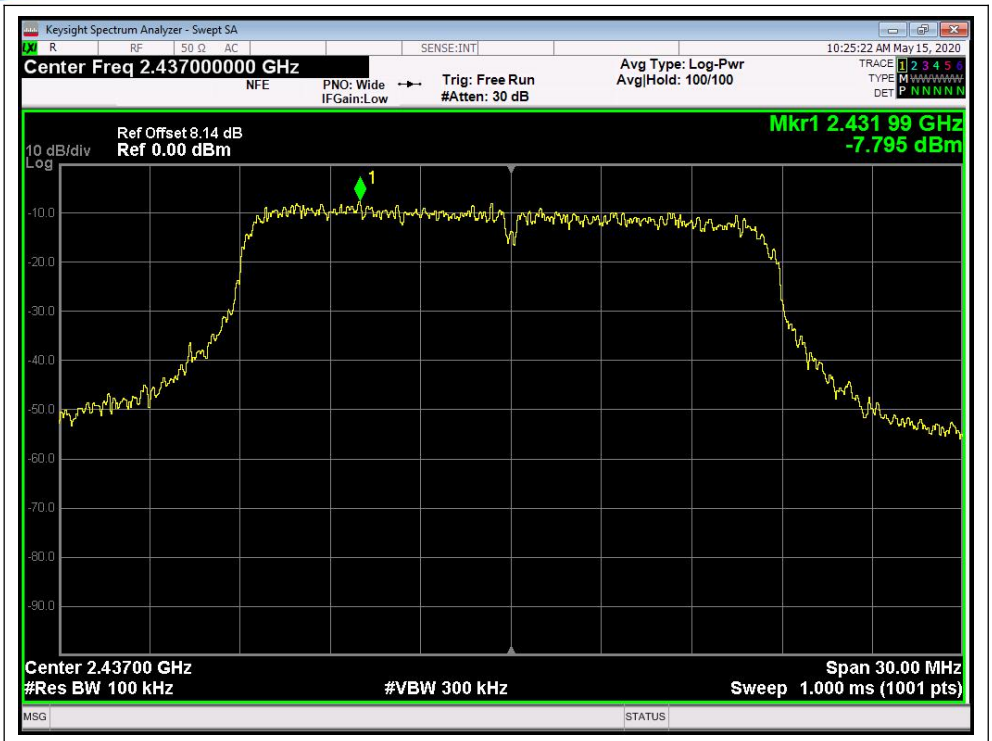
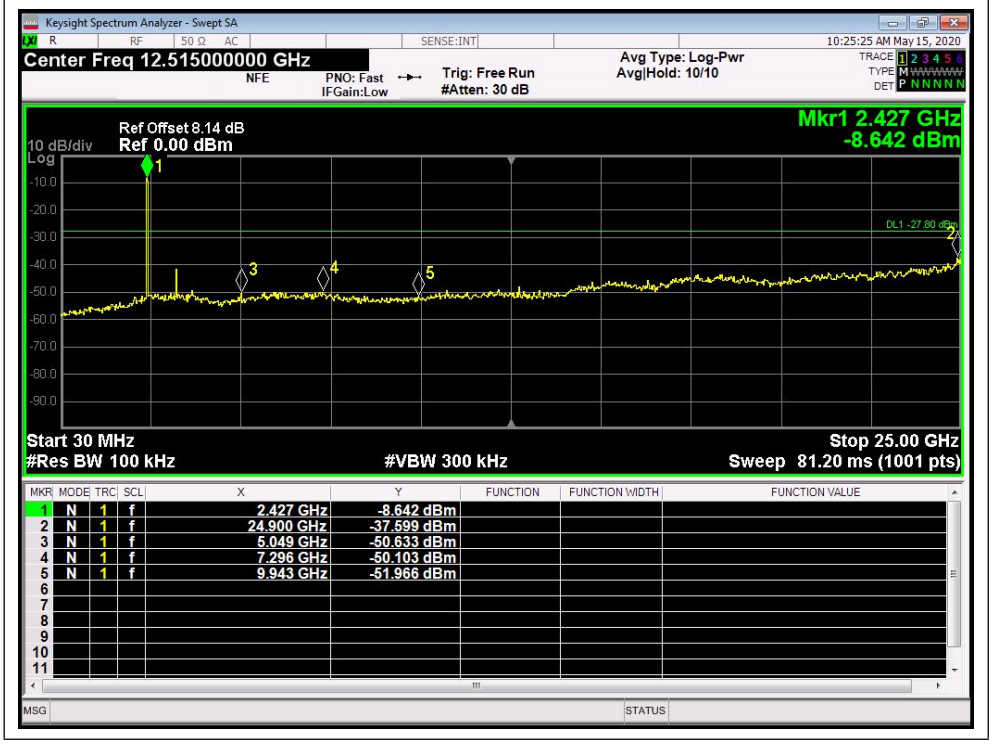
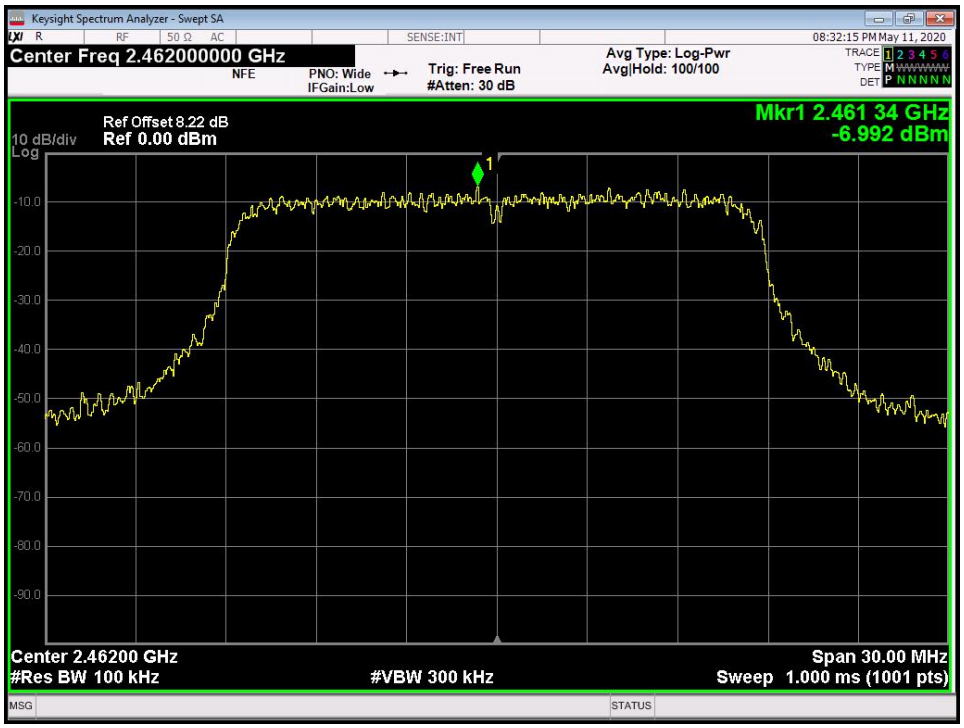
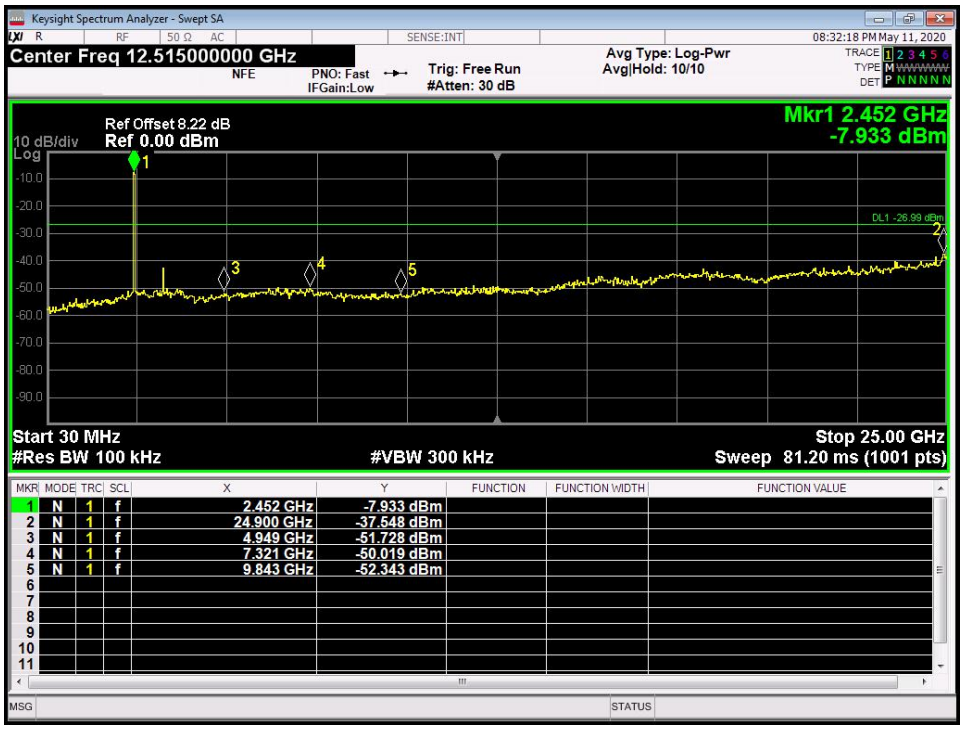


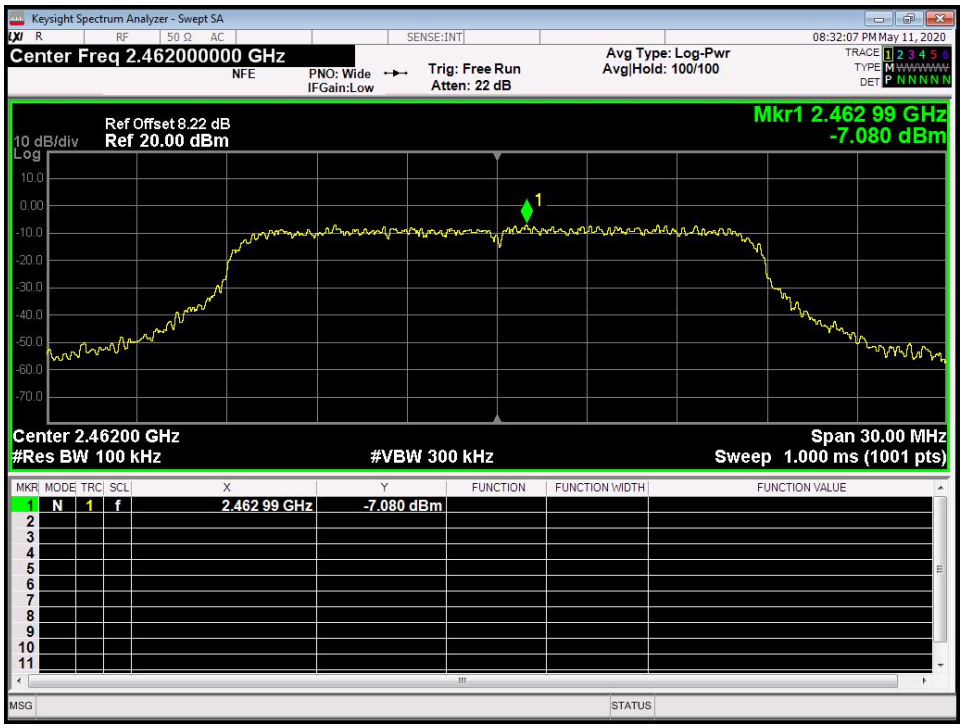


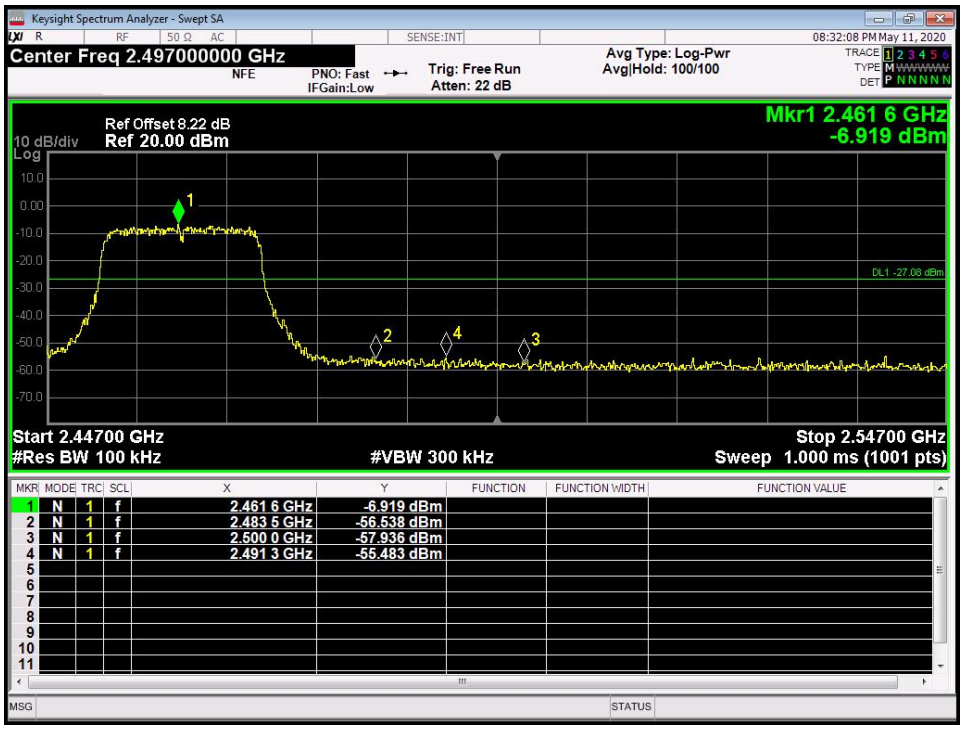
(802.11 HT20, Channel = 6, 30MHz to 25GHz)



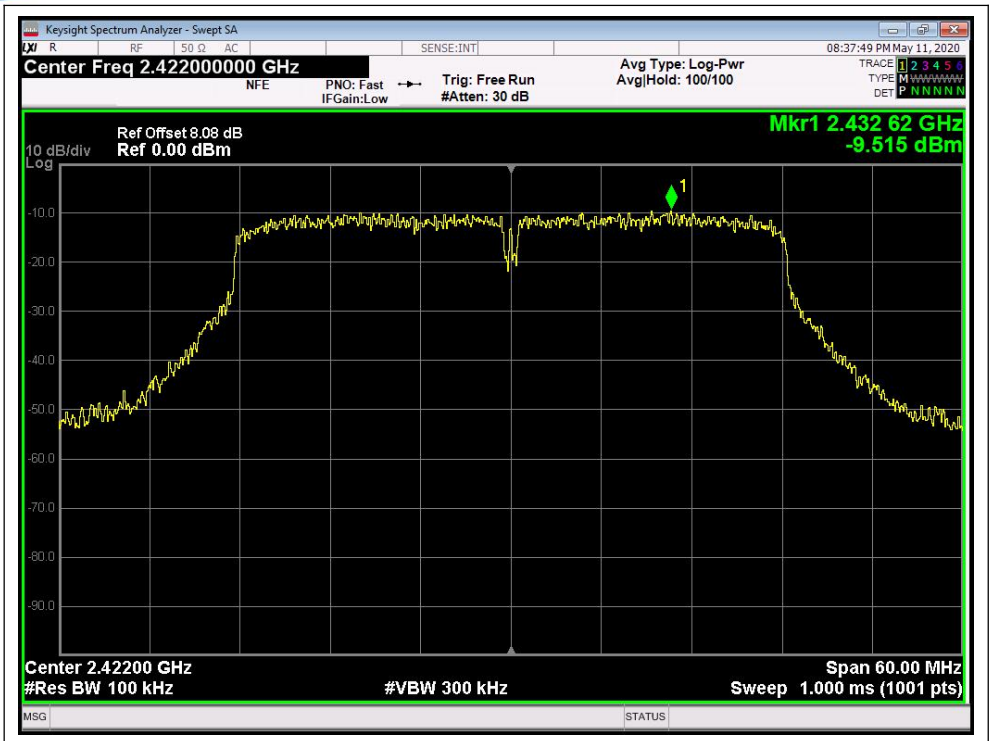


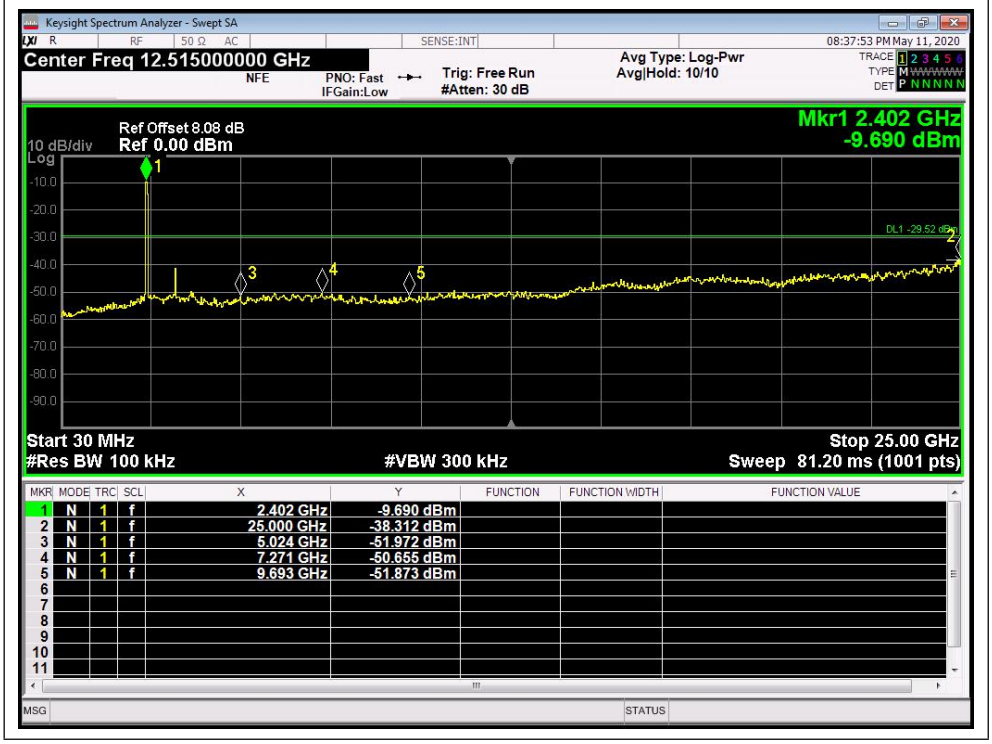
(802.11 HT20, Channel = 11, 30MHz to 25GHz)



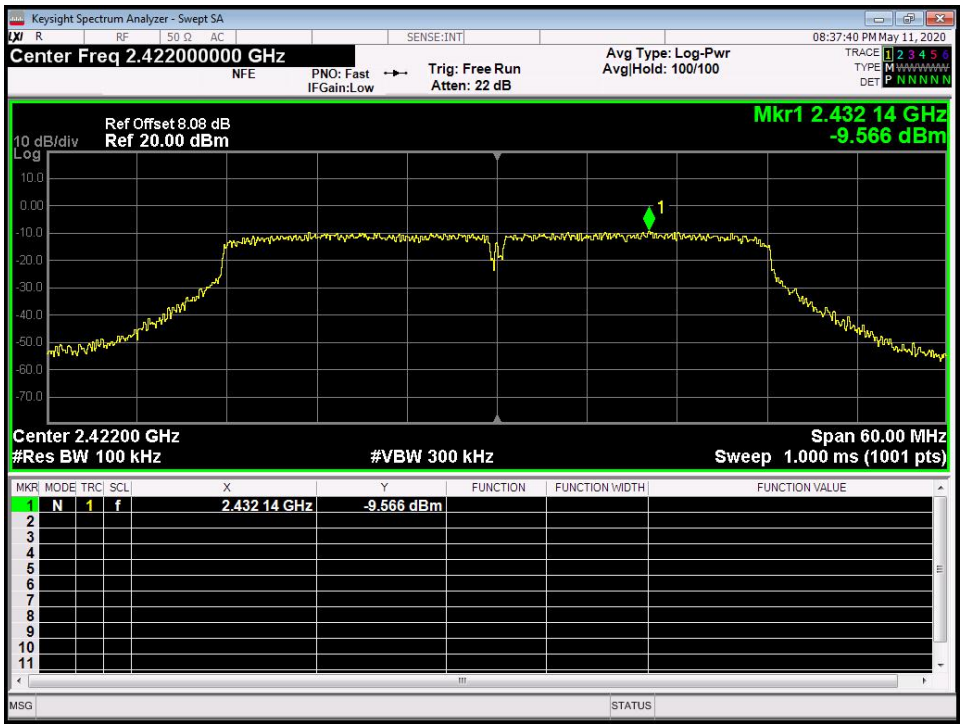


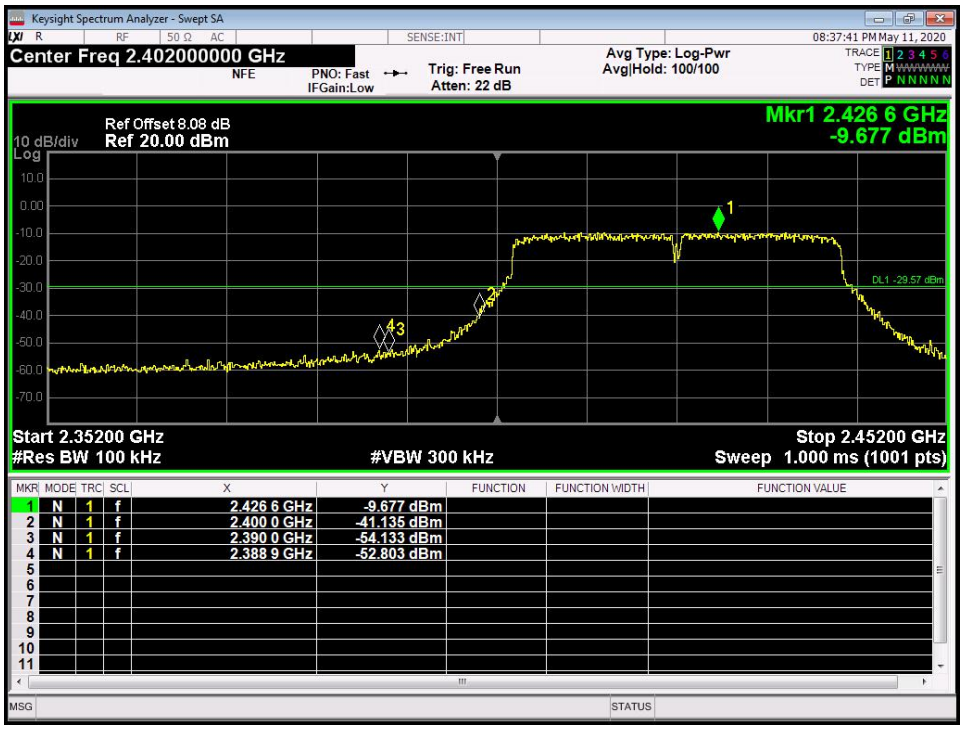
(802.11 HT20, Band Edge @ Channel = 11)



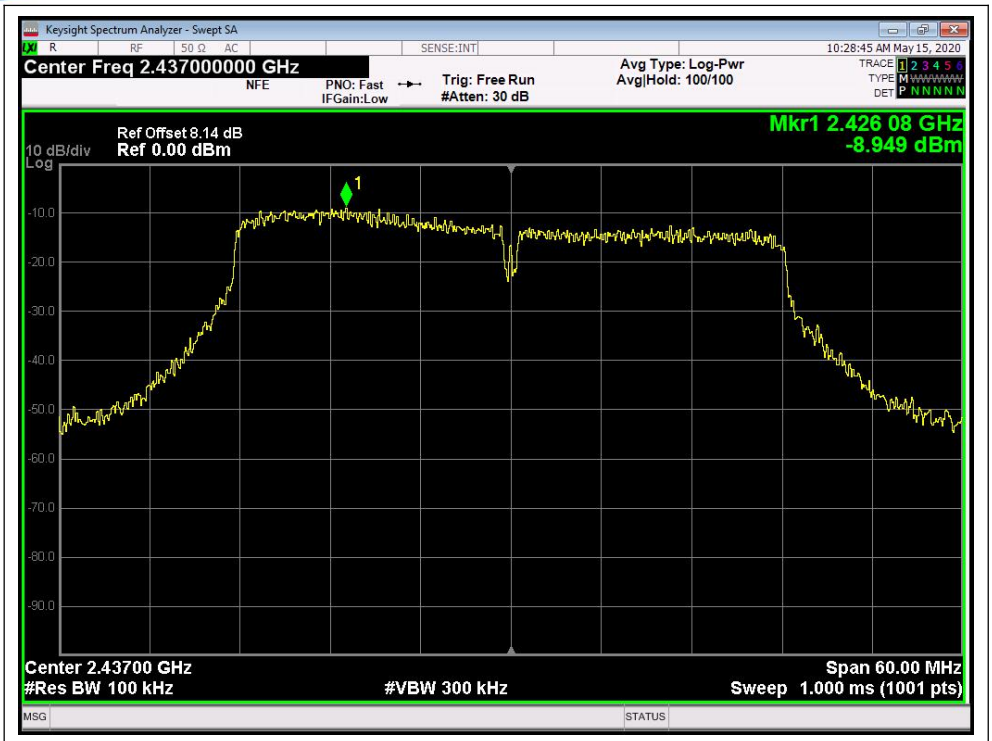


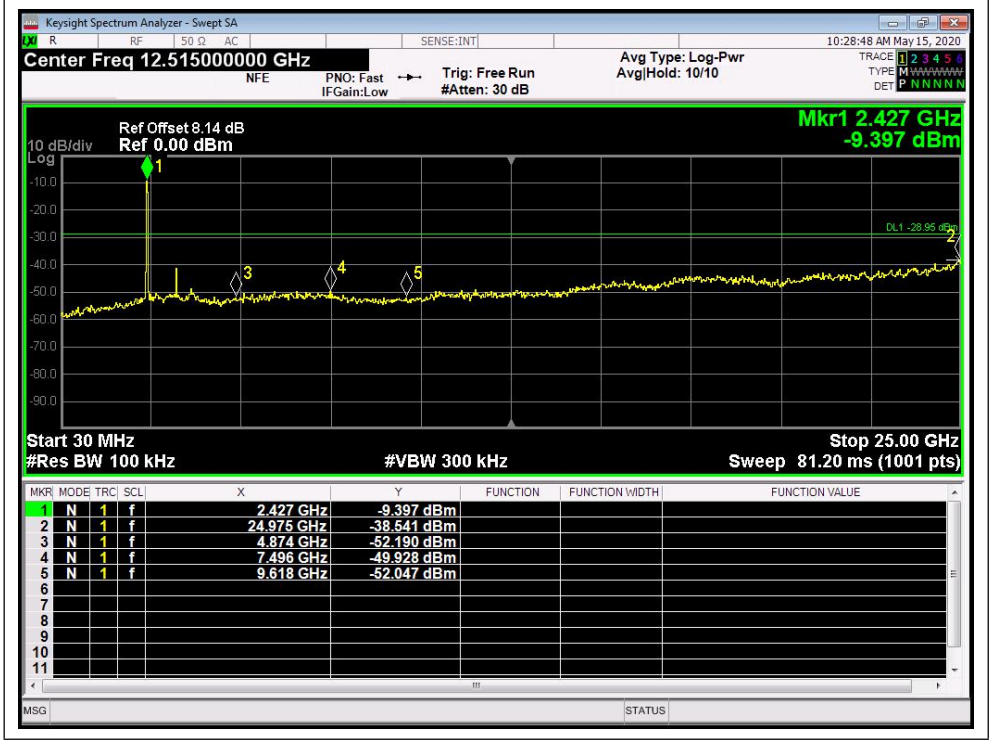
(802.11 HT40, Channel = 3, 30MHz to 25GHz)



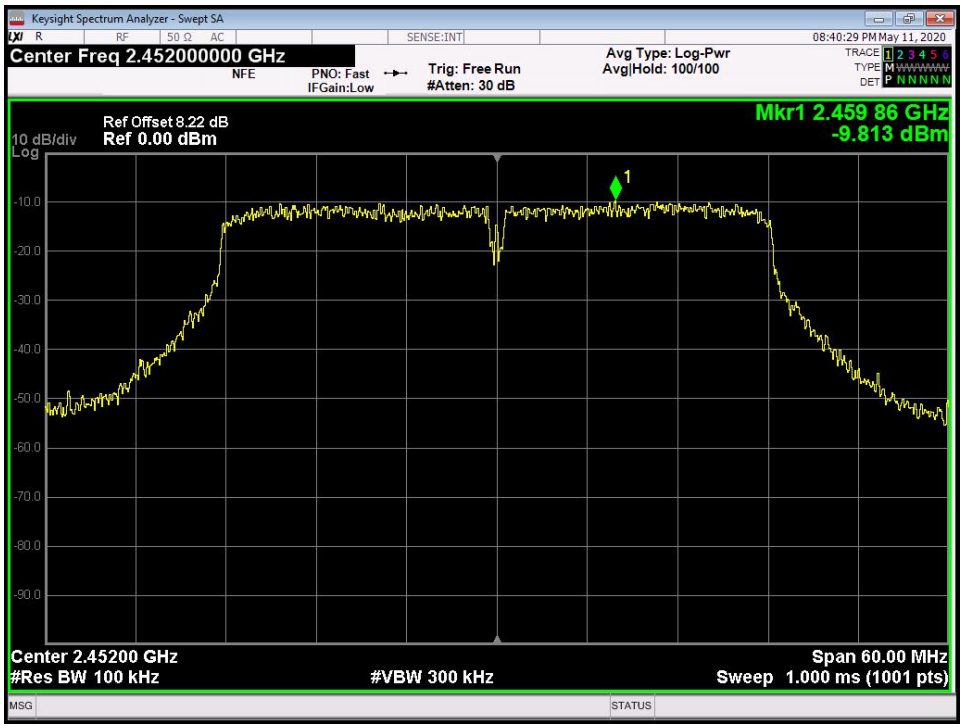


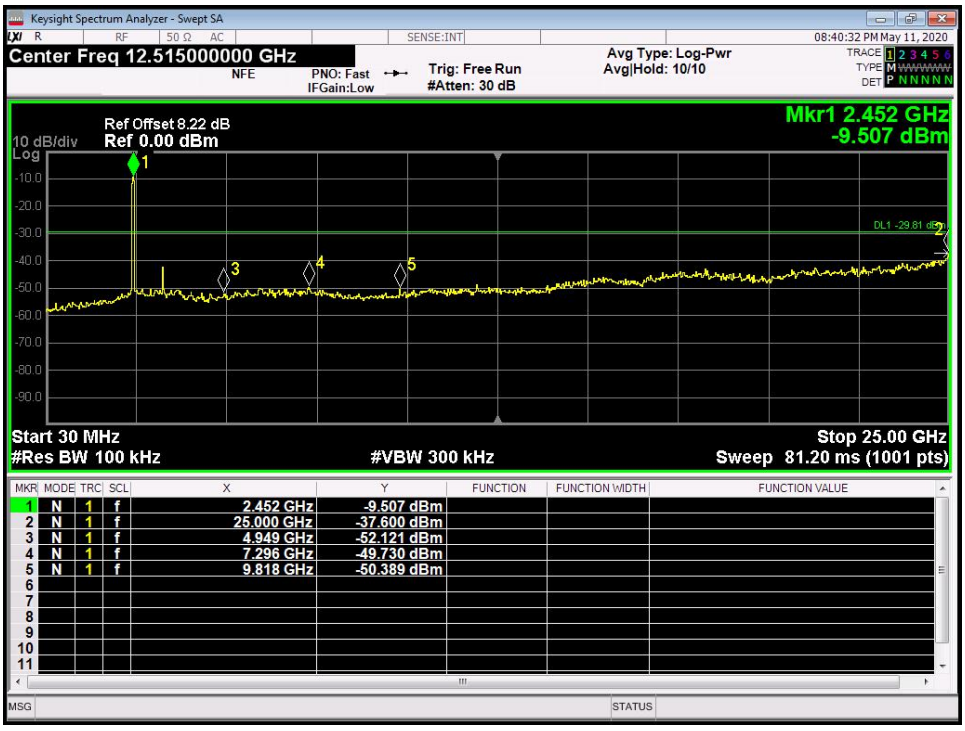
(802.11 HT40, Band Edge @ Channel = 3)



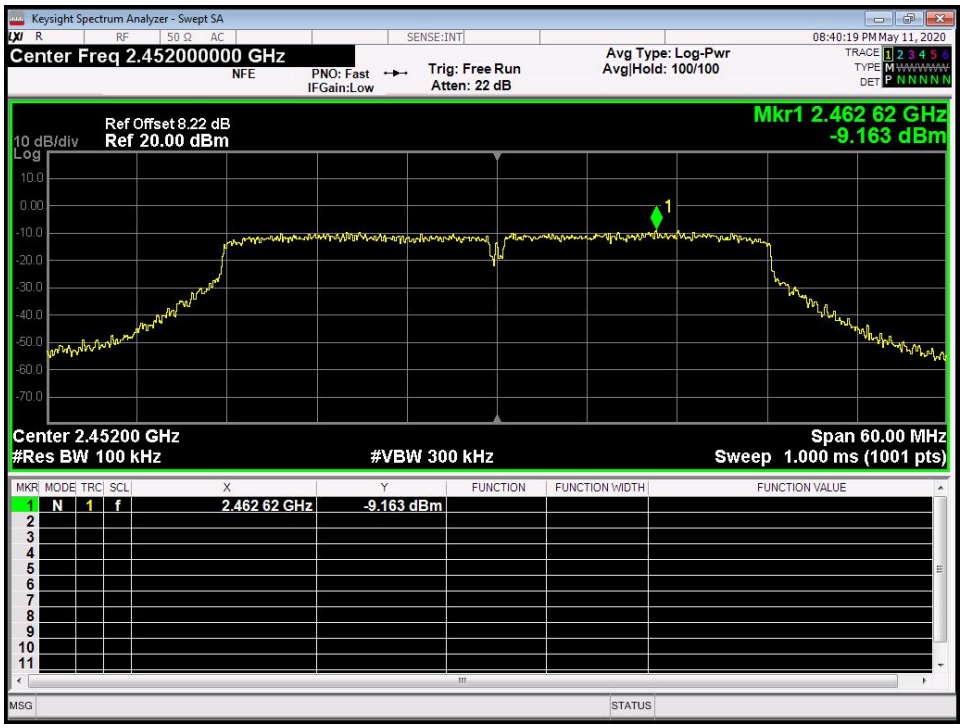


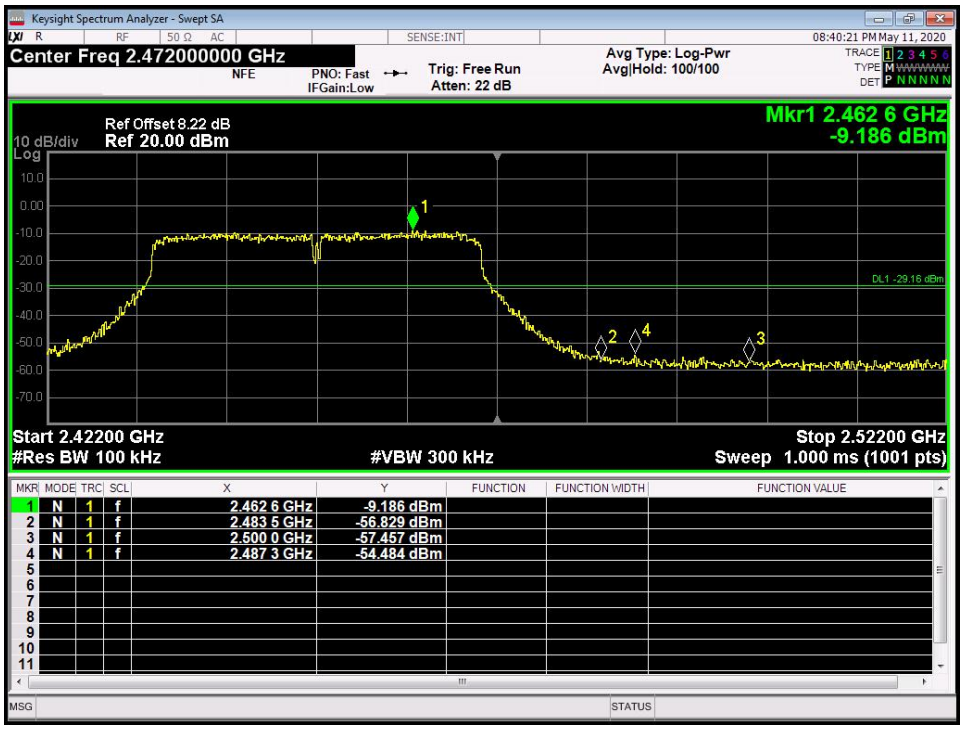
(802.11 HT40, Channel = 6, 30MHz to 25GHz)





(802.11 HT40, Channel = 9, 30MHz to 25GHz)





(802.11 HT40, Band Edge @ Channel = 9)

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).

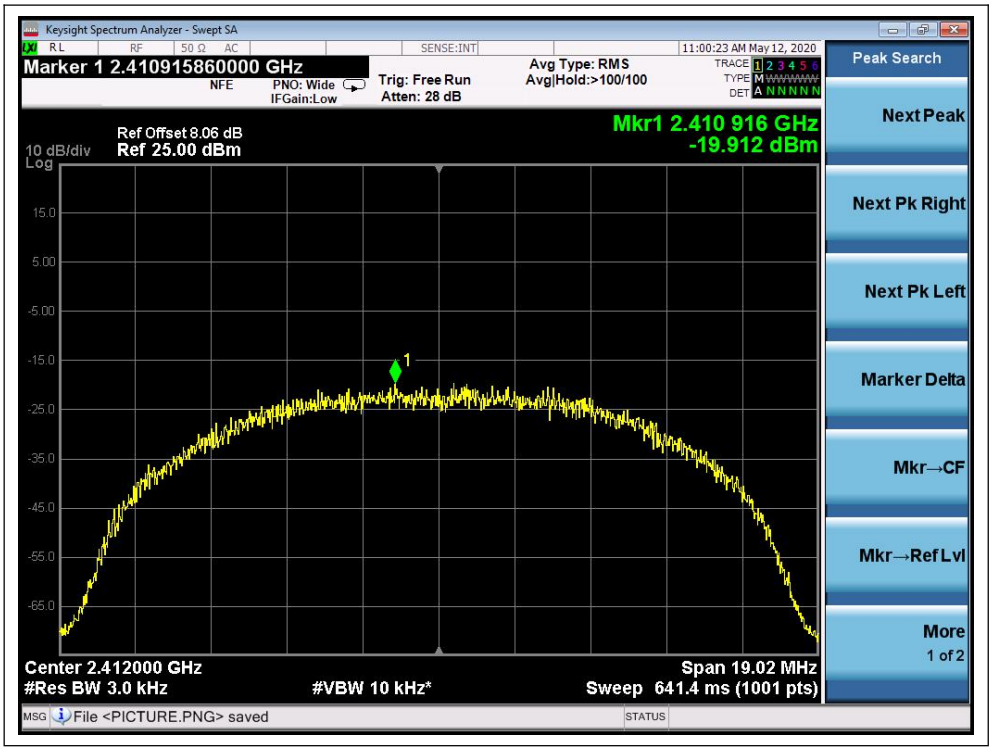
2.5.3. Test Result

802.11b Test mode

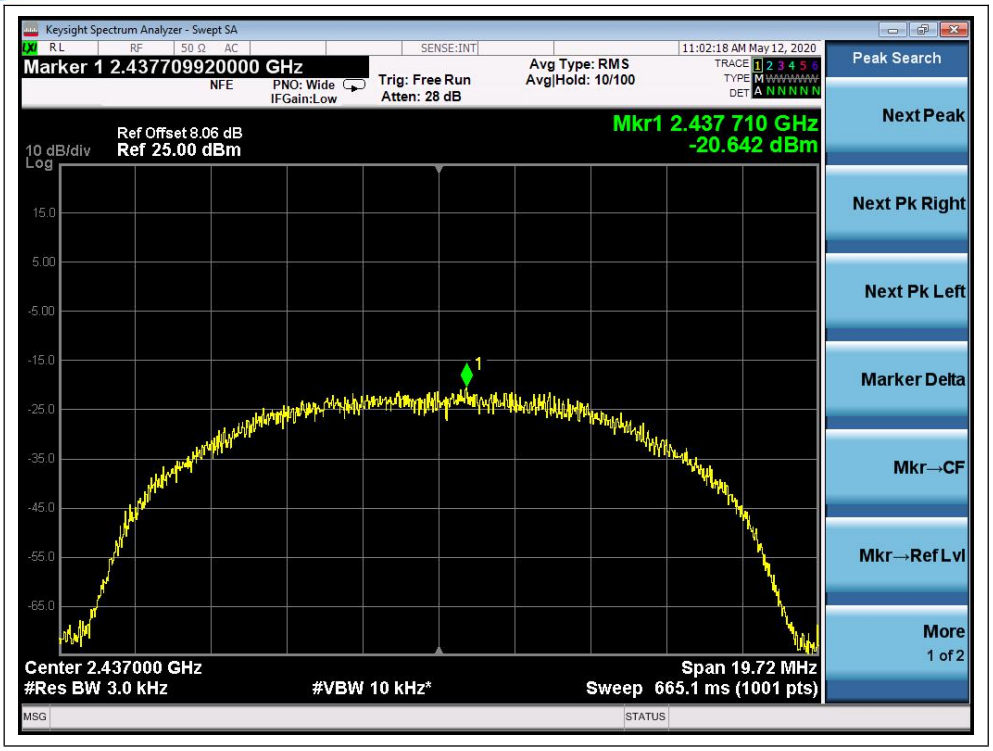
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-19.91	8	**PASS**
6	2437	-20.64	8	**PASS**
11	2462	-19.98	8	**PASS**

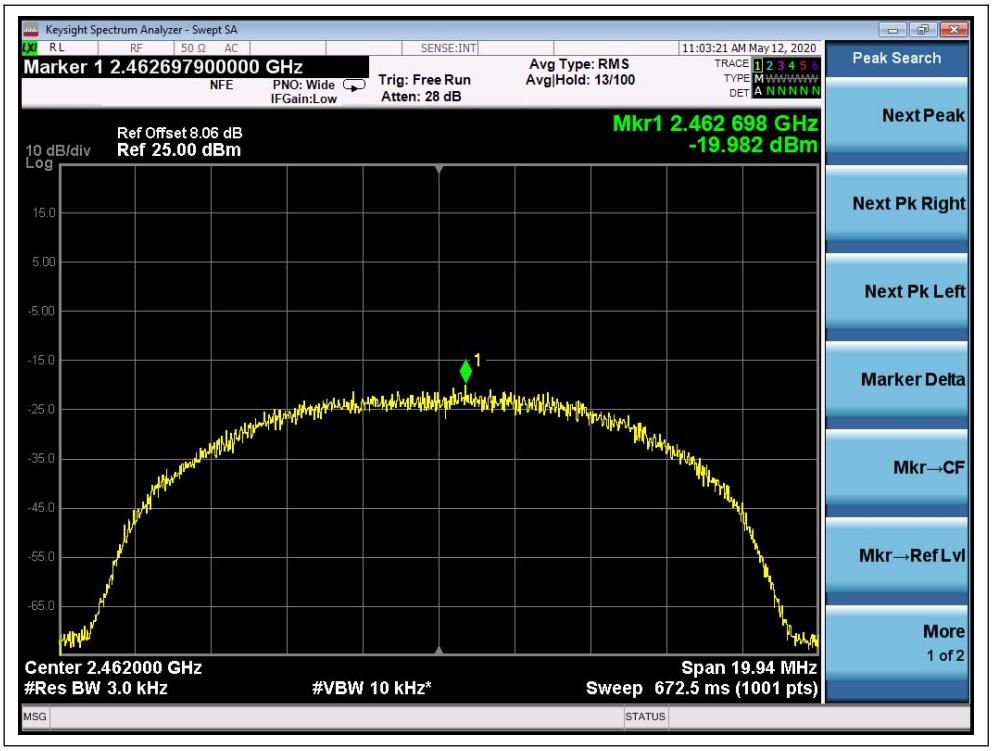
B. Test Plots:



(Channel = 1, 802.11b)



(Channel = 6, 802.11b)



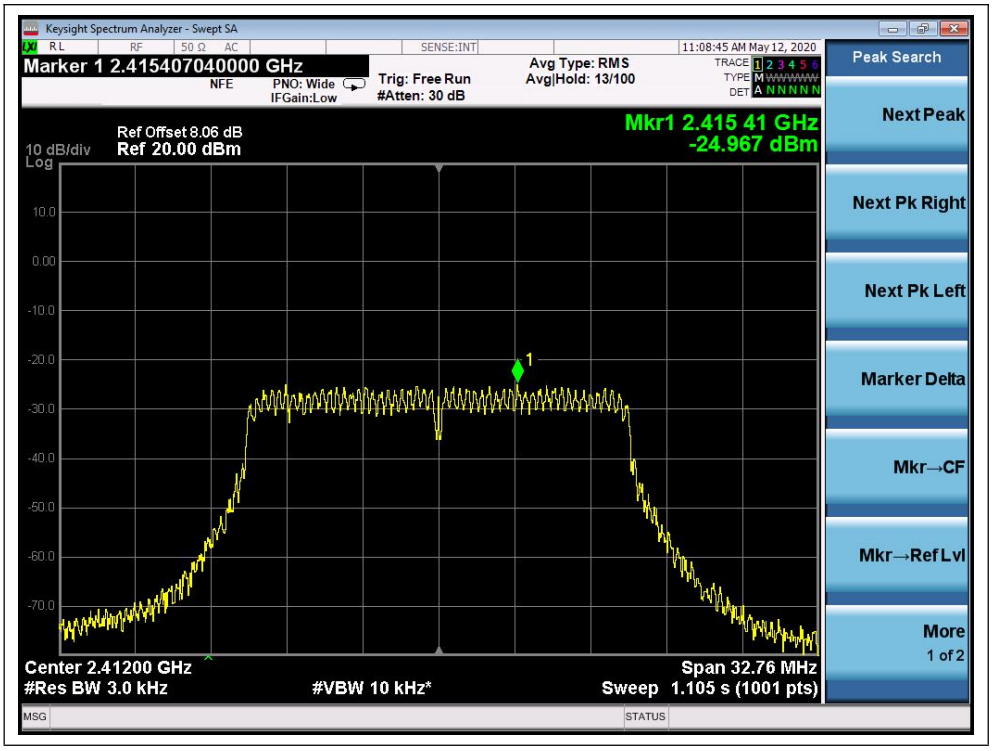
(Channel = 11, 802.11b)

802.11g Test mode

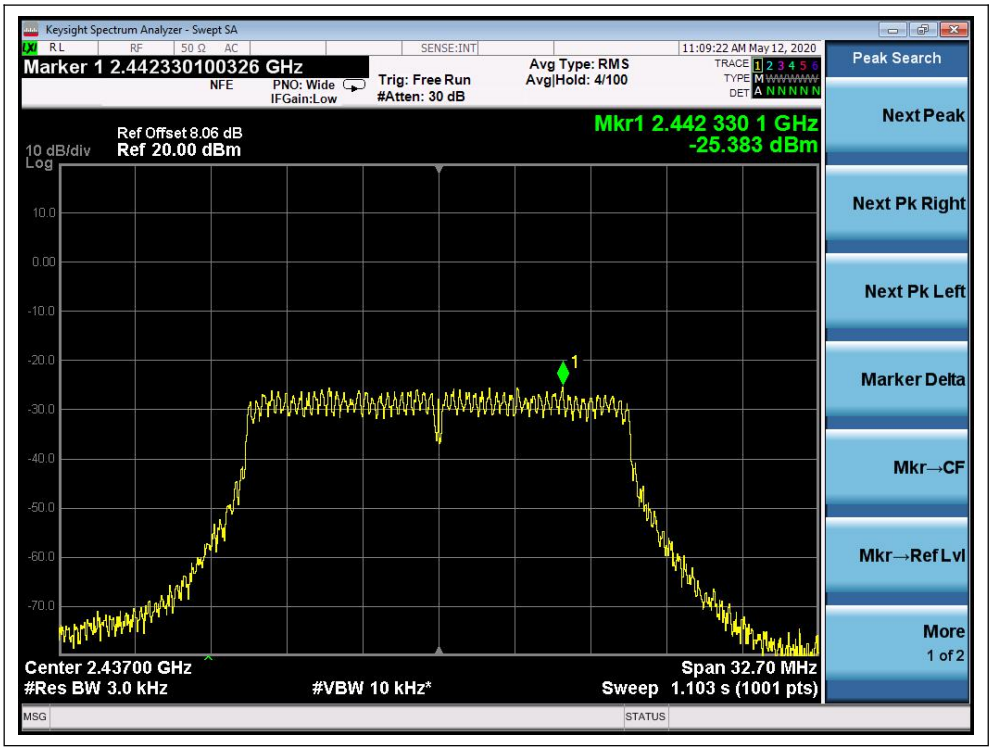
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-24.97	8	**PASS**
6	2437	-25.38	8	**PASS**
11	2462	-25.57	8	**PASS**

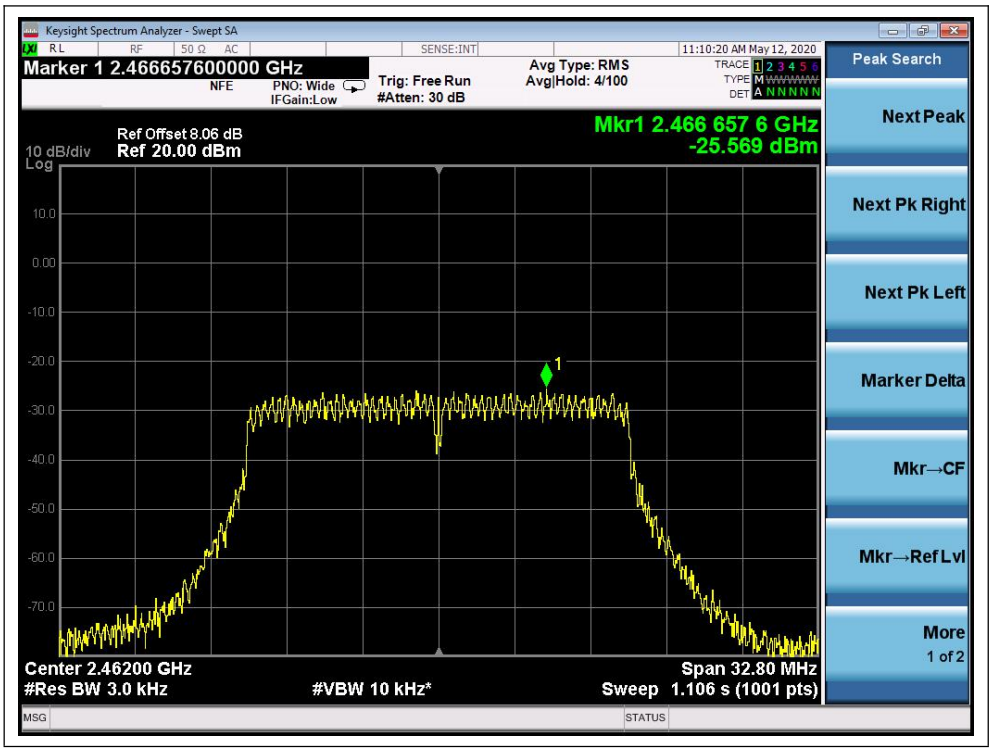
B. Test Plots:



(Channel = 1, 802.11g)



(Channel = 6, 802.11g)



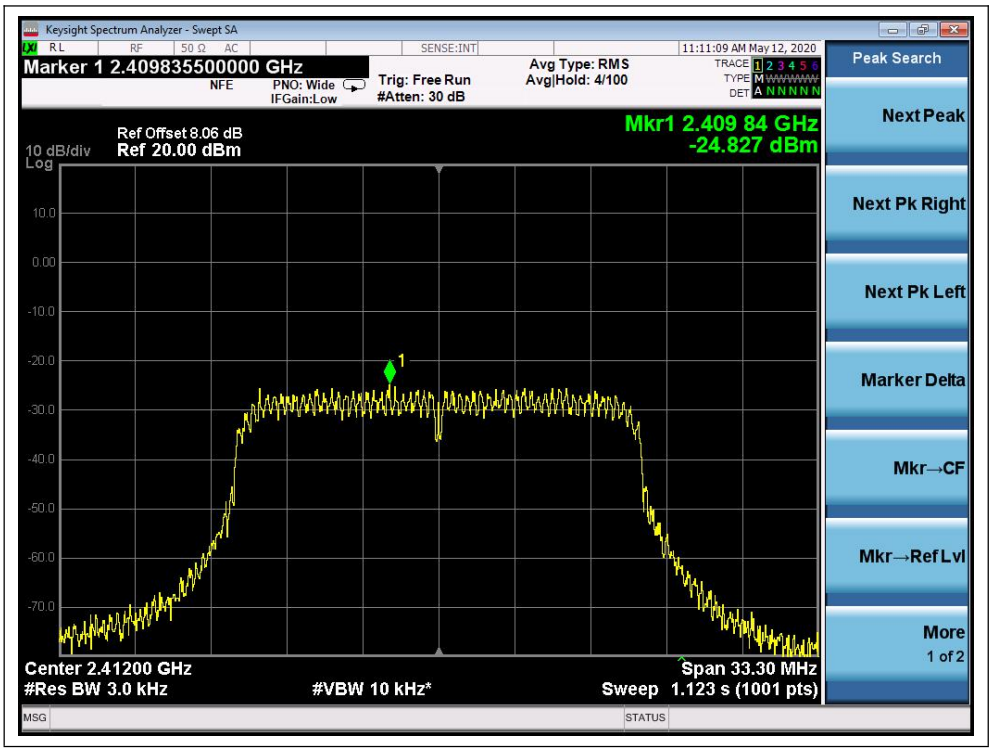
(Channel = 11, 802.11g)

802.11n-20MHz Test mode

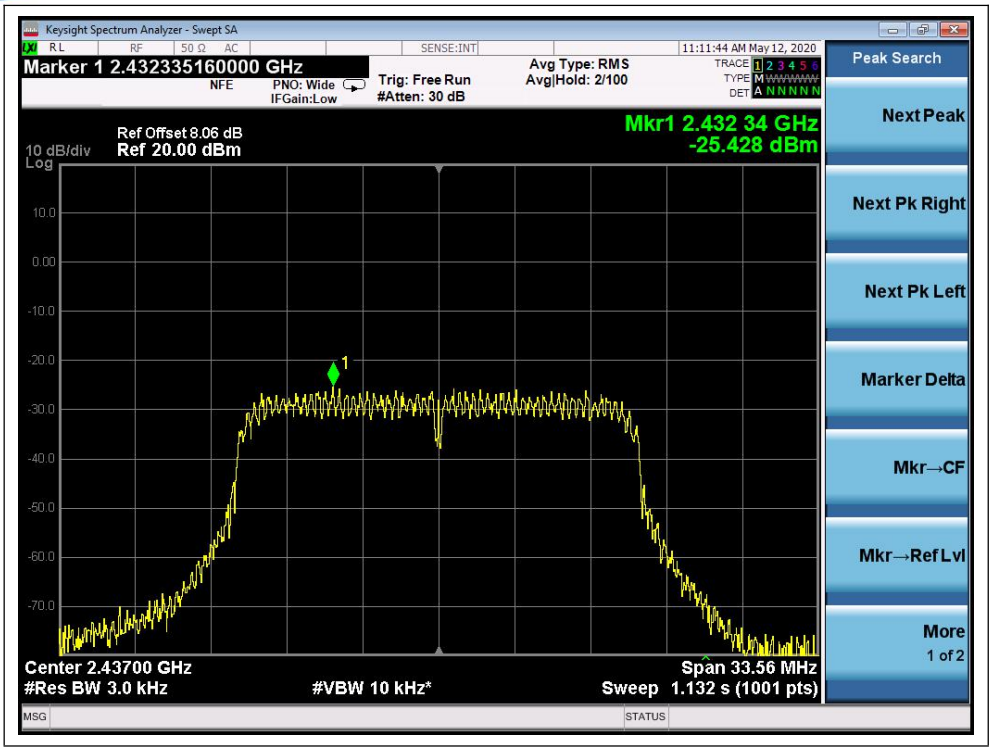
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
1	2412	-24.83	8	**PASS**
6	2437	-25.43	8	**PASS**
11	2462	-25.76	8	**PASS**

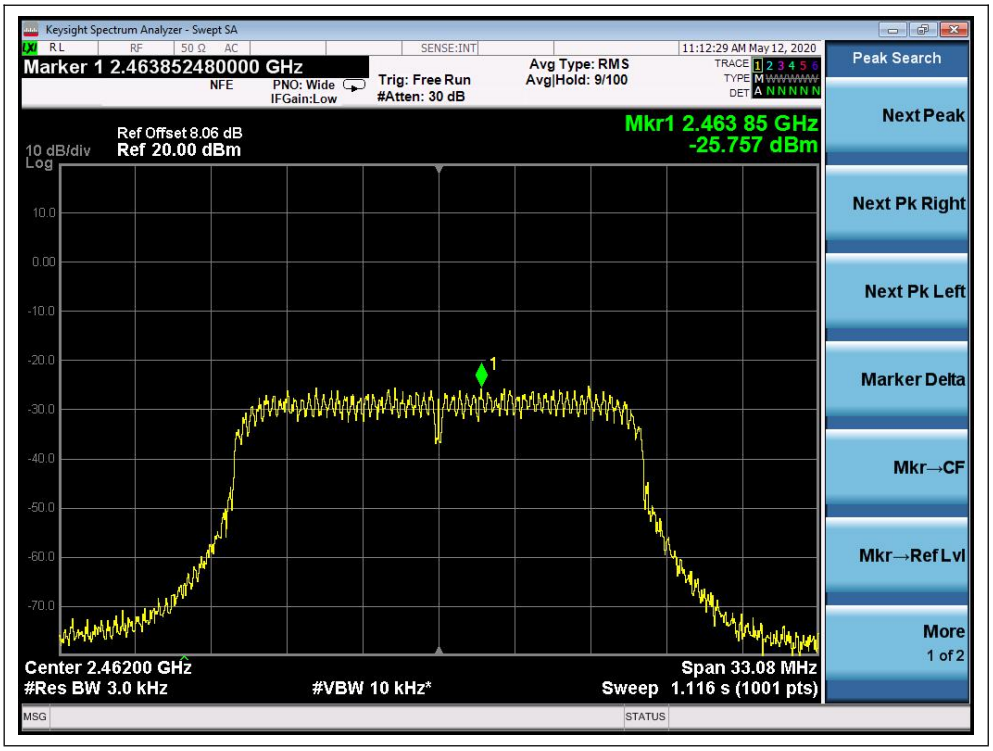
B. Test Plots:



(Channel = 1, 802.11n-20MHz)



(Channel = 6, 802.11n-20MHz)



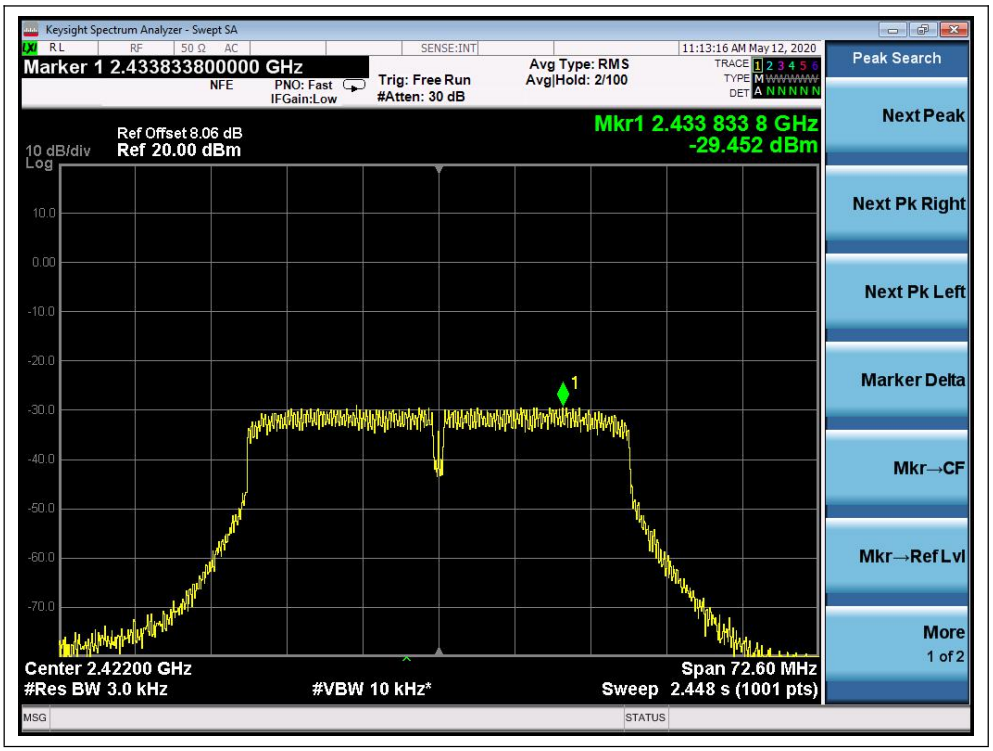
(Channel = 11, 802.11n-20MHz)

802.11n-40MHz Test mode

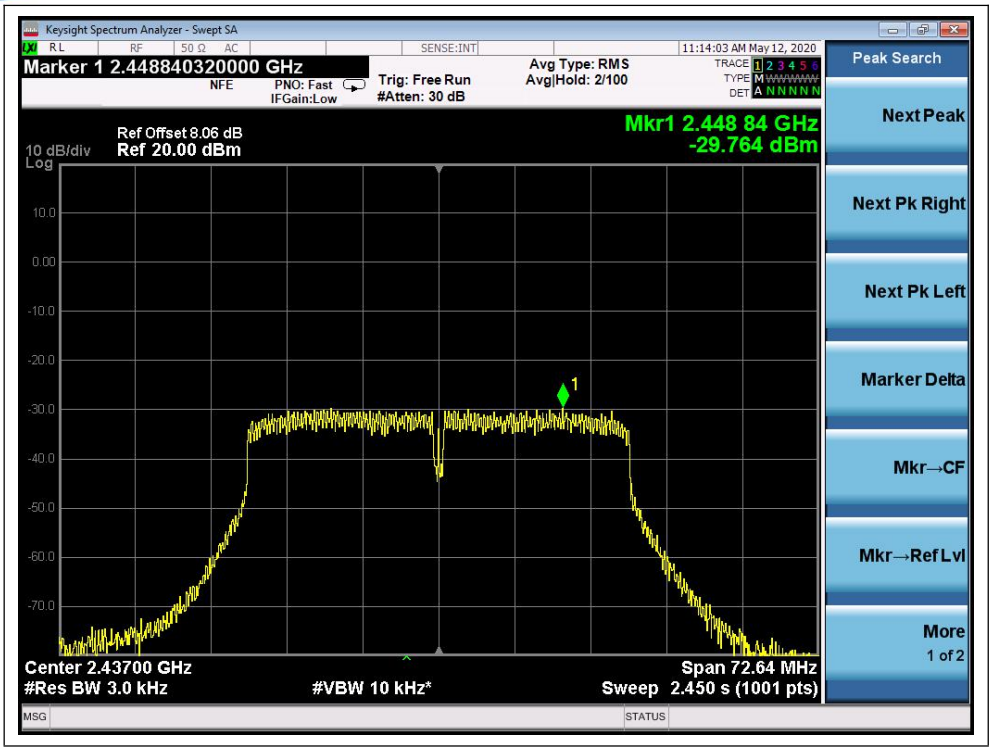
A. Test Verdict:

Spectral power density (dBm/3kHz)				
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
3	2422	-29.45	8	**PASS**
6	2437	-29.76	8	**PASS**
9	2452	-29.34	8	**PASS**

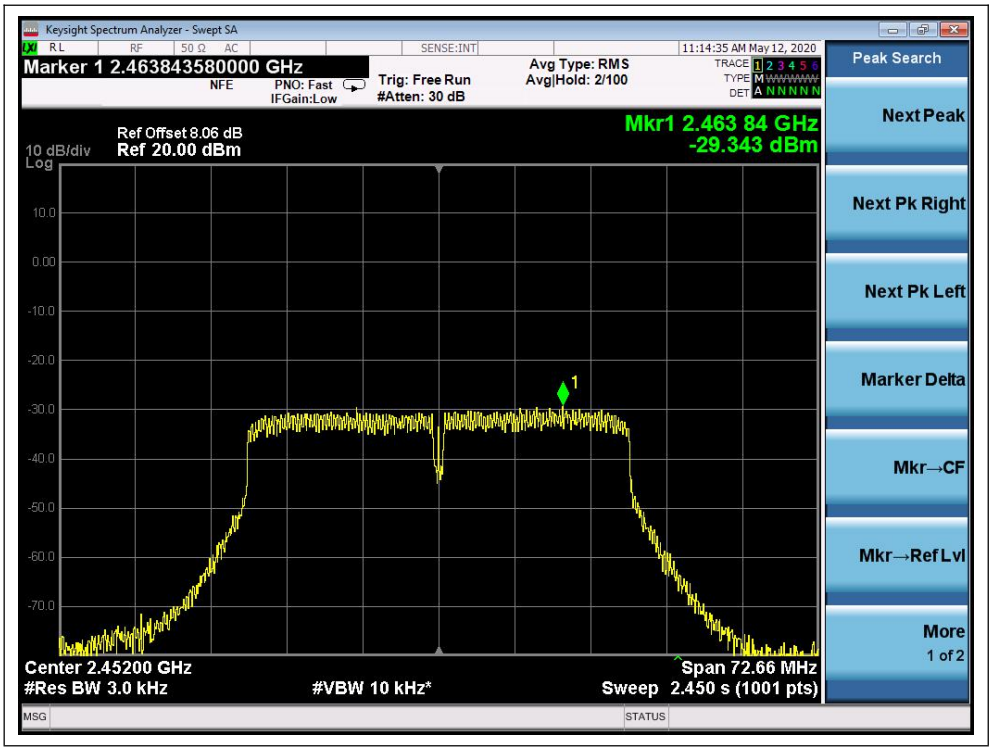
B. Test Plots:



(Channel = 3, 802.11n-40MHz)



(Channel = 6, 802.11n-40MHz)



(Channel = 9, 802.11n-40MHz)

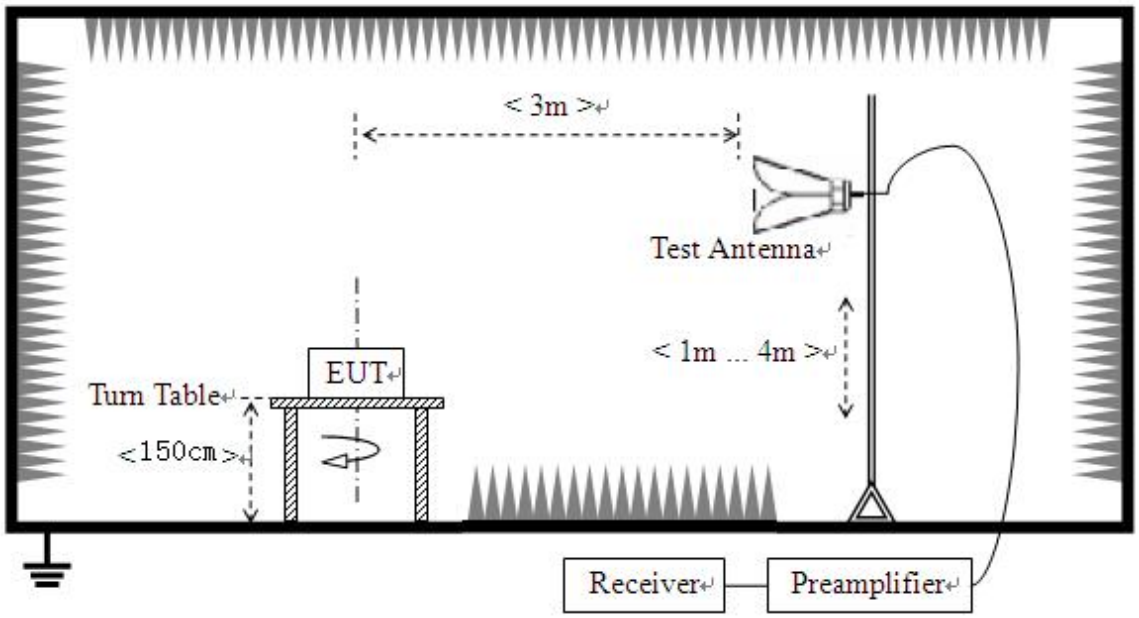
2.6. Restricted Frequency Bands

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 ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.

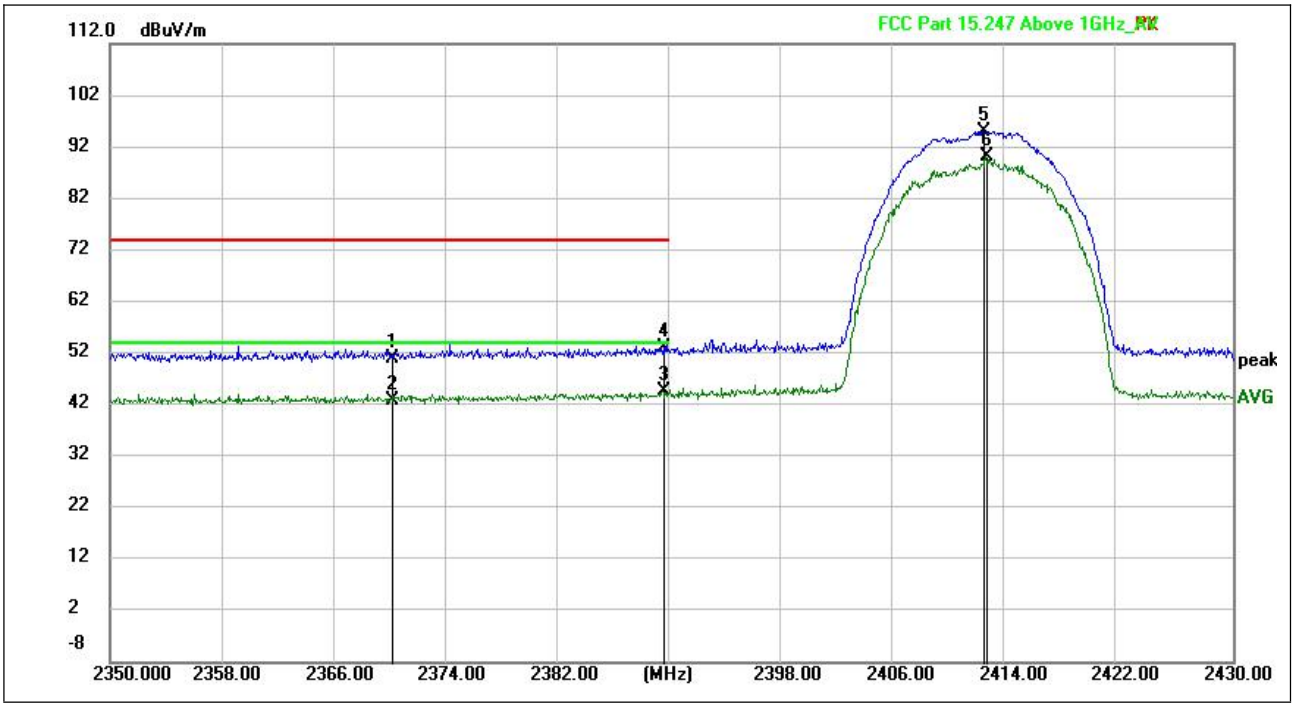
4. All modes of operation were investigated and the worst-case emissions are reported.

B. Equipments List:

Please refer ANNEX B(4).

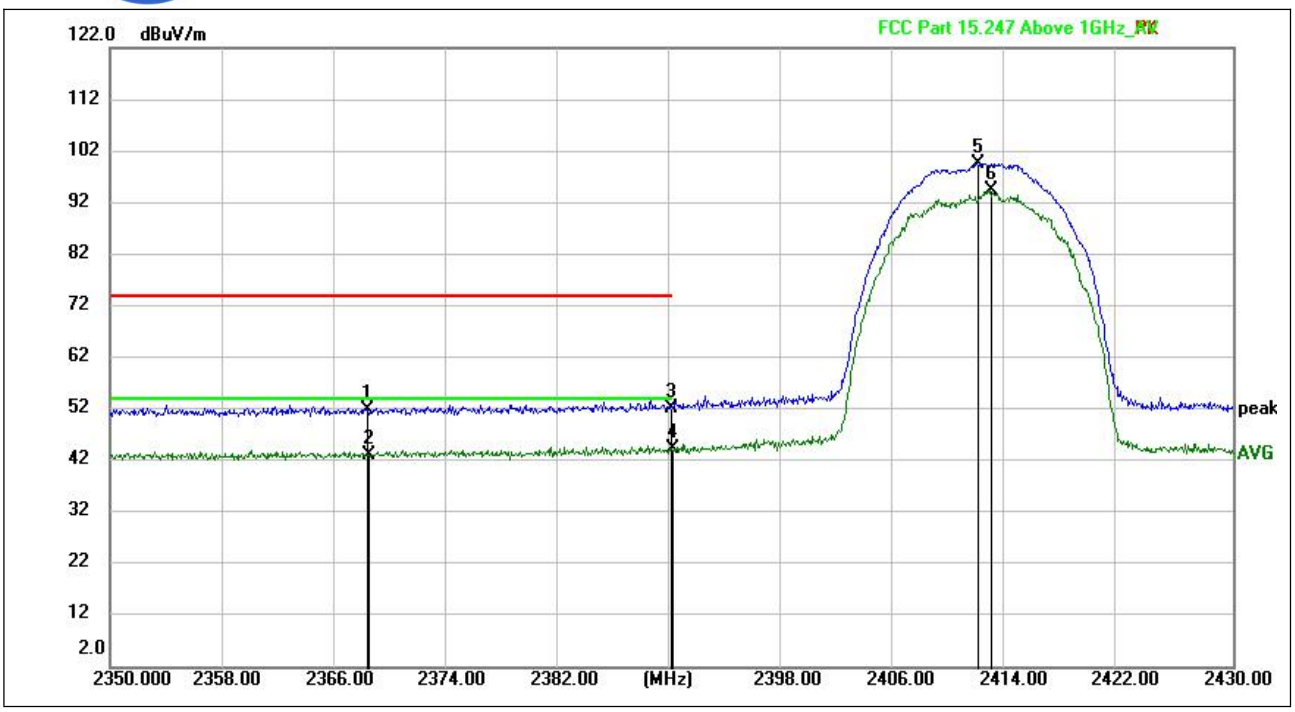
2.6.3. Test Result

802.11b Test mode



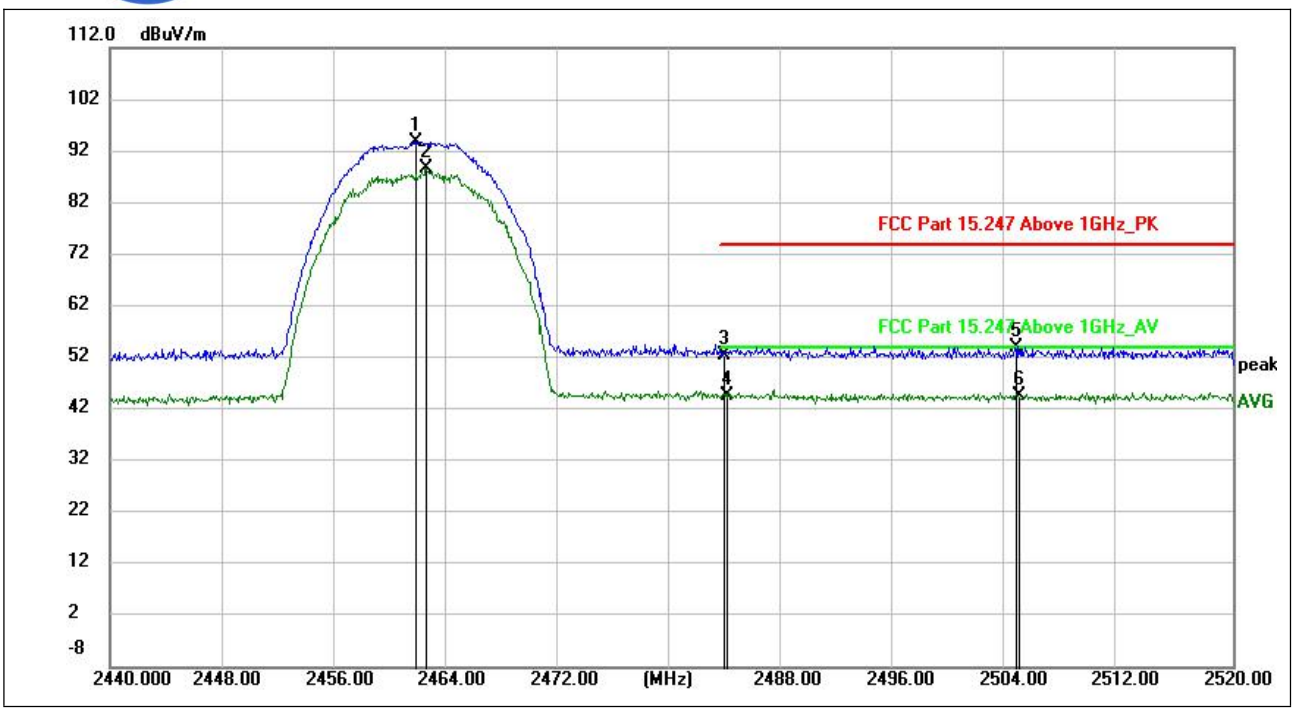
(802.11b _2412MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2370.136	10.80	40.15	50.95	74.00	-23.05	peak	H
2370.136	2.78	40.15	42.93	54.00	-11.07	AVG	H
2389.436	3.83	40.92	44.75	54.00	-9.25	AVG	H
2389.508	12.17	40.92	53.09	74.00	-20.91	peak	H
2412.000	53.85	41.12	94.97	NA	NA	peak	H
2412.000	49.03	41.11	90.14	NA	NA	AVG	H



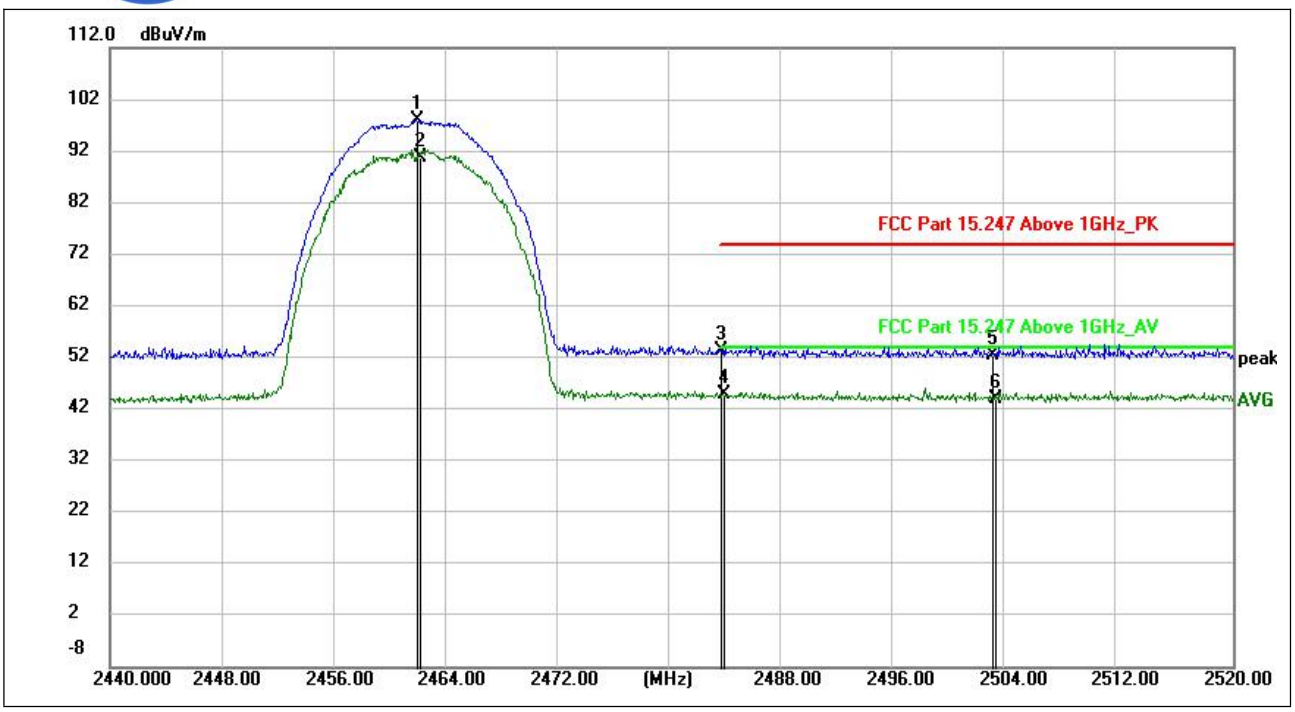
(802.11b _2412MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2368.288	11.82	40.13	51.95	74.00	-22.05	peak	V
2368.416	3.10	40.13	43.23	54.00	-10.77	AVG	V
2389.932	11.30	40.95	52.25	74.00	-21.75	peak	V
2389.932	3.41	40.96	44.37	54.00	-9.63	AVG	V
241 1.820	58.52	41.14	99.66	NA	NA	peak	V
2412.768	53.33	41.09	94.42	NA	NA	AVG	V



(802.11b _2462MHz, Antenna Horizontal)

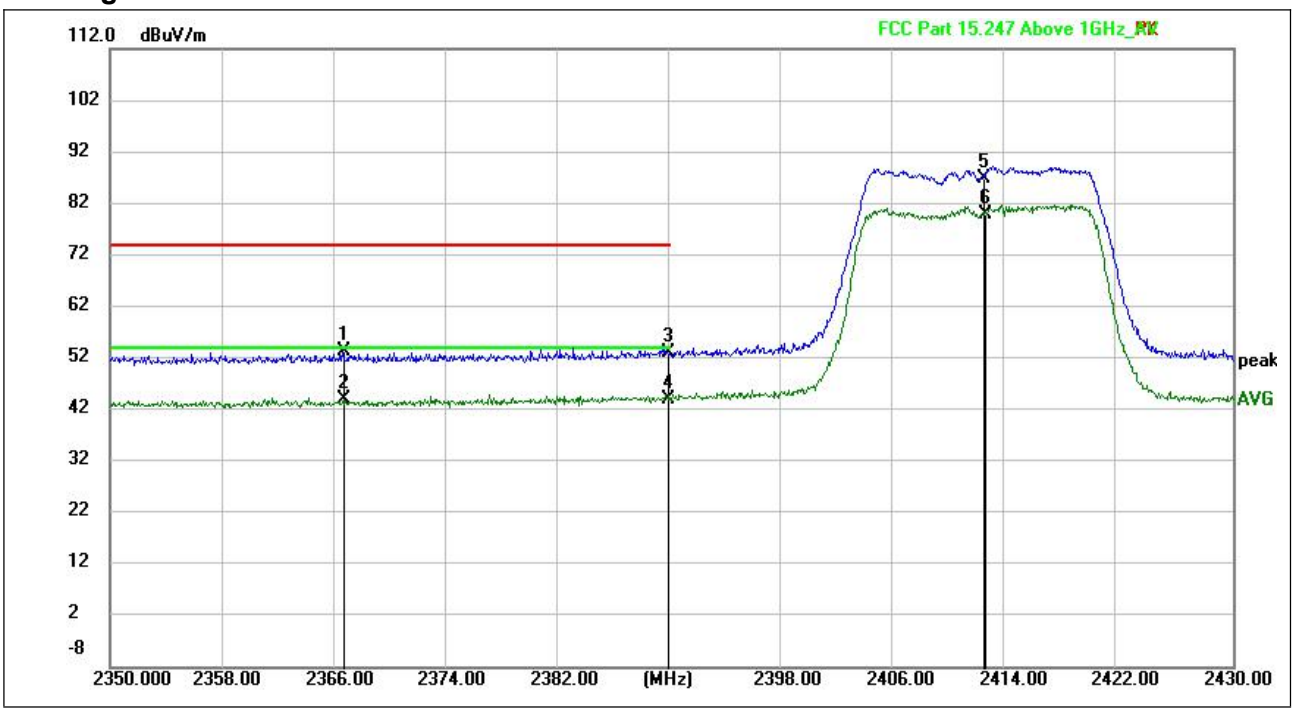
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2461.756	52.38	41.48	93.86	NA	NA	peak	H
2462.500	47.23	41.51	88.74	NA	NA	AVG	H
2483.736	10.80	41.76	52.56	74.00	-21.44	peak	H
2483.924	2.90	41.75	44.65	54.00	-9.35	AVG	H
2504.556	12.46	41.49	53.95	74.00	-20.05	peak	H
2504.724	3.13	41.49	44.62	54.00	-9.38	AVG	H



(802.11b _2462MHz, Antenna Vertical)

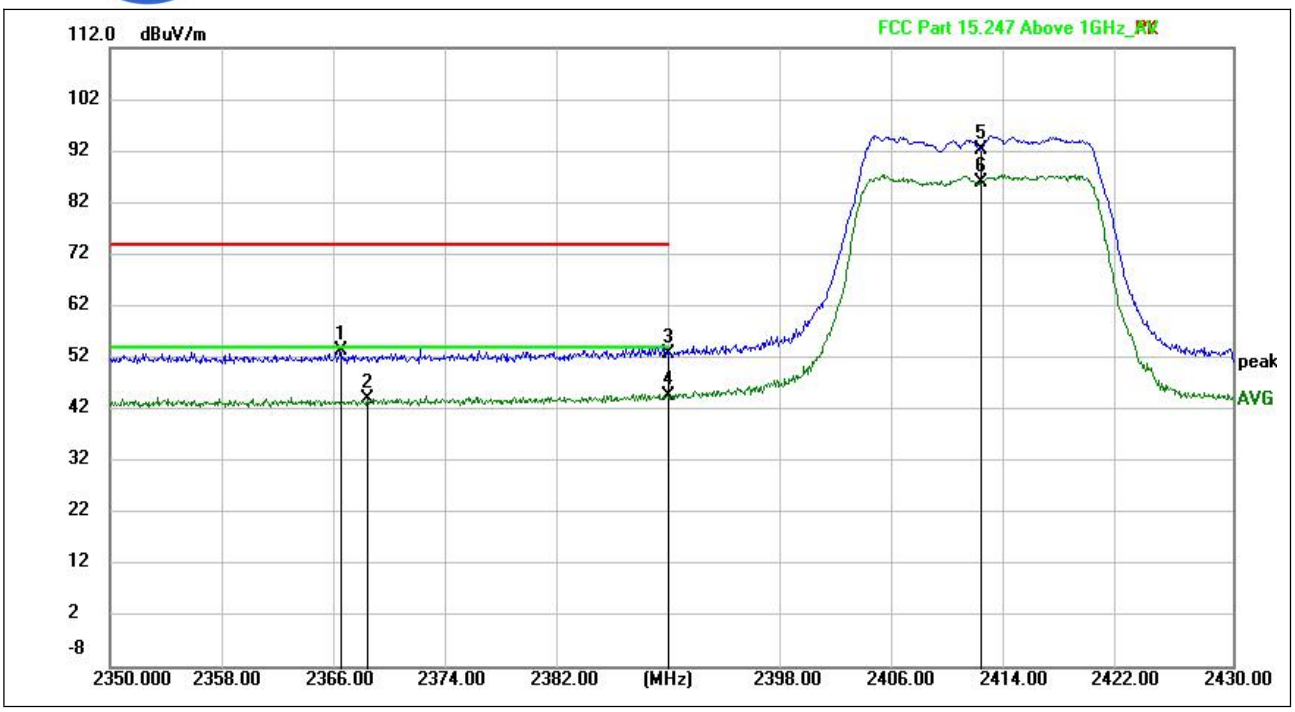
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2461.880	56.49	41.48	97.97	NA	NA	peak	V
2462.028	49.21	41.49	90.70	NA	NA	AVG	V
2483.552	11.57	41.76	53.33	74.00	-20.67	peak	V
2483.752	3.06	41.76	44.82	54.00	-9.18	AVG	V
2502.844	11.05	41.49	52.54	74.00	-21.46	peak	V
2503.076	2.46	41.49	43.95	54.00	-10.05	AVG	V

802.11g Test mode



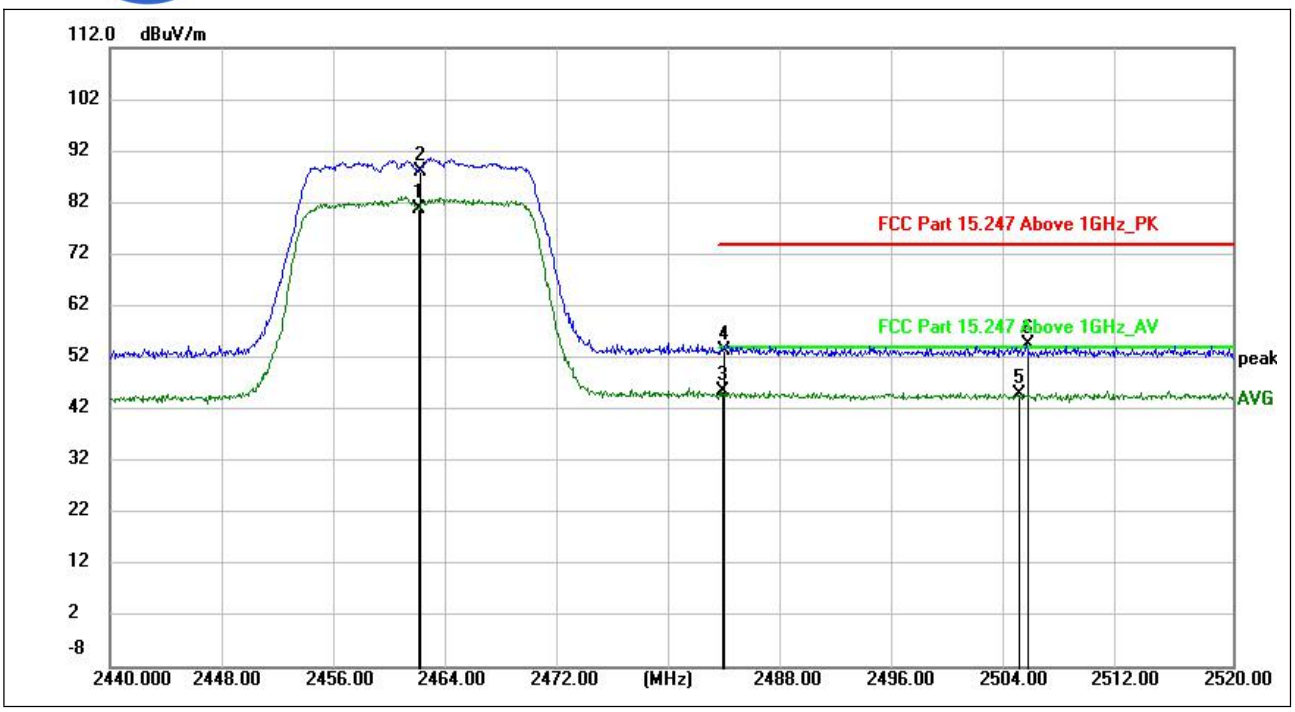
(802.11g _2412MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2366.628	13.25	40.11	53.36	74.00	-20.64	peak	H
2366.696	3.82	40.11	43.93	54.00	-10.07	AVG	H
2389.724	12.04	40.94	52.98	74.00	-21.02	peak	H
2389.832	3.20	40.95	44.15	54.00	-9.85	AVG	H
2412.168	45.61	41.12	86.73	NA	NA	peak	H
2412.360	38.82	41.11	79.93	NA	NA	AVG	H



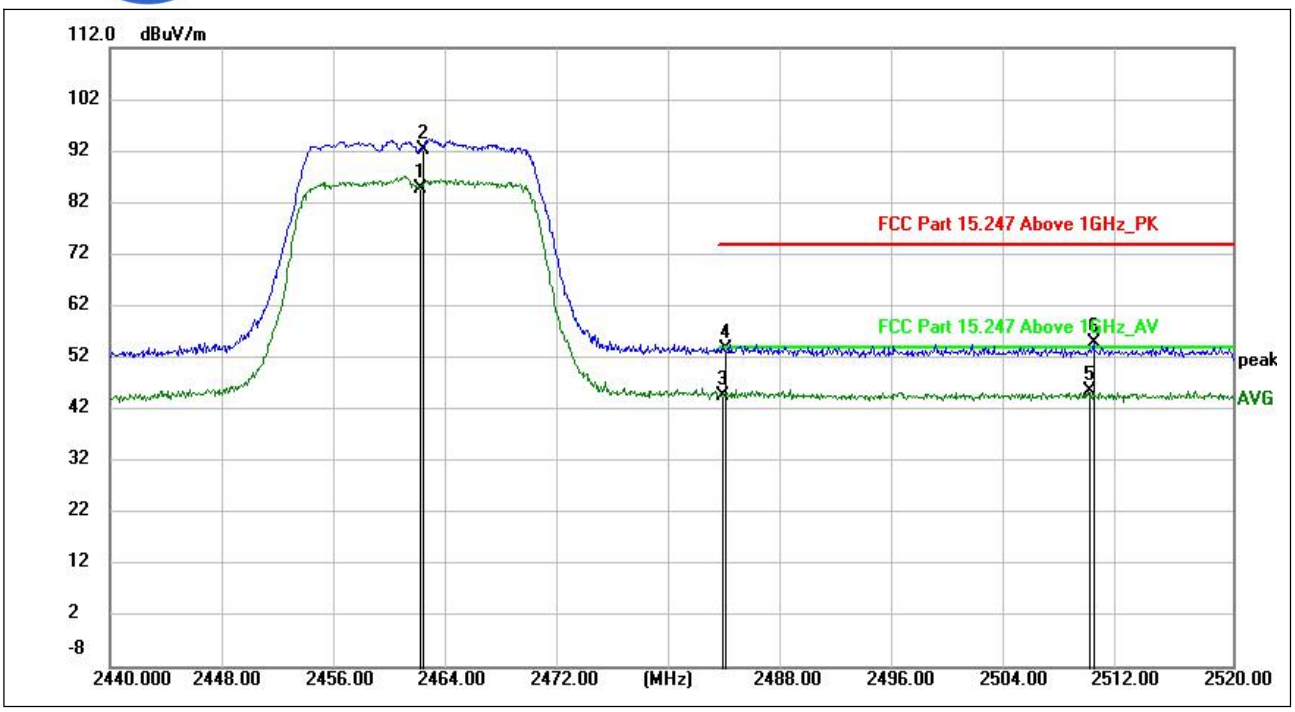
(802.11g _2412MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2366.444	13.20	40.11	53.31	74.00	-20.69	peak	V
2368.380	3.98	40.13	44.11	54.00	-9.89	AVG	V
2389.756	11.71	40.94	52.65	74.00	-21.35	peak	V
2389.756	3.75	40.94	44.69	54.00	-9.31	AVG	V
2412.004	51.23	41.13	92.36	NA	NA	peak	V
2412.004	44.73	41.13	85.86	NA	NA	AVG	V



(802.11g _2462MHz, Antenna Horizontal)

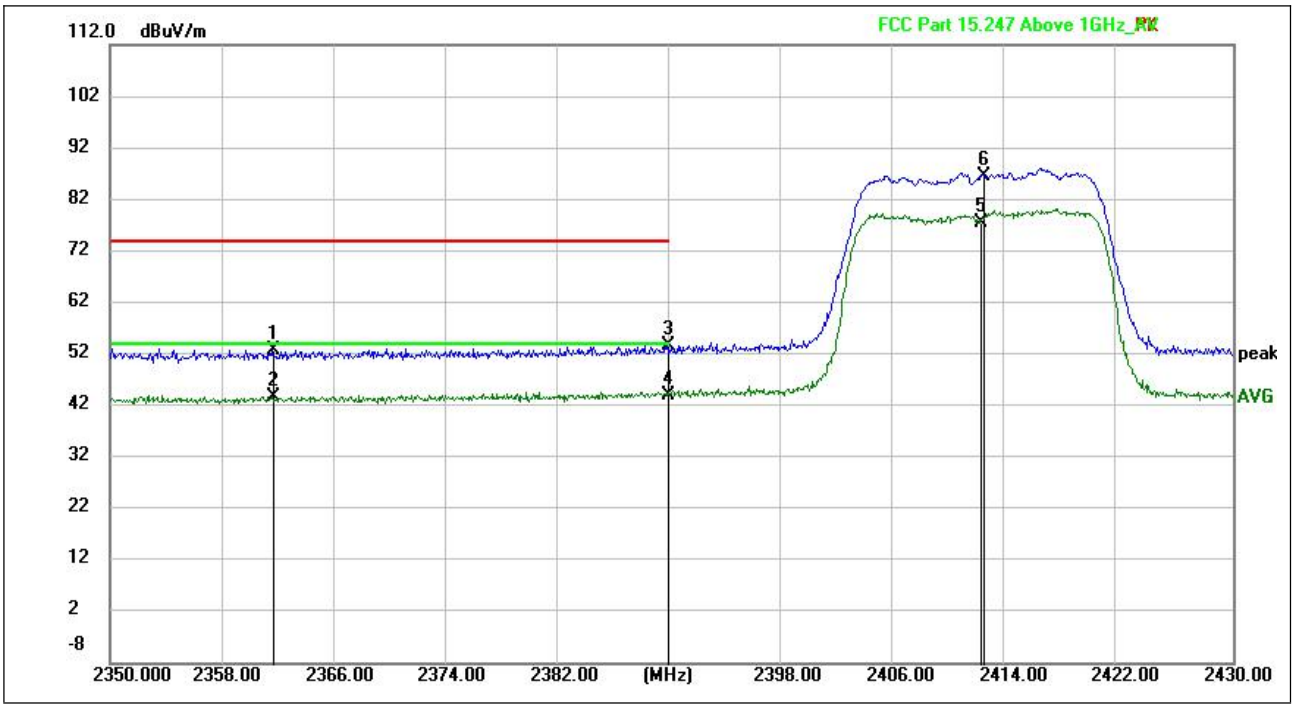
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2461.992	39.25	41.49	80.74	NA	NA	AVG	H
2462.100	46.63	41.49	88.12	NA	NA	peak	H
2483.608	3.63	41.77	45.40	54.00	-8.60	AVG	H
2483.756	11.51	41.76	53.27	74.00	-20.73	peak	H
2504.736	3.57	41.49	45.06	54.00	-8.94	AVG	H
2505.348	12.92	41.50	54.42	74.00	-19.58	peak	H



(802.11g _2462MHz, Antenna Vertical)

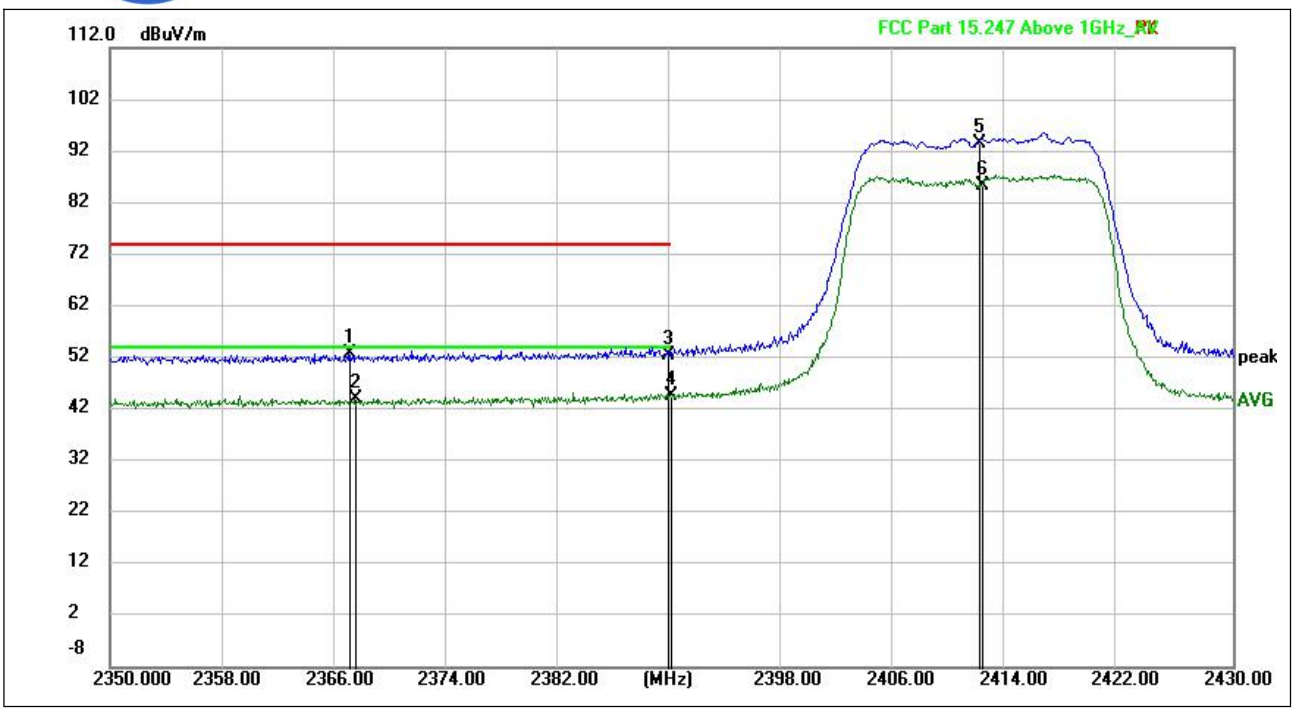
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2462.068	43.23	41.49	84.72	NA	NA	AVG	V
2462.288	50.67	41.51	92.18	NA	NA	peak	V
2483.620	2.88	41.77	44.65	54.00	-9.35	AVG	V
2483.844	11.76	41.76	53.52	74.00	-20.48	peak	V
2509.772	4.09	41.51	45.60	54.00	-8.40	AVG	V
2510.148	13.24	41.51	54.75	74.00	-19.25	peak	V

802.11n-20MHz Test mode



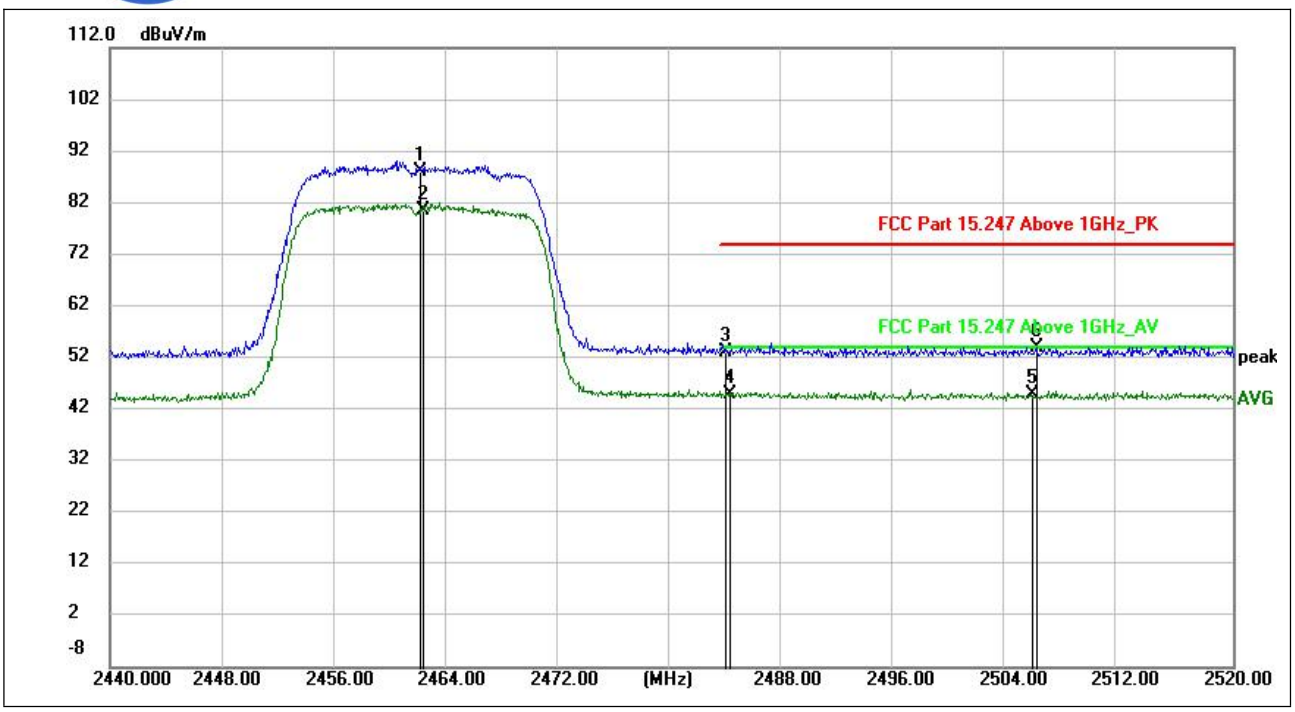
(802.11n_20M _2412MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2361.628	12.80	40.06	52.86	74.00	-21.14	peak	H
2361.628	3.69	40.06	43.75	54.00	-10.25	AVG	H
2389.796	12.72	40.94	53.66	74.00	-20.34	peak	H
2389.796	3.10	40.94	44.04	54.00	-9.96	AVG	H
2412.032	36.39	41.13	77.52	NA	NA	AVG	H
2412.180	45.48	41.12	86.60	NA	NA	peak	H



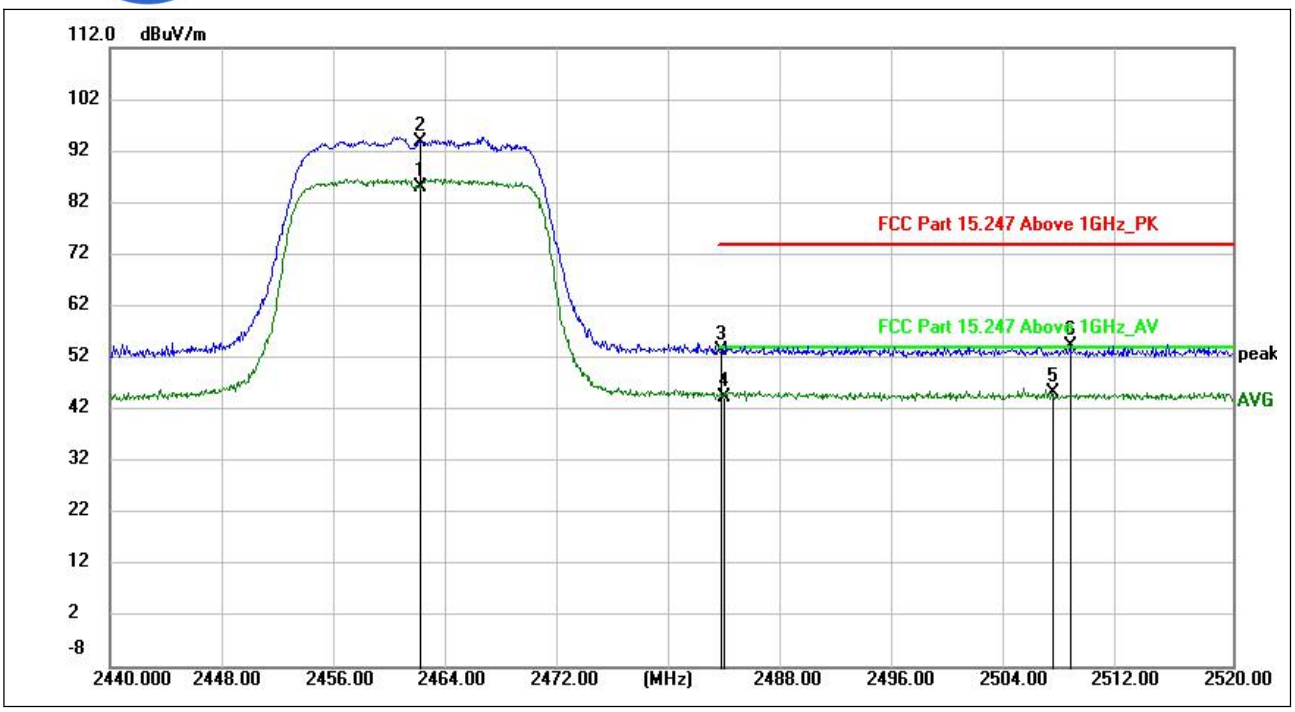
(802.11n_20M _2412MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2367.108	12.62	40.11	52.73	74.00	-21.27	peak	V
2367.496	3.95	40.11	44.06	54.00	-9.94	AVG	V
2389.840	11.56	40.95	52.51	74.00	-21.49	peak	V
2389.980	3.60	40.96	44.56	54.00	-9.44	AVG	V
2411.912	52.33	41.13	93.46	NA	NA	peak	V
2412.132	44.20	41.12	85.32	NA	NA	AVG	V



(802.11n_20M _2462MHz, Antenna Horizontal)

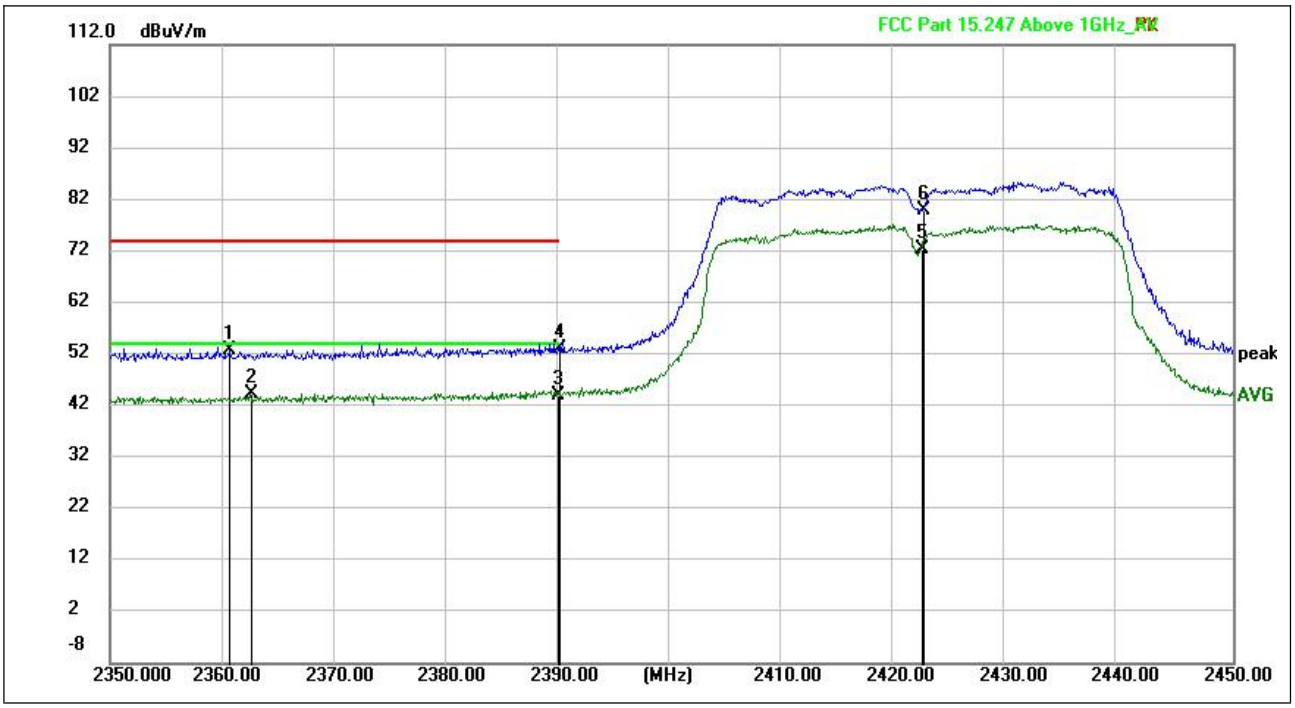
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2462.016	46.40	41.49	87.89	NA	NA	peak	H
2462.308	38.93	41.51	80.44	NA	NA	AVG	H
2483.784	11.35	41.76	53.11	74.00	-20.89	peak	H
2484.092	3.14	41.75	44.89	54.00	-9.11	AVG	H
2505.684	3.28	41.50	44.78	54.00	-9.22	AVG	H
2506.032	12.47	41.50	53.97	74.00	-20.03	peak	H



(802.11n_20M _2462MHz, Antenna Vertical)

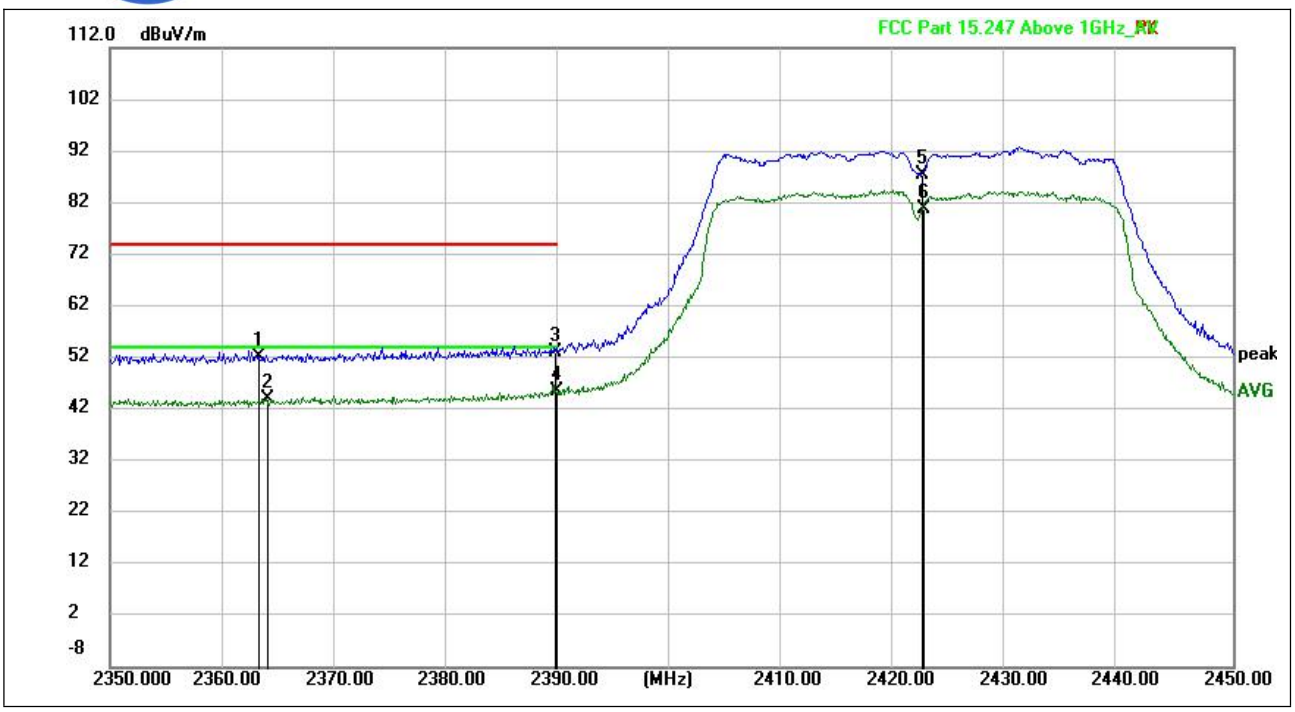
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2462.052	43.42	41.49	84.91	NA	NA	AVG	V
2462.104	52.21	41.49	93.70	NA	NA	peak	V
2483.572	11.56	41.77	53.33	74.00	-20.67	peak	V
2483.752	2.64	41.76	44.40	54.00	-9.60	AVG	V
2507.152	3.85	41.50	45.35	54.00	-8.65	AVG	V
2508.420	12.86	41.51	54.37	74.00	-19.63	peak	V

802.11n-40MHz Test mode



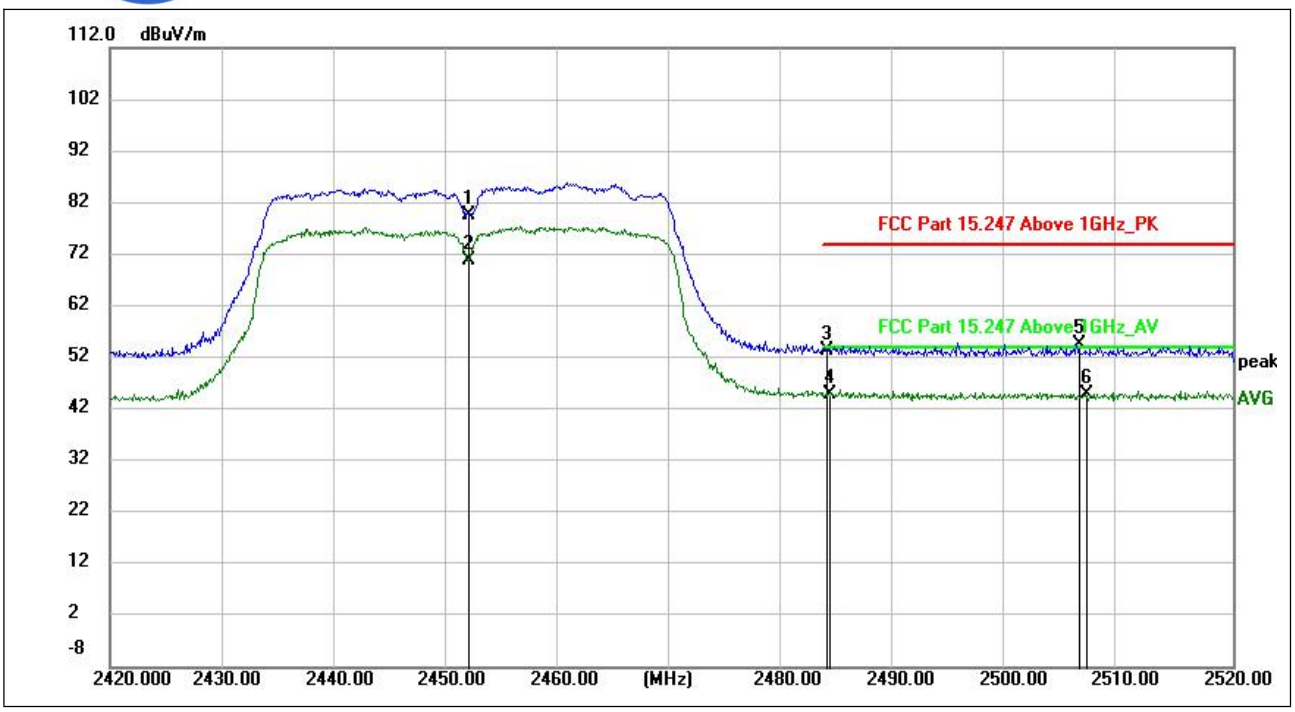
(802.11n_40M _2422MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2360.700	12.71	40.05	52.76	74.00	-21.24	peak	H
2362.595	4.37	40.07	44.44	54.00	-9.56	AVG	H
2389.850	3.19	40.95	44.14	54.00	-9.86	AVG	H
2389.960	12.10	40.96	53.06	74.00	-20.94	peak	H
2422.370	31.59	40.76	72.35	NA	NA	AVG	H
2422.460	39.24	40.76	80.00	NA	NA	peak	H



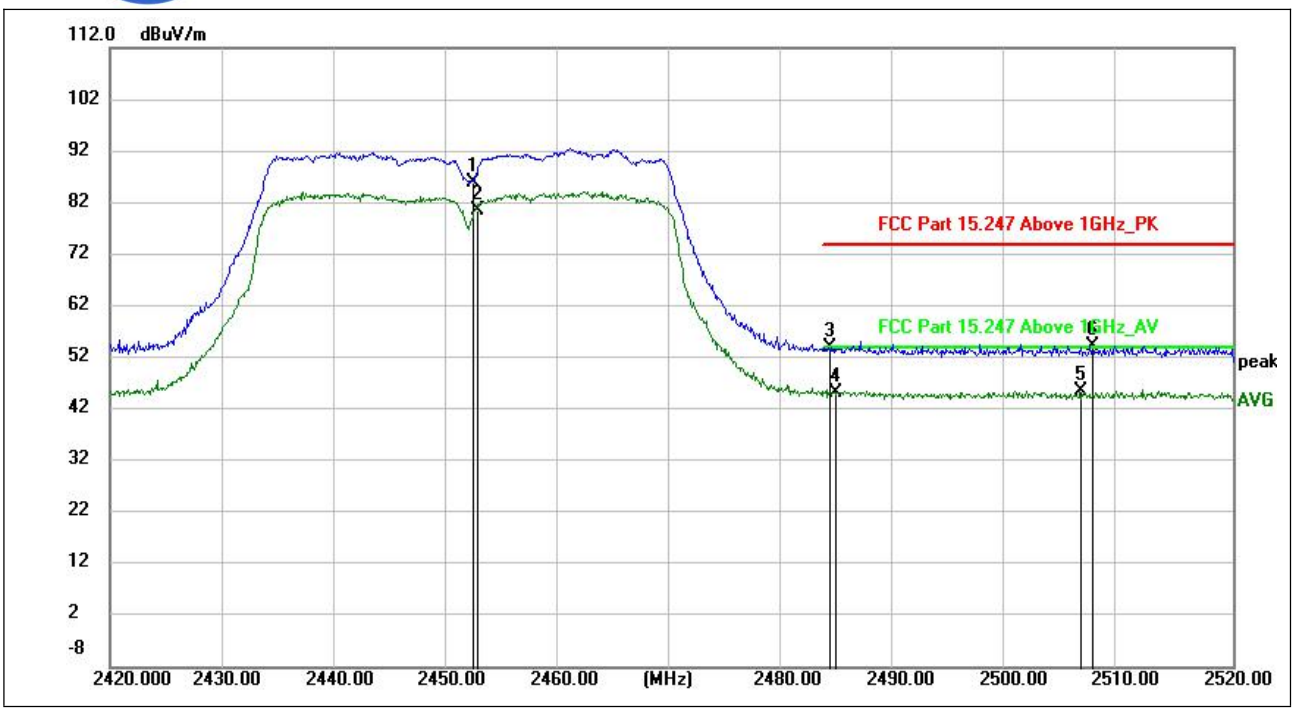
(802.11n_40M _2422MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2363.215	12.19	40.08	52.27	74.00	-21.73	peak	V
2364.030	3.95	40.08	44.03	54.00	-9.97	AVG	V
2389.610	12.05	40.93	52.98	74.00	-21.02	peak	V
2389.770	4.56	40.94	45.50	54.00	-8.50	AVG	V
2422.205	46.59	40.76	87.35	NA	NA	peak	V
2422.475	39.98	40.76	80.74	NA	NA	AVG	V



(802.11n_40M _2452MHz, Antenna Horizontal)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2451.975	38.54	41.10	79.64	NA	NA	peak	H
2451.975	29.71	41.10	70.81	NA	NA	AVG	H
2483.805	11.52	41.76	53.28	74.00	-20.72	peak	H
2484.085	3.17	41.75	44.92	54.00	-9.08	AVG	H
2506.215	13.20	41.50	54.70	74.00	-19.30	peak	H
2506.915	3.27	41.50	44.77	54.00	-9.23	AVG	H



(802.11n_40M _2452MHz, Antenna Vertical)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
2452.235	44.85	41.11	85.96	NA	NA	peak	V
2452.620	39.24	41.13	80.37	NA	NA	AVG	V
2484.095	12.20	41.75	53.95	74.00	-20.05	peak	V
2484.600	3.37	41.73	45.10	54.00	-8.90	AVG	V
2506.495	3.93	41.50	45.43	54.00	-8.57	AVG	V
2507.465	12.62	41.50	54.12	74.00	-19.88	peak	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 50μH/50Ω line impedance stabilization network (LISN).

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

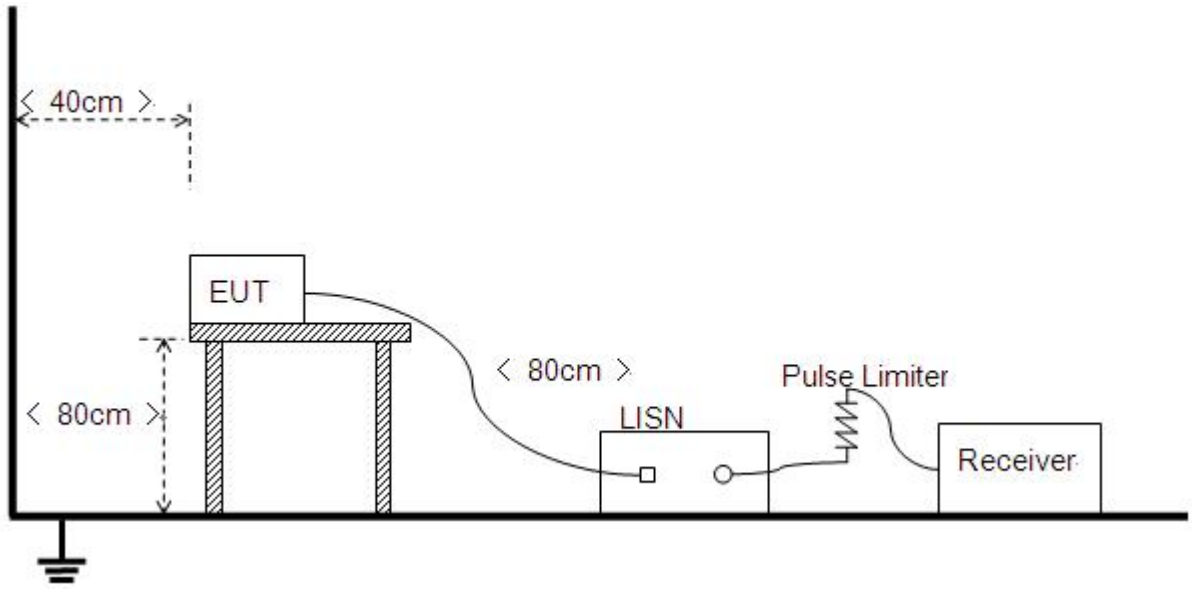
NOTE:

(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.

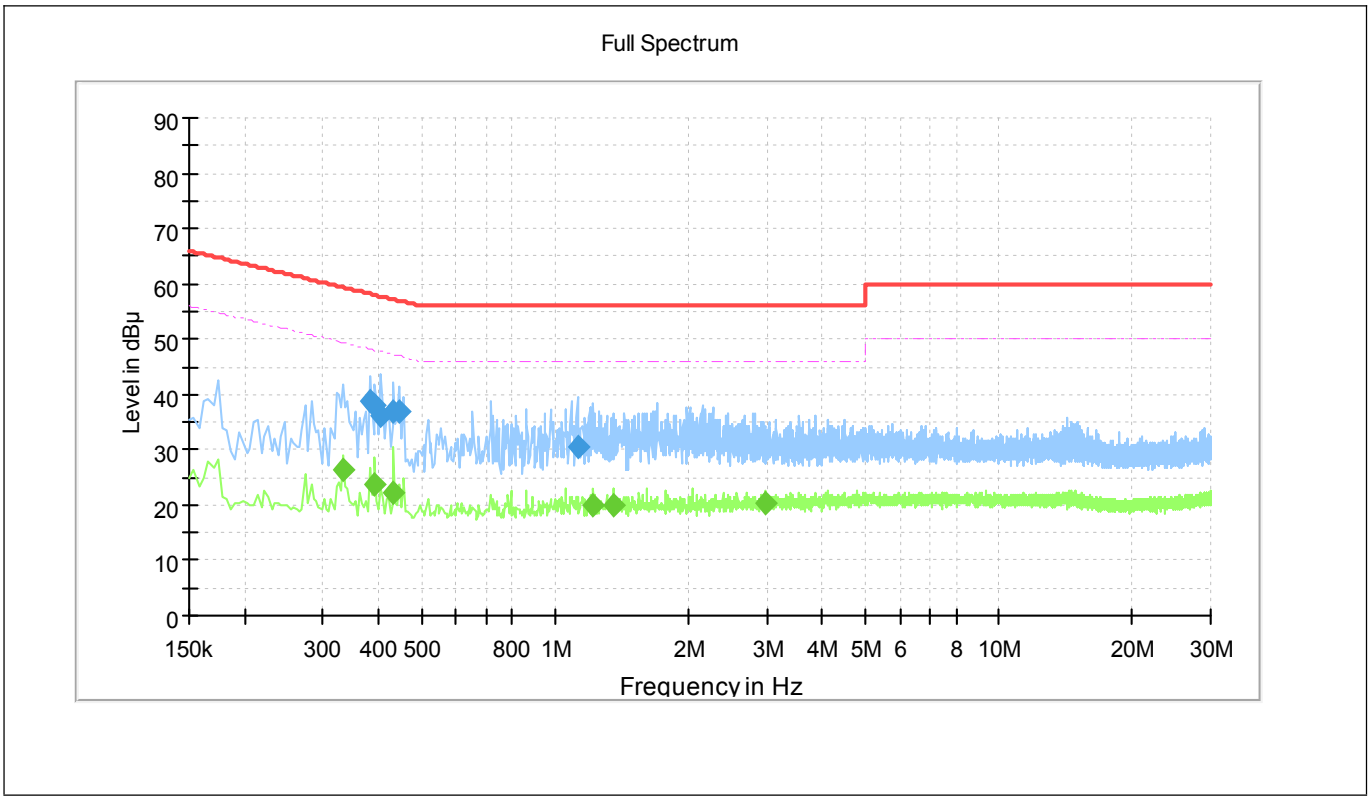
Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test setup:

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

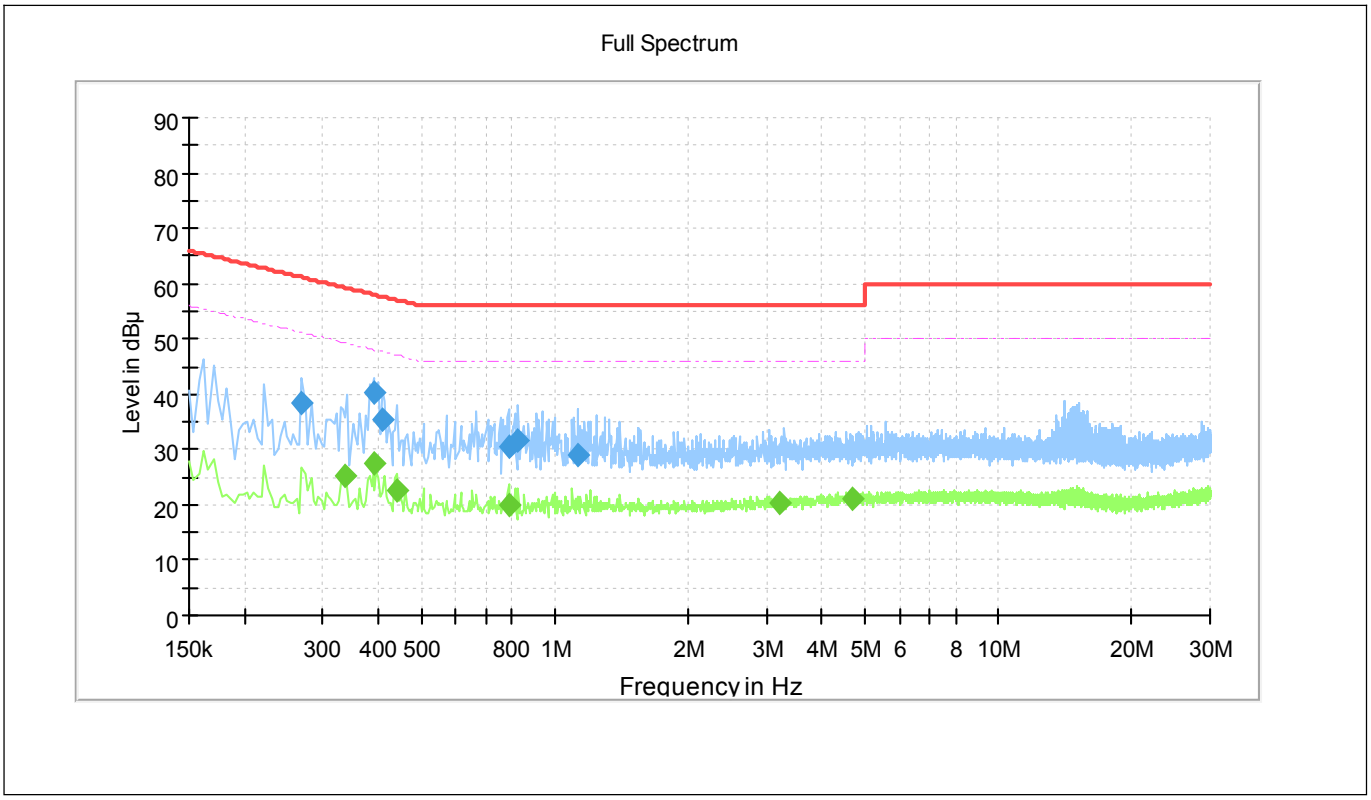
Note: The test voltage is AC 120V/60Hz.

B. Test Plots:



(Plot A: L Phase)

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.334000	---	26.24	49.35	23.11	L1	10.2
0.382000	38.70	---	58.24	19.53	L1	10.2
0.394000	38.09	---	57.98	19.89	L1	10.2
0.394000	---	23.90	47.98	24.08	L1	10.2
0.406000	36.22	---	57.73	21.51	L1	10.2
0.434000	36.88	---	57.18	20.30	L1	10.2
0.434000	---	22.28	47.18	24.90	L1	10.2
0.446000	36.99	---	56.95	19.96	L1	10.2
1.126000	30.45	---	56.00	25.55	L1	10.3
1.222000	---	19.83	46.00	26.17	L1	10.3
1.358000	---	20.10	46.00	25.90	L1	10.3
2.966000	---	20.39	46.00	25.61	L1	10.3



(Plot A: N Phase)

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.270000	38.25	---	61.12	22.87	N	10.4
0.338000	---	25.32	49.25	23.93	N	10.4
0.390000	---	27.46	48.06	20.60	N	10.4
0.390000	40.48	---	58.06	17.59	N	10.4
0.410000	35.21	---	57.65	22.43	N	10.4
0.442000	---	22.78	47.02	24.24	N	10.4
0.790000	30.65	---	56.00	25.35	N	10.4
0.790000	---	19.89	46.00	26.11	N	10.4
0.826000	31.81	---	56.00	24.19	N	10.4
1.130000	28.97	---	56.00	27.03	N	10.5
3.206000	---	20.19	46.00	25.81	N	10.6
4.674000	---	21.01	46.00	24.99	N	10.6

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 (μV/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.

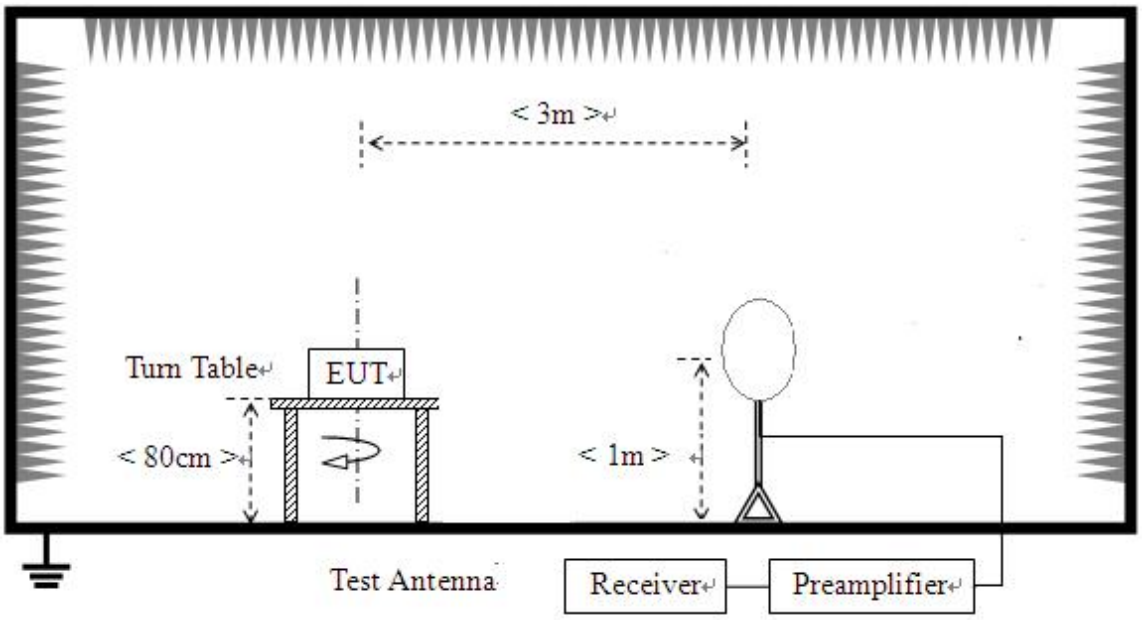
For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

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)

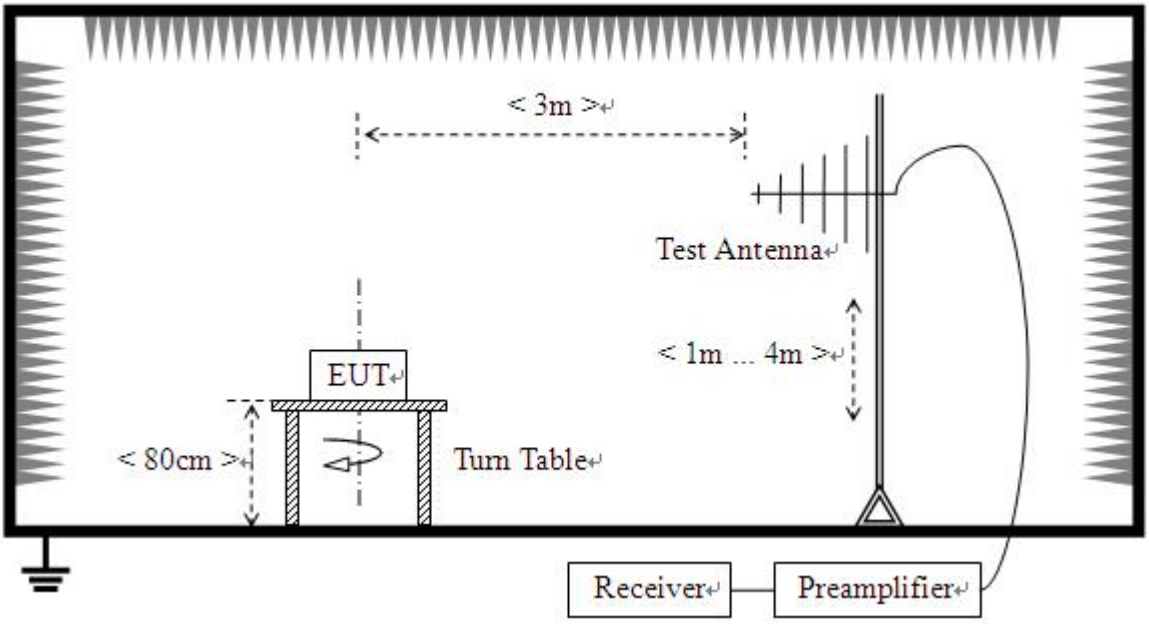
2.8.2. Test Description

A. Test Setup:

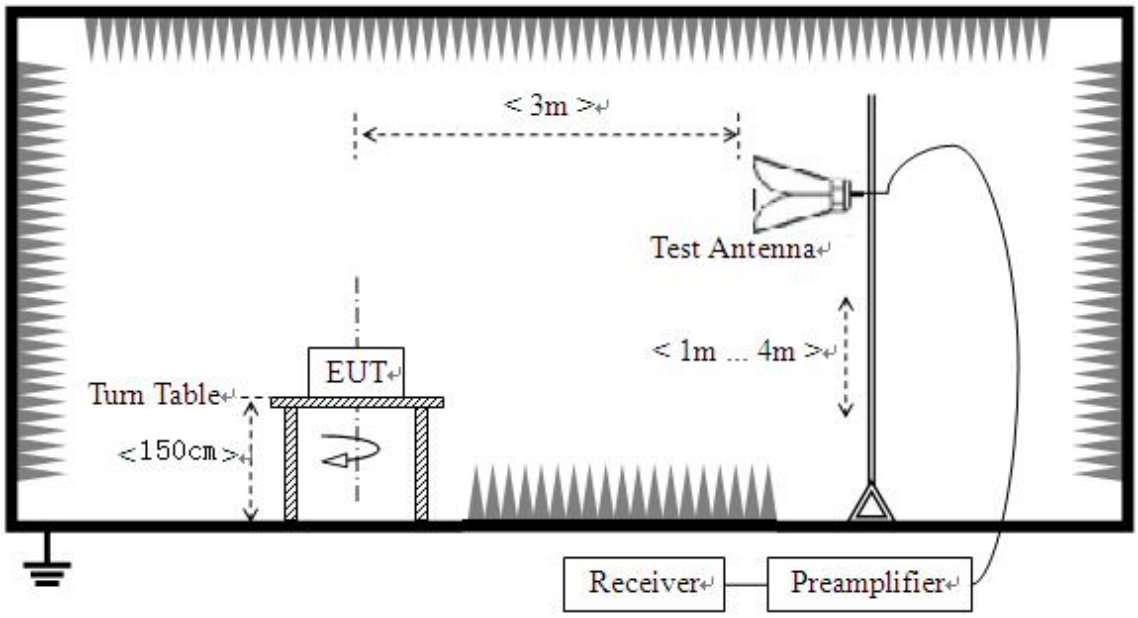
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



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 ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 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:

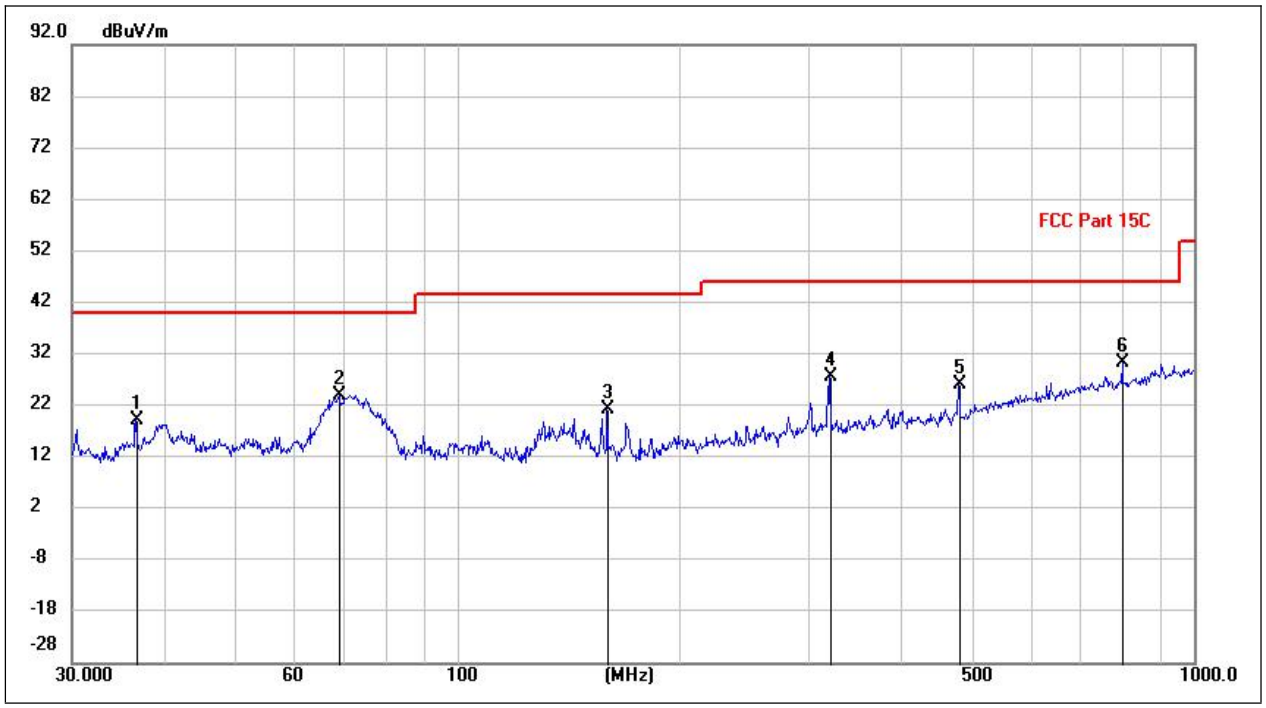
Please refere ANNEX B(4).

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.

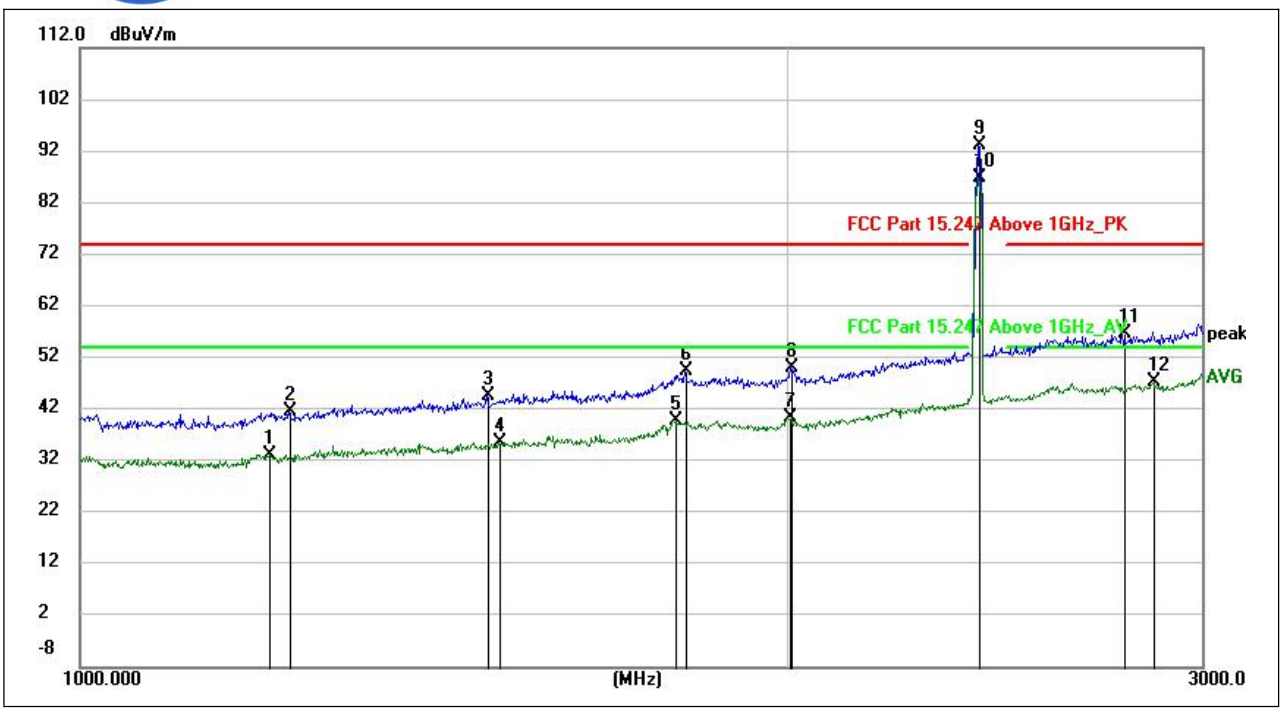
Note2: For the frequency, which started from 18GHz to25GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

802.11b Test mode



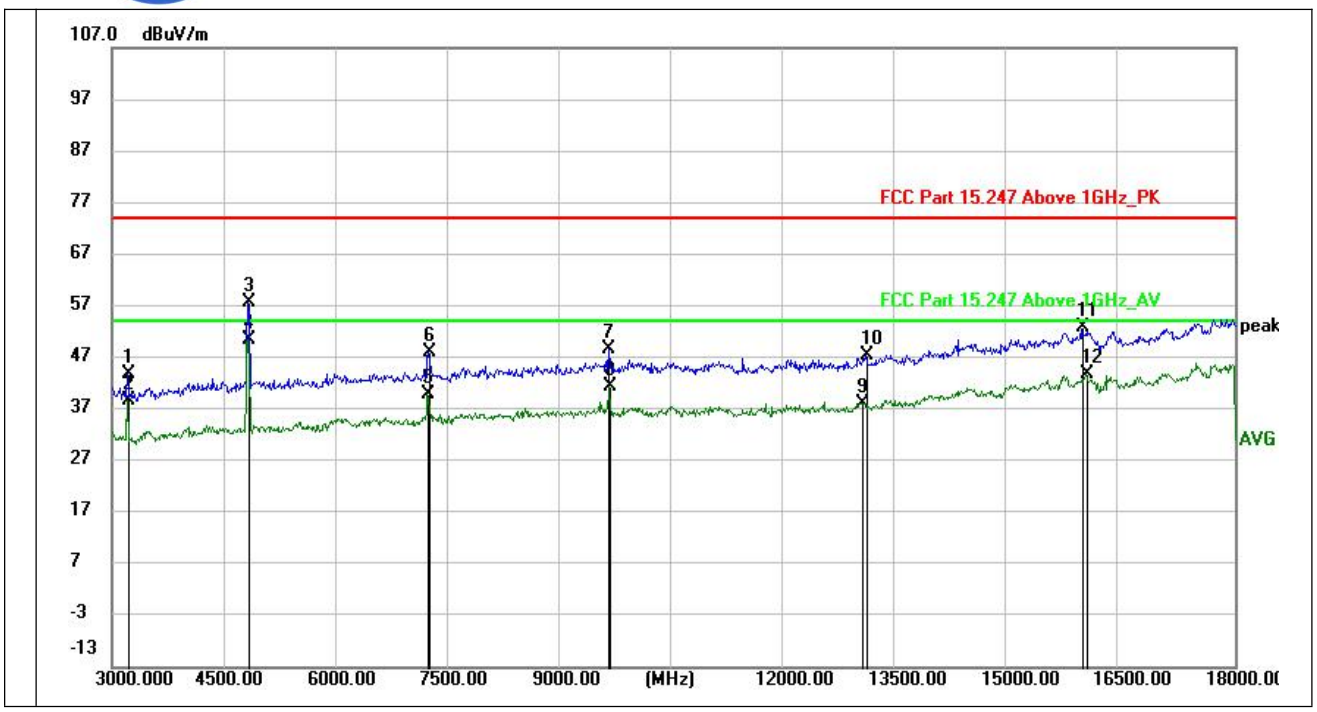
(802.11b _2412MHz, Antenna Horizontal, 30MHz to 1GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
36.6439	5.79	13.41	19.20	40.00	-20.80	peak	H
69.2475	11.79	12.22	24.01	40.00	-15.99	peak	H
160.0087	9.18	12.20	21.38	43.50	-22.12	peak	H
319.9931	9.73	18.00	27.73	46.00	-18.27	peak	H
480.0224	4.59	21.54	26.13	46.00	-19.87	peak	H
800.1012	4.15	26.13	30.28	46.00	-15.72	peak	H



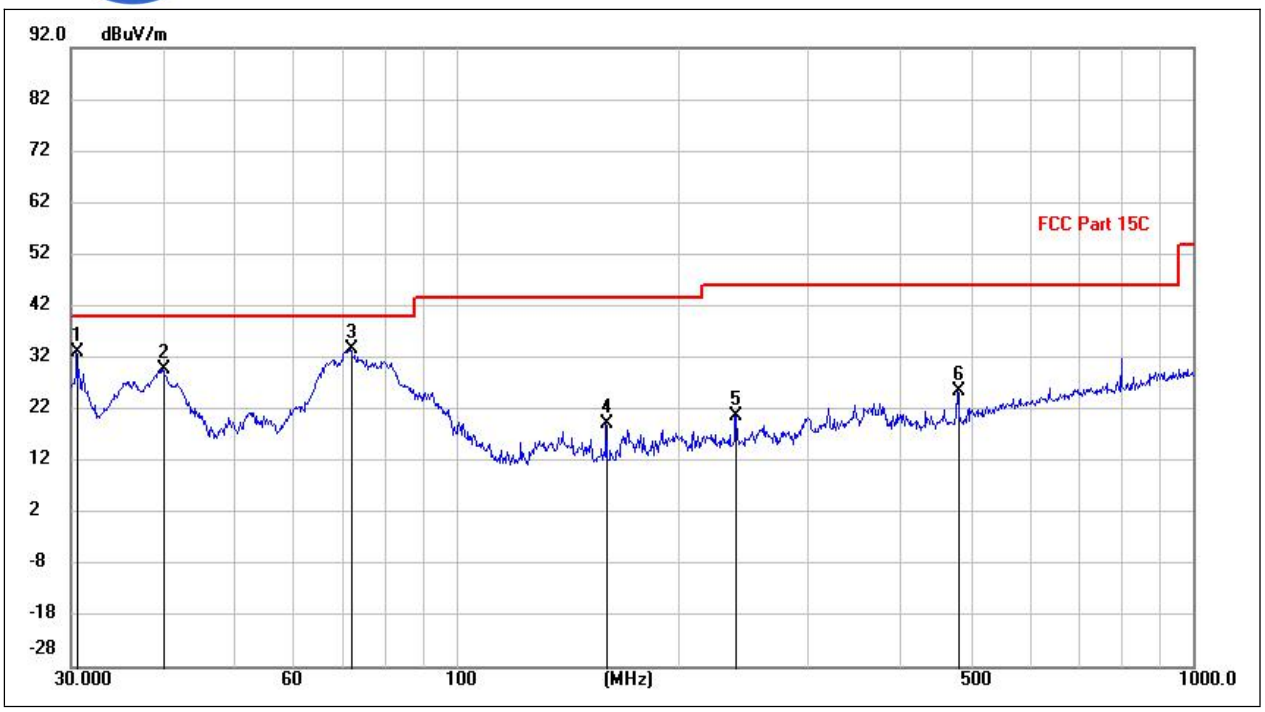
(802.11b _2412MHz, Antenna Horizontal, 1GHz to 3GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
1203.490	2.77	30.53	33.30	54.00	-20.70	AVG	H
1227.324	11.73	29.87	41.60	74.00	-32.40	peak	H
1491.504	12.36	32.38	44.74	74.00	-29.26	peak	H
1507.649	2.96	32.66	35.62	54.00	-18.38	AVG	H
1790.481	3.96	35.92	39.88	54.00	-14.12	AVG	H
1810.658	13.29	36.06	49.35	74.00	-24.65	peak	H
2003.233	2.99	37.32	40.31	54.00	-13.69	AVG	H
2006.647	12.95	37.24	50.19	74.00	-23.81	peak	H
2412.594	51.95	41.10	93.05	NA	NA	peak	H
2412.594	45.75	41.10	86.85	NA	NA	AVG	H
2778.550	13.60	43.03	56.63	74.00	-17.37	peak	H
2864.405	3.01	44.19	47.20	54.00	-6.80	AVG	H



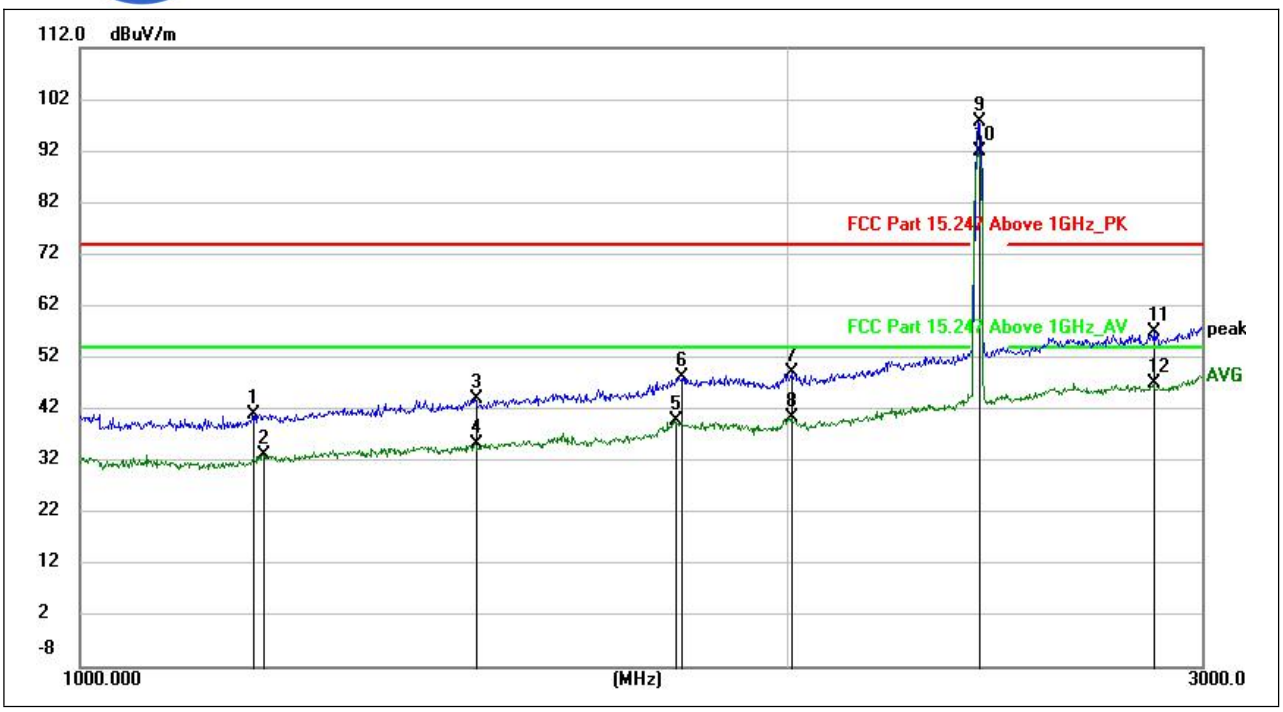
(802.11b _2412MHz, Antenna Horizontal, 3GHz to 18GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
3216.000	50.19	-6.35	43.84	74.00	-30.16	peak	H
3216.000	45.01	-6.35	38.66	54.00	-15.34	AVG	H
4824.750	60.93	-3.21	57.72	74.00	-16.28	peak	H
4824.750	53.53	-3.21	50.32	54.00	-3.68	AVG	H
7228.500	40.13	-0.36	39.77	54.00	-14.23	AVG	H
7244.250	48.51	-0.34	48.17	74.00	-25.83	peak	H
9636.750	47.02	1.74	48.76	74.00	-25.24	peak	H
9648.000	39.65	1.71	41.36	54.00	-12.64	AVG	H
13021.500	32.08	6.17	38.25	54.00	-15.75	AVG	H
13071.750	40.90	6.45	47.35	74.00	-26.65	peak	H
15960.750	41.46	11.27	52.73	74.00	-21.27	peak	H
16029.750	32.03	11.85	43.88	54.00	-10.12	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
30.6003	20.19	12.83	33.02	40.00	-6.98	peak	V
40.0925	14.21	15.61	29.82	40.00	-10.18	peak	V
72.0086	23.21	10.57	33.78	40.00	-6.22	peak	V
160.0087	6.86	12.20	19.06	43.50	-24.44	peak	V
239.9873	5.50	15.27	20.77	46.00	-25.23	peak	V
480.0224	3.91	21.54	25.45	46.00	-20.55	peak	V



(802.11b _2412MHz, Antenna Vertical , 1GHz to 3GHz)

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Pol
1185.382	11.29	29.73	41.02	74.00	-32.98	peak	V
1197.358	2.62	30.51	33.13	54.00	-20.87	AVG	V
1473.912	11.66	32.41	44.07	74.00	-29.93	peak	V
1473.912	2.96	32.41	35.37	54.00	-18.63	AVG	V
1793.335	3.54	36.21	39.75	54.00	-14.25	AVG	V
1799.948	11.44	36.78	48.22	74.00	-25.78	peak	V
2008.743	12.01	37.12	49.13	74.00	-24.87	peak	V
2008.743	3.20	37.12	40.32	54.00	-13.68	AVG	V
2412.992	56.65	41.08	97.73	NA	NA	peak	V
2412.992	50.98	41.08	92.06	NA	NA	AVG	V
2863.461	12.71	44.15	56.86	74.00	-17.14	peak	V
2863.461	2.86	44.15	47.01	54.00	-6.99	AVG	V