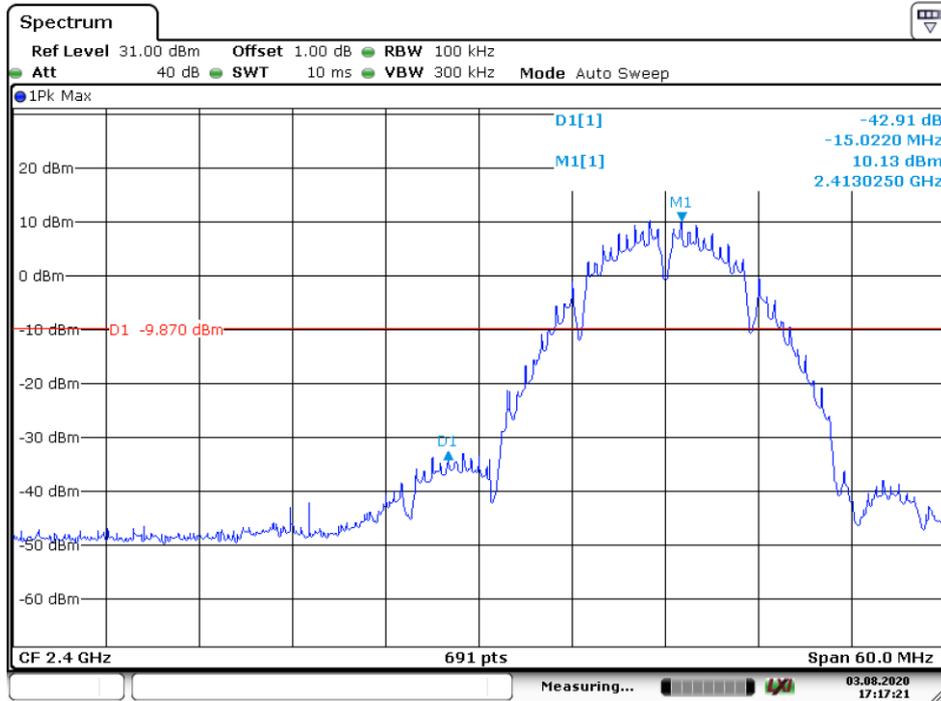


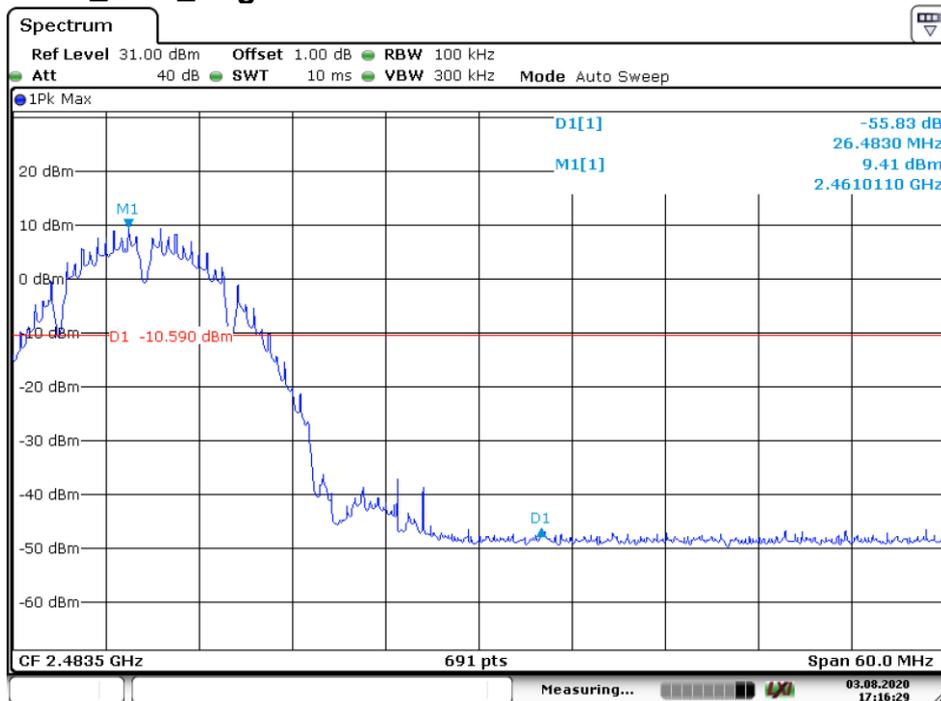
4.7.1.2 ANT2

4.7.1.2.1 802.11B_CDD_Lowest Channel



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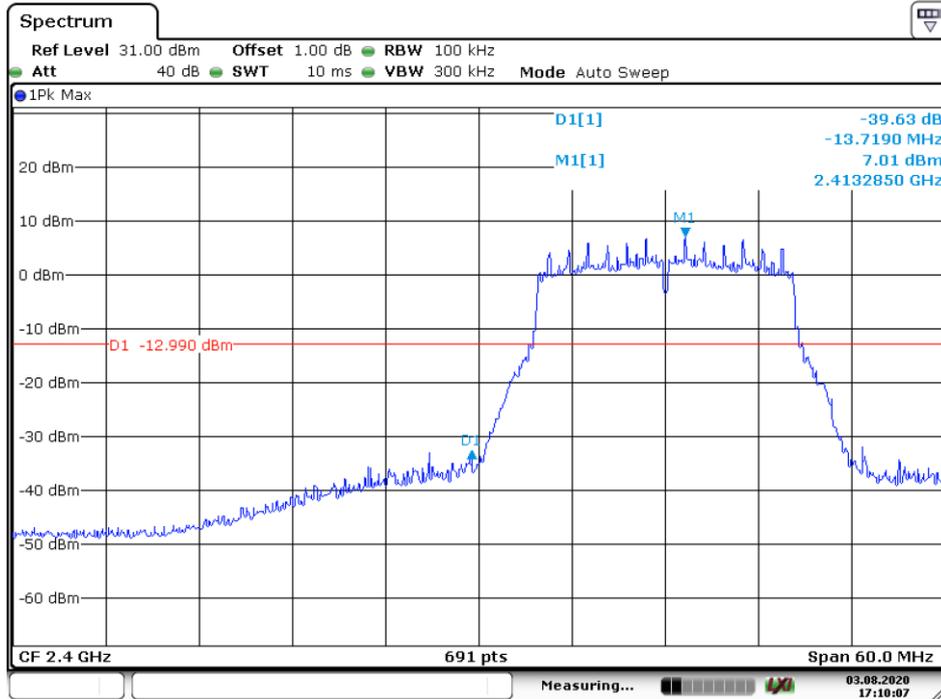
4.7.1.2.2 802.11B_CDD_Highest Channel



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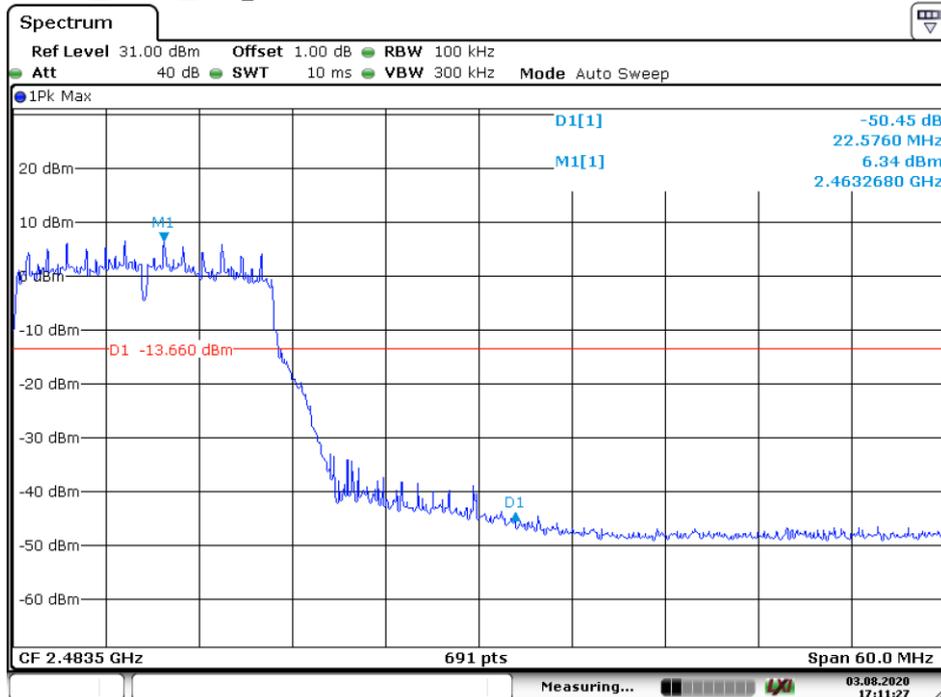


4.7.1.2.3 802.11G_CDD_Lowest Channel



Date: 3.AUG.2020 17:10:08

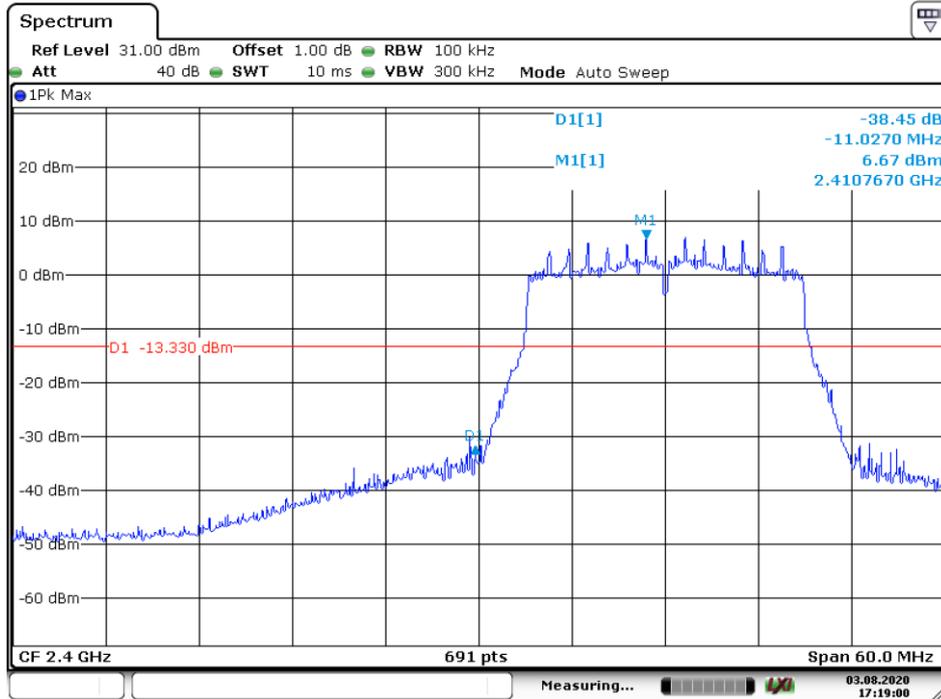
4.7.1.2.4 802.11G_CDD_Highest Channel



Date: 3.AUG.2020 17:11:27

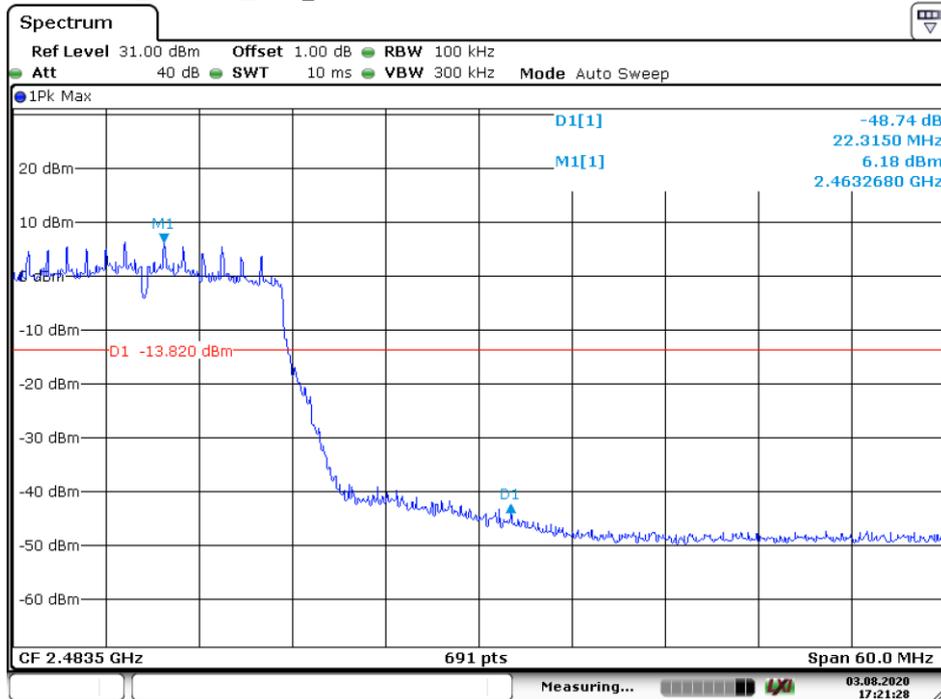


4.7.1.2.5 802.11N20_MIMO_Lowest Channel



Date: 3.AUG.2020 17:19:00

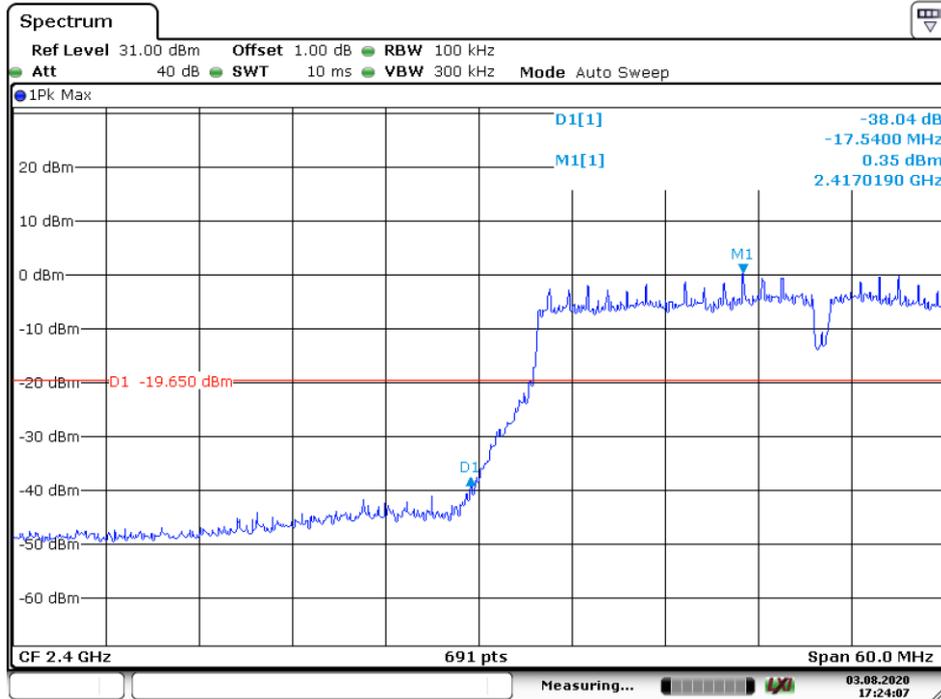
4.7.1.2.6 802.11 N20_MIMO_Highest Channel



Date: 3.AUG.2020 17:21:28

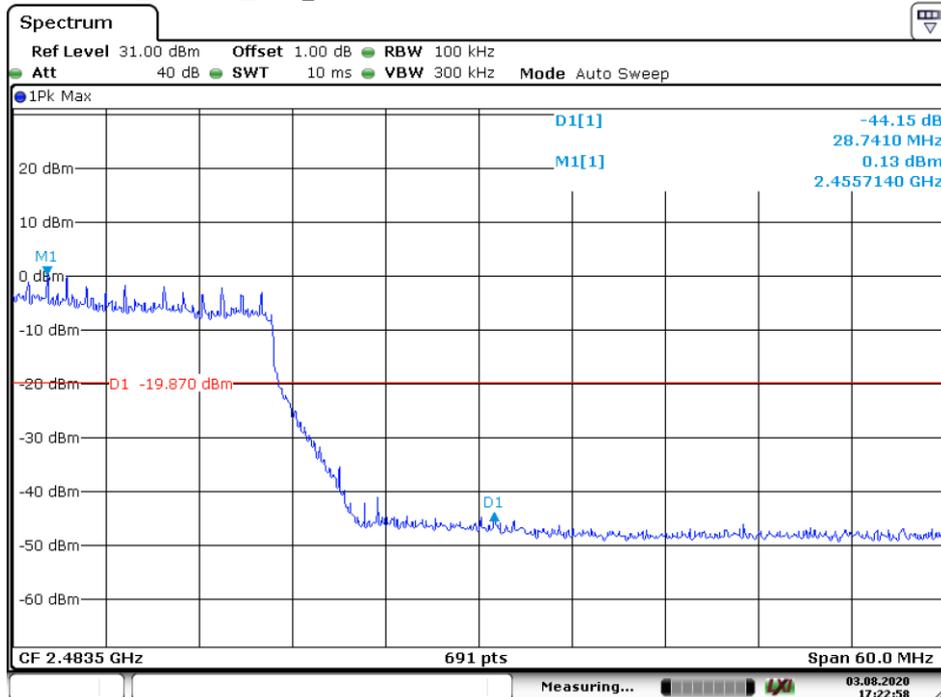


4.7.1.2.7 802.11N40_MIMO_Lowest Channel



Date: 3.AUG.2020 17:24:07

4.7.1.2.8 802.11 N40_MIMO_Highest Channel



Date: 3.AUG.2020 17:22:59



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4.8 RF Conducted Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2013 Section 11.11
Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test 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).
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

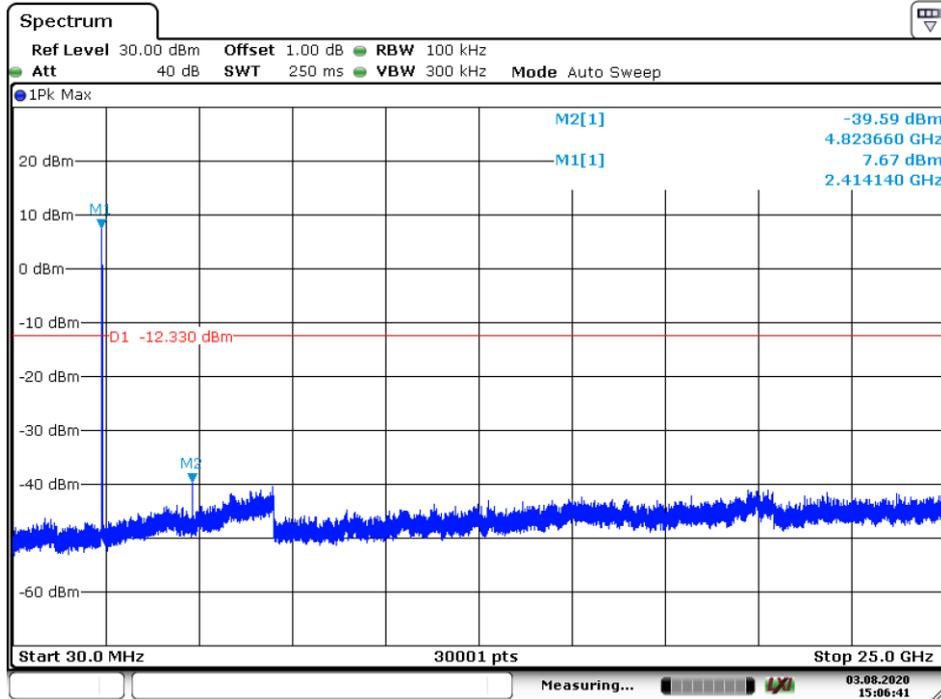


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4.8.1 Test plots

4.8.1.1 ANT1

4.8.1.1.1 802.11B_CDD_Lowest Channel



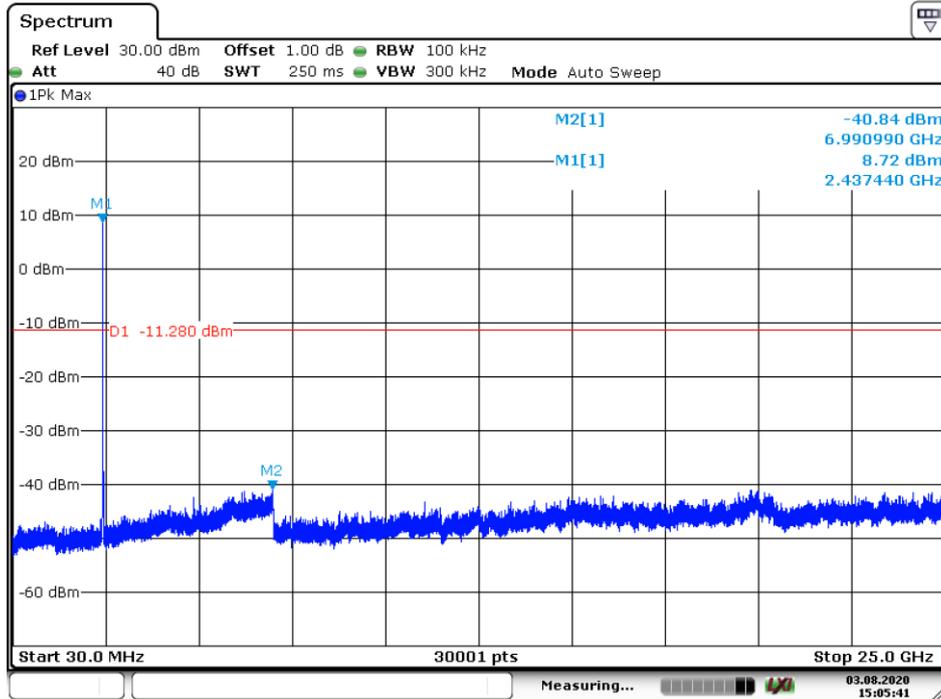
Date: 3.AUG.2020 15:06:41



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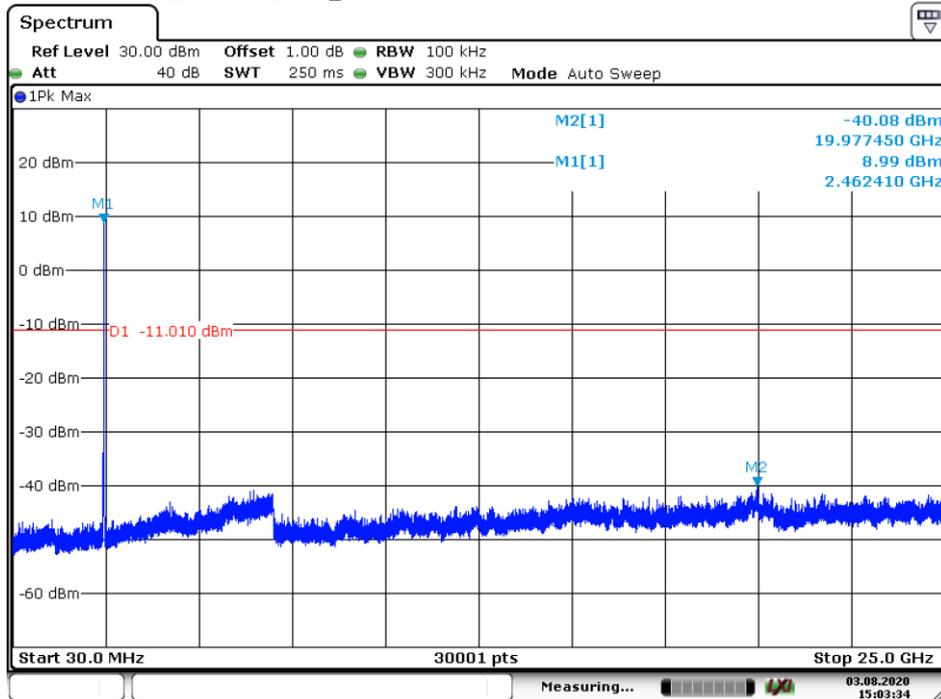
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4.8.1.1.2 802.11B_CDD _ Middle Channel



Date: 3.AUG.2020 15:05:41

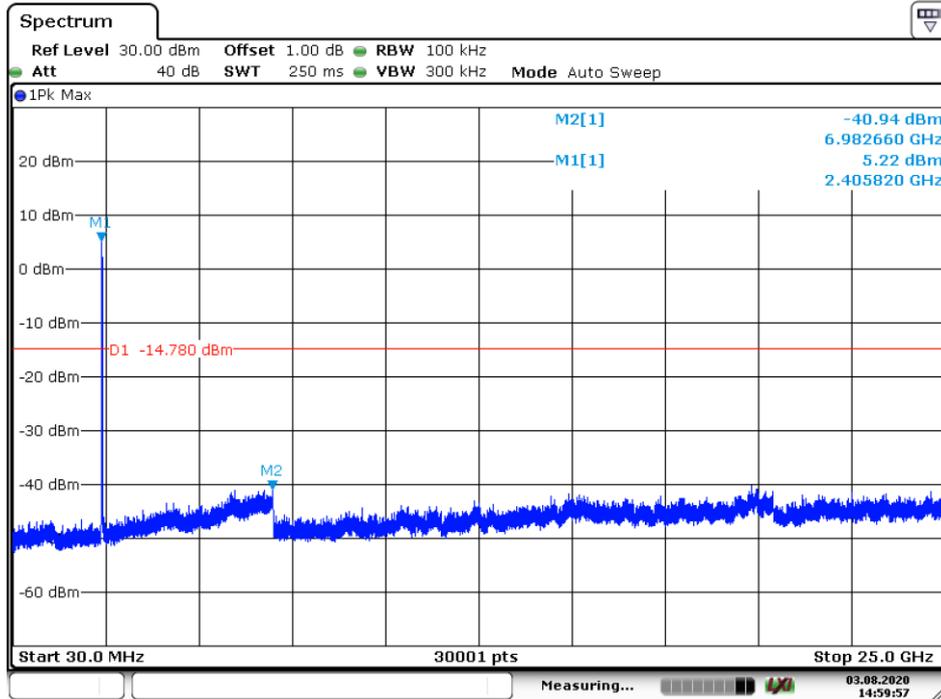
4.8.1.1.3 802.11B_CDD _ Highest Channel



Date: 3.AUG.2020 15:03:34

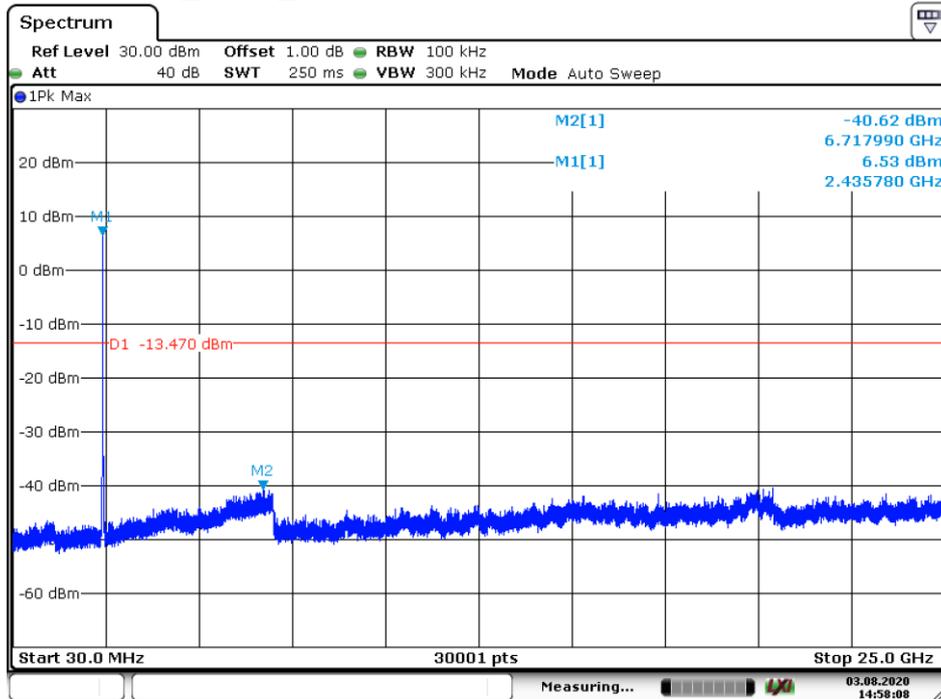


4.8.1.1.4 802.11G_CDD_Lowest Channel



Date: 3.AUG.2020 14:59:57

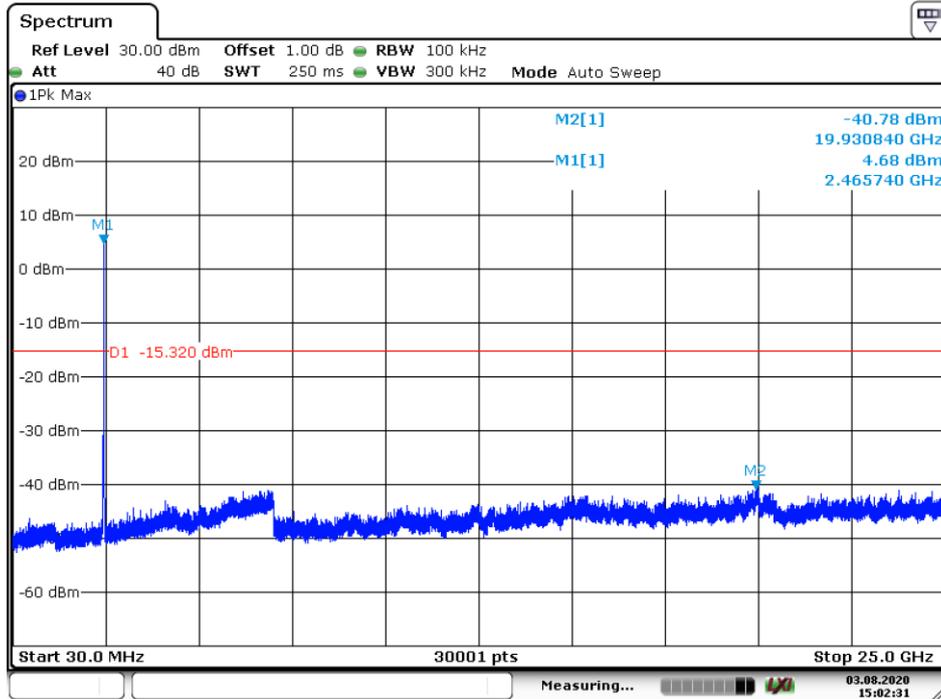
4.8.1.1.5 802.11G_CDD_Middle Channel



Date: 3.AUG.2020 14:58:08

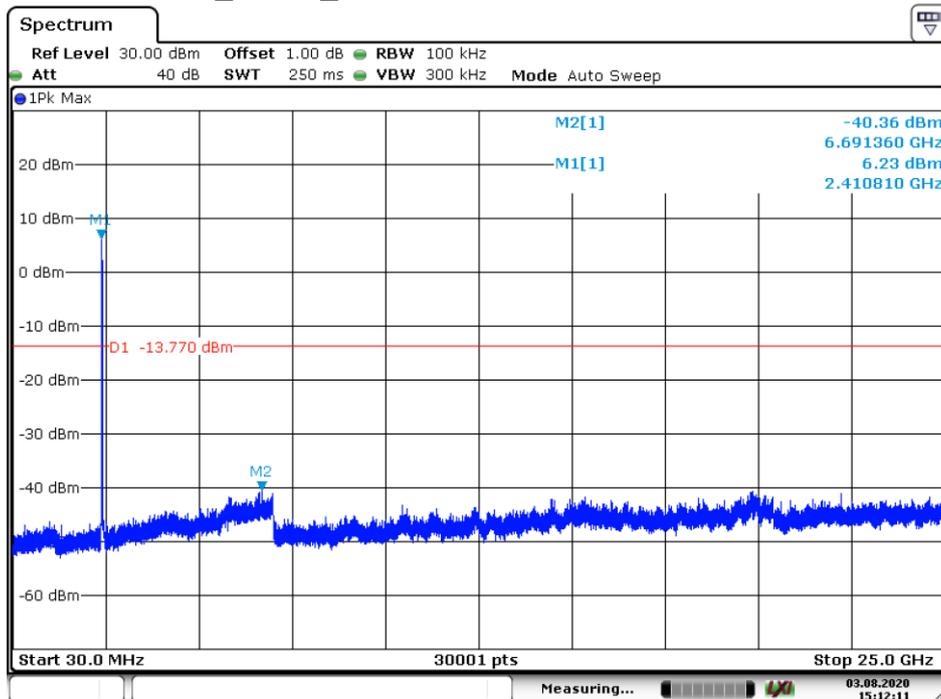


4.8.1.1.6 802.11G_CDD _ Highest Channel



Date: 3.AUG.2020 15:02:31

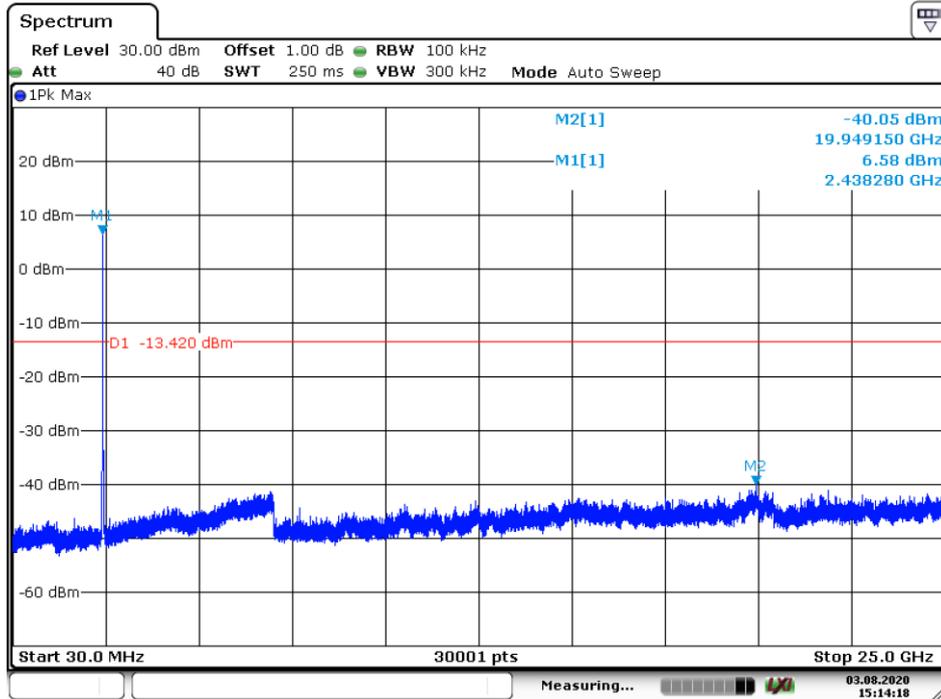
4.8.1.1.7 802.11N20_MIMO_Lowest Channel



Date: 3.AUG.2020 15:12:11

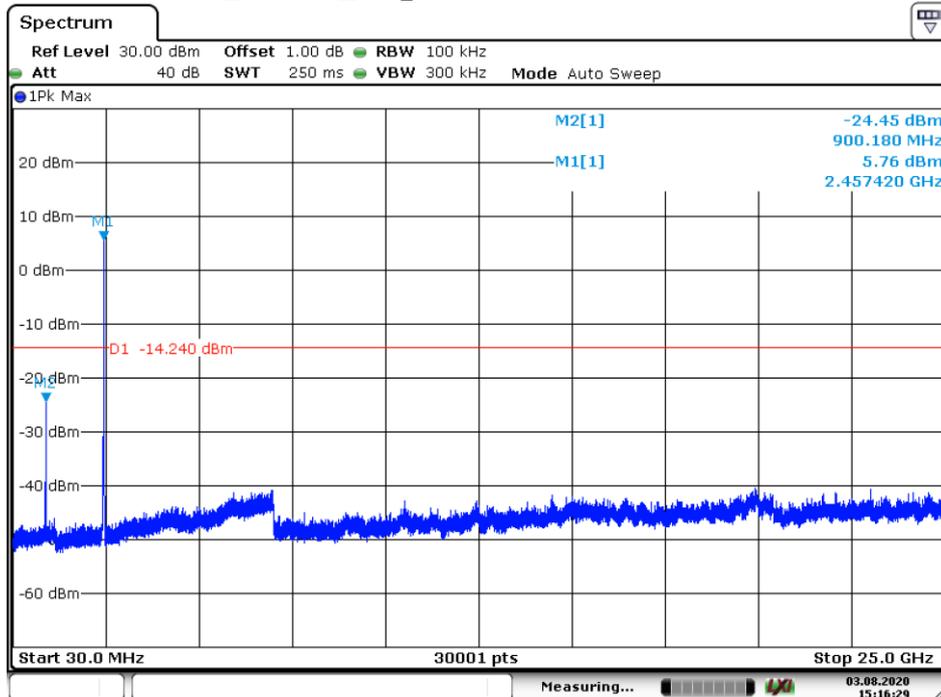


4.8.1.1.8 802.11 N20_MIMO _ Middle Channel



Date: 3.AUG.2020 15:14:19

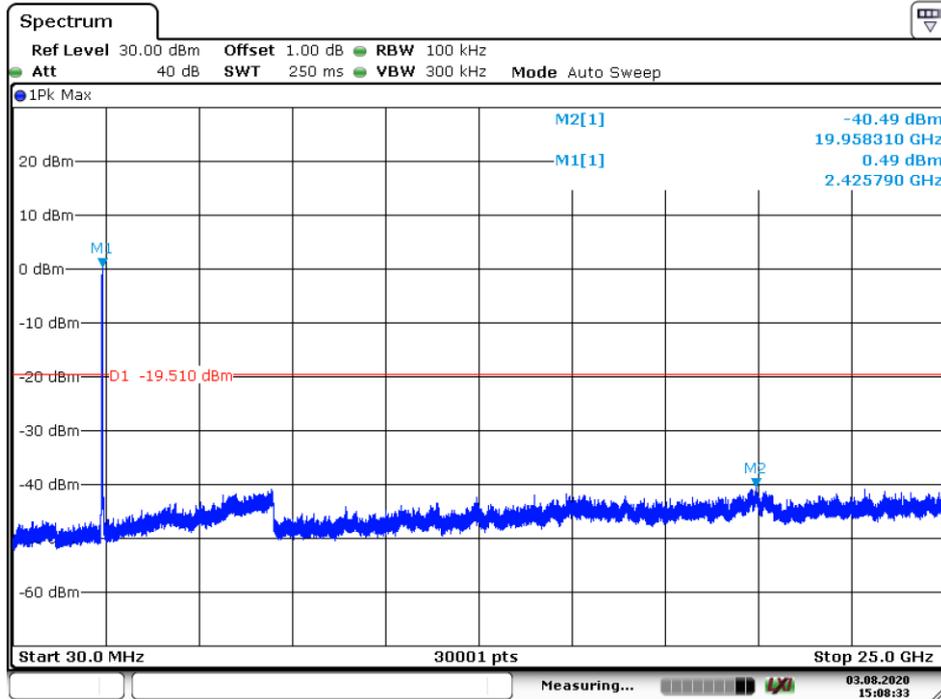
4.8.1.1.9 802.11 N20_MIMO _ Highest Channel



Date: 3.AUG.2020 15:16:30

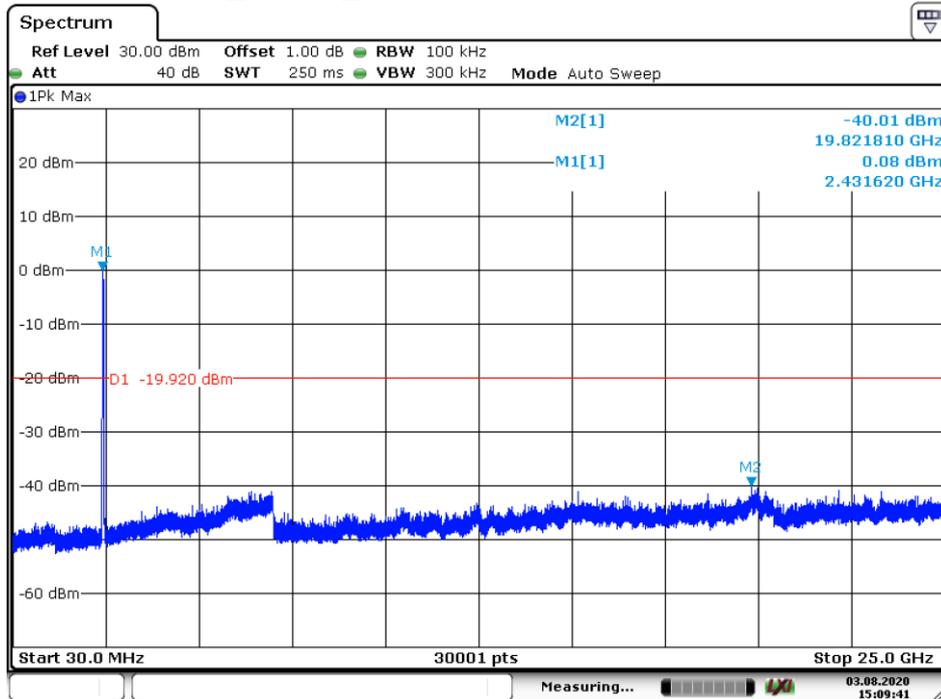


4.8.1.1.10 802.11N40_MIMO_Lowest Channel



Date: 3.AUG.2020 15:08:33

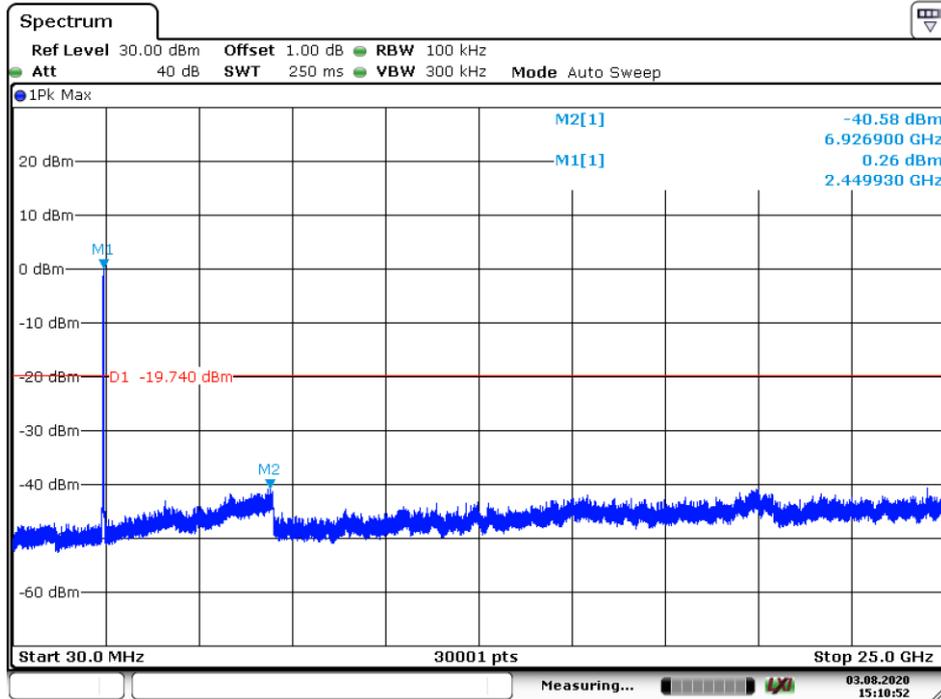
4.8.1.1.11 802.11 N40_MIMO_Middle Channel



Date: 3.AUG.2020 15:09:41



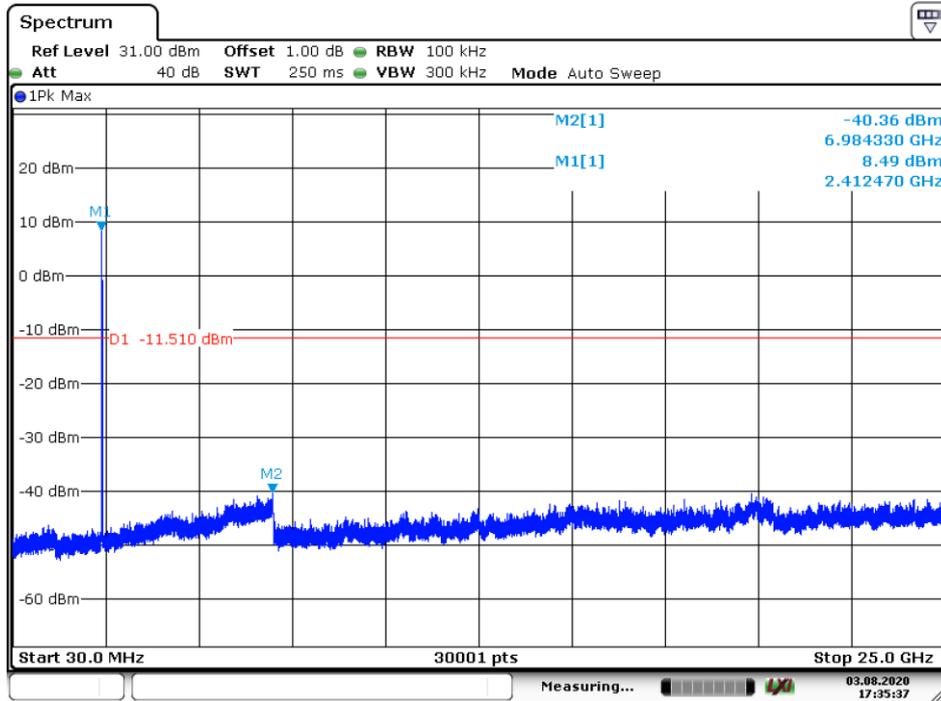
4.8.1.1.12 802.11 N40_MIMO _ Highest Channel



Date: 3.AUG.2020 15:10:52

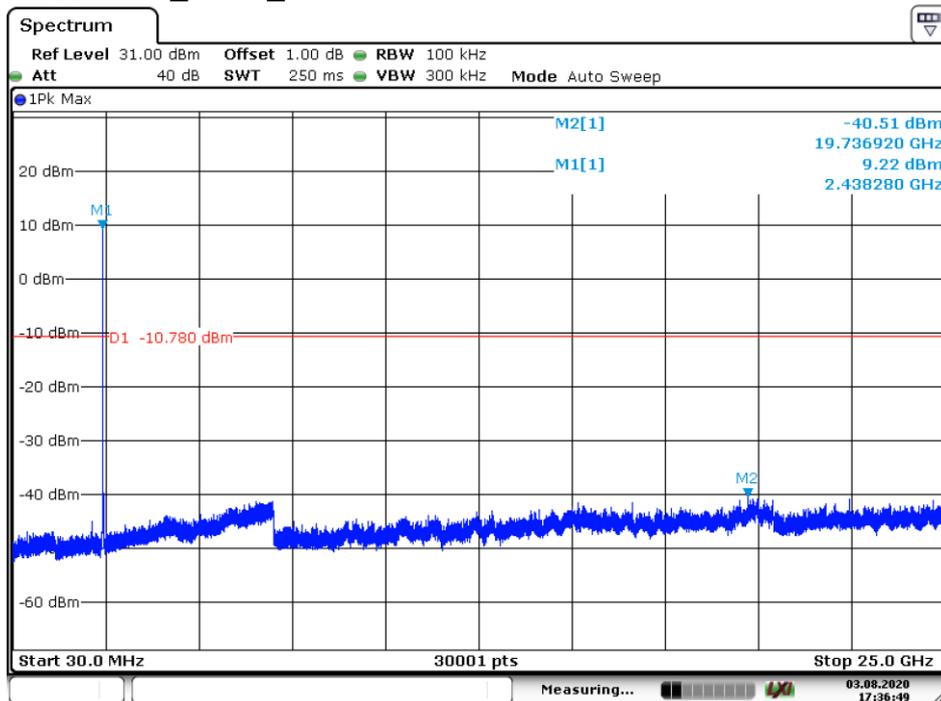


4.8.1.2 ANT2
4.8.1.2.1 802.11B_CDD_Lowest Channel



Date: 3.AUG.2020 17:35:37

4.8.1.2.2 802.11B_CDD_Middle Channel

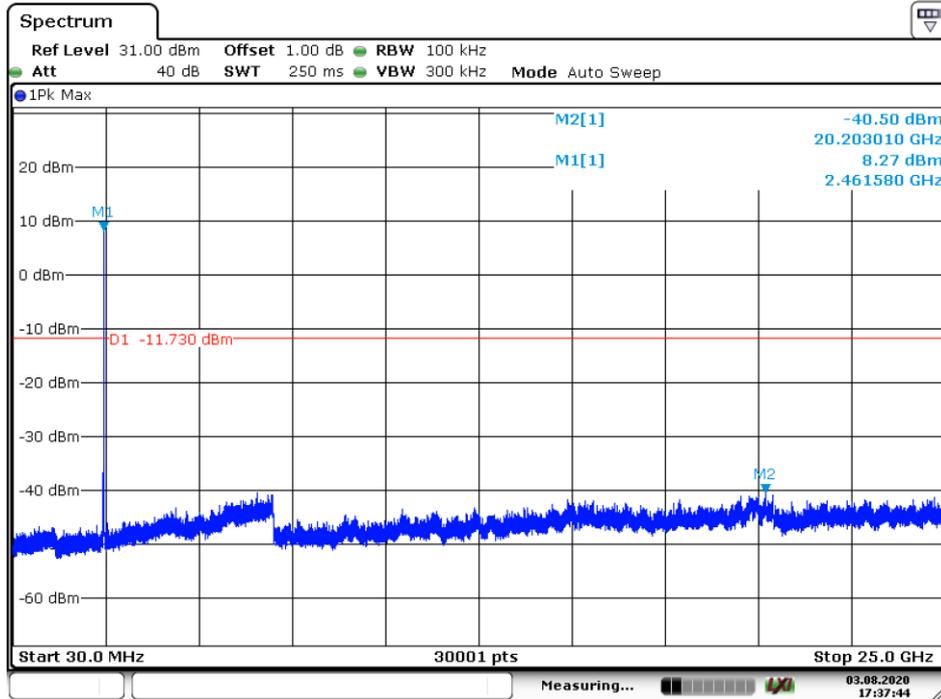


Date: 3.AUG.2020 17:36:49



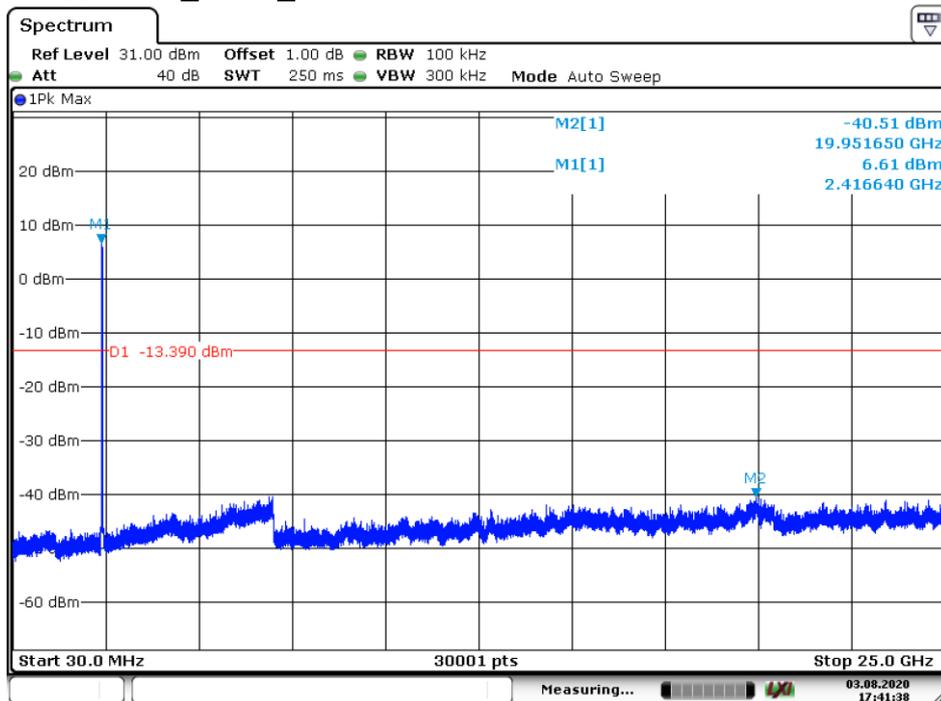
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4.8.1.2.3 802.11B_CDD _ Highest Channel



Date: 3.AUG.2020 17:37:45

4.8.1.2.4 802.11G_CDD _ Lowest Channel



Date: 3.AUG.2020 17:41:37

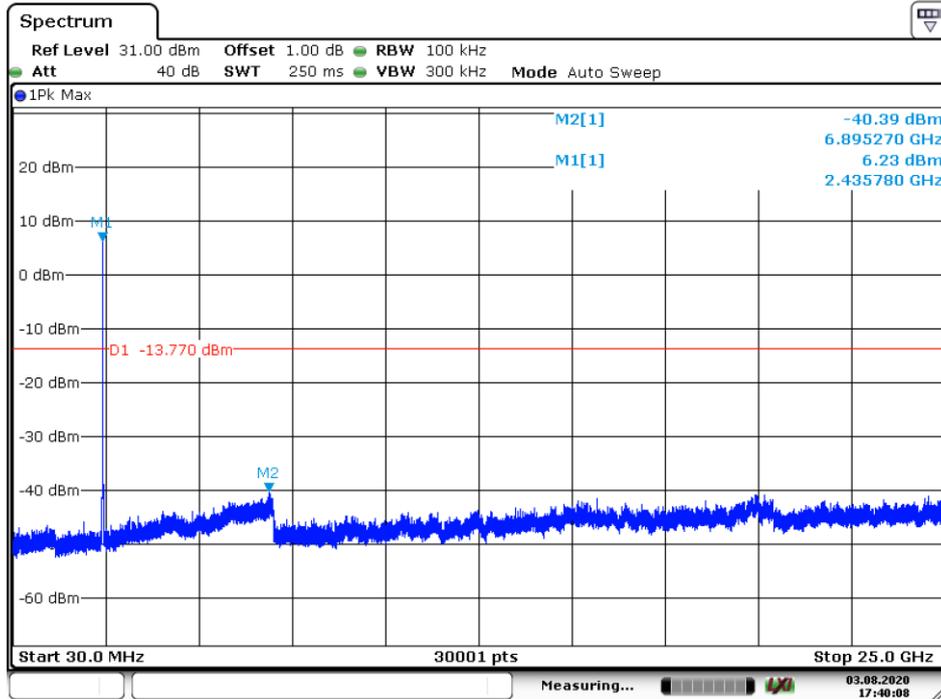


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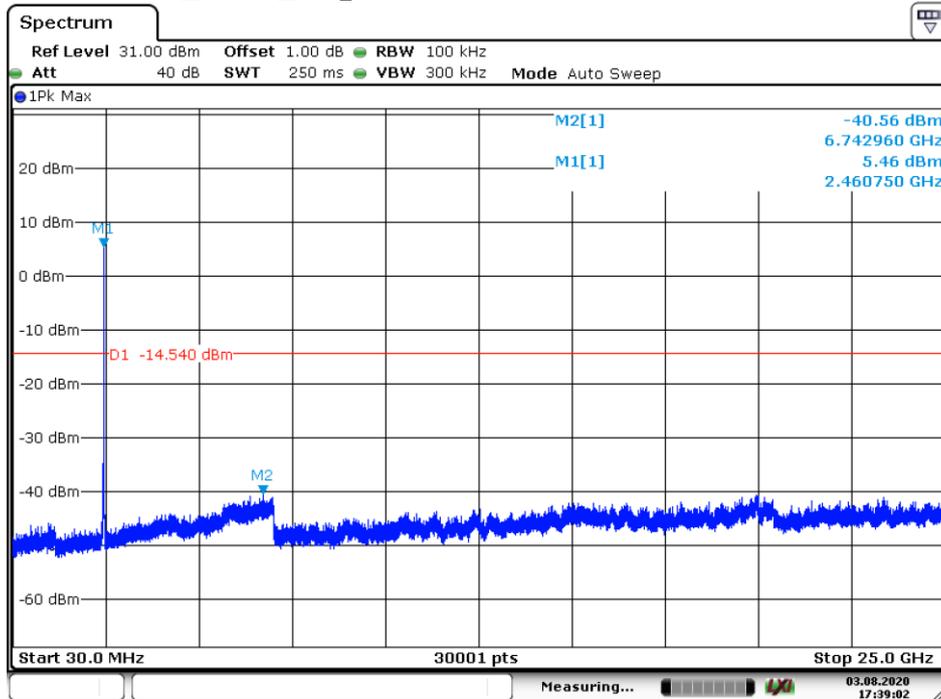
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4.8.1.2.5 802.11G_CDD _ Middle Channel



Date: 3.AUG.2020 17:40:09

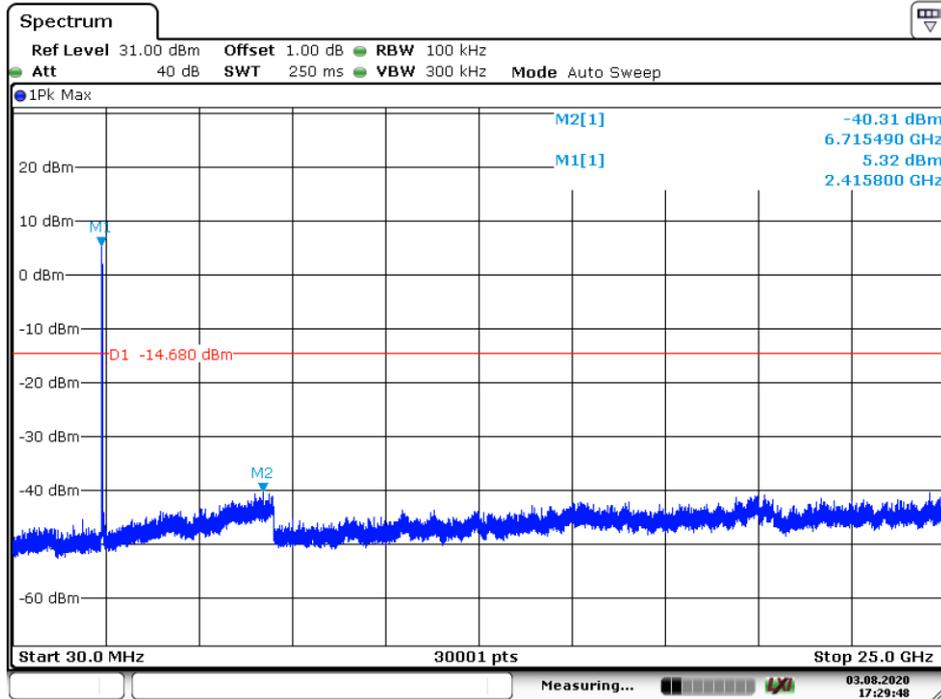
4.8.1.2.6 802.11G_CDD _ Highest Channel



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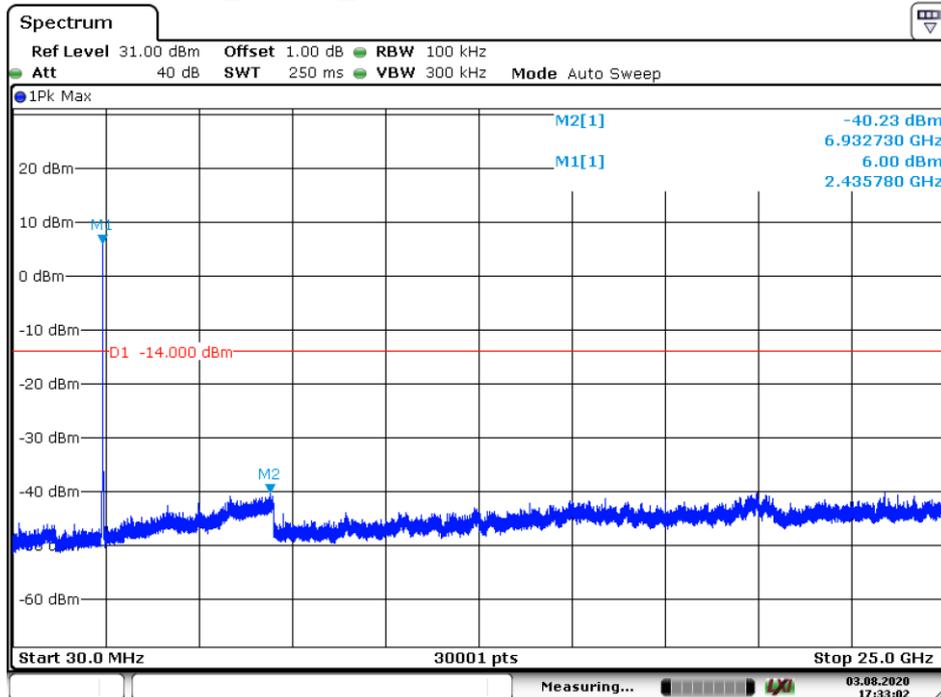


4.8.1.2.7 802.11N20_MIMO_Lowest Channel



Date: 3.AUG.2020 17:29:48

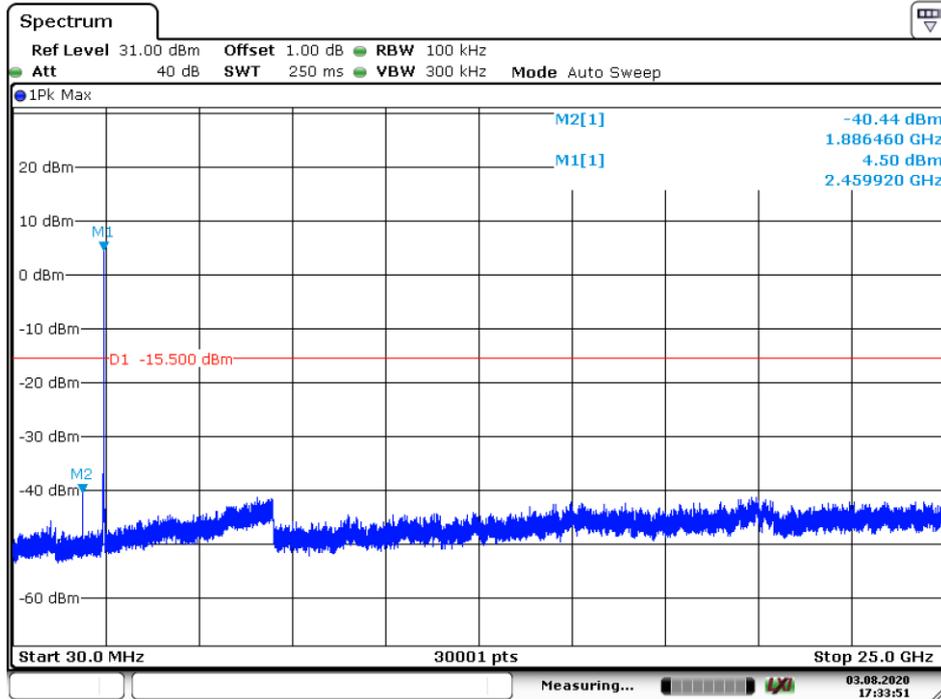
4.8.1.2.8 802.11 N20_MIMO_Middle Channel



Date: 3.AUG.2020 17:33:03

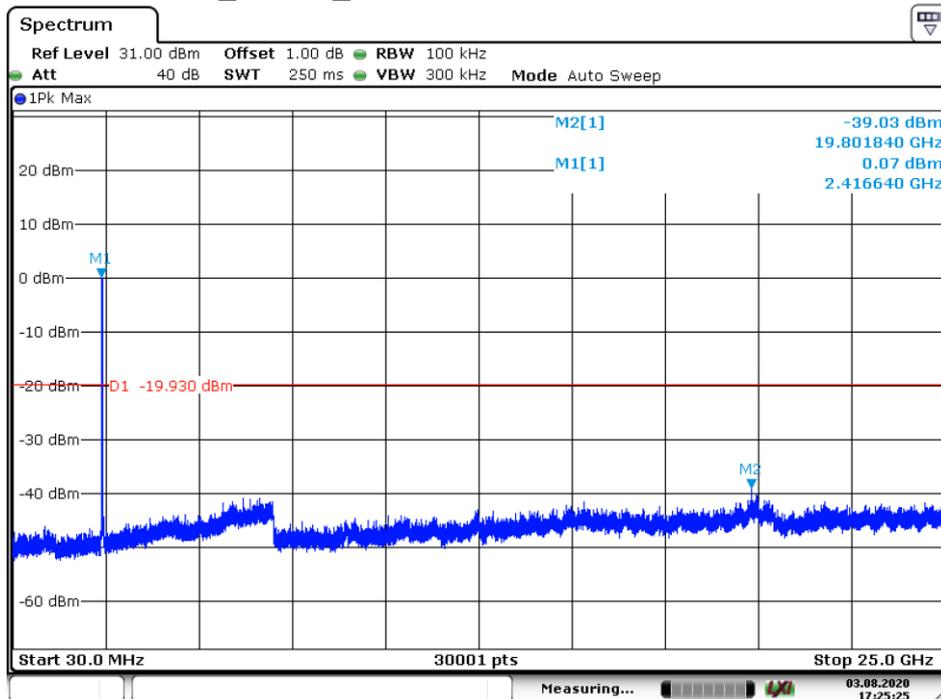


4.8.1.2.9 802.11 N20_MIMO _ Highest Channel



Date: 3.AUG.2020 17:33:51

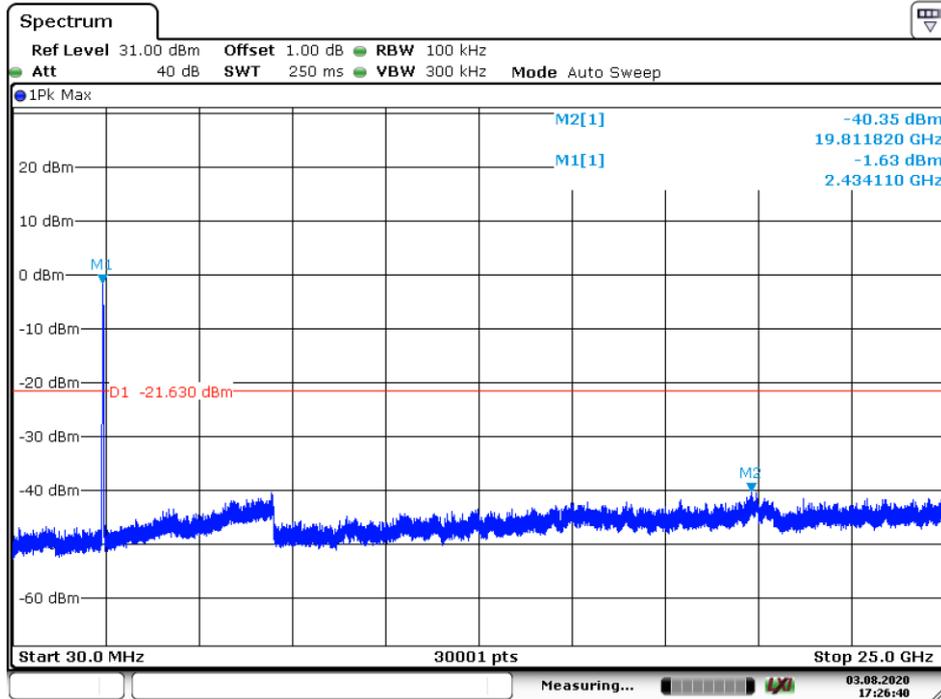
4.8.1.2.10 802.11N40_MIMO _ Lowest Channel



Date: 3.AUG.2020 17:25:25

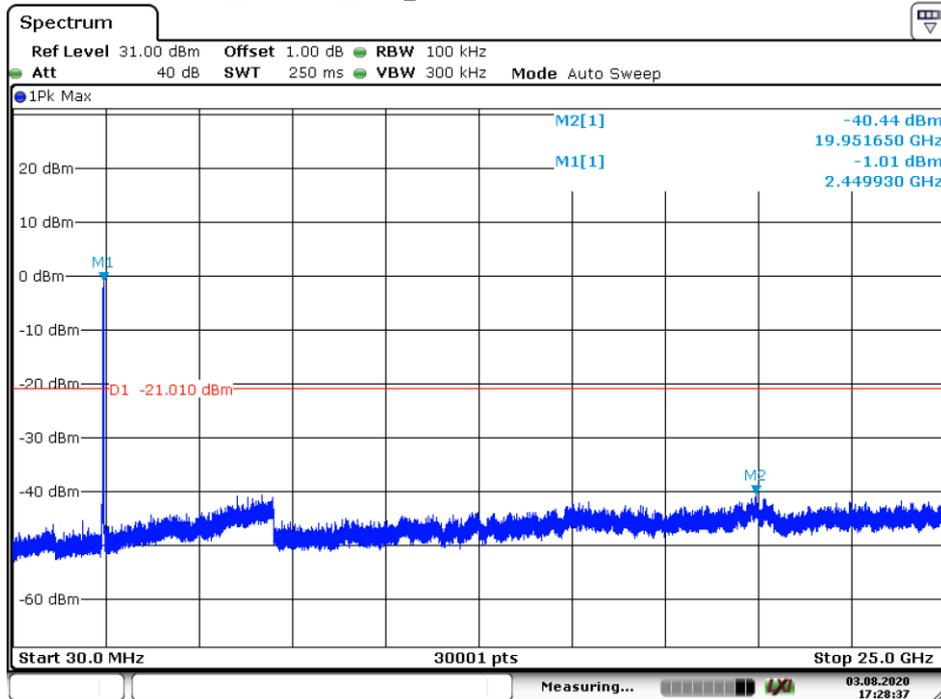


4.8.1.2.11 802.11 N40_MIMO _ Middle Channel



Date: 3.AUG.2020 17:26:40

4.8.1.2.12 802.11 N40_MIMO _ Highest Channel



Date: 3.AUG.2020 17:28:37





Remark:

Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz 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.



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4.9 Radiated Spurious Emissions

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)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
Peak		1MHz	10Hz	Average	
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
Remark: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.					

Test Setup:	
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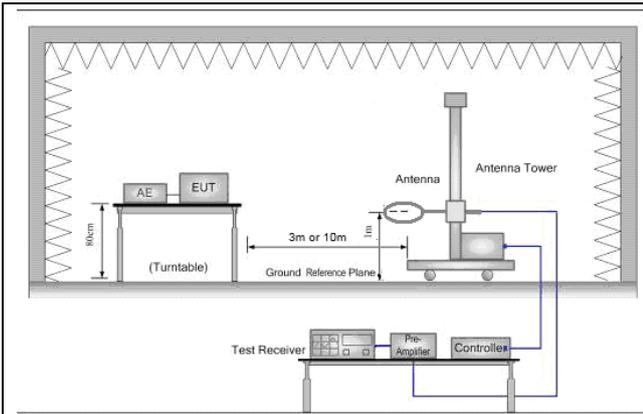


Figure 1. Below 30MHz

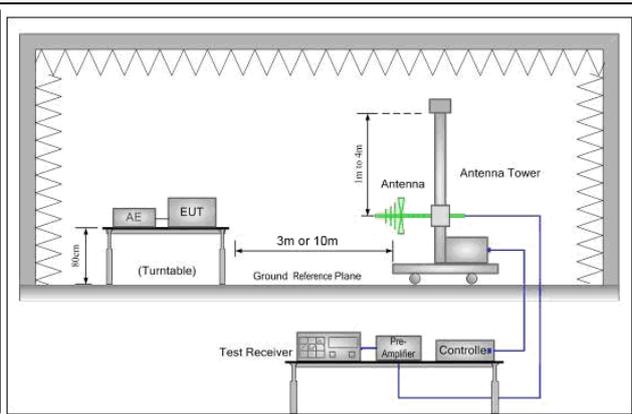


Figure 2. 30MHz to 1GHz

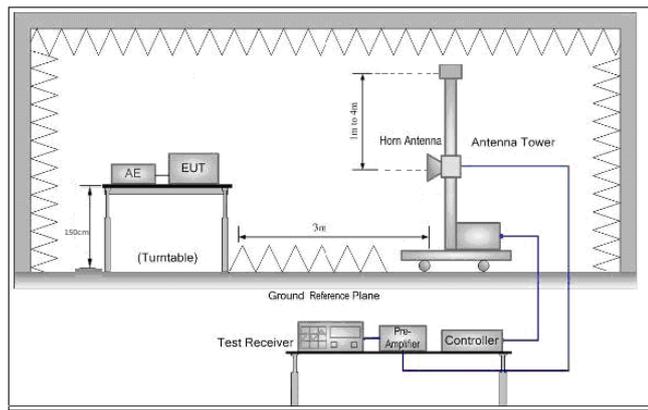


Figure 3. Above 1 GHz

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 chamber. 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 chamber. 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. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz, RBW=1MHz for $f > 1$ GHz ; VBW \geq RBW; Sweep = auto;
Detector function = peak; Trace = max hold for peak
 - (3) For average measurement: use duty cycle correction factor method per 15.35(c).
Duty cycle = On time/100 milliseconds



	<p>On time = $N_1 * L_1 + N_2 * L_2 + \dots + N_{n-1} * L_{n-1} + N_n * L_n$</p> <p>Where N_1 is number of type 1 pulses, L_1 is length of type 1 pulses, etc.</p> <p>Average Emission Level = Peak Emission Level + $20 * \log(\text{Duty cycl}$</p> <p>f. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>g. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>h. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</p> <p>i. Test the EUT in the lowest channel, the middle channel, the Highest channel</p> <p>j. 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.</p> <p>k. Repeat above procedures until all frequencies measured was complete.</p>
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Charge + Transmitting mode.
Final Test Mode:	<p>Pretest the EUT at Charge + Transmitting mode.</p> <p>Through Pre-scan, find the</p> <p>1Mbps of rate is the worst case of 802.11B;</p> <p>6Mbps of rate is the worst case of 802.11G;</p> <p>6.5Mbps of rate is the worst case of 802.11N(HT20);</p> <p>13.5Mbps of rate is the worst case of 802.11N(HT40)</p> <p>For below 1GHz, through Pre-scan, find the 1Mbps of rate of 802.11B at lowest channel is the worst case. Only the worst case is recorded in the report.</p>
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass



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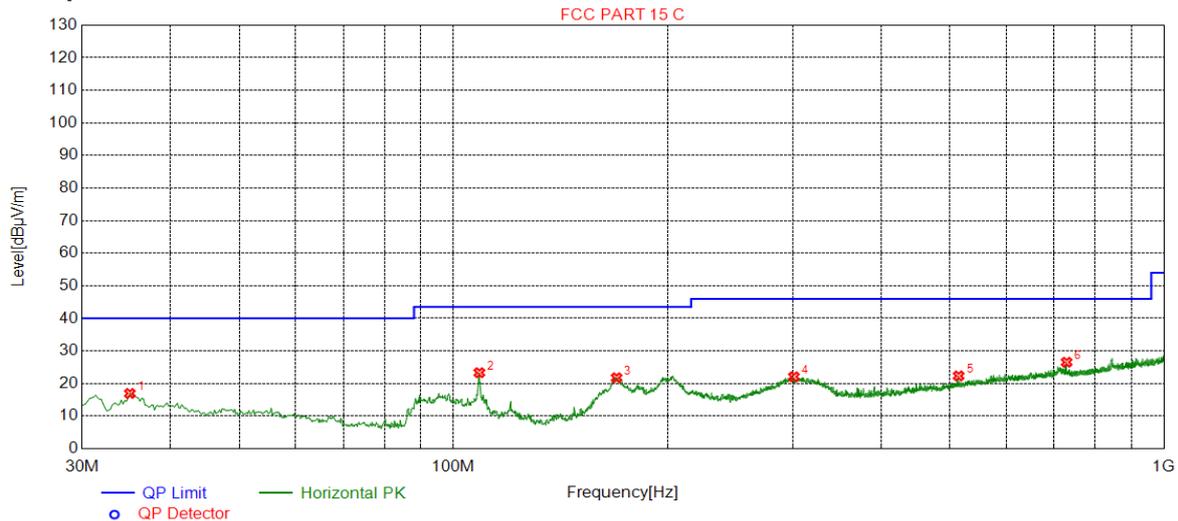
4.9.1 Radiated Emission below 1GHz

MIMO:

4.9.1.1 Charge + Transmitting

Project Information			
Mode:	2.4G WIFI	State:	
Environment:	Temp: 25°C; Humi:60%	Engineer:	

Test Graph



Suspected List

NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	35.0450	16.96	-29.95	40.00	23.04	177	261	Horizontal
2	108.779	23.34	-32.00	43.50	20.16	186	74	Horizontal
3	169.707	21.78	-34.06	43.50	21.72	104	204	Horizontal
4	301.460	22.09	-28.22	46.00	23.91	237	119	Horizontal
5	514.126	22.35	-22.96	46.00	23.65	226	96	Horizontal
6	729.703	26.55	-18.81	46.00	19.45	240	283	Horizontal

Final Data List

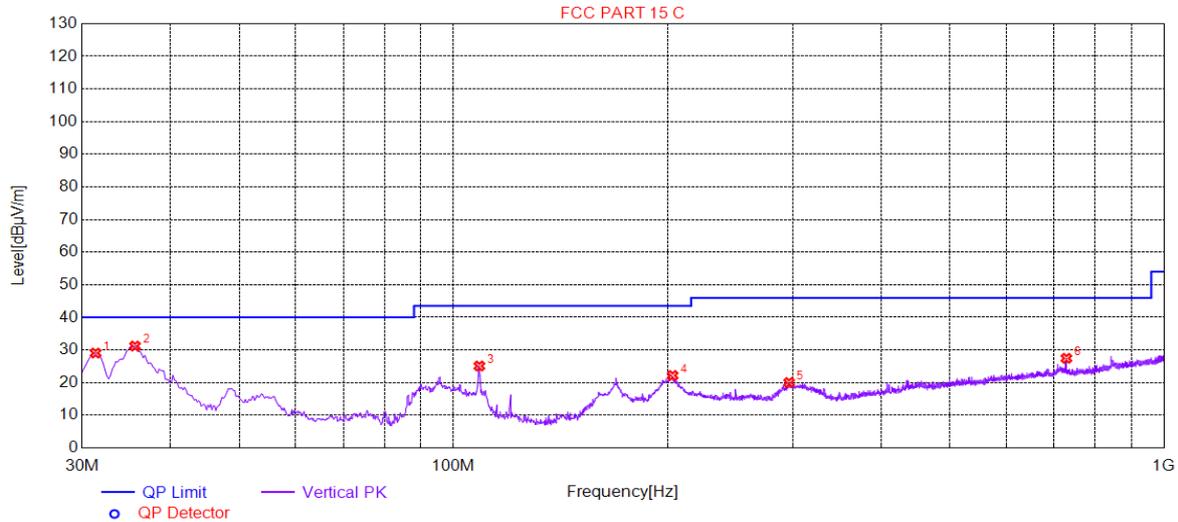


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Project Information			
Mode:	2.4G WIFI	State:	
Environment:	Temp: 25°C; Humi:60%	Engineer:	

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	31.3583	29.08	-30.05	40.00	10.92	294	81	Vertical
2	35.6271	31.23	-29.76	40.00	8.77	188	81	Vertical
3	108.779	25.12	-32.00	43.50	18.38	274	221	Vertical
4	203.470	22.20	-31.11	43.50	21.30	244	33	Vertical
5	296.803	20.04	-28.38	46.00	25.96	152	228	Vertical
6	729.121	27.48	-18.82	46.00	18.52	251	343	Vertical

Final Data List



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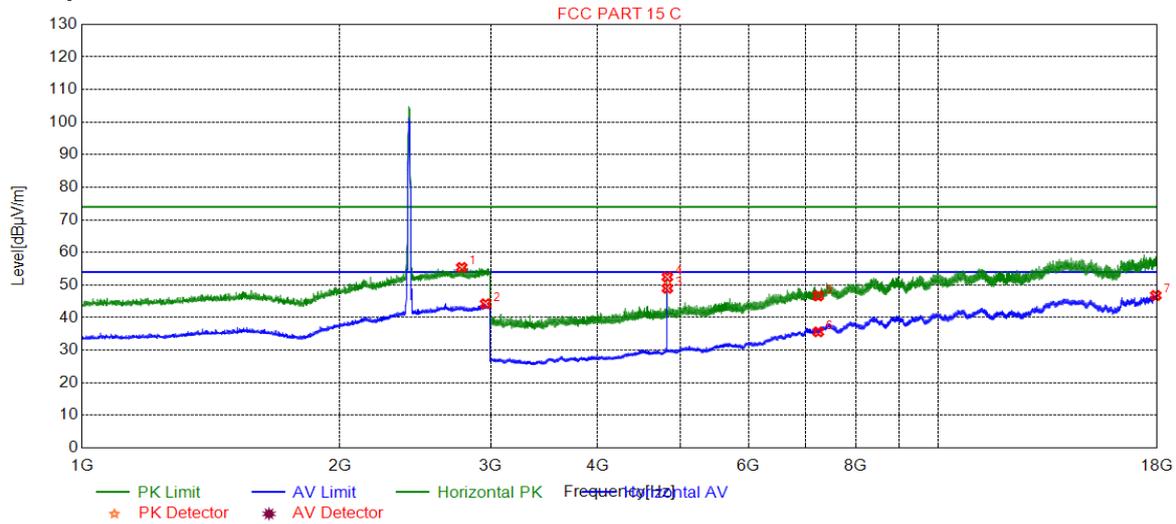
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4.9.2 Transmitter emission above 1GHz

MIMO:

4.9.2.1 802.11B_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	2775.94	55.41	9.04	74.00	18.59	103	156	Horizontal
2	2959.48	44.26	9.64	54.00	9.74	124	358	Horizontal
3	4824.00	49.00	-18.21	54.00	5.00	173	232	Horizontal
4	4824.00	52.47	-18.21	74.00	21.53	168	232	Horizontal
5	7236.00	46.65	-9.99	74.00	27.35	189	118	Horizontal
6	7236.00	35.63	-9.99	54.00	18.37	164	320	Horizontal
7	17927.9	46.82	0.70	54.00	7.18	159	68	Horizontal

Final Data List

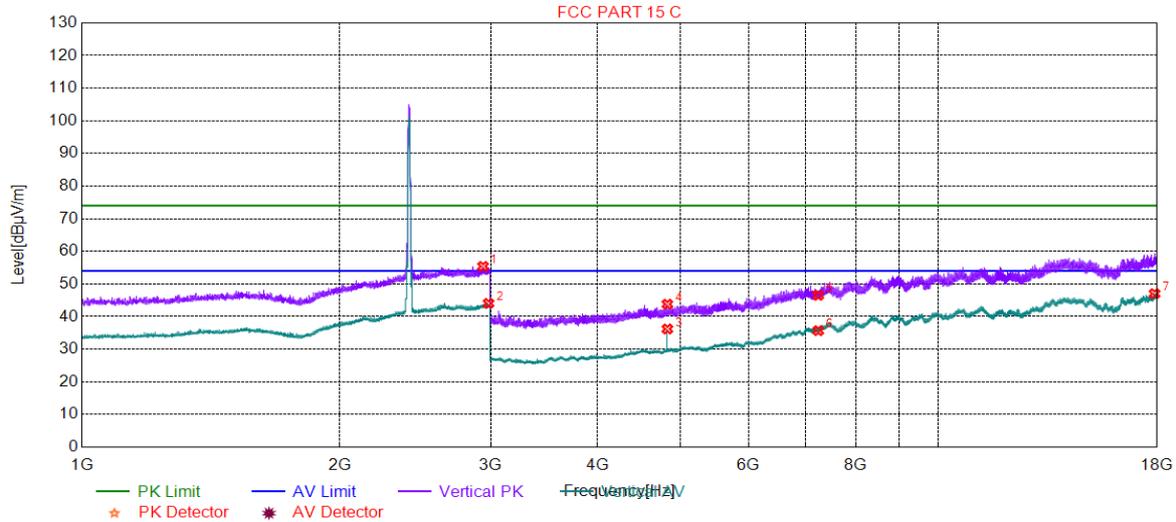


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4.9.2.2 802.11B_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2939.48	55.40	9.57	74.00	18.60	161	288	Vertical
2	2982.99	44.07	9.53	54.00	9.93	229	108	Vertical
3	4824.00	36.23	-18.21	54.00	17.77	251	260	Vertical
4	4824.00	43.82	-18.21	74.00	30.18	197	228	Vertical
5	7236.00	46.55	-9.99	74.00	27.45	155	118	Vertical
6	7236.00	35.71	-9.99	54.00	18.29	223	218	Vertical
7	17869.0	47.04	0.28	54.00	6.96	278	268	Vertical

Final Data List

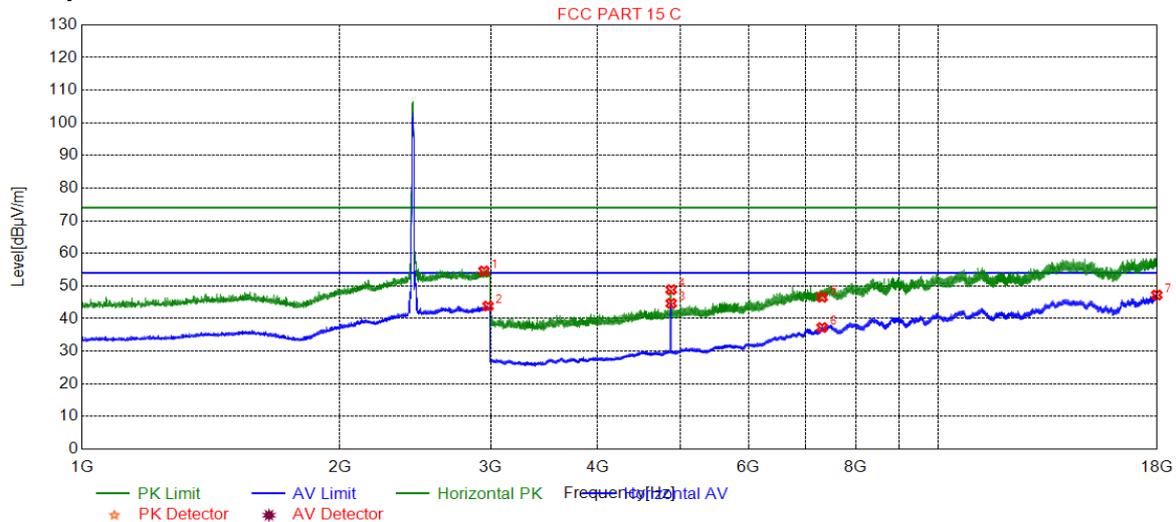


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4.9.2.3 802.11B_Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2946.48	54.61	9.64	74.00	19.39	183	192	Horizontal
2	2978.99	43.85	9.55	54.00	10.15	235	342	Horizontal
3	4874.00	44.69	-17.99	54.00	9.31	224	227	Horizontal
4	4874.00	48.86	-17.99	74.00	25.14	192	227	Horizontal
5	7311.00	46.56	-9.74	74.00	27.44	178	269	Horizontal
6	7311.00	37.29	-9.74	54.00	16.71	176	18	Horizontal
7	17976.8	47.24	0.71	54.00	6.76	246	168	Horizontal

Final Data List

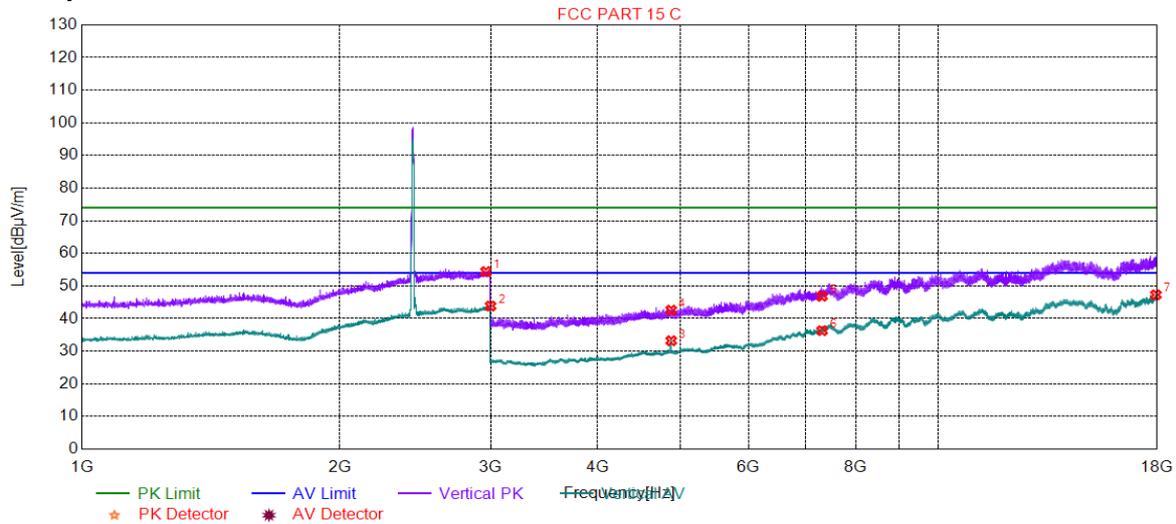


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4.9.2.4 802.11B_Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2961.99	54.43	9.62	74.00	19.57	153	113	Vertical
2	2999.49	43.85	9.45	54.00	10.15	266	278	Vertical
3	4874.00	33.24	-17.99	54.00	20.76	196	261	Vertical
4	4874.00	42.61	-17.99	74.00	31.39	292	96	Vertical
5	7311.00	46.88	-9.74	74.00	27.12	166	69	Vertical
6	7311.00	36.33	-9.74	54.00	17.67	154	360	Vertical
7	17933.4	47.31	0.70	54.00	6.69	277	269	Vertical

Final Data List

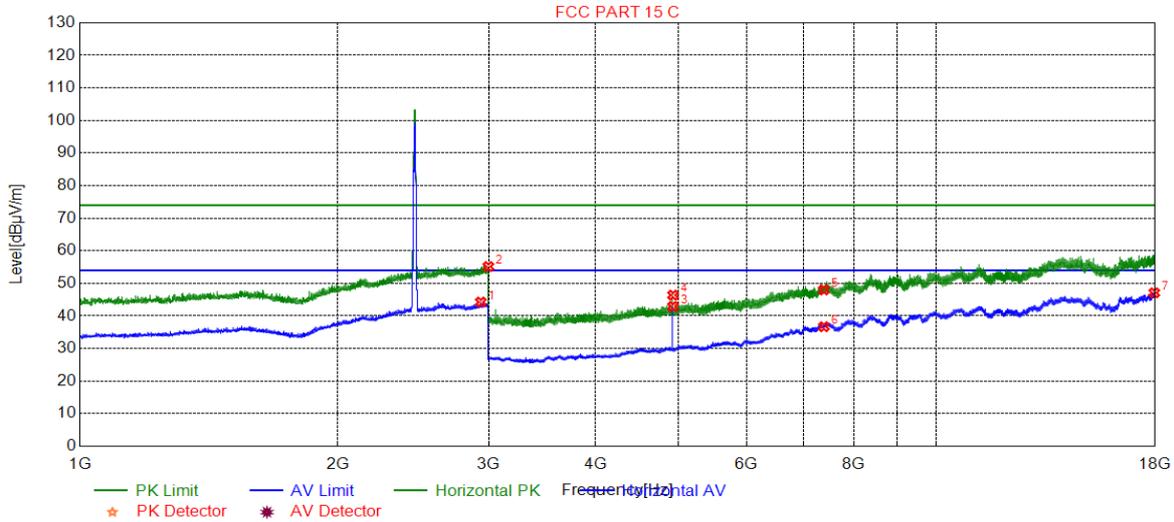


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4.9.2.5 802.11B_Channel 11

Test Graph



Suspected List

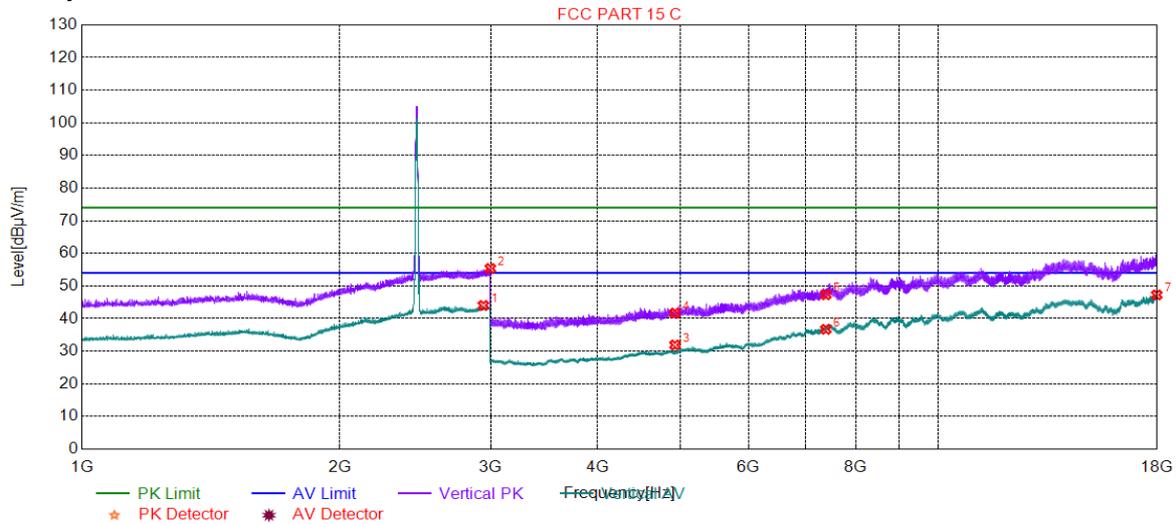
Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2937.48	44.28	9.54	54.00	9.72	100	183	Horizontal
2	2997.99	55.17	9.46	74.00	18.83	225	183	Horizontal
3	4924.00	42.95	-17.72	54.00	11.05	161	234	Horizontal
4	4924.00	46.41	-17.72	74.00	27.59	114	262	Horizontal
5	7386.00	48.01	-9.55	74.00	25.99	177	319	Horizontal
6	7386.00	36.70	-9.55	54.00	17.30	150	270	Horizontal
7	17952.1	47.11	0.71	54.00	6.89	234	360	Horizontal

Final Data List



4.9.2.6 802.11B_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	2941.98	44.03	9.59	54.00	9.97	241	316	Vertical
2	2997.49	55.38	9.46	74.00	18.62	200	40	Vertical
3	4924.00	31.93	-17.72	54.00	22.07	232	150	Vertical
4	4924.00	41.71	-17.72	74.00	32.29	249	13	Vertical
5	7386.00	47.32	-9.55	74.00	26.68	262	219	Vertical
6	7386.00	36.73	-9.55	54.00	17.27	230	119	Vertical
7	17974.6	47.27	0.71	54.00	6.73	169	18	Vertical

Final Data List

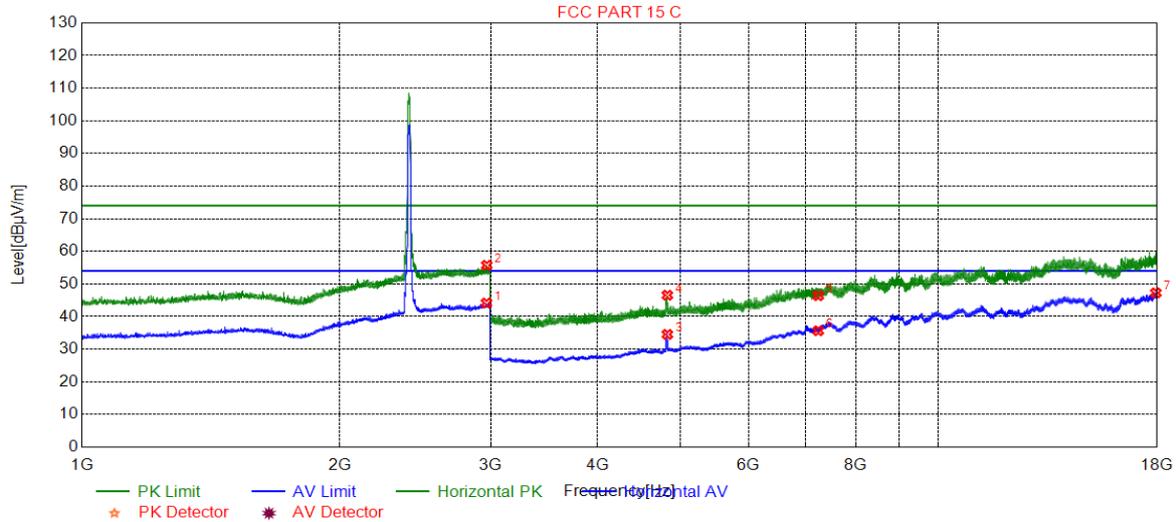


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4.9.2.7 802.11G_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2966.49	44.17	9.60	54.00	9.83	245	74	Horizontal
2	2968.99	55.74	9.59	74.00	18.26	157	102	Horizontal
3	4824.00	34.57	-18.21	54.00	19.43	237	261	Horizontal
4	4824.00	46.58	-18.21	74.00	27.42	222	233	Horizontal
5	7236.00	46.42	-9.99	74.00	27.58	131	270	Horizontal
6	7236.00	35.67	-9.99	54.00	18.33	197	169	Horizontal
7	17931.2	47.28	0.70	54.00	6.72	105	220	Horizontal

Final Data List

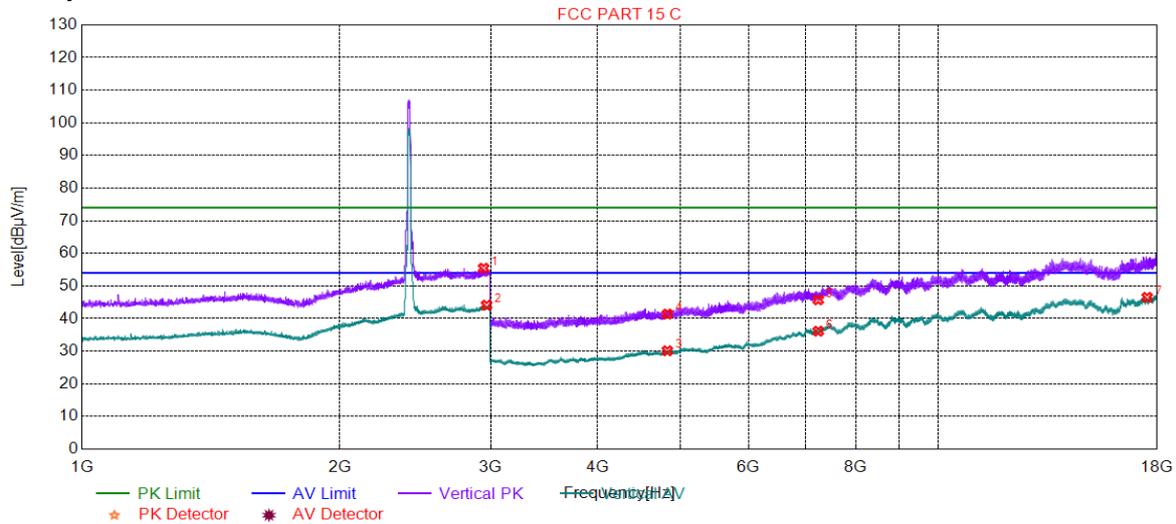


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4.9.2.8 802.11G_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2943.48	55.47	9.61	74.00	18.53	194	0	Vertical
2	2967.49	44.12	9.60	54.00	9.88	185	68	Vertical
3	4824.00	30.15	-18.21	54.00	23.85	262	287	Vertical
4	4824.00	41.39	-18.21	74.00	32.61	230	314	Vertical
5	7236.00	45.76	-9.99	74.00	28.24	286	360	Vertical
6	7236.00	36.16	-9.99	54.00	17.84	168	360	Vertical
7	17515.9	46.54	0.98	54.00	7.46	204	321	Vertical

Final Data List



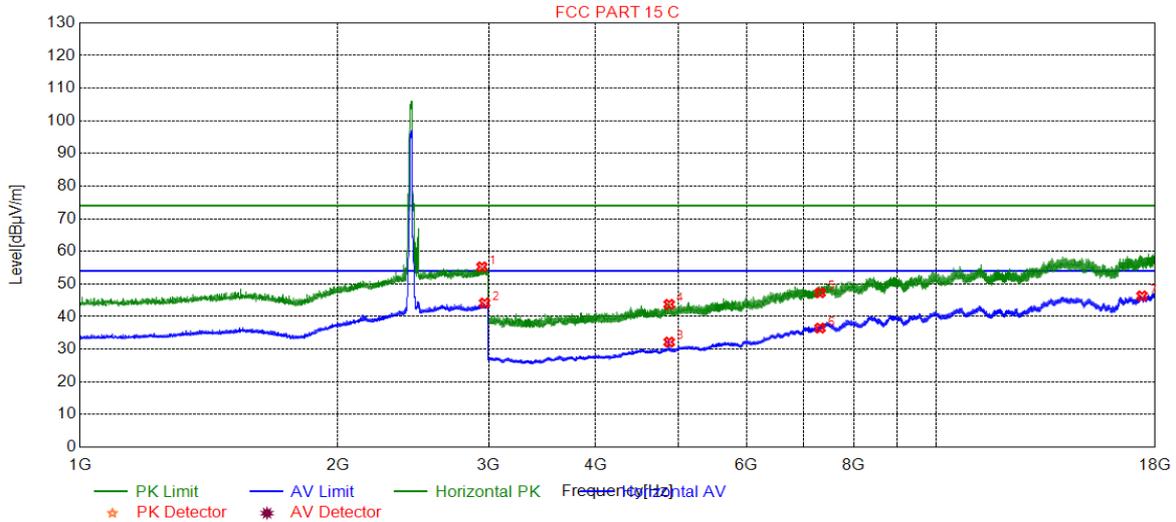
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4.9.2.9 802.11G_Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2946.48	55.27	9.64	74.00	18.73	232	0	Horizontal
2	2967.49	44.17	9.60	54.00	9.83	190	342	Horizontal
3	4874.00	32.21	-17.99	54.00	21.79	137	232	Horizontal
4	4874.00	43.77	-17.99	74.00	30.23	115	232	Horizontal
5	7311.00	47.32	-9.74	74.00	26.68	205	18	Horizontal
6	7311.00	36.50	-9.74	54.00	17.50	231	220	Horizontal
7	17368.5	46.37	0.13	54.00	7.63	169	119	Horizontal

Final Data List



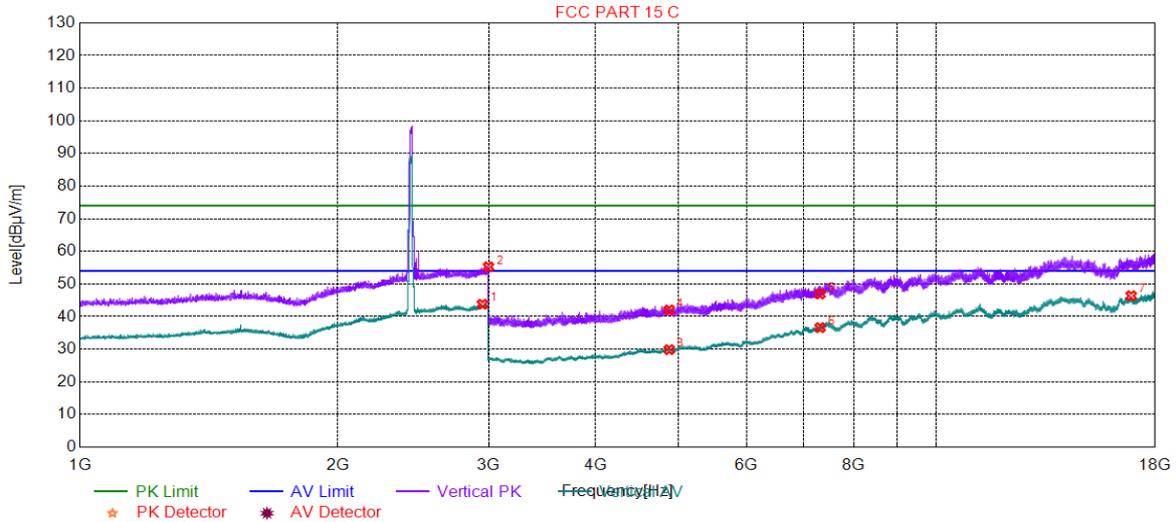
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4.9.2.10 802.11G_Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2950.48	43.82	9.68	54.00	10.18	279	114	Vertical
2	2998.49	55.28	9.46	74.00	18.72	299	251	Vertical
3	4874.00	29.89	-17.99	54.00	24.11	180	13	Vertical
4	4874.00	42.04	-17.99	74.00	31.96	178	68	Vertical
5	7311.00	46.95	-9.74	74.00	27.05	182	217	Vertical
6	7311.00	36.64	-9.74	54.00	17.36	237	18	Vertical
7	16871.3	46.41	1.03	54.00	7.59	278	318	Vertical

Final Data List

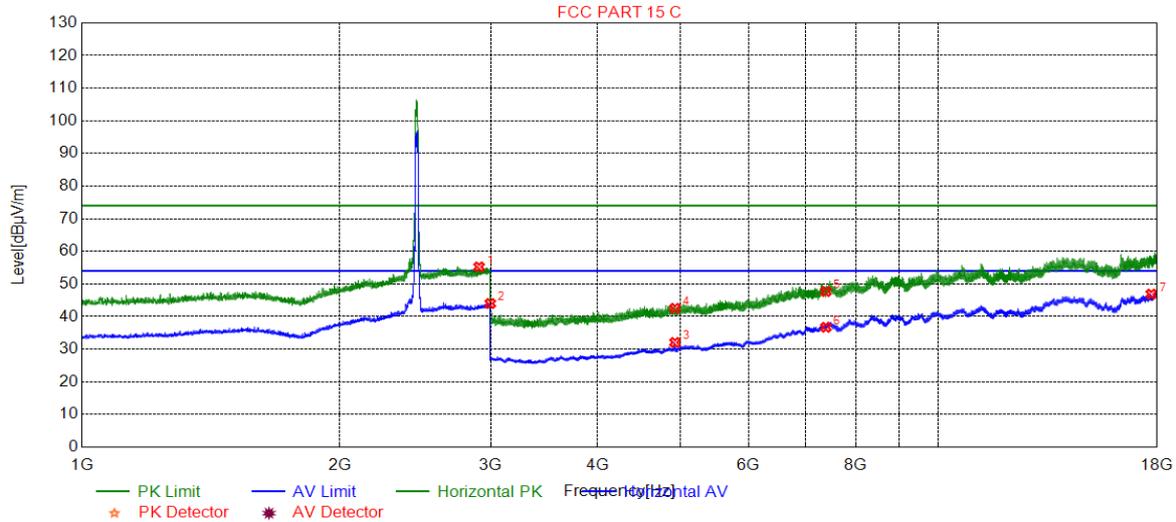


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4.9.2.11 802.11G_Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2907.97	55.25	9.23	74.00	18.75	192	292	Horizontal
2	2996.99	44.03	9.46	54.00	9.97	102	250	Horizontal
3	4924.00	32.10	-17.72	54.00	21.90	122	232	Horizontal
4	4924.00	42.56	-17.72	74.00	31.44	103	288	Horizontal
5	7386.00	47.70	-9.55	74.00	26.30	182	270	Horizontal
6	7386.00	36.75	-9.55	54.00	17.25	236	68	Horizontal
7	17712.8	46.91	1.10	54.00	7.09	219	119	Horizontal

Final Data List

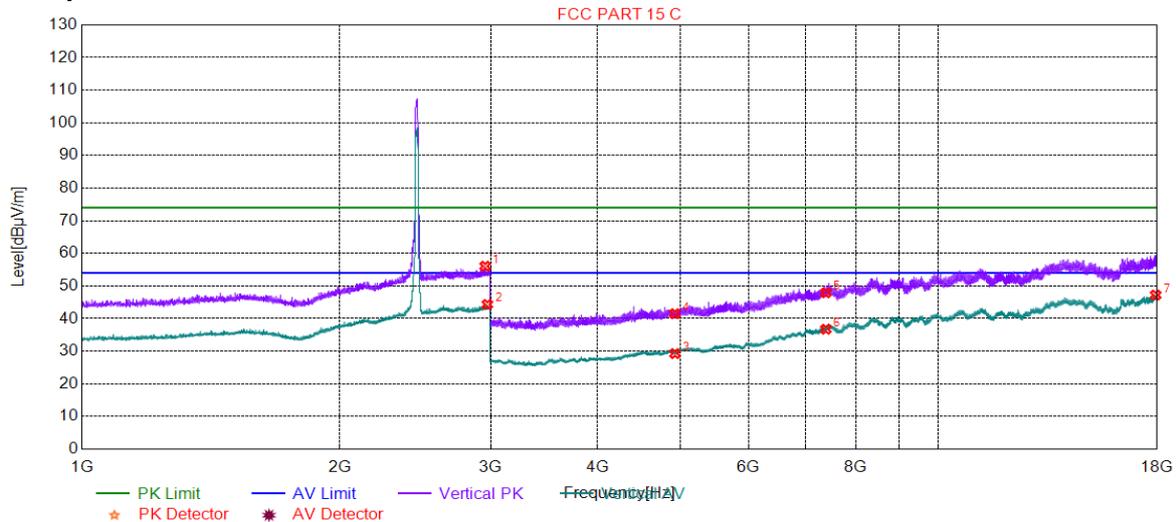


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4.9.2.12 802.11G_Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2955.98	56.08	9.65	74.00	17.92	201	342	Vertical
2	2973.49	44.36	9.57	54.00	9.64	171	2	Vertical
3	4924.00	29.30	-17.72	54.00	24.70	263	342	Vertical
4	4924.00	41.51	-17.72	74.00	32.49	283	122	Vertical
5	7386.00	47.93	-9.55	74.00	26.07	173	118	Vertical
6	7386.00	36.77	-9.55	54.00	17.23	161	269	Vertical
7	17923.5	47.24	0.70	54.00	6.76	177	269	Vertical

Final Data List



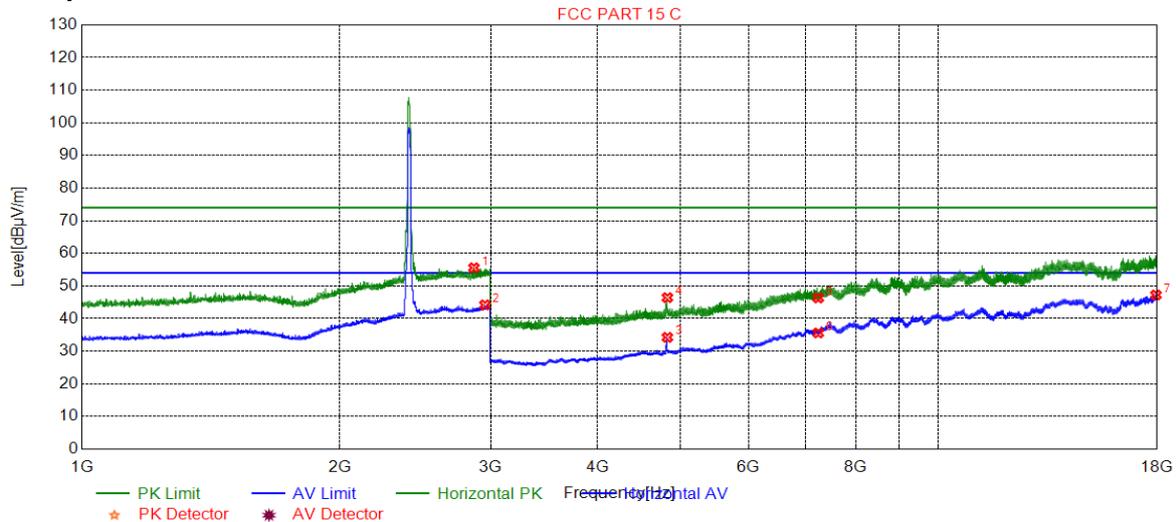
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4.9.2.13 802.11N20_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2867.96	55.58	9.20	74.00	18.42	174	18	Horizontal
2	2954.48	44.22	9.66	54.00	9.78	121	99	Horizontal
3	4824.00	34.27	-18.21	54.00	19.73	231	261	Horizontal
4	4824.00	46.44	-18.21	74.00	27.56	141	234	Horizontal
5	7236.00	46.34	-9.99	74.00	27.66	163	360	Horizontal
6	7236.00	35.62	-9.99	54.00	18.38	248	68	Horizontal
7	17936.7	47.25	0.70	54.00	6.75	197	270	Horizontal

Final Data List

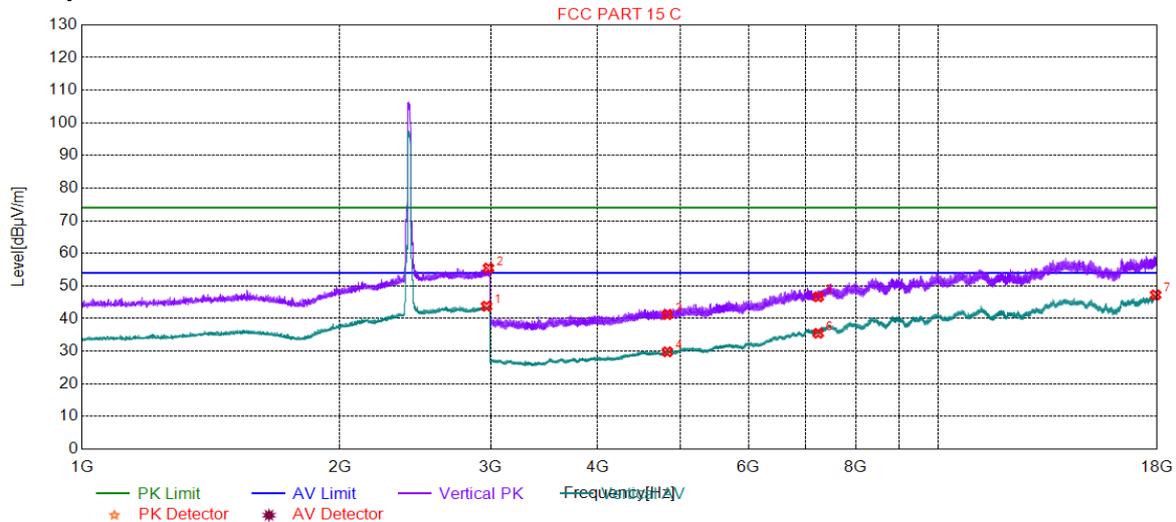


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4.9.2.14 802.11N20_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2966.99	43.81	9.60	54.00	10.19	232	287	Vertical
2	2981.99	55.52	9.53	74.00	18.48	191	274	Vertical
3	4824.00	41.25	-18.21	74.00	32.75	200	149	Vertical
4	4824.00	29.84	-18.21	54.00	24.16	215	204	Vertical
5	7236.00	46.68	-9.99	74.00	27.32	256	68	Vertical
6	7236.00	35.53	-9.99	54.00	18.47	159	169	Vertical
7	17921.8	47.29	0.70	54.00	6.71	291	68	Vertical

Final Data List

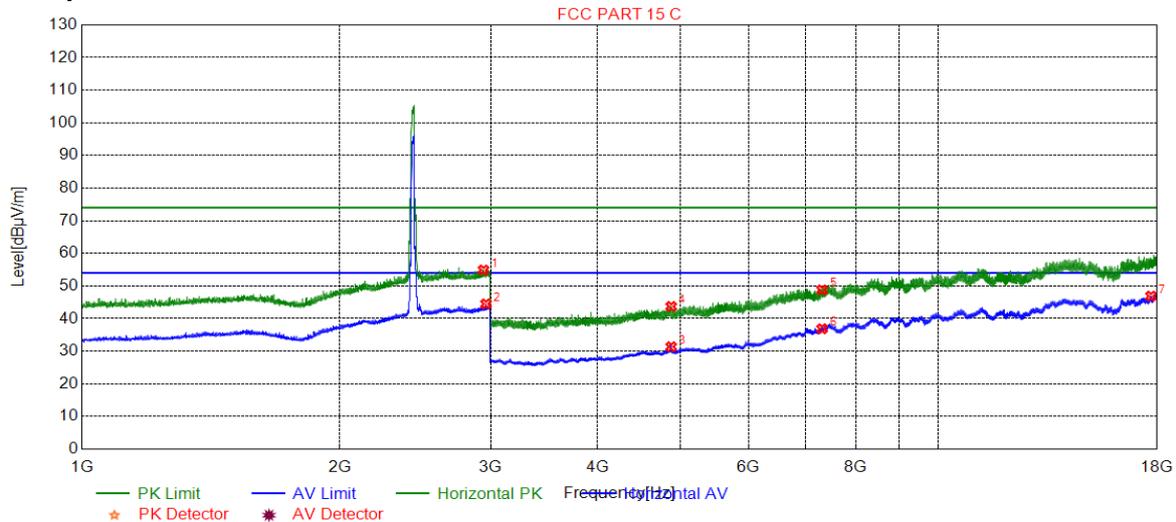


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4.9.2.15 802.11N20_Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2942.98	54.90	9.60	74.00	19.10	117	0	Horizontal
2	2962.49	44.52	9.62	54.00	9.48	170	151	Horizontal
3	4874.00	31.40	-17.99	54.00	22.60	157	287	Horizontal
4	4874.00	43.74	-17.99	74.00	30.26	246	259	Horizontal
5	7311.00	48.82	-9.74	74.00	25.18	203	320	Horizontal
6	7311.00	36.90	-9.74	54.00	17.10	156	360	Horizontal
7	17700.2	46.92	1.36	54.00	7.08	194	320	Horizontal

Final Data List

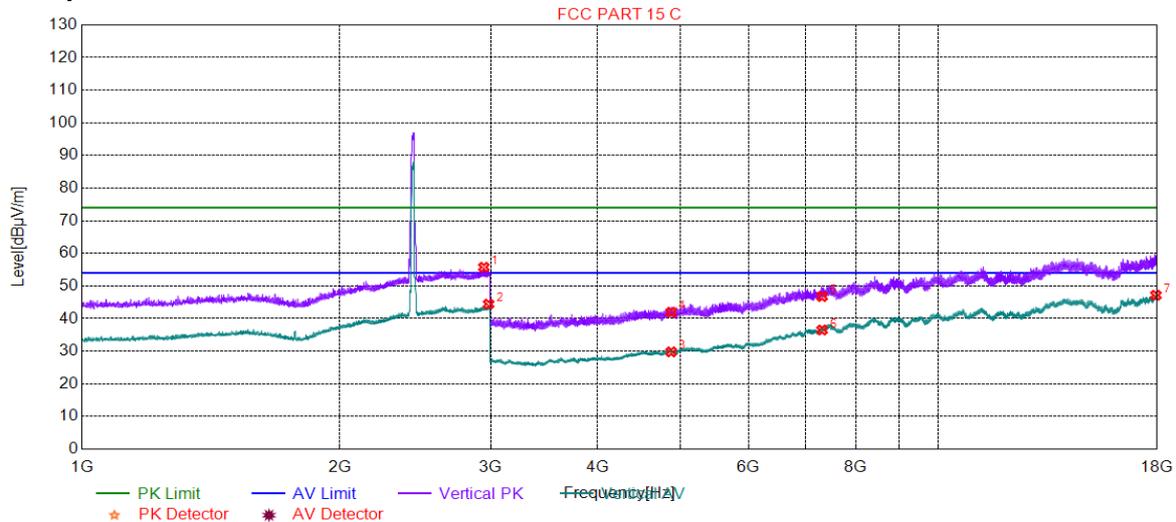


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4.9.2.16 802.11N20_Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2945.48	55.75	9.63	74.00	18.25	161	194	Vertical
2	2983.49	44.46	9.53	54.00	9.54	279	317	Vertical
3	4874.00	29.82	-17.99	54.00	24.18	207	178	Vertical
4	4874.00	41.96	-17.99	74.00	32.04	214	205	Vertical
5	7311.00	46.78	-9.74	74.00	27.22	166	169	Vertical
6	7311.00	36.52	-9.74	54.00	17.48	160	360	Vertical
7	17932.3	47.18	0.70	54.00	6.82	257	319	Vertical

Final Data List



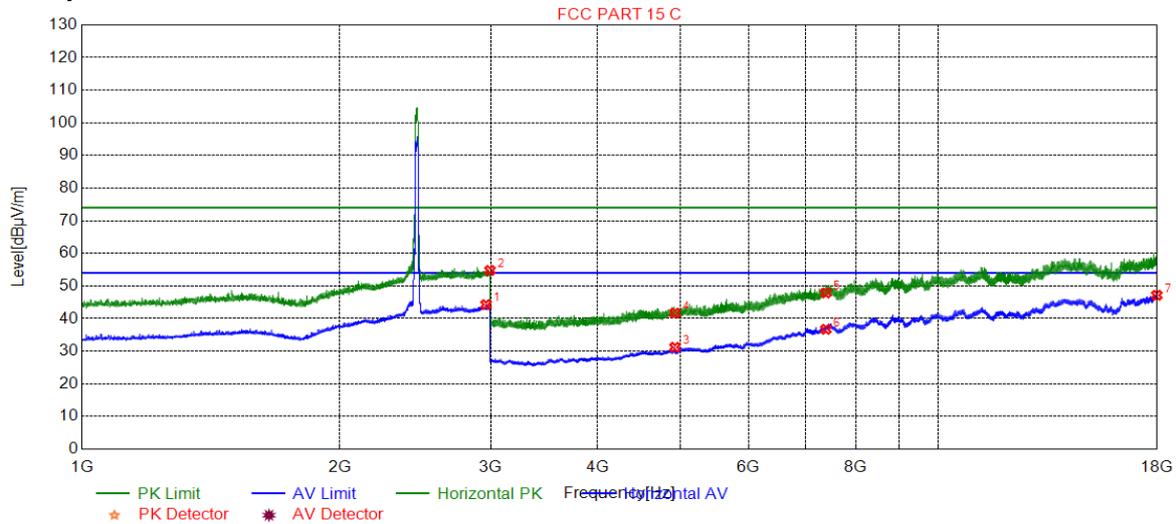
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4.9.2.17 802.11N20_Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2962.49	44.30	9.62	54.00	9.70	141	60	Horizontal
2	2994.49	54.77	9.48	74.00	19.23	125	18	Horizontal
3	4924.00	31.23	-17.72	54.00	22.77	109	260	Horizontal
4	4924.00	41.72	-17.72	74.00	32.28	209	342	Horizontal
5	7386.00	47.88	-9.55	74.00	26.12	213	68	Horizontal
6	7386.00	36.74	-9.55	54.00	17.26	216	319	Horizontal
7	17975.7	47.18	0.71	54.00	6.82	190	218	Horizontal

Final Data List

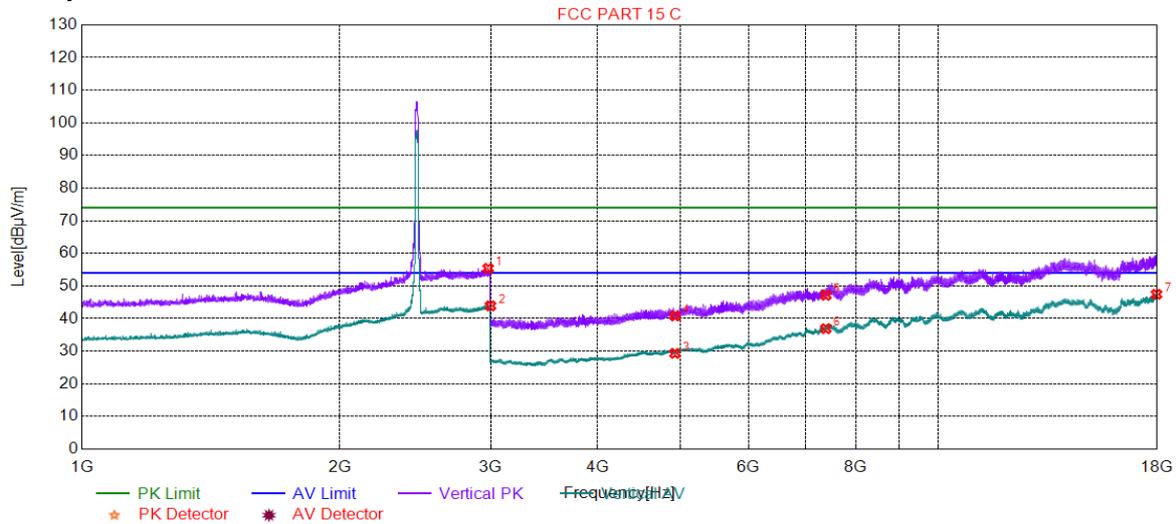


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4.9.2.18 802.11N20_Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2979.99	55.42	9.54	74.00	18.58	291	123	Vertical
2	2998.99	43.90	9.45	54.00	10.10	296	247	Vertical
3	4924.00	29.36	-17.72	54.00	24.64	155	93	Vertical
4	4924.00	40.83	-17.72	74.00	33.17	264	93	Vertical
5	7386.00	47.16	-9.55	74.00	26.84	215	360	Vertical
6	7386.00	36.92	-9.55	54.00	17.08	294	360	Vertical
7	17961.4	47.46	0.71	54.00	6.54	172	270	Vertical

Final Data List

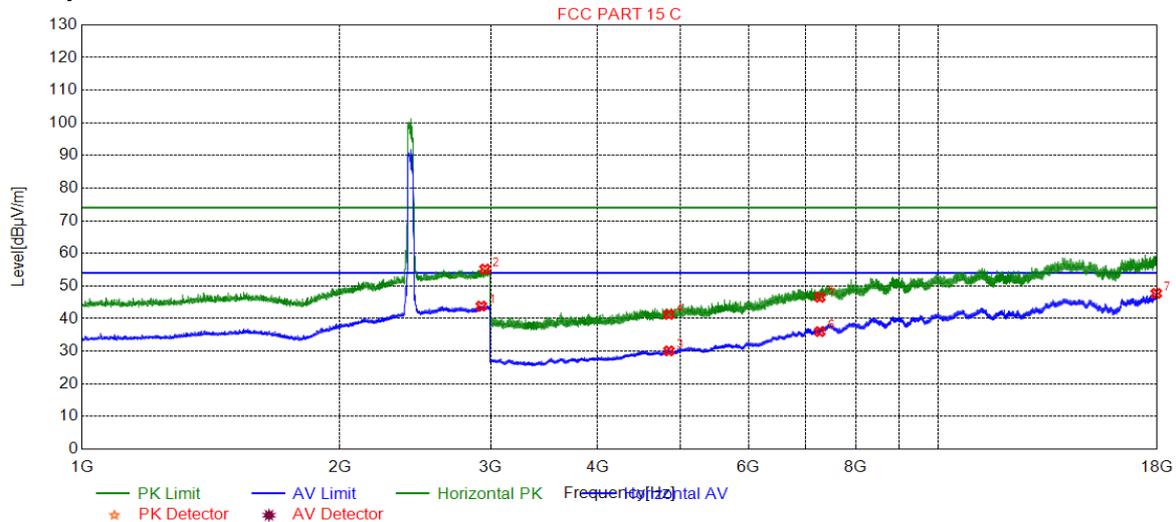


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4.9.2.19 802.11N40_Channel 3

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2925.48	43.84	9.42	54.00	10.16	176	18	Horizontal
2	2954.98	55.18	9.66	74.00	18.82	104	128	Horizontal
3	4844.00	30.12	-18.13	54.00	23.88	217	260	Horizontal
4	4844.00	41.29	-18.13	74.00	32.71	229	287	Horizontal
5	7266.00	46.54	-9.88	74.00	27.46	244	360	Horizontal
6	7266.00	36.02	-9.88	54.00	17.98	197	269	Horizontal
7	17951.5	47.73	0.71	54.00	6.27	231	360	Horizontal

Final Data List

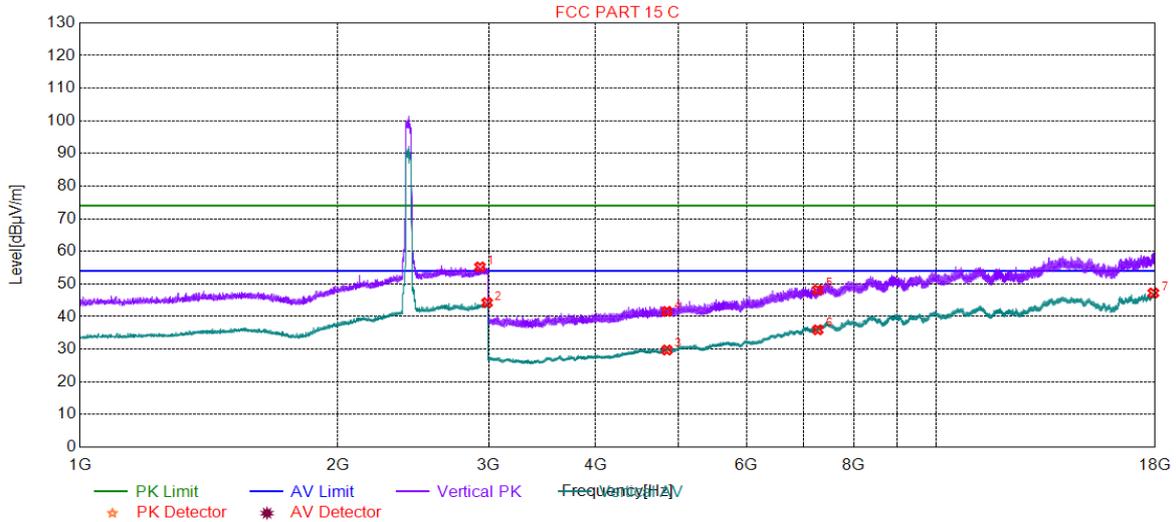


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4.9.2.20 802.11N40_Channel 3

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2930.98	55.22	9.47	74.00	18.78	264	191	Vertical
2	2987.49	44.27	9.51	54.00	9.73	219	314	Vertical
3	4844.00	29.77	-18.13	54.00	24.23	268	315	Vertical
4	4844.00	41.61	-18.13	74.00	32.39	154	315	Vertical
5	7266.00	48.19	-9.88	74.00	25.81	217	119	Vertical
6	7266.00	35.97	-9.88	54.00	18.03	280	18	Vertical
7	17908.6	47.25	0.69	54.00	6.75	201	68	Vertical

Final Data List

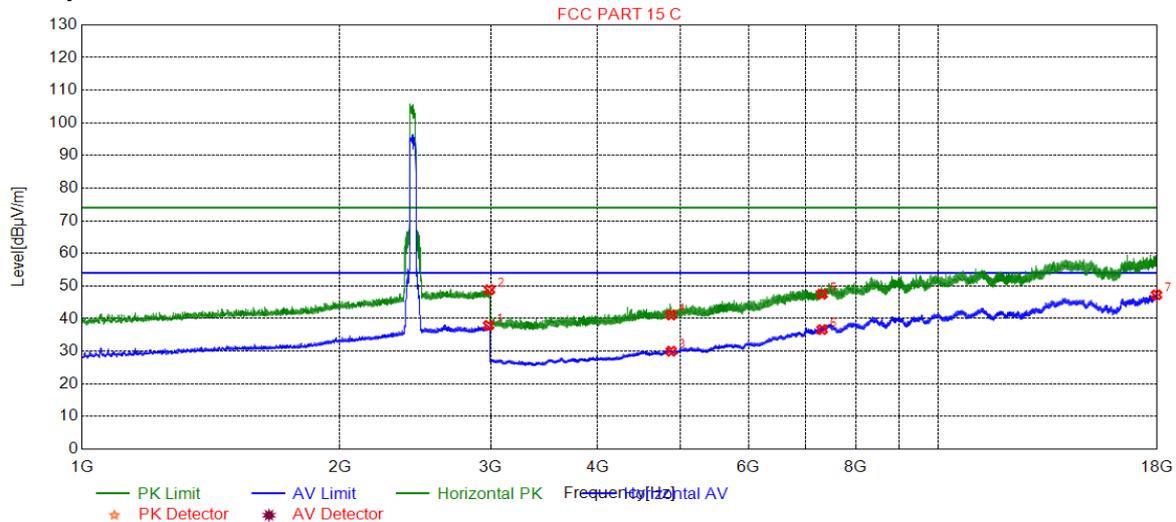


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4.9.2.21 802.11N40_Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2983.49	37.93	2.32	54.00	16.07	124	13	Horizontal
2	2990.49	48.85	2.32	74.00	25.15	174	83	Horizontal
3	4874.00	30.03	-17.99	54.00	23.97	176	227	Horizontal
4	4874.00	41.13	-17.99	74.00	32.87	239	145	Horizontal
5	7311.00	47.48	-9.74	74.00	26.52	154	269	Horizontal
6	7311.00	36.65	-9.74	54.00	17.35	195	118	Horizontal
7	17961.4	47.29	0.71	54.00	6.71	224	269	Horizontal

Final Data List



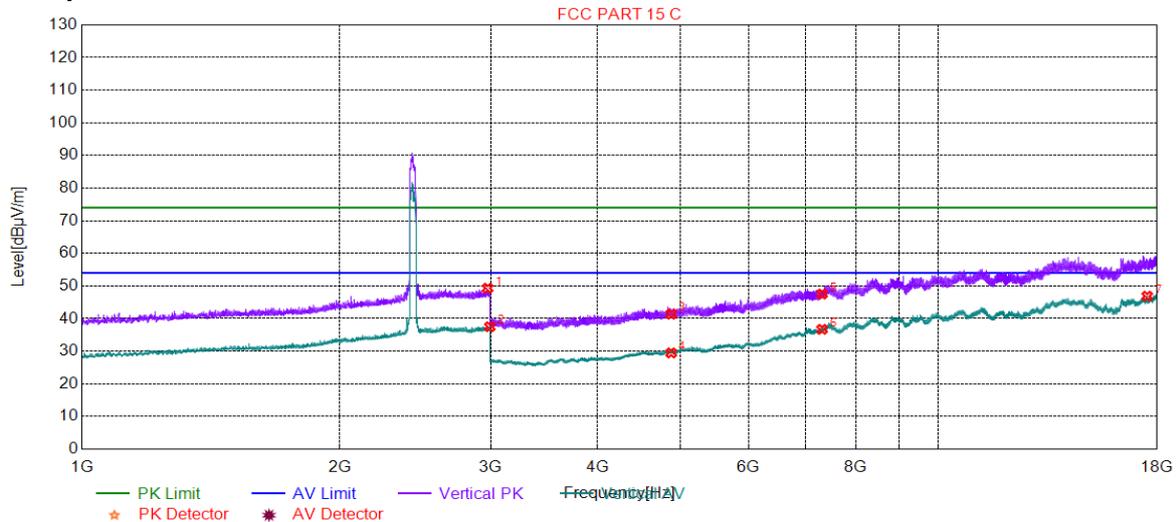
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4.9.2.22 802.11N40_Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2975.99	49.33	2.31	74.00	24.67	246	127	Vertical
2	2993.49	37.53	2.33	54.00	16.47	190	174	Vertical
3	4874.00	41.37	-17.99	74.00	32.63	212	259	Vertical
4	4874.00	29.49	-17.99	54.00	24.51	210	95	Vertical
5	7311.00	47.54	-9.74	74.00	26.46	258	18	Vertical
6	7311.00	36.74	-9.74	54.00	17.26	197	18	Vertical
7	17518.7	46.89	0.99	54.00	7.11	164	174	Vertical

Final Data List

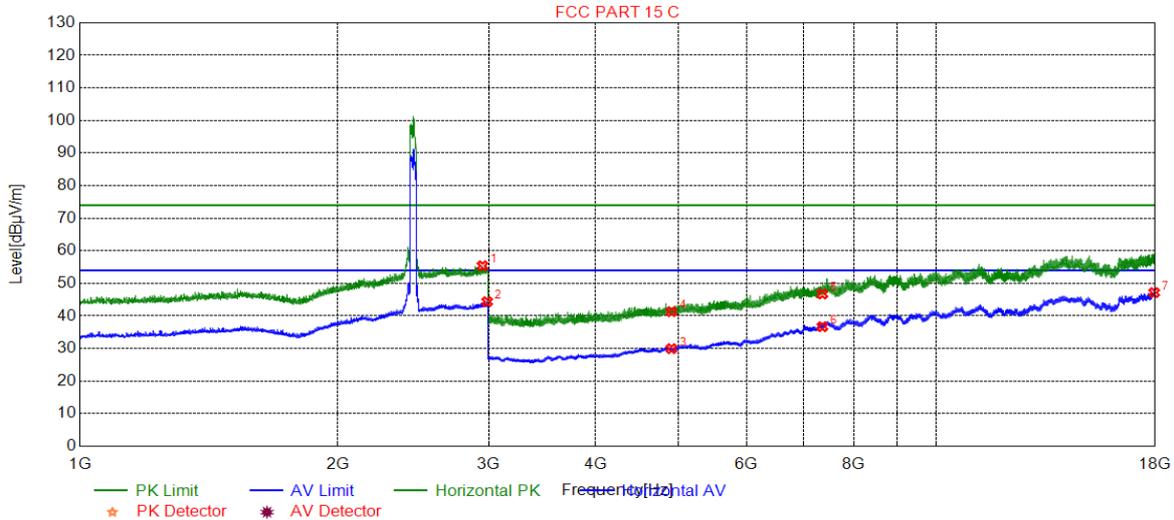


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4.9.2.23 802.11N40_Channel 9

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2950.98	55.41	9.68	74.00	18.59	240	127	Horizontal
2	2987.99	44.39	9.51	54.00	9.61	166	58	Horizontal
3	4904.00	29.97	-17.85	54.00	24.03	133	0	Horizontal
4	4904.00	41.32	-17.85	74.00	32.68	136	42	Horizontal
5	7356.00	46.75	-9.62	74.00	27.25	150	68	Horizontal
6	7356.00	36.72	-9.62	54.00	17.28	164	360	Horizontal
7	17947.1	47.17	0.70	54.00	6.83	211	218	Horizontal

Final Data List

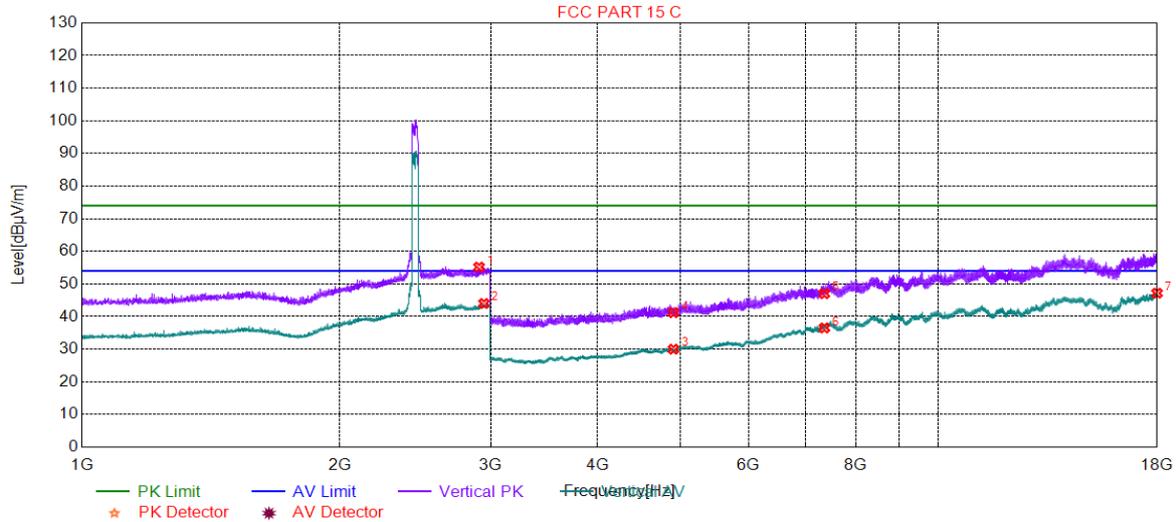


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4.9.2.24 802.11N40_Channel 9

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2907.97	55.19	9.23	74.00	18.81	211	1	Vertical
2	2946.48	44.04	9.64	54.00	9.96	171	204	Vertical
3	4904.00	30.04	-17.85	54.00	23.96	283	205	Vertical
4	4904.00	41.22	-17.85	74.00	32.78	283	123	Vertical
5	7356.00	47.04	-9.62	74.00	26.96	156	119	Vertical
6	7356.00	36.54	-9.62	54.00	17.46	187	119	Vertical
7	17989.5	47.20	0.72	54.00	6.80	193	170	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:			

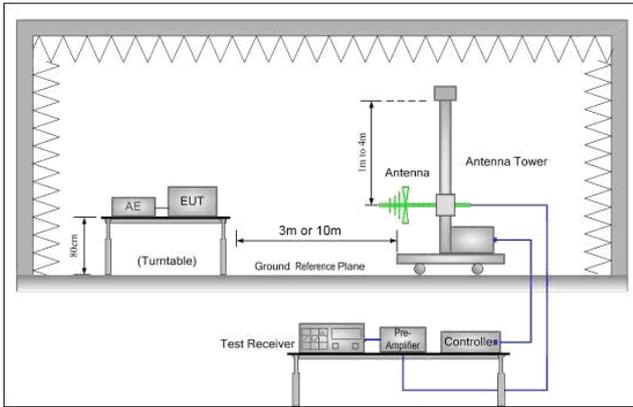


Figure 1. 30MHz to 1GHz

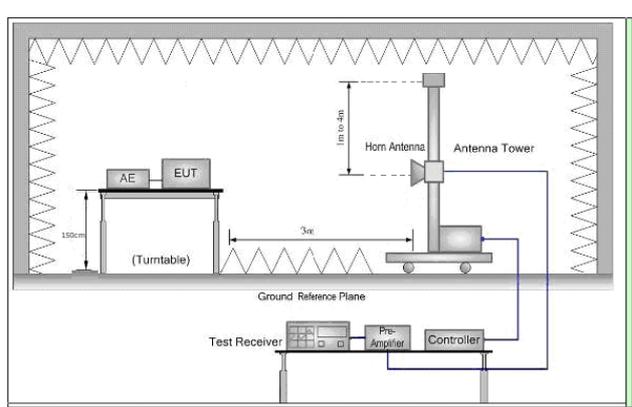


Figure 2. Above 1 GHz



<p>Test Procedure:</p>	<ul style="list-style-type: none"> 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 chamber. 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 chamber. 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.
<p>Exploratory Test Mode:</p>	<p>Transmitting with all kind of modulations, data rates. Charge + Transmitting mode.</p>
<p>Final Test Mode:</p>	<p>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.</p>
<p>Instruments Used:</p>	<p>Refer to section 5.10 for details</p>
<p>Test Results:</p>	<p>Pass</p>



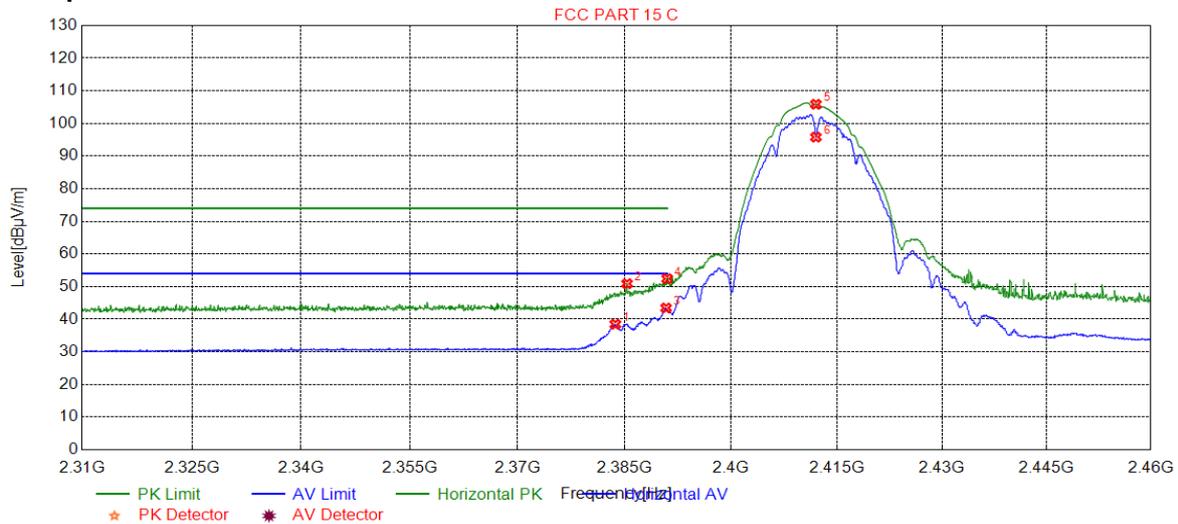
Test plot as follows:

4.10.1 Restricted bands around fundamental frequency

MIMO:

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	2383.68	38.47	7.78	54.00	15.53	247	68	Horizontal
2	2385.33	50.90	7.77	74.00	23.10	242	79	Horizontal
3	2390.81	43.46	7.77	54.00	10.54	246	62	Horizontal
4	2390.96	52.42	7.77	74.00	21.58	223	57	Horizontal
5	2412.00	105.88	7.81	0.00	-105.88	187	189	Horizontal
6	2412.00	95.81	7.81	0.00	-95.81	121	189	Horizontal

Final Data List

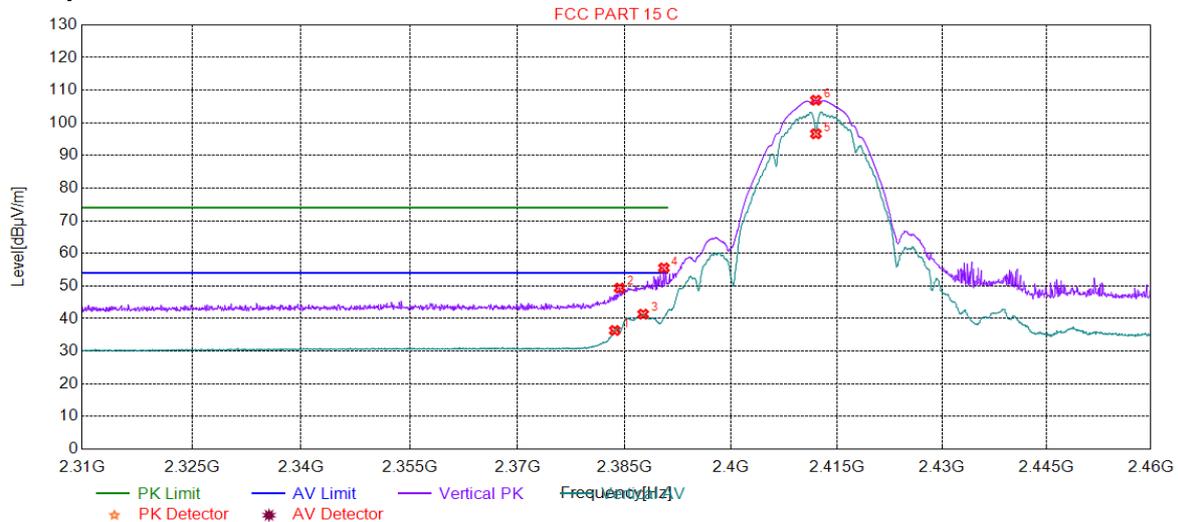


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4.10.1.2 802.11B_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2383.61	36.37	7.78	54.00	17.63	212	341	Vertical
2	2384.28	49.37	7.78	74.00	24.63	264	336	Vertical
3	2387.58	41.37	7.77	54.00	12.63	164	341	Vertical
4	2390.51	55.54	7.77	74.00	18.46	284	341	Vertical
5	2412.00	96.63	7.81	0.00	-96.63	181	304	Vertical
6	2412.00	106.93	7.81	0.00	-106.93	221	304	Vertical

Final Data List

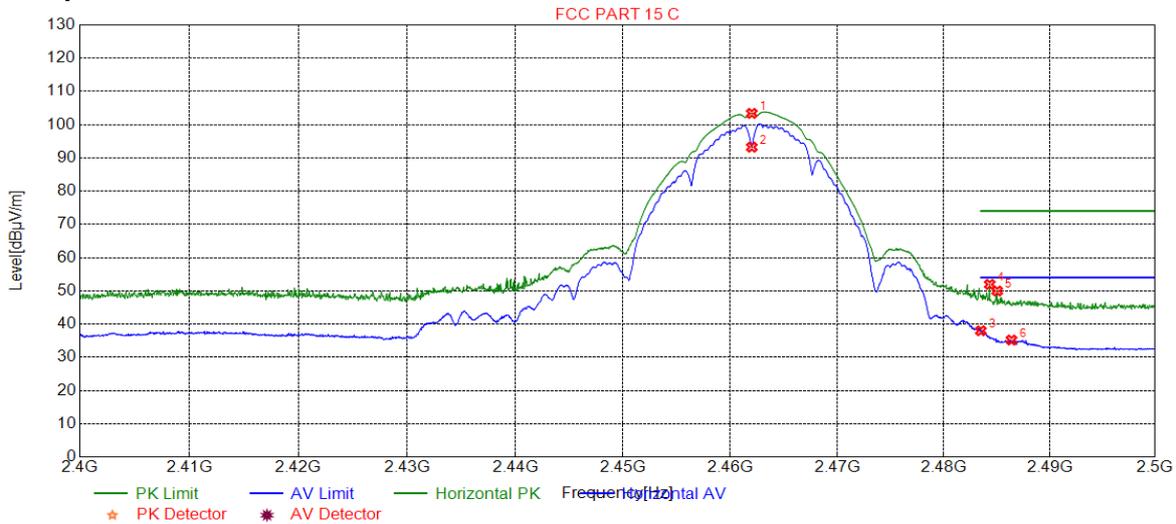


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4.10.1.3 802.11B_Channel 11

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	103.39	7.98	0.00	-103.39	233	63	Horizontal
2	2462.00	93.22	7.98	0.00	-93.22	136	63	Horizontal
3	2483.50	38.01	8.01	54.00	15.99	213	228	Horizontal
4	2484.34	51.94	8.01	74.00	22.06	211	233	Horizontal
5	2485.04	49.98	8.01	74.00	24.02	129	162	Horizontal
6	2486.39	35.22	8.01	54.00	18.78	243	228	Horizontal

Final Data List

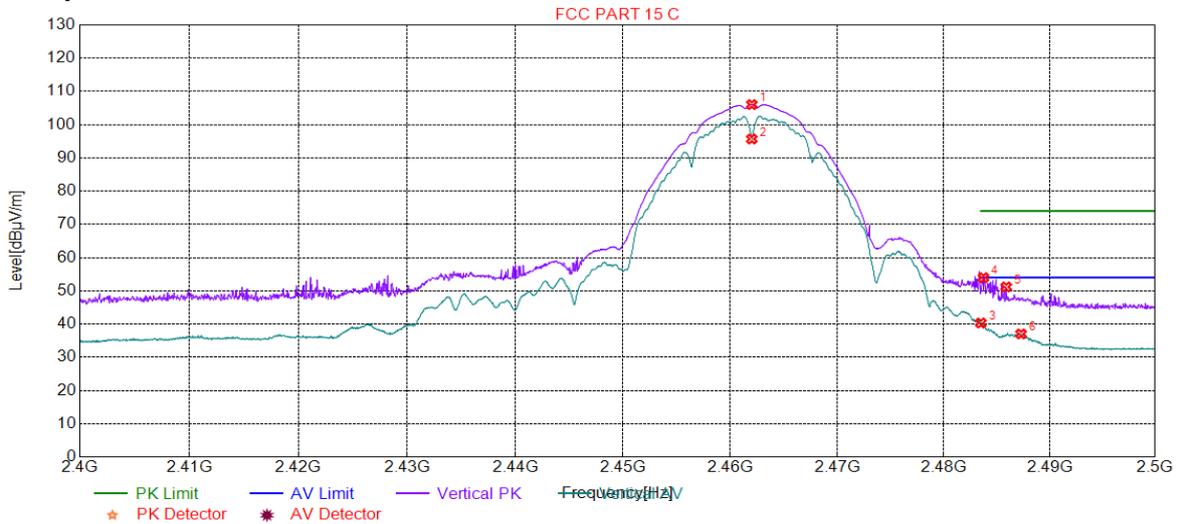


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4.10.1.4 802.11B_Channel 11

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	106.05	7.98	0.00	-106.05	220	320	Vertical
2	2462.00	95.68	7.98	0.00	-95.68	207	320	Vertical
3	2483.50	40.33	8.01	54.00	13.67	230	325	Vertical
4	2483.74	53.98	8.01	74.00	20.02	207	346	Vertical
5	2485.89	51.19	8.01	74.00	22.81	182	320	Vertical
6	2487.29	37.06	8.01	54.00	16.94	272	320	Vertical

Final Data List



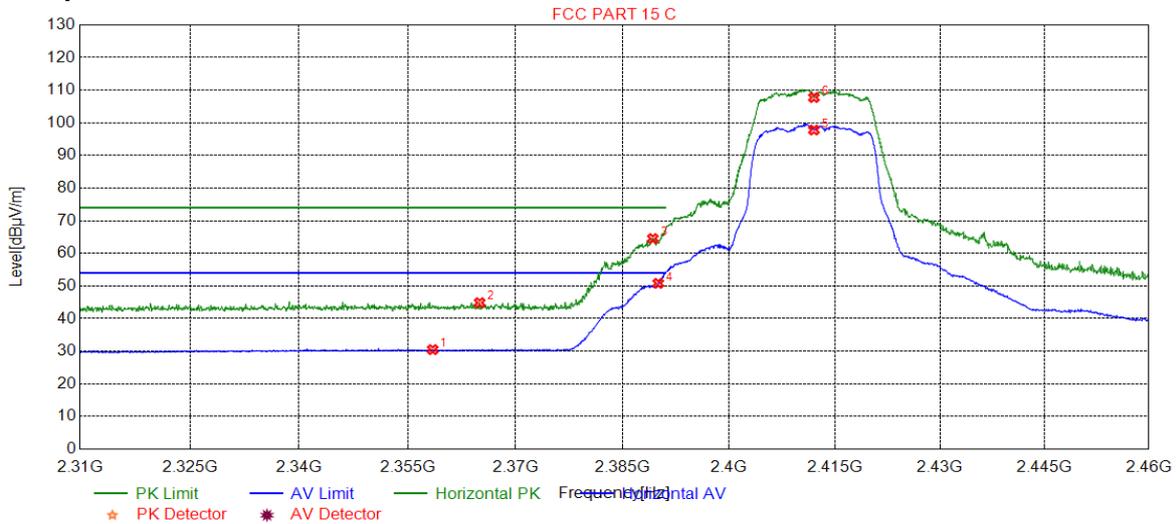
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4.10.1.5 802.11G_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2358.47	30.52	7.80	54.00	23.48	229	258	Horizontal
2	2365.00	44.90	7.79	74.00	29.10	148	102	Horizontal
3	2389.23	64.53	7.77	74.00	9.47	179	258	Horizontal
4	2390.00	50.81	7.77	54.00	3.19	177	258	Horizontal
5	2412.00	97.79	7.81	0.00	-97.79	240	74	Horizontal
6	2412.00	107.76	7.81	0.00	-107.76	229	85	Horizontal

Final Data List

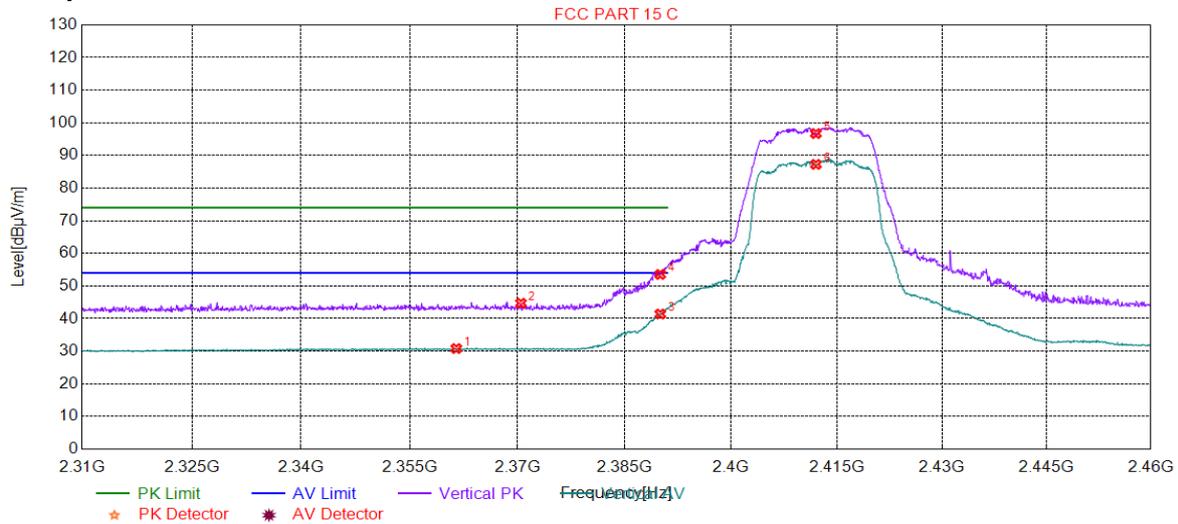


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4.10.1.6 802.11G_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2361.47	30.84	7.80	54.00	23.16	232	34	Vertical
2	2370.48	44.73	7.79	74.00	29.27	192	346	Vertical
3	2390.00	41.41	7.77	54.00	12.59	199	222	Vertical
4	2390.00	53.54	7.77	74.00	20.46	200	194	Vertical
5	2412.00	96.72	7.81	0.00	-96.72	292	194	Vertical
6	2412.00	87.27	7.81	0.00	-87.27	240	194	Vertical

Final Data List

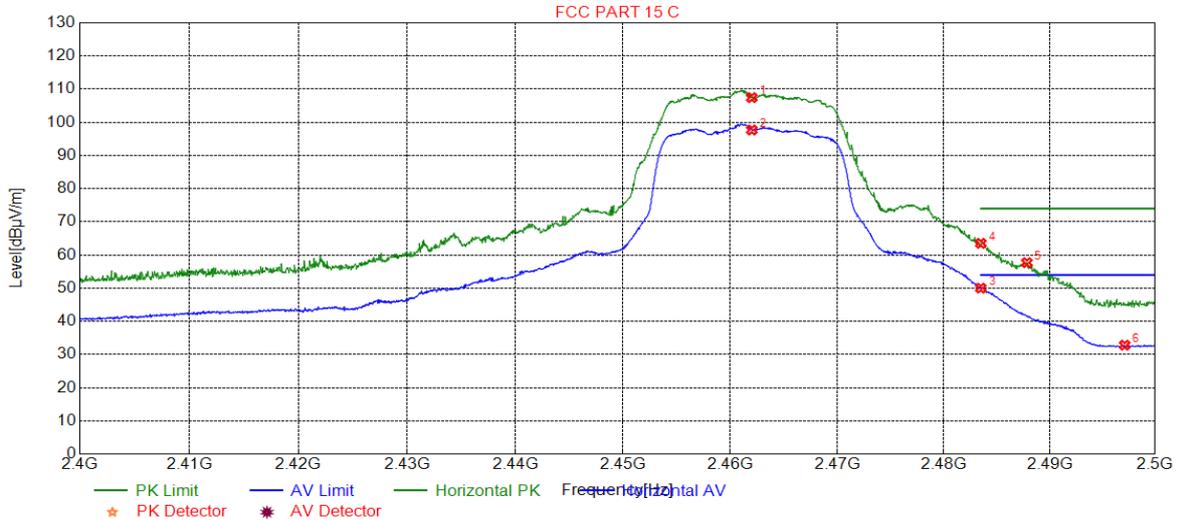


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4.10.1.7 802.11G_Channel 11

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	107.45	7.98	0.00	-107.45	163	239	Horizontal
2	2462.00	97.70	7.98	0.00	-97.70	171	239	Horizontal
3	2483.50	50.03	8.01	54.00	3.97	117	239	Horizontal
4	2483.50	63.54	8.01	74.00	10.46	116	316	Horizontal
5	2487.84	57.71	8.02	74.00	16.29	235	316	Horizontal
6	2497.09	32.85	8.03	54.00	21.15	234	344	Horizontal

Final Data List

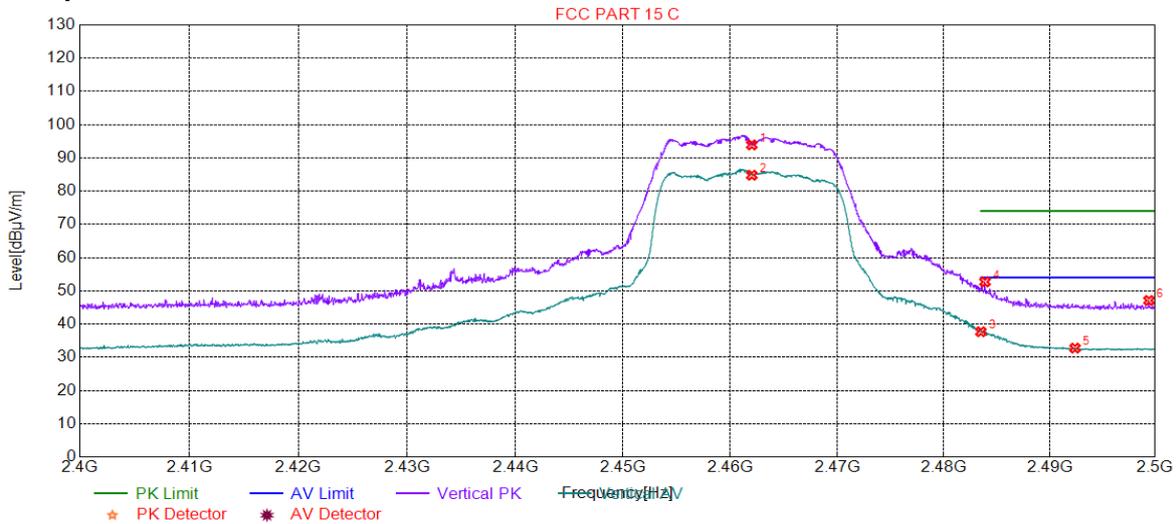


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4.10.1.8 802.11G_Channel 11

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	93.91	7.98	0.00	-93.91	199	237	Vertical
2	2462.00	84.79	7.98	0.00	-84.79	246	243	Vertical
3	2483.50	37.71	8.01	54.00	16.29	238	243	Vertical
4	2483.89	52.69	8.01	74.00	21.31	284	215	Vertical
5	2492.39	32.78	8.02	54.00	21.22	224	204	Vertical
6	2499.39	47.11	8.03	74.00	26.89	286	33	Vertical

Final Data List



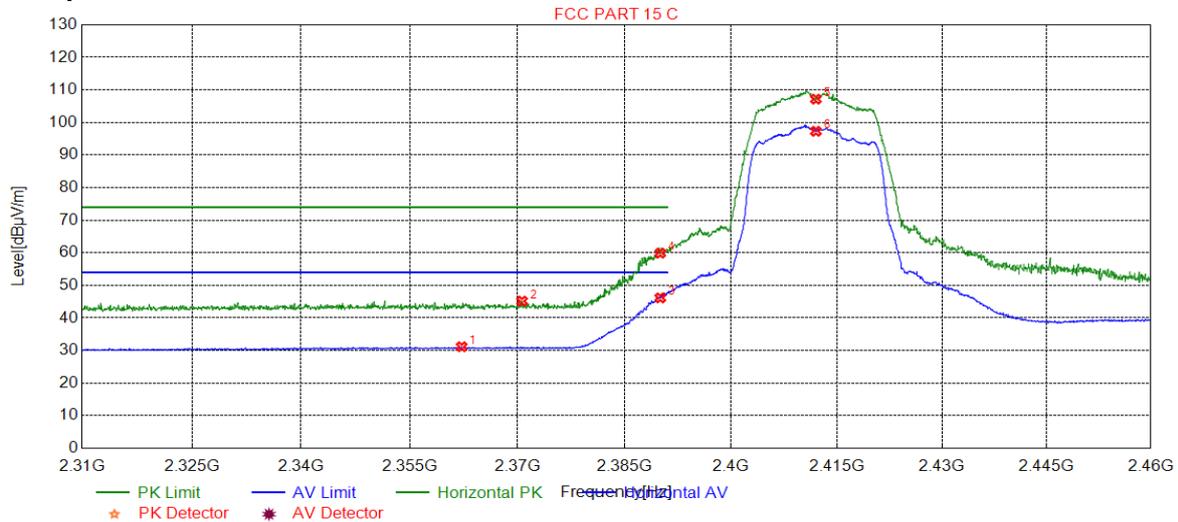
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4.10.1.9 802.11N20_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2362.22	31.18	7.80	54.00	22.82	160	57	Horizontal
2	2370.63	45.18	7.79	74.00	28.82	220	238	Horizontal
3	2390.00	46.17	7.77	54.00	7.83	125	205	Horizontal
4	2390.00	59.90	7.77	74.00	14.10	174	210	Horizontal
5	2412.00	107.18	7.81	0.00	-107.18	152	62	Horizontal
6	2412.00	97.32	7.81	0.00	-97.32	168	57	Horizontal

Final Data List

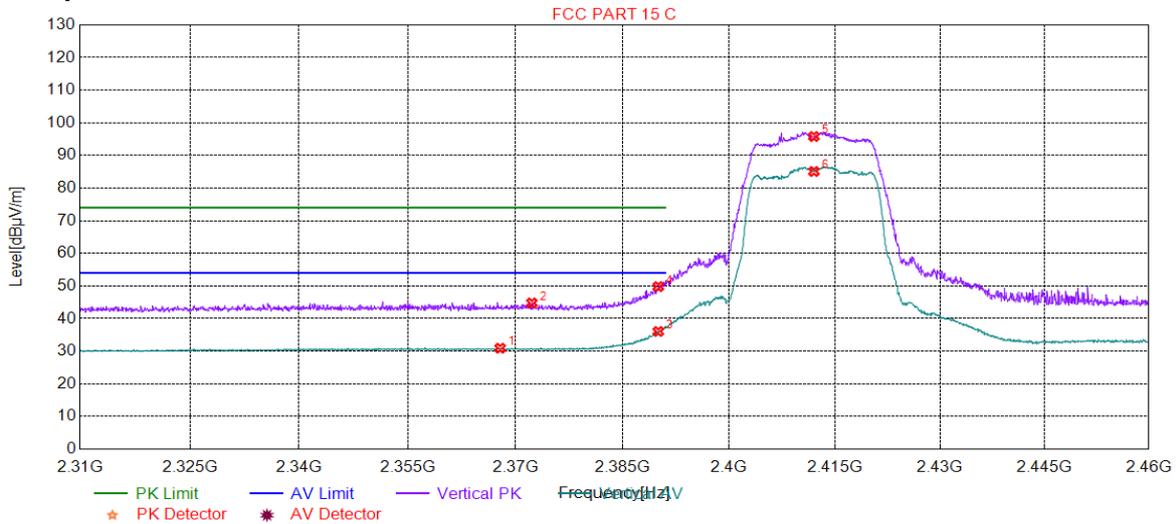


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4.10.1.10 802.11N20_Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2367.85	30.94	7.79	54.00	23.06	275	346	Vertical
2	2372.28	44.82	7.79	74.00	29.18	265	244	Vertical
3	2390.00	36.08	7.77	54.00	17.92	228	145	Vertical
4	2390.00	49.81	7.77	74.00	24.19	295	249	Vertical
5	2412.00	95.81	7.81	0.00	-95.81	245	139	Vertical
6	2412.00	85.09	7.81	0.00	-85.09	278	145	Vertical

Final Data List



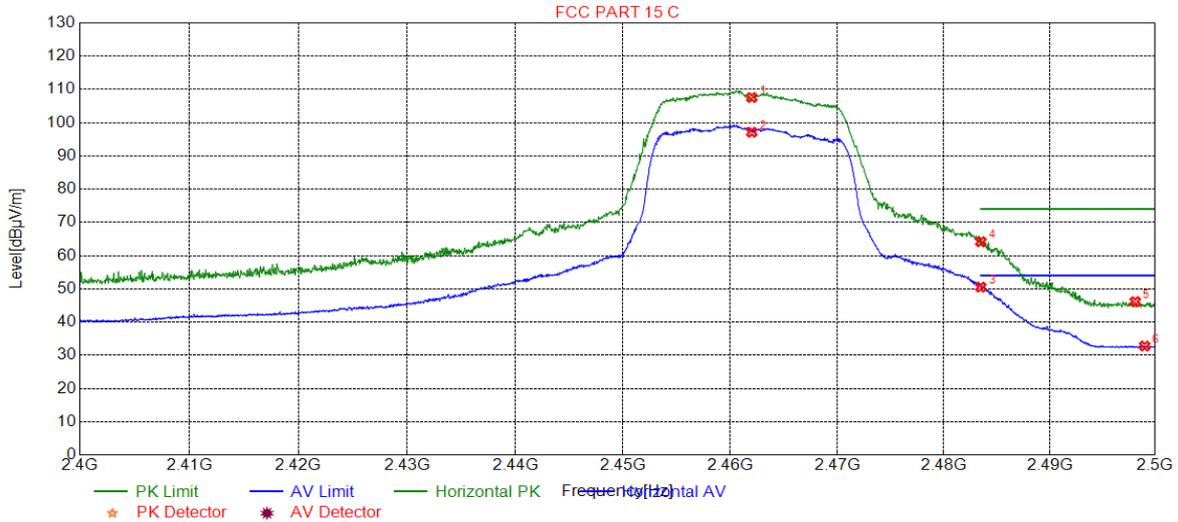
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4.10.1.11 802.11N20_Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	107.56	7.98	0.00	-107.56	245	250	Horizontal
2	2462.00	97.12	7.98	0.00	-97.12	144	245	Horizontal
3	2483.50	50.54	8.01	54.00	3.46	233	256	Horizontal
4	2483.50	64.16	8.01	74.00	9.84	117	261	Horizontal
5	2498.09	46.16	8.03	74.00	27.84	249	63	Horizontal
6	2498.99	32.79	8.03	54.00	21.21	173	288	Horizontal

Final Data List

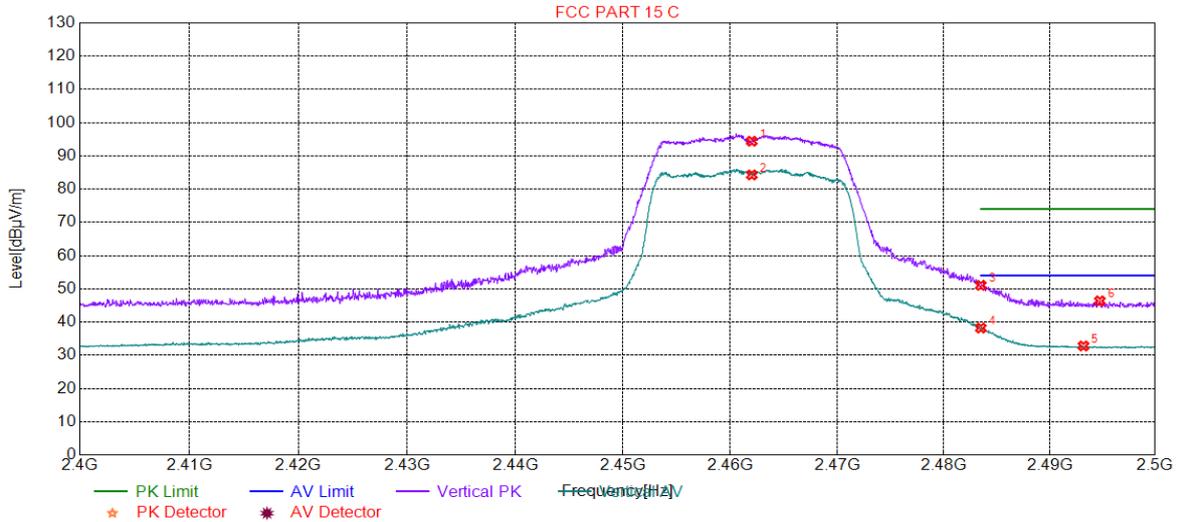


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4.10.1.12 802.11N20_Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	94.42	7.98	0.00	-94.42	200	197	Vertical
2	2462.00	84.28	7.98	0.00	-84.28	212	197	Vertical
3	2483.50	51.06	8.01	74.00	22.94	289	115	Vertical
4	2483.50	38.22	8.01	54.00	15.78	200	208	Vertical
5	2493.19	32.82	8.02	54.00	21.18	211	292	Vertical
6	2494.74	46.38	8.02	74.00	27.62	285	39	Vertical

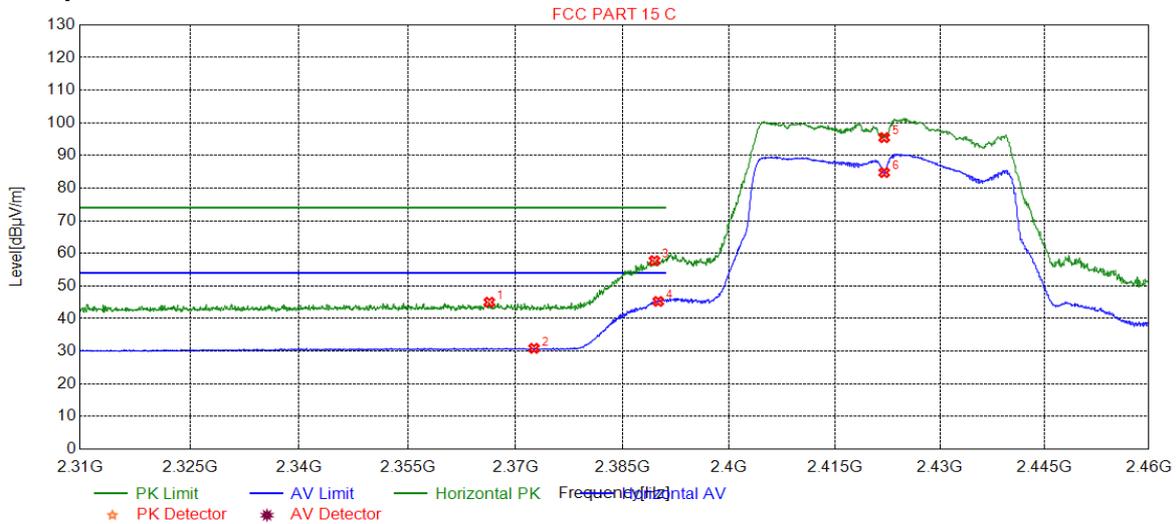
Final Data List



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4.10.1.13 802.11N40_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	2366.35	45.03	7.79	74.00	28.97	206	211	Horizontal
2	2372.58	30.90	7.79	54.00	23.10	228	19	Horizontal
3	2389.46	57.77	7.77	74.00	16.23	123	46	Horizontal
4	2390.00	45.28	7.77	54.00	8.72	196	40	Horizontal
5	2422.00	95.46	7.85	0.00	-95.46	164	46	Horizontal
6	2422.00	84.74	7.85	0.00	-84.74	219	40	Horizontal

Final Data List

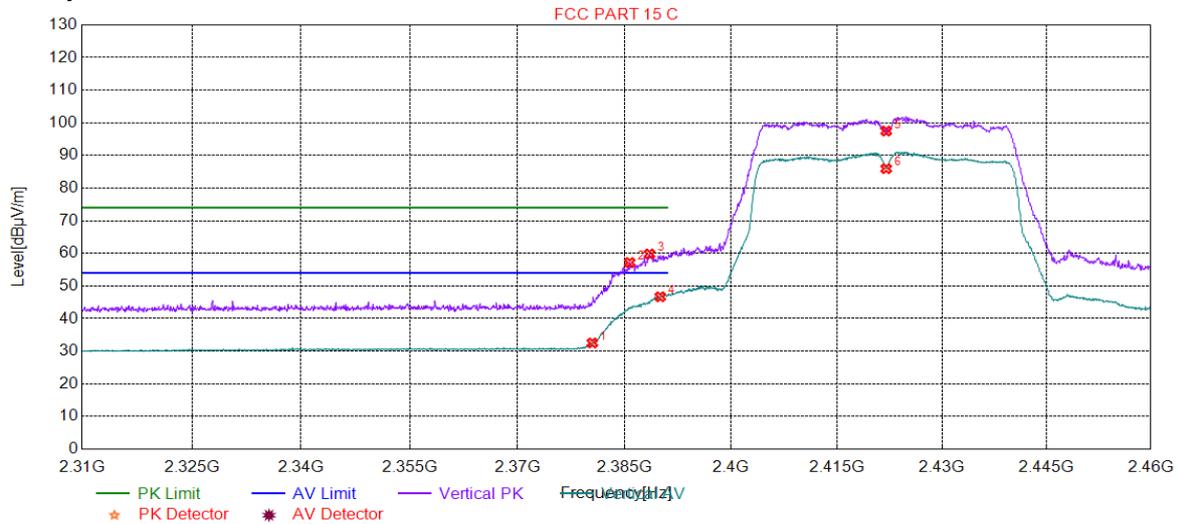


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4.10.1.14 802.11N40_Channel 3

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2380.46	32.55	7.78	54.00	21.45	231	63	Vertical
2	2385.71	57.20	7.77	74.00	16.80	292	303	Vertical
3	2388.48	59.82	7.77	74.00	14.18	255	325	Vertical
4	2390.00	46.71	7.77	54.00	7.29	254	303	Vertical
5	2422.00	97.48	7.85	0.00	-97.48	293	319	Vertical
6	2422.00	85.95	7.85	0.00	-85.95	230	325	Vertical

Final Data List

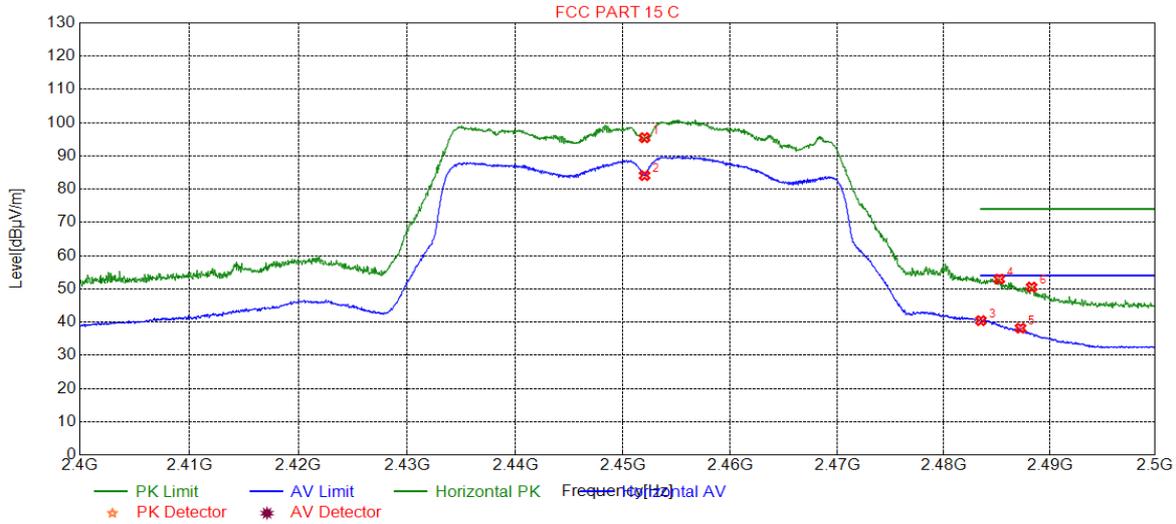


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4.10.1.15 802.11N40_Channel 9

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2452.00	95.47	7.97	0.00	-95.47	102	51	Horizontal
2	2452.00	84.08	7.97	0.00	-84.08	159	46	Horizontal
3	2483.50	40.45	8.01	54.00	13.55	100	62	Horizontal
4	2485.24	52.93	8.01	74.00	21.07	187	229	Horizontal
5	2487.24	38.19	8.01	54.00	15.81	104	68	Horizontal
6	2488.29	50.53	8.02	74.00	23.47	167	57	Horizontal

Final Data List

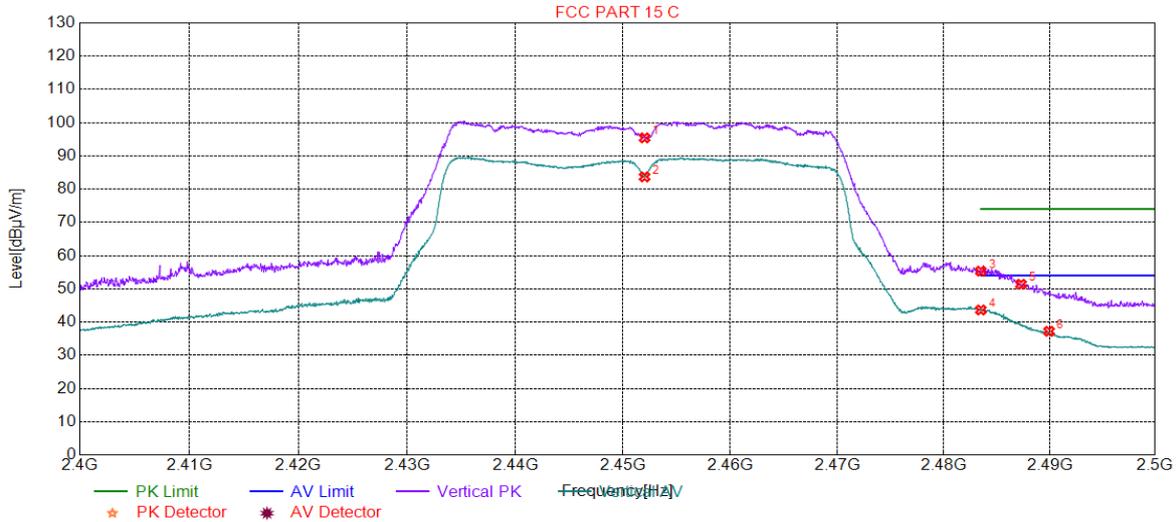


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4.10.1.16 802.11N40_Channel 9

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2452.00	95.43	7.97	0.00	-95.43	275	298	Vertical
2	2452.00	83.69	7.97	0.00	-83.69	173	320	Vertical
3	2483.50	55.34	8.01	74.00	18.66	286	314	Vertical
4	2483.50	43.65	8.01	54.00	10.35	270	320	Vertical
5	2487.29	51.39	8.01	74.00	22.61	221	320	Vertical
6	2489.94	37.24	8.02	54.00	16.76	244	320	Vertical

Final Data List

Remark:

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

All Modes have been tested, but only the worst case data displayed in this report.



5 Measurement Uncertainty (95% confidence levels, k=2)

Lab A:

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.75dB
2	RF power density, conducted	±2.84dB
3	Spurious emissions, conducted	±0.75dB
4	Temperature test	±1°C
5	Humidity test	±3%
6	DC and low frequency voltages	±0.5%

Lab B:

No.	Item	Measurement Uncertainty
1	Conduction Emission	± 3.0dB (150kHz to 30MHz)
2	Radiated Emission	± 4.8dB (Below 1GHz)
		± 4.8dB (1GHz to 6GHz)
		± 4.5dB (6GHz to 18GHz)
		± 5.02dB (Above 18GHz)



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6 Equipment List

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal. Due date
				(yyyy-mm-dd)	(yyyy-mm-dd)
DC Power Supply	Agilent Technologies Inc	66311B	W009-09	2020/7/15	2021/7/15
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2020/1/3	2021/1/2
Coaxial Cable	SGS	N/A	SEM031-01	2020/6/12	2021/6/11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2020/7/14	2021/7/14
Temperature Chamber	GIANT FORCE	ICT-150-40-CP-AR	W027-03	2019/10/27	2020/10/27
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2020/7/14	2021/7/14

CE Test System					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2019-09-07	2020-09-06
Artificial network	ROHDE&SCHWARZ	ENV216	XAW01-04-03	2019-12-11	2020-12-10
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2019-12-06	2020-12-05
Measurement Software	Tonscend	TS+ CE V2.5	XAW02-05-02	NCR	NCR



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RSE Test System					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Semi-Anechoic Chamber	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10
MXA signal analyzer	Keysight	N9020A	XAW01-06-01	2020-04-02	2021-04-01
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-05	2020-04-12	2021-04-11
Receiving antenna (30MHz-3GHz)	Schwarzbeck	VULB 9163	XAW01-09-01	2019-10-13	2021-10-12
Receiving antenna (1GHz~18GHz)	Schwarzbeck	BBHA 9120D	XAW01-09-02	2019-10-13	2021-10-12
Receiving antenna (15GHz~40GHz)	Schwarzbeck	BBHA 9170	XAW01-09-03	2019-10-13	2021-10-12
Directional antenna rack controller	Max-Full	MF-7802BS	XAW03-03-01	NCR	NCR
High-speed antenna rack controller	Max-Full	MF-7802	XAW03-04-01	NCR	NCR
Filter bank	Tonscend	JS0806-F	XAW03-05-01	NCR	NCR
Filter bank	Tonscend	JS0806s	XAW03-05-02	NCR	NCR
Amplifier	Tonscend	TAP00903040	XAW01-41-01	2019-11-18	2020-11-17
Amplifier	Tonscend	TAP01018048	XAW01-41-02	2019-11-18	2020-11-17
Amplifier	Tonscend	TAP18040048	XAW01-41-03	2019-12-03	2020-12-02
Amplifier	Shanghai Steed	YX28980930	XAW01-41-06	2019-11-18	2020-11-17
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2019-12-06	2020-12-05
Measurement Software	Tonscend	TS+ RSE V3.0.0.2	XAW02-05-01	NCR	NCR



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7 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of Set-Up for ZR/2020/60037.

The End



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