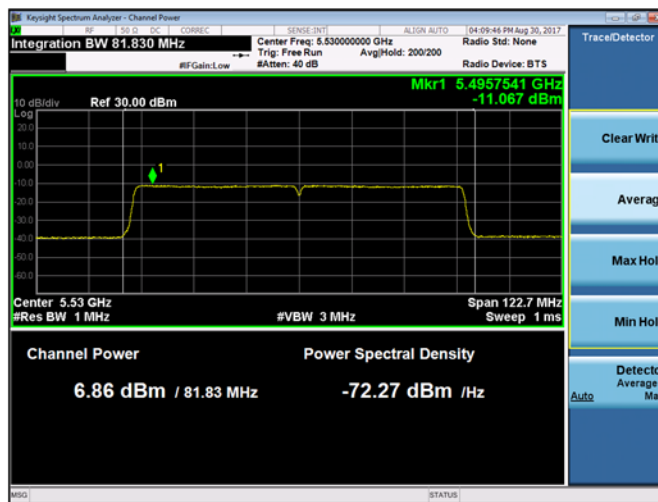
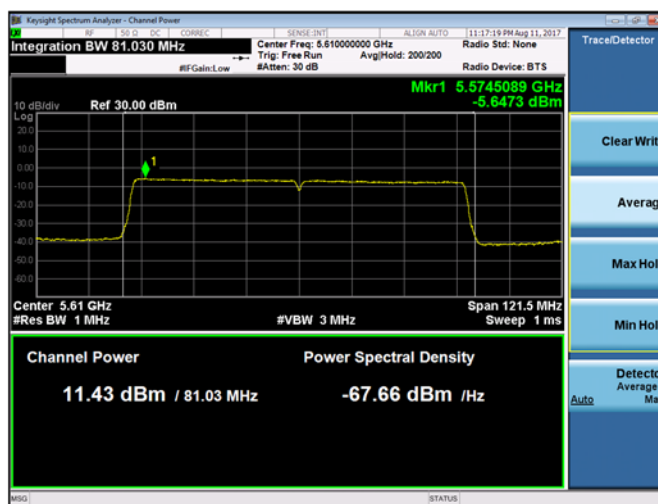


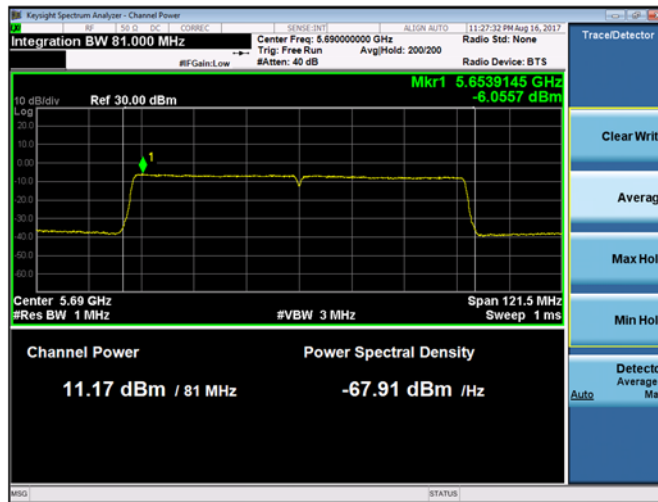
Plot 9-334. Maximum Conducted Output Power and PSD Chain B 802.11ac VHT80 (Ch. 58)



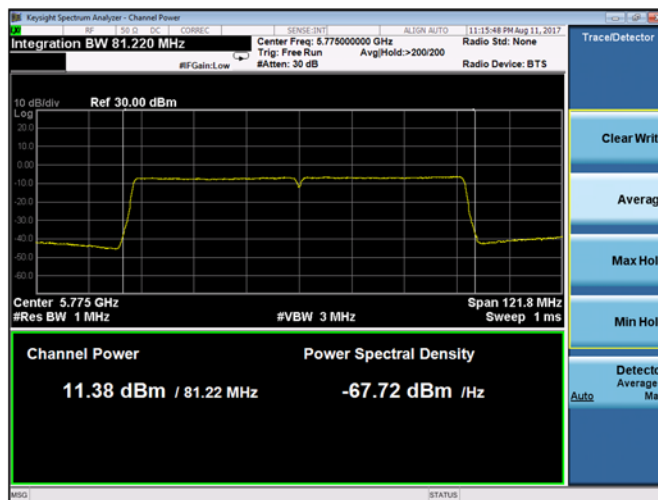
Plot 9-335. Max Conducted Output Power and PSD Chain B 802.11ac VHT80 (Ch. 106)



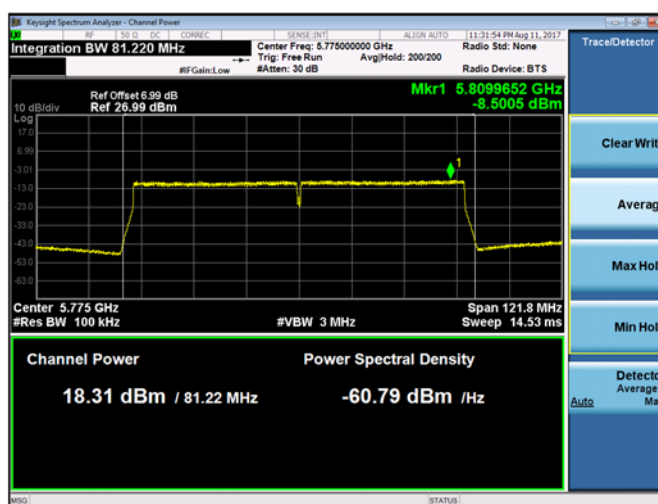
Plot 9-336. Max Conducted Output Power and PSD Chain B 802.11ac VHT80 (Ch. 122)



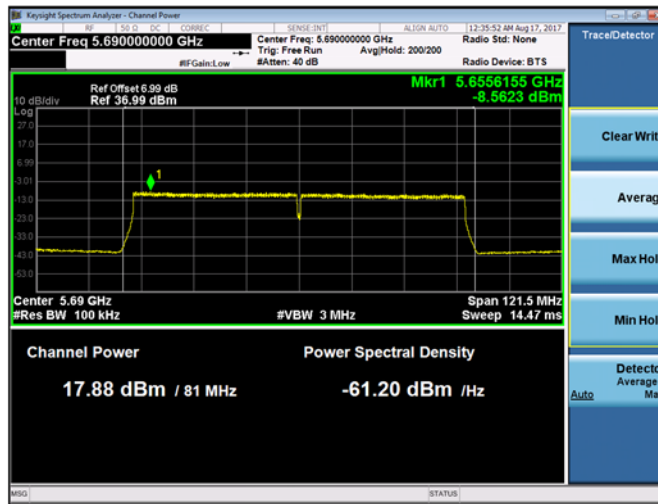
Plot 9-337. Max Conducted Output Power and PSD Chain B 802.11ac VHT80 (Ch. 138)



Plot 9-338. Maximum Conducted Output Power Chain B 802.11ac VHT80 (Ch. 155)



Plot 9-339. Maximum Power Spectral Density Chain B 802.11ac VHT80 (Ch. 155)



Plot 9-340. Maximum Power Spectral Density Chain B 802.11ac VHT80 (Ch. 138)

9.6 Radiated Spurious and Band Edge Emissions

9.6.1 Test Requirement:

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

9.6.2 Test Method:

Measurements were performed according to the procedure defined in KDB 789033 D02 v01r03 - 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 $\geq 3 \times$ RBW

Trace Mode: Peak Detector (Max Hold). Final measurements performed using QP Detector.

Span= 30 MHz- 1 GHz

Sweep time= Auto Couple

Sweep points $\geq 2 \times$ 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 $\geq 2 \times$ Span/RBW**Final Peak Measurements above 1 GHz****Spectrum Analyzer Settings:**

RBW= 1 MHz

VBW $\geq 3 \times$ RBW

Detector= Peak

Span= wide enough to encompass the emission

Sweep points $\geq 2 \times$ Span/RBW

Sweep time = Auto Couple

Trace= Max Hold

Final RMS Average Measurements above 1 GHz**Spectrum Analyzer Settings:**

RBW= 1 MHz

VBW $\geq 3 \times$ RBW

Detector= RMS

Span= wide enough to encompass the emission

Sweep points $\geq 2 \times$ 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 (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 ($\text{dB}\mu\text{V/m}$)
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 (68.2 $\text{dB}\mu\text{V/m}$ at 3m).

9.6.4 Test Result:

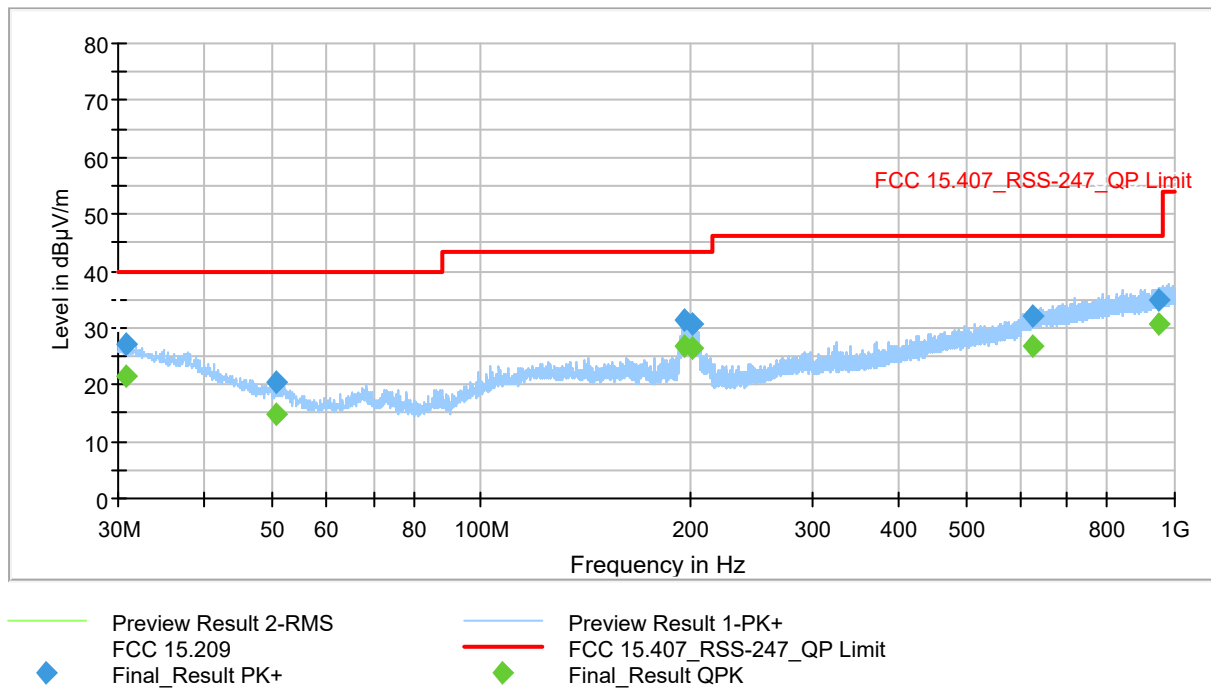
Pass.

9.6.5 Test Data:

9.6.5.1 Radiated Emissions in 30 MHz- 1 GHz range

All channels and modes were tested and worst case results from 802.11n mode, channel 102 shown here.

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)
30.80	-2.18	23.80	21.62	40.00	-18.38
50.65	0.06	14.90	14.96	40.00	-25.04
196.90	7.74	19.20	26.94	43.50	-16.56
201.55	6.98	19.30	26.28	43.50	-17.22
622.81	-0.65	27.60	26.95	46.00	-19.05
946.75	-1.04	31.60	30.56	46.00	-15.44

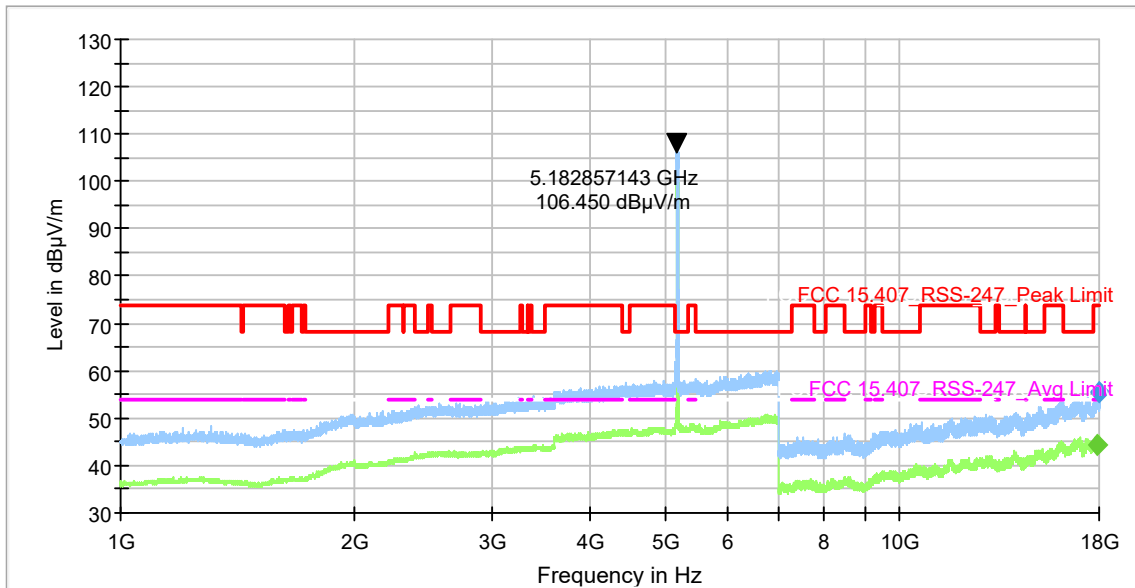


Plot 9-341. Radiated Spurious Emissions 30-1000 MHz Tx Chains A & B 802.11n (Ch. 102)

9.6.5.2 Radiated Emissions in 1-18 GHz range 802.11a

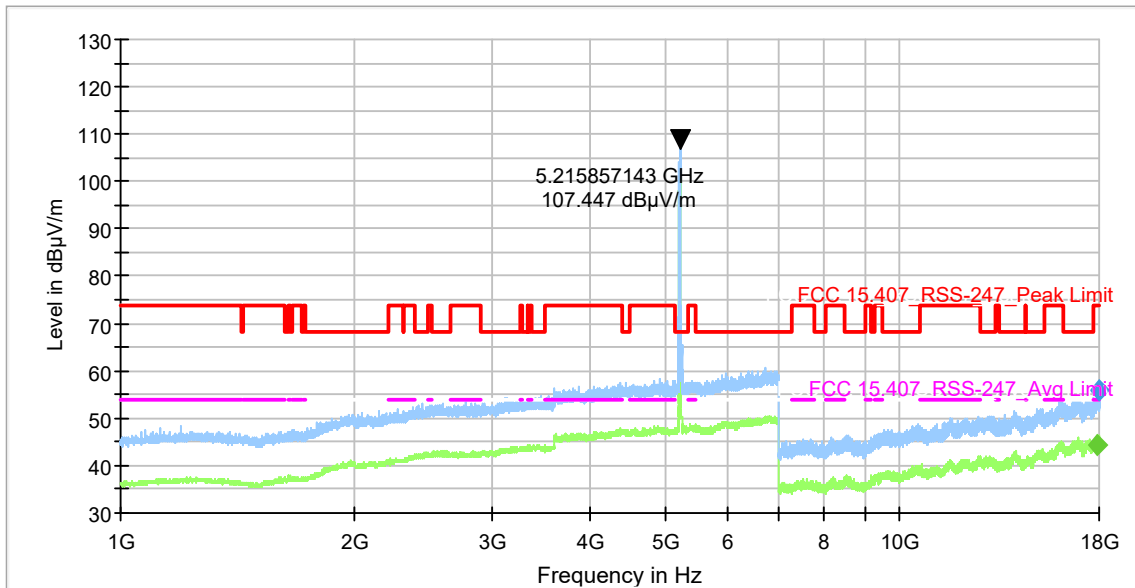
802.11a RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBµV)	Correction Factor (dB)	Corrected Peak Field Strength (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)
5180	17987.68	30.92	24.4	55.32	74	-18.68
5220	17962.19	31.54	24.4	55.94	74	-18.06
5240	17993.20	30.9	24.5	55.40	74	-18.6
5260	17847.94	31.05	24.8	55.85	74	-18.15
5300	17968.10	30.88	24.4	55.28	74	-18.72
5320	17857.68	30.86	24.9	55.76	74	-18.24
5500	17618.95	30.66	23.7	54.36	68.2	-13.84
5700	17976.62	31.26	24.4	55.66	74	-18.34
5580	17558.57	30.49	23.5	53.99	68.2	-14.21
5720	17931.52	31.39	24.7	56.09	74	-17.91
5745	17892.47	31.70	24.7	56.40	74	-17.60
5785	16109.53	31.36	22.6	53.96	74	-20.04
5785	17960.79	31.54	24.4	55.94	74	-18.06
5825	16001.32	31.61	22.5	54.11	74	-19.89
5825	17967.24	30.61	24.4	55.01	74	-18.99

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	17945.54	19.66	24.5	44.16	54	-9.84
5220	17938.20	19.69	24.5	44.19	54	-9.81
5240	17952.87	19.62	24.5	44.12	54	-9.88
5260	17919.71	19.64	24.6	44.24	54	-9.76
5300	17949.20	19.79	24.5	44.29	54	-9.71
5320	17882.45	19.61	24.8	44.41	54	-9.59
5500	17628.73	19.43	23.7	43.13	54	-10.87
5700	17882.21	19.64	24.8	44.44	54	-9.56
5580	17549.77	19.43	23.5	42.93	54	-11.07
5720	17923.57	19.38	24.9	44.28	54	-9.72
5745	17866.01	19.75	24.9	44.65	54	-9.35
5785	15998.73	20.25	22.5	42.75	54	-11.25
5785	17993.16	19.60	24.5	44.10	54	-9.90
5825	16002.25	20.26	22.5	42.76	54	-11.24
5825	17927.36	18.71	24.6	43.31	54	-10.69



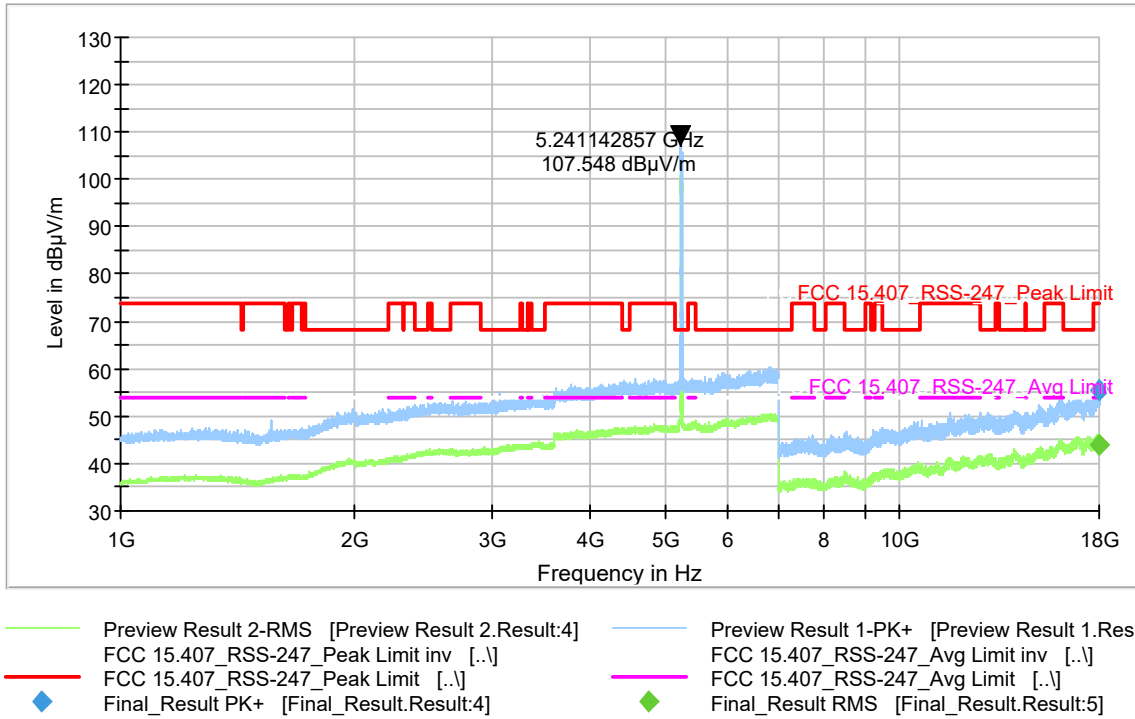
- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-342. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 36)

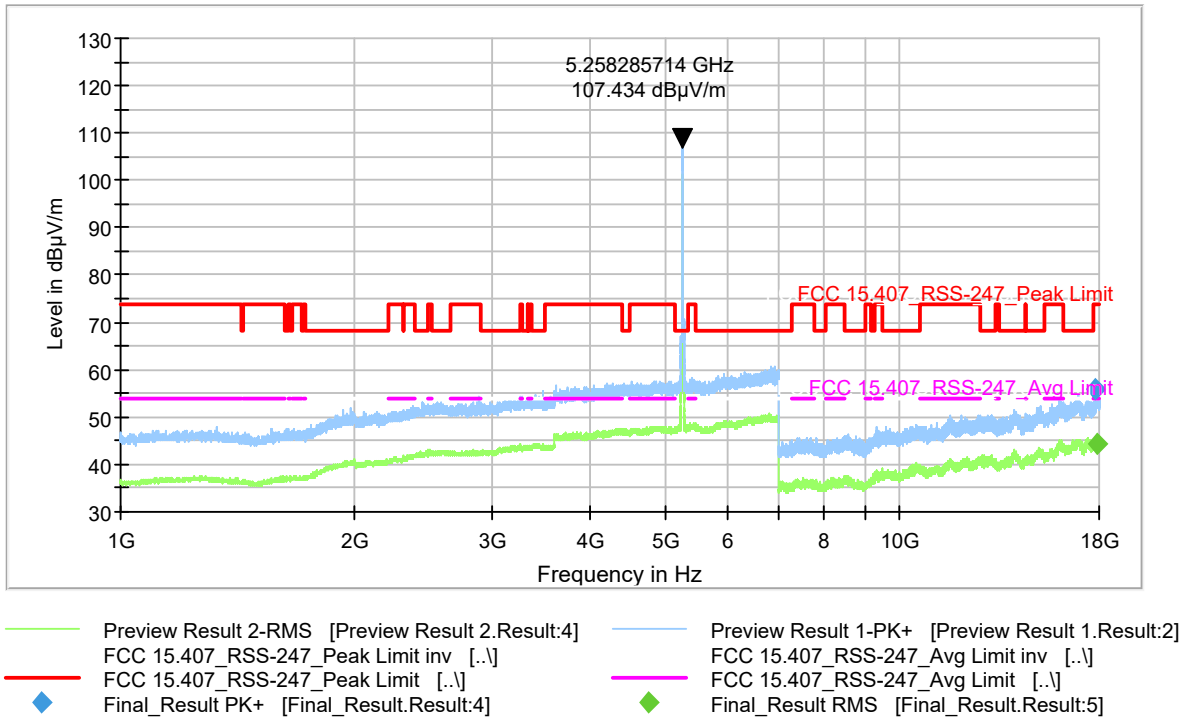


- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

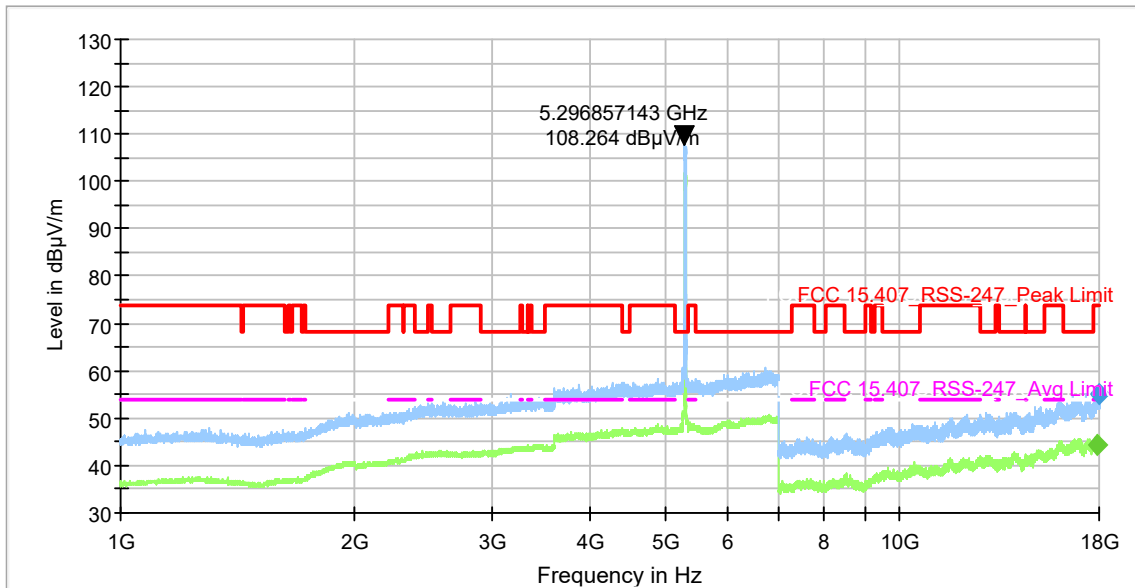
Plot 9-343. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 44)



Plot 9-344. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 48)

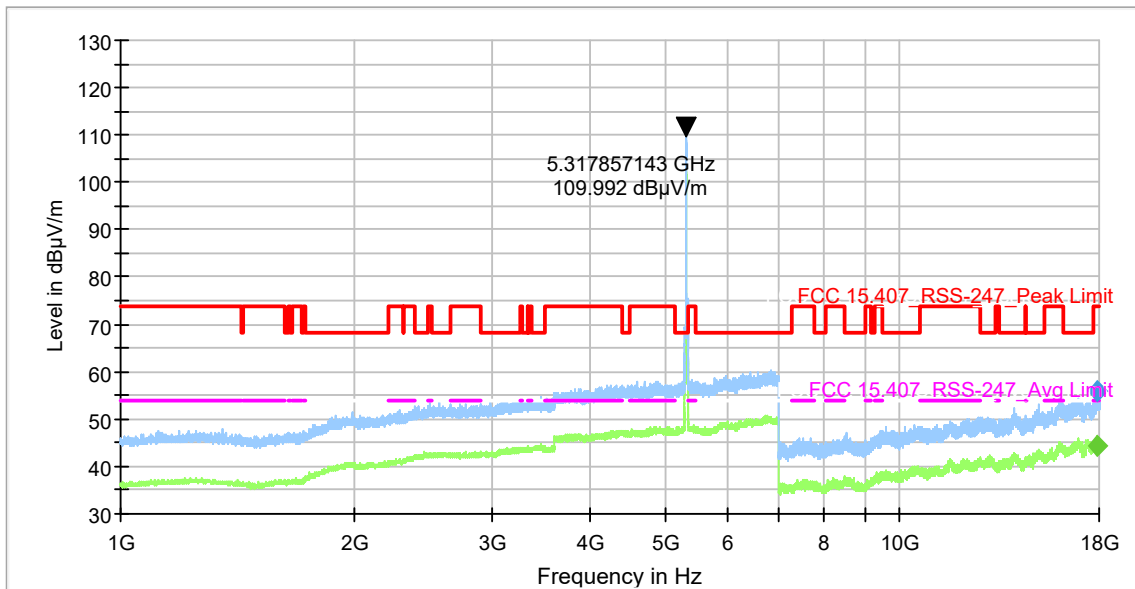


Plot 9-345. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 52)



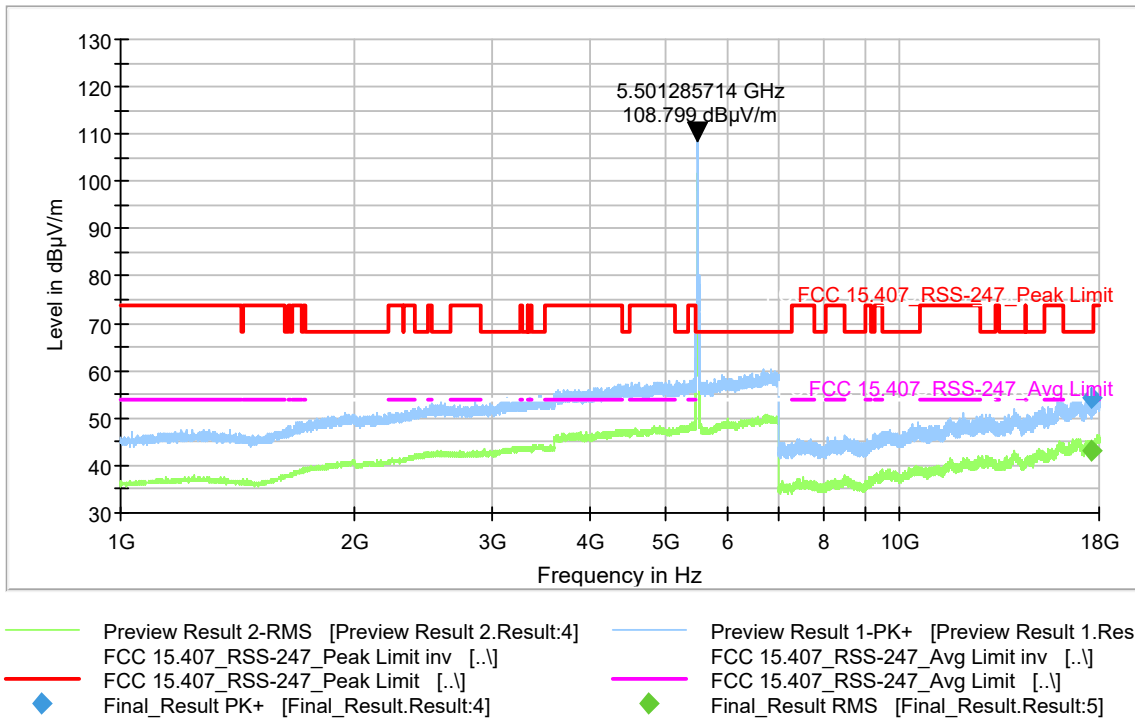
- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-346. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 60)

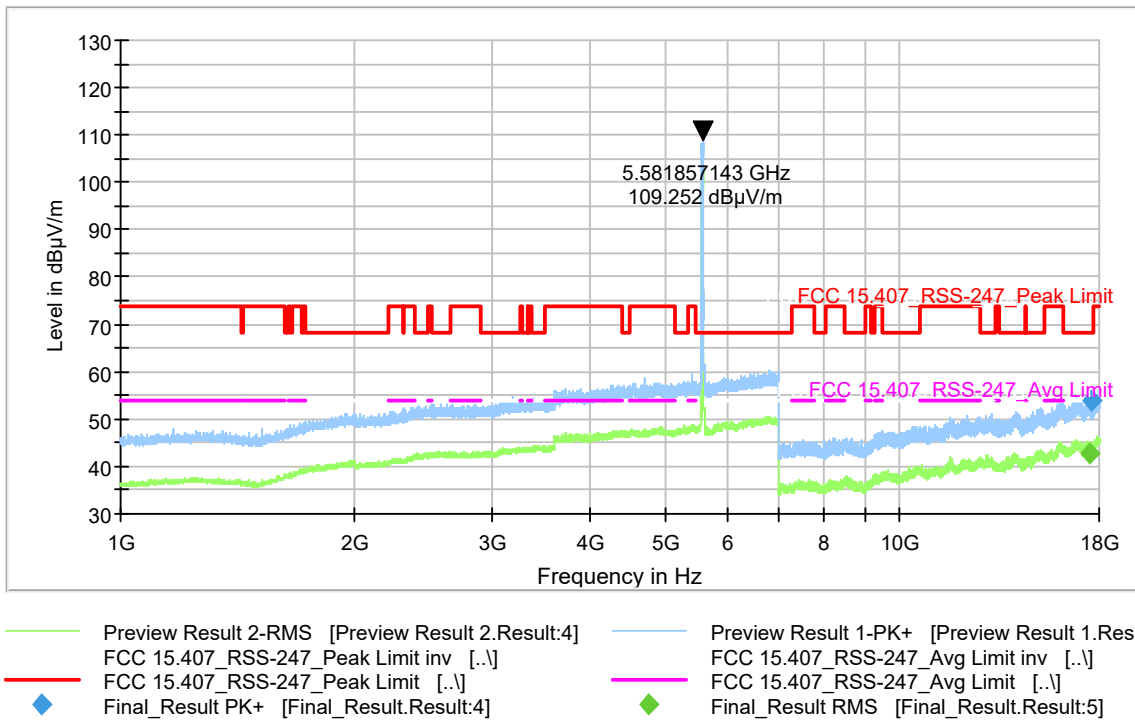


- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-347. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 64)



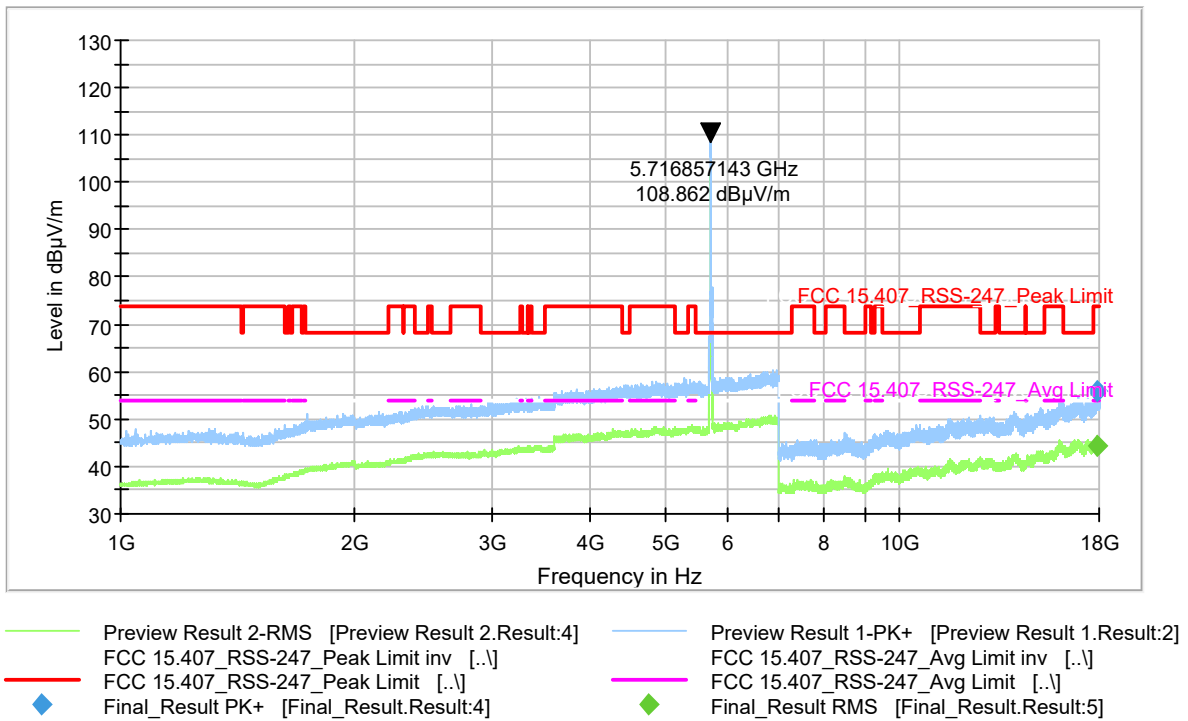
Plot 9-348. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 100)



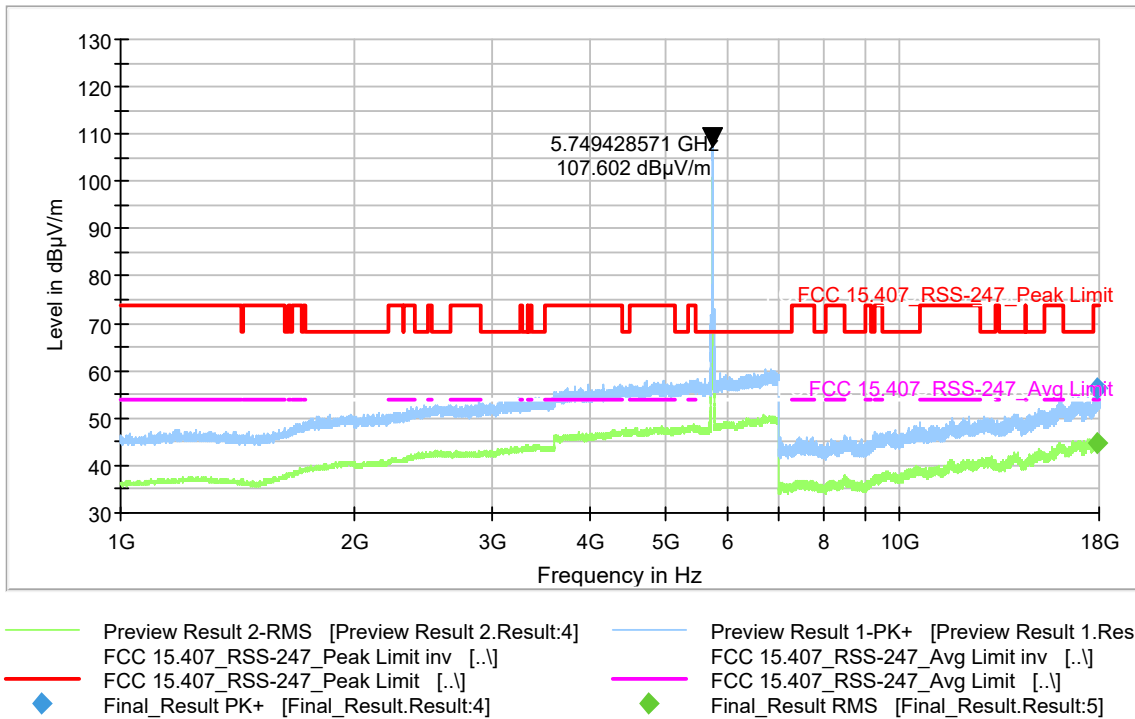
Plot 9-349. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 116)



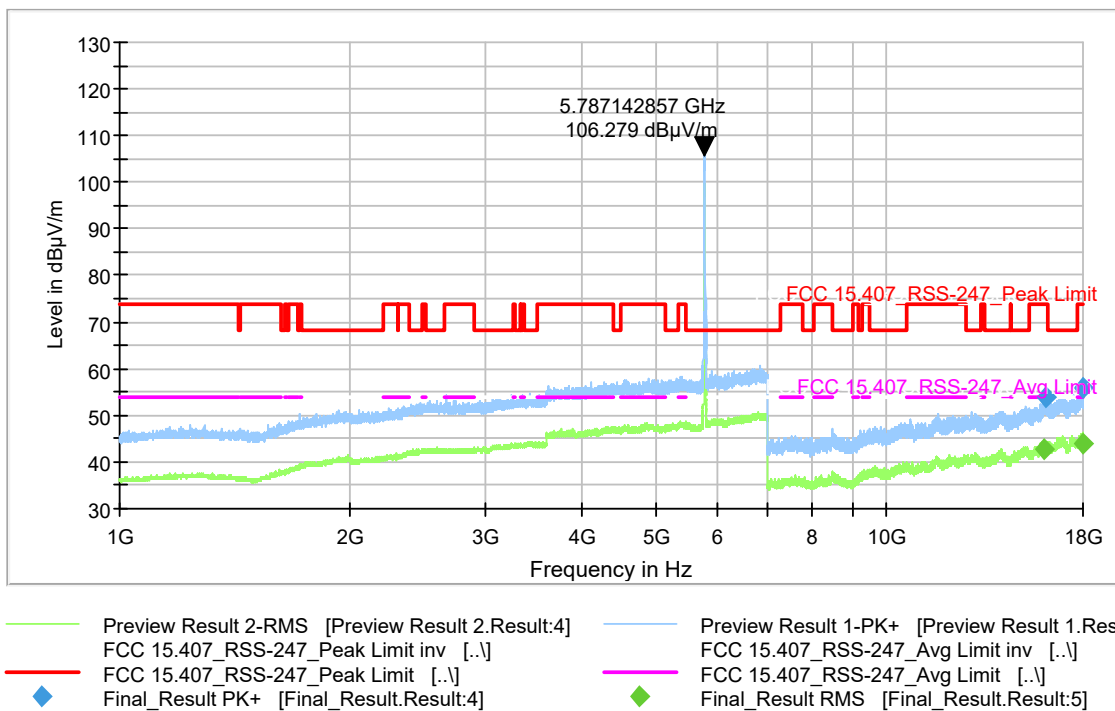
Plot 9-350. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 140)



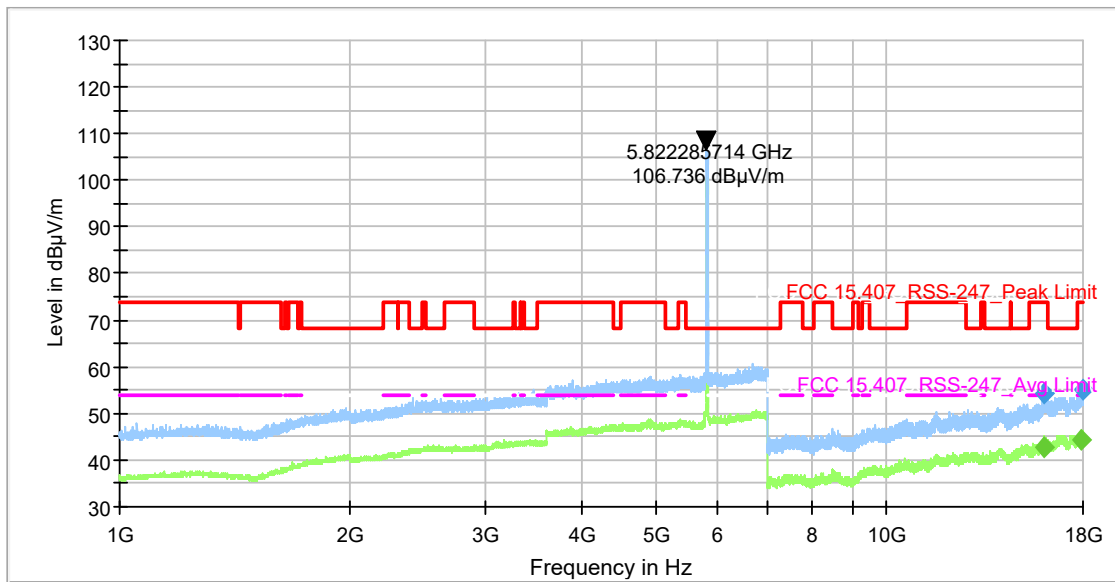
Plot 9-351. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 144)



Plot 9-352. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 149)



Plot 9-353. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 157)



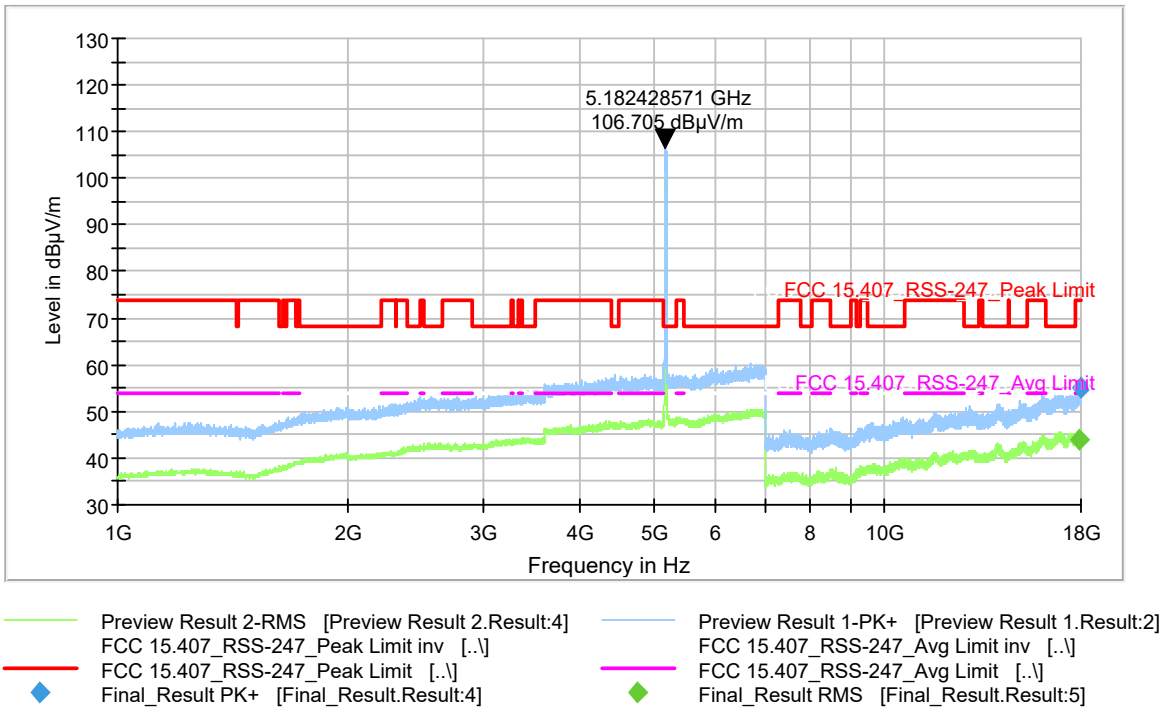
- Preview Result 2-RMS [Preview Result 2.Result:4]
 - FCC 15.407_RSS-247_Peak Limit inv [..]
 - ◆ Final_Result PK+ [Final_Result.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
 - - - FCC 15.407_RSS-247_Avg Limit inv [..]
 - ◆ Final_Result RMS [Final_Result.Result:5]

Plot 9-354. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11a (Ch. 165)

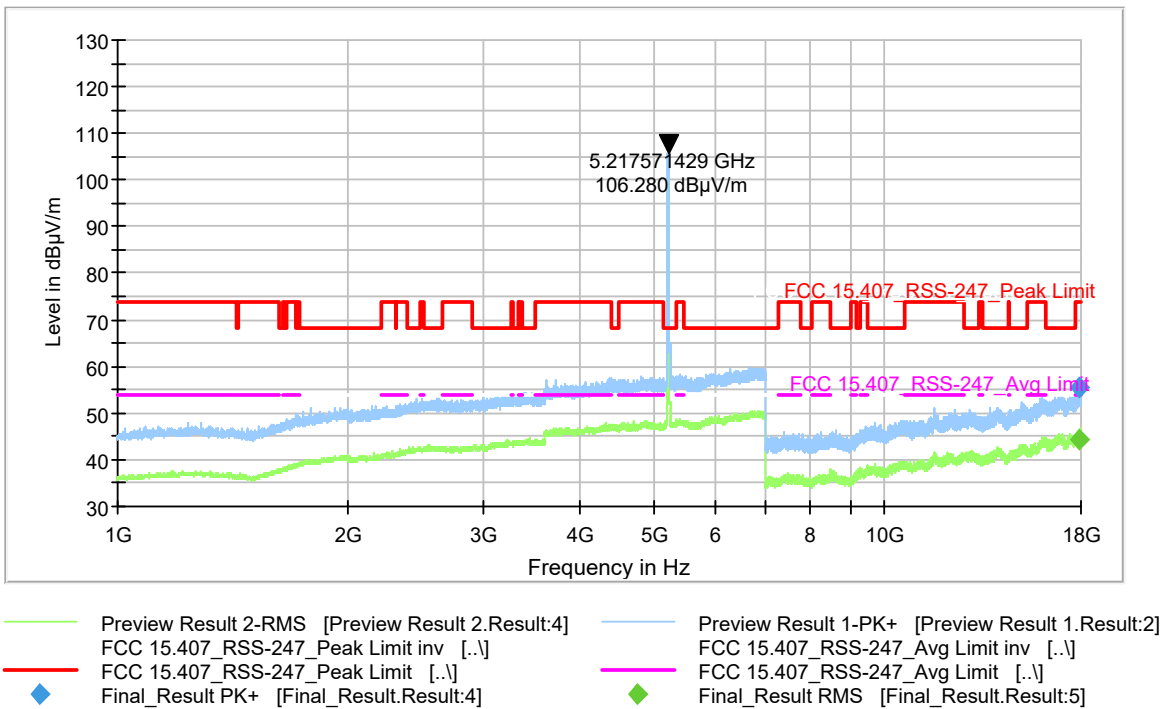
9.6.5.3 Radiated Emission in 1-18 GHz range 802.11n HT20

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	17968.47	30.82	24.4	55.22	74	-18.78
5220	17913.49	30.89	24.6	55.49	74	-18.51
5240	17960.60	31.17	24.4	55.57	74	-18.43
5260	17876.90	32.05	24.8	56.85	74	-17.15
5300	17904.85	30.83	24.7	55.53	74	-18.47
5320	7367.37	32.82	12.9	45.72	74	-28.28
5320	17958.56	30.35	24.4	54.75	74	-19.25
5500	17914.56	31.93	24.6	56.53	74	-17.47
5580	17936.39	31.06	24.5	55.56	74	-18.44
5700	17960.33	30.74	24.4	55.14	74	-18.86
5720	17846.28	31.31	24.8	56.11	74	-17.89
5745	17950.06	30.71	24.5	55.21	74	-18.79
5785	17866.86	31.04	24.9	55.94	74	-18.06
5825	17955.38	31.50	24.5	56.00	74	-18.00

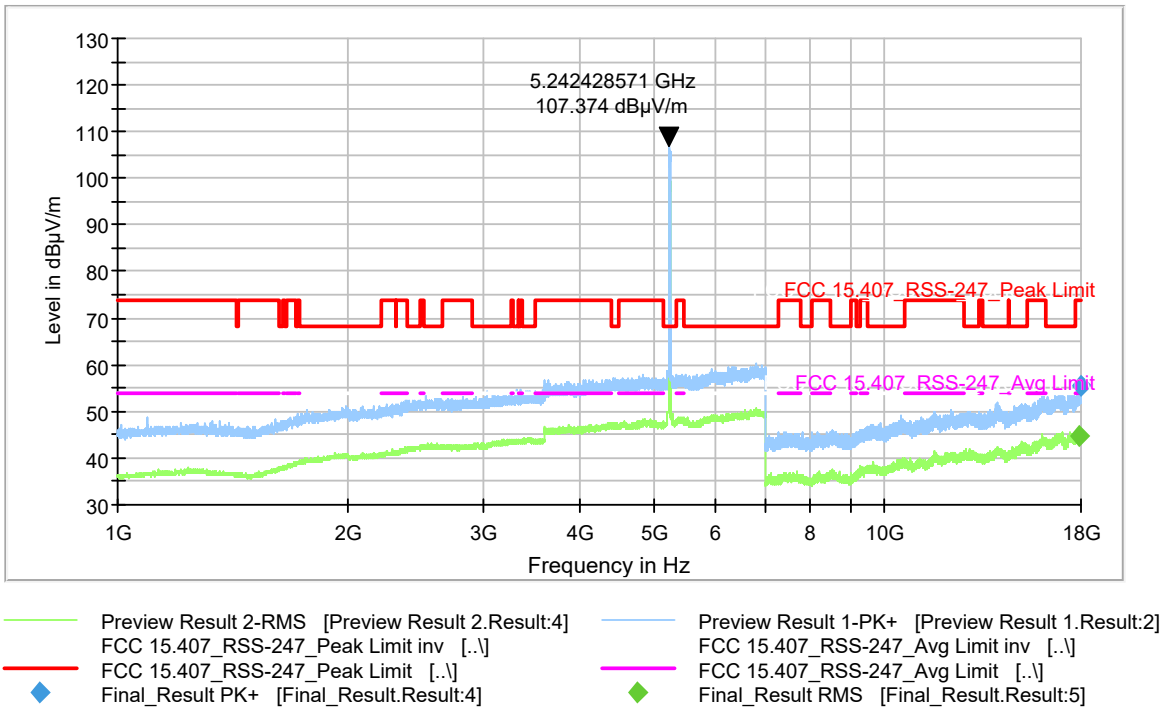
802.11N HT20 RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBµV)	Correction Factor (incl DCF=0dB) (dB)	Corrected Avg. Field Strength (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)
5180	17946.00	19.56	24.5	44.06	54	-9.94
5220	17924.15	19.57	24.6	44.17	54	-9.83
5240	17865.88	19.79	24.9	44.69	54	-9.31
5260	17949.49	19.51	24.5	44.01	54	-9.99
5300	17964.50	19.49	24.4	43.89	54	-10.11
5320	7372.16	21.81	13.0	34.81	54	-19.19
5320	17865.88	19.54	24.9	44.44	54	-9.56
5500	17901.69	19.55	24.7	44.25	54	-9.75
5580	17923.75	19.69	24.6	44.29	54	-9.71
5700	17949.13	19.69	24.5	44.19	54	-9.81
5720	17938.38	19.76	24.5	44.26	54	-9.74
5745	17898.16	19.50	24.7	44.20	54	-9.80
5785	17920.38	19.57	24.6	44.17	54	-9.83
5825	17924.03	19.58	24.6	44.18	54	-9.82



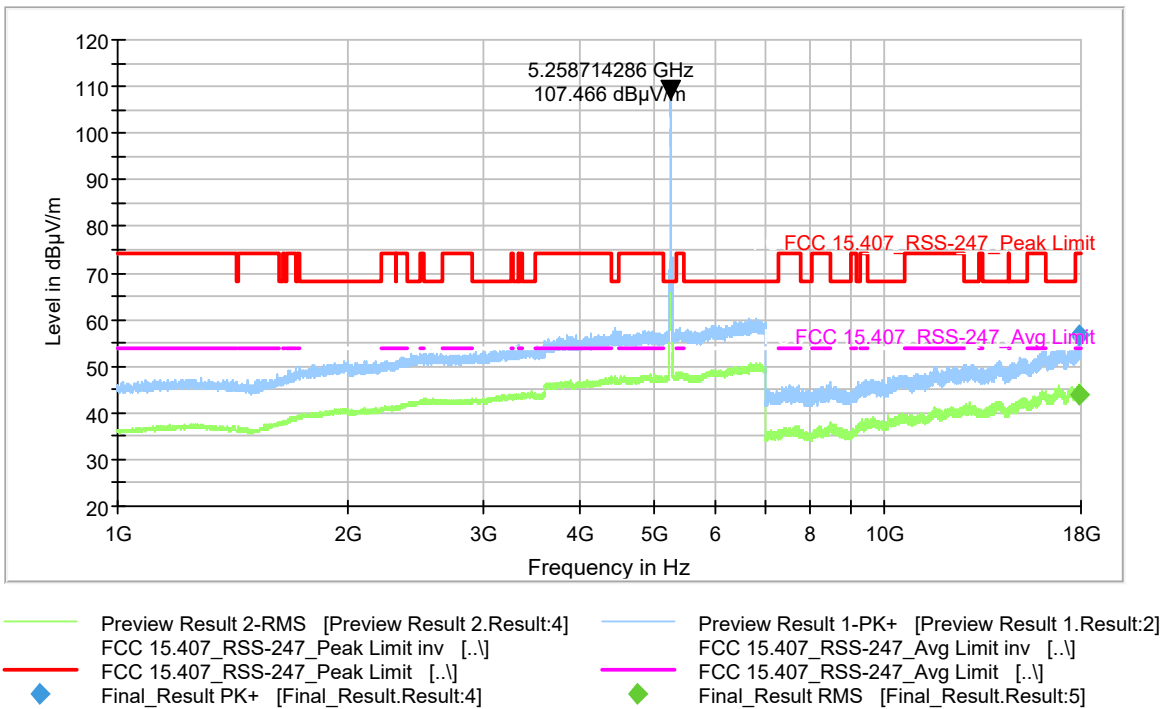
Plot 9-355. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 36)



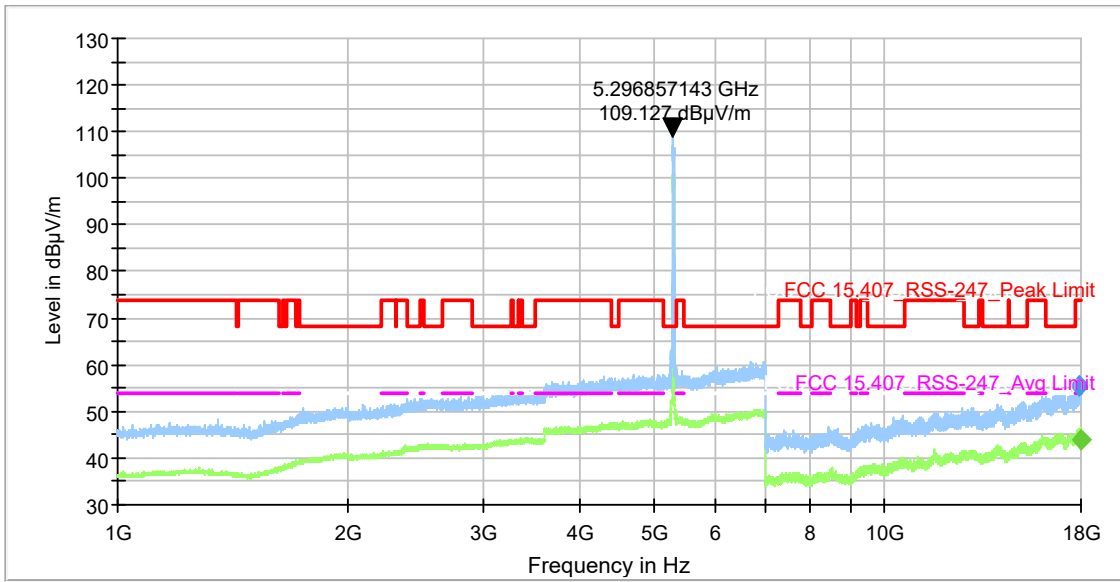
Plot 9-356. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 44)



Plot 9-357. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 48)

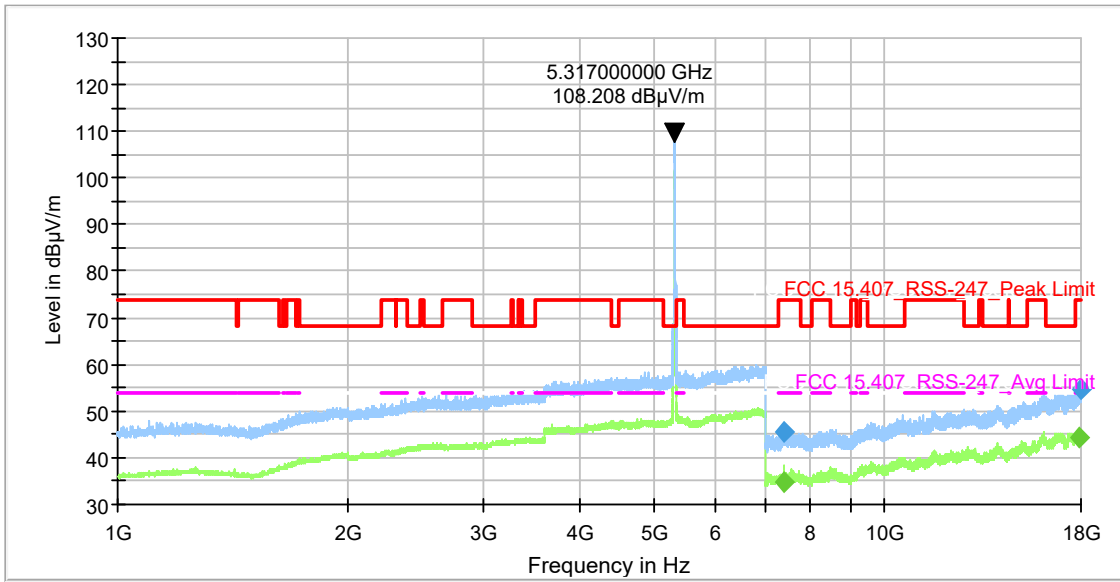


Plot 9-358. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 52)



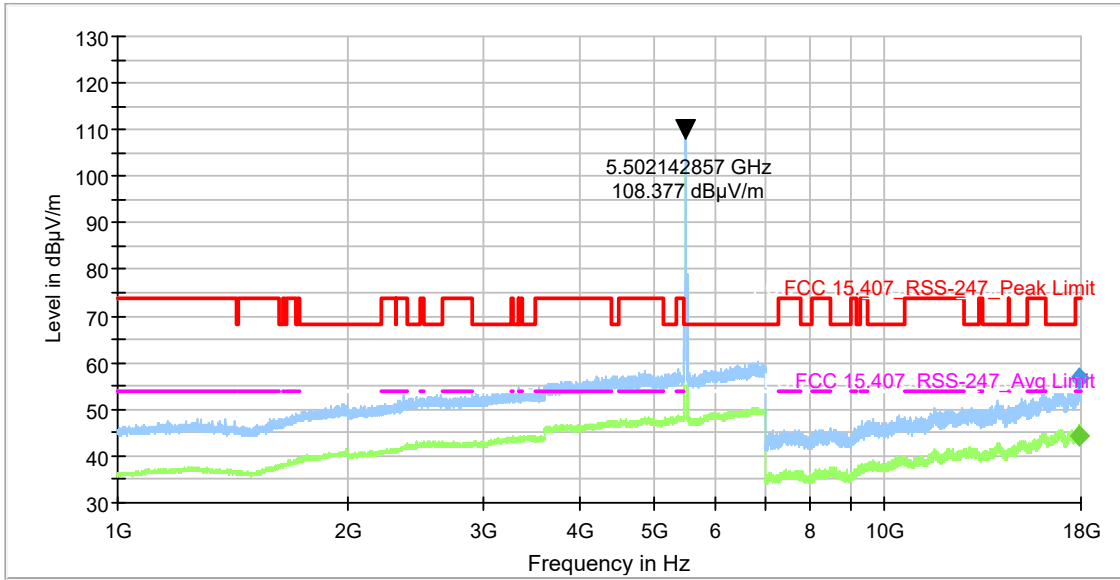
- Preview Result 2-RMS [Preview Result 2.Result:4]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-359. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 60)



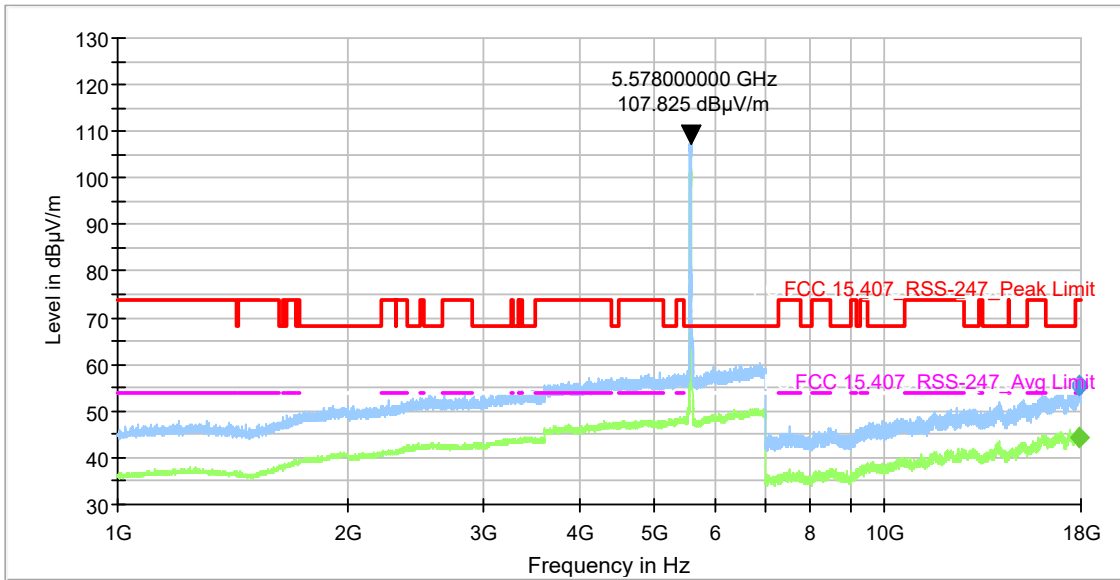
- Preview Result 2-RMS [Preview Result 2.Result:4]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-360. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 64)



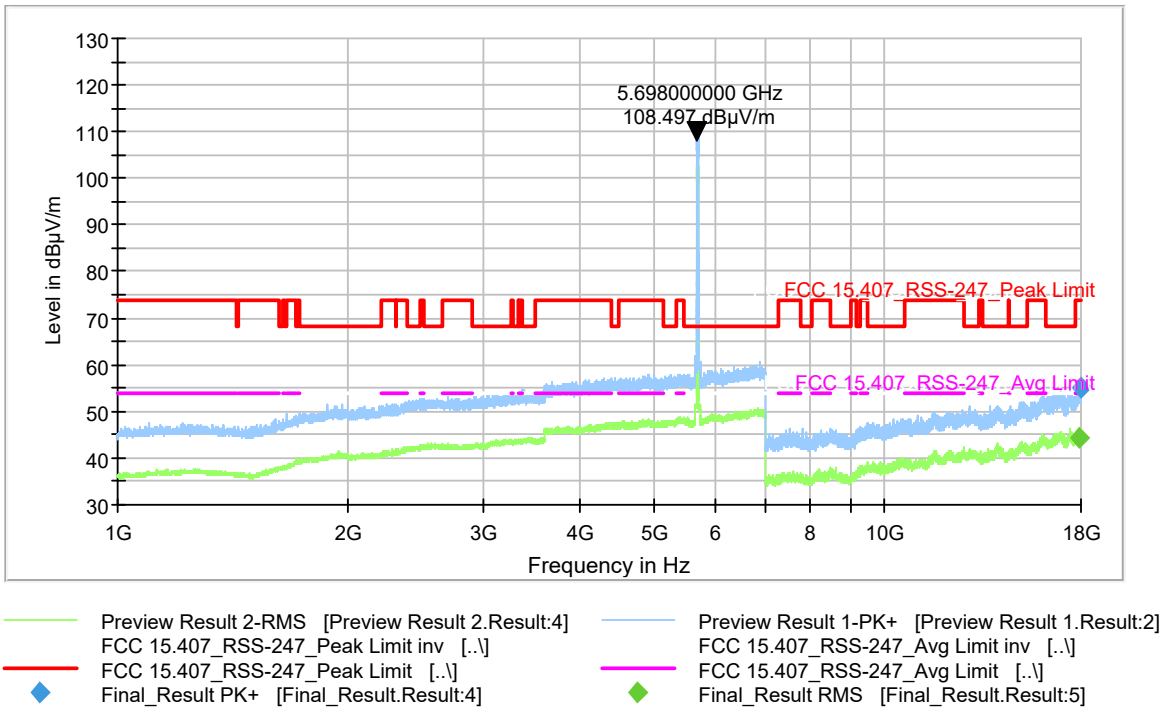
- Preview Result 2-RMS [Preview Result 2.Result:4]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-361. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 100)

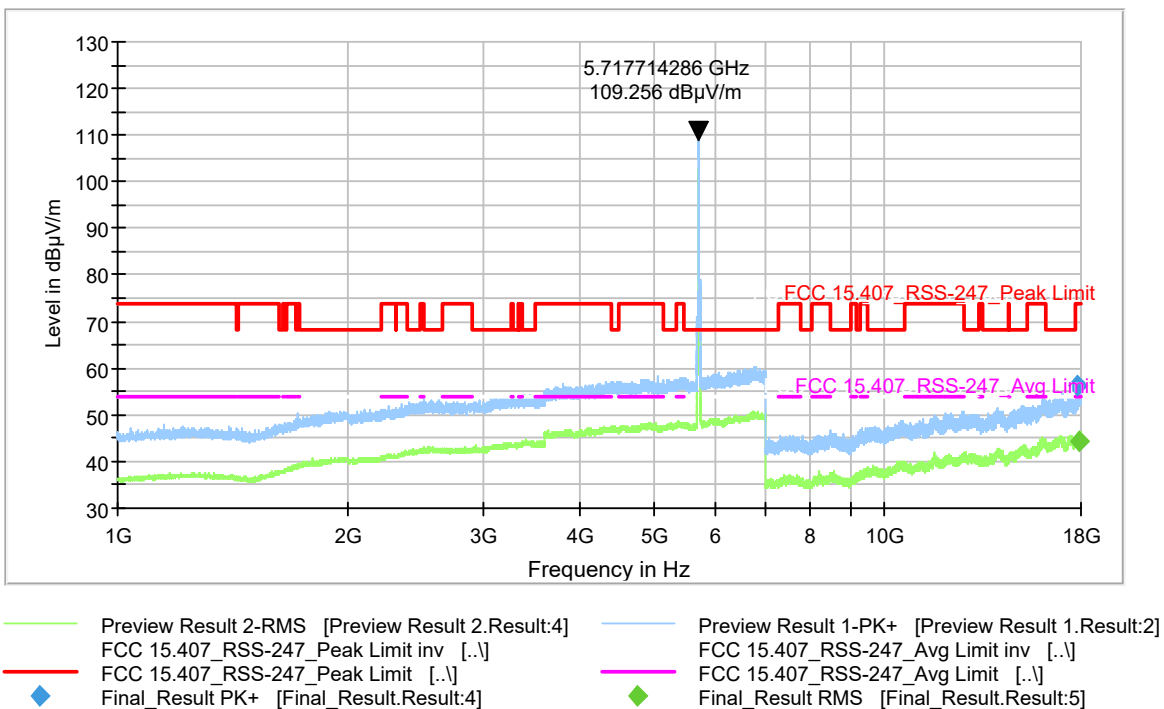


- Preview Result 2-RMS [Preview Result 2.Result:4]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result RMS [Final_Result.Result:5]

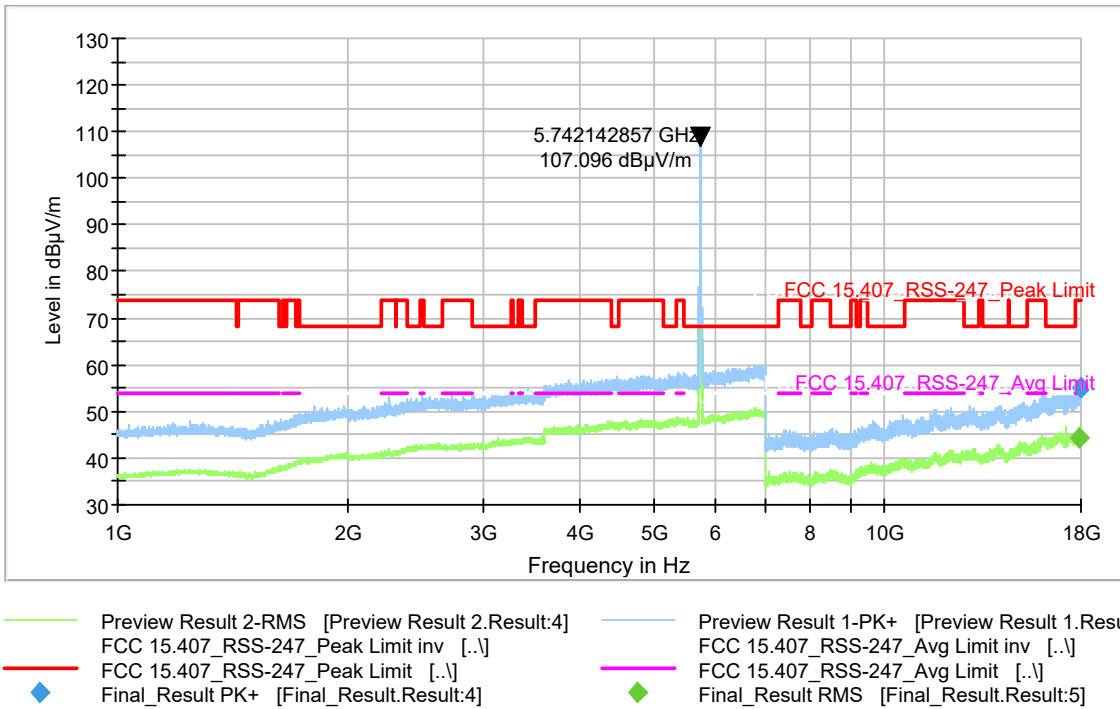
Plot 9-362. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 116)



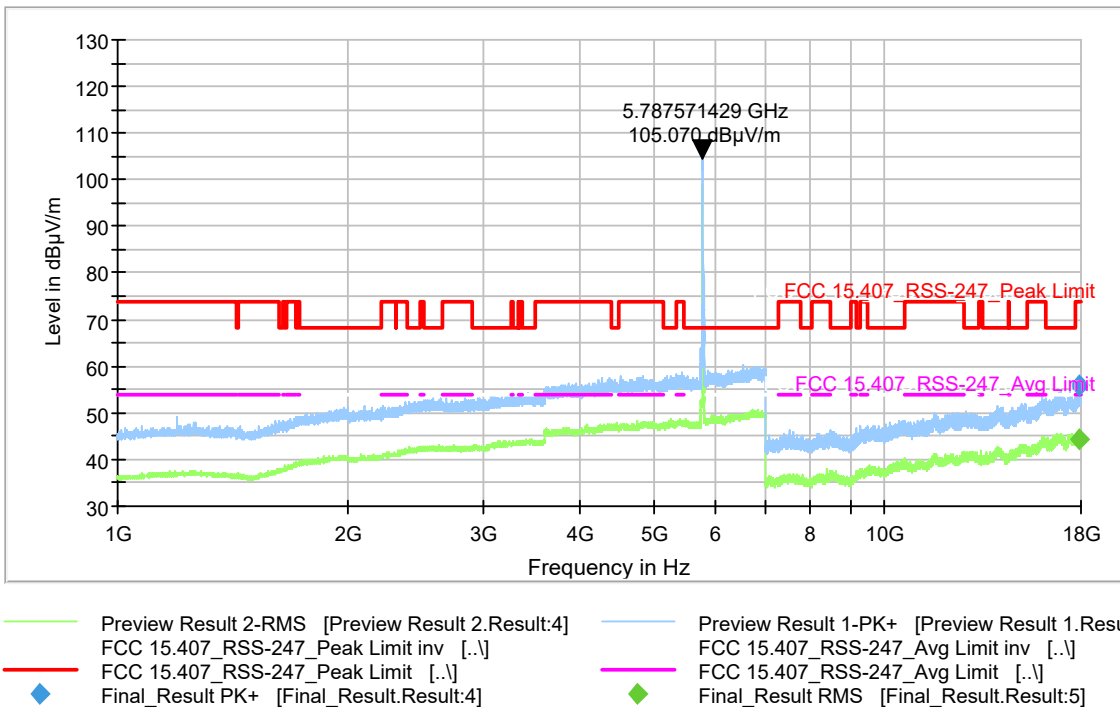
Plot 9-363. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 140)



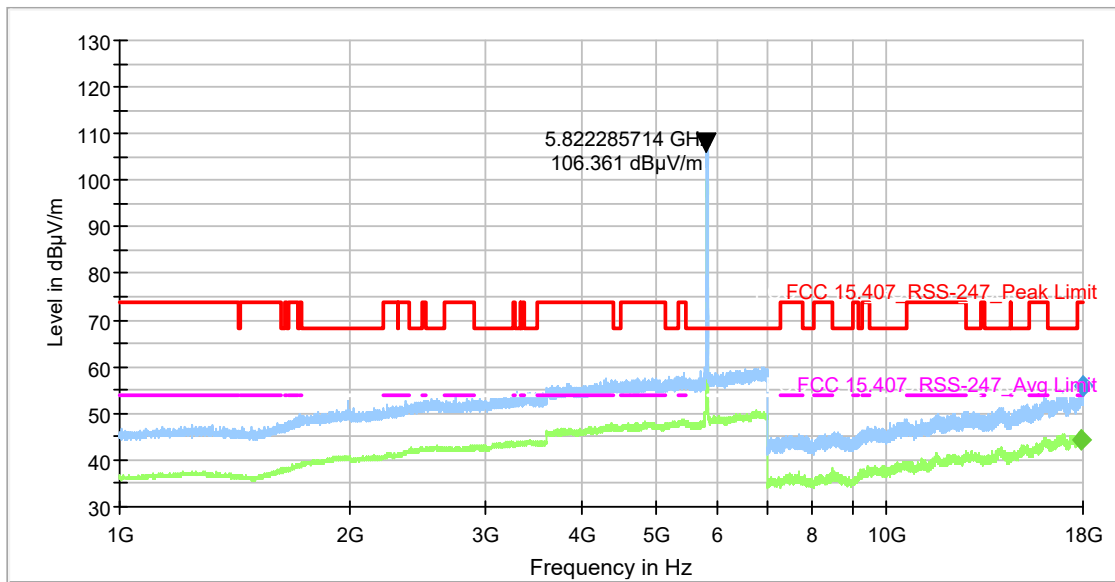
Plot 9-364. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 144)



Plot 9-365. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 149)



Plot 9-366. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 157)



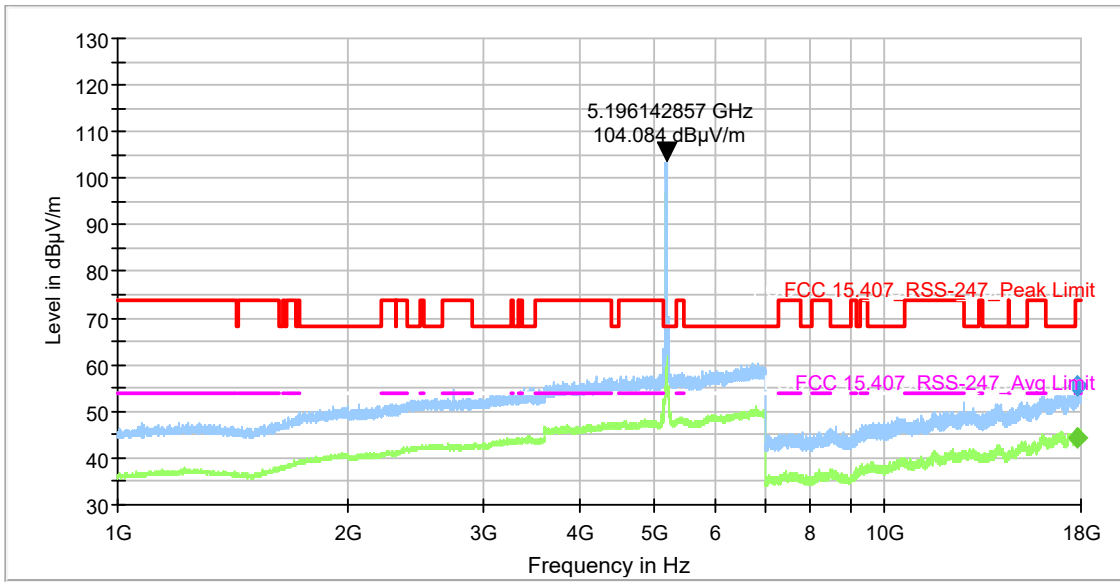
- Preview Result 2-RMS [Preview Result 2.Result:4]
 — Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
 - - - FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
 — FCC 15.407_RSS-247_Avg Limit [..]
- ◆ Final_Result PK+ [Final_Result.Result:4]
 ◆ Final_Result RMS [Final_Result.Result:5]

Plot 9-367. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n (Ch. 165)

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

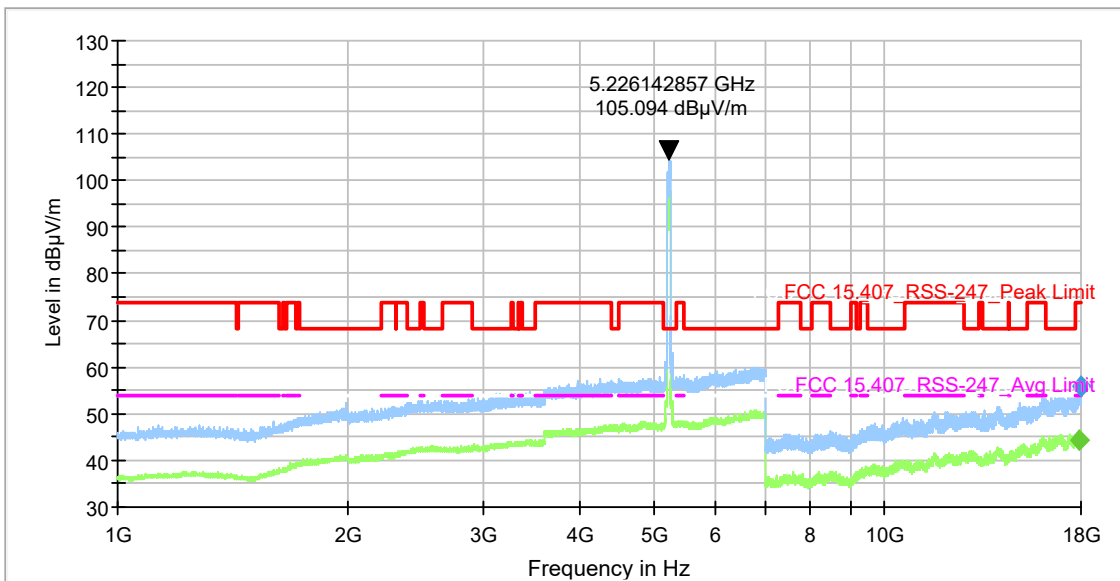
802.11n HT40 RSE 1 – 18GHz Peak Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Peak Amplitude (dBμV)	Correction Factor (dB)	Corrected Peak Field Strength (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)
5190	17765.76	30.86	24.5	55.36	74	-18.64
5230	17970.33	31.69	24.4	56.09	74	-17.91
5270	16120.61	32.02	22.6	54.62	74	-19.38
5270	17915.64	31.82	24.6	56.42	74	-17.58
5310	17924.07	31.35	24.6	55.95	74	-18.05
5510	17913.00	31.16	24.6	55.76	74	-18.24
5550	17929.43	31.75	24.6	56.35	74	-17.65
5670	17952.67	30.52	24.5	55.02	74	-18.98
5710	17944.50	31.89	24.5	56.39	74	-17.61
5755	17961.02	31.25	24.4	55.65	74	-18.35
5795	17950.88	31.01	24.5	55.51	74	-18.49

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	17811.60	19.54	24.7	44.24	54	-9.76
5230	17941.76	19.69	24.5	44.19	54	-9.81
5270	16098.03	20.03	22.6	42.63	54	-11.37
5270	17897.98	19.72	24.7	44.42	54	-9.58
5310	17864.51	19.90	24.9	44.80	54	-9.20
5510	17862.23	19.49	24.9	44.39	54	-9.61
5550	17923.48	19.65	24.6	44.25	54	-9.75
5670	17941.87	19.62	24.5	44.12	54	-9.88
5710	17956.48	19.56	24.5	44.06	54	-9.94
5755	17897.98	19.50	24.7	44.20	54	-9.80
5795	17927.21	19.58	24.6	44.18	54	-9.82



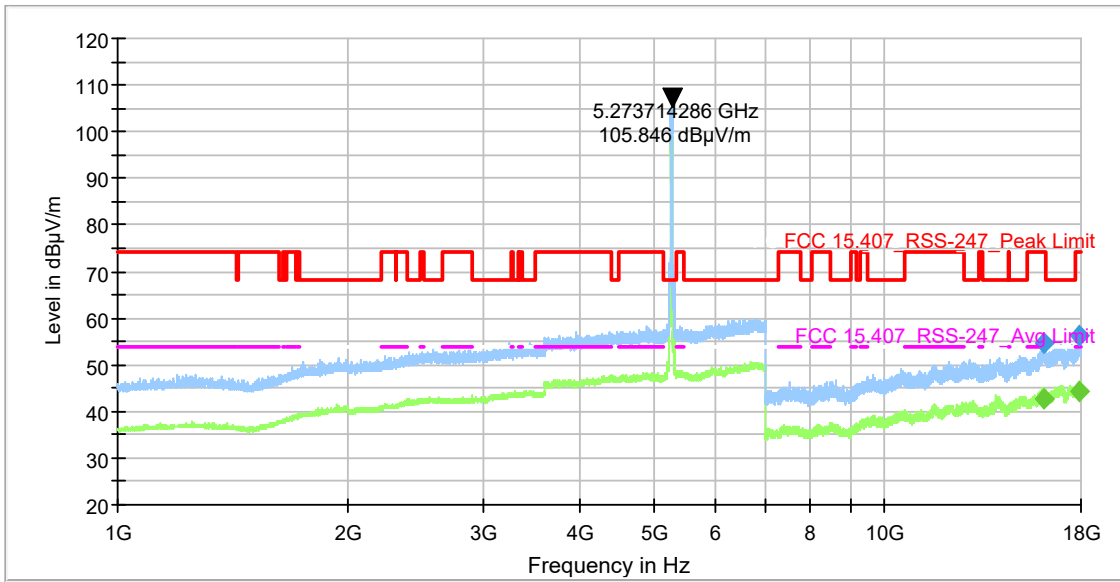
- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-368. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 38)



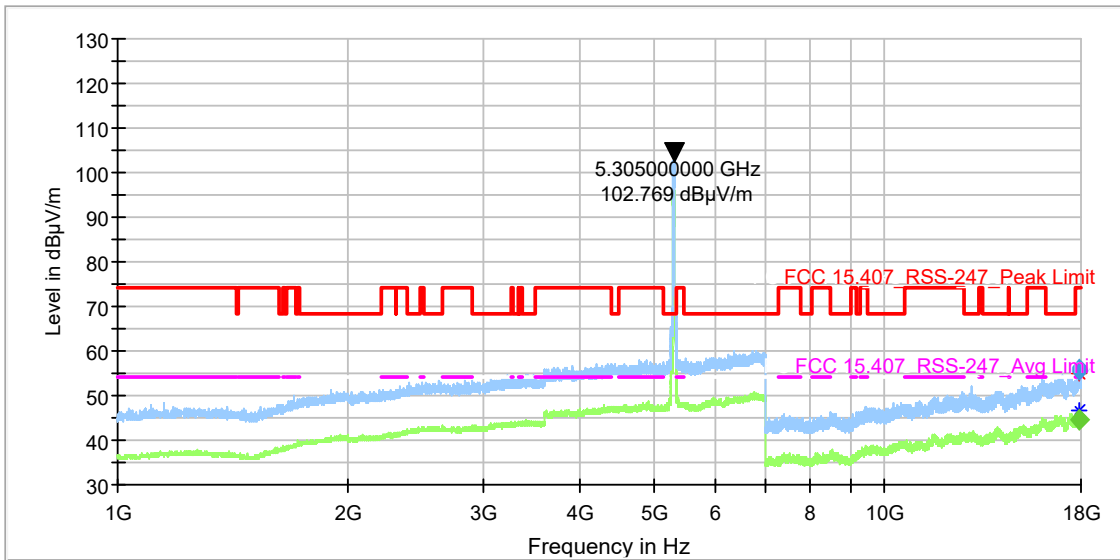
- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-369. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 46)



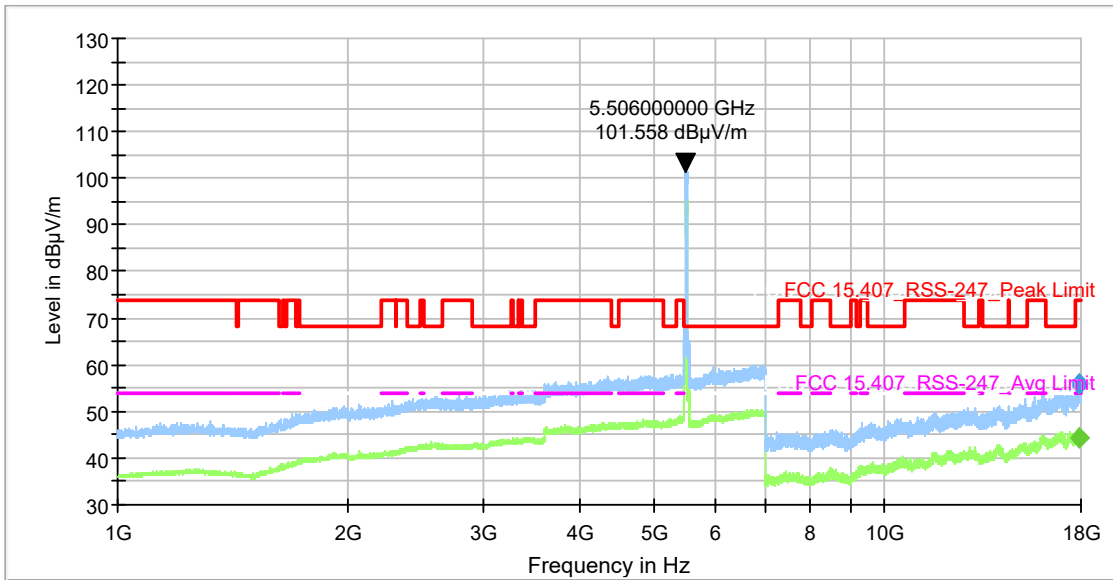
- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-370. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 54)



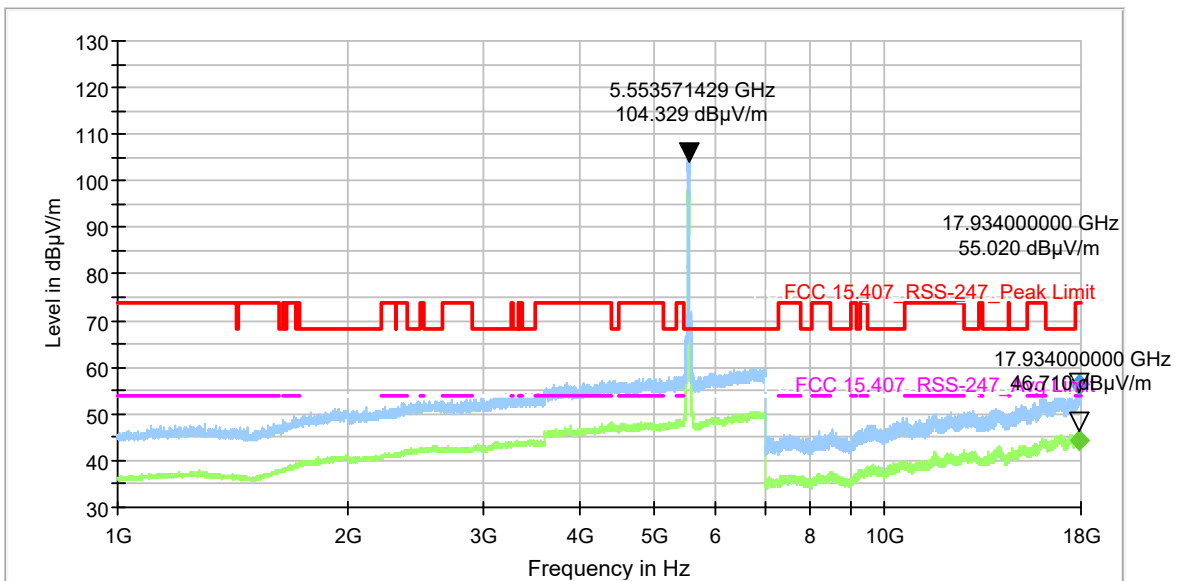
- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- * MaxPeak-PK+ [Critical_Freqs.Result:4]
- * RMS [Critical_Freqs.Result:5]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-371. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 62)



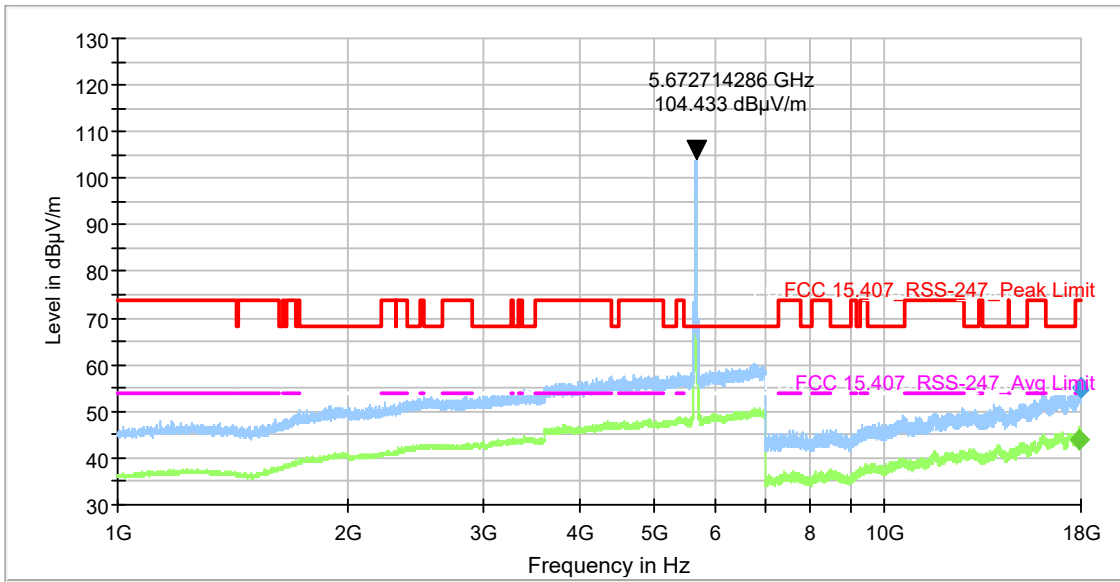
- Preview Result 2-RMS [Preview Result 2.Result:4]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result RMS [Final_Result.Result:5]

Plot 372. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 102)



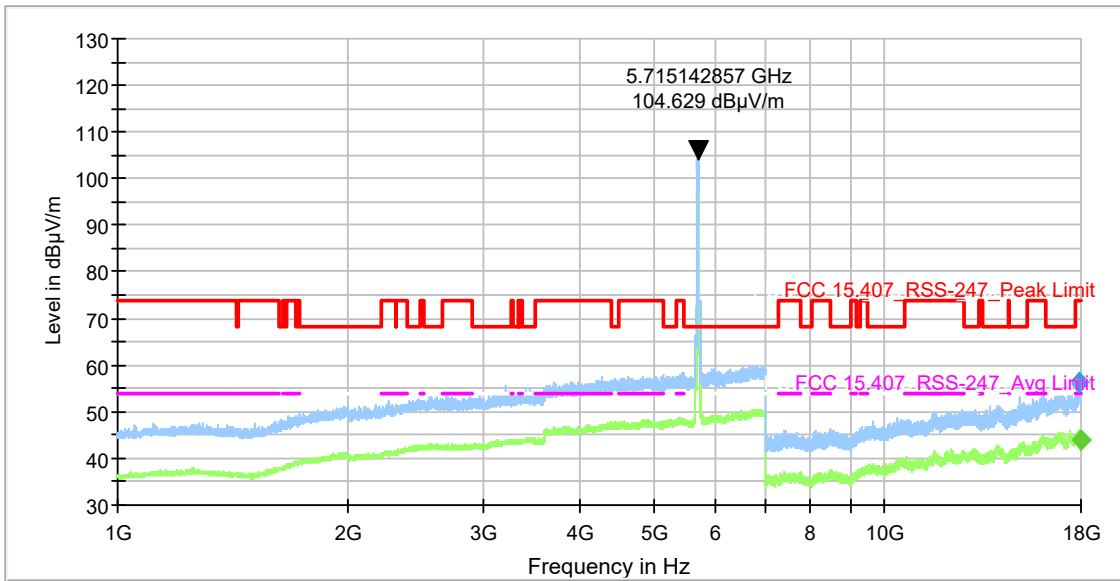
- Preview Result 2-RMS [Preview Result 2.Result:4]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-373. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 110)



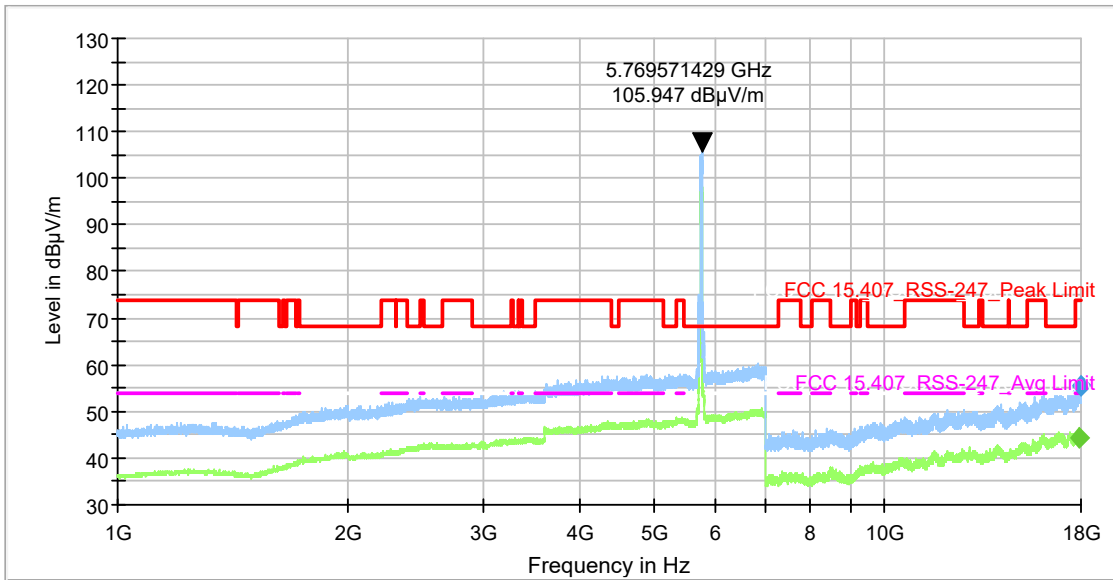
- Preview Result 2-RMS [Preview Result 2.Result:4]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-374. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 134)



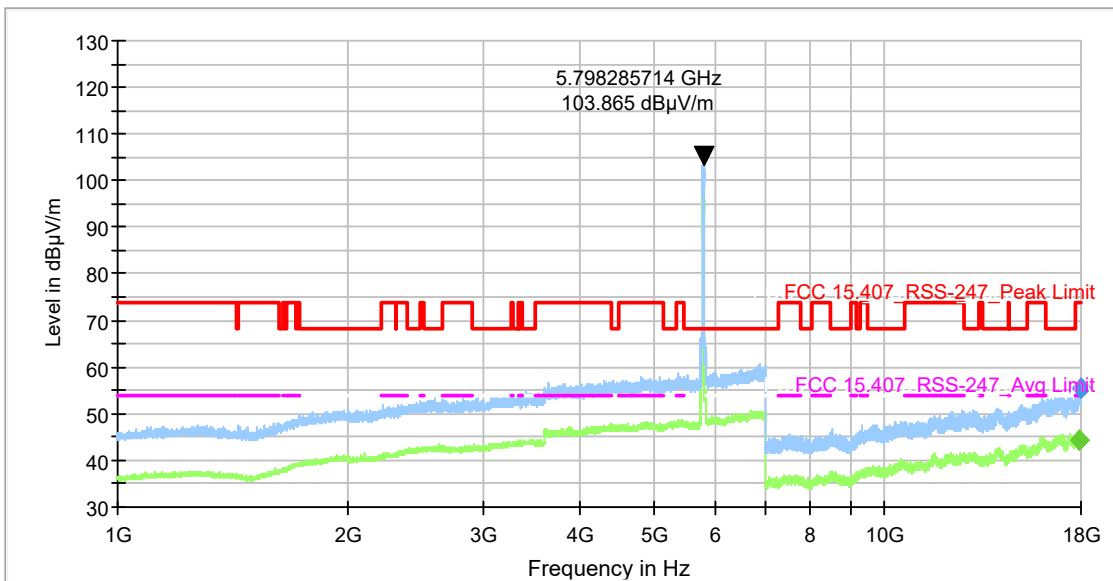
- Preview Result 2-RMS [Preview Result 2.Result:4]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-375. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 142)



- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-376. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 151)



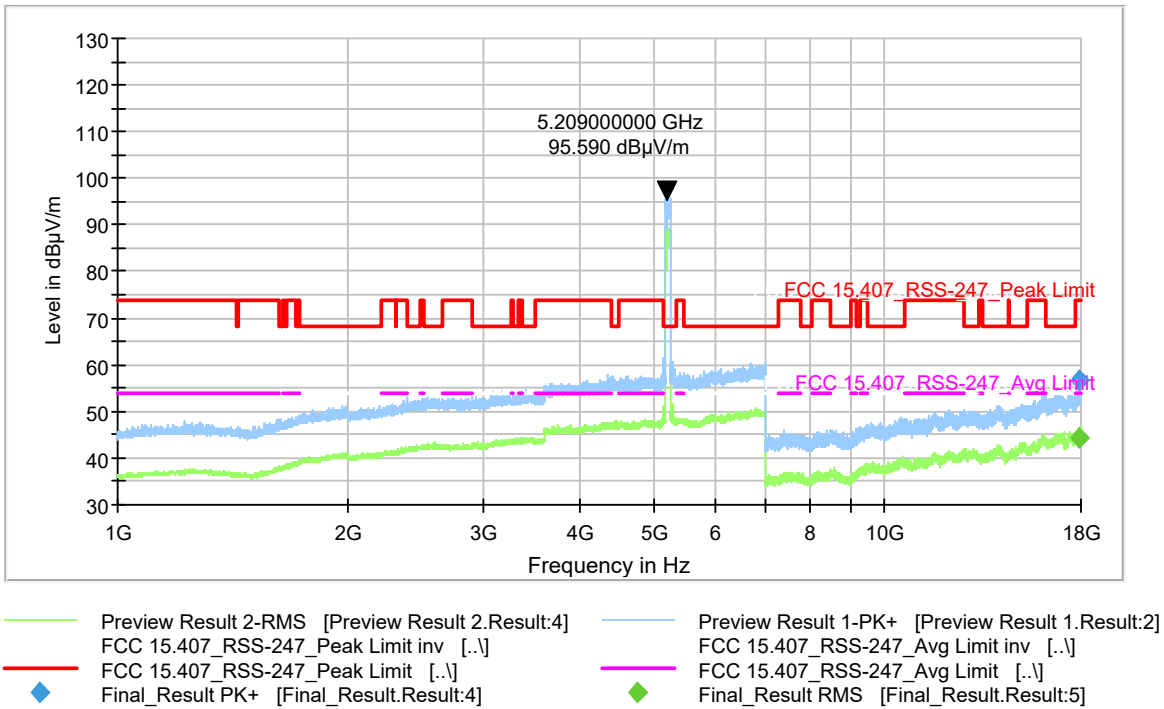
- Preview Result 2-RMS [Preview Result 2.Result:4]
- Preview Result 1-PK+ [Preview Result 1.Result:2]
- FCC 15.407_RSS-247_Peak Limit inv [..]
- FCC 15.407_RSS-247_Avg Limit inv [..]
- FCC 15.407_RSS-247_Peak Limit [..]
- FCC 15.407_RSS-247_Avg Limit [..]
- Final_Result PK+ [Final_Result.Result:4]
- Final_Result RMS [Final_Result.Result:5]

Plot 9-377. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11n HT40 (Ch. 159)

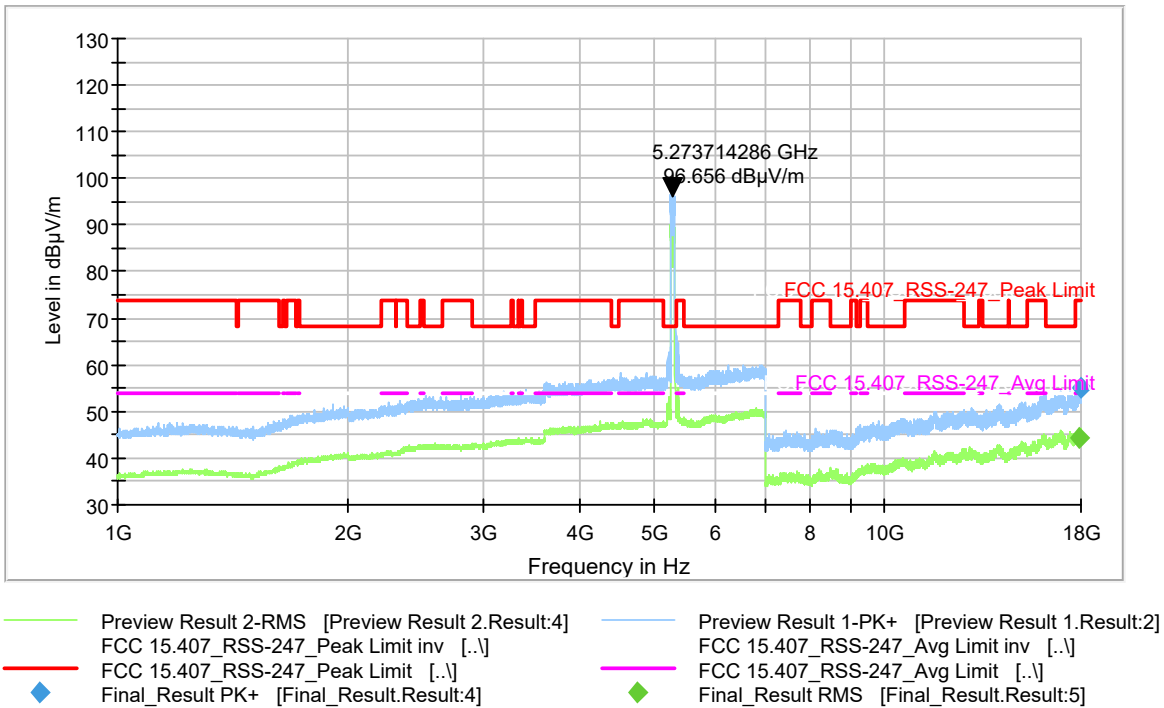
9.6.5.5 Radiated Emissions in 1-18 GHz range 802.11ac VHT80

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	17912.50	31.92	24.7	56.62	74	-17.38
5290	17956.24	30.63	24.6	55.23	74	-18.77
5530	17958.13	30.75	24.4	55.15	74	-18.85
5610	17950.07	30.17	24.4	54.57	74	-19.43
5690	15997.03	31.44	22.5	53.94	74	-20.06
5690	17989.36	30.77	24.5	55.27	74	-18.73
5775	17434.00	30.49	24.1	54.59	68.2	-13.61

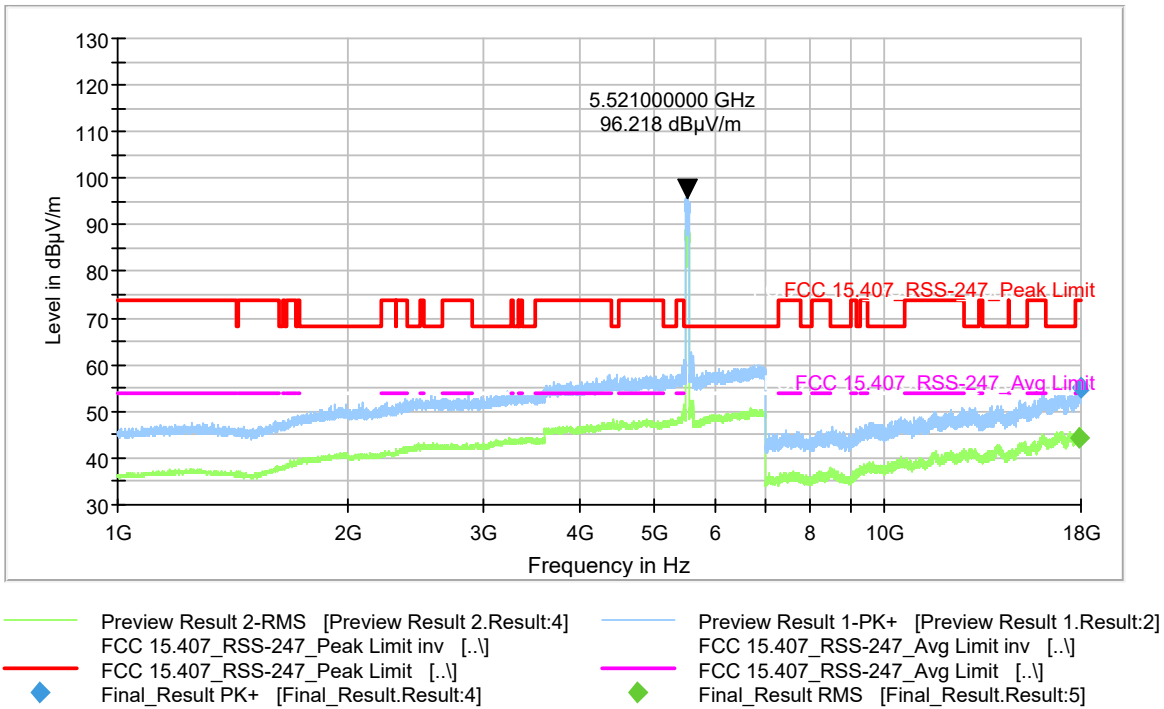
802.11Ac VHT80ac RSE 1 - 18GHz Average Data						
Carrier Frequency (MHz)	Frequency (MHz)	Raw Avg. Amplitude (dBμV)	Correction Factor (incl DCF=0dB) (dB)	Corrected Avg. Field Strength (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)
5210	17923.58	19.76	24.6	44.36	54	-9.64
5290	17927.13	19.75	24.6	44.35	54	-9.65
5530	17931.03	19.73	24.6	44.33	54	-9.67
5610	17993.16	21.61	24.4	46.01	54	-7.99
5690	16001.58	20.27	22.5	42.77	54	-11.23
5690	17997.07	19.72	24.6	44.32	54	-9.68
5775	17420.57	21.11	24.1	45.21	54	-8.79



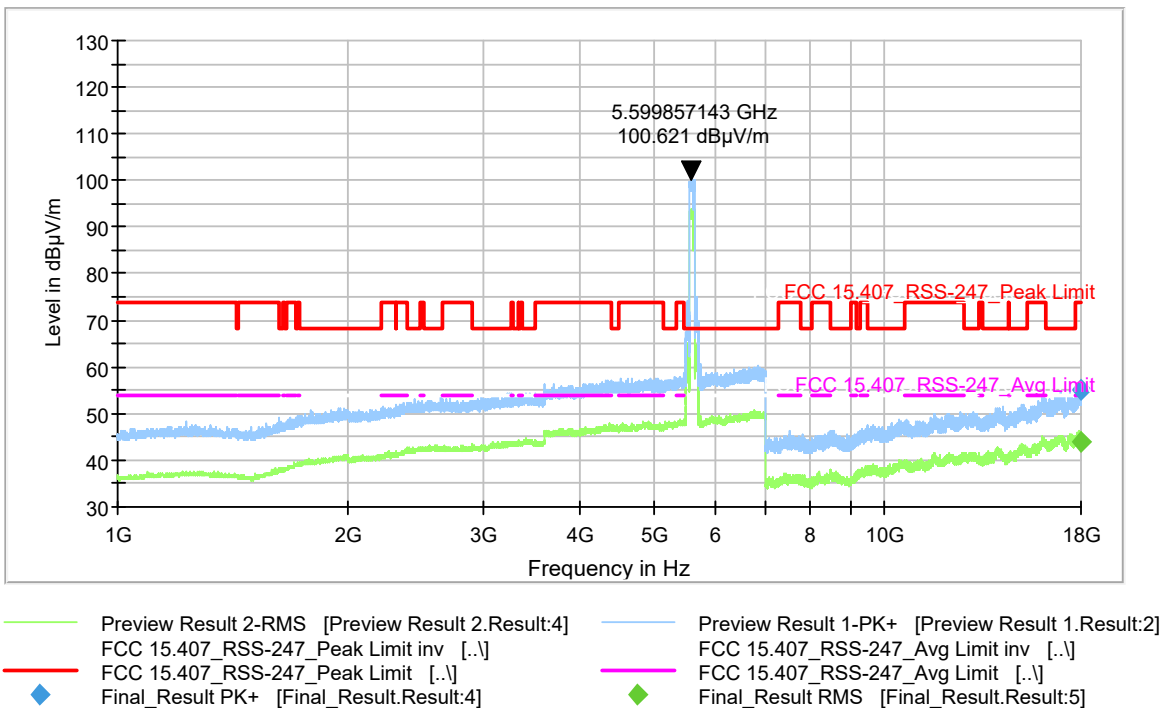
Plot 9-378. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 42)



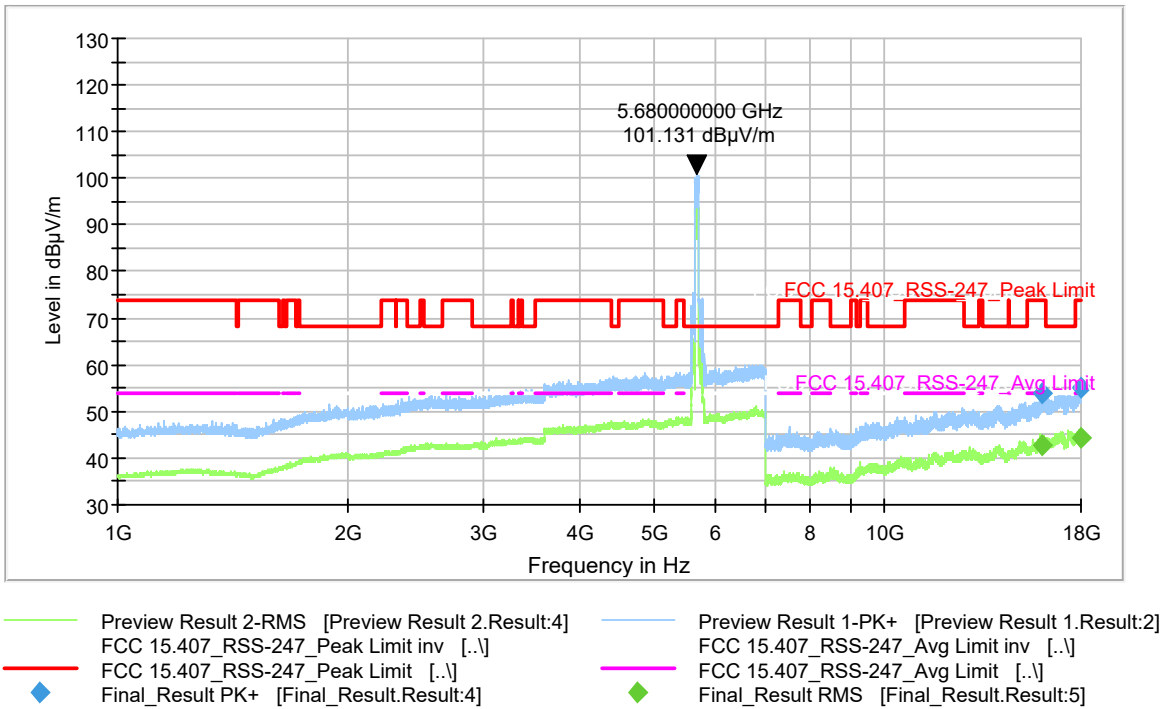
Plot 9-379. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 58)



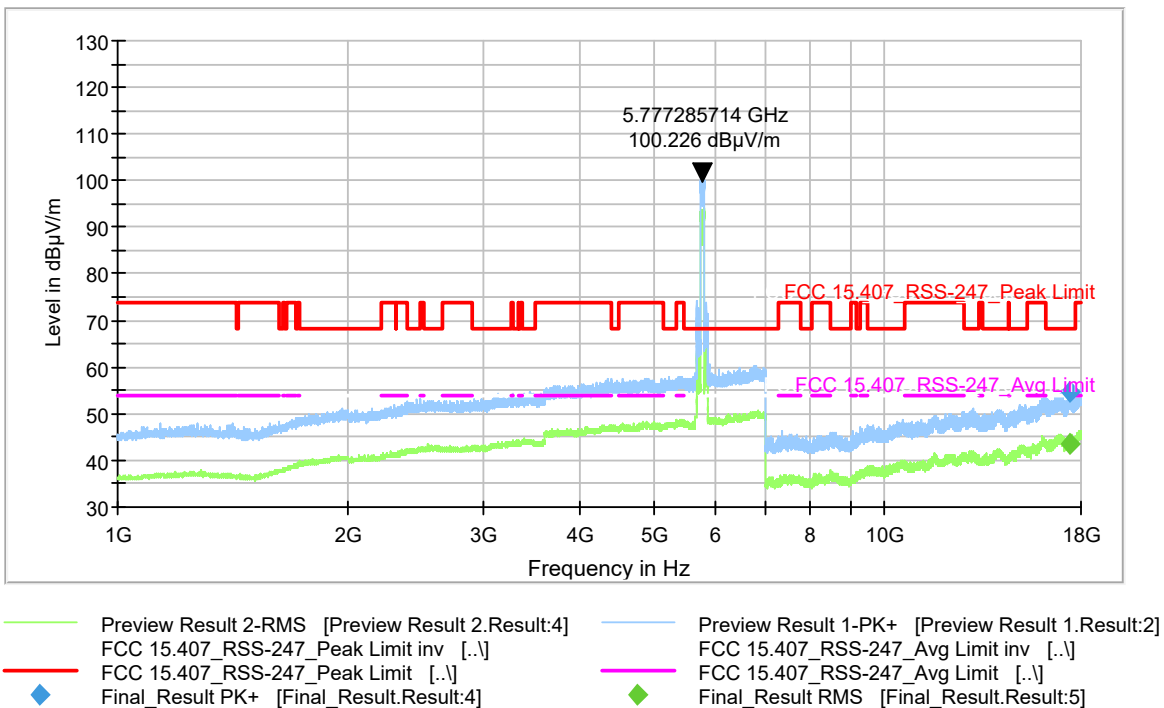
Plot 9-380. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 106)



Plot 9-381. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 122)



Plot 9-382. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 138)



Plot 9-383. Radiated Spurious Emissions 1-18 GHz Tx Chains A & B 802.11ac VHT80 (Ch. 155)

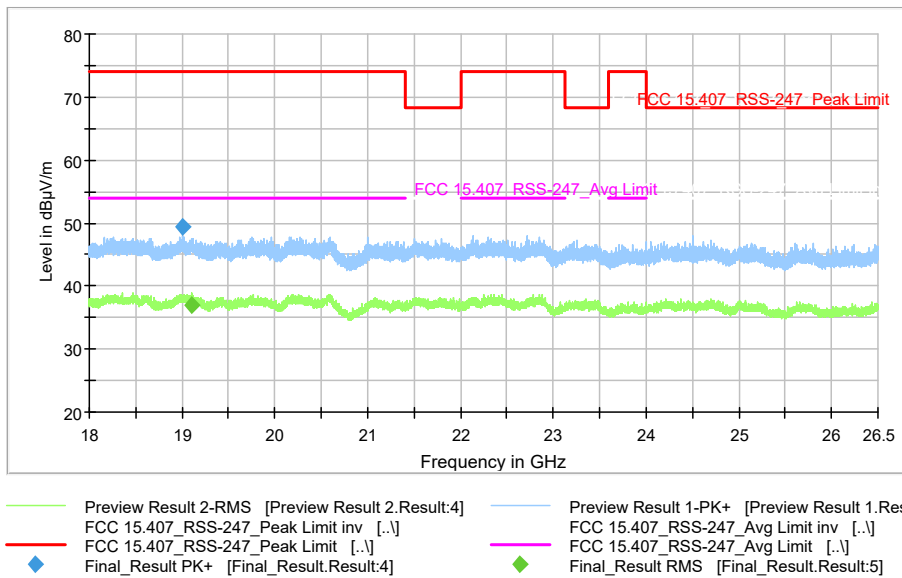
9.6.5.6 Emissions in 18-40 GHz range

No significant emissions to report above noise floor. Near field scans were performed in 18GHz to 40GHz range. 4th harmonics were found at the EUT antenna port at a distance of 10cm, but not measurable at 3m distance.

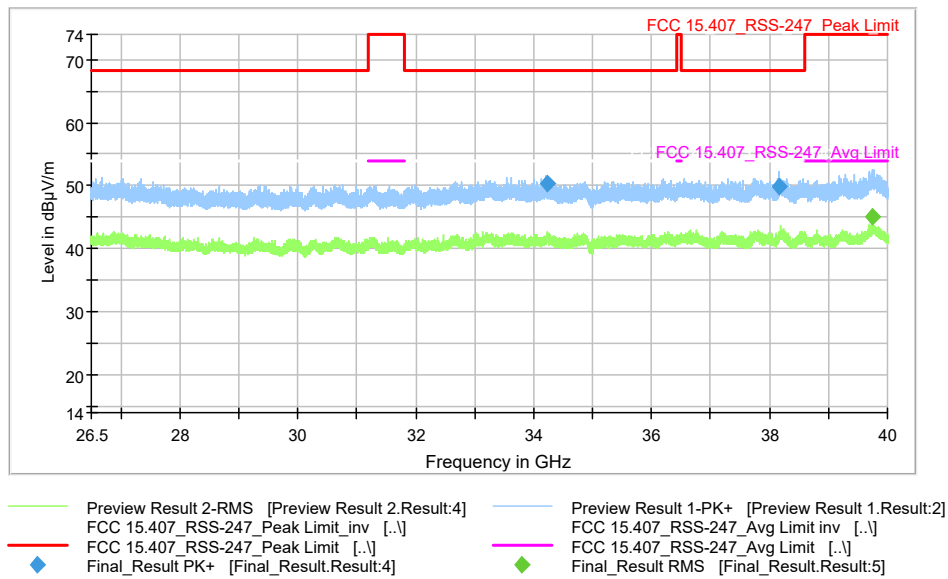
All channels and modes were tested and data from 802.11a mode, channel 149 shown here.

802.11a VHT20 RSE 18 – 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)
5745	19005.55	40.02	9.5	49.52	74	-24.48
5745	34223.51	48.39	1.9	50.29	74	-17.91
5745	38155.25	47.78	2.1	49.88	74	-18.32

802.11Ac VHT20a RSE 1 - 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)
5745	19098.20	29.16	9.7	38.86	54	-15.14
5745	39745.04	42.78	2.2	44.98	54	-9.02

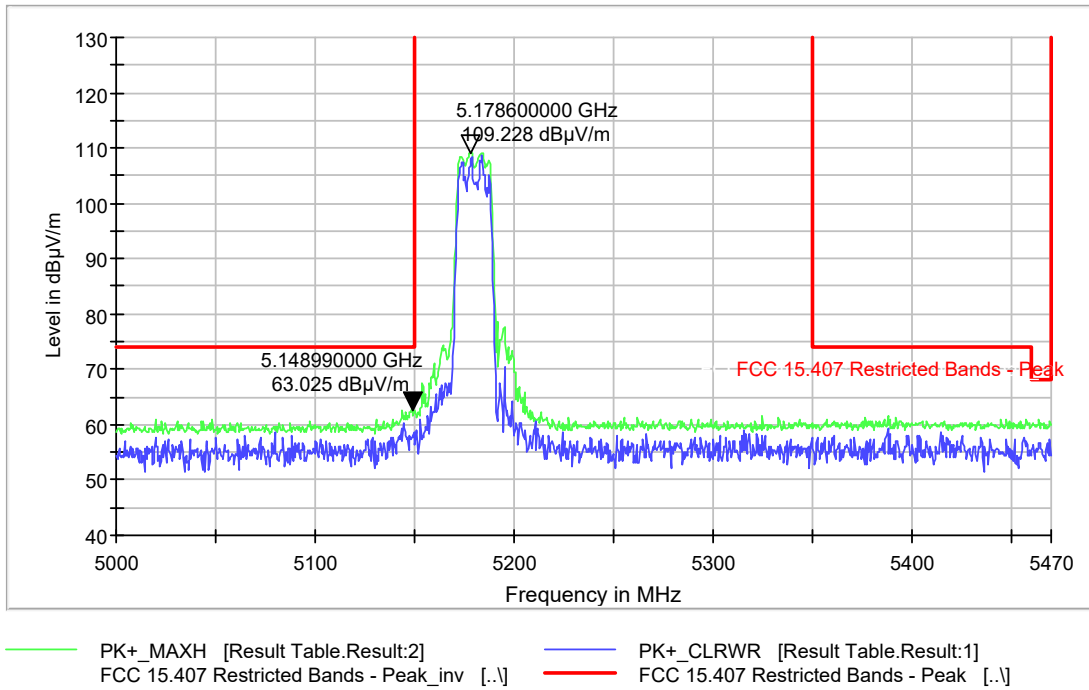


Plot 9-384. Radiated Spurious Emissions 18-26 GHz Tx A & B 802.11n HT20 (Ch. 64)

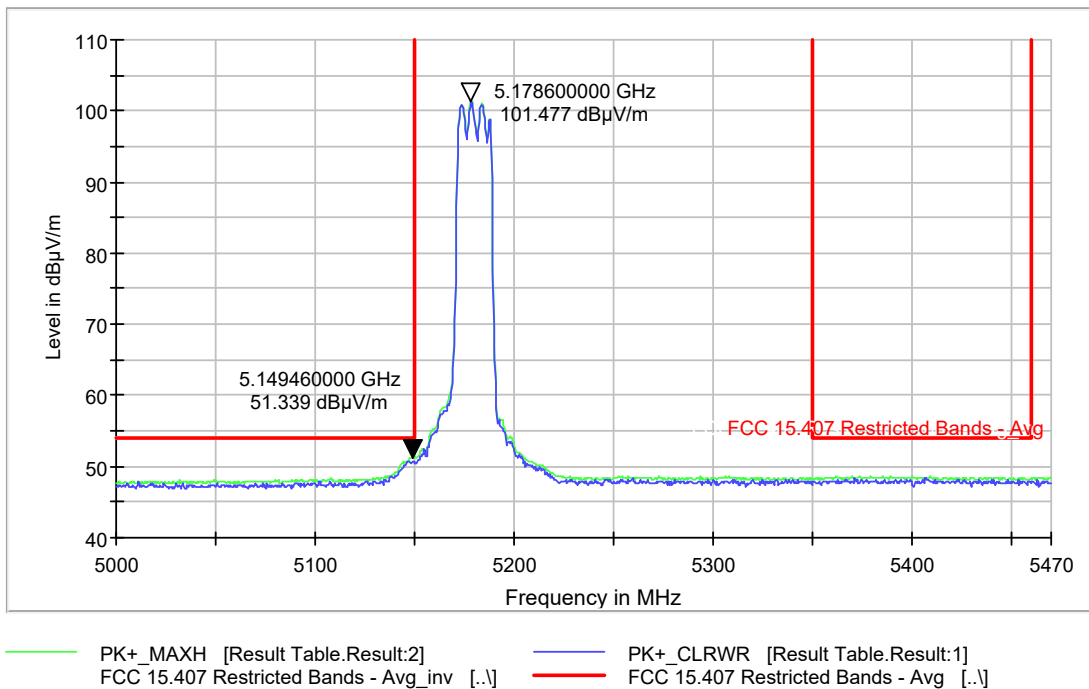


Plot 9-385. Radiated Spurious Emissions 26-40 GHz Tx A & B 802.11n HT20 (Ch. 64)

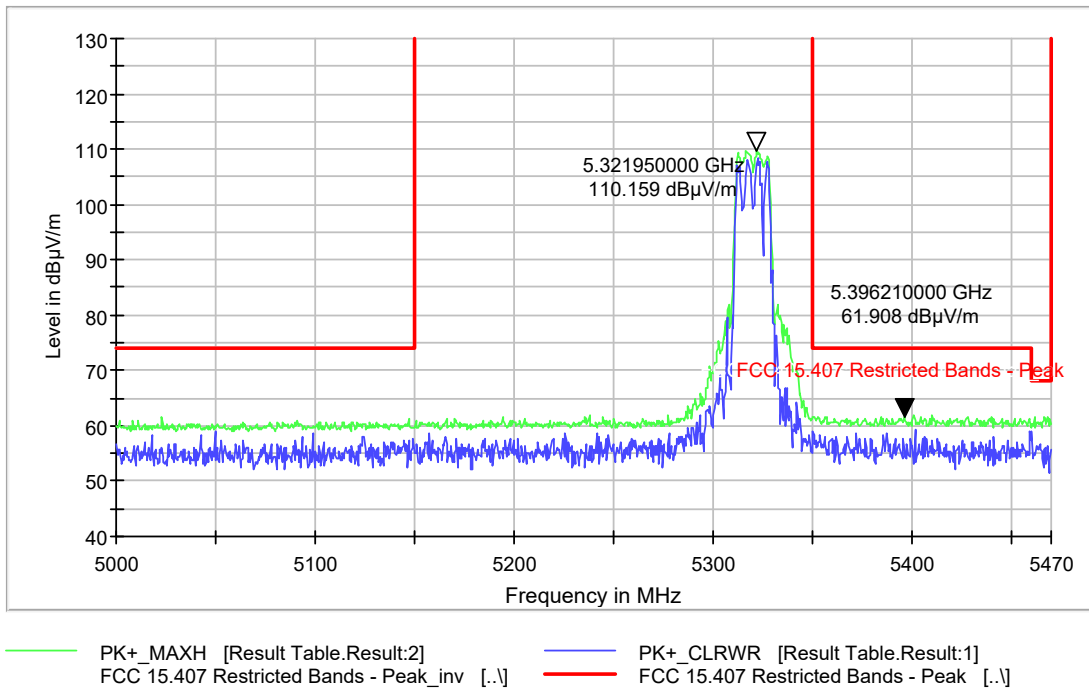
9.6.5.7 Radiated Band-edge emissions 802.11a



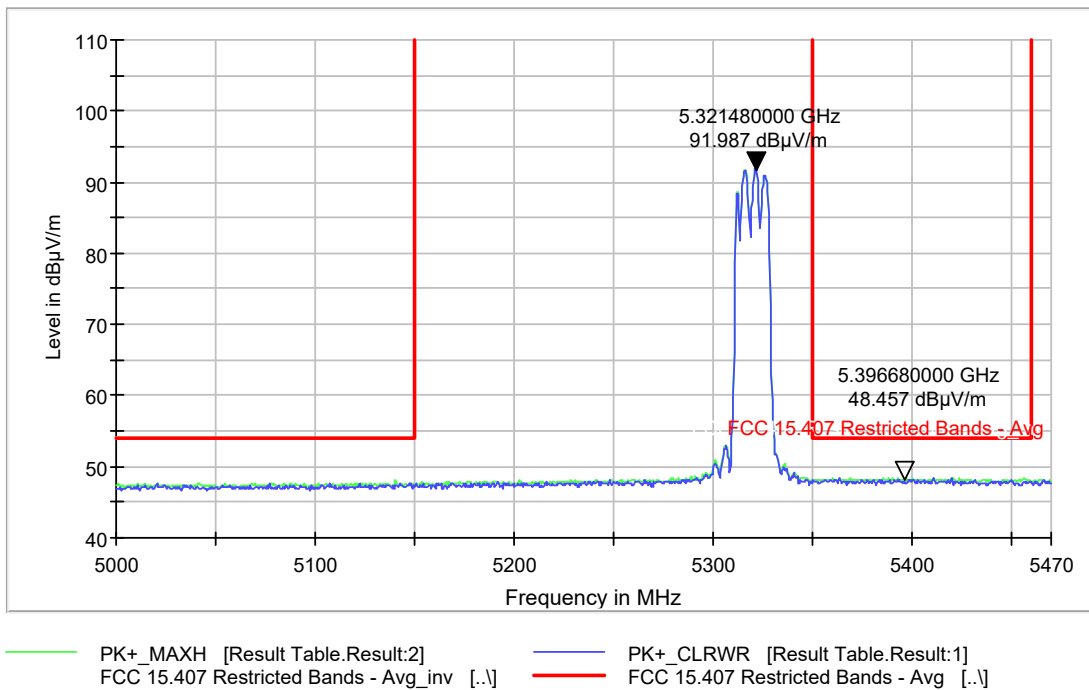
Plot 9-386. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 36)



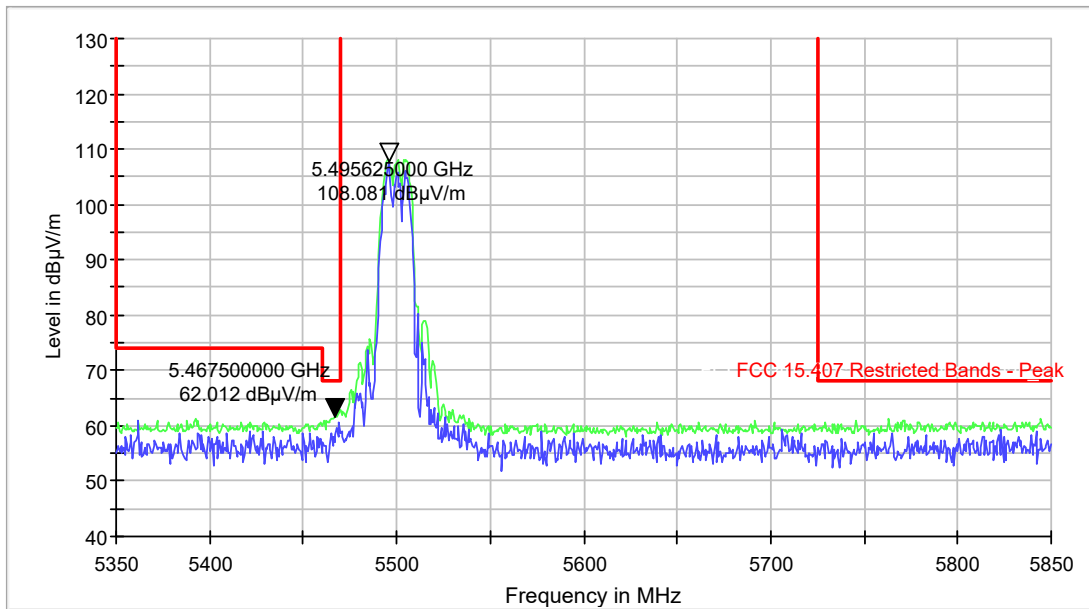
Plot 9-387. Average Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 36)



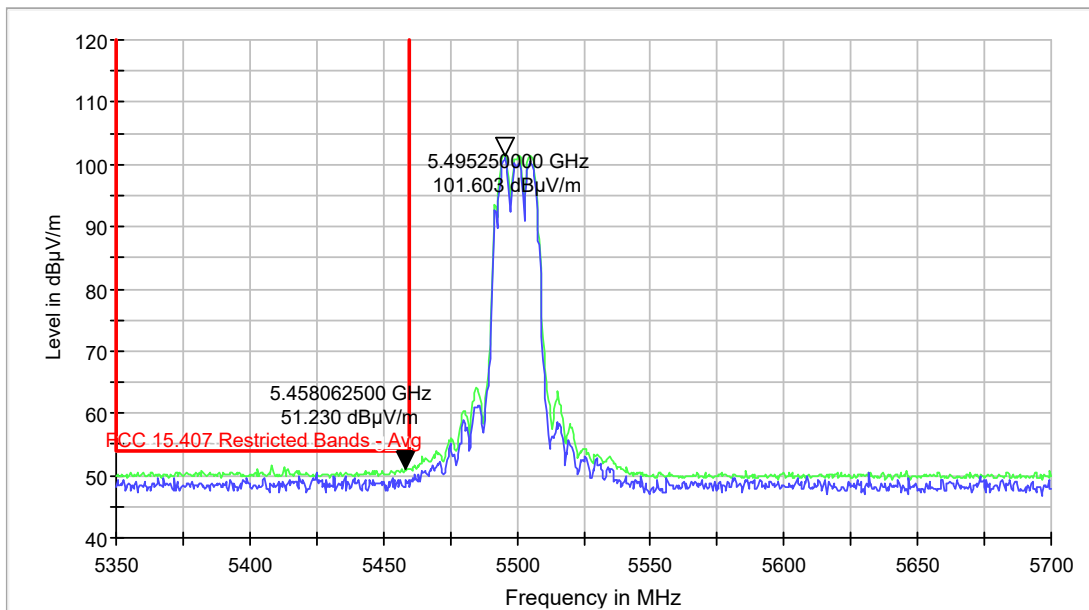
Plot 9-388. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 64)



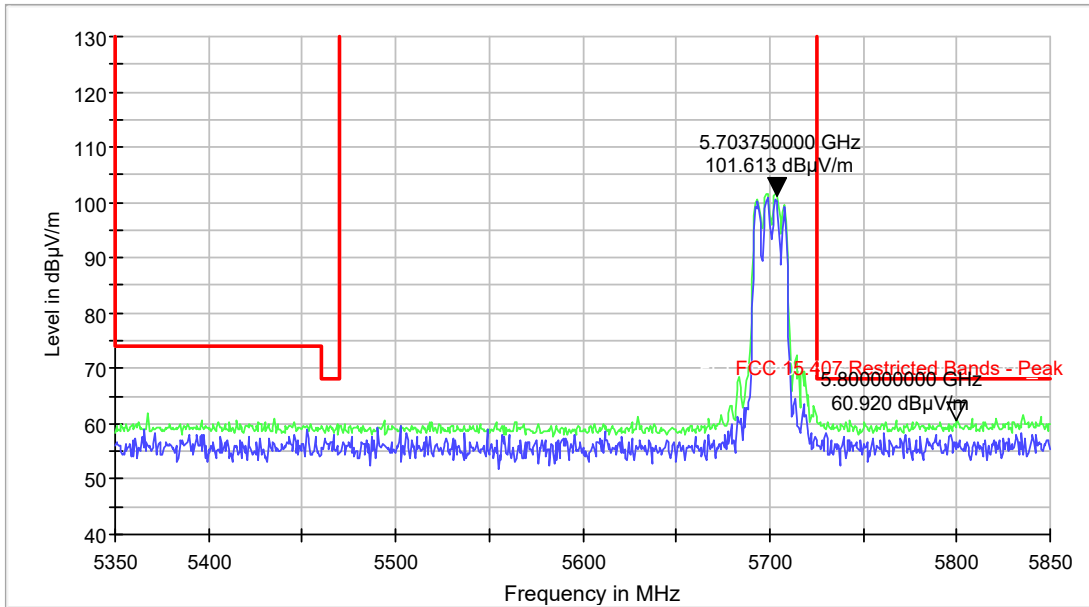
Plot 9-389. Average Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 64)



Plot 9-390. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 100)

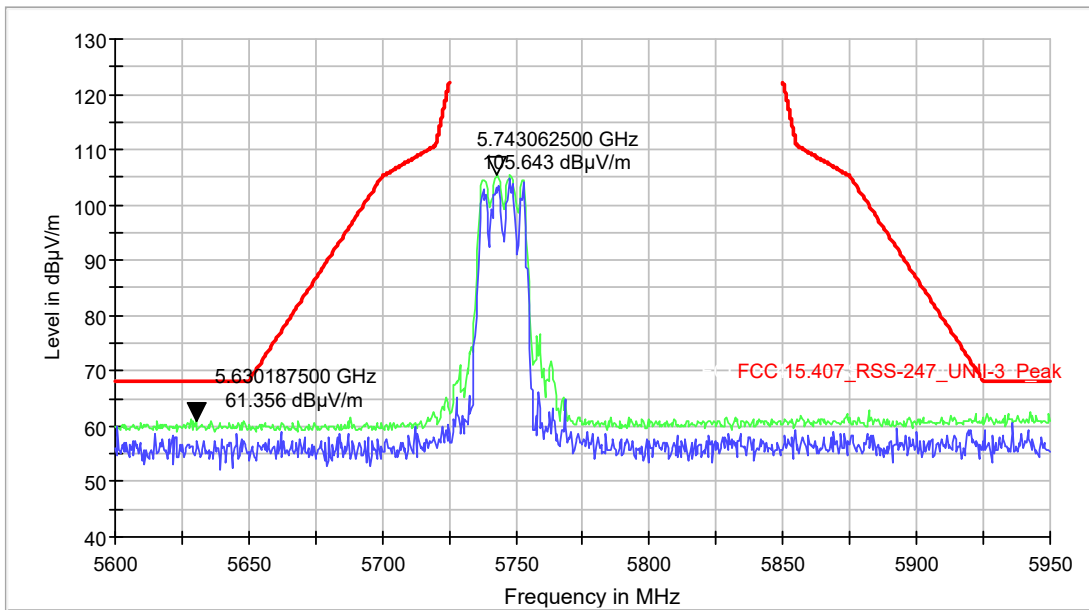


Plot 9-391. Average Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 100)



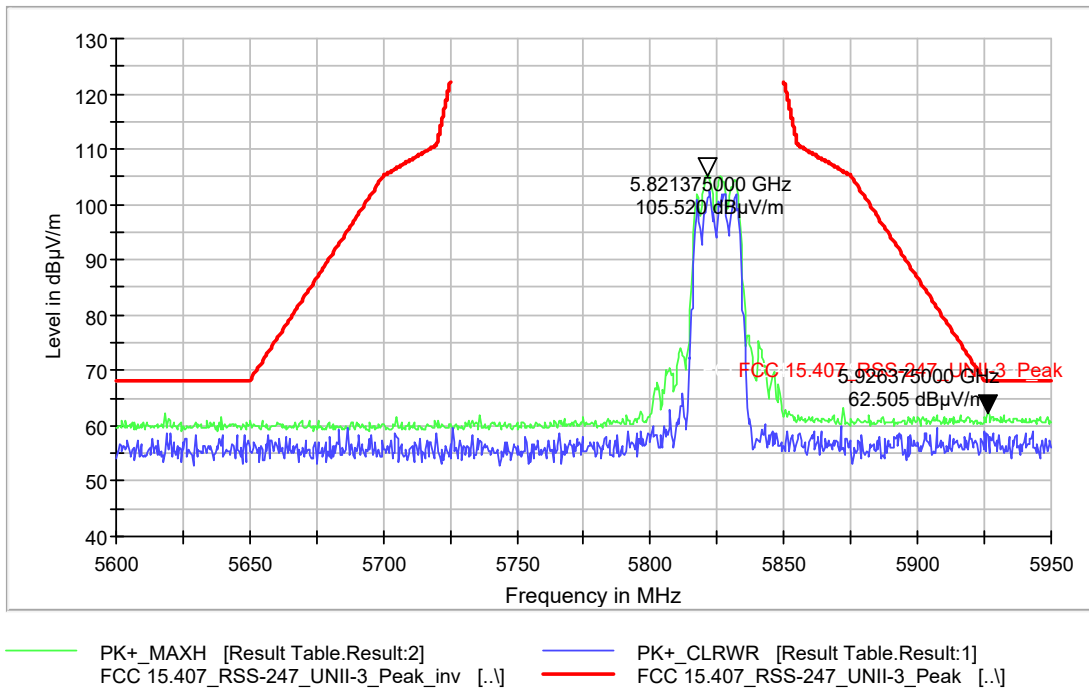
PK+_MAXH [Result Table.Result:2] PK+_CLRWR [Result Table.Result:1]
FCC 15.407 Restricted Bands - Peak_inv [..] FCC 15.407 Restricted Bands - Peak [..]

Plot 9-392. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 140)



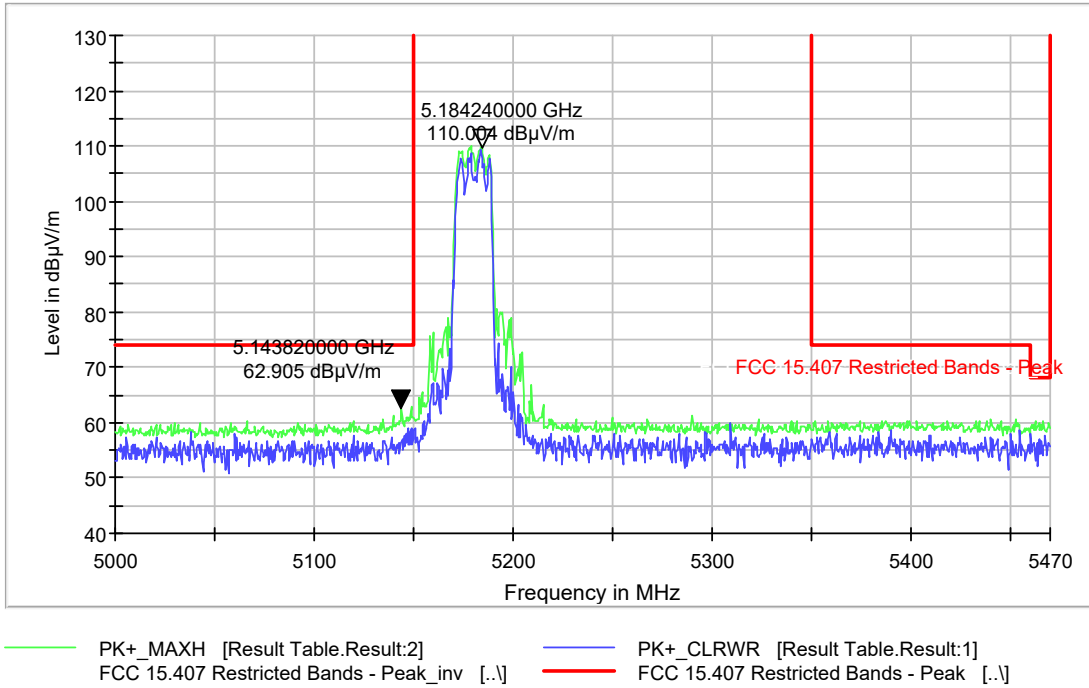
PK+_MAXH [Result Table.Result:2] PK+_CLRWR [Result Table.Result:1]
FCC 15.407_RSS-247_UNII-3_Peak_inv [..] FCC 15.407_RSS-247_UNII-3_Peak [..]

Plot 9-393. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 149)

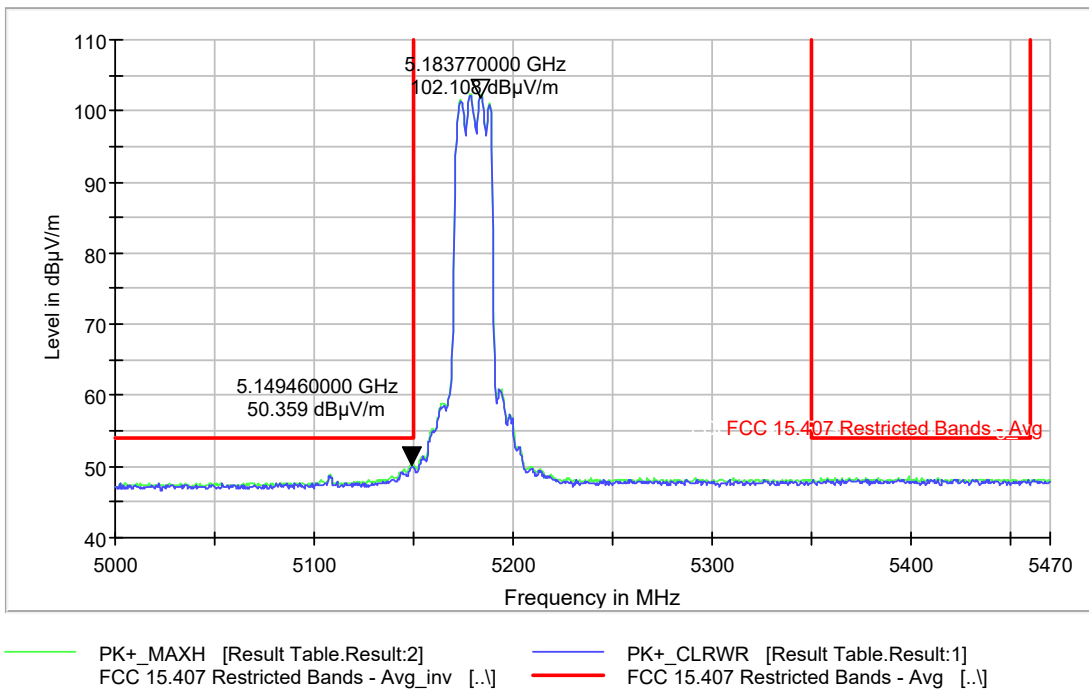


Plot 9-394. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11a (Ch. 165)

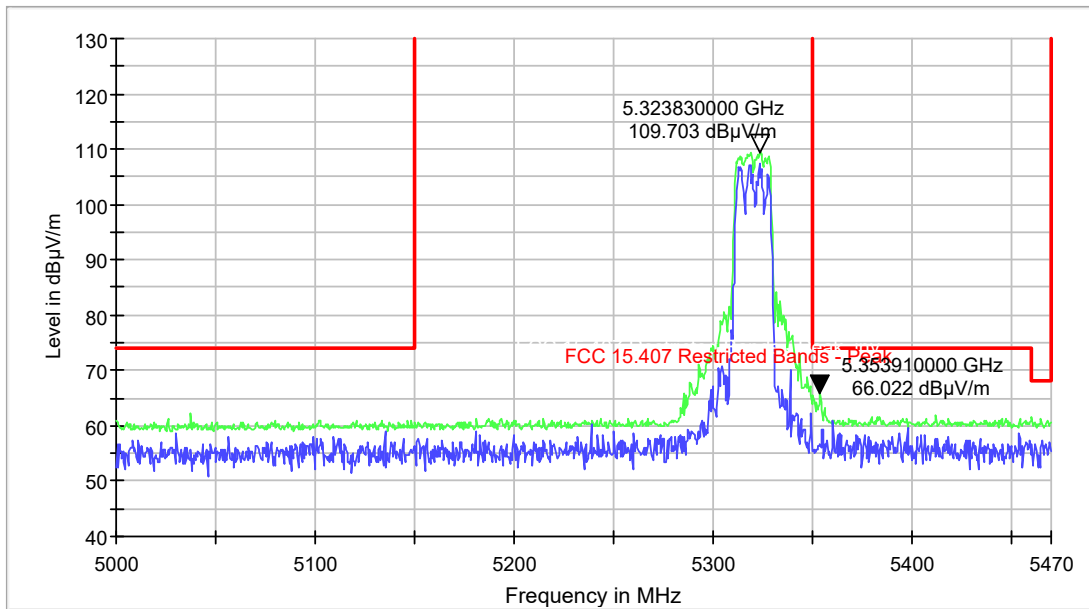
9.6.5.8 Radiated Band-edge emissions 802.11n HT20



Plot 9-395. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 36)

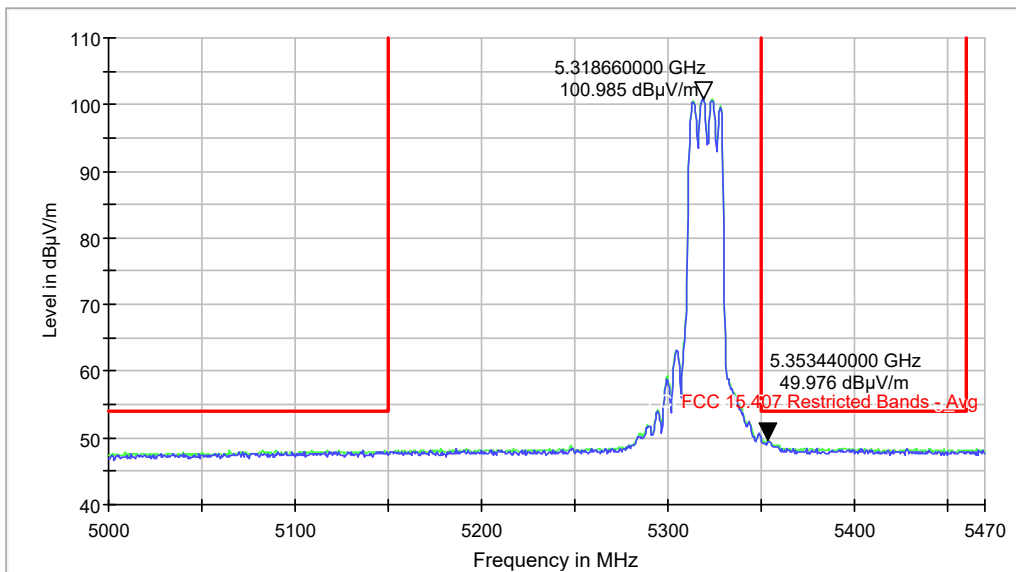


Plot 9-396. Average Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 36)



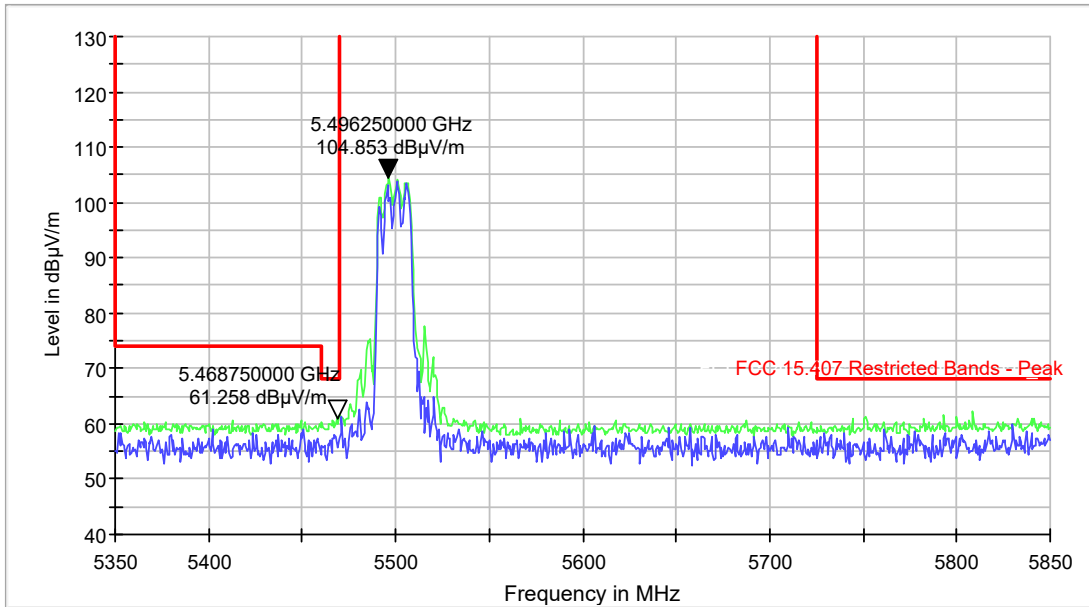
— PK+_MAXH [Result Table.Result:2] — PK+_CLRWR [Result Table.Result:1]
— FCC 15.407 Restricted Bands - Peak_inv [..] — FCC 15.407 Restricted Bands - Peak [..]

Plot 9-397. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 64)



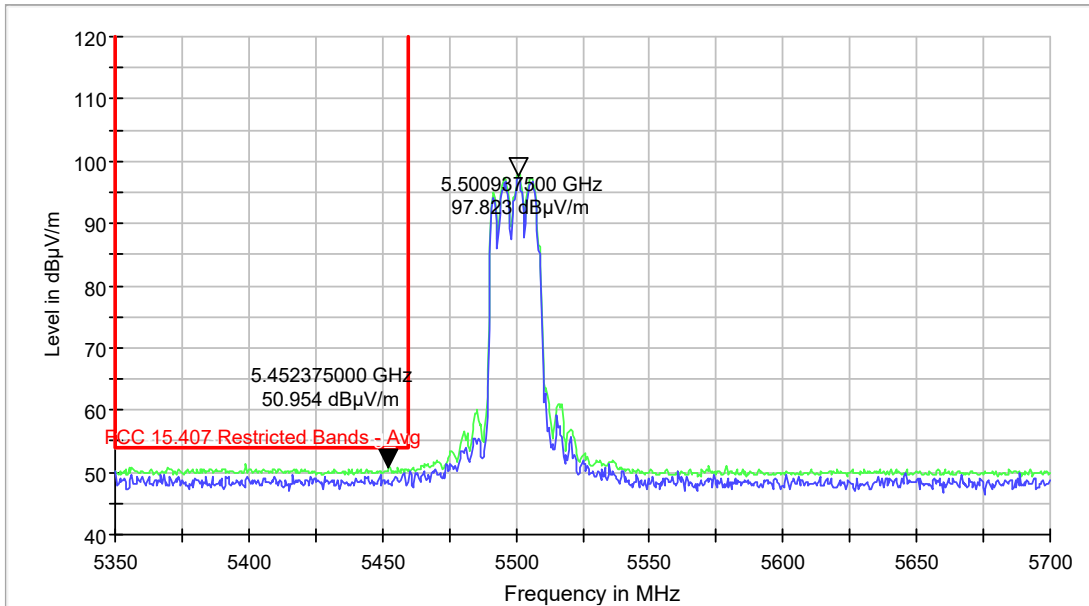
— PK+_MAXH [Result Table.Result:2] — PK+_CLRWR [Result Table.Result:1]
— FCC 15.407 Restricted Bands - Avg_inv [..] — FCC 15.407 Restricted Bands - Avg [..]

Plot 9-398. Average Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 64)



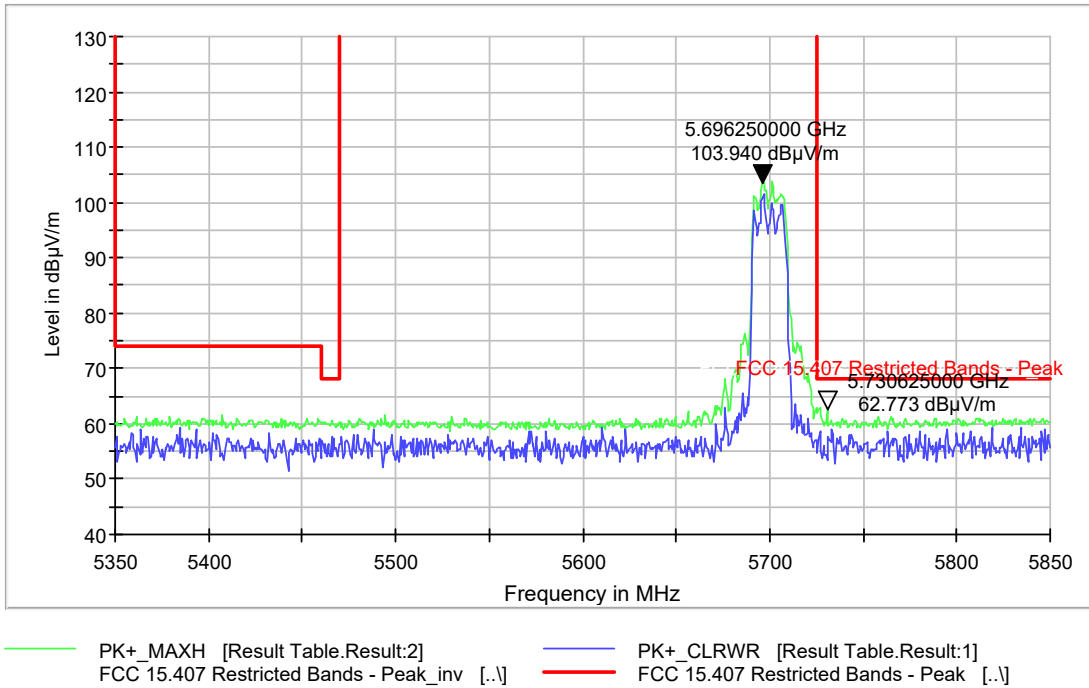
— PK+_MAXH [Result Table.Result:2] — PK+_CLRWR [Result Table.Result:1]
— FCC 15.407 Restricted Bands - Peak_inv [..] — FCC 15.407 Restricted Bands - Peak [..]

Plot 9-399. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 100)

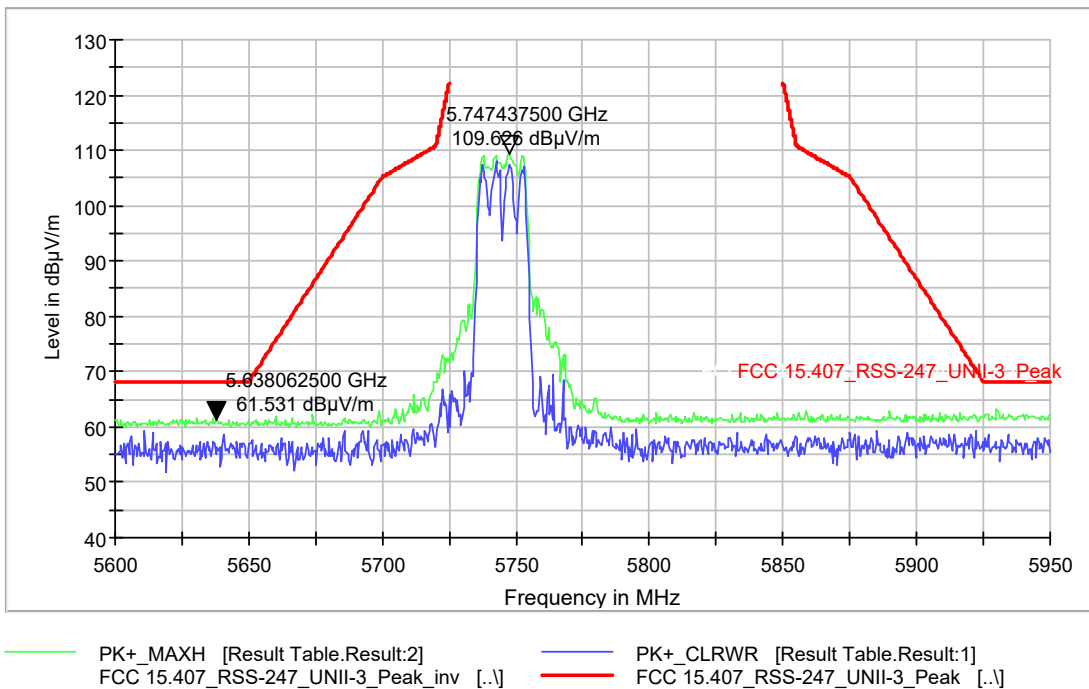


— PK+_MAXH [Result Table.Result:2] — PK+_CLRWR [Result Table.Result:1]
— FCC 15.407 Restricted Bands - Avg_inv [..] — FCC 15.407 Restricted Bands - Avg [..]

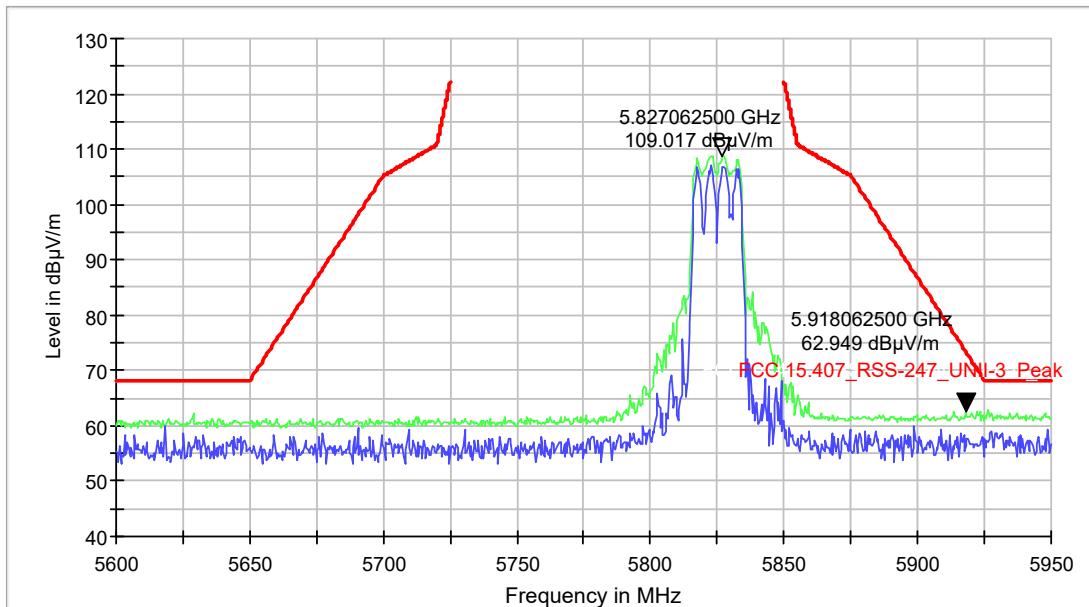
Plot 9-400. Average Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 100)



Plot 9-401. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 140)



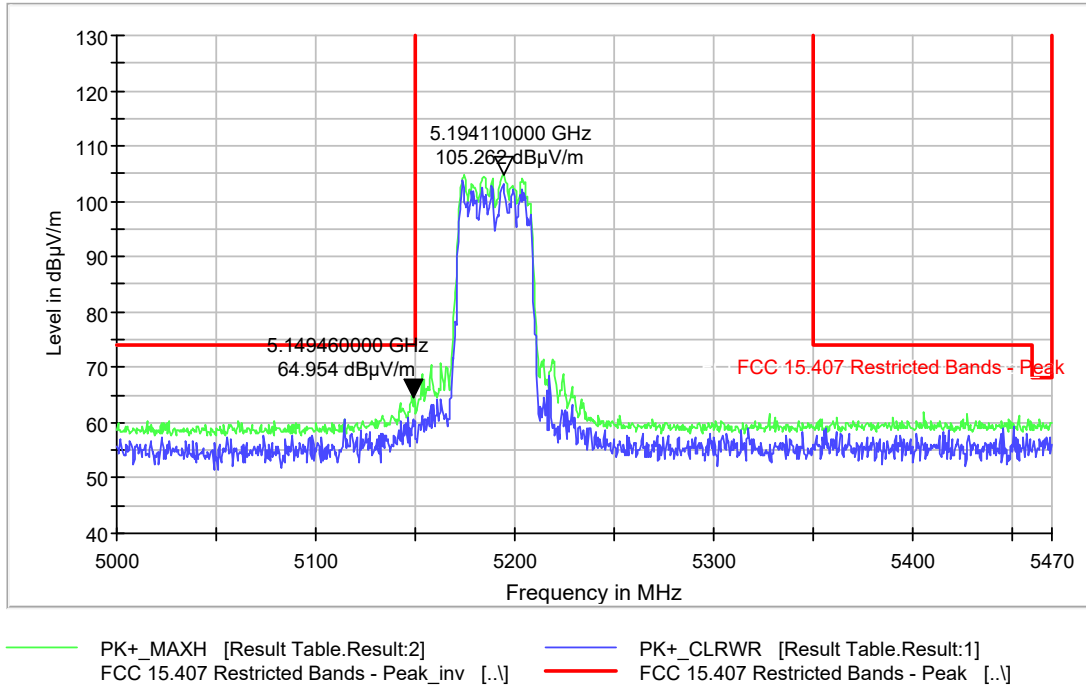
Plot 9-402. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 149)



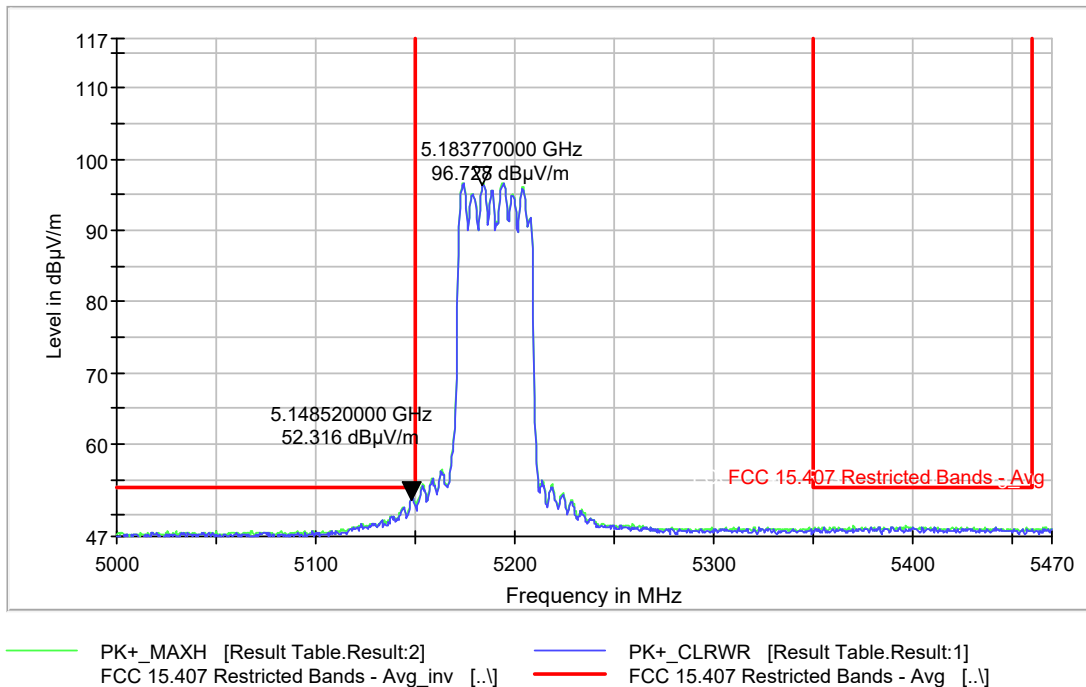
— PK+_MAXH [Result Table.Result:2]
— PK+_CLRWR [Result Table.Result:1]
— FCC 15.407_RSS-247_UNII-3_Peak [..]

Plot 9-403. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11n HT20 (Ch. 165)

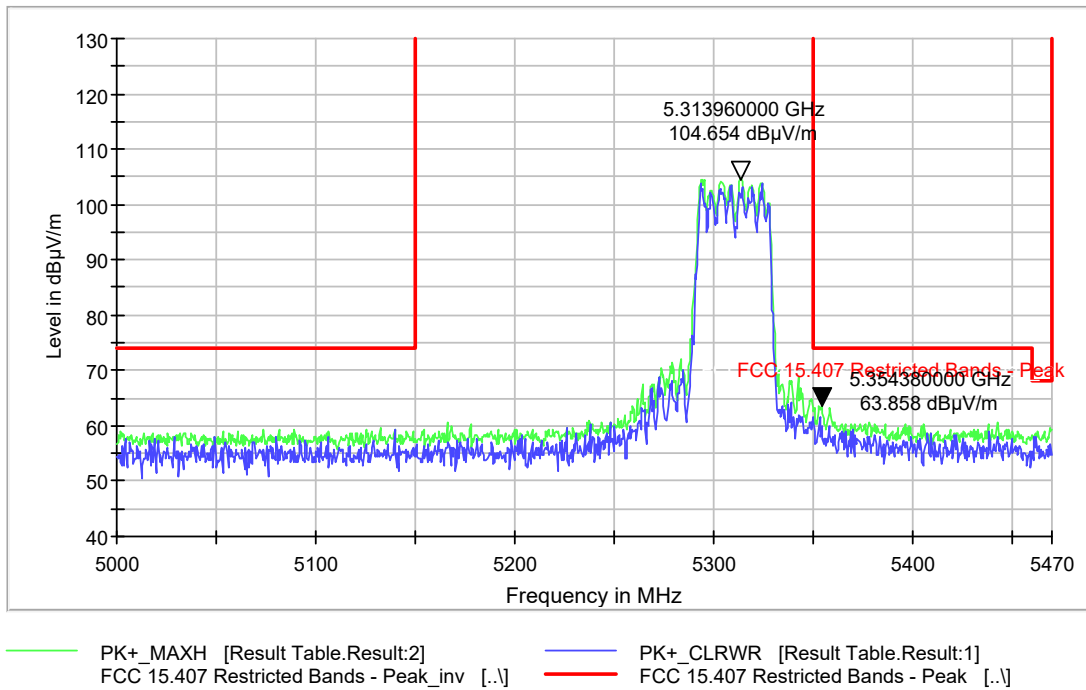
9.6.5.9 Radiated Band-edge emissions 802.11ac VHT40



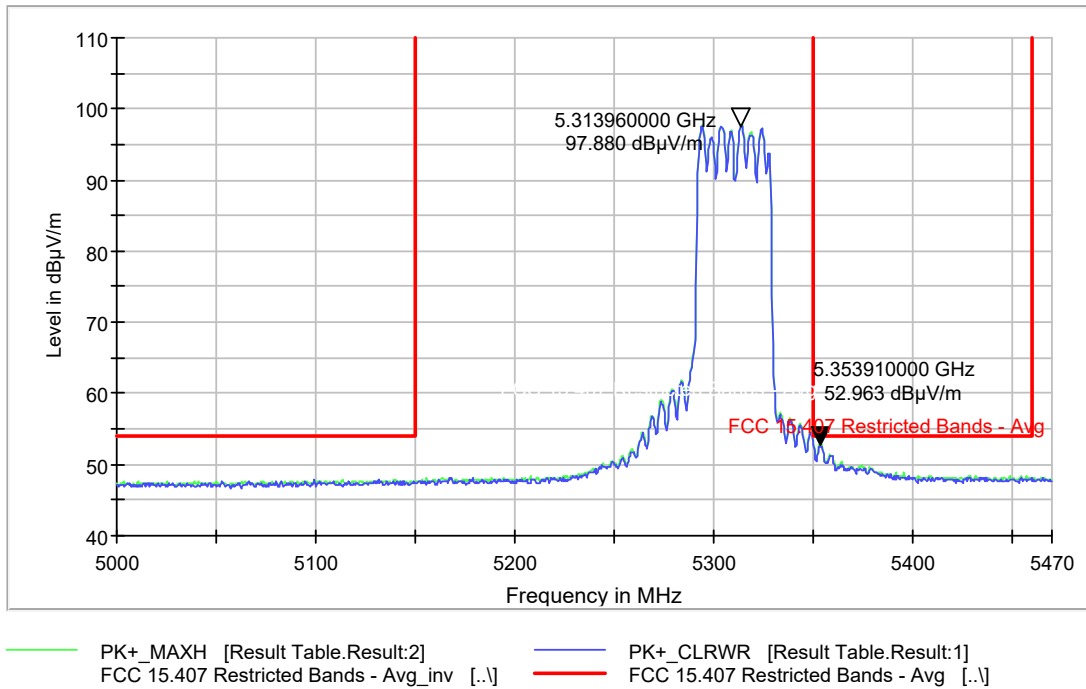
Plot 9-404. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT40 (Ch. 38)



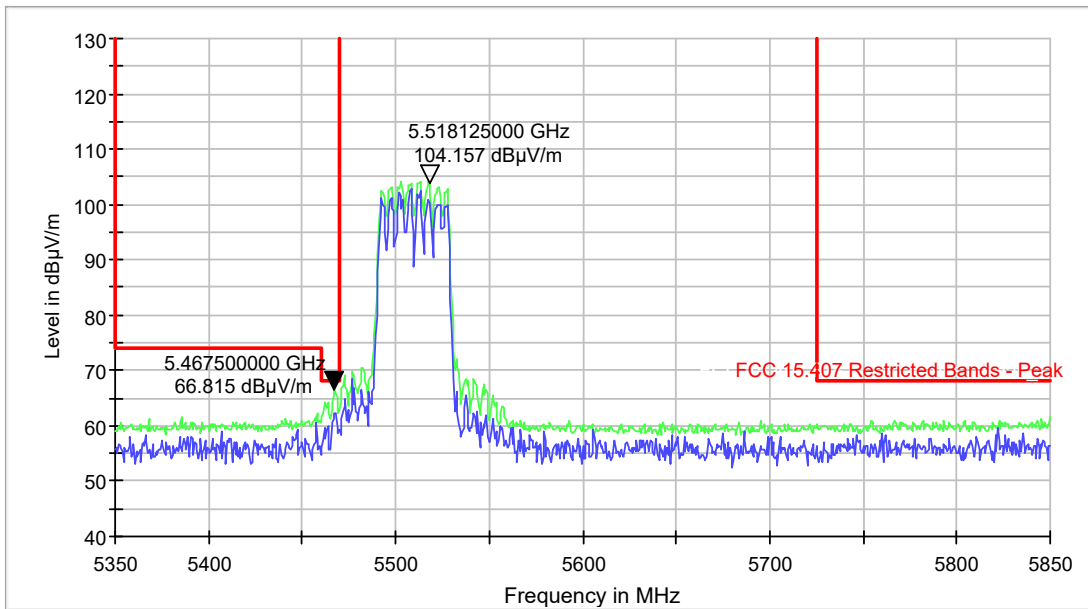
Plot 9-405. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT40 (Ch. 38)



Plot 9-406. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT40 (Ch. 62)

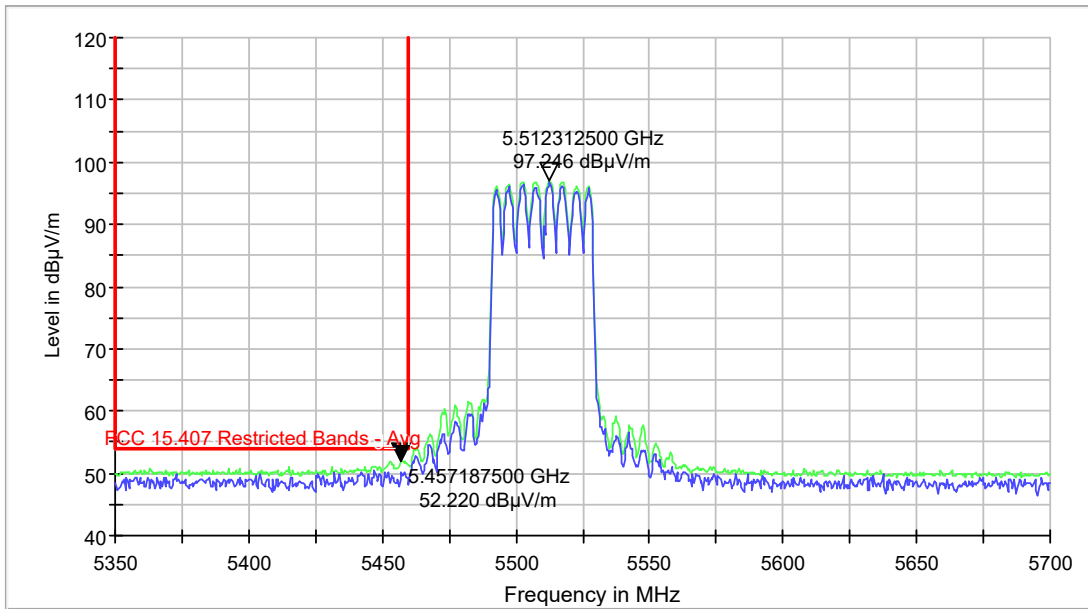


Plot 9-407. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT40 (Ch. 62)



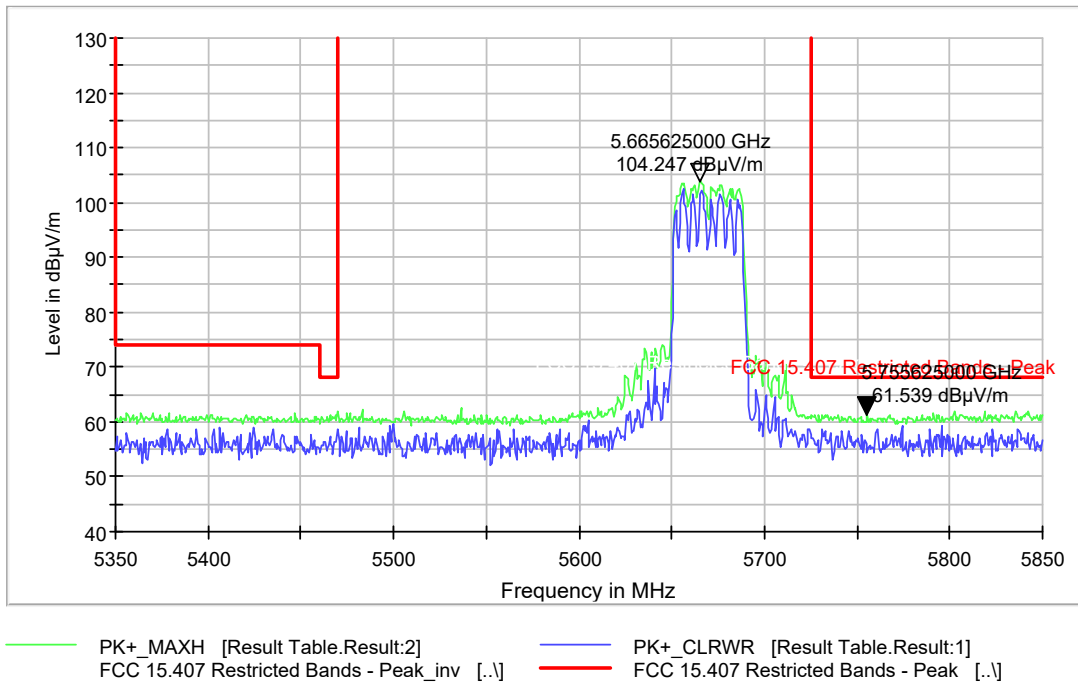
— PK+_MAXH [Result Table.Result:2]
— PK+_CLRWR [Result Table.Result:1]
— FCC 15.407 Restricted Bands - Peak_inv [..]
— FCC 15.407 Restricted Bands - Peak [..]

Plot 9-408. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT40 (Ch. 102)

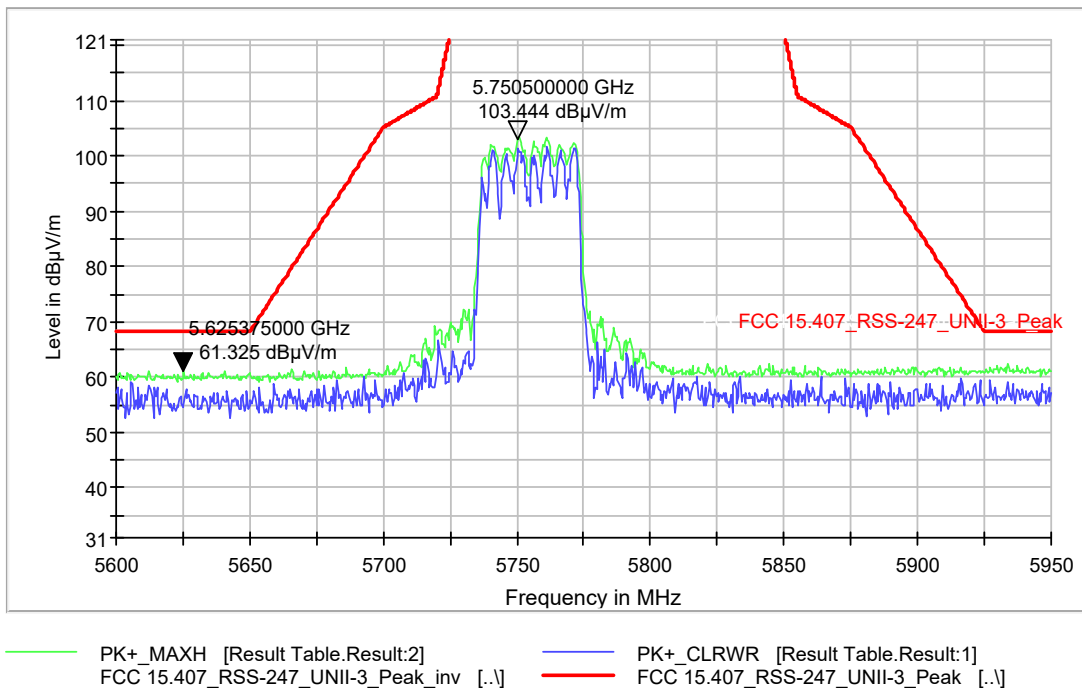


— PK+_MAXH [Result Table.Result:2]
— PK+_CLRWR [Result Table.Result:1]
— FCC 15.407 Restricted Bands - Avg_inv [..]
— FCC 15.407 Restricted Bands - Avg [..]

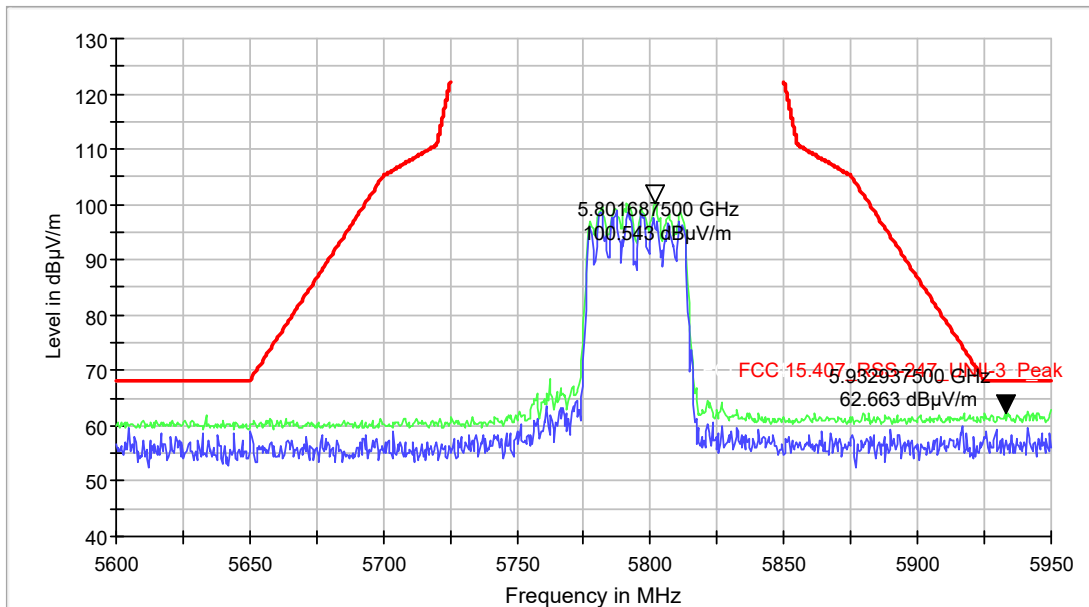
Plot 9-409. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT40 (Ch. 102)



Plot 9-410. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT40 (Ch. 134)



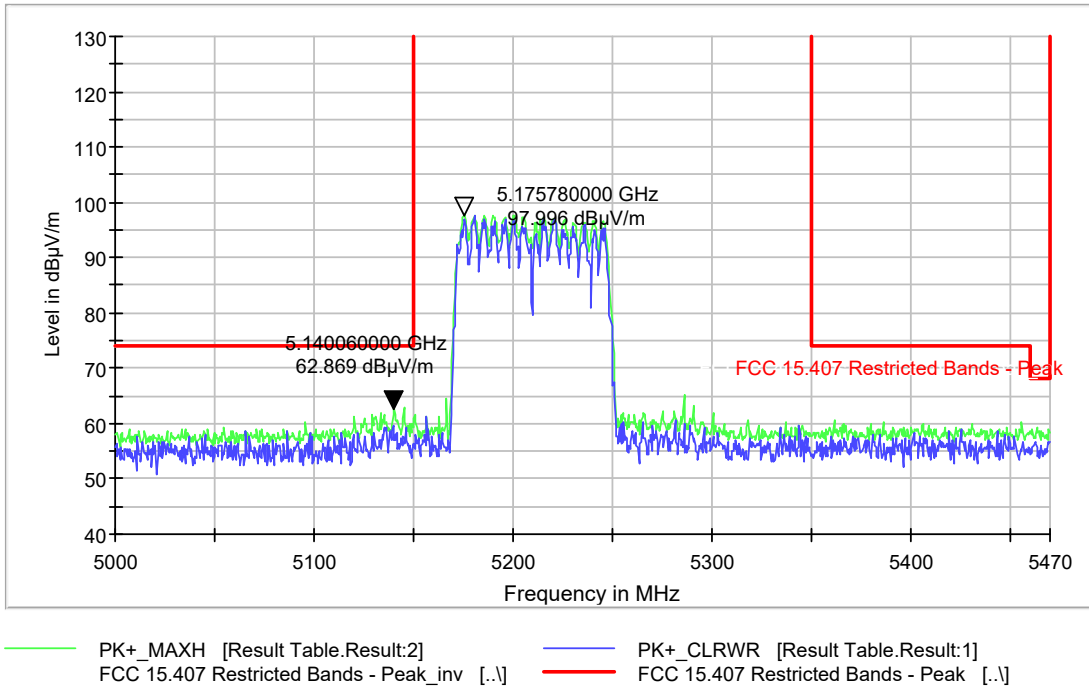
Plot 9-411. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT40 (Ch. 151)



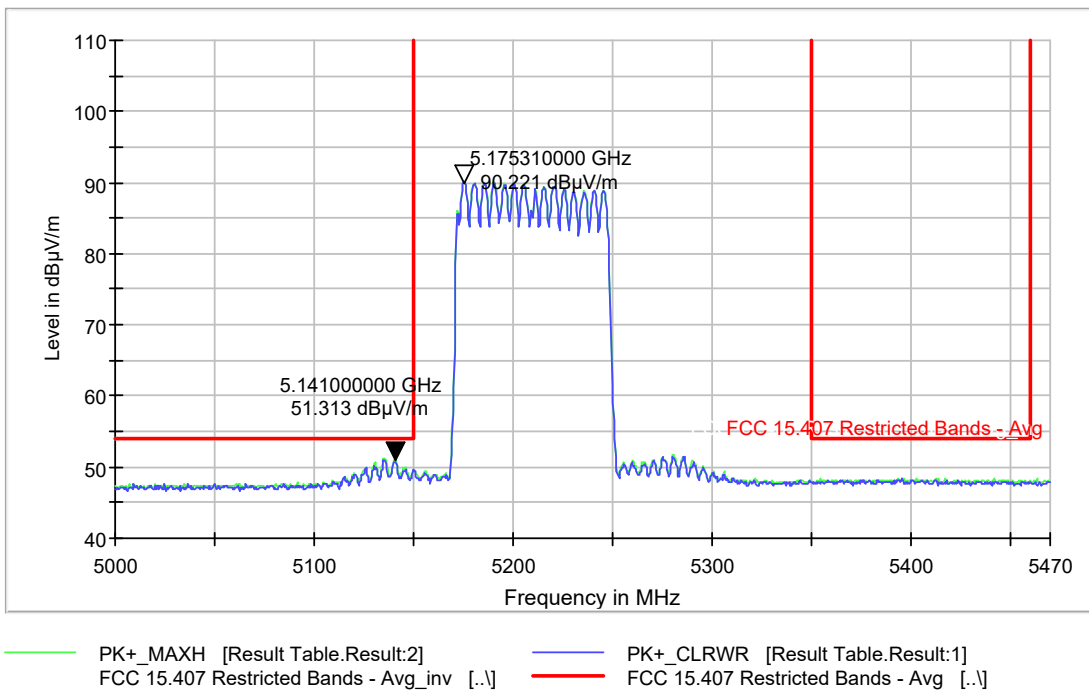
— PK+_MAXH [Result Table.Result:2]
— PK+_CLRWR [Result Table.Result:1]
— FCC 15.407_RSS-247_UNII-3_Peak [..]

Plot 9-412. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT40 (Ch. 159)

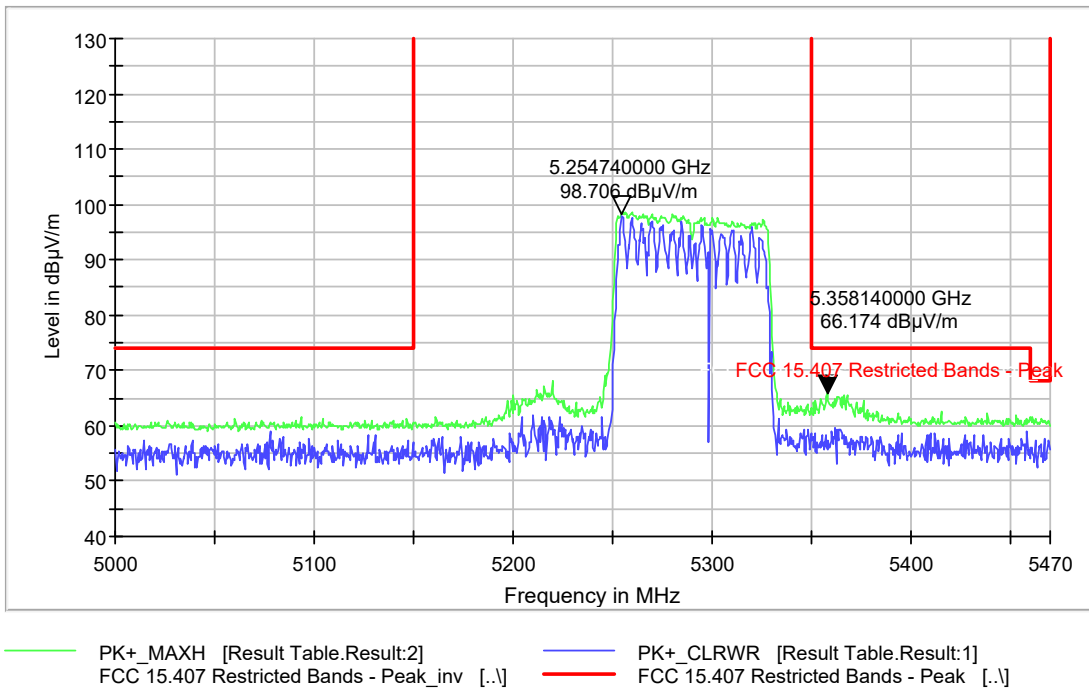
9.6.5.10 Radiated Band-edge emissions 802.11ac VHT80



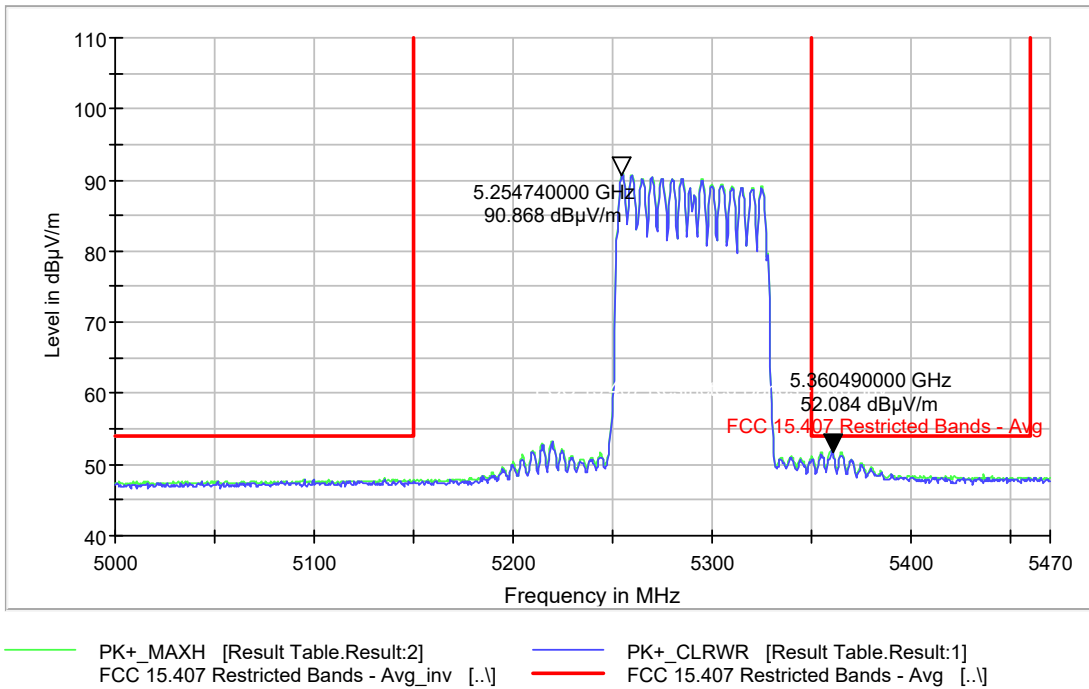
Plot 9-413. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 42)



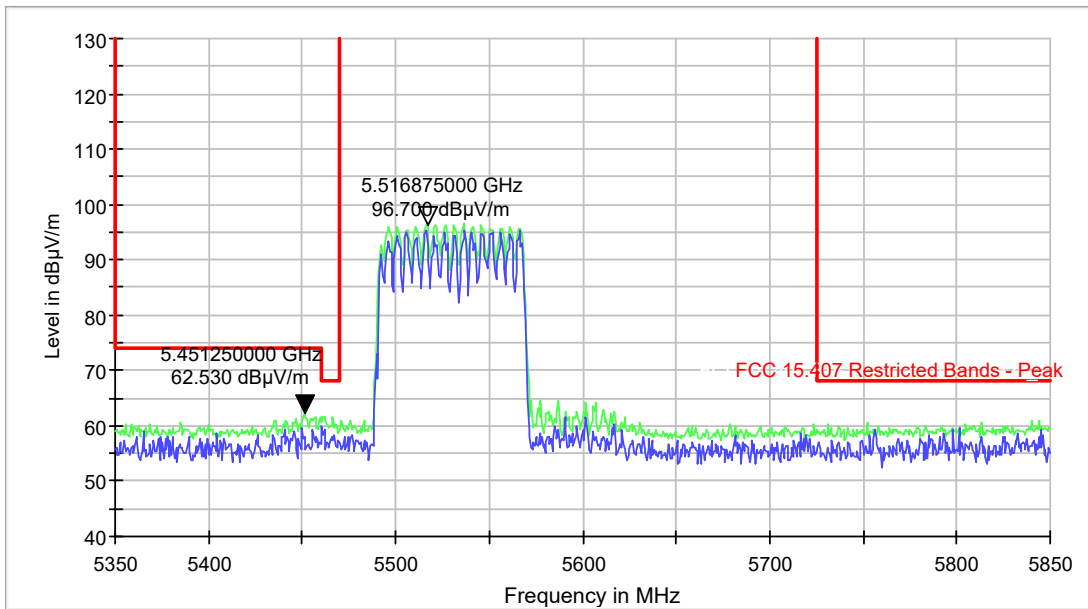
Plot 9-414. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 42)



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

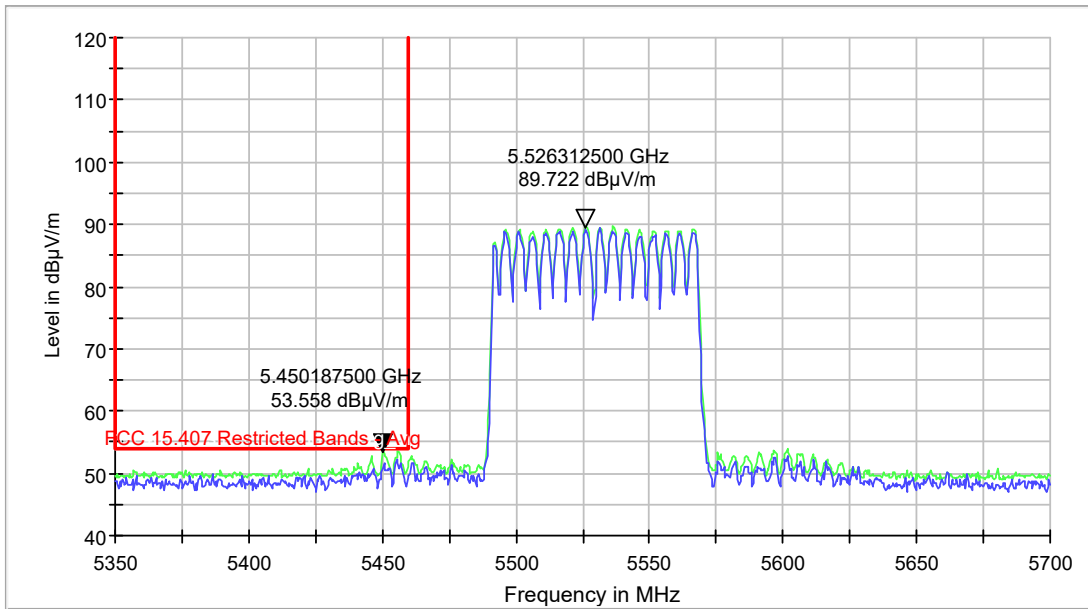


Plot 9-416. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 58)



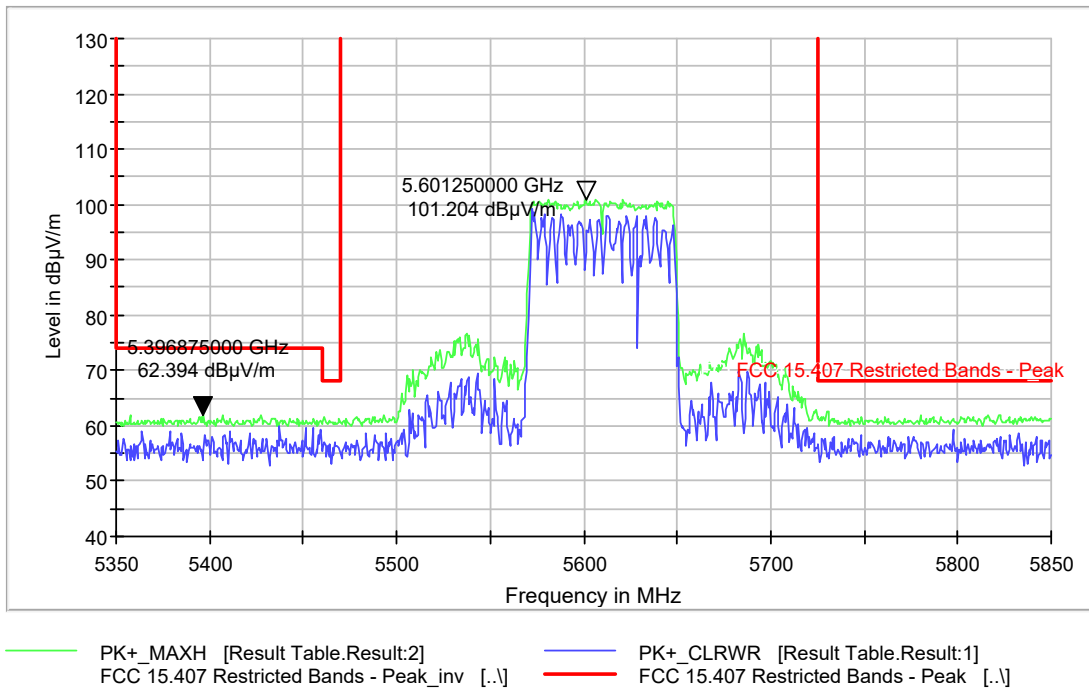
PK+_MAXH [Result Table.Result:2] PK+_CLRWR [Result Table.Result:1]
FCC 15.407 Restricted Bands - Peak_inv [..] FCC 15.407 Restricted Bands - Peak [..]

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



PK+_MAXH [Result Table.Result:2] PK+_CLRWR [Result Table.Result:1]
FCC 15.407 Restricted Bands - Avg_inv [..] FCC 15.407 Restricted Bands - Avg [..]

Plot 9-418. Average Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 106)



Plot 9-419. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 122)

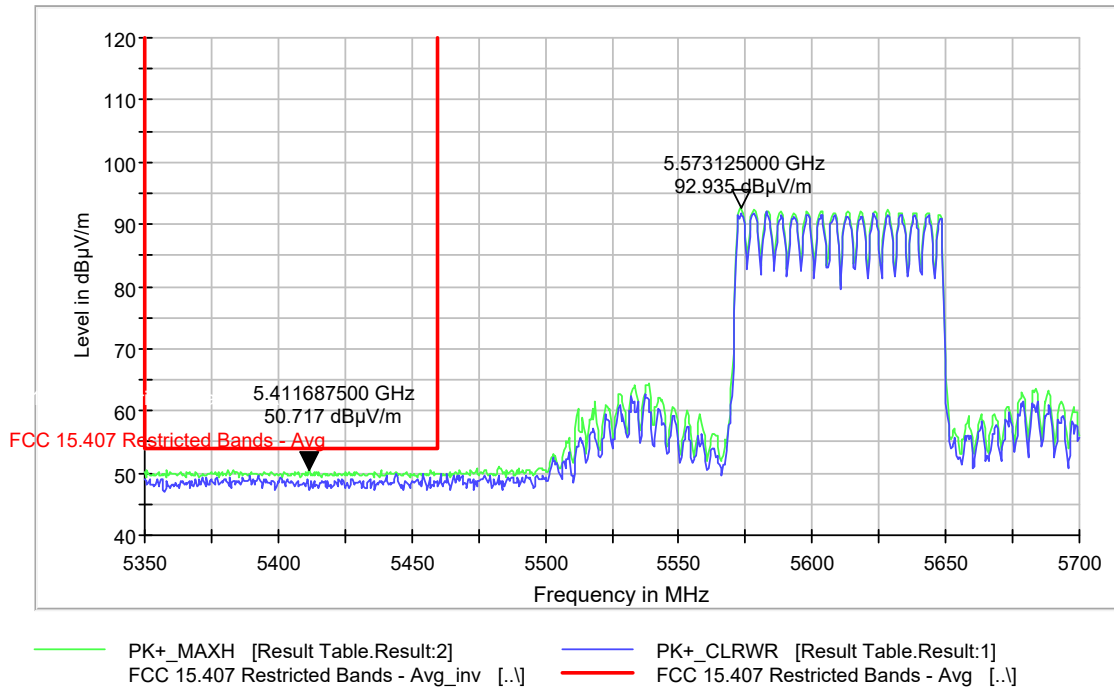
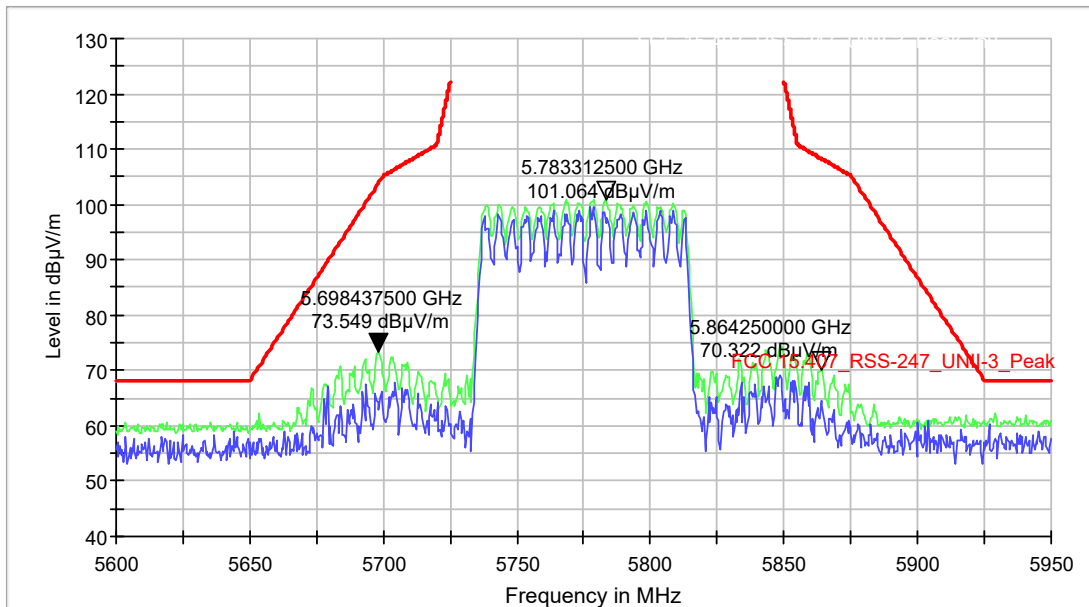


Figure 9-420 AVG Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 122)



— PK+_MAXH [Result Table.Result:2]
— PK+_CLRWR [Result Table.Result:1]
— FCC 15.407_RSS-247_UNII-3_Peak [..]

Plot 9-421. Peak Radiated Band Edge Emissions Tx Chains A & B 802.11ac VHT80 (Ch. 155)

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.

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

EUT Exercising:

WiFi tool v2.7.5, labtool v2.0.0.77

UNII 5GHz

Technology: 802.11ac

RF Channel: Channel 100, 5500GHz

Antenna Path: Path A and Path B

Signal Duty Cycle > 95%

Power Level Setting: 13 dBm

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:

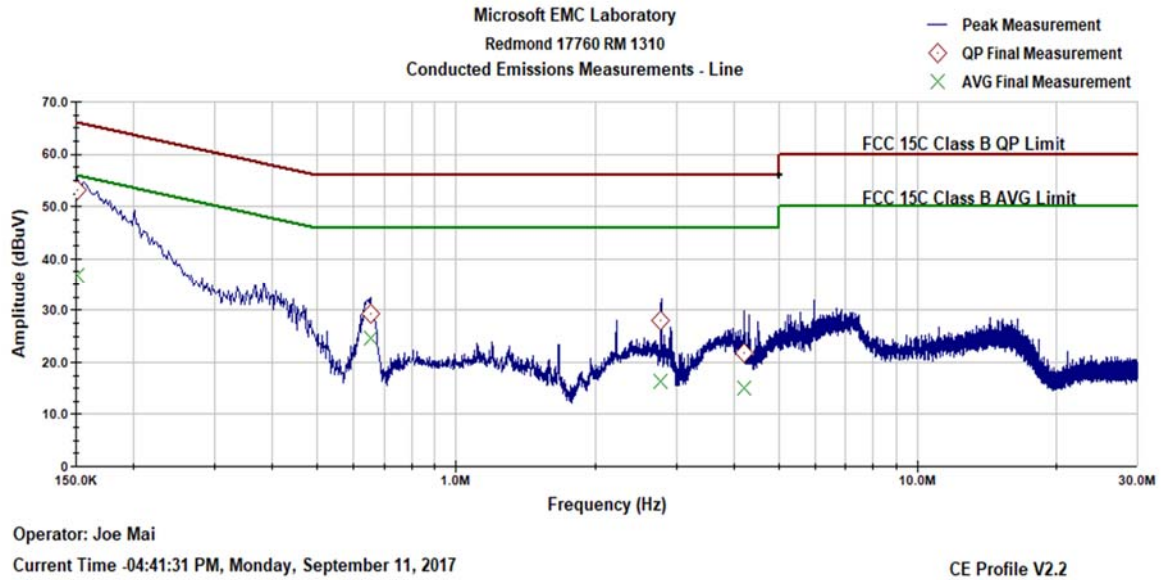


Figure 9-422. AC Line Conducted Emissions- Line (150 kHz- 30 MHz)

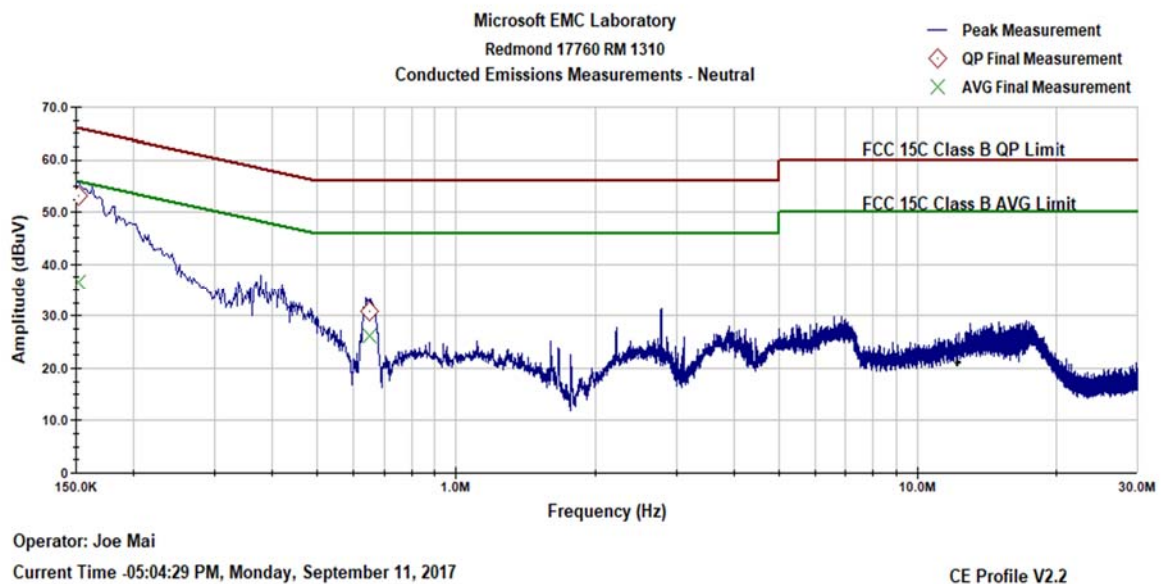


Figure 9-423. AC Line Conducted Emissions- Neutral (150 kHz- 30 MHz)

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)
0.15	54.36	39.61	65.99	55.99	N	-11.63	-16.38
0.15	54.20	37.84	65.90	55.90	L	-11.70	-18.06
0.64	30.76	25.96	56.00	46.00	N	-25.24	-20.04
0.64	29.55	25.24	56.00	46.00	L	-26.45	-20.76
2.78	28.05	16.09	56.00	46.00	N	-27.95	-29.91
6.65	22.83	16.92	60.00	50.00	L	-37.17	-33.08
3.04	14.29	8.74	56.00	46.00	L	-41.71	-37.26

End of Report