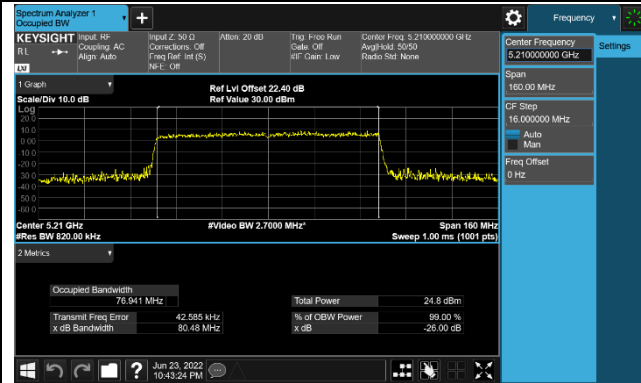
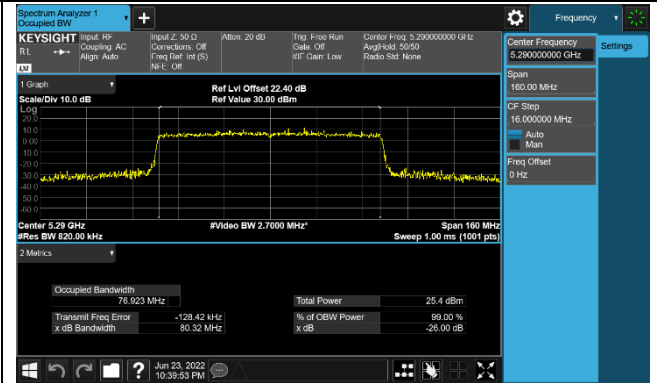


802.11ax-HE80 26dB Bandwidth & 99% Bandwidth

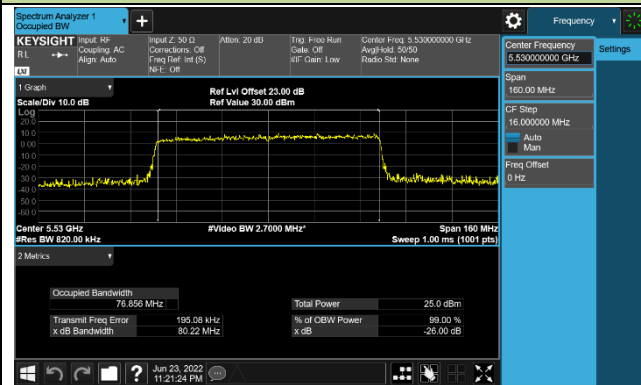
Channel 42 (5210MHz)



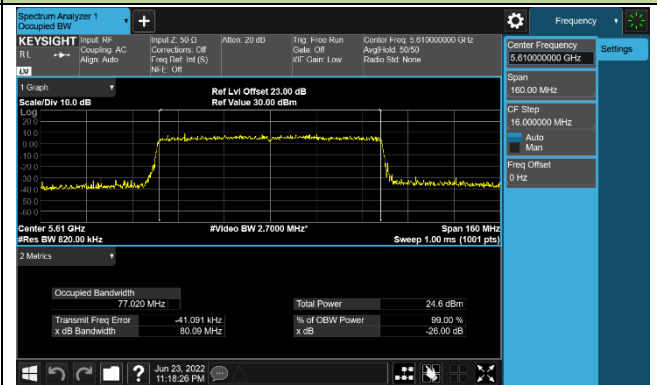
Channel 58 (5290MHz)



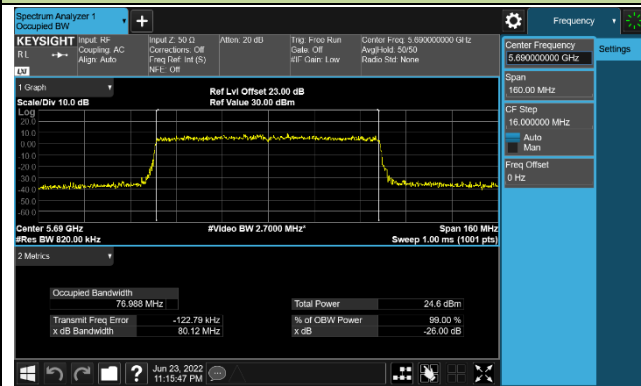
Channel 106 (5530MHz)



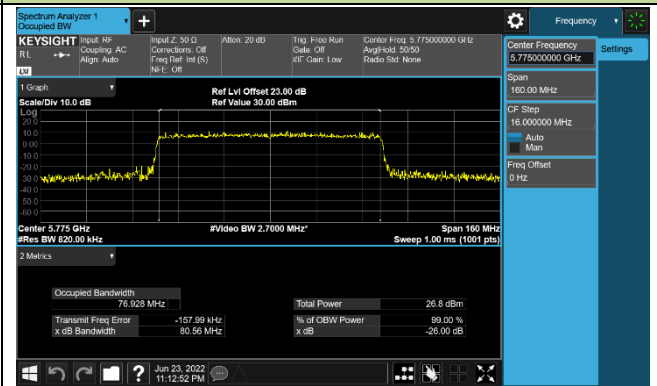
Channel 122 (5610MHz)



Channel 138 (5690MHz)

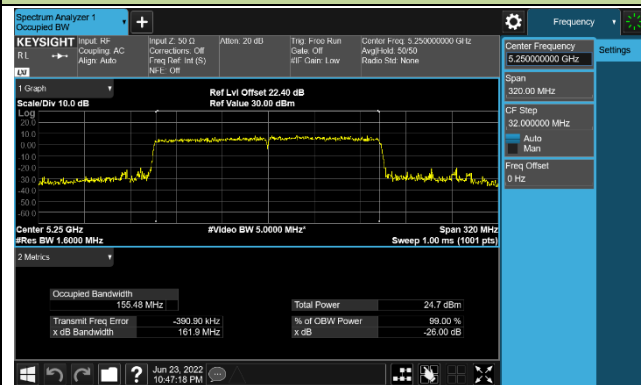


Channel 155 (5775MHz)

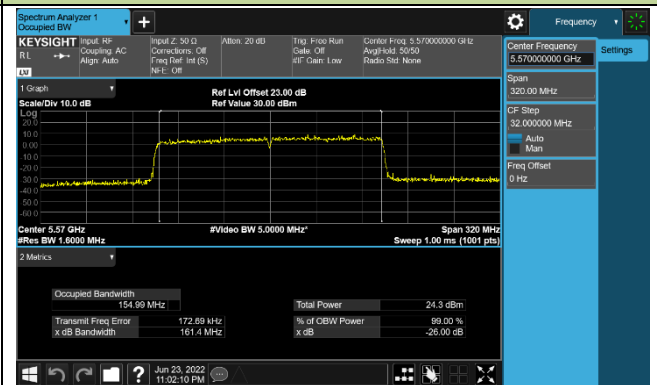


802.11ax-HE160 26dB Bandwidth & 99% Bandwidth

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.

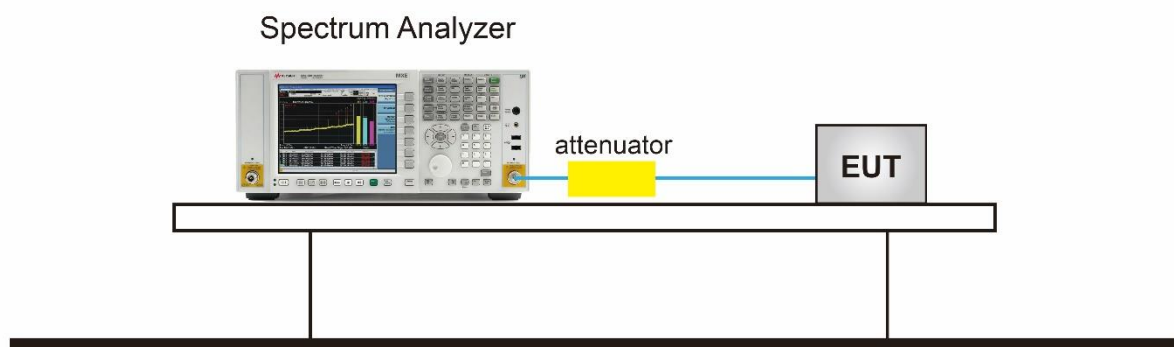
7.3.2. Test Procedure used

KDB 789033 D02v02r01- Section II) 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



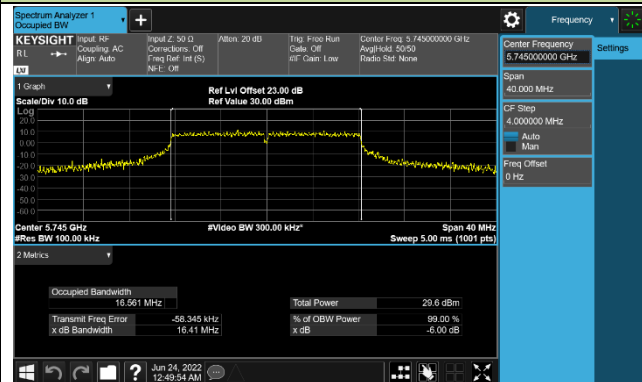
7.3.5. Test Result

Product	AX5400 Tri-Band Wi-Fi 6 Range Extender	Test Engineer	Owen
Test Site	SR5	Test Date	2022/6/23~2022/6/24

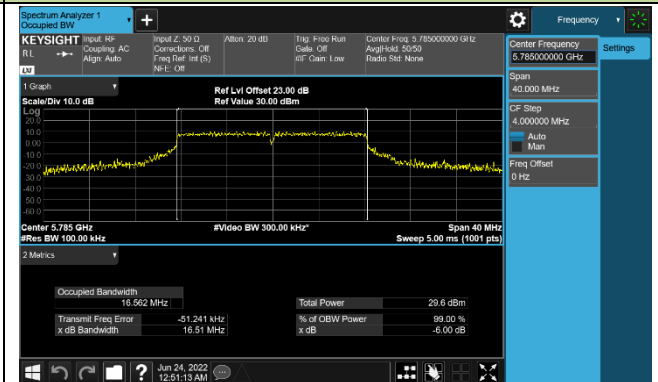
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 1						
802.11a	6Mbps	149	5745	16.41	≥ 0.5	Pass
802.11a	6Mbps	157	5785	16.51	≥ 0.5	Pass
802.11a	6Mbps	165	5825	16.52	≥ 0.5	Pass
802.11ac-VHT20	MCS0	149	5745	17.58	≥ 0.5	Pass
802.11ac-VHT20	MCS0	157	5785	17.57	≥ 0.5	Pass
802.11ac-VHT20	MCS0	165	5825	17.63	≥ 0.5	Pass
802.11ac-VHT40	MCS0	151	5755	36.38	≥ 0.5	Pass
802.11ac-VHT40	MCS0	159	5795	36.36	≥ 0.5	Pass
802.11ac-VHT80	MCS0	155	5775	76.35	≥ 0.5	Pass
802.11ax-HE20	MCS0	149	5745	18.53	≥ 0.5	Pass
802.11ax-HE20	MCS0	157	5785	18.73	≥ 0.5	Pass
802.11ax-HE20	MCS0	165	5825	18.71	≥ 0.5	Pass
802.11ax-HE40	MCS0	151	5755	36.29	≥ 0.5	Pass
802.11ax-HE40	MCS0	159	5795	35.74	≥ 0.5	Pass
802.11ax-HE80	MCS0	155	5775	76.02	≥ 0.5	Pass

802.11a 6dB Bandwidth

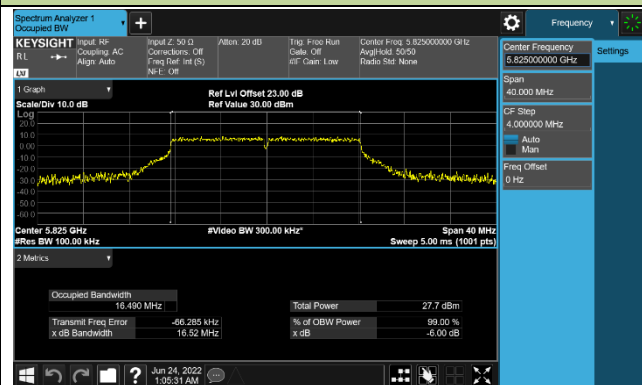
Channel 149 (5745MHz)



Channel 157 (5785MHz)

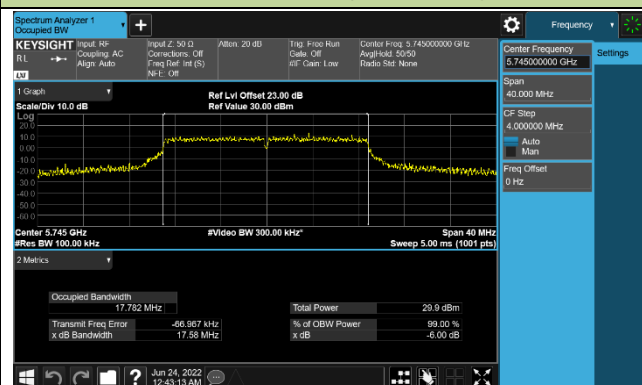


Channel 165 (5825MHz)

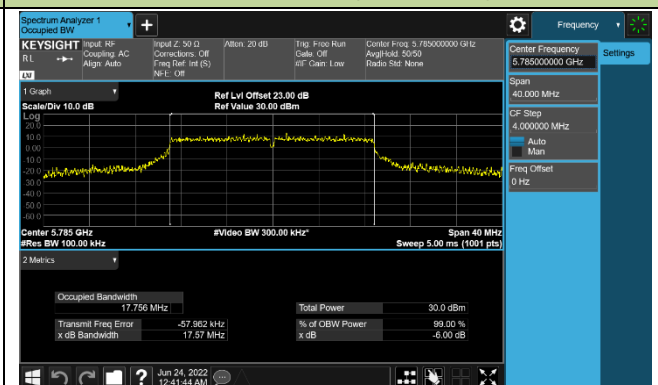


802.11ac-VHT20 6dB Bandwidth

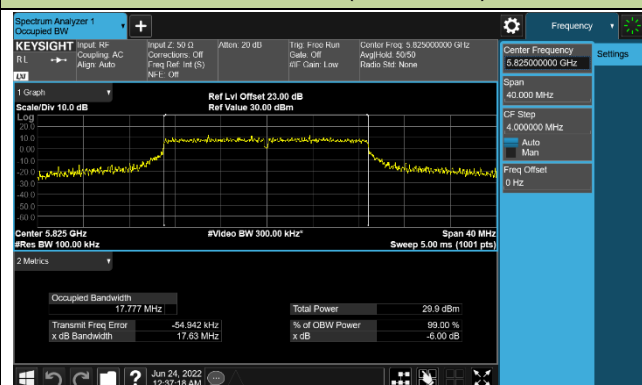
Channel 149 (5745MHz)



Channel 157 (5785MHz)

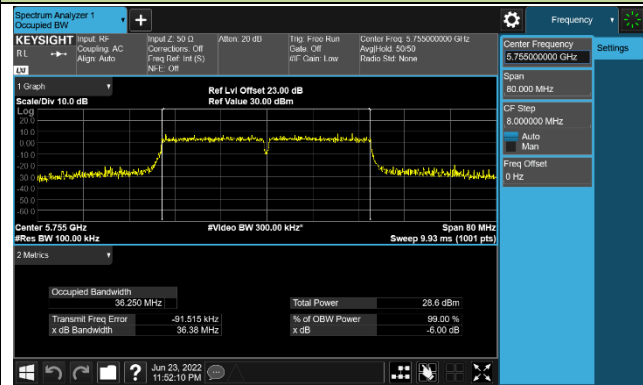


Channel 165 (5825MHz)

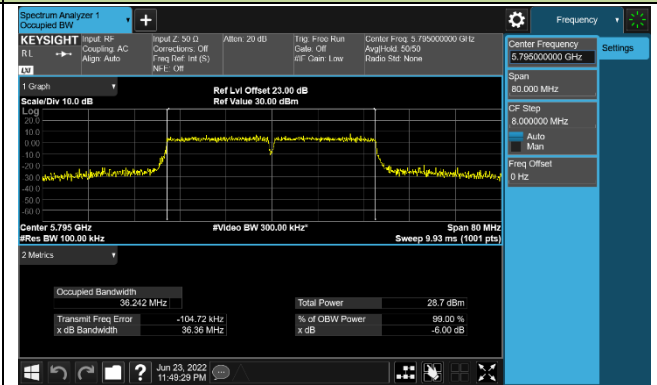


802.11ac-VHT40 6dB Bandwidth

Channel 151 (5755MHz)

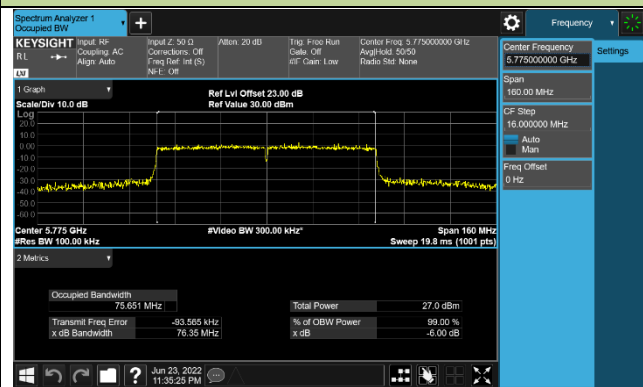


Channel 159 (5795MHz)



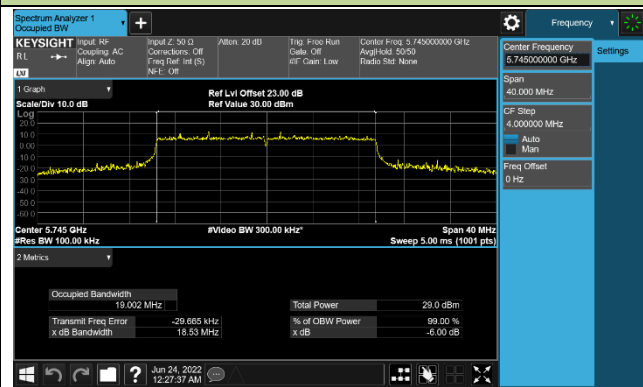
802.11ac-VHT80 6dB Bandwidth

Channel 155 (5775MHz)

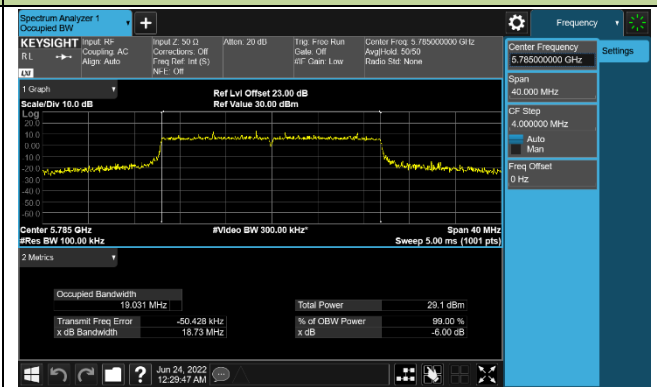


802.11ax-HE20 6dB Bandwidth

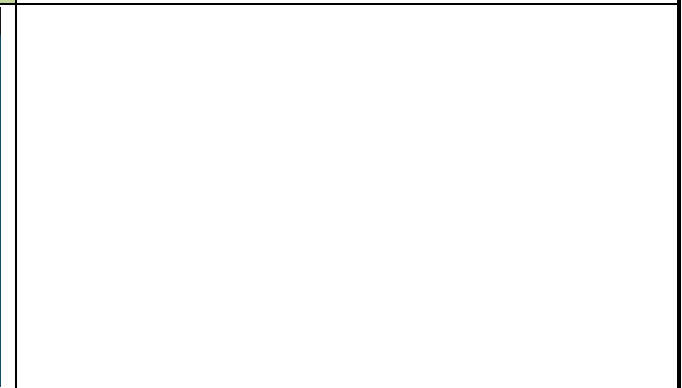
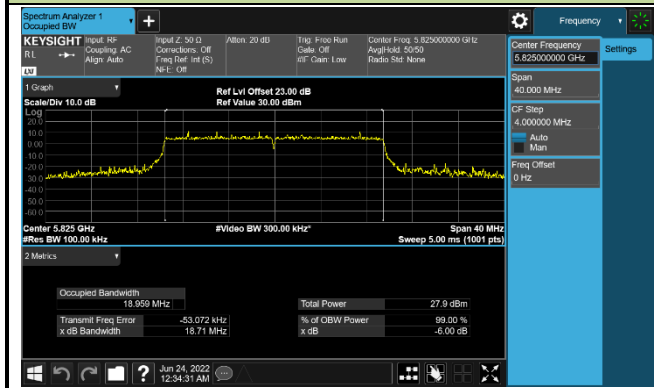
Channel 149 (5745MHz)



Channel 157 (5785MHz)

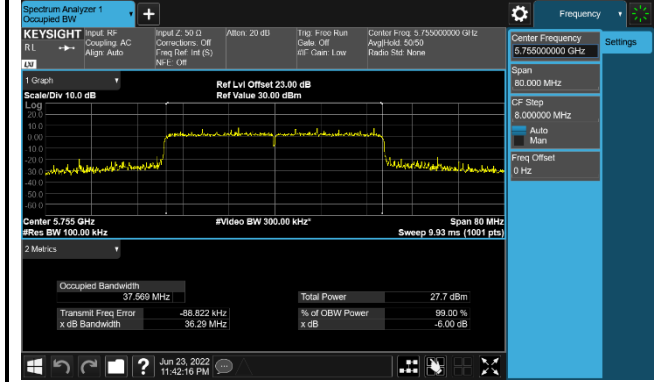


Channel 165 (5825MHz)

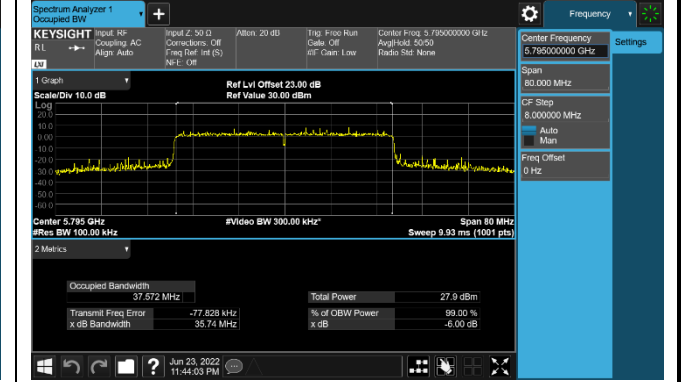


802.11ax-HE40 6dB Bandwidth

Channel 151 (5755MHz)

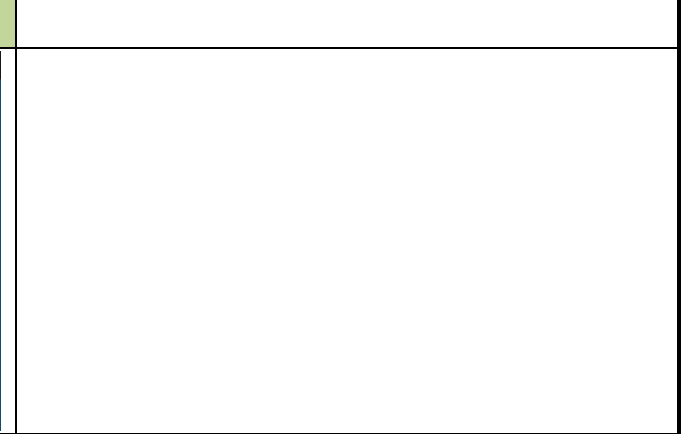
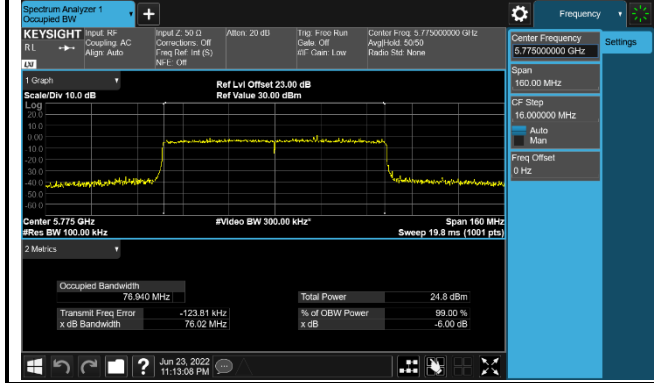


Channel 159 (5795MHz)



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.

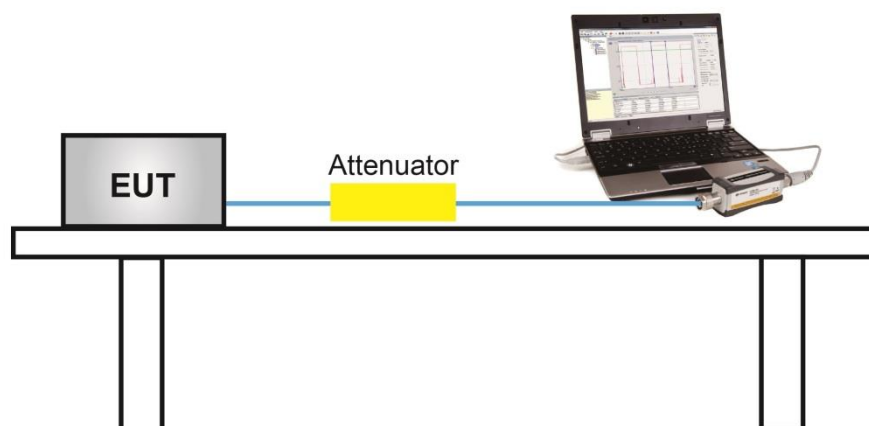
7.4.2. Test Procedure Used

KDB 789033D02v02r01- Section II)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	AX5400 Tri-Band Wi-Fi 6 Range Extender	Test Engineer	Owen
Test Site	SR5	Test Date	2022/6/22
Test Mode	CDD Mode		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)		Total Average Power (dBm)	Power Limit (dBm)	Result
				Ant 0	Ant 1			
11a	6Mbps	36	5180	22.89	23.32	26.12	≤ 30.00	Pass
11a	6Mbps	44	5220	24.24	24.56	27.41	≤ 30.00	Pass
11a	6Mbps	48	5240	24.25	24.67	27.48	≤ 30.00	Pass
11a	6Mbps	52	5260	20.12	21.30	23.76	≤ 23.98	Pass
11a	6Mbps	60	5300	20.19	21.42	23.86	≤ 23.98	Pass
11a	6Mbps	64	5320	19.99	21.11	23.60	≤ 23.98	Pass
11a	6Mbps	100	5500	20.34	20.77	23.57	≤ 23.98	Pass
11a	6Mbps	116	5580	20.31	20.75	23.55	≤ 23.98	Pass
11a	6Mbps	140	5700	20.45	20.79	23.63	≤ 23.98	Pass
11a	6Mbps	144	5720	19.67	19.34	22.52	≤ 22.93	Pass
11a	6Mbps	149	5745	25.51	24.57	28.08	≤ 30.00	Pass
11a	6Mbps	157	5785	25.37	25.38	28.39	≤ 30.00	Pass
11a	6Mbps	165	5825	25.26	25.37	28.33	≤ 30.00	Pass
11ac-VHT20	MCS0	36	5180	22.21	22.70	25.47	≤ 30.00	Pass
11ac-VHT20	MCS0	40	5220	23.93	24.30	27.13	≤ 30.00	Pass
11ac-VHT20	MCS0	48	5240	23.87	24.22	27.06	≤ 30.00	Pass
11ac-VHT20	MCS0	52	5260	20.24	21.22	23.77	≤ 23.98	Pass
11ac-VHT20	MCS0	60	5300	19.89	21.21	23.61	≤ 23.98	Pass
11ac-VHT20	MCS0	64	5320	19.97	20.97	23.51	≤ 23.98	Pass
11ac-VHT20	MCS0	100	5500	20.23	20.72	23.49	≤ 23.98	Pass
11ac-VHT20	MCS0	116	5580	20.19	20.69	23.46	≤ 23.98	Pass
11ac-VHT20	MCS0	140	5700	20.22	20.71	23.48	≤ 23.98	Pass
11ac-VHT20	MCS0	144	5720	19.78	19.43	22.62	≤ 22.92	Pass
11ac-VHT20	MCS0	149	5745	25.11	25.32	28.23	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	25.13	25.25	28.20	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	25.34	25.36	28.36	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)		Total Average Power (dBm)	Power Limit (dBm)	Result
				Ant 0	Ant 1			
11ac-VHT40	MCS0	38	5190	21.53	21.88	24.72	≤ 30.00	Pass
11ac-VHT40	MCS0	46	5230	23.94	24.24	27.10	≤ 30.00	Pass
11ac-VHT40	MCS0	54	5270	20.44	20.74	23.60	≤ 23.98	Pass
11ac-VHT40	MCS0	62	5310	20.45	20.78	23.63	≤ 23.98	Pass
11ac-VHT40	MCS0	102	5510	20.55	20.67	23.62	≤ 23.98	Pass
11ac-VHT40	MCS0	110	5550	20.53	20.70	23.63	≤ 23.98	Pass
11ac-VHT40	MCS0	134	5670	20.58	20.69	23.65	≤ 23.98	Pass
11ac-VHT40	MCS0	142	5710	20.53	20.71	23.63	≤ 23.98	Pass
11ac-VHT40	MCS0	151	5755	24.11	24.20	27.17	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	24.09	24.26	27.19	≤ 30.00	Pass
11ac-VHT80	MCS0	42	5210	20.75	21.68	24.25	≤ 30.00	Pass
11ac-VHT80	MCS0	58	5290	20.23	20.57	23.41	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	20.15	20.48	23.33	≤ 23.98	Pass
11ac-VHT80	MCS0	122	5610	20.32	20.69	23.52	≤ 23.98	Pass
11ac-VHT80	MCS0	138	5690	20.65	20.76	23.72	≤ 23.98	Pass
11ac-VHT80	MCS0	155	5775	23.25	23.65	26.46	≤ 30.00	Pass
11ac-VHT160	MCS0	50	5250	19.42	19.83	22.64	≤ 23.98	Pass
11ac-VHT160	MCS0	114	5570	19.82	19.44	22.64	≤ 23.98	Pass
11ax-HE20	MCS0	36	5180	21.90	22.28	25.10	≤ 30.00	Pass
11ax-HE20	MCS0	40	5220	24.02	24.29	27.17	≤ 30.00	Pass
11ax-HE20	MCS0	48	5240	24.15	24.35	27.26	≤ 30.00	Pass
11ax-HE20	MCS0	52	5260	19.93	21.15	23.59	≤ 23.98	Pass
11ax-HE20	MCS0	60	5300	19.87	21.11	23.54	≤ 23.98	Pass
11ax-HE20	MCS0	64	5320	19.95	21.27	23.67	≤ 23.98	Pass
11ax-HE20	MCS0	100	5500	20.37	20.83	23.62	≤ 23.98	Pass
11ax-HE20	MCS0	116	5580	20.42	20.80	23.62	≤ 23.98	Pass
11ax-HE20	MCS0	140	5700	20.43	20.89	23.68	≤ 23.98	Pass
11ax-HE20	MCS0	144	5720	19.96	19.35	22.68	≤ 22.92	Pass
11ax-HE20	MCS0	149	5745	25.02	25.14	28.09	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	25.09	25.23	28.17	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	25.12	25.21	28.18	≤ 30.00	Pass

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)		Total Average Power (dBm)	Power Limit (dBm)	Result
				Ant 0	Ant 1			
11ax-HE40	MCS0	38	5190	21.46	21.93	24.71	≤ 30.00	Pass
11ax-HE40	MCS0	46	5230	24.28	24.63	27.47	≤ 30.00	Pass
11ax-HE40	MCS0	54	5270	20.60	20.75	23.69	≤ 23.98	Pass
11ax-HE40	MCS0	62	5310	20.60	20.76	23.69	≤ 23.98	Pass
11ax-HE40	MCS0	102	5510	20.56	20.72	23.65	≤ 23.98	Pass
11ax-HE40	MCS0	110	5550	20.64	20.67	23.67	≤ 23.98	Pass
11ax-HE40	MCS0	134	5670	20.51	20.67	23.60	≤ 23.98	Pass
11ax-HE40	MCS0	142	5710	20.49	20.65	23.58	≤ 23.98	Pass
11ax-HE40	MCS0	151	5755	24.10	24.38	27.25	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	24.24	24.54	27.40	≤ 30.00	Pass
11ax-HE80	MCS0	42	5210	19.94	20.85	23.43	≤ 30.00	Pass
11ax-HE80	MCS0	58	5290	20.04	20.39	23.23	≤ 23.98	Pass
11ax-HE80	MCS0	106	5530	20.37	20.68	23.54	≤ 23.98	Pass
11ax-HE80	MCS0	122	5610	20.33	20.70	23.53	≤ 23.98	Pass
11ax-HE80	MCS0	138	5690	20.35	20.66	23.52	≤ 23.98	Pass
11ax-HE80	MCS0	155	5775	22.65	22.89	25.78	≤ 30.00	Pass
11ax-HE160	MCS0	50	5250	19.42	19.75	22.60	≤ 23.98	Pass
11ax-HE160	MCS0	114	5570	20.77	20.36	23.58	≤ 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 Channel 144 (5720MHz), Average Power Limit (dBm) = $11 + 10 \cdot \log (5\text{MHz} + \text{BW}_{26\text{dBc}}/2)$



Product	AX5400 Tri-Band Wi-Fi 6 Range Extender	Test Engineer	Owen
Test Site	SR5	Test Date	2022/6/22
Test Mode	Beamforming Mode		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)		Total Average Power (dBm)	Power Limit (dBm)	Result
				Ant 0	Ant 1			
11ac-VHT20	MCS0	36	5180	22.21	22.70	25.47	≤ 29.99	Pass
11ac-VHT20	MCS0	40	5220	23.93	24.30	27.13	≤ 29.99	Pass
11ac-VHT20	MCS0	48	5240	23.87	24.22	27.06	≤ 29.99	Pass
11ac-VHT20	MCS0	52	5260	20.24	21.22	23.77	≤ 23.97	Pass
11ac-VHT20	MCS0	60	5300	19.89	21.21	23.61	≤ 23.97	Pass
11ac-VHT20	MCS0	64	5320	19.97	20.97	23.51	≤ 23.97	Pass
11ac-VHT20	MCS0	100	5500	20.23	20.72	23.49	≤ 23.97	Pass
11ac-VHT20	MCS0	116	5580	20.19	20.69	23.46	≤ 23.97	Pass
11ac-VHT20	MCS0	140	5700	20.22	20.71	23.48	≤ 23.97	Pass
11ac-VHT20	MCS0	144	5720	19.78	19.43	22.62	≤ 22.91	Pass
11ac-VHT20	MCS0	149	5745	25.11	25.32	28.23	≤ 29.99	Pass
11ac-VHT20	MCS0	157	5785	25.13	25.25	28.20	≤ 29.99	Pass
11ac-VHT20	MCS0	165	5825	25.34	25.36	28.36	≤ 29.99	Pass
11ac-VHT40	MCS0	38	5190	21.53	21.88	24.72	≤ 29.99	Pass
11ac-VHT40	MCS0	46	5230	23.94	24.24	27.10	≤ 29.99	Pass
11ac-VHT40	MCS0	54	5270	20.44	20.74	23.60	≤ 23.97	Pass
11ac-VHT40	MCS0	62	5310	20.45	20.78	23.63	≤ 23.97	Pass
11ac-VHT40	MCS0	102	5510	20.55	20.67	23.62	≤ 23.97	Pass
11ac-VHT40	MCS0	110	5550	20.53	20.70	23.63	≤ 23.97	Pass
11ac-VHT40	MCS0	134	5670	20.58	20.69	23.65	≤ 23.97	Pass
11ac-VHT40	MCS0	142	5710	20.53	20.71	23.63	≤ 23.97	Pass
11ac-VHT40	MCS0	151	5755	24.11	24.20	27.17	≤ 29.99	Pass
11ac-VHT40	MCS0	159	5795	24.09	24.26	27.19	≤ 29.99	Pass
11ac-VHT80	MCS0	42	5210	20.75	21.68	24.25	≤ 29.99	Pass
11ac-VHT80	MCS0	58	5290	20.23	20.57	23.41	≤ 23.97	Pass
11ac-VHT80	MCS0	106	5530	20.15	20.48	23.33	≤ 23.97	Pass
11ac-VHT80	MCS0	122	5610	20.32	20.69	23.52	≤ 23.97	Pass
11ac-VHT80	MCS0	138	5690	20.65	20.76	23.72	≤ 23.97	Pass
11ac-VHT80	MCS0	155	5775	23.25	23.65	26.46	≤ 29.99	Pass



Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Average Power (dBm)		Total Average Power (dBm)	Power Limit (dBm)	Result
				Ant 0	Ant 1			
11ac-VHT160	MCS0	50	5250	19.42	19.83	22.64	≤ 23.97	Pass
11ac-VHT160	MCS0	114	5570	19.82	19.44	22.64	≤ 23.97	Pass
11ax-HE20	MCS0	36	5180	21.90	22.28	25.10	≤ 29.99	Pass
11ax-HE20	MCS0	40	5220	24.02	24.29	27.17	≤ 29.99	Pass
11ax-HE20	MCS0	48	5240	24.15	24.35	27.26	≤ 29.99	Pass
11ax-HE20	MCS0	52	5260	19.93	21.15	23.59	≤ 23.97	Pass
11ax-HE20	MCS0	60	5300	19.87	21.11	23.54	≤ 23.97	Pass
11ax-HE20	MCS0	64	5320	19.95	21.27	23.67	≤ 23.97	Pass
11ax-HE20	MCS0	100	5500	20.37	20.83	23.62	≤ 23.97	Pass
11ax-HE20	MCS0	116	5580	20.42	20.80	23.62	≤ 23.97	Pass
11ax-HE20	MCS0	140	5700	20.43	20.89	23.68	≤ 23.97	Pass
11ax-HE20	MCS0	144	5720	19.96	19.35	22.68	≤ 22.91	Pass
11ax-HE20	MCS0	149	5745	25.02	25.14	28.09	≤ 29.99	Pass
11ax-HE20	MCS0	157	5785	25.09	25.23	28.17	≤ 29.99	Pass
11ax-HE20	MCS0	165	5825	25.12	25.21	28.18	≤ 29.99	Pass
11ax-HE40	MCS0	38	5190	21.46	21.93	24.71	≤ 29.99	Pass
11ax-HE40	MCS0	46	5230	24.28	24.63	27.47	≤ 29.99	Pass
11ax-HE40	MCS0	54	5270	20.60	20.75	23.69	≤ 23.97	Pass
11ax-HE40	MCS0	62	5310	20.60	20.76	23.69	≤ 23.97	Pass
11ax-HE40	MCS0	102	5510	20.56	20.72	23.65	≤ 23.97	Pass
11ax-HE40	MCS0	110	5550	20.64	20.67	23.67	≤ 23.97	Pass
11ax-HE40	MCS0	134	5670	20.51	20.67	23.60	≤ 23.97	Pass
11ax-HE40	MCS0	142	5710	20.49	20.65	23.58	≤ 23.97	Pass
11ax-HE40	MCS0	151	5755	24.10	24.38	27.25	≤ 29.99	Pass
11ax-HE40	MCS0	159	5795	24.24	24.54	27.40	≤ 29.99	Pass
11ax-HE80	MCS0	42	5210	19.94	20.85	23.43	≤ 29.99	Pass
11ax-HE80	MCS0	58	5290	20.04	20.39	23.23	≤ 23.97	Pass
11ax-HE80	MCS0	106	5530	20.37	20.68	23.54	≤ 23.97	Pass
11ax-HE80	MCS0	122	5610	20.33	20.70	23.53	≤ 23.97	Pass
11ax-HE80	MCS0	138	5690	20.35	20.66	23.52	≤ 23.97	Pass
11ax-HE80	MCS0	155	5775	22.65	22.89	25.78	≤ 29.99	Pass
11ax-HE160	MCS0	50	5250	19.42	19.75	22.60	≤ 23.97	Pass
11ax-HE160	MCS0	114	5570	20.77	20.36	23.58	≤ 23.97	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 and 5725 - 5850MHz Bands: Average Power Limit (dBm) = 30 - (6.01- 6) = 29.99dBm

For 5250 - 5350MHz and 5470 - 5725MHz Band: Average Power Limit (dBm) = 23.98 - (6.01- 6) = 23.97dBm.

For Channel 144 (5720MHz), Average Power Limit (dBm) = $11 + 10 \cdot \log(5\text{MHz} + \text{BW}_{26\text{dBc}}/2) - (6.01- 6)$

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.

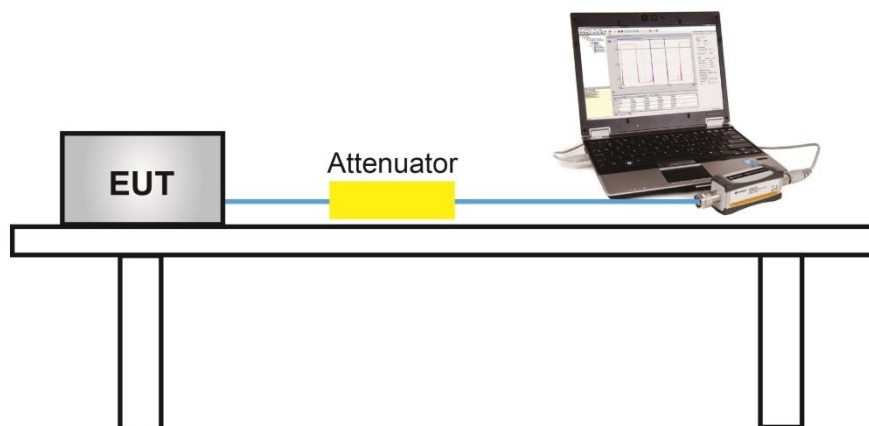
7.5.2. Test Procedure Used

KDB 789033 D02v02r01- Section II)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.

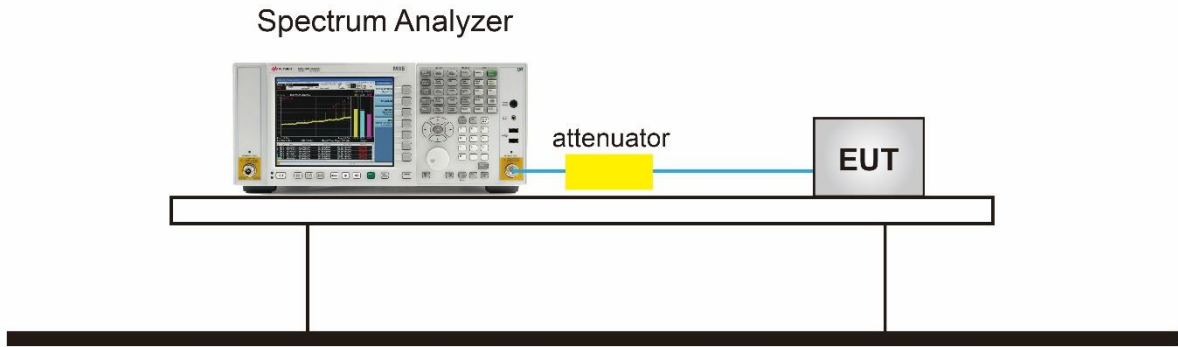
7.6.2. Test Procedure Used

KDB 789033 D02v02r01-Section II)F

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	AX5400 Tri-Band Wi-Fi 6 Range Extender	Test Engineer	Owen
Test Site	SR5	Test Date	2022/6/22~2022/6/28
Mode	Power Spectral Density (U-NII- 1/-2a / -2c) CDD Mode		

Test Mode	Data Rate /MCS	Ch. No.	Freq. (MHz)	PSD (dBm/MHz)		Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
				Ant 0	Ant 1				
11a	6Mbps	36	5180	10.681	10.993	98.02	13.937	≤ 16.99	Pass
11a	6Mbps	44	5220	12.123	12.354	98.02	15.337	≤ 16.99	Pass
11a	6Mbps	48	5240	12.310	12.890	98.02	15.707	≤ 16.99	Pass
11a	6Mbps	52	5260	6.804	8.165	98.02	10.635	≤ 10.99	Pass
11a	6Mbps	60	5300	6.901	7.933	98.02	10.545	≤ 10.99	Pass
11a	6Mbps	64	5320	6.955	7.888	98.02	10.544	≤ 10.99	Pass
11a	6Mbps	100	5500	7.232	7.949	98.02	10.702	≤ 10.99	Pass
11a	6Mbps	116	5580	7.011	8.159	98.02	10.720	≤ 10.99	Pass
11a	6Mbps	140	5700	7.825	7.362	98.02	10.697	≤ 10.99	Pass
11a	6Mbps	144	5720	7.746	7.077	98.02	10.522	≤ 10.99	Pass
11ac-VHT20	MCS0	36	5180	10.046	10.059	98.89	13.111	≤ 16.99	Pass
11ac-VHT20	MCS0	40	5220	11.989	12.557	98.89	15.341	≤ 16.99	Pass
11ac-VHT20	MCS0	48	5240	11.968	13.129	98.89	15.646	≤ 16.99	Pass
11ac-VHT20	MCS0	52	5260	8.295	7.087	98.89	10.792	≤ 10.99	Pass
11ac-VHT20	MCS0	60	5300	7.027	8.326	98.89	10.784	≤ 10.99	Pass
11ac-VHT20	MCS0	64	5320	7.062	8.119	98.89	10.681	≤ 10.99	Pass
11ac-VHT20	MCS0	100	5500	7.087	7.931	98.89	10.588	≤ 10.99	Pass
11ac-VHT20	MCS0	116	5580	7.072	8.236	98.89	10.752	≤ 10.99	Pass
11ac-VHT20	MCS0	140	5700	7.932	7.273	98.89	10.674	≤ 10.99	Pass
11ac-VHT20	MCS0	144	5720	7.566	7.271	98.89	10.480	≤ 10.99	Pass
11ac-VHT40	MCS0	38	5190	6.057	6.457	98.96	9.317	≤ 16.99	Pass
11ac-VHT40	MCS0	46	5230	8.716	9.469	98.96	12.165	≤ 16.99	Pass
11ac-VHT40	MCS0	54	5270	5.576	5.906	98.96	8.800	≤ 10.99	Pass
11ac-VHT40	MCS0	62	5310	5.525	5.506	98.96	8.571	≤ 10.99	Pass
11ac-VHT40	MCS0	102	5510	5.459	5.709	98.96	8.642	≤ 10.99	Pass
11ac-VHT40	MCS0	110	5550	6.035	6.833	98.96	9.508	≤ 10.99	Pass
11ac-VHT40	MCS0	134	5670	5.657	5.690	98.96	8.729	≤ 10.99	Pass
11ac-VHT40	MCS0	142	5710	5.424	5.380	98.96	8.458	≤ 10.99	Pass

Test Mode	Data Rate /MCS	Ch. No.	Freq. (MHz)	PSD (dBm/MHz)		Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
				Ant 0	Ant 1				
11ac-VHT80	MCS0	42	5210	2.761	3.699	98.09	6.349	≤ 16.99	Pass
11ac-VHT80	MCS0	58	5290	2.635	3.002	98.09	5.916	≤ 10.99	Pass
11ac-VHT80	MCS0	106	5530	3.059	3.812	98.09	6.546	≤ 10.99	Pass
11ac-VHT80	MCS0	122	5610	2.708	2.430	98.09	5.665	≤ 10.99	Pass
11ac-VHT80	MCS0	138	5690	2.668	2.264	98.09	5.565	≤ 10.99	Pass
11ac-VHT160	MCS0	50	5250	-1.424	-0.496	98.57	2.138	≤ 10.99	Pass
11ac-VHT160	MCS0	114	5570	-0.282	-0.806	98.57	2.537	≤ 10.99	Pass
11ax-HE20	MCS0	36	5180	9.381	9.562	98.77	12.536	≤ 16.99	Pass
11ax-HE20	MCS0	44	5220	12.046	12.145	98.77	15.160	≤ 16.99	Pass
11ax-HE20	MCS0	48	5240	11.770	12.377	98.77	15.148	≤ 16.99	Pass
11ax-HE20	MCS0	52	5260	7.131	8.172	98.77	10.747	≤ 10.99	Pass
11ax-HE20	MCS0	60	5300	7.162	8.108	98.77	10.725	≤ 10.99	Pass
11ax-HE20	MCS0	64	5320	6.889	7.956	98.77	10.519	≤ 10.99	Pass
11ax-HE20	MCS0	100	5500	6.874	8.119	98.77	10.605	≤ 10.99	Pass
11ax-HE20	MCS0	116	5580	7.105	8.243	98.77	10.775	≤ 10.99	Pass
11ax-HE20	MCS0	140	5700	7.899	7.198	98.77	10.627	≤ 10.99	Pass
11ax-HE20	MCS0	144	5720	7.986	7.228	98.77	10.688	≤ 10.99	Pass
11ax-HE40	MCS0	38	5190	6.156	6.629	98.51	9.474	≤ 16.99	Pass
11ax-HE40	MCS0	46	5230	8.828	9.454	98.51	12.228	≤ 16.99	Pass
11ax-HE40	MCS0	54	5270	5.875	6.390	98.51	9.216	≤ 10.99	Pass
11ax-HE40	MCS0	62	5310	5.958	6.033	98.51	9.071	≤ 10.99	Pass
11ax-HE40	MCS0	102	5510	5.411	5.532	98.51	8.547	≤ 10.99	Pass
11ax-HE40	MCS0	110	5550	6.331	6.841	98.51	9.669	≤ 10.99	Pass
11ax-HE40	MCS0	134	5670	5.700	5.797	98.51	8.824	≤ 10.99	Pass
11ax-HE40	MCS0	142	5710	5.389	5.759	98.51	8.653	≤ 10.99	Pass
11ax-HE80	MCS0	42	5210	1.838	2.689	98.09	5.378	≤ 16.99	Pass
11ax-HE80	MCS0	58	5290	3.007	3.323	98.09	6.262	≤ 10.99	Pass
11ax-HE80	MCS0	106	5530	3.667	3.343	98.09	6.602	≤ 10.99	Pass
11ax-HE80	MCS0	122	5610	2.671	2.656	98.09	5.758	≤ 10.99	Pass
11ax-HE80	MCS0	122	5690	2.779	2.605	98.09	5.787	≤ 10.99	Pass
11ax-HE160	MCS0	50	5250	0.304	0.603	98.57	3.529	≤ 10.99	Pass
11ax-HE160	MCS0	114	5570	0.811	0.056	98.57	3.523	≤ 10.99	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) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + 10 \cdot \log (1/\text{Duty})$

Cycle)(dBm/MHz).

Note 2:

For 5150 - 5250MHz Band: PSD Limit (dBm/MHz) = 17 - (6.01 - 6) = 16.99dBm/MHz.

For 5250 - 5350MHz and 5470 - 5725MHz Band: PSD Limit (dBm/MHz) = 11 - (6.01 - 6) = 10.99dBm/MHz.

Product	AX5400 Tri-Band Wi-Fi 6 Range Extender	Test Engineer	Owen
Test Site	SR5	Test Date	2022/6/22~2022/6/28
Test Item	Power Spectral Density (U-NII-3) CDD Mode		

Test Mode	Data Rate /MCS	Ch. No.	Freq. (MHz)	PSD (dBm/510kHz)		Duty Cycle (%)	Total PSD (dBm/510kHz)	PSD Limit (dBm/500kHz)	Result
				Ant 0	Ant 1				
11a	6Mbps	149	5745	10.951	10.789	98.02	13.968	≤ 29.99	Pass
11a	6Mbps	157	5785	10.995	10.493	98.02	13.848	≤ 29.99	Pass
11a	6Mbps	165	5825	10.810	10.420	98.02	13.717	≤ 29.99	Pass
11ac-VHT20	MCS0	149	5745	10.529	10.439	98.89	13.543	≤ 29.99	Pass
11ac-VHT20	MCS0	157	5785	10.746	10.529	98.89	13.698	≤ 29.99	Pass
11ac-VHT20	MCS0	165	5825	10.512	10.423	98.89	13.527	≤ 29.99	Pass
11ac-VHT40	MCS0	151	5755	6.931	6.456	98.96	9.756	≤ 29.99	Pass
11ac-VHT40	MCS0	159	5795	6.772	6.607	98.96	9.746	≤ 29.99	Pass
11ac-VHT80	MCS0	155	5775	2.665	2.303	98.09	5.582	≤ 29.99	Pass
11ax-HE20	MCS0	149	5745	10.300	10.108	98.77	13.269	≤ 29.99	Pass
11ax-HE20	MCS0	157	5785	10.486	10.249	98.77	13.433	≤ 29.99	Pass
11ax-HE20	MCS0	165	5825	10.363	10.042	98.77	13.270	≤ 29.99	Pass
11ax-HE40	MCS0	151	5755	6.758	6.923	98.51	9.917	≤ 29.99	Pass
11ax-HE40	MCS0	159	5795	6.918	6.366	98.51	9.726	≤ 29.99	Pass
11ax-HE80	MCS0	155	5775	1.757	1.917	98.09	4.932	≤ 29.99	Pass

Note 1:

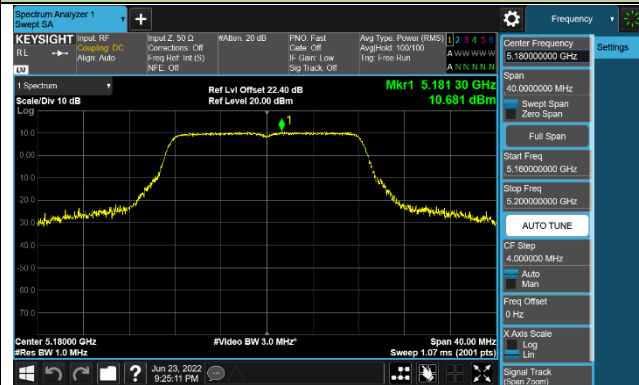
When EUT duty cycle ≥ 98%, the total PSD (dBm/510kHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ (dBm/510kHz).

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) + $10 \cdot \log (1/\text{Duty Cycle})$.

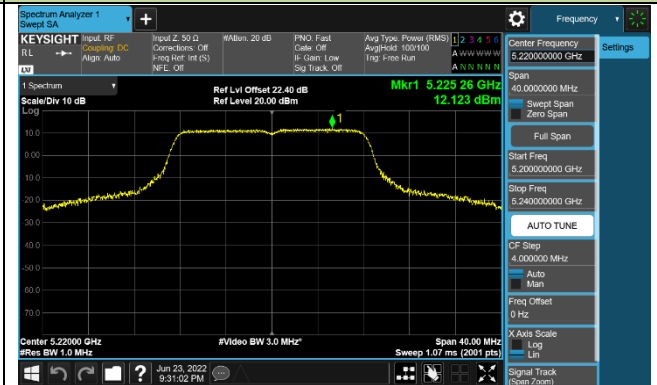
Note 2: PSD Limit (dBm/500kHz) = 30 - (6.01 - 6) = 29.99dBm/500kHz.

802.11a Power Spectral Density - Ant 0

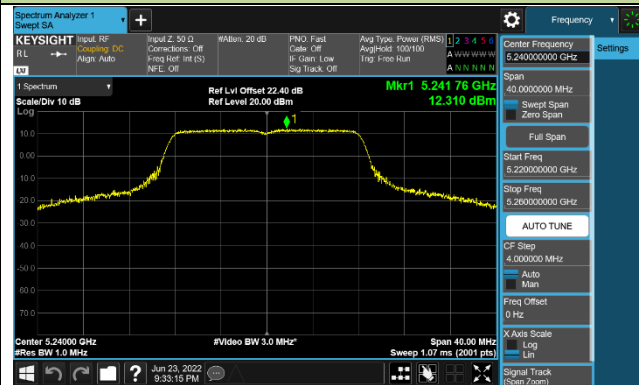
Channel 36 (5180MHz)



Channel 44 (5220MHz)



Channel 48 (5240MHz)



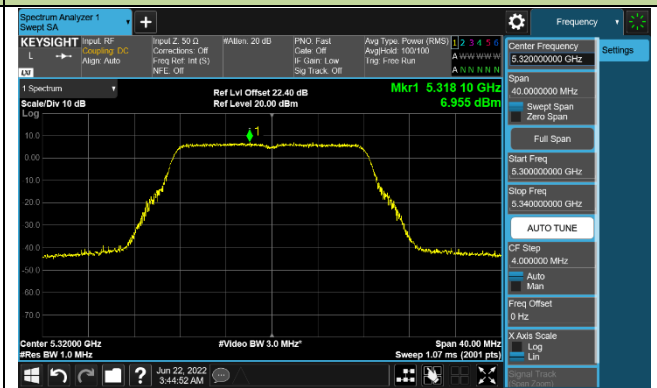
Channel 52 (5260MHz)



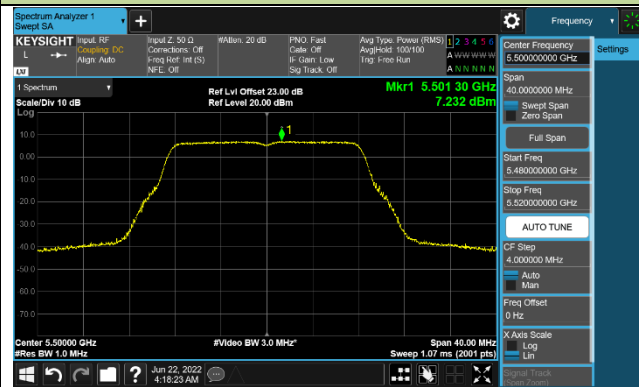
Channel 60 (5300MHz)



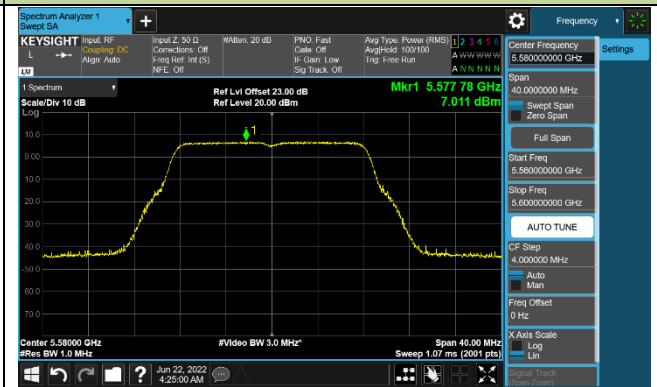
Channel 64 (5320MHz)

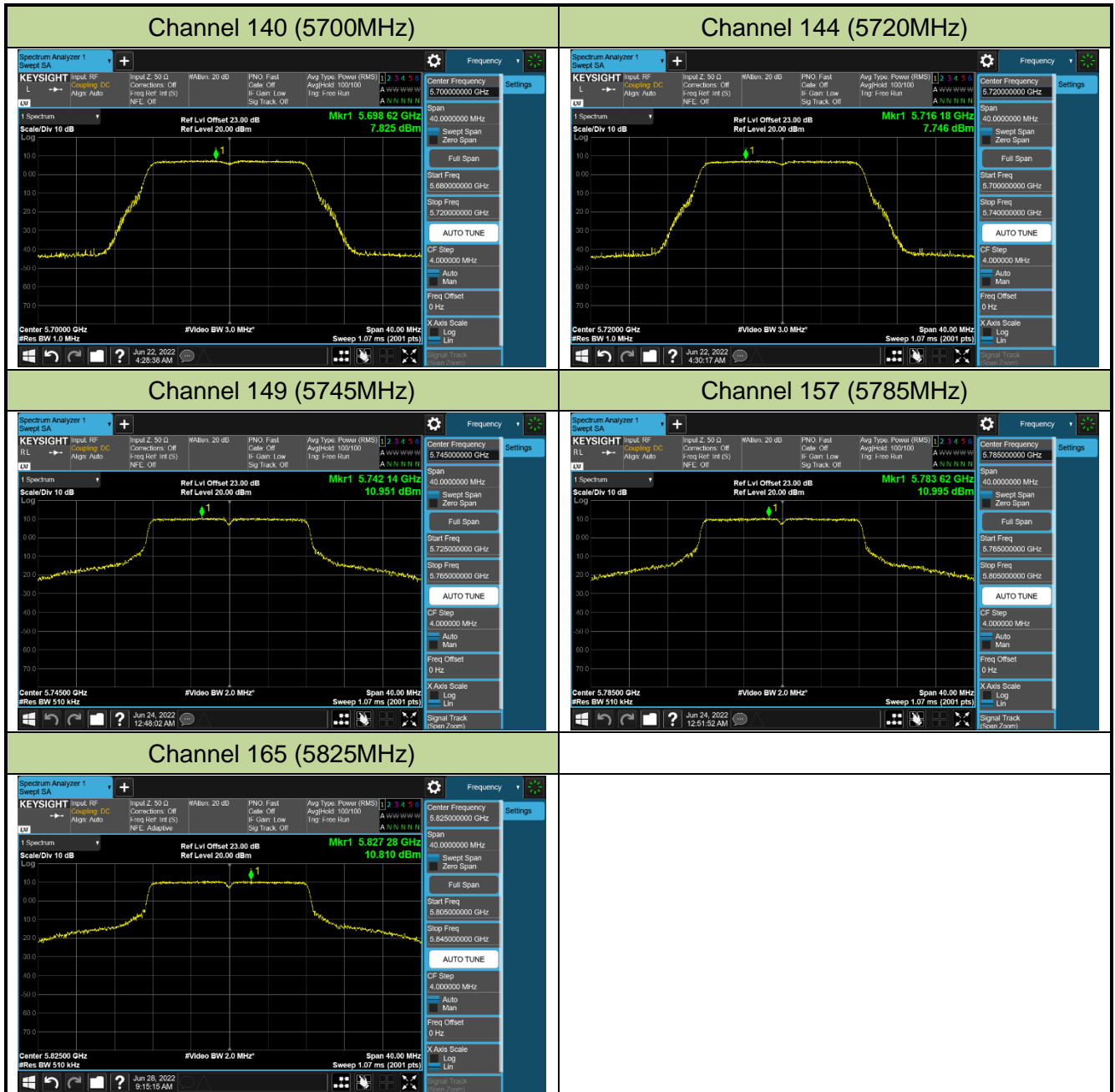


Channel 100 (5500MHz)



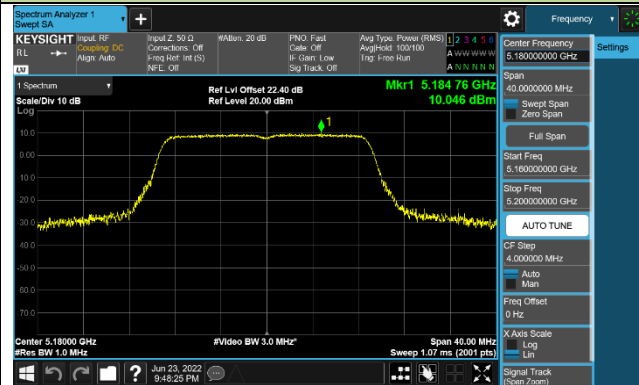
Channel 116 (5580MHz)



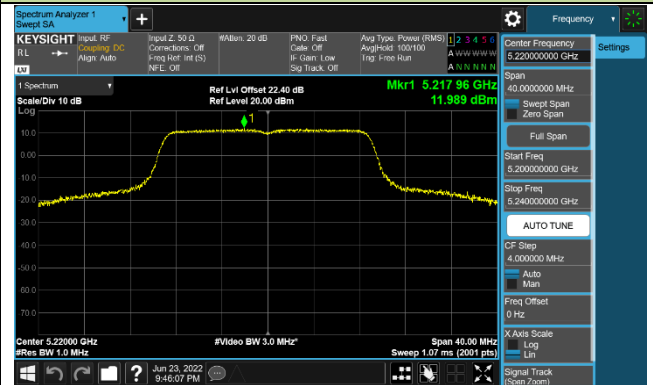


802.11ac-VHT20 Power Spectral Density - Ant 0

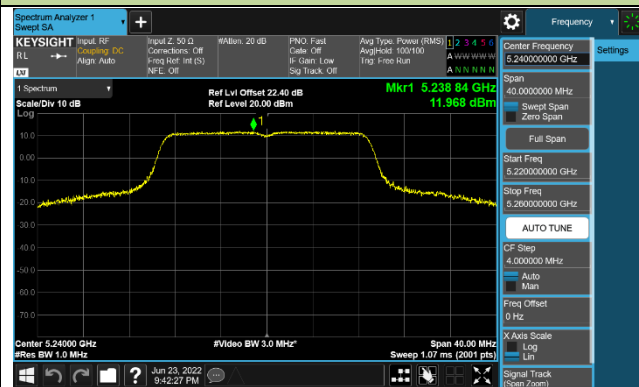
Channel 36 (5180MHz)



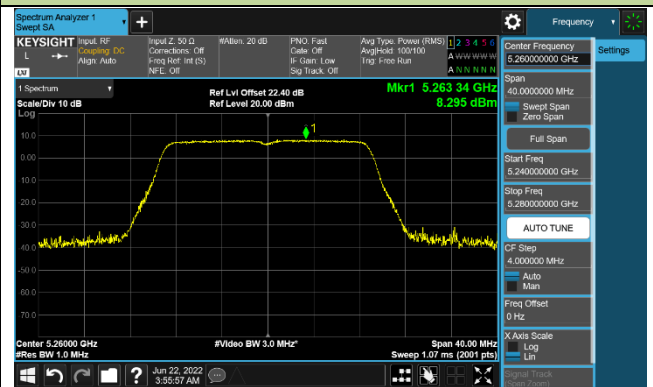
Channel 44 (5220MHz)



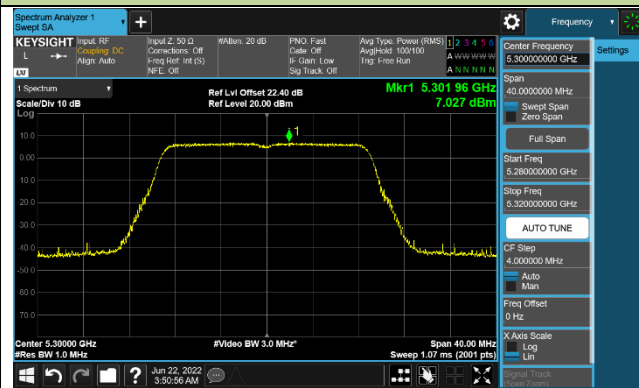
Channel 48 (5240MHz)



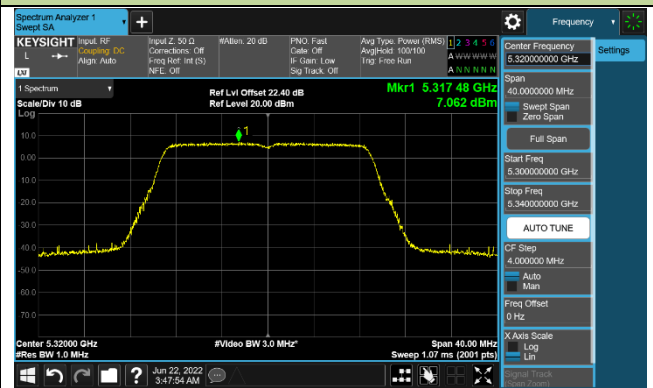
Channel 52 (5260MHz)



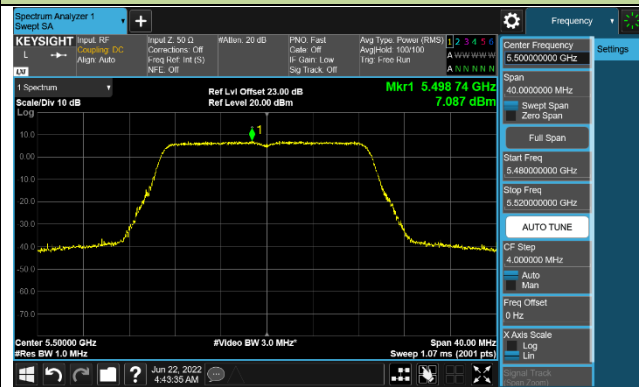
Channel 60 (5300MHz)



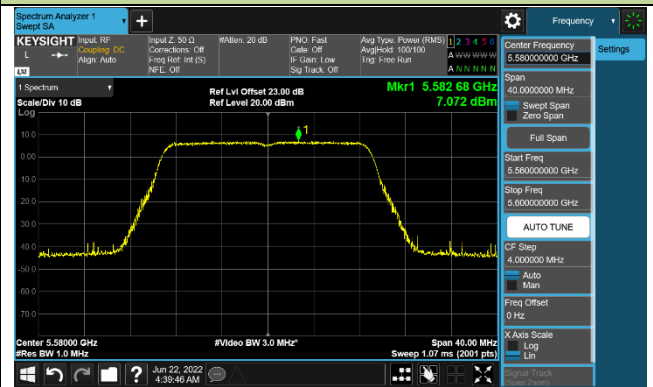
Channel 64 (5320MHz)

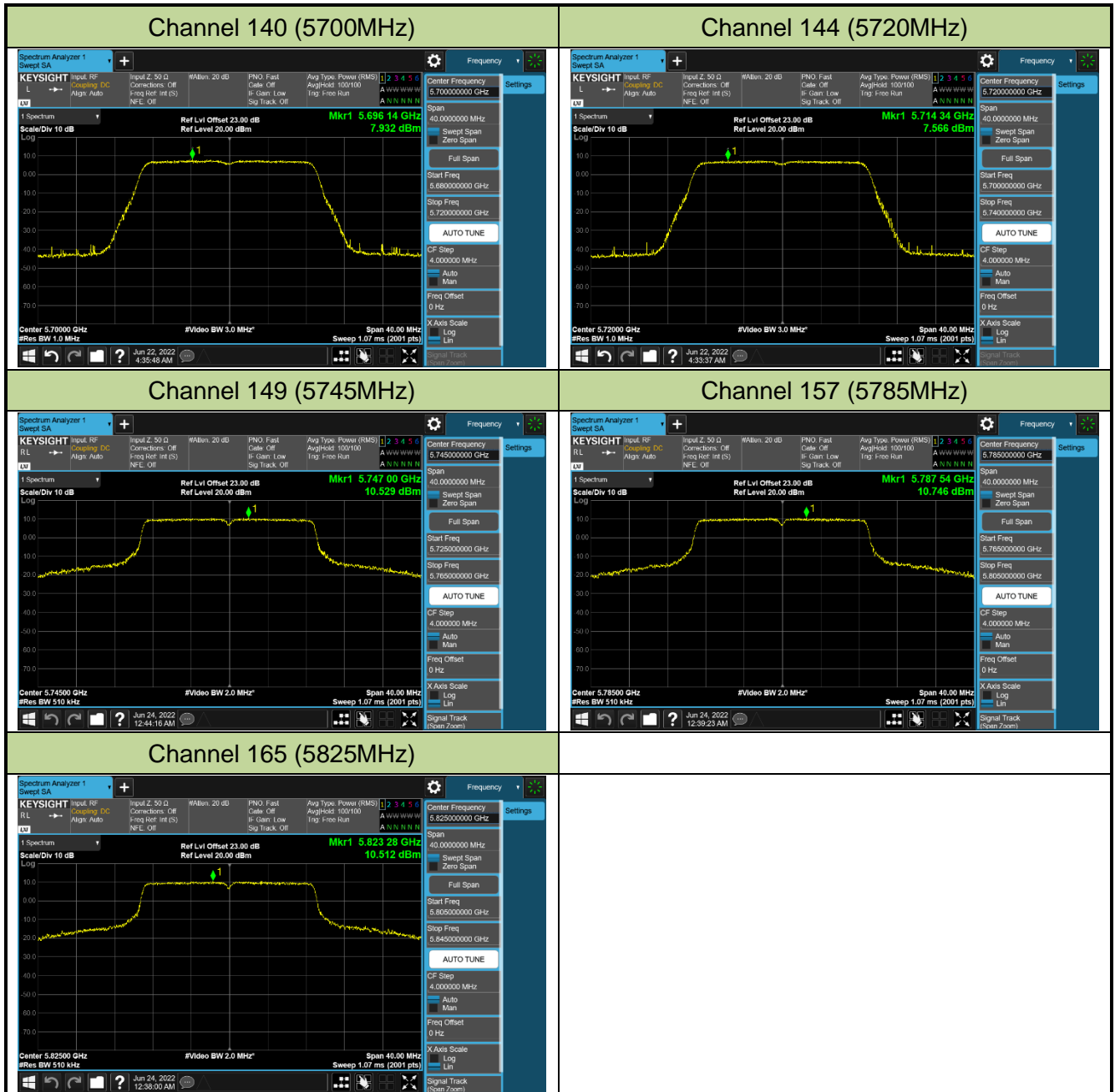


Channel 100 (5500MHz)



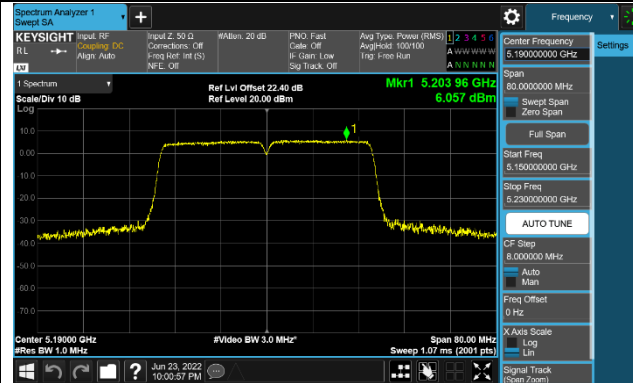
Channel 116 (5580MHz)



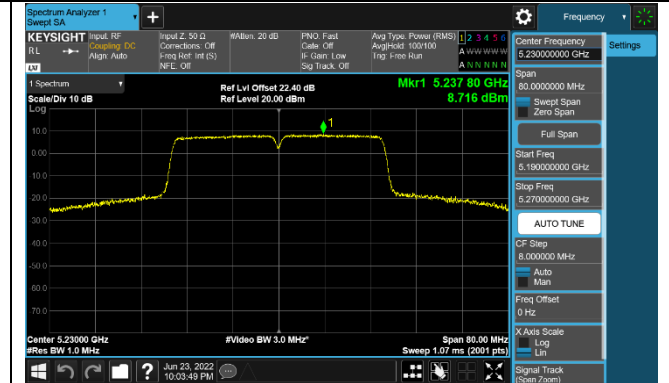


802.11ac-VHT40 Power Spectral Density - Ant 0

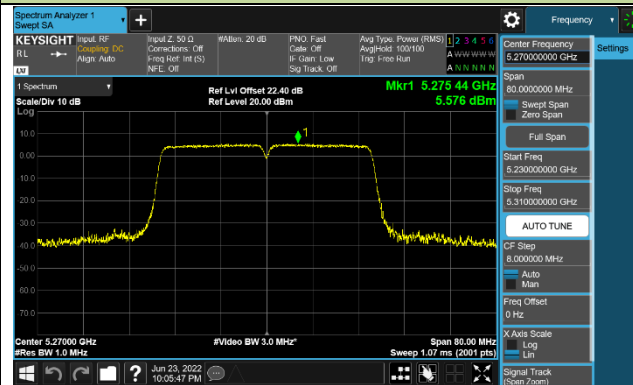
Channel 38 (5190MHz)



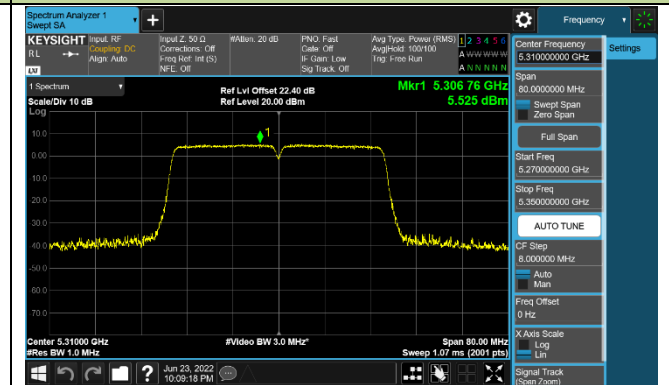
Channel 46 (5230MHz)



Channel 54 (5270MHz)



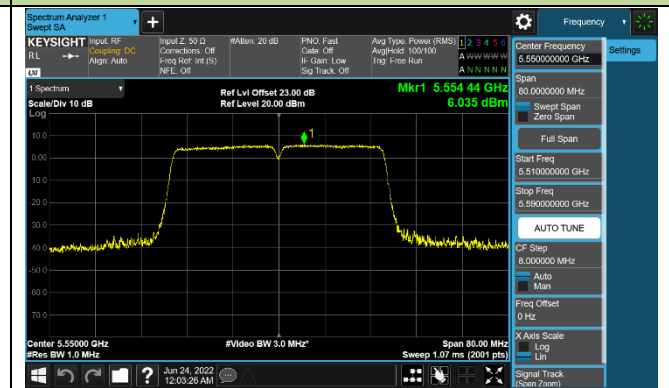
Channel 62 (5310MHz)



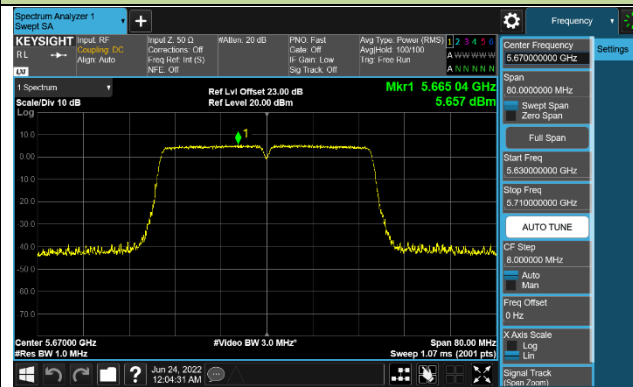
Channel 102 (5510MHz)



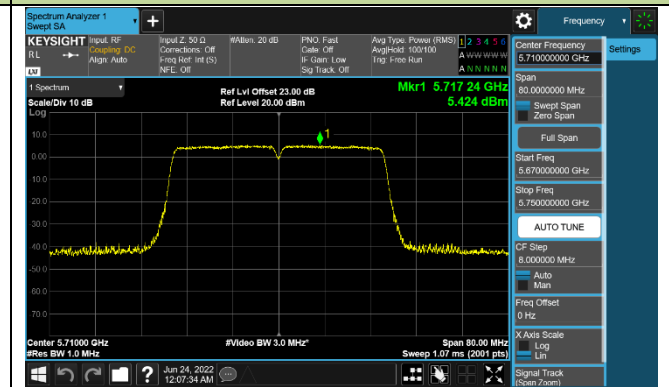
Channel 110 (5550MHz)

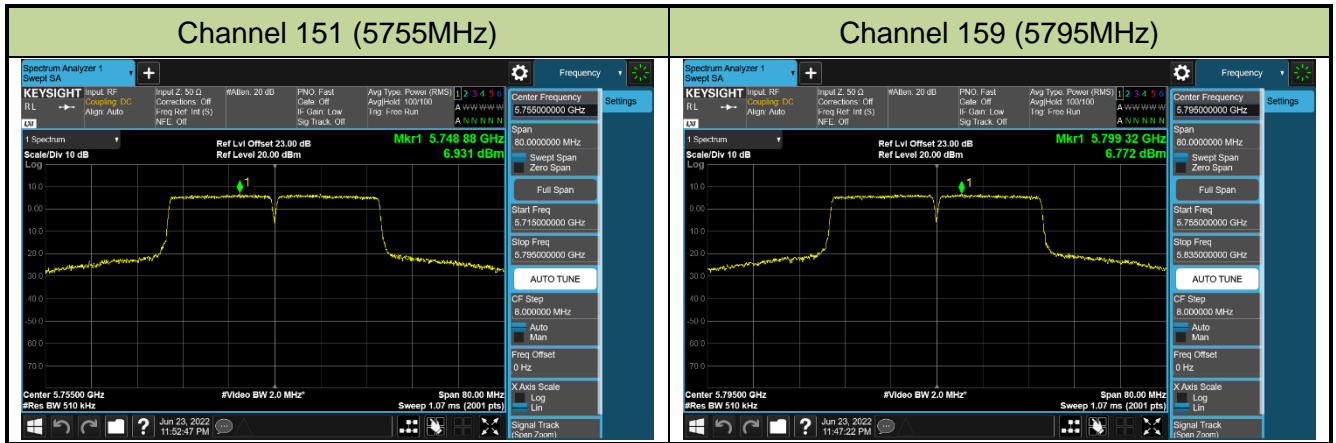


Channel 134 (5670MHz)



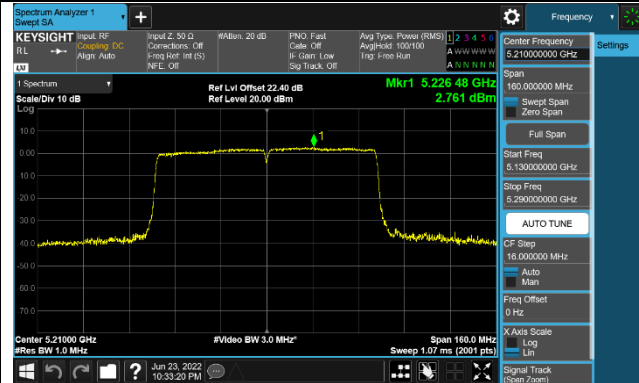
Channel 142 (5710MHz)



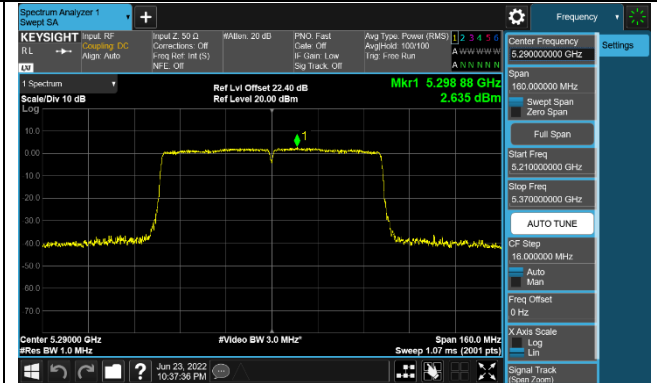


802.11ac-VHT80 Power Spectral Density - Ant 0

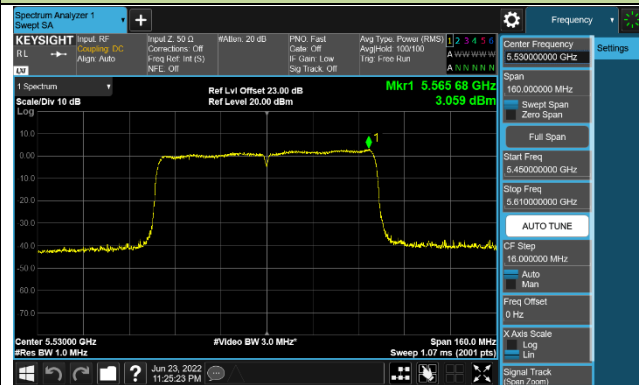
Channel 42 (5210MHz)



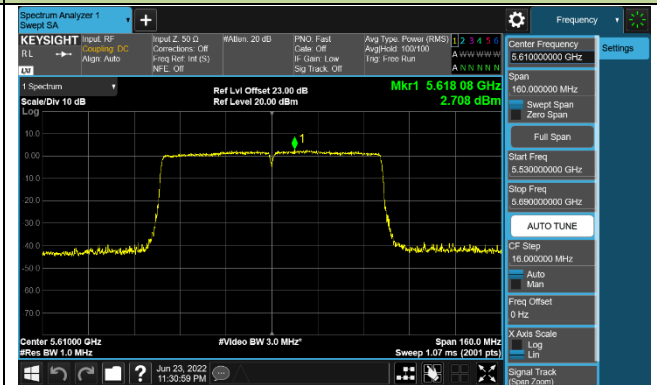
Channel 58 (5290MHz)



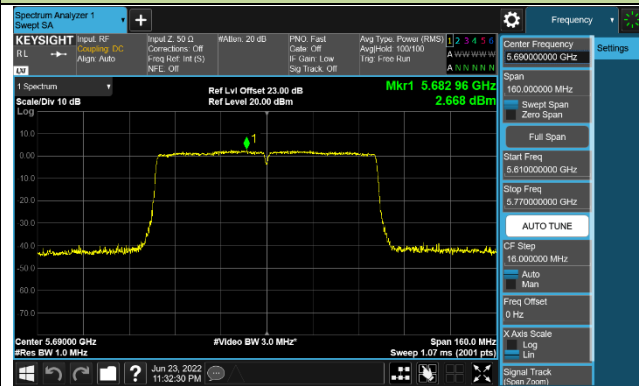
Channel 106 (5530MHz)



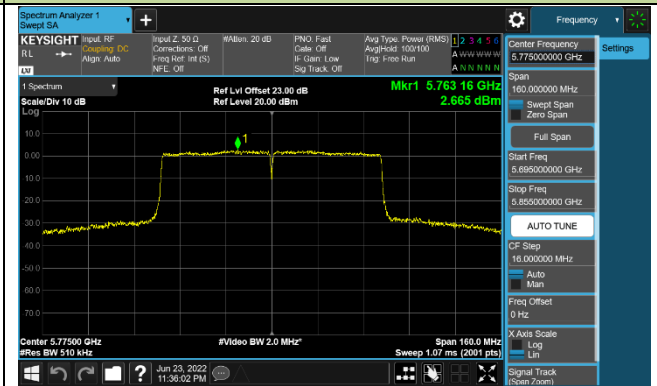
Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)

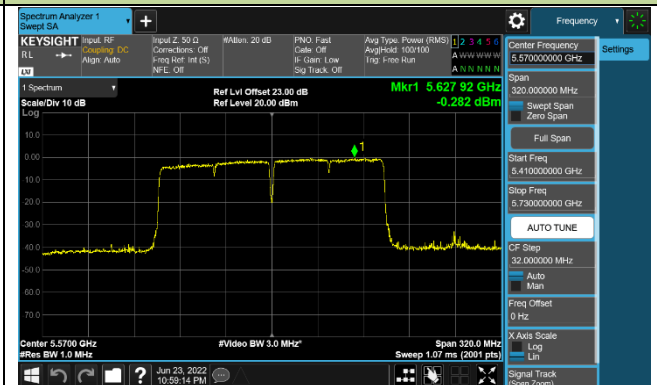


802.11ac-VHT160 Power Spectral Density - Ant 0

Channel 50 (5250MHz)

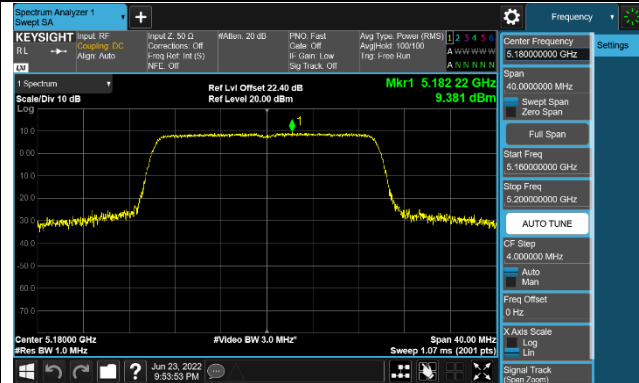


Channel 114 (5570MHz)

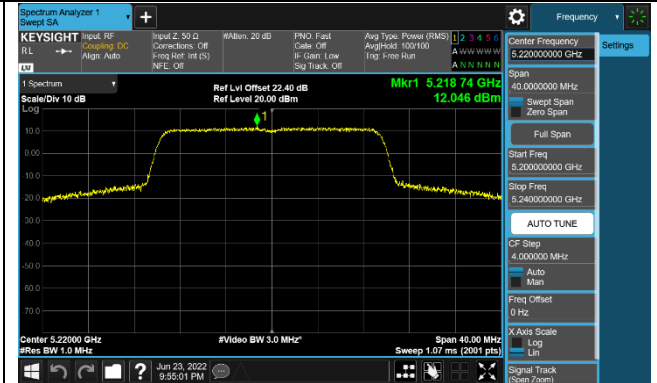


802.11ax-HE20 Power Spectral Density - Ant 0

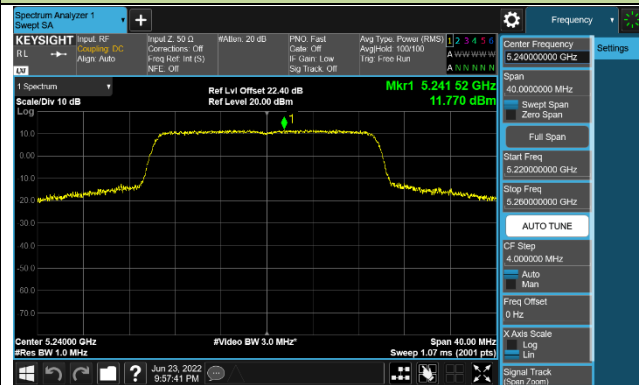
Channel 36 (5180MHz)



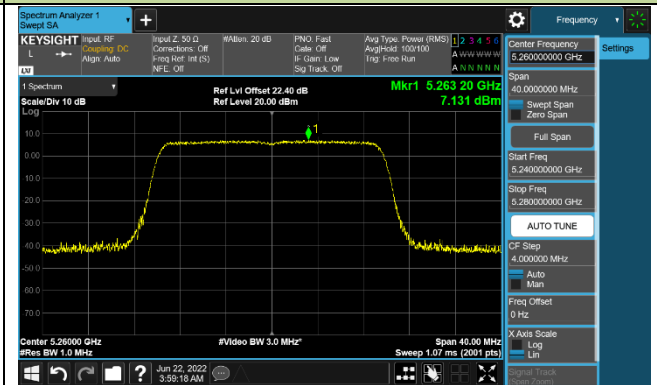
Channel 44 (5220MHz)



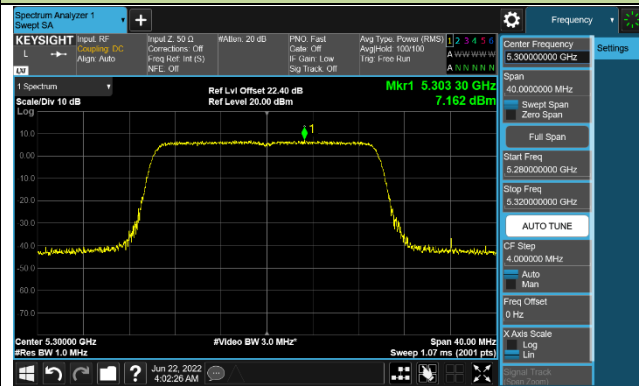
Channel 48 (5240MHz)



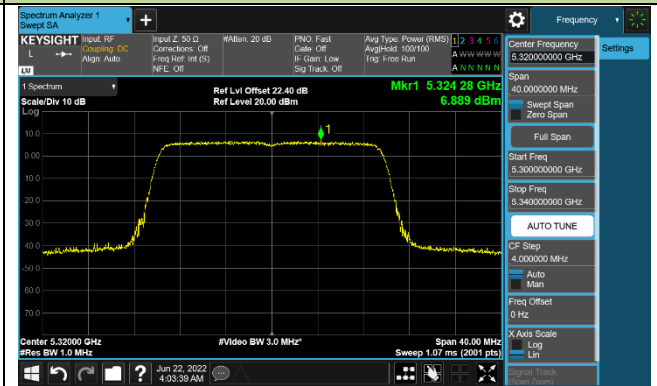
Channel 52 (5260MHz)



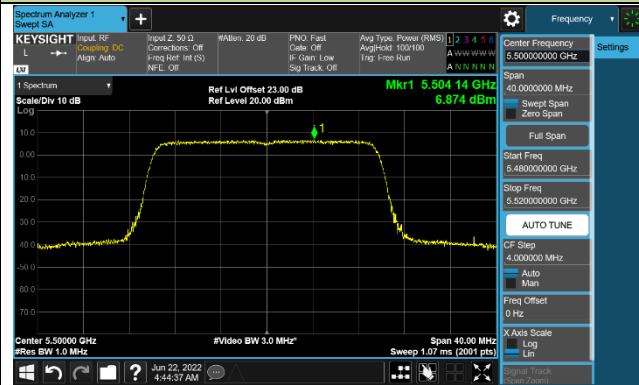
Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 116 (5580MHz)

