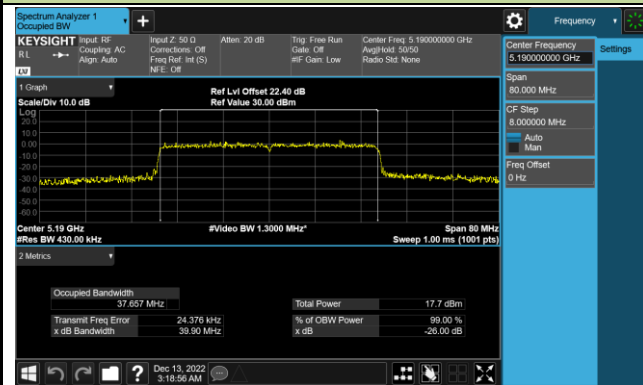
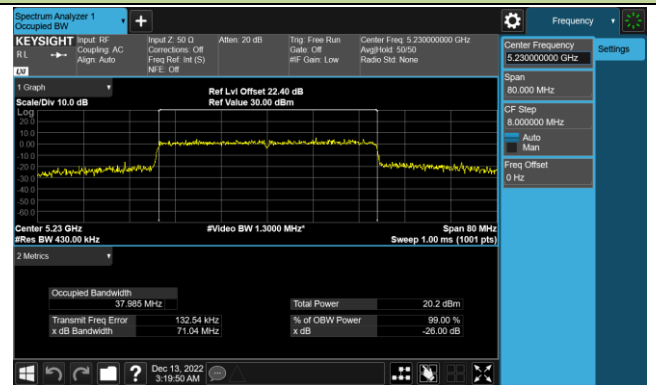


802.11ax-HE40 26dB Bandwidth & 99% Bandwidth

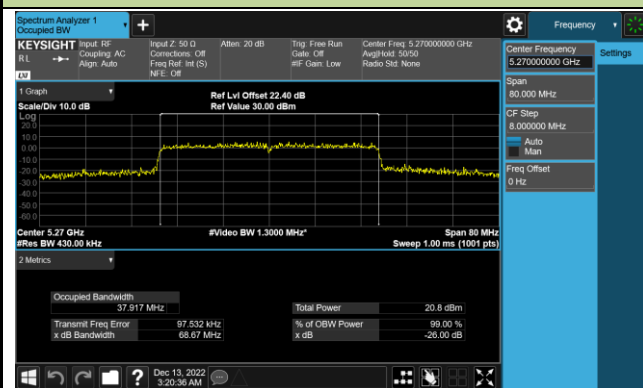
Channel 38 (5190MHz)



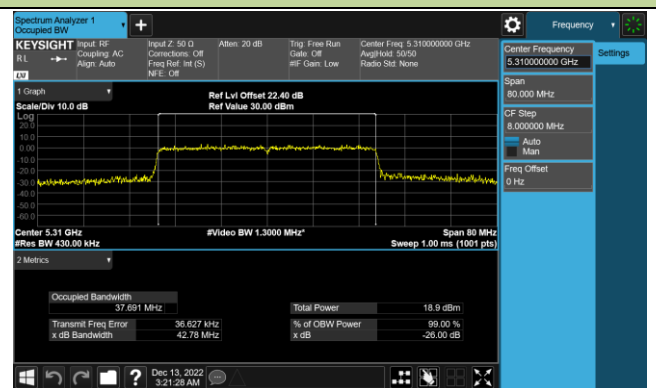
Channel 46 (5230MHz)



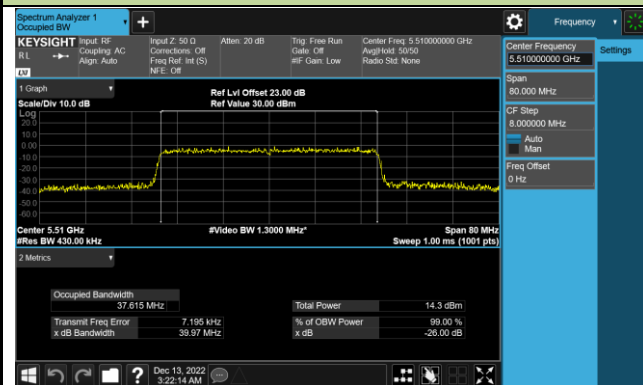
Channel 54 (5270MHz)



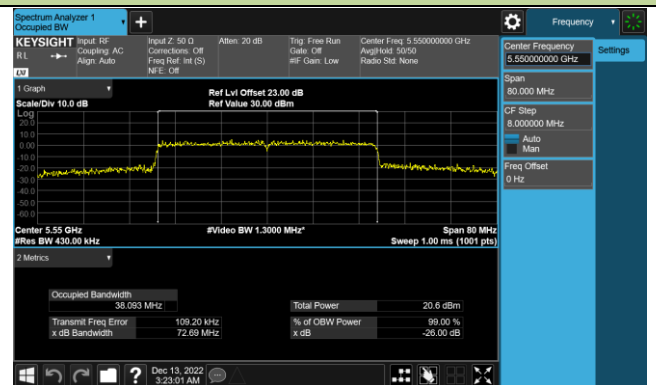
Channel 62 (5310MHz)



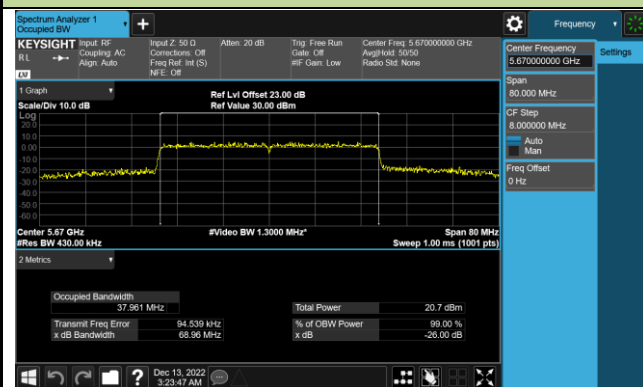
Channel 102 (5510MHz)



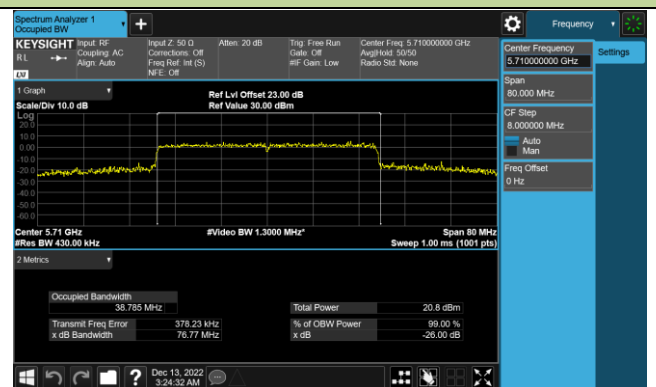
Channel 110 (5550MHz)

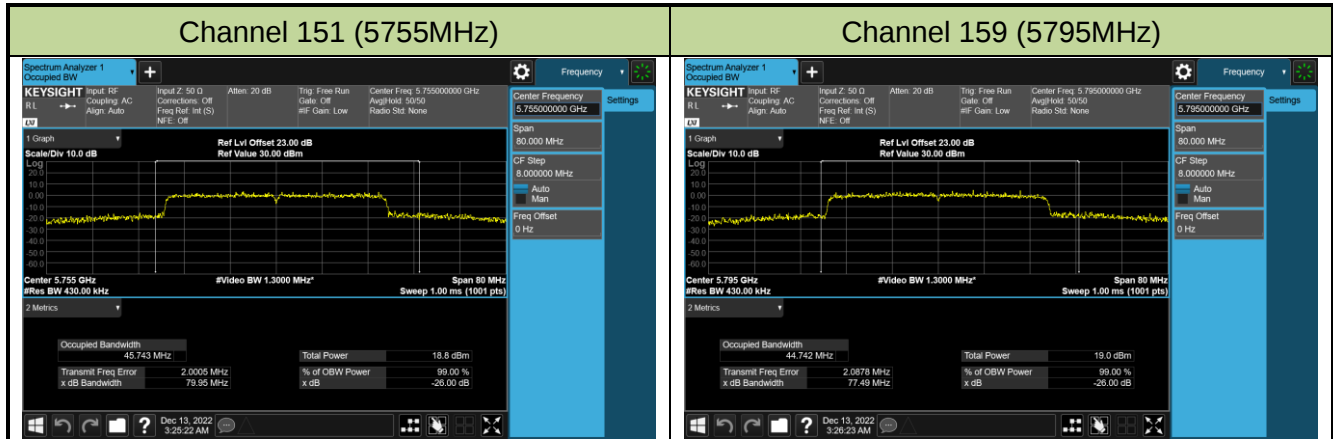


Channel 134 (5670MHz)



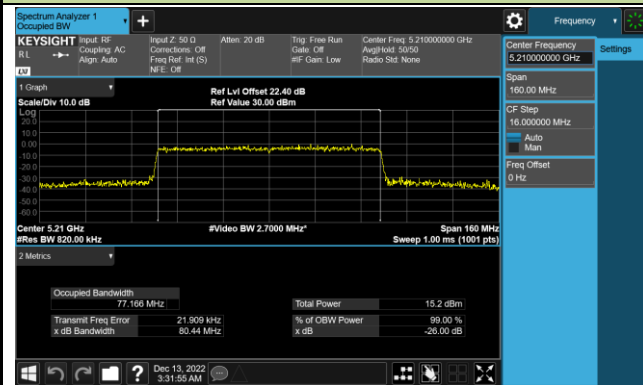
Channel 142 (5710MHz)



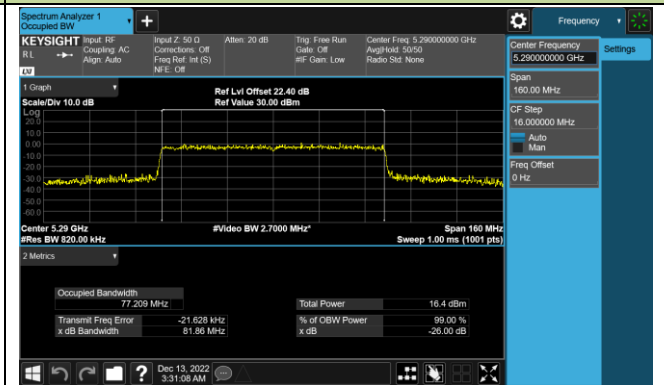


8802.11ax-HE80 26dB Bandwidth & 99% Bandwidth

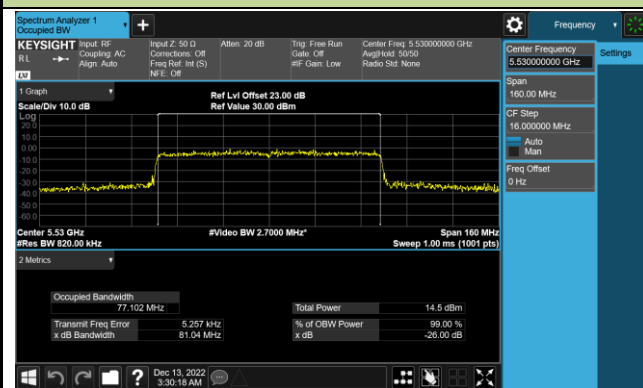
Channel 42 (5210MHz)



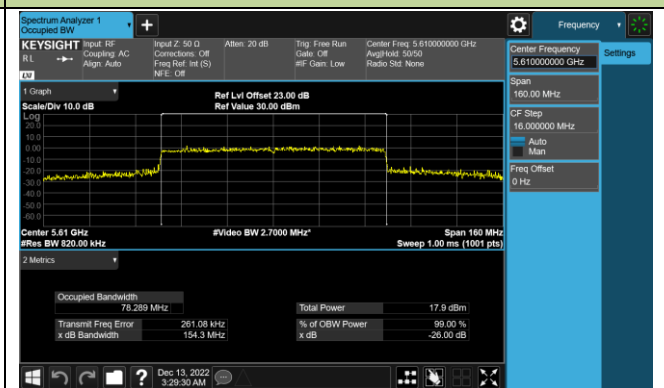
Channel 58 (5290MHz)



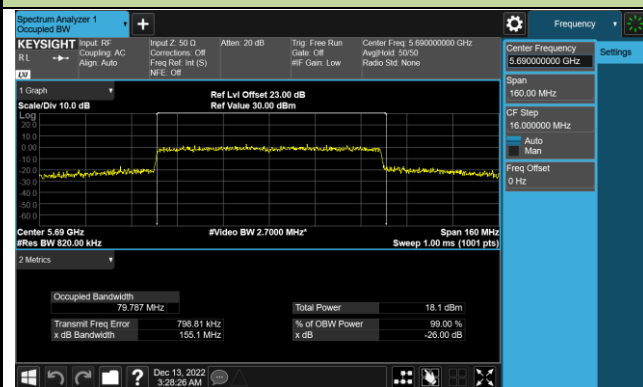
Channel 106 (5530MHz)



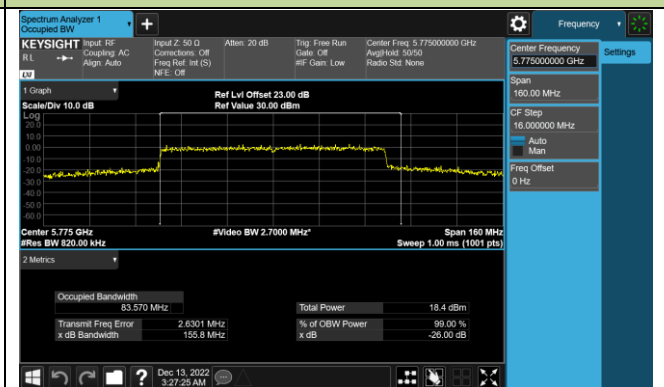
Channel 122 (5610MHz)



Channel 138 (5690MHz)



Channel 155 (5775MHz)



7.3. 6dB Bandwidth Measurement

7.3.1. Test Limit

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

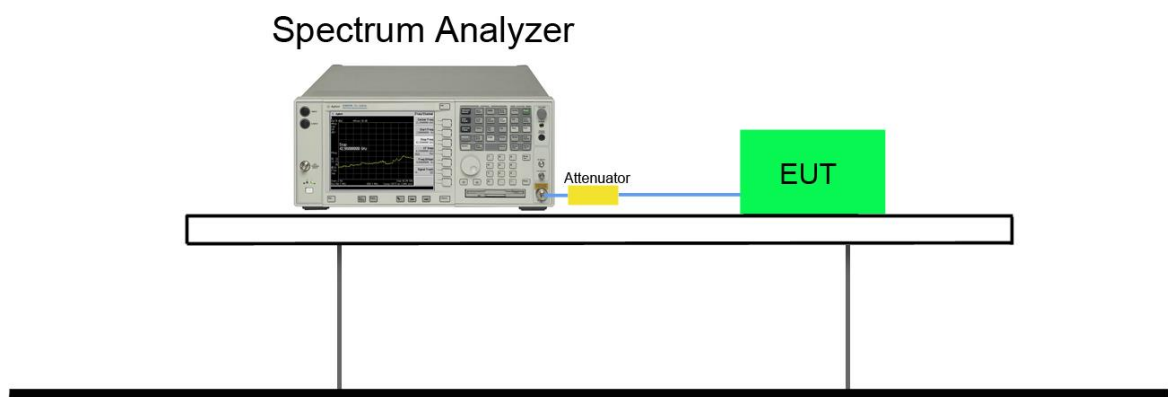
7.3.2. Test Procedure used

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 $\geq 3 \times$ 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



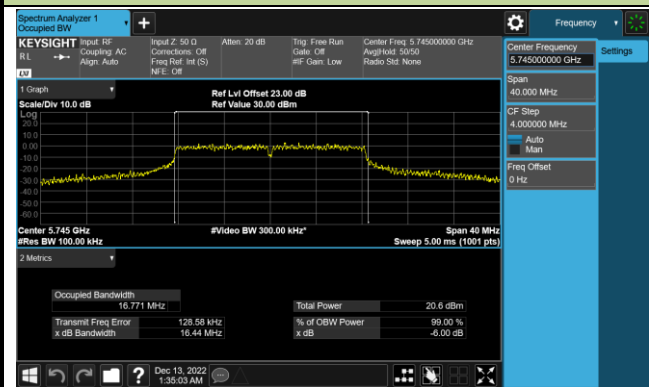
7.3.5. Test Result

Product	Module	Test Engineer	Peter
Test Site	SR5	Test Date	2022/12/13
Test Item	6dB Bandwidth		

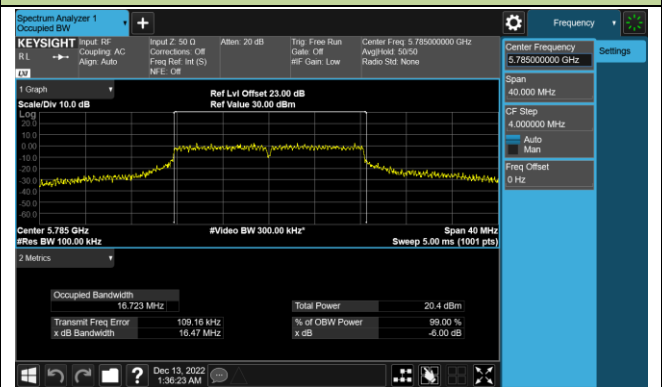
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	Result
Ant 0 / Ant 0+1						
802.11a	6Mbps	149	5745	16.440	≥ 0.5	Pass
802.11a	6Mbps	157	5785	16.470	≥ 0.5	Pass
802.11a	6Mbps	165	5825	16.440	≥ 0.5	Pass
802.11ac-VHT20	MCS0	149	5745	17.550	≥ 0.5	Pass
802.11ac-VHT20	MCS0	157	5785	17.580	≥ 0.5	Pass
802.11ac-VHT20	MCS0	165	5825	17.540	≥ 0.5	Pass
802.11ac-VHT40	MCS0	151	5755	36.460	≥ 0.5	Pass
802.11ac-VHT40	MCS0	159	5795	36.370	≥ 0.5	Pass
802.11ac-VHT80	MCS0	155	5775	76.370	≥ 0.5	Pass
802.11ax-HE20	MCS0	149	5745	13.240	≥ 0.5	Pass
802.11ax-HE20	MCS0	157	5785	16.350	≥ 0.5	Pass
802.11ax-HE20	MCS0	165	5825	15.400	≥ 0.5	Pass
802.11ax-HE40	MCS0	151	5755	37.570	≥ 0.5	Pass
802.11ax-HE40	MCS0	159	5795	35.660	≥ 0.5	Pass
802.11ax-HE80	MCS0	155	5775	77.530	≥ 0.5	Pass

802.11a 6dB Bandwidth

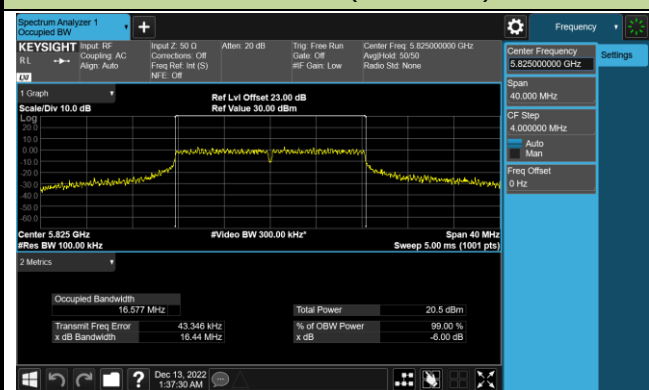
Channel 149 (5745MHz)



Channel 157 (5785MHz)

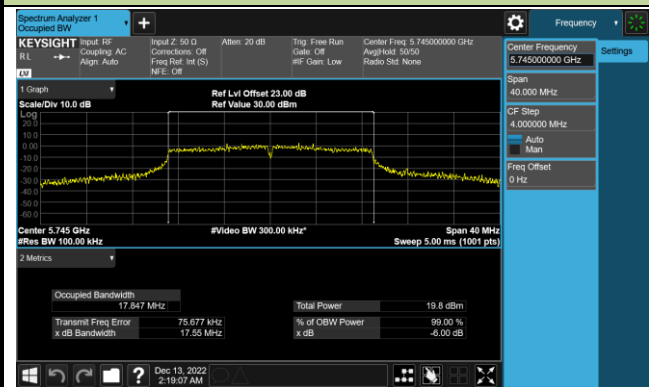


Channel 165 (5825MHz)

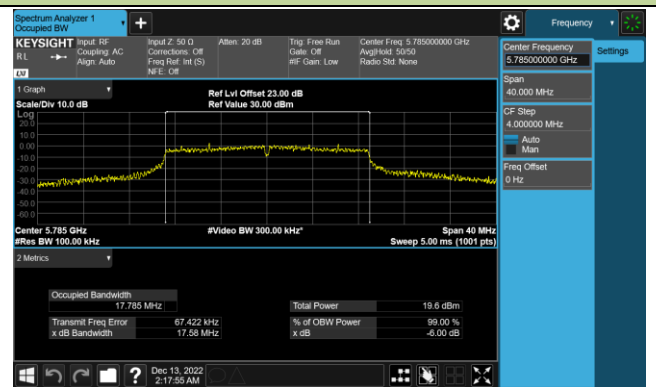


802.11ac-VHT20 6dB Bandwidth

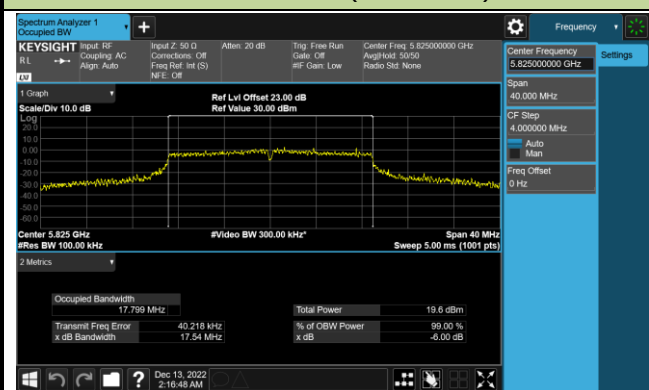
Channel 149 (5745MHz)



Channel 157 (5785MHz)

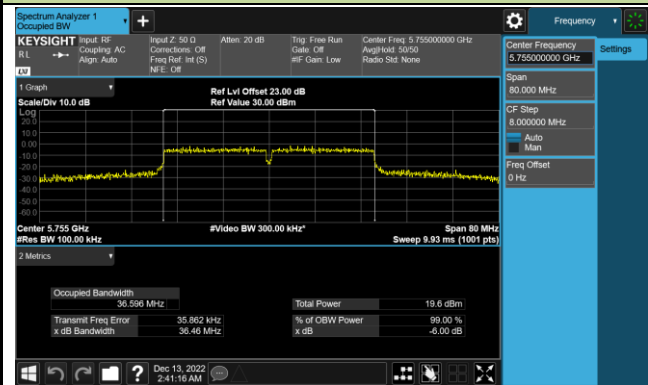


Channel 165 (5825MHz)

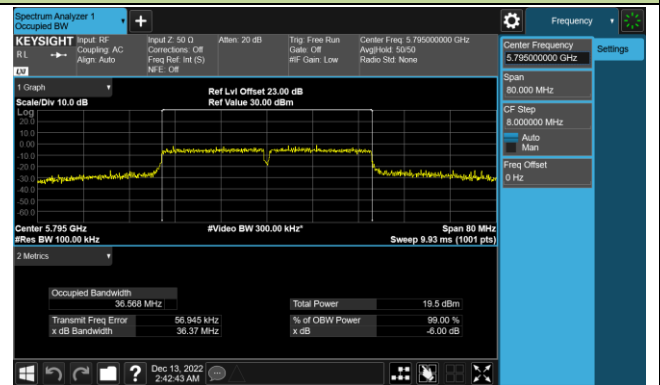


802.11ac-VHT40 6dB Bandwidth

Channel 151 (5755MHz)

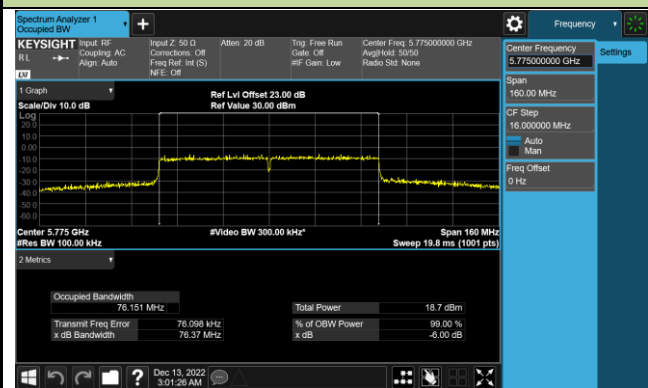


Channel 159 (5795MHz)



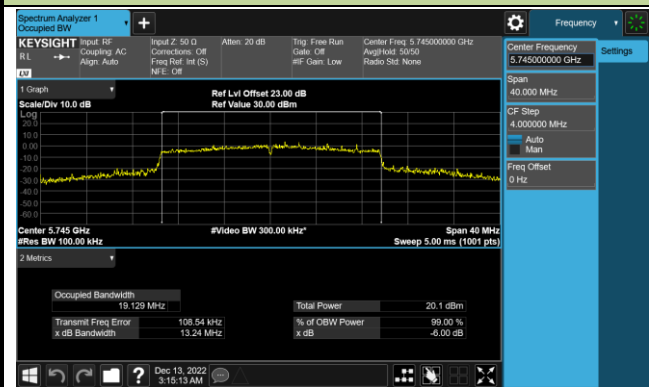
802.11ac-VHT80 6dB Bandwidth

Channel 155 (5775MHz)

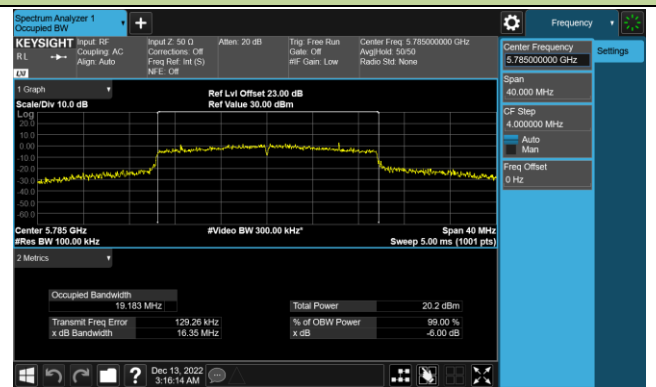


802.11ax-HE20 6dB Bandwidth

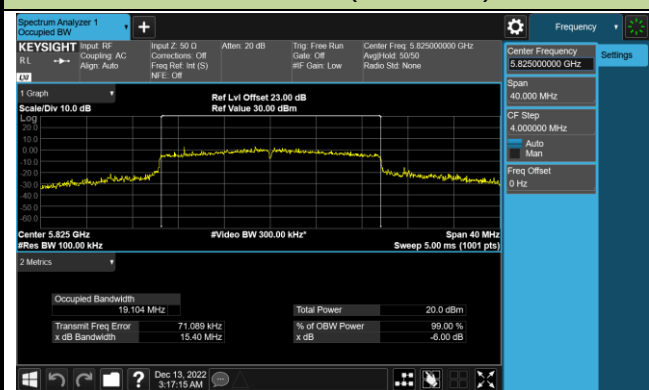
Channel 149 (5745MHz)



Channel 157 (5785MHz)

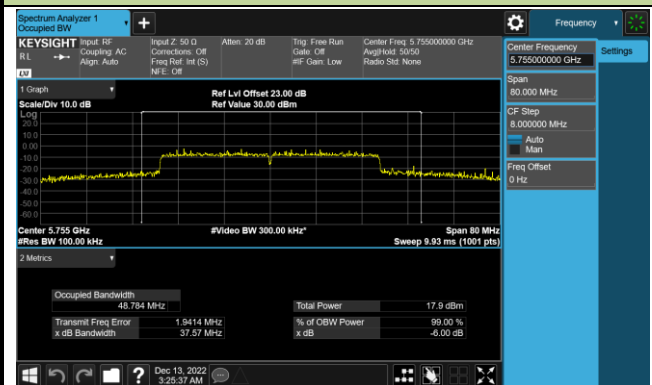


Channel 165 (5825MHz)

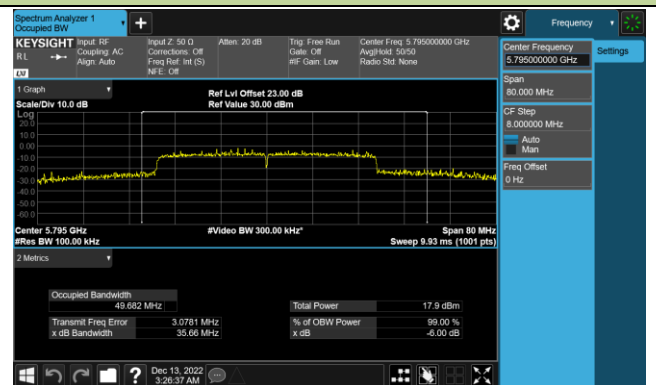


802.11ax-HE40 6dB Bandwidth

Channel 151 (5755MHz)

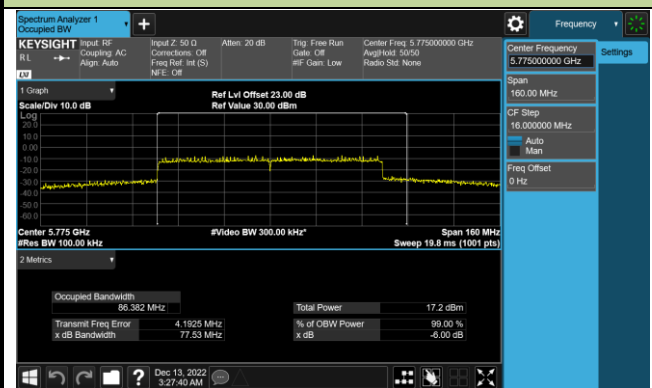


Channel 159 (5795MHz)



802.11ax-HE80 6dB Bandwidth

Channel 155 (5775MHz)



7.4. Output Power Measurement

7.4.1. Test Limit

For FCC Power Measurement Limit

For client operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 250mW.

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 (23.98dBm) or $11\text{dBm} + 10 \log(26\text{dB BW})$.

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.

For IC Power Measurement Limit

For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW (23.01dBm) or $10 + 10 \cdot \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed 250 mW (23.98dBm) or $11 + 10 \log_{10} B$, dBm, whichever power is less. The maximum e.i.r.p. shall not exceed 1.0 W (30dBm) or $17 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

For the 5.725-5.85 GHz band, the maximum conducted output power shall not exceed 1 W.

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.

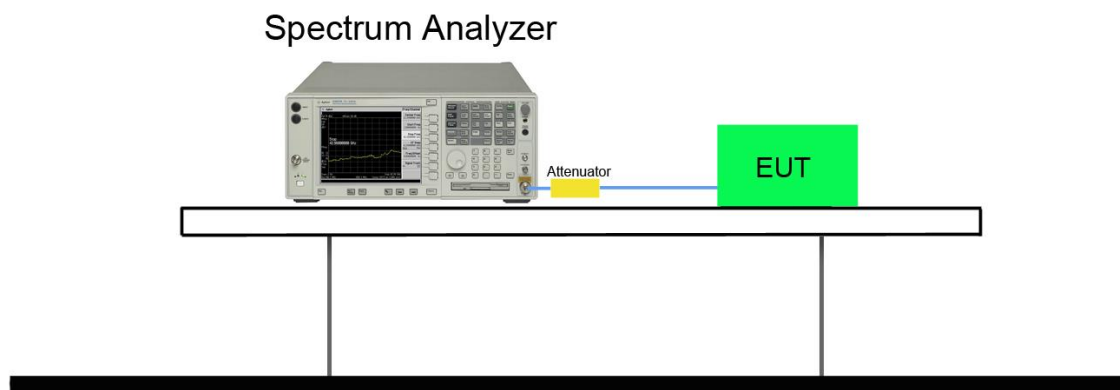
7.4.2. Test Procedure Used

KDB 789033 D02v02r01 - 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. The trace was averaged over 100 traces to obtain the final measured average power.

7.4.4. Test Setup



7.4.5. Test Result

Product	Module	Test Engineer	Peter
Test Site	SR5	Test Date	2022/12/13
Test Item	Output Power		

FCC Power:

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
11a	6Mbps	36	5180	15.59	15.69	18.65	≤ 30.00	Pass
11a	6Mbps	44	5220	15.45	15.14	18.31	≤ 30.00	Pass
11a	6Mbps	48	5240	15.65	15.08	18.38	≤ 30.00	Pass
11a	6Mbps	52	5260	15.55	15.18	18.38	≤ 23.98	Pass
11a	6Mbps	60	5300	15.69	15.33	18.52	≤ 23.98	Pass
11a	6Mbps	64	5320	15.78	15.48	18.64	≤ 23.98	Pass
11a	6Mbps	100	5500	15.91	16.18	19.06	≤ 23.98	Pass
11a	6Mbps	116	5580	16.02	16.18	19.11	≤ 23.98	Pass
11a	6Mbps	140	5700	15.07	14.72	17.91	≤ 23.98	Pass
11a	6Mbps	144	5720	15.95	16.16	19.07	≤ 24.15	Pass
11a	6Mbps	149	5745	16.20	16.63	19.43	≤ 30.00	Pass
11a	6Mbps	157	5785	16.04	16.86	19.48	≤ 30.00	Pass
11a	6Mbps	165	5825	15.90	16.33	19.13	≤ 30.00	Pass
11ac-VHT20	MCS0	36	5180	15.33	14.92	18.14	≤ 30.00	Pass
11ac-VHT20	MCS0	40	5220	15.54	15.03	18.30	≤ 30.00	Pass
11ac-VHT20	MCS0	48	5240	15.78	15.18	18.50	≤ 30.00	Pass
11ac-VHT20	MCS0	52	5260	15.52	15.09	18.32	≤ 23.98	Pass
11ac-VHT20	MCS0	60	5300	15.79	15.54	18.68	≤ 23.98	Pass
11ac-VHT20	MCS0	64	5320	15.69	15.63	18.67	≤ 23.98	Pass
11ac-VHT20	MCS0	100	5500	16.12	16.32	19.23	≤ 23.98	Pass
11ac-VHT20	MCS0	116	5580	16.36	16.16	19.27	≤ 23.98	Pass
11ac-VHT20	MCS0	140	5700	15.61	15.71	18.67	≤ 23.98	Pass
11ac-VHT20	MCS0	144	5720	16.28	16.45	19.38	≤ 24.42	Pass
11ac-VHT20	MCS0	149	5745	16.32	16.66	19.50	≤ 30.00	Pass
11ac-VHT20	MCS0	157	5785	16.18	16.63	19.42	≤ 30.00	Pass
11ac-VHT20	MCS0	165	5825	16.05	16.45	19.26	≤ 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)	Average Power Limit (dBm)	Result
11ac-VHT40	MCS0	38	5190	13.23	12.82	16.04	≤ 30.00	Pass
11ac-VHT40	MCS0	46	5230	15.91	15.15	18.56	≤ 30.00	Pass
11ac-VHT40	MCS0	54	5270	16.23	15.16	18.74	≤ 23.98	Pass
11ac-VHT40	MCS0	62	5310	14.69	14.07	17.40	≤ 23.98	Pass
11ac-VHT40	MCS0	102	5510	12.14	11.94	15.05	≤ 23.98	Pass
11ac-VHT40	MCS0	110	5550	16.33	16.02	19.19	≤ 23.98	Pass
11ac-VHT40	MCS0	134	5670	15.92	15.43	18.69	≤ 23.98	Pass
11ac-VHT40	MCS0	142	5710	16.55	16.29	19.43	≤ 23.98	Pass
11ac-VHT40	MCS0	151	5755	16.44	16.46	19.46	≤ 30.00	Pass
11ac-VHT40	MCS0	159	5795	16.09	16.24	19.18	≤ 30.00	Pass
11ac-VHT80	MCS0	42	5210	13.01	12.34	15.70	≤ 30.00	Pass
11ac-VHT80	MCS0	58	5290	14.45	13.64	17.07	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	13.21	13.02	16.13	≤ 23.98	Pass
11ac-VHT80	MCS0	122	5610	15.81	15.77	18.80	≤ 23.98	Pass
11ac-VHT80	MCS0	138	5690	15.91	16.09	19.01	≤ 23.98	Pass
11ac-VHT80	MCS0	155	5775	16.06	16.22	19.15	≤ 30.00	Pass
11ax-HE20	MCS0	36	5180	15.71	15.36	18.55	≤ 30.00	Pass
11ax-HE20	MCS0	40	5220	15.92	15.11	18.54	≤ 30.00	Pass
11ax-HE20	MCS0	48	5240	16.10	15.28	18.72	≤ 30.00	Pass
11ax-HE20	MCS0	52	5260	15.98	15.26	18.65	≤ 23.98	Pass
11ax-HE20	MCS0	60	5300	16.13	15.48	18.83	≤ 23.98	Pass
11ax-HE20	MCS0	64	5320	16.10	15.57	18.85	≤ 23.98	Pass
11ax-HE20	MCS0	100	5500	16.78	16.91	19.86	≤ 23.98	Pass
11ax-HE20	MCS0	116	5580	16.94	16.96	19.96	≤ 23.98	Pass
11ax-HE20	MCS0	140	5700	15.11	14.98	18.06	≤ 23.98	Pass
11ax-HE20	MCS0	144	5720	16.71	17.02	19.88	≤ 24.09	Pass
11ax-HE20	MCS0	149	5745	16.98	17.13	20.07	≤ 30.00	Pass
11ax-HE20	MCS0	157	5785	16.74	16.94	19.85	≤ 30.00	Pass
11ax-HE20	MCS0	165	5825	16.67	17.03	19.86	≤ 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)	Average Power Limit (dBm)	Result
11ax-HE40	MCS0	38	5190	13.78	12.62	16.25	≤ 30.00	Pass
11ax-HE40	MCS0	46	5230	16.22	15.05	18.68	≤ 30.00	Pass
11ax-HE40	MCS0	54	5270	16.32	15.24	18.82	≤ 23.98	Pass
11ax-HE40	MCS0	62	5310	14.51	13.66	17.12	≤ 23.98	Pass
11ax-HE40	MCS0	102	5510	12.79	12.87	15.84	≤ 23.98	Pass
11ax-HE40	MCS0	110	5550	16.63	16.28	19.47	≤ 23.98	Pass
11ax-HE40	MCS0	134	5670	16.29	15.91	19.11	≤ 23.98	Pass
11ax-HE40	MCS0	142	5710	16.67	16.43	19.56	≤ 23.98	Pass
11ax-HE40	MCS0	151	5755	16.68	17.21	19.96	≤ 30.00	Pass
11ax-HE40	MCS0	159	5795	16.69	16.79	19.75	≤ 30.00	Pass
11ax-HE80	MCS0	42	5210	13.22	12.63	15.95	≤ 30.00	Pass
11ax-HE80	MCS0	58	5290	14.15	13.62	16.90	≤ 23.98	Pass
11ax-HE80	MCS0	106	5530	12.85	12.80	15.84	≤ 23.98	Pass
11ax-HE80	MCS0	122	5610	15.93	16.36	19.16	≤ 23.98	Pass
11ax-HE80	MCS0	138	5690	16.01	16.45	19.25	≤ 23.98	Pass
11ax-HE80	MCS0	155	5775	16.34	16.74	19.55	≤ 30.00	Pass

Note 1:

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

IC Power:

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
11a	6Mbps	36	5180	11.40	11.12	14.27	--	17.57	≤ 22.21	Pass
11a	6Mbps	44	5220	11.54	11.09	14.33	--	17.63	≤ 22.21	Pass
11a	6Mbps	48	5240	12.04	11.32	14.71	--	18.01	≤ 22.21	Pass
11a	6Mbps	52	5260	15.55	15.18	18.38	≤ 23.22	21.68	≤ 29.22	Pass
11a	6Mbps	60	5300	15.69	15.33	18.52	≤ 23.22	21.82	≤ 29.22	Pass
11a	6Mbps	64	5320	15.78	15.48	18.64	≤ 23.22	21.94	≤ 29.22	Pass
11a	6Mbps	100	5500	15.91	16.18	19.06	≤ 23.25	22.36	≤ 29.25	Pass
11a	6Mbps	116	5580	16.02	16.18	19.11	≤ 23.25	22.41	≤ 29.25	Pass
11a	6Mbps	140	5700	15.07	14.72	17.91	≤ 23.25	21.21	≤ 29.25	Pass
11a	6Mbps	144	5720	15.95	16.16	19.07	≤ 24.15	22.37	≤ 30.15	Pass
11a	6Mbps	149	5745	16.20	16.63	19.43	≤ 30.00	--	--	Pass
11a	6Mbps	157	5785	16.04	16.86	19.48	≤ 30.00	--	--	Pass
11a	6Mbps	165	5825	15.90	16.33	19.13	≤ 30.00	--	--	Pass
11ac-VHT20	MCS0	36	5180	11.54	11.31	14.44	--	17.74	≤ 22.52	Pass
11ac-VHT20	MCS0	40	5220	11.79	11.17	14.50	--	17.80	≤ 22.52	Pass
11ac-VHT20	MCS0	48	5240	11.96	11.32	14.66	--	17.96	≤ 22.52	Pass
11ac-VHT20	MCS0	100	5260	15.52	15.09	18.32	≤ 23.52	21.62	≤ 29.52	Pass
11ac-VHT20	MCS0	116	5300	15.79	15.54	18.68	≤ 23.52	21.98	≤ 29.52	Pass
11ac-VHT20	MCS0	140	5320	15.69	15.63	18.67	≤ 23.52	21.97	≤ 29.52	Pass
11ac-VHT20	MCS0	100	5500	16.12	16.32	19.23	≤ 23.53	22.53	≤ 29.53	Pass
11ac-VHT20	MCS0	116	5580	16.36	16.16	19.27	≤ 23.53	22.57	≤ 29.53	Pass
11ac-VHT20	MCS0	140	5700	15.61	15.71	18.67	≤ 23.53	21.97	≤ 29.53	Pass
11ac-VHT20	MCS0	144	5720	16.28	16.45	19.38	≤ 24.42	22.68	≤ 30.42	Pass
11ac-VHT20	MCS0	149	5745	16.32	16.66	19.50	≤ 30.00	--	--	Pass
11ac-VHT20	MCS0	157	5785	16.18	16.63	19.42	≤ 30.00	--	--	Pass
11ac-VHT20	MCS0	165	5825	16.05	16.45	19.26	≤ 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)	Average Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
11ac-VHT40	MCS0	38	5190	13.23	12.52	15.90	--	19.20	≤ 23.01	Pass
11ac-VHT40	MCS0	46	5230	15.91	15.15	18.56	--	21.86	≤ 23.01	Pass
11ac-VHT40	MCS0	54	5270	16.23	15.16	18.74	≤ 23.98	22.04	≤ 29.98	Pass
11ac-VHT40	MCS0	62	5310	14.69	14.07	17.40	≤ 23.98	20.70	≤ 29.98	Pass
11ac-VHT40	MCS0	102	5510	12.14	11.94	15.05	≤ 23.98	18.35	≤ 29.98	Pass
11ac-VHT40	MCS0	110	5550	16.33	16.02	19.19	≤ 23.98	22.49	≤ 29.98	Pass
11ac-VHT40	MCS0	134	5670	15.92	15.43	18.69	≤ 23.98	21.99	≤ 29.98	Pass
11ac-VHT40	MCS0	142	5710	16.55	16.29	19.43	≤ 23.98	22.73	≤ 29.98	Pass
11ac-VHT40	MCS0	151	5755	16.44	16.46	19.46	≤ 30.00	--	--	Pass
11ac-VHT40	MCS0	159	5795	16.09	16.24	19.18	≤ 30.00	--	--	Pass
11ac-VHT80	MCS0	42	5210	13.01	12.34	15.70	--	19.00	≤ 23.01	Pass
11ac-VHT80	MCS0	58	5290	14.45	13.64	17.07	≤ 23.98	20.37	≤ 29.98	Pass
11ac-VHT80	MCS0	106	5530	13.21	13.02	16.13	≤ 23.98	19.43	≤ 29.98	Pass
11ac-VHT80	MCS0	122	5610	15.81	15.77	18.80	≤ 23.98	22.10	≤ 29.98	Pass
11ac-VHT80	MCS0	138	5690	15.91	16.09	19.01	≤ 23.98	22.31	≤ 29.98	Pass
11ac-VHT80	MCS0	155	5775	16.06	16.22	19.15	≤ 30.00	--	--	Pass
11ax-HE20	MCS0	36	5180	11.74	11.33	14.55	--	17.85	≤ 22.76	Pass
11ax-HE20	MCS0	40	5220	11.87	11.23	14.57	--	17.87	≤ 22.76	Pass
11ax-HE20	MCS0	48	5240	11.96	10.98	14.51	--	17.81	≤ 22.76	Pass
11ax-HE20	MCS0	52	5260	15.98	15.26	18.65	≤ 23.78	21.95	≤ 29.78	Pass
11ax-HE20	MCS0	60	5300	16.13	15.48	18.83	≤ 23.78	22.13	≤ 29.78	Pass
11ax-HE20	MCS0	64	5320	16.10	15.57	18.85	≤ 23.78	22.15	≤ 29.78	Pass
11ax-HE20	MCS0	100	5500	16.78	16.91	19.86	≤ 23.80	23.16	≤ 29.80	Pass
11ax-HE20	MCS0	116	5580	16.94	16.96	19.96	≤ 23.80	23.26	≤ 29.80	Pass
11ax-HE20	MCS0	140	5700	15.11	14.98	18.06	≤ 23.80	21.36	≤ 29.80	Pass
11ax-HE20	MCS0	144	5720	16.71	17.02	19.88	≤ 24.09	23.18	≤ 30.09	Pass
11ax-HE20	MCS0	149	5745	16.98	17.13	20.07	≤ 30.00	--	--	Pass
11ax-HE20	MCS0	157	5785	16.74	16.94	19.85	≤ 30.00	--	--	Pass
11ax-HE20	MCS0	165	5825	16.67	17.03	19.86	≤ 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)	Average Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
11ax-HE40	MCS0	38	5190	13.78	12.62	16.25	--	19.55	≤ 23.01	Pass
11ax-HE40	MCS0	46	5230	16.22	15.05	18.68	--	21.98	≤ 23.01	Pass
11ax-HE40	MCS0	54	5270	16.32	15.24	18.82	≤ 23.98	22.12	≤ 29.98	Pass
11ax-HE40	MCS0	62	5310	14.51	13.66	17.12	≤ 23.98	20.42	≤ 29.98	Pass
11ax-HE40	MCS0	102	5510	12.79	12.87	15.84	≤ 23.98	19.14	≤ 29.98	Pass
11ax-HE40	MCS0	110	5550	16.63	16.28	19.47	≤ 23.98	22.77	≤ 29.98	Pass
11ax-HE40	MCS0	134	5670	16.29	15.91	19.11	≤ 23.98	22.41	≤ 29.98	Pass
11ax-HE40	MCS0	142	5710	16.67	16.43	19.56	≤ 23.98	22.86	≤ 29.98	Pass
11ax-HE40	MCS0	151	5755	16.68	17.21	19.96	≤ 30.00	--	--	Pass
11ax-HE40	MCS0	159	5795	16.69	16.79	19.75	≤ 30.00	--	--	Pass
11ax-HE80	MCS0	42	5210	13.22	12.63	15.95	--	19.25	≤ 23.01	Pass
11ax-HE80	MCS0	58	5290	14.15	13.62	16.90	≤ 23.98	20.20	≤ 29.98	Pass
11ax-HE80	MCS0	106	5530	12.85	12.80	15.84	≤ 23.98	19.14	≤ 29.98	Pass
11ax-HE80	MCS0	122	5610	15.93	16.36	19.16	≤ 23.98	22.46	≤ 29.98	Pass
11ax-HE80	MCS0	138	5690	16.01	16.45	19.25	≤ 23.98	22.55	≤ 29.98	Pass
11ax-HE80	MCS0	155	5775	16.34	16.74	19.55	≤ 30.00	--	--	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:

The Max EIRP (dBm) = Total Average Power (dBm) + Antenna Gain (dBi).

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.

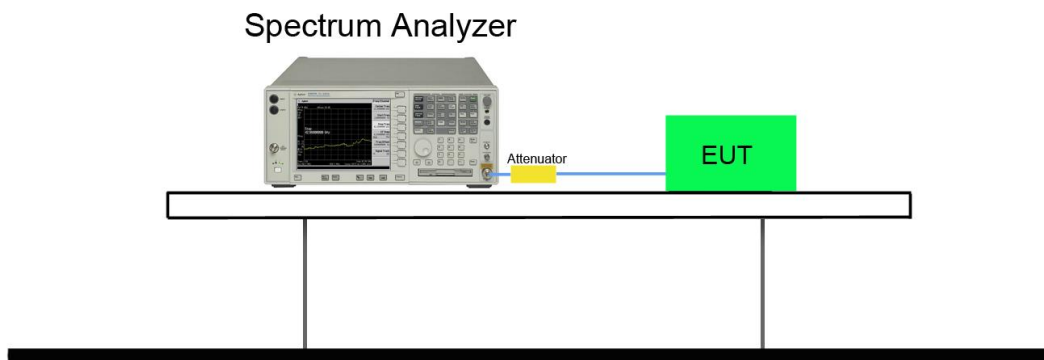
7.5.2. Test Procedure Used

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

Note: TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

7.6. Power Spectral Density Measurement

7.6.1. Test Limit

For FCC Power Spectral Density Limit

For an outdoor access point operating in 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.

For IC Power Spectral Density Limit

For the band 5.15-5.25 GHz, the e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

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

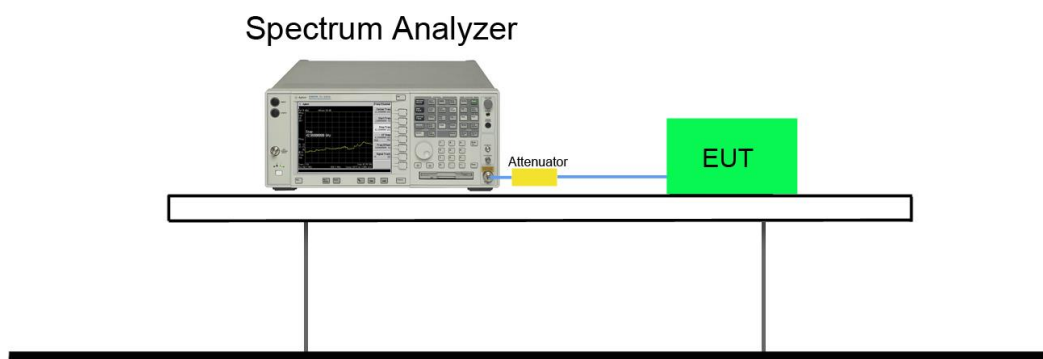
7.6.2. Test Procedure Used

KDB 789033 D02v02r01 - Section 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,
4. RBW = 100 kHz
5. VBW = 3MHz
6. Number of sweep points $\geq 2 \times (\text{span} / \text{RBW})$
7. Detector = power averaging (Average)
8. Sweep time = auto
9. Trigger = free run
10. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
11. 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 $10 \cdot \log(1/0.25) = 6 \text{ dB}$ if the duty cycle is 25 percent.

7.6.4. Test Setup



7.6.5. Test Result

Product	Module	Test Engineer	Peter
Test Site	SR2	Test Date	2022/12/13
Test Item	Power Spectral Density		

FCC U-NII-1

FCC & IC: U-NII-2A & U-NII-2C

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	4.307	3.898	98.05%	7.203	≤ 10.69	Pass
11a	6Mbps	44	5220	3.188	2.963	98.05%	6.173	≤ 10.69	Pass
11a	6Mbps	48	5240	3.350	3.018	98.05%	6.283	≤ 10.69	Pass
11a	6Mbps	52	5260	3.341	3.424	98.05%	6.479	≤ 10.69	Pass
11a	6Mbps	60	5300	4.106	3.592	98.05%	6.952	≤ 10.69	Pass
11a	6Mbps	64	5320	5.312	5.046	98.05%	8.277	≤ 10.69	Pass
11a	6Mbps	100	5500	4.842	5.093	98.05%	8.065	≤ 10.69	Pass
11a	6Mbps	116	5580	3.838	3.843	98.05%	6.936	≤ 10.69	Pass
11a	6Mbps	140	5700	4.018	4.006	98.05%	7.108	≤ 10.69	Pass
11a	6Mbps	144	5720	4.047	3.765	98.05%	7.004	≤ 10.69	Pass
11ac-VHT20	MCS0	36	5180	4.124	3.391	96.26%	6.949	≤ 10.69	Pass
11ac-VHT20	MCS0	40	5220	4.172	3.516	96.26%	7.032	≤ 10.69	Pass
11ac-VHT20	MCS0	48	5240	4.289	3.853	96.26%	7.252	≤ 10.69	Pass
11ac-VHT20	MCS0	52	5260	4.469	3.873	96.26%	7.357	≤ 10.69	Pass
11ac-VHT20	MCS0	60	5300	4.964	4.222	96.26%	7.785	≤ 10.69	Pass
11ac-VHT20	MCS0	64	5320	4.841	4.557	96.26%	7.877	≤ 10.69	Pass
11ac-VHT20	MCS0	100	5500	4.801	4.977	96.26%	8.066	≤ 10.69	Pass
11ac-VHT20	MCS0	116	5580	5.068	4.692	96.26%	8.060	≤ 10.69	Pass
11ac-VHT20	MCS0	140	5700	4.417	4.346	96.26%	7.557	≤ 10.69	Pass
11ac-VHT20	MCS0	144	5720	4.860	4.988	96.26%	8.100	≤ 10.69	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-VHT40	MCS0	38	5190	-2.444	-3.176	94.37%	0.467	≤ 10.69	Pass
11ac-VHT40	MCS0	46	5230	0.486	-0.601	94.37%	3.238	≤ 10.69	Pass
11ac-VHT40	MCS0	54	5270	0.917	-0.045	94.37%	3.725	≤ 10.69	Pass
11ac-VHT40	MCS0	62	5310	-0.068	-0.914	94.37%	2.792	≤ 10.69	Pass
11ac-VHT40	MCS0	102	5510	-3.302	-3.787	94.37%	-0.276	≤ 10.69	Pass
11ac-VHT40	MCS0	110	5550	1.012	0.818	94.37%	4.178	≤ 10.69	Pass
11ac-VHT40	MCS0	134	5670	0.420	0.246	94.37%	3.596	≤ 10.69	Pass
11ac-VHT40	MCS0	142	5710	1.097	1.262	94.37%	4.442	≤ 10.69	Pass
11ac-VHT80	MCS0	42	5210	-5.833	-6.338	89.28%	-2.575	≤ 10.69	Pass
11ac-VHT80	MCS0	58	5290	-3.851	-4.440	89.28%	-0.633	≤ 10.69	Pass
11ac-VHT80	MCS0	106	5530	-5.462	-5.631	89.28%	-2.043	≤ 10.69	Pass
11ac-VHT80	MCS0	122	5610	-2.450	-2.383	89.28%	1.086	≤ 10.69	Pass
11ac-VHT80	MCS0	138	5690	-2.834	-2.272	89.28%	0.959	≤ 10.69	Pass
11ax-HE20	MCS0	36	5180	4.676	3.969	96.30%	7.511	≤ 10.69	Pass
11ax-HE20	MCS0	44	5220	4.545	3.903	96.30%	7.410	≤ 10.69	Pass
11ax-HE20	MCS0	48	5240	5.066	4.262	96.30%	7.857	≤ 10.69	Pass
11ax-HE20	MCS0	52	5260	4.908	4.433	96.30%	7.851	≤ 10.69	Pass
11ax-HE20	MCS0	60	5300	5.480	4.654	96.30%	8.261	≤ 10.69	Pass
11ax-HE20	MCS0	64	5320	5.604	5.053	96.30%	8.511	≤ 10.69	Pass
11ax-HE20	MCS0	100	5500	5.240	5.742	96.30%	8.672	≤ 10.69	Pass
11ax-HE20	MCS0	116	5580	5.699	5.849	96.30%	8.949	≤ 10.69	Pass
11ax-HE20	MCS0	140	5700	3.876	3.817	96.30%	7.021	≤ 10.69	Pass
11ax-HE20	MCS0	144	5720	5.473	5.770	96.30%	8.798	≤ 10.69	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
11ax-HE40	MCS0	38	5190	-1.657	-2.832	93.76%	1.085	≤ 10.69	Pass
11ax-HE40	MCS0	46	5230	0.394	-0.377	93.76%	3.316	≤ 10.69	Pass
11ax-HE40	MCS0	54	5270	0.884	-0.161	93.76%	3.683	≤ 10.69	Pass
11ax-HE40	MCS0	62	5310	-0.644	-1.084	93.76%	2.432	≤ 10.69	Pass
11ax-HE40	MCS0	102	5510	-5.405	-3.434	93.76%	-1.019	≤ 10.69	Pass
11ax-HE40	MCS0	110	5550	-0.896	0.956	93.76%	3.418	≤ 10.69	Pass
11ax-HE40	MCS0	134	5670	0.961	0.562	93.76%	4.056	≤ 10.69	Pass
11ax-HE40	MCS0	142	5710	1.440	1.166	93.76%	4.595	≤ 10.69	Pass
11ax-HE80	MCS0	42	5210	-5.151	-5.735	88.05%	-1.870	≤ 10.69	Pass
11ax-HE80	MCS0	58	5290	-4.016	-4.565	88.05%	-0.719	≤ 10.69	Pass
11ax-HE80	MCS0	106	5530	-5.967	-5.372	88.05%	-2.096	≤ 10.69	Pass
11ax-HE80	MCS0	122	5610	-2.531	-1.956	88.05%	1.329	≤ 10.69	Pass
11ax-HE80	MCS0	122	5690	-2.429	-1.744	88.05%	1.490	≤ 10.69	Pass

Note: Total PSD (dBm/MHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD}/10} + 10^{\text{Ant 1 PSD}/10}\}$ (dBm/MHz) + $10 \cdot \log(1/\text{duty cycle})$.

IC: U-NII-1

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Total PSD (dBm/MHz)	Duty Cycle (%)	E.I.R.P PSD (dBm/MHz)	E.I.R.P PSD Limit (dBm/MHz)	Result
11a	6Mbps	36	5180	0.600	0.186	3.494	98.05%	9.80	≤ 10.00	Pass
11a	6Mbps	44	5220	0.554	-0.020	3.372	98.05%	9.68	≤ 10.00	Pass
11a	6Mbps	48	5240	0.680	0.223	3.553	98.05%	9.86	≤ 10.00	Pass
11ac-VHT20	MCS0	36	5180	0.631	0.023	3.513	96.26%	9.82	≤ 10.00	Pass
11ac-VHT20	MCS0	44	5220	0.634	0.189	3.593	96.26%	9.90	≤ 10.00	Pass
11ac-VHT20	MCS0	48	5240	0.616	0.163	3.571	96.26%	9.88	≤ 10.00	Pass
11ac-VHT40	MCS0	38	5190	-2.444	-3.176	0.467	94.37%	6.78	≤ 10.00	Pass
11ac-VHT40	MCS0	46	5230	0.486	-0.601	3.238	94.37%	9.55	≤ 10.00	Pass
11ac-VHT80	MCS0	42	5210	-5.833	-6.338	-2.575	89.28%	3.73	≤ 10.00	Pass
11ax-VHT20	MCS0	36	5180	0.593	0.236	3.592	96.30%	9.90	≤ 10.00	Pass
11ax-VHT20	MCS0	44	5220	0.663	0.105	3.567	96.30%	9.88	≤ 10.00	Pass
11ax-VHT20	MCS0	48	5240	0.692	0.024	3.545	96.30%	9.86	≤ 10.00	Pass
11ax-VHT40	MCS0	38	5190	-1.657	-2.832	1.085	93.76%	7.40	≤ 10.00	Pass
11ax-VHT40	MCS0	46	5230	0.394	-0.377	3.316	93.76%	9.63	≤ 10.00	Pass
11ax-VHT80	MCS0	42	5210	-5.151	-5.735	-1.870	88.05%	4.44	≤ 10.00	Pass

Note: E.I.R.P PSD (dBm/MHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD}/10} + 10^{\text{Ant 1 PSD}/10}\}$ (dBm/MHz) + $10 \cdot \log(1/\text{duty cycle})$ + Directional Antenna Gain (dBi).

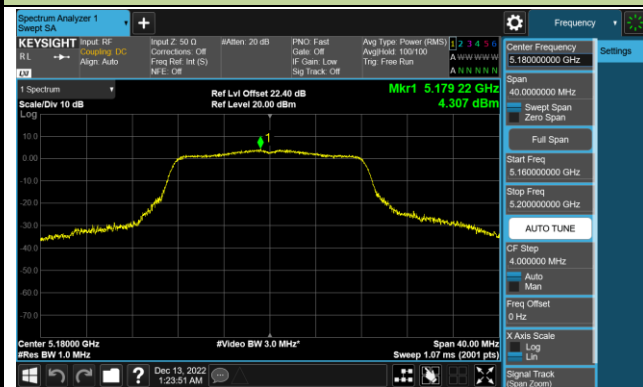
FCC & IC: U-NII-3

Test Mode	Data Rate/ MCS	Ch. No.	Freq. (MHz)	Ant 0 PSD (dBm/510KHz)	Ant 1 PSD (dBm/510KHz)	Duty Cycle (%)	Total PSD (dBm/510kHz)	Limit (dBm/ 500kHz)	Result
11a	6Mbps	149	5745	1.249	1.899	98.05%	4.682	≤ 29.69	Pass
11a	6Mbps	157	5785	1.041	1.379	98.05%	4.309	≤ 29.69	Pass
11a	6Mbps	165	5825	1.120	1.752	98.05%	4.543	≤ 29.69	Pass
11ac-VHT20	MCS0	149	5745	2.207	2.501	96.26%	5.532	≤ 29.69	Pass
11ac-VHT20	MCS0	157	5785	2.111	2.424	96.26%	5.446	≤ 29.69	Pass
11ac-VHT20	MCS0	165	5825	2.364	2.520	96.26%	5.619	≤ 29.69	Pass
11ac-VHT40	MCS0	151	5755	-2.262	-1.623	94.37%	1.331	≤ 29.69	Pass
11ac-VHT40	MCS0	159	5795	-2.061	-1.870	94.37%	1.298	≤ 29.69	Pass
11ac-VHT80	MCS0	155	5775	-5.683	-5.365	89.28%	-2.018	≤ 29.69	Pass
11ax-HE20	MCS0	149	5745	3.011	3.409	96.30%	6.389	≤ 29.69	Pass
11ax-HE20	MCS0	157	5785	2.756	3.264	96.30%	6.191	≤ 29.69	Pass
11ax-HE20	MCS0	165	5825	2.969	3.498	96.30%	6.416	≤ 29.69	Pass
11ax-HE40	MCS0	151	5755	-1.761	-1.633	93.76%	1.594	≤ 29.69	Pass
11ax-HE40	MCS0	159	5795	-1.672	-1.563	93.76%	1.673	≤ 29.69	Pass
11ax-HE80	MCS0	155	5775	-4.859	-4.797	88.05%	-1.265	≤ 29.69	Pass

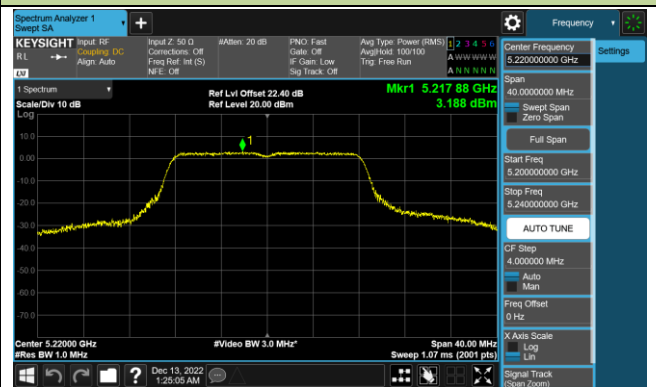
Note: Total PSD (dBm/500kHz) = $10 \cdot \log\{10^{\text{Ant 0 PSD} / 10} + 10^{\text{Ant 1 PSD} / 10}\}$ (dBm/500kHz) + $10 \cdot \log(1/\text{duty cycle})$.

802.11a Power Spectral Density - Ant 0

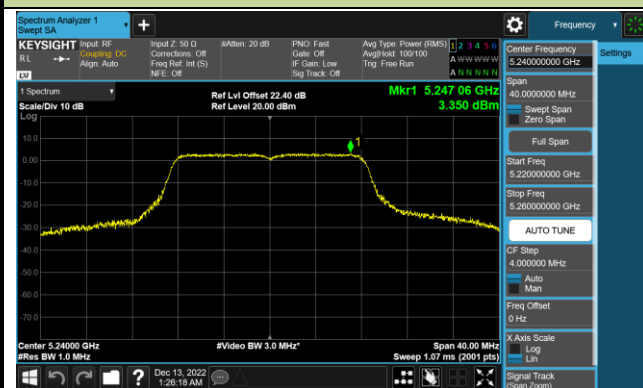
Channel 36 (5180MHz)



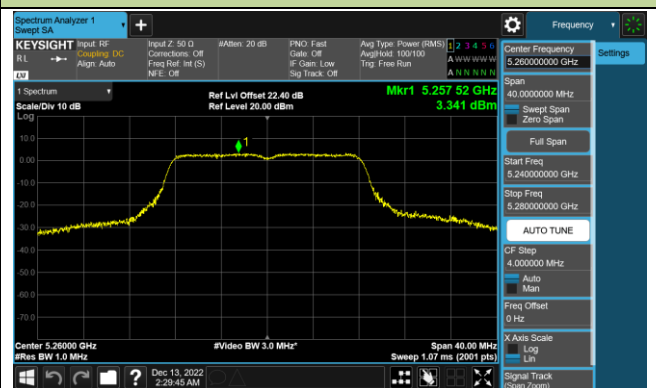
Channel 44 (5220MHz)



Channel 48 (5240MHz)



Channel 52 (5260MHz)



Channel 60 (5300MHz)



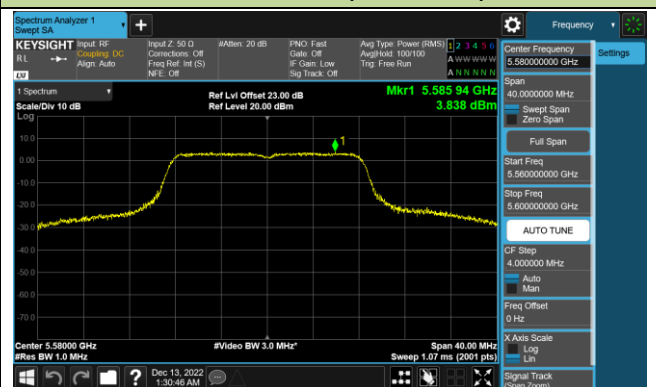
Channel 64 (5320MHz)

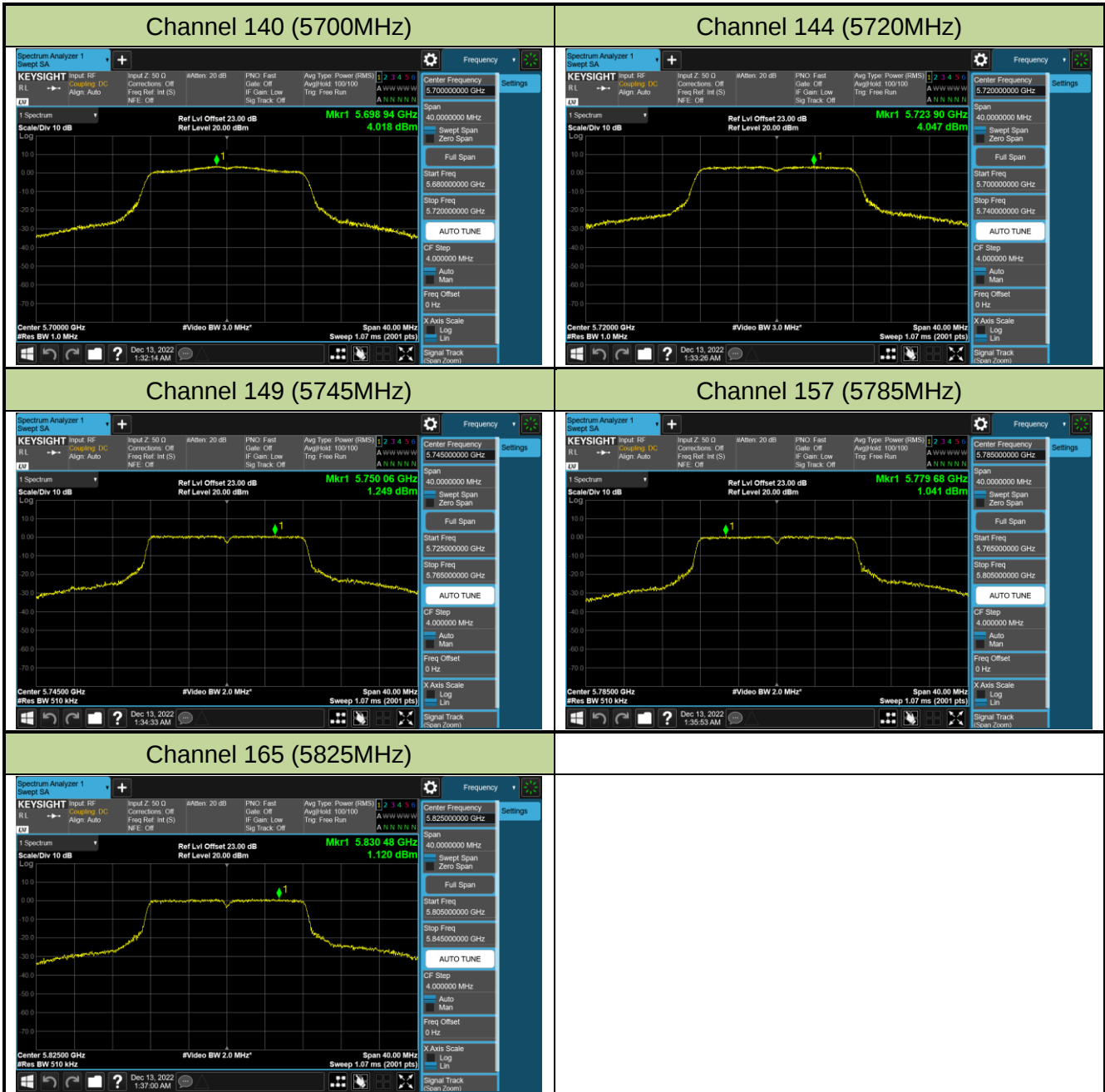


Channel 100 (5500MHz)



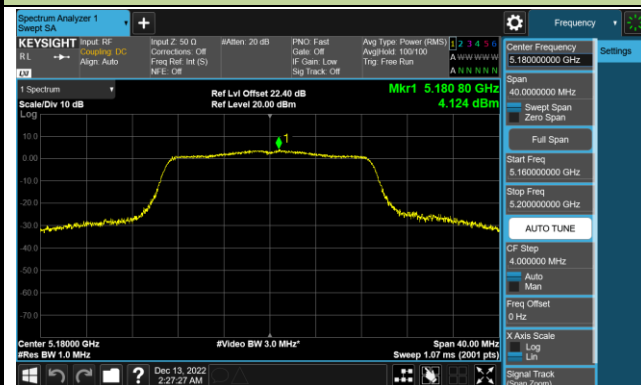
Channel 116 (5580MHz)



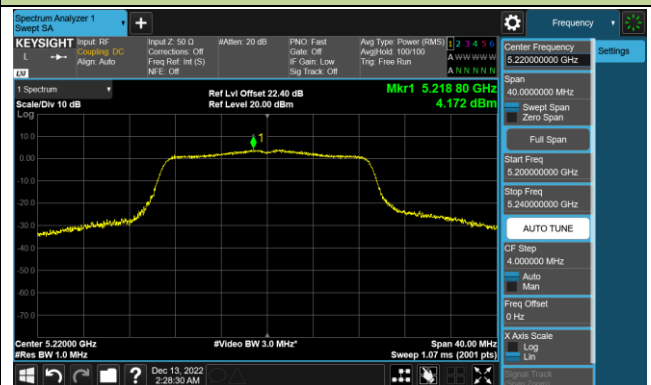


802.11ac-VHT20 Power Spectral Density - Ant 0

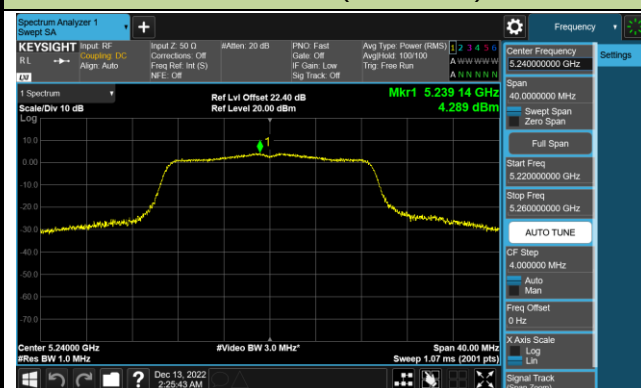
Channel 36 (5180MHz)



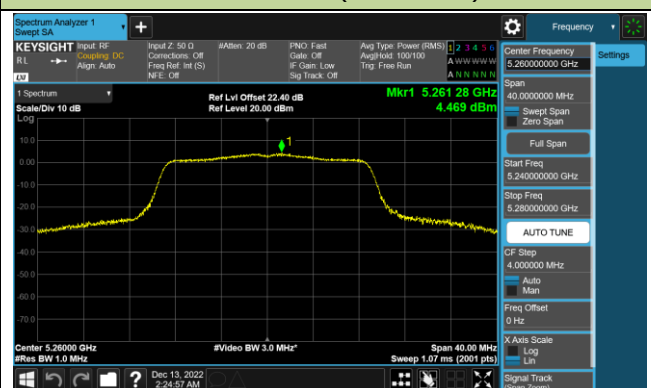
Channel 44 (5220MHz)



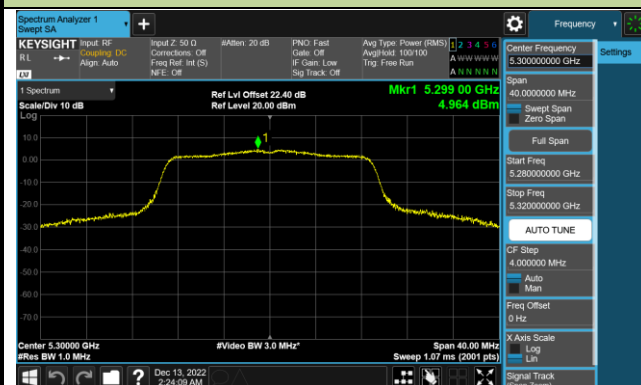
Channel 48 (5240MHz)



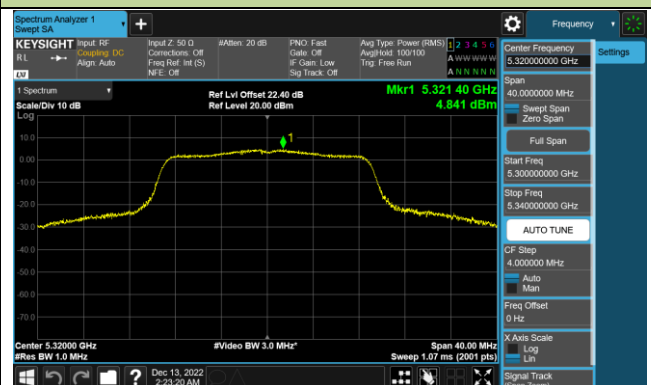
Channel 52 (5260MHz)



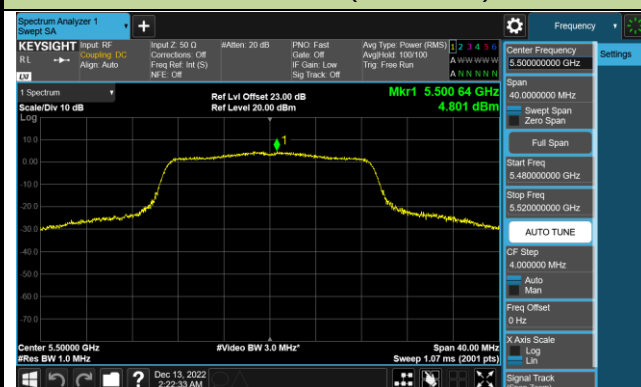
Channel 60 (5300MHz)



Channel 64 (5320MHz)



Channel 100 (5500MHz)



Channel 116 (5580MHz)

