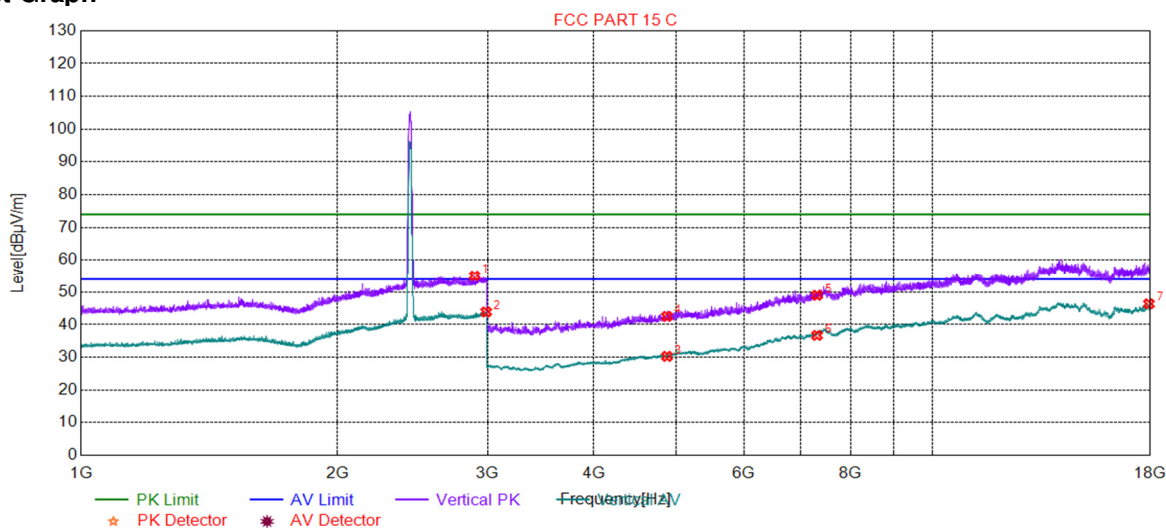


4.9.2.16 802.11N20_Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2897.47	55.07	9.15	74.00	18.93	150	98	Vertical
2	2989.49	43.91	9.50	54.00	10.09	150	180	Vertical
3	4874.00	30.31	-17.99	54.00	23.69	150	360	Vertical
4	4874.00	42.55	-17.99	74.00	31.45	150	264	Vertical
5	7311.00	49.03	-9.59	74.00	24.97	150	346	Vertical
6	7311.00	36.73	-9.59	54.00	17.27	150	72	Vertical
7	17926.4	46.40	-1.30	54.00	7.60	150	346	Vertical

Final Data List



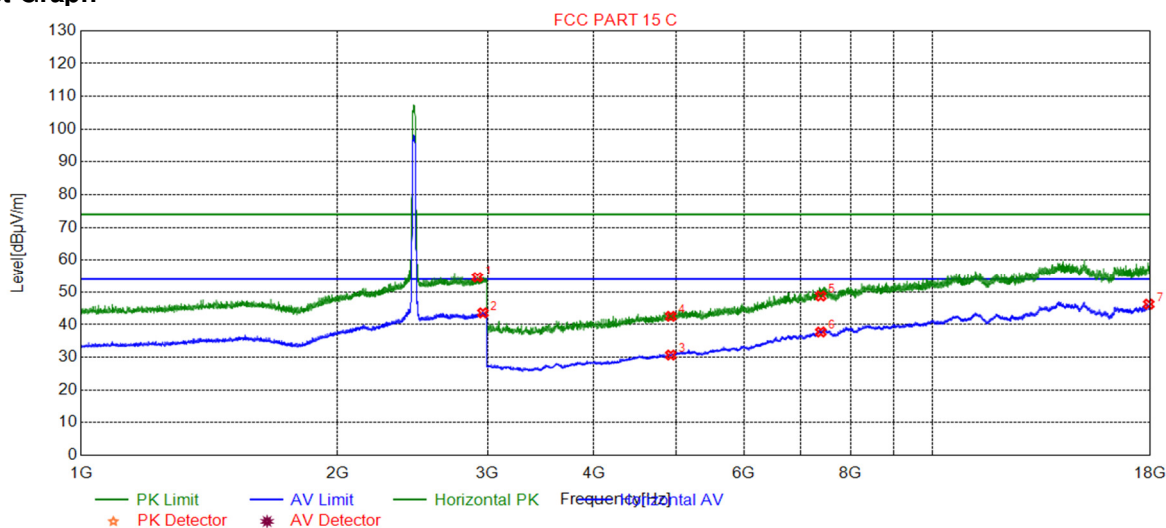
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Shenzhen Branch Testing Center, FCC Laboratory.

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4.9.2.17 802.11N20_Channel 11

Test Graph



Suspected List

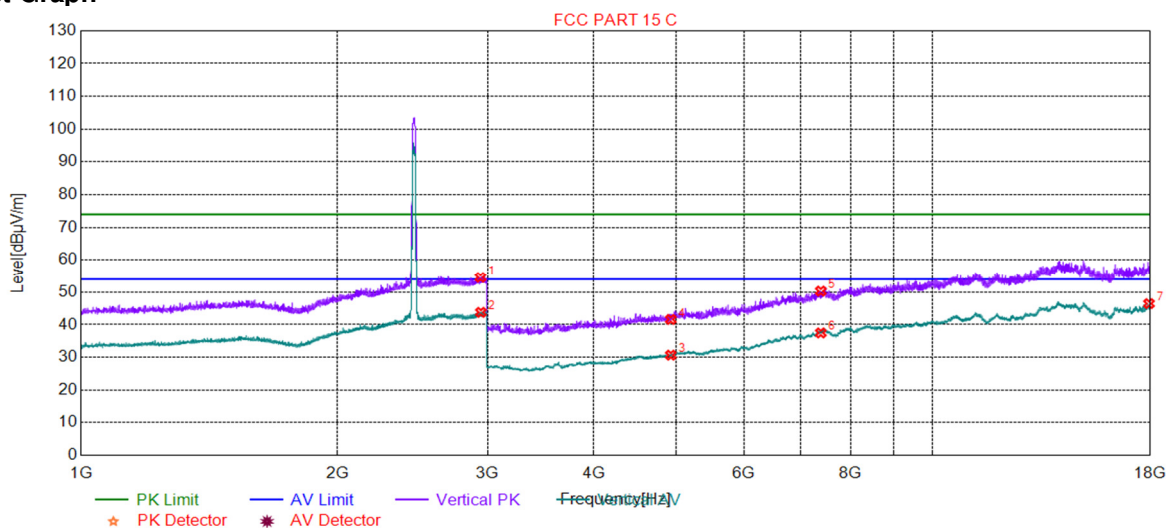
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2919.47	54.62	9.35	74.00	19.38	150	235	Horizontal
2	2962.99	43.62	9.62	54.00	10.38	150	113	Horizontal
3	4924.00	30.70	-17.71	54.00	23.30	150	122	Horizontal
4	4924.00	42.57	-17.71	74.00	31.43	150	96	Horizontal
5	7386.00	48.78	-9.20	74.00	25.22	150	260	Horizontal
6	7386.00	37.76	-9.20	54.00	16.24	150	205	Horizontal
7	17920.4	46.30	-1.30	54.00	7.70	150	205	Horizontal

Final Data List



4.9.2.18 802.11N20_Channel 11

Test Graph



Suspected List

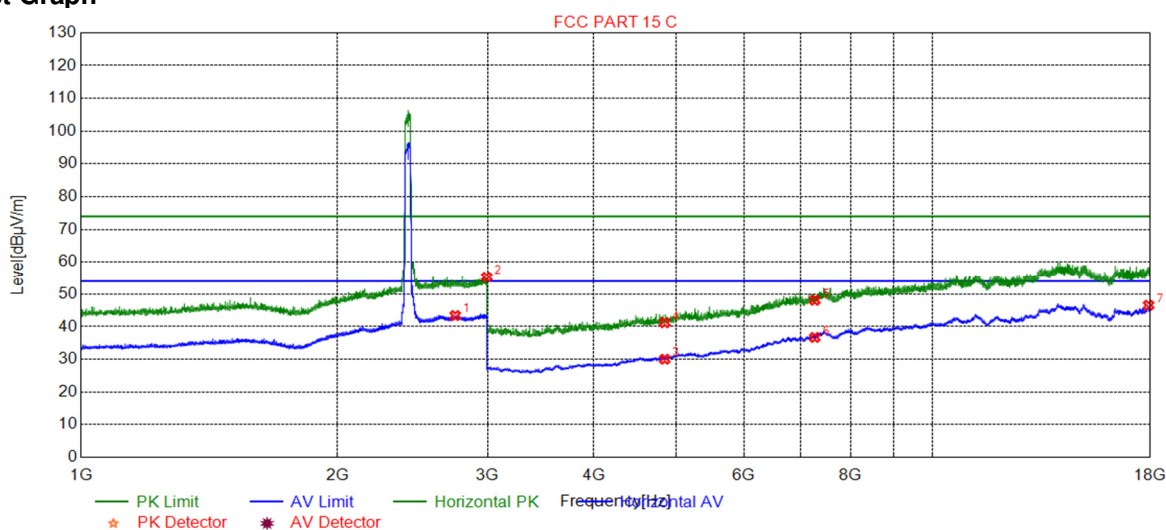
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2943.48	54.59	9.61	74.00	19.41	150	245	Vertical
2	2946.98	43.79	9.65	54.00	10.21	150	41	Vertical
3	4924.00	30.67	-17.71	54.00	23.33	150	318	Vertical
4	4924.00	41.61	-17.71	74.00	32.39	150	236	Vertical
5	7386.00	50.30	-9.20	74.00	23.70	150	345	Vertical
6	7386.00	37.48	-9.20	54.00	16.52	150	181	Vertical
7	17932.4	46.47	-1.30	54.00	7.53	150	291	Vertical

Final Data List



4.9.2.19 802.11N40_Channel 3

Test Graph



Suspected List

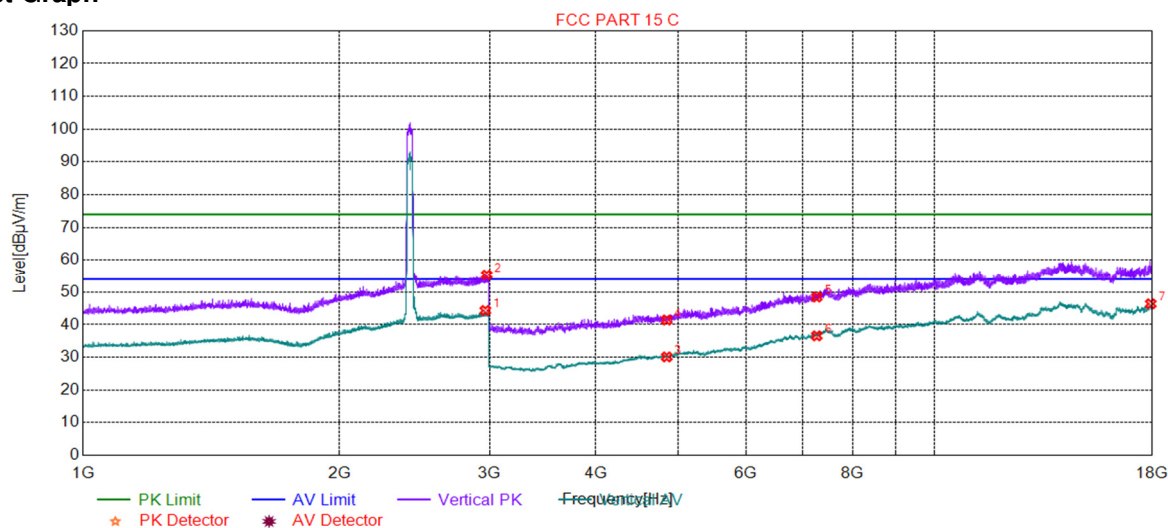
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2749.43	43.40	9.10	54.00	10.60	150	100	Horizontal
2	2993.99	55.36	9.48	74.00	18.64	150	358	Horizontal
3	4844.00	30.04	-18.12	54.00	23.96	150	0	Horizontal
4	4844.00	41.22	-18.12	74.00	32.78	150	96	Horizontal
5	7266.00	48.11	-9.71	74.00	25.89	150	0	Horizontal
6	7266.00	36.71	-9.71	54.00	17.29	150	0	Horizontal
7	17912.9	46.58	-1.31	54.00	7.42	150	14	Horizontal

Final Data List



4.9.2.20 802.11N40_Channel 3

Test Graph



Suspected List

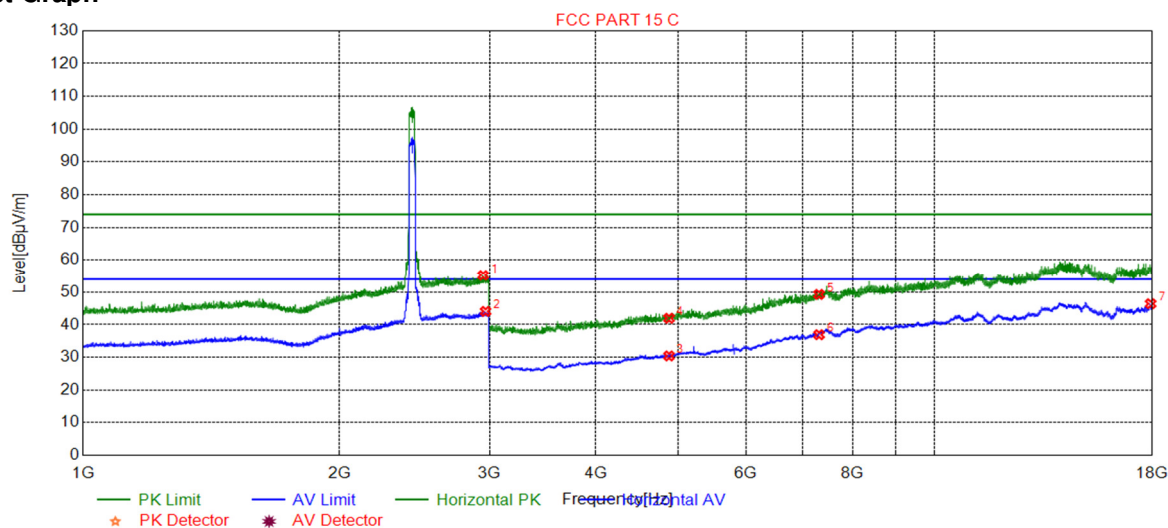
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2966.49	44.34	9.60	54.00	9.66	150	54	Vertical
2	2977.99	55.42	9.55	74.00	18.58	150	41	Vertical
3	4844.00	30.14	-18.12	54.00	23.86	150	72	Vertical
4	4844.00	41.44	-18.12	74.00	32.56	150	18	Vertical
5	7266.00	48.49	-9.71	74.00	25.51	150	99	Vertical
6	7266.00	36.59	-9.71	54.00	17.41	150	317	Vertical
7	17921.9	46.40	-1.30	54.00	7.60	150	344	Vertical

Final Data List



4.9.2.21 802.11N40_Channel 6

Test Graph



Suspected List

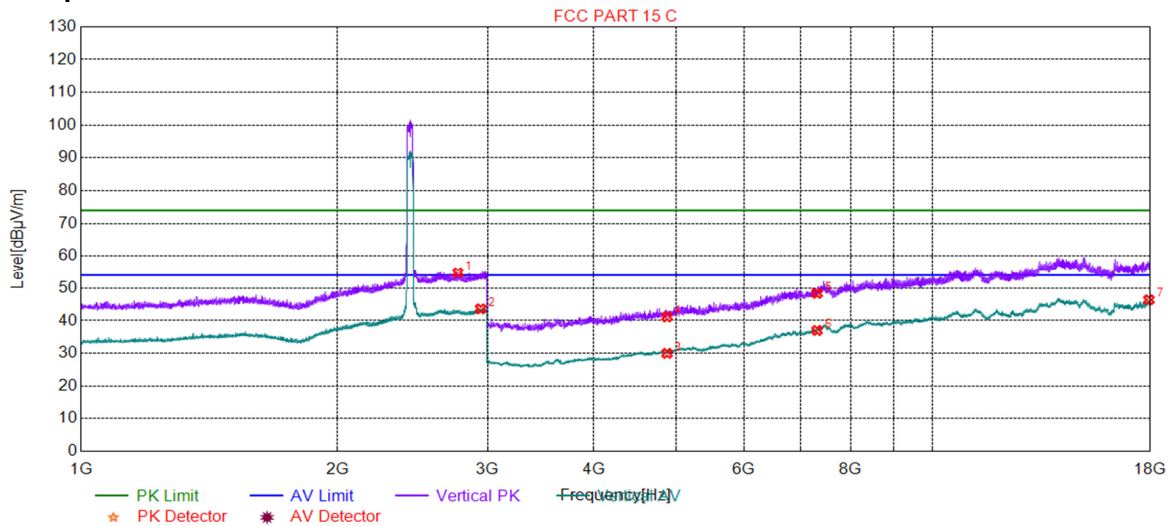
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2948.98	55.26	9.67	74.00	18.74	150	18	Horizontal
2	2968.49	44.08	9.59	54.00	9.92	150	290	Horizontal
3	4874.00	30.43	-17.99	54.00	23.57	150	0	Horizontal
4	4874.00	41.97	-17.99	74.00	32.03	150	342	Horizontal
5	7311.00	49.29	-9.59	74.00	24.71	150	206	Horizontal
6	7311.00	36.93	-9.59	54.00	17.07	150	206	Horizontal
7	17914.4	46.43	-1.31	54.00	7.57	150	97	Horizontal

Final Data List



4.9.2.22 802.11N40_Channel 6

Test Graph



Suspected List

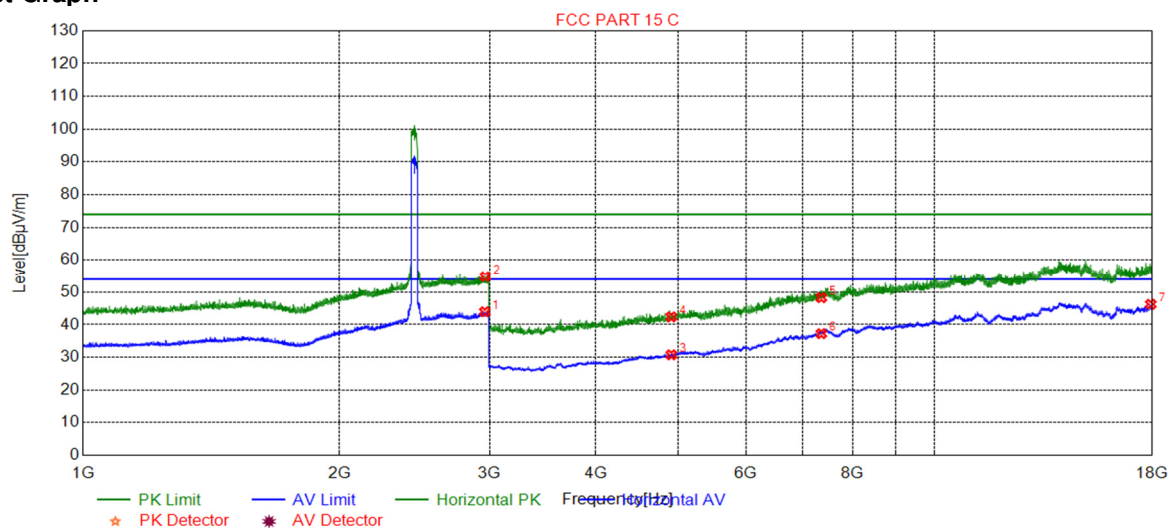
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2769.44	54.85	9.06	74.00	19.15	150	247	Vertical
2	2944.98	43.62	9.63	54.00	10.38	150	3	Vertical
3	4874.00	30.00	-17.99	54.00	24.00	150	127	Vertical
4	4874.00	41.17	-17.99	74.00	32.83	150	346	Vertical
5	7311.00	48.39	-9.59	74.00	25.61	150	44	Vertical
6	7311.00	37.02	-9.59	54.00	16.98	150	18	Vertical
7	17929.4	46.41	-1.30	54.00	7.59	150	100	Vertical

Final Data List



4.9.2.23 802.11N40_Channel 9

Test Graph



Suspected List

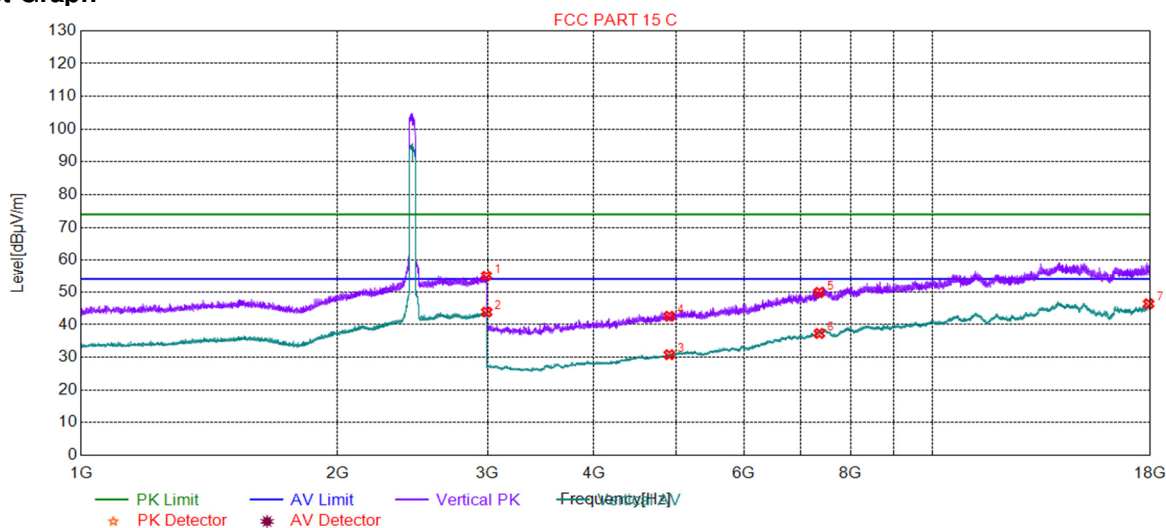
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2962.49	43.96	9.62	54.00	10.04	150	18	Horizontal
2	2965.99	54.86	9.61	74.00	19.14	150	237	Horizontal
3	4904.00	30.78	-17.84	54.00	23.22	150	16	Horizontal
4	4904.00	42.39	-17.84	74.00	31.61	150	0	Horizontal
5	7356.00	48.29	-9.36	74.00	25.71	150	126	Horizontal
6	7356.00	37.26	-9.36	54.00	16.74	150	43	Horizontal
7	17921.9	46.27	-1.30	54.00	7.73	150	288	Horizontal

Final Data List



4.9.2.24 802.11N40_Channel 9

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2991.49	55.09	9.49	74.00	18.91	150	124	Vertical
2	2993.99	43.87	9.48	54.00	10.13	150	83	Vertical
3	4904.00	30.80	-17.84	54.00	23.20	150	127	Vertical
4	4904.00	42.59	-17.84	74.00	31.41	150	44	Vertical
5	7356.00	49.90	-9.36	74.00	24.10	150	180	Vertical
6	7356.00	37.32	-9.36	54.00	16.68	150	344	Vertical
7	17914.4	46.42	-1.31	54.00	7.58	150	290	Vertical

Final Data List

Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

- 2) Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz and 18GHz to 25GHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.
- 4) All Modes have been tested, but only the worst case data displayed in this report.



4.10 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10: 2013 Section 11.12		
Test Site:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:			

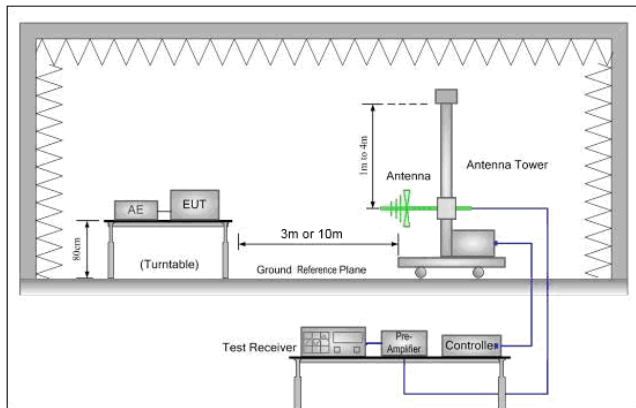


Figure 1. 30MHz to 1GHz

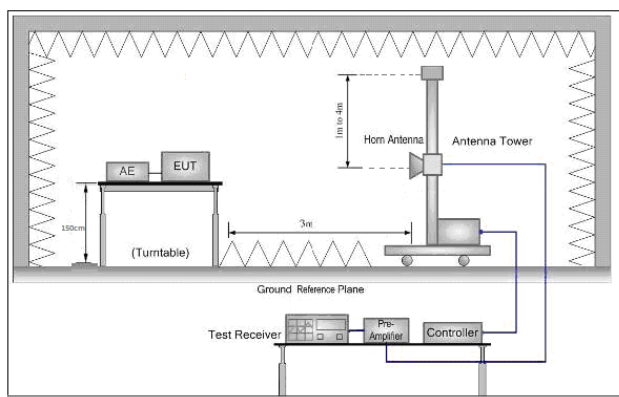


Figure 2. Above 1 GHz



Test Procedure:	a. 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 camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. 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 camber. The table was rotated 360 degrees to determine the position of the highest radiation. c. 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. d. 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. e. 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. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. 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 h. Test the EUT in the lowest channel , the Highest channel i. 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. j. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Charge + 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); 13.5Mbps of rate is the worst case of 802.11N(HT40). Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

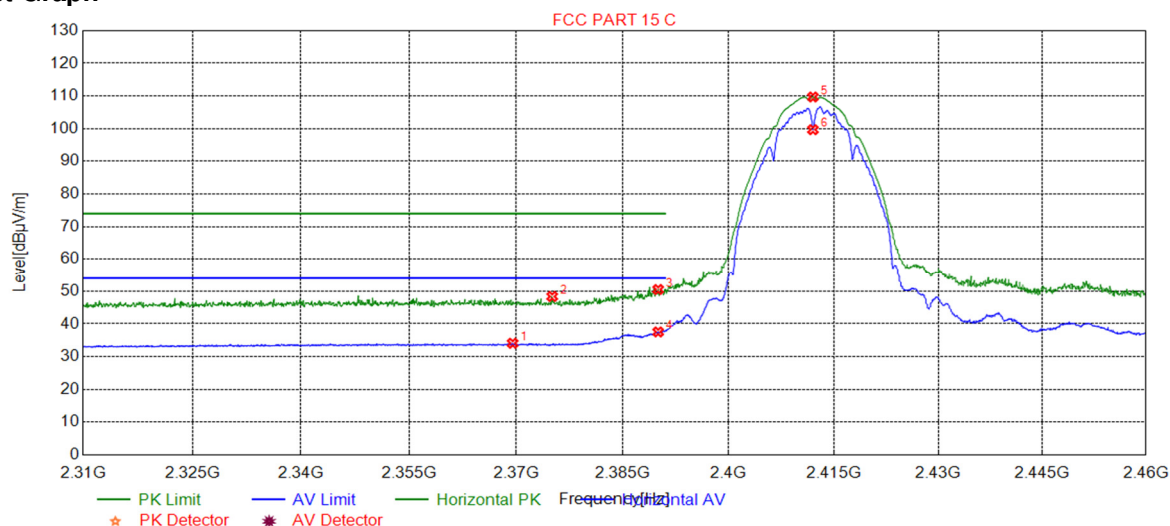


Test plot as follows:

4.10.1 Restricted bands around fundamental frequency

4.10.1.1 802.11B_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2369.50	34.09	7.79	54.00	19.91	150	178	Horizontal
2	2375.05	48.36	7.78	74.00	25.64	150	281	Horizontal
3	2390.00	50.50	7.77	74.00	23.50	150	200	Horizontal
4	2390.00	37.55	7.77	54.00	16.45	150	63	Horizontal
5	2412.00	109.71	7.81	0.00	-109.71	150	46	Horizontal
6	2412.00	99.70	7.81	0.00	-99.70	150	41	Horizontal

Final Data List



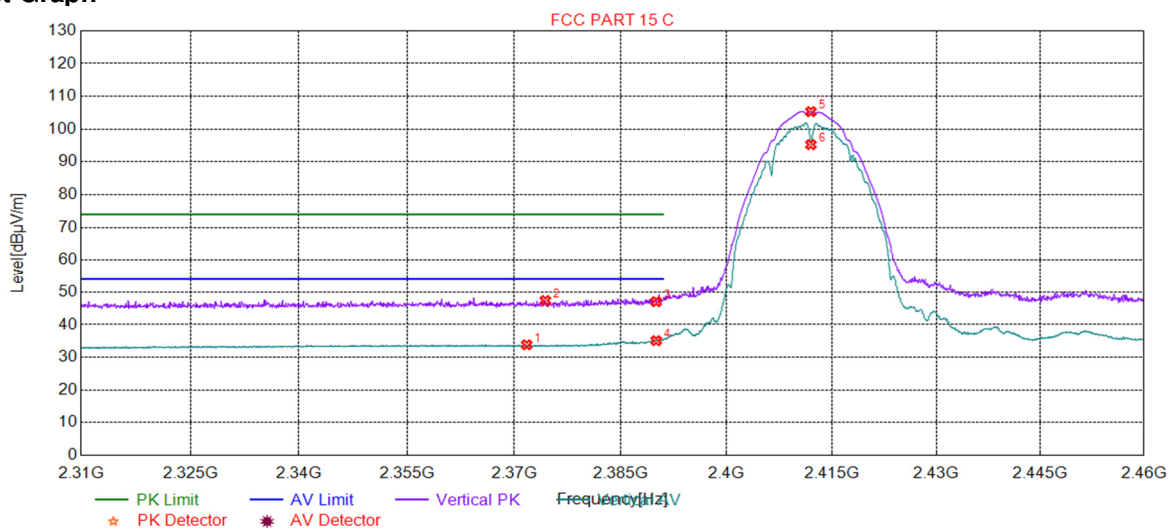
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4.10.1.2 802.11B_Channel 1

Test Graph



Suspected List

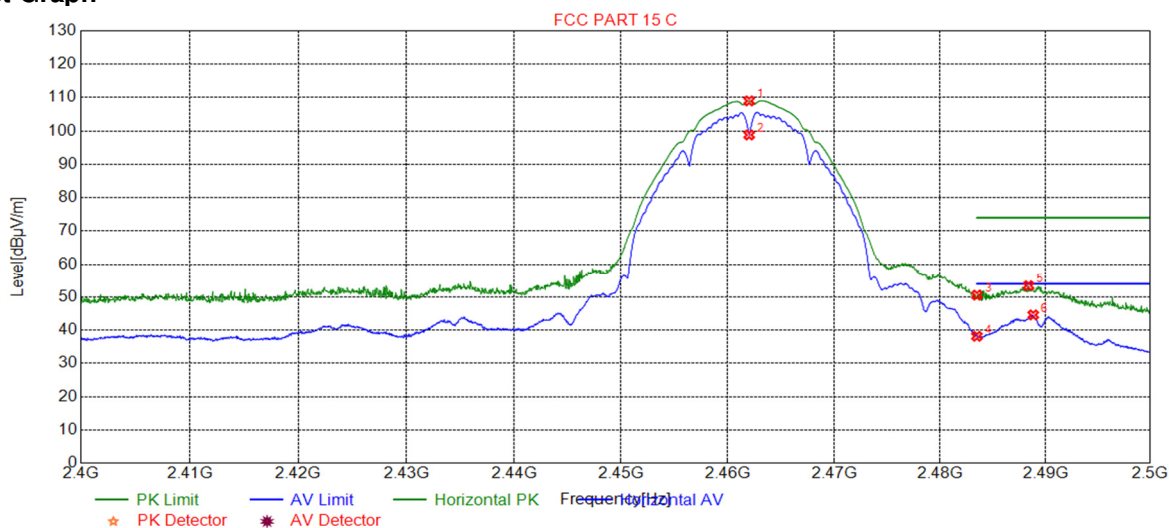
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2371.75	33.84	7.79	54.00	20.16	150	204	Vertical
2	2374.38	47.40	7.79	74.00	26.60	150	67	Vertical
3	2390.00	47.05	7.77	74.00	26.95	150	111	Vertical
4	2390.00	35.10	7.77	54.00	18.90	150	111	Vertical
5	2412.00	105.35	7.81	0.00	-105.35	150	111	Vertical
6	2412.00	95.28	7.81	0.00	-95.28	150	111	Vertical

Final Data List



4.10.1.3 802.11B_Channel 11

Test Graph



Suspected List

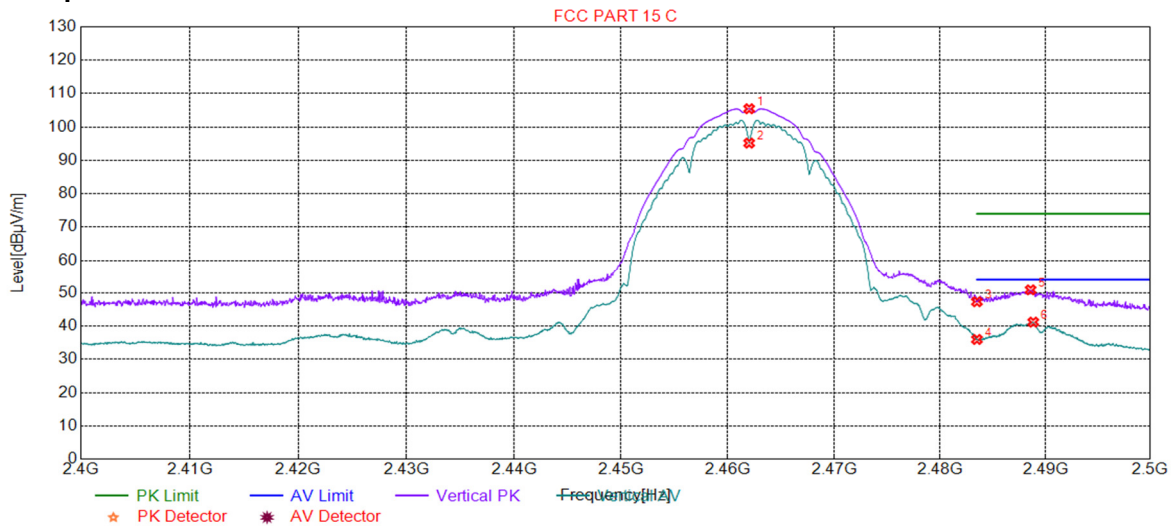
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	109.02	7.98	0.00	-109.02	150	63	Horizontal
2	2462.00	98.82	7.98	0.00	-98.82	150	63	Horizontal
3	2483.50	50.55	8.01	74.00	23.45	150	63	Horizontal
4	2483.50	38.17	8.01	54.00	15.83	150	63	Horizontal
5	2488.39	53.40	8.02	74.00	20.60	150	52	Horizontal
6	2488.84	44.59	8.02	54.00	9.41	150	57	Horizontal

Final Data List



4.10.1.4 802.11B_Channel 11

Test Graph



Suspected List

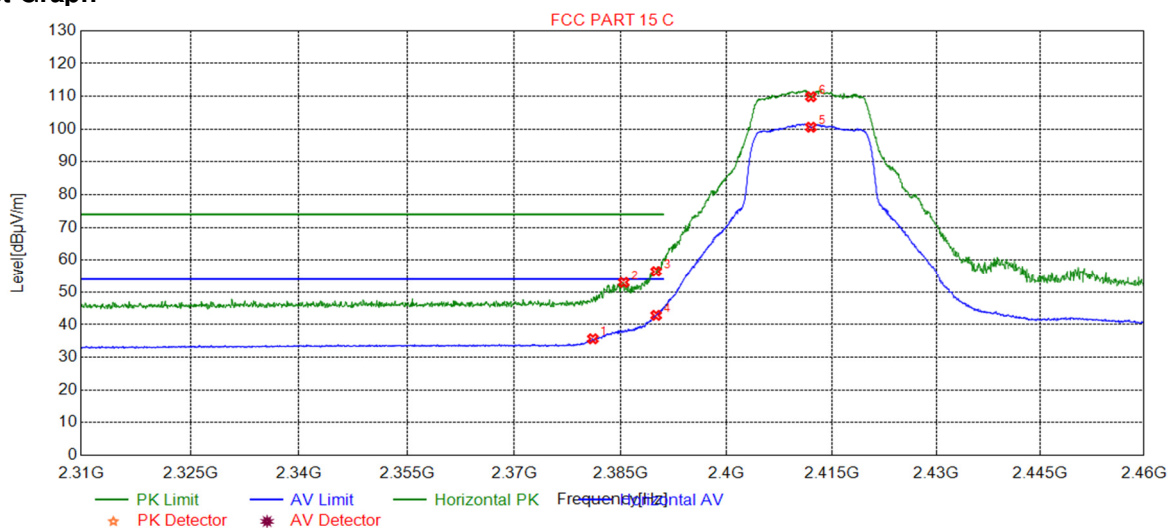
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	105.46	7.98	0.00	-105.46	150	122	Vertical
2	2462.00	95.17	7.98	0.00	-95.17	150	122	Vertical
3	2483.50	47.34	8.01	74.00	26.66	150	72	Vertical
4	2483.50	36.01	8.01	54.00	17.99	150	94	Vertical
5	2488.59	50.92	8.02	74.00	23.08	150	133	Vertical
6	2488.84	41.22	8.02	54.00	12.78	150	128	Vertical

Final Data List



4.10.1.5 802.11G_Channel 1

Test Graph



Suspected List

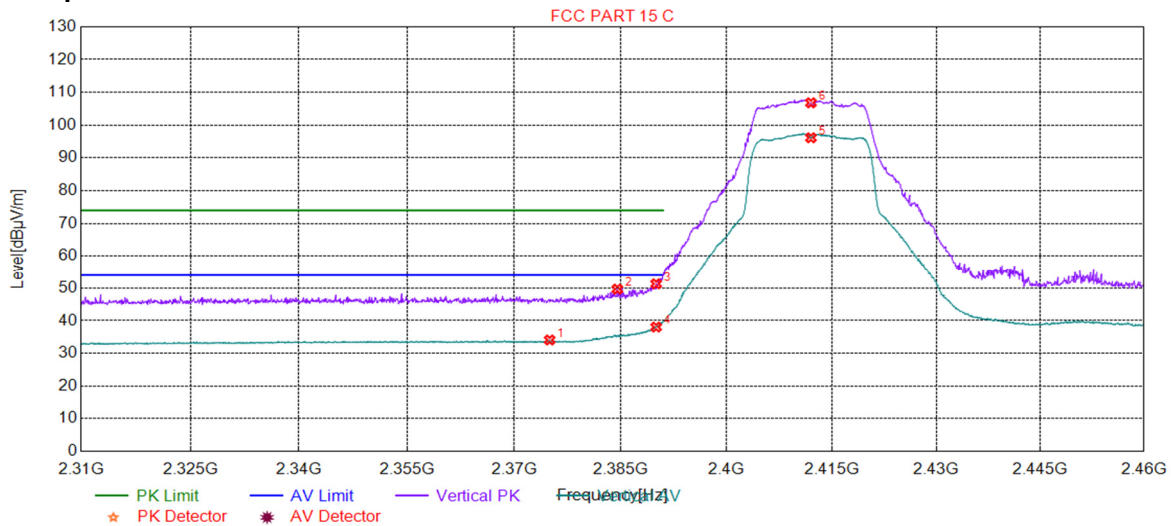
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2381.06	35.68	7.78	54.00	18.32	150	63	Horizontal
2	2385.41	52.98	7.77	74.00	21.02	150	68	Horizontal
3	2390.00	56.51	7.77	74.00	17.49	150	63	Horizontal
4	2390.00	42.86	7.77	54.00	11.14	150	63	Horizontal
5	2412.00	100.60	7.81	0.00	-100.60	150	63	Horizontal
6	2412.00	109.89	7.81	0.00	-109.89	150	57	Horizontal

Final Data List



4.10.1.6 802.11G_Channel 1

Test Graph



Suspected List

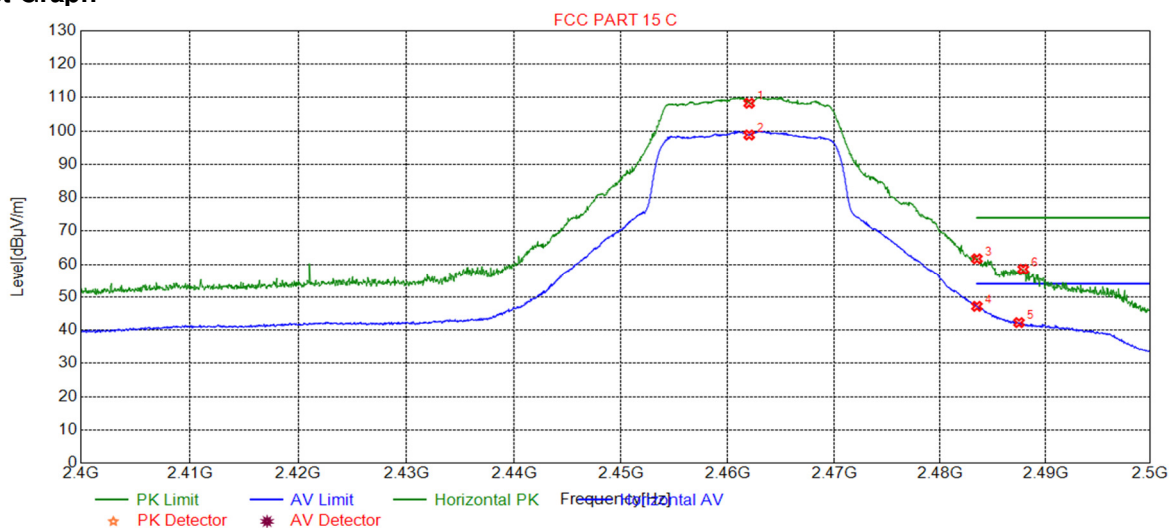
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2374.98	34.10	7.79	54.00	19.90	150	98	Vertical
2	2384.51	49.67	7.78	74.00	24.33	150	104	Vertical
3	2390.00	51.30	7.77	74.00	22.70	150	115	Vertical
4	2390.00	38.05	7.77	54.00	15.95	150	115	Vertical
5	2412.00	96.16	7.81	0.00	-96.16	150	98	Vertical
6	2412.00	106.82	7.81	0.00	-106.82	150	93	Vertical

Final Data List



4.10.1.7 802.11G_Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	108.31	7.98	0.00	-108.31	150	73	Horizontal
2	2462.00	98.80	7.98	0.00	-98.80	150	68	Horizontal
3	2483.50	61.71	8.01	74.00	12.29	150	171	Horizontal
4	2483.50	47.16	8.01	54.00	6.84	150	171	Horizontal
5	2487.49	42.27	8.01	54.00	11.73	150	73	Horizontal
6	2487.89	58.56	8.02	74.00	15.44	150	73	Horizontal

Final Data List

