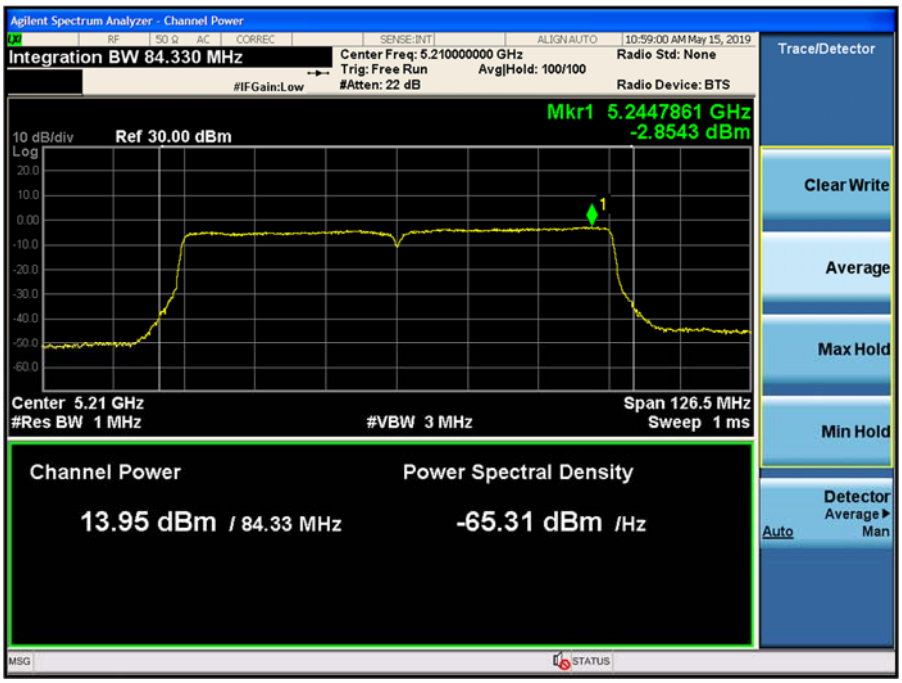
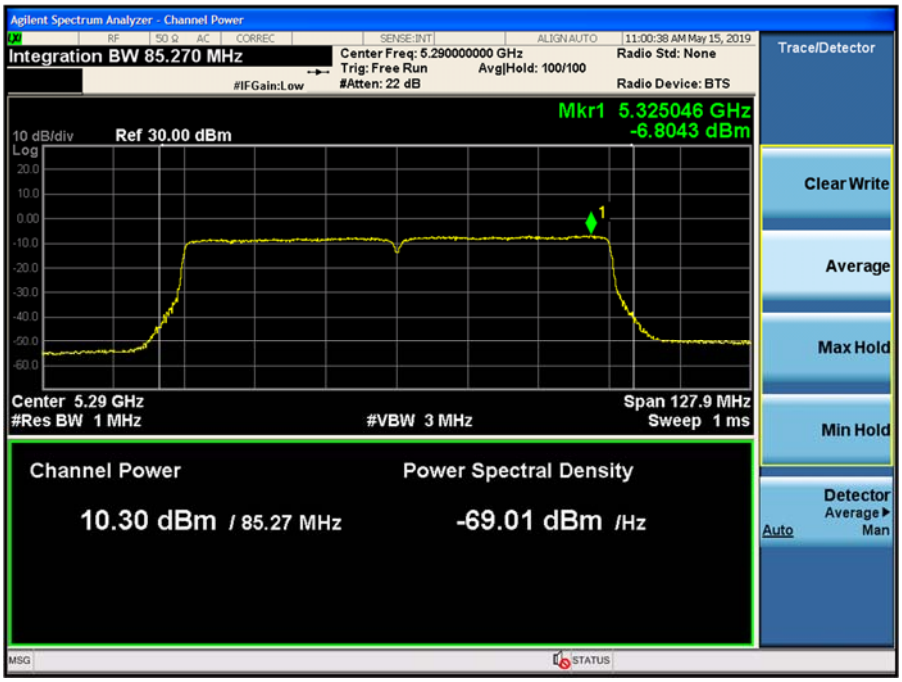
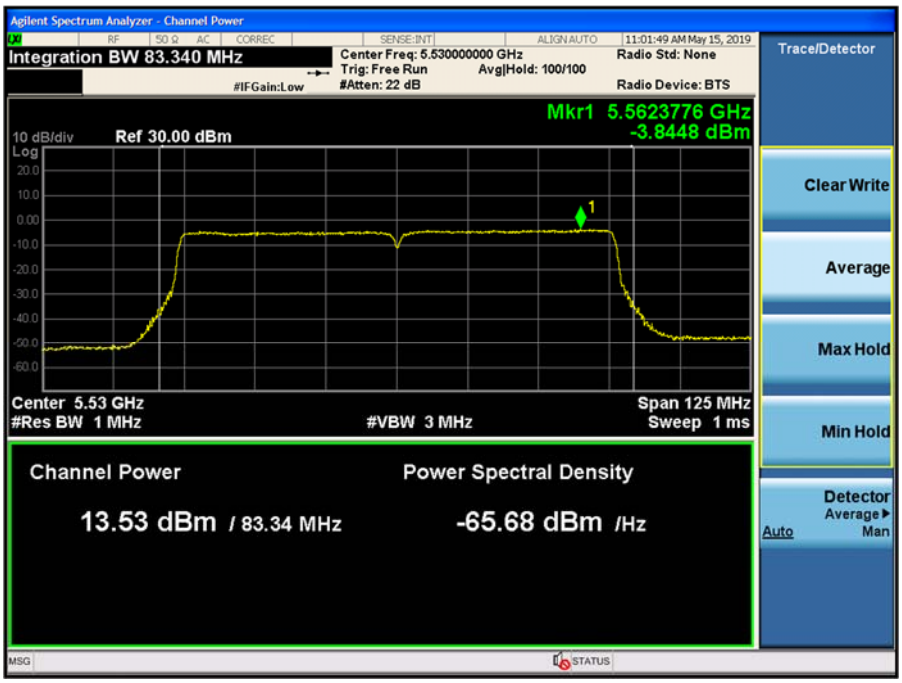


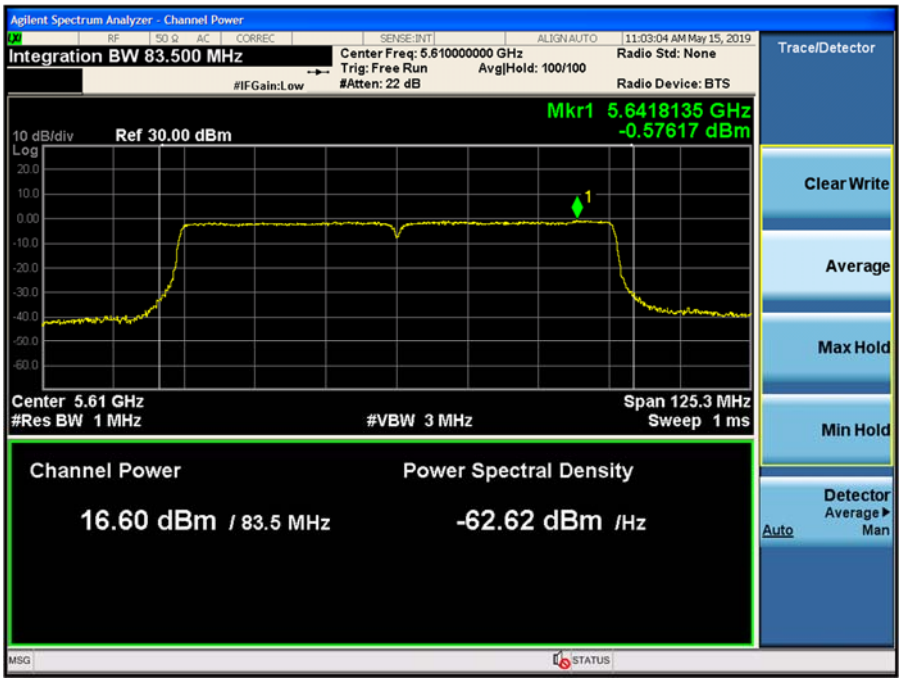
Plot 9-345. Maximum Conducted Output Power and PSD Chain 1 802.11ac VHT80 (Ch. 42)



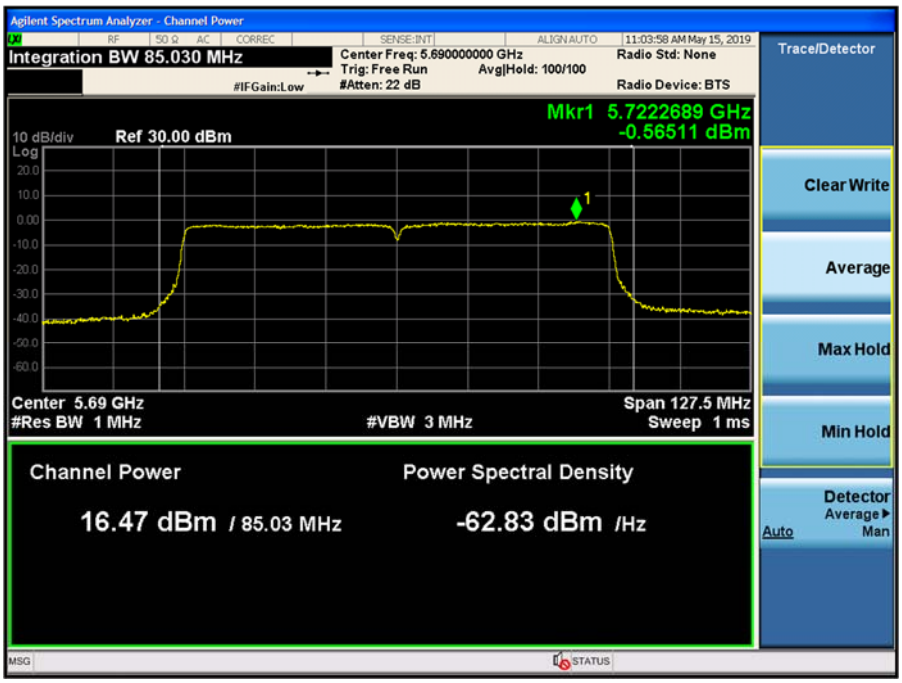
Plot 9-346. Maximum Conducted Output Power and PSD Chain 1 802.11ac VHT80 (Ch. 58)



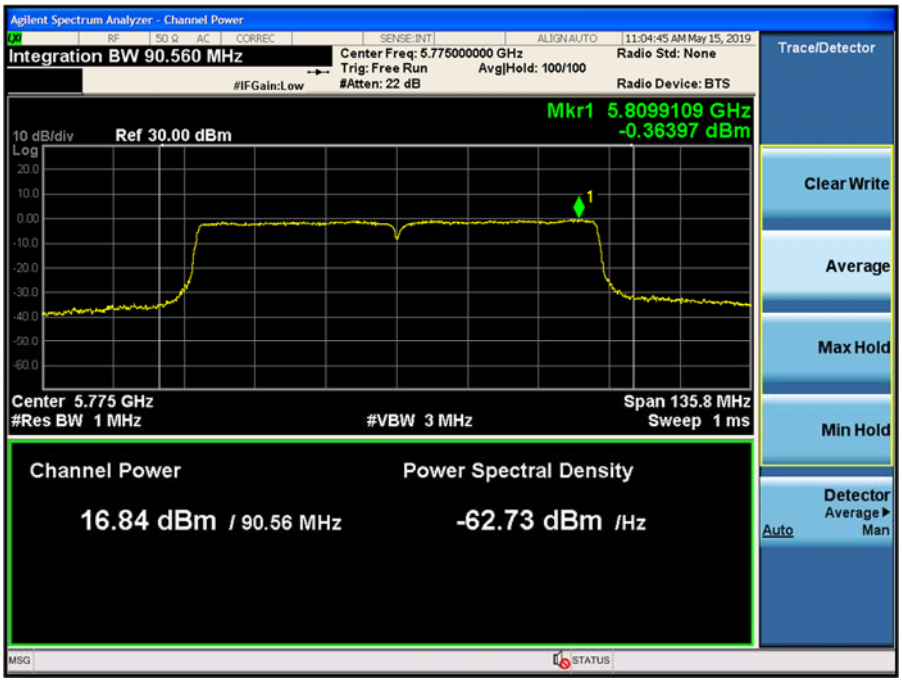
Plot 9-347. Max Conducted Output Power and PSD Chain 1 802.11ac VHT80 (Ch. 106)



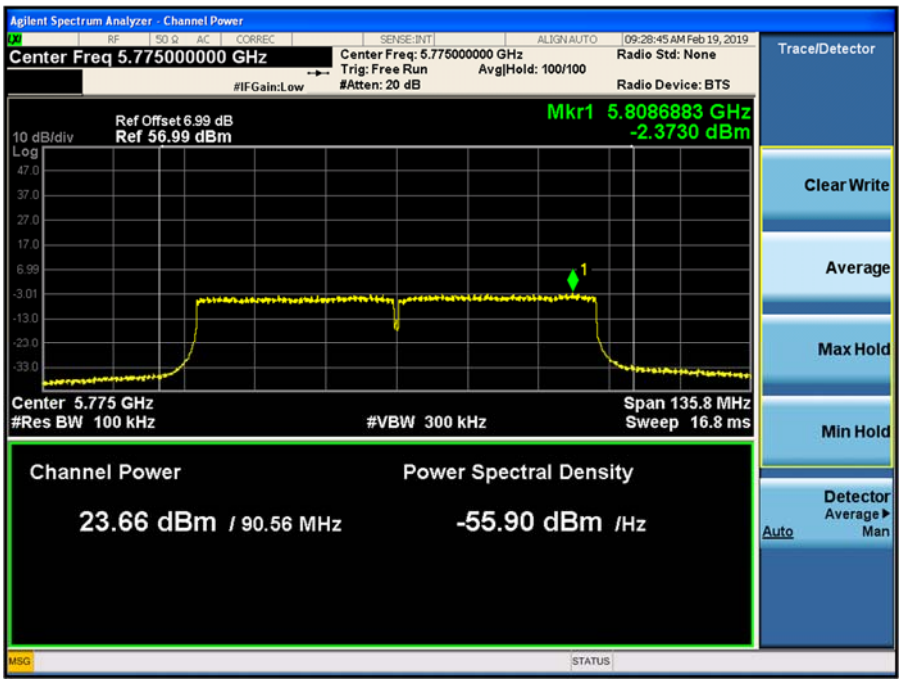
Plot 9-348. Max Conducted Output Power and PSD Chain 1 802.11ac VHT80 (Ch. 122)



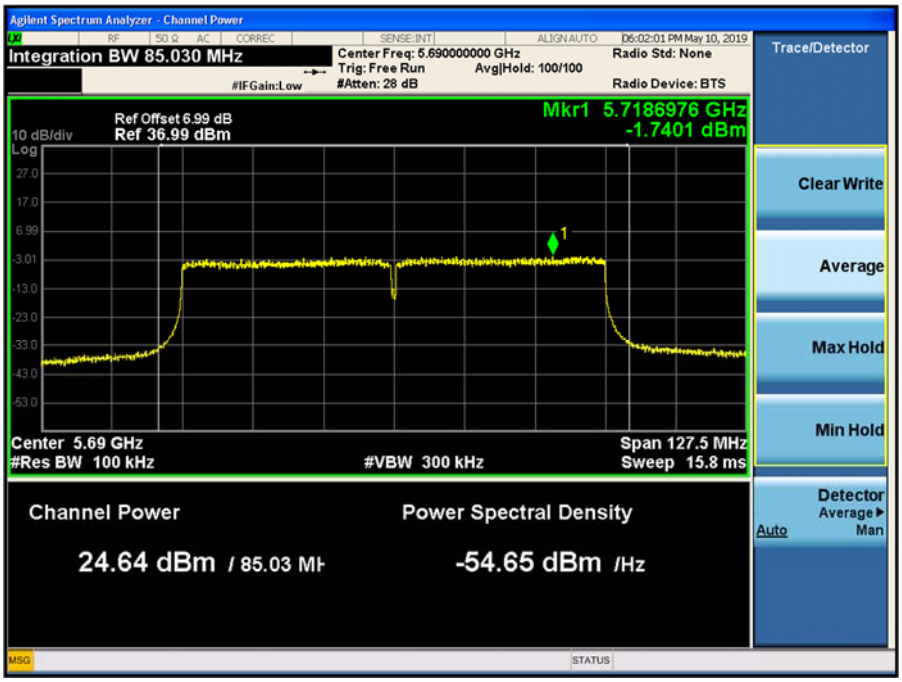
Plot 9-349. Max Conducted Output Power and PSD Chain 1 802.11ac VHT80 (Ch. 138)



Plot 9-350. Maximum Conducted Output Power Chain 1 802.11ac VHT80 (Ch. 155)



Plot 9-351. Maximum Power Spectral Density Chain 1 802.11ac VHT80 (Ch. 155)



Plot 9-352. Maximum Power Spectral Density Chain 1 802.11ac VHT80 (Ch. 138)

9.7 Radiated Spurious and Band Edge Emissions

9.7.1 Test Requirement:

FCC CFR 47 Rule Part 15.407 (b)
ISED RSS-247 [6.2] and RSS GEN [8.9]

9.7.2 Test Method:

Measurements were performed according to the procedure defined in KDB 789033 D02 v02r01 - Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E and ANSI C63.10 2013.

Radiated spurious measurements are made from 30MHz to the 10th harmonic of the fundamental frequency of the transmitter. Measurements below 30MHz were not performed since the radio circuitry of the EUT does not contain clocks below 30MHz. The limit for radiated spurious emissions is per 15.209 and RSS-247 [5.5]. Additionally, emissions found in the restricted bands as listed in 15.205 and RSS-Gen were tested for compliance per limits in 15.209 and RSS-Gen.

The EUT was tested near the low, middle and high channels of operation in each sub band. Guidelines in ANSI C63.10:2013 were followed with respect to maximizing the emissions.

A pre-amp and a high pass filter were required for this test, to provide the measuring system with sufficient sensitivity. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength.
All tests were performed in MIMO transmission mode to measure the worst case for both antennas.

Both horizontal and vertical antenna polarizations were investigated. Worst case maximized data for both polarizations is shown in this test report.

Radiated Spurious Emissions

Spectrum Analyzer Settings:

30 MHz- 1 GHz:

RBW= 120 kHz
VBW ≥ 3 X RBW
Trace Mode: Peak Detector (Max Hold). Final measurements performed using QP Detector.
Span= 30 MHz- 1 GHz
Sweep time= Auto Couple
Sweep points ≥ 2 x Span/RBW

Above 1 GHz:

RBW= 1 MHz
VBW= 10 MHz
Trace Mode: Peak Detector (Max Hold) and RMS Average Detector (Max Hold) (Pre-scan Only)
Span= 1- 18 GHz, 18- 26.5 GHz and 26.5- 40 GHz
Sweep time= Auto Couple
Sweep points ≥ 2 x Span/RBW

Final Peak Measurements above 1 GHz

Spectrum Analyzer Settings:

RBW= 1 MHz
VBW≥ 3 × RBW
Detector= Peak
Span= wide enough to encompass the emission
Sweep points≥ 2 × Span/RBW
Sweep time = Auto Couple
Trace= Max Hold

Final RMS Average Measurements above 1 GHz

Spectrum Analyzer Settings:

RBW= 1 MHz
VBW≥ 3 × RBW
Detector= RMS
Span= wide enough to encompass the emission
Sweep points≥ 2 × Span/RBW
Sweep time = Auto Couple
Trace= Average at least 100 traces
Trace Averaging type= power (RMS)
The duty cycle correction factor is added to the emission level.

Restricted Band-Edge Emissions

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

Spectrum analyzer Settings:

RBW= 1 MHz
VBW= 3 MHz
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

9.7.3 Limits:

Frequency (MHz)	Field Strength (µV/m)	Measurement Distance (meters)	Corrected Field Strength for 3m measurement distance (dBµV/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 (68.2dBµV/m at 3m).

9.7.4 Test Result:

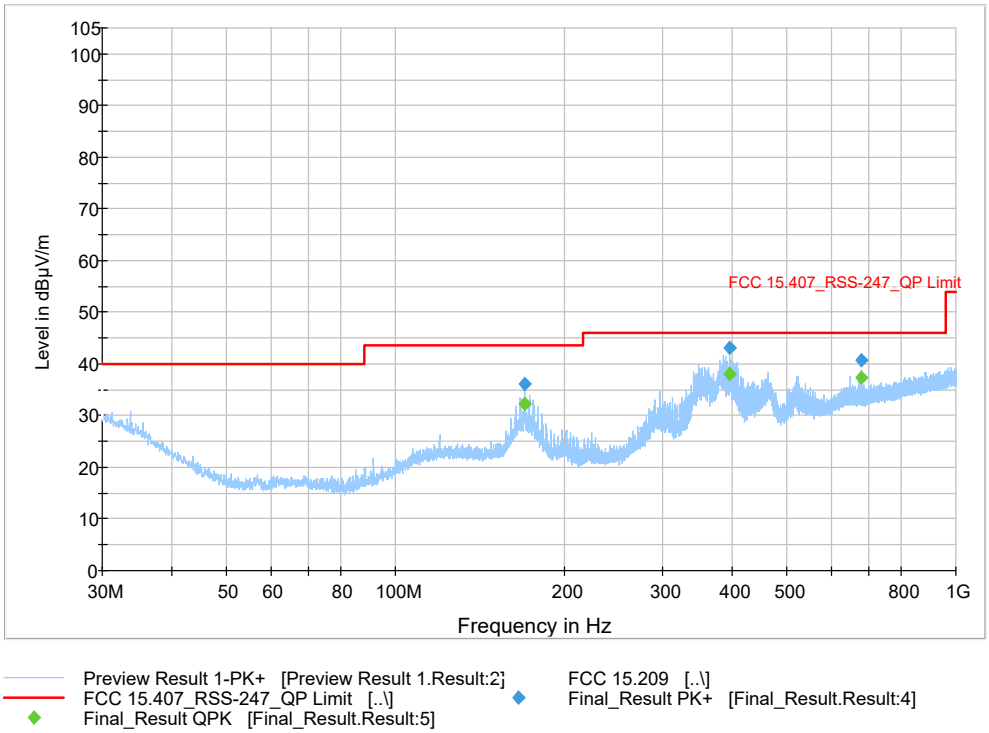
Pass.

9.7.5 Test Data:

9.7.5.1 Radiated Emissions in 30 MHz- 1 GHz range

All channels and modes were tested and worst-case results from 802.11a mode, channel 60 shown here.

RSE 30-1000 MHz					
Frequency (MHz)	**Raw Quasi-Peak Amplitude (dBµV/m)**	**Correction Factor (dB)**	**Corrected Quasi-Peak Field Strength (dBµV/m)**	**Quasi-Peak Limit (dBµV/m)**	**Quasi-Peak Margin (dB)**
170.19	12.69	19.70	32.39	43.50	-11.11
394.24	13.74	24.30	38.04	46.00	-7.96
679.91	7.48	29.80	37.28	46.00	-8.72



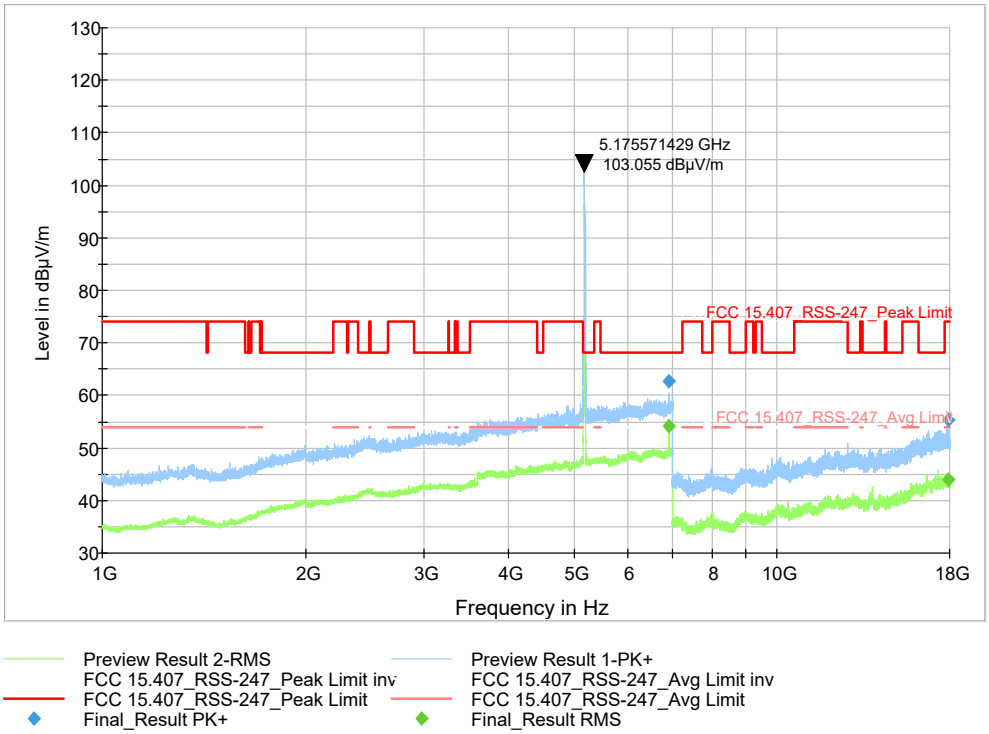
Plot 9-353. Radiated Spurious Emissions 30-1000 MHz Tx Chains 0 & 1 802.11a (Ch. 60)

9.7.5.2 Radiated Emissions in 1-18 GHz range 802.11a

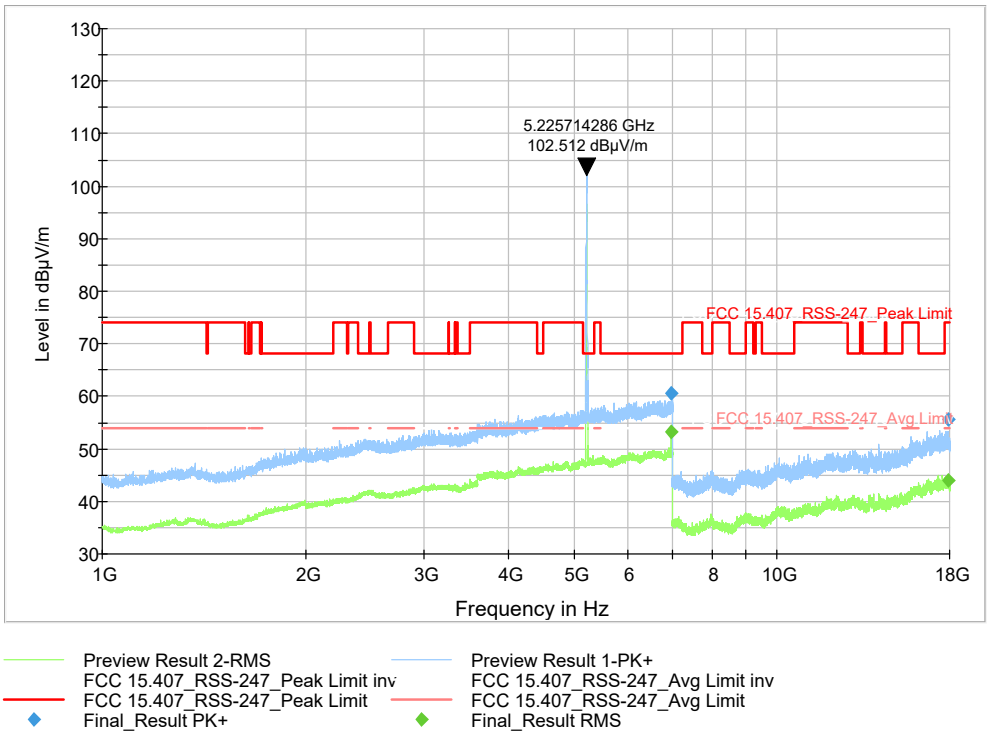
802.11a RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBµV)	Correction Factor (dB)	Corrected Peak Field Strength (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)
5180	6906.60	41.63	21.1	62.73	68.2	-5.47
5180	17890.37	30.96	24.3	55.26	74	-18.74
5220	6968.14	39.83	20.8	60.63	68.2	-7.57
5220	17886.04	31.50	24.2	55.70	74	-18.30
5240	17931.16	30.71	24.4	55.11	74	-18.89
5260	7985.53	32.92	13.7	46.62	68.2	-21.58
5260	10492.67	31.73	16.6	48.33	68.2	-19.87
5260	10520.46	37.61	16.9	54.51	68.2	-13.69
5260	17882.99	31.95	24.2	56.15	74	-17.85
5280	7040.28	39.04	12.0	51.04	68.2	-17.16
5280	10560.38	38.15	16.0	54.15	68.2	-14.05
5320	7093.44	38.36	12.7	51.06	68.2	-17.14
5320	10640.37	32.78	17.1	49.88	74	-24.12
5320	17796.25	30.85	23.3	54.15	74	-19.85
5500	7332.75	32.65	12.2	44.85	74	-29.15
5500	11000.10	32.08	17.4	49.48	74	-24.52
5580	11160.63	33.46	17.6	51.06	74	-22.94
5700	7412.38	33.34	11.8	45.14	74	-28.86
5700	11399.94	36.18	17.2	53.38	74	-20.62
5720	11538.97	33.08	15.8	48.88	74	-25.12
5720	17297.16	38.12	19.0	57.12	68.2	-11.08
5745	11489.89	36.65	17.7	54.35	74	-19.65
5745	17235.11	35.31	22.3	57.61	68.2	-10.59
5785	17349.29	36.79	23.3	60.09	68.2	-8.11
5825	11646.99	35.38	17.7	53.08	74	-20.92
5825	17473.96	38.80	22.7	61.50	68.2	-6.70

802.11a RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBµV)	Correction Factor (incl DCF) (dB)	Corrected Avg. Field Strength (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)
5180	6906.60	33.30	21.1	54.40	54	0.40*
5180	17900.38	19.58	24.3	43.88	54	-10.12
5220	6960.14	32.51	20.8	53.31	54	-0.69*
5220	17896.77	19.66	24.2	43.86	54	-10.14
5240	17899.85	19.49	24.4	43.89	54	-10.11
5260	7997.06	21.81	13.7	35.51	54	-18.49*
5260	17897.03	27.30	16.6	43.90	54	-10.10
5280	7039.88	35.07	12.0	47.07	54	-6.93*
5280	10559.88	26.60	16.0	42.60	54	-11.40*
5320	7093.44	32.64	12.7	45.34	54	-8.66*
5320	10640.03	23.29	17.1	40.39	54	-13.61
5320	17799.56	19.79	23.3	43.09	54	-10.91
5500	7333.21	25.47	12.2	37.67	54	-16.33
5500	10999.88	24.66	17.4	42.06	54	-11.94
5580	11159.83	23.64	17.6	41.24	54	-12.76
5700	7416.78	21.42	11.8	33.22	54	-20.78
5700	11399.94	27.48	17.2	44.68	54	-9.32
5720	11530.11	27.20	15.8	43.00	54	-11.00
5720	17296.41	24.91	19.0	43.91	54	-10.09*
5745	11489.83	26.65	17.7	44.35	54	-9.65
5745	17233.68	22.70	22.3	45.00	54	-9.00*
5785	17353.05	23.26	23.3	46.56	54	-7.44*
5825	11649.79	26.22	17.7	43.92	54	-10.08
5825	17474.96	25.79	22.7	48.49	54	-5.51*

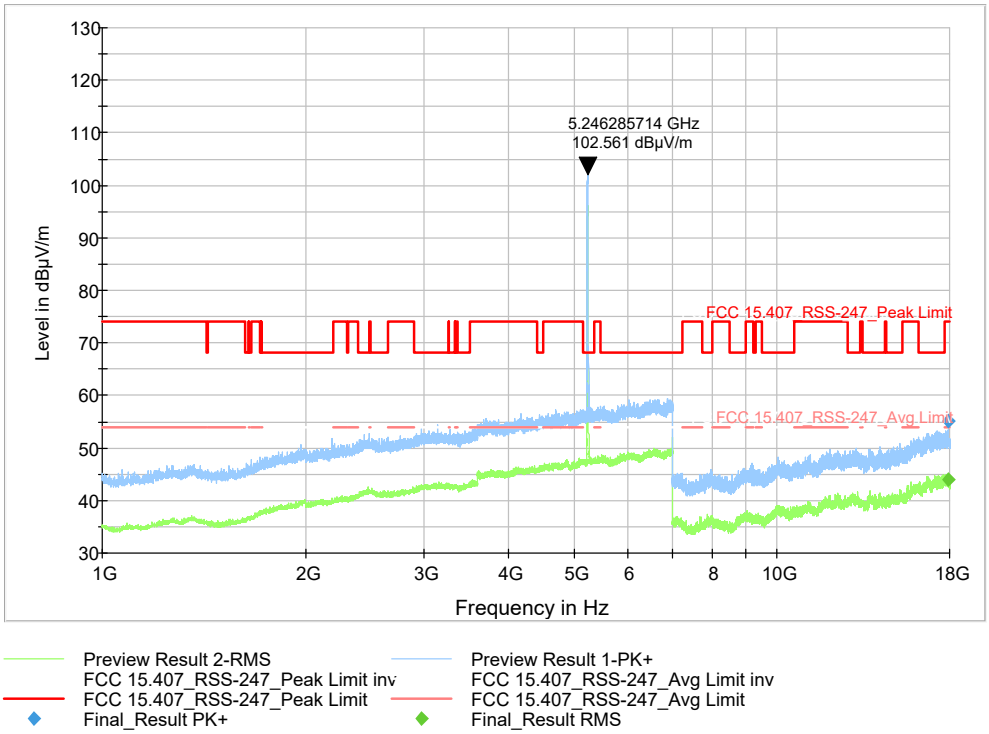
Note*: Emission does not fall in a restricted frequency band, therefore the average limit does not apply.



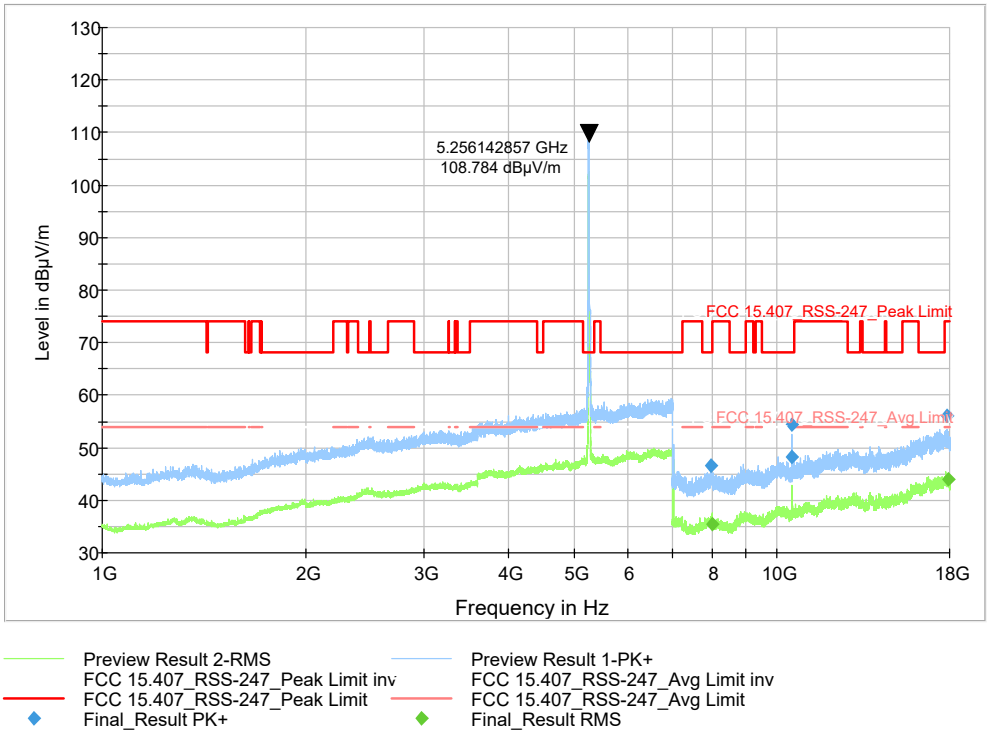
Plot 9-354. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 36)



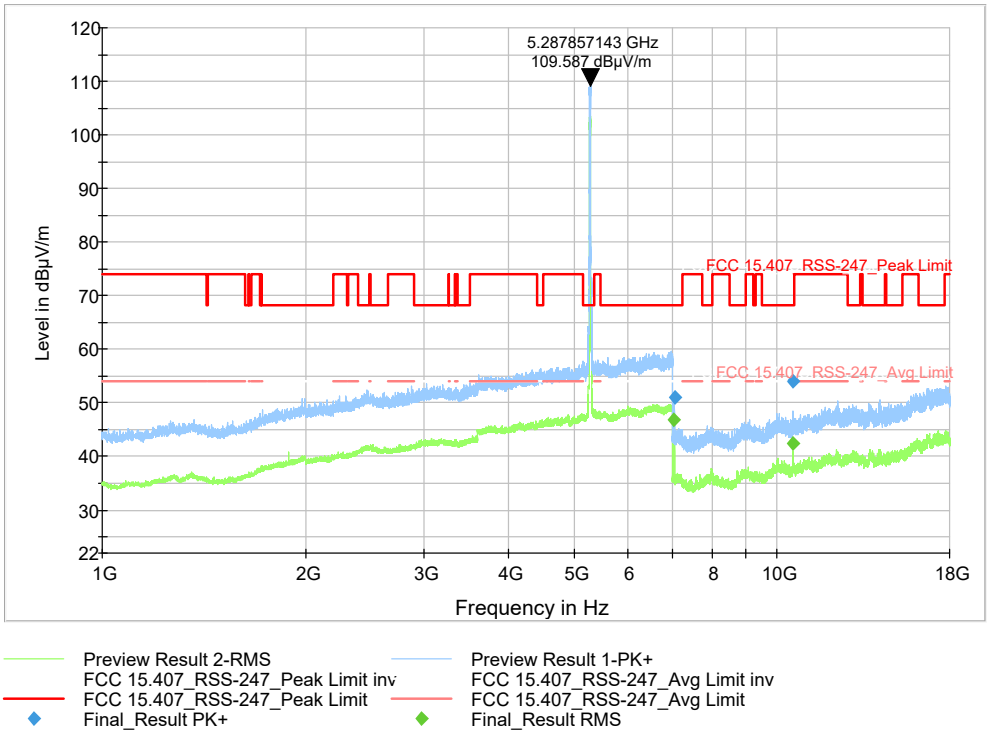
Plot 9-355. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 44)



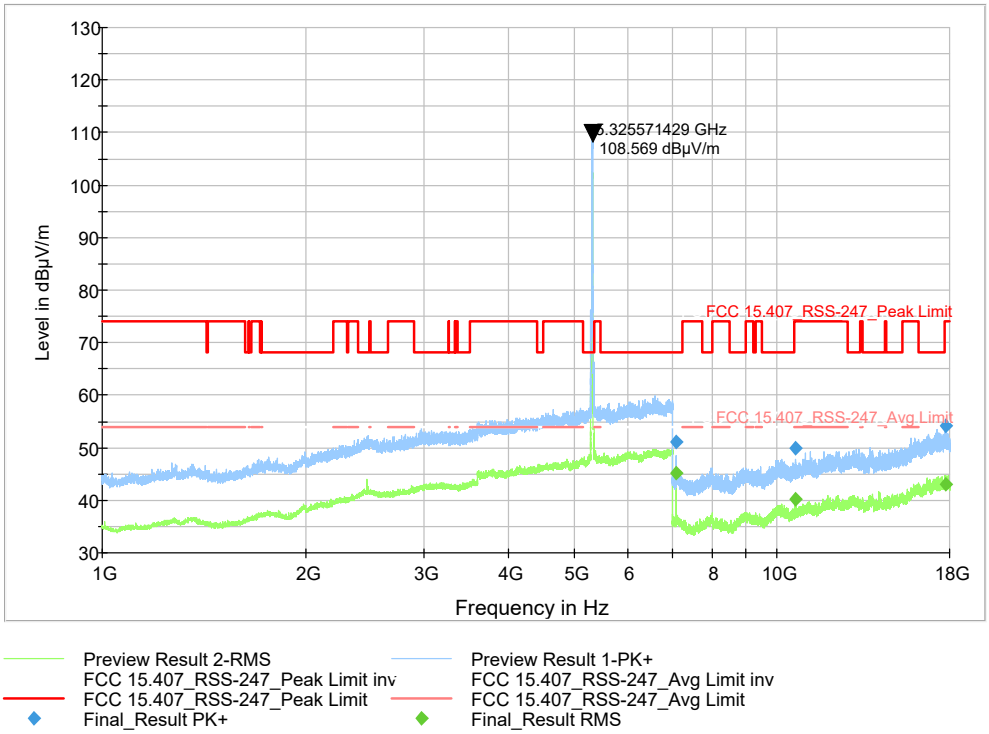
Plot 9-356. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 48)



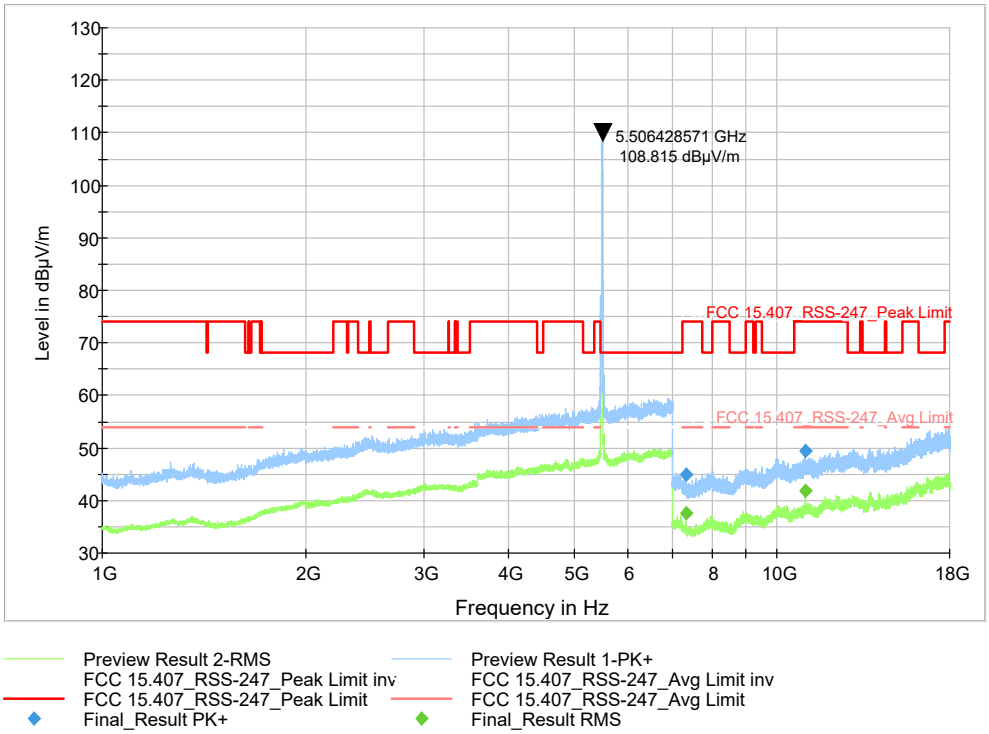
Plot 9-357. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 52)



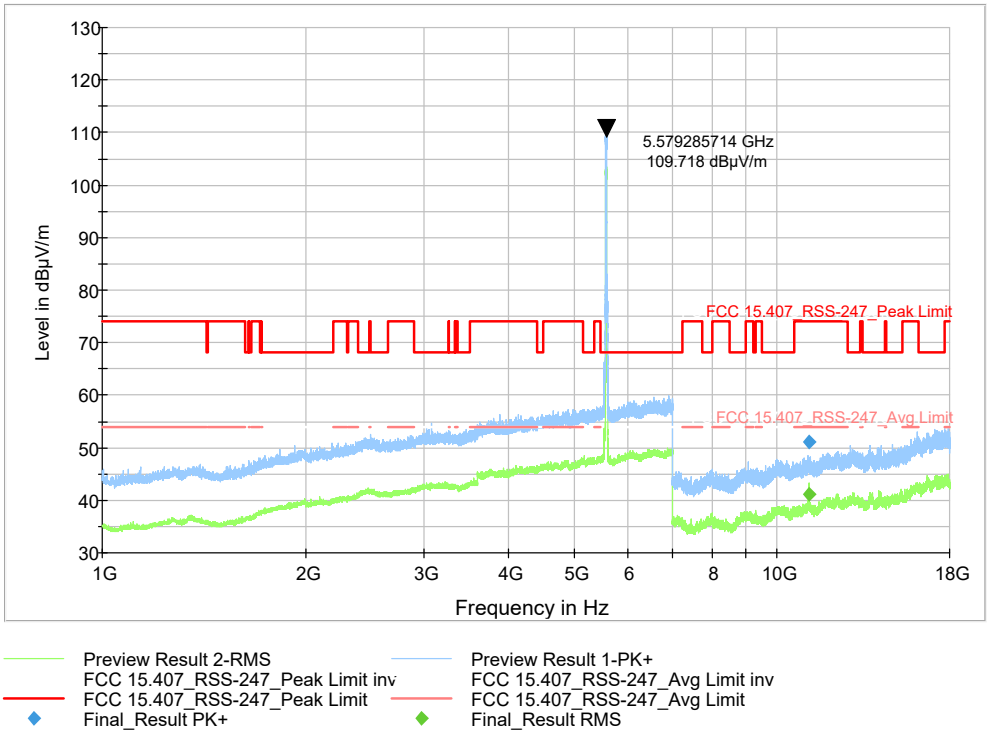
Plot 9-358. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 56)



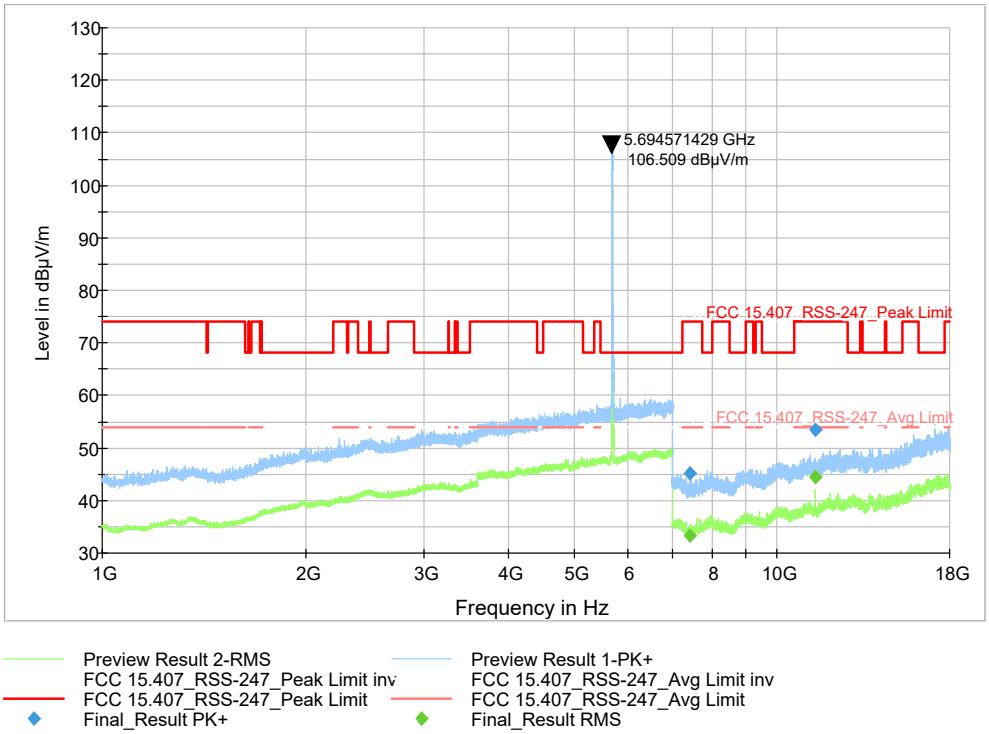
Plot 9-359. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 64)



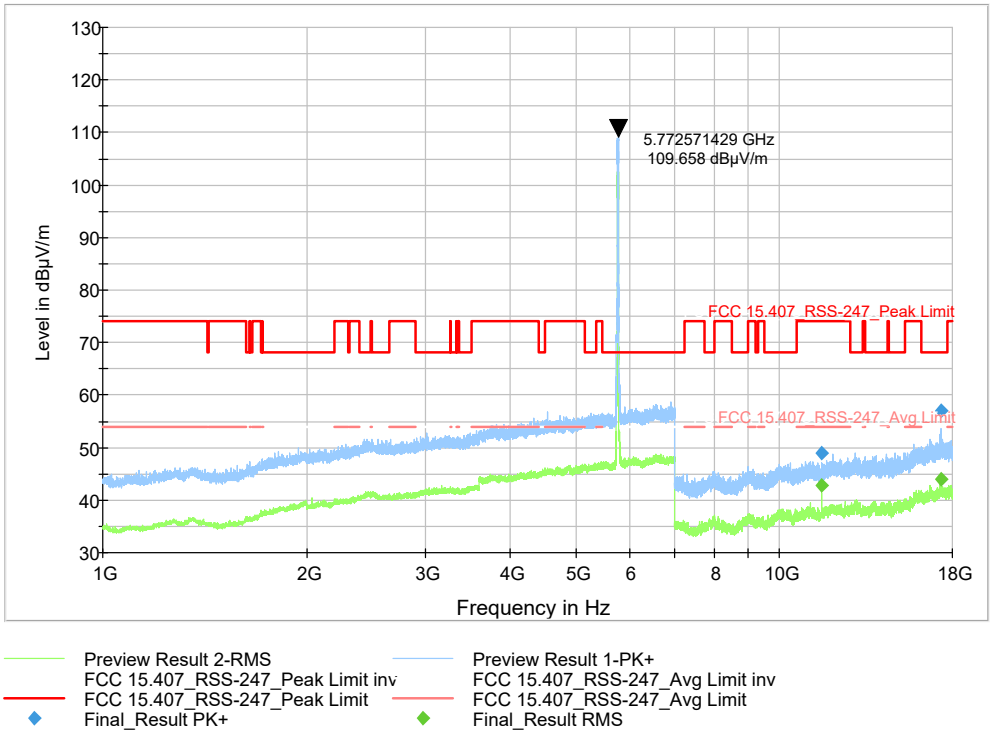
Plot 9-360. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 100)



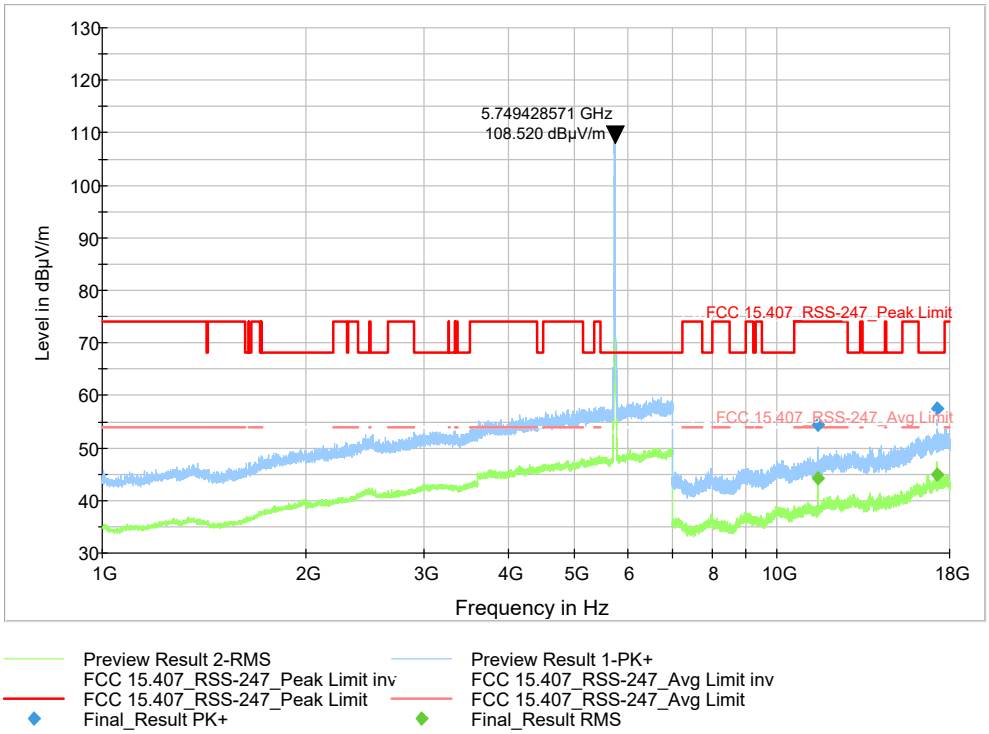
Plot 9-361. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 116)



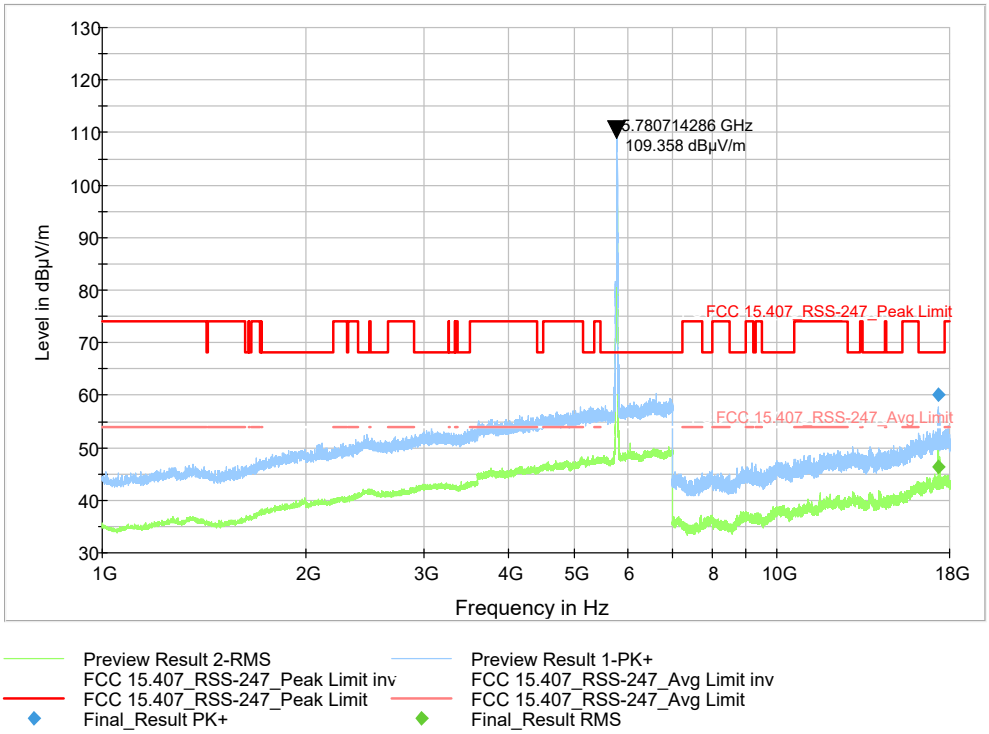
Plot 9-362. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 140)



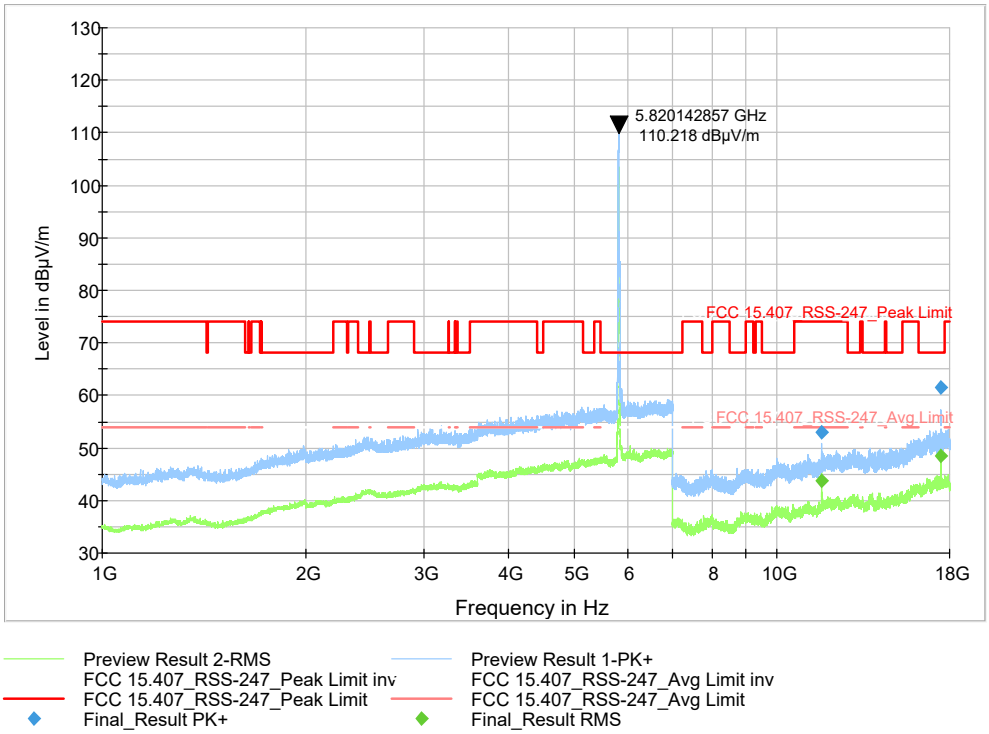
Plot 9-363. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 144)



Plot 9-364. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 149)



Plot 9-365. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 157)



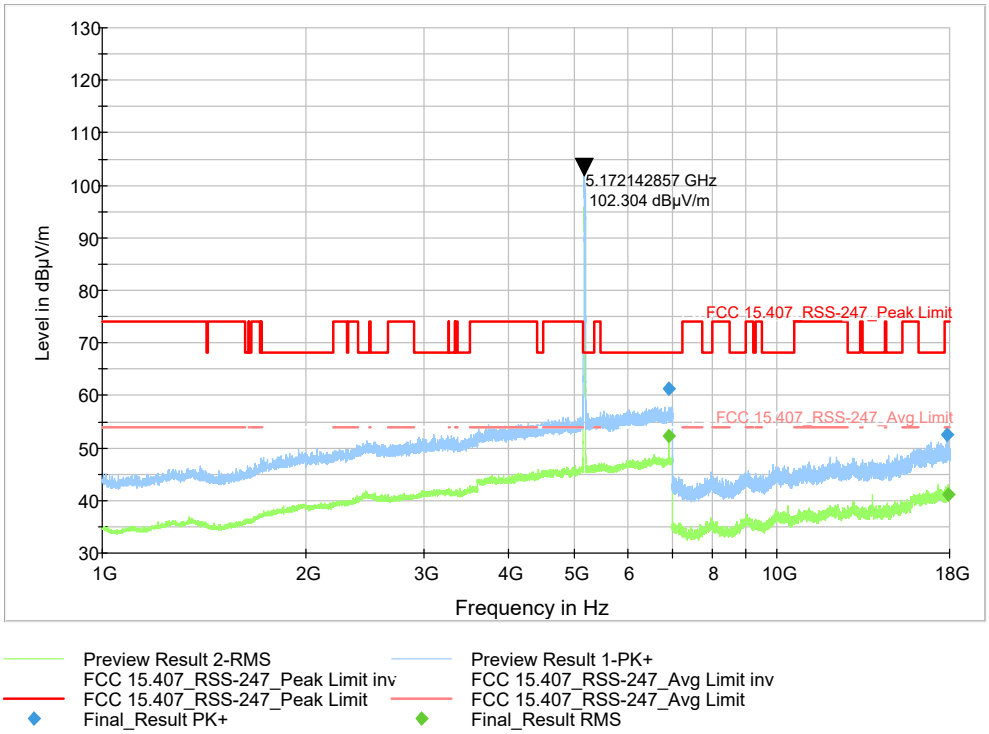
Plot 9-366. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11a (Ch. 165)

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

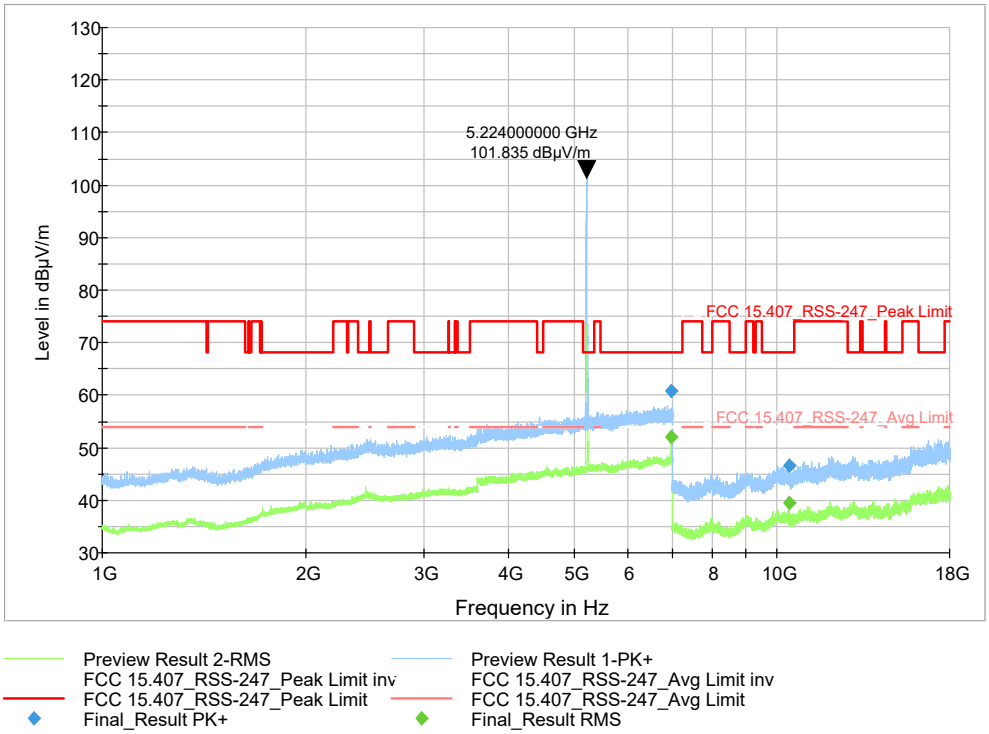
802.11n HT20 RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBµV)	Correction Factor (dB)	Corrected Peak Field Strength (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)
5180	6906.57	42.08	19.3	61.38	68.2	-6.82
5180	17884.94	31.73	20.8	52.53	74	-21.47
5220	6959.74	41.75	19.0	60.75	68.2	-7.45
5220	10440.99	32.07	14.4	46.47	68.2	-21.73
5240	10474.86	31.92	14.5	46.42	68.2	-21.78
5240	17889.56	32.39	20.8	53.19	74	-20.81
5260	10519.88	37.15	16.9	54.05	68.2	-14.15
5260	17893.49	31.45	24.3	55.75	74	-18.25
5280	7039.88	40.17	12.0	52.17	68.2	-16.03
5280	10564.51	35.94	17.0	52.94	68.2	-15.26
5320	7093.44	38.45	12.7	51.15	68.2	-17.05
5320	10641.73	33.01	17.2	50.21	74	-23.79
5320	17771.44	31.50	23.0	54.50	74	-19.50
5500	7327.95	32.50	12.2	44.70	74	-29.30
5500	10999.88	32.92	17.4	50.32	74	-23.68
5580	11150.69	32.63	15.3	47.93	74	-26.07
5580	17801.51	32.76	19.8	52.56	74	-21.44
5700	7599.96	33.41	13.5	46.91	74	-27.09
5700	11400.0	32.02	17.2	49.22	74	-24.78
5745	11489.23	31.35	17.9	49.25	74	-24.75
5745	17226.90	34.40	22.2	56.60	68.2	-11.60
5785	11570.04	38.22	15.5	53.72	74	-20.28
5785	17358.50	39.13	20.0	59.13	68.2	-9.07
5825	7762.39	32.72	12.5	45.22	68.2	-22.98
5825	11650.13	34.40	17.7	52.10	74	-21.90
5825	17470.33	38.92	22.7	61.62	68.2	-6.58
5720	17897.57	31.60	20.8	52.40	74	-21.60

802.11N HT20 RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	**Frequency (MHz)**	**Raw Avg. Amplitude (dBµV)**	**Correction Factor (incl DCF) (dB)**	**Corrected Avg. Field Strength (dBµV/m)**	**Average Limit (dBµV/m)**	**Margin (dB)**
5180	6906.6	33.16	19.3	52.46	54	-1.54*
5180	17898.94	20.36	20.8	41.16	54	-12.84
5220	6960.14	33.08	19.0	52.08	54	-1.92*
5220	10439.79	25.12	14.4	39.52	54	-14.48*
5240	10480.06	16.00	14.5	30.50	54	-14.50*
5240	17939.69	20.16	20.8	40.96	54	-13.04
5260	10521.26	25.52	16.9	42.42	54	-11.58*
5260	17897.14	19.63	24.3	43.93	54	-10.07
5280	7039.88	36.25	12.0	48.25	54	-5.75*
5280	10564.51	24.58	16.9	41.48	54	-12.52
5320	7093.44	31.90	12.7	44.60	54	-9.40*
5320	10640.08	23.38	17.1	40.48	54	-13.52
5320	17799.52	19.73	23.3	43.03	54	-10.97
5500	7333.15	24.27	12.2	36.47	54	-17.53
5500	10999.88	24.21	17.4	41.61	54	-12.39
5580	11159.83	26.19	15.3	41.49	54	-12.51
5580	17888.31	20.50	20.8	41.30	54	-12.70
5700	7599.96	26.12	13.5	39.62	54	-14.38
5700	11400.8	25.49	17.2	42.69	54	-11.31
5745	11489.83	25.10	17.7	42.80	54	-11.20
5745	17229.89	23.58	22.2	45.78	54	-8.22*
5785	11569.98	28.32	15.5	43.82	54	-10.18
5785	17355.80	26.29	20.0	46.29	54	-7.71*
5825	7766.73	25.35	12.5	37.85	54	-16.15
5825	11649.79	26.02	17.7	43.72	54	-10.28
5825	17474.86	24.48	22.7	47.18	54	-6.82*
5720	17801.52	20.56	19.8	40.36	54	-13.64

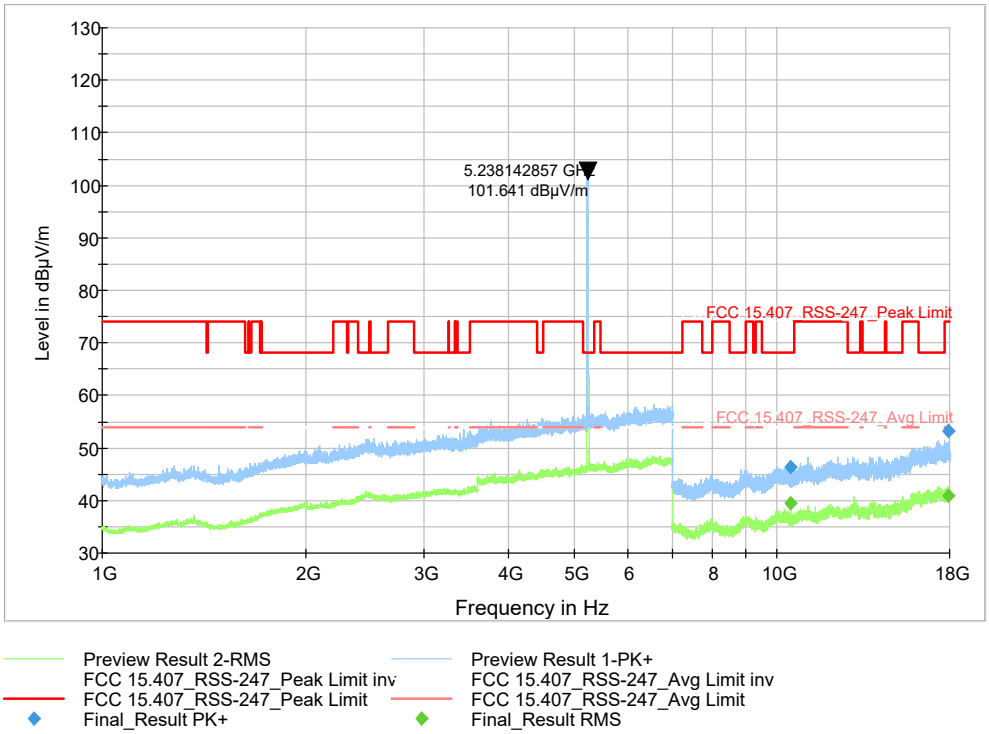
Note*: Emission does not fall in a restricted frequency band, therefore the average limit does not apply.



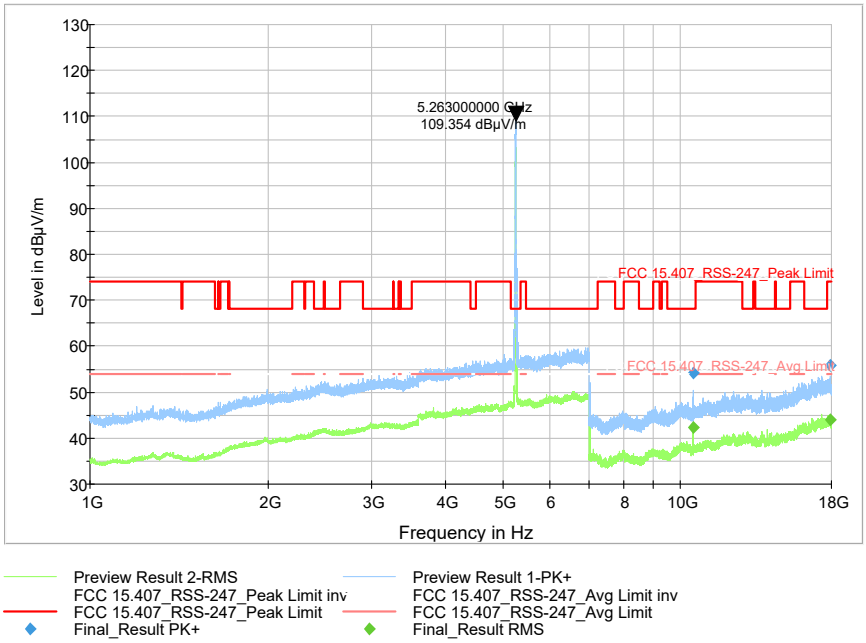
Plot 9-367. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 36)



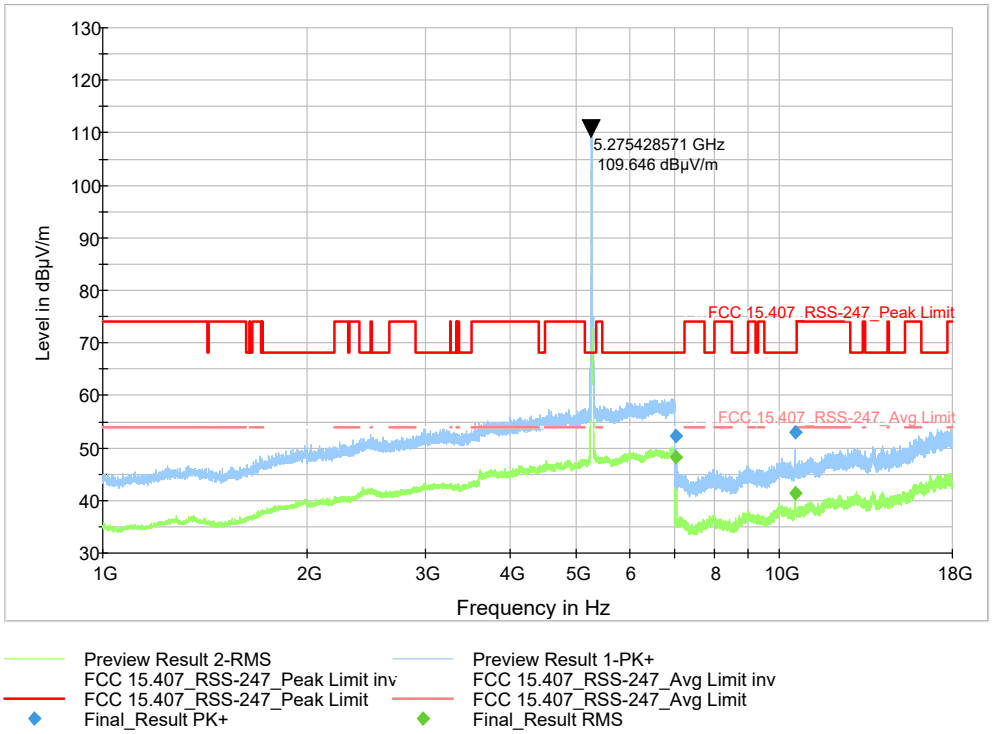
Plot 9-368. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 44)



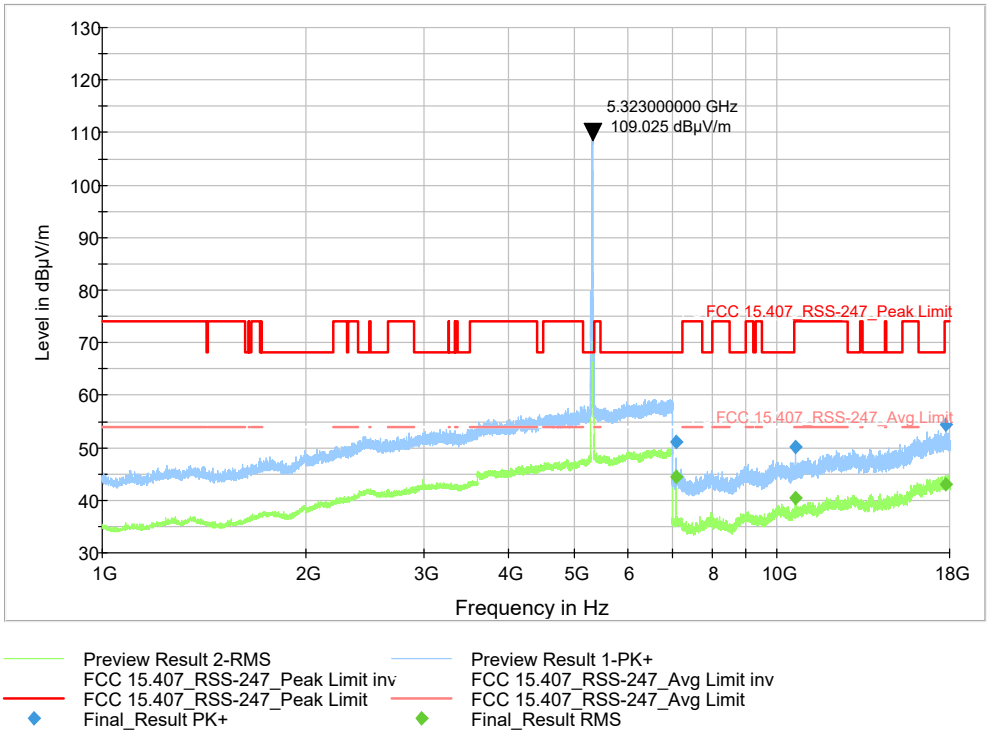
Plot 9-369. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 48)



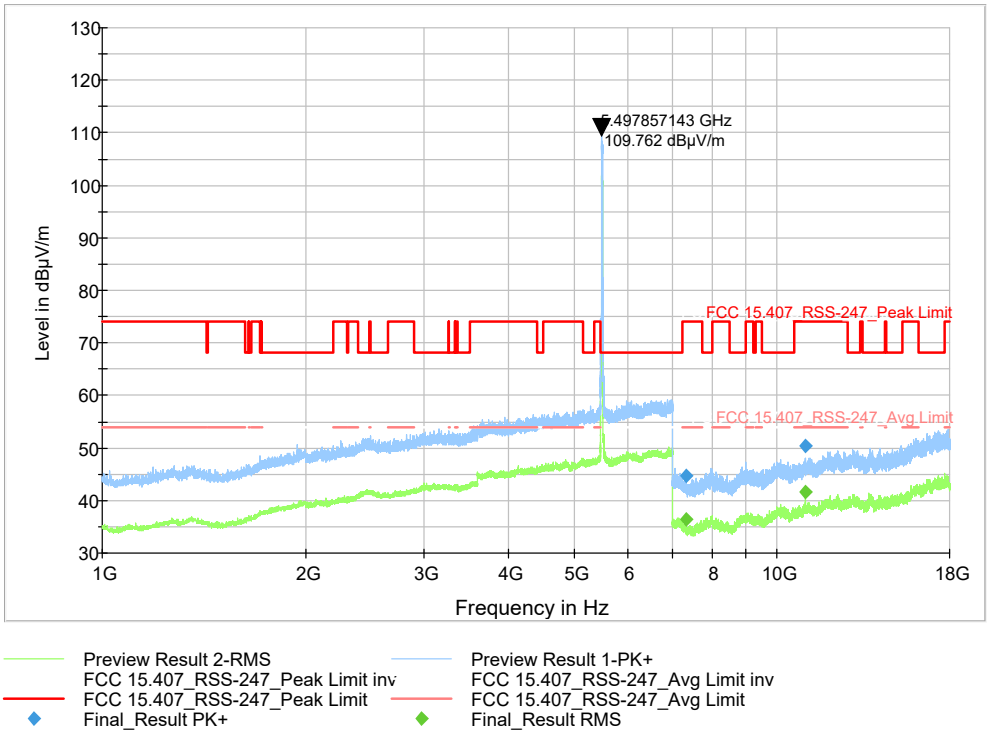
Plot 9-370. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 52)



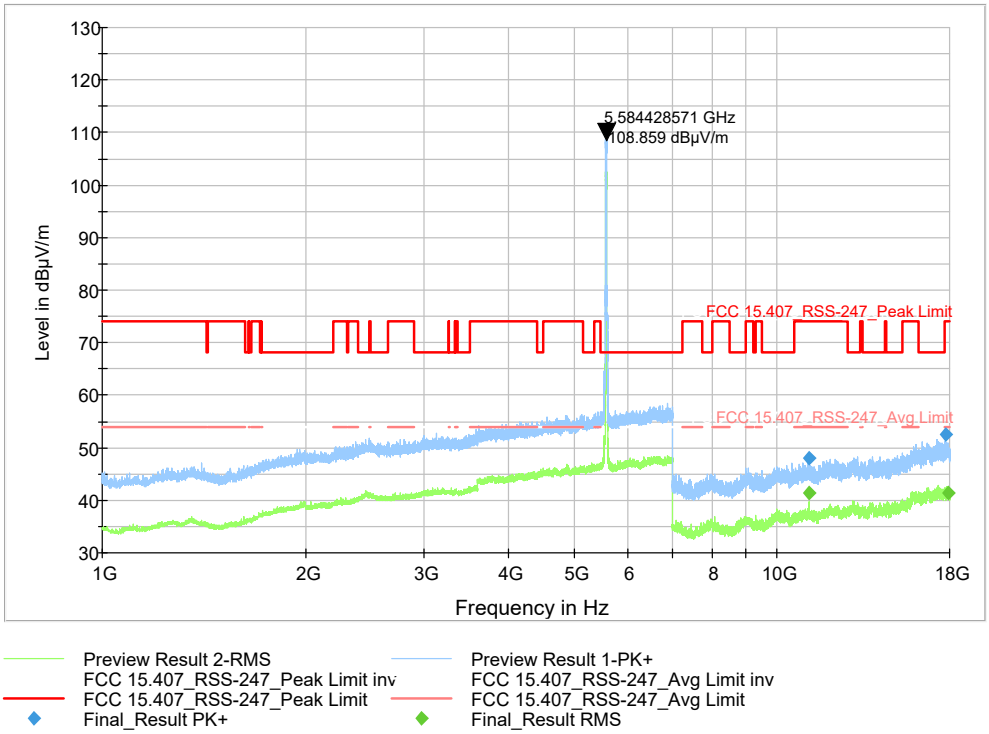
Plot 9-371. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 56)



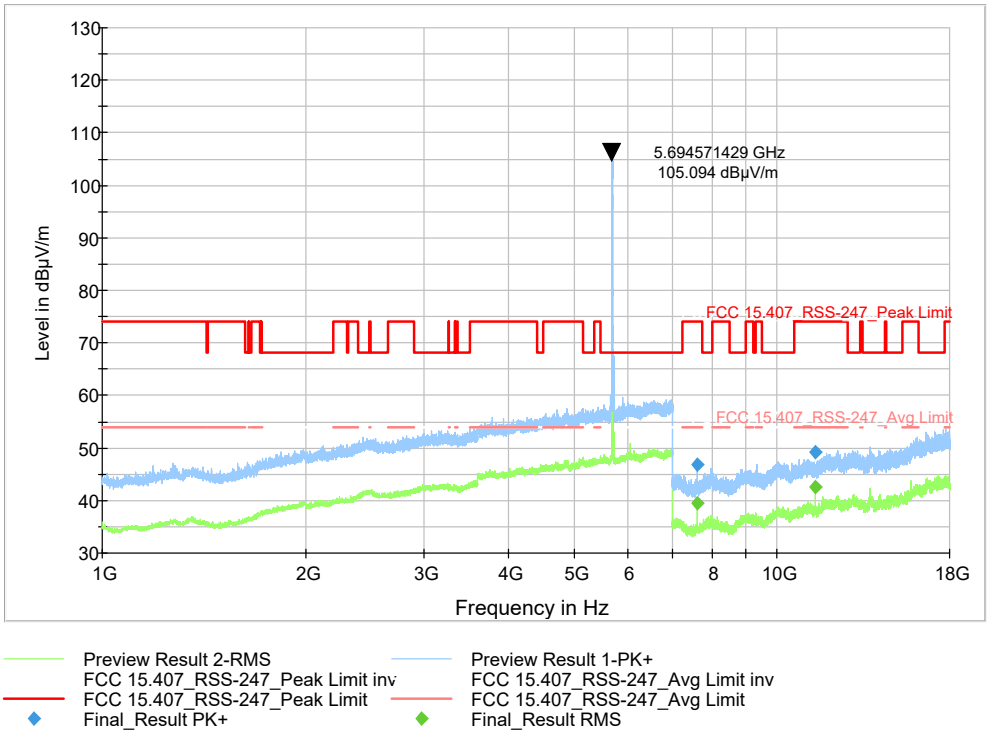
Plot 9-372. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 64)



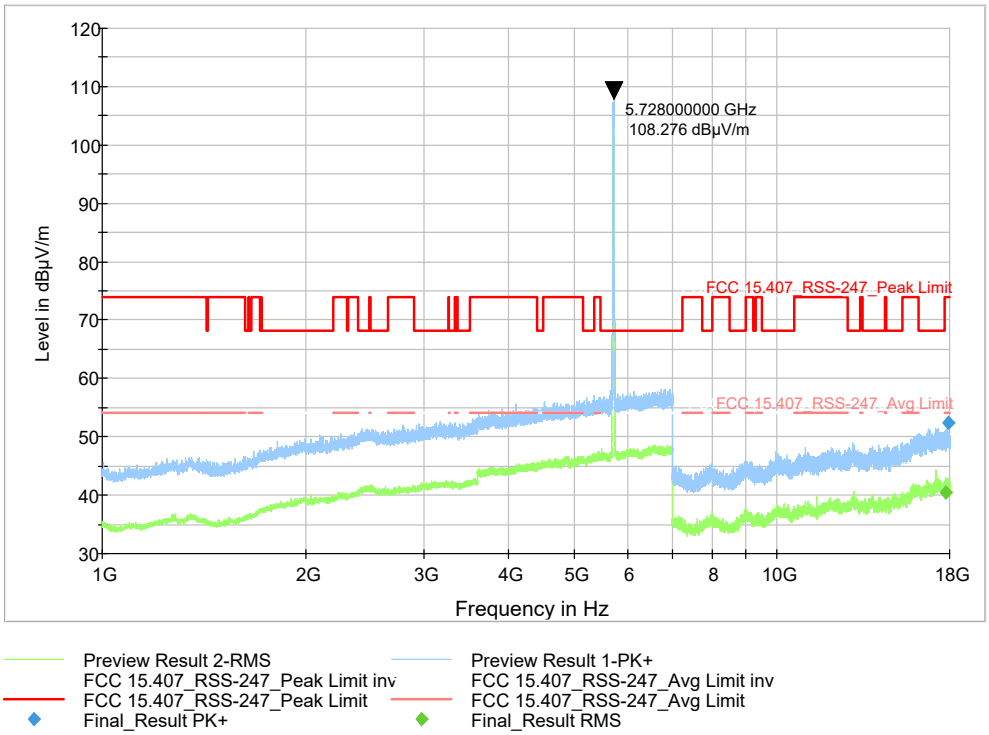
Plot 9-373. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 100)



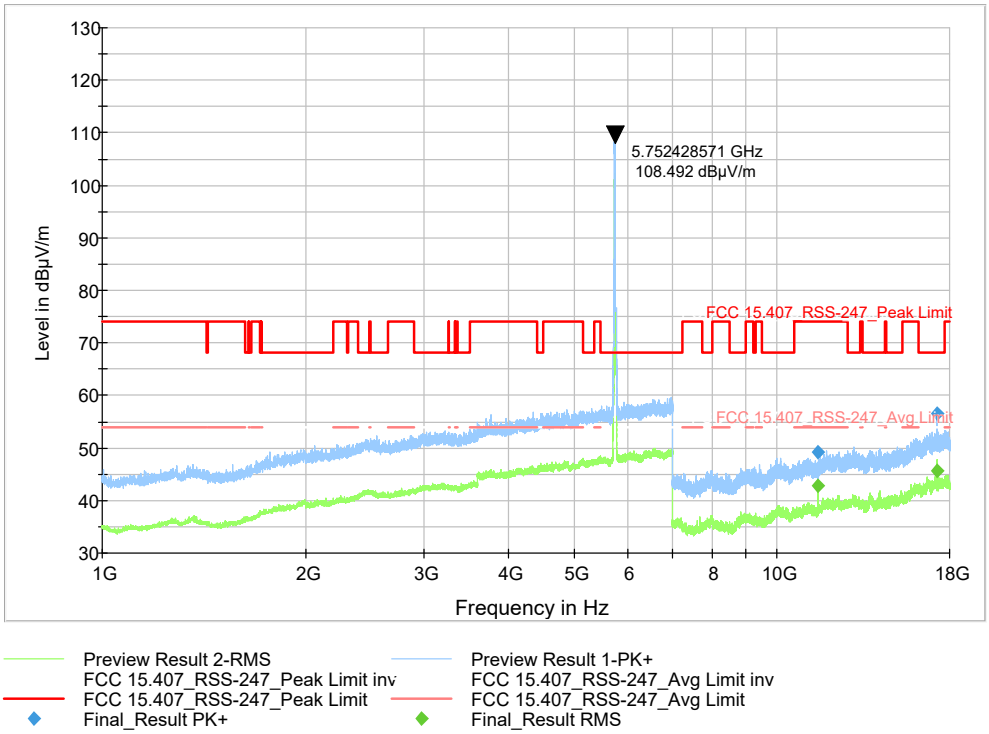
Plot 9-374. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 116)



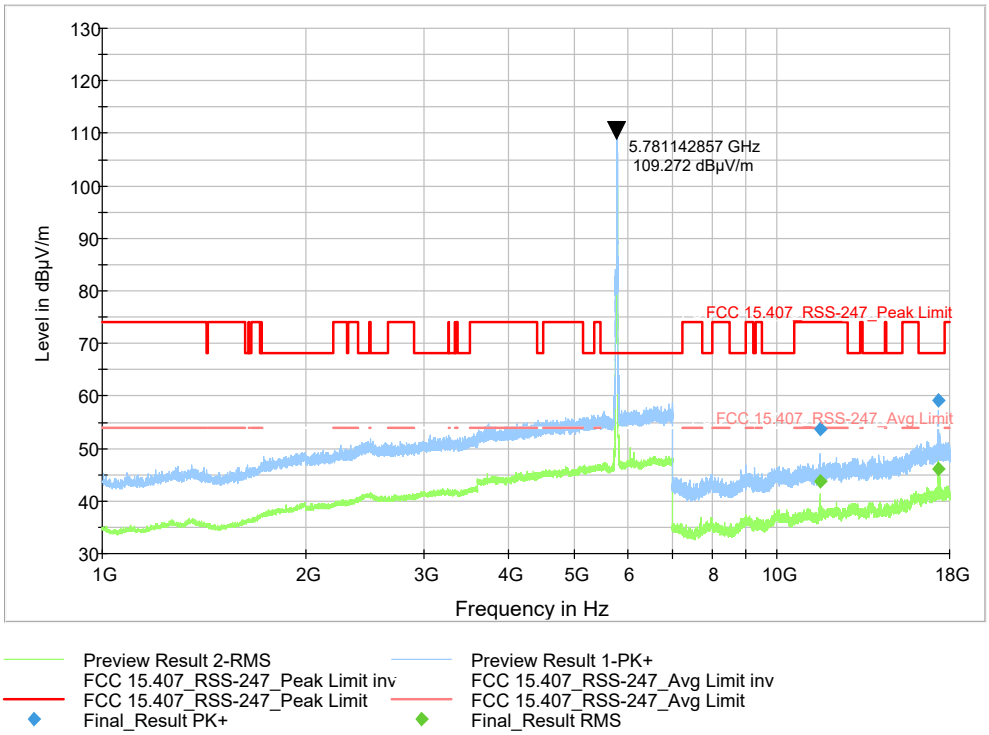
Plot 9-375. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 140)



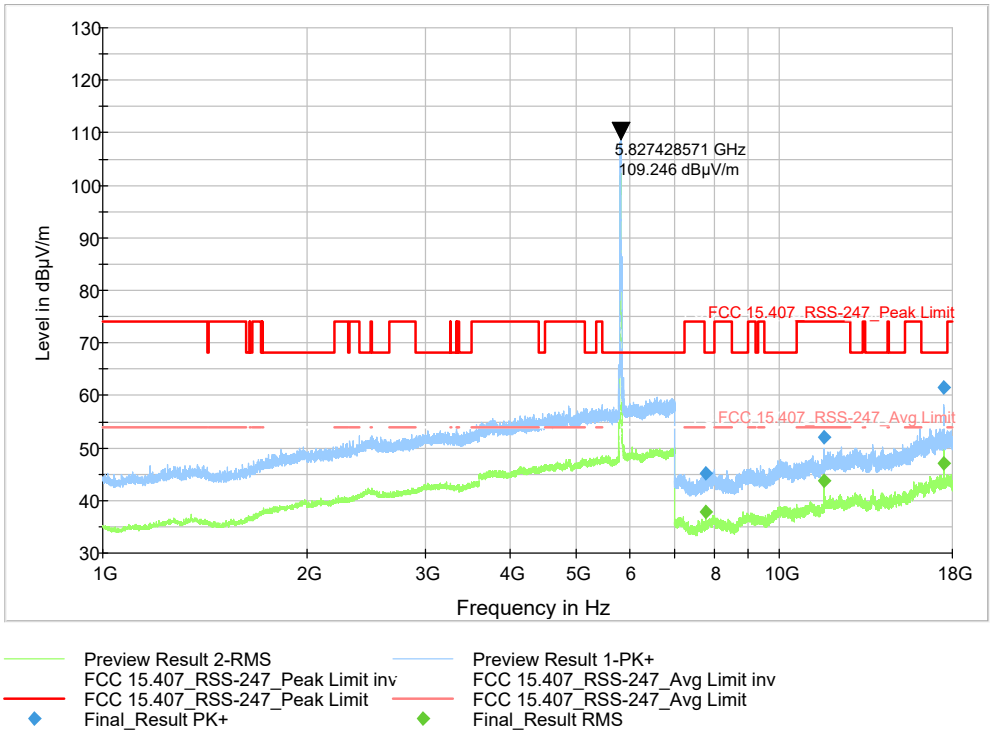
Plot 9-376. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 144)



Plot 9-377. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 149)



Plot 9-378. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 157)



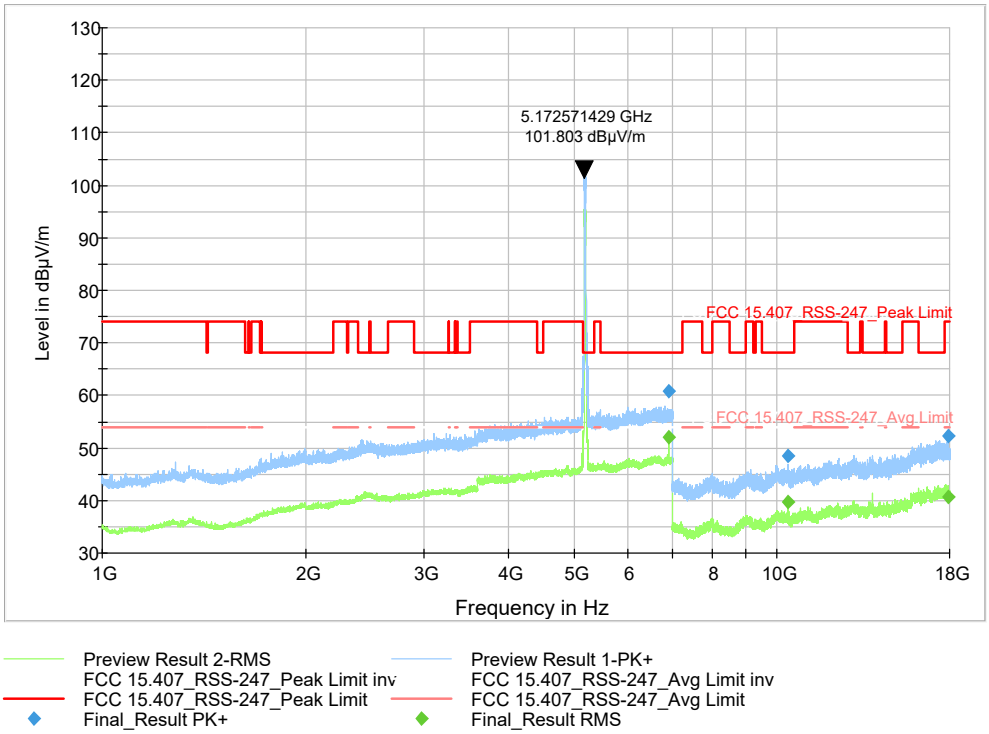
Plot 9-379. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n (Ch. 165)

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

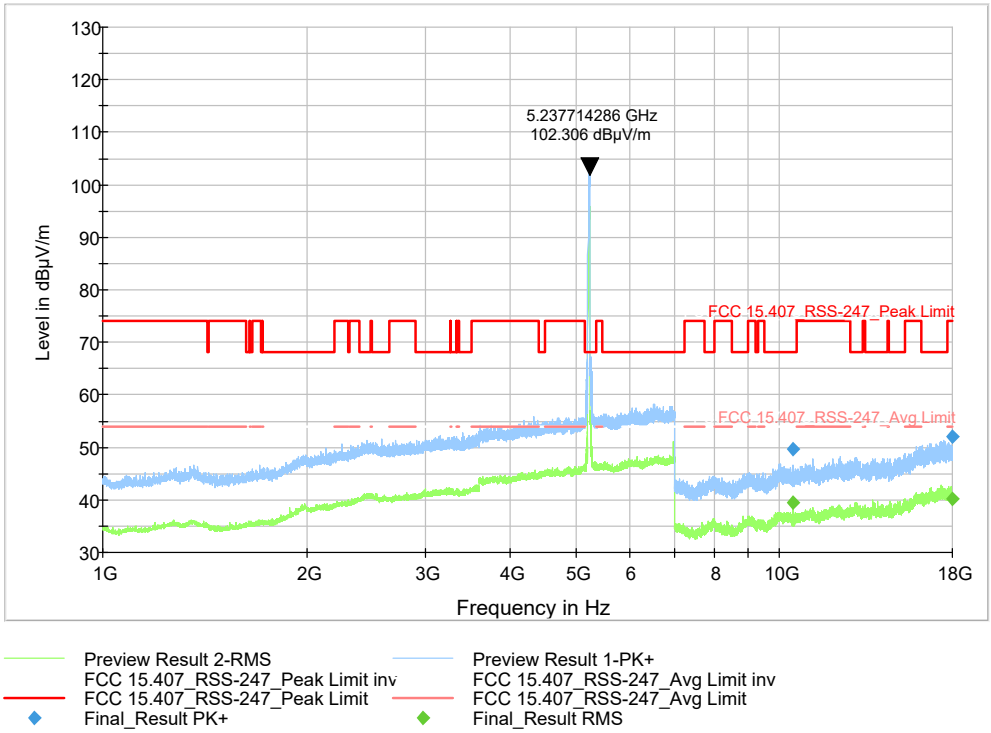
802.11n HT40 RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBµV)	Correction Factor (dB)	Corrected Peak Field Strength (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)
5190	6919.89	41.67	19.1	60.77	68.2	-7.43
5190	10379.75	33.87	14.6	48.47	68.2	-19.73
5190	17944.43	31.47	20.8	52.27	74	-21.73
5230	10459.96	35.06	14.5	49.56	68.2	-18.63
5230	17998.51	31.88	20.1	51.98	74	-22.02
5270	7026.58	42.53	10.2	52.73	68.2	-15.47
5270	17901.50	31.57	20.8	52.37	74	-21.63
5310	7080.15	38.72	12.6	51.32	68.2	-16.88
5310	10620.26	30.96	17.1	48.06	74	-25.94
5310	14165.91	42.09	9.2	51.29	68.2	-16.91
5510	1845.57	37.86	9.5	47.36	68.2	-20.84
5510	7346.78	34.09	10.3	44.39	74	-29.61
5510	10977.08	32.71	15.1	47.81	74	-26.19
5550	7400.01	34.90	10.0	44.90	74	-29.10
5550	11099.85	34.35	15.5	49.85	74	-24.15
5670	7566.43	33.06	11.4	44.46	74	-29.54
5670	11341.96	32.22	14.9	47.12	74	-26.88
5755	11509.94	35.51	18.0	53.51	74	-20.49
5795	11581.01	32.35	15.5	47.85	74	-26.15
5795	17382.58	33.25	19.8	53.05	68.2	-15.15
5710	7613.19	33.85	11.5	45.35	74	-28.65
5710	11420.11	34.65	15.1	49.75	74	-24.25
5710	17786.36	31.94	19.6	51.54	74	-22.46

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	6919.89	33.25	19.1	52.35	54	-1.64*
5190	10380.15	25.39	14.6	39.99	54	-14.01*
5190	17939.98	20.13	20.9	41.03	54	-12.97
5230	10459.96	25.24	14.5	39.74	54	-14.26*
5230	17998.85	20.41	20.1	40.51	54	-13.49
5270	7026.58	37.96	10.2	48.16	54	-5.84*
5270	17898.70	20.57	20.8	41.37	54	-12.63
5310	7080.15	33.53	12.6	46.13	54	-7.87*
5310	10619.92	23.26	17.1	40.36	54	-13.64
5310	14160.08	33.53	9.2	42.73	54	-11.27*
5510	1871.11	26.98	9.5	36.48	54	-17.52
5510	7346.50	26.94	10.3	37.24	54	-16.76
5510	11020.04	25.23	15.1	40.33	54	-13.67
5550	7400.06	28.90	10.0	38.9	54	-15.11
5550	11099.79	24.46	15.5	39.96	54	-14.04
5670	7560.03	27.46	11.3	38.76	54	-15.24
5670	11339.96	25.31	14.9	40.21	54	-13.79
5755	11510.00	26.99	18.0	44.99	54	-9.01
5795	11589.81	26.68	15.5	42.18	54	-11.82
5795	17386.23	22.59	19.8	42.39	54	-11.61*
5710	7613.25	25.92	11.0	36.92	54	-17.08
5710	11420.11	25.77	15.1	40.87	54	-13.13
5710	17798.07	21.55	19.2	40.75	54	-13.25

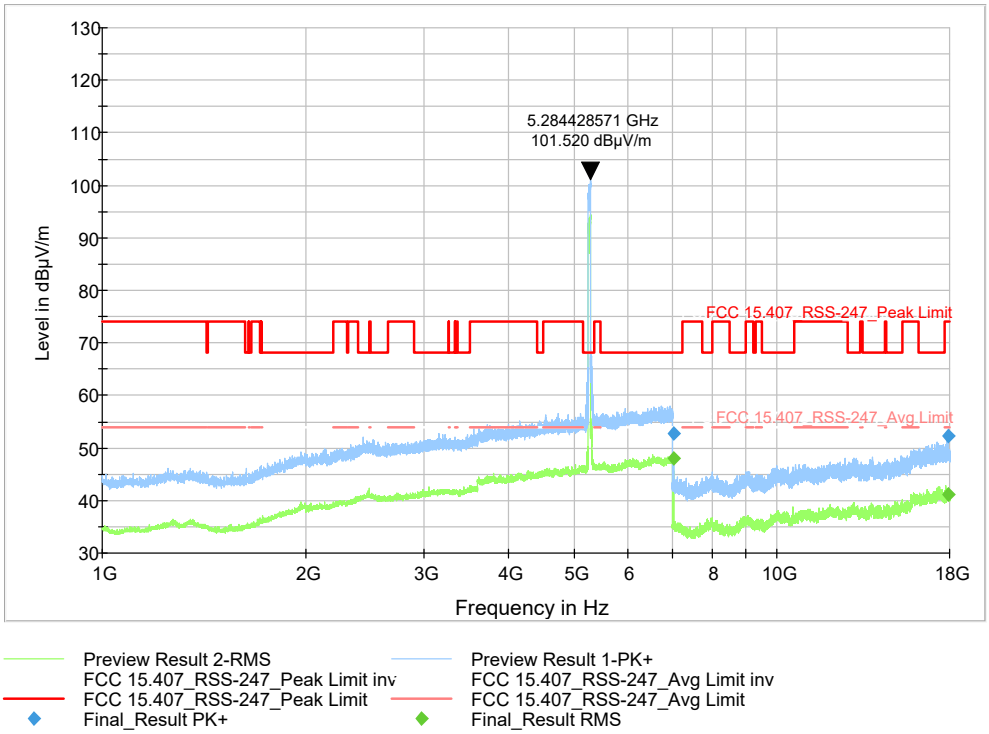
Note*: Emission does not fall in a restricted frequency band, therefore the average limit does not apply.



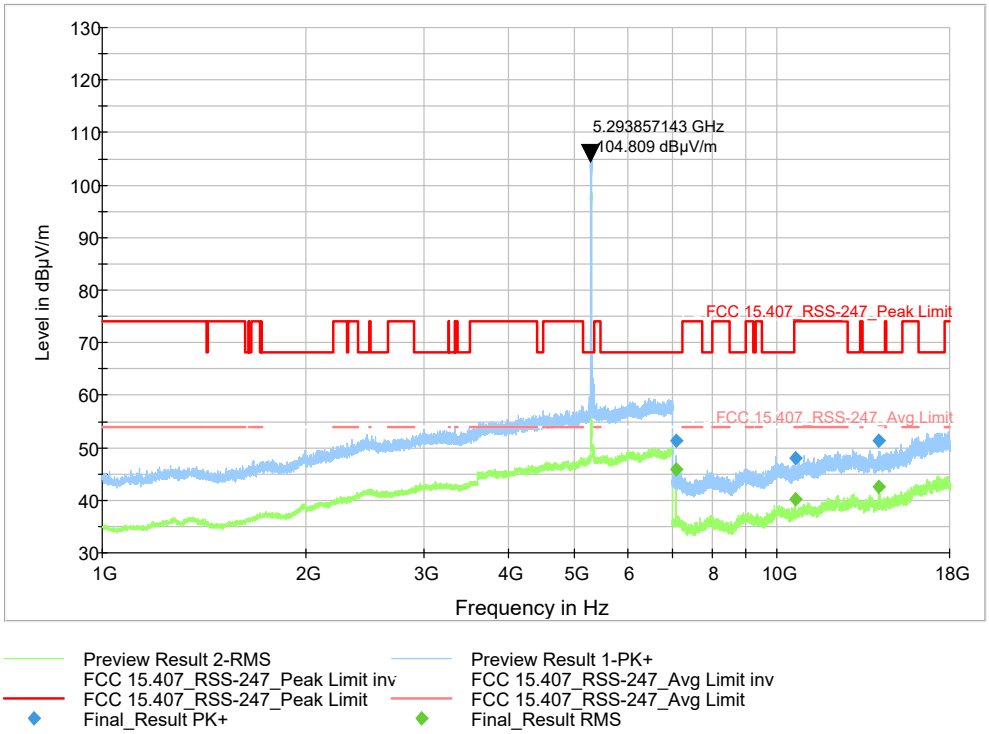
Plot 9-380. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 38)



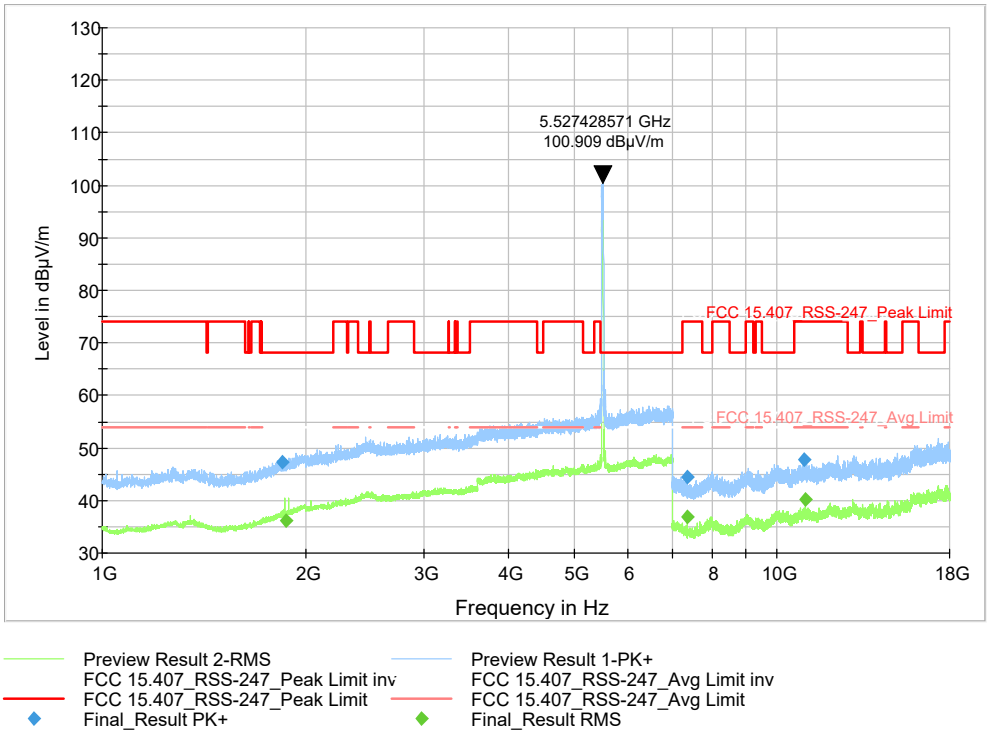
Plot 9-381. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 46)



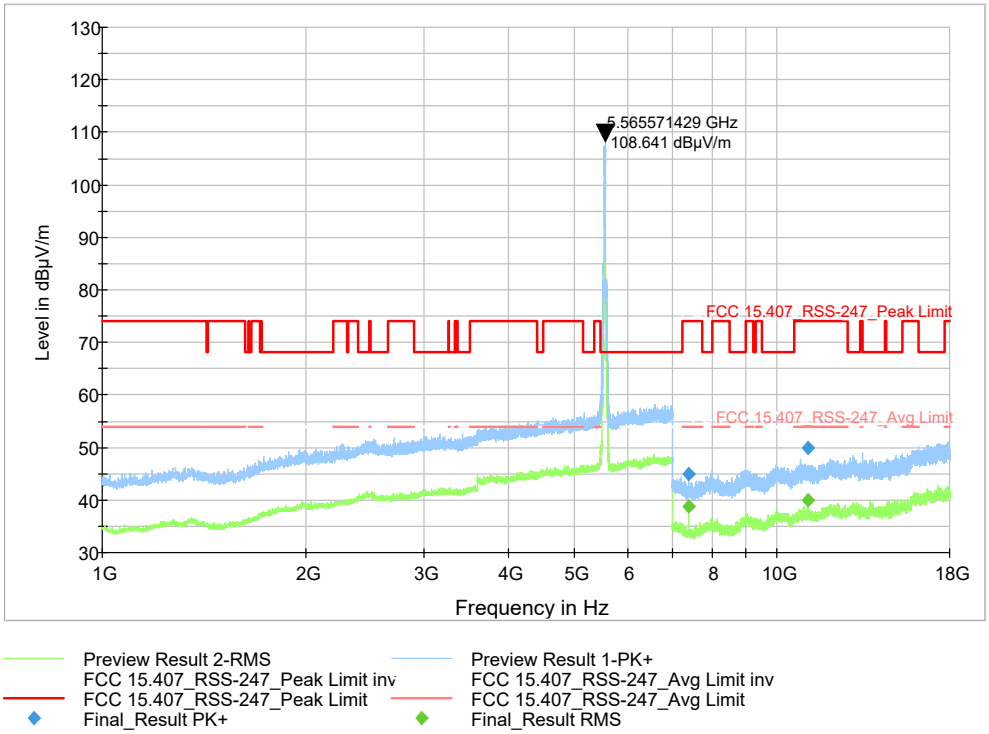
Plot 9-382. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 54)



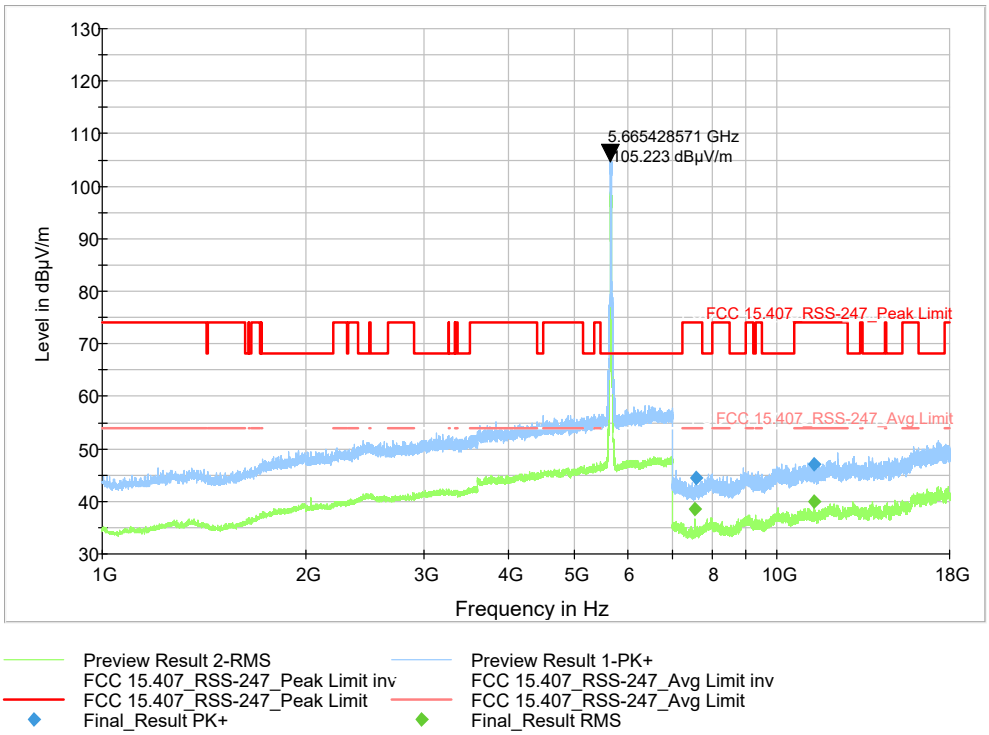
Plot 9-383. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 62)



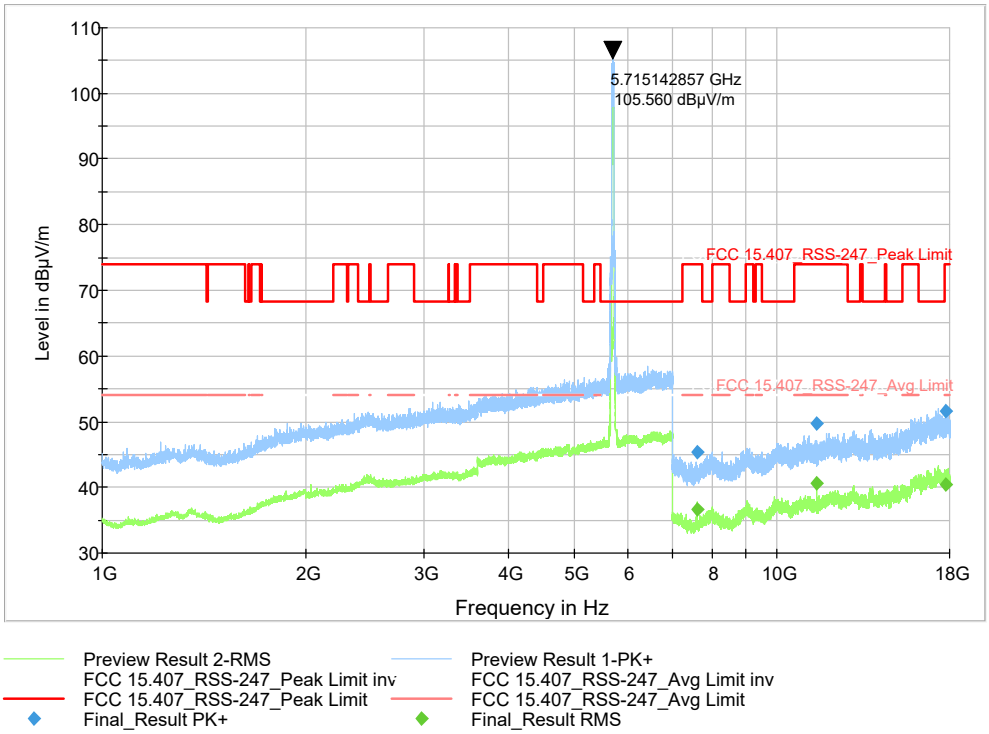
Plot 9-384. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 102)



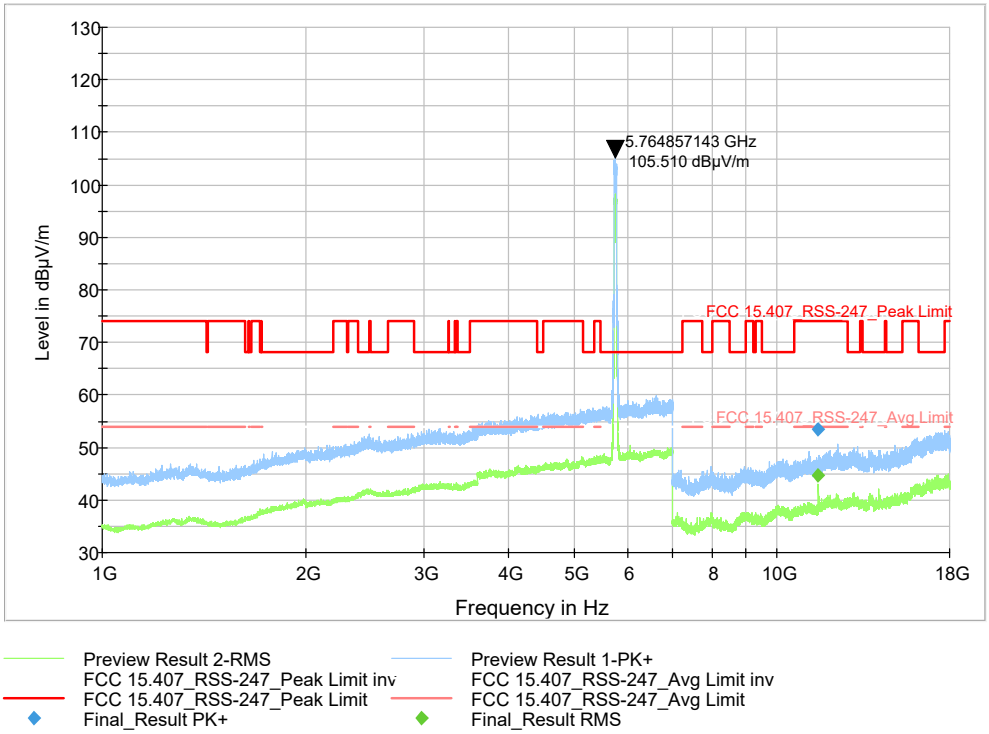
Plot 9-385. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 110)



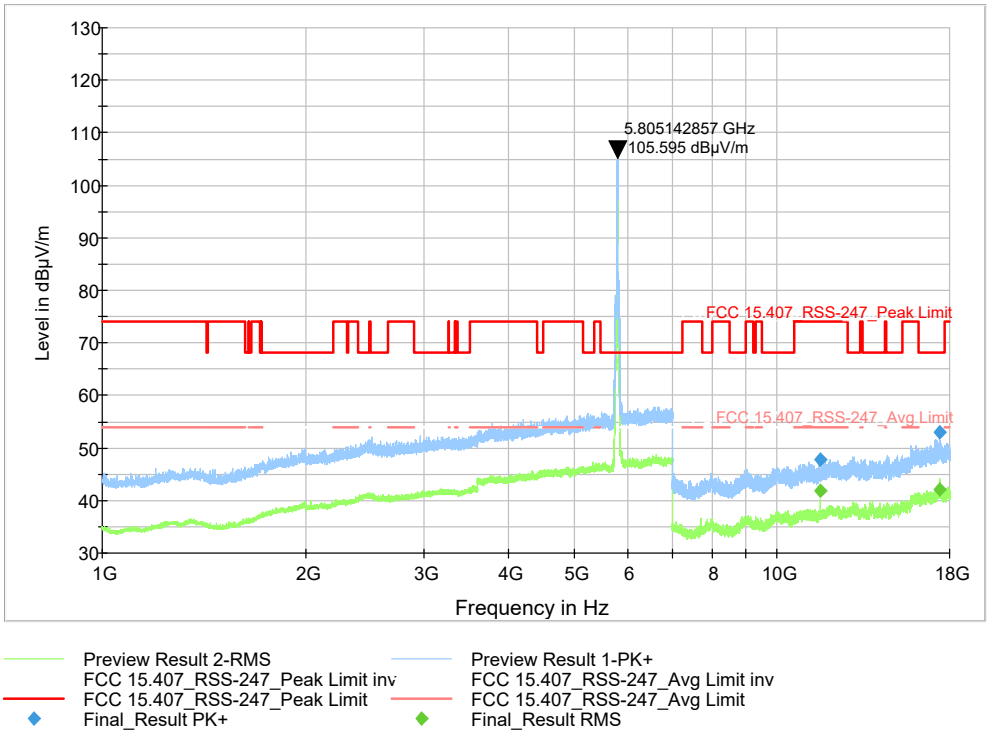
Plot 9-386. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 134)



Plot 9-387. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 142)



Plot 9-388. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 151)



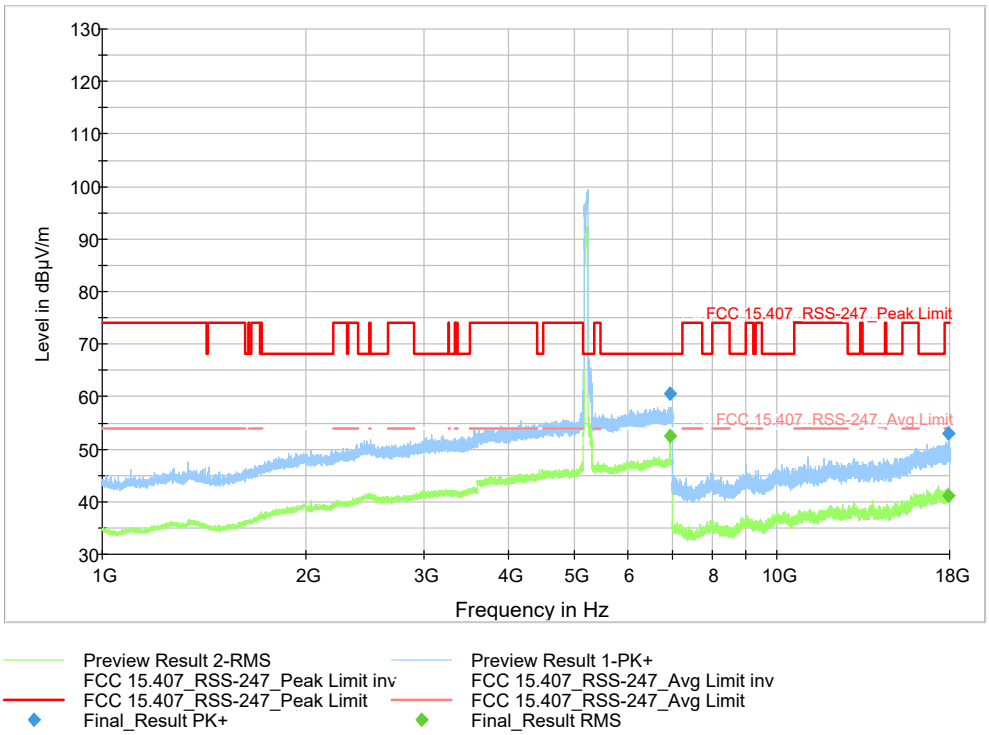
Plot 9-389. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11n HT40 (Ch. 159)

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

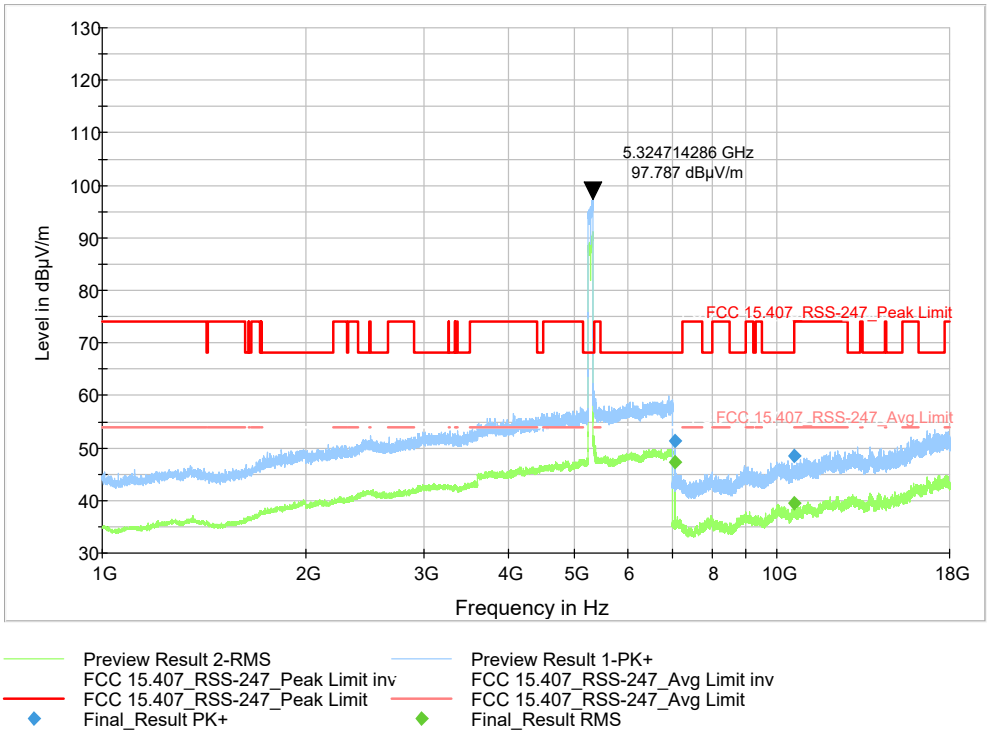
802.11ac VHT80 RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	**Frequency (MHz)**	**Raw Peak Amplitude (dBµV)**	**Correction Factor (dB)**	**Corrected Peak Field Strength (dBµV/m)**	**Peak Limit (dBµV/m)**	**Margin (dB)**
5210	6946.46	41.48	19.1	60.58	68.2	-7.62
5210	17925.18	31.97	20.9	52.87	74	-21.13
5290	7053.11	39.20	12.1	51.30	68.2	-16.90
5290	10580.10	31.36	17.1	48.46	68.2	-19.74
5530	7367.43	33.97	10.2	44.17	74	-29.83
5530	17807.23	31.50	19.8	51.30	74	-22.70
5610	7489.48	33.08	10.7	43.78	74	-30.22
5610	11219.08	32.91	15.0	47.91	74	-26.09
5775	11549.88	35.38	15.7	51.08	74	-22.92
5775	17346.86	32.20	19.9	52.10	68.2	-16.10
5690	7691.63	33.39	10.8	44.19	74	-29.81
5690	11435.84	32.27	15.2	47.47	74	-26.53
5690	17749.61	31.48	19.2	50.68	74	-23.32

802.11Ac VHT80ac RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBµV)	Correction Factor (incl DCF) (dB)	Corrected Avg. Field Strength (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)
5210	6946.46	33.74	19.1	52.84	54	-1.16*
5210	17898.83	20.80	20.8	41.60	54	-12.40
5290	7053.17	35.48	12.1	47.58	54	-6.42*
5290	10580.04	22.76	17.1	39.86	54	-14.14*
5530	7373.48	28.19	10.1	38.29	54	-15.71
5530	17898.88	20.84	20.8	41.64	54	-12.36
5610	7479.88	29.22	10.6	39.82	54	-14.18
5610	11219.88	24.94	15.0	39.94	54	-14.06
5775	11549.88	27.75	15.7	43.45	54	-10.55
5775	17328.20	22.54	19.4	41.94	54	-12.06*
5690	7680.11	25.18	11.0	36.18	54	-17.82
5690	11379.83	24.56	15.1	39.66	54	-14.34
5690	17770.66	20.90	19.2	40.10	54	-13.90

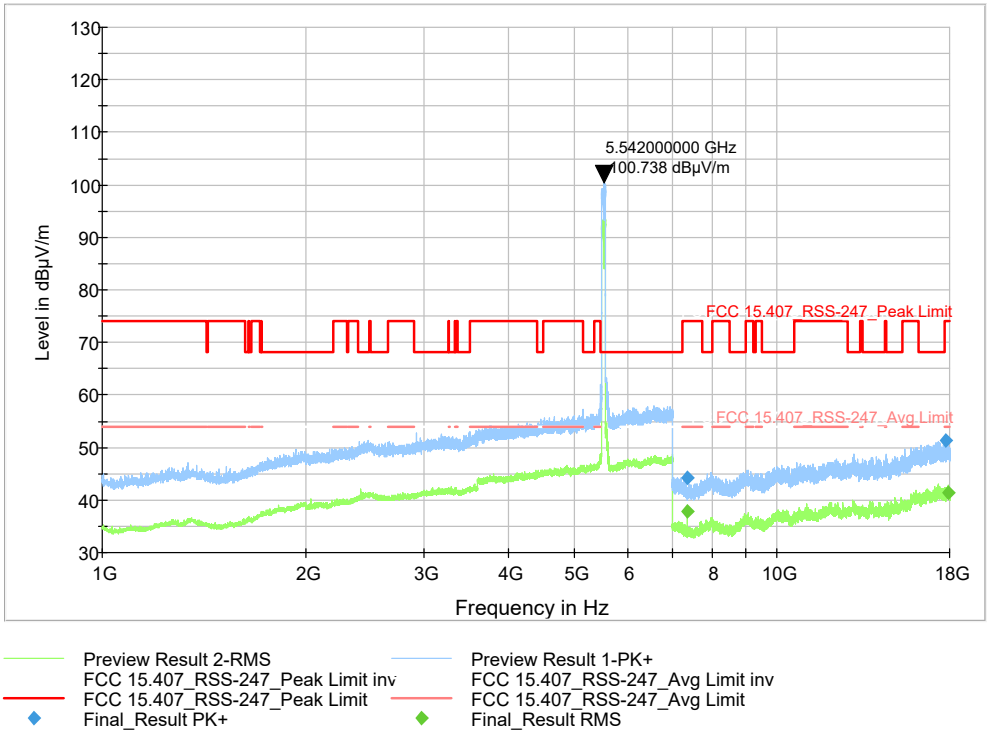
Note*: Emission does not fall in a restricted frequency band, therefore the average limit does not apply.



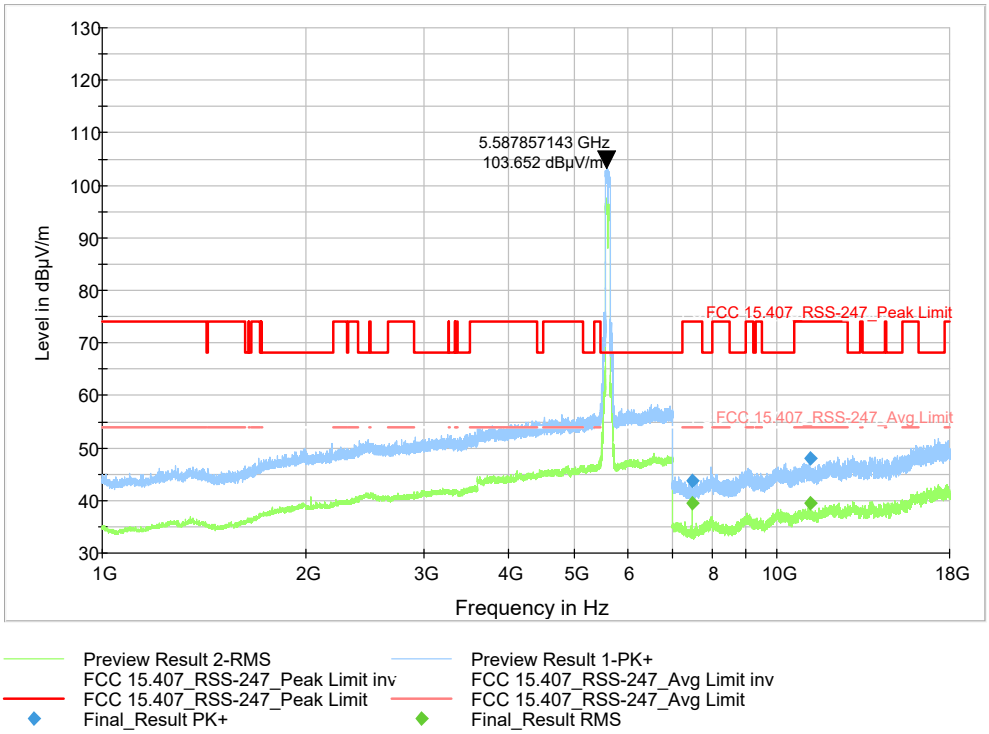
Plot 9-390. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11ac VHT80 (Ch. 42)



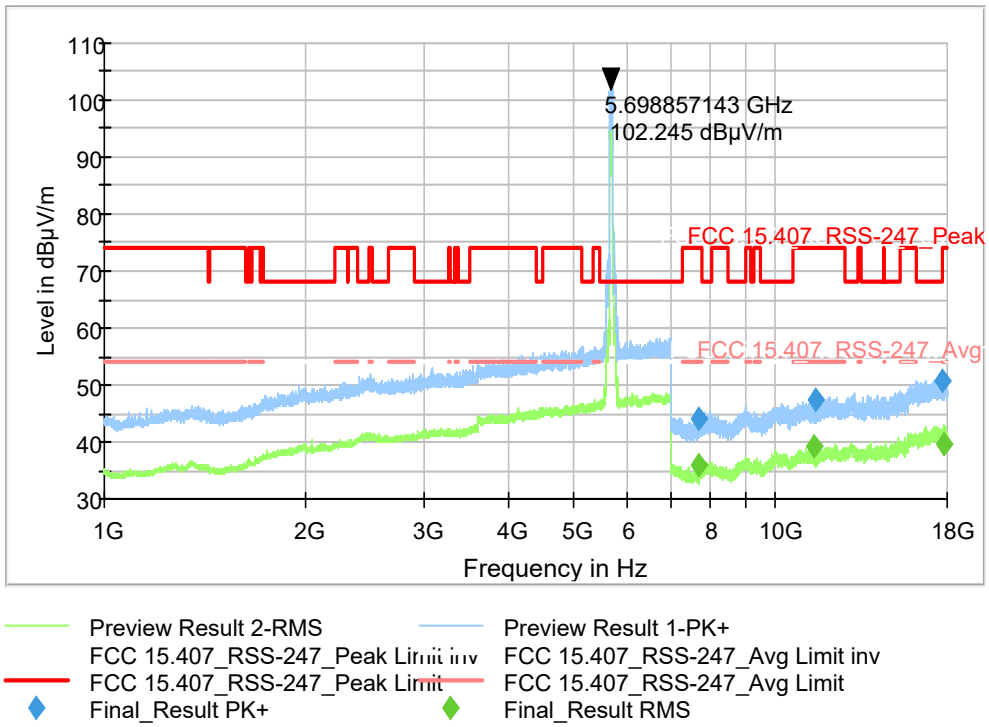
Plot 9-391. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11ac VHT80 (Ch. 58)



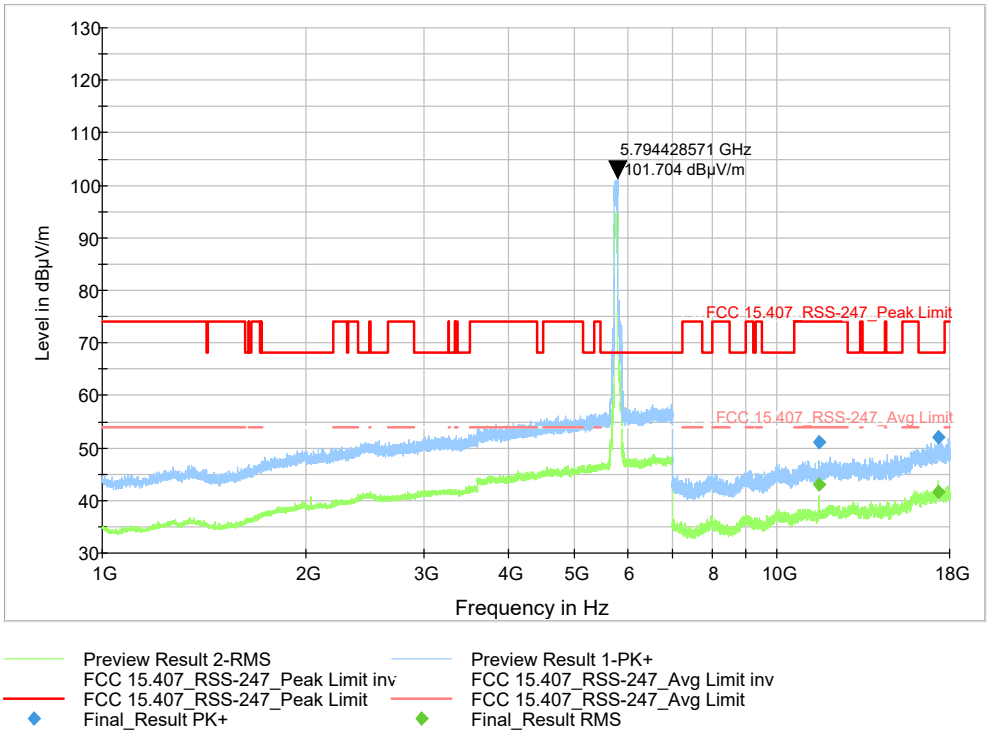
Plot 9-392. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11ac VHT80 (Ch. 106)



Plot 9-393. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11ac VHT80 (Ch. 122)



Plot 9-394. Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11ac VHT80 (Ch. 138)



Plot 9-395 Radiated Spurious Emissions 1-18 GHz Tx Chains 0 & 1 802.11ac VHT80 (Ch. 155)

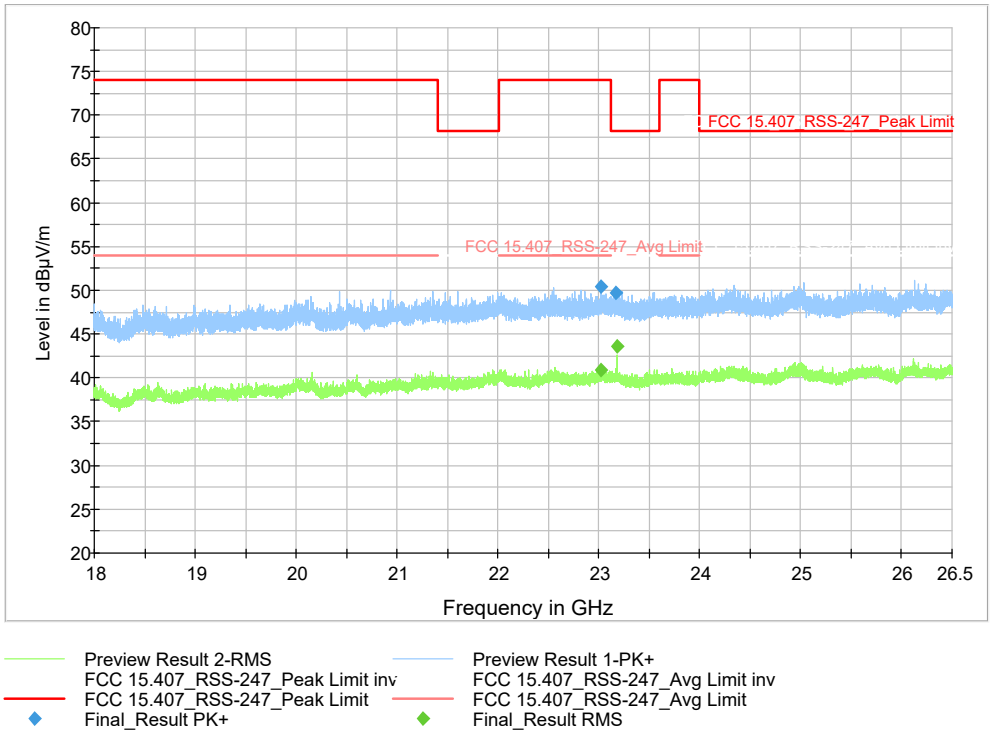
9.7.5.6 Emissions in 18-26 GHz range

No significant emissions to report above noise floor.

All channels and modes were tested and data from 802.11n40 mode, channel 159 shown here.

802.11n HT40 RSE 18 – 26GHz 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)**
5795	23017.55	37.66	12.80	50.46	74	-23.54
5795	23165.03	36.90	12.80	49.70	74	-18.50

802.11n HT40 RSE 18 - 26GHz 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)**
5795	23025.20	28.08	12.80	40.88	54	-13.12
5795	23179.90	30.75	12.80	43.55	54	-10.45



Plot 9-396. Radiated Spurious Emissions 18-26 GHz Tx A & B 802.11n HT40 (Ch. 159)

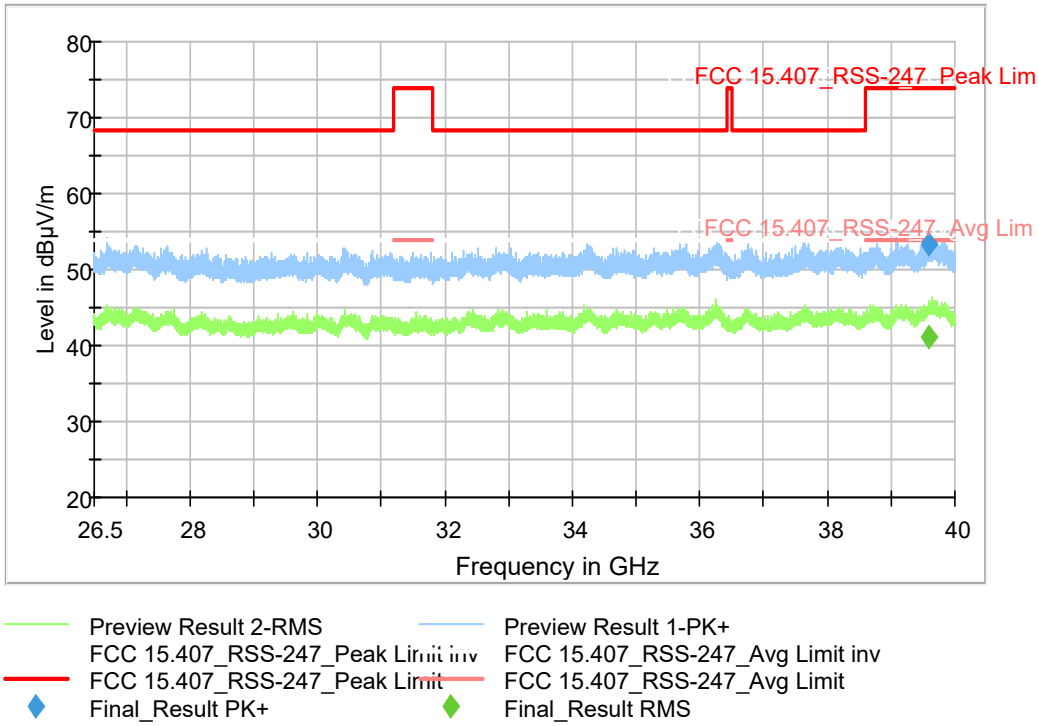
9.7.5.7 Emissions in 26- GHz range

No significant emissions to report above noise floor.

All channels and modes were tested and data from 802.11a mode, channel 60 shown here.

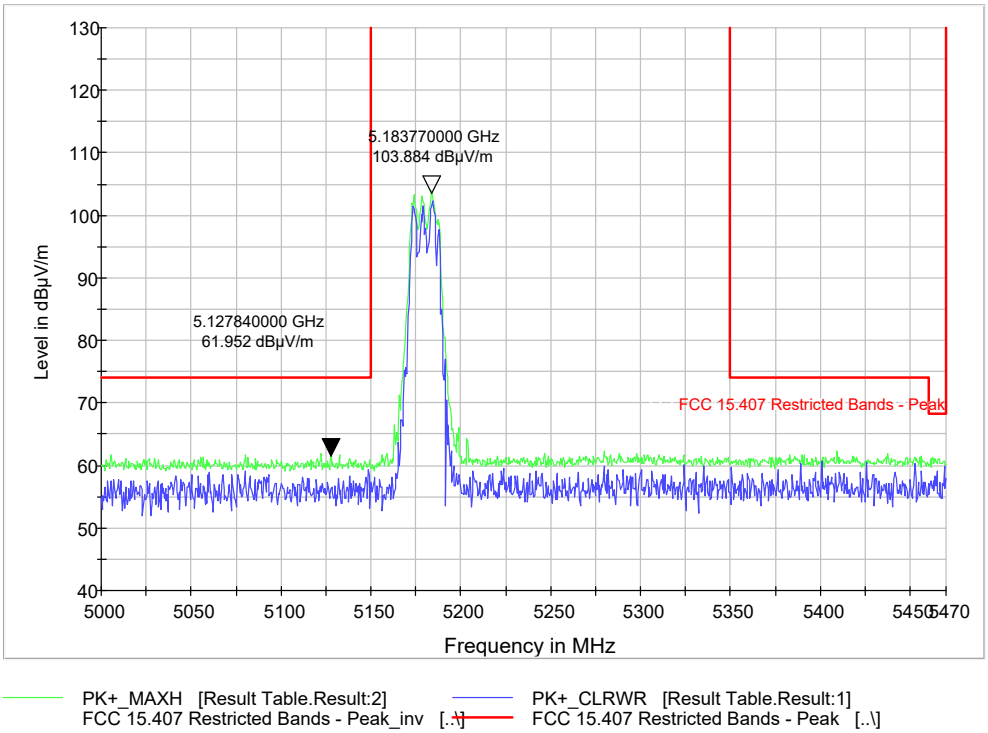
802.11n HT40 RSE 26 – 40GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBµV)	Correction Factor (dB)	Corrected Peak Field Strength (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)
5300	39593.65	50.30	3.70	54.00	74	-20.00

802.11n HT40 RSE 26 - 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)
5300	39599.50	41.02	3.70	44.72	54	-9.28

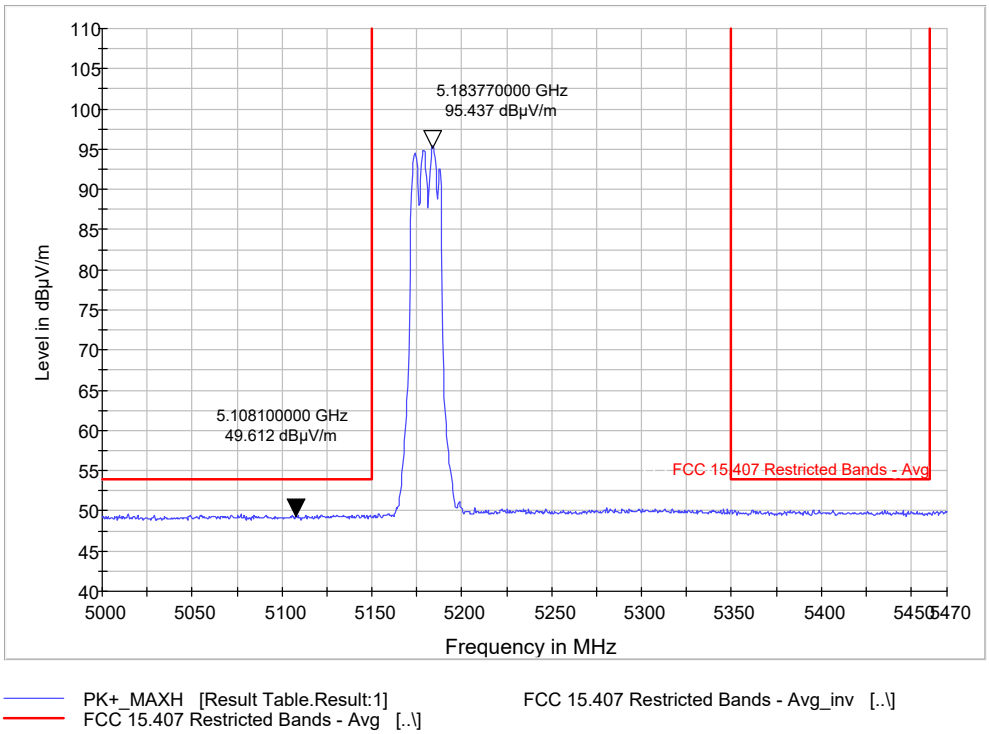


Plot 9-397. Radiated Spurious Emissions 26-40 GHz Tx A & B 802.11a (Ch. 60)

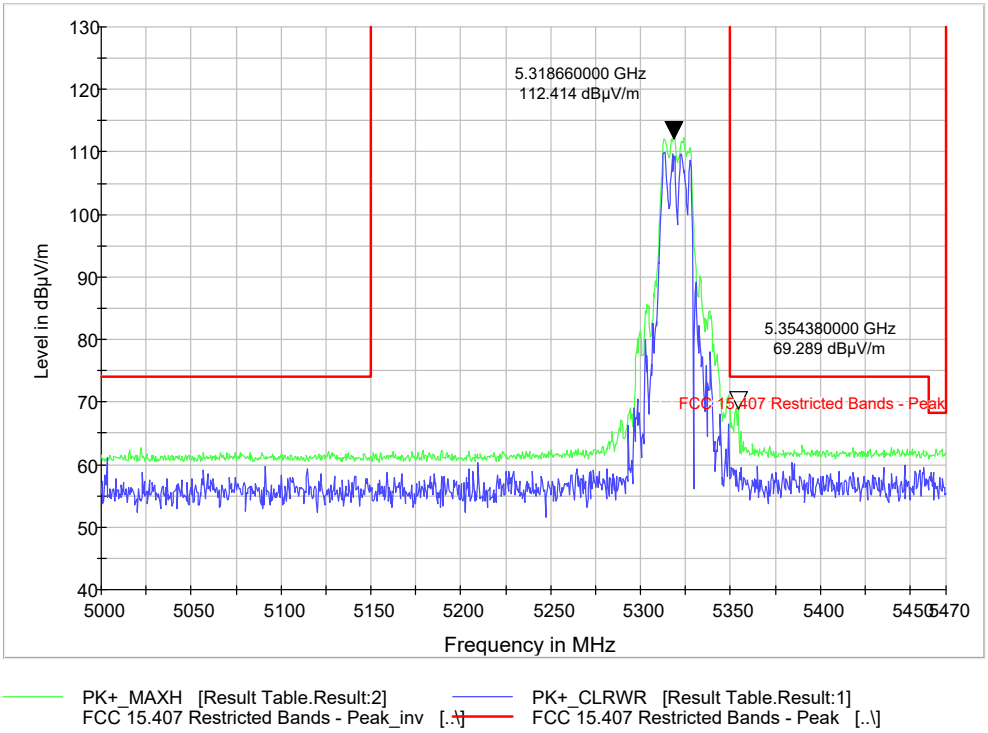
9.7.5.8 Radiated Band-edge emissions 802.11a



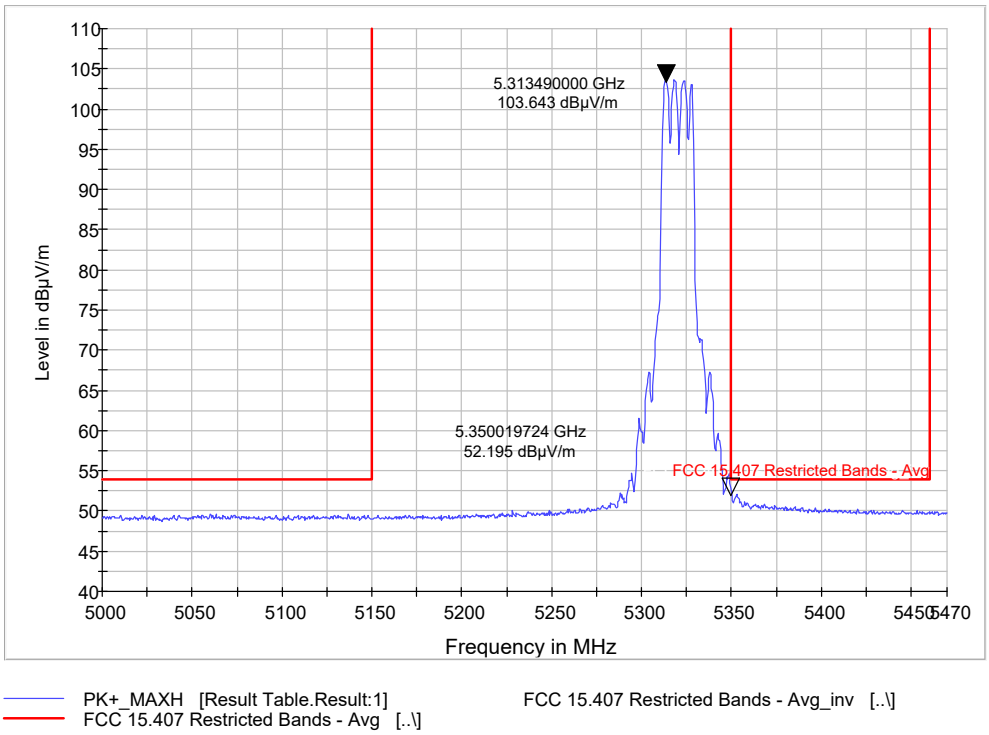
Plot 9-398. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11a (Ch. 36)



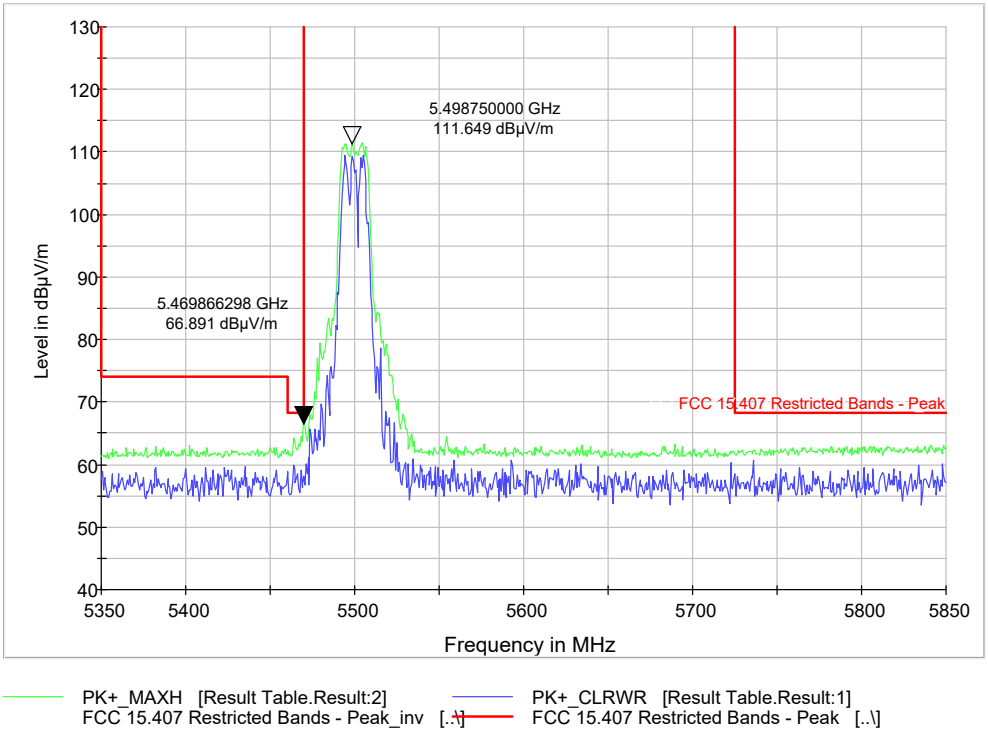
Plot 9-399. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11a (Ch. 36)



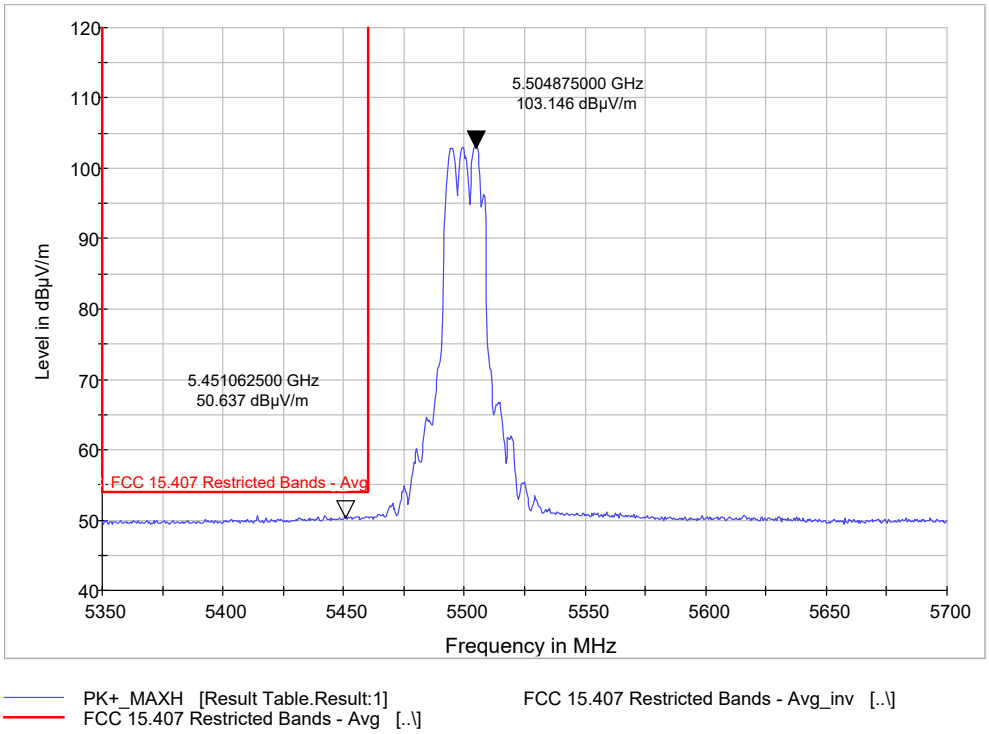
Plot 9-400. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11a (Ch. 64)



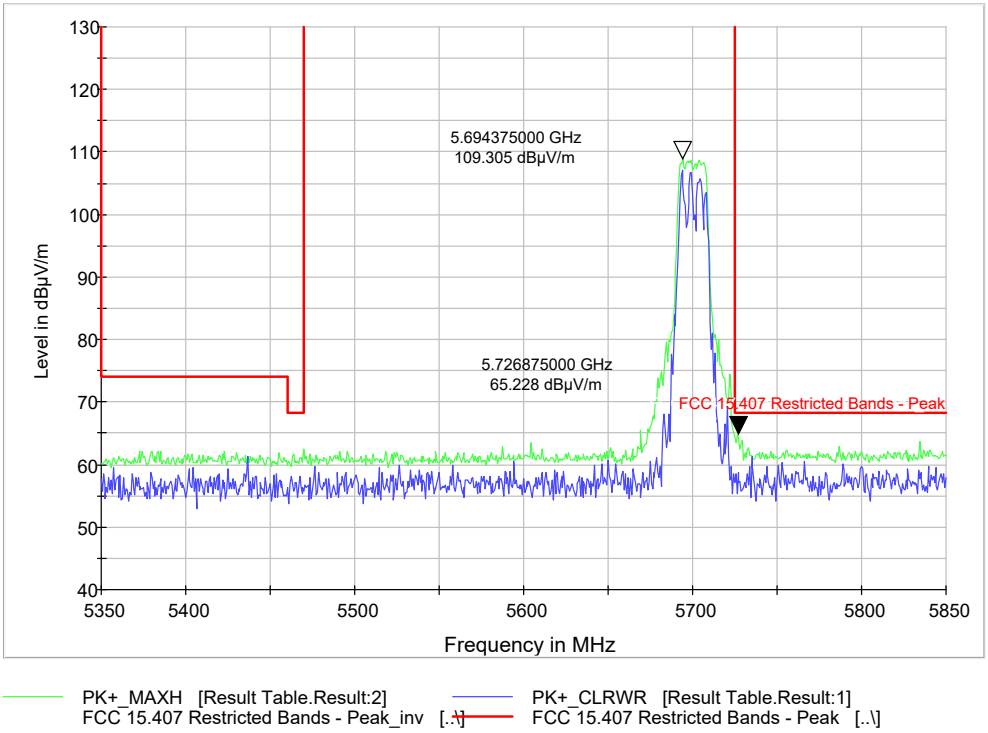
Plot 9-401. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11a (Ch. 64)



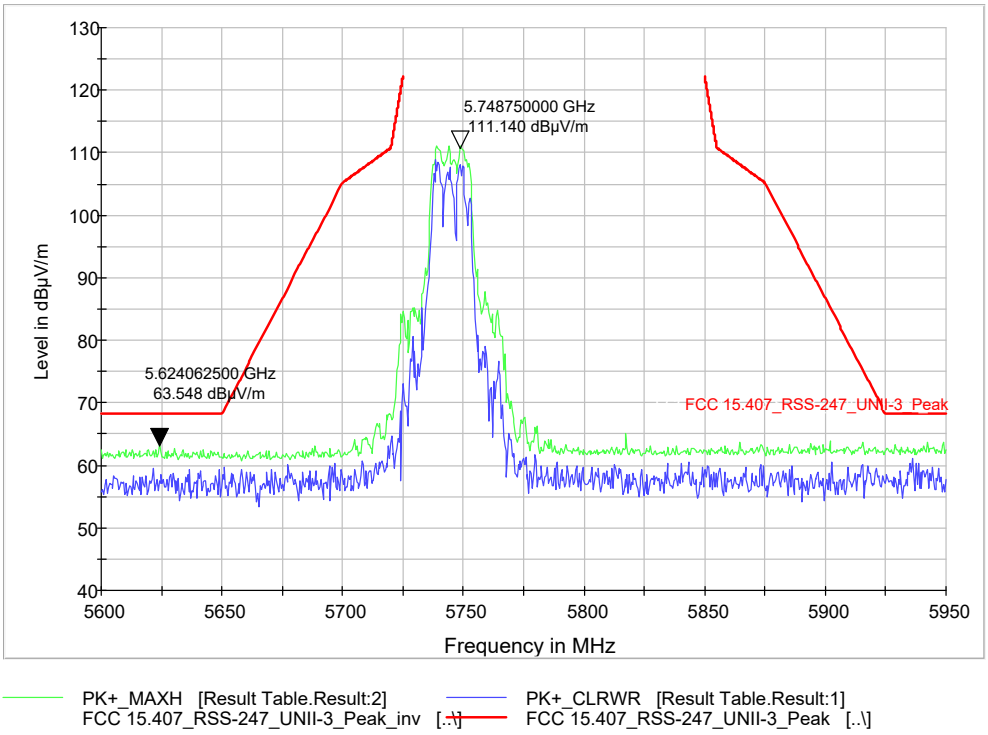
Plot 9-402. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11a (Ch. 100)



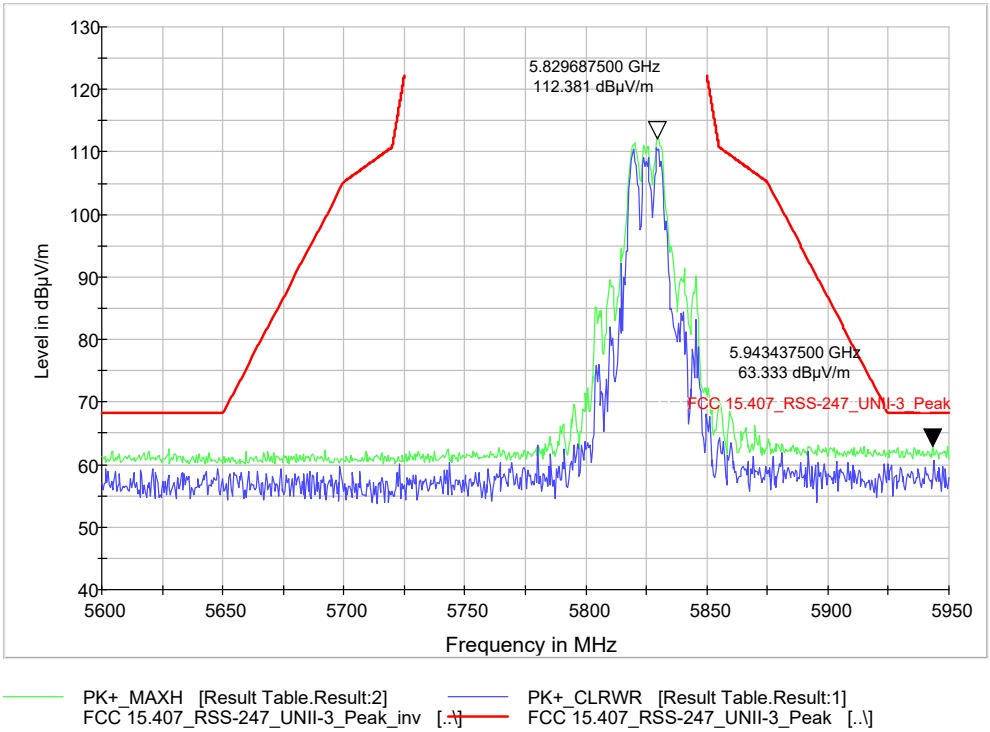
Plot 9-403. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11a (Ch. 100)



Plot 9-404. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11a (Ch. 140)

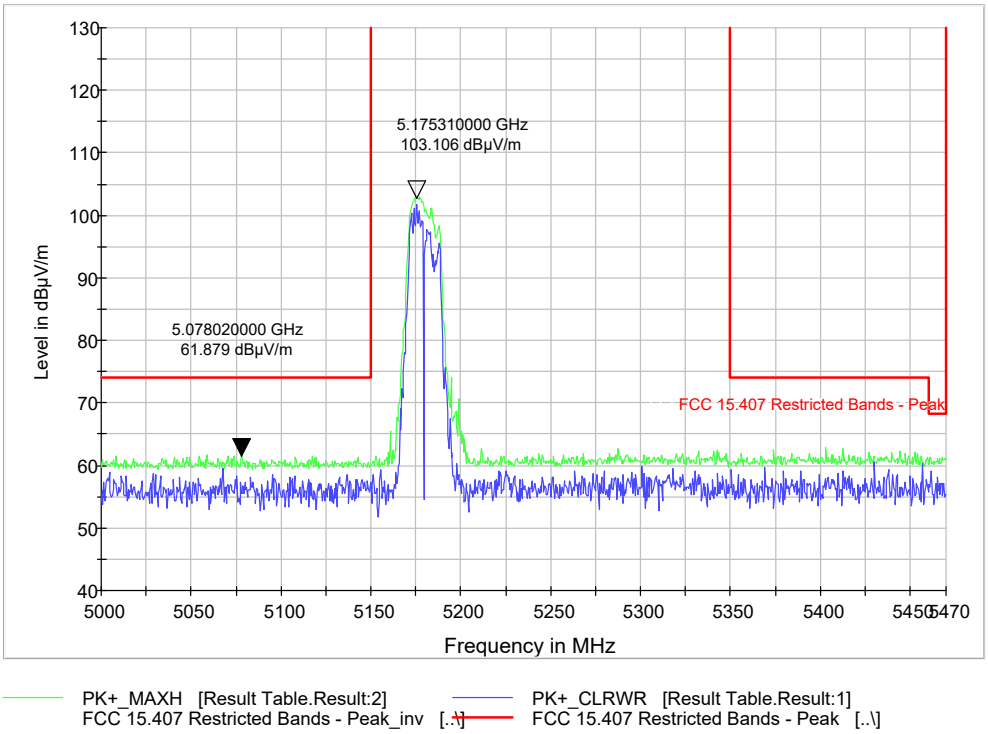


Plot 9-405. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11a (Ch. 149)

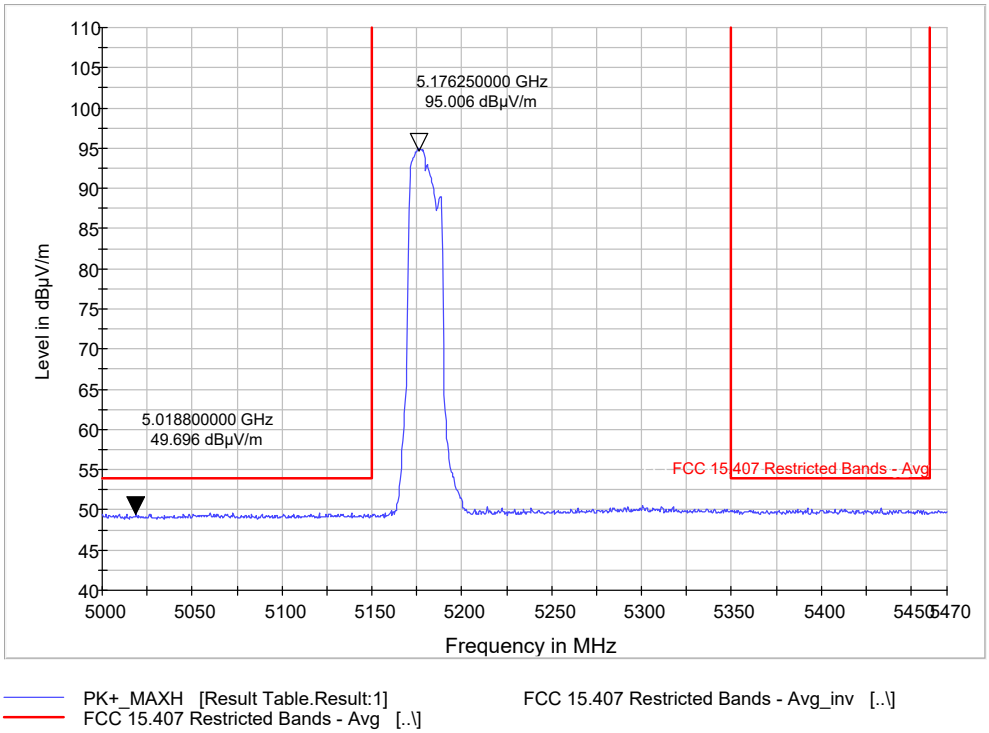


Plot 9-406. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11a (Ch. 165)

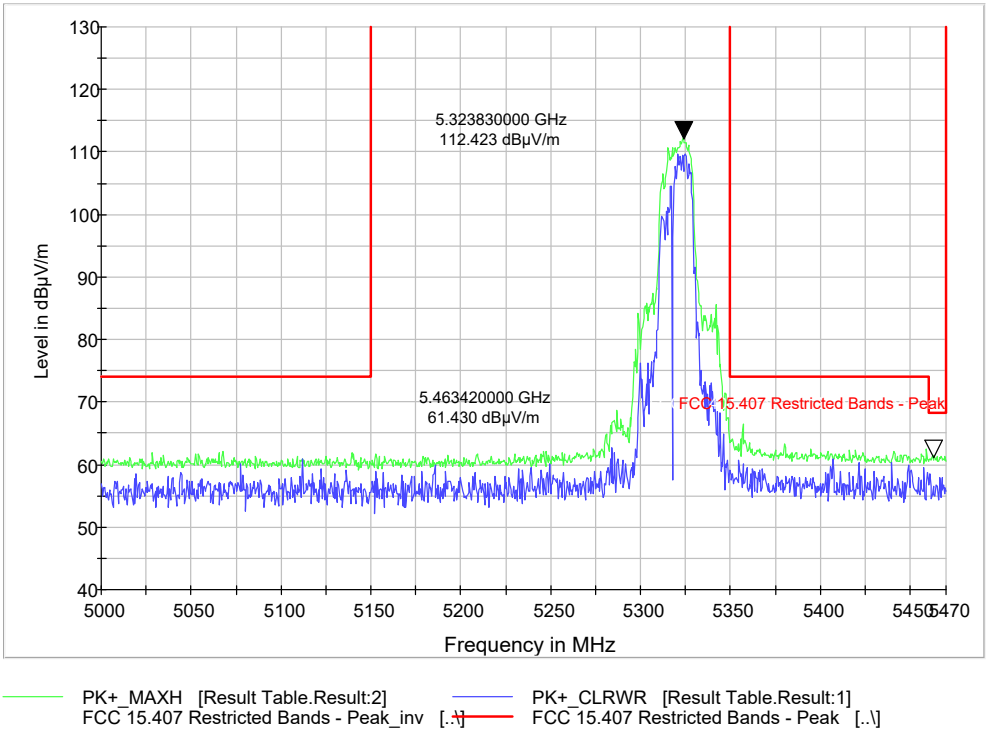
9.7.5.9 Radiated Band-edge emissions 802.11n HT20



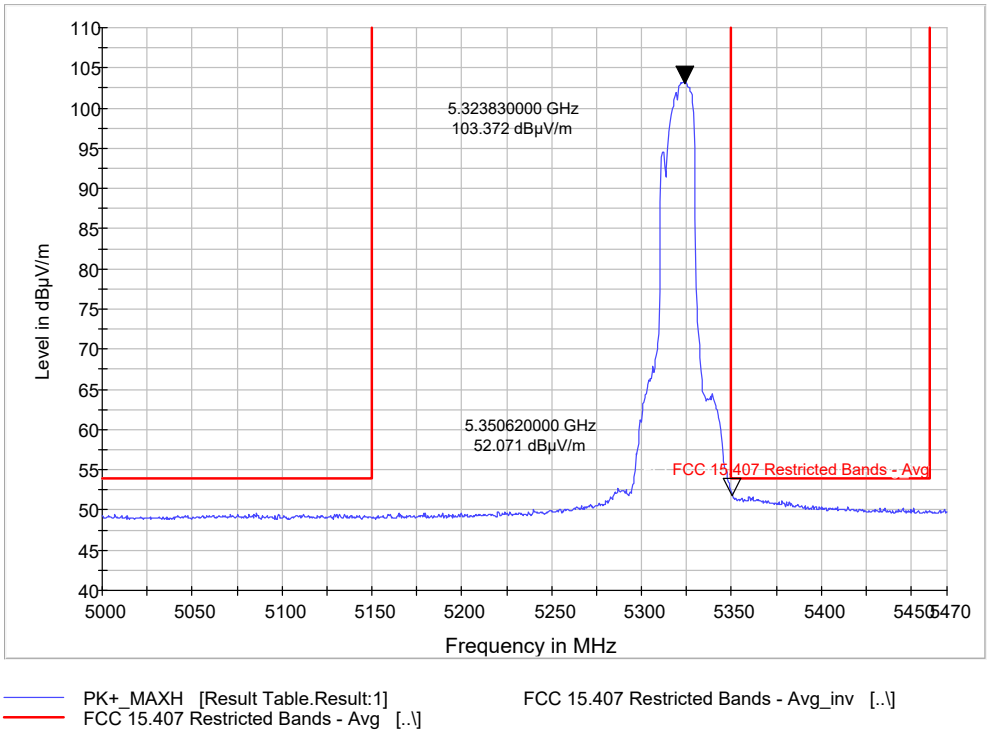
Plot 9-407. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT20 (Ch. 36)



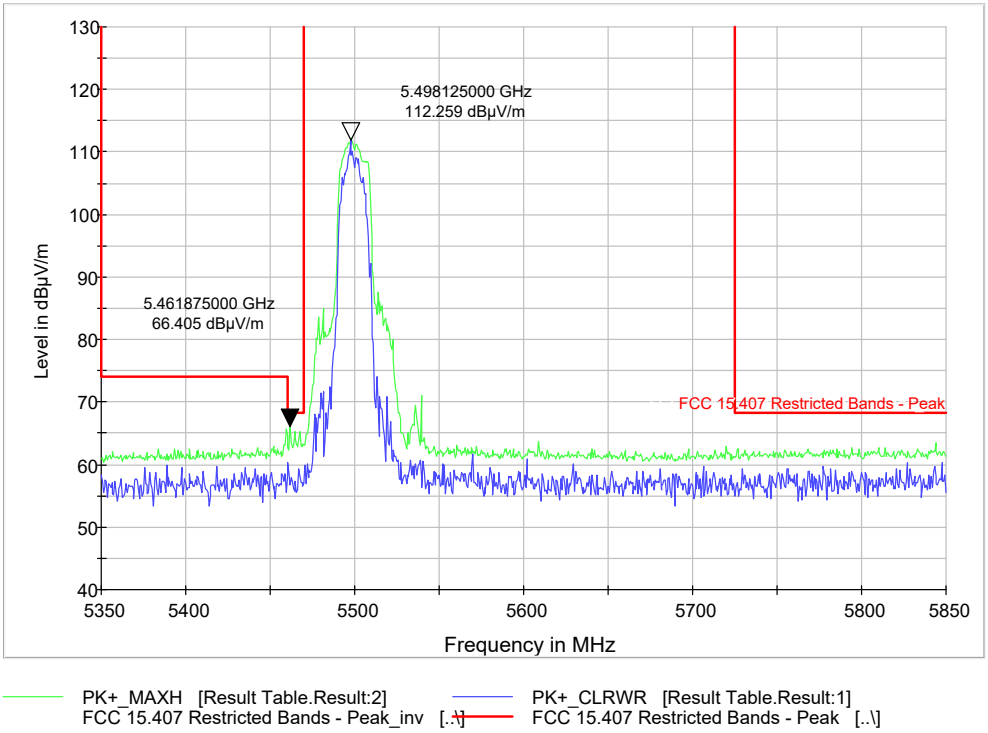
Plot 9-408. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT20 (Ch. 36)



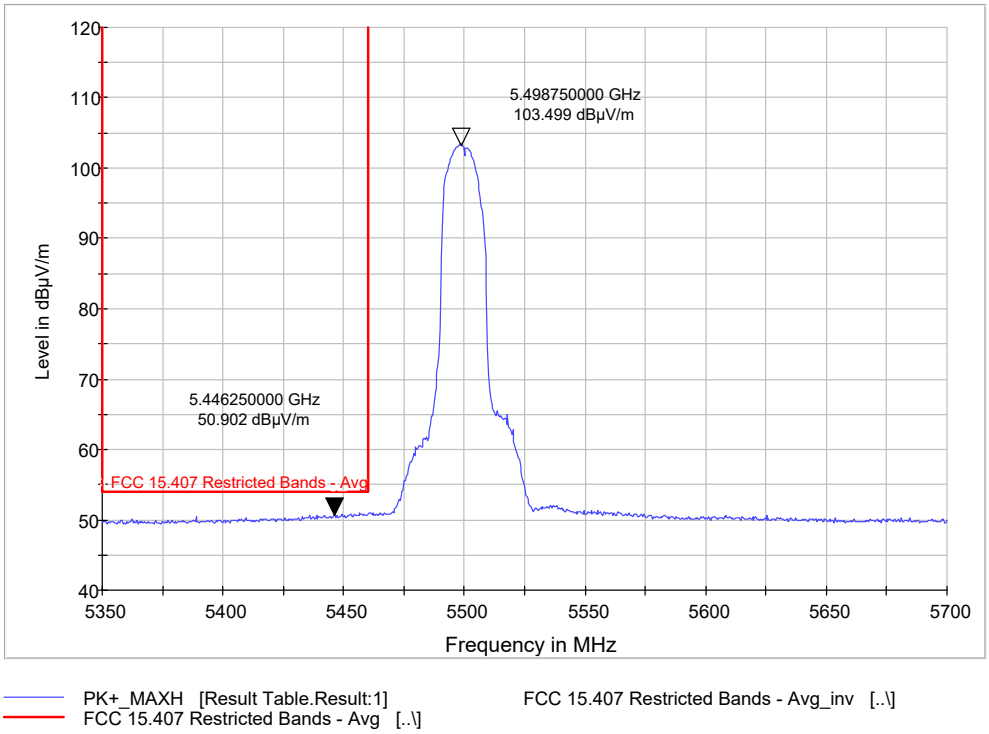
Plot 9-409. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT20 (Ch. 64)



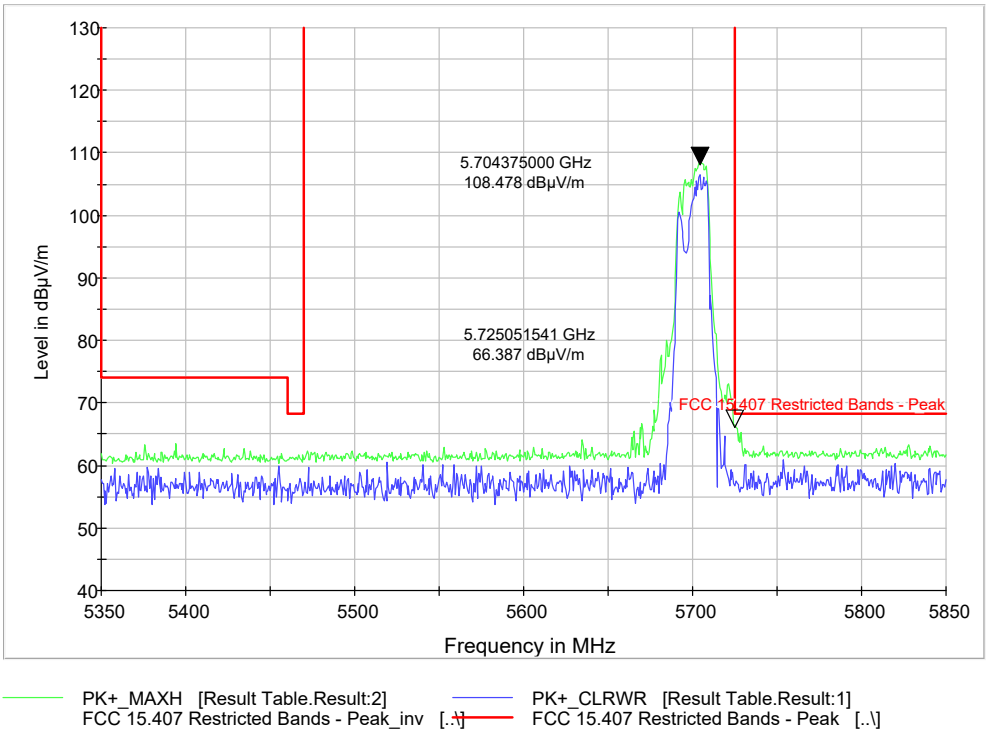
Plot 9-410. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT20 (Ch. 64)



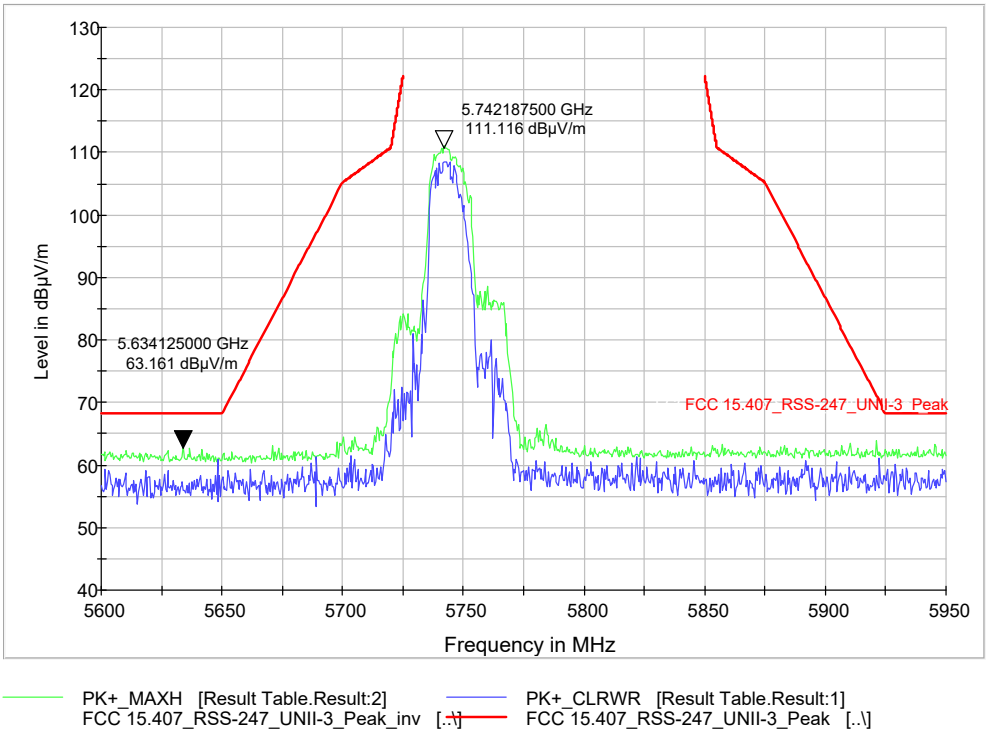
Plot 9-411. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT20 (Ch. 100)



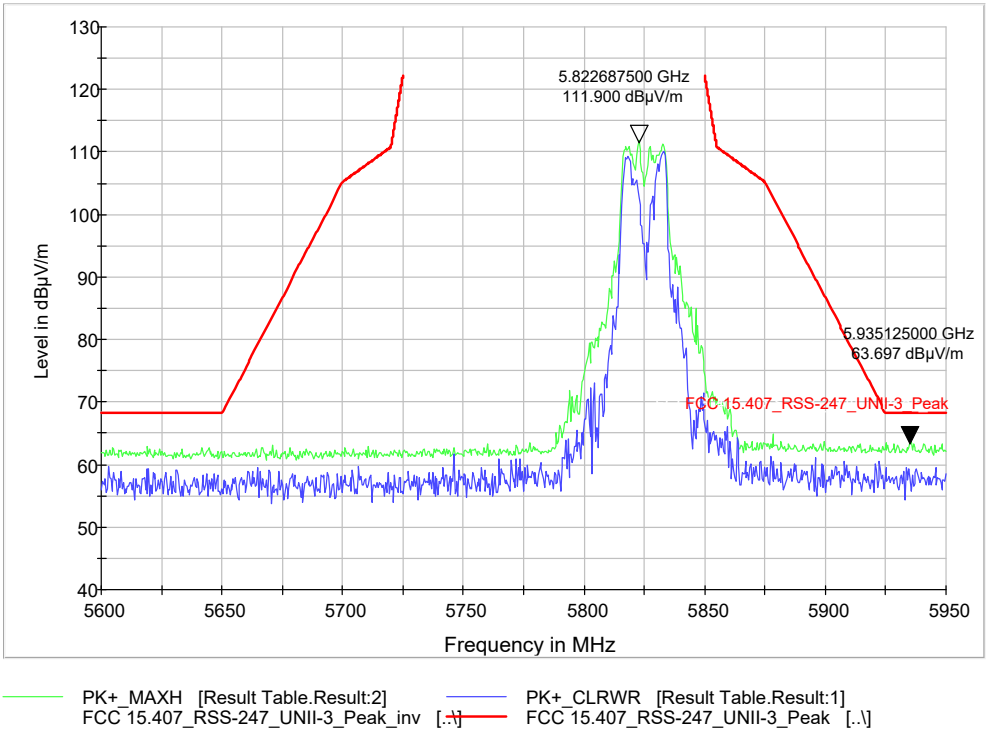
Plot 9-412. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT20 (Ch. 100)



Plot 9-413. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT20 (Ch. 140)

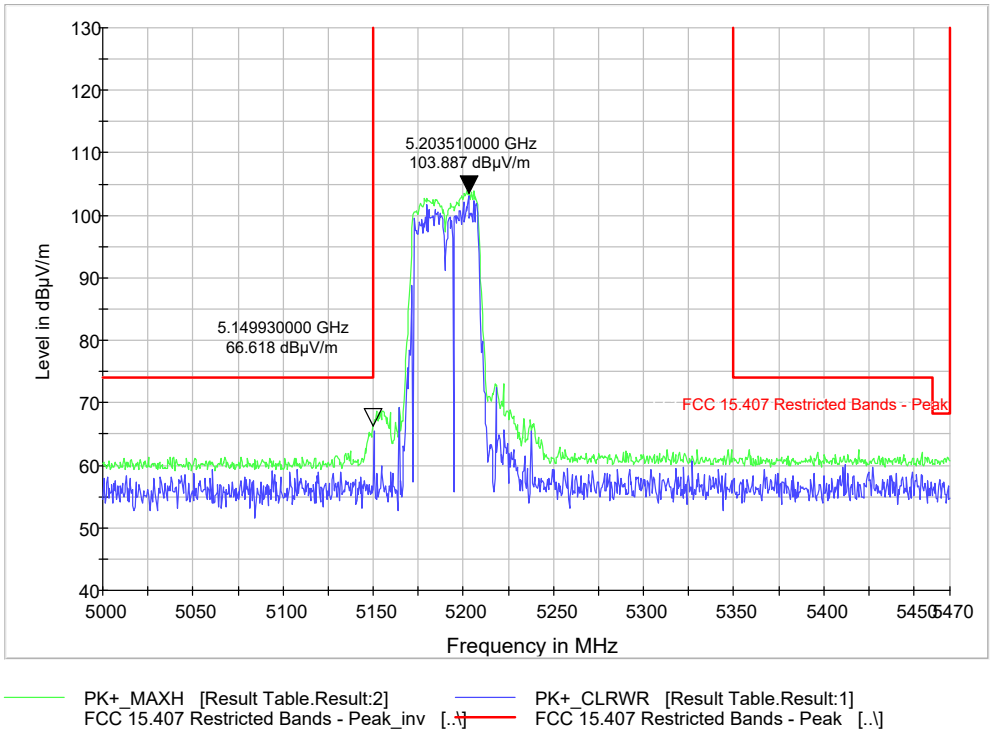


Plot 9-414. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT20 (Ch. 149)

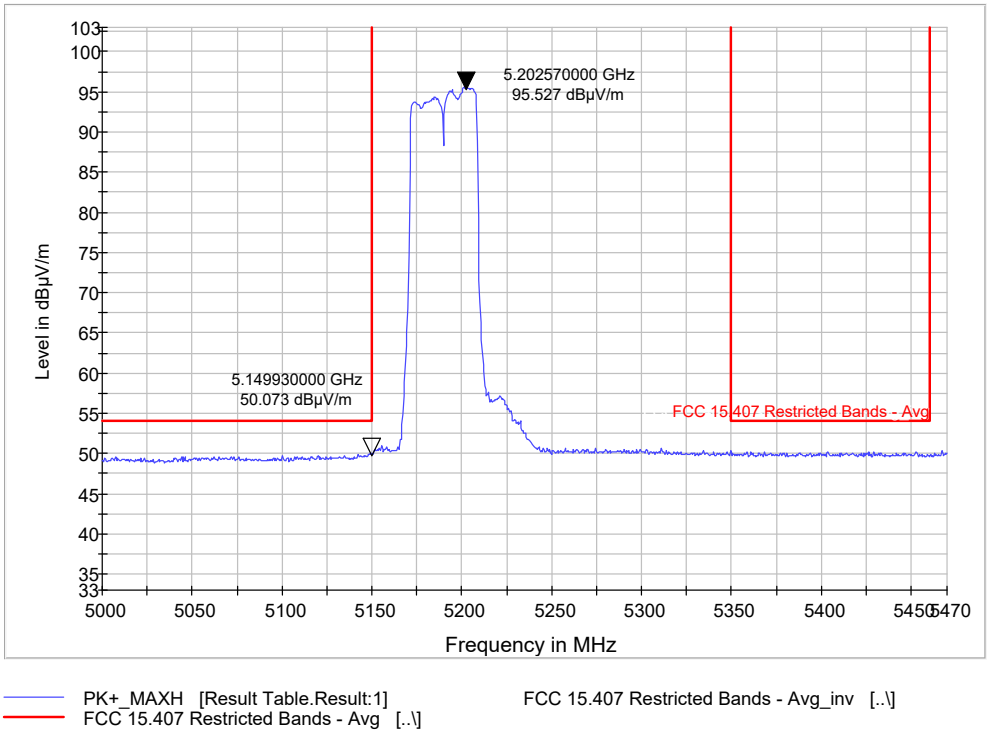


Plot 9-415. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT20 (Ch. 165)

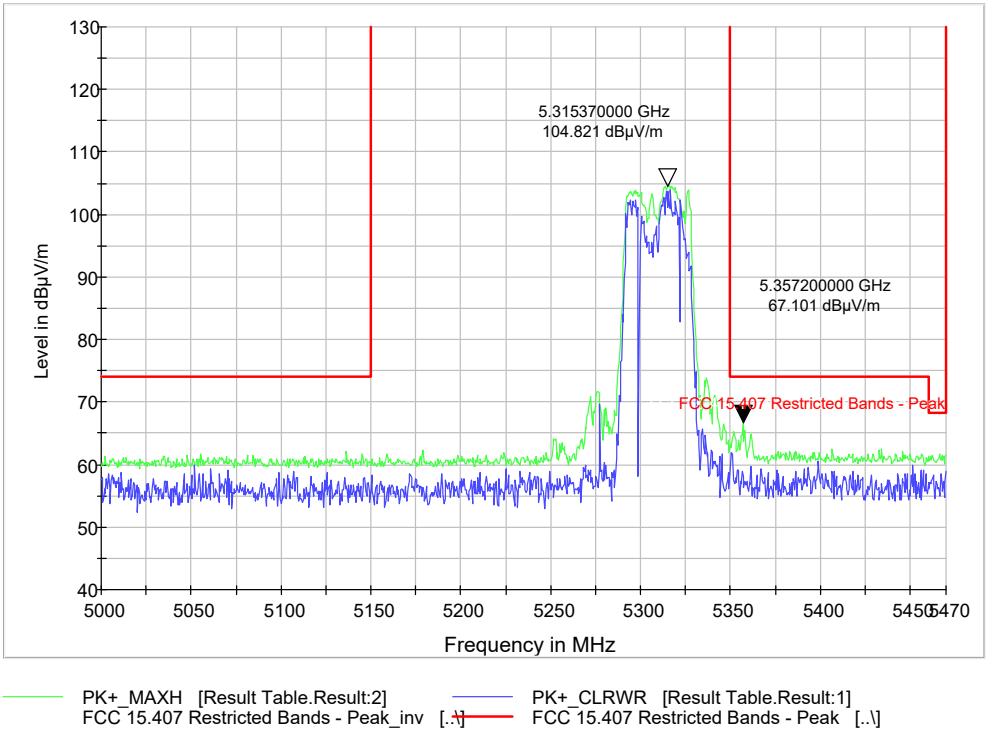
9.7.5.10 Radiated Band-edge emissions 802.11n HT40



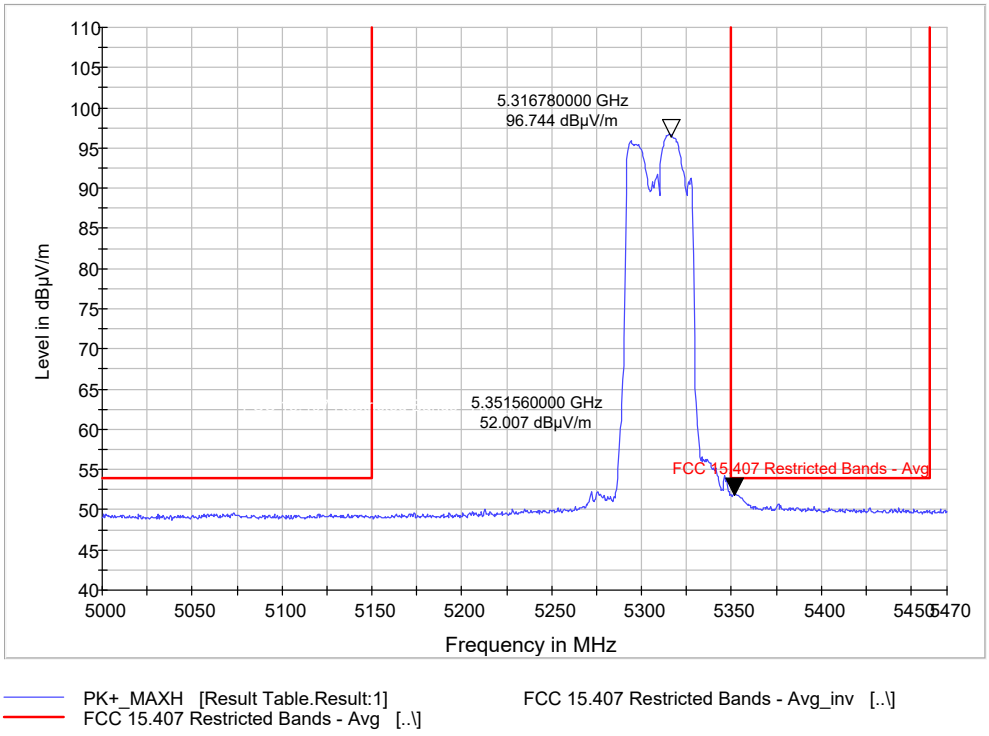
Plot 9-416. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT40 (Ch. 38)



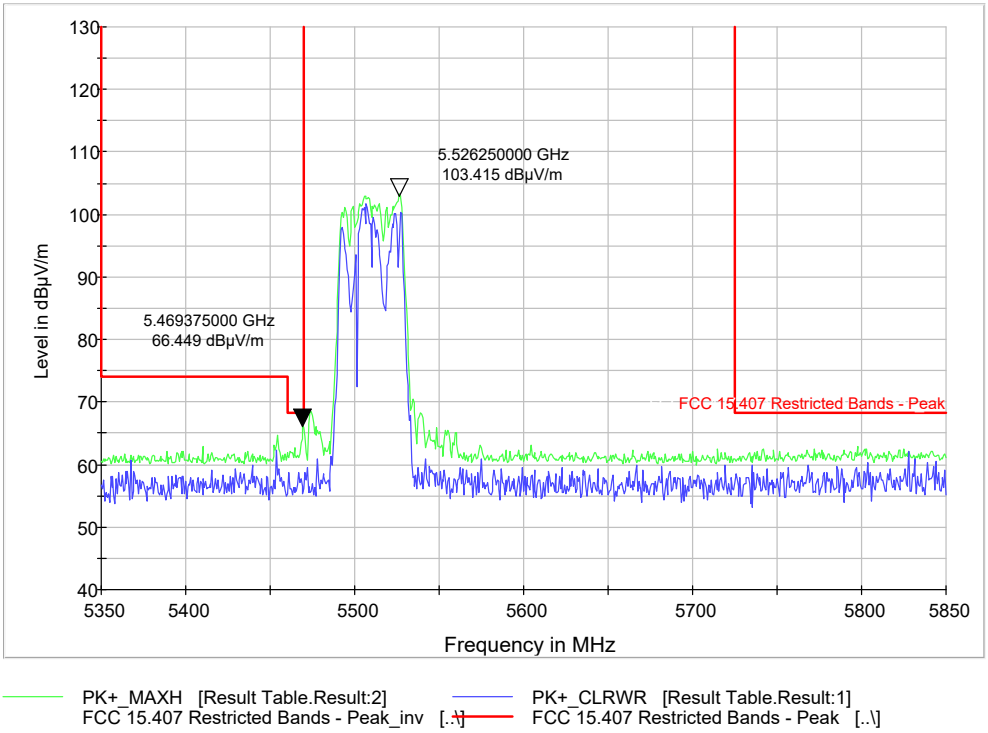
Plot 9-417. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT40 (Ch. 38)



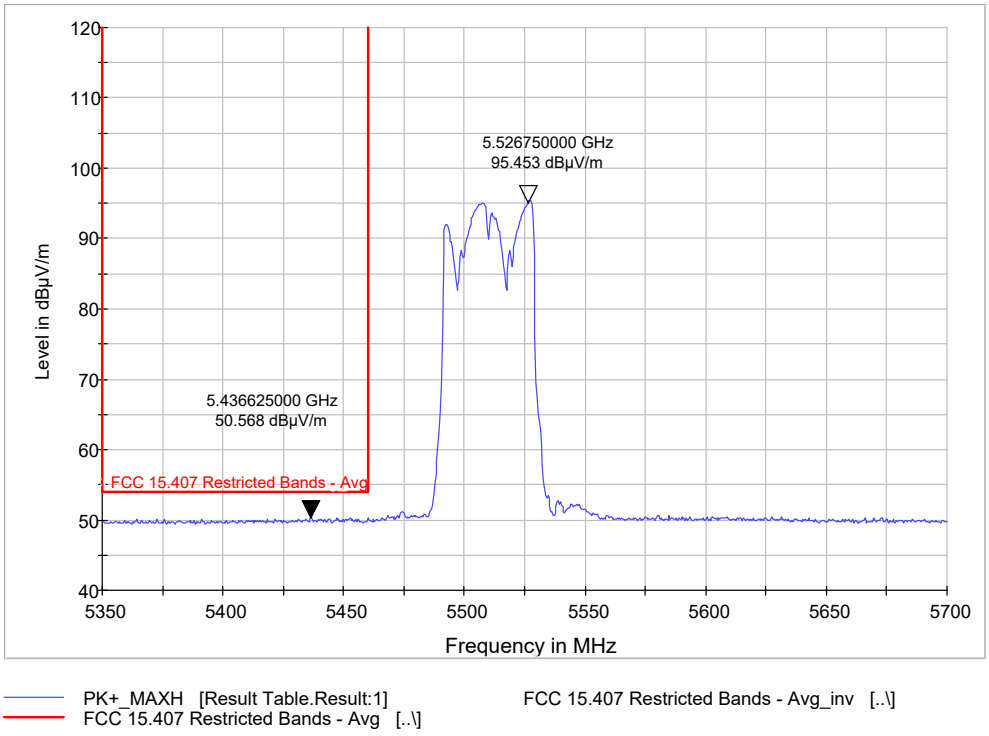
Plot 9-418. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT40 (Ch. 62)



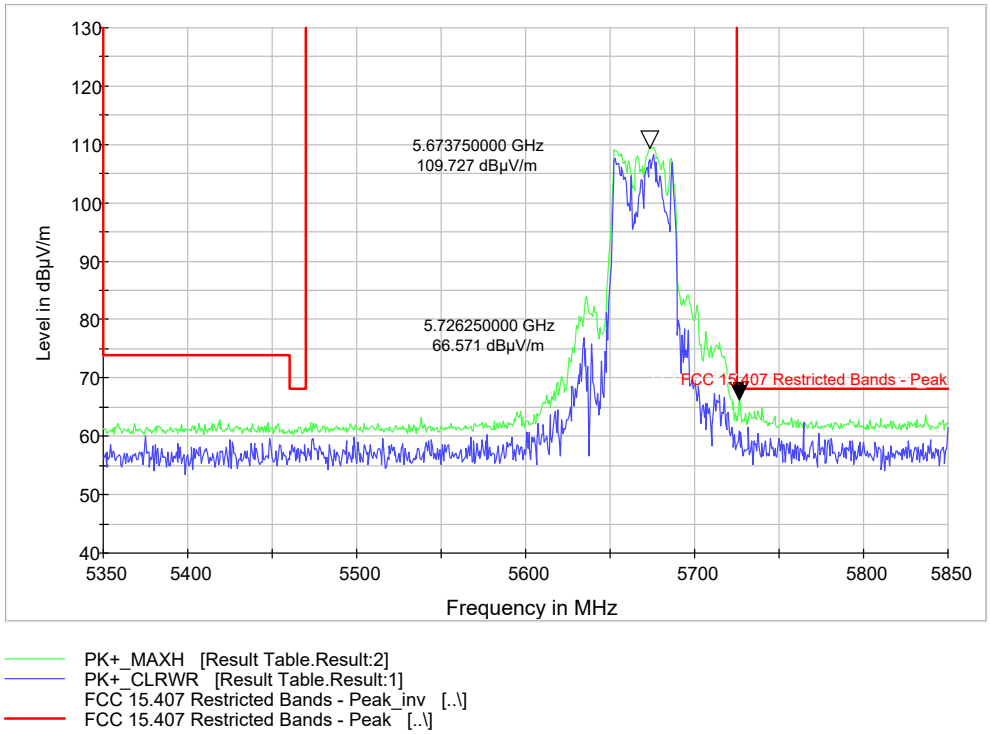
Plot 9-419. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT40 (Ch. 62)



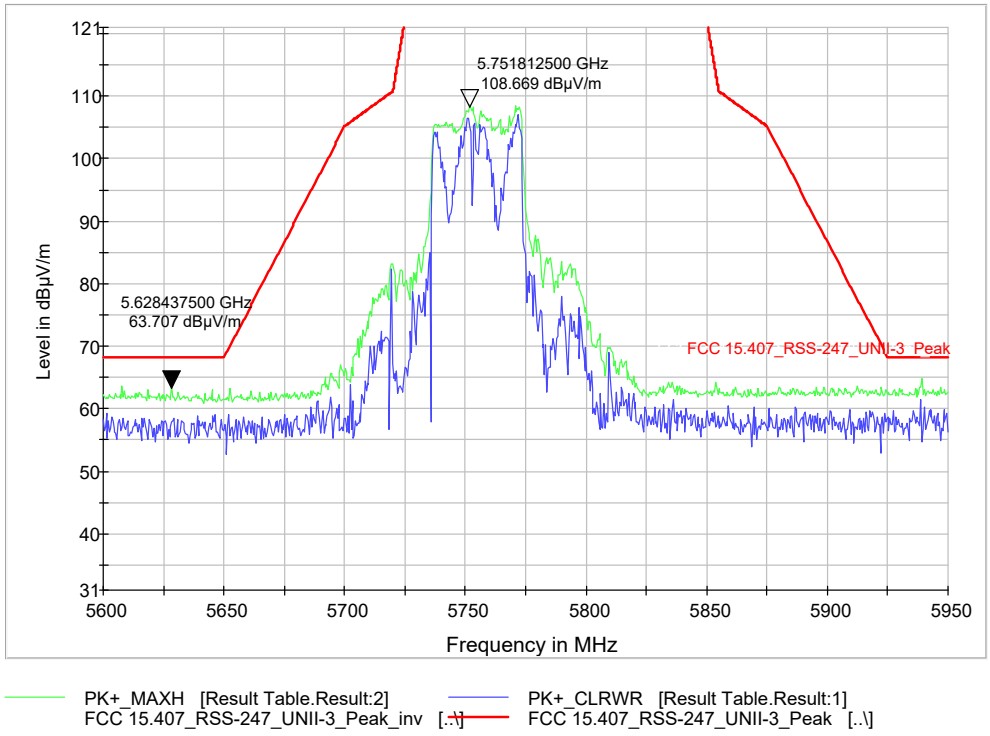
Plot 9-420. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT40 (Ch. 102)



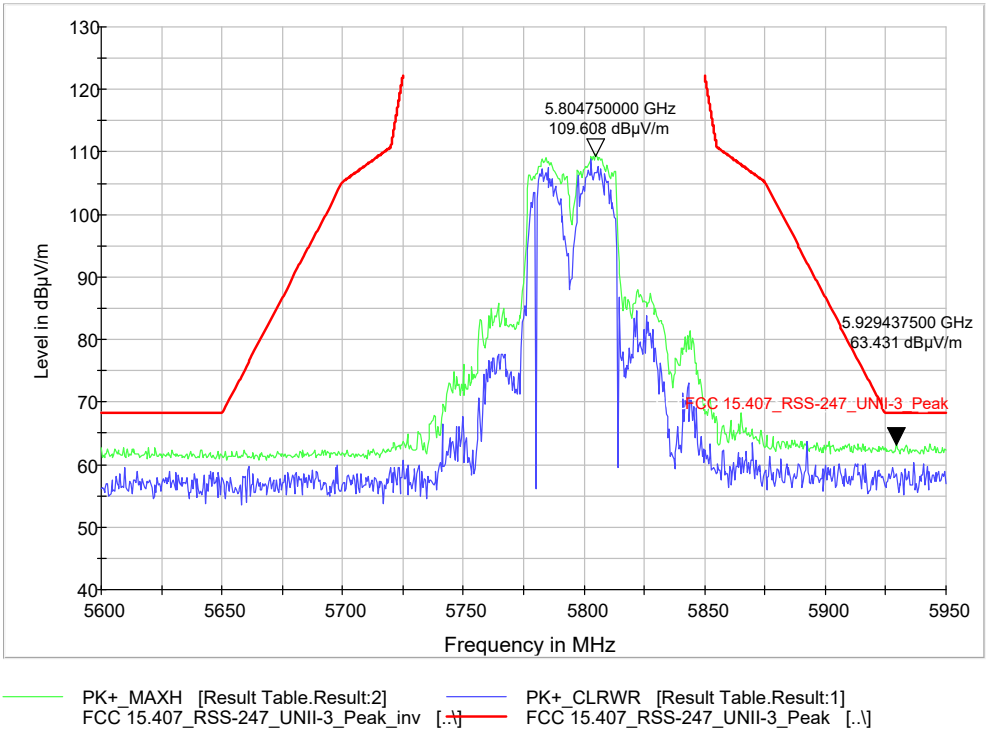
Plot 9-421. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT40 (Ch. 102)



Plot 9-422. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT40 (Ch. 134)

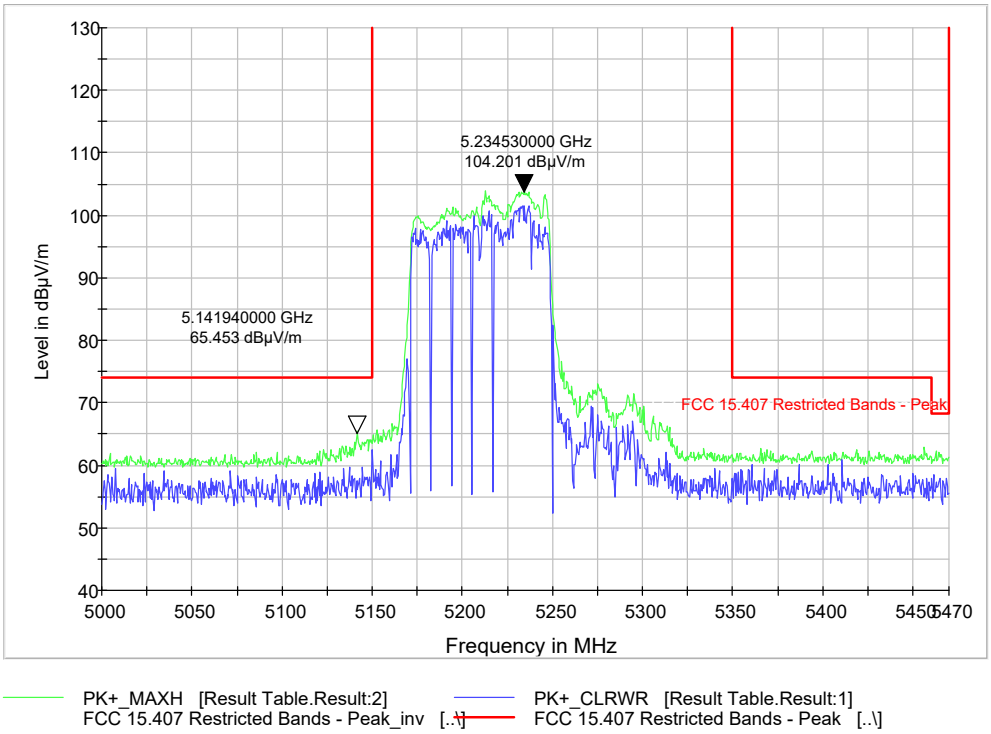


Plot 9-423. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT40 (Ch. 151)

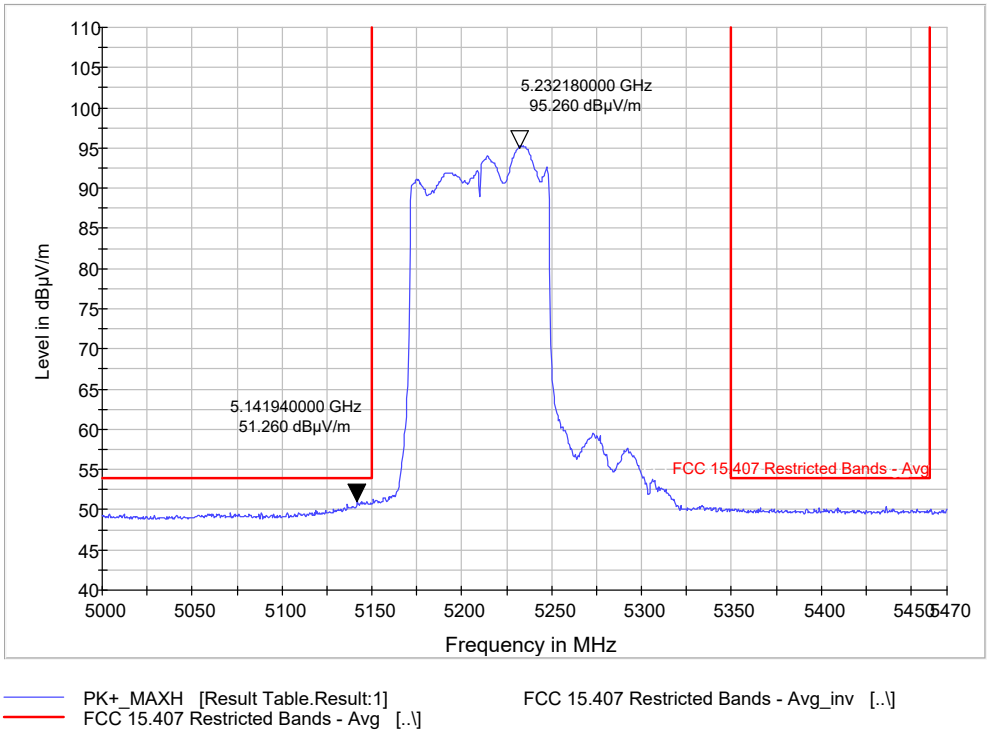


Plot 9-424. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11n HT40 (Ch. 159)

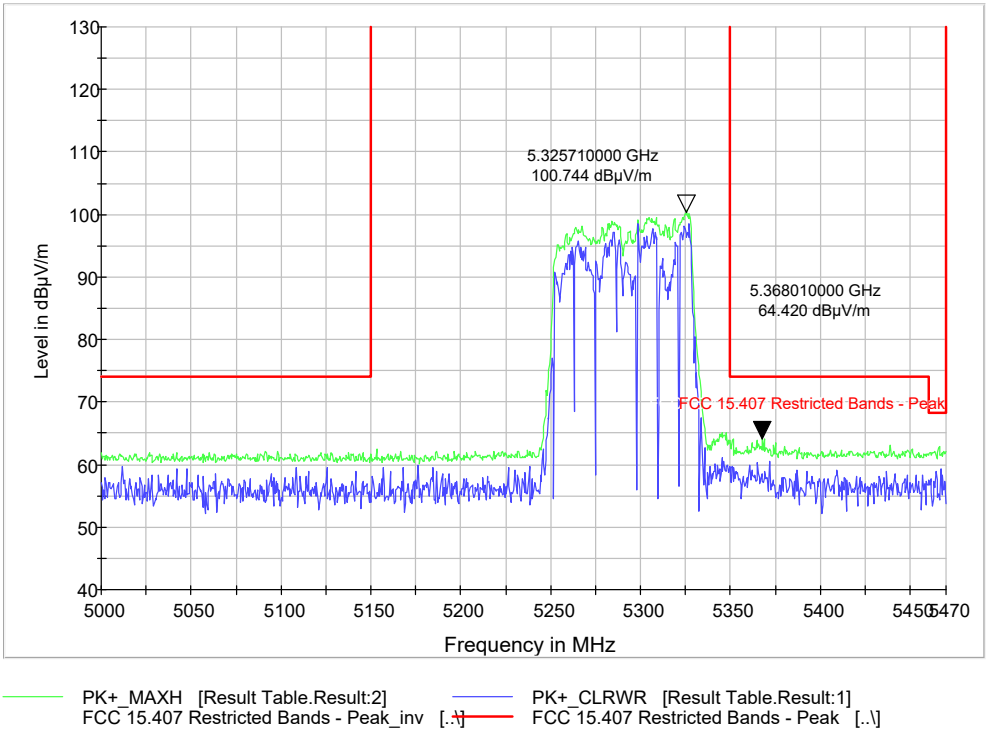
9.7.5.11 Radiated Band-edge emissions 802.11ac VHT80



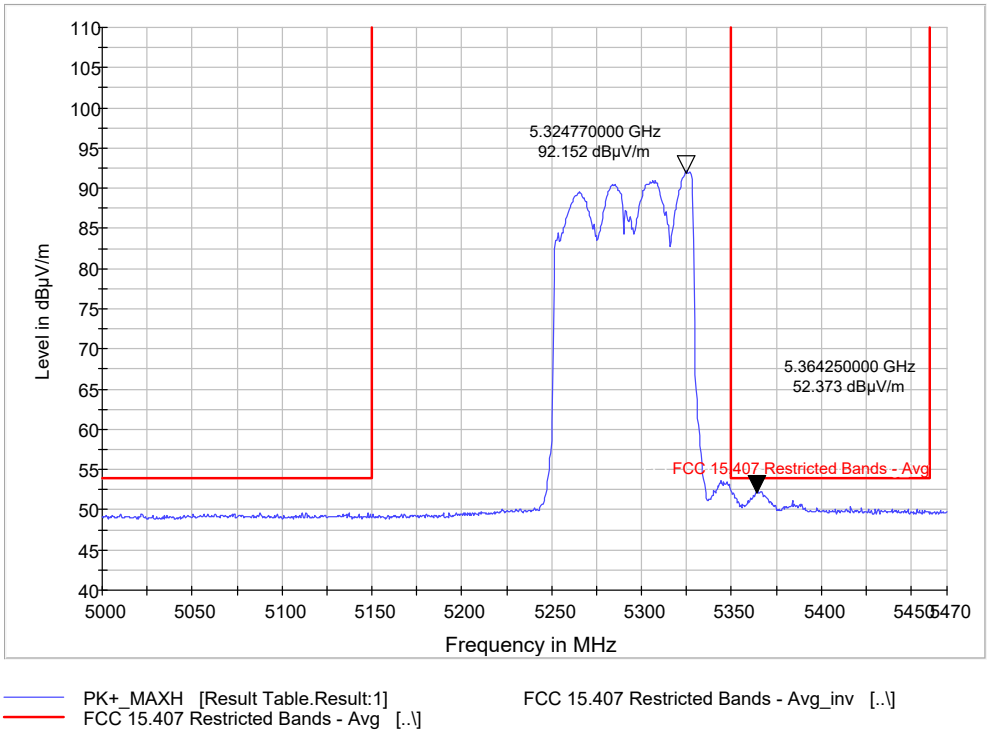
Plot 9-425. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11acVHT80 (Ch. 42)



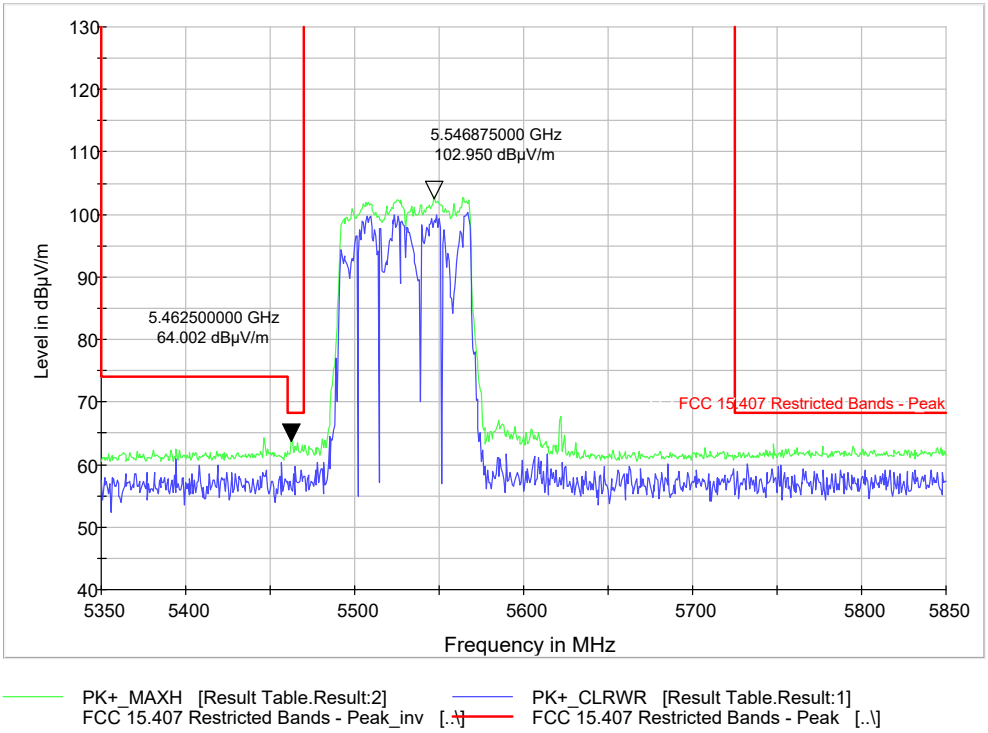
Plot 9-426. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11ac VHT80 (Ch. 42)



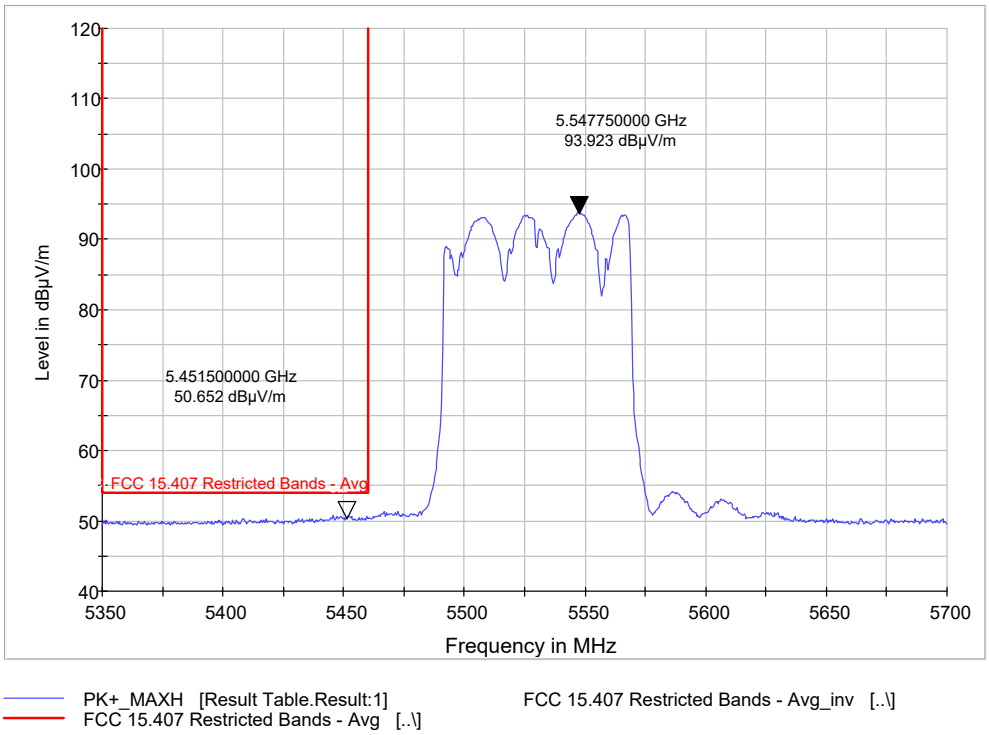
Plot 9-427. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11ac VHT80 (Ch. 58)



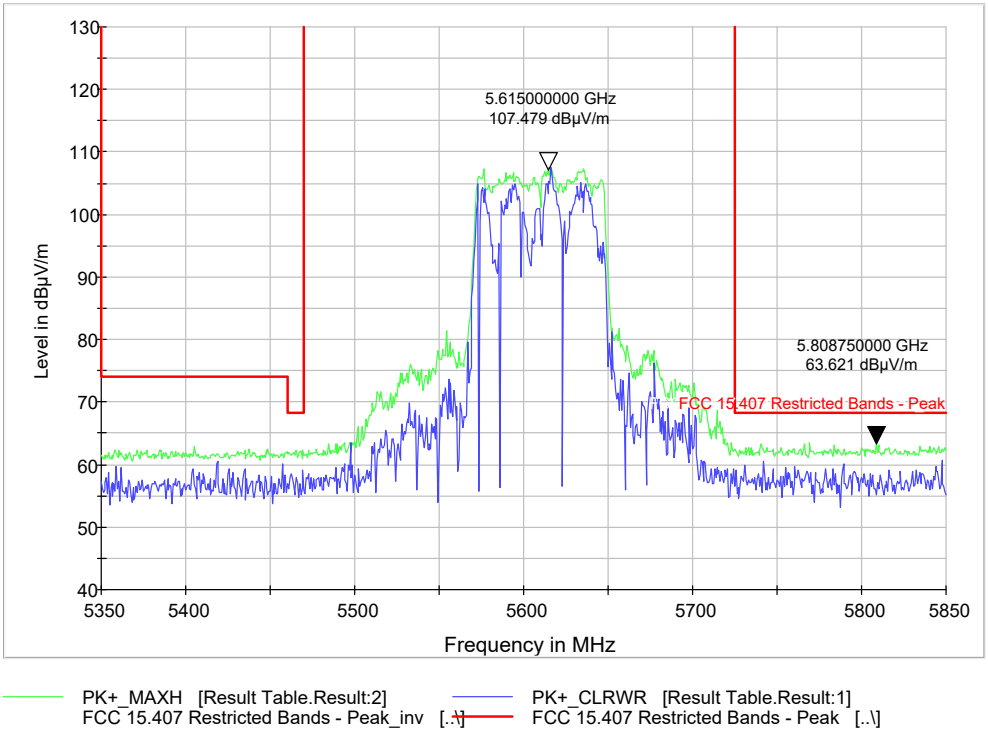
Plot 9-428. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11ac VHT80 (Ch. 58)



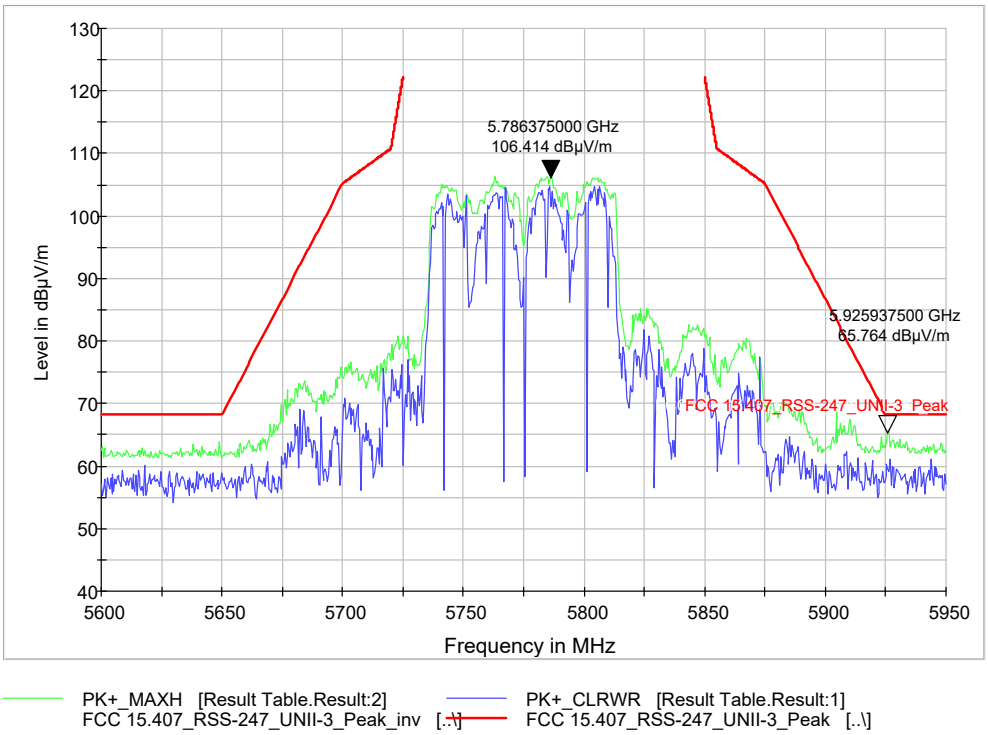
Plot 9-429. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11ac VHT80 (Ch. 106)



Plot 9-430. Average Radiated Band Edge Emissions Tx Chains 0 & 1 802.11ac VHT80 (Ch. 106)



Plot 9-431. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11ac VHT80 (Ch. 122)



Plot 9-432. Peak Radiated Band Edge Emissions Tx Chains 0 & 1 802.11ac VHT80 (Ch. 155)

9.8 AC Line Conducted Emissions

9.8.1 Test Requirements

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

9.8.2 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.

EMI Receiver Settings:

150 kHz – 30 MHz:

RBW= 9 kHz
VBW ≥ 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

EUT Exercising:

UNII 5GHz
Technology: 802.11a 6Mbps
RF Channel: Channel 64, 5320GHz
Antenna Chains: Chain 0 and Chain 1
Power Level Setting: 17 dBm

9.8.3 Limit

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

9.8.4 Test Result:

Pass.

9.8.5 Test Data:

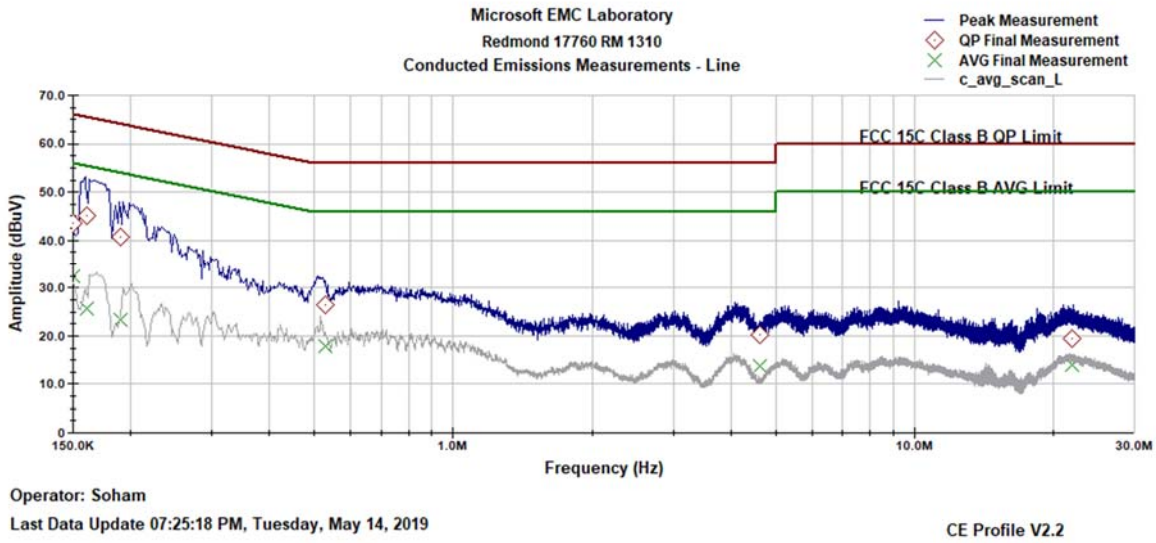


Figure 9-434. AC Line Conducted Emissions- Line (150 kHz- 30 MHz)

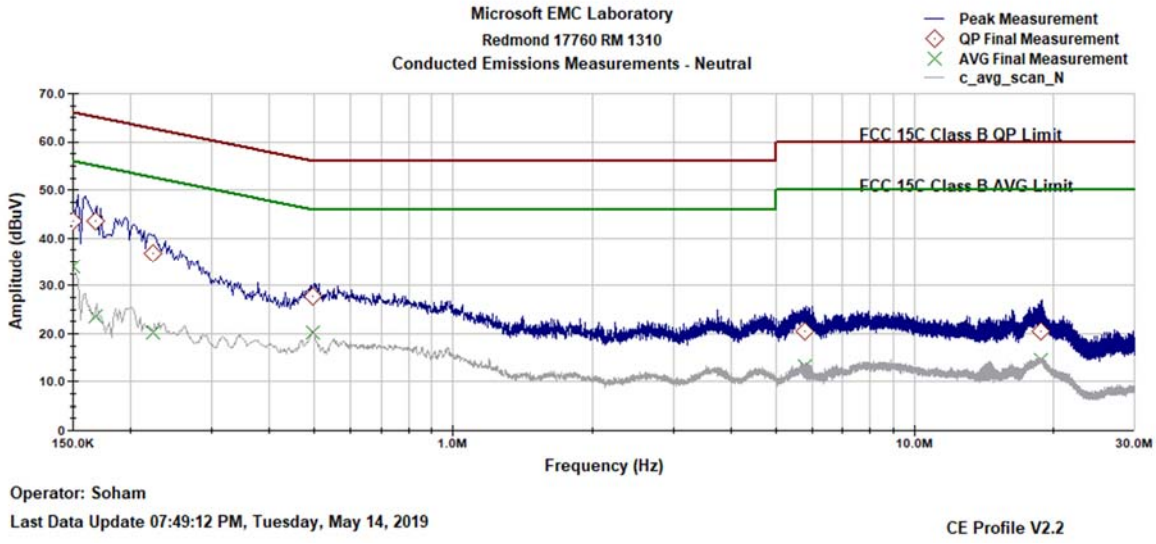


Figure 9-435. AC Line Conducted Emissions- Neutral (150 kHz- 30 MHz)

Frequency (MHz)	Line Tested (L or N)	AVG Amplitude (dBuV)	QP Amplitude (dBuV)	Peak Amplitude (dBuV)	AVG Limit (dBuV)	QP Limit (dBuV)	AVG Margin (dB)	QP Margin (dB)
0.168	N	23.70	43.45	46.06	55.05	65.05	-31.35	-21.60
0.150	N	33.94	43.56	45.61	55.99	65.99	-22.05	-22.43
0.224	N	20.33	36.87	40.60	52.68	62.68	-32.35	-25.81
0.495	N	20.13	27.71	29.51	46.08	56.08	-25.95	-28.37
18.765	N	14.49	20.44	24.60	50.00	60.00	-35.52	-39.56
5.774	N	13.16	20.36	24.69	50.00	60.00	-36.84	-39.64
0.161	L	25.53	45.16	47.97	55.40	65.40	-29.87	-20.25
0.150	L	32.46	43.53	41.77	55.99	65.99	-23.53	-22.47
0.190	L	23.21	40.76	45.55	54.02	64.02	-30.82	-23.26
0.528	L	17.90	26.54	30.66	46.00	56.00	-28.10	-29.46
4.630	L	13.62	20.26	21.41	46.00	56.00	-32.38	-35.75
21.910	L	14.06	19.35	24.03	50.00	60.00	-35.94	-40.65

End of Report