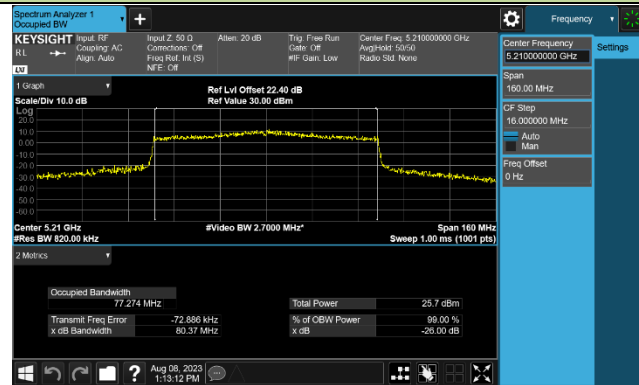
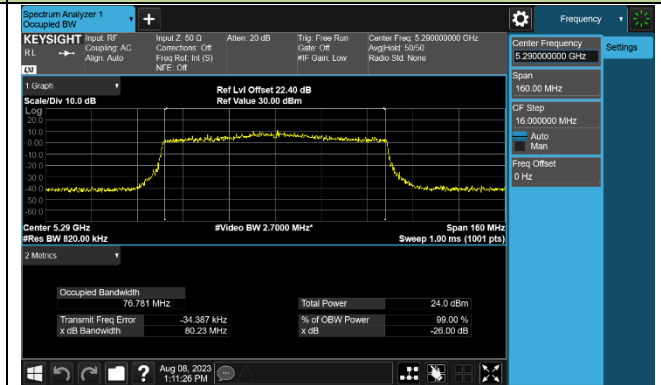


802.11ax-HE80 26dB Bandwidth & 99% Bandwidth

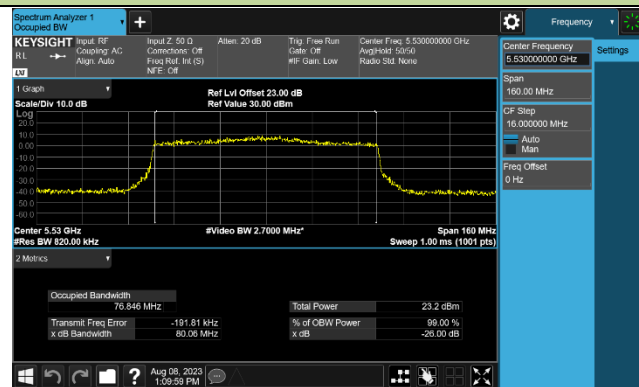
Channel 42 (5210MHz)



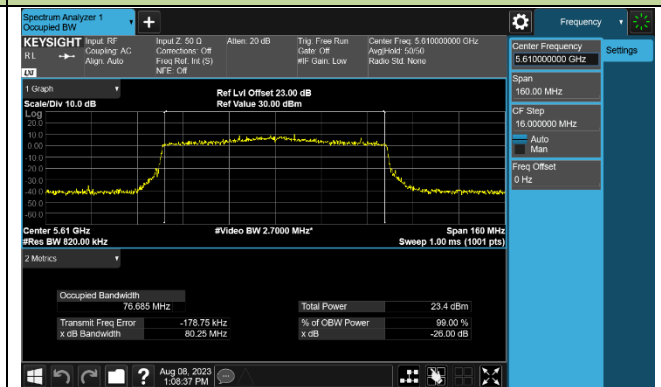
Channel 58 (5290MHz)



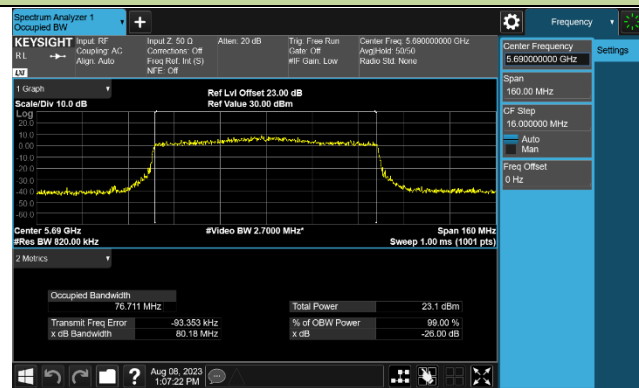
Channel 106 (5530MHz)



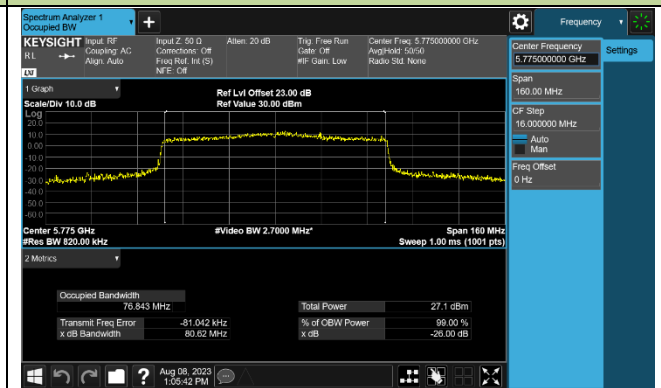
Channel 122 (5610MHz)



Channel 138 (5690MHz)

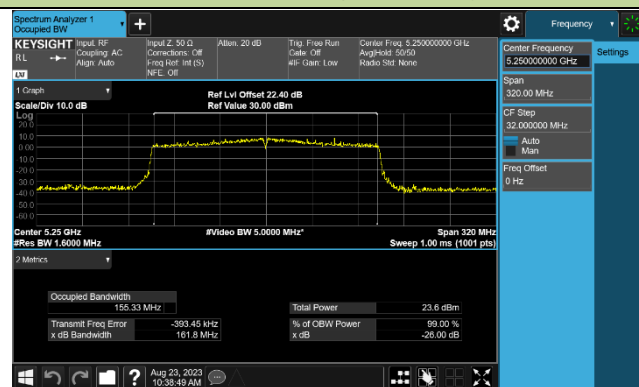


Channel 155 (5775MHz)

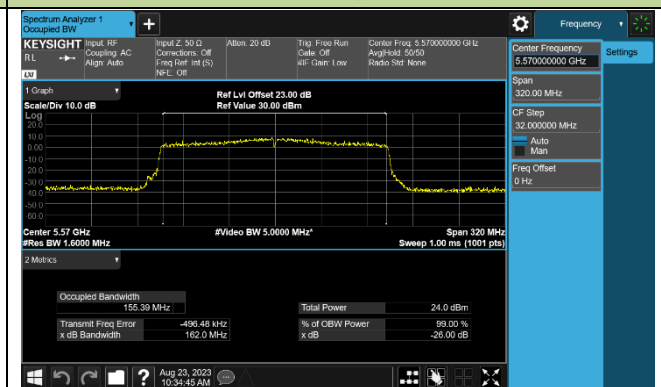


802.11ax-HE160 26dB Bandwidth & 99% Bandwidth

Channel 50 (5250MHz)



Channel 114 (5570MHz)



## 7.3. 6dB Bandwidth Measurement

### 7.3.1. Test Limit

The minimum 6dB bandwidth shall be at least 500 kHz.

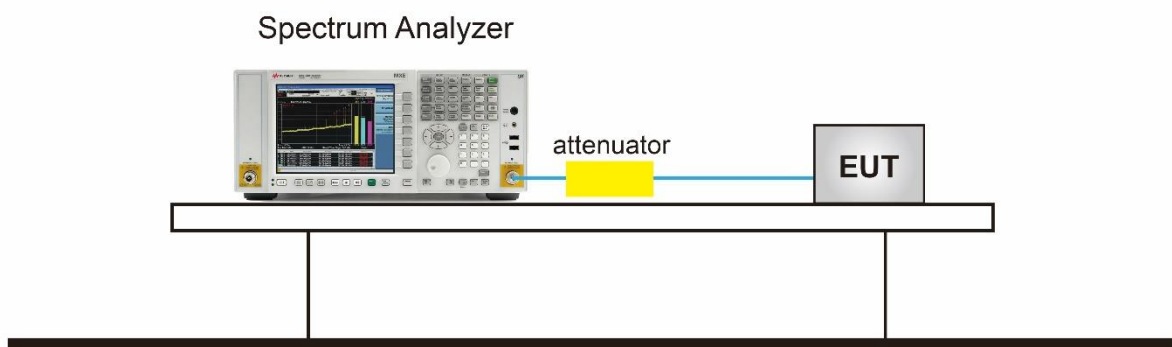
### 7.3.2. Test Procedure used

KDB 789033 D02v02r01- Section C.2

### 7.3.3. Test Setting

1. Set center frequency to the nominal EUT channel center frequency.
2. RBW = 100 kHz.
3. VBW  $3 \times$  RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### 7.3.4. Test Setup



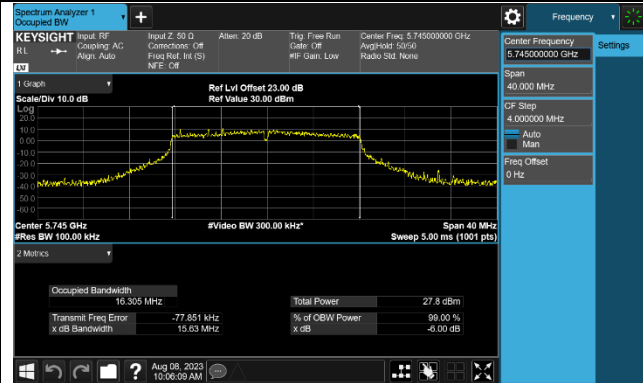
### 7.3.5.TestResult

Product	AX3000 Gigabit Wi-Fi 6 Router	Test Engineer	Xuan Yu
Test Site	SR6	Test Date	2023/08/08

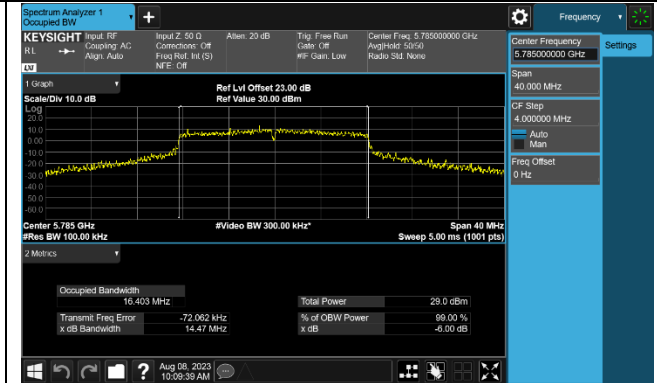
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 0						
802.11a	6Mbps	149	5745	15.630	≥ 0.5	Pass
802.11a	6Mbps	157	5785	14.470	≥ 0.5	Pass
802.11a	6Mbps	165	5825	14.370	≥ 0.5	Pass
802.11ac-VHT20	MCS0	149	5745	10.870	≥ 0.5	Pass
802.11ac-VHT20	MCS0	157	5785	16.510	≥ 0.5	Pass
802.11ac-VHT20	MCS0	165	5825	17.560	≥ 0.5	Pass
802.11ac-VHT40	MCS0	151	5755	25.910	≥ 0.5	Pass
802.11ac-VHT40	MCS0	159	5795	36.020	≥ 0.5	Pass
802.11ac-VHT80	MCS0	155	5775	68.930	≥ 0.5	Pass
802.11ax-HE20	MCS0	149	5745	18.550	≥ 0.5	Pass
802.11ax-HE20	MCS0	157	5785	17.370	≥ 0.5	Pass
802.11ax-HE20	MCS0	165	5825	14.380	≥ 0.5	Pass
802.11ax-HE40	MCS0	151	5755	26.740	≥ 0.5	Pass
802.11ax-HE40	MCS0	159	5795	37.620	≥ 0.5	Pass
802.11ax-HE80	MCS0	155	5775	70.210	≥ 0.5	Pass

802.11a 6dB Bandwidth

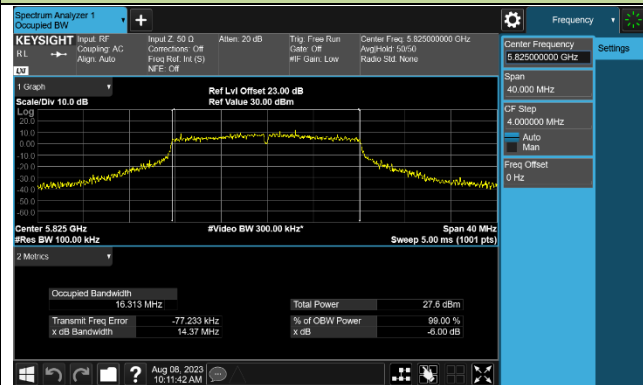
Channel 149 (5745MHz)



Channel 157 (5785MHz)

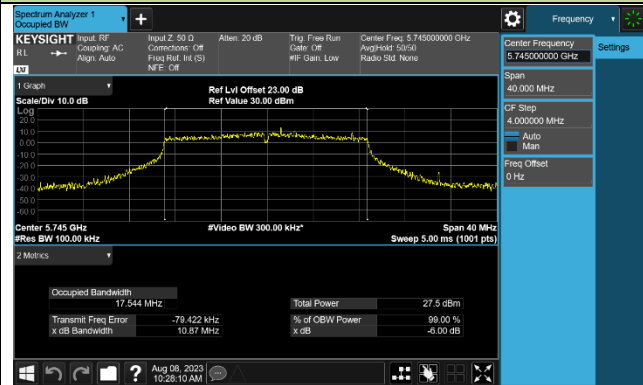


Channel 165 (5825MHz)

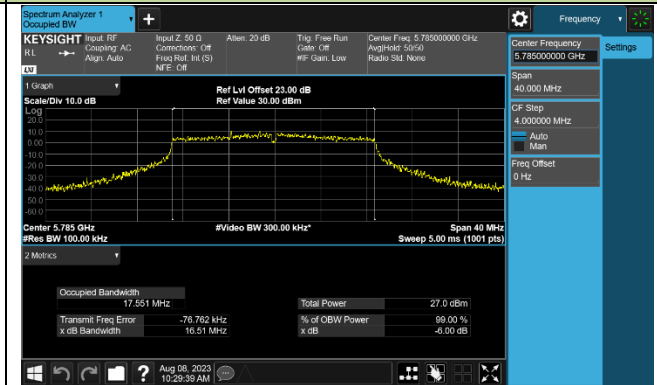


802.11ac-VHT20 6dB Bandwidth

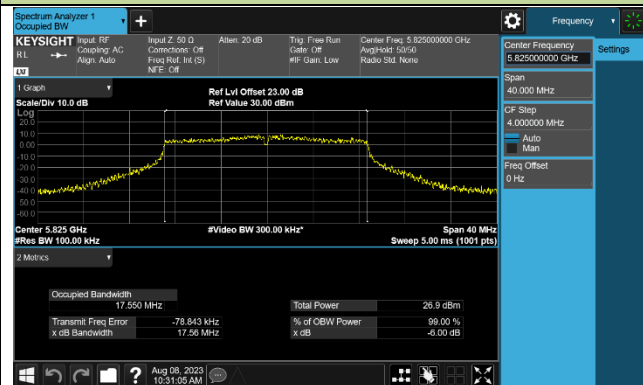
Channel 149 (5745MHz)



Channel 157 (5785MHz)



Channel 165 (5825MHz)

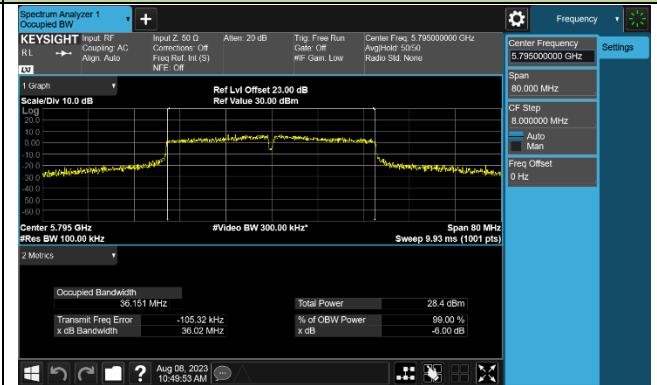


802.11ac-VHT40 6dB Bandwidth

Channel 151 (5755MHz)

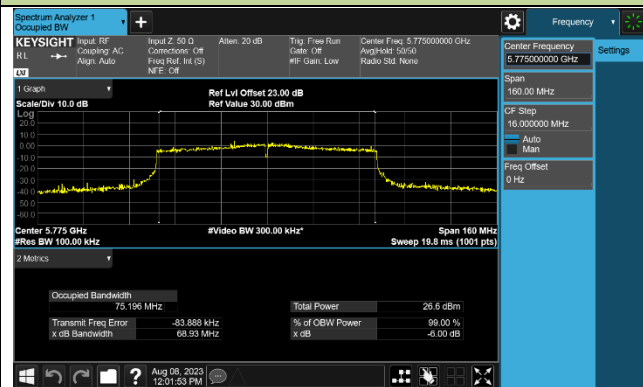


Channel 159 (5795MHz)



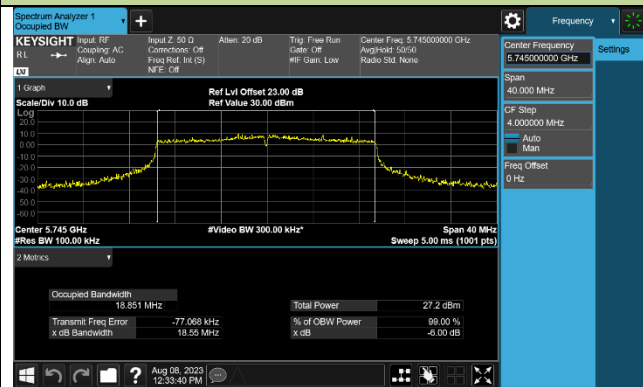
802.11ac-VHT80 6dB Bandwidth

Channel 155 (5775MHz)

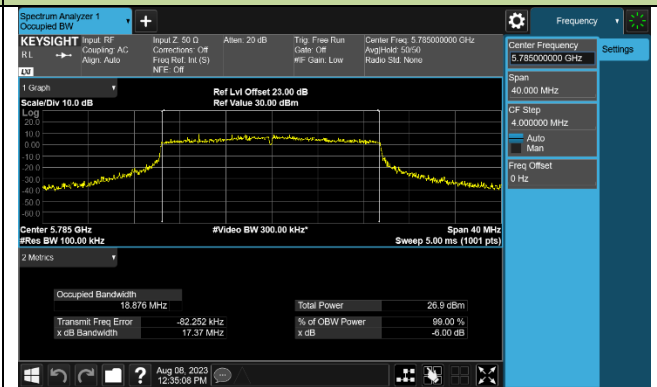


802.11ax-HE20 6dB Bandwidth

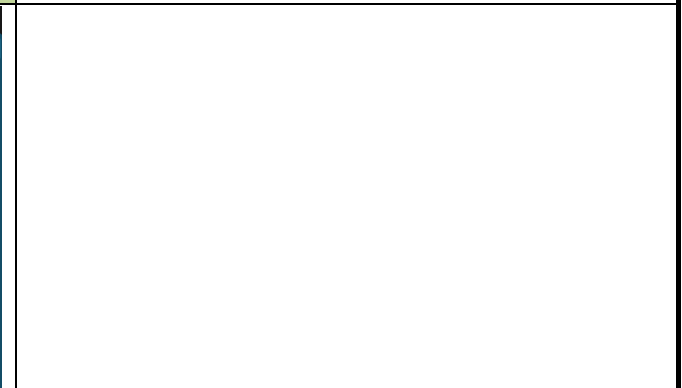
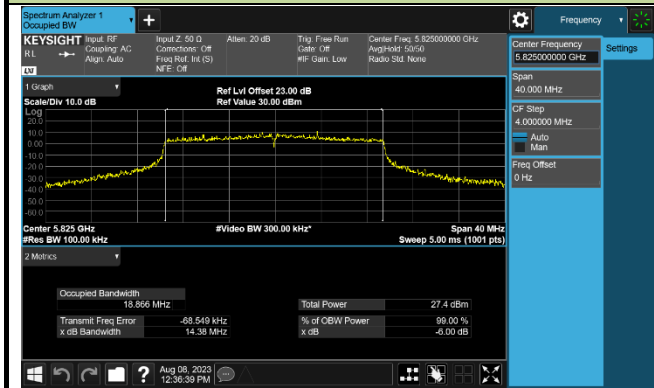
Channel 149 (5745MHz)



Channel 157 (5785MHz)

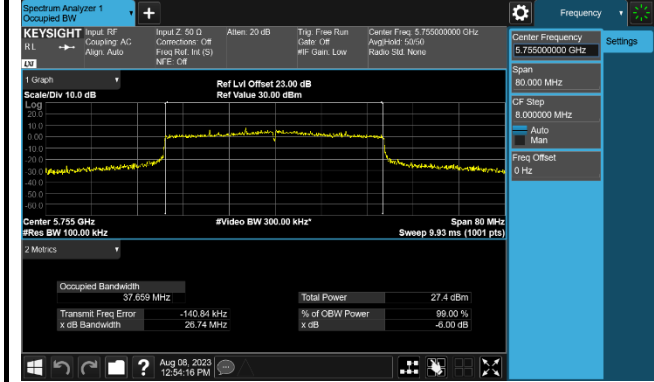


**Channel 165 (5825MHz)**

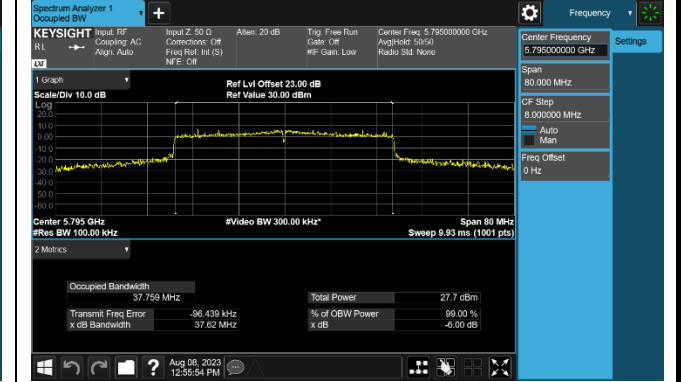


**802.11ax-HE40 6dB Bandwidth**

**Channel 151 (5755MHz)**

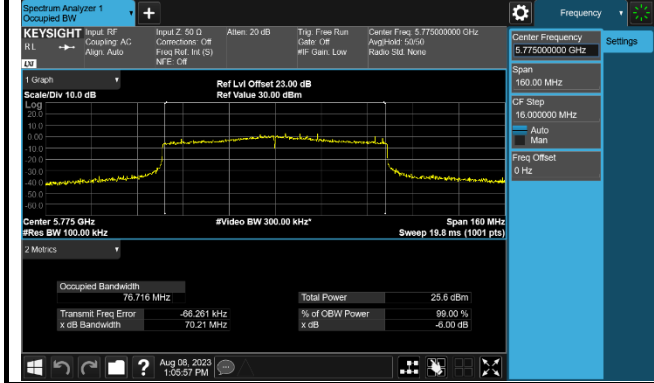


**Channel 159 (5795MHz)**



**802.11ax-HE80 6dB Bandwidth**

**Channel 155 (5775MHz)**



## 7.4. Output Power Measurement

### 7.4.1. Test Limit

For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm).

If transmitting antennas of directional gain greater than 6dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

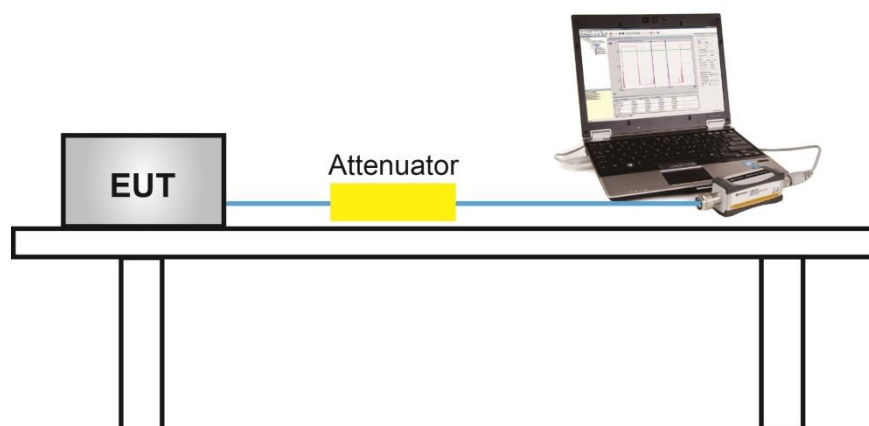
### 7.4.2. Test Procedure Used

KDB 789033D02v02r01- Section E)3)b) Method PM-G

### 7.4.3. Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

### 7.4.4. Test Setup



### 7.4.5. Test Result

Product	AX3000 Gigabit Wi-Fi 6 Router	Test Engineer	Xuan Yu
Test Site	SR6	Test Date	2023/08/04~2023/08/09
Test Mode	CDD Mode		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Power Limit (dBm)	Result
11a	6Mbps	36	5180	23.54	23.02	26.30	≤ 30.00	Pass
11a	6Mbps	44	5220	25.15	24.46	27.83	≤ 30.00	Pass
11a	6Mbps	48	5240	24.85	24.22	27.56	≤ 30.00	Pass
11a	6Mbps	52	5260	18.81	17.65	21.28	≤ 23.98	Pass
11a	6Mbps	60	5300	18.69	17.80	21.28	≤ 23.98	Pass
11a	6Mbps	64	5320	17.95	17.12	20.57	≤ 23.98	Pass
11a	6Mbps	100	5500	17.20	17.75	20.49	≤ 23.98	Pass
11a	6Mbps	116	5580	16.99	16.72	19.87	≤ 23.98	Pass
11a	6Mbps	140	5700	16.81	16.38	19.61	≤ 23.98	Pass
11a	6Mbps	144	5720	17.34	17.15	20.26	≤ 22.66	Pass
11a	6Mbps	149	5745	26.08	25.36	28.75	≤ 30.00	Pass
11a	6Mbps	157	5785	25.23	25.66	28.46	≤ 30.00	Pass
11a	6Mbps	165	5825	25.81	25.08	28.47	≤ 30.00	Pass
11ac-VHT20	MCS0	36	5180	24.54	23.98	27.28	≤ 30.00	Pass
11ac-VHT20	MCS0	40	5220	25.74	24.87	28.34	≤ 30.00	Pass
11ac-VHT20	MCS0	48	5240	25.65	24.68	28.20	≤ 30.00	Pass
11ac-VHT20	MCS0	52	5260	18.89	18.23	21.58	≤ 23.98	Pass
11ac-VHT20	MCS0	60	5300	18.31	17.88	21.11	≤ 23.98	Pass
11ac-VHT20	MCS0	64	5320	18.80	18.54	21.68	≤ 23.98	Pass
11ac-VHT20	MCS0	100	5500	18.32	18.38	21.36	≤ 23.98	Pass
11ac-VHT20	MCS0	116	5580	18.01	17.78	20.91	≤ 23.98	Pass
11ac-VHT20	MCS0	140	5700	17.61	17.53	20.58	≤ 23.98	Pass
11ac-VHT20	MCS0	144	5720	17.72	17.36	20.55	≤ 22.80	Pass
11ac-VHT20	MCS0	149	5745	26.09	25.02	28.60	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	26.08	25.03	28.60	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	25.97	25.03	28.54	≤ 30.00	Pass



Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Power Limit (dBm)	Result
11ac-VHT40	MCS0	38	5190	22.56	22.43	25.51	≤ 30.00	Pass
11ac-VHT40	MCS0	46	5230	25.63	25.11	28.39	≤ 30.00	Pass
11ac-VHT40	MCS0	54	5270	20.63	20.30	23.48	≤ 23.98	Pass
11ac-VHT40	MCS0	62	5310	20.44	20.30	23.38	≤ 23.98	Pass
11ac-VHT40	MCS0	102	5510	21.01	20.64	23.84	≤ 23.98	Pass
11ac-VHT40	MCS0	110	5550	21.32	20.20	23.81	≤ 23.98	Pass
11ac-VHT40	MCS0	134	5670	21.17	20.01	23.64	≤ 23.98	Pass
11ac-VHT40	MCS0	142	5710	21.24	20.32	23.81	≤ 23.98	Pass
11ac-VHT40	MCS0	151	5755	25.51	25.33	28.43	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	25.42	25.72	28.58	≤ 30.00	Pass
11ac-VHT80	MCS0	42	5210	22.85	22.20	25.55	≤ 30.00	Pass
11ac-VHT80	MCS0	58	5290	20.95	20.11	23.56	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	20.00	20.74	23.40	≤ 23.98	Pass
11ac-VHT80	MCS0	122	5610	20.54	20.34	23.45	≤ 23.98	Pass
11ac-VHT80	MCS0	138	5690	20.30	20.35	23.34	≤ 23.98	Pass
11ac-VHT80	MCS0	155	5775	23.86	22.96	26.44	≤ 30.00	Pass
11ac-VHT160	MCS0	50	5250	20.47	20.45	23.47	≤ 23.98	Pass
11ac-VHT160	MCS0	114	5570	20.63	20.51	23.58	≤ 23.98	Pass
11ax-HE20	MCS0	36	5180	23.76	22.61	26.23	≤ 30.00	Pass
11ax-HE20	MCS0	40	5220	25.58	24.81	28.22	≤ 30.00	Pass
11ax-HE20	MCS0	48	5240	25.41	24.81	28.13	≤ 30.00	Pass
11ax-HE20	MCS0	52	5260	18.80	18.27	21.55	≤ 23.98	Pass
11ax-HE20	MCS0	60	5300	18.65	18.51	21.59	≤ 23.98	Pass
11ax-HE20	MCS0	64	5320	18.16	17.89	21.04	≤ 23.98	Pass
11ax-HE20	MCS0	100	5500	18.94	18.58	21.77	≤ 23.98	Pass
11ax-HE20	MCS0	116	5580	19.09	18.61	21.87	≤ 23.98	Pass
11ax-HE20	MCS0	140	5700	18.30	17.40	20.88	≤ 23.98	Pass
11ax-HE20	MCS0	144	5720	18.57	17.50	21.08	≤ 22.80	Pass
11ax-HE20	MCS0	149	5745	25.81	25.28	28.56	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	25.83	25.02	28.45	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	26.07	25.03	28.59	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Power Limit (dBm)	Result
11ax-HE40	MCS0	38	5190	22.56	22.16	25.37	≤ 30.00	Pass
11ax-HE40	MCS0	46	5230	25.59	25.03	28.33	≤ 30.00	Pass
11ax-HE40	MCS0	54	5270	20.90	20.55	23.74	≤ 23.98	Pass
11ax-HE40	MCS0	62	5310	20.94	20.85	23.91	≤ 23.98	Pass
11ax-HE40	MCS0	102	5510	20.57	20.85	23.72	≤ 23.98	Pass
11ax-HE40	MCS0	110	5550	20.84	20.34	23.61	≤ 23.98	Pass
11ax-HE40	MCS0	134	5670	21.09	20.27	23.71	≤ 23.98	Pass
11ax-HE40	MCS0	142	5710	20.42	19.31	22.91	≤ 23.98	Pass
11ax-HE40	MCS0	151	5755	25.09	25.21	28.16	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	25.36	25.62	28.50	≤ 30.00	Pass
11ax-HE80	MCS0	42	5210	22.87	21.98	25.46	≤ 30.00	Pass
11ax-HE80	MCS0	58	5290	20.89	20.19	23.56	≤ 23.98	Pass
11ax-HE80	MCS0	106	5530	20.42	20.65	23.55	≤ 23.98	Pass
11ax-HE80	MCS0	122	5610	20.52	20.32	23.43	≤ 23.98	Pass
11ax-HE80	MCS0	138	5690	20.42	20.43	23.44	≤ 23.98	Pass
11ax-HE80	MCS0	155	5775	24.05	22.72	26.45	≤ 30.00	Pass
11ax-HE160	MCS0	50	5250	20.71	20.55	23.64	≤ 23.98	Pass
11ax-HE160	MCS0	114	5570	20.71	20.71	23.72	≤ 23.98	Pass

Note 1:

The Total Average Power (dBm) =  $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)}\}$ .

Note 2:

For 5250- 5350MHz and 5470 - 5725MHz Band: Average Power Limit (dBm) = 23.98 dBm.

For 5150 - 5250MHz and 5725 - 5850MHz Bands: Average Power Limit (dBm) = 30 dBm.

For 802.11a Ch144 (5720MHz), Average Power Limit (dBm) =  $11 + 10 \cdot \log(5\text{MHz} + \text{BW}_{26\text{dBc}}/2) = 22.66$  dBm.

For 802.11ac Ch144 (5720MHz), Average Power Limit (dBm) =  $11 + 10 \cdot \log(5\text{MHz} + \text{BW}_{26\text{dBc}}/2) = 22.80$  dBm.

For 802.11ax Ch144 (5720MHz), Average Power Limit (dBm) =  $11 + 10 \cdot \log(5\text{MHz} + \text{BW}_{26\text{dBc}}/2) = 22.80$  dBm.

Product	AX3000 Gigabit Wi-Fi 6 Router	Test Engineer	Xuan Yu
Test Site	SR6	Test Date	2023/08/04~2023/08/09
Test Mode	Beamforming Mode		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Power Limit (dBm)	Result
11ac-VHT20	MCS0	36	5180	24.54	23.98	27.28	≤ 30.00	Pass
11ac-VHT20	MCS0	40	5220	25.74	24.87	28.34	≤ 30.00	Pass
11ac-VHT20	MCS0	48	5240	25.65	24.68	28.20	≤ 30.00	Pass
11ac-VHT20	MCS0	52	5260	18.89	18.23	21.58	≤ 23.98	Pass
11ac-VHT20	MCS0	60	5300	18.31	17.88	21.11	≤ 23.98	Pass
11ac-VHT20	MCS0	64	5320	18.80	18.54	21.68	≤ 23.98	Pass
11ac-VHT20	MCS0	100	5500	18.32	18.38	21.36	≤ 23.98	Pass
11ac-VHT20	MCS0	116	5580	18.01	17.78	20.91	≤ 23.98	Pass
11ac-VHT20	MCS0	140	5700	17.61	17.53	20.58	≤ 23.98	Pass
11ac-VHT20	MCS0	144	5720	17.72	17.36	20.55	≤ 23.32	Pass
11ac-VHT20	MCS0	149	5745	26.09	25.02	28.60	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	26.08	25.03	28.60	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	25.97	25.03	28.54	≤ 30.00	Pass
11ac-VHT40	MCS0	38	5190	22.56	22.43	25.51	≤ 30.00	Pass
11ac-VHT40	MCS0	46	5230	25.63	25.11	28.39	≤ 30.00	Pass
11ac-VHT40	MCS0	54	5270	20.63	20.30	23.48	≤ 23.98	Pass
11ac-VHT40	MCS0	62	5310	20.44	20.30	23.38	≤ 23.98	Pass
11ac-VHT40	MCS0	102	5510	21.01	20.64	23.84	≤ 23.98	Pass
11ac-VHT40	MCS0	110	5550	21.32	20.20	23.81	≤ 23.98	Pass
11ac-VHT40	MCS0	134	5670	21.17	20.01	23.64	≤ 23.98	Pass
11ac-VHT40	MCS0	142	5710	21.24	20.32	23.81	≤ 23.98	Pass
11ac-VHT40	MCS0	151	5755	25.51	25.33	28.43	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	25.42	25.72	28.58	≤ 30.00	Pass
11ac-VHT80	MCS0	42	5210	22.85	22.20	25.55	≤ 30.00	Pass
11ac-VHT80	MCS0	58	5290	20.95	20.11	23.56	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	20.00	20.74	23.40	≤ 23.98	Pass
11ac-VHT80	MCS0	122	5610	20.54	20.34	23.45	≤ 23.98	Pass
11ac-VHT80	MCS0	138	5690	20.30	20.35	23.34	≤ 23.98	Pass
11ac-VHT80	MCS0	155	5775	23.86	22.96	26.44	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Power Limit (dBm)	Result
11ac-VHT160	MCS0	50	5250	17.39	17.11	20.26	≤ 23.98	Pass
11ac-VHT160	MCS0	114	5570	15.25	14.53	17.92	≤ 23.98	Pass
11ax-HE20	MCS0	36	5180	23.76	22.61	26.23	≤ 30.00	Pass
11ax-HE20	MCS0	40	5220	25.58	24.81	28.22	≤ 30.00	Pass
11ax-HE20	MCS0	48	5240	25.41	24.81	28.13	≤ 30.00	Pass
11ax-HE20	MCS0	52	5260	18.80	18.27	21.55	≤ 23.98	Pass
11ax-HE20	MCS0	60	5300	18.65	18.51	21.59	≤ 23.98	Pass
11ax-HE20	MCS0	64	5320	18.16	17.89	21.04	≤ 23.98	Pass
11ax-HE20	MCS0	100	5500	18.94	18.58	21.77	≤ 23.32	Pass
11ax-HE20	MCS0	116	5580	19.09	18.61	21.87	≤ 30.00	Pass
11ax-HE20	MCS0	140	5700	18.30	17.40	20.88	≤ 30.00	Pass
11ax-HE20	MCS0	144	5720	18.57	17.50	21.08	≤ 30.00	Pass
11ax-HE20	MCS0	149	5745	25.81	25.28	28.56	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	25.83	25.02	28.45	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	26.07	25.03	28.59	≤ 23.98	Pass
11ax-HE40	MCS0	38	5190	22.56	22.16	25.37	≤ 30.00	Pass
11ax-HE40	MCS0	46	5230	25.59	25.03	28.33	≤ 30.00	Pass
11ax-HE40	MCS0	54	5270	20.90	20.55	23.74	≤ 23.98	Pass
11ax-HE40	MCS0	62	5310	20.94	20.85	23.91	≤ 23.98	Pass
11ax-HE40	MCS0	102	5510	20.57	20.85	23.72	≤ 23.98	Pass
11ax-HE40	MCS0	110	5550	20.84	20.34	23.61	≤ 23.98	Pass
11ax-HE40	MCS0	134	5670	21.09	20.27	23.71	≤ 23.98	Pass
11ax-HE40	MCS0	142	5710	20.42	19.31	22.91	≤ 23.98	Pass
11ax-HE40	MCS0	151	5755	25.09	25.21	28.16	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	25.36	25.62	28.50	≤ 30.00	Pass
11ax-HE80	MCS0	42	5210	22.87	21.98	25.46	≤ 23.98	Pass
11ax-HE80	MCS0	58	5290	20.89	20.19	23.56	≤ 23.98	Pass
11ax-HE80	MCS0	106	5530	20.42	20.65	23.55	≤ 23.98	Pass
11ax-HE80	MCS0	122	5610	20.52	20.32	23.43	≤ 23.98	Pass
11ax-HE80	MCS0	138	5690	20.42	20.43	23.44	≤ 23.98	Pass
11ax-HE80	MCS0	155	5775	24.05	22.72	26.45	≤ 30.00	Pass
11ax-HE160	MCS0	50	5250	16.90	16.67	19.80	≤ 23.98	Pass
11ax-HE160	MCS0	114	5570	14.48	14.05	17.28	≤ 23.98	Pass

Note 1:

The Total Average Power (dBm) =  $10 \cdot \log \{10^{(\text{Ant 0 Average Power} / 10)} + 10^{(\text{Ant 1 Average Power} / 10)}\}$ .

Note 2:

For 5125 - 5250MHz Band: Average Power Limit (dBm) = 30dBm

For 5250 - 5350MHz and 5470 - 5725MHz Band: Average Power Limit (dBm) = 23.98dBm.

For 5725 - 5850MHz Band: Average Power Limit (dBm) = 30dBm.

For 802.11ac Ch144 (5720MHz), Average Power Limit (dBm) =  $11 + 10 \cdot \log(5\text{MHz} + \text{BW}_{26\text{dBc}}/2) = 23.32 \text{ dBm}$ .

For 802.11ax Ch144 (5720MHz), Average Power Limit (dBm) =  $11 + 10 \cdot \log(5\text{MHz} + \text{BW}_{26\text{dBc}}/2) = 23.32 \text{ dBm}$ .

## 7.5. Transmit Power Control

### 7.5.1. Test Limit

The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm.

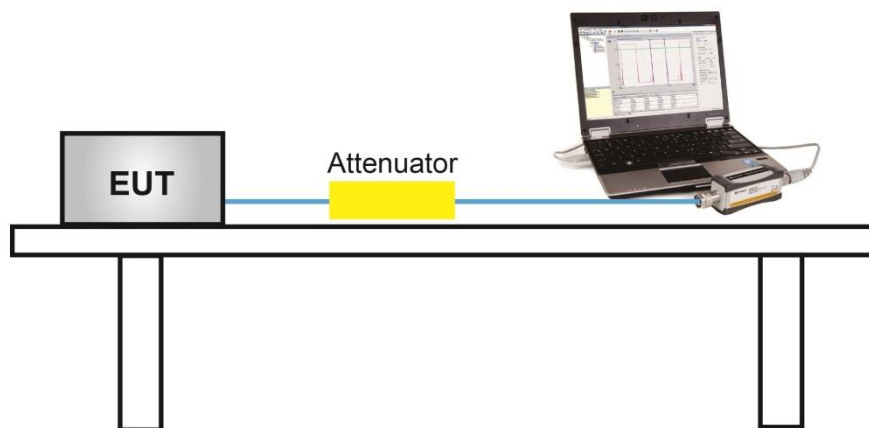
### 7.5.2. Test Procedure Used

KDB 789033 D02v02r01- Section E)3)b) Method PM-G

### 7.5.3. Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

### 7.5.4. Test Setup



### 7.5.5. Test Result

Device supports TPC mechanism, details refer to the operational description.

## 7.6. Power Spectral Density Measurement

### 7.6.1. Test Limit

For the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

If transmitting antennas of directional gain greater than 6dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

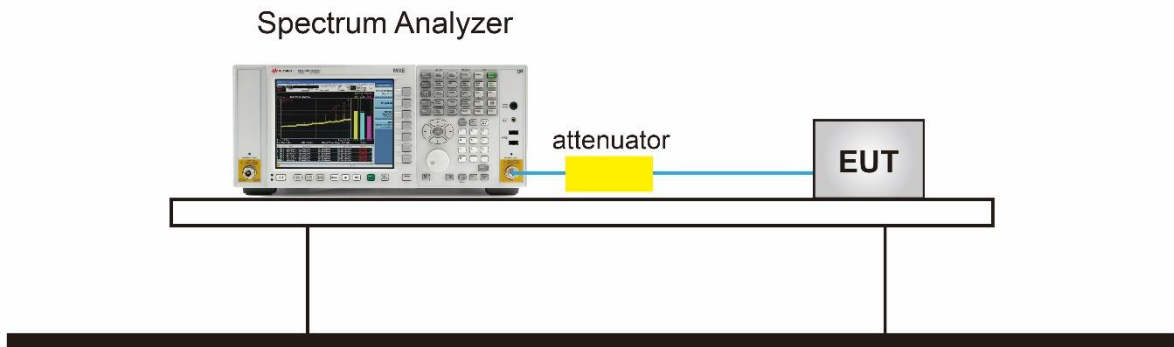
### 7.6.2. Test Procedure Used

KDB 789033 D02v02r01-SectionF

### 7.6.3. Test Setting

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire 26dB EBW of the signal.
3. RBW = 1MHz, if measurement bandwidth of Maximum PSD is specified in 500 kHz,  
RBW = 510 kHz
4. VBW = 3MHz
5. Number of sweep points  $\geq 2 \times (\text{span} / \text{RBW})$
6. Detector = power averaging (Average)
7. Sweep time = auto
8. Trigger = free run
9. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
10. Add  $10 \cdot \log(1/x)$ , where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add  $10 \cdot \log(1/0.25) = 6$  dB if the duty cycle is 25 percent.

### 7.6.4. Test Setup





### 7.6.5. Test Result

Product	AX3000 Gigabit Wi-Fi 6 Router	Test Engineer	Xuan Yu
Test Site	SR6	Test Date	2023/08/04~2023/08/09
Mode	Power Spectral Density (U-NII- 1/-2a / -2c) CDD Mode		

Test Mode	Data Rate /MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)	Result
11a	6Mbps	36	5180	12.017	11.612	92.74%	15.157	≤ 17.00	Pass
11a	6Mbps	44	5220	13.805	13.122	92.74%	16.815	≤ 17.00	Pass
11a	6Mbps	48	5240	13.712	13.334	92.74%	16.865	≤ 17.00	Pass
11a	6Mbps	52	5260	7.483	7.293	92.74%	10.727	≤ 11.00	Pass
11a	6Mbps	60	5300	7.345	7.649	92.74%	10.837	≤ 11.00	Pass
11a	6Mbps	64	5320	7.375	7.169	92.74%	10.611	≤ 11.00	Pass
11a	6Mbps	100	5500	7.142	7.443	92.74%	10.633	≤ 11.00	Pass
11a	6Mbps	116	5580	7.154	7.241	92.74%	10.535	≤ 11.00	Pass
11a	6Mbps	140	5700	7.401	6.881	92.74%	10.486	≤ 11.00	Pass
11a	6Mbps	144	5720	7.526	7.114	92.74%	10.663	≤ 11.00	Pass
11ac-VHT20	MCS0	36	5180	12.355	12.056	92.50%	15.557	≤ 17.00	Pass
11ac-VHT20	MCS0	40	5220	13.384	13.001	92.50%	16.546	≤ 17.00	Pass
11ac-VHT20	MCS0	48	5240	13.252	13.498	92.50%	16.726	≤ 17.00	Pass
11ac-VHT20	MCS0	52	5260	7.480	7.087	92.50%	10.637	≤ 11.00	Pass
11ac-VHT20	MCS0	60	5300	7.337	7.076	92.50%	10.557	≤ 11.00	Pass
11ac-VHT20	MCS0	64	5320	7.510	7.586	92.50%	10.897	≤ 11.00	Pass
11ac-VHT20	MCS0	100	5500	7.540	7.558	92.50%	10.898	≤ 11.00	Pass
11ac-VHT20	MCS0	116	5580	7.347	7.390	92.50%	10.717	≤ 11.00	Pass
11ac-VHT20	MCS0	140	5700	7.332	7.329	92.50%	10.679	≤ 11.00	Pass
11ac-VHT20	MCS0	144	5720	7.233	7.160	92.50%	10.546	≤ 11.00	Pass
11ac-VHT40	MCS0	38	5190	8.054	7.629	89.54%	11.337	≤ 17.00	Pass
11ac-VHT40	MCS0	46	5230	10.606	10.817	89.54%	14.203	≤ 17.00	Pass
11ac-VHT40	MCS0	54	5270	7.111	7.005	89.54%	10.548	≤ 11.00	Pass
11ac-VHT40	MCS0	62	5310	6.960	7.300	89.54%	10.623	≤ 11.00	Pass
11ac-VHT40	MCS0	102	5510	6.899	7.182	89.54%	10.533	≤ 11.00	Pass
11ac-VHT40	MCS0	110	5550	7.094	7.198	89.54%	10.636	≤ 11.00	Pass
11ac-VHT40	MCS0	134	5670	7.011	6.865	89.54%	10.429	≤ 11.00	Pass
11ac-VHT40	MCS0	142	5710	7.346	7.067	89.54%	10.699	≤ 11.00	Pass

Test Mode	Data Rate /MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)	Result
11ac-VHT80	MCS0	42	5210	5.467	5.178	91.91%	8.702	≤ 17.00	Pass
11ac-VHT80	MCS0	58	5290	3.437	3.429	91.91%	6.810	≤ 11.00	Pass
11ac-VHT80	MCS0	106	5530	3.072	3.028	91.91%	6.427	≤ 11.00	Pass
11ac-VHT80	MCS0	122	5610	3.506	2.510	91.91%	6.413	≤ 11.00	Pass
11ac-VHT80	MCS0	138	5690	3.996	2.474	91.91%	6.678	≤ 11.00	Pass
11ac-VHT160	MCS0	50	5250	1.036	0.682	91.10%	4.278	≤ 11.00	Pass
11ac-VHT160	MCS0	114	5570	0.867	0.323	91.10%	4.019	≤ 11.00	Pass
11ax-HE20	MCS0	36	5180	11.239	10.841	91.74%	14.429	≤ 17.00	Pass
11ax-HE20	MCS0	44	5220	13.303	12.916	91.74%	16.499	≤ 17.00	Pass
11ax-HE20	MCS0	48	5240	13.358	13.059	91.74%	16.596	≤ 17.00	Pass
11ax-HE20	MCS0	52	5260	7.882	6.981	91.74%	10.840	≤ 11.00	Pass
11ax-HE20	MCS0	60	5300	7.473	7.491	91.74%	10.867	≤ 11.00	Pass
11ax-HE20	MCS0	64	5320	7.225	7.177	91.74%	10.586	≤ 11.00	Pass
11ax-HE20	MCS0	100	5500	7.120	7.336	91.74%	10.614	≤ 11.00	Pass
11ax-HE20	MCS0	116	5580	7.305	7.604	91.74%	10.842	≤ 11.00	Pass
11ax-HE20	MCS0	140	5700	7.161	7.145	91.74%	10.538	≤ 11.00	Pass
11ax-HE20	MCS0	144	5720	7.483	7.438	91.74%	10.845	≤ 11.00	Pass
11ax-HE40	MCS0	38	5190	7.641	7.699	89.92%	11.142	≤ 17.00	Pass
11ax-HE40	MCS0	46	5230	10.825	10.633	89.92%	14.202	≤ 17.00	Pass
11ax-HE40	MCS0	54	5270	7.346	7.128	89.92%	10.710	≤ 11.00	Pass
11ax-HE40	MCS0	62	5310	7.576	7.249	89.92%	10.887	≤ 11.00	Pass
11ax-HE40	MCS0	102	5510	5.883	5.032	89.92%	8.950	≤ 11.00	Pass
11ax-HE40	MCS0	110	5550	5.930	4.539	89.92%	8.762	≤ 11.00	Pass
11ax-HE40	MCS0	134	5670	7.224	7.085	89.92%	10.627	≤ 11.00	Pass
11ax-HE40	MCS0	142	5710	7.425	7.224	89.92%	10.797	≤ 11.00	Pass
11ax-HE80	MCS0	42	5210	5.582	5.292	90.82%	8.868	≤ 17.00	Pass
11ax-HE80	MCS0	58	5290	3.647	2.803	90.82%	6.674	≤ 11.00	Pass
11ax-HE80	MCS0	106	5530	3.107	3.396	90.82%	6.682	≤ 11.00	Pass
11ax-HE80	MCS0	122	5610	3.207	2.246	90.82%	6.182	≤ 11.00	Pass
11ax-HE80	MCS0	122	5690	3.005	2.449	90.82%	6.164	≤ 11.00	Pass
11ax-HE160	MCS0	50	5250	0.841	0.162	90.89%	3.940	≤ 11.00	Pass
11ax-HE160	MCS0	114	5570	0.917	0.114	90.89%	3.959	≤ 11.00	Pass

Note 1: When EUT duty cycle ≥ 98%,

the total PSD (dBm/MHz) =  $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$  (dBm/MHz).

When EUT duty cycle < 98%,

the total PSD (dBm/MHz) =  $10 \cdot \log \{10^{(\text{Ant } 0 \text{ PSD}/10)} + 10^{(\text{Ant } 1 \text{ PSD}/10)}\} + 10 \cdot \log (1/\text{Duty Cycle})(\text{dBm/MHz})$ .

Product	AX3000 Gigabit Wi-Fi 6 Router	Test Engineer	Xuan Yu
Test Site	SR6	Test Date	2023/08/04~2023/08/09
Test Item	Power Spectral Density (U-NII-3) CDD Mode		

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/510 KHz)	Ant 1 PSD (dBm/510 KHz)	Duty Cycle (%)	Total PSD (dBm/510 kHz)	Limit (dBm/ 500kHz)	Result
11a	6Mbps	149	5745	10.461	10.275	92.74%	13.707	≤ 30.00	Pass
11a	6Mbps	157	5785	11.821	11.033	92.74%	14.782	≤ 30.00	Pass
11a	6Mbps	165	5825	10.323	9.833	92.74%	13.423	≤ 30.00	Pass
11ac-VHT20	MCS0	149	5745	10.143	9.969	92.50%	13.406	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	9.645	9.566	92.50%	12.955	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	9.162	9.034	92.50%	12.447	≤ 30.00	Pass
11ac-VHT40	MCS0	151	5755	7.927	7.714	89.54%	11.312	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	7.770	8.158	89.54%	11.458	≤ 30.00	Pass
11ac-VHT80	MCS0	155	5775	4.465	4.000	91.91%	7.615	≤ 30.00	Pass
11ax-HE20	MCS0	149	5745	9.906	9.207	91.74%	12.955	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	9.460	8.501	91.74%	12.392	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	10.225	9.128	91.74%	13.096	≤ 30.00	Pass
11ax-HE40	MCS0	151	5755	7.915	7.619	89.92%	11.241	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	7.798	7.793	89.92%	11.267	≤ 30.00	Pass
11ax-HE80	MCS0	155	5775	3.983	3.430	90.82%	7.144	≤ 30.00	Pass

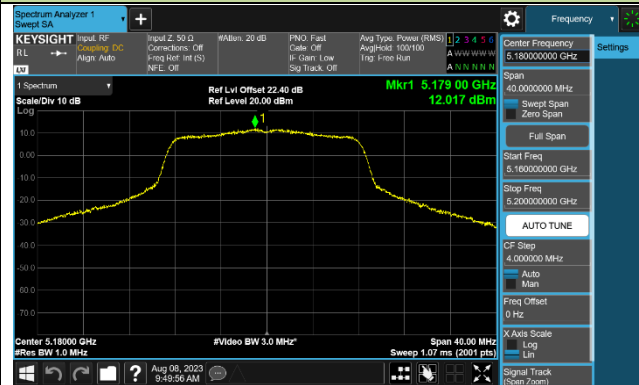
Note: When EUT duty cycle ≥ 98%,

the total PSD (dBm/510kHz) =  $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$  (dBm/510kHz).

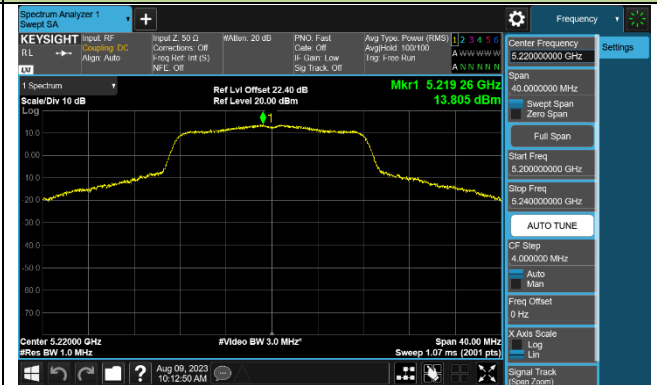
When EUT duty cycle < 98%, the total PSD (dBm/510kHz) =  $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$  (dBm/510kHz) +  $10 \cdot \log (1/\text{Duty Cycle})$ .

### 802.11a Power Spectral Density - Ant 0

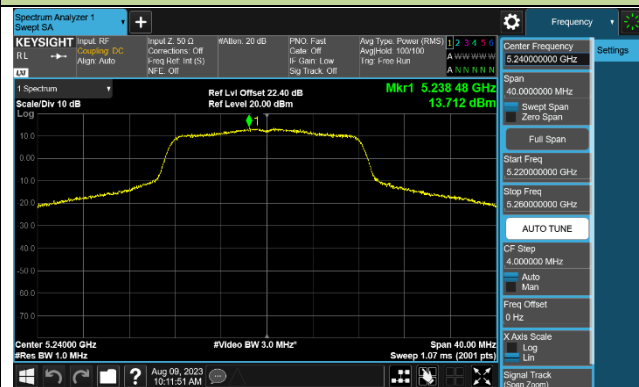
Channel 36 (5180MHz)



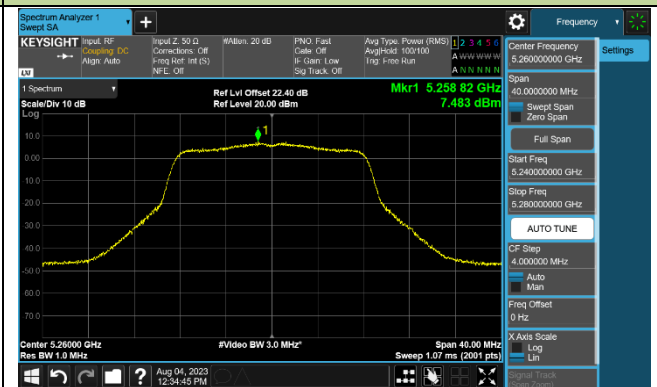
Channel 44 (5220MHz)



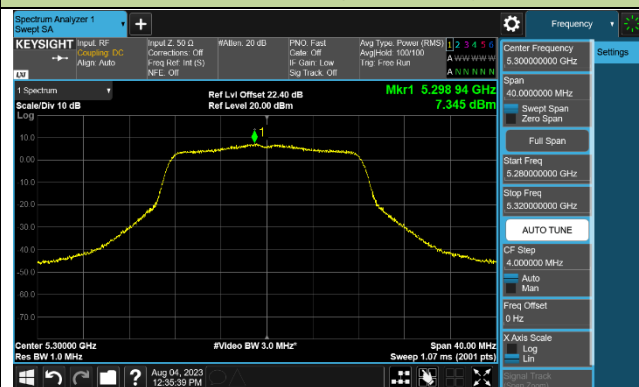
Channel 48 (5240MHz)



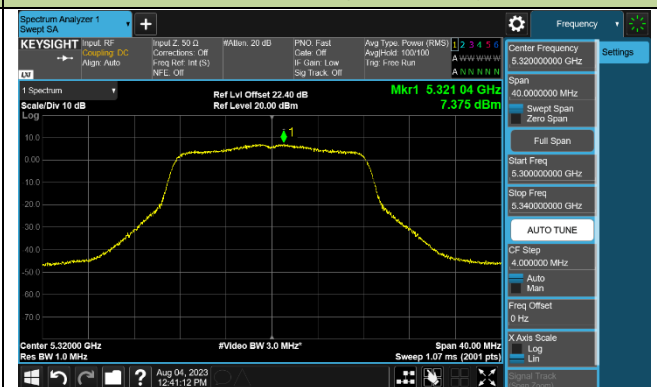
Channel 52 (5260MHz)



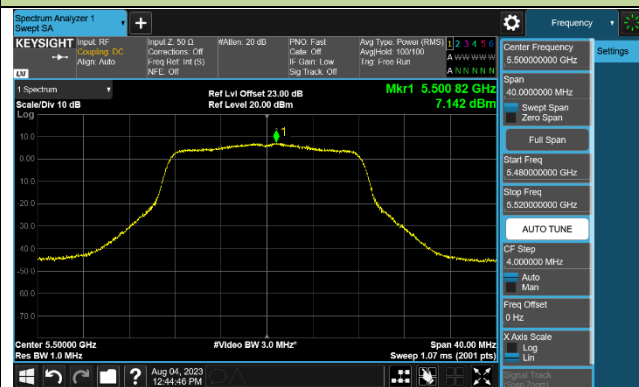
Channel 60 (5300MHz)



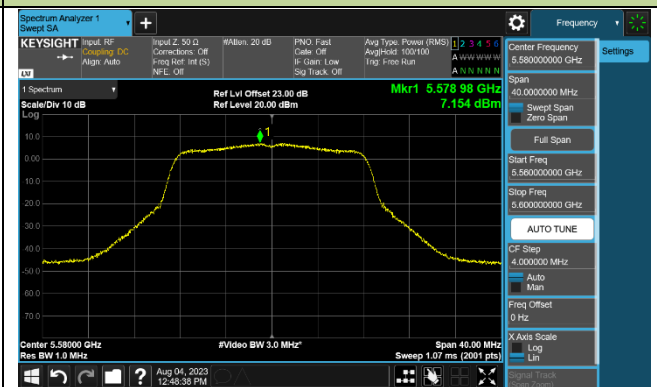
Channel 64 (5320MHz)

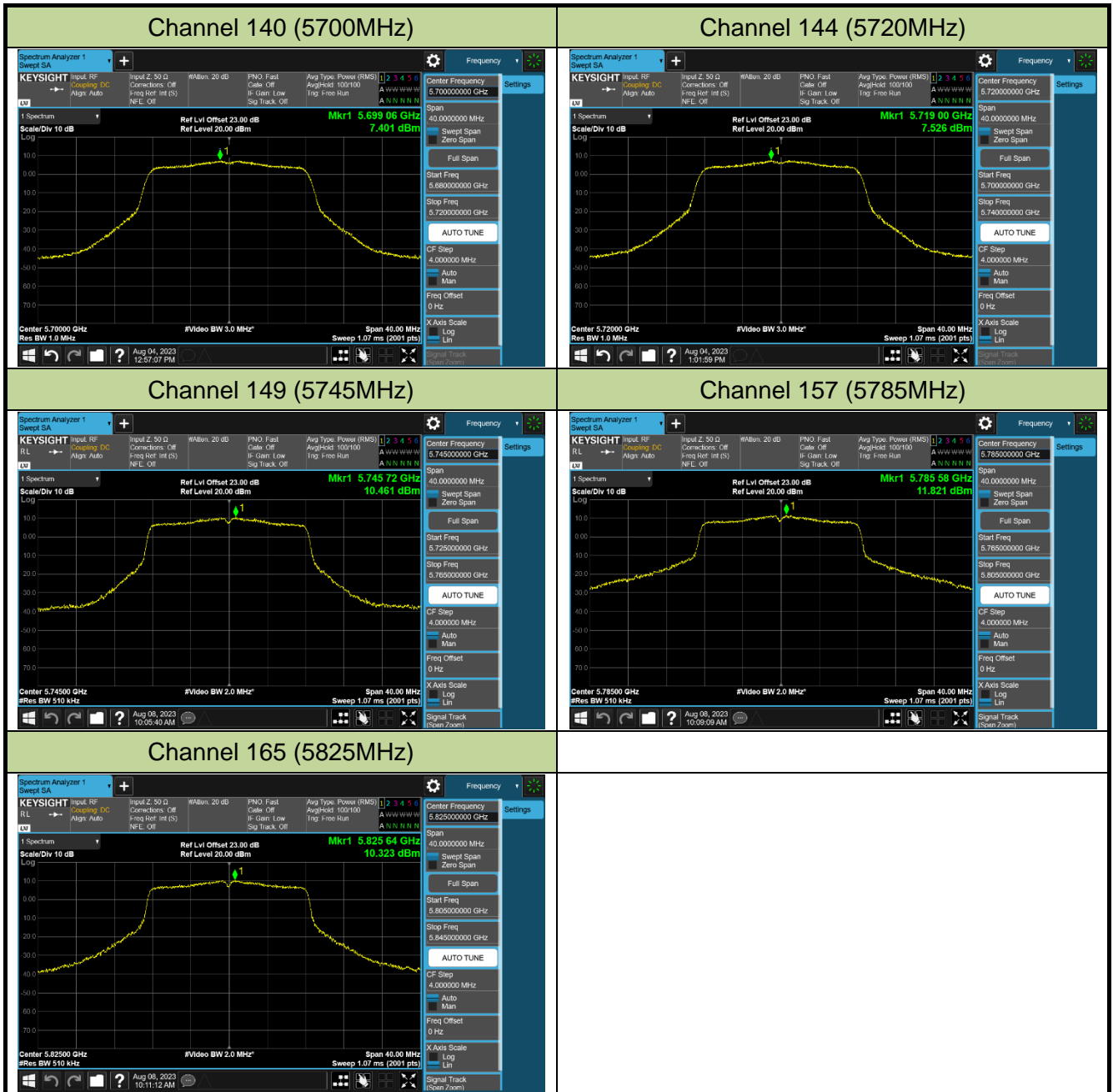


Channel 100 (5500MHz)



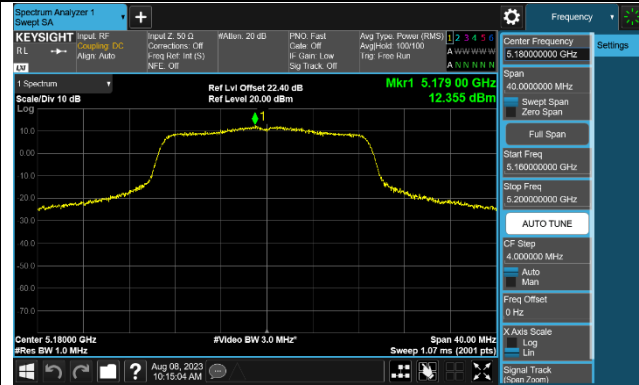
Channel 116 (5580MHz)



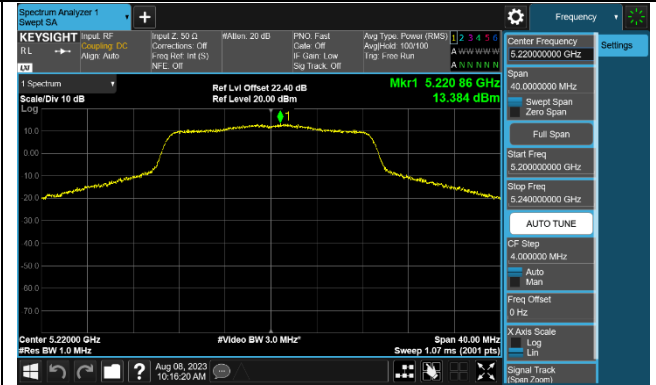


### 802.11ac-VHT20 Power Spectral Density - Ant 0

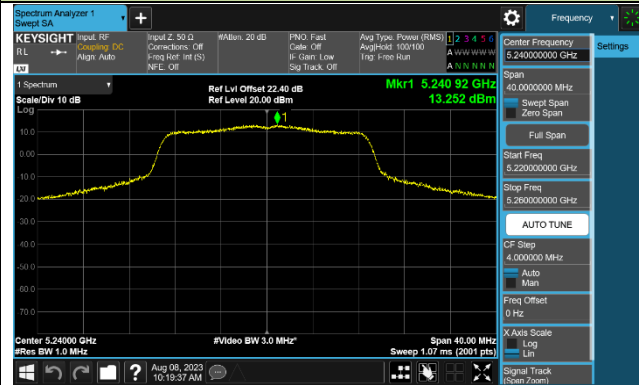
Channel 36 (5180MHz)



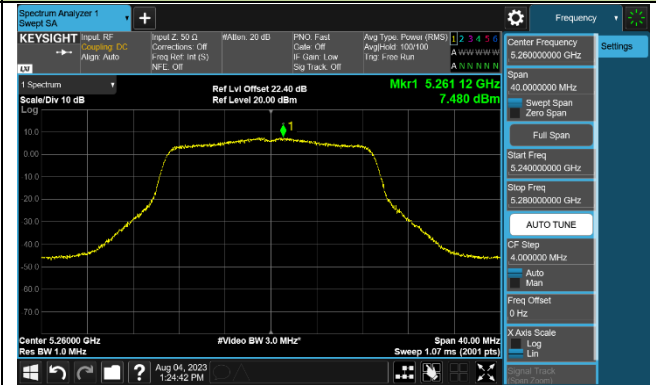
Channel 44 (5220MHz)



Channel 48 (5240MHz)



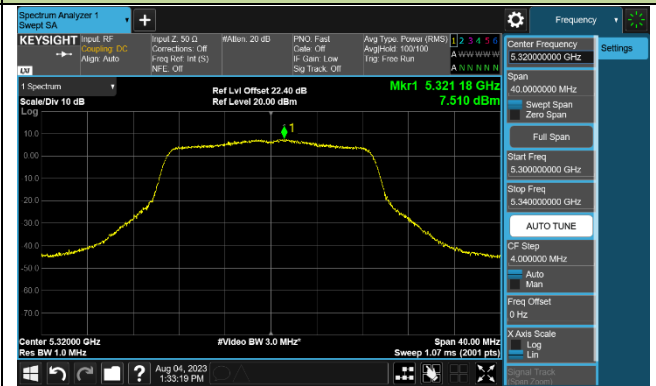
Channel 52 (5260MHz)



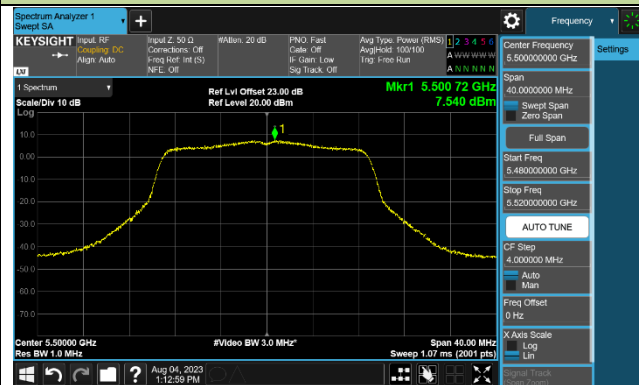
Channel 60 (5300MHz)



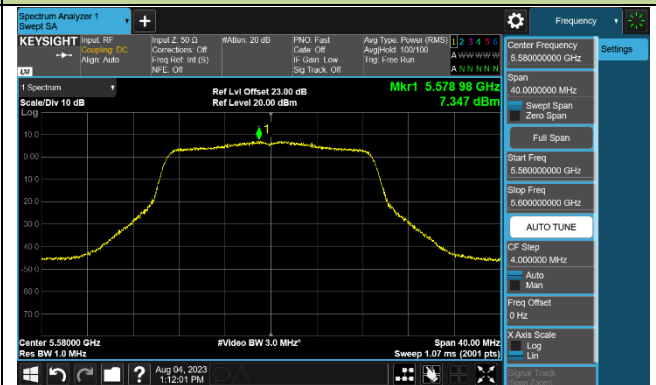
Channel 64 (5320MHz)

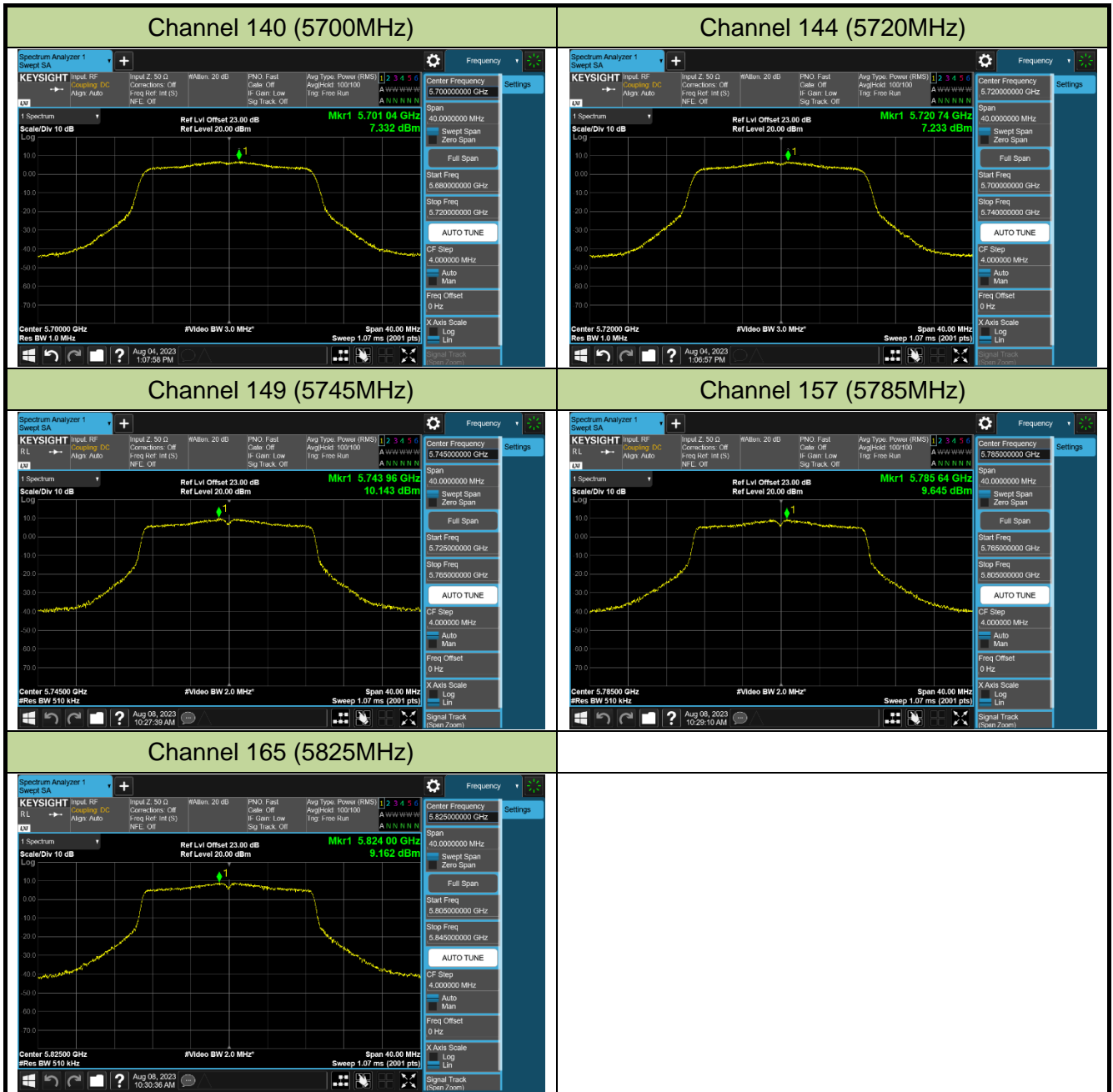


Channel 100 (5500MHz)



Channel 116 (5580MHz)

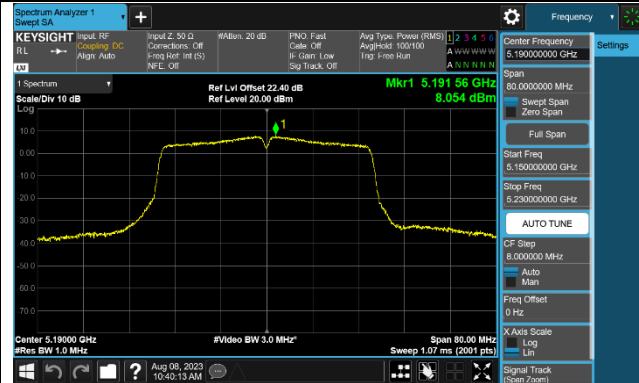




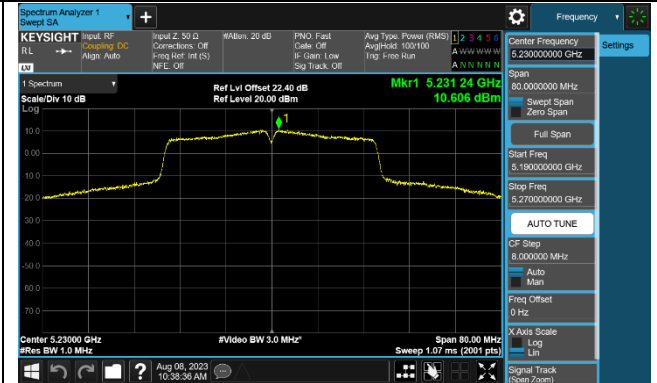


## 802.11ac-VHT40 Power Spectral Density - Ant 0

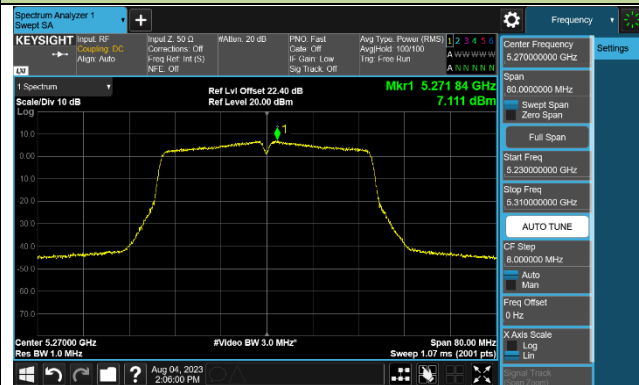
Channel 38 (5190MHz)



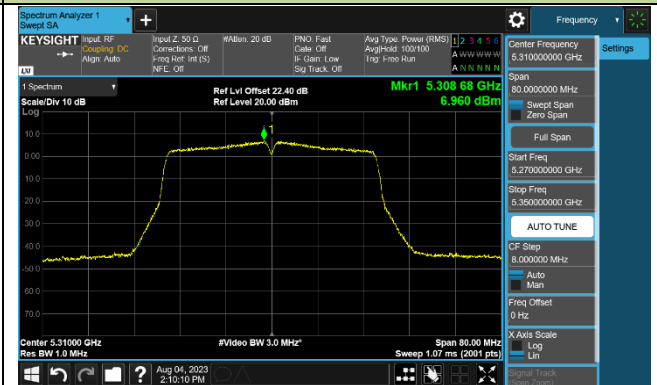
Channel 46 (5230MHz)



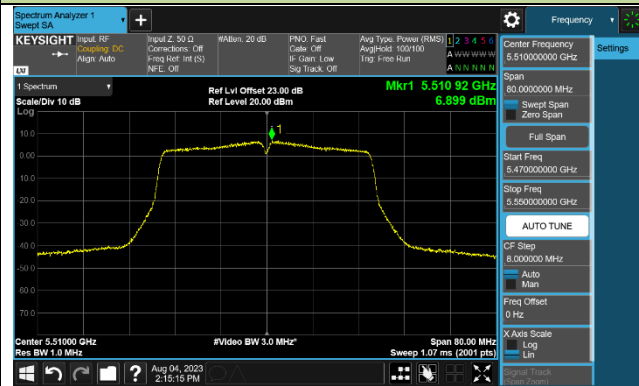
Channel 54 (5270MHz)



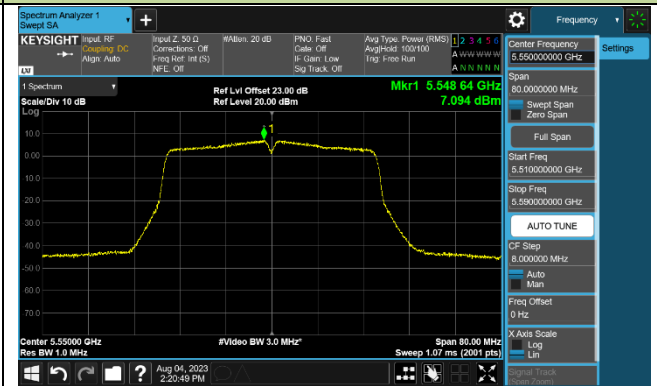
Channel 62 (5310MHz)



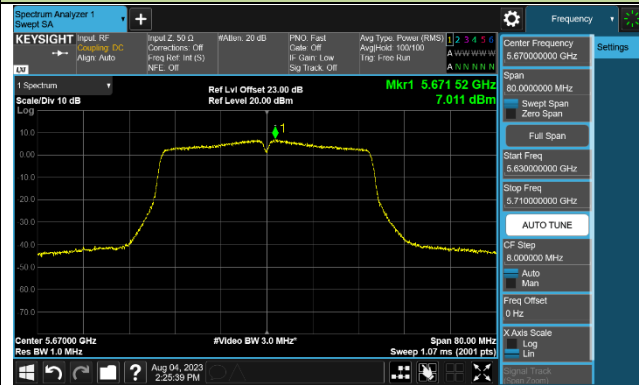
Channel 102 (5510MHz)



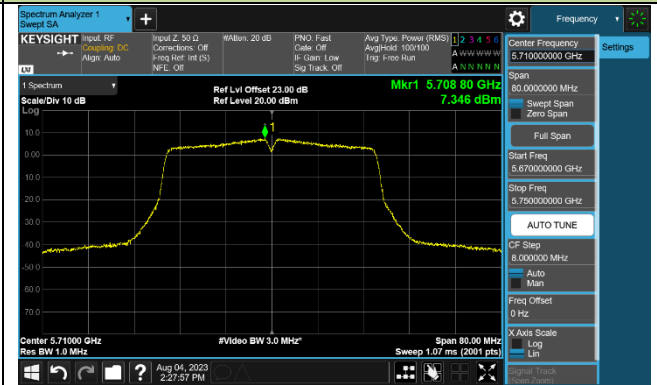
Channel 110 (5550MHz)

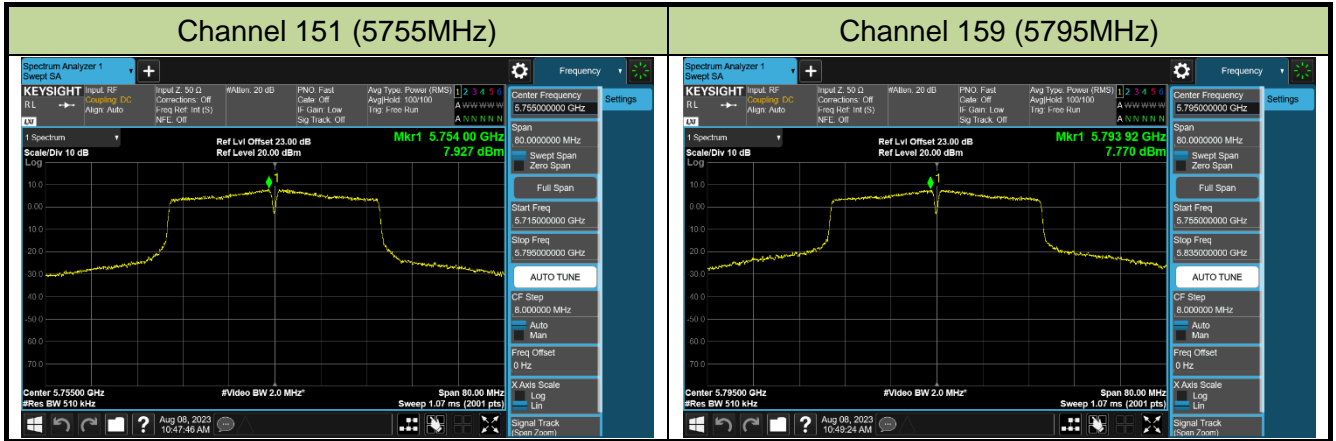


Channel 134 (5670MHz)



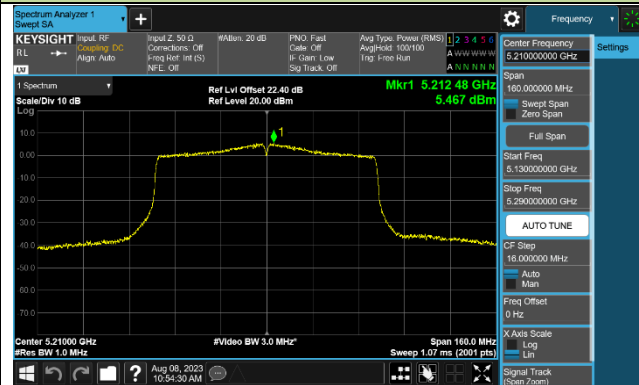
Channel 142 (5710MHz)



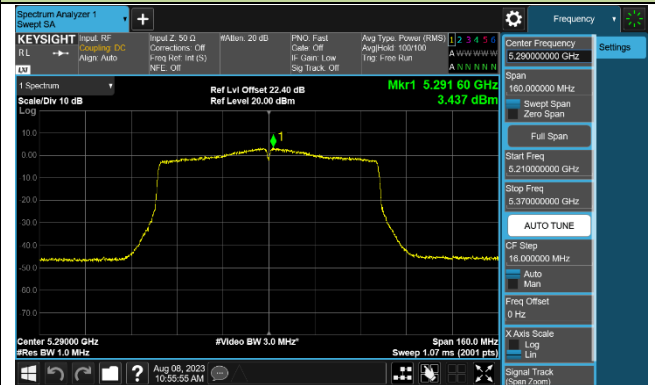


## 802.11ac-VHT80 Power Spectral Density - Ant 0

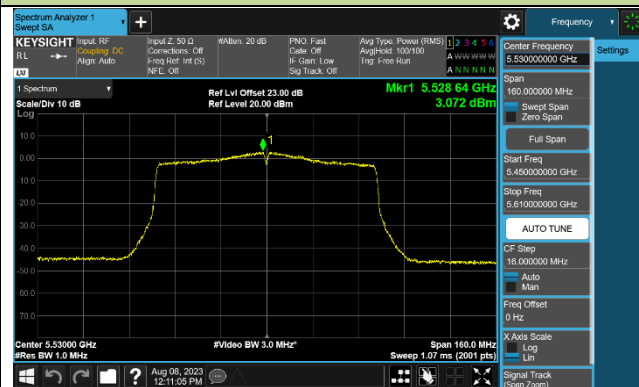
Channel 42 (5210MHz)



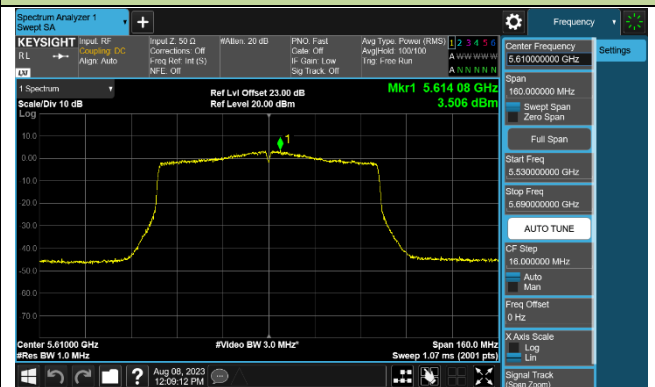
Channel 58 (5290MHz)



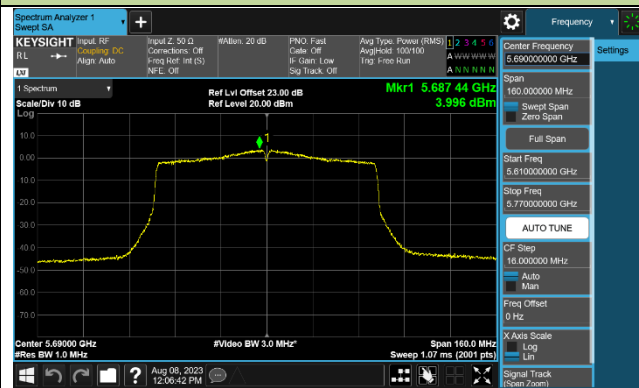
Channel 106 (5530MHz)



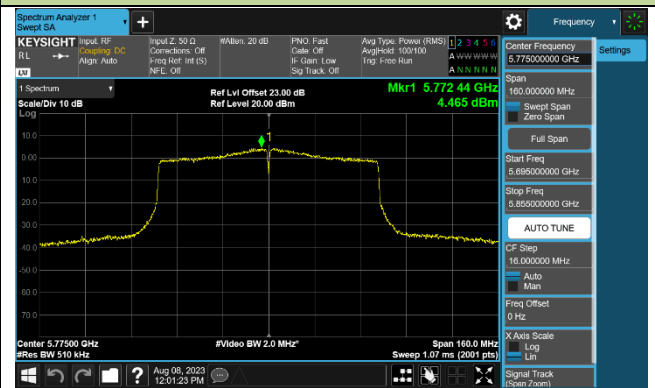
Channel 122 (5610MHz)



Channel 138 (5690MHz)



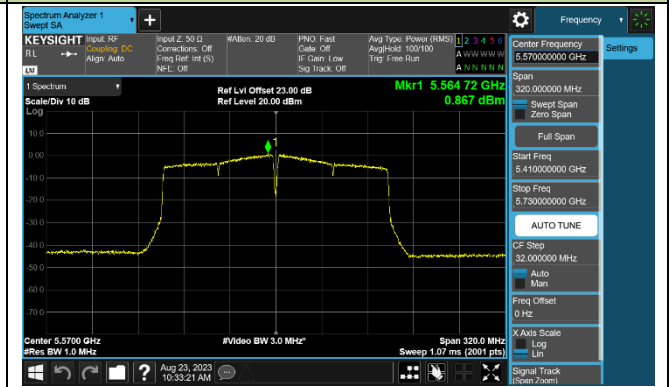
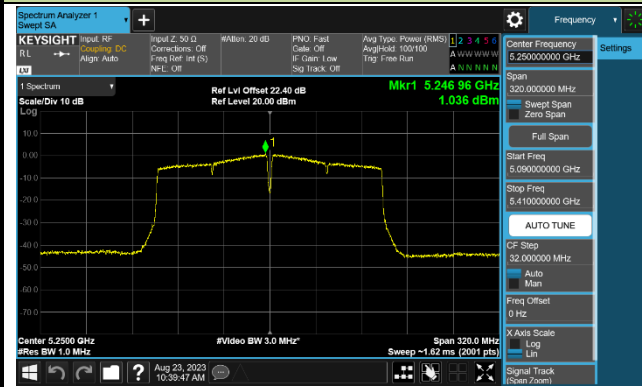
Channel 155 (5775MHz)



802.11ac-VHT160 Power Spectral Density - Ant 0

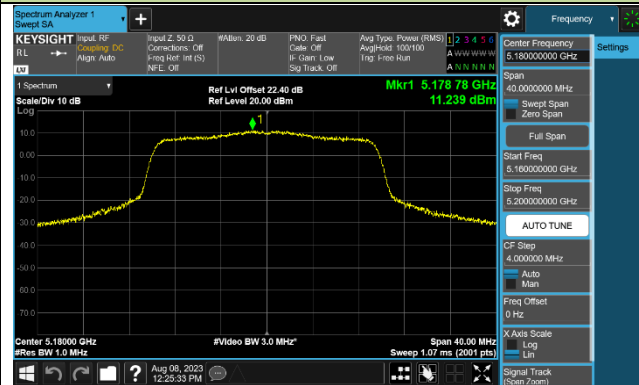
Channel 50 (5250MHz)

Channel 114 (5570MHz)

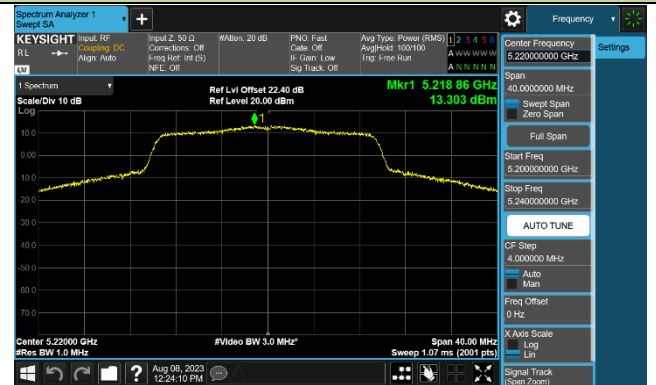


### 802.11ax-HE20 Power Spectral Density - Ant 0

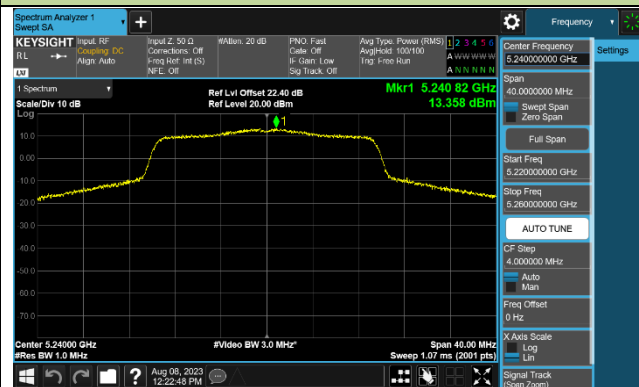
Channel 36 (5180MHz)



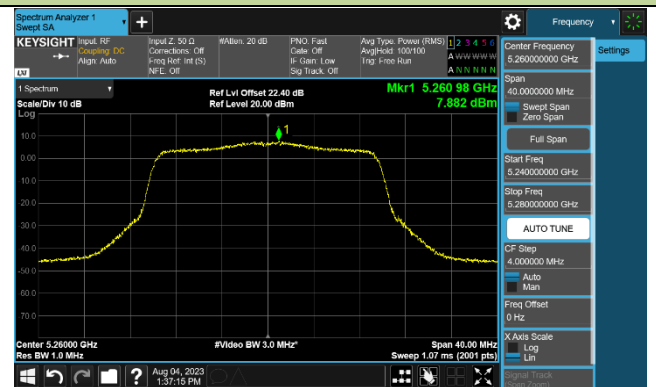
Channel 44 (5220MHz)



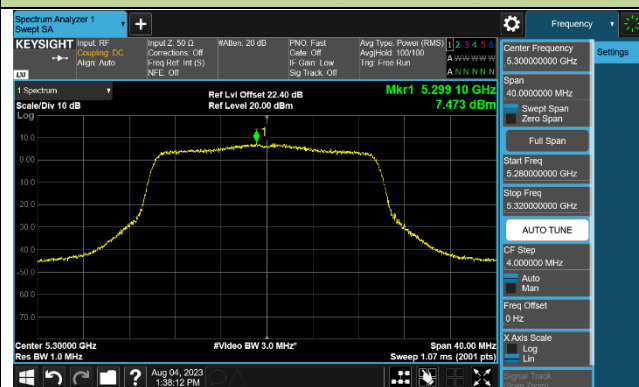
Channel 48 (5240MHz)



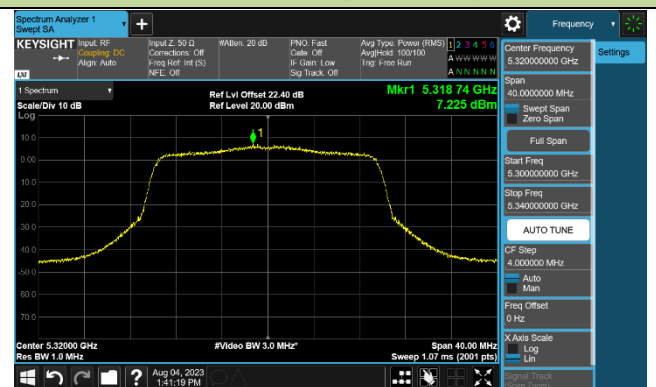
Channel 52 (5260MHz)



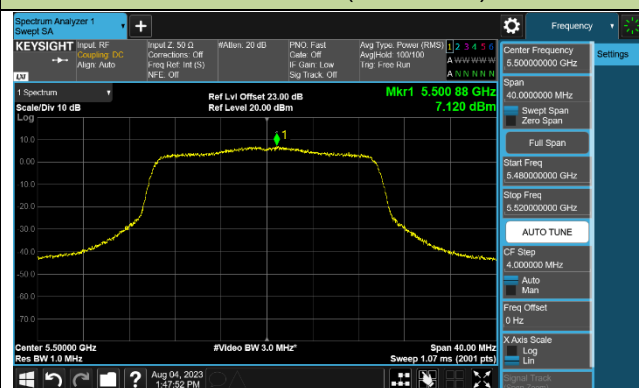
Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 116 (5580MHz)

