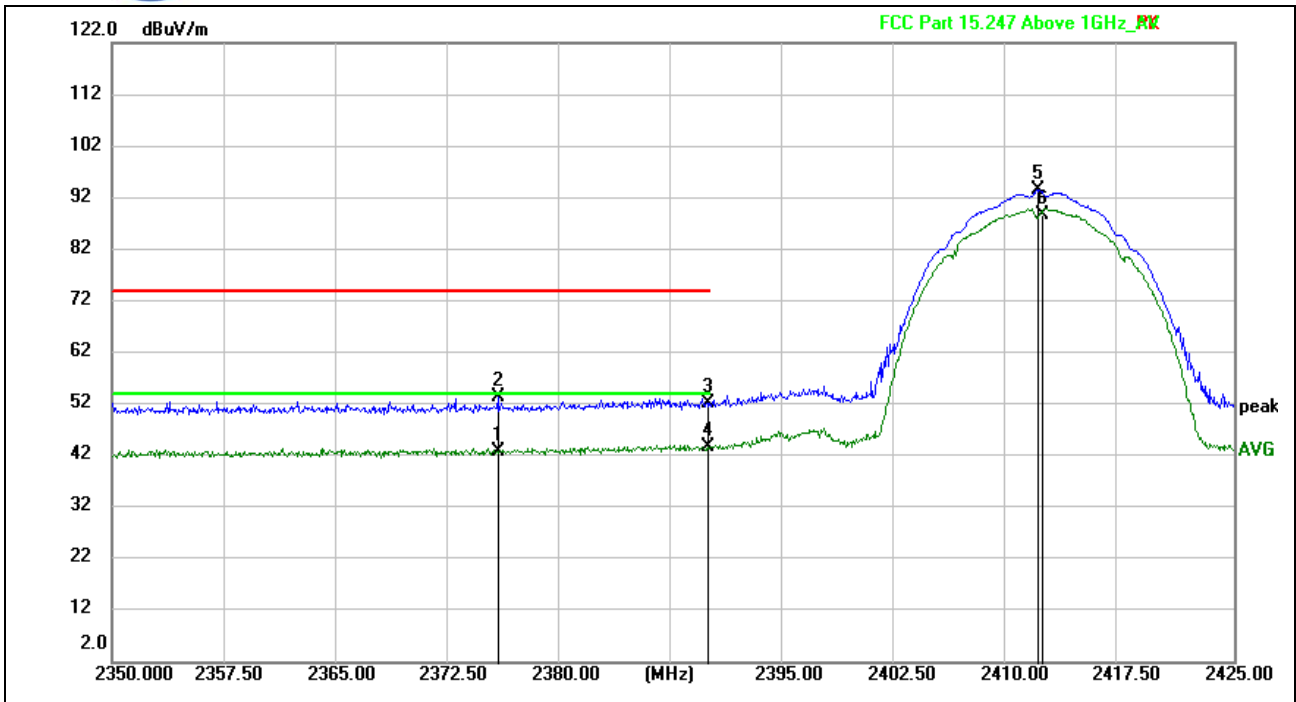
2.6.3. Test Result

802.11b Test mode



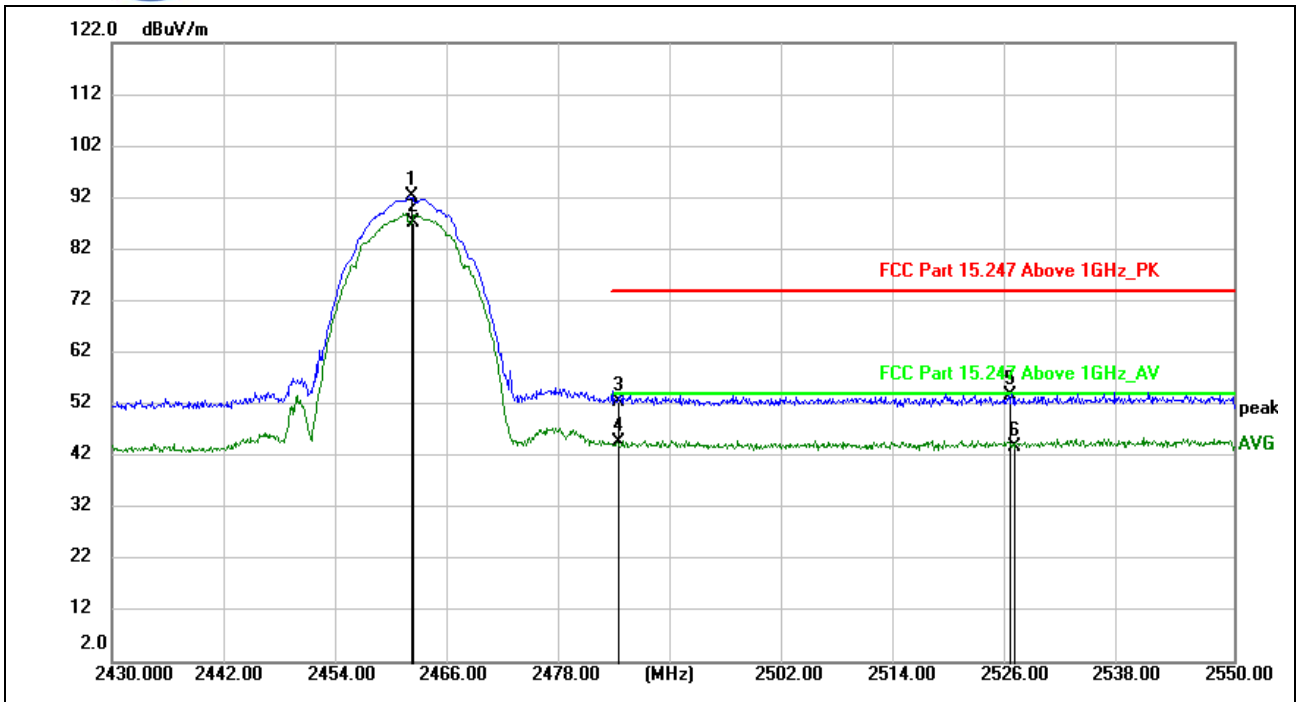
(802.11b _2412MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2370.452	12.19	40.15	52.34	74.00	-21.66	peak	H
2370.610	2.49	40.15	42.64	54.00	-11.36	AVG	H
2389.716	10.74	40.94	51.68	74.00	-22.32	peak	H
2389.866	2.93	40.95	43.88	54.00	-10.12	AVG	H
2412.100	50.55	41.12	91.67	---	---	peak	H
2412.168	45.38	41.12	86.50	---	---	AVG	H



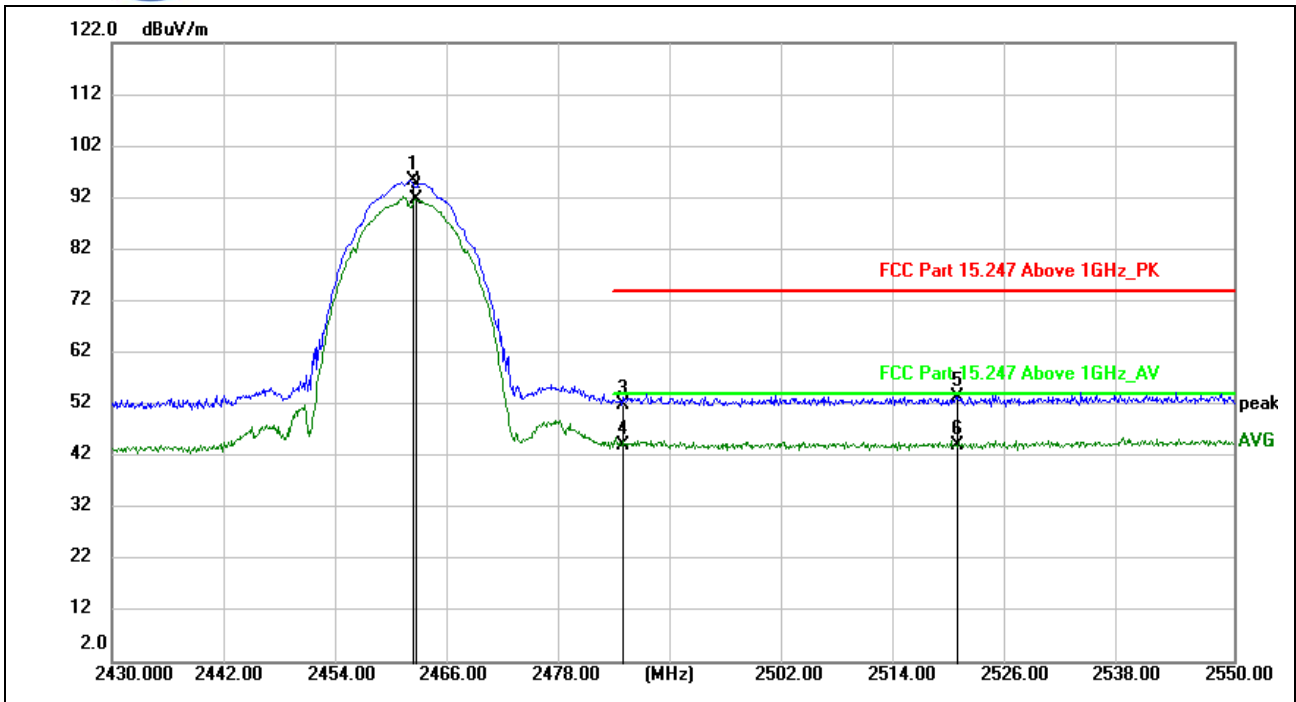
(802.11b _2412MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2375.838	2.69	40.20	42.89	54.00	-11.11	AVG	v
2375.860	13.21	40.20	53.41	74.00	-20.59	peak	v
2389.878	11.26	40.95	52.21	74.00	-21.79	peak	v
2389.878	2.83	40.95	43.78	54.00	-10.22	AVG	v
2411.912	52.45	41.13	93.58	---	---	peak	v
2412.149	47.64	41.12	88.76	---	---	AVG	v



(802.11b _2462MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2461.950	50.77	41.49	92.26	---	---	peak	H
2462.190	45.79	41.50	87.29	---	---	AVG	H
2484.084	10.77	41.75	52.52	74.00	-21.48	peak	H
2484.084	3.02	41.75	44.77	54.00	-9.23	AVG	H
2526.006	11.98	41.61	53.59	74.00	-20.41	peak	H
2526.378	2.19	41.63	43.82	54.00	-10.18	AVG	H

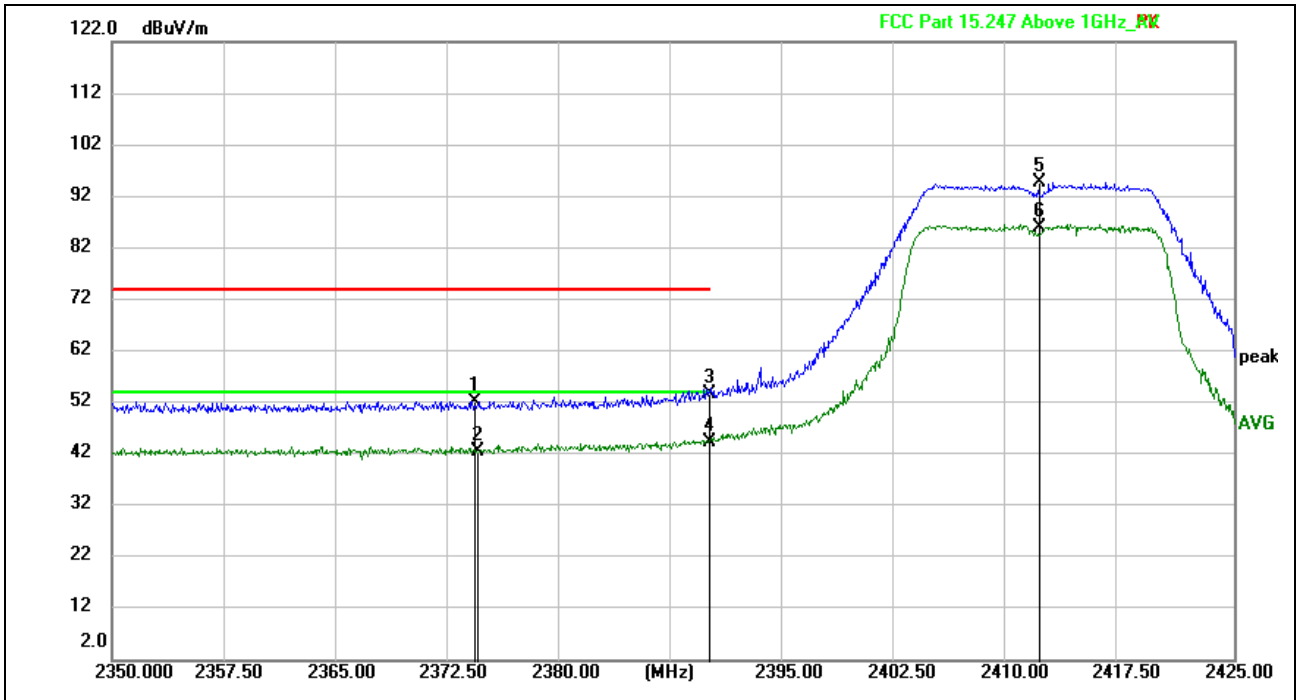


(802.11b _2462MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2462.094	53.85	41.49	95.34	---	---	peak	v
2462.520	50.07	41.51	91.58	---	---	AVG	v
2484.618	10.15	41.73	51.88	74.00	-22.12	peak	v
2484.678	2.28	41.73	44.01	54.00	-9.99	AVG	v
2520.438	11.76	41.55	53.31	74.00	-20.69	peak	v
2520.438	2.45	41.55	44.00	54.00	-10.00	AVG	v

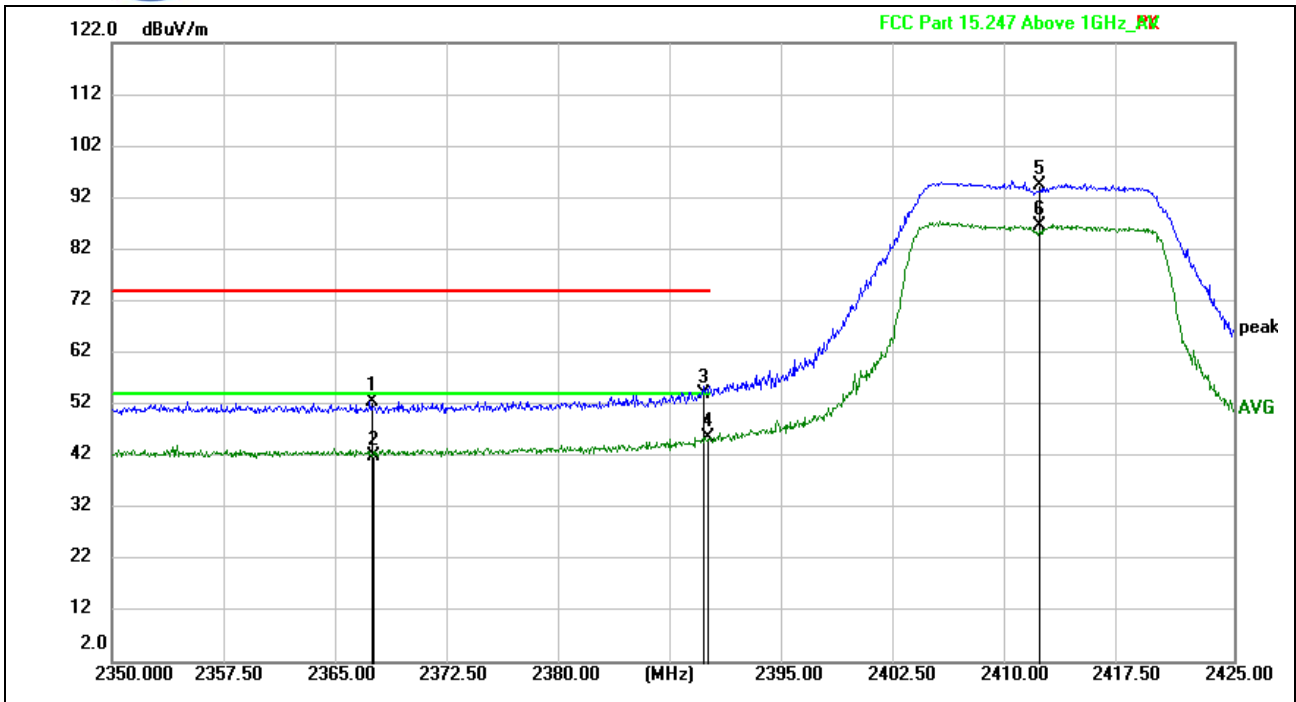


802.11g Test mode



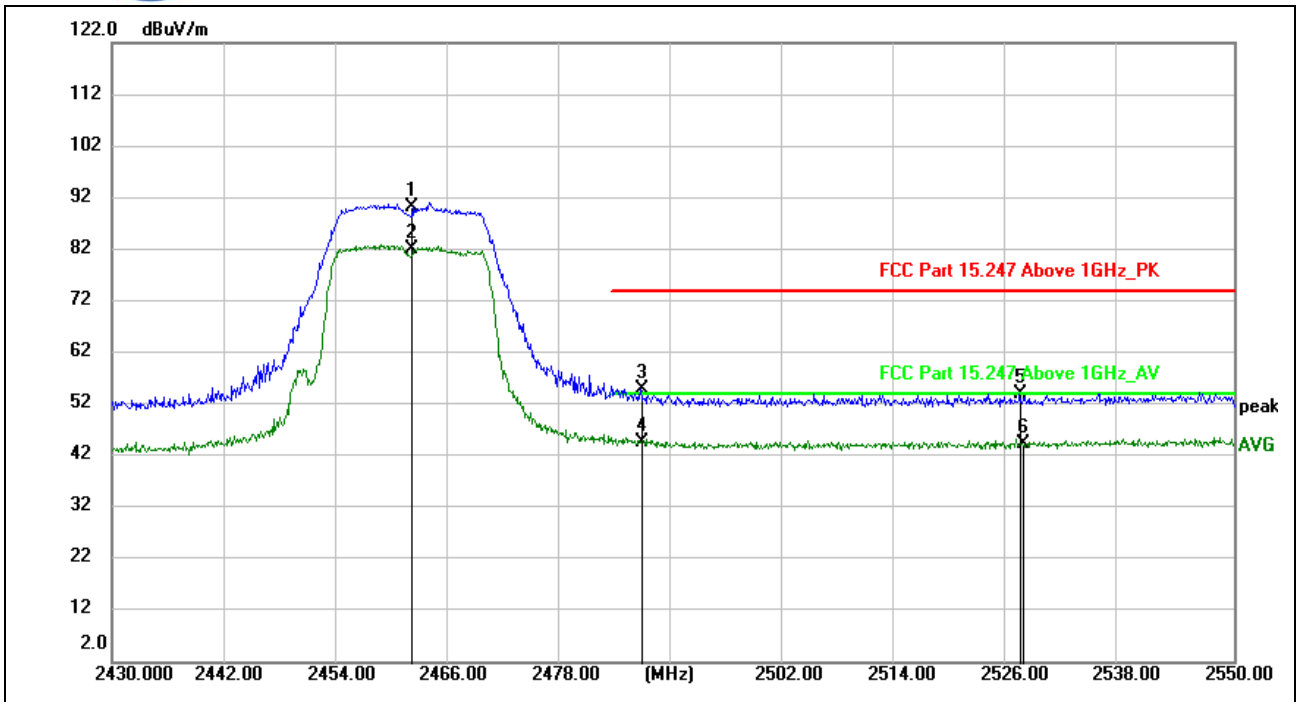
(802.11g _2412MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2374.165	12.11	40.18	52.29	74.00	-21.71	peak	H
2374.450	2.38	40.19	42.57	54.00	-11.43	AVG	H
2389.930	12.77	40.95	53.72	74.00	-20.28	peak	H
2389.930	3.47	40.95	44.42	54.00	-9.58	AVG	H
2412.000	53.73	41.13	94.86	---	---	peak	H
2412.000	44.71	41.13	85.84	---	---	AVG	H



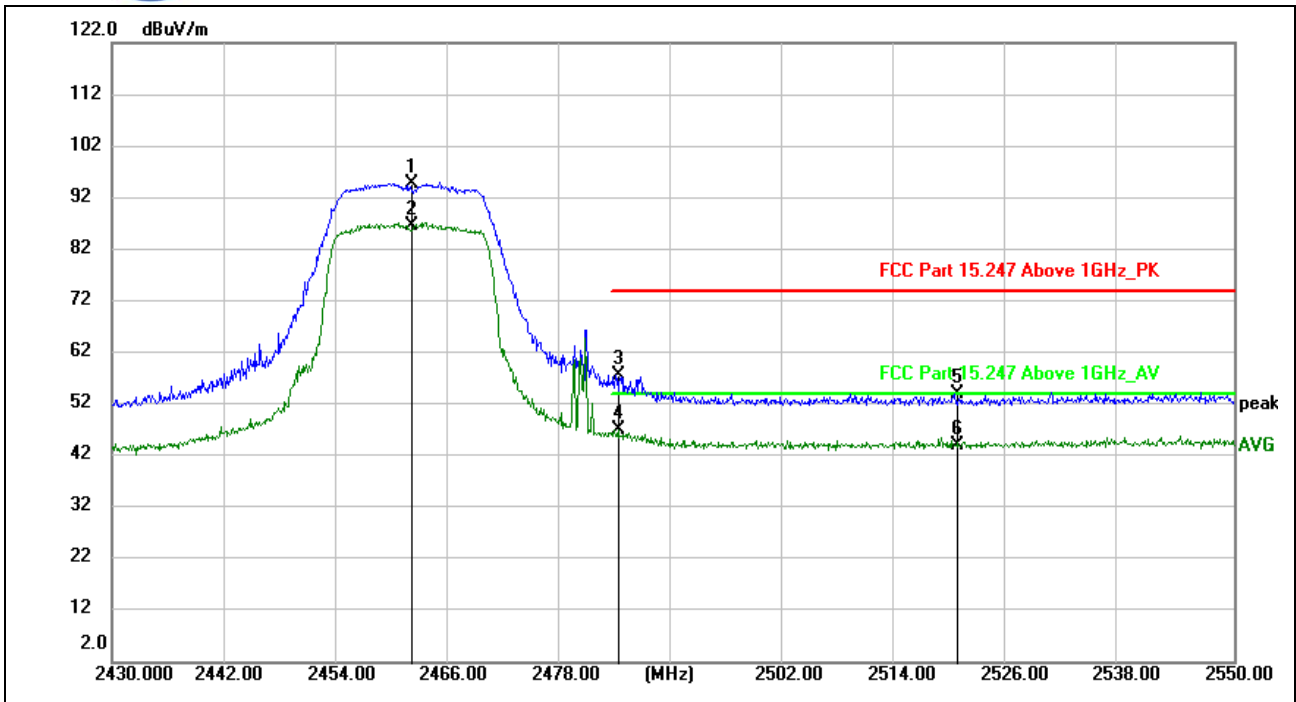
(802.11g _2412MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2367.374	12.25	40.11	52.36	74.00	-21.64	peak	v
2367.460	1.91	40.11	42.02	54.00	-11.98	AVG	v
2389.491	13.06	40.92	53.98	74.00	-20.02	peak	v
2389.769	4.62	40.94	45.56	54.00	-8.44	AVG	v
2412.000	53.23	41.13	94.36	---	---	peak	v
2412.000	45.39	41.13	86.52	---	---	AVG	v



(802.11g _2462MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2462.000	48.61	41.49	90.10	---	---	peak	H
2462.000	40.44	41.49	81.93	---	---	AVG	H
2486.640	13.37	41.67	55.04	74.00	-18.96	peak	H
2486.640	3.03	41.67	44.70	54.00	-9.30	AVG	H
2527.200	12.43	41.63	54.06	74.00	-19.94	peak	H
2527.440	2.76	41.63	44.39	54.00	-9.61	AVG	H

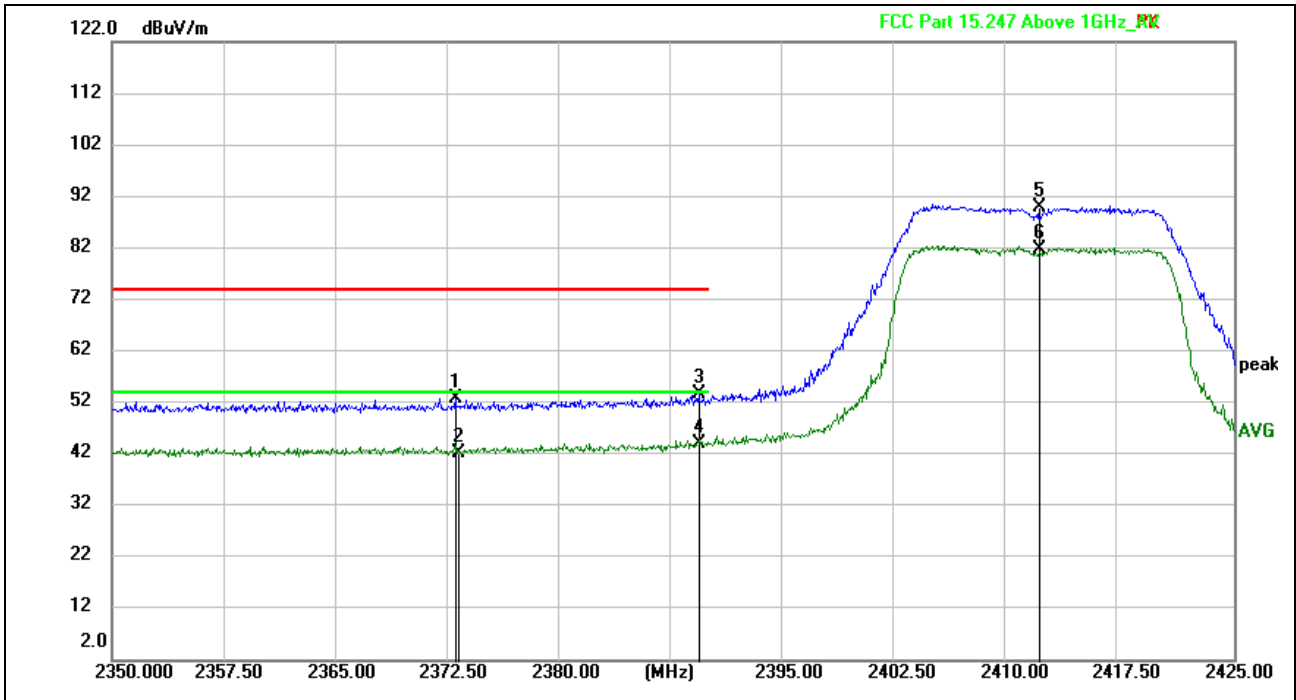


(802.11g _2462MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2462.000	53.34	41.49	94.83	---	---	peak	v
2462.000	45.15	41.49	86.64	---	---	AVG	v
2484.054	16.02	41.75	57.77	74.00	-16.23	peak	v
2484.198	5.26	41.74	47.00	54.00	-7.00	AVG	v
2520.300	12.33	41.55	53.88	74.00	-20.12	peak	v
2520.348	2.48	41.55	44.03	54.00	-9.97	AVG	v

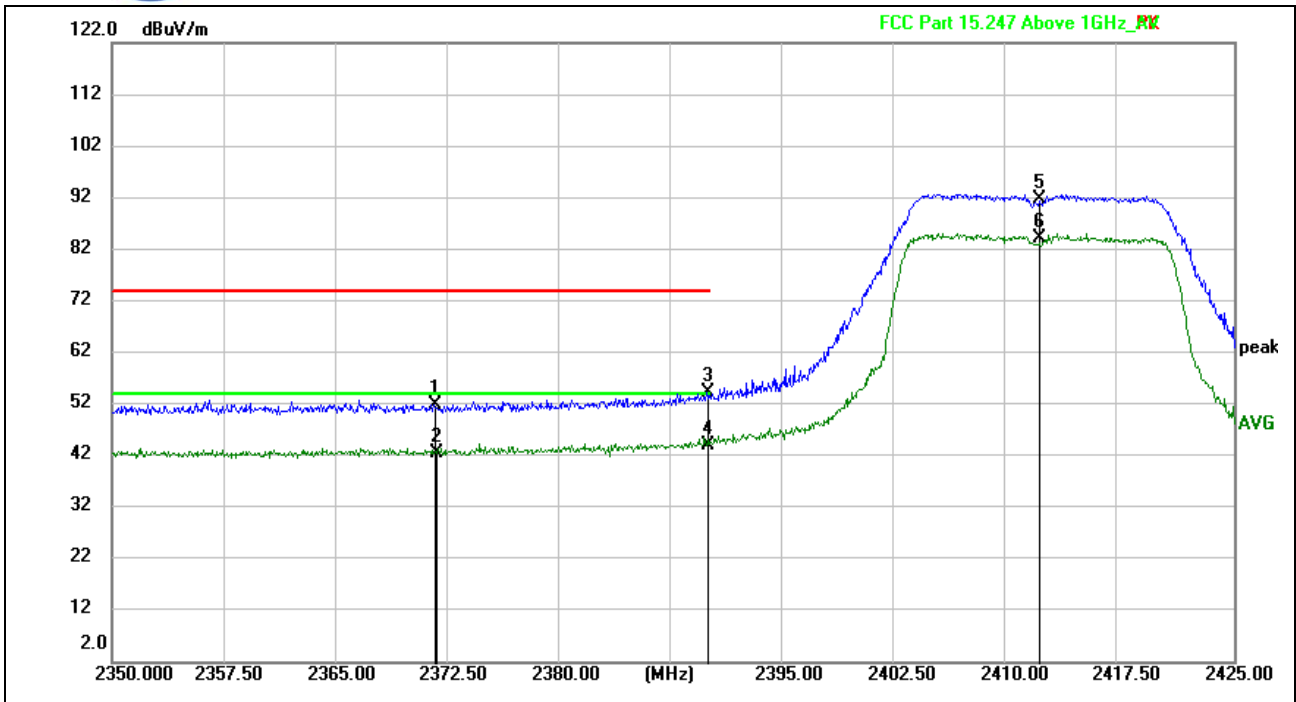


802.11n-20MHz Test mode



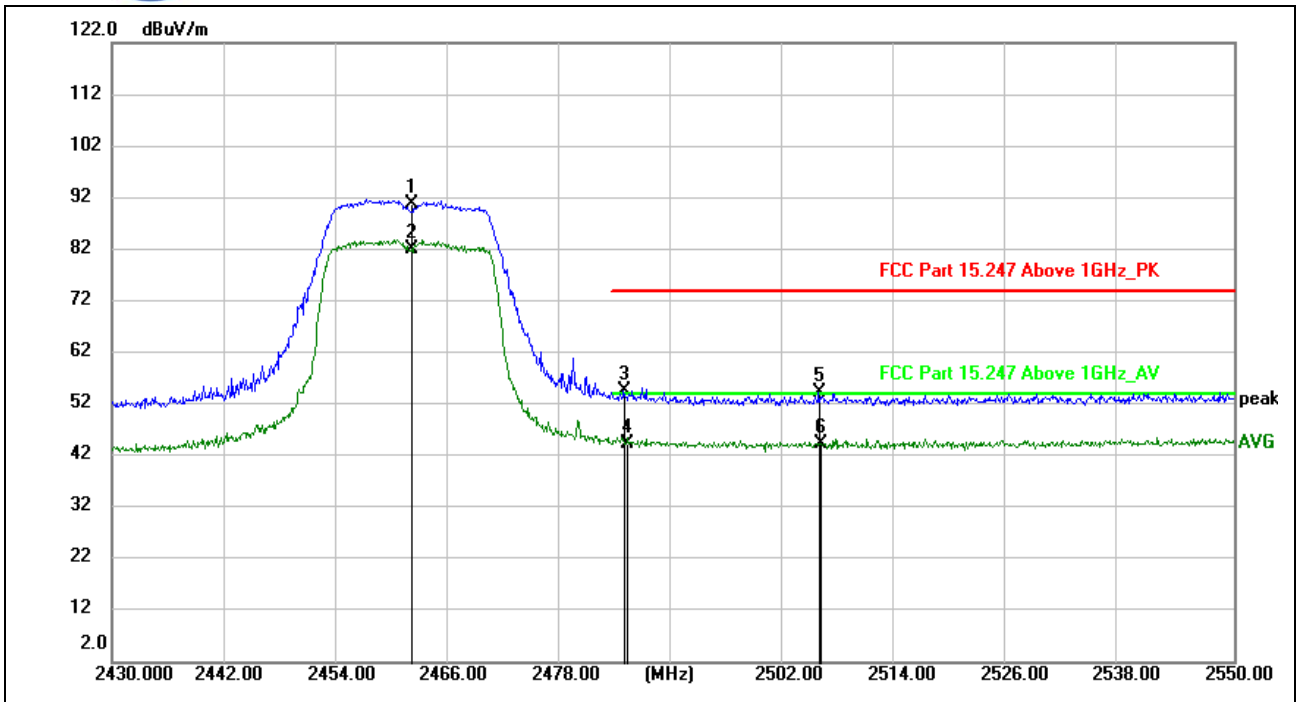
(802.11n_20M_2412MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2373.017	12.76	40.18	52.94	74.00	-21.06	peak	H
2373.156	2.19	40.18	42.37	54.00	-11.63	AVG	H
2389.262	12.87	40.91	53.78	74.00	-20.22	peak	H
2389.262	3.02	40.91	43.93	54.00	-10.07	AVG	H
2412.000	48.89	41.13	90.02	---	---	peak	H
2412.000	40.52	41.13	81.65	---	---	AVG	H



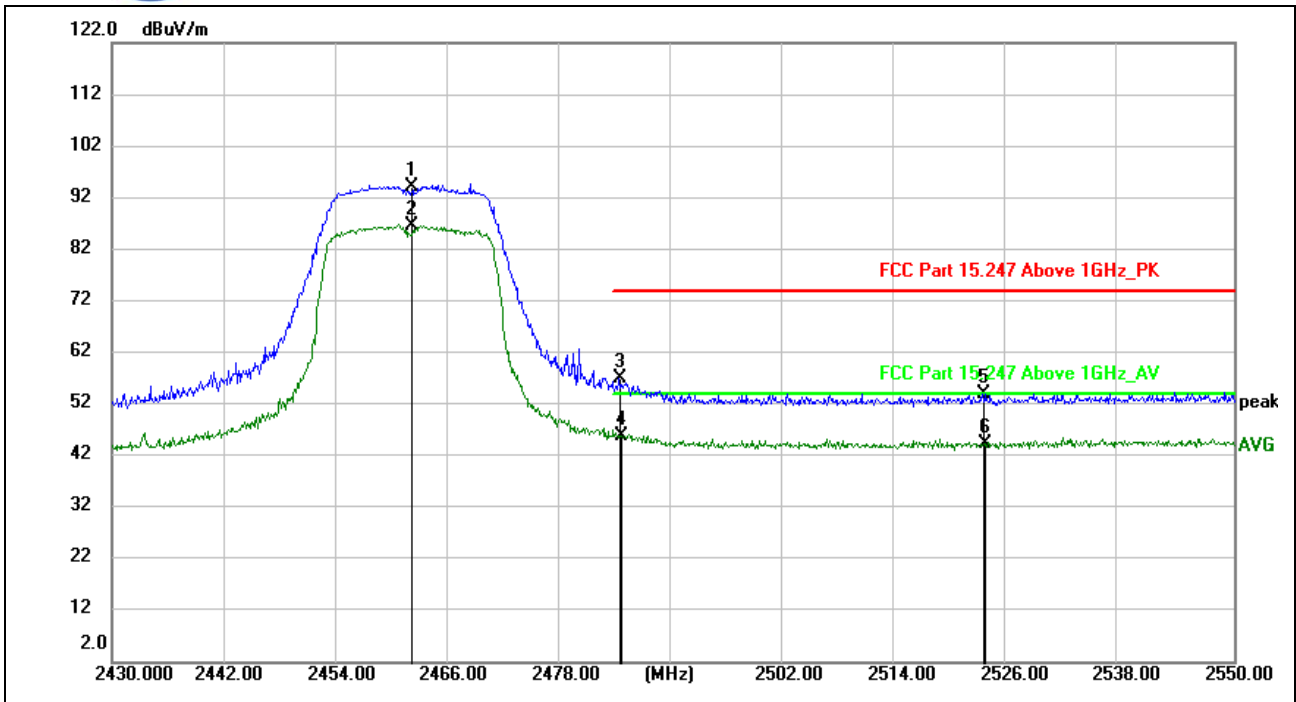
(802.11n_20M_2412MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2371.551	11.75	40.16	51.91	74.00	-22.09	peak	v
2371.742	2.33	40.16	42.49	54.00	-11.51	AVG	v
2389.840	13.25	40.95	54.20	74.00	-19.80	peak	v
2389.840	3.18	40.95	44.13	54.00	-9.87	AVG	v
2412.000	50.52	41.13	91.65	---	---	peak	v
2412.000	43.13	41.13	84.26	---	---	AVG	v



(802.11n_20M_2462MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2462.000	49.18	41.49	90.67	---	---	peak	H
2462.000	40.59	41.49	82.08	---	---	AVG	H
2484.816	12.97	41.72	54.69	74.00	-19.31	peak	H
2485.050	2.73	41.72	44.45	54.00	-9.55	AVG	H
2505.672	12.68	41.50	54.18	74.00	-19.82	peak	H
2505.816	2.72	41.50	44.22	54.00	-9.78	AVG	H



(802.11n_20M_2462MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2462.000	52.64	41.49	94.13	---	---	peak	v
2462.000	45.12	41.49	86.61	---	---	AVG	v
2484.264	15.26	41.74	57.00	74.00	-17.00	peak	v
2484.474	4.17	41.73	45.90	54.00	-8.10	AVG	v
2523.198	12.53	41.58	54.11	74.00	-19.89	peak	v
2523.396	2.65	41.58	44.23	54.00	-9.77	AVG	v

2.7. Conducted Emission

2.7.1. Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

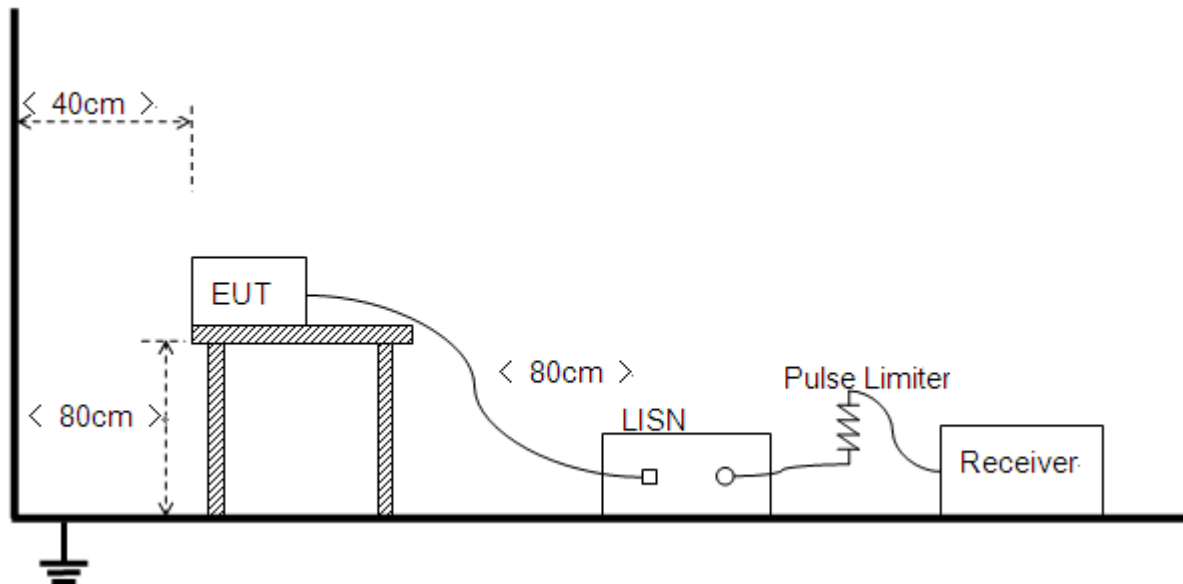
Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- (a) The lower limit shall apply at the band edges.
- (b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.7.2. Test Description

A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10 2013.



B. Equipments List:

Please refer ANNEX B(4).

2.7.3. Test Result

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

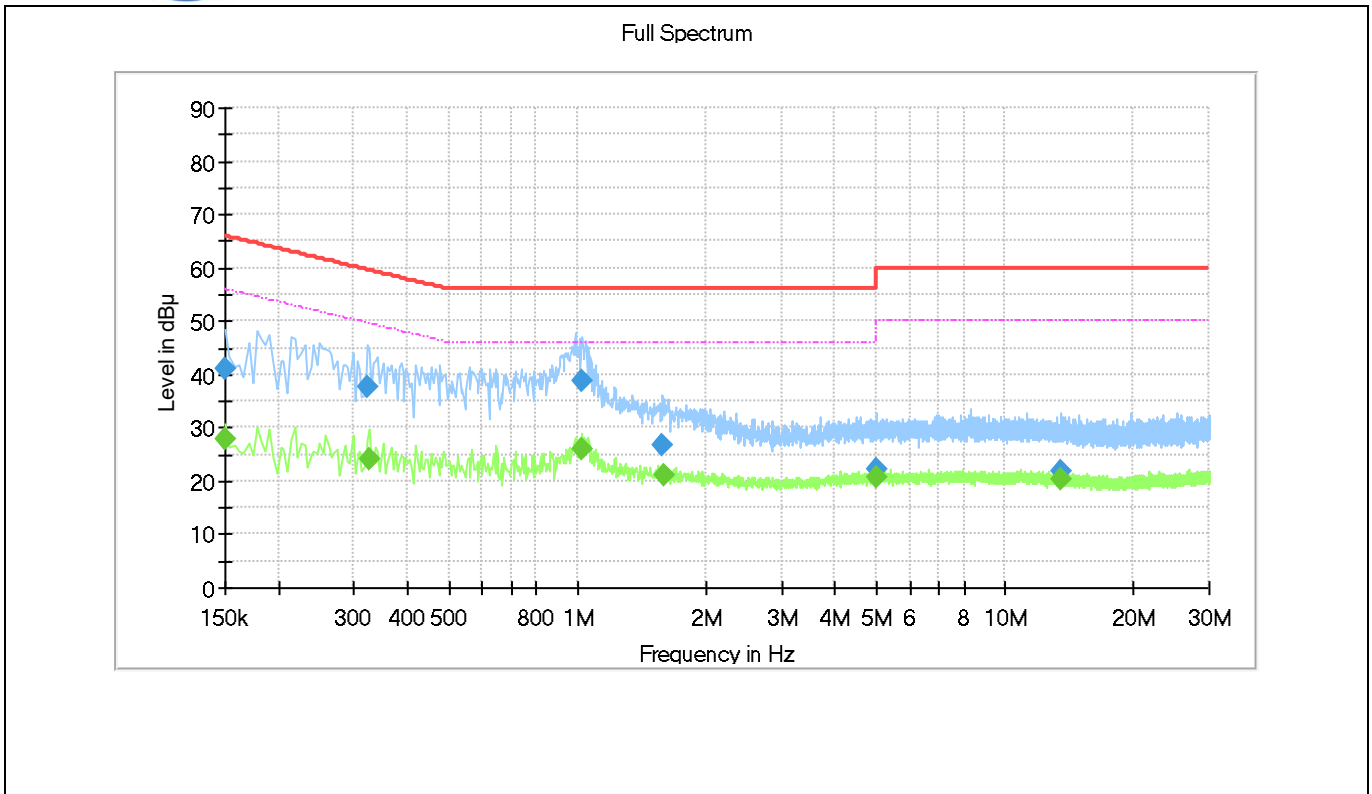
Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test setup:

The EUT configuration of the emission tests is EUT+Wlan Link.

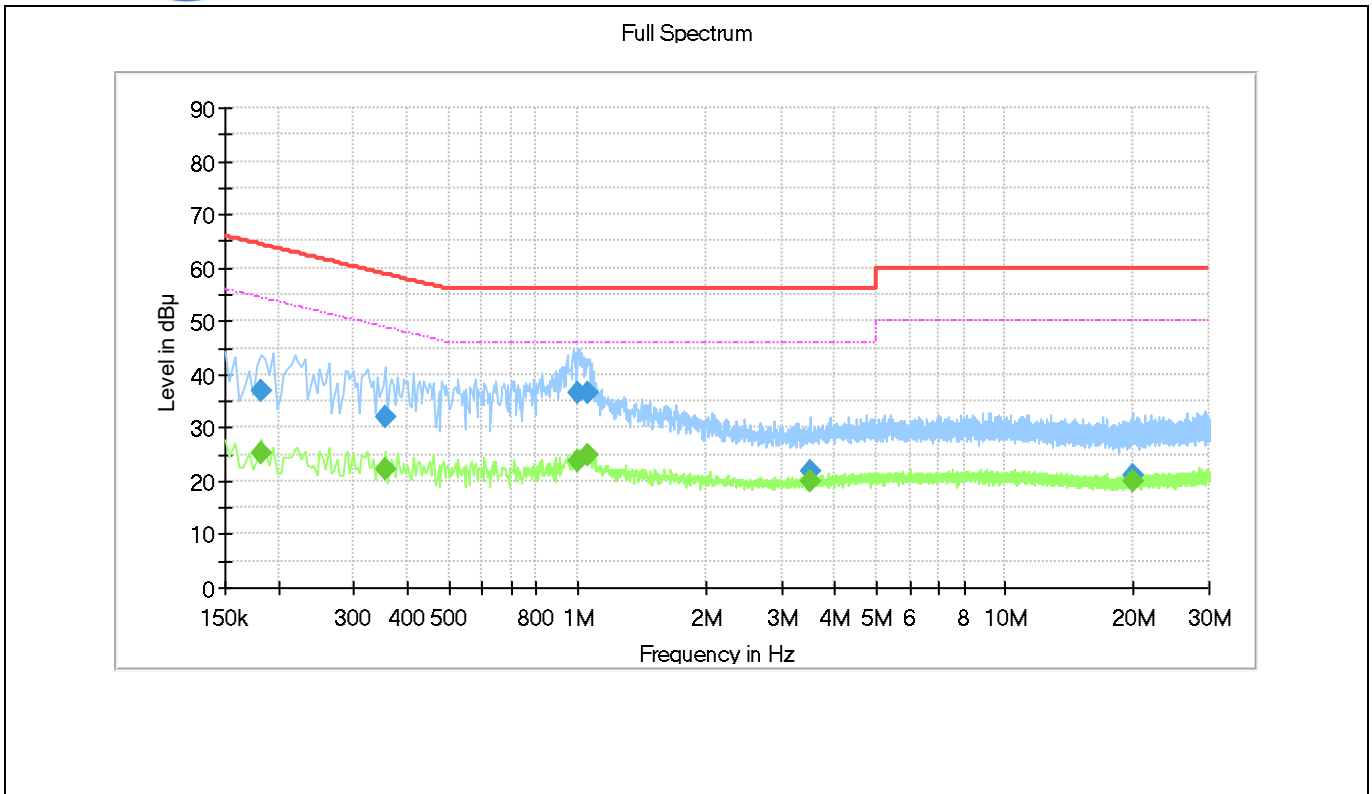
Note: The test voltage is AC 120V/60Hz.

B. Test Plots:



(Plot A: L Phase)

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.150000	---	27.90	56.00	28.10	L1	10.2
0.150000	41.18	---	66.00	24.82	L1	10.2
0.322000	37.56	---	59.66	22.09	L1	10.2
0.326000	---	24.14	49.55	25.41	L1	10.2
1.022000	---	26.16	46.00	19.84	L1	10.3
1.026000	38.81	---	56.00	17.19	L1	10.3
1.582000	26.75	---	56.00	29.25	L1	10.3
1.586000	---	20.94	46.00	25.06	L1	10.3
4.998000	22.28	---	56.00	33.72	L1	10.4
4.998000	---	20.61	46.00	25.39	L1	10.4
13.434000	---	20.31	50.00	29.69	L1	10.8
13.434000	21.71	---	60.00	38.29	L1	10.8



(Plot A: N Phase)

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.182000	---	25.28	54.39	29.11	N	10.2
0.182000	36.81	---	64.39	27.58	N	10.2
0.354000	---	22.08	48.87	26.79	N	10.2
0.354000	31.98	---	58.87	26.89	N	10.2
1.002000	---	23.80	46.00	22.20	N	10.3
1.002000	36.48	---	56.00	19.52	N	10.3
1.054000	36.35	---	56.00	19.65	N	10.3
1.054000	---	24.67	46.00	21.33	N	10.3
3.510000	21.68	---	56.00	34.32	N	10.3
3.510000	---	19.80	46.00	26.20	N	10.3
19.930000	---	19.87	50.00	30.13	N	10.8
19.930000	21.15	---	60.00	38.85	N	10.8



2.8. Radiated Emission

2.8.1. Requirement

According to FCC section 15.247(d), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

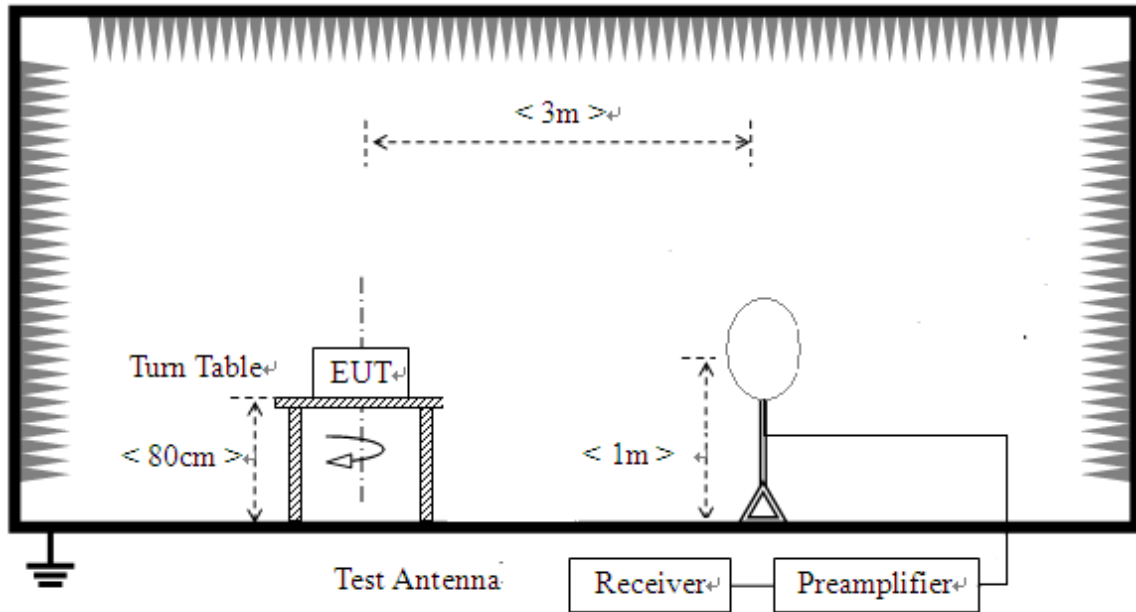
For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

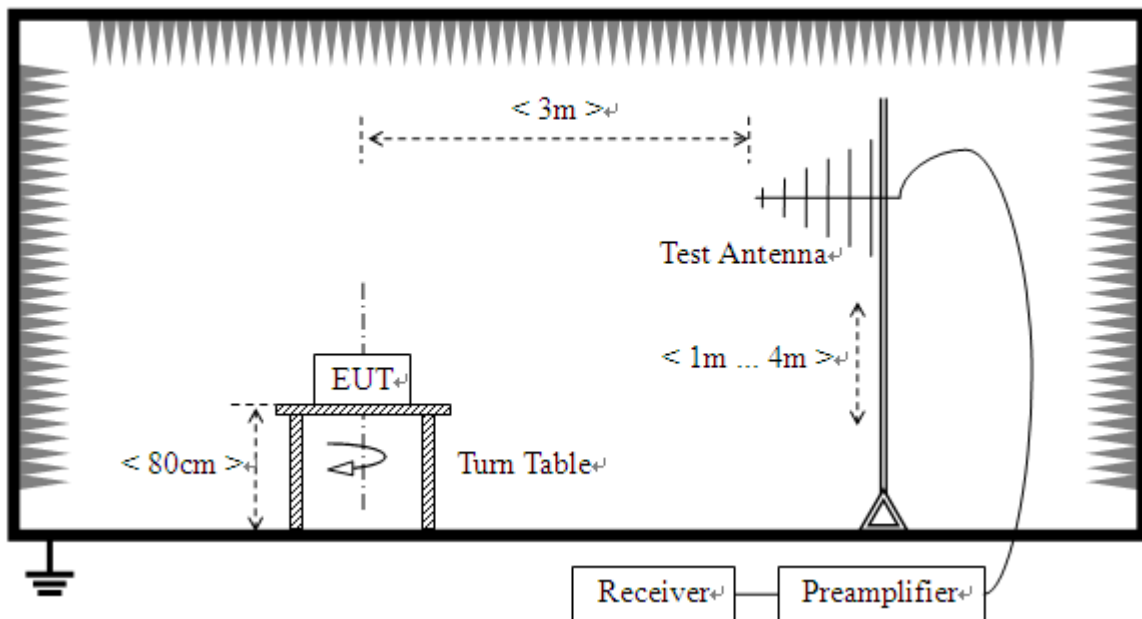
2.8.2. Test Description

A. Test Setup:

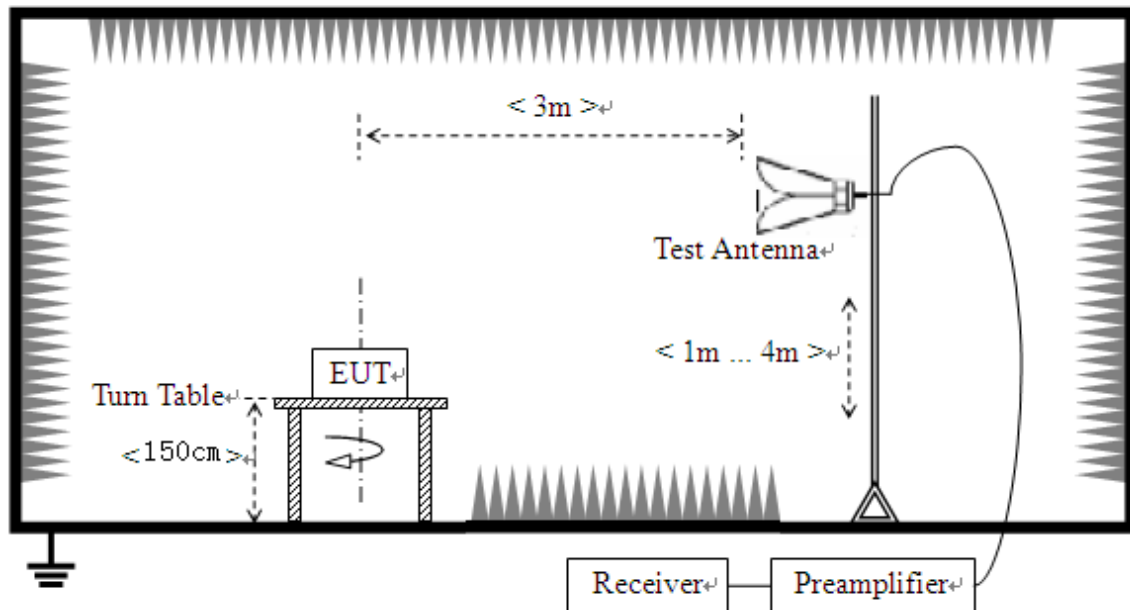
- 1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to 1GHz



3) For radiated emissions above 1GHz



The RF absorbing material used on the reference ground plane and on the turntable have a maximum height (thickness) of 30 cm (12 in) and have a minimum-rated attenuation of 20 dB at all frequencies from 1 GHz to 18 GHz. Test site have a minimum area of the ground plane covered with RF absorbing material as specified in Figure 6 of ANSI C63.4: 2014.

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.10 (2013). For radiated emissions below or equal to 1GHz, The EUT was set-up on insulator 80cm above the Ground Plane, For radiated emissions above 1GHz, The EUT was set-up on insulator 150cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading

For the Test Antenna:



(a) In the frequency range of 9kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.

(b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Place the test antenna at 3m away from area of the EUT, while keeping the test antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The test antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final test antenna elevation shall be that which maximizes the emissions. The test antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. The emission levels at both horizontal and vertical polarizations should be tested.

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was



tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasipeak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

A. Equipments List:

Please refer to ANNEX B(4).

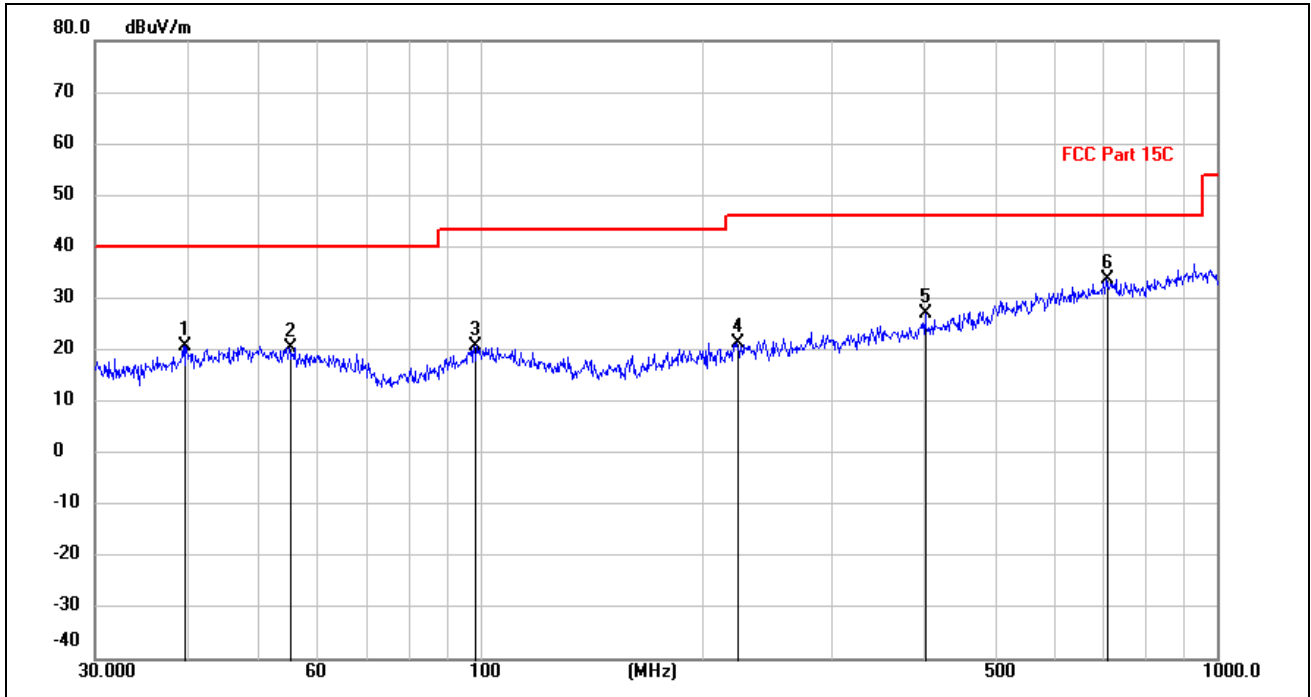


2.8.3. Test Result

Note1: For the frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

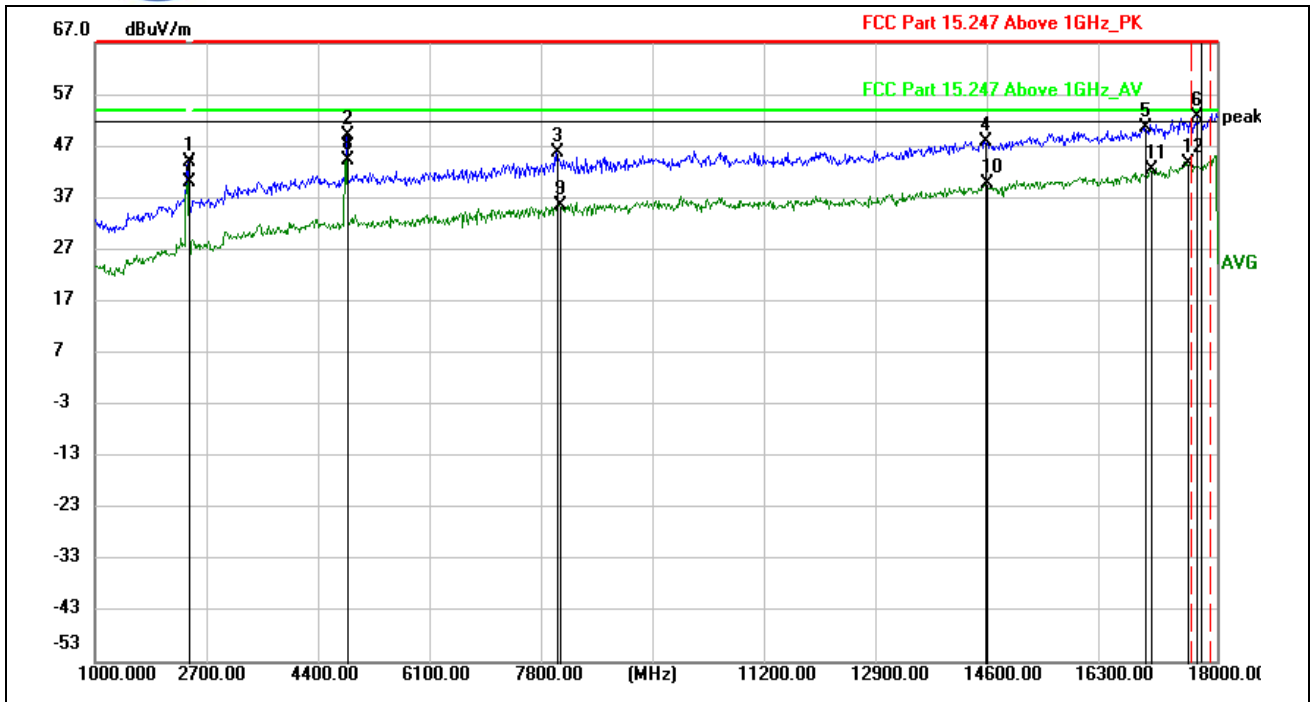
Note2: For the frequency, which started from 18GHz to 40GHz, was pre-scanned and the result which was 10dB lower than the limit was not recorded.

802.11b Test mode



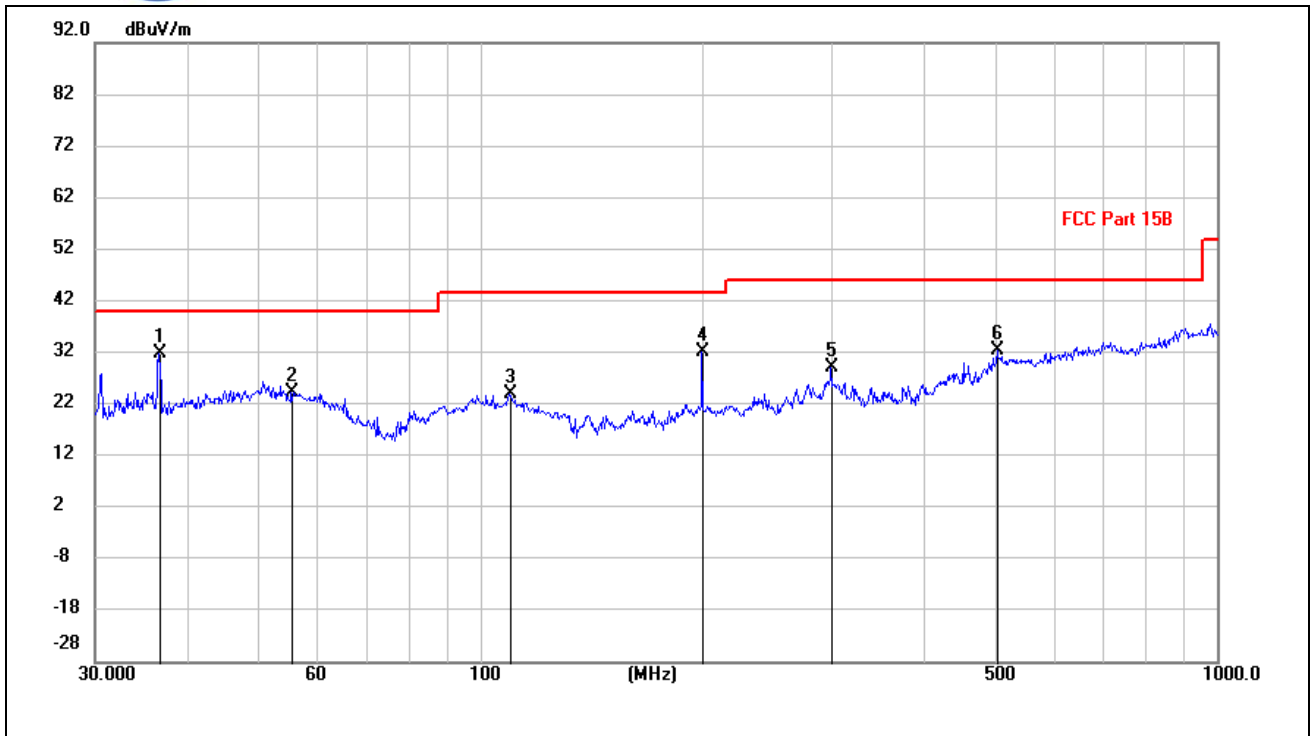
(802.11b _2412MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
39.5896	5.81	15.08	20.89	40.00	-19.11	peak	H
55.1337	5.32	15.09	20.41	40.00	-19.59	peak	H
98.3141	7.09	13.80	20.89	43.50	-22.61	peak	H
223.0675	6.95	14.32	21.27	46.00	-24.73	peak	H
403.0380	7.70	19.45	27.15	46.00	-18.85	peak	H
706.9477	8.73	24.93	33.66	46.00	-12.34	peak	H



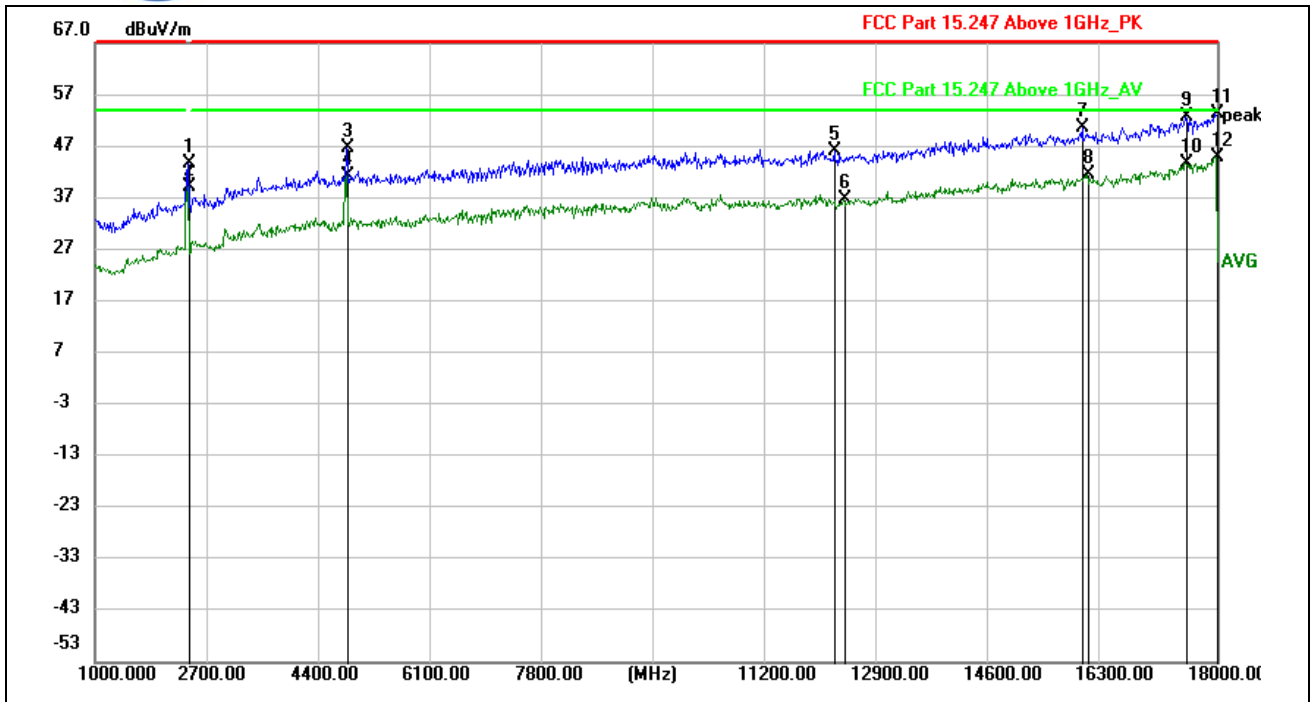
(802.11b _2412MHz, Antenna Horizontal, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2412.700	56.16	-12.15	44.01	---	---	peak	H
4824.150	52.89	-3.90	48.99	74.00	-25.01	peak	H
7991.250	46.21	-0.44	45.77	74.00	-28.23	peak	H
14485.250	40.87	7.10	47.97	74.00	-26.03	peak	H
16909.450	39.80	10.64	50.44	74.00	-23.56	peak	H
17705.900	39.49	13.25	52.74	74.00	-21.26	peak	H
2412.700	52.10	-12.15	39.95	---	---	AVG	H
4824.150	48.17	-3.90	44.27	54.00	-9.73	AVG	H
8049.050	36.05	-0.50	35.55	54.00	-18.45	AVG	H
14523.500	32.40	7.37	39.77	54.00	-14.23	AVG	H
16999.550	32.12	10.40	42.52	54.00	-11.48	AVG	H
17548.650	30.39	13.13	43.52	54.00	-10.48	AVG	H



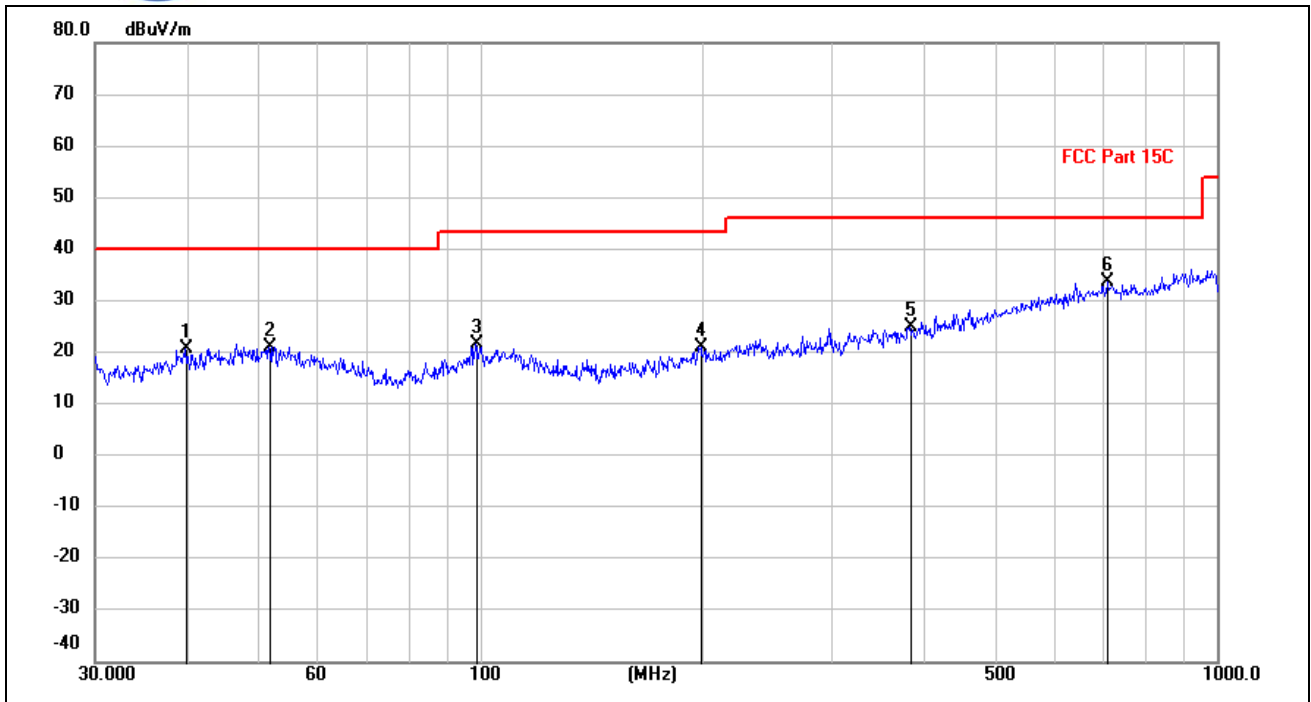
(802.11b _2412MHz, Antenna Vertical, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6567	18.35	13.41	31.76	40.00	-8.24	peak	V
55.5801	9.39	14.97	24.36	40.00	-15.64	peak	V
109.5459	9.18	14.92	24.10	43.50	-19.40	peak	V
200.0557	17.94	14.35	32.29	43.50	-11.21	peak	V
300.1566	11.75	17.48	29.23	46.00	-16.77	peak	V
503.2923	14.26	18.10	32.36	46.00	-13.64	peak	V



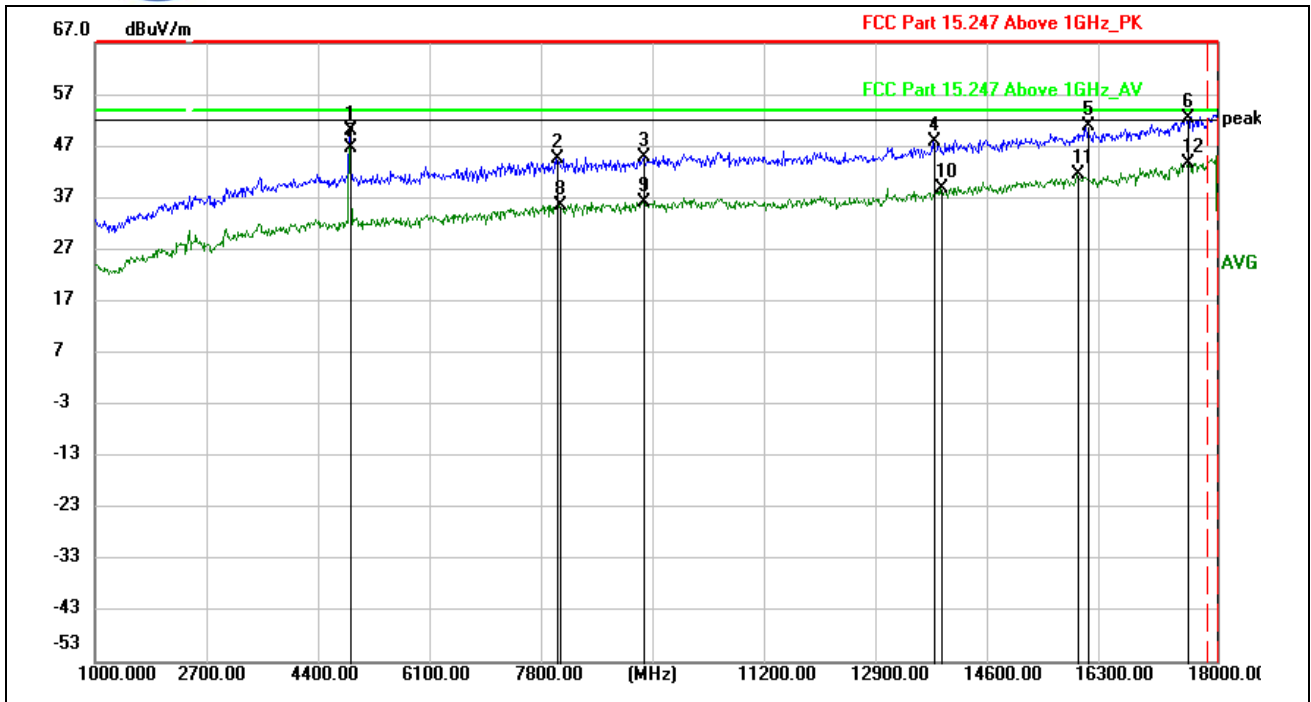
(802.11b _2412MHz, Antenna Vertical, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2412.700	55.65	-12.15	43.50	---	---	peak	V
2412.700	51.26	-12.15	39.11	---	---	AVG	V
4824.150	50.51	-3.90	46.61	74.00	-27.39	peak	V
4824.150	45.00	-3.90	41.10	54.00	-12.90	AVG	V
12216.600	43.00	3.05	46.05	74.00	-27.95	peak	V
12364.500	33.59	3.19	36.78	54.00	-17.22	AVG	V
15973.600	40.14	10.41	50.55	74.00	-23.45	peak	V
16039.050	30.51	10.95	41.46	54.00	-12.54	AVG	V
17539.300	38.82	13.77	52.59	74.00	-21.41	peak	V
17539.300	30.01	13.77	43.78	54.00	-10.22	AVG	V
17988.100	38.26	15.08	53.34	74.00	-20.66	peak	V
17995.750	29.82	15.09	44.91	54.00	-9.09	AVG	V



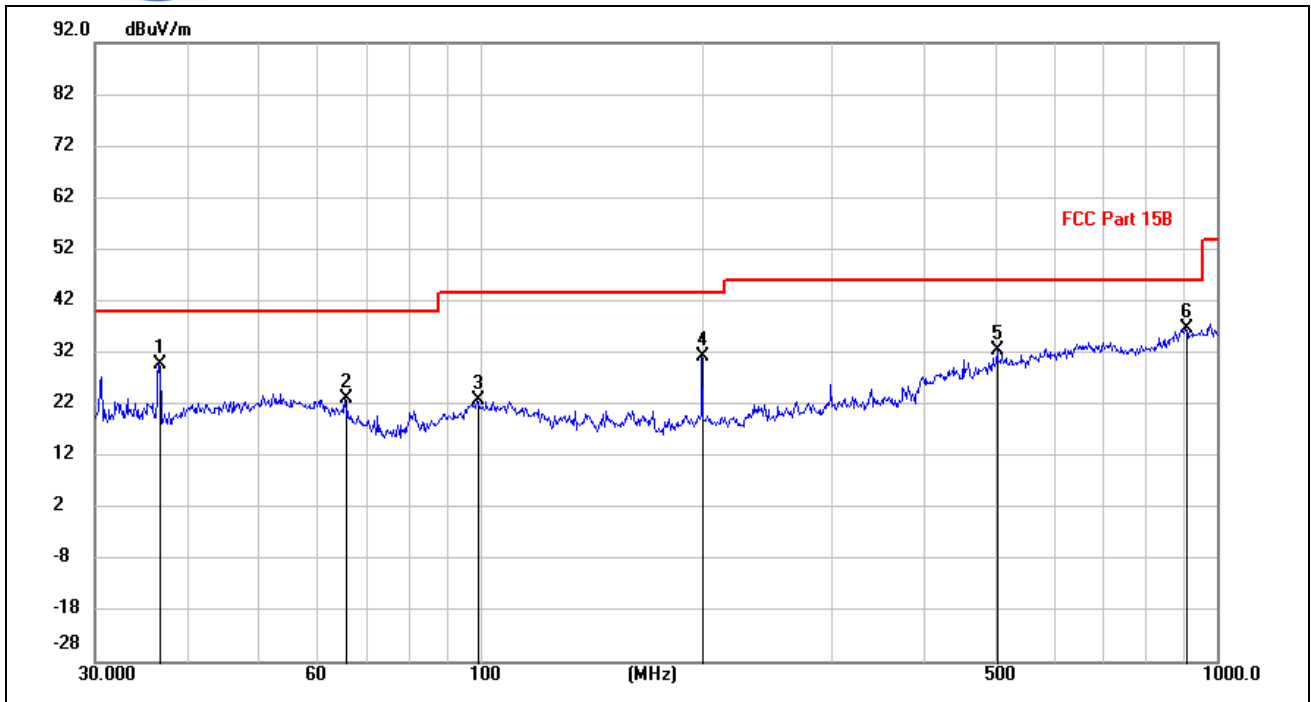
(802.11b _2437MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
39.9732	5.23	15.66	20.89	40.00	-19.11	peak	H
51.7613	5.48	15.57	21.05	40.00	-18.95	peak	H
98.5557	7.71	14.00	21.71	43.50	-21.79	peak	H
199.4253	6.76	14.27	21.03	43.50	-22.47	peak	H
383.7299	6.09	18.77	24.86	46.00	-21.14	peak	H
709.8043	8.72	24.97	33.69	46.00	-12.31	peak	H



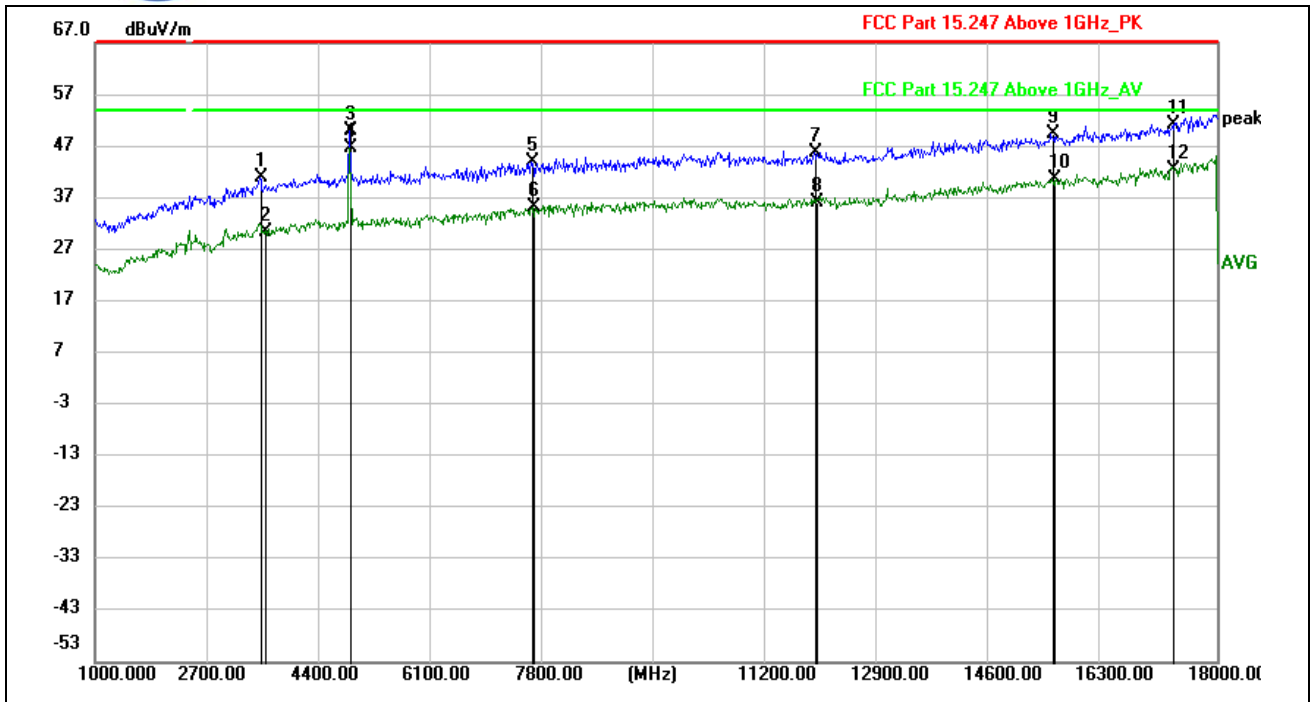
(802.11b _2437MHz, Antenna Horizontal, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
4873.450	54.03	-4.05	49.98	74.00	-24.02	peak	H
7990.400	7.91	36.59	44.50	74.00	-29.50	peak	H
9320.650	7.52	37.38	44.90	74.00	-29.10	peak	H
13701.550	8.40	39.33	47.73	74.00	-26.27	peak	H
16028.850	8.68	42.18	50.86	74.00	-23.14	peak	H
17545.250	8.38	44.10	52.48	74.00	-21.52	peak	H
4873.450	50.58	-4.05	46.53	54.00	-7.47	AVG	H
8053.300	-1.12	36.63	35.51	54.00	-18.49	AVG	H
9310.450	-1.30	37.37	36.07	54.00	-17.93	AVG	H
13826.500	-0.64	39.57	38.93	54.00	-15.07	AVG	H
15880.100	-0.01	41.66	41.65	54.00	-12.35	AVG	H
17545.250	-0.40	44.10	43.70	54.00	-10.30	AVG	H



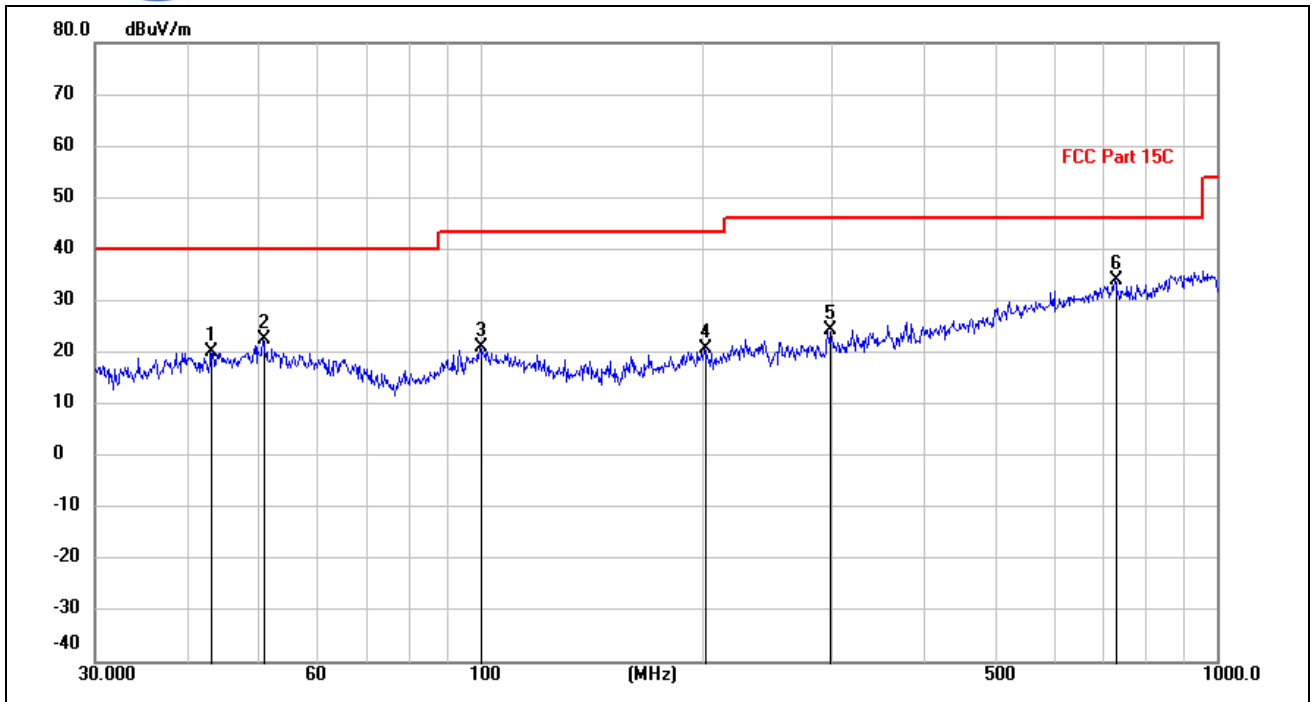
(802.11b _2437MHz, Antenna Vertical, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6567	16.35	13.41	29.76	40.00	-10.24	peak	V
65.7683	9.89	13.17	23.06	40.00	-16.94	peak	V
99.2493	8.28	14.57	22.85	43.50	-20.65	peak	V
200.0557	16.94	14.35	31.29	43.50	-12.21	peak	V
503.2923	14.26	18.10	32.36	46.00	-13.64	peak	V
908.0730	14.04	22.50	36.54	46.00	-9.46	peak	V



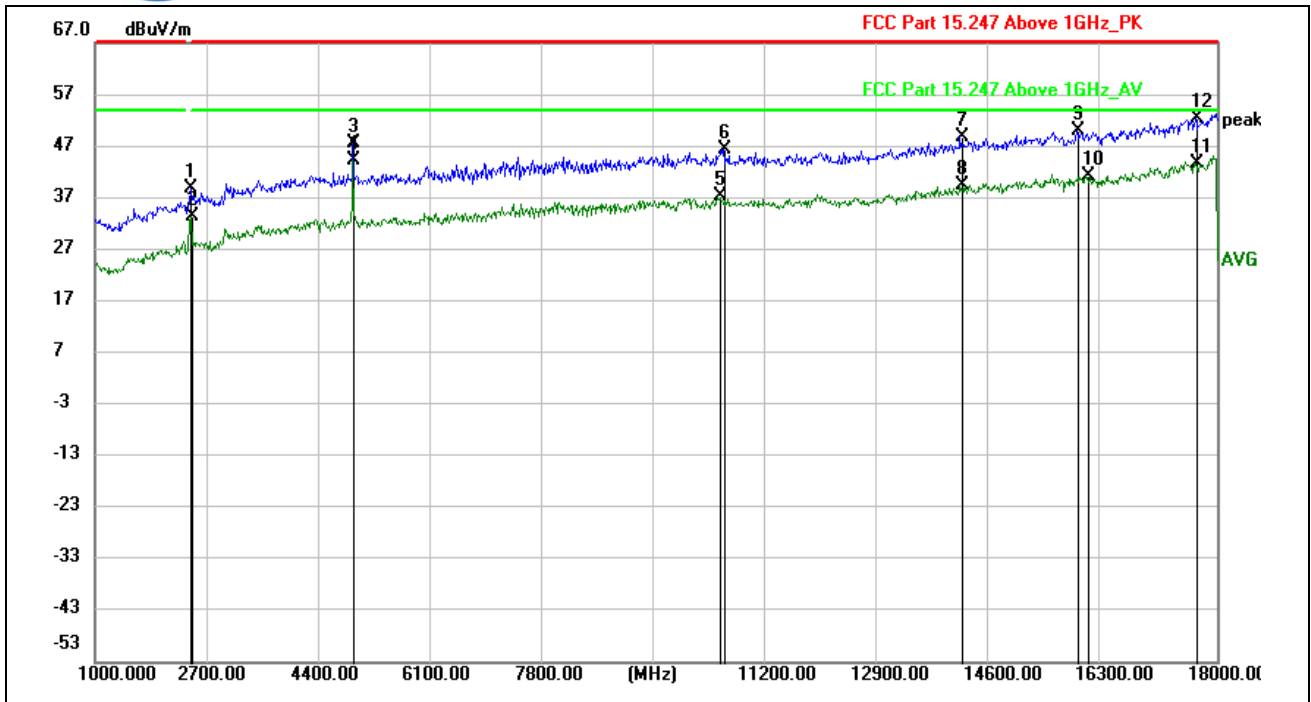
(802.11b _2437MHz, Antenna Vertical, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
3510.050	46.88	-6.11	40.77	74.00	-33.23	peak	V
3572.950	37.64	-7.13	30.51	54.00	-23.49	AVG	V
4873.450	54.03	-4.05	49.98	74.00	-24.02	peak	V
4873.450	50.58	-4.05	46.53	54.00	-7.47	AVG	V
7630.000	7.76	36.23	43.99	74.00	-30.01	peak	V
7632.550	-0.97	36.24	35.27	54.00	-18.73	AVG	V
11902.100	7.55	38.15	45.70	74.00	-28.30	peak	V
11946.300	-2.19	38.36	36.17	54.00	-17.83	AVG	V
15512.050	7.45	41.82	49.27	74.00	-24.73	peak	V
15522.250	-1.20	41.76	40.56	54.00	-13.44	AVG	V
17342.100	8.14	43.15	51.29	74.00	-22.71	peak	V
17342.100	-0.84	43.15	42.31	54.00	-11.69	AVG	V



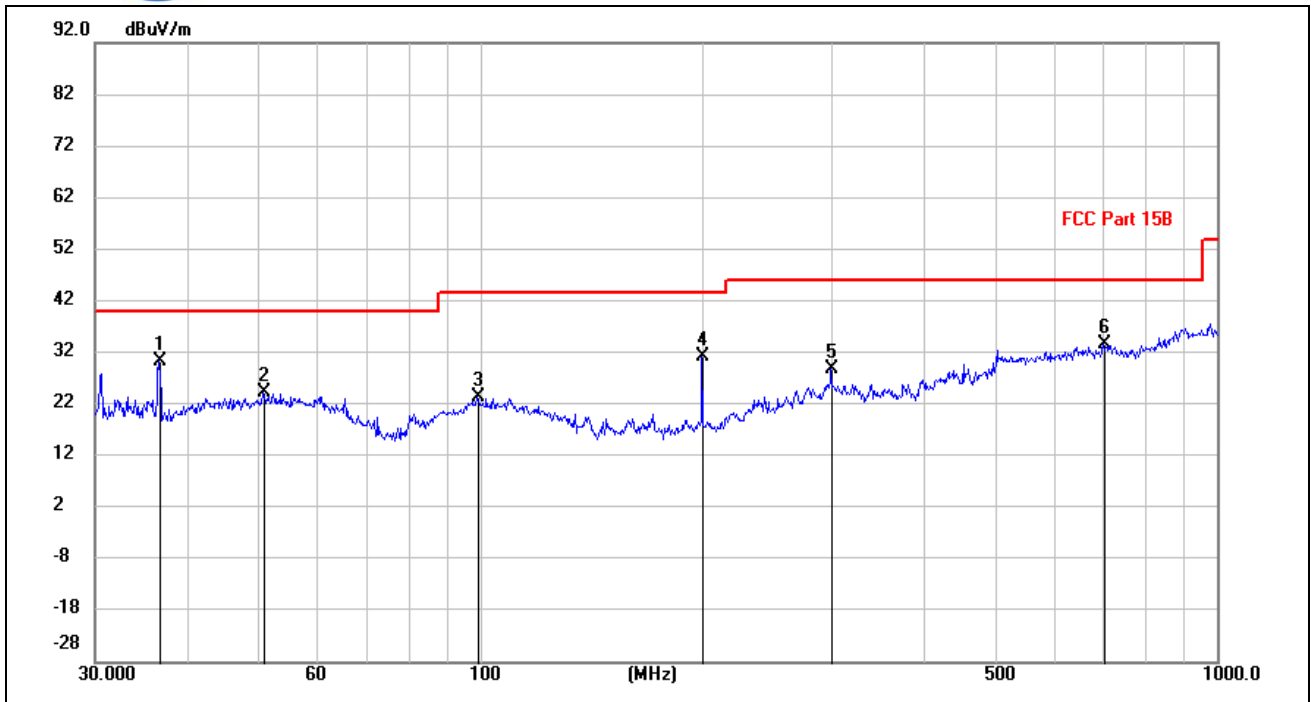
(802.11b _2462MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
43.1487	4.99	15.24	20.23	40.00	-19.77	peak	H
50.9331	6.63	15.89	22.52	40.00	-17.48	peak	H
100.0355	5.88	15.19	21.07	43.50	-22.43	peak	H
201.7111	6.81	14.01	20.82	43.50	-22.68	peak	H
297.2241	7.90	16.58	24.48	46.00	-21.52	peak	H
729.3583	8.70	25.36	34.06	46.00	-11.94	peak	H



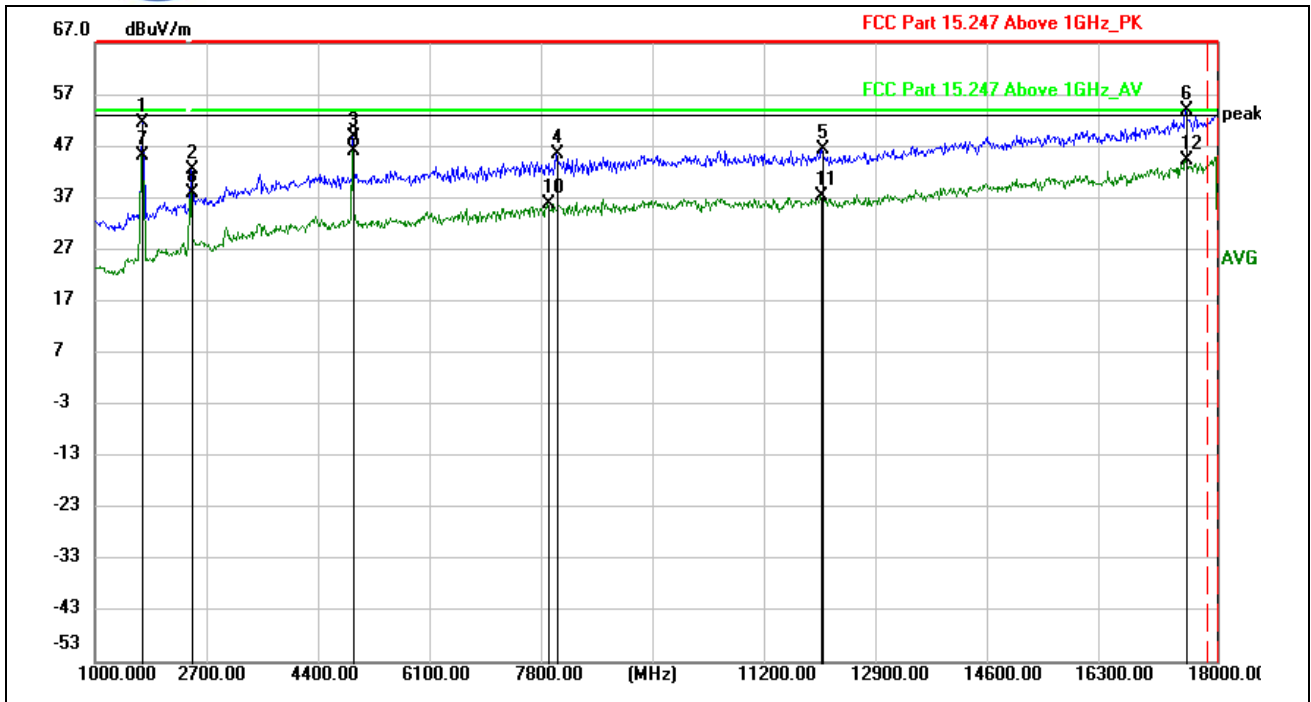
(802.11b _2462MHz, Antenna Horizontal, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2461.150	50.52	-11.59	38.93	---	---	peak	H
2462.850	44.88	-11.55	33.33	---	---	AVG	H
4923.600	51.14	-3.65	47.49	74.00	-26.51	peak	H
4923.600	48.02	-3.65	44.37	54.00	-9.63	AVG	H
10460.500	35.54	1.64	37.18	54.00	-16.82	AVG	H
10531.900	44.68	1.68	46.36	74.00	-27.64	peak	H
14129.950	41.69	7.19	48.88	74.00	-25.12	peak	H
14129.950	32.22	7.19	39.41	54.00	-14.59	AVG	H
15888.600	39.69	10.29	49.98	74.00	-24.02	peak	H
16029.700	29.99	11.15	41.14	54.00	-12.86	AVG	H
17678.700	30.45	13.13	43.58	54.00	-10.42	AVG	H
17694.000	39.33	13.12	52.45	74.00	-21.55	peak	H



(802.11b _2462MHz, Antenna Vertical, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6567	16.85	13.41	30.26	40.00	-9.74	peak	V
50.8795	8.43	15.90	24.33	40.00	-15.67	peak	V
99.2493	8.78	14.57	23.35	43.50	-20.15	peak	V
200.0557	16.94	14.35	31.29	43.50	-12.21	peak	V
300.1566	11.25	17.48	28.73	46.00	-17.27	peak	V
703.3623	13.35	20.20	33.55	46.00	-12.45	peak	V

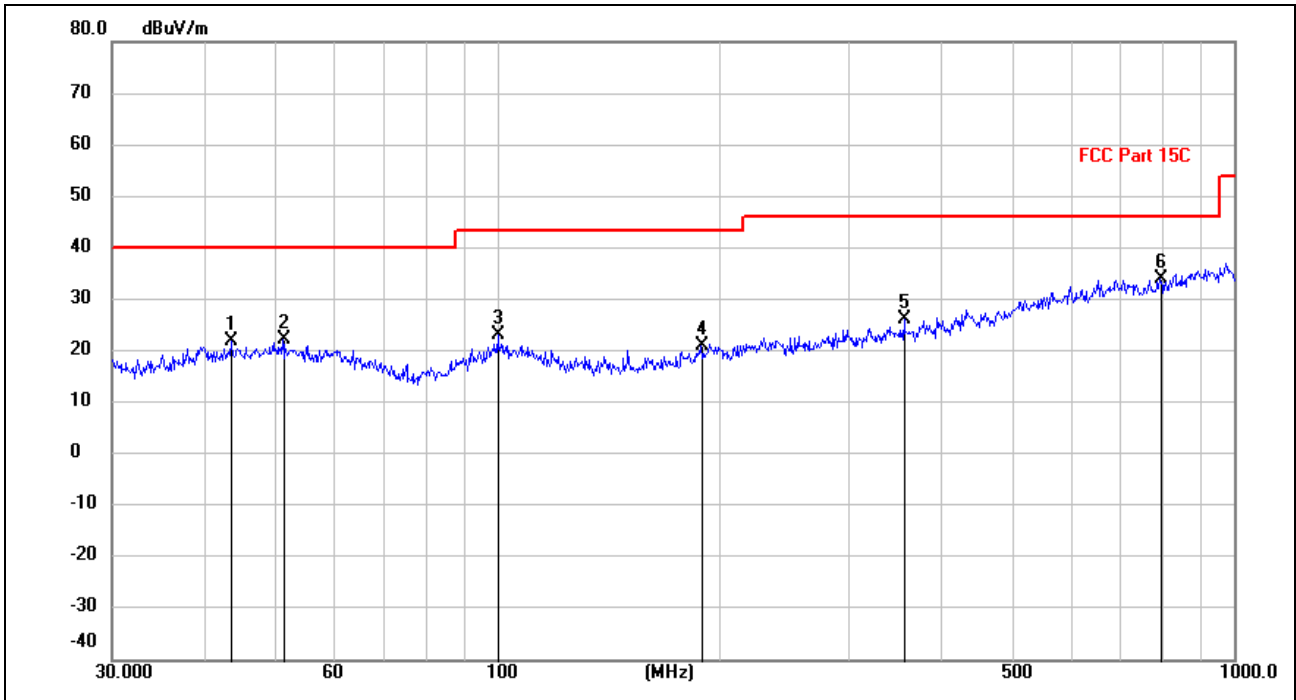


(802.11b _2462MHz, Antenna Vertical , 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
1719.950	66.03	-14.62	51.41	74.00	-22.59	peak	V
2462.850	54.02	-11.55	42.47	---	---	peak	V
4924.450	52.53	-3.64	48.89	74.00	-25.11	peak	V
7997.200	45.66	-0.21	45.45	74.00	-28.55	peak	V
12030.450	42.51	3.75	46.26	74.00	-27.74	peak	V
17537.600	39.98	13.80	53.78	74.00	-20.22	peak	V
1719.100	59.74	-14.62	45.12	54.00	-8.88	AVG	V
2462.850	49.53	-11.55	37.98	---	---	AVG	V
4923.600	49.55	-3.65	45.90	54.00	-8.10	AVG	V
7874.800	36.46	-0.68	35.78	54.00	-18.22	AVG	V
12010.050	33.47	3.68	37.15	54.00	-16.85	AVG	V
17530.800	30.27	13.90	44.17	54.00	-9.83	AVG	V

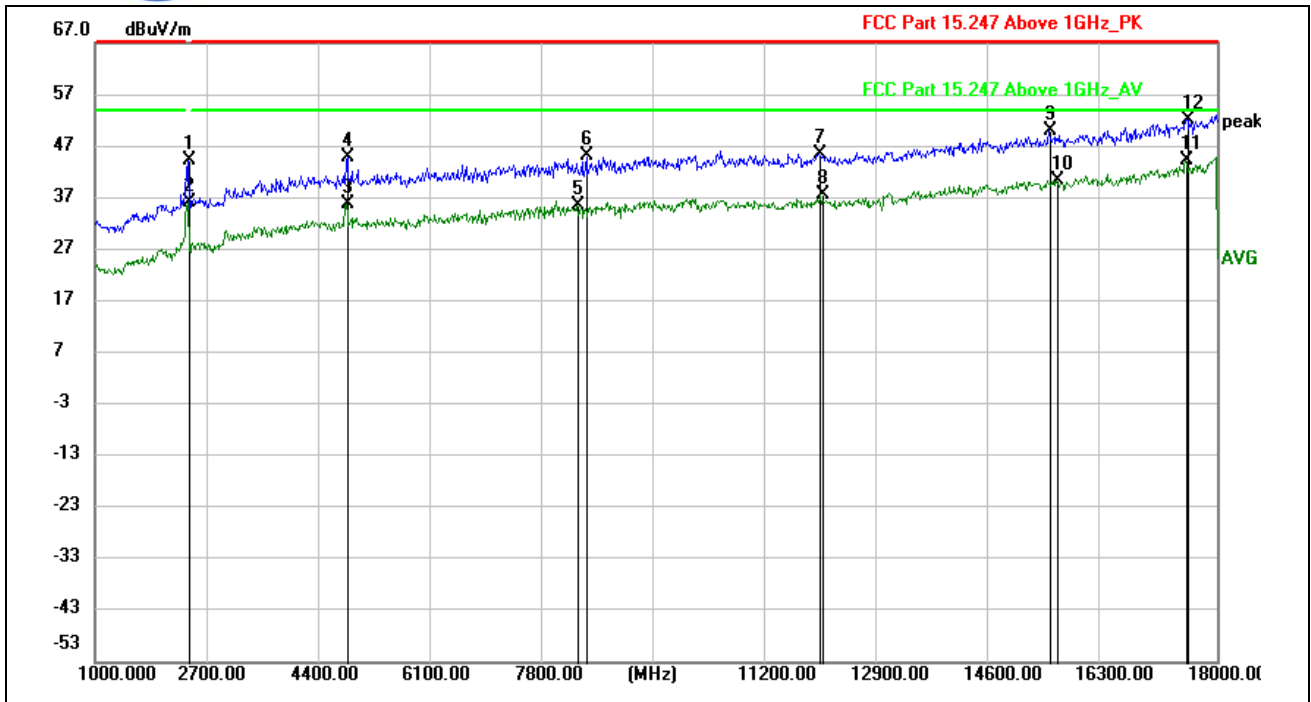


802.11g Test mode



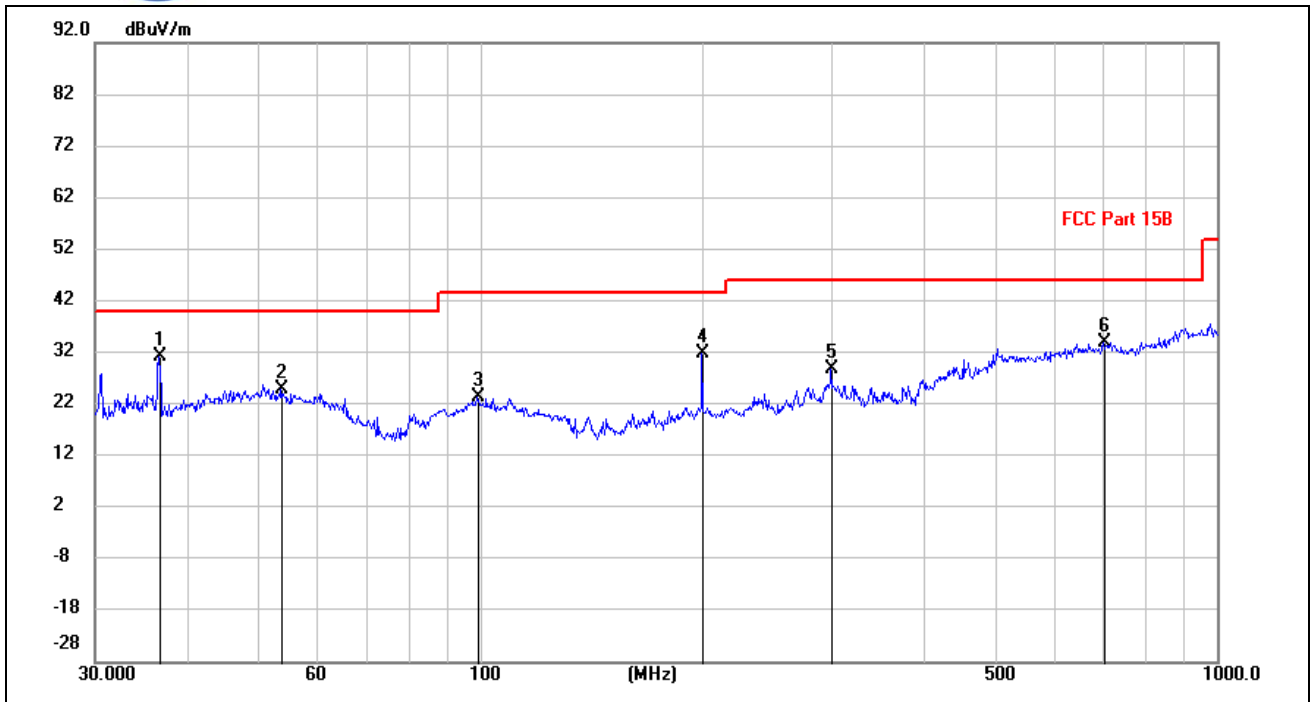
(802.11g _2412MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
43.6509	6.58	15.26	21.84	40.00	-18.16	peak	H
51.1299	6.33	15.83	22.16	40.00	-17.84	peak	H
100.3869	7.98	15.12	23.10	43.50	-20.40	peak	H
189.4393	7.78	13.36	21.14	43.50	-22.36	peak	H
356.9260	7.78	18.33	26.11	46.00	-19.89	peak	H
795.6248	7.72	26.18	33.90	46.00	-12.10	peak	H



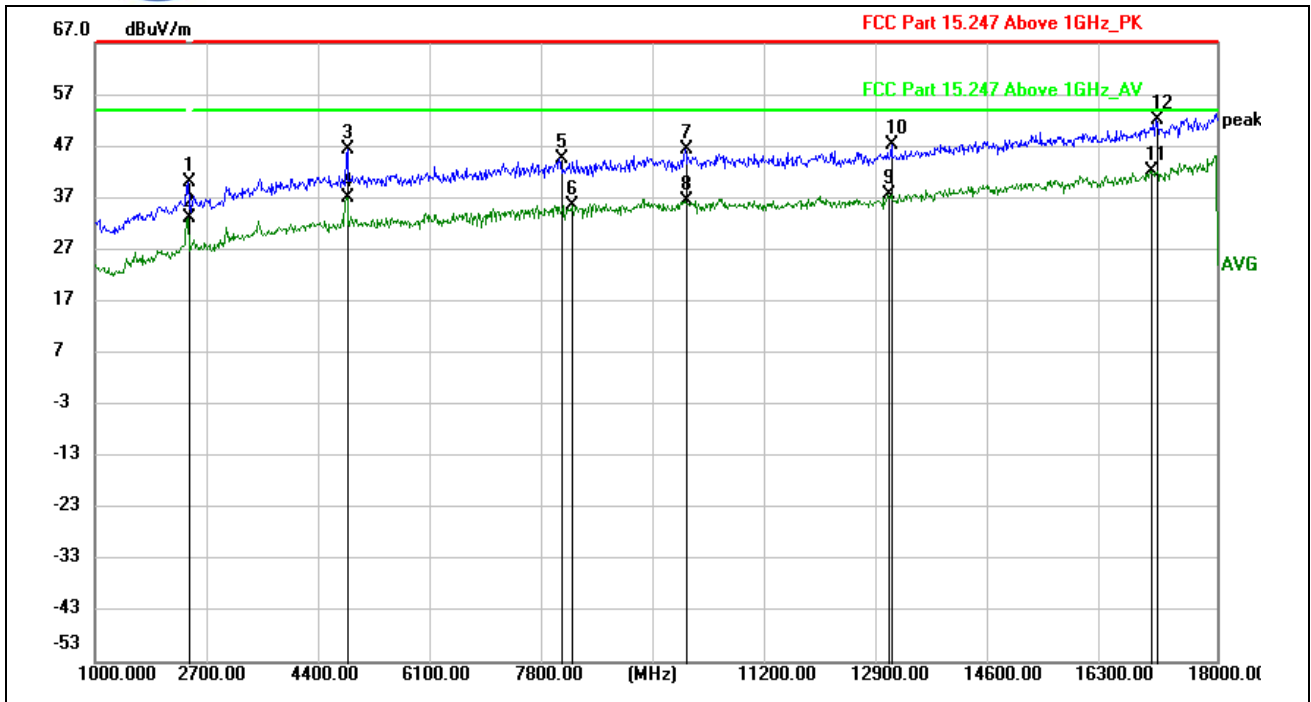
(802.11g _2412MHz, Antenna Horizontal, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2412.700	56.41	-12.15	44.26	---	---	peak	H
2412.700	48.38	-12.15	36.23	---	---	AVG	H
4830.100	39.64	-3.94	35.70	54.00	-18.30	AVG	H
4834.350	48.67	-3.95	44.72	74.00	-29.28	peak	H
8316.800	35.39	-0.03	35.36	54.00	-18.64	AVG	H
8447.700	45.33	-0.34	44.99	74.00	-29.01	peak	H
11982.000	42.49	2.86	45.35	74.00	-28.65	peak	H
12021.950	34.39	3.09	37.48	54.00	-16.52	AVG	H
15469.550	39.67	10.30	49.97	74.00	-24.03	peak	H
15578.350	30.36	10.04	40.40	54.00	-13.60	AVG	H
17534.200	31.17	13.19	44.36	54.00	-9.64	AVG	H
17558.000	39.01	13.09	52.10	74.00	-21.90	peak	H



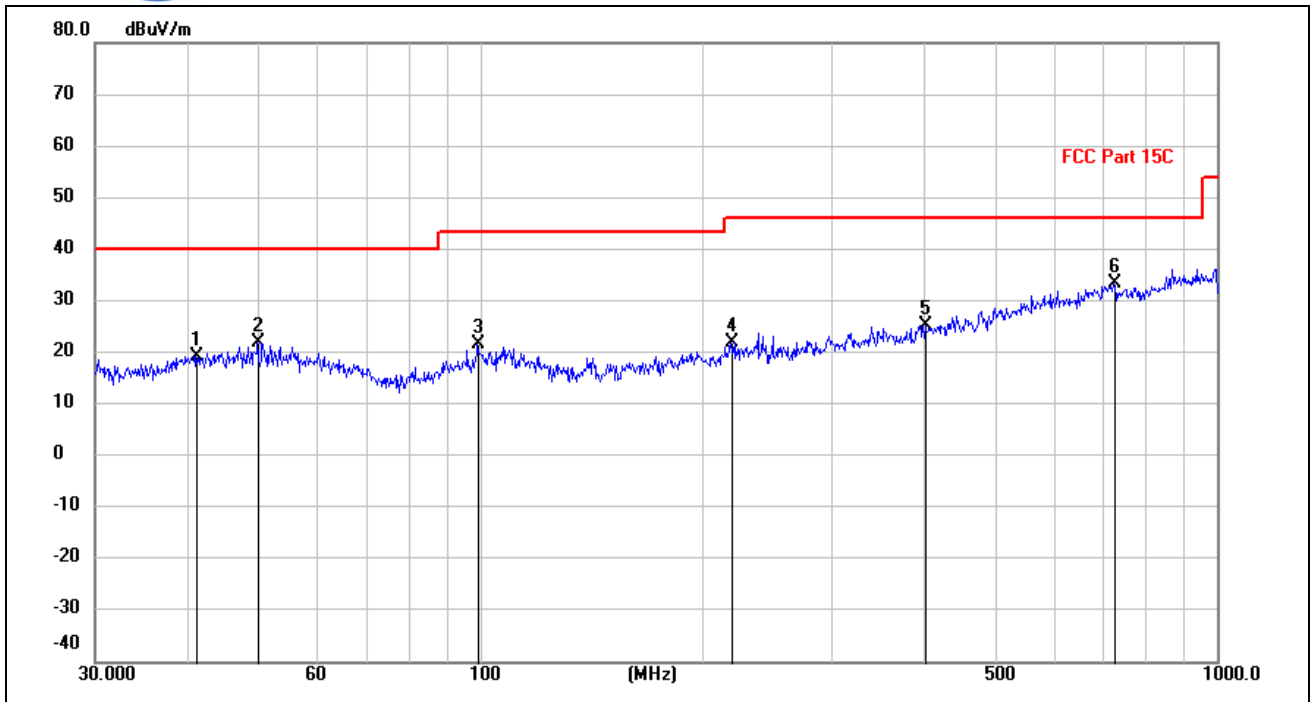
(802.11g _2412MHz, Antenna Vertical, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6567	17.85	13.41	31.26	40.00	-8.74	peak	V
53.7214	9.65	15.34	24.99	40.00	-15.01	peak	V
99.2493	8.78	14.57	23.35	43.50	-20.15	peak	V
200.0557	17.44	14.35	31.79	43.50	-11.71	peak	V
300.1566	11.25	17.48	28.73	46.00	-17.27	peak	V
703.3623	13.85	20.20	34.05	46.00	-11.95	peak	V



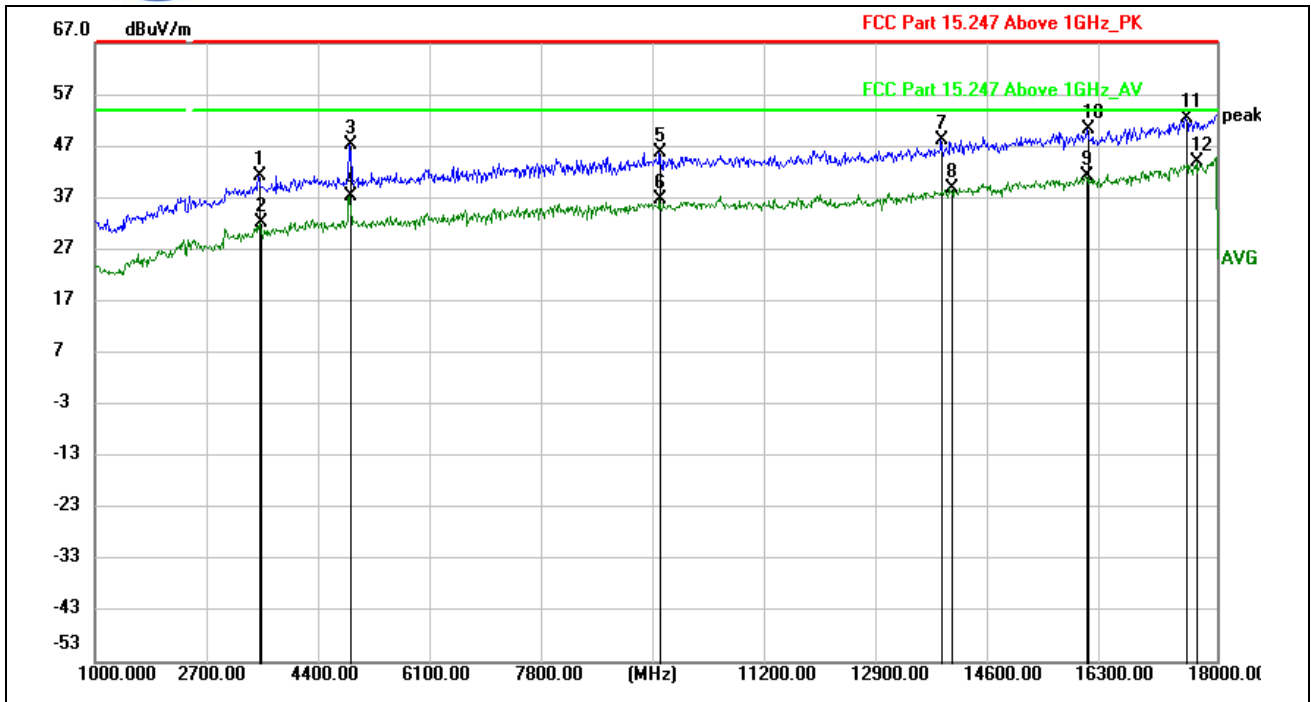
(802.11g _2412MHz, Antenna Vertical, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2415.250	52.32	-12.16	40.16	---	---	peak	V
2415.250	45.22	-12.16	33.06	---	---	AVG	V
4830.100	50.23	-3.94	46.29	74.00	-27.71	peak	V
4830.100	41.02	-3.94	37.08	54.00	-16.92	AVG	V
8061.800	44.93	-0.40	44.53	74.00	-29.47	peak	V
8239.450	35.74	-0.20	35.54	54.00	-18.46	AVG	V
9959.000	44.73	1.58	46.31	74.00	-27.69	peak	V
9959.000	34.78	1.58	36.36	54.00	-17.64	AVG	V
13030.050	32.43	5.11	37.54	54.00	-16.46	AVG	V
13079.350	42.04	5.16	47.20	74.00	-26.80	peak	V
17011.450	30.09	12.18	42.27	54.00	-11.73	AVG	V
17099.000	40.09	12.12	52.21	74.00	-21.79	peak	V



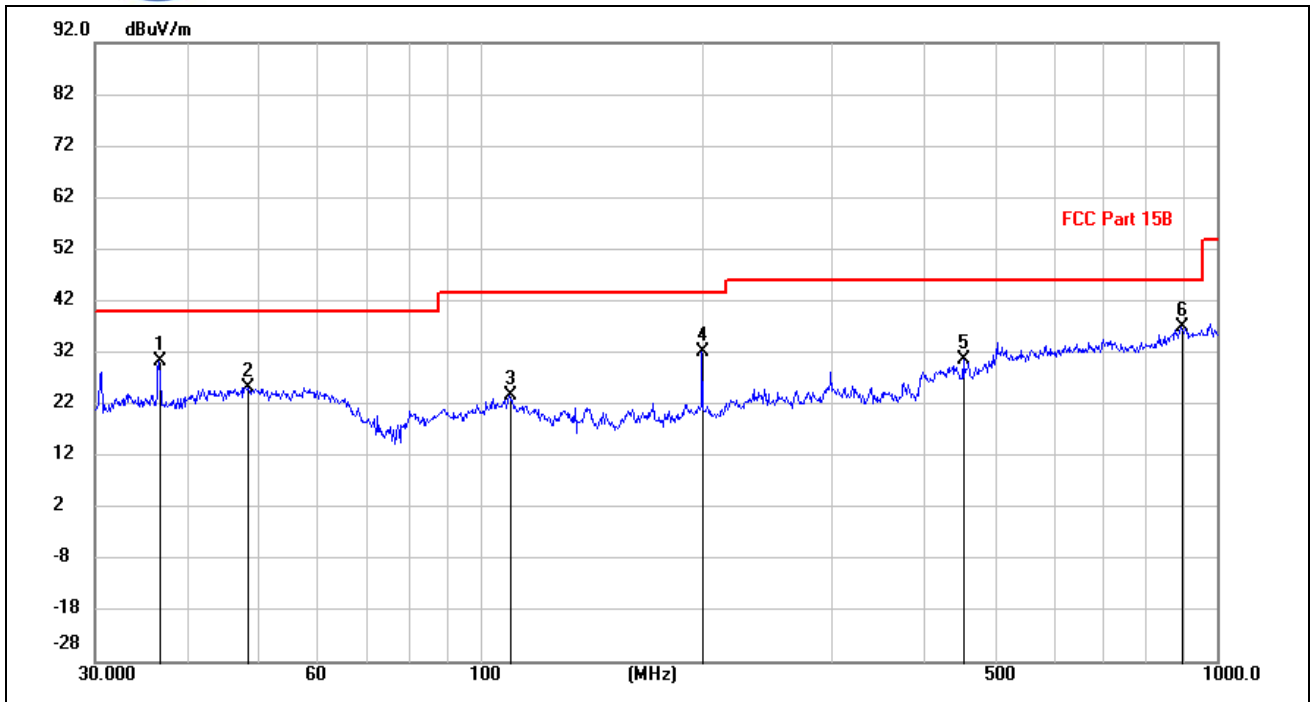
(802.11g _2437MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
41.1970	4.51	14.80	19.31	40.00	-20.69	peak	H
50.0478	5.73	16.18	21.91	40.00	-18.09	peak	H
99.2667	6.92	14.60	21.52	43.50	-21.98	peak	H
219.8064	7.13	14.73	21.86	46.00	-24.14	peak	H
402.1909	5.75	19.52	25.27	46.00	-20.73	peak	H
725.9138	8.19	25.15	33.34	46.00	-12.66	peak	H



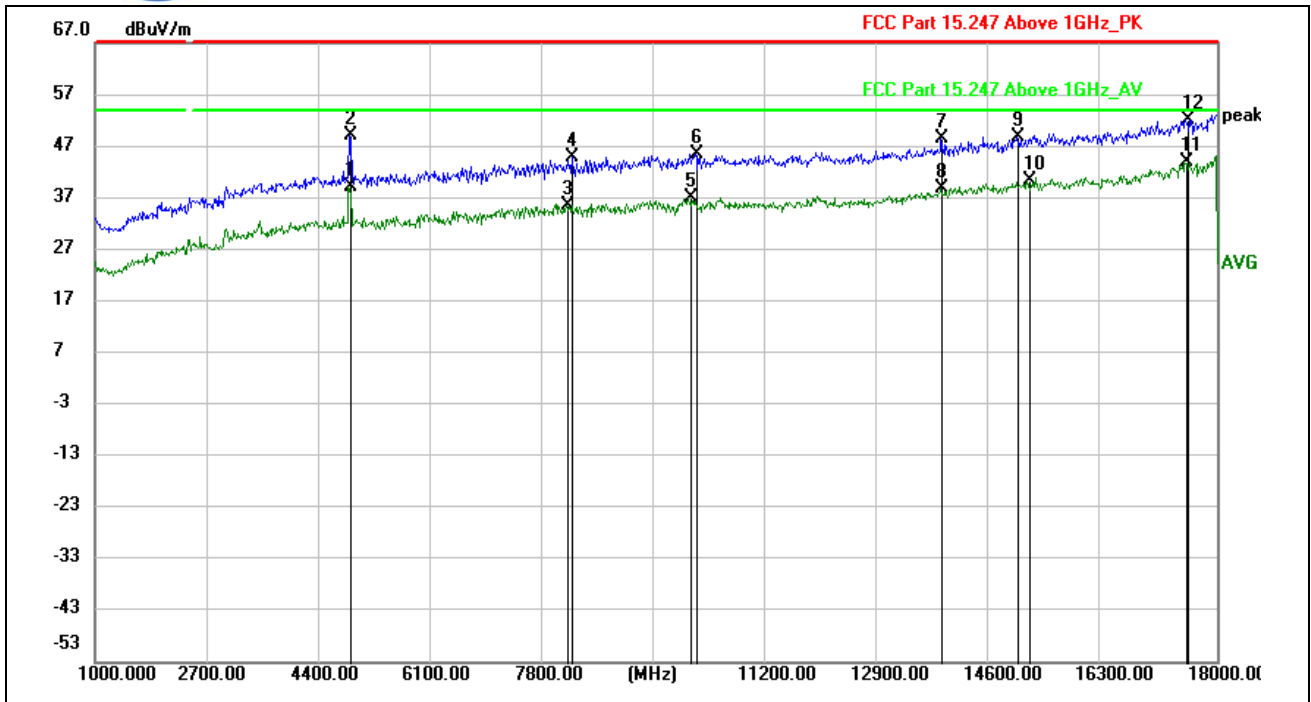
(802.11g _2437MHz, Antenna Horizontal, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
3494.750	49.49	-8.35	41.14	74.00	-32.86	peak	H
3514.300	40.56	-8.35	32.21	54.00	-21.79	AVG	H
4873.450	51.17	-4.05	47.12	74.00	-26.88	peak	H
4873.450	41.28	-4.05	37.23	54.00	-16.77	AVG	H
9566.300	44.99	0.71	45.70	74.00	-28.30	peak	H
9566.300	36.10	0.71	36.81	54.00	-17.19	AVG	H
13824.800	41.81	6.27	48.08	74.00	-25.92	peak	H
13978.650	31.48	7.19	38.67	54.00	-15.33	AVG	H
16028.000	29.93	11.17	41.10	54.00	-12.90	AVG	H
16039.900	39.20	11.02	50.22	74.00	-23.78	peak	H
17537.600	39.14	13.18	52.32	74.00	-21.68	peak	H
17697.400	30.89	13.16	44.05	54.00	-9.95	AVG	H



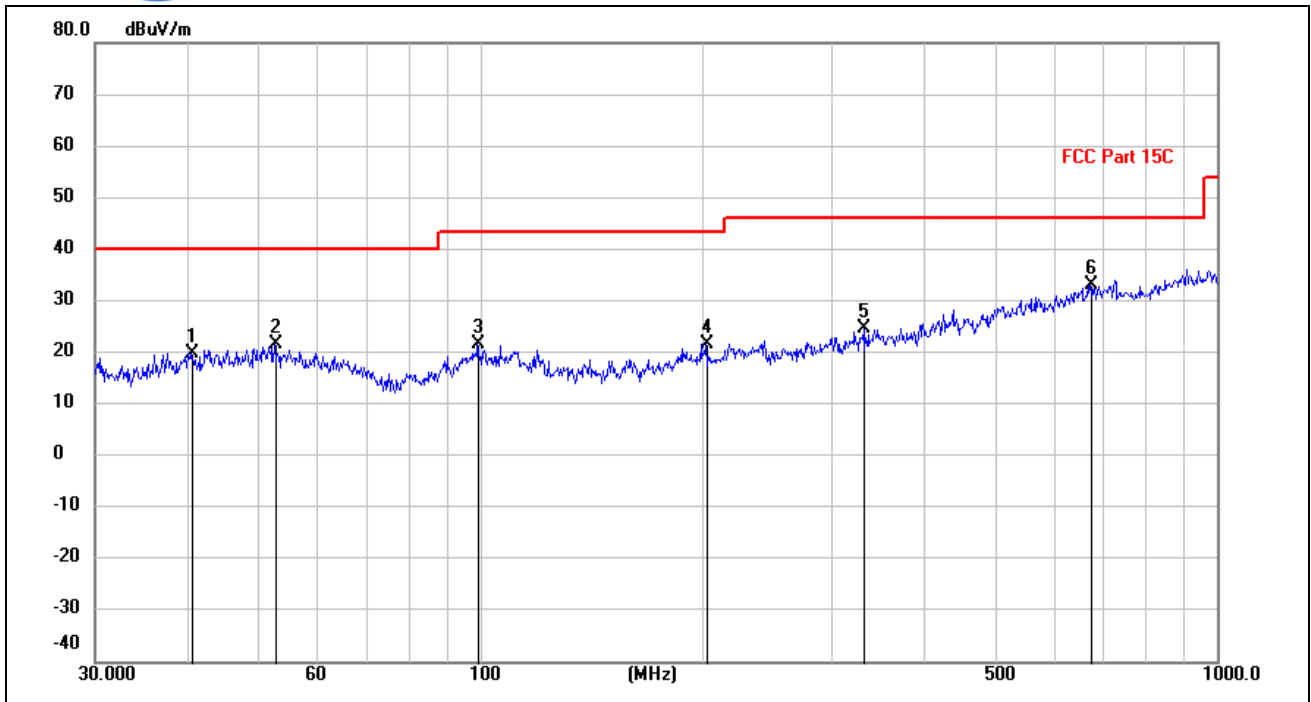
(802.11g _2437MHz, Antenna Vertical, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6567	16.85	13.41	30.26	40.00	-9.74	peak	V
48.4420	9.78	15.54	25.32	40.00	-14.68	peak	V
109.5459	8.68	14.92	23.60	43.50	-19.90	peak	V
200.0557	17.94	14.35	32.29	43.50	-11.21	peak	V
453.5140	14.44	16.22	30.66	46.00	-15.34	peak	V
896.8392	14.50	22.47	36.97	46.00	-9.03	peak	V



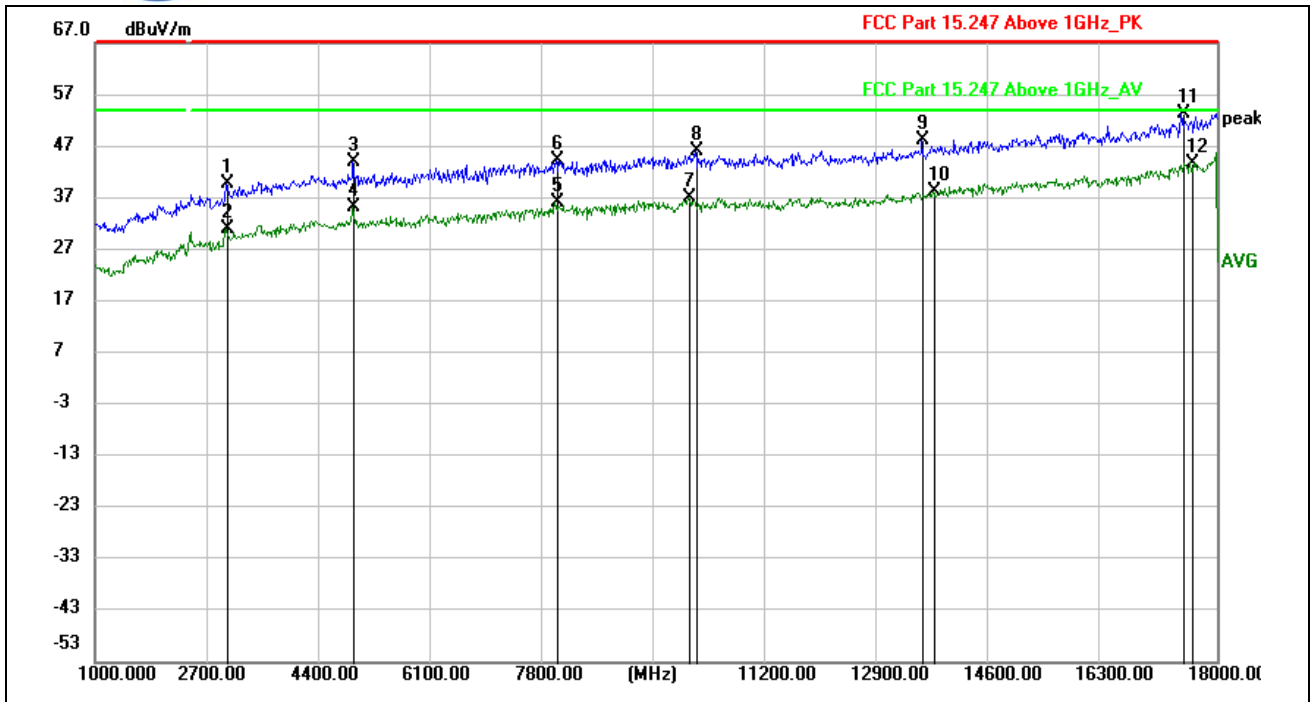
(802.11g _2437MHz, Antenna Vertical , 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
4870.050	43.21	-4.08	39.13	54.00	-14.87	AVG	V
4872.600	53.10	-4.06	49.04	74.00	-24.96	peak	V
8161.250	35.99	-0.35	35.64	54.00	-18.36	AVG	V
8241.150	44.90	-0.20	44.70	74.00	-29.30	peak	V
10015.100	35.22	1.64	36.86	54.00	-17.14	AVG	V
10100.100	43.95	1.57	45.52	74.00	-28.48	peak	V
13829.900	42.20	6.27	48.47	74.00	-25.53	peak	V
13829.900	32.60	6.27	38.87	54.00	-15.13	AVG	V
14983.350	39.55	9.26	48.81	74.00	-25.19	peak	V
15151.650	31.41	8.77	40.18	54.00	-13.82	AVG	V
17529.100	29.96	13.92	43.88	54.00	-10.12	AVG	V
17541.850	38.25	13.74	51.99	74.00	-22.01	peak	V



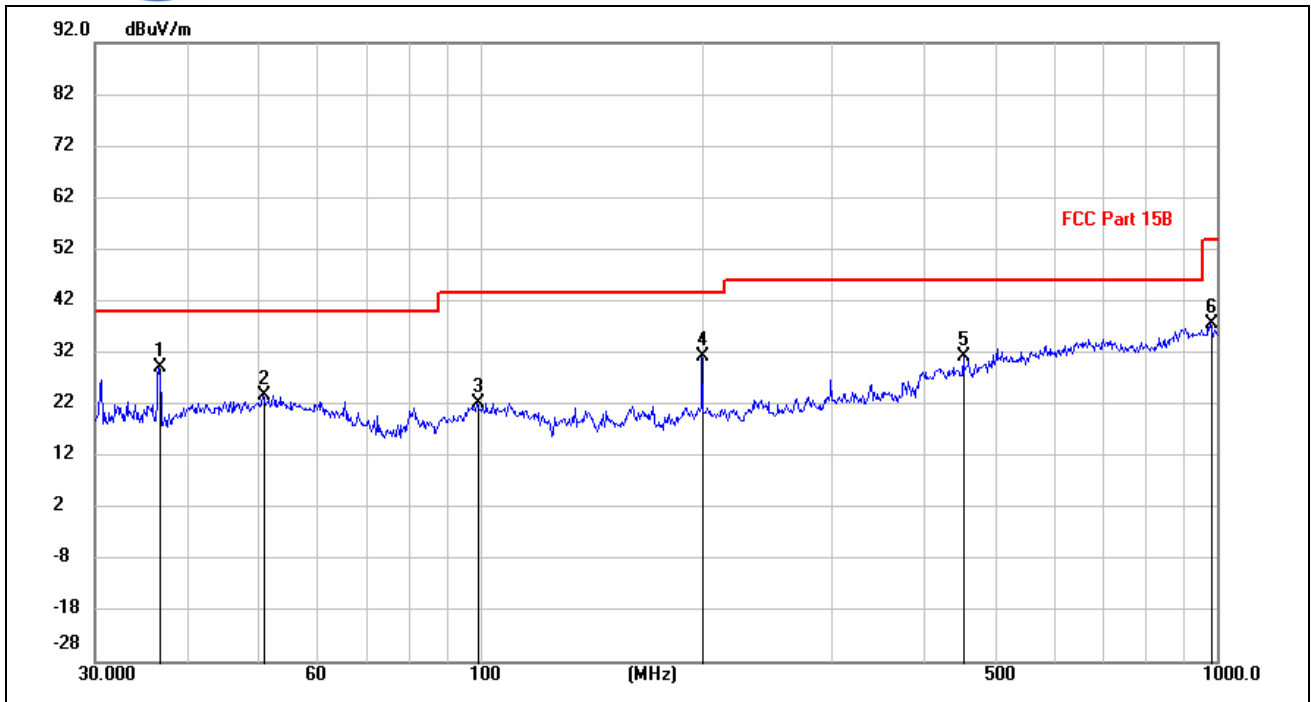
(802.11g _2462MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
40.6303	4.83	15.09	19.92	40.00	-20.08	peak	H
52.6399	6.21	15.38	21.59	40.00	-18.41	peak	H
99.4932	7.01	14.78	21.79	43.50	-21.71	peak	H
202.8815	7.72	13.85	21.57	43.50	-21.93	peak	H
331.4128	7.47	17.09	24.56	46.00	-21.44	peak	H
673.4346	8.56	24.60	33.16	46.00	-12.84	peak	H



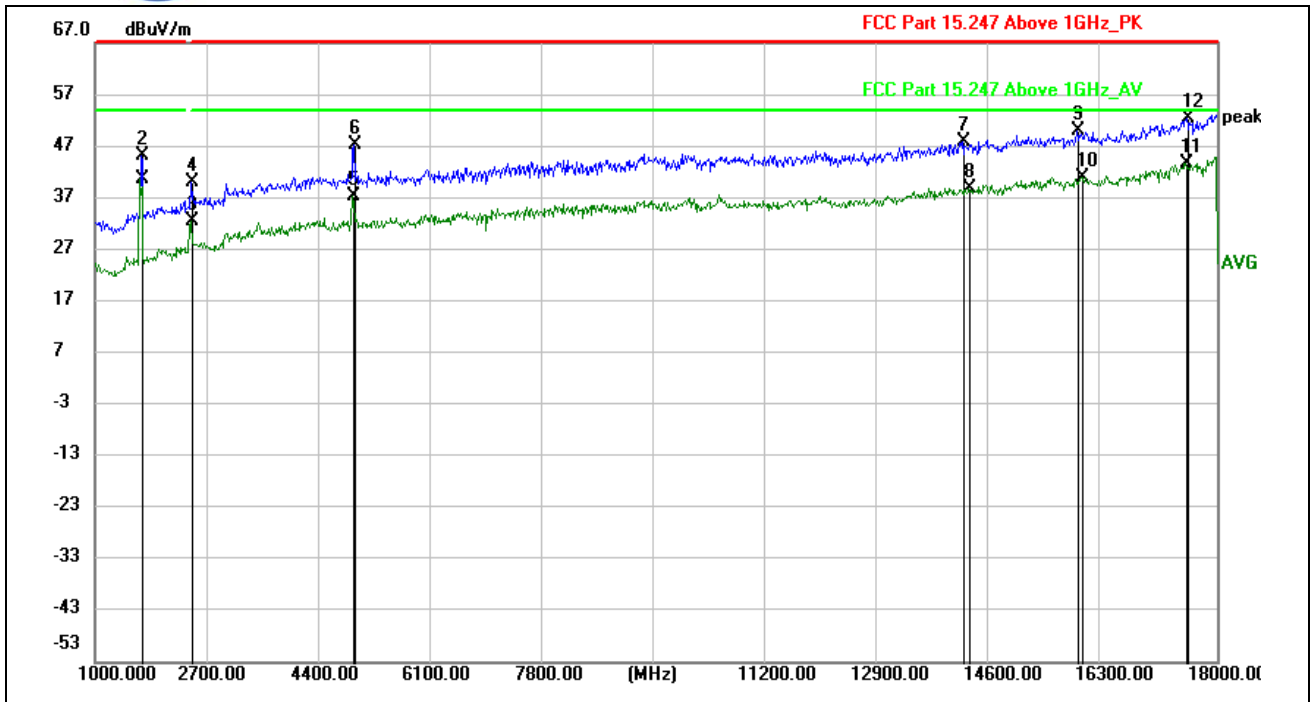
(802.11g _2462MHz, Antenna Horizontal, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2999.200	48.89	-9.30	39.59	74.00	-34.41	peak	H
2999.200	40.19	-9.30	30.89	54.00	-23.11	AVG	H
4926.150	47.48	-3.63	43.85	74.00	-30.15	peak	H
4926.150	38.72	-3.63	35.09	54.00	-18.91	AVG	H
7992.100	36.46	-0.43	36.03	54.00	-17.97	AVG	H
7997.200	44.57	-0.41	44.16	74.00	-29.84	peak	H
9998.950	35.93	1.00	36.93	54.00	-17.07	AVG	H
10105.200	44.88	1.19	46.07	74.00	-27.93	peak	H
13542.600	42.48	5.65	48.13	74.00	-25.87	peak	H
13713.450	32.01	6.05	38.06	54.00	-15.94	AVG	H
17474.700	40.48	12.77	53.25	74.00	-20.75	peak	H
17613.250	30.57	13.21	43.78	54.00	-10.22	AVG	H



(802.11g _2462MHz, Antenna Vertical, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6567	15.85	13.41	29.26	40.00	-10.74	peak	V
50.8795	7.93	15.90	23.83	40.00	-16.17	peak	V
99.2493	7.78	14.57	22.35	43.50	-21.15	peak	V
200.0557	16.94	14.35	31.29	43.50	-12.21	peak	V
453.5140	14.94	16.22	31.16	46.00	-14.84	peak	V
979.8673	14.85	22.60	37.45	54.00	-16.55	peak	V

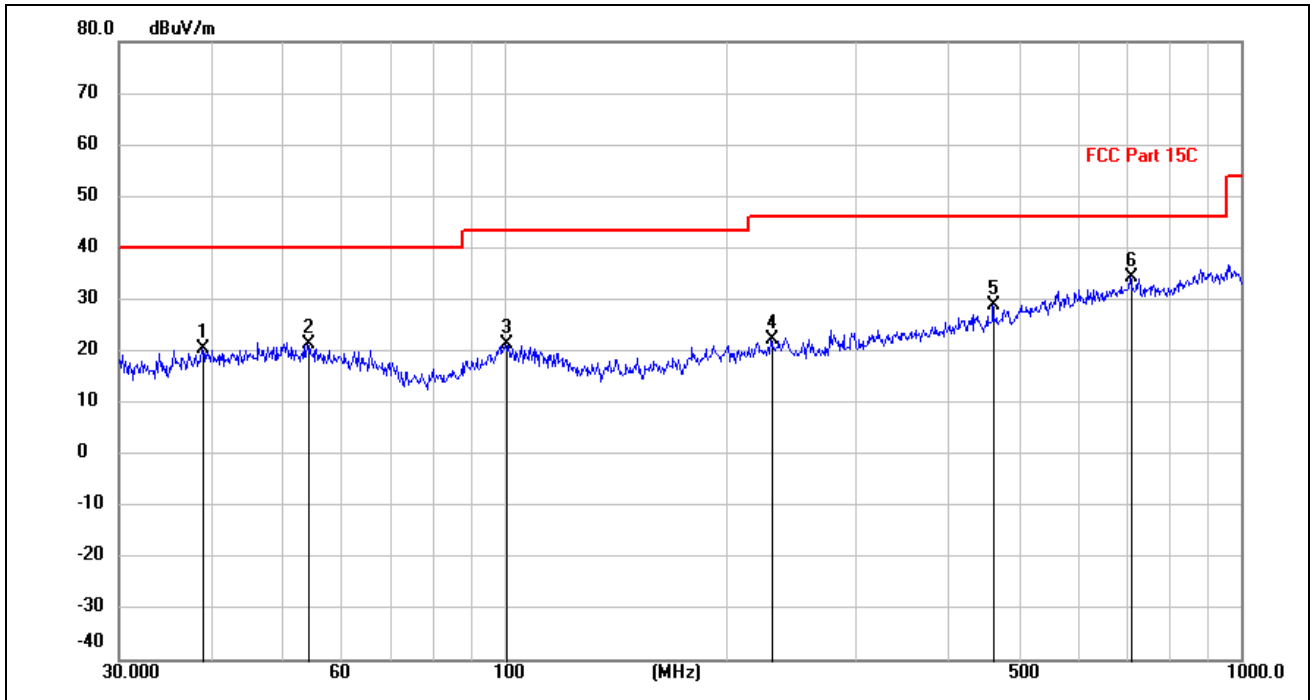


(802.11g _2462MHz, Antenna Vertical, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
1710.600	55.21	-14.52	40.69	54.00	-13.31	AVG	V
1714.000	59.75	-14.55	45.20	74.00	-28.80	peak	V
2463.700	43.93	-11.53	32.40	---	---	AVG	V
2465.400	51.55	-11.48	40.07	---	---	peak	V
4923.600	40.99	-3.65	37.34	54.00	-16.66	AVG	V
4927.850	50.72	-3.61	47.11	74.00	-26.89	peak	V
14156.300	40.58	7.17	47.75	74.00	-26.25	peak	V
14252.350	31.41	7.49	38.90	54.00	-15.10	AVG	V
15891.150	39.65	10.25	49.90	74.00	-24.10	peak	V
15964.250	30.73	10.33	41.06	54.00	-12.94	AVG	V
17531.650	29.80	13.89	43.69	54.00	-10.31	AVG	V
17551.200	38.80	13.60	52.40	74.00	-21.60	peak	V

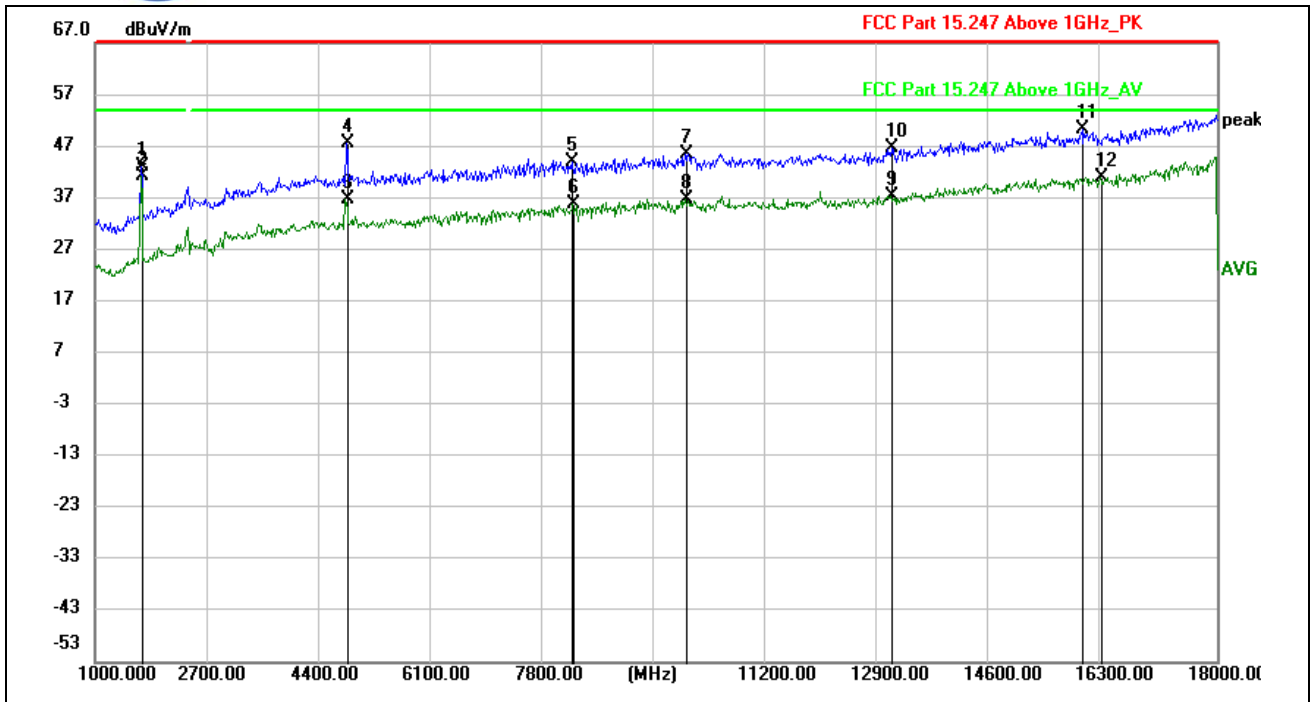


802.11n-20MHz Test mode



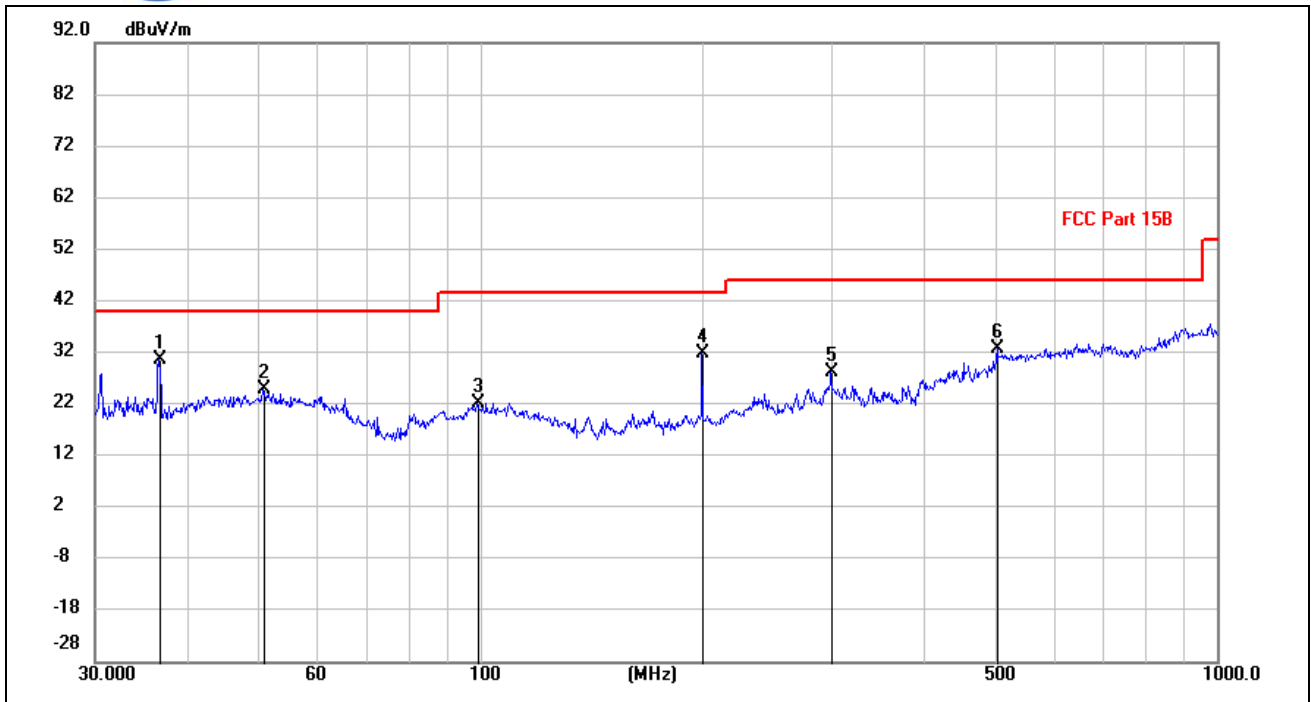
(802.11n_20M_2412MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
39.0040	6.28	14.20	20.48	40.00	-19.52	peak	H
54.0995	6.11	15.32	21.43	40.00	-18.57	peak	H
100.6689	6.30	15.06	21.36	43.50	-22.14	peak	H
230.7044	7.73	14.40	22.13	46.00	-23.87	peak	H
461.8594	8.08	20.89	28.97	46.00	-17.03	peak	H
709.0580	9.35	24.96	34.31	46.00	-11.69	peak	H



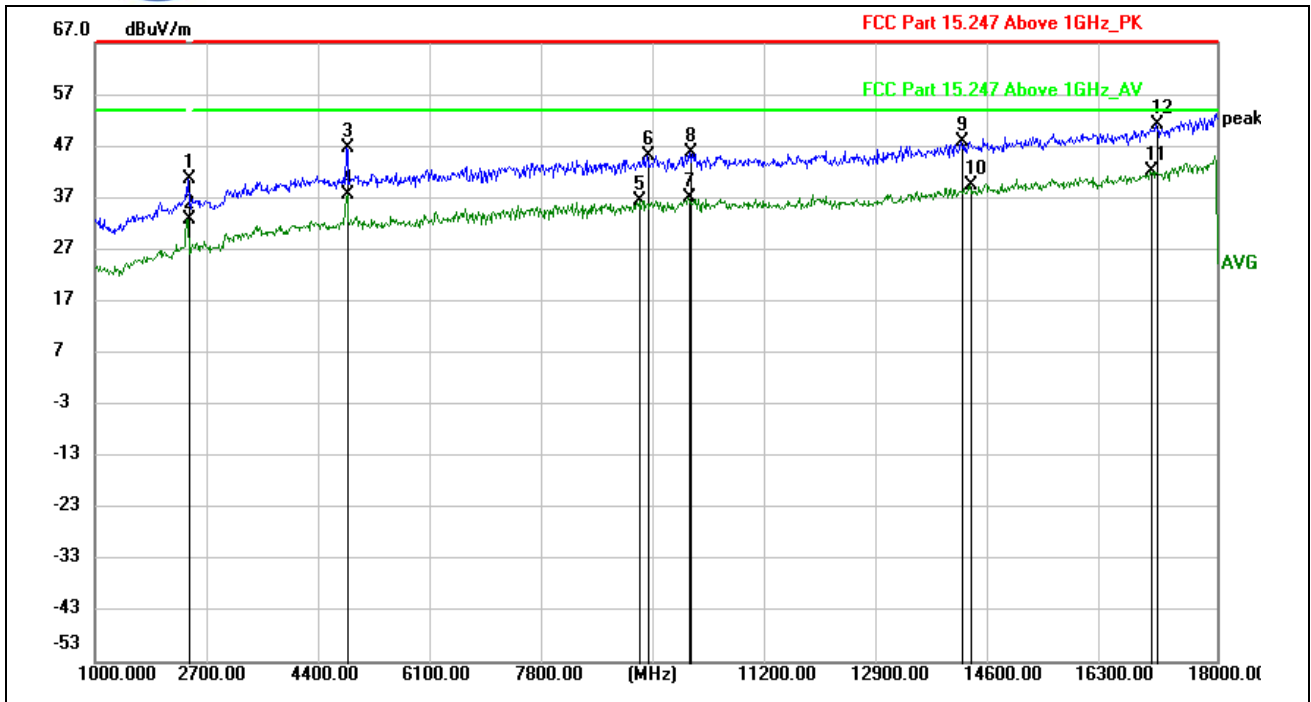
(802.11n_20M_2412MHz, Antenna Horizontal, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
1710.600	57.64	-14.52	43.12	74.00	-30.88	peak	H
1710.600	55.73	-14.52	41.21	54.00	-12.79	AVG	H
4819.050	40.45	-3.88	36.57	54.00	-17.43	AVG	H
4828.400	51.52	-3.93	47.59	74.00	-26.41	peak	H
8241.150	44.25	-0.20	44.05	74.00	-29.95	peak	H
8245.400	35.91	-0.19	35.72	54.00	-18.28	AVG	H
9958.150	44.53	1.03	45.56	74.00	-28.44	peak	H
9958.150	35.58	1.03	36.61	54.00	-17.39	AVG	H
13058.950	31.84	5.57	37.41	54.00	-16.59	AVG	H
13073.400	41.18	5.37	46.55	74.00	-27.45	peak	H
15969.350	39.85	10.42	50.27	74.00	-23.73	peak	H
16238.800	31.15	9.82	40.97	54.00	-13.03	AVG	H



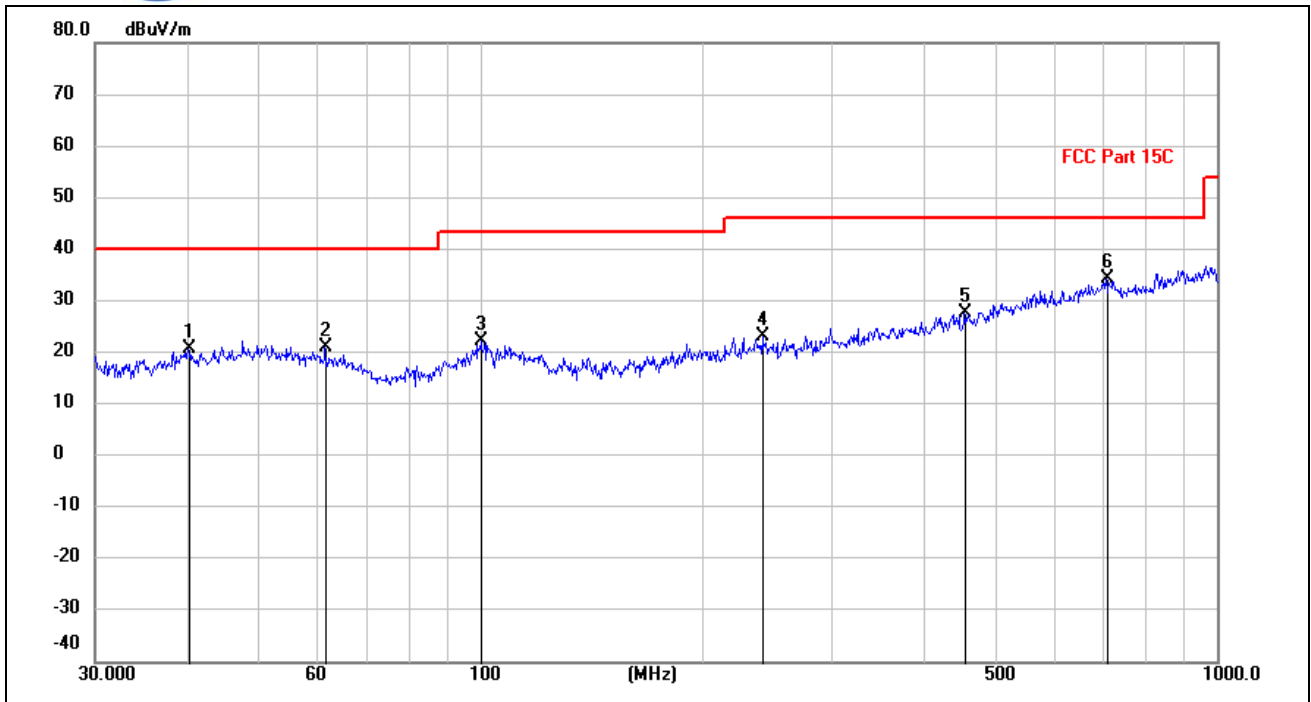
(802.11n_20M_2412MHz, Antenna Vertical, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6567	17.35	13.41	30.76	40.00	-9.24	peak	V
50.8795	8.93	15.90	24.83	40.00	-15.17	peak	V
99.2493	7.78	14.57	22.35	43.50	-21.15	peak	V
200.0557	17.44	14.35	31.79	43.50	-11.71	peak	V
300.1566	10.75	17.48	28.23	46.00	-17.77	peak	V
503.2923	14.76	18.10	32.86	46.00	-13.14	peak	V



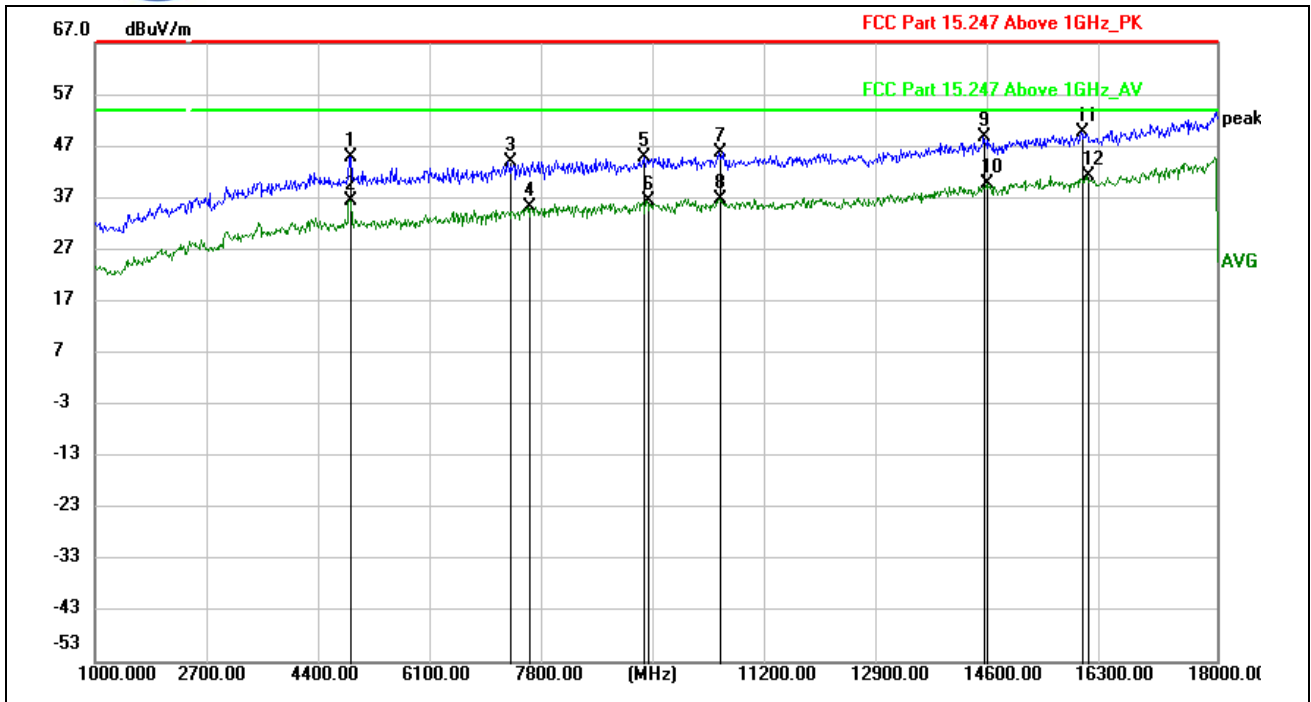
(802.11n_20M_2412MHz, Antenna Vertical , 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2413.550	52.70	-12.16	40.54	---	---	peak	V
2413.550	45.04	-12.16	32.88	---	---	AVG	V
4823.300	50.49	-3.90	46.59	74.00	-27.41	peak	V
4825.850	41.58	-3.91	37.67	54.00	-16.33	AVG	V
9251.800	35.81	0.67	36.48	54.00	-17.52	AVG	V
9381.850	44.34	0.77	45.11	74.00	-28.89	peak	V
10009.150	35.33	1.66	36.99	54.00	-17.01	AVG	V
10026.150	44.16	1.60	45.76	74.00	-28.24	peak	V
14128.250	40.82	7.16	47.98	74.00	-26.02	peak	V
14276.150	31.77	7.50	39.27	54.00	-14.73	AVG	V
17013.150	30.09	12.17	42.26	54.00	-11.74	AVG	V
17098.150	39.19	12.12	51.31	74.00	-22.69	peak	V



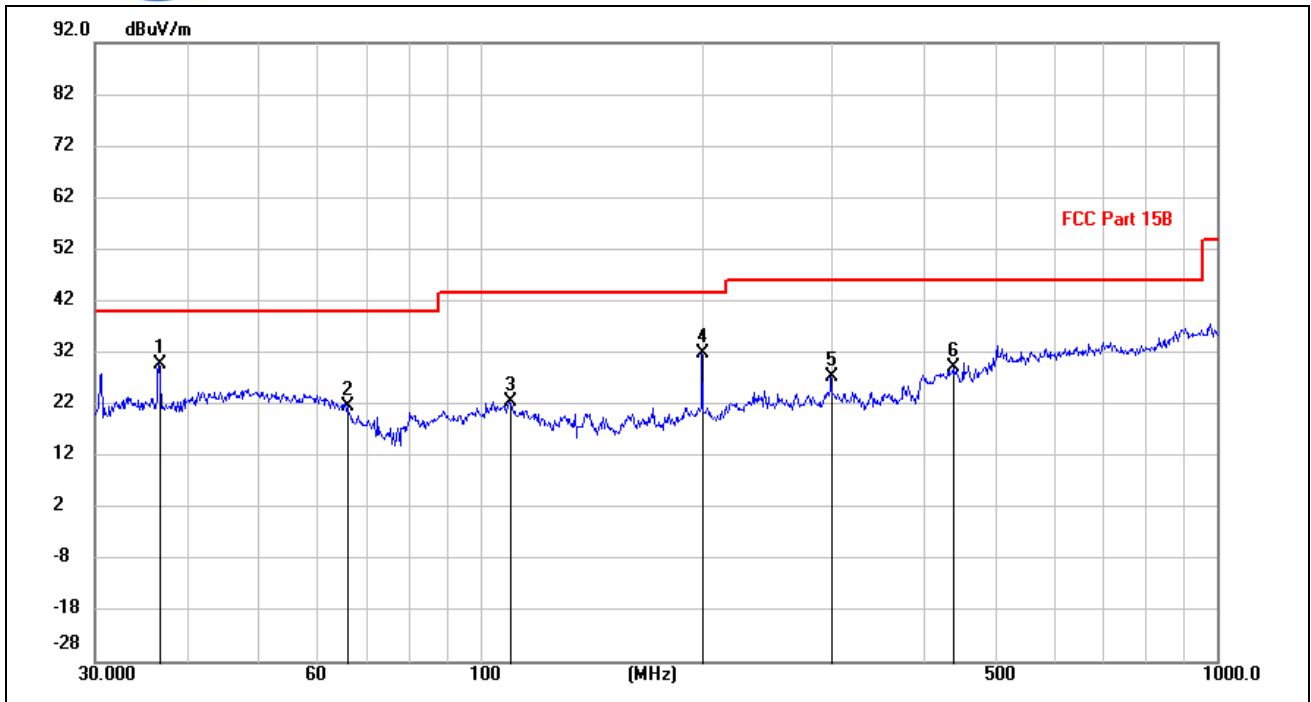
(802.11n_20M_2437MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
40.2545	5.16	15.45	20.61	40.00	-19.39	peak	H
61.7131	7.30	13.80	21.10	40.00	-18.90	peak	H
100.5630	7.06	15.08	22.14	43.50	-21.36	peak	H
241.7187	8.06	15.09	23.15	46.00	-22.85	peak	H
455.8259	7.29	20.37	27.66	46.00	-18.34	peak	H
708.4366	9.25	24.95	34.20	46.00	-11.80	peak	H



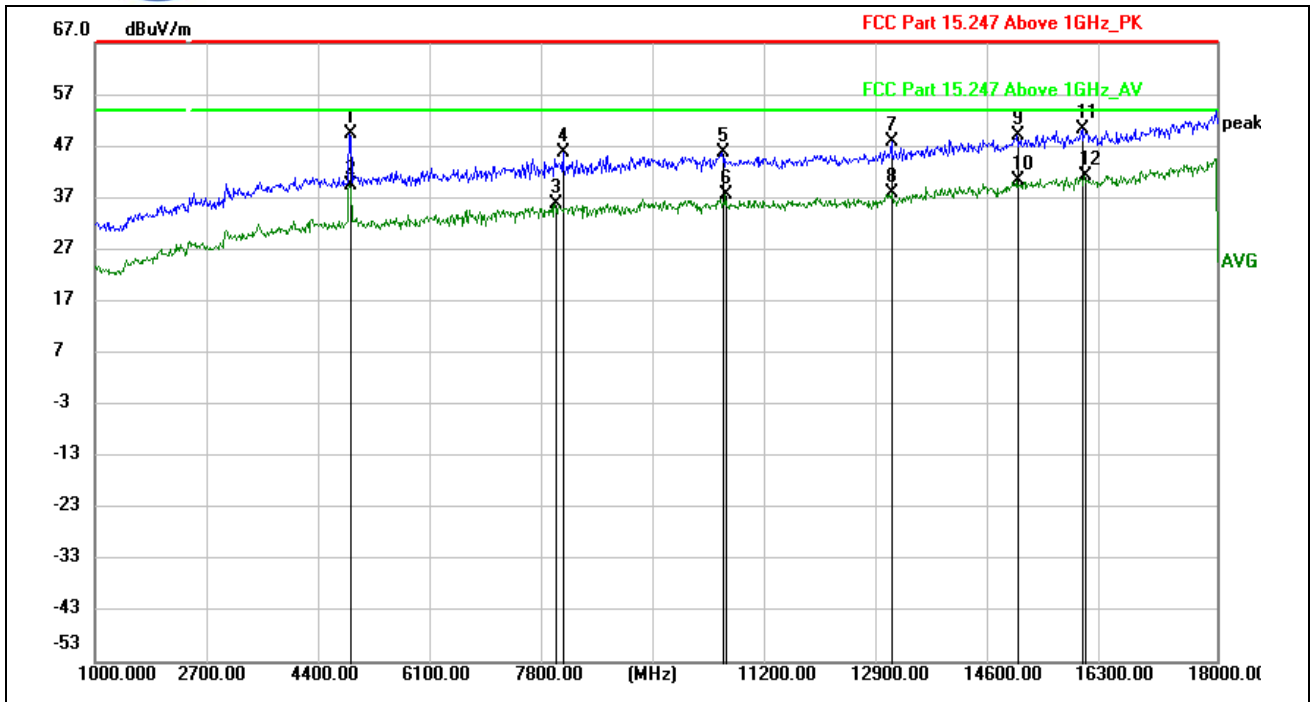
(802.11n_20M_2437MHz, Antenna Horizontal, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
4871.750	48.96	-4.06	44.90	74.00	-29.10	peak	H
4871.750	40.44	-4.06	36.38	54.00	-17.62	AVG	H
7278.950	45.38	-1.34	44.04	74.00	-29.96	peak	H
7567.100	36.10	-0.84	35.26	54.00	-18.74	AVG	H
9324.900	44.01	0.87	44.88	74.00	-29.12	peak	H
9384.400	35.56	0.77	36.33	54.00	-17.67	AVG	H
10474.950	44.03	1.70	45.73	74.00	-28.27	peak	H
10474.950	35.14	1.70	36.84	54.00	-17.16	AVG	H
14477.600	41.43	7.20	48.63	74.00	-25.37	peak	H
14522.650	32.50	7.35	39.85	54.00	-14.15	AVG	H
15960.000	39.19	10.42	49.61	74.00	-24.39	peak	H
16038.200	30.07	11.04	41.11	54.00	-12.89	AVG	H



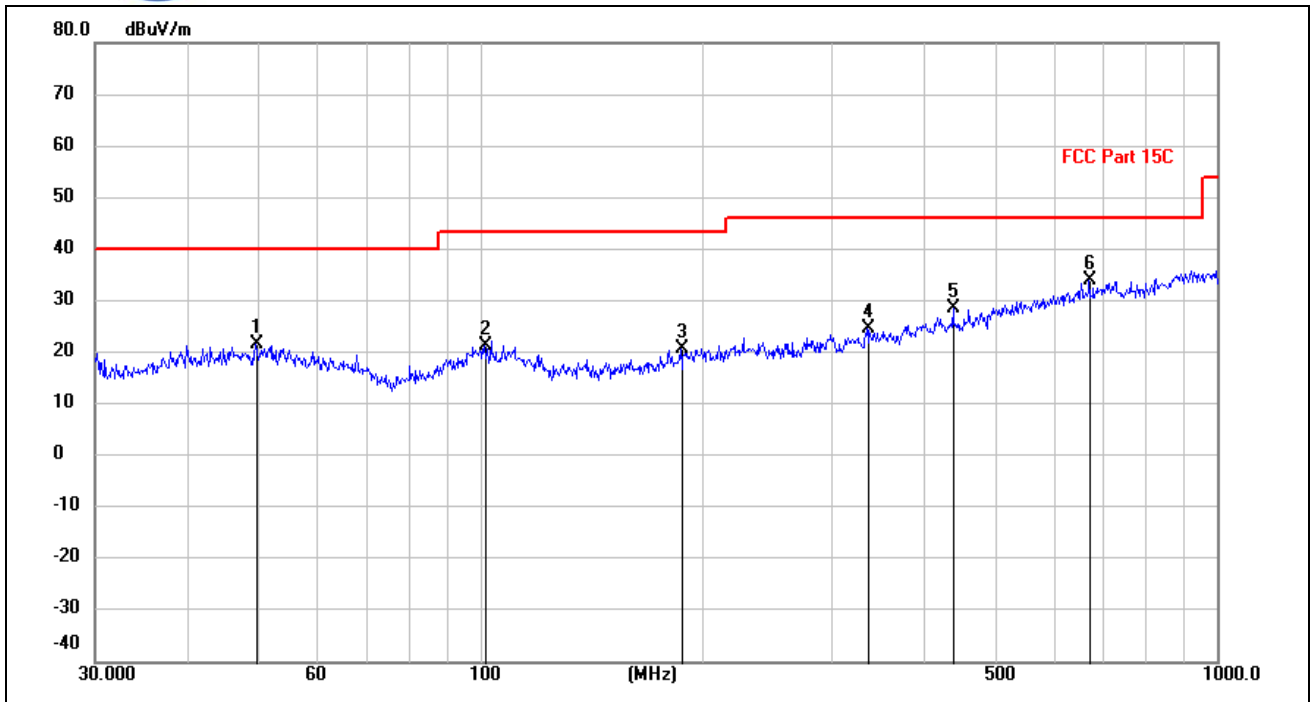
(802.11n_20M_2437MHz, Antenna Vertical, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6567	16.35	13.41	29.76	40.00	-10.24	peak	V
66.2544	8.58	12.99	21.57	40.00	-18.43	peak	V
109.5459	7.68	14.92	22.60	43.50	-20.90	peak	V
200.0557	17.44	14.35	31.79	43.50	-11.71	peak	V
300.1566	9.75	17.48	27.23	46.00	-18.77	peak	V
440.0418	12.00	16.99	28.99	46.00	-17.01	peak	V



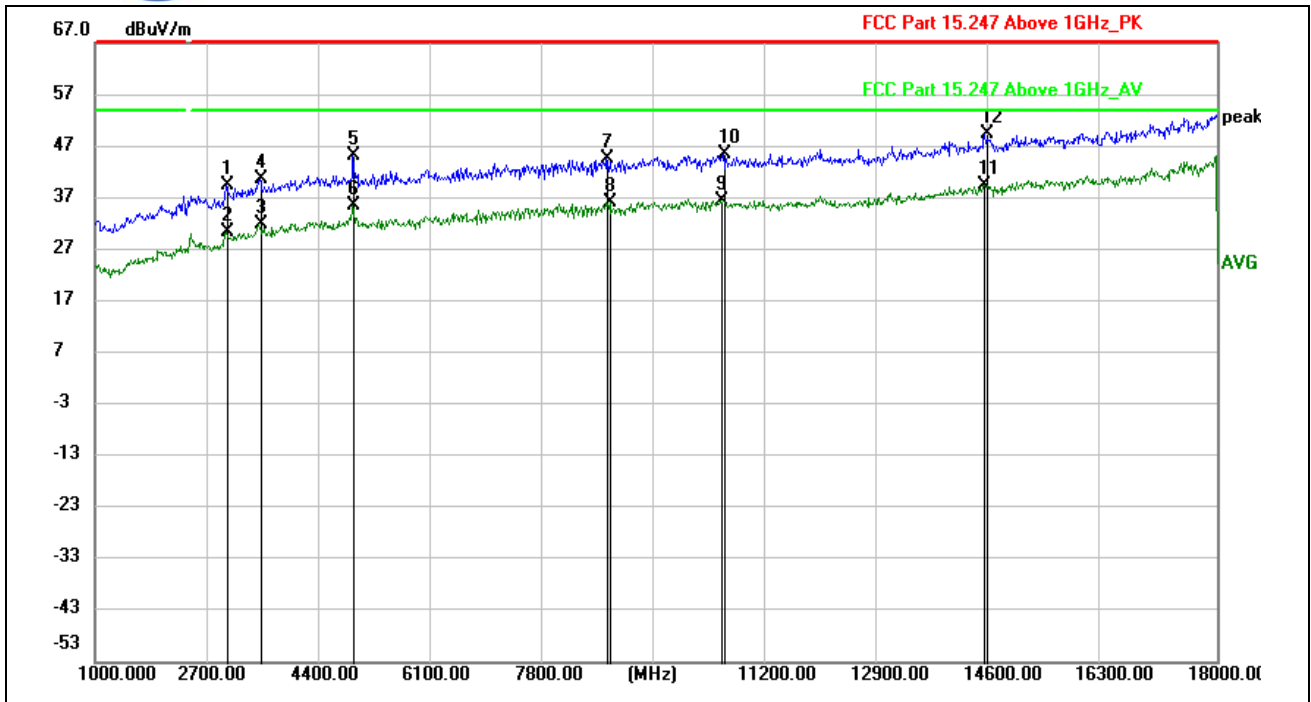
(802.11n_20M_2437MHz, Antenna Vertical, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
4875.150	53.32	-4.03	49.29	74.00	-24.71	peak	V
4875.150	43.37	-4.03	39.34	54.00	-14.66	AVG	V
7986.150	36.00	-0.28	35.72	54.00	-18.28	AVG	V
8106.000	46.03	-0.43	45.60	74.00	-28.40	peak	V
10519.150	43.40	2.37	45.77	74.00	-28.23	peak	V
10568.450	35.97	1.78	37.75	54.00	-16.25	AVG	V
13073.400	42.60	5.24	47.84	74.00	-26.16	peak	V
13073.400	32.66	5.24	37.90	54.00	-16.10	AVG	V
14984.200	39.78	9.26	49.04	74.00	-24.96	peak	V
14984.200	31.04	9.26	40.30	54.00	-13.70	AVG	V
15968.500	39.97	10.33	50.30	74.00	-23.70	peak	V
16010.150	30.41	10.95	41.36	54.00	-12.64	AVG	V



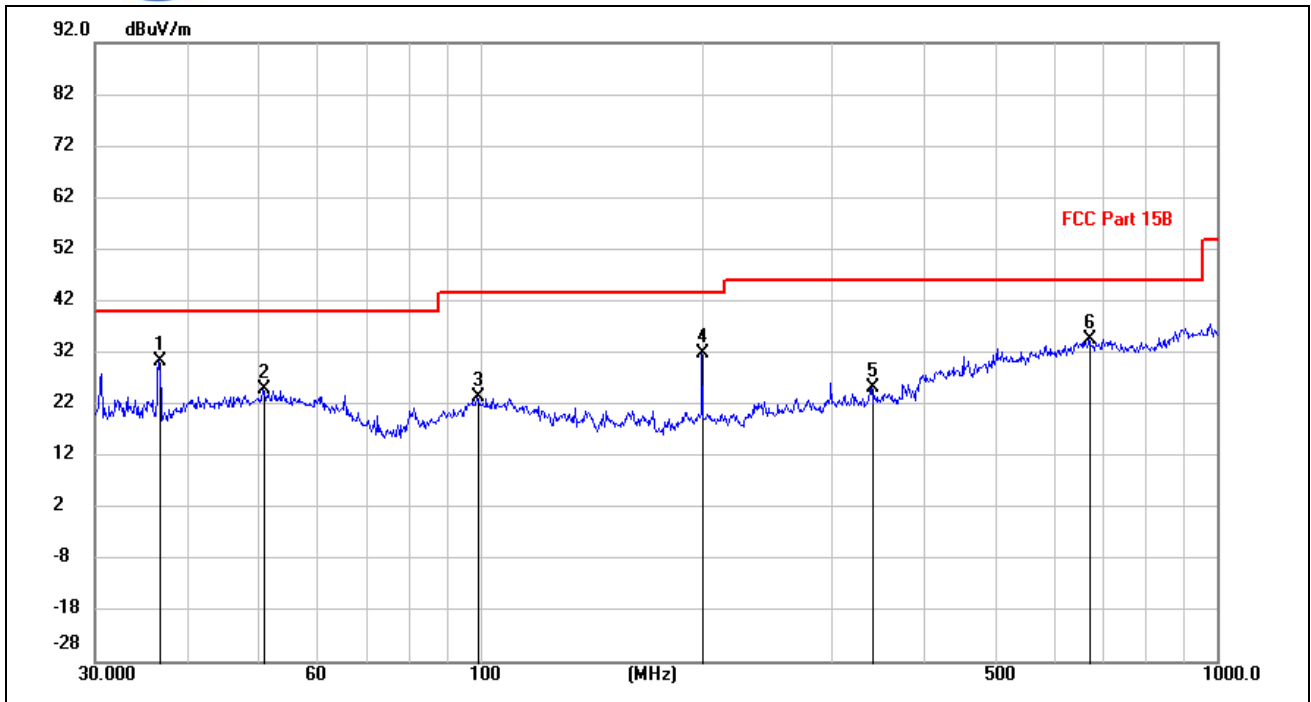
(802.11n_20M_2462MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
49.6893	5.59	16.00	21.59	40.00	-18.41	peak	H
101.5196	6.61	14.85	21.46	43.50	-22.04	peak	H
187.2926	8.08	12.81	20.89	43.50	-22.61	peak	H
335.2701	7.08	17.46	24.54	46.00	-21.46	peak	H
439.6563	11.58	16.95	28.53	46.00	-17.47	peak	H
672.4906	14.17	19.79	33.96	46.00	-12.04	peak	H



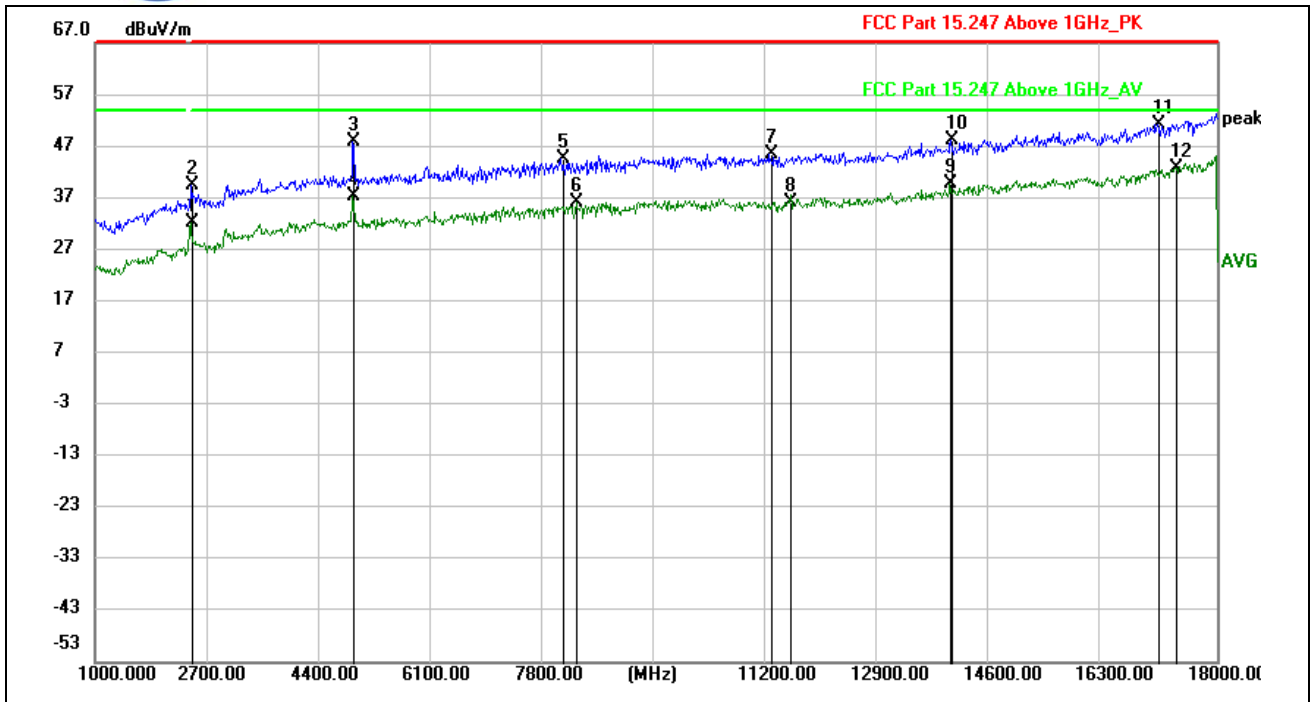
(802.11n_20M_2462MHz, Antenna Horizontal, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
3001.750	48.65	-9.27	39.38	74.00	-34.62	peak	H
3001.750	39.72	-9.27	30.45	54.00	-23.55	AVG	H
3504.100	40.29	-8.53	31.76	54.00	-22.24	AVG	H
3517.700	49.04	-8.29	40.75	74.00	-33.25	peak	H
4925.300	48.80	-3.64	45.16	74.00	-28.84	peak	H
4925.300	39.17	-3.64	35.53	54.00	-18.47	AVG	H
8763.900	44.16	0.40	44.56	74.00	-29.44	peak	H
8818.300	35.84	0.35	36.19	54.00	-17.81	AVG	H
10498.750	34.71	1.79	36.50	54.00	-17.50	AVG	H
10528.500	43.74	1.69	45.43	74.00	-28.57	peak	H
14471.650	32.24	7.27	39.51	54.00	-14.49	AVG	H
14498.850	42.32	7.08	49.40	74.00	-24.60	peak	H



(802.11n_20M_2462MHz, Antenna Vertical, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6567	16.85	13.41	30.26	40.00	-9.74	peak	V
50.8795	8.93	15.90	24.83	40.00	-15.17	peak	V
99.2493	8.78	14.57	23.35	43.50	-20.15	peak	V
200.0557	17.44	14.35	31.79	43.50	-11.71	peak	V
340.0654	7.04	18.27	25.31	46.00	-20.69	peak	V
672.4905	14.78	19.79	34.57	46.00	-11.43	peak	V



(802.11n_20M_2462MHz, Antenna Vertical, 1GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2462.850	43.85	-11.55	32.30	---	---	AVG	V
2466.250	50.75	-11.46	39.29	---	---	peak	V
4923.600	51.38	-3.65	47.73	74.00	-26.27	peak	V
4923.600	40.88	-3.65	37.23	54.00	-16.77	AVG	V
8072.850	45.06	-0.45	44.61	74.00	-29.39	peak	V
8308.300	36.02	0.00	36.02	54.00	-17.98	AVG	V
11234.850	43.60	1.86	45.46	74.00	-28.54	peak	V
11523.850	33.52	2.68	36.20	54.00	-17.80	AVG	V
13968.450	32.62	7.05	39.67	54.00	-14.33	AVG	V
13983.750	40.98	7.12	48.10	74.00	-25.90	peak	V
17113.450	38.94	12.19	51.13	74.00	-22.87	peak	V
17382.050	30.34	12.43	42.77	54.00	-11.23	AVG	V



Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Peak Output Power	$\pm 2.22\text{dB}$
Power spectral density (PSD)	$\pm 2.22\text{dB}$
Bandwidth	$\pm 5\%$
Conducted Spurious Emission	$\pm 2.77\text{ dB}$
Restricted Frequency Bands	$\pm 5\%$
Radiated Emission	$\pm 3.1\text{dB}$
Conducted Emission	$\pm 1.8\text{dB}$

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$



Annex B Testing Laboratory Information

1..Identification of the Responsible Testing Laboratory

Laboratory Name:	Kehu-Morlab Test Laboratory
Laboratory Address:	Unit 101, No.1732 Gangzhong Road, Xiamen Area, Pilot Free Trade Zone (Fujian) P.R. China
Telephone:	+86-0592-5612050
Facsimile:	+86-0592-5612095

2. Identification of the Responsible Testing Location

Name:	Kehu-Morlab Test Laboratory
Address:	Unit 101, No.1732 Gangzhong Road, Xiamen Area, Pilot Free Trade Zone (Fujian) P.R. China

3. Accreditation Certificate

Accredited Testing Laboratory:	The FCC designation number is CN1249. (Kehu-Morlab Test Laboratory)
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4. Test Equipments Utilized

4.1 Conducted Test Equipments

No	Equipment Name	Serial No.	Model No.	Manufacturer	Cal.Due Date
1	MXA Signal Analyzer	MY53421845	N9020A	Keysight	2022. 03.08
2	RF cable (30MHz-26.5GHz)	RF01	N/A	Morlab	2022.03.06
3	Coaxial cable	RF02	N/A	Morlab	2022.03.06
4	SMA connector	RF03	N/A	Xingbo	N/A
5	USB Power Sensor	MY56410006	U2021XA	Keysight	2022.06.18

4.2 Conducted Emission Test Equipments

No	Equipment Name	Serial No.	Model No.	Manufacturer	Cal.Due Date
1	EMI Receiver	102174	ESR3	ESR3	2022.03.15
2	LISN	101338	ENV432	ENV432	2022.03.09
3	Pulse Limiter (10dB)	317	VTSD 9561 F	VTSD 9561 F	2022.03.13
4	Coaxial cable(BNC)	EMC01	N/A	Morlab	2022.03.13



	(30MHz-3GHz)				
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4.4 List of Software Used

No.	Model	Version Number	Producer	Test Item
1	EMC32	V10.00.00	Rode&Schwarz	RE
2	EMC32	V10.20.01	Rode&Schwarz	CE

4.5 Radiated Test Equipments

RSE Test System					
No.	Equipment Name	Serial No.	Model No.	Manufacturer	Cal.Due Date
1	Anechoic Chamber	N/A	9m*6m*6m	ETS-Lindgren	2022.07.20
2	Signal Analyzer	101294	FSV40	R&S	2022.03.02
3	Active Ring Antenna	FMZB 1513 #269	FMZB 1513	Schwarzbeck	2022.03.11
4	Linear Log Periodic Broad Band Antenna	949	VULB 9163	Schwarzbeck	2022.09.24
5	Ultra-Wideband Horn Antenna	102615	HF907	R&S	2022.01.18
6	Steatite Antennas	17868	QSH-SL-18-26-S-20	Seibersdorf	2022.03.23
7	RF Switch and Control Platform	N/A	RSC	CDSI	2022.03.11
8	Coaxial cable (N male) (9kHz -3GHz)	EMC02	N/A	Morlab	N/A
9	Coaxial cable (N male) (9kHz -3GHz)	EMC03	N/A	Morlab	2022.03.23
10	Coaxial cable (N male) (1GHz-26.5GHz)	EMC04	N/A	Morlab	2022.03.23
11	Coaxial cable (N male) (1GHz-26.5GHz)	EMC05	N/A	Morlab	2022.03.23



12	Pre-amplifier (1GHz-18GHz)	8810011	PAP-1G18	CDSI	2022.03.23
13	Pre-amplifier (18GHz-40GHz)	17021-17024	PAP-1840	CDSI	2022.03.23
14	Band stop Filter	EMC19	BJF2400/2485-60	CDSI	2022.03.23
15	High Pass Filter	EMC22	HFP-3.0/18G-60	CDSI	2022.03.23

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