

Peak Measurements**Spectrum Analyzer Settings:**

RBW= 1 MHz

VBW= 10 MHz

Trace Mode: Peak Detector (Max Hold)

Span= 5000 – 5470 MHz; 5350 – 5850 MHz; 5600 – 5950 MHz

Sweep Points = 1001; 801; 801

Sweep Time = Auto Couple

Average Measurements (Reduced Video Bandwidth Method)**Spectrum analyzer Settings:**

RBW= 1 MHz

VBW= 1 kHz

VBW Mode= Linear

Trace Mode: Peak Detector (Max Hold)

Span = 5000 – 5470 MHz; 5350 – 5700 MHz;

Sweep Points: 1001; 801

Sweep Time = Auto Couple

Sweep Count = 200

Sample Calculation:

Field Strength Level: Amplitude (Analyzer level) + AFCL (Antenna Factor and Cable losses) –
Amplifier Gain = 50 dBuV + 33 dB – 25 dB = 58dBuV/m

9.6.3 Limits:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (meters)	Corrected Field Strength for 3m measurement distance (dB $\mu\text{V/m}$)
0.009-0.490	2400/F (kHz)	300	48.5- 13.8
0.490-1.705	24000/F (kHz)	30	33.8- 23.0
1.705-30	30	30	29.5
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
960-1000	500	3	54
Above 1000	500	3	54 (Average) 74 (Peak) Note: The peak limit for emissions in unrestricted bands is -27dBm EIRP (68.2dB $\mu\text{V/m}$ at 3m).

9.6.4 Test Result:

Pass.

9.6.5 Test Data:

9.6.5.1 Radiated Emissions in 9 kHz- 30 MHz range

All channels and modes were tested and worst-case results from 802.11a, Channel 36 is reported below:

RSE 9 kHz - 30 MHz					
Frequency (MHz)	Raw Quasi-Peak Amplitude (dB μ V/m)	Correction Factor (dB)	Corrected Quasi-Peak Field Strength (dB μ V/m)	Quasi-Peak Limit (dB μ V/m)	Quasi-Peak Margin (dB)
1.57	-1.44	3.7	-1.44	23.71	-25.152
4.37	-9.13	-3.9	-9.13	29.54	-38.67
17.92	-16.32	-5.4	-16.32	29.54	-45.86

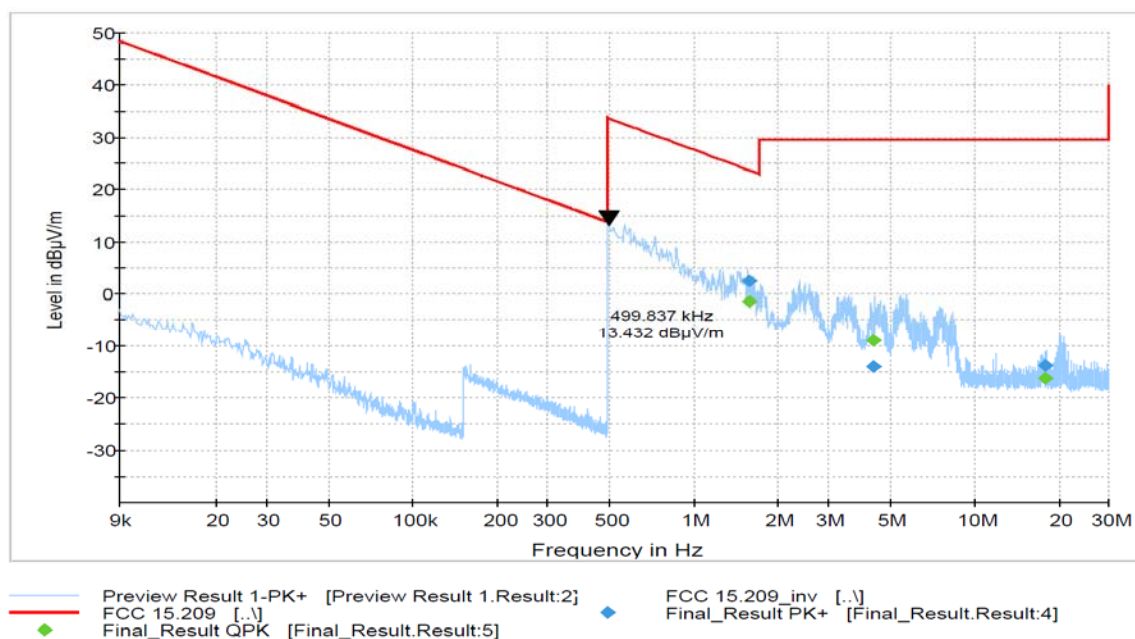


Figure 9-305 Radiated Spurious Emission 9kHz-30 MHz Tx Chain A&B 802.11a (Ch. 36)

9.6.5.2 Radiated Emissions in 30 MHz- 1 GHz range

All channels and modes were tested and worst-case results from 802.11ac mode(160MHz), channel 160 is reported in the table below:

RSE 30-1000 MHz					
Frequency (MHz)	Raw Quasi-Peak Amplitude (dB μ V/m)	Correction Factor (dB)	Corrected Quasi-Peak Field Strength (dB μ V/m)	Quasi-Peak Limit (dB μ V/m)	Quasi-Peak Margin (dB)
943.79	-6.86	33.22	26.36	46	-19.64

Ambient scan with all the radios off were also taken to verify the emissions that were not related to the radio shown in figure below:

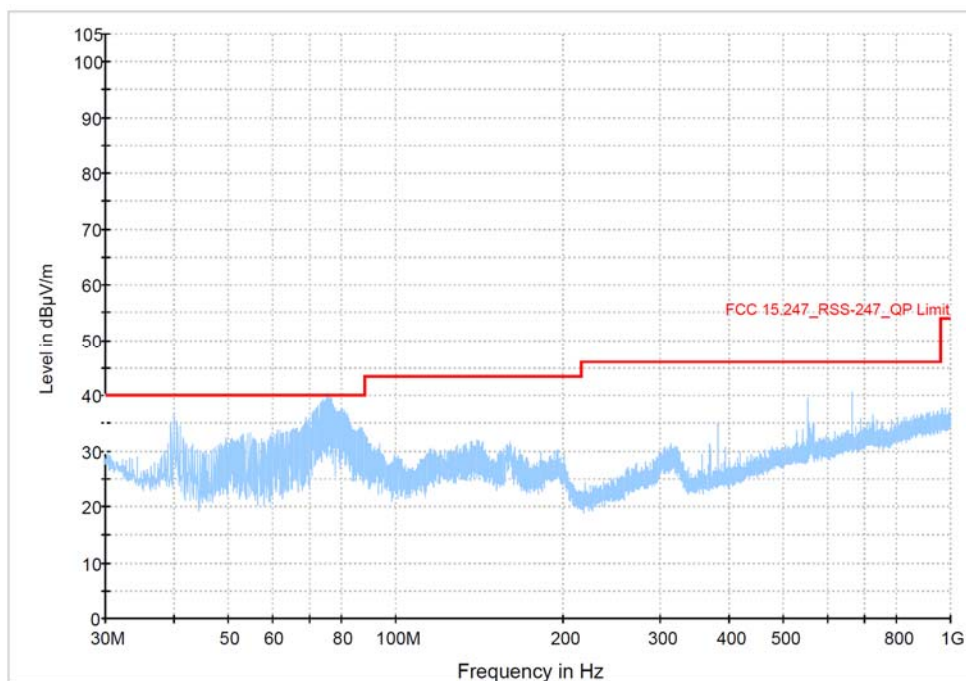


Figure 9-306. Ambient Scan with all the radios turned off

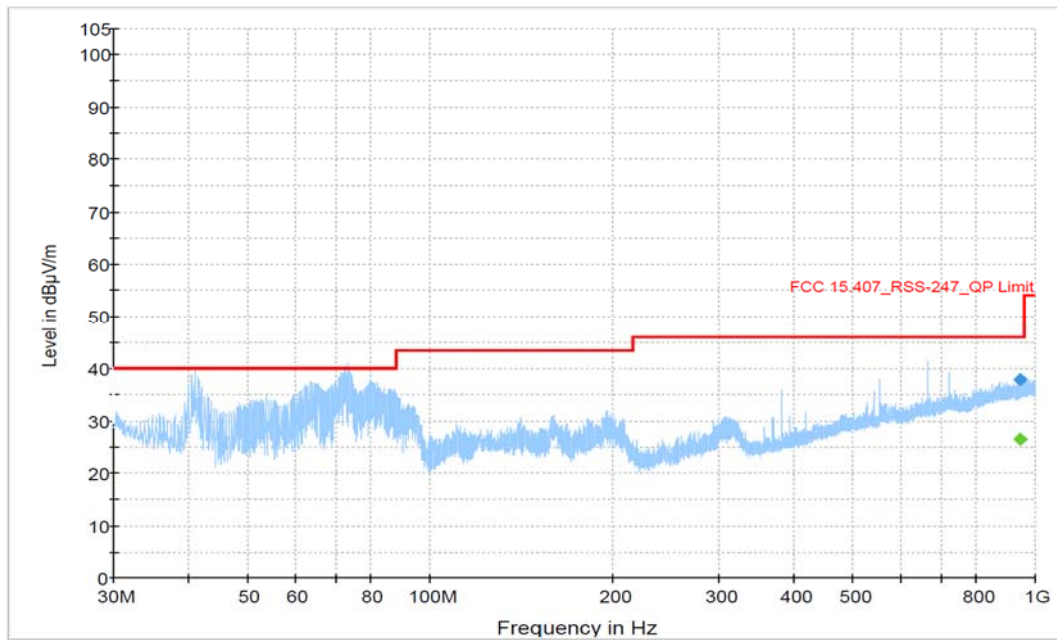


Figure 9-306. Radiated Spurious Emission 30 MHz-1000MHz Tx Chain A&B 802.11ac (Ch. 160)

9.6.5.3 Radiated Emissions in 1-18 GHz range 802.11a

802.11a RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBμV)	Correction Factor (dB)	Corrected Peak Field Strength (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)
5180	17890.23	31.87	23.3	55.17	74	-18.83
5220	17820.73	30.96	23.3	54.26	74	-19.74
5240	17811.28	31.5	23.3	54.8	74	-19.2
5260	17882.95	30.83	24.2	55.03	74	-18.97
5300	17937.79	31.03	24.4	55.43	74	-18.57
5320	17935.56	30.53	24.4	54.93	74	-19.07
5500	17905.56	31.64	24.3	55.94	74	-18.06
5580	17914.42	30.59	24.3	54.89	74	-19.11
5700	17886.10	31.74	24.2	55.94	74	-18.06
5745	17927.09	31.62	23.2	54.82	74	-19.18
5785	17895.40	30.97	24.3	55.27	74	-18.73
5825	17864.49	31.53	23.3	54.83	74	-19.17

802.11a RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBμV)	Correction Factor (incl DCF=0dB) (dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5180	17799.50	18.97	24.3	43.27	54	-10.73
5220	17813.43	19.80	23.3	43.10	54	-10.90
5240	17803.22	19.99	23.3	43.29	54	-10.71
5260	17795.50	19.91	23.3	43.21	54	-10.79
5300	17930.08	19.43	24.4	43.83	54	-10.17
5320	17903.08	19.62	24.3	43.92	54	-10.08
5500	17792.75	19.94	23.3	43.24	54	-10.76
5580	17900.53	19.70	24.3	44.00	54	-10.00
5700	17893.70	19.71	24.3	44.01	54	-9.99
5745	17789.08	18.87	24.3	43.17	54	-10.83
5785	17931.13	19.42	24.4	43.82	54	-10.18
5825	17799.88	19.60	23.7	43.30	54	-10.70

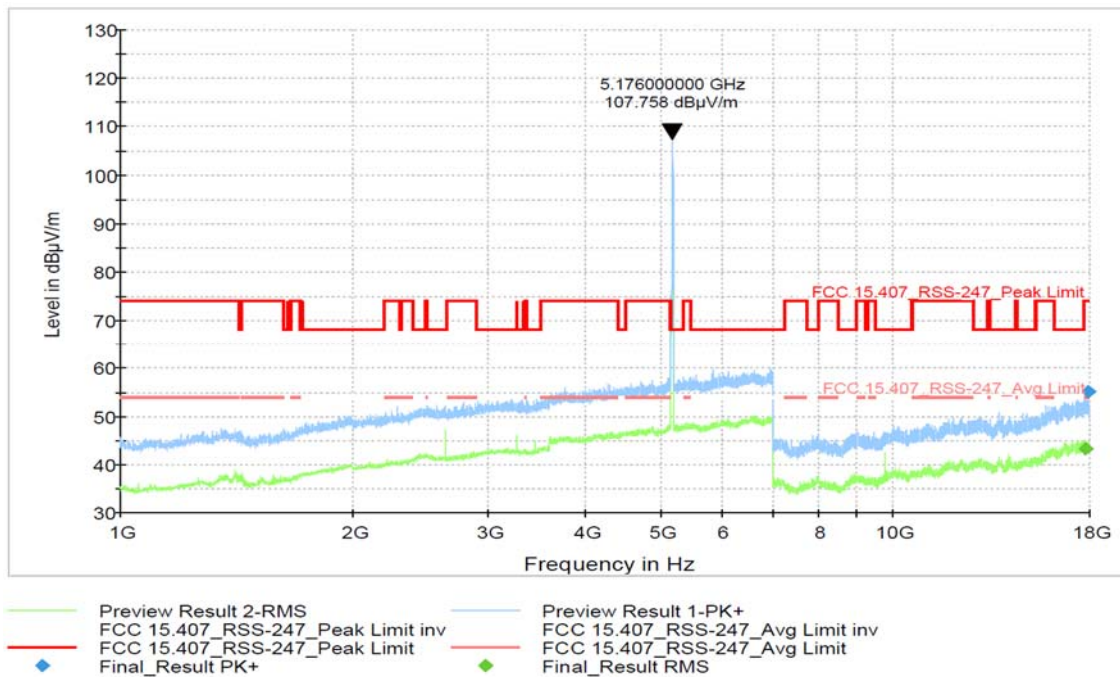


Figure 9-307. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 36)

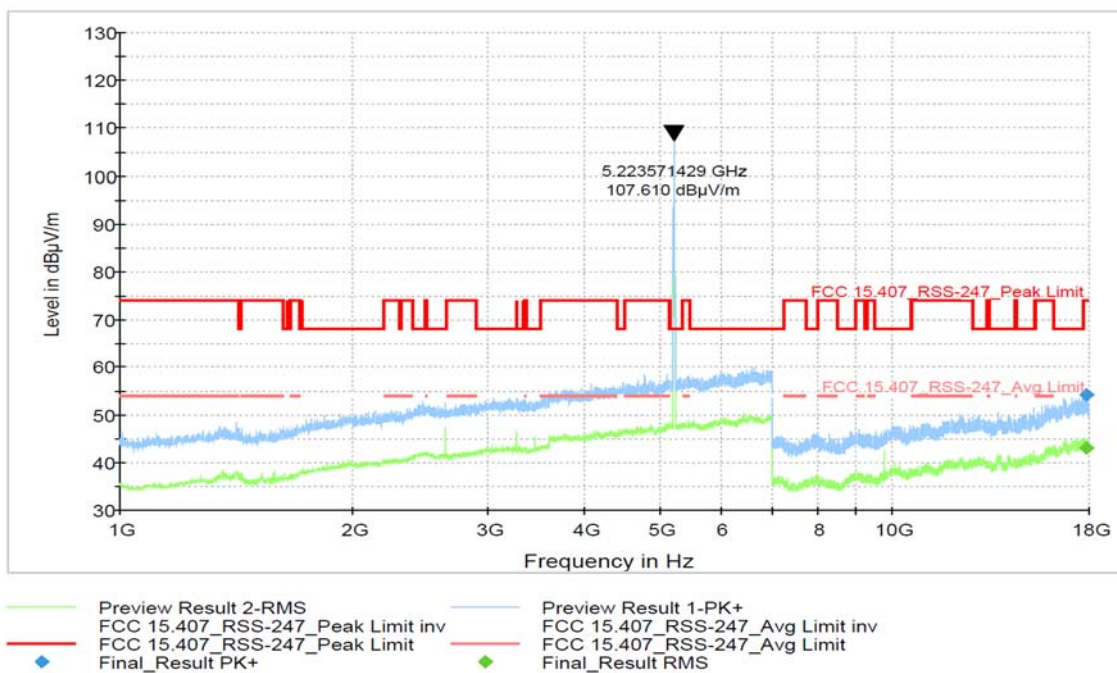


Figure 9-308. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 44)

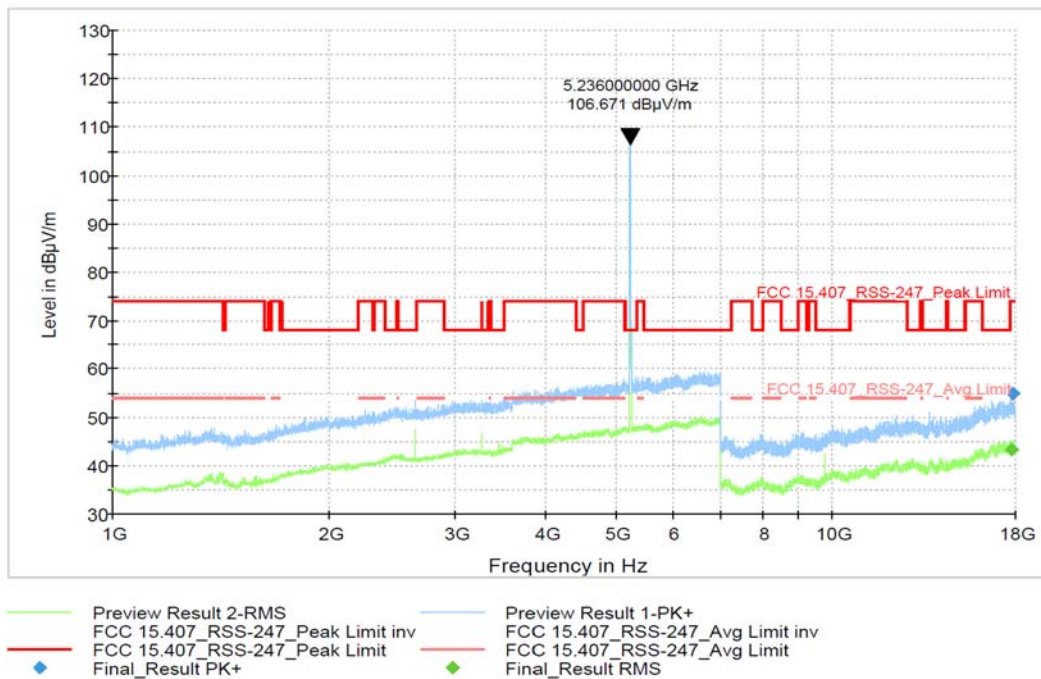


Figure 9-309. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 48)

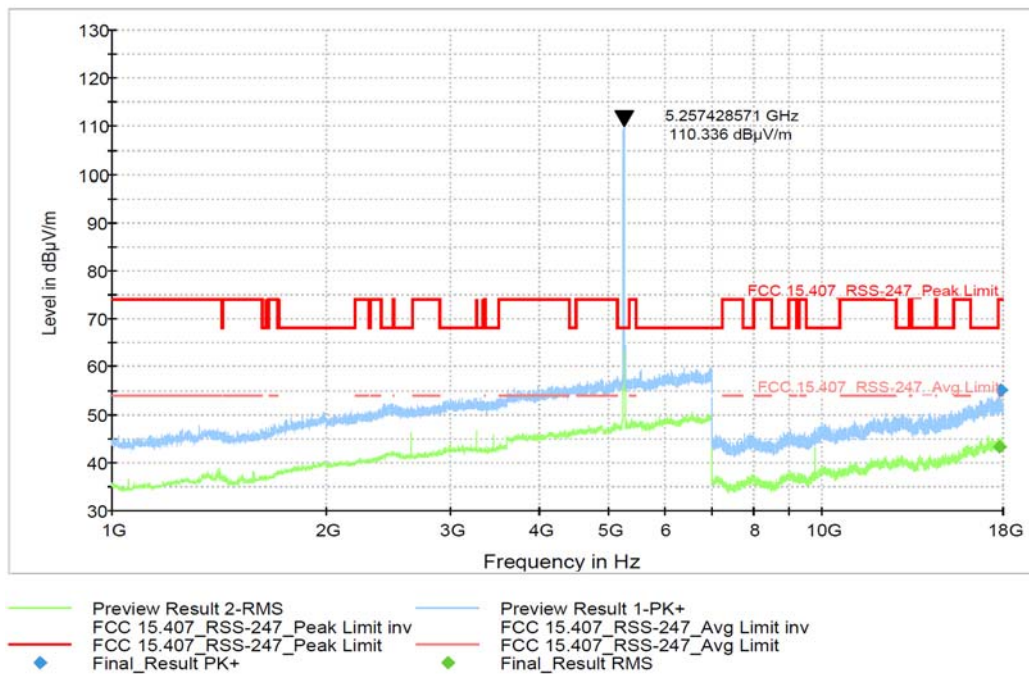


Figure 9-310. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 52)

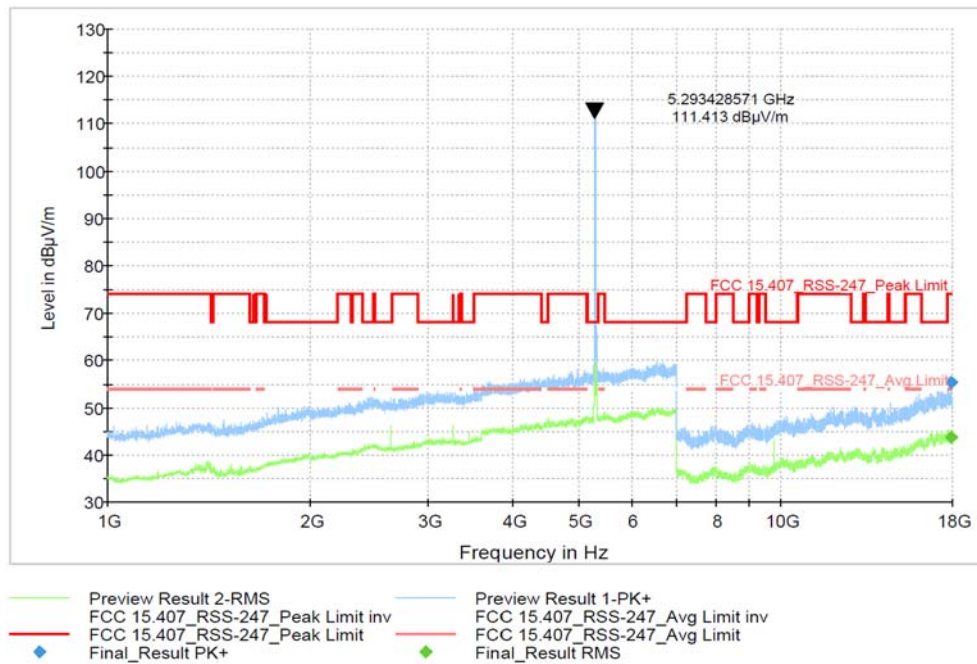


Figure 9-311. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 60)

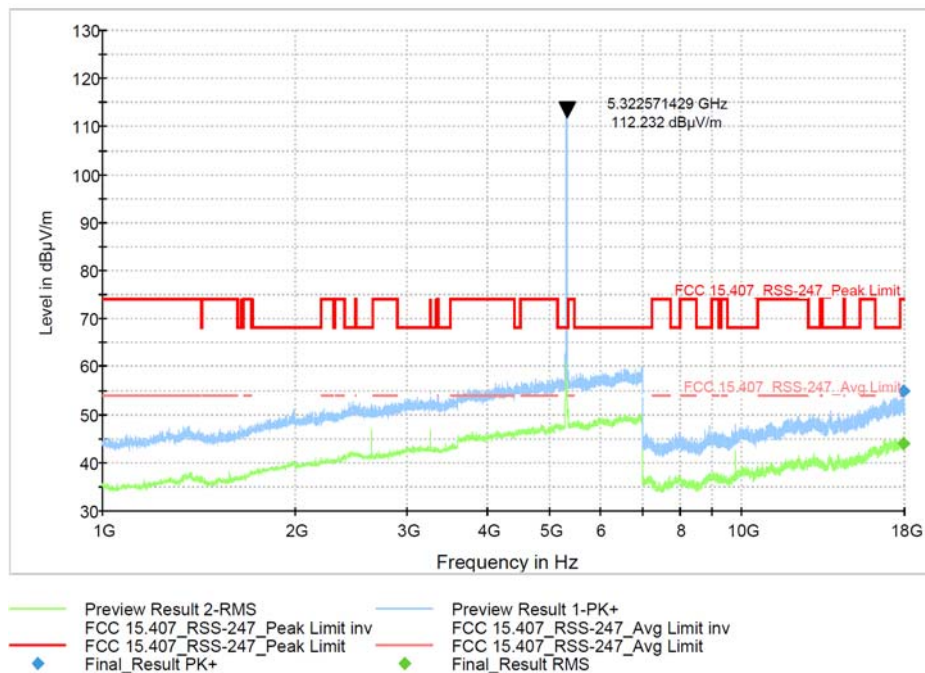


Figure 9-312. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 64)

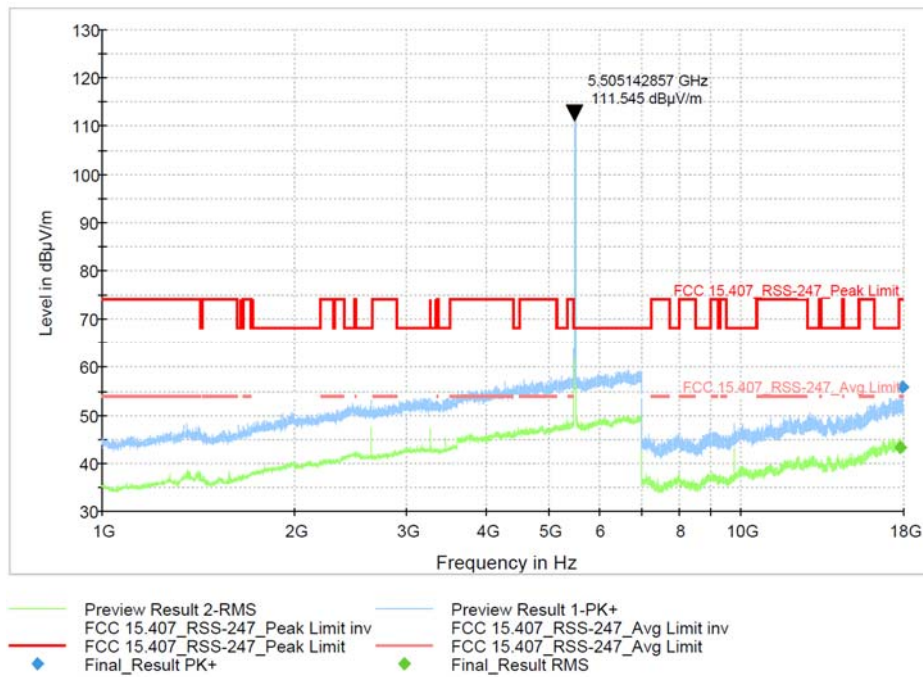


Figure 9-313. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 100)

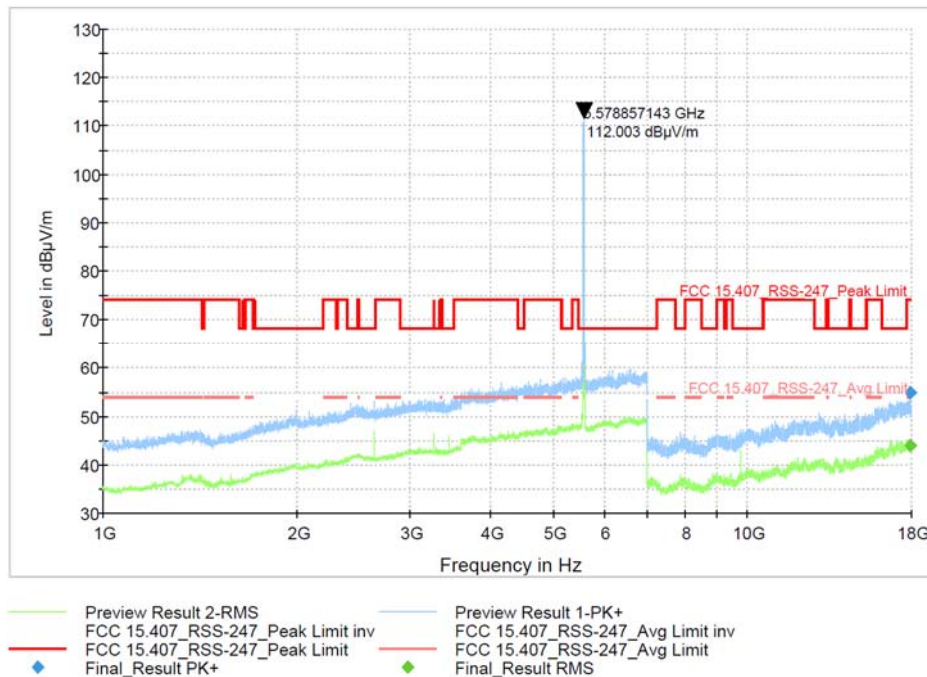


Figure 9-314. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 116)

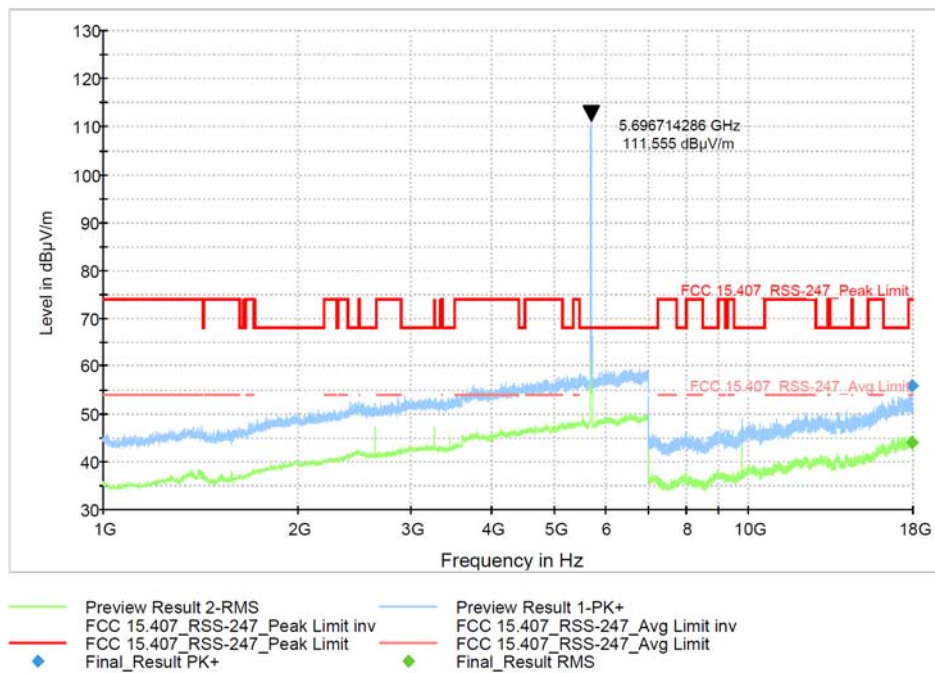


Figure 9-315. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 140)

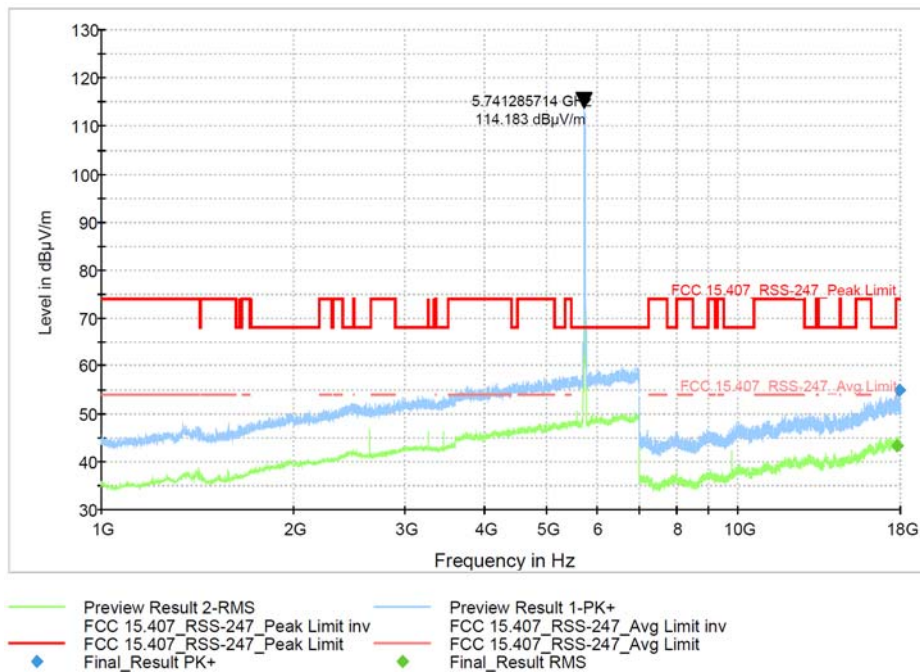


Figure 9-316. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 149)

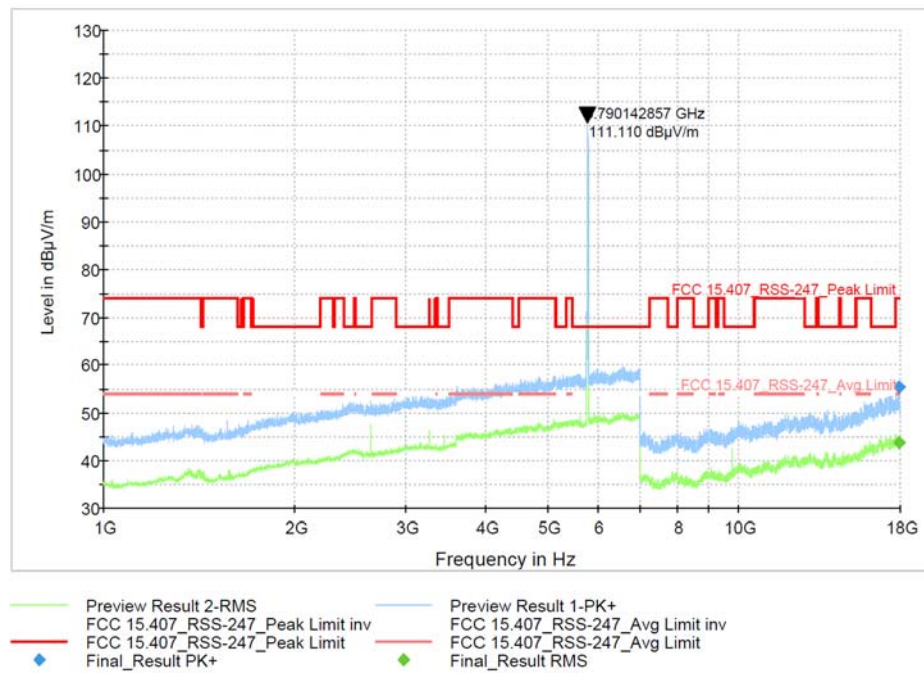


Figure 9-317. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 157)

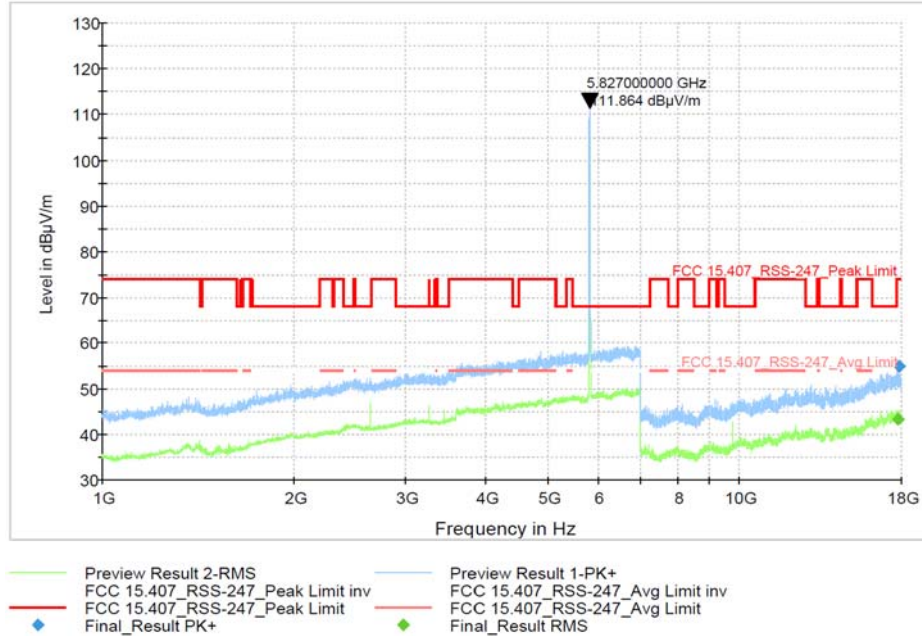


Figure 9-318. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 165)

9.6.5.4 Radiated Emission in 1-18 GHz range 802.11n HT20

802.11n HT20 RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBμV)	Correction Factor (dB)	Corrected Peak Field Strength (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)
5180	17937.31	31.28	24.4	55.68	74	-18.32
5220	17929.36	31.34	24.4	55.74	74	-18.26
5240	17811.28	30.5	24.3	55.10	74	-19.20
5260	17942.78	30.96	24.3	55.26	74	-18.74
5300	17896.14	31.73	24.3	56.03	74	-17.97
5320	17926.89	30.7	24.3	55.00	74	-19.00
5500	17800.95	30.7	24.3	55.00	74	-19.00
5580	17879.29	31.13	24.1	55.23	74	-18.77
5700	17792.34	31.02	23.3	54.32	74	-19.68
5745	17826.4	31.53	23.3	54.83	74	-19.17
5785	17816.93	30.69	23.3	53.99	74	-20.01
5825	17897.11	31.12	24.3	55.42	74	-18.58

802.11N HT20 RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBμV)	Correction Factor (incl DCF=0dB) (dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5180	17927.43	19.52	24.3	43.82	54	-10.18
5220	17929.76	19.44	24.4	43.84	54	-10.16
5240	17803.22	18.89	24.4	43.86	54	-10.71
5260	17940.38	19.38	24.4	43.78	54	-10.22
5300	17900.2	19.7	24.3	44.00	54	-10.00
5320	17900.16	19.69	24.3	43.99	54	-10.01
5500	17893.71	19.71	24.3	44.01	54	-9.99
5580	17890.38	19.66	24.3	43.96	54	-10.04
5700	17799.71	20	23.3	43.3	54	-10.70
5745	17817.09	19.79	23.3	43.09	54	-10.91
5785	17931.64	19.45	24.4	43.85	54	-10.15
5825	17900.2	19.71	24.3	44.01	54	-9.99

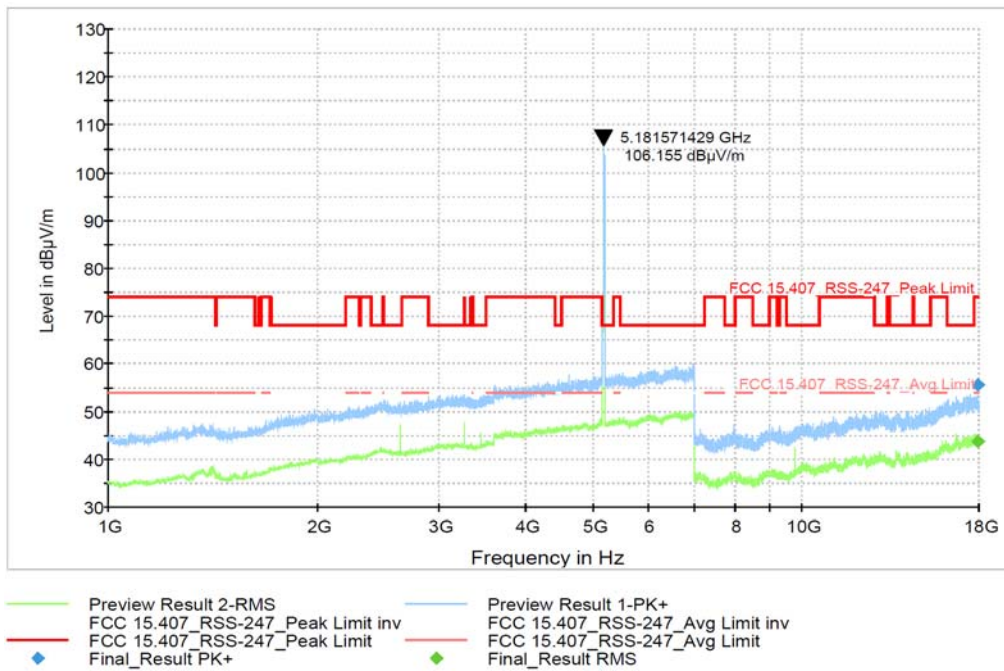


Figure 9-319. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 36)

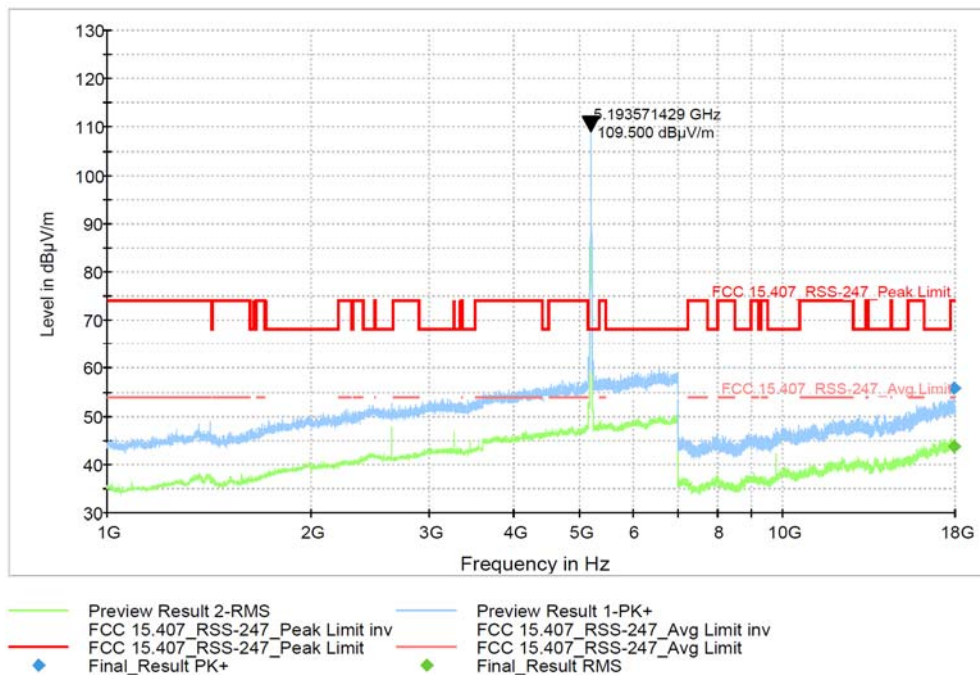


Figure 9-320. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 44)

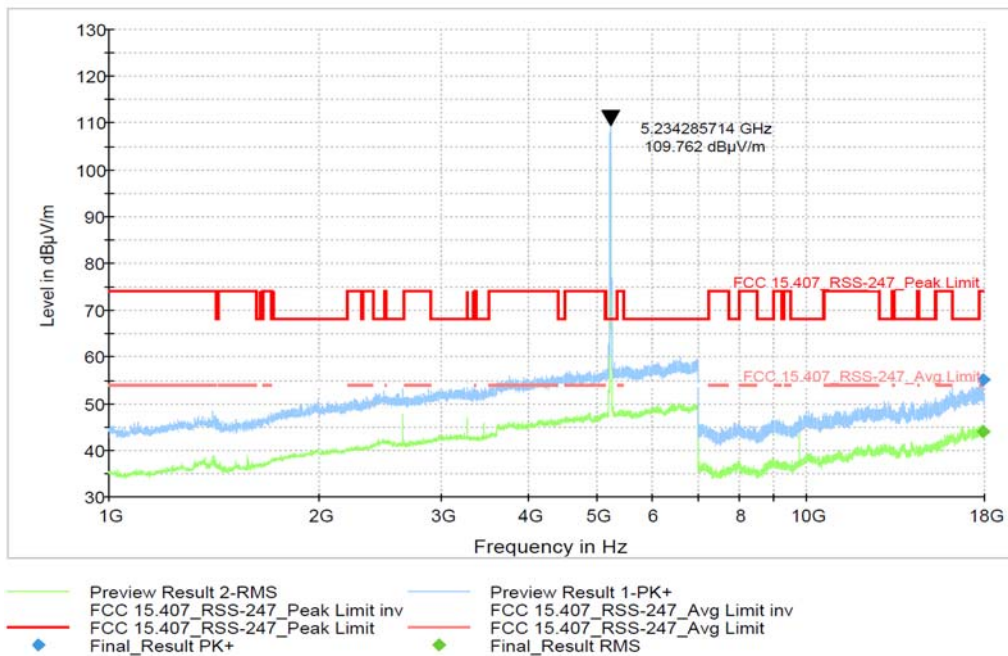


Figure 9-321. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 48)

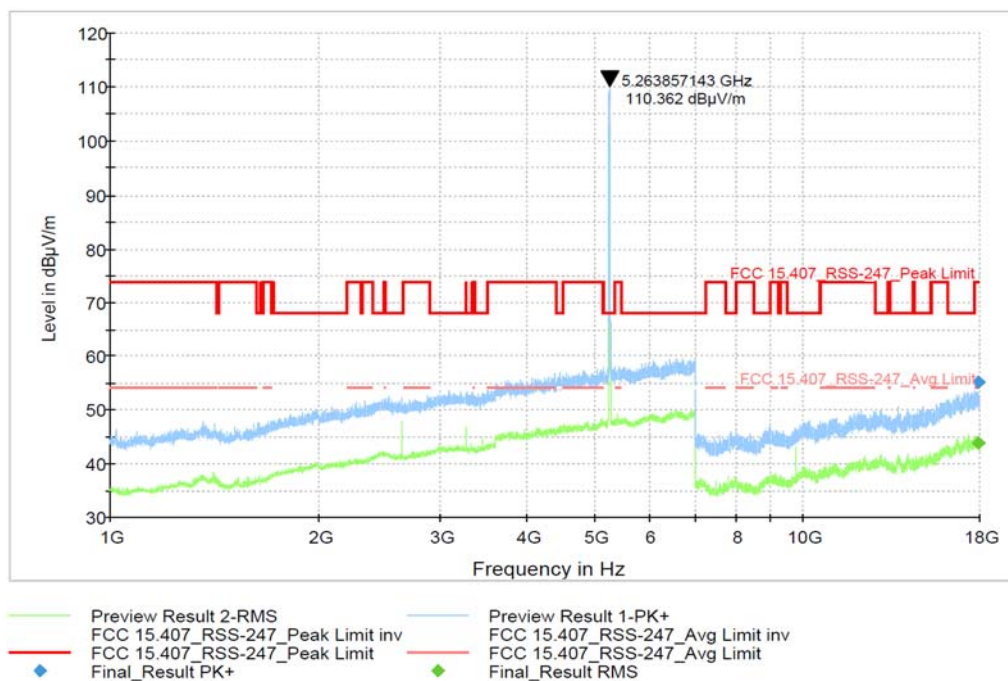


Figure 9-322. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 52)

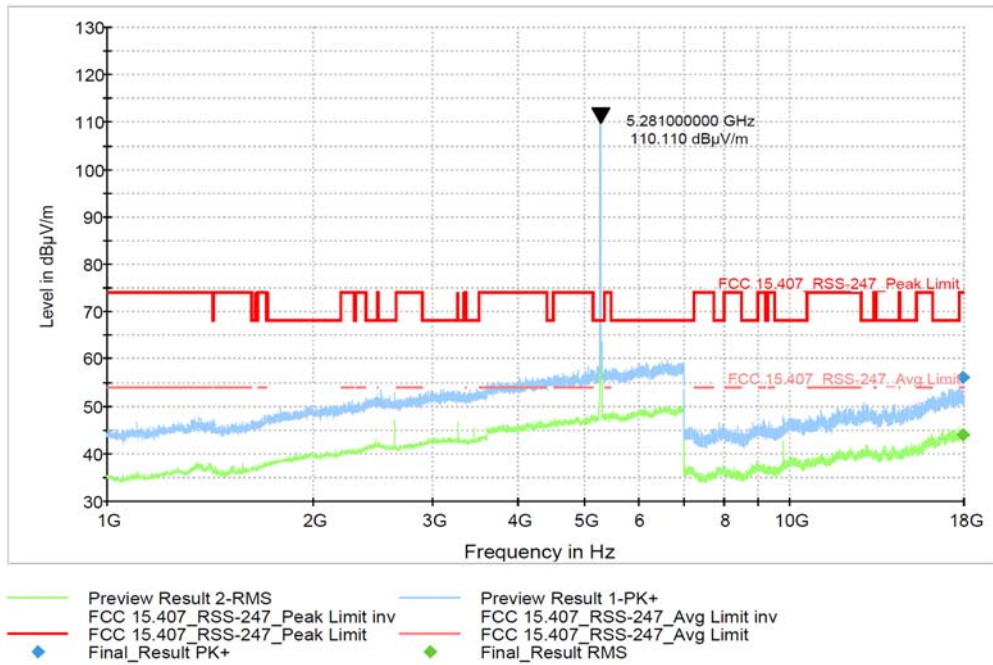


Figure 9-323. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 60)

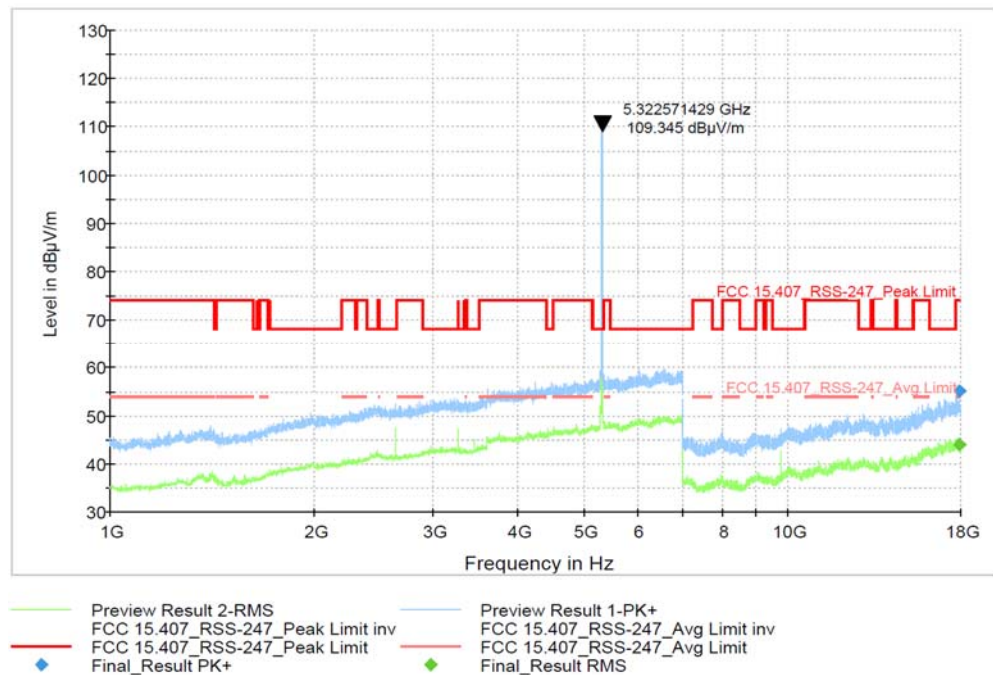


Figure 9-324. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 64)

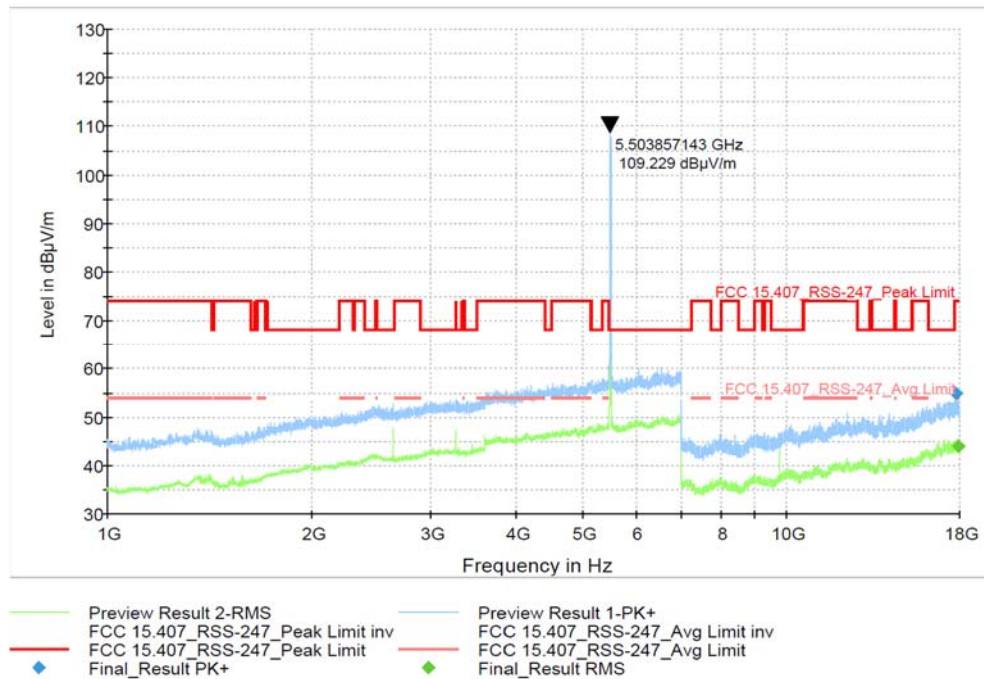


Figure 9-325. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 100)

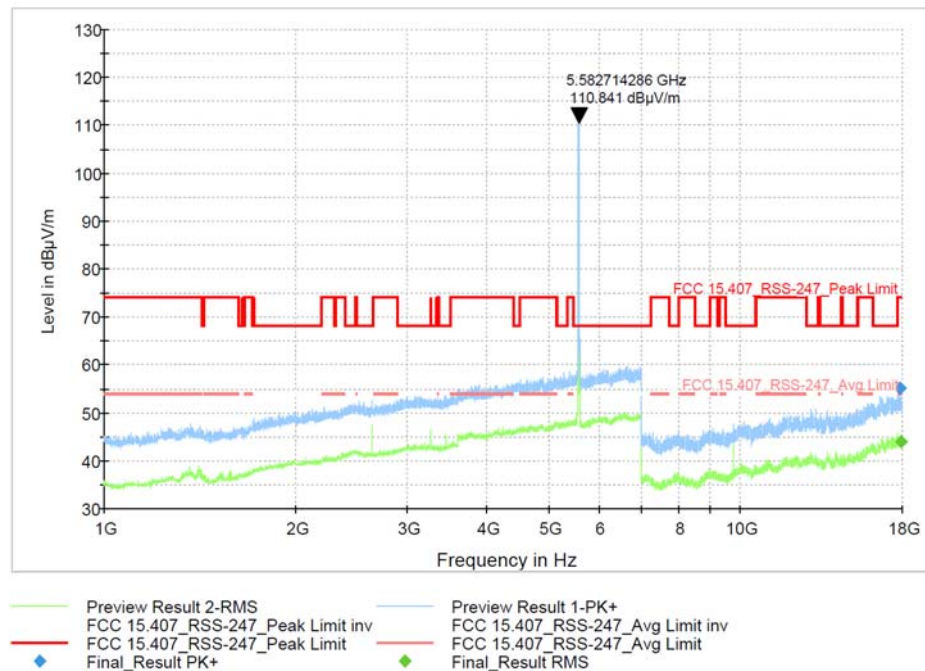


Figure 9-326 Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 116)

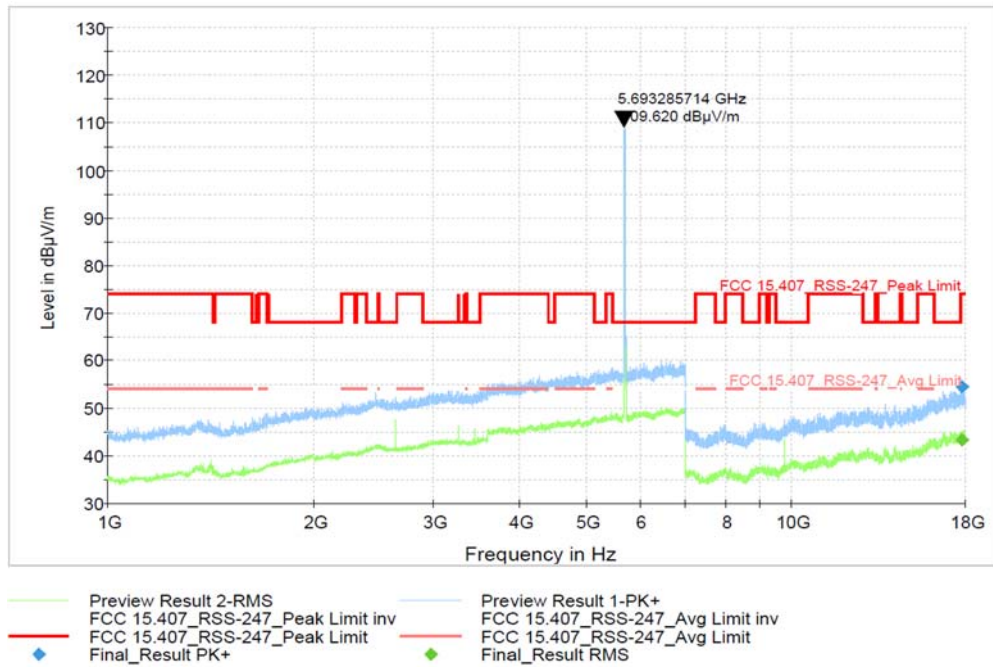


Figure 9-327. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 140)

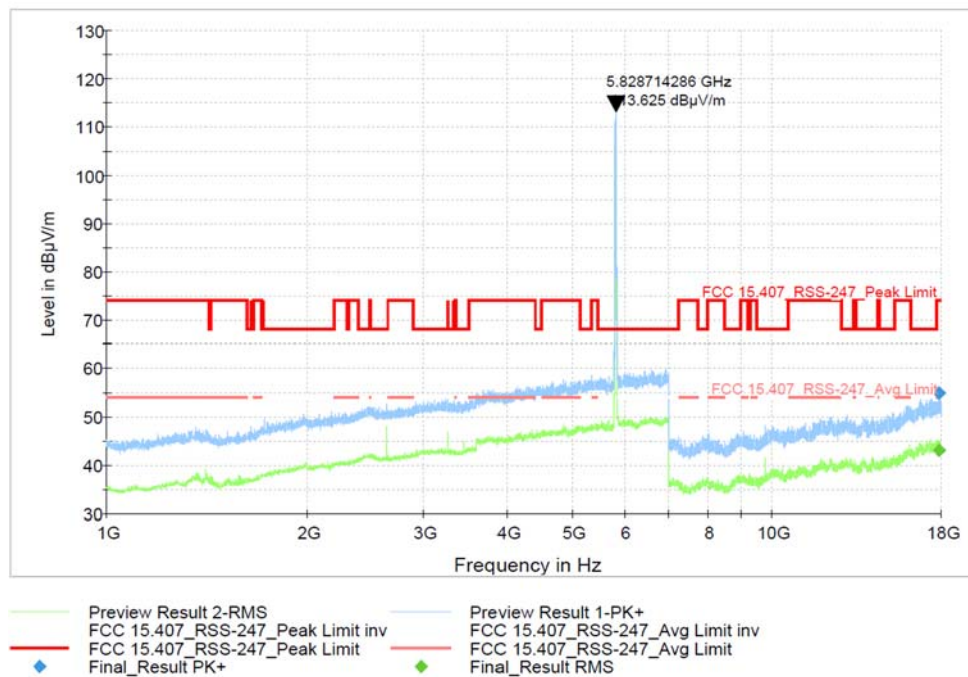


Figure 9-328. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 149)

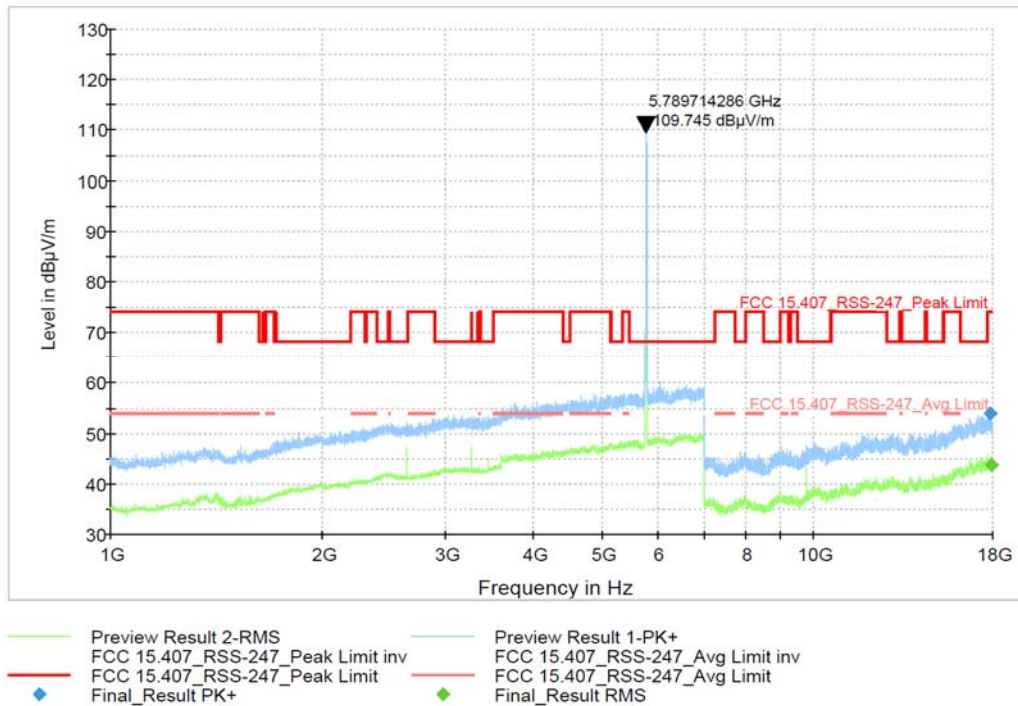


Figure 9-329. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 157)

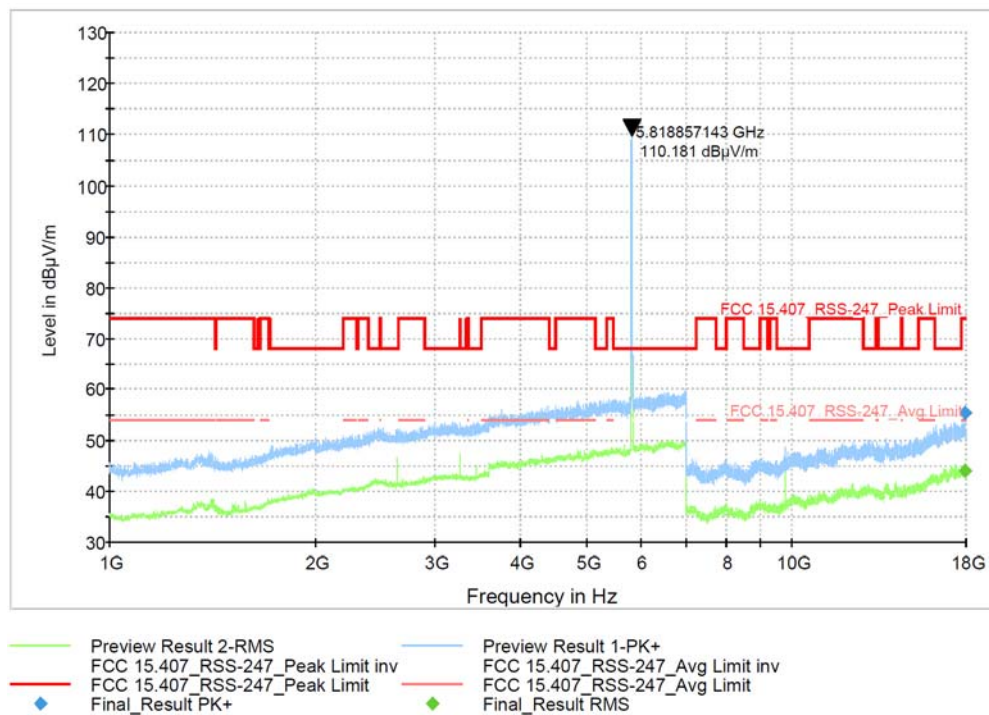


Figure 9-330. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 165)

9.6.5.5 Radiated Emissions in 1-18 GHz range 802.11n HT40

802.11n HT40 RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBμV)	Correction Factor (dB)	Corrected Peak Field Strength (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)
5190	17893.37	30.77	24.3	55.07	74	-18.93
5230	17937.29	31.29	24.4	55.69	74	-18.31
5270	17889.58	31.14	24.3	55.44	74	-18.56
5310	17794.75	31.63	23.3	54.93	74	-19.07
5510	17562.32	31.94	22.6	54.54	68.2	-13.66
5550	17918.46	30.48	24.3	54.78	74	-19.22
5670	17827.36	30.9	23.3	54.2	74	-19.8
5755	17892.73	31.26	24.3	55.56	74	-18.44
5795	17877.18	30.91	24.1	55.01	74	-18.99

802.11N HT40 RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBμV)	Correction Factor (incl DCF=0dB) (dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5190	17896.23	19.69	24.3	43.99	54	-10.01
5230	17937.29	19.41	24.4	43.81	54	-10.19
5270	17888.08	19.6	24.3	43.9	54	-10.10
5310	17802.30	20	23.3	43.3	54	-10.70
5510	17564.03	20.38	22.6	42.98	54	-11.02
5550	17899.78	19.71	24.3	44.01	54	-9.99
5670	17899.66	19.74	24.3	44.04	54	-9.96
5755	17795.33	19.89	23.3	43.19	54	-10.81
5795	17896.23	19.69	24.3	43.99	54	-10.01

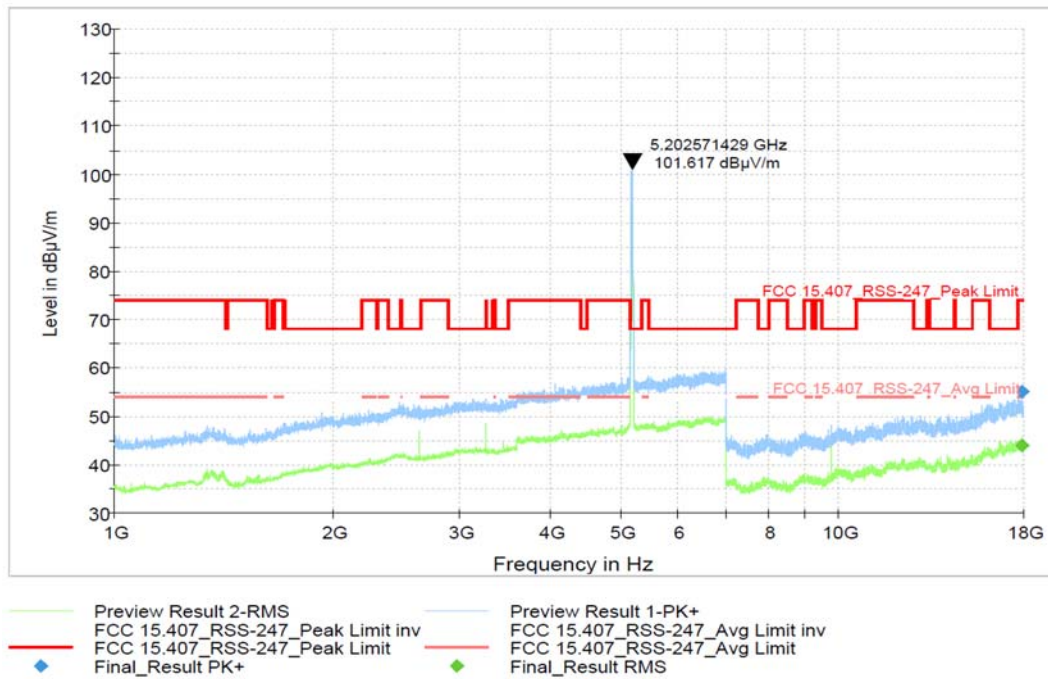


Figure 9-331. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 38)

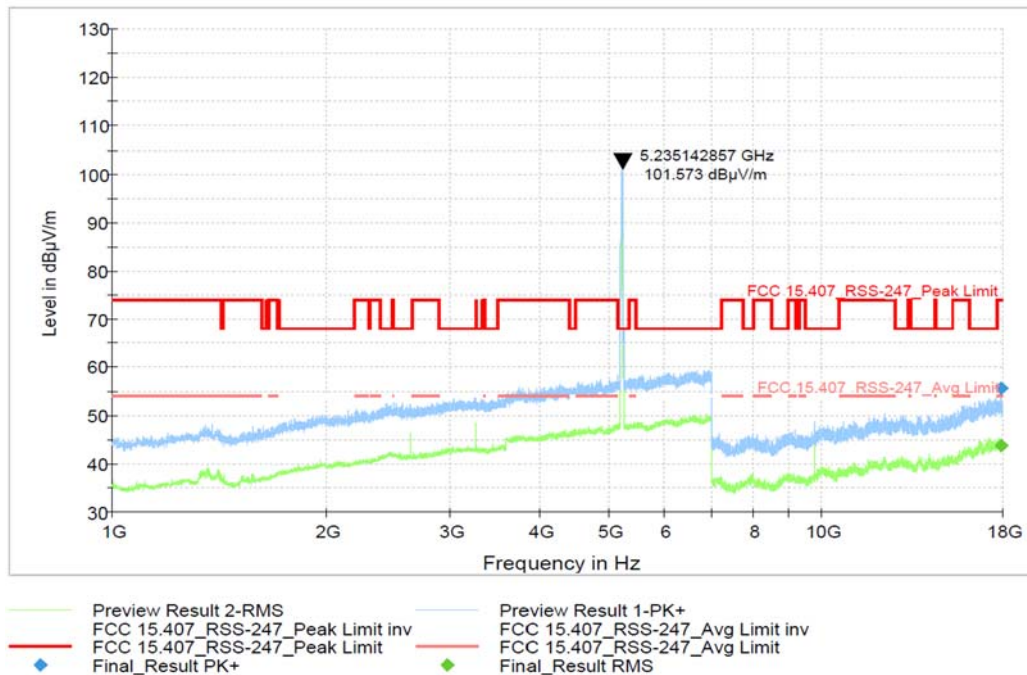


Figure 9-332. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 46)

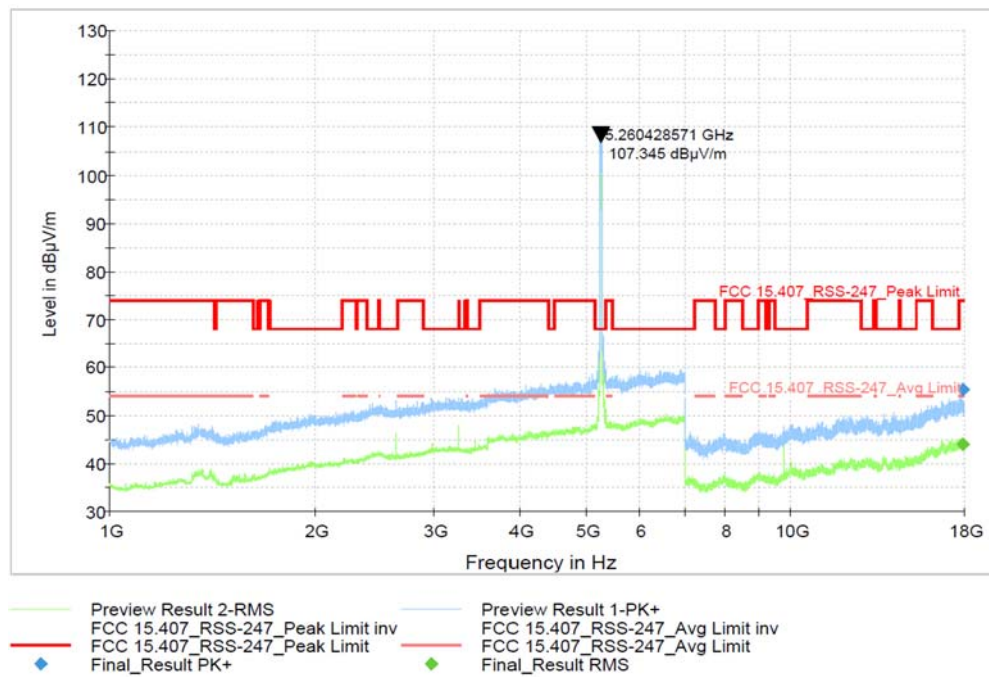


Figure 9-333. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 54)

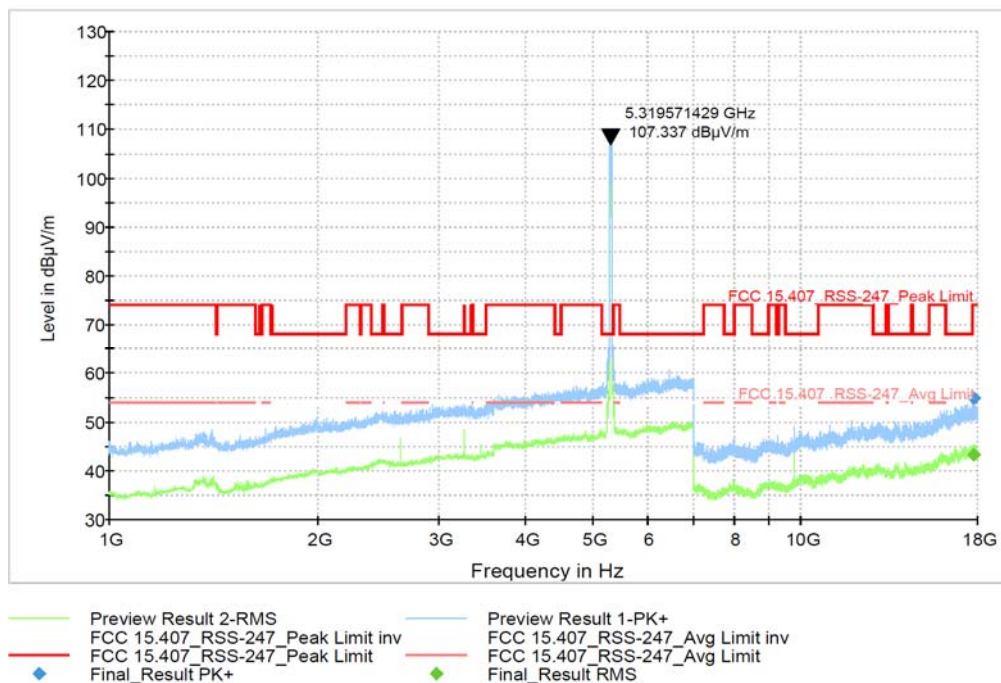


Figure 9-334. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 62)

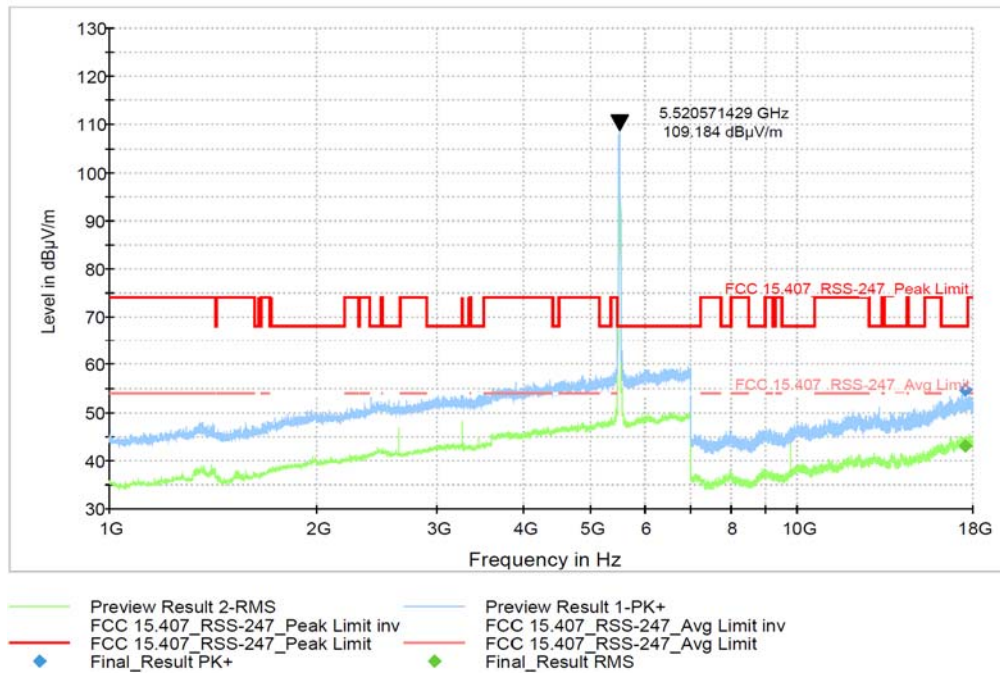


Figure 9-335. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 102)

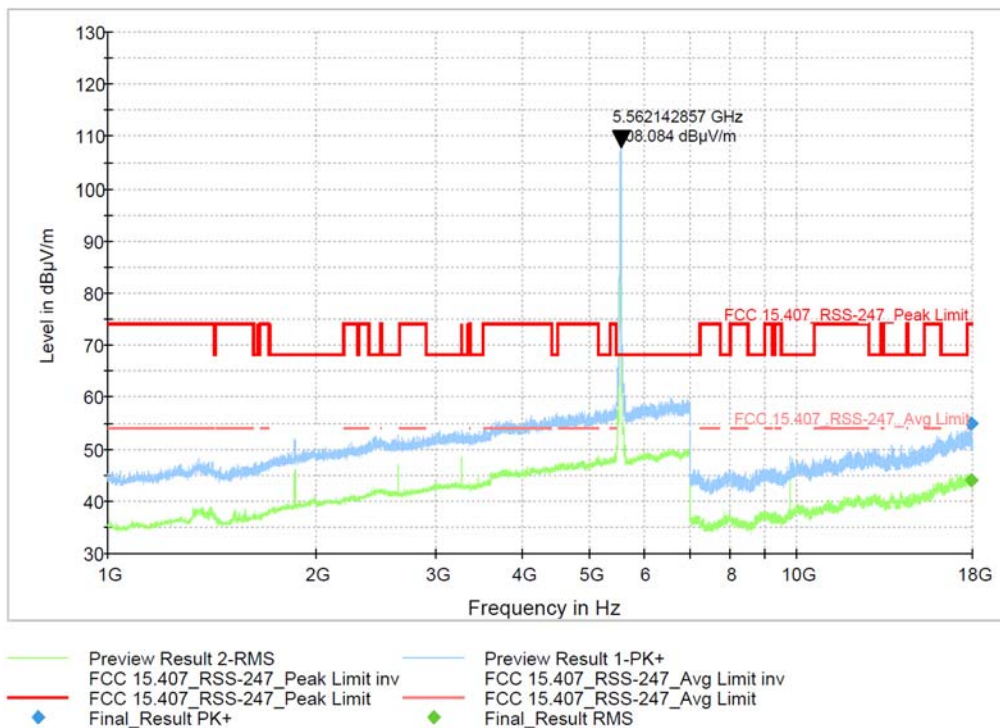


Figure 9-336. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 110)

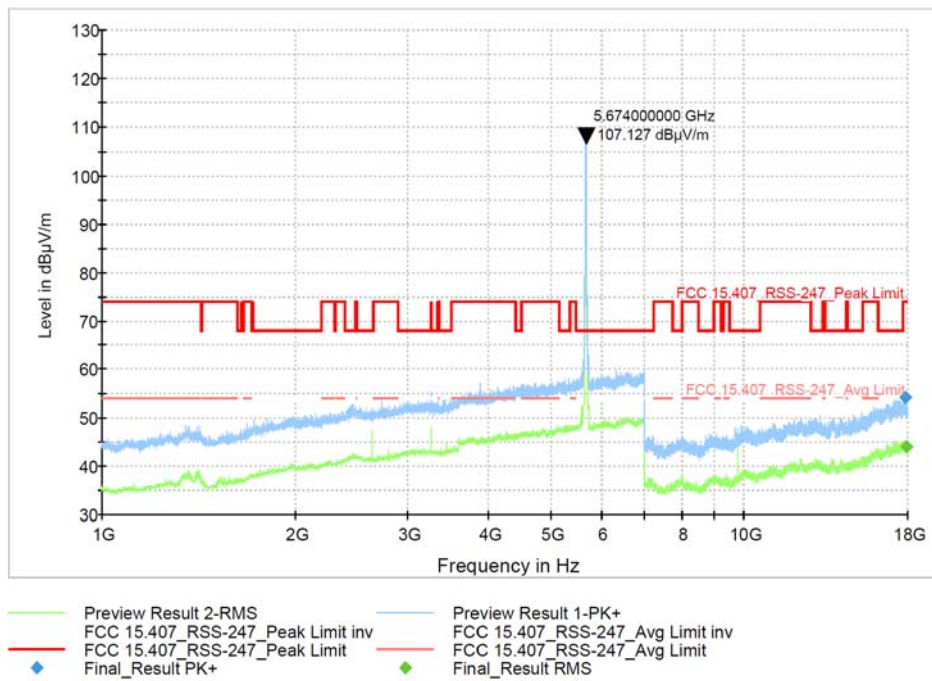


Figure 9-337. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 134)

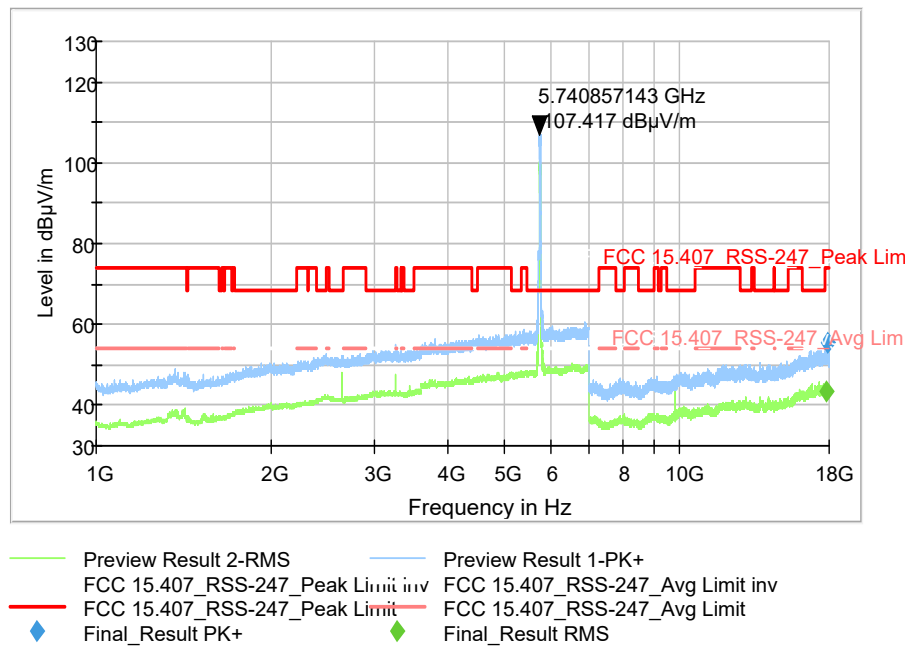


Figure 9-338. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 151)

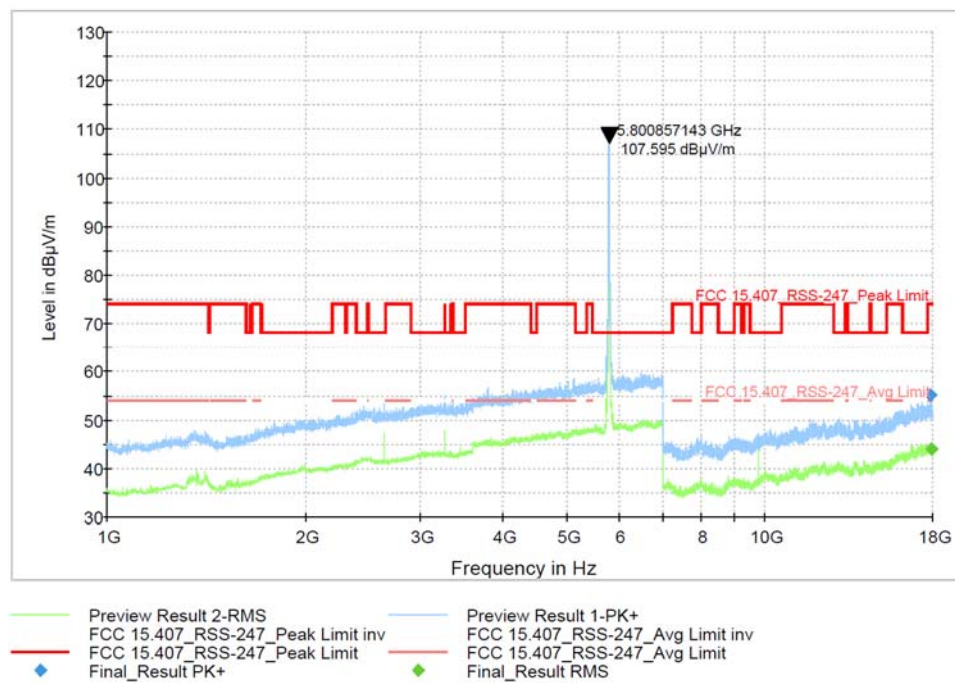


Figure 9-339. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 159)

9.6.5.6 Radiated Emissions in 1-18 GHz range 802.11ac VHT80

802.11ac VHT80 RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBμV)	Correction Factor (dB)	Corrected Peak Field Strength (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)
5210	17910.24	31.00	24.2	55.2	74	-18.8
5290	17805.03	31.43	23.3	54.73	74	-19.27
5530	17652.91	31.10	22.4	53.5	68.2	-14.7
5610	17901.33	30.88	24.3	55.18	74	-18.82
5775	17793.78	31.86	23.3	55.16	74	-18.84

802.11Ac VHT80ac RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBμV)	Correction Factor (incl DCF=0dB) (dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5210	17930.78	19.64	24.2	43.84	54	-10.16
5290	17899.87	19.74	24.3	44.04	54	-9.96
5530	17675.83	20.17	22.8	42.97	54	-11.03
5610	17901.33	19.73	24.3	44.03	54	-9.97
5775	17802.38	19.99	23.3	43.29	54	-10.71

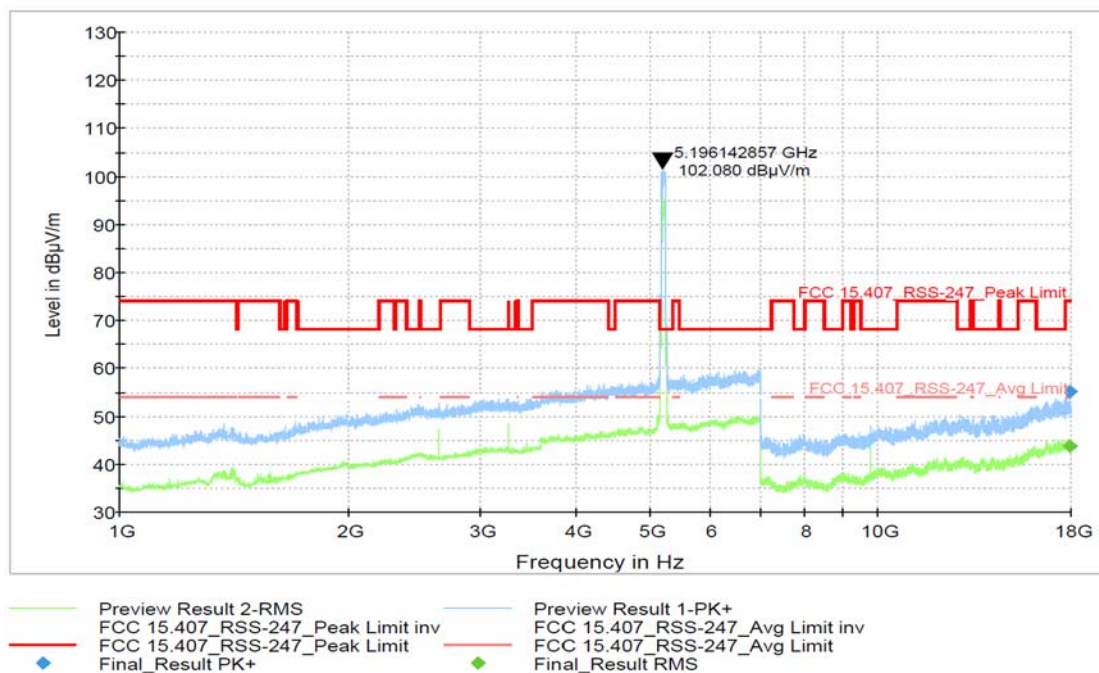


Figure 9-340. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 42)

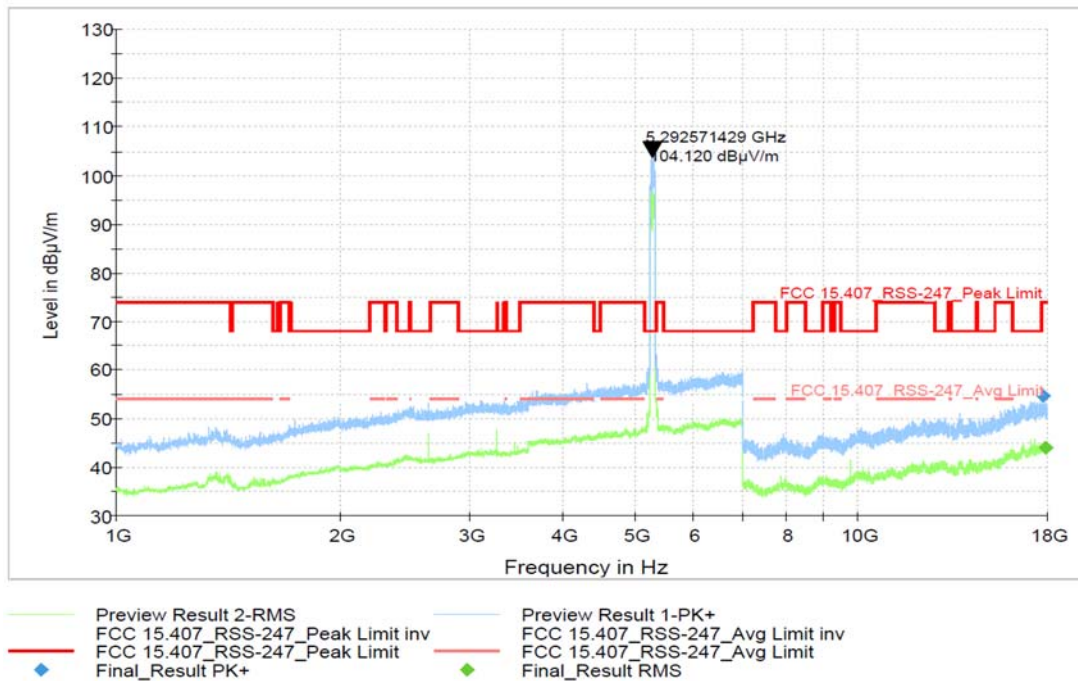


Figure 9-341. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 58)

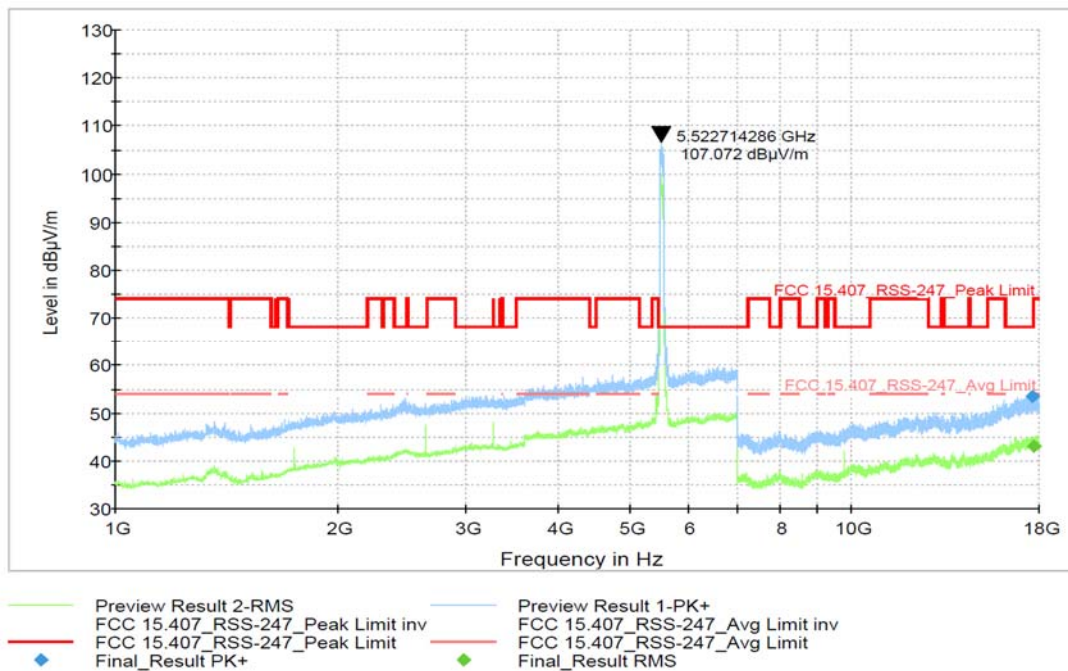


Figure 9-342. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 106)

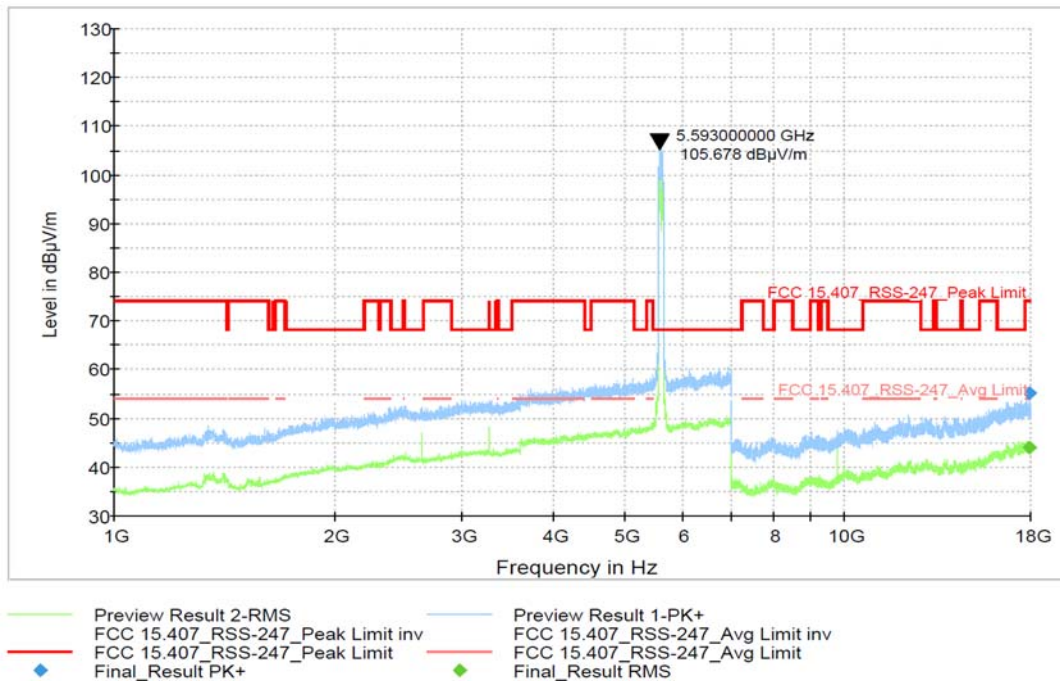


Figure 9-343. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 122)

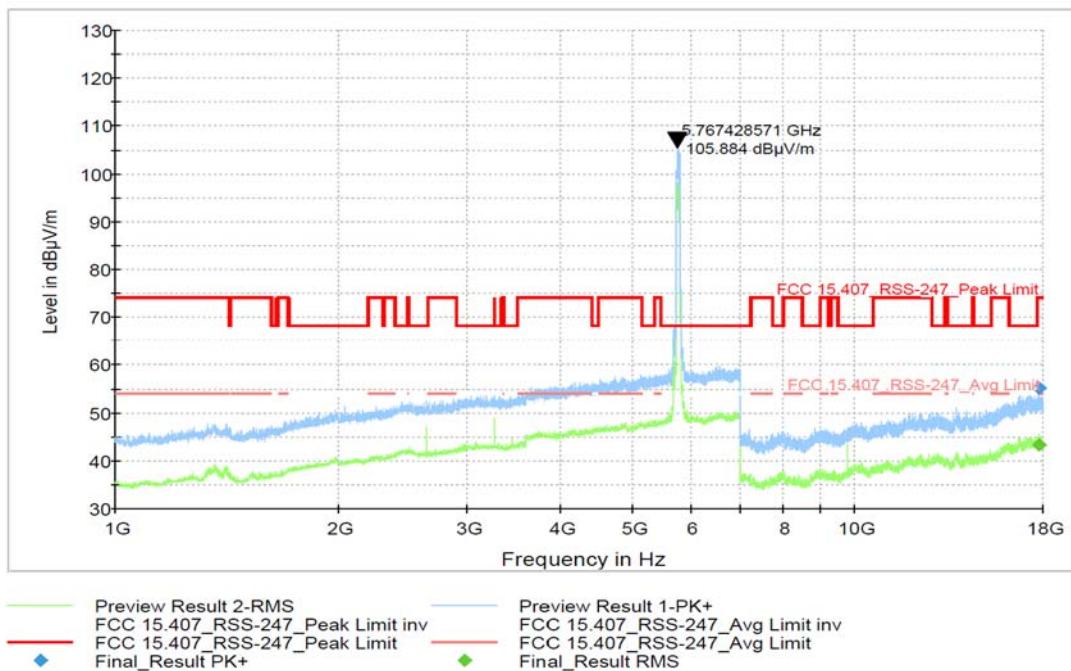


Figure 9-344. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 155)

9.6.5.7 Radiated Emissions in 1-18 GHz range 802.11ac VHT160

802.11ac VHT80 RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBμV)	Correction Factor (dB)	Corrected Peak Field Strength (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)
5250	5402.54	44.69	18.8	63.49	74	-10.51
5250	17895.40	31.28	24.3	55.58	74	-18.42
5570	5438.11	43.67	18.9	62.57	74	-11.43
5570	17923.31	30.67	24.3	54.97	74	-19.03

802.11ac VHT80 RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBμV)	Correction Factor (incl DCF=0dB) (dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5250	5403.74	31.77	18.8	50.57	54	-3.43
5250	17802.33	20.09	23.3	43.39	54	-10.61
5570	5463.91	30.06	19.0	49.06	54	-4.94
5570	17899.34	19.71	24.3	44.01	54	-9.99

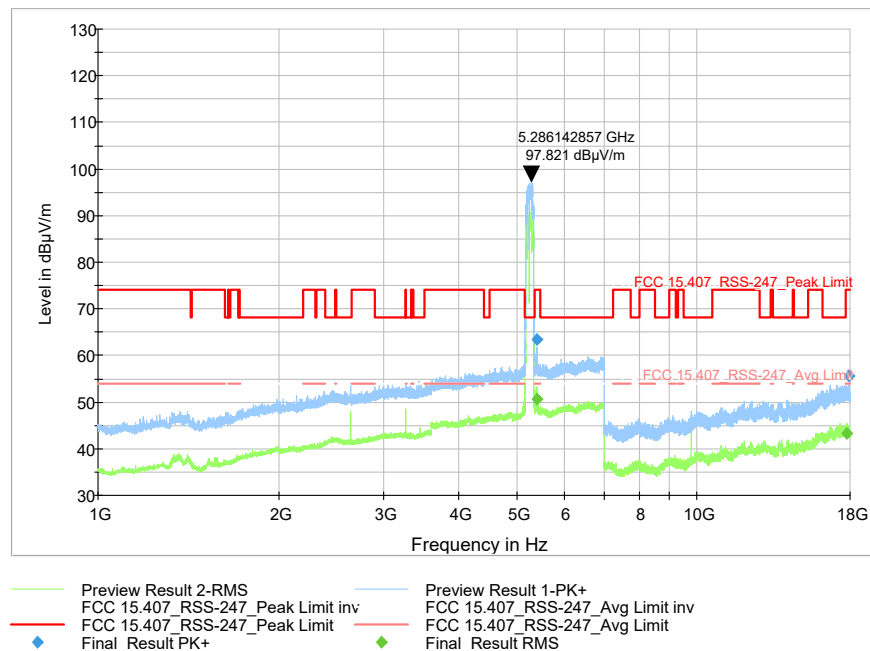


Figure 9-345. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT160 (Ch. 50)

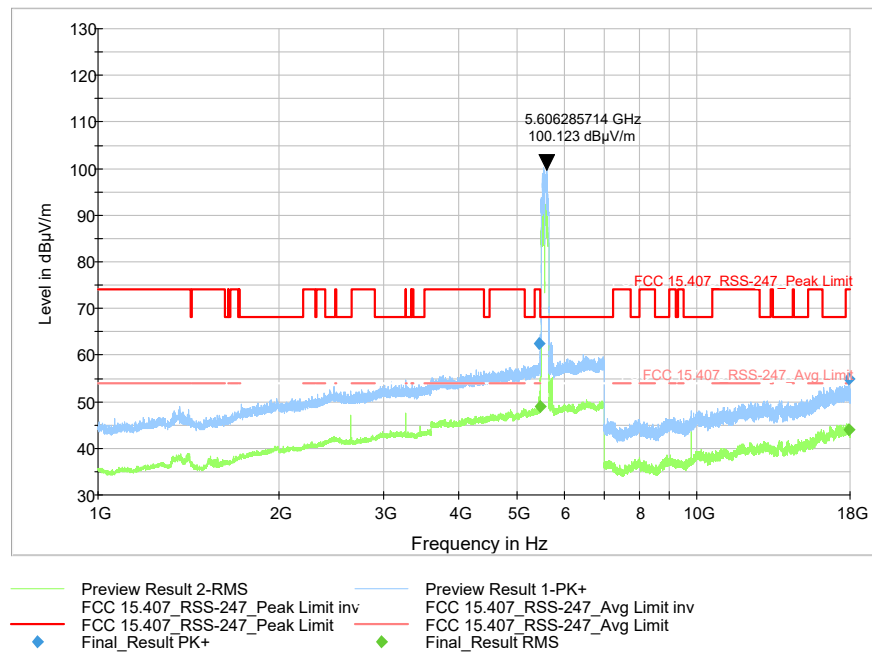


Figure 9-346. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT160 (Ch. 114)

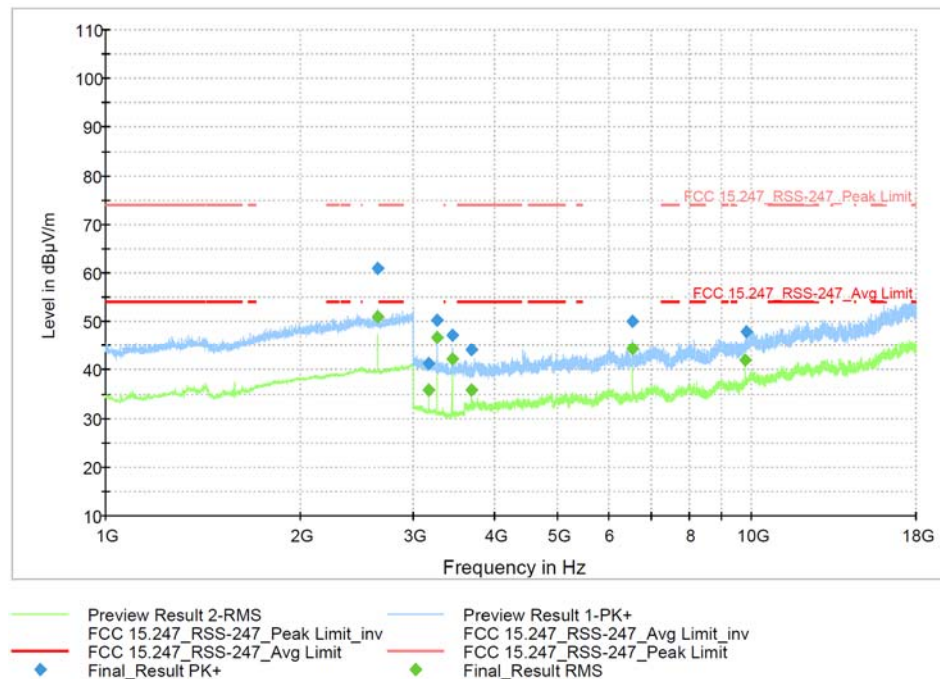


Figure 9-346. Ambient scan with all radios turned off

9.6.5.8 Emissions in 18-26.5 GHz range

All channels and modes were tested and worst-case results from 802.11a, Channel 36 is reported below. No significant emissions to report above noise floor.

RSE 18 – 26.5GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBμV)	Correction Factor (dB)	Corrected Peak Field Strength (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)
5180	22536.03	21.54	12.7	47.87	74	-26.13

RSE 18 – 26.5GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBμV)	Correction Factor (incl DCF=0dB) (dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5180	22584.9	23.63	12.7	36.33	54	-17.67

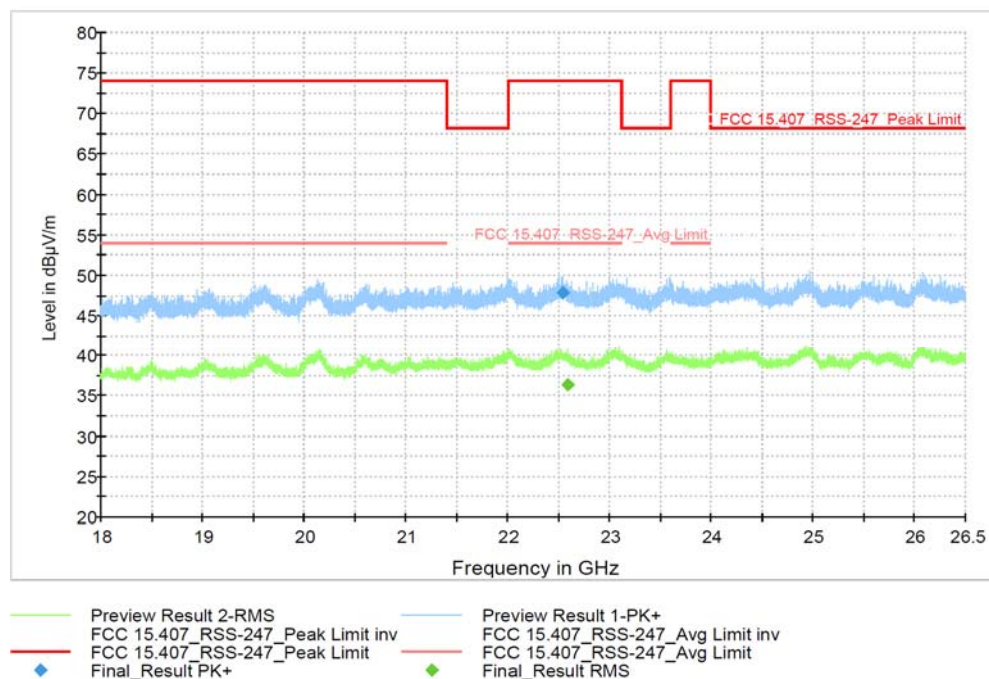


Figure 9-347. Radiated Spurious Emissions 18-26 GHz Tx A & B 802.11a HT20 (Ch. 36)

9.6.5.9 Emissions in 26.5-40 GHz range

All channels and modes were tested and worst-case results from 802.11a, Channel 36 is reported below. No significant emissions to report above noise floor.

RSE 26.5 – 40GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBμV)	Correction Factor (dB)	Corrected Peak Field Strength (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)
5180	39712	48.39	1.6	49.99	74	-24.01
RSE 26.5 – 40GHz Average Data						

Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBμV)	Correction Factor (incl DCF=0dB) (dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5180	39712	37.22	1.6	38.82	54	-15.18

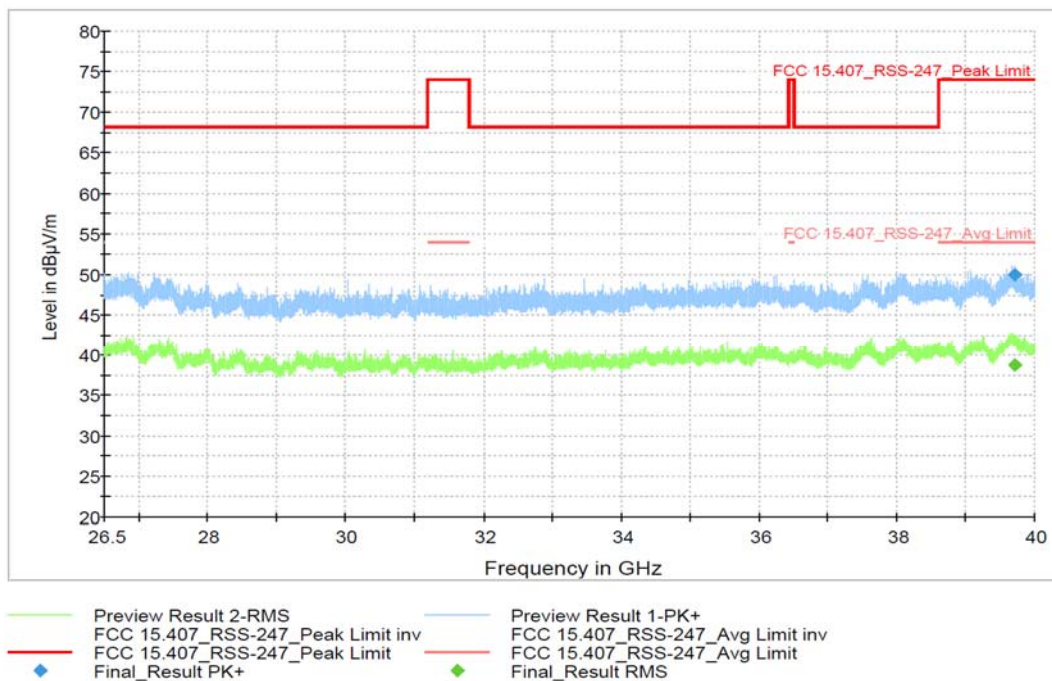
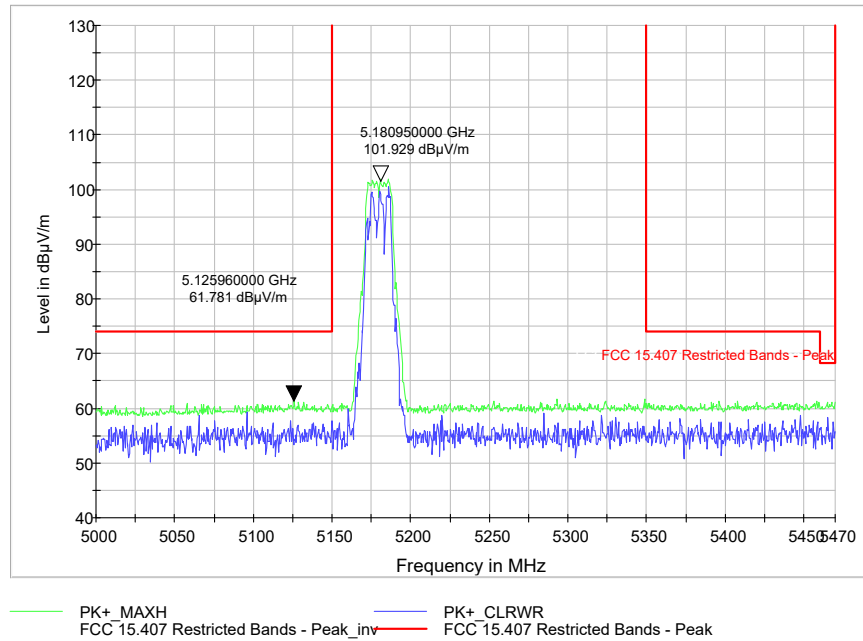
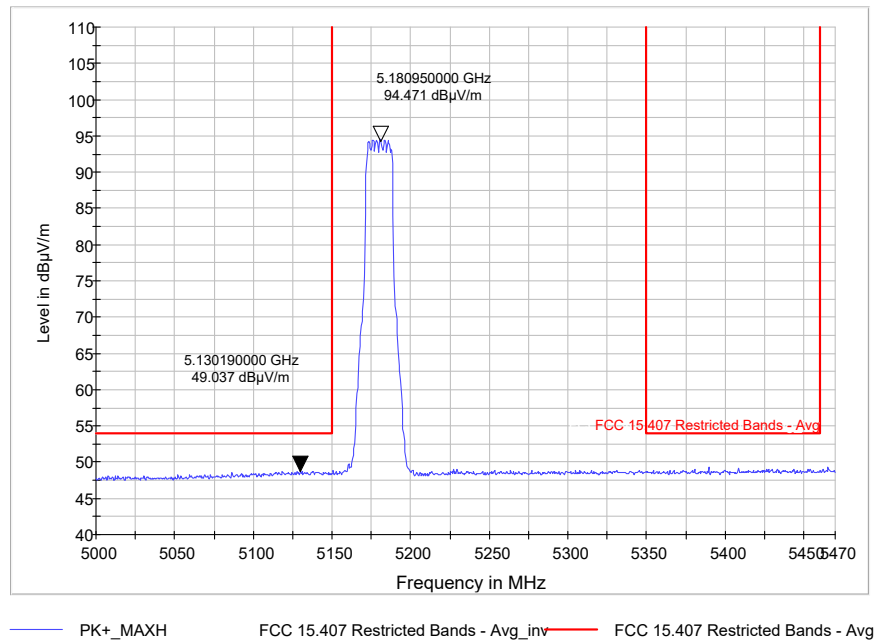


Figure 9-348. Radiated Spurious Emissions 26-40 GHz Tx A & B 802.11a HT20 (Ch. 36)

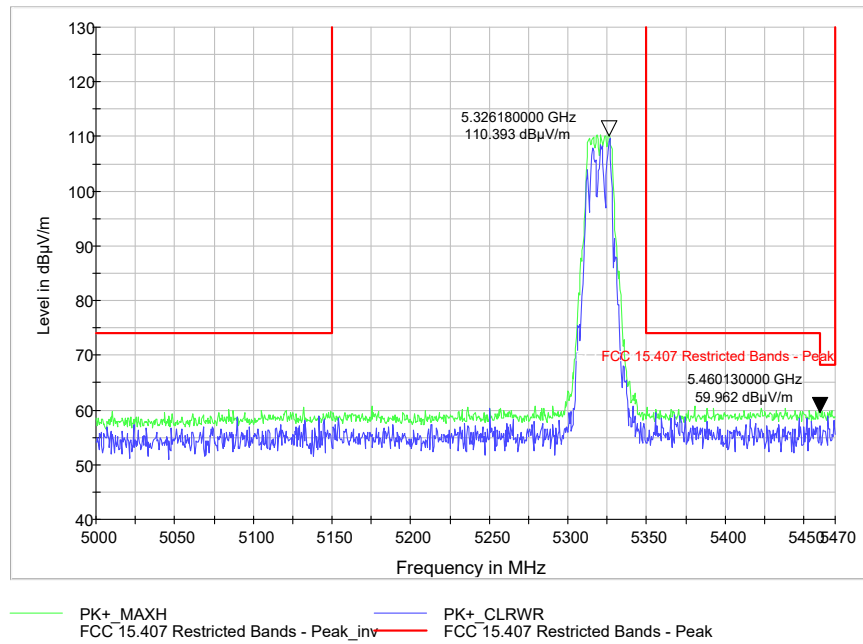
9.6.5.10 Radiated Band-edge emissions 802.11a - MIMO



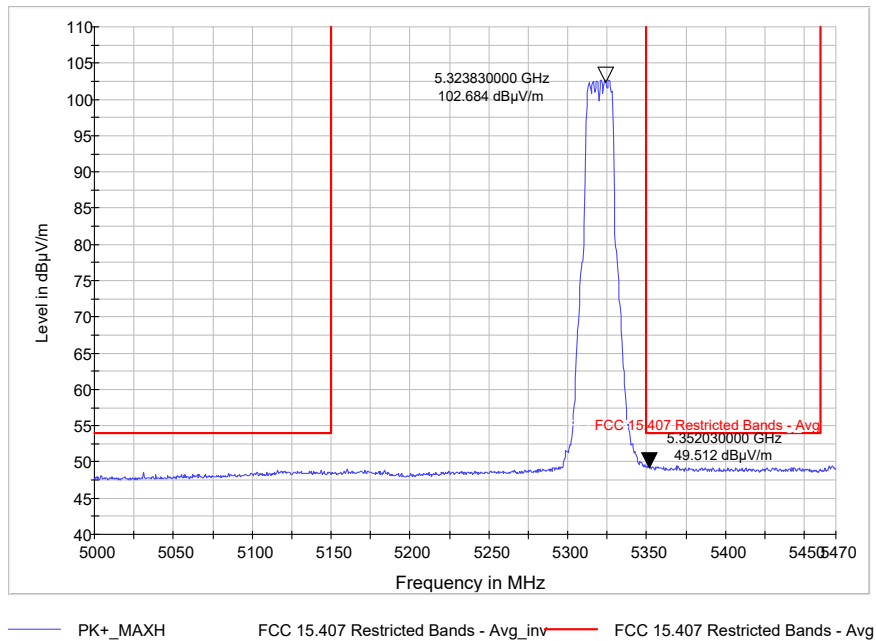
Plot 9-349. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 36)



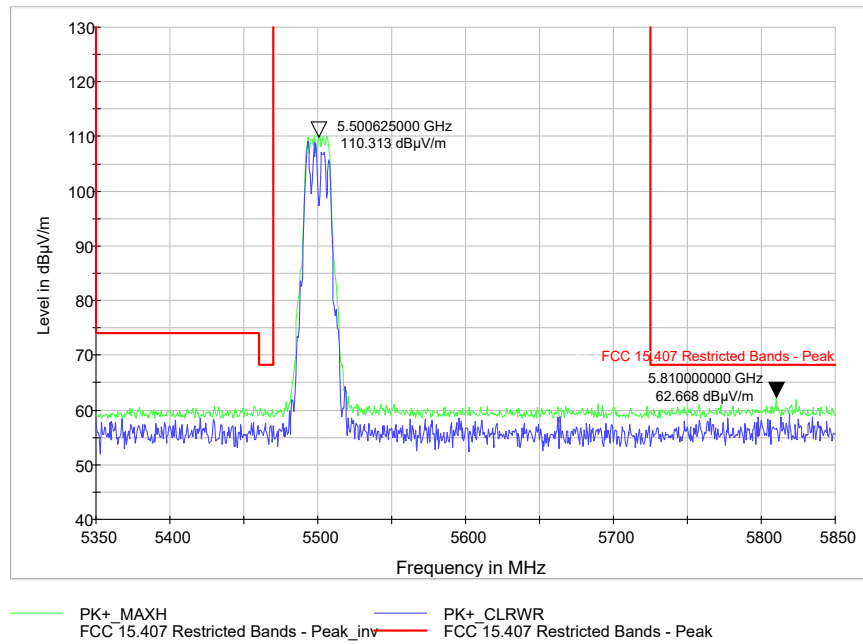
Plot 9-350. Average Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 36)



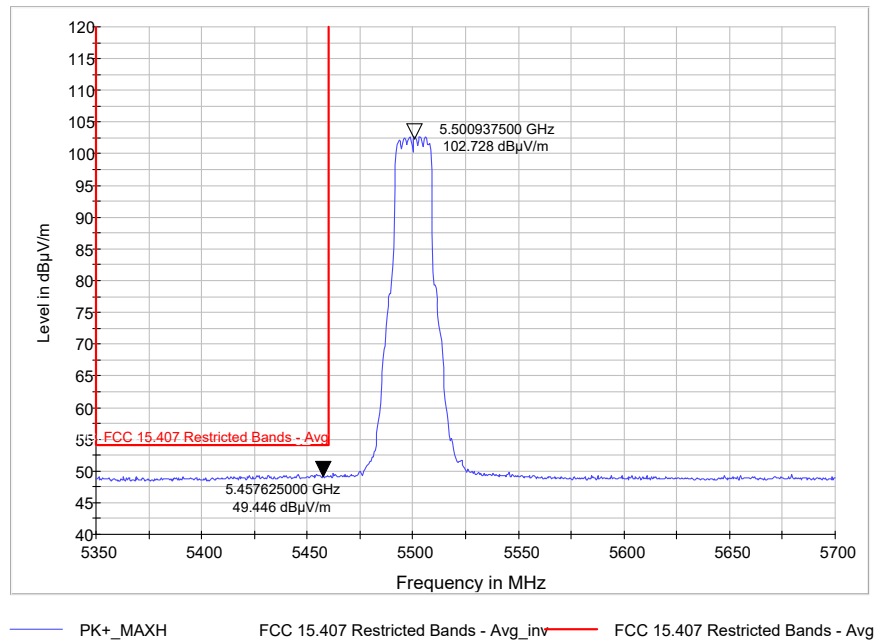
Plot 9-351. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 64)



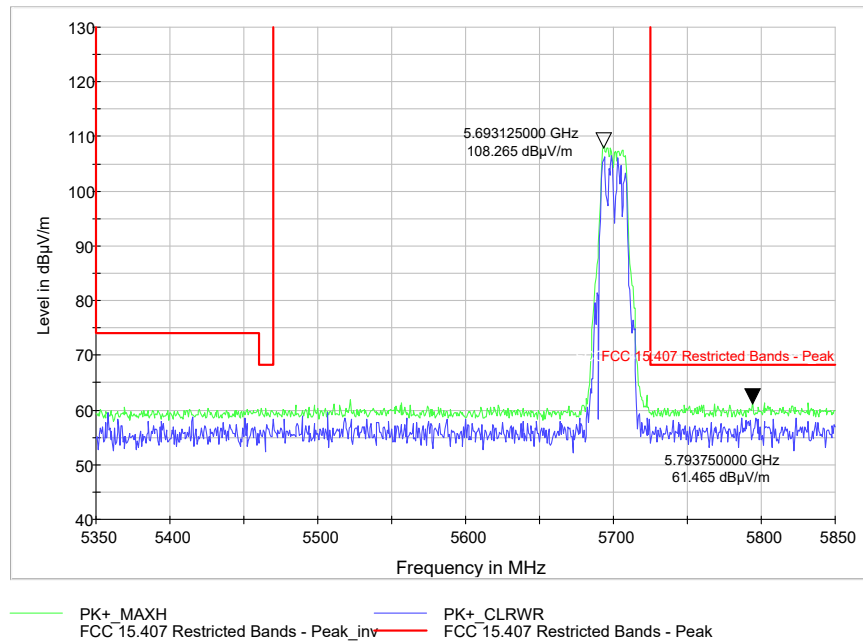
Plot 9-352. Average Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 64)



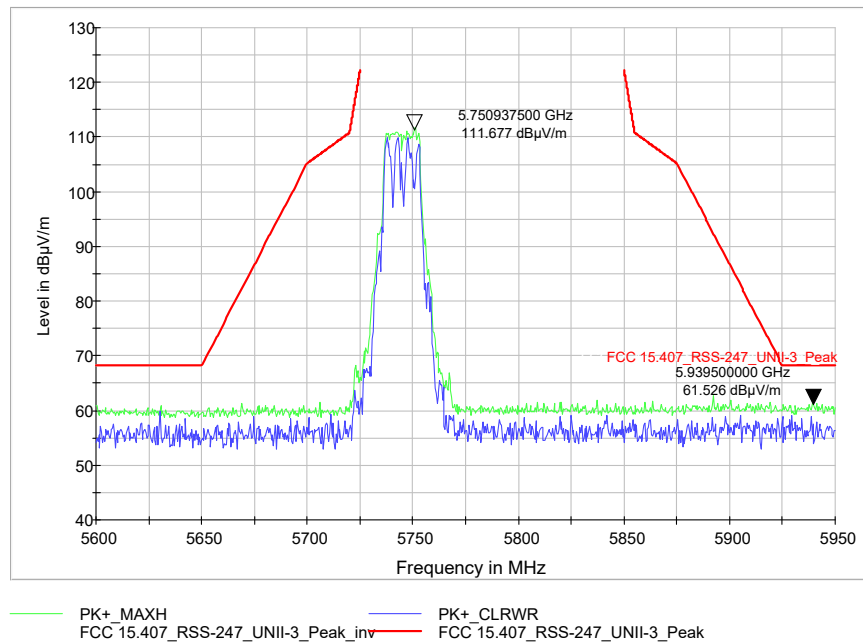
Plot 9-353. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 100)



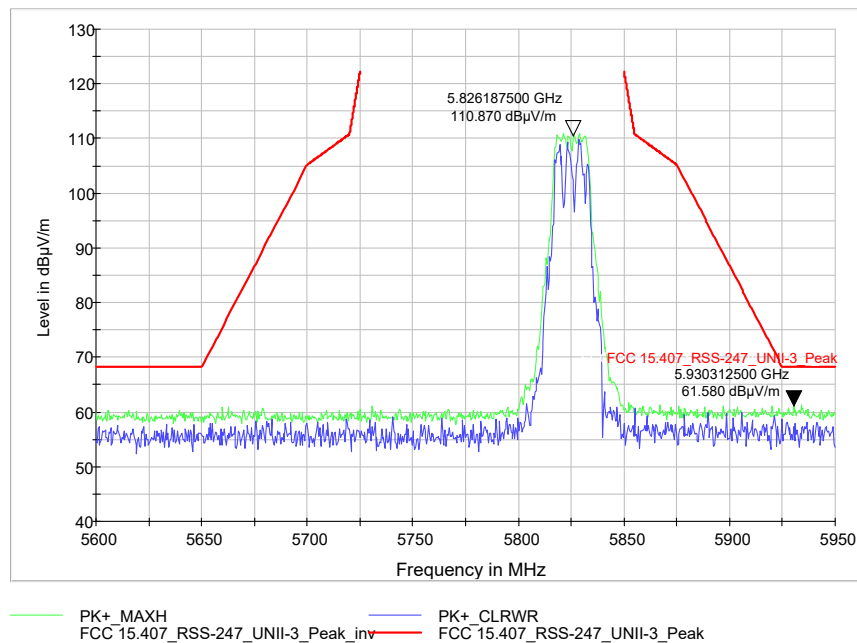
Plot 9-354. Average Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 100)



Plot 9-355 Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 140)

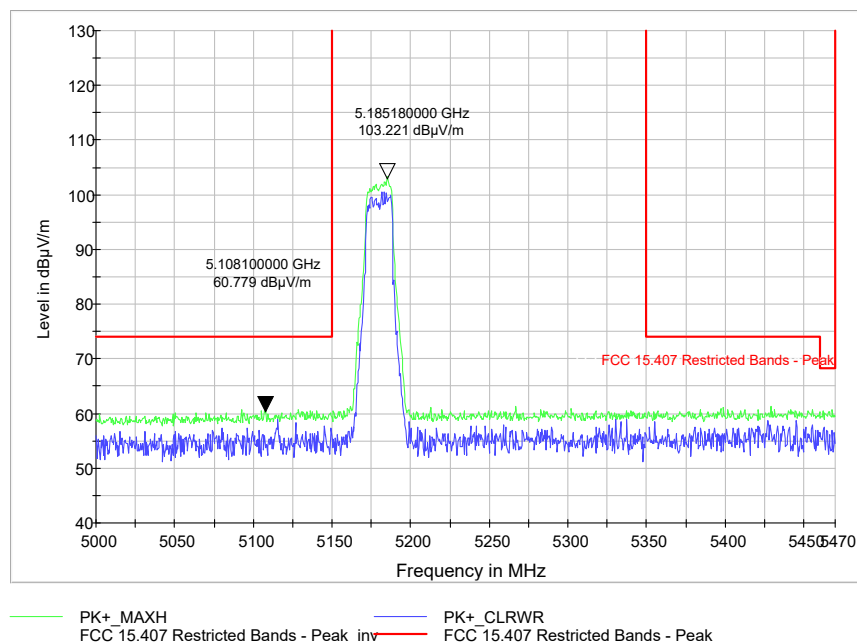


Plot 9-356. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 149)

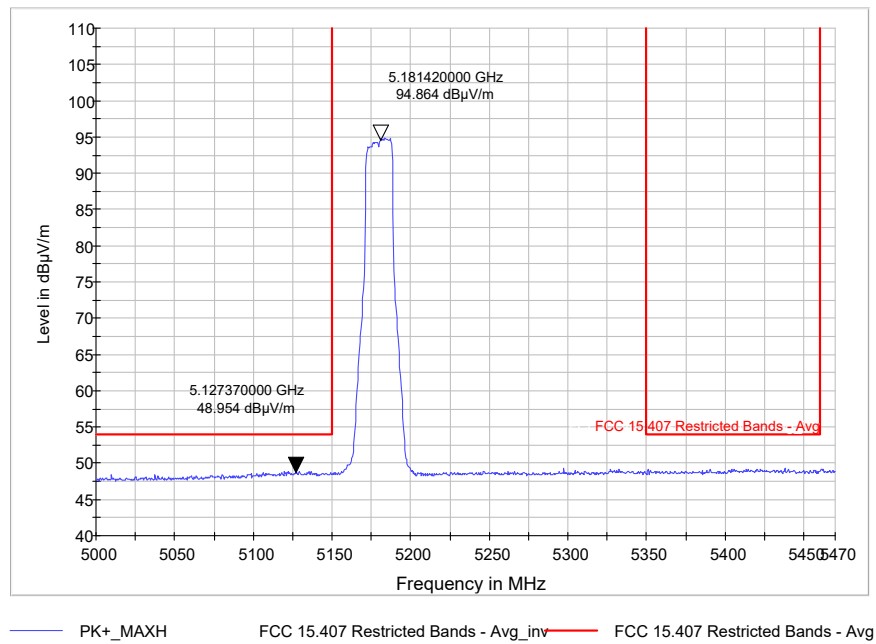


Plot 9-357. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 165)

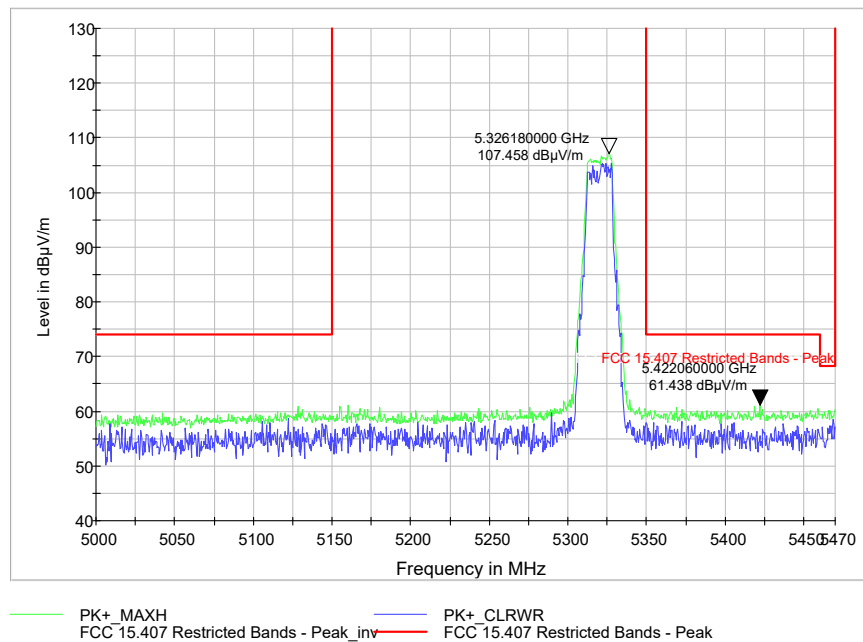
9.6.5.11 Radiated Band-edge emissions 802.11a – SISO Path A



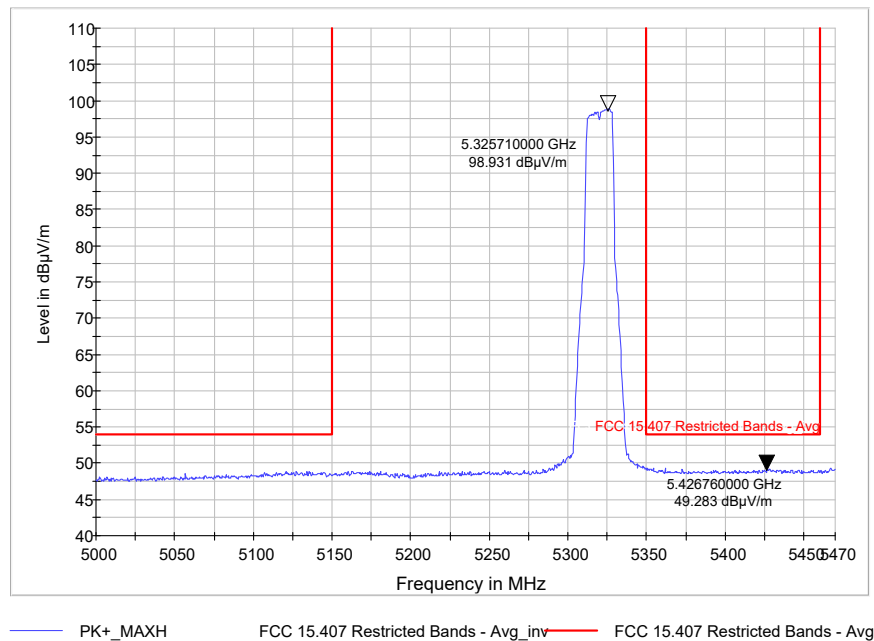
Plot 9-358. Peak Radiated Band Edge Emissions Tx Chain A 802.11a (Ch. 36)



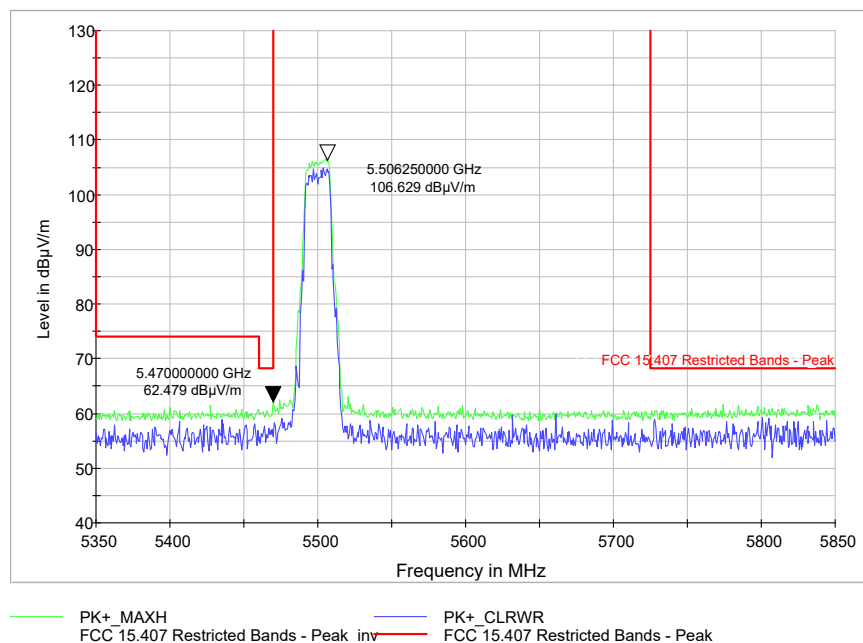
Plot 9-359. Average Radiated Band Edge Emissions Tx Chain A 802.11a (Ch. 36)



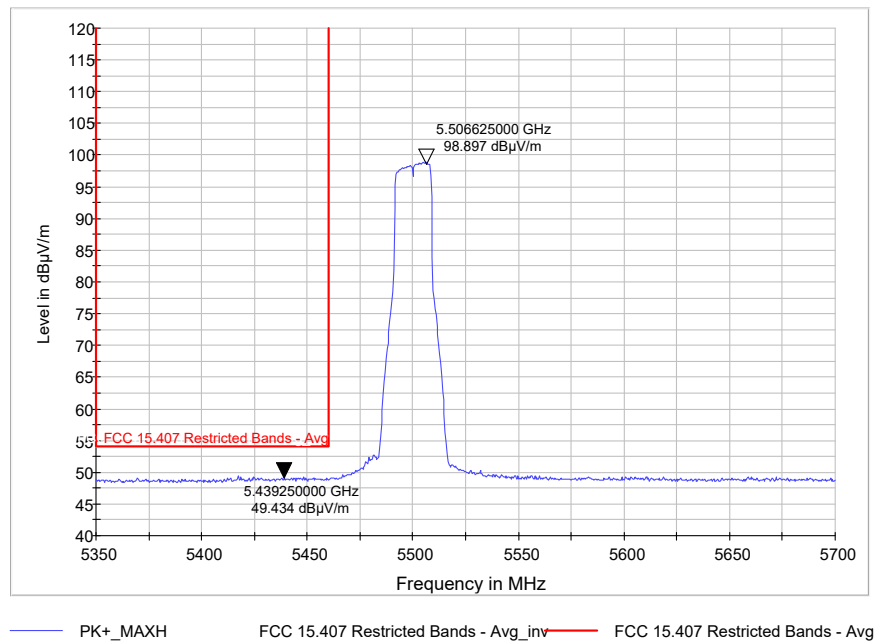
Plot 9-360. Peak Radiated Band Edge Emissions Tx Chain A 802.11a (Ch. 64)



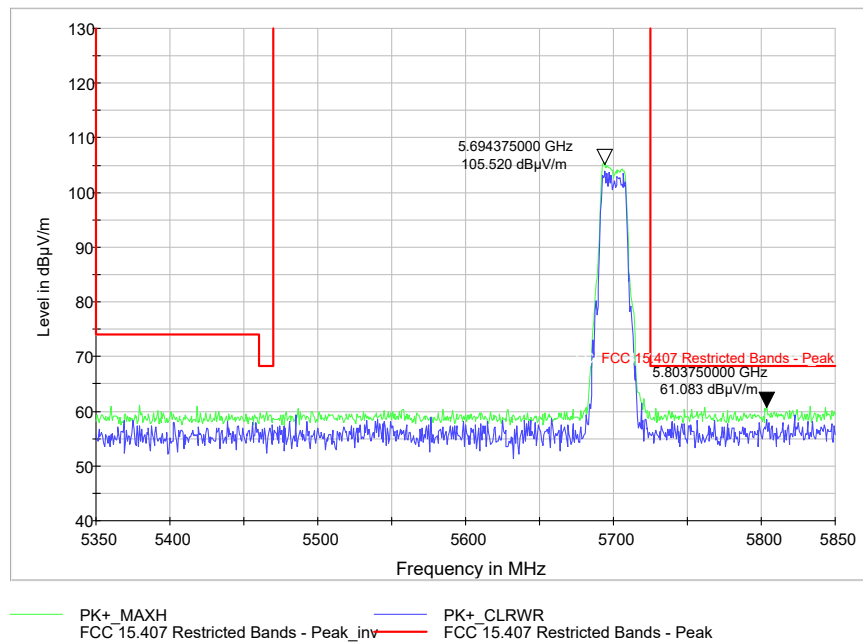
Plot 9-361. Average Radiated Band Edge Emissions Tx Chain A 802.11a (Ch. 64)



Plot 9-362. Peak Radiated Band Edge Emissions Tx Chain A 802.11a (Ch. 100)

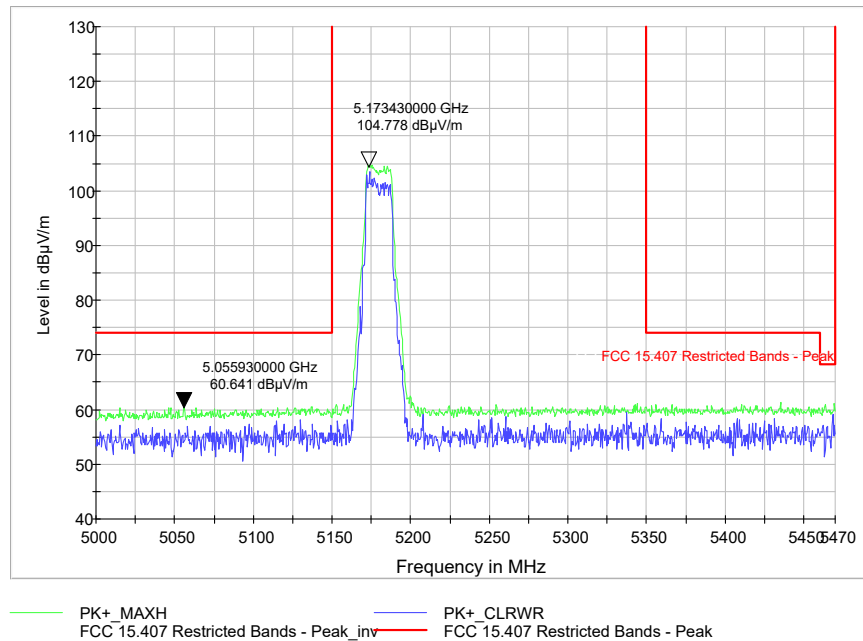


Plot 9-363. Average Radiated Band Edge Emissions Tx Chain A 802.11a (Ch. 100)

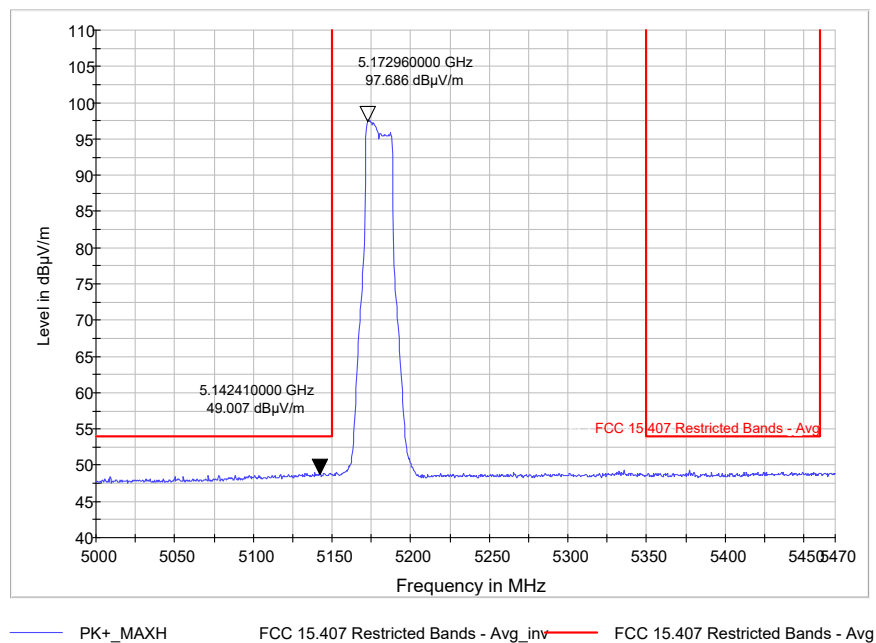


Plot 9-364. Peak Radiated Band Edge Emissions Tx Chain A 802.11a (Ch. 140)

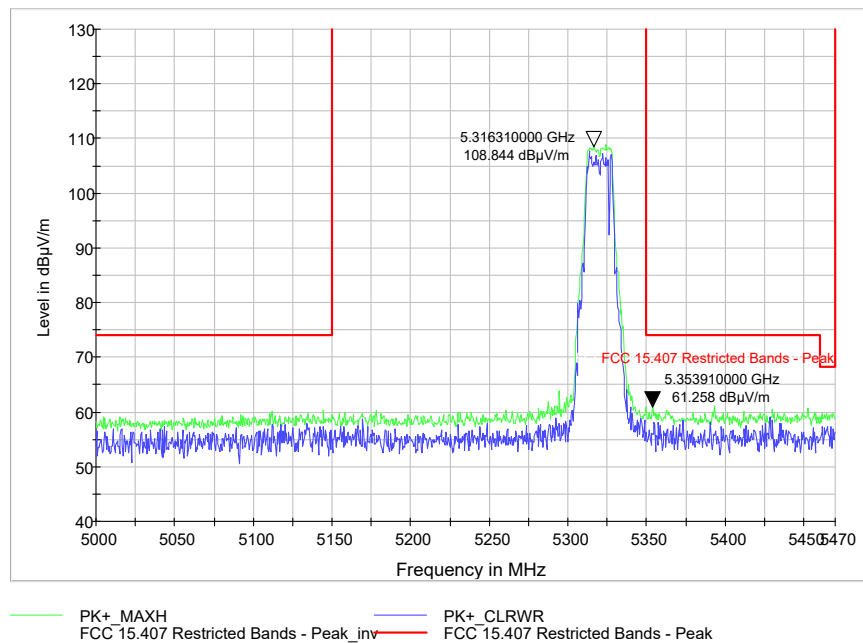
9.6.5.12 Radiated Band-edge emissions 802.11a – SISO Path B



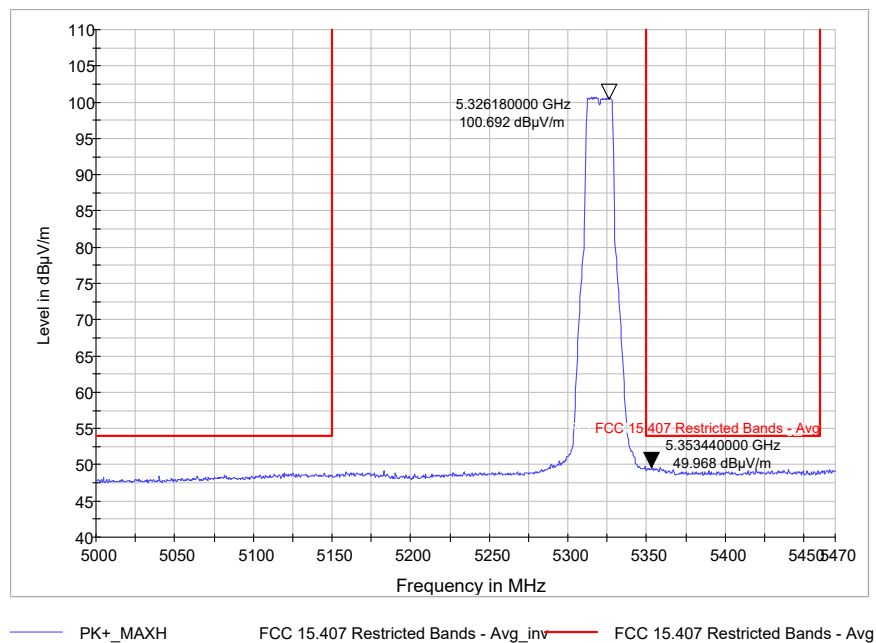
Plot 9-365. Peak Radiated Band Edge Emissions Tx Chain B 802.11a (Ch. 36)



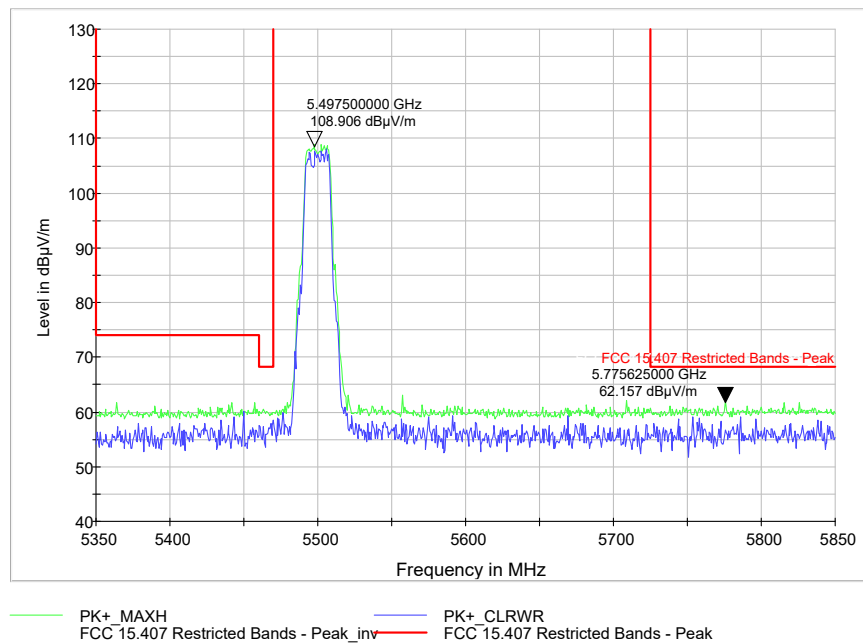
Plot 9-366. Average Radiated Band Edge Emissions Tx Chain B 802.11a (Ch. 36)



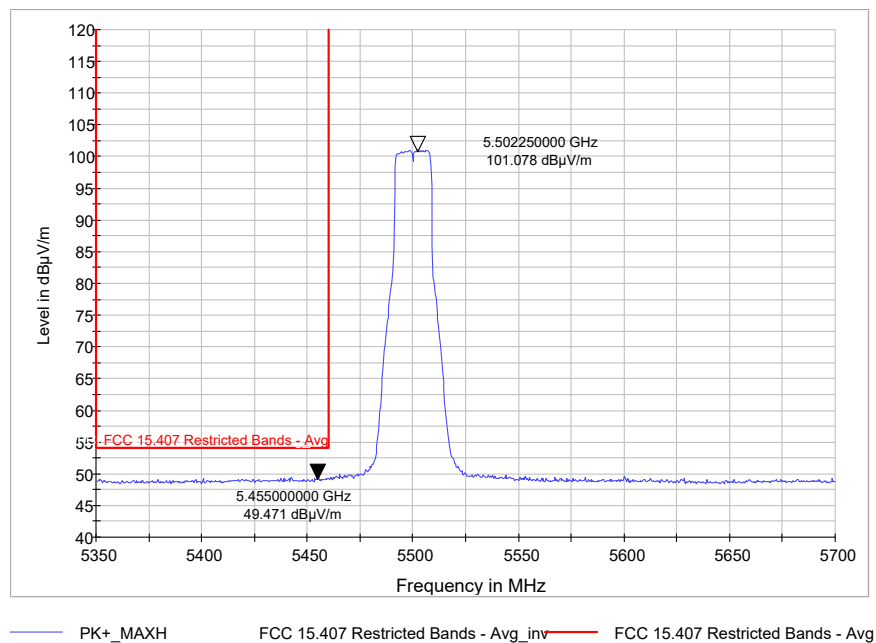
Plot 9-367. Peak Radiated Band Edge Emissions Tx Chain B 802.11a (Ch. 64)



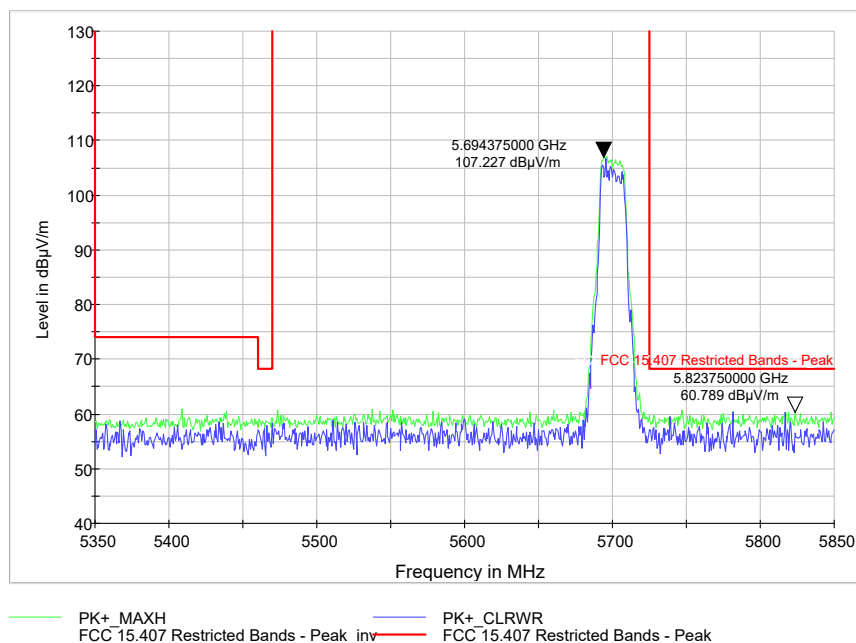
Plot 9-368. Average Radiated Band Edge Emissions Tx Chain B 802.11a (Ch. 64)



Plot 9-369. Peak Radiated Band Edge Emissions Tx Chain B 802.11a (Ch. 100)



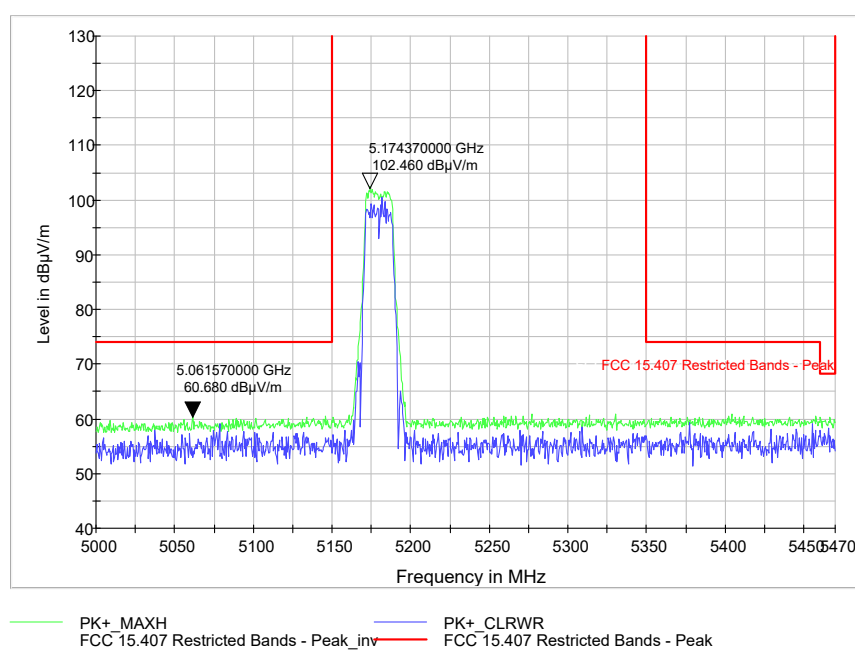
Plot 9-370. Average Radiated Band Edge Emissions Tx Chain B 802.11a (Ch. 100)



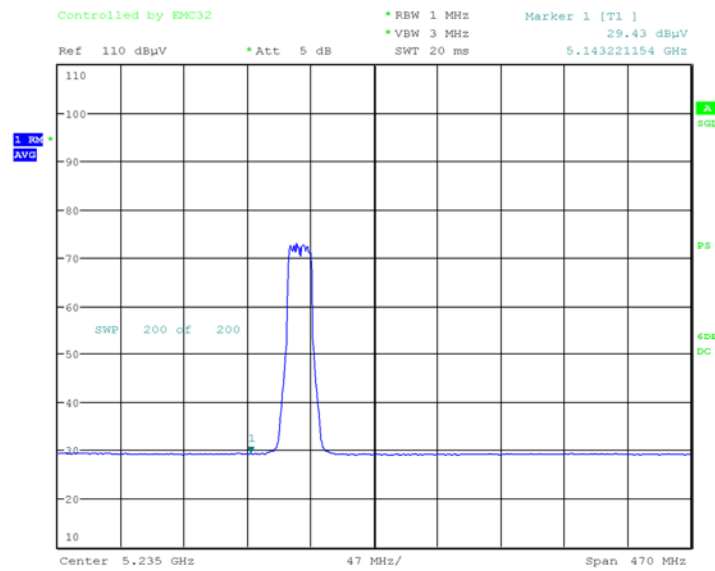
Plot 9-371. Peak Radiated Band Edge Emissions Tx Chain B 802.11a (Ch. 140)

9.6.5.13 Radiated Band-edge emissions 802.11n HT20 - MIMO

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5180	5143.22	29.43	18.6	0.25	48.28	54	-5.72
5320	5352.25	30.02	18.7	0.25	48.97	54	-5.03
5500	5459.43	29.74	18.9	0.25	48.49	54	-5.11

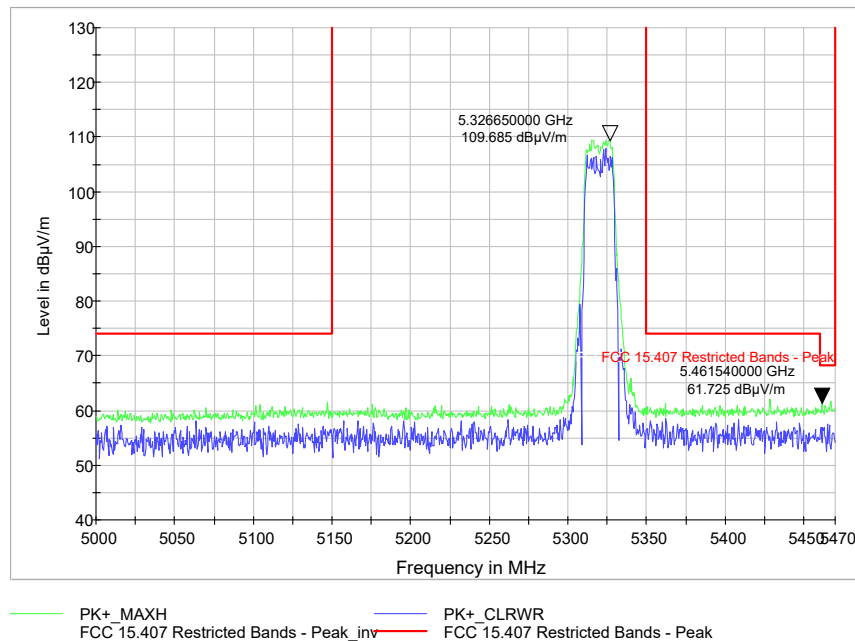


Plot 9-372. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 36)

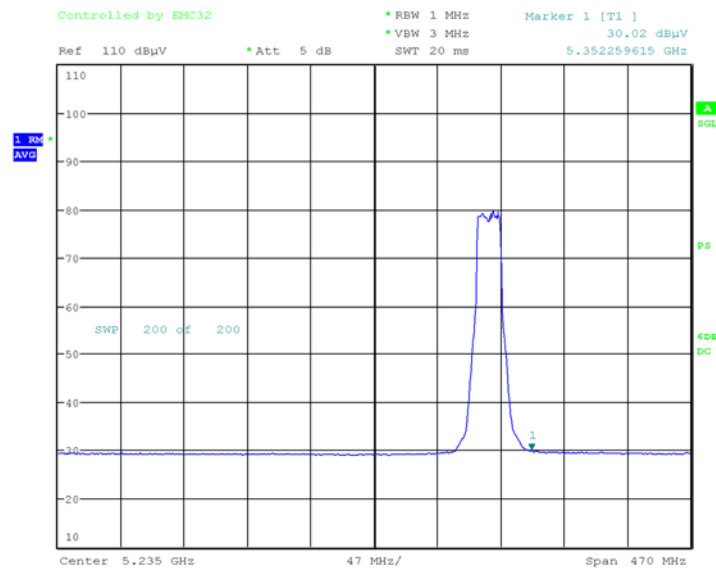


Date: 20.FEB.2019 01:49:02

Plot 9-373. Average Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 36)

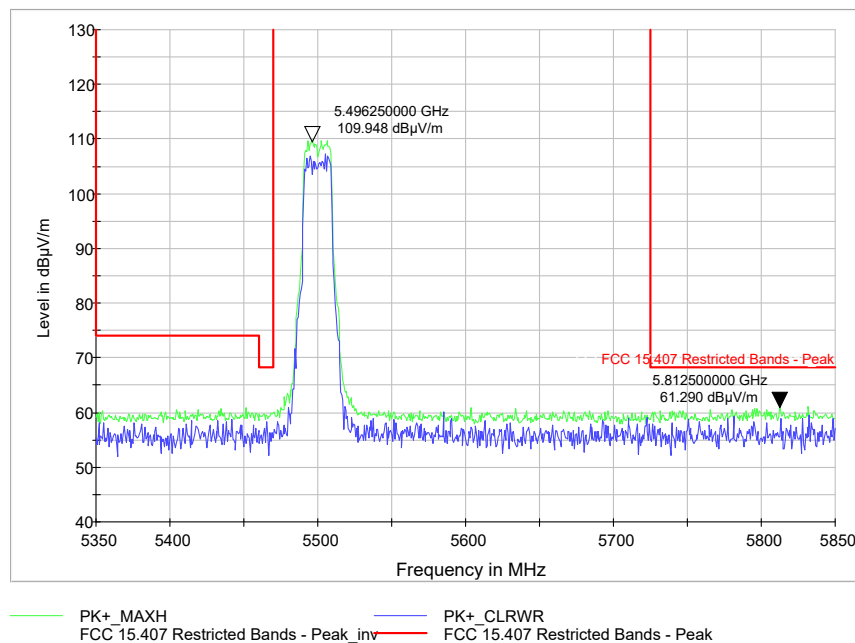


Plot 9-374. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 64)

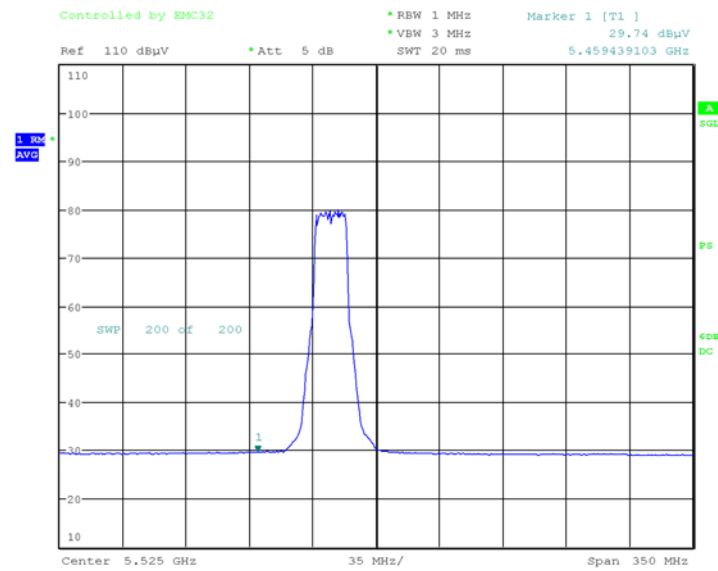


Date: 20.FEB.2019 01:22:48

Plot 9-375. Average Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 64)

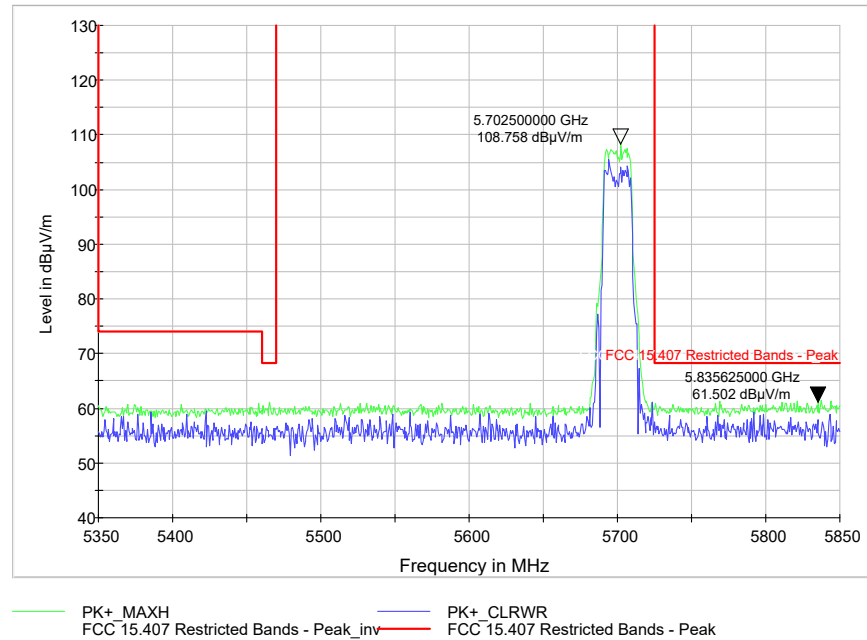


Plot 9-376. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 100)

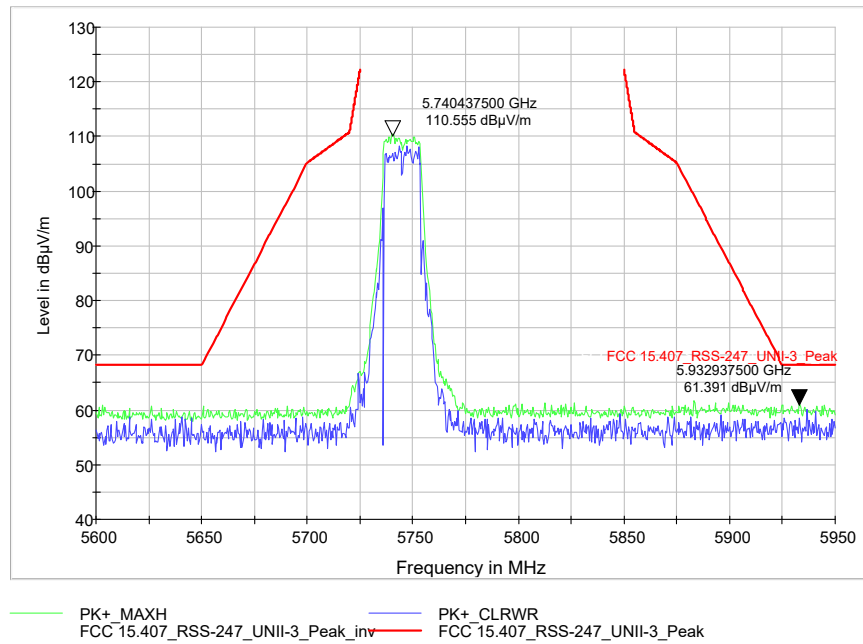


Date: 20.FEB.2019 01:08:05

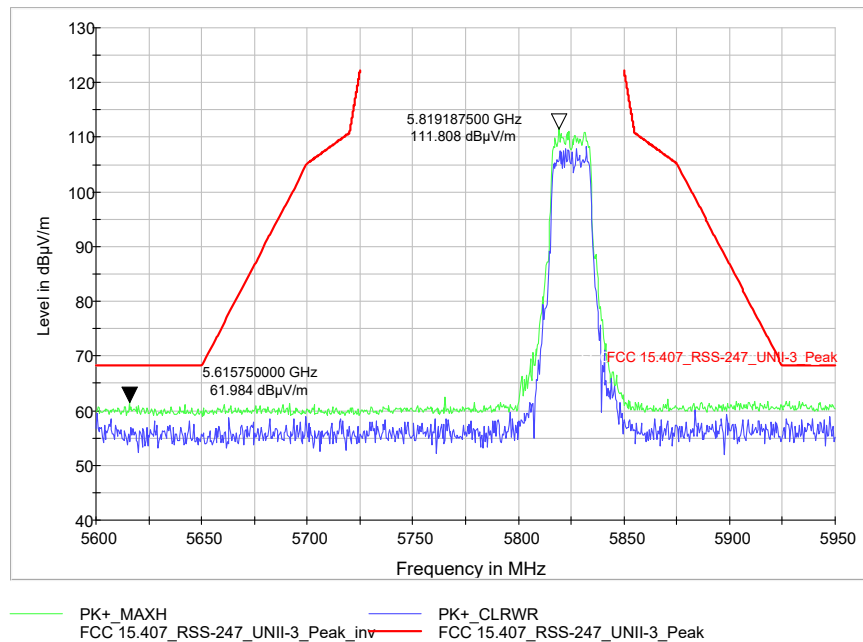
Plot 9-377. Average Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 100)



Plot 9-378. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 140)



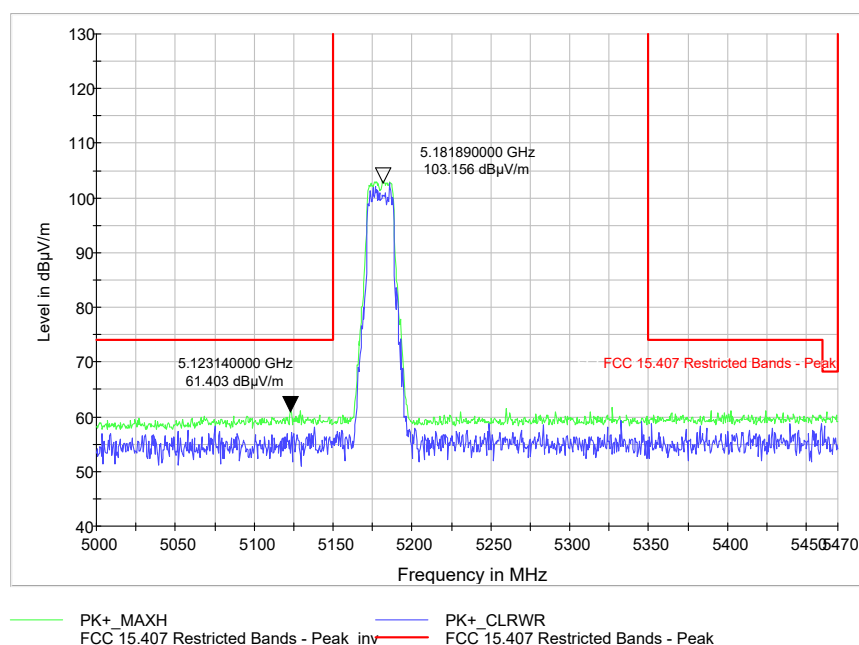
Plot 9-379. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 149)



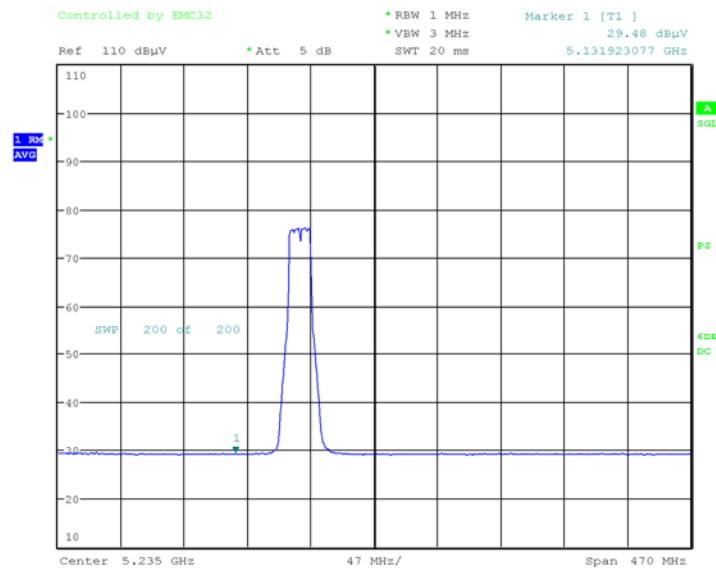
Plot 9-380. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 165)

9.6.5.14 Radiated Band-edge emissions 802.11n HT20 – SISO Path A

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5180	5131.92	29.48	18.6	0.11	48.19	54	-5.81
5320	5350.01	29.94	18.7	0.11	48.75	54	-5.25
5500	5452.7	29.61	18.9	0.11	48.62	54	-5.38

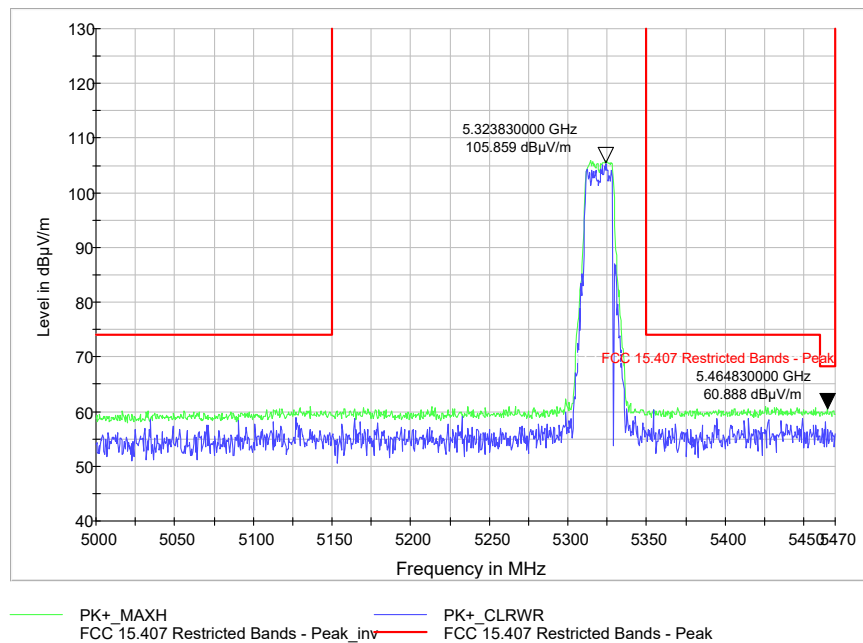


Plot 9-381. Peak Radiated Band Edge Emissions Tx Chain A 802.11n HT20 (Ch. 36)

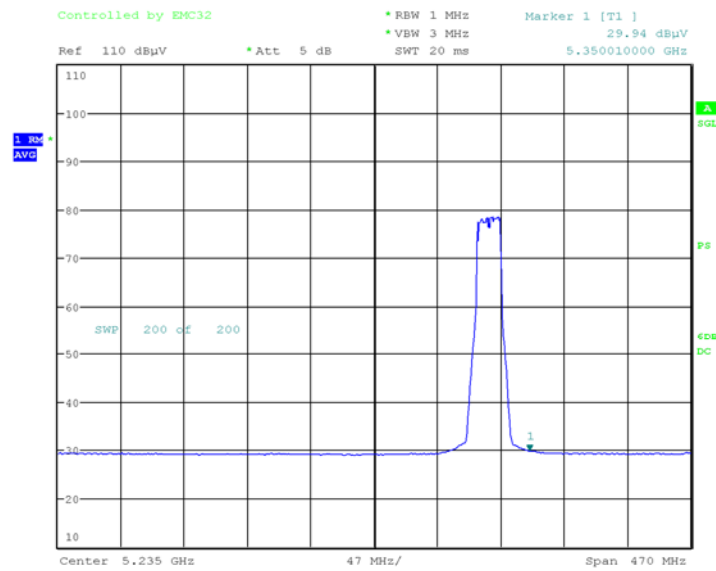


Date: 21.FEB.2019 01:17:06

Plot 9-382. Average Radiated Band Edge Emissions Tx Chain A 802.11n HT20 (Ch. 36)

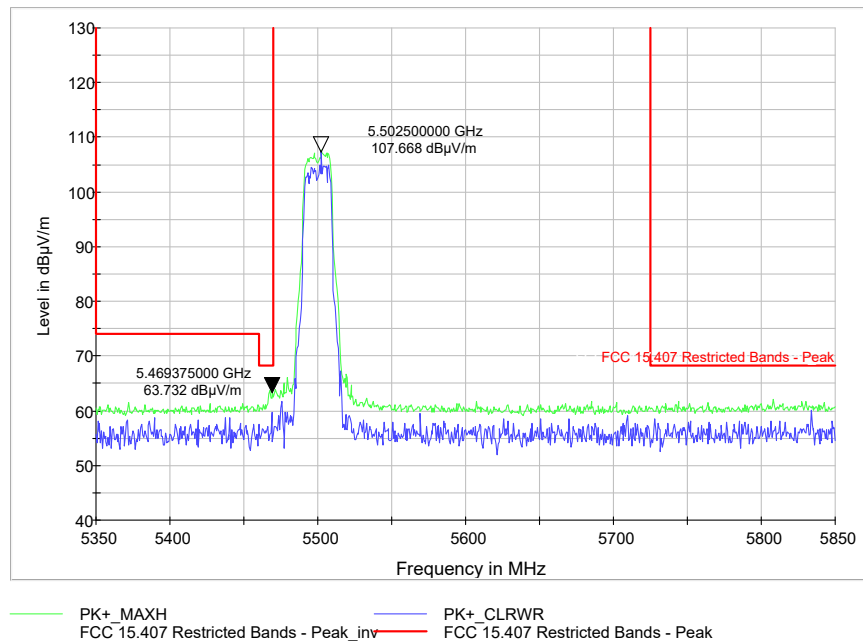


Plot 9-383. Peak Radiated Band Edge Emissions Tx Chain A 802.11n HT20 (Ch. 64)

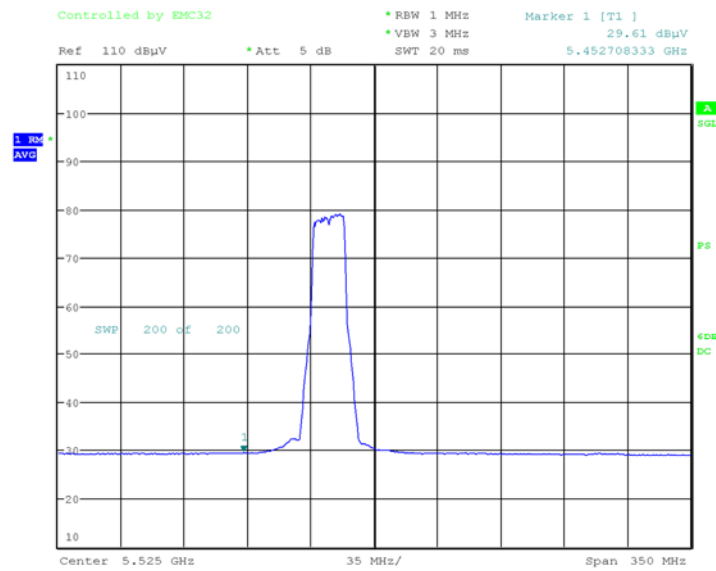


Date: 21.FEB.2019 00:53:55

Plot 9-384. Average Radiated Band Edge Emissions Tx Chain A 802.11n HT20 (Ch. 64)

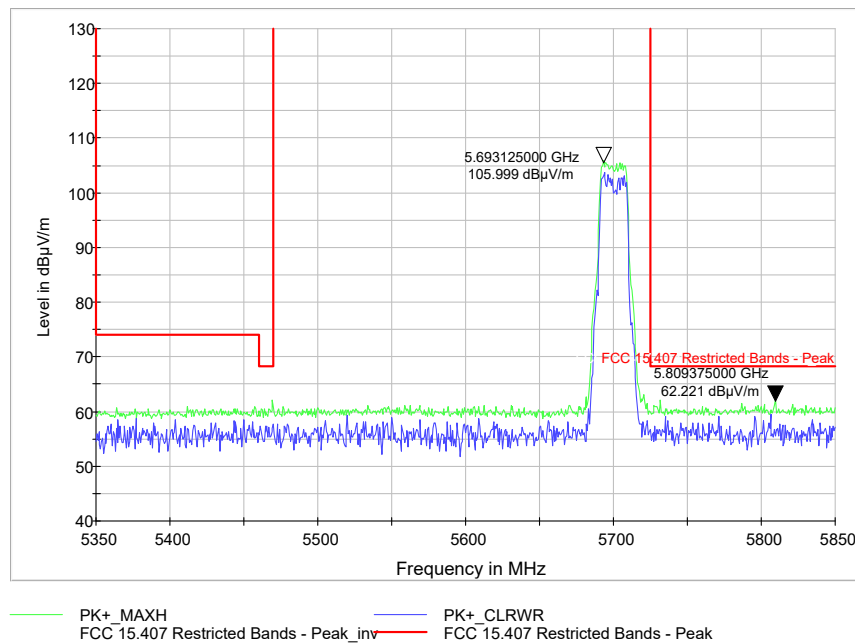


Plot 9-385. Peak Radiated Band Edge Emissions Tx Chain A 802.11n HT20 (Ch. 100)



Date: 21.FEB.2019 00:40:36

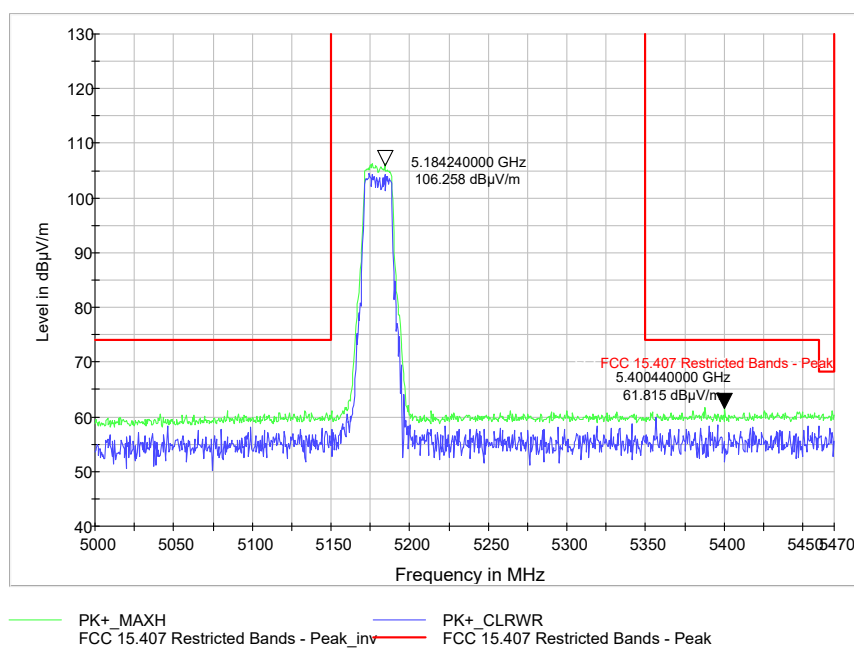
Plot 9-386. Average Radiated Band Edge Emissions Tx Chain A 802.11n HT20 (Ch. 100)



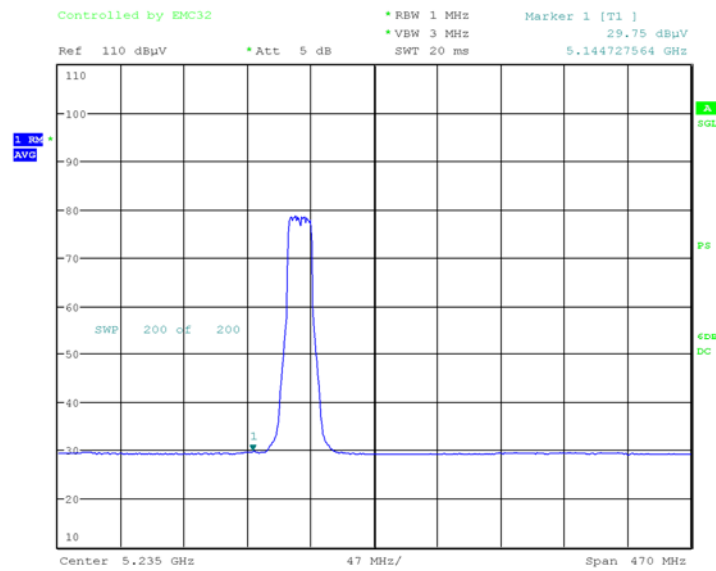
Plot 9-387. Peak Radiated Band Edge Emissions Tx Chain A 802.11n HT20 (Ch. 140)

9.6.5.15 Radiated Band-edge emissions 802.11n HT20 – SISO Path B

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5180	5144.72	29.75	18.6	0.11	48.46	54	-5.54
5320	5350.01	30.3	18.7	0.11	49.11	54	-4.89
5500	5459.43	29.77	18.9	0.11	48.78	54	-5.22

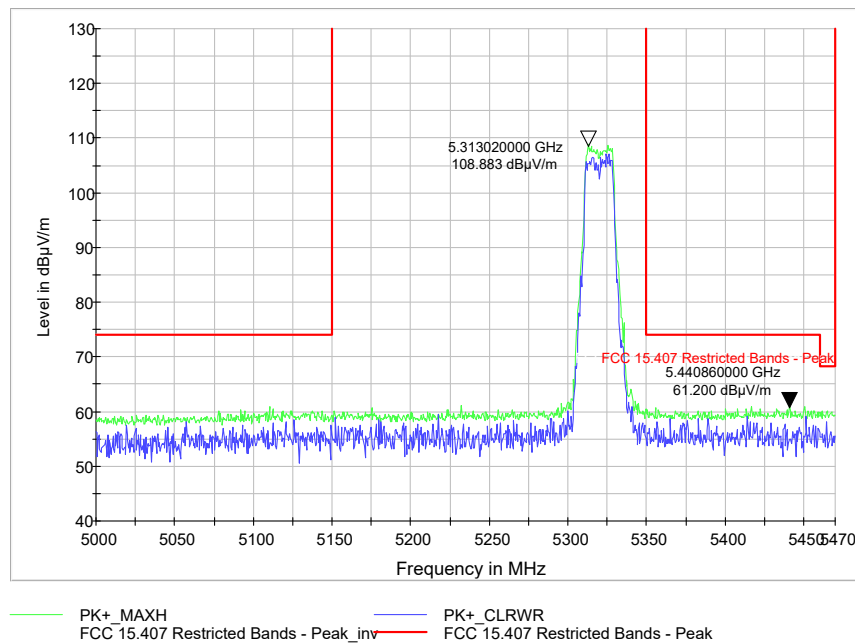


Plot 9-388. Peak Radiated Band Edge Emissions Tx Chain B 802.11n HT20 (Ch. 36)

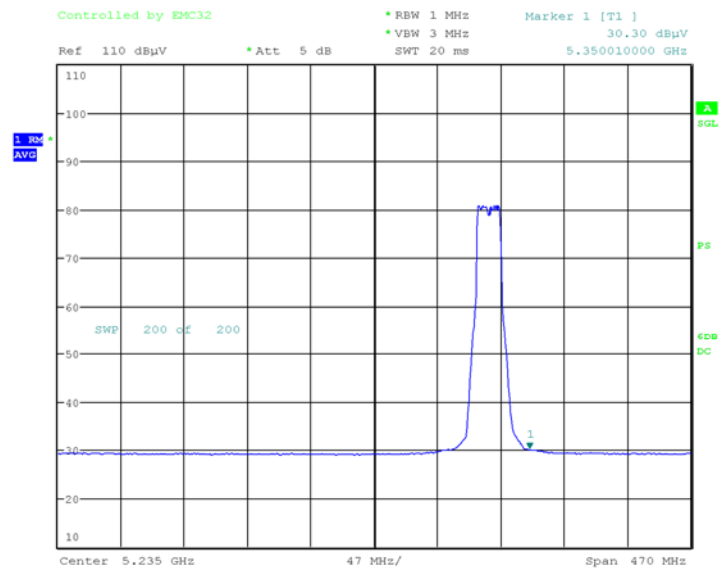


Date: 21.FEB.2019 23:46:06

Plot 9-389. Average Radiated Band Edge Emissions Tx Chain B 802.11n HT20 (Ch. 36)

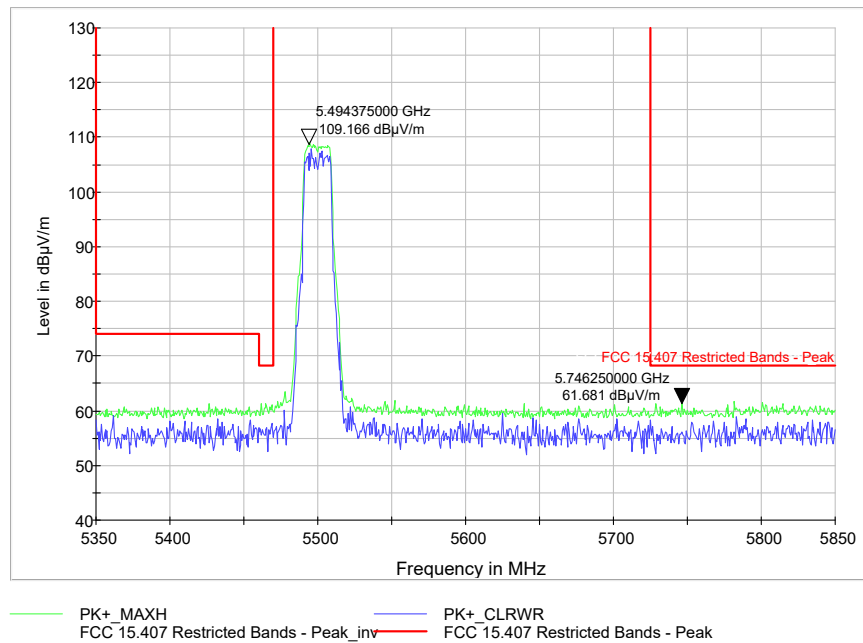


Plot 9-390. Peak Radiated Band Edge Emissions Tx Chain B 802.11n HT20 (Ch. 64)

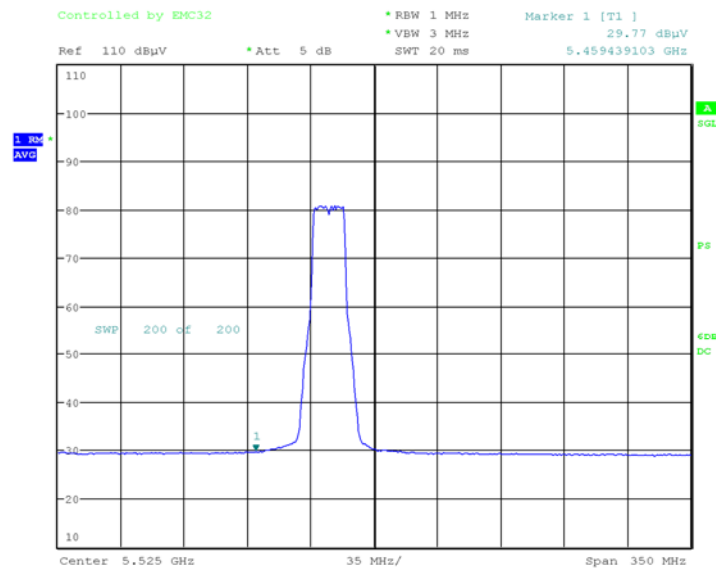


Date: 21.FEB.2019 23:24:56

Plot 9-391. Average Radiated Band Edge Emissions Tx Chain B 802.11n HT20 (Ch. 64)

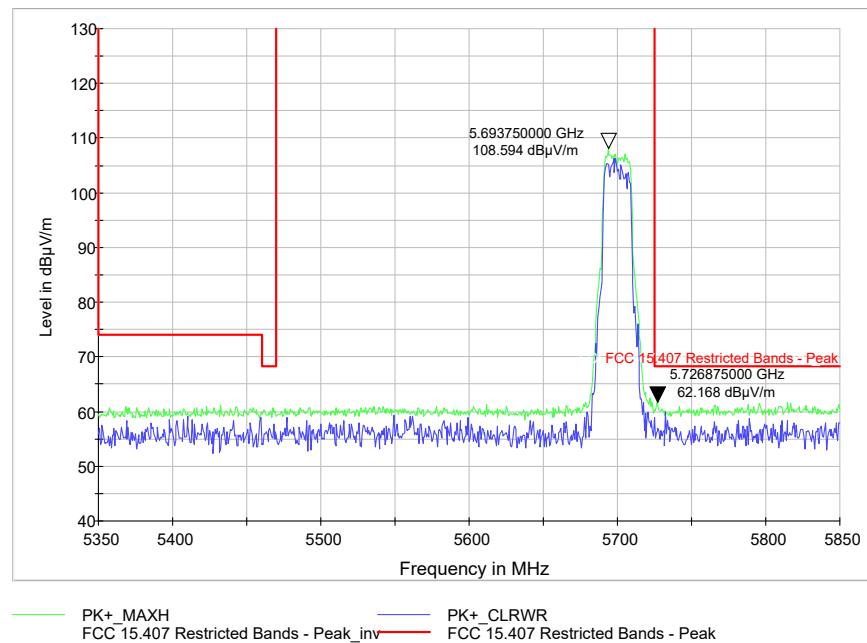


Plot 9-392. Peak Radiated Band Edge Emissions Tx Chain B 802.11n HT20 (Ch. 100)



Date: 21.FEB.2019 23:13:42

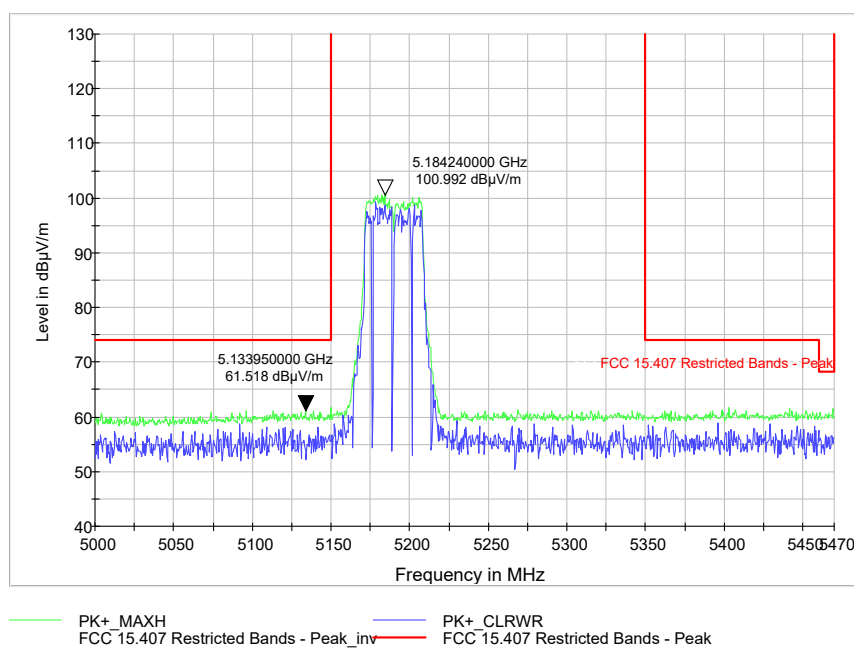
Plot 9-393 Average Radiated Band Edge Emissions Tx Chain B 802.11n HT20 (Ch. 100)



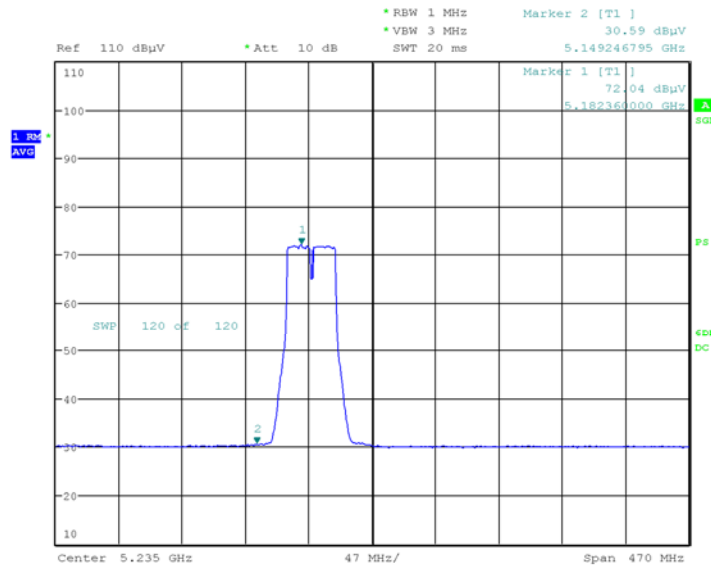
Plot 9-394. Peak Radiated Band Edge Emissions Tx Chain B 802.11n HT20 (Ch. 140)

9.6.5.16 Radiated Band-edge emissions 802.11n HT40 - MIMO

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5190	5149.24	30.59	18.6	0.35	49.54	54	-4.46
5310	5350.75	32.19	18.7	0.35	51.25	54	-2.75
5510	5459.43	31.01	18.9	0.35	50.26	54	-3.74

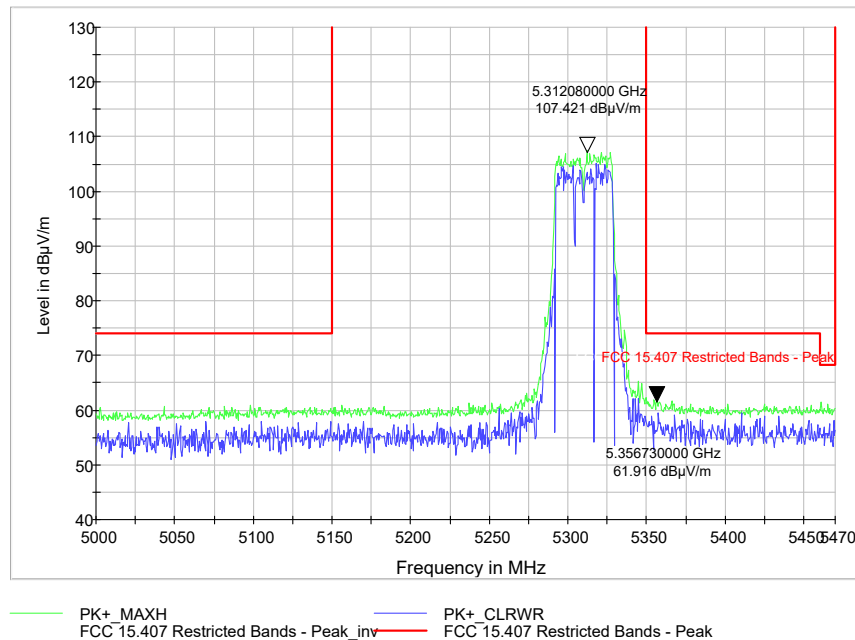


Plot 9-395. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT40 (Ch. 38)

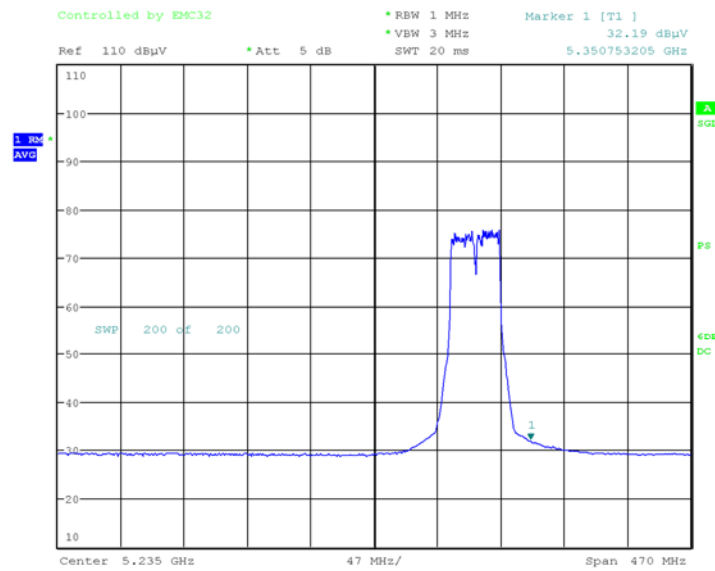


Date: 20.MAR.2019 13:09:03

Plot 9-396 Average Radiated Band Edge Emissions Tx Chains A & B 802.11n HT40 (Ch. 38)

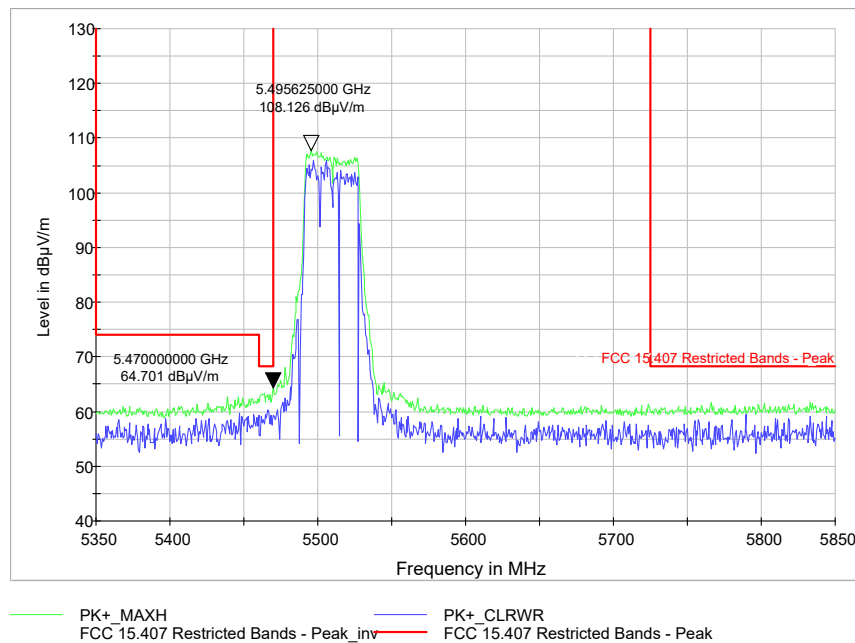


Plot 9-397. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT40 (Ch. 62)

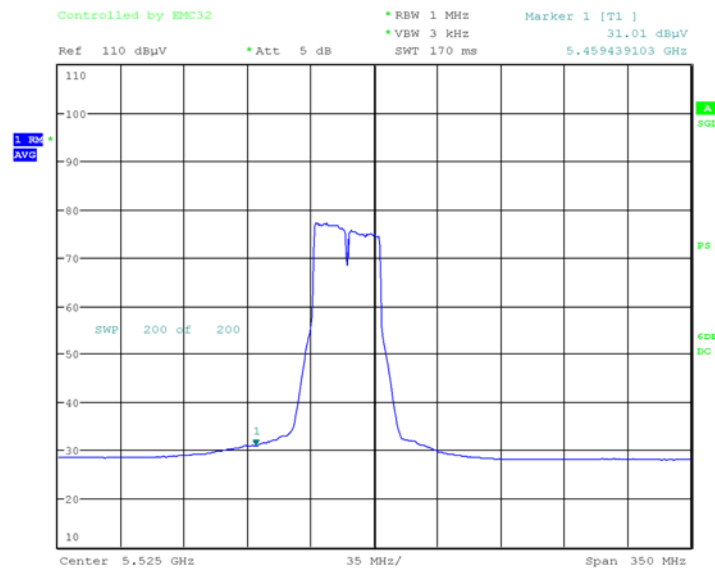


Date: 19.FEB.2019 18:52:41

Plot 9-398. Average Radiated Band Edge Emissions Tx Chains A & B 802.11n HT40 (Ch. 62)

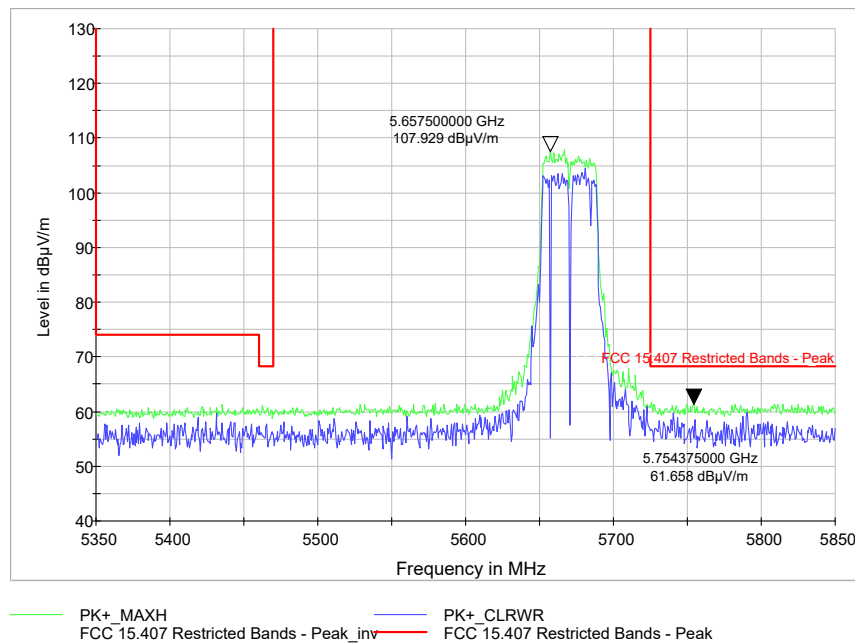


Plot 9-399. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT40 (Ch. 102)

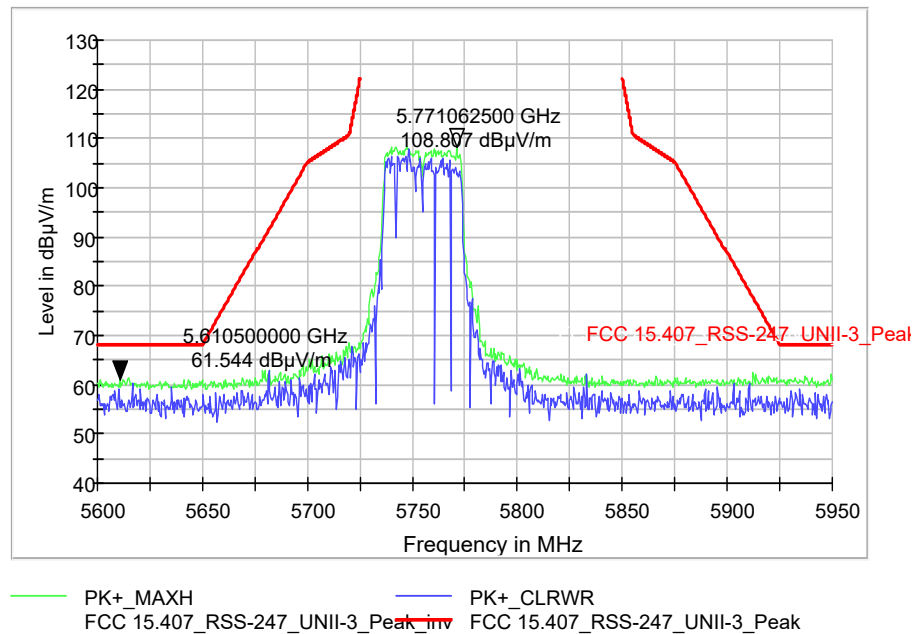


Date: 19.FEB.2019 19:16:13

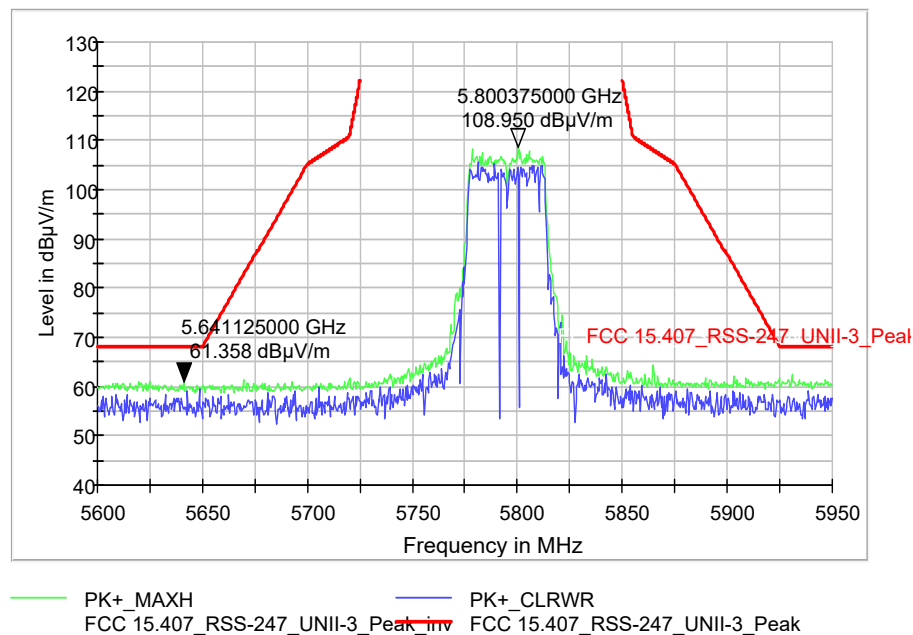
Plot 9-400. Average Radiated Band Edge Emissions Tx Chains A & B 802.11n HT40 (Ch. 102)



Plot 9-401. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT40 (Ch. 134)



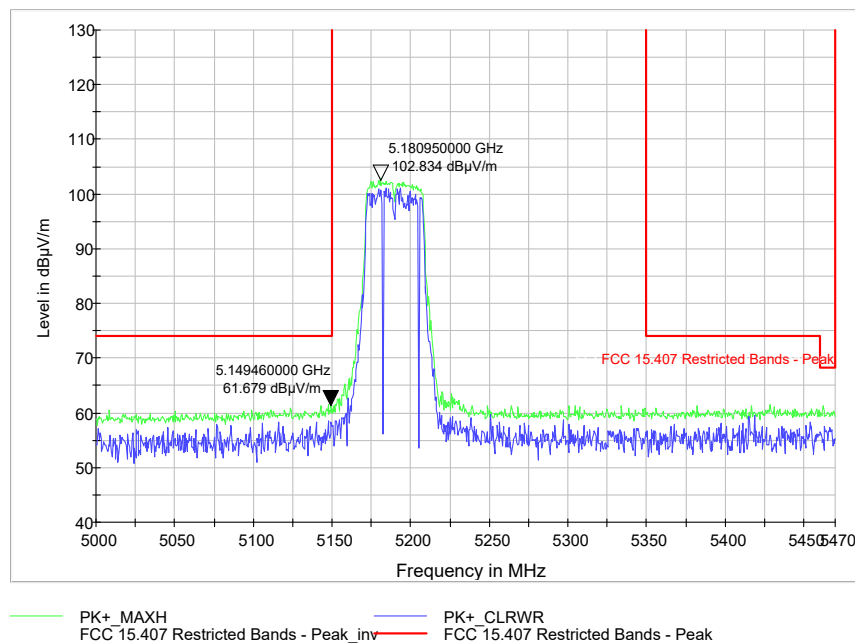
Plot 9-402. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT40 (Ch. 151)



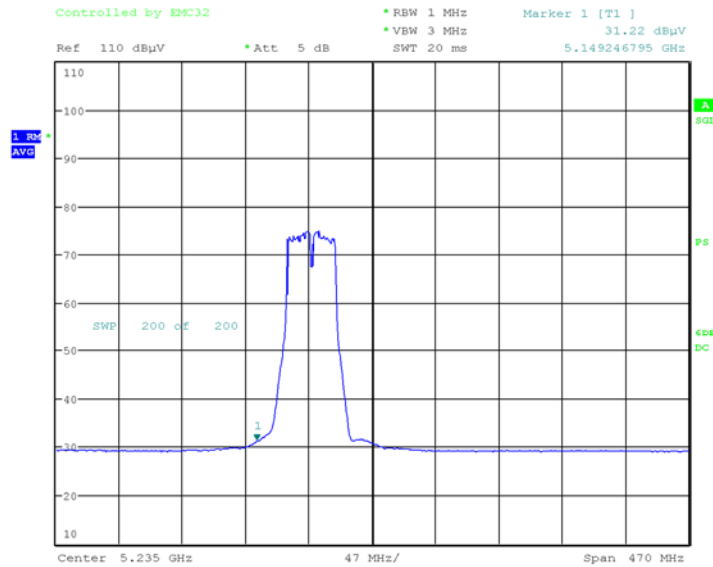
Plot 9-403. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT40 (Ch. 159)

9.6.5.17 Radiated Band-edge emissions 802.11n HT40 – SISO Path A

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5190	5149.24	31.22	18.6	0.21	50.03	54	-3.97
5310	5350.75	32.1	18.7	0.21	51.01	54	-2.99

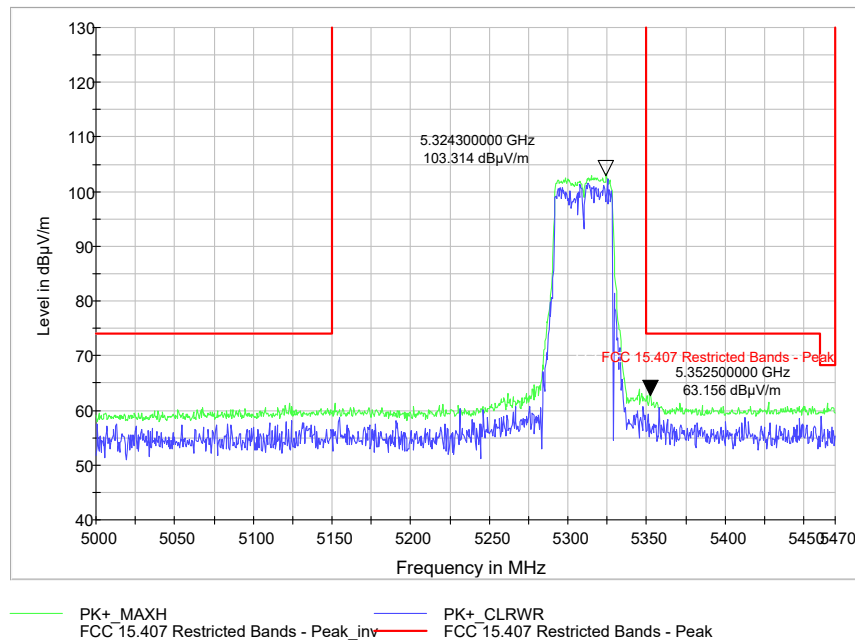


Plot 9-404. Peak Radiated Band Edge Emissions Tx Chain A 802.11n HT40 (Ch. 38)

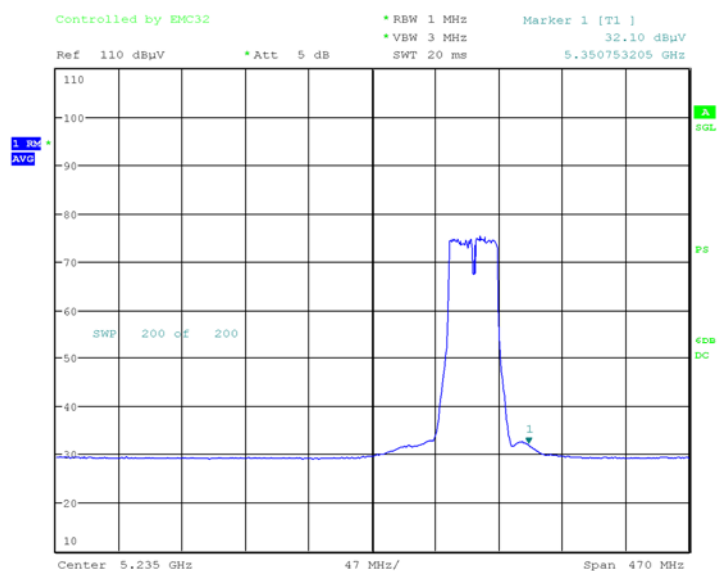


Date: 20.MAR.2019 22:46:17

Plot 9-405. Average Radiated Band Edge Emissions Tx Chain A 802.11n HT40 (Ch. 38)



Plot 9-406. Peak Radiated Band Edge Emissions Tx Chain A 802.11n HT40 (Ch. 62)

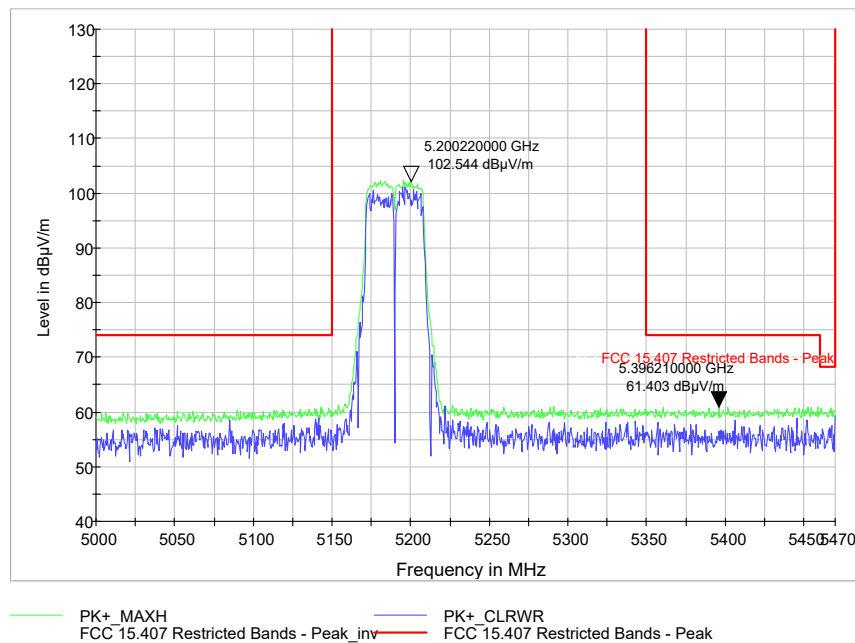


Date: 20.FEB.2019 23:52:31

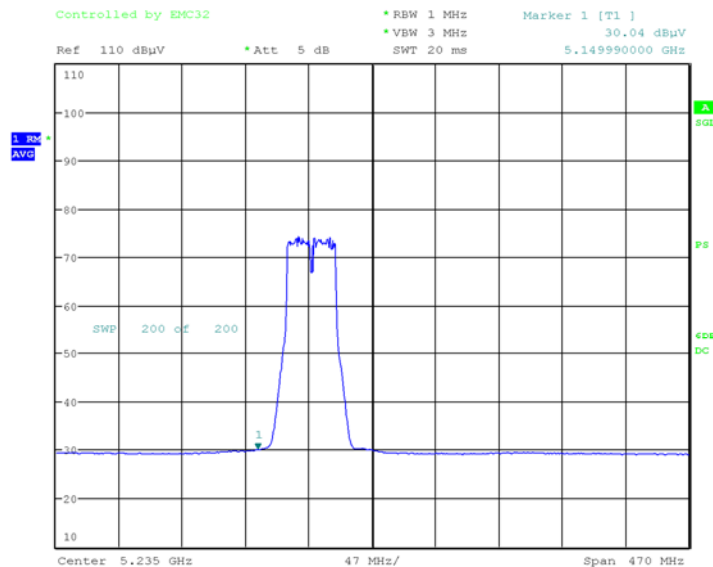
Plot 9-407. Average Radiated Band Edge Emissions Tx Chain A 802.11n HT40 (Ch. 62)

9.6.5.18 Radiated Band-edge emissions 802.11n HT40 – SISO Path B

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5190	5149.99	30.04	18.6	0.33	48.97	54	-5.03
5310	5350.01	33.52	18.7	0.33	52.55	54	-1.45

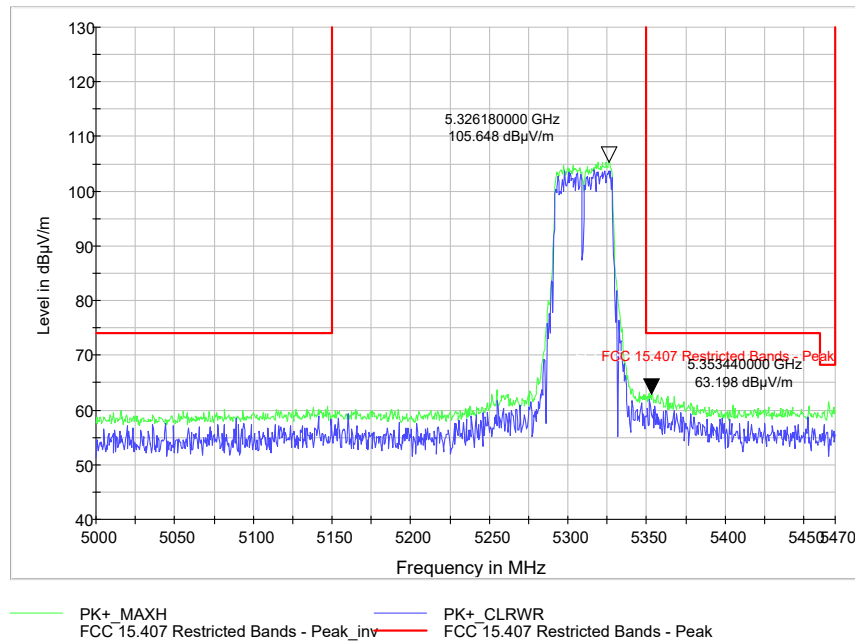


Plot 9-408. Peak Radiated Band Edge Emissions Tx Chain B 802.11n HT40 (Ch. 38)

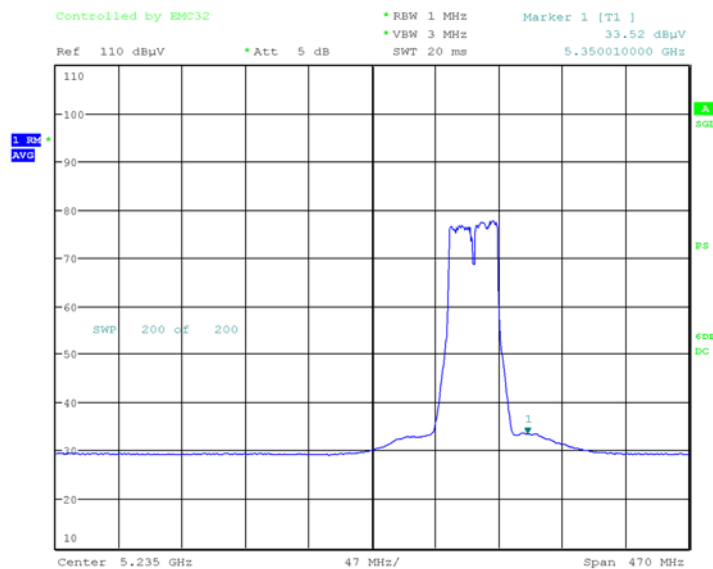


Date: 20.MAR.2019 23:15:09

Plot 9-409. Average Radiated Band Edge Emissions Tx Chain B 802.11n HT40 (Ch. 38)



Plot 9-410. Peak Radiated Band Edge Emissions Tx Chain B 802.11n HT40 (Ch. 62)

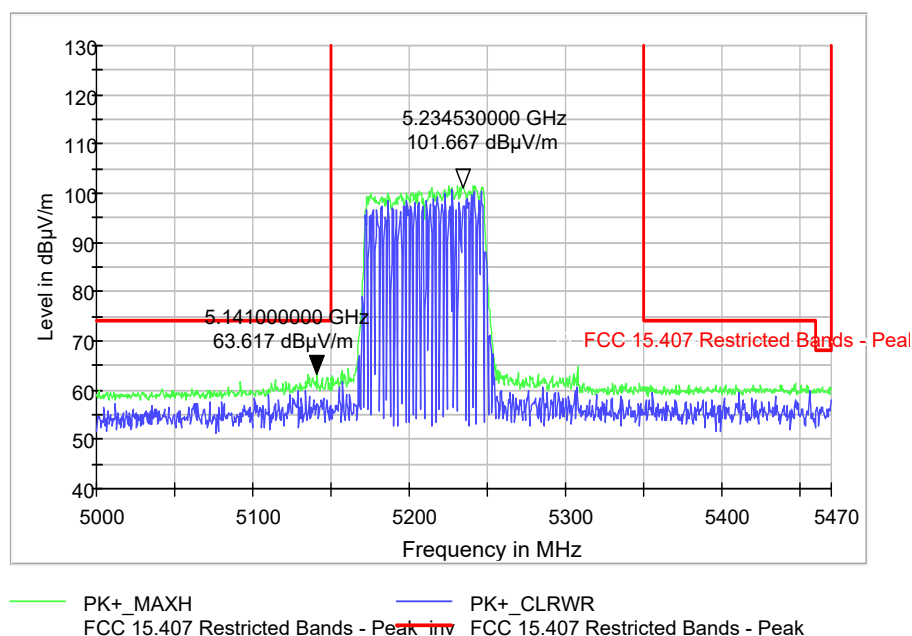


Date: 21.FEB.2019 21:45:08

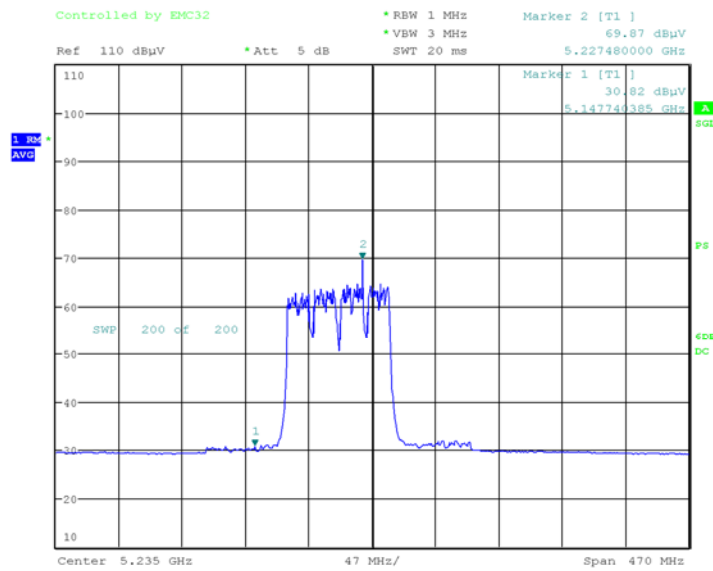
Plot 9-411. Average Radiated Band Edge Emissions Tx Chain B 802.11n HT40 (Ch. 62)

9.6.5.19 Radiated Band-edge emissions 802.11ac VHT80 – MIMO

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5210	5147.74	30.82	18.6	0.63	50.05	54	-3.95
5290	5357.53	33.89	18.8	0.63	53.32	54	-0.68
5530	5454.95	32.44	19.0	0.63	52.07	54	-1.93

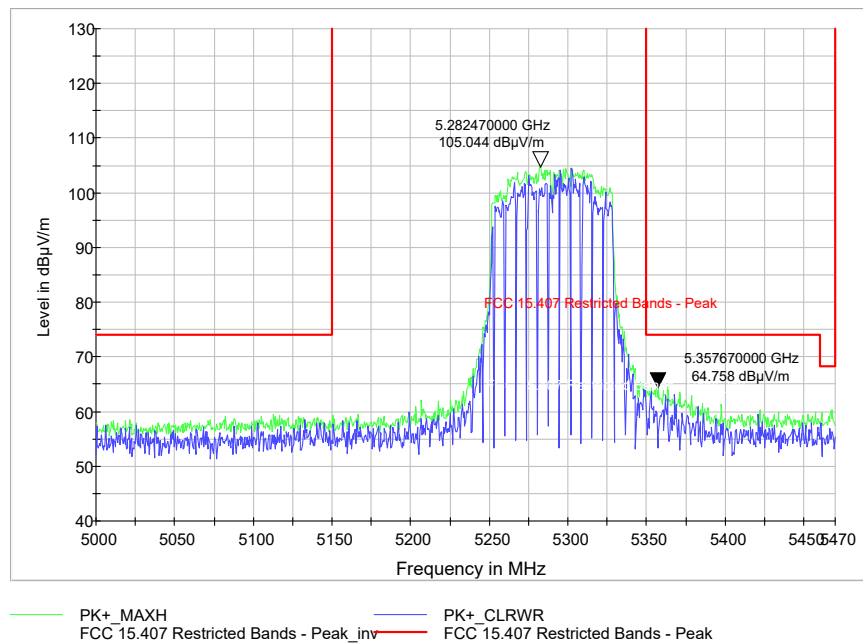


Plot 9-412. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 42)

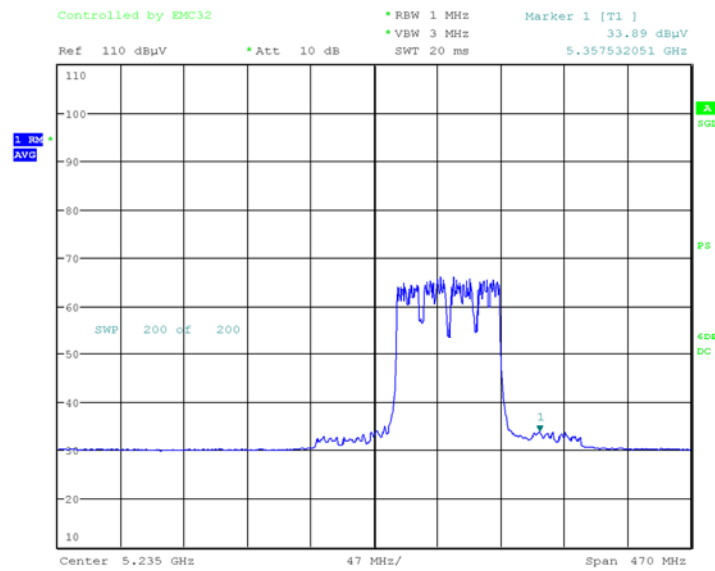


Date: 19.FEB.2019 12:50:05

Plot 9-413. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 42)

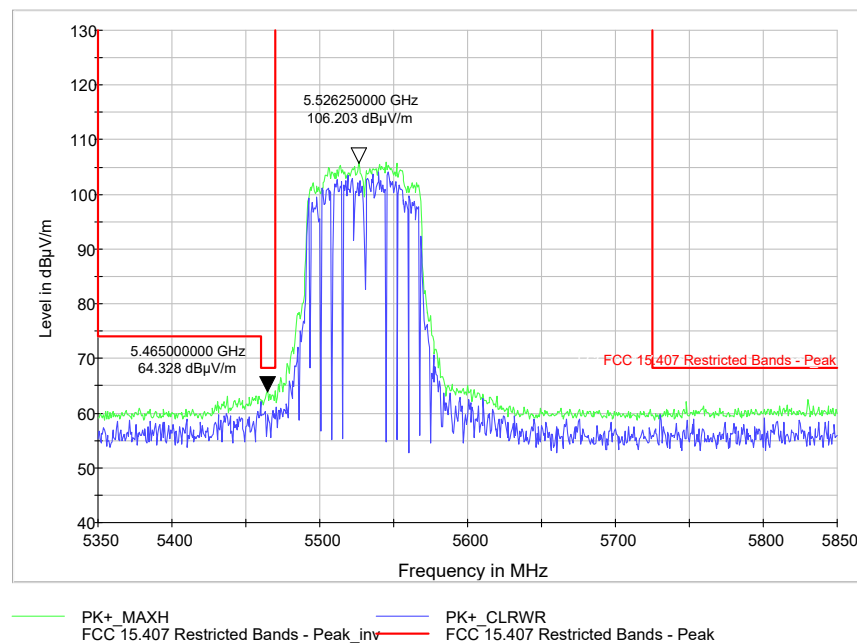


Plot 9-414. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 58)

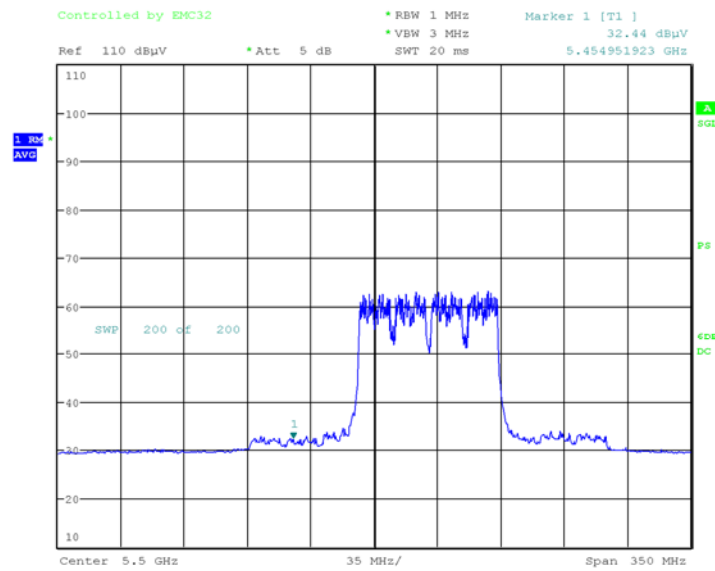


Date: 19.FEB.2019 14:25:36

Plot 9-415. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 58)

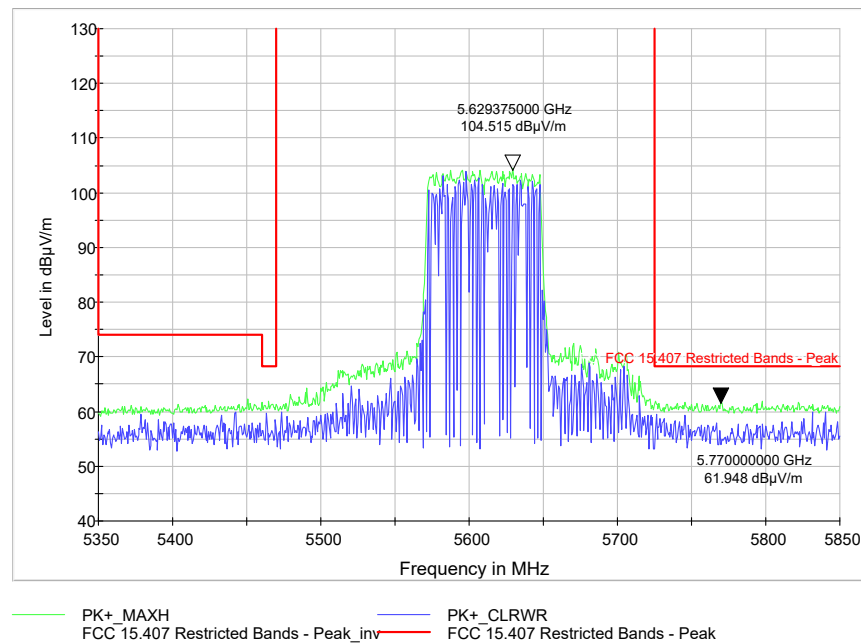


Plot 9-416. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 106)

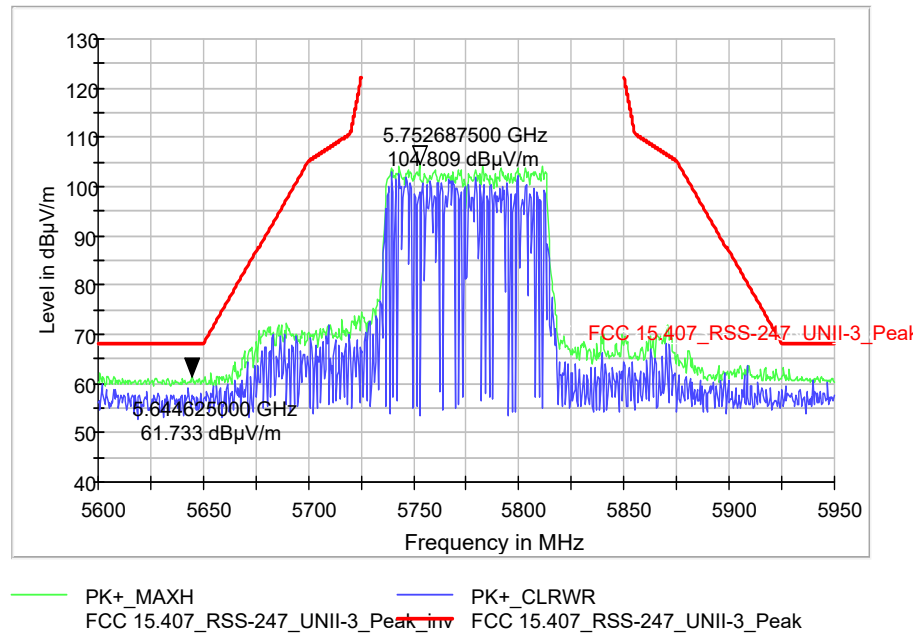


Date: 19.FEB.2019 16:00:12

Plot 9-417. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 106)



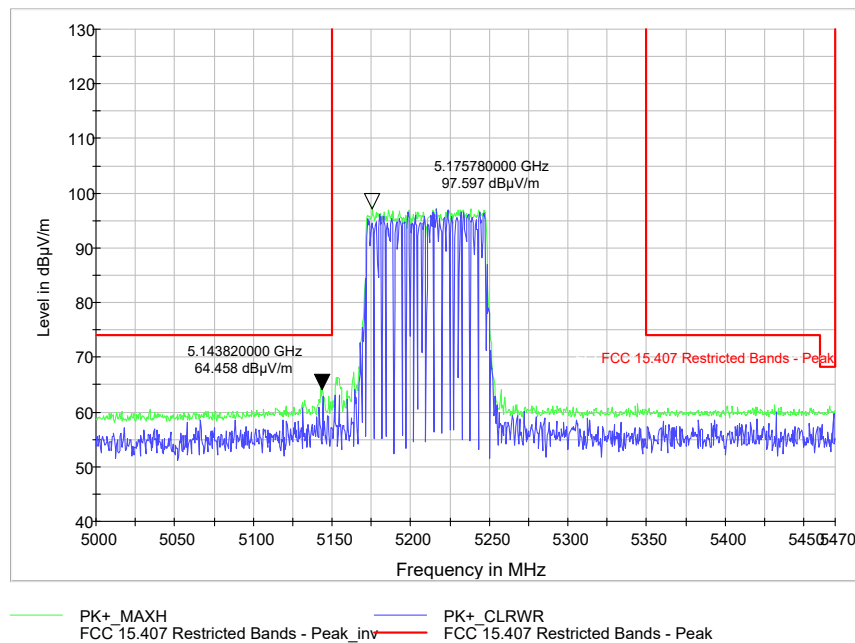
Plot 9-418. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 122)



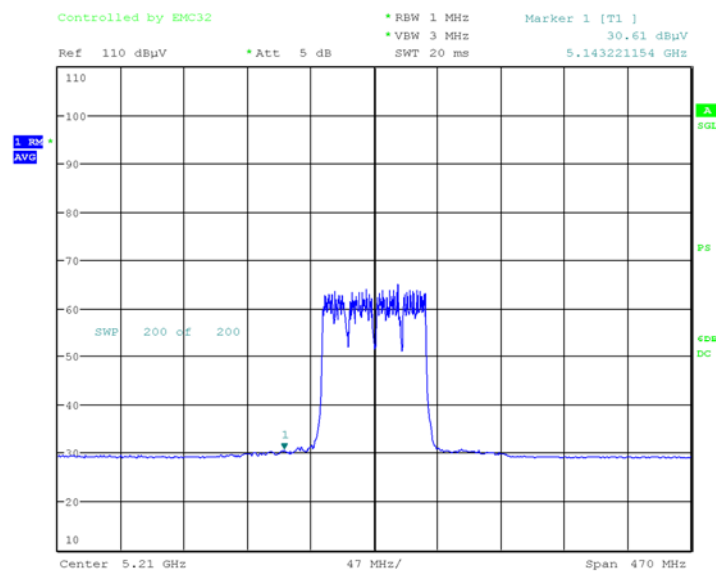
Plot 9-419. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 155)

9.6.5.20 Radiated Band-edge emissions 802.11ac VHT80 – SISO Path A

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5210	5143.22	30.61	18.6	0.29	49.50	54	-4.50
5290	5350.75	31.32	18.7	0.29	50.31	54	-3.69
5530	5454.95	30.36	18.9	0.29	49.55	54	-4.45

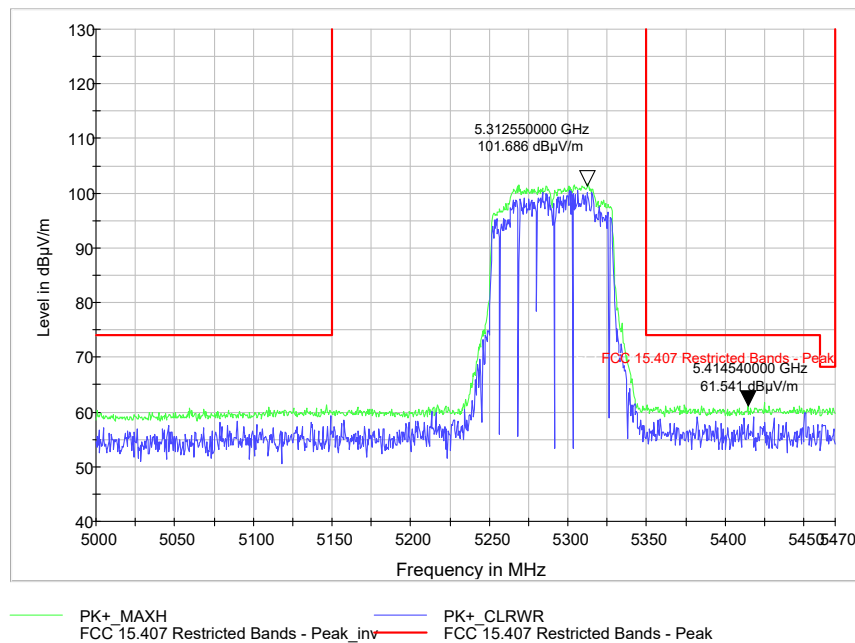


Plot 9-420. Peak Radiated Band Edge Emissions Tx Chain A 802.11ac VHT80 (Ch. 42)

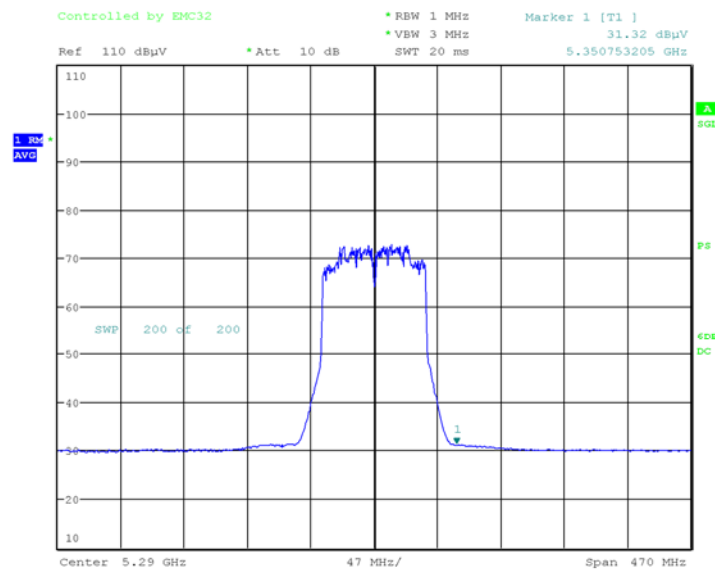


Date: 20.FEB.2019 11:35:05

Plot 9-421. Average Radiated Band Edge Emissions Tx Chain A 802.11ac VHT80(Ch. 42)

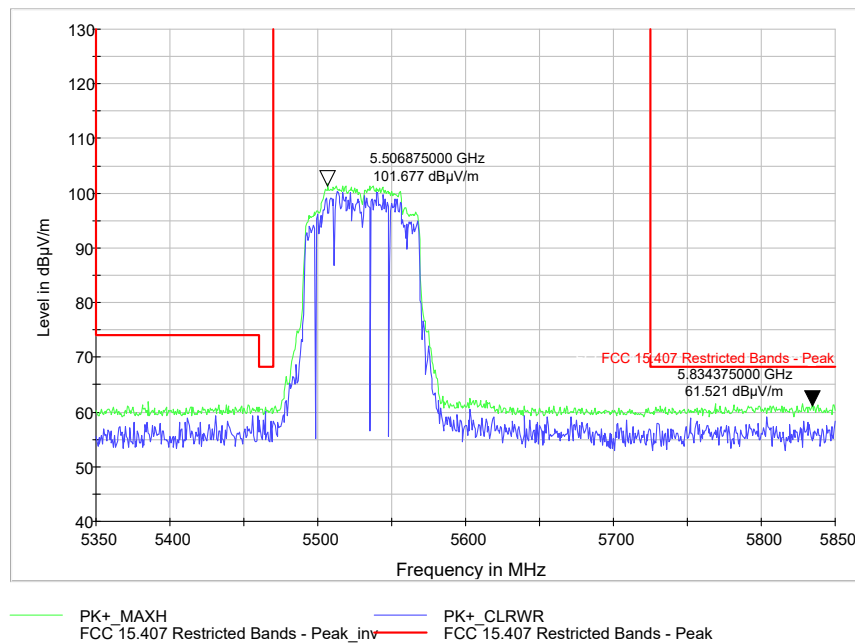


Plot 9-422. Peak Radiated Band Edge Emissions Tx Chain A 802.11ac VHT80 (Ch. 58)

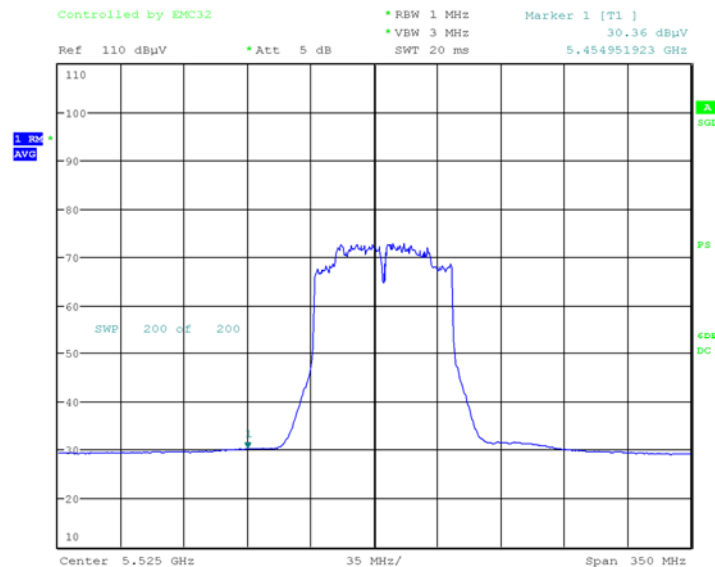


Date: 20.FEB.2019 15:13:11

Plot 9-423 Average Radiated Band Edge Emissions Tx Chain A 802.11ac VHT80(Ch. 58)



Plot 9-424. Peak Radiated Band Edge Emissions Tx Chain A 802.11ac VHT80 (Ch. 106)

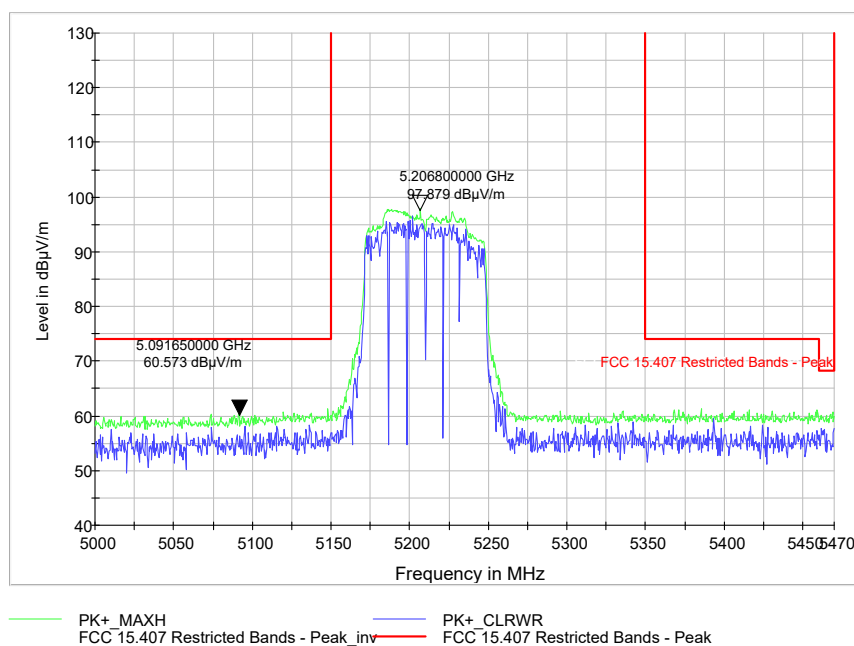


Date: 22.FEB.2019 22:48:39

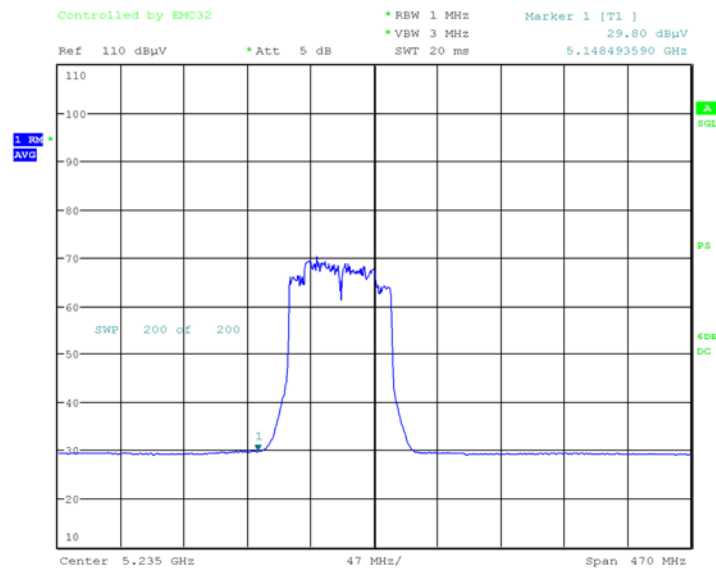
Plot 9-425. Average Radiated Band Edge Emissions Tx Chain A 802.11ac VHT80 (Ch. 106)

9.6.5.21 Radiated Band-edge emissions 802.11ac VHT80 – SISO Path B

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5210	5148.40	29.8	18.6	0.69	48.79	54	-4.91
5290	5355.28	32.92	18.7	0.69	52.31	54	-1.69
5530	5453.83	31.58	18.9	0.69	51.17	54	-2.83

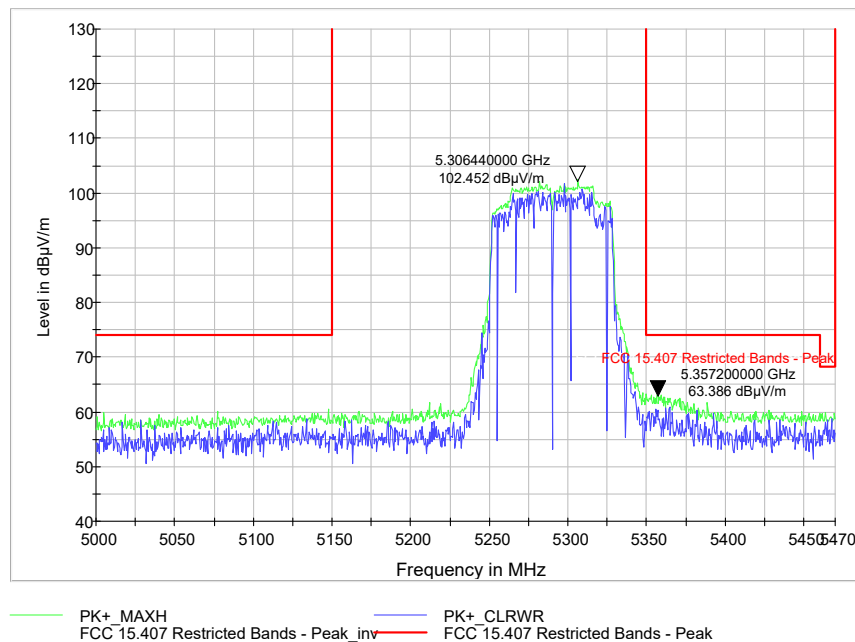


Plot 9-426. Peak Radiated Band Edge Emissions Tx Chain B 802.11ac VHT80 (Ch. 42)

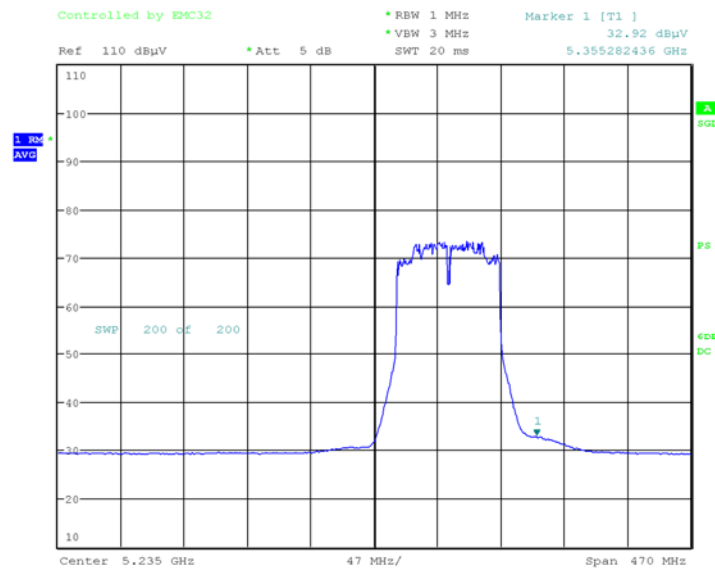


Date: 20.MAR.2019 11:35:07

Plot 9-427. Average Radiated Band Edge Emissions Tx Chain B 802.11ac VHT80(Ch. 42)

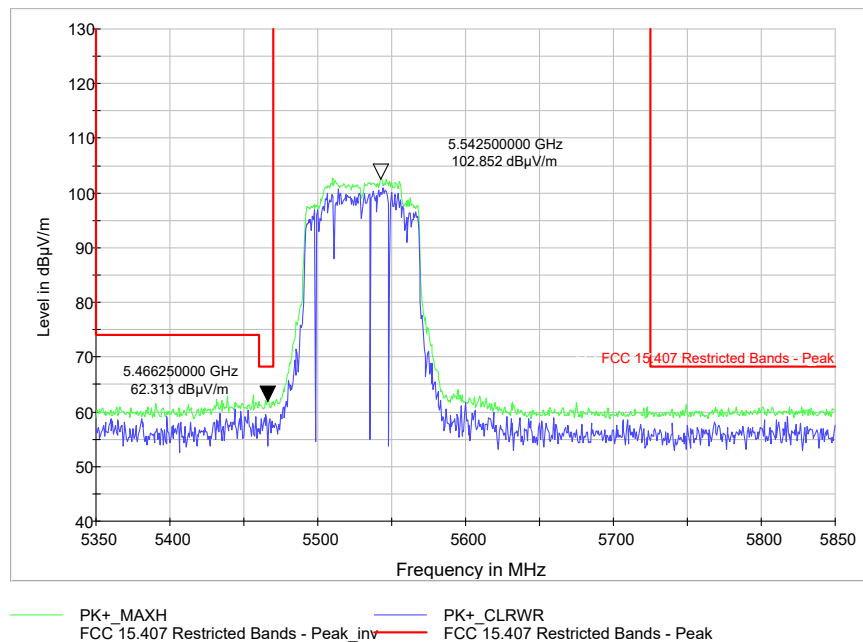


Plot 9-428 Peak Radiated Band Edge Emissions Tx Chain B 802.11ac VHT80 (Ch. 58)

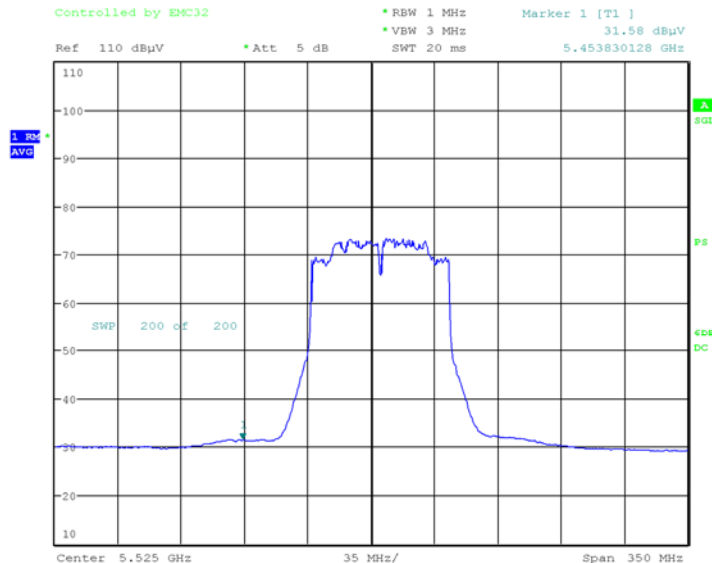


Date: 21.FEB.2019 20:59:41

Plot 9-429. Average Radiated Band Edge Emissions Tx Chain B 802.11ac VHT80(Ch. 58)



Plot 9-430. Peak Radiated Band Edge Emissions Tx Chain B 802.11ac VHT80 (Ch. 106)

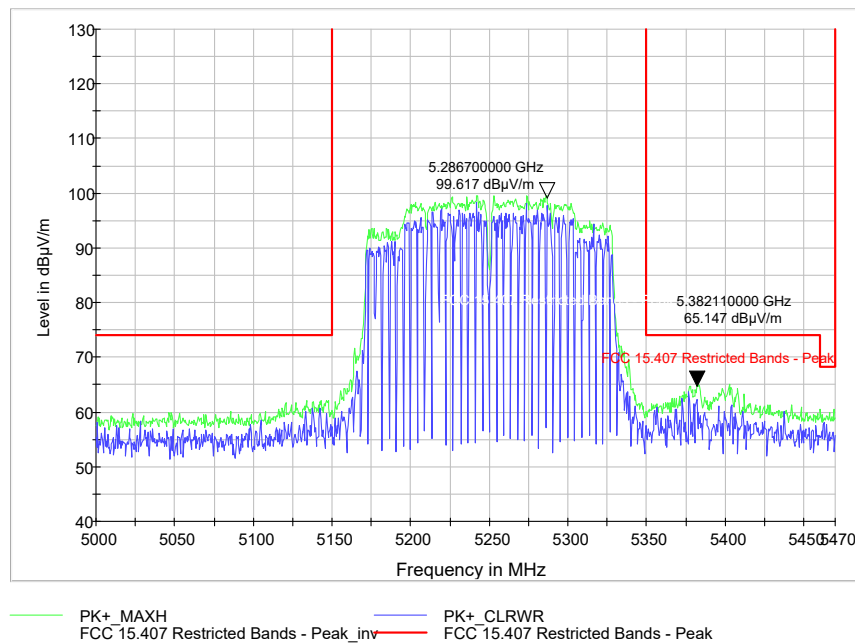


Date: 21.FEB.2019 21:13:28

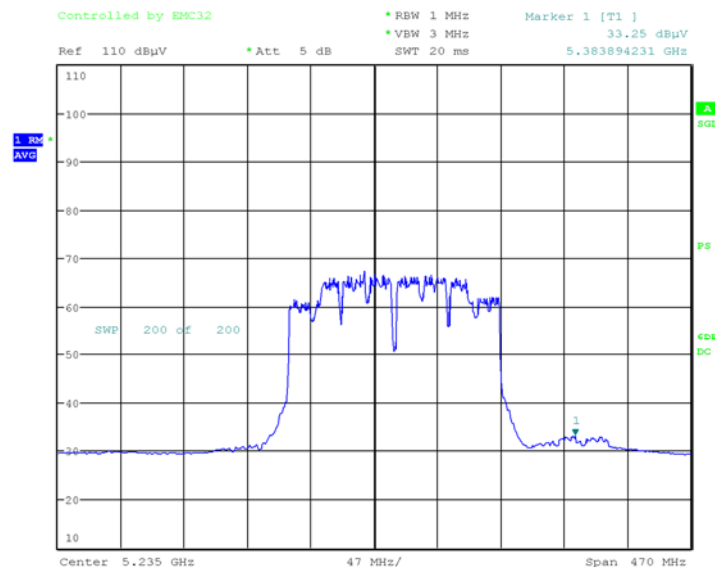
**Plot 9-431. Average Radiated Band Edge Emissions Tx Chain B 802.11ac VHT80
(Ch. 106)**

9.6.5.22 Radiated Band-edge emissions 802.11ac VHT160 mode– MIMO

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5250	5383.89	33.25	18.8	1.01	53.06	54	-0.94
5570	5437.56	32.68	18.9	1.01	52.59	54	-1.41

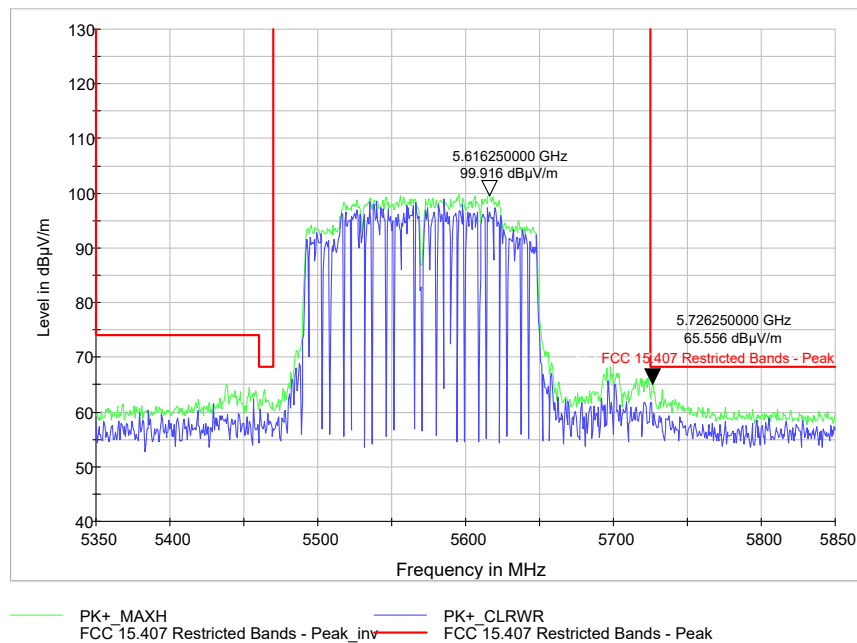


Plot 9-432 Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT160 (Ch. 50)

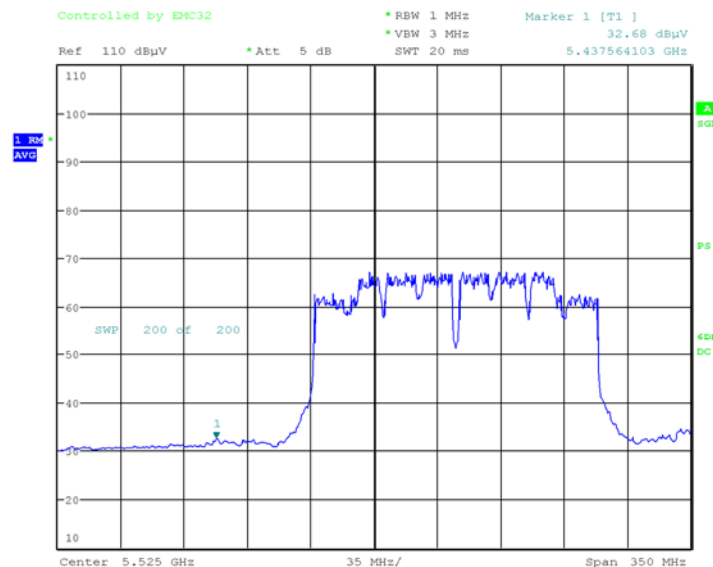


Date: 20.FEB.2019 21:12:29

Plot 9-433. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT160 (Ch. 50)



Plot 9-434. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT160 (Ch. 114)

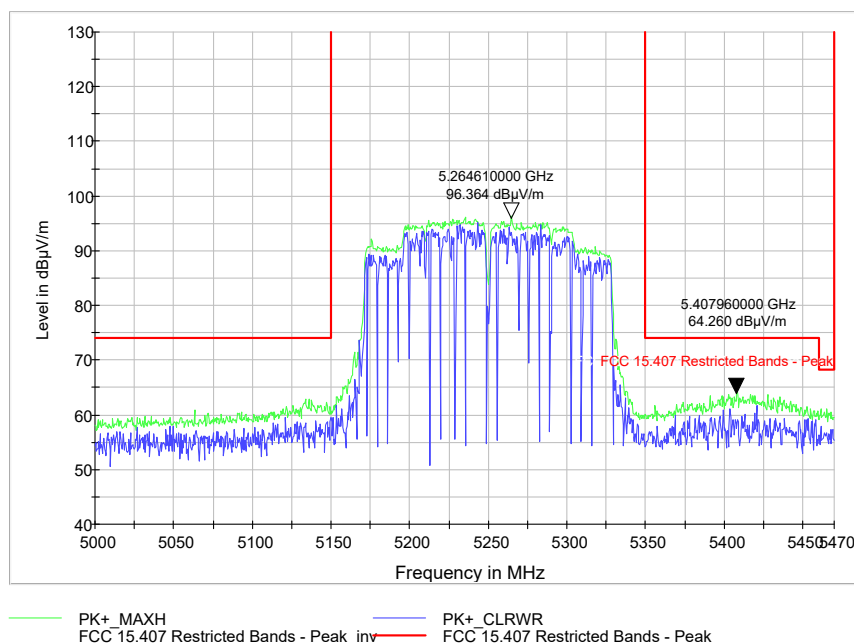


Date: 20.FEB.2019 21:37:56

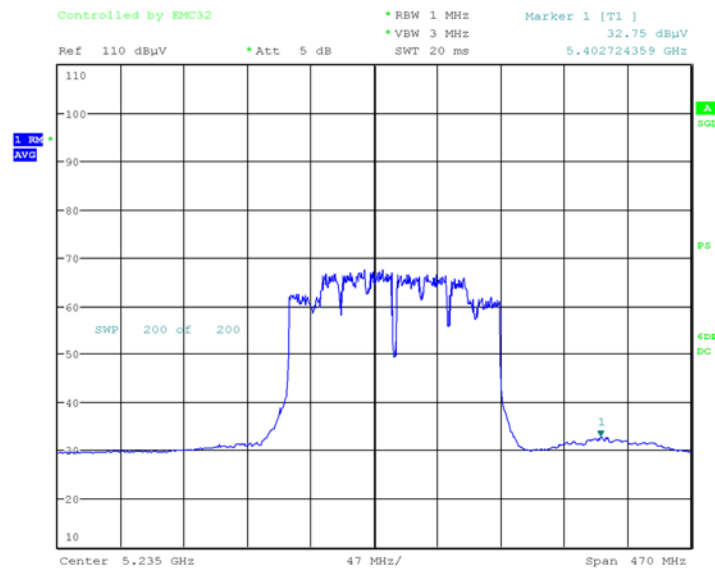
Plot 9-435. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT160 (Ch. 114)

9.6.5.23 Radiated Band-edge emissions 802.11ac VHT160 mode – SISO Path A

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5250	5402.72	32.75	18.8	0.60	52.15	54	-1.85
5570	5437.56	32.48	18.9	0.60	51.98	54	-2.02

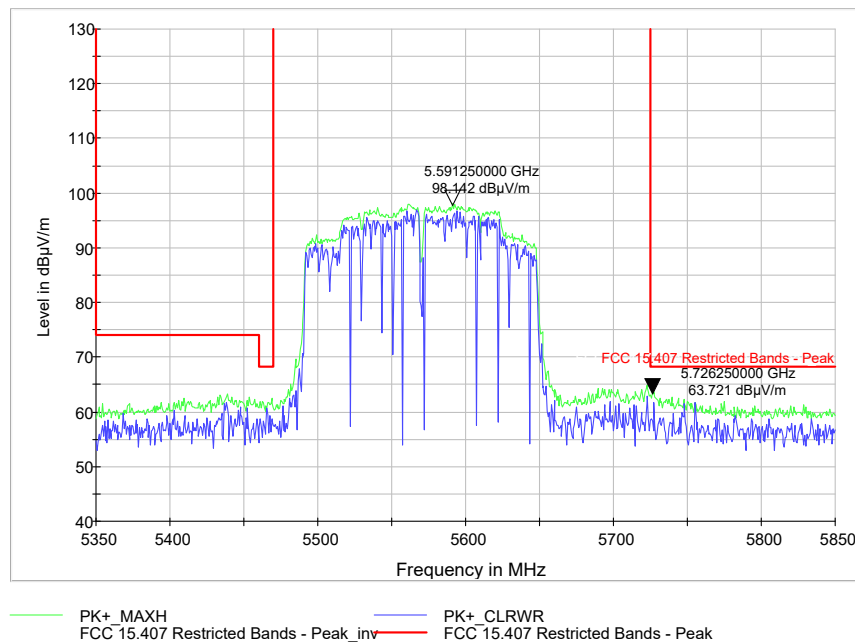


Plot 9-436. Peak Radiated Band Edge Emissions Tx Chain A 802.11ac VHT160 (Ch. 50)

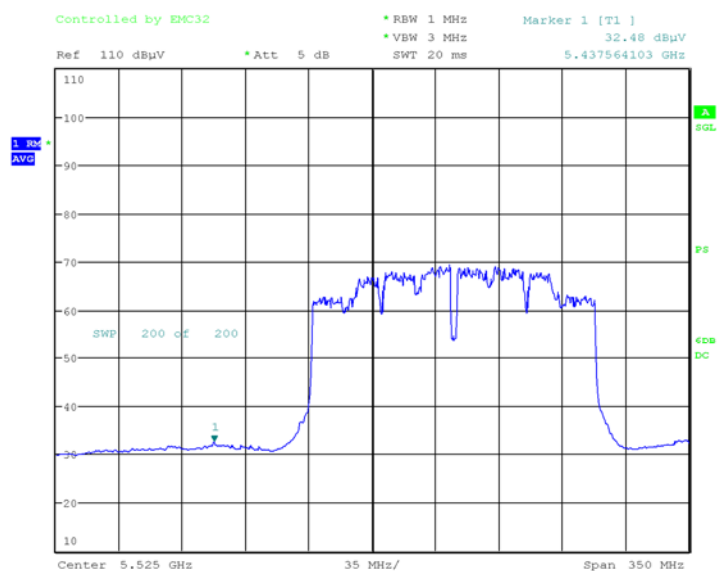


Date: 20.FEB.2019 22:47:16

Plot 9-437. Average Radiated Band Edge Emissions Tx Chain A 802.11ac VHT160 (Ch. 50)



Plot 9-438. Peak Radiated Band Edge Emissions Tx Chain A 802.11ac VHT160 (Ch. 114)

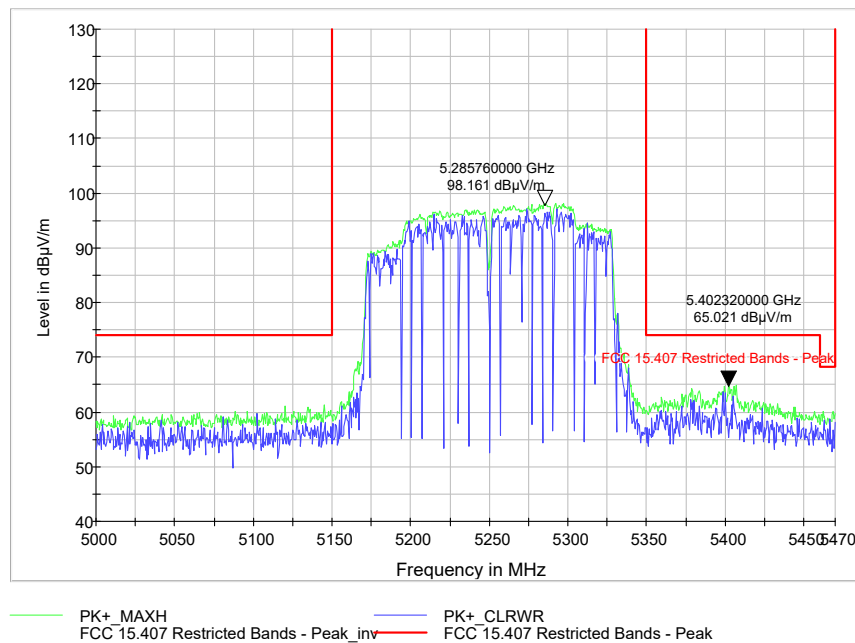


Date: 20.FEB.2019 23:08:39

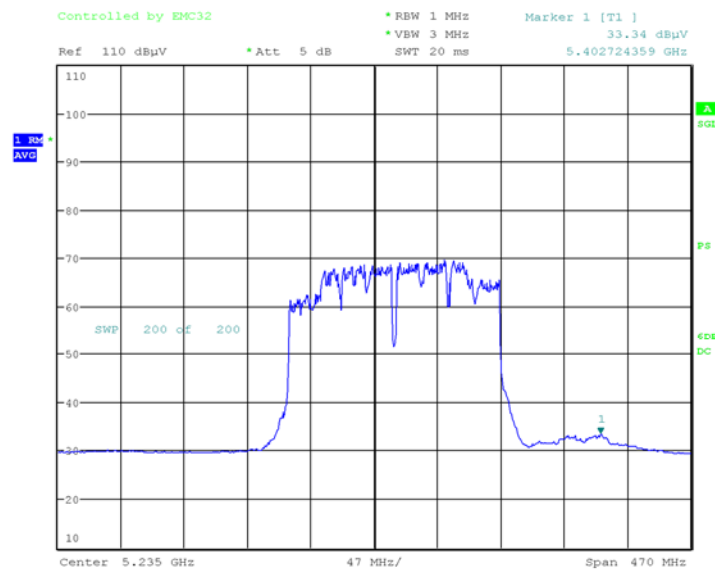
Plot 9-439. Average Radiated Band Edge Emissions Tx Chain A 802.11ac VHT160 (Ch. 114)

9.6.5.24 Radiated Band-edge emissions 802.11ac VHT160 mode – SISO Path B

Band Edge Average Data							
Carrier Frequency (MHz)	Spurious Frequency (MHz)	Raw Avg. Amplitude (dBμV)	System Correction Factor (dB)	Duty cycle correction factor(dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5250	5402.72	33.34	18.8	0.55	52.69	54	-1.31
5570	5438.12	33.3	18.9	0.55	52.65	54	-1.35

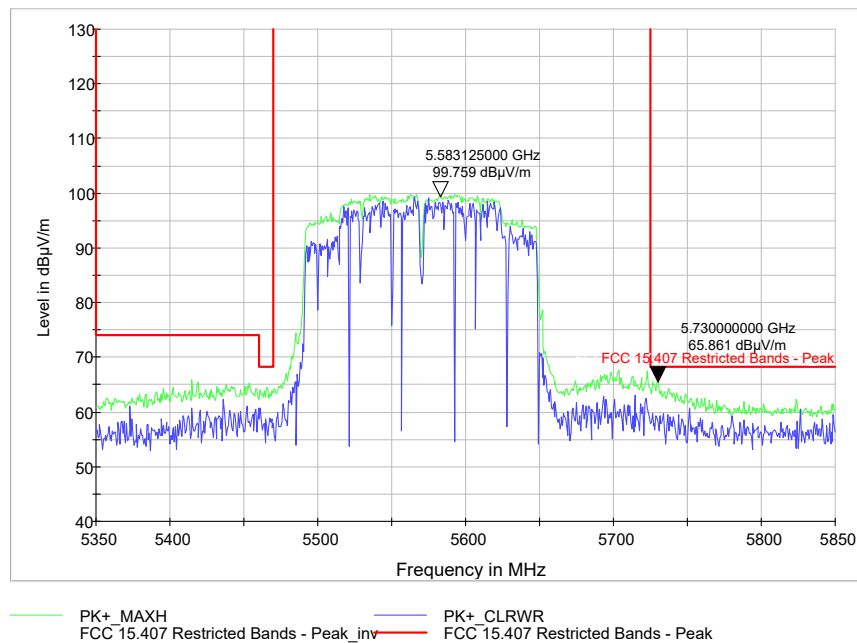


Plot 9-440. Peak Radiated Band Edge Emissions Tx Chain B 802.11ac VHT160 (Ch. 50)

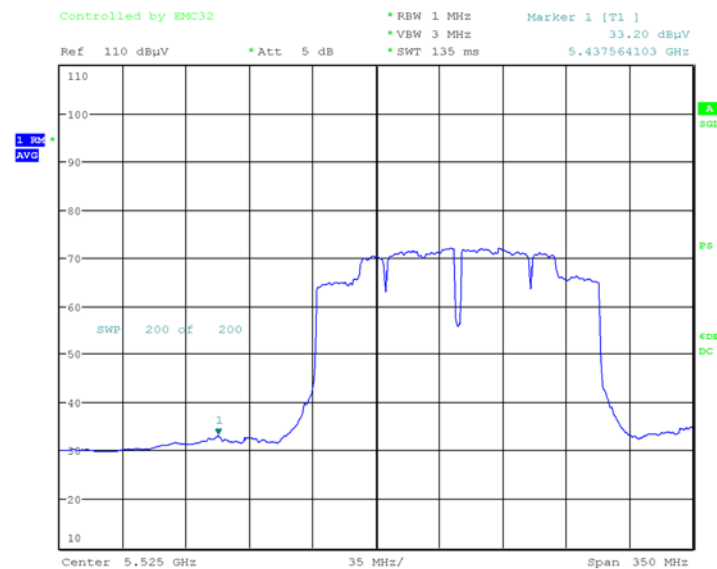


Date: 21.FEB.2019 19:48:05

Plot 9-441. Average Radiated Band Edge Emissions Tx Chain B 802.11ac VHT160 (Ch. 50)



Plot 9-442. Peak Radiated Band Edge Emissions Tx Chain B 802.11ac VHT160 (Ch. 114)



Date: 21.FEB.2019 20:26:05

Plot 9-443. Average Radiated Band Edge Emissions Tx Chain B 802.11ac VHT160 (Ch. 114)

9.7 AC Line Conducted Emissions

9.7.1 Test Requirements

FCC CFR 47 Rule Part 15.207 (a)
ISED RSS Gen [8.8]

9.7.2 Test Method

Conducted power line measurements were made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment was tested with the power cords that were used under normal operating conditions. The following measurements were made using a LISN (Line Impedance Stabilization Network). AC powered peripherals were attached to a second LISN with the 50-ohm measurement port terminated by a 50-ohm resistive load.

The EUT is set to continuously transmit on Ch.104, 802.11a MIMO mode at 16dBm power setting.

EMI Receiver Settings:

150 kHz – 30 MHz:

RBW= 9 kHz

VBW $\geq$ 3 X RBW

Trace Mode: Peak Detector (Max Hold).

Final measurements were performed using Quasi-Peak and Average Detectors.

Span= 150 kHz – 30 MHz

Sweep time= Auto

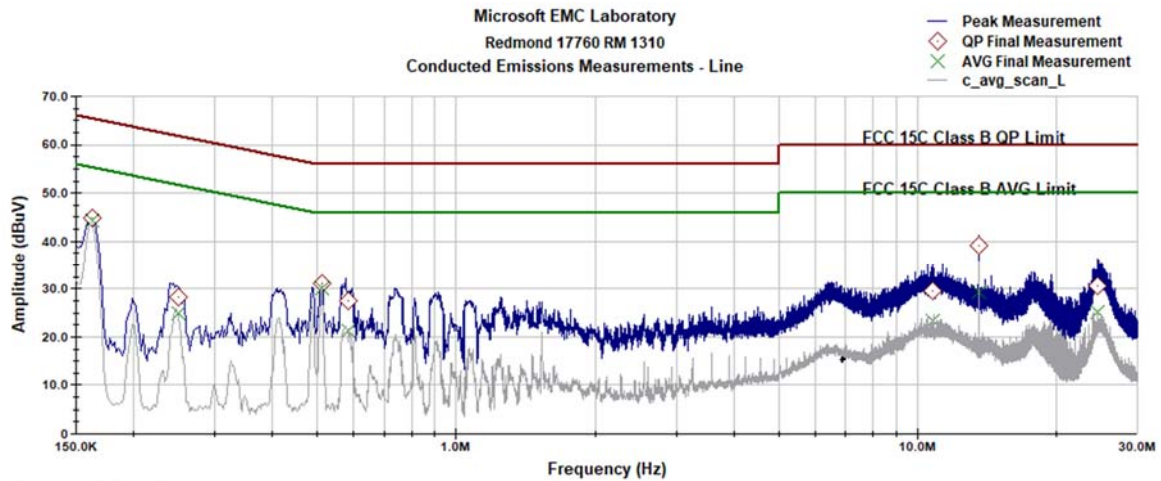
9.7.3 Limit

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

9.7.4 Test Result:

Pass.

9.7.5 Test Data:

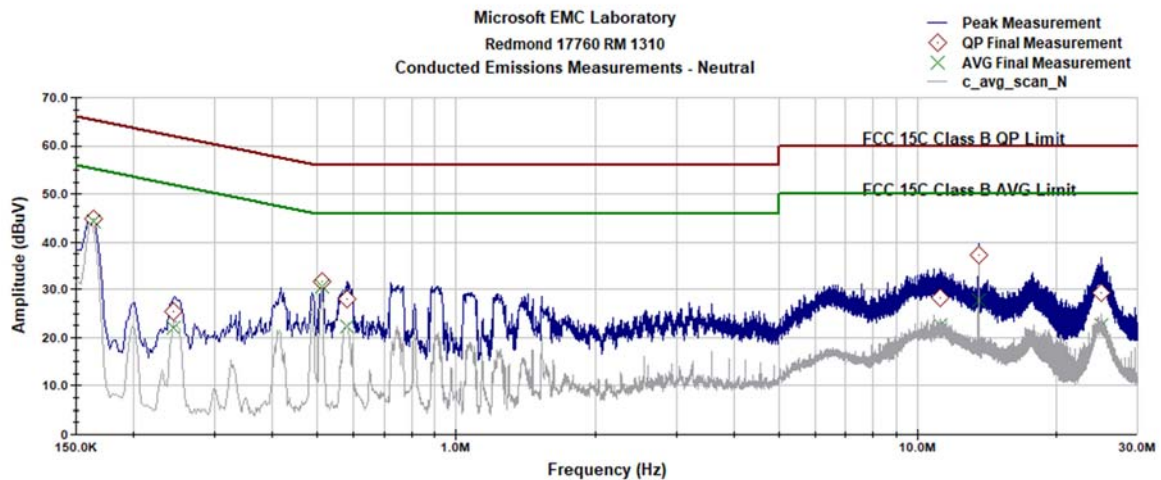


Operator: Soham Surve

Last Data Update 05:12:00 PM, Thursday, April 04, 2019

CE Profile V2.2

Figure 9-444. AC Line Conducted Emissions- Line (150 kHz- 30 MHz)



Operator: Soham Surve

Last Data Update 05:33:33 PM, Thursday, April 04, 2019

CE Profile V2.2

Figure 9-445. AC Line Conducted Emissions- Neutral (150 kHz- 30 MHz)

Frequency (MHz)	Line Tested (L or N)	AVG Amplitude (dBuV)	QP Amplitude (dBuV)	AVG Limit (dBuV)	QP Limit (dBuV)	AVG Margin (dB)	QP Margin (dB)
0.163	L	44.35	44.94	55.30	65.30	-10.95	-20.37
0.513	L	30.00	31.21	46.00	56.00	-16.00	-24.79
13.562	L	29.39	39.25	50.00	60.00	20.61	-20.75
0.584	L	21.28	27.53	46.00	56.00	-24.72	-28.47
24.565	L	25.10	30.46	50.00	60.00	-24.90	-29.54
10.778	L	23.32	29.43	50.00	60.00	-26.68	-30.57
0.251	L	24.81	28.31	51.73	61.73	-26.92	-33.43
0.163	N	44.28	44.93	55.29	65.29	-11.01	-20.37
0.511	N	30.50	31.66	46.00	56.00	-15.50	-24.34
13.562	N	27.79	37.45	50.00	60.00	-22.21	-22.55
0.581	N	22.19	28.10	46.00	56.00	-23.81	-27.90
11.199	N	22.55	28.36	50.00	60.00	-27.45	-31.64
25.03	N	22.55	29.27	50.00	60.00	-27.45	-30.74
0.244	N	22.05	25.50	51.95	61.95	-29.90	-36.45

End of Report