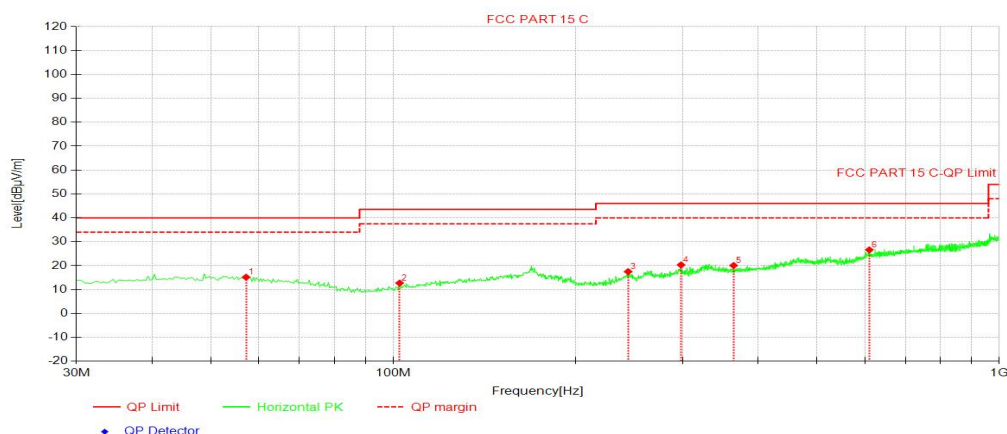


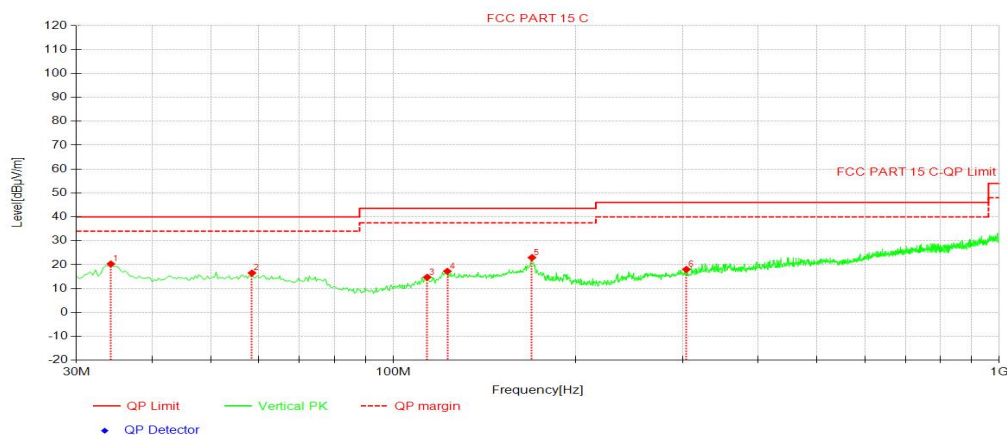
**Test data****For 30-1000MHz**

Horizontal:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	57.17	23.65	-8.48	15.17	40.00	24.83	200	48	PK
2	102.45	24.96	-12.25	12.71	43.50	30.79	200	351	PK
3	244.12	26.56	-9.05	17.51	46.00	28.49	100	90	PK
4	298.46	27.36	-7.04	20.32	46.00	25.68	100	85	PK
5	364.44	25.46	-5.39	20.07	46.00	25.93	100	279	PK
6	610.25	25.68	0.94	26.62	46.00	19.38	100	360	PK

Vertical :



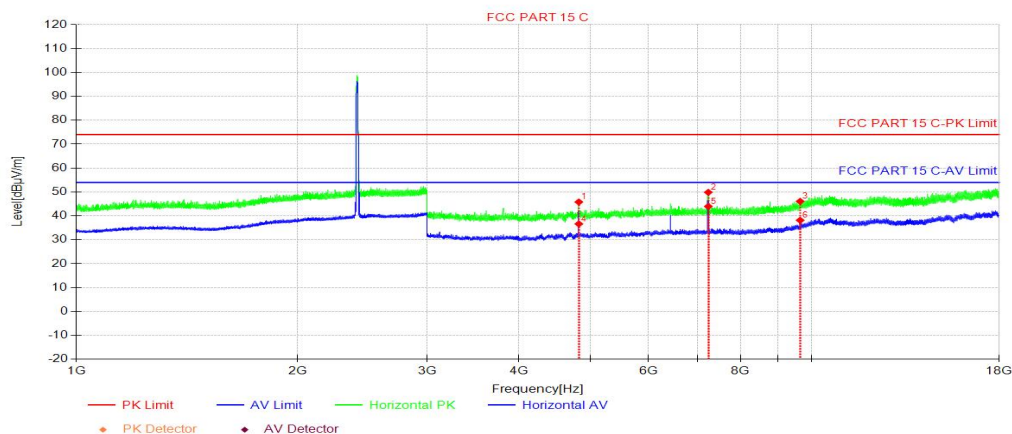
NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	34.20	29.66	-9.39	20.27	40.00	19.73	100	48	PK
2	58.46	25.10	-8.60	16.50	40.00	23.50	100	309	PK
3	113.77	25.55	-10.81	14.74	43.50	28.76	100	126	PK
4	122.83	27.27	-10.04	17.23	43.50	26.27	100	116	PK
5	169.40	31.22	-8.26	22.96	43.50	20.54	100	294	PK
6	304.60	24.87	-6.84	18.03	46.00	27.97	100	188	PK



For above 1GHz

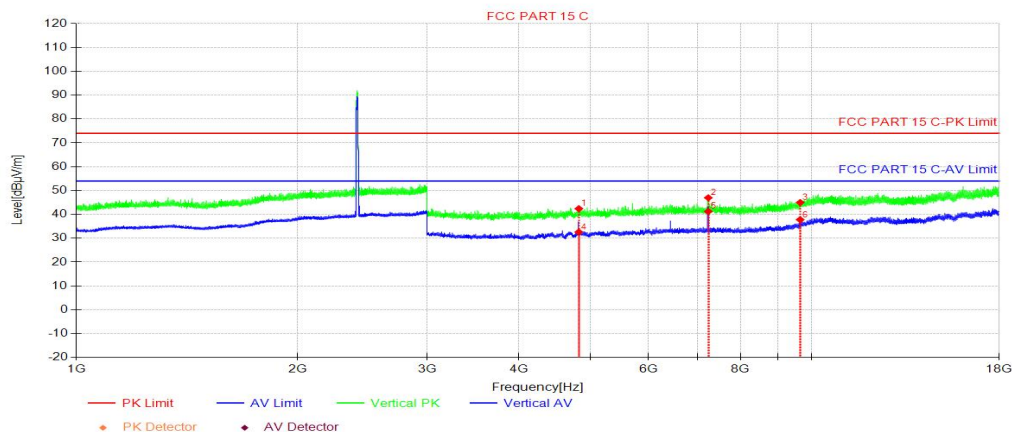
11B 2412MHz

Horizontal:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	4824.00	50.43	-4.63	45.80	74.00	28.20	150	224	PK
2	7236.00	51.55	-1.70	49.85	74.00	24.15	150	175	PK
3	9648.00	45.01	1.07	46.08	74.00	27.92	150	327	PK
4	4824.00	41.26	-4.63	36.63	54.00	17.37	150	224	AV
5	7236.00	45.65	-1.70	43.95	54.00	10.05	150	175	AV
6	9648.00	37.09	1.07	38.16	54.00	15.84	150	275	AV

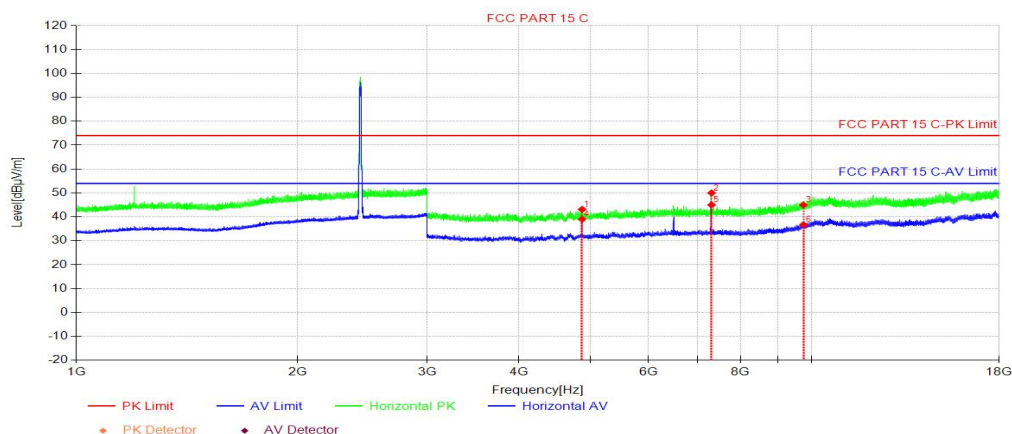
Vertical:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	4824.00	47.01	-4.63	42.38	74.00	31.62	150	281	PK
2	7236.00	48.66	-1.70	46.96	74.00	27.04	150	154	PK
3	9648.00	43.90	1.07	44.97	74.00	29.03	150	130	PK
4	4824.00	37.21	-4.63	32.58	54.00	21.42	150	281	AV
5	7236.00	42.93	-1.70	41.23	54.00	12.77	150	154	AV
6	9648.00	36.70	1.07	37.77	54.00	16.23	150	154	AV

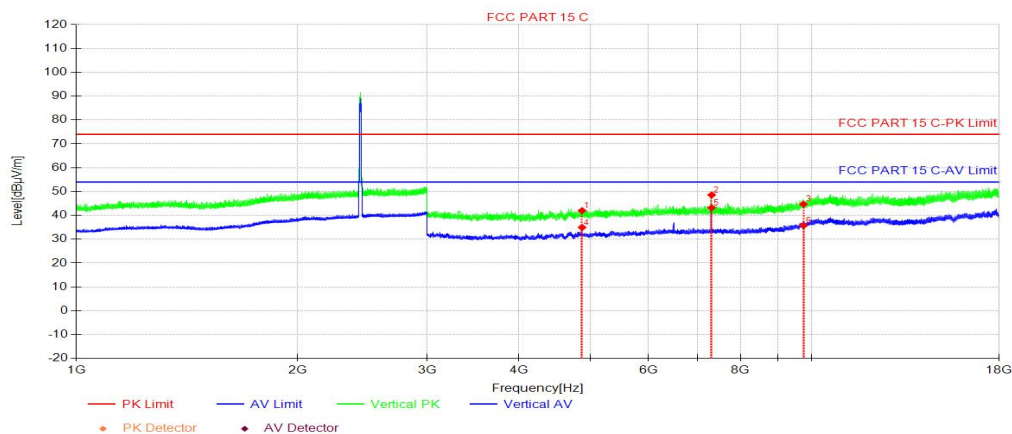
**11B 2437MHz**

Horizontal:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	4874.00	47.82	-4.70	43.12	74.00	30.88	150	222	PK
2	7311.00	51.52	-1.53	49.99	74.00	24.01	150	172	PK
3	9748.00	43.39	1.56	44.95	74.00	29.05	150	359	PK
4	4874.00	43.71	-4.70	39.01	54.00	14.99	150	222	AV
5	7311.00	46.53	-1.53	45.00	54.00	9.00	150	172	AV
6	9748.00	35.11	1.56	36.67	54.00	17.33	150	273	AV

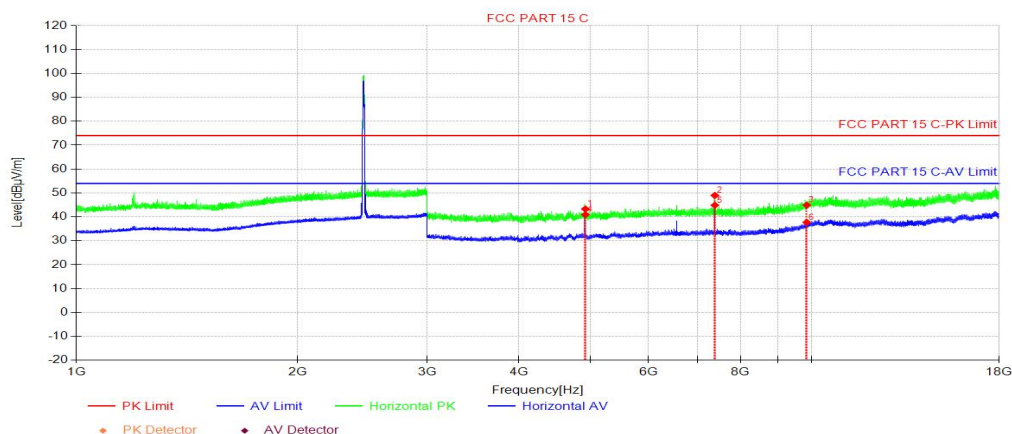
Vertical:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	4874.00	46.68	-4.70	41.98	74.00	32.02	150	284	PK
2	7311.00	50.08	-1.53	48.55	74.00	25.45	150	179	PK
3	9748.00	43.14	1.56	44.70	74.00	29.30	150	360	PK
4	4874.00	39.64	-4.70	34.94	54.00	19.06	150	73	AV
5	7311.00	44.70	-1.53	43.17	54.00	10.83	150	179	AV
6	9748.00	34.19	1.56	35.75	54.00	18.25	150	153	AV

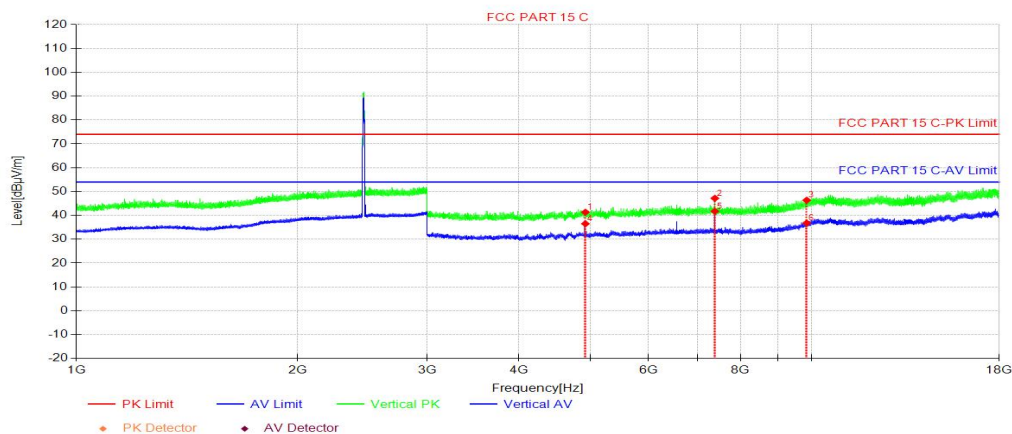
**11B 2462MHz**

Horizontal:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	4924.00	48.08	-4.79	43.29	74.00	30.71	150	228	PK
2	7386.00	50.29	-1.32	48.97	74.00	25.03	150	178	PK
3	9848.00	42.90	2.00	44.90	74.00	29.10	150	100	PK
4	4924.00	45.70	-4.79	40.91	54.00	13.09	150	228	AV
5	7386.00	46.18	-1.32	44.86	54.00	9.14	150	178	AV
6	9848.00	35.71	2.00	37.71	54.00	16.29	150	360	AV

Vertical:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	4924.00	46.11	-4.79	41.32	74.00	32.68	150	280	PK
2	7386.00	48.48	-1.32	47.16	74.00	26.84	150	177	PK
3	9848.00	44.36	2.00	46.36	74.00	27.64	150	360	PK
4	4924.00	41.27	-4.79	36.48	54.00	17.52	150	75	AV
5	7386.00	43.03	-1.32	41.71	54.00	12.29	150	149	AV
6	9848.00	34.77	2.00	36.77	54.00	17.23	150	206	AV



Note:

1. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including Ant.Factor and the Cable Factor etc.), The basic equation is as follows:

$$\text{Result Level} = \text{Reading Level} + \text{Correct Factor}(\text{including Ant.Factor, Cable Factor etc.})$$

2. The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

3. The amplitude of 18GHz to 25GHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be report.

4. All channels had been pre-test,only the worst case was reported.



3.9 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10: 2020 Section 11.12		
Test Site:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m)	Remark
	30MHz-88MHz	40.0	Quasi-peak
	88MHz-216MHz	43.5	Quasi-peak
	216MHz-960MHz	46.0	Quasi-peak
	960MHz-1GHz	54.0	Quasi-peak
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:			

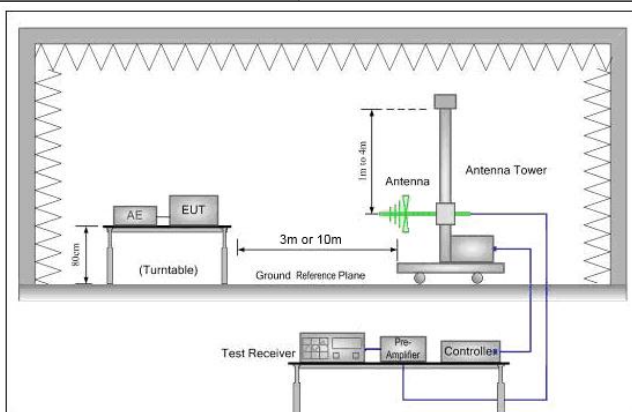


Figure 1. 30MHz to 1GHz

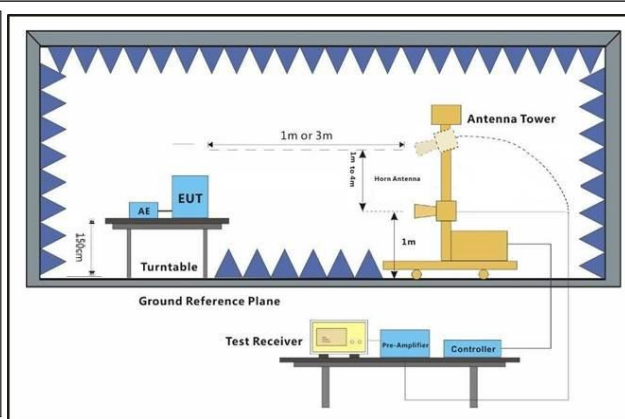


Figure 2. Above 1 GHz

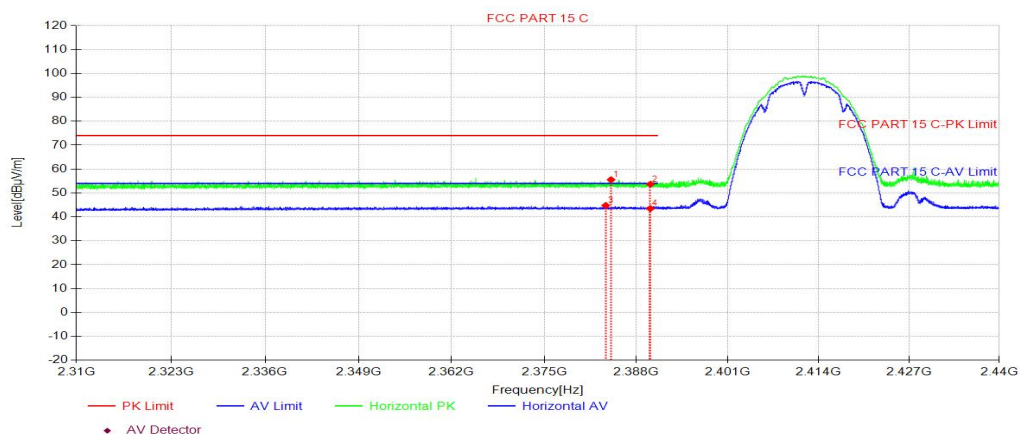


Test Procedure:	- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. - For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. - The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. - The antenna height 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. - 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. - The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. - Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel - Test the EUT in the lowest channel , the Highest channel - The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode,And found the X axis positioning which it is worse case. - Repeat above procedures until all frequencies measured was complete.
Test Configuration:	Measurements Below 1000MHz • RBW = 120 kHz • VBW = 300 kHz • Detector = Peak • Trace mode = max hold Peak Measurements Above 1000 MHz • RBW = 1 MHz • VBW $\geq$ 3 MHz • Detector = Peak • Sweep time = auto • Trace mode = max hold Average Measurements Above 1000MHz • RBW = 1 MHz • VBW = 10 Hz, when duty cycle is no less than 98 percent. • VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Transmitting mode.
Final Test Mode:	Pretest the EUT at Charge + Transmitting mode. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); Only the worst case is recorded in the report.
Instruments Used:	Refer to section 2.9 for details
Test Results:	Pass



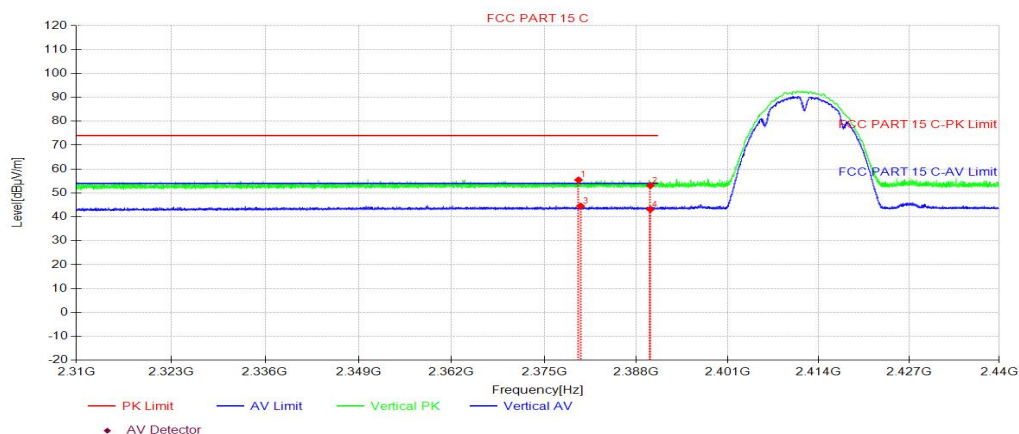
Test Date
11B 2412MHz

Horizontal:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2384.45	56.36	-0.82	55.54	74.00	18.46	150	156	PK
2	2390.01	54.43	-0.80	53.63	74.00	20.37	150	324	PK
3	2383.69	45.58	-0.82	44.76	54.00	9.24	150	79	AV
4	2390.01	44.27	-0.80	43.47	54.00	10.53	150	200	AV

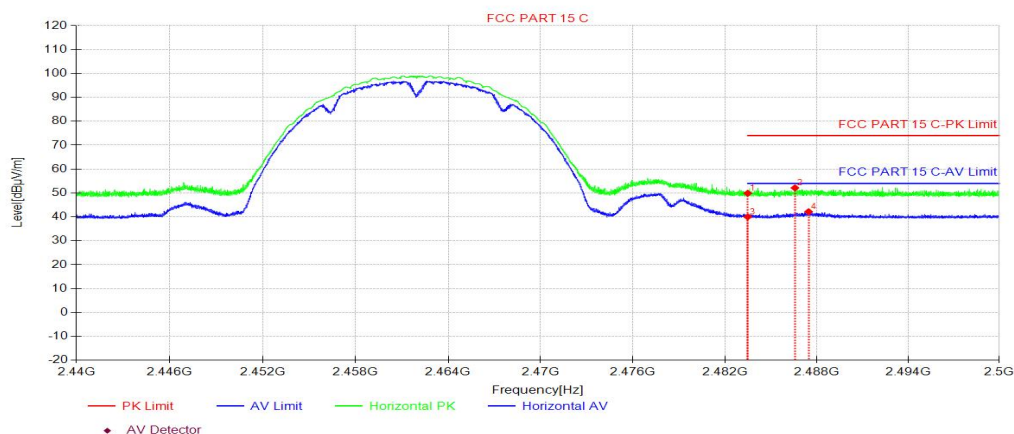
Vertical:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2379.86	56.27	-0.83	55.44	74.00	18.56	150	76	PK
2	2390.01	53.90	-0.80	53.10	74.00	20.90	150	3	PK
3	2380.14	45.37	-0.83	44.54	54.00	9.46	150	155	AV
4	2390.01	43.94	-0.80	43.14	54.00	10.86	150	144	AV

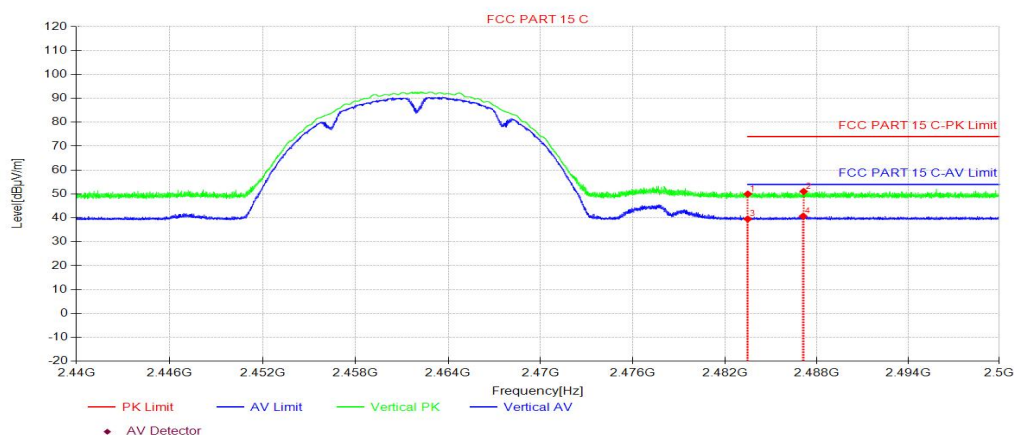
**11B 2462MHz**

Horizontal:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2483.50	50.17	-0.29	49.88	74.00	24.12	150	108	PK
2	2486.59	52.39	-0.26	52.13	74.00	21.87	150	187	PK
3	2483.50	40.29	-0.29	40.00	54.00	14.00	150	208	AV
4	2487.48	42.41	-0.26	42.15	54.00	11.85	150	187	AV

Vertical:



NO.	Freq. [MHz]	Reading Level [dBμV]	Correct Factor [dB/m]	Result Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	2483.50	50.27	-0.29	49.98	74.00	24.02	150	16	PK
2	2487.16	51.31	-0.26	51.05	74.00	22.95	150	249	PK
3	2483.50	39.79	-0.29	39.50	54.00	14.50	150	203	AV
4	2487.13	40.99	-0.26	40.73	54.00	13.27	150	215	AV

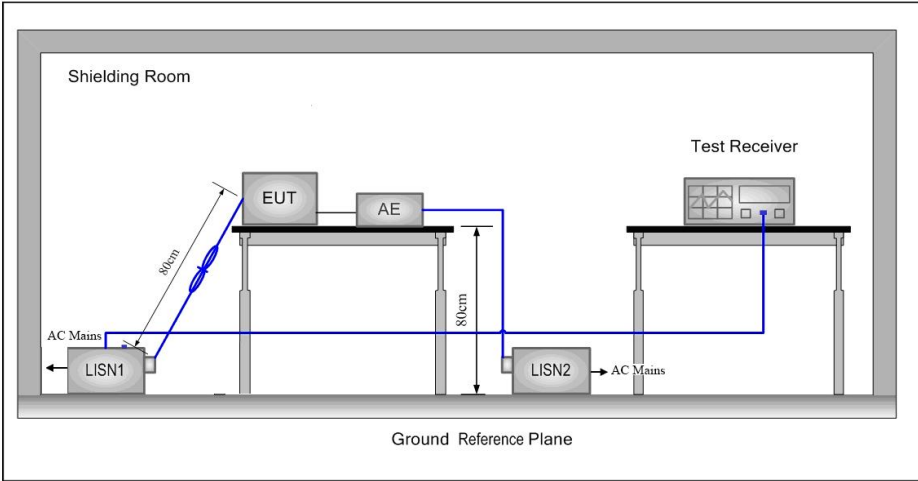
Note:

1. The 802.11b is the worse case.
2. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including Ant.Factor and the Cable Factor etc.), The basic equation is as follows:

$$\text{Result Level} = \text{Reading Level} + \text{Correct Factor}(\text{including Ant.Factor, Cable Factor etc.})$$



3.10AC Power Line Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2020		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 2020 on conducted measurement.		
Test Setup:			
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.		



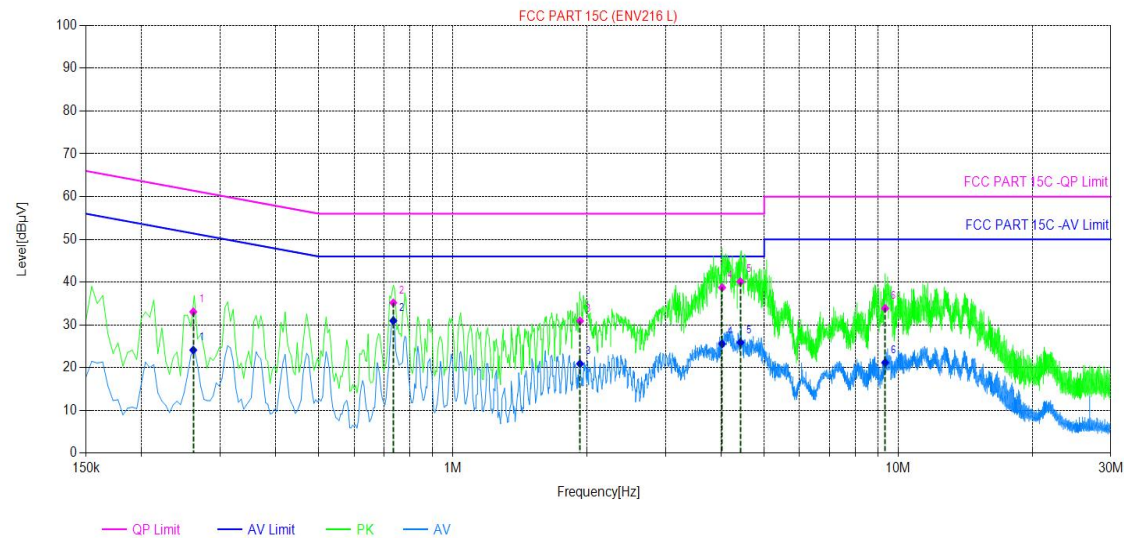
	Charge + Transmitting mode.
Final Test Mode:	Through Pre-scan, find the 6.5Mbps of rate of 802.11n(HT20) at lowest channel is the worst case. Charge + Transmitting mode. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 2.9 for details
Test Results:	Pass



Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:

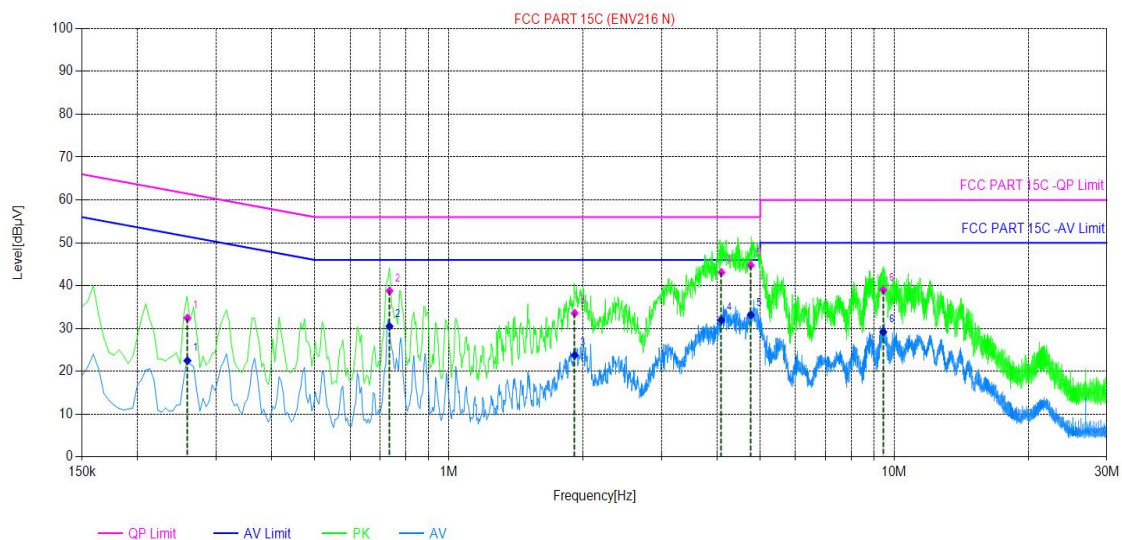


Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.2612	9.91	33.06	61.39	28.33	24.12	51.39	27.27	PASS
2	0.7347	9.76	35.18	56.00	20.82	30.99	46.00	15.01	PASS
3	1.9293	9.73	30.92	56.00	25.08	20.93	46.00	25.07	PASS
4	4.0222	9.75	38.73	56.00	17.27	25.58	46.00	20.42	PASS
5	4.4232	9.77	40.12	56.00	15.88	25.90	46.00	20.10	PASS
6	9.3458	9.86	33.88	60.00	26.12	21.19	50.00	28.81	PASS



Neutral Line:



Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.2587	9.87	32.44	61.47	29.03	22.50	51.47	28.97	PASS
2	0.7356	9.84	38.80	56.00	17.20	30.51	46.00	15.49	PASS
3	1.9155	9.76	33.58	56.00	22.42	23.77	46.00	22.23	PASS
4	4.0918	9.96	43.11	56.00	12.89	31.96	46.00	14.04	PASS
5	4.7621	9.97	44.74	56.00	11.26	33.14	46.00	12.86	PASS
6	9.4472	9.83	38.99	60.00	21.01	29.20	50.00	20.80	PASS

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including LISN Factor and the Cable Factor etc.), The basic equation is as follows:

Result Level= Reading Level + Correct Factor(including LISN Factor, Cable Factor etc.)



4 Appendix

Appendix A: Duty Cycle

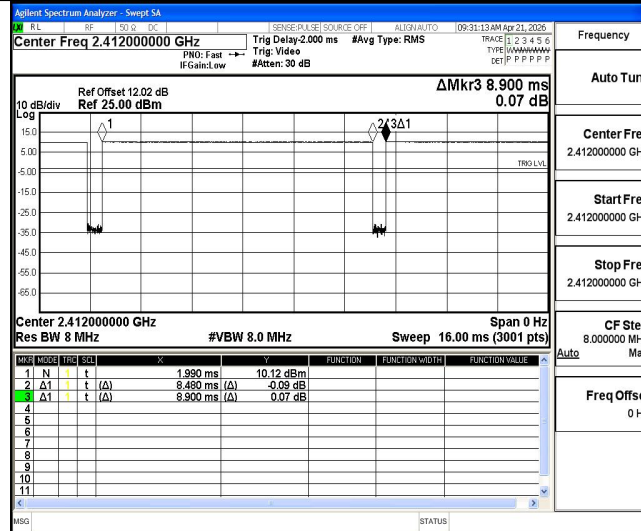
Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	8.48	8.90	95.28	0.21
11B	Ant1	2437	8.48	8.91	95.17	0.21
11B	Ant1	2462	8.48	9.09	93.29	0.30
11G	Ant1	2412	1.41	1.76	80.11	0.96
11G	Ant1	2437	1.41	1.64	85.98	0.66
11G	Ant1	2462	1.41	1.92	73.44	1.34
11N20SISO	Ant1	2412	1.31	2.11	62.09	2.07
11N20SISO	Ant1	2437	1.32	1.48	89.19	0.50
11N20SISO	Ant1	2462	1.32	1.65	80.00	0.97

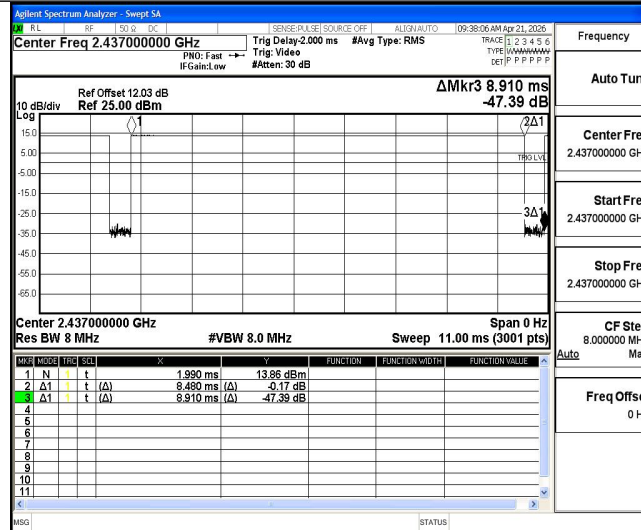


Test Graphs

NTNV-11B-Ant1-2412



NTNV-11B-Ant1-2437



NTNV-11B-Ant1-2462

