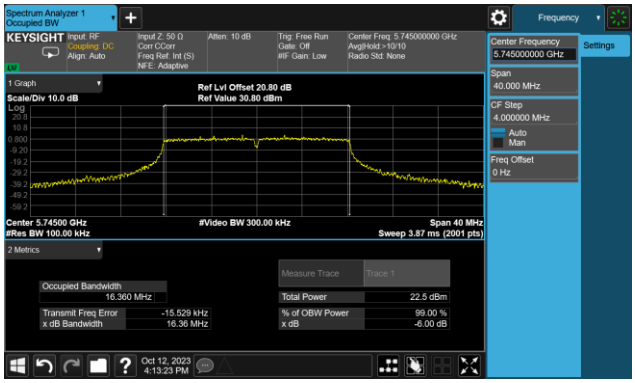
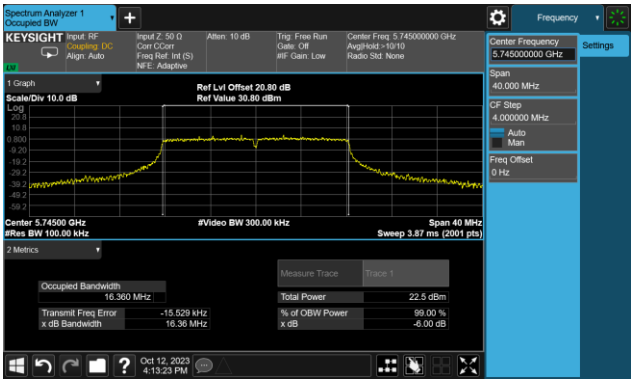
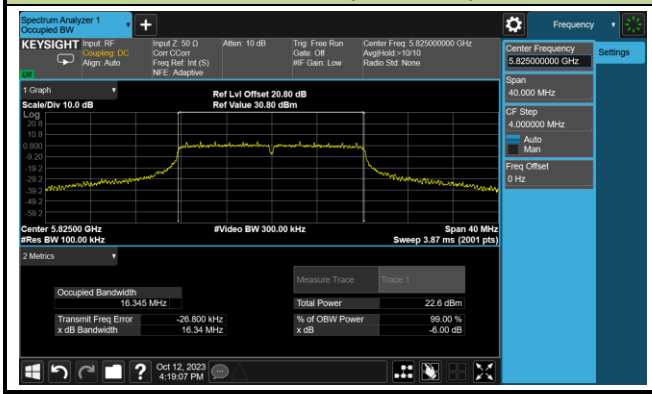
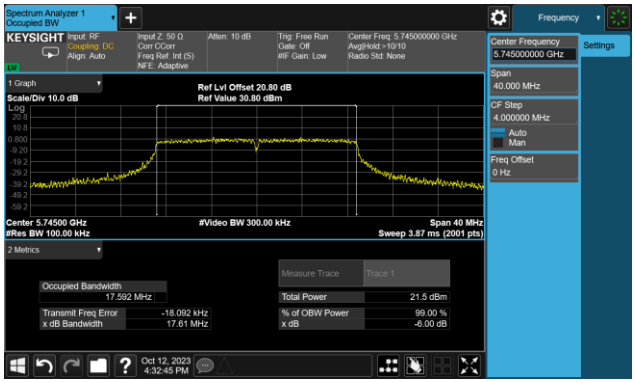
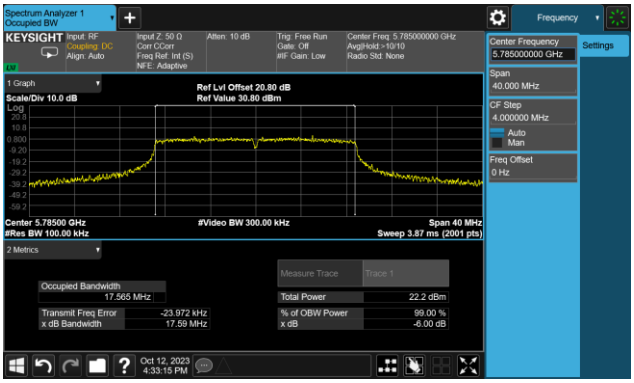
802.11a 6dB Bandwidth	
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	
Channel 165 (5825MHz)	
	

802.11ac-VHT20 6dB Bandwidth

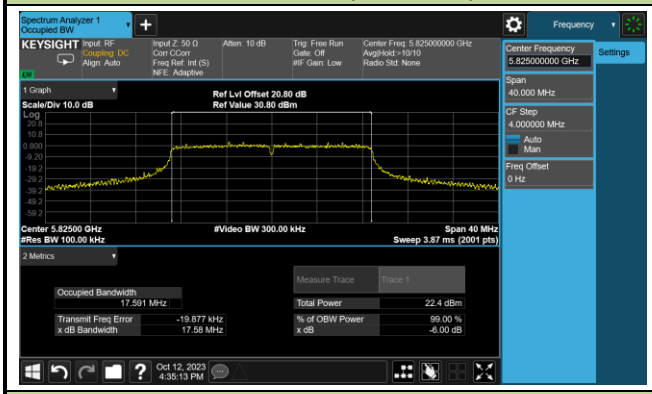
Channel 149 (5745MHz)



Channel 157 (5785MHz)

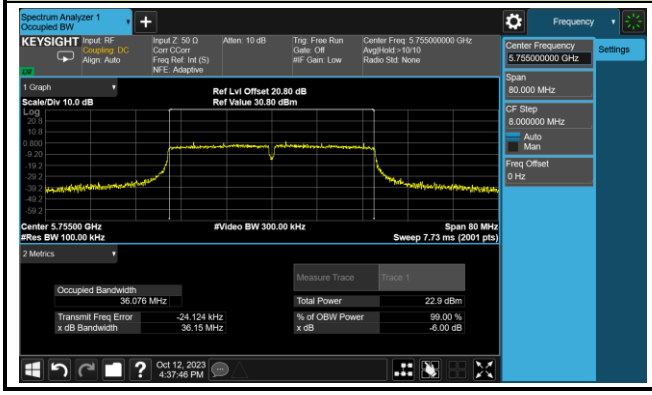


Channel 165 (5825MHz)

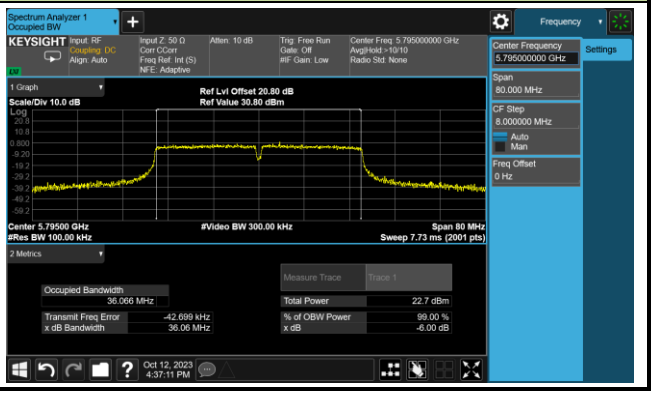


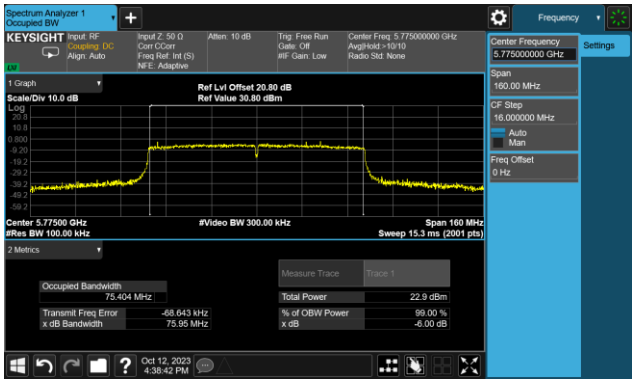
802.11ac-VHT40 6dB Bandwidth

Channel 151 (5755MHz)



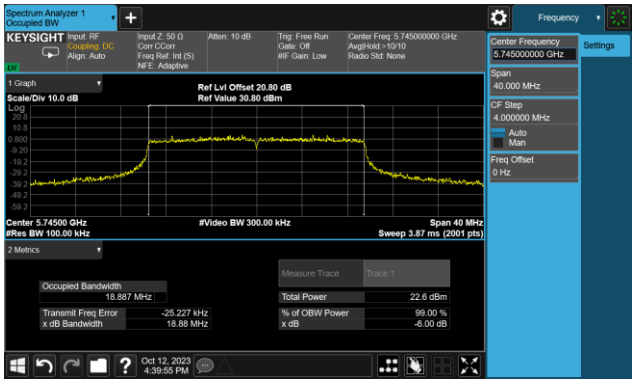
Channel 159 (5795MHz)



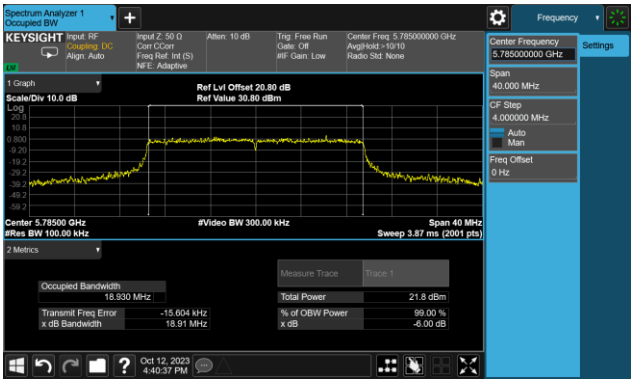
802.11ac-VHT80 6dB Bandwidth	
Channel 155 (5775MHz)	
	

802.11ax-HE20 6dB Bandwidth

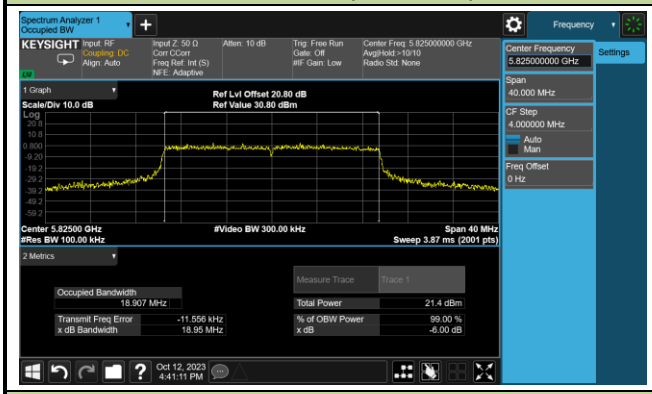
Channel 149 (5745MHz)



Channel 157 (5785MHz)

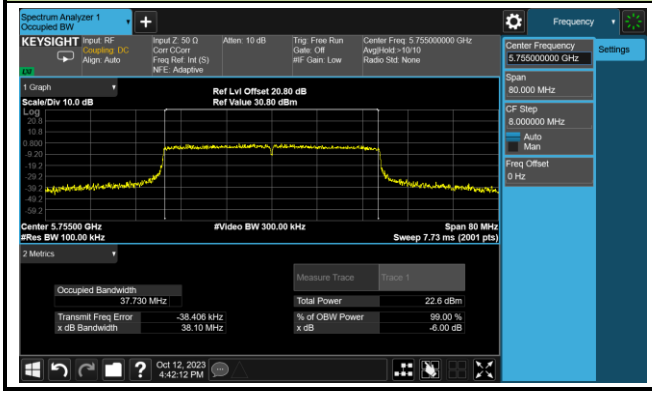


Channel 165 (5825MHz)

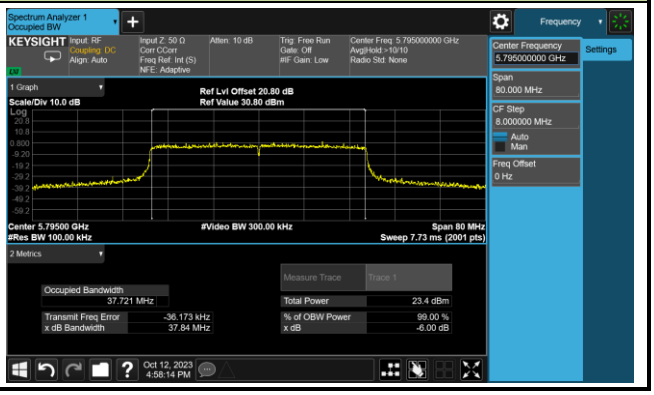


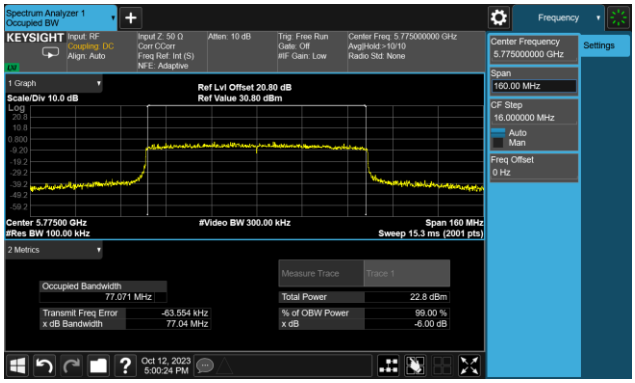
802.11ac-VHT40 6dB Bandwidth

Channel 151 (5755MHz)



Channel 159 (5795MHz)



802.11ax-HE80 6dB Bandwidth	
Channel 155 (5775MHz)	
	

A.4 Output Power Test Result

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-10-17~2023-10-25	Antenna Model No.	KDP2N-D2458L13BWB

Test Mode	Data Rate MCS	Channel No.	Freq. (MHz)	Average Power (dBm)				Total Average Power (dBm)		Power Limit (dBm)
				Ant 0	Ant 1	Ant 2	Ant 3	Ant 0+2	Ant 1+3	
11a	6Mbps	36	5180	14.67	15.18	14.11	14.05	17.41	17.66	≤ 23.10
11a	6Mbps	44	5220	14.56	15.24	14.34	14.67	17.46	17.97	≤ 23.10
11a	6Mbps	48	5240	14.22	15.13	14.58	14.52	17.41	17.85	≤ 23.10
11a	6Mbps	52	5260	9.11	8.57	7.89	8.23	11.55	11.41	≤ 15.87
11a	6Mbps	60	5300	9.26	8.81	8.24	8.31	11.79	11.58	≤ 15.87
11a	6Mbps	64	5320	9.22	9.15	7.91	8.31	11.62	11.76	≤ 15.85
11a	6Mbps	100	5500	8.30	6.79	7.84	7.78	11.09	10.32	≤ 15.81
11a	6Mbps	116	5580	8.29	7.53	8.15	8.06	11.23	10.81	≤ 15.89
11a	6Mbps	140	5700	9.46	8.41	7.88	8.16	11.75	11.30	≤ 15.81
11a	6Mbps	144	5720	9.35	7.88	7.94	8.33	11.71	11.12	≤ 14.62
11a	6Mbps	149	5745	19.46	17.85	18.45	19.04	21.99	21.50	≤ 22.52
11a	6Mbps	157	5785	19.41	17.33	18.36	18.94	21.93	21.22	≤ 22.52
11a	6Mbps	165	5825	19.61	18.08	18.31	18.96	22.02	21.55	≤ 22.52
11ac-VHT20	MCS0	36	5180	14.33	15.11	13.65	14.17	17.01	17.68	≤ 23.10
11ac-VHT20	MCS0	44	5220	14.51	15.18	14.21	14.58	17.37	17.90	≤ 23.10
11ac-VHT20	MCS0	48	5240	14.17	14.87	14.27	14.22	17.23	17.57	≤ 23.10
11ac-VHT20	MCS0	52	5260	9.06	8.45	7.76	8.14	11.47	11.31	≤ 16.02
11ac-VHT20	MCS0	60	5300	9.17	8.81	7.61	8.22	11.47	11.54	≤ 16.00
11ac-VHT20	MCS0	64	5320	9.75	9.73	8.79	8.82	12.31	12.31	≤ 16.02
11ac-VHT20	MCS0	100	5500	9.46	7.88	9.21	9.01	12.35	11.49	≤ 15.98
11ac-VHT20	MCS0	116	5580	8.51	7.44	8.46	8.07	11.50	10.78	≤ 16.02
11ac-VHT20	MCS0	140	5700	9.97	9.07	8.02	8.79	12.11	11.94	≤ 16.02
11ac-VHT20	MCS0	144	5720	10.12	8.56	8.02	8.95	12.21	11.77	≤ 14.80
11ac-VHT20	MCS0	149	5745	19.55	17.89	18.59	19.11	22.11	21.55	≤ 22.52
11ac-VHT20	MCS0	157	5785	19.28	17.34	18.35	19.15	21.85	21.35	≤ 22.52
11ac-VHT20	MCS0	165	5825	19.39	17.42	18.56	19.09	22.01	21.35	≤ 22.52

Test Mode	Data Rate MCS	Channel No.	Freq. (MHz)	Average Power (dBm)				Total Average Power (dBm)		Power Limit (dBm)
				Ant 0	Ant 1	Ant 2	Ant 3	Ant 0+2	Ant 1+3	
11ac-VHT40	MCS0	38	5190	14.47	15.08	13.96	14.24	17.23	17.69	≤ 23.10
11ac-VHT40	MCS0	46	5230	14.45	14.37	14.54	14.48	17.51	17.44	≤ 23.10
11ac-VHT40	MCS0	54	5270	12.44	11.58	11.12	11.57	14.84	14.59	≤ 16.02
11ac-VHT40	MCS0	62	5310	12.17	11.91	10.57	10.91	14.45	14.45	≤ 16.02
11ac-VHT40	MCS0	102	5510	12.05	10.06	11.76	11.81	14.92	14.03	≤ 16.02
11ac-VHT40	MCS0	110	5550	11.35	10.08	10.97	11.31	14.17	13.75	≤ 16.02
11ac-VHT40	MCS0	134	5670	12.11	11.56	10.63	11.09	14.44	14.34	≤ 16.02
11ac-VHT40	MCS0	142	5710	12.52	11.21	10.64	11.93	14.69	14.60	≤ 16.02
11ac-VHT40	MCS0	151	5755	19.84	17.96	18.59	19.48	22.27	21.80	≤ 22.52
11ac-VHT40	MCS0	159	5795	19.76	17.37	18.08	19.13	22.01	21.35	≤ 22.52
11ac-VHT80	MCS0	42	5210	14.50	15.31	14.28	14.60	17.40	17.98	≤ 23.10
11ac-VHT80	MCS0	58	5290	13.24	12.52	12.03	11.98	15.69	15.27	≤ 16.02
11ac-VHT80	MCS0	106	5530	12.59	11.24	12.09	12.56	15.36	14.96	≤ 16.02
11ac-VHT80	MCS0	122	5610	12.89	11.84	11.95	12.04	15.46	14.95	≤ 16.02
11ac-VHT80	MCS0	138	5690	13.51	12.54	11.80	12.73	15.75	15.65	≤ 16.02
11ac-VHT80	MCS0	155	5775	19.79	17.71	18.57	19.14	22.23	21.49	≤ 22.52
11ax-HE20	MCS0	36	5180	14.64	14.43	14.14	14.31	17.41	17.38	≤ 23.10
11ax-HE20	MCS0	44	5220	14.71	14.64	14.61	14.49	17.67	17.58	≤ 23.10
11ax-HE20	MCS0	48	5240	14.94	14.89	14.93	14.96	17.95	17.94	≤ 23.10
11ax-HE20	MCS0	52	5260	9.53	8.63	8.24	8.33	11.94	11.49	≤ 16.02
11ax-HE20	MCS0	60	5300	8.98	8.56	8.11	7.96	11.58	11.28	≤ 16.02
11ax-HE20	MCS0	64	5320	9.03	8.84	8.24	8.05	11.66	11.47	≤ 16.02
11ax-HE20	MCS0	100	5500	8.86	7.46	9.05	8.50	11.97	11.02	≤ 16.02
11ax-HE20	MCS0	116	5580	8.48	7.53	7.79	7.63	11.16	10.59	≤ 16.02
11ax-HE20	MCS0	140	5700	9.34	8.04	6.94	8.37	11.31	11.22	≤ 16.02
11ax-HE20	MCS0	144	5720	9.31	7.87	7.31	8.23	11.43	11.06	≤ 14.98
11ax-HE20	MCS0	149	5745	20.12	18.21	18.47	19.45	22.38	21.88	≤ 22.52
11ax-HE20	MCS0	157	5785	19.67	17.78	18.57	19.47	22.17	21.72	≤ 22.52
11ax-HE20	MCS0	165	5825	19.35	17.21	17.86	18.52	21.68	20.92	≤ 22.52

Test Mode	Data Rate MCS	Channel No.	Freq. (MHz)	Average Power (dBm)				Total Average Power (dBm)		Power Limit (dBm)
				Ant 0	Ant 1	Ant 2	Ant 3	Ant 0+2	Ant 1+3	
11ax-HE40	MCS0	38	5190	15.12	14.96	14.78	14.94	17.96	17.96	≤ 23.10
11ax-HE40	MCS0	46	5230	14.66	15.36	14.81	14.65	17.75	18.03	≤ 23.10
11ax-HE40	MCS0	54	5270	11.95	11.52	10.72	11.08	14.39	14.32	≤ 16.02
11ax-HE40	MCS0	62	5310	11.45	10.98	9.56	10.14	13.62	13.59	≤ 16.02
11ax-HE40	MCS0	102	5510	11.51	9.62	10.91	11.17	14.23	13.47	≤ 16.02
11ax-HE40	MCS0	110	5550	10.71	9.66	10.37	10.52	13.55	13.12	≤ 16.02
11ax-HE40	MCS0	134	5670	12.26	11.45	10.25	10.81	14.38	14.15	≤ 16.02
11ax-HE40	MCS0	142	5710	11.91	10.75	10.57	11.28	14.30	14.03	≤ 16.02
11ax-HE40	MCS0	151	5755	19.78	17.98	18.54	19.51	22.21	21.82	≤ 22.52
11ax-HE40	MCS0	159	5795	19.46	17.31	18.46	19.23	22.00	21.39	≤ 22.52
11ax-HE80	MCS0	42	5210	14.45	15.03	14.34	14.42	17.41	17.75	≤ 23.10
11ax-HE80	MCS0	58	5290	12.27	12.66	13.39	11.98	15.88	15.34	≤ 16.02
11ax-HE80	MCS0	106	5530	12.42	11.38	12.05	12.81	15.25	15.16	≤ 16.02
11ax-HE80	MCS0	122	5610	13.11	12.28	12.40	12.55	15.78	15.43	≤ 16.02
11ax-HE80	MCS0	138	5690	13.57	12.78	11.84	12.54	15.80	15.67	≤ 16.02
11ax-HE80	MCS0	155	5775	19.76	17.86	18.60	19.23	22.23	21.61	≤ 22.52

Note 1:

Ant 0+2 Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ +$10^{(\text{Ant 2 Average Power /10})}$}.

Ant 1+3 Total Average Power (dBm) = 10*log {$10^{(\text{Ant 1 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$}.

Note 2:

For 5150-5250MHz & 5725-5850MHz, Average Power Limit = 30 - (Ant Gain - 6).

For 5250-5350MHz & 5470-5725MHz, Average Power Limit = Min{23.98, 11+10log10(26dBc)} - (Ant Gain - 6).

For straddle channel, Average Power Limit =11+10*log(5+26dBc/2) – (Ant Gain - 6).

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-10-17~2023-10-25	Antenna Model No.	KDP2N-D2458L13BWB
Test Item	30° Elevation Angle EIRP		

Test Mode	Data Rate MCS	Channel No.	Freq. (MHz)	Average Power (dBm)				30° EIRP (dBm)		Power Limit (dBm)
				Ant 0	Ant 1	Ant 2	Ant 3	Ant 0+2	Ant 1+3	
11a	6Mbps	36	5180	14.67	15.18	14.11	14.05	20.31	20.56	≤ 21.00
11a	6Mbps	44	5220	14.56	15.24	14.34	14.67	20.36	20.87	≤ 21.00
11a	6Mbps	48	5240	14.22	15.13	14.58	14.52	20.31	20.75	≤ 21.00
11ac-VHT20	MCS0	36	5180	14.33	15.11	13.65	14.17	19.91	20.58	≤ 21.00
11ac-VHT20	MCS0	44	5220	14.51	15.18	14.21	14.58	20.27	20.80	≤ 21.00
11ac-VHT20	MCS0	48	5240	14.17	14.87	14.27	14.22	20.13	20.47	≤ 21.00
11ac-VHT40	MCS0	38	5190	14.47	15.08	13.96	14.24	20.13	20.59	≤ 21.00
11ac-VHT40	MCS0	46	5230	14.45	14.37	14.54	14.48	20.41	20.34	≤ 21.00
11ac-VHT80	MCS0	42	5210	14.50	15.31	14.28	14.60	20.30	20.88	≤ 21.00
11ax-HE20	MCS0	36	5180	14.64	14.43	14.14	14.31	20.31	20.28	≤ 21.00
11ax-HE20	MCS0	44	5220	14.71	14.64	14.61	14.49	20.57	20.48	≤ 21.00
11ax-HE20	MCS0	48	5240	14.94	14.89	14.93	14.96	20.85	20.84	≤ 21.00
11ax-HE40	MCS0	38	5190	15.12	14.96	14.78	14.94	20.86	20.86	≤ 21.00
11ax-HE40	MCS0	46	5230	14.66	15.36	14.81	14.65	20.65	20.93	≤ 21.00
11ax-HE80	MCS0	42	5210	14.45	15.03	14.34	14.42	20.31	20.65	≤ 21.00

Note:

Ant 0+2 30° EIRP (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ +$10^{(\text{Ant 2 Average Power /10})}$} + 30° Ant Gain.

Ant 1+3 30° EIRP (dBm) = 10*log {$10^{(\text{Ant 1 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$} + 30° Ant Gain.

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-10-17~2023-10-25	Antenna Model No.	TQJ-2458D9

Test Mode	Data Rate MCS	Channel No.	Freq. (MHz)	Average Power (dBm)				Total Average Power (dBm)	Power Limit (dBm)
				Ant 0	Ant 1	Ant 2	Ant 3		
11a	6Mbps	36	5180	7.43	6.98	6.73	7.38	13.16	≤ 28.73
11a	6Mbps	44	5220	7.11	6.75	6.94	7.15	13.01	≤ 28.73
11a	6Mbps	48	5240	6.94	7.35	7.21	6.76	13.09	≤ 28.73
11a	6Mbps	52	5260	6.47	6.26	5.98	6.14	12.24	≤ 19.91
11a	6Mbps	60	5300	6.36	6.37	6.31	6.26	12.35	≤ 19.91
11a	6Mbps	64	5320	6.23	6.41	6.36	6.25	12.33	≤ 19.89
11a	6Mbps	100	5500	5.95	5.49	6.33	5.44	11.84	≤ 19.85
11a	6Mbps	116	5580	7.08	6.53	7.56	6.84	13.04	≤ 19.93
11a	6Mbps	140	5700	6.35	5.66	6.12	6.18	12.11	≤ 19.85
11a	6Mbps	144	5720	5.72	5.67	5.96	6.43	11.98	≤ 18.66
11a	6Mbps	149	5745	20.05	19.86	20.23	20.00	26.06	≤ 26.60
11a	6Mbps	157	5785	19.82	20.25	20.61	20.95	26.45	≤ 26.60
11a	6Mbps	165	5825	19.98	20.11	20.17	20.42	26.19	≤ 26.60
11ac-VHT20	MCS0	36	5180	7.24	7.76	6.86	7.40	13.35	≤ 28.73
11ac-VHT20	MCS0	44	5220	6.91	7.43	6.65	7.12	13.06	≤ 28.73
11ac-VHT20	MCS0	48	5240	6.68	7.37	7.06	6.75	12.99	≤ 28.73
11ac-VHT20	MCS0	52	5260	5.95	5.81	5.86	5.46	11.79	≤ 20.06
11ac-VHT20	MCS0	60	5300	6.27	6.16	6.04	5.76	12.08	≤ 20.04
11ac-VHT20	MCS0	64	5320	6.39	6.31	6.40	5.90	12.28	≤ 20.06
11ac-VHT20	MCS0	100	5500	6.54	6.41	6.77	6.33	12.54	≤ 20.02
11ac-VHT20	MCS0	116	5580	5.85	5.41	6.21	5.61	11.80	≤ 20.06
11ac-VHT20	MCS0	140	5700	5.92	6.13	6.59	5.73	12.13	≤ 20.06
11ac-VHT20	MCS0	144	5720	5.87	5.89	6.45	5.81	12.03	≤ 18.84
11ac-VHT20	MCS0	149	5745	20.08	19.96	20.49	20.86	26.38	≤ 26.60
11ac-VHT20	MCS0	157	5785	19.86	20.26	20.56	20.97	26.45	≤ 26.60
11ac-VHT20	MCS0	165	5825	19.78	20.21	19.63	20.35	26.02	≤ 26.60

Test Mode	Data Rate MCS	Channel No.	Freq. (MHz)	Average Power (dBm)				Total Average Power (dBm)	Power Limit (dBm)
				Ant 0	Ant 1	Ant 2	Ant 3		
11ac-VHT40	MCS0	38	5190	7.30	7.68	6.86	7.56	13.38	≤ 28.73
11ac-VHT40	MCS0	46	5230	7.07	7.58	7.24	7.14	13.28	≤ 28.73
11ac-VHT40	MCS0	54	5270	9.67	9.59	9.48	9.35	15.54	≤ 20.06
11ac-VHT40	MCS0	62	5310	9.32	9.41	9.55	9.28	15.41	≤ 20.06
11ac-VHT40	MCS0	102	5510	8.14	7.66	8.27	9.10	14.34	≤ 20.06
11ac-VHT40	MCS0	110	5550	8.73	9.12	9.92	9.49	15.36	≤ 20.06
11ac-VHT40	MCS0	134	5670	9.32	8.74	9.05	9.31	15.13	≤ 20.06
11ac-VHT40	MCS0	142	5710	9.17	8.71	9.45	9.76	15.31	≤ 20.06
11ac-VHT40	MCS0	151	5755	20.29	19.92	20.45	21.13	26.49	≤ 26.60
11ac-VHT40	MCS0	159	5795	19.89	20.17	20.45	20.81	26.36	≤ 26.60
11ac-VHT80	MCS0	42	5210	7.31	7.62	7.04	7.25	13.33	≤ 28.73
11ac-VHT80	MCS0	58	5290	12.32	12.47	12.63	12.55	18.51	≤ 20.06
11ac-VHT80	MCS0	106	5530	12.69	12.23	13.04	12.56	18.66	≤ 20.06
11ac-VHT80	MCS0	122	5610	12.84	11.96	12.73	12.38	18.51	≤ 20.06
11ac-VHT80	MCS0	138	5690	12.51	11.71	12.18	12.23	18.19	≤ 20.06
11ac-VHT80	MCS0	155	5775	19.63	20.01	20.38	20.49	26.16	≤ 26.60
11ax-HE20	MCS0	36	5180	7.45	7.97	6.81	7.74	13.53	≤ 28.73
11ax-HE20	MCS0	44	5220	7.26	7.70	7.12	7.28	13.37	≤ 28.73
11ax-HE20	MCS0	48	5240	6.98	7.55	7.44	7.14	13.30	≤ 28.73
11ax-HE20	MCS0	52	5260	6.67	6.39	6.36	6.16	12.42	≤ 20.06
11ax-HE20	MCS0	60	5300	6.73	6.50	6.39	6.52	12.56	≤ 20.06
11ax-HE20	MCS0	64	5320	6.55	6.65	6.71	6.48	12.62	≤ 20.06
11ax-HE20	MCS0	100	5500	7.16	6.80	7.35	6.94	13.09	≤ 20.06
11ax-HE20	MCS0	116	5580	7.39	6.61	7.68	6.92	13.19	≤ 20.06
11ax-HE20	MCS0	140	5700	7.28	6.92	7.08	7.63	13.26	≤ 20.06
11ax-HE20	MCS0	144	5720	6.92	6.79	7.08	7.31	13.05	≤ 19.02
11ax-HE20	MCS0	149	5745	20.06	20.23	20.36	20.86	26.41	≤ 26.60
11ax-HE20	MCS0	157	5785	19.35	19.63	20.14	20.30	25.89	≤ 26.60
11ax-HE20	MCS0	165	5825	19.21	19.47	19.29	19.43	25.37	≤ 26.60

Test Mode	Data Rate MCS	Channel No.	Freq. (MHz)	Average Power (dBm)				Total Average Power (dBm)	Power Limit (dBm)
				Ant 0	Ant 1	Ant 2	Ant 3		
11ax-HE40	MCS0	38	5190	7.55	7.97	7.24	7.67	13.64	≤ 28.73
11ax-HE40	MCS0	46	5230	7.19	7.62	7.48	7.26	13.41	≤ 28.73
11ax-HE40	MCS0	54	5270	9.81	9.71	9.62	9.54	15.69	≤ 20.06
11ax-HE40	MCS0	62	5310	8.79	8.92	8.98	8.57	14.84	≤ 20.06
11ax-HE40	MCS0	102	5510	9.48	8.58	9.36	9.25	15.20	≤ 20.06
11ax-HE40	MCS0	110	5550	9.67	9.23	9.15	9.64	15.45	≤ 20.06
11ax-HE40	MCS0	134	5670	10.22	9.29	9.96	10.16	15.94	≤ 20.06
11ax-HE40	MCS0	142	5710	9.31	8.93	9.53	9.83	15.43	≤ 20.06
11ax-HE40	MCS0	151	5755	19.51	19.25	19.89	20.37	25.80	≤ 26.60
11ax-HE40	MCS0	159	5795	19.39	19.62	19.82	20.02	25.74	≤ 26.60
11ax-HE80	MCS0	42	5210	7.58	7.26	7.51	7.55	13.50	≤ 28.73
11ax-HE80	MCS0	58	5290	12.75	12.82	12.72	12.64	18.75	≤ 20.06
11ax-HE80	MCS0	106	5530	13.01	12.43	13.28	12.91	18.94	≤ 20.06
11ax-HE80	MCS0	122	5610	12.75	12.87	12.84	12.73	18.82	≤ 20.06
11ax-HE80	MCS0	138	5690	12.65	11.85	12.31	12.65	18.40	≤ 20.06
11ax-HE80	MCS0	155	5775	19.29	19.32	19.69	20.14	25.64	≤ 26.60

Note 1: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ + $10^{(\text{Ant 1 Average Power /10})}$ +$10^{(\text{Ant 2 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$}.

Note 2:

For 5150-5250MHz & 5725-5850MHz, Average Power Limit = 30 - (Ant Gain - 6).

For 5250-5350MHz & 5470-5725MHz, Average Power Limit = Min{23.98, 11+10log10(26dBc)} - (Ant Gain - 6).

For straddle channel, Average Power Limit =11+10*log(5+26dBc/2) – (Ant Gain - 6).

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-10-17~2023-10-25	Antenna Model No.	TQJ-2458D9
Test Item	30° EIRP		

Test Mode	Data Rate MCS	Channel No.	Freq. (MHz)	Average Power (dBm)				30° EIRP (dBm)	Power Limit (dBm)
				Ant 0	Ant 1	Ant 2	Ant 3		
11a	6Mbps	36	5180	7.43	6.98	6.73	7.38	20.43	≤ 21.00
11a	6Mbps	44	5220	7.11	6.75	6.94	7.15	20.28	≤ 21.00
11a	6Mbps	48	5240	6.94	7.35	7.21	6.76	20.36	≤ 21.00
11ac-VHT20	MCS0	36	5180	7.24	7.76	6.86	7.40	20.62	≤ 21.00
11ac-VHT20	MCS0	44	5220	6.91	7.43	6.65	7.12	20.33	≤ 21.00
11ac-VHT20	MCS0	48	5240	6.68	7.37	7.06	6.75	20.26	≤ 21.00
11ac-VHT40	MCS0	38	5190	7.30	7.68	6.86	7.56	20.65	≤ 21.00
11ac-VHT40	MCS0	46	5230	7.07	7.58	7.24	7.14	20.55	≤ 21.00
11ac-VHT80	MCS0	42	5210	7.31	7.62	7.04	7.25	20.60	≤ 21.00
11ax-HE20	MCS0	36	5180	7.45	7.97	6.81	7.74	20.80	≤ 21.00
11ax-HE20	MCS0	44	5220	7.26	7.70	7.12	7.28	20.64	≤ 21.00
11ax-HE20	MCS0	48	5240	6.98	7.55	7.44	7.14	20.57	≤ 21.00
11ax-HE40	MCS0	38	5190	7.55	7.97	7.24	7.67	20.91	≤ 21.00
11ax-HE40	MCS0	46	5230	7.19	7.62	7.48	7.26	20.68	≤ 21.00
11ax-HE80	MCS0	42	5210	7.58	7.26	7.51	7.55	20.77	≤ 21.00

Note 1: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} + 10^{(\text{Ant 1 Average Power }/10)} + 10^{(\text{Ant 2 Average Power }/10)} + 10^{(\text{Ant 3 Average Power }/10)}\}$ + 30° Ant Gain.

A.5 Power Spectral Density Test Result

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-10-17~2023-10-25	Antenna Model No.	KDP2N-D2458L13BWB
Test Item	Power Spectral Density (UNII-Band 1 & UNII-2a & UNII-2c)		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	AVPSD (dBm/ MHz)				Duty Cycle (%)	Total PSD (dBm/ MHz)		PSD Limit (dBm/MHz)
				Ant 0	Ant 1	Ant 2	Ant 3		Ant 0+2	Ant 1+3	
11a	6Mbps	36	5180	1.53	2.06	0.88	2.40	95.62	4.42	5.44	≤ 7.09
11a	6Mbps	44	5220	2.91	3.52	2.63	3.01	95.62	5.98	6.48	≤ 7.09
11a	6Mbps	48	5240	2.20	3.05	2.63	2.67	95.62	5.62	6.07	≤ 7.09
11a	6Mbps	52	5260	-3.50	-3.21	-3.66	-3.65	95.62	-0.37	-0.22	≤ 0.03
11a	6Mbps	60	5300	-3.58	-3.48	-3.61	-3.50	95.62	-0.39	-0.29	≤ 0.03
11a	6Mbps	64	5320	-3.71	-3.71	-3.40	-3.47	95.62	-0.35	-0.38	≤ 0.03
11a	6Mbps	100	5500	-3.54	-4.24	-3.53	-4.21	95.62	-0.33	-1.02	≤ 0.03
11a	6Mbps	116	5580	-3.38	-4.51	-3.29	-3.65	95.62	-0.13	-0.85	≤ 0.03
11a	6Mbps	140	5700	-4.61	-5.09	-4.50	-3.32	95.62	-1.35	-0.91	≤ 0.03
11a	6Mbps	144	5720	-4.62	-4.96	-4.59	-3.18	95.62	-1.40	-0.78	≤ 0.03
11ac-VHT20	MCS0	36	5180	1.89	2.60	1.67	1.82	93.57	5.08	5.52	≤ 7.09
11ac-VHT20	MCS0	44	5220	2.00	2.87	1.70	2.28	93.57	5.15	5.88	≤ 7.09
11ac-VHT20	MCS0	48	5240	2.04	2.65	2.54	2.04	93.57	5.59	5.66	≤ 7.09
11ac-VHT20	MCS0	52	5260	-3.90	-3.58	-4.61	-3.92	93.57	-0.94	-0.45	≤ 0.03
11ac-VHT20	MCS0	60	5300	-4.45	-3.85	-3.98	-4.00	93.57	-0.91	-0.62	≤ 0.03
11ac-VHT20	MCS0	64	5320	-3.47	-3.44	-3.47	-3.76	93.57	-0.17	-0.30	≤ 0.03
11ac-VHT20	MCS0	100	5500	-3.25	-3.67	-3.63	-3.31	93.57	-0.14	-0.18	≤ 0.03
11ac-VHT20	MCS0	116	5580	-3.69	-5.32	-3.99	-5.09	93.57	-0.54	-1.90	≤ 0.03
11ac-VHT20	MCS0	140	5700	-4.08	-4.76	-4.27	-3.50	93.57	-0.88	-0.79	≤ 0.03
11ac-VHT20	MCS0	144	5720	-4.97	-4.96	-3.37	-2.82	93.57	-0.80	-0.46	≤ 0.03
11ac-VHT40	MCS0	38	5190	-0.64	0.14	-1.18	-0.93	91.71	2.49	3.03	≤ 7.09
11ac-VHT40	MCS0	46	5230	-0.54	0.41	-0.32	-0.49	91.71	2.96	3.37	≤ 7.09
11ac-VHT40	MCS0	54	5270	-3.79	-4.23	-4.05	-4.33	91.71	-0.53	-0.89	≤ 0.03
11ac-VHT40	MCS0	62	5310	-3.46	-3.04	-3.88	-4.22	91.71	-0.28	-0.20	≤ 0.03
11ac-VHT40	MCS0	102	5510	-3.66	-5.36	-4.34	-3.63	91.71	-0.60	-1.02	≤ 0.03
11ac-VHT40	MCS0	110	5550	-3.94	-5.09	-3.86	-3.86	91.71	-0.52	-1.05	≤ 0.03
11ac-VHT40	MCS0	134	5670	-3.30	-4.05	-3.91	-3.92	91.71	-0.21	-0.60	≤ 0.03
11ac-VHT40	MCS0	142	5710	-3.27	-4.30	-4.19	-3.55	91.71	-0.32	-0.52	≤ 0.03

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	AVPSD (dBm/ MHz)				Duty Cycle (%)	Total PSD (dBm/ MHz)		PSD Limit (dBm/MHz)
				Ant 0	Ant 1	Ant 2	Ant 3		Ant 0,2	Ant 1,3	
11ac-VHT80	MCS0	42	5210	-3.71	-2.69	-3.63	-3.46	92.64	-0.33	0.28	≤ 7.09
11ac-VHT80	MCS0	58	5290	-5.40	-5.50	-6.54	-6.25	92.64	-2.59	-2.52	≤ 0.03
11ac-VHT80	MCS0	106	5530	-5.89	-7.46	-6.03	-6.24	92.64	-2.62	-3.46	≤ 0.03
11ac-VHT80	MCS0	122	5610	-5.14	-6.38	-6.23	-6.25	92.64	-2.31	-2.97	≤ 0.03
11ac-VHT80	MCS0	138	5690	-4.63	-5.62	-6.01	-5.83	92.64	-1.92	-2.38	≤ 0.03
11ax-HE20	MCS0	36	5180	2.05	2.72	1.26	2.16	95.10	4.90	5.68	≤ 7.09
11ax-HE20	MCS0	44	5220	2.14	2.92	2.23	2.17	95.10	5.41	5.79	≤ 7.09
11ax-HE20	MCS0	48	5240	2.73	3.32	2.89	2.73	95.10	6.04	6.26	≤ 7.09
11ax-HE20	MCS0	52	5260	-3.51	-3.94	-4.39	-4.03	95.10	-0.70	-0.75	≤ 0.03
11ax-HE20	MCS0	60	5300	-3.51	-3.33	-4.48	-4.27	95.10	-0.74	-0.55	≤ 0.03
11ax-HE20	MCS0	64	5320	-3.69	-3.44	-4.05	-4.48	95.10	-0.64	-0.70	≤ 0.03
11ax-HE20	MCS0	100	5500	-3.76	-4.95	-3.63	-3.77	95.10	-0.46	-1.09	≤ 0.03
11ax-HE20	MCS0	116	5580	-4.46	-5.56	-3.73	-4.63	95.10	-0.85	-1.84	≤ 0.03
11ax-HE20	MCS0	140	5700	-3.39	-4.59	-4.43	-4.09	95.10	-0.65	-1.10	≤ 0.03
11ax-HE20	MCS0	144	5720	-3.47	-4.63	-4.71	-4.06	95.10	-0.82	-1.10	≤ 0.03
11ax-HE40	MCS0	38	5190	-0.09	0.51	-0.53	-0.33	93.30	3.01	3.42	≤ 7.09
11ax-HE40	MCS0	46	5230	-0.47	0.43	-0.47	-0.61	93.30	2.84	3.25	≤ 7.09
11ax-HE40	MCS0	54	5270	-3.18	-3.67	-3.61	-4.09	93.30	-0.08	-0.56	≤ 0.03
11ax-HE40	MCS0	62	5310	-3.56	-3.54	-4.05	-4.52	93.30	-0.49	-0.69	≤ 0.03
11ax-HE40	MCS0	102	5510	-3.93	-5.67	-3.75	-3.86	93.30	-0.52	-1.36	≤ 0.03
11ax-HE40	MCS0	110	5550	-4.42	-5.71	-4.03	-4.38	93.30	-0.91	-1.68	≤ 0.03
11ax-HE40	MCS0	134	5670	-3.49	-3.98	-4.36	-4.01	93.30	-0.60	-0.69	≤ 0.03
11ax-HE40	MCS0	142	5710	-3.43	-4.62	-4.19	-3.84	93.30	-0.48	-0.90	≤ 0.03
11ax-HE80	MCS0	42	5210	-3.66	-2.91	-3.76	-3.76	94.43	-0.45	-0.05	≤ 7.09
11ax-HE80	MCS0	58	5290	-5.72	-5.02	-4.55	-5.59	94.43	-1.83	-2.03	≤ 0.03
11ax-HE80	MCS0	106	5530	-5.68	-5.97	-6.09	-5.34	94.43	-2.62	-2.39	≤ 0.03
11ax-HE80	MCS0	122	5610	-5.22	-6.24	-5.62	-5.52	94.43	-2.16	-2.61	≤ 0.03
11ax-HE80	MCS0	138	5690	-4.76	-5.52	-5.77	-5.31	94.43	-1.98	-2.16	≤ 0.03

Note 1:

When EUT duty cycle < 98%,

Ant 0+2 total PSD (dBm/MHz) =10*log {$10^{(\text{Ant 0 AVGPSD}/10)}$ +$10^{(\text{Ant 2 AVGPSD}/10)}$} +10*log (1/Duty cycle),

Ant 1+3 total PSD (dBm/MHz) =10*log {$10^{(\text{Ant 1 AVGPSD}/10)}$ +$10^{(\text{Ant 3 AVGPSD}/10)}$} +10*log (1/Duty cycle).

When EUT duty cycle ≥ 98%,

Ant 0+2 total PSD (dBm/MHz) =10*log {$10^{(\text{Ant 0 AVGPSD}/10)}$ +$10^{(\text{Ant 2 AVGPSD}/10)}$},

Ant 1+3 total PSD (dBm/MHz) =10*log {$10^{(\text{Ant 1 AVGPSD/10})}$ +$10^{(\text{Ant 3 AVGPSD/10})}$}.

Note 2:

For 5125 - 5250MHz Band: PSD Limit (dBm/MHz) = 17 - (15.91 - 6) = 7.09dBm/MHz.

For 5250 - 5350MHz& 5470 - 5725MHz Band: Average Power Limit (dBm) = 11 - (16.97 - 6) = 0.03dBm/MHz.

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-10-19~2023-10-23	Antenna Model No.	KDP2N-D2458L13BWB
Test Item	Power Spectral Density (UNII-Band 3)		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	AVPSD (dBm/ 510kHz)				Duty Cycle (%)	Total PSD (dBm/ 510kHz)		PSD Limit (dBm/ 500kHz)
				Ant 0	Ant 1	Ant 2	Ant 3		Ant 0+2	Ant 1+3	
11a	6Mbps	149	5745	4.50	3.30	3.63	4.68	95.62	7.29	7.25	≤ 19.51
11a	6Mbps	157	5785	4.56	2.78	3.66	4.45	95.62	7.34	6.90	≤ 19.51
11a	6Mbps	165	5825	4.71	3.20	3.60	4.61	95.62	7.40	7.17	≤ 19.51
11ac-VHT20	MCS0	149	5745	3.83	2.73	3.26	3.92	93.57	6.85	6.67	≤ 19.51
11ac-VHT20	MCS0	157	5785	4.19	1.95	3.31	3.92	93.57	7.07	6.35	≤ 19.51
11ac-VHT20	MCS0	165	5825	3.28	1.86	2.29	3.20	93.57	6.11	5.88	≤ 19.51
11ac-VHT40	MCS0	151	5755	1.40	-1.03	-0.12	1.31	91.71	4.10	3.68	≤ 19.51
11ac-VHT40	MCS0	159	5795	1.14	-1.27	-0.75	0.59	91.71	3.68	3.14	≤ 19.51
11ac-VHT80	MCS0	155	5775	-1.53	-3.68	-2.67	-2.11	92.64	1.28	0.52	≤ 19.51
11ax-HE20	MCS0	149	5745	3.47	2.86	3.34	4.26	95.10	6.63	6.84	≤ 19.51
11ax-HE20	MCS0	157	5785	3.51	3.37	2.45	4.57	95.10	6.24	7.24	≤ 19.51
11ax-HE20	MCS0	165	5825	3.20	3.05	2.11	3.73	95.10	5.91	6.63	≤ 19.51
11ax-HE40	MCS0	151	5755	1.03	0.33	0.40	1.65	93.30	4.03	4.35	≤ 19.51
11ax-HE40	MCS0	159	5795	0.56	0.13	-0.88	1.02	93.30	3.21	3.91	≤ 19.51
11ax-HE80	MCS0	155	5775	-1.93	-2.22	-2.86	-1.40	94.43	0.89	1.47	≤ 19.51

Note 1:

When EUT duty cycle < 98%,

Ant 0+2 total PSD (dBm/510kHz) =10*log {$10^{(\text{Ant 0 AVGPSD}/10)}$ +$10^{(\text{Ant 2 AVGPSD}/10)}$} +10*log (1/Duty cycle),

Ant 1+3 total PSD (dBm/510kHz) =10*log {$10^{(\text{Ant 1 AVGPSD}/10)}$ +$10^{(\text{Ant 3 AVGPSD}/10)}$} +10*log (1/Duty cycle).

When EUT duty cycle ≥ 98%,

Ant 0+2 total PSD (dBm/510kHz) =10*log {$10^{(\text{Ant 0 AVGPSD}/10)}$ +$10^{(\text{Ant 2 AVGPSD}/10)}$},

Ant 1+3 total PSD (dBm/510kHz) =10*log {$10^{(\text{Ant 1 AVGPSD}/10)}$ +$10^{(\text{Ant 3 AVGPSD}/10)}$}.

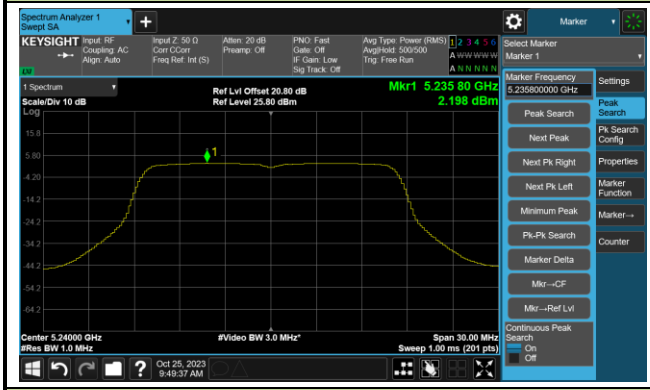
Note 2: PSD Limit (dBm/500kHz) = 30 - (16.49 - 6) = 19.51dBm/500KHz.

802.11a Power Spectral Density- Ant 0

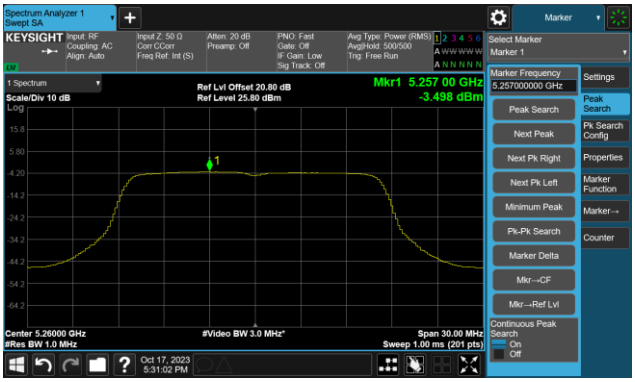
Channel 36 (5180MHz)

Channel 44 (5220MHz)

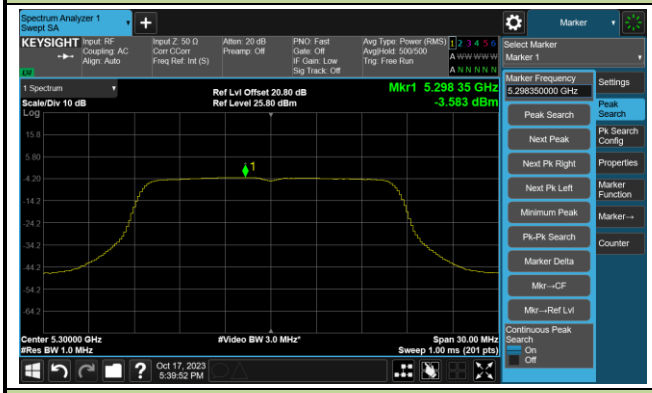
Channel 48 (5240MHz)



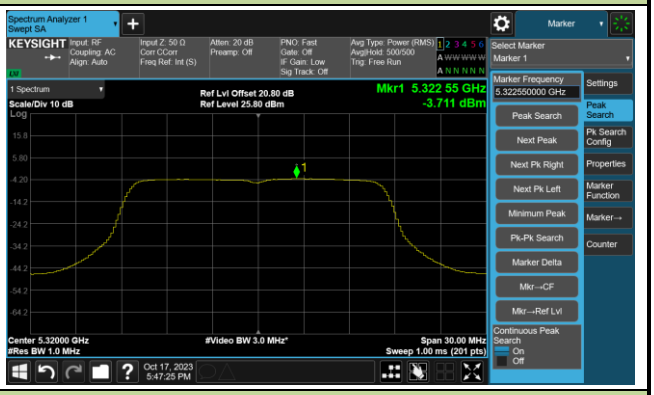
Channel 52 (5260MHz)



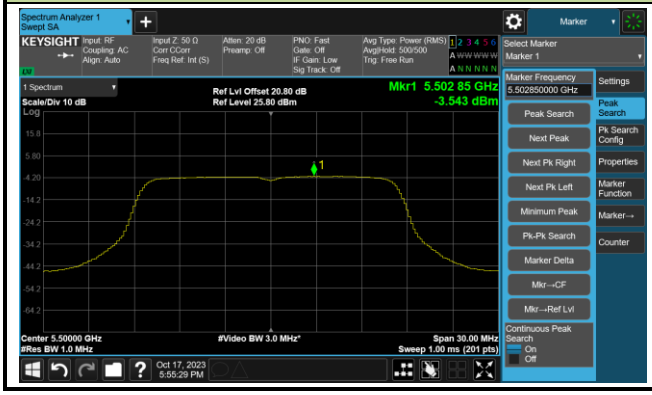
Channel 60 (5300MHz)



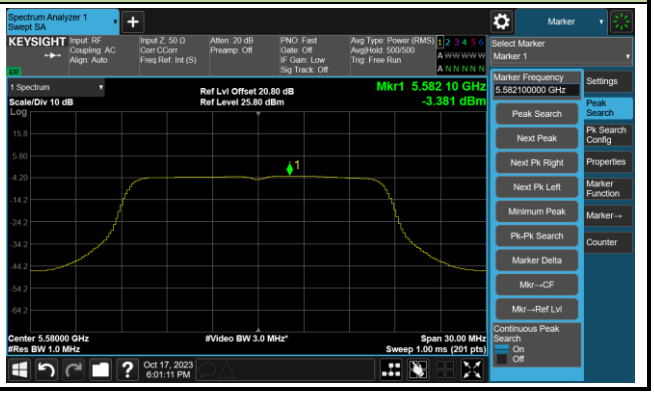
Channel 64 (5320MHz)

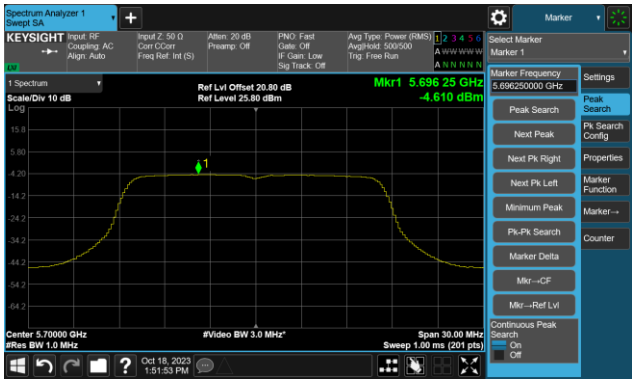
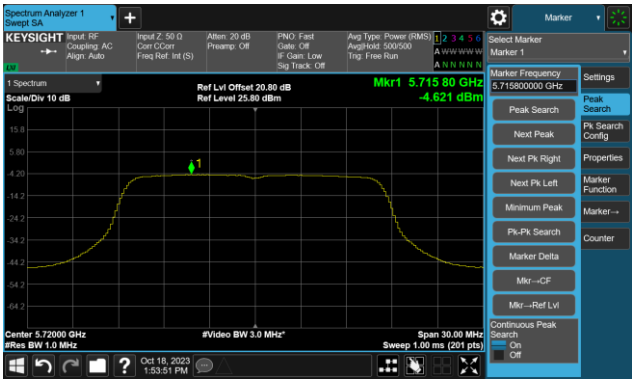
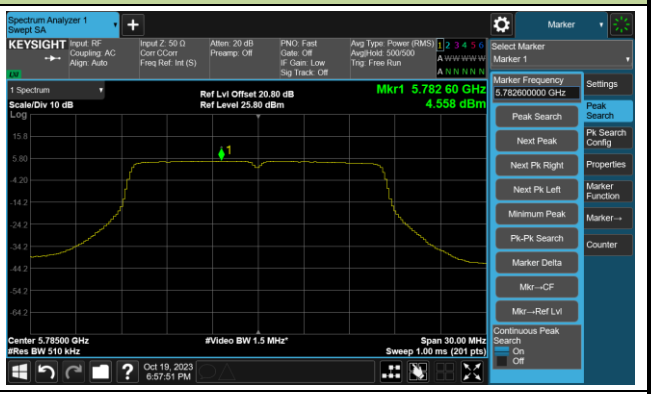
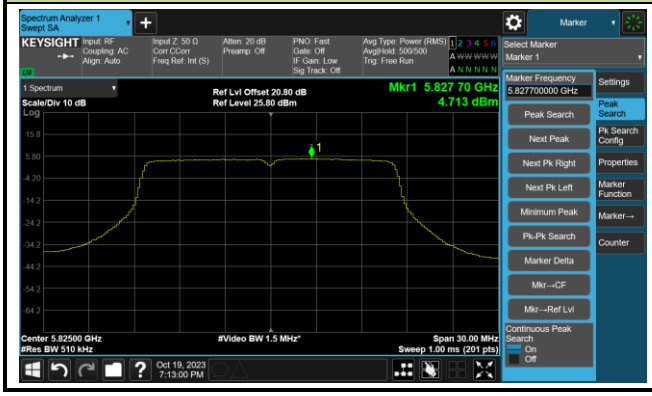


Channel 100 (5500MHz)



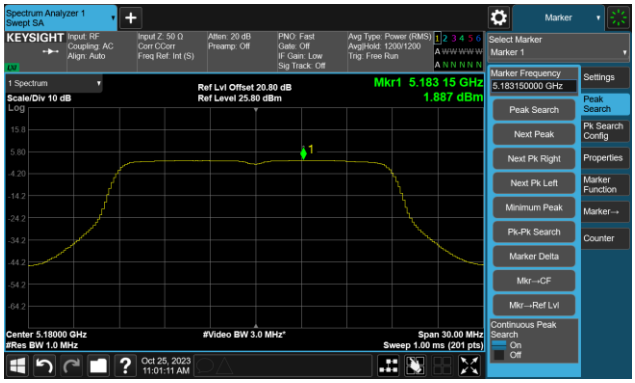
Channel 116 (5580MHz)



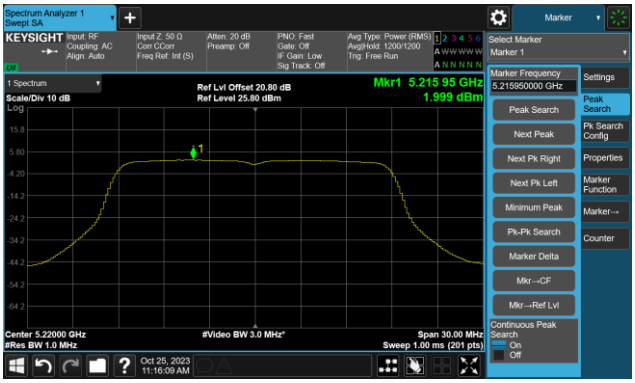
802.11a Power Spectral Density- Ant 0	
Channel 140 (5700MHz)	Channel 144(5720MHz)
	
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	
Channel 165 (5825MHz)	
	

802.11ac-VHT20 Power Spectral Density- Ant 0

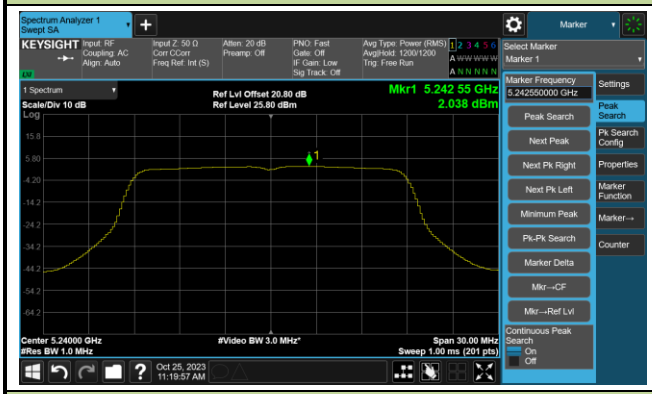
Channel 36 (5180MHz)



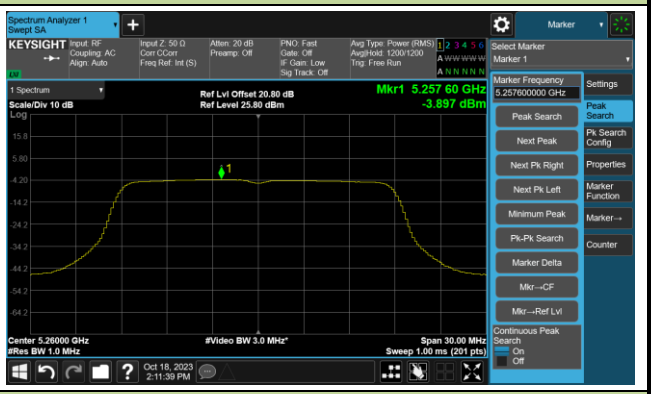
Channel 44 (5220MHz)



Channel 48 (5240MHz)

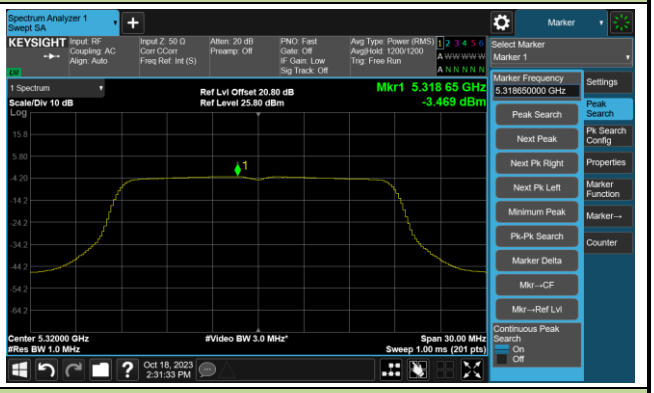


Channel 52 (5260MHz)

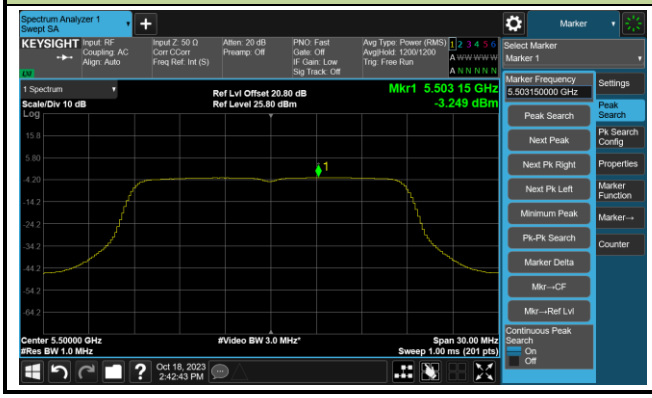


Channel 60 (5300MHz)

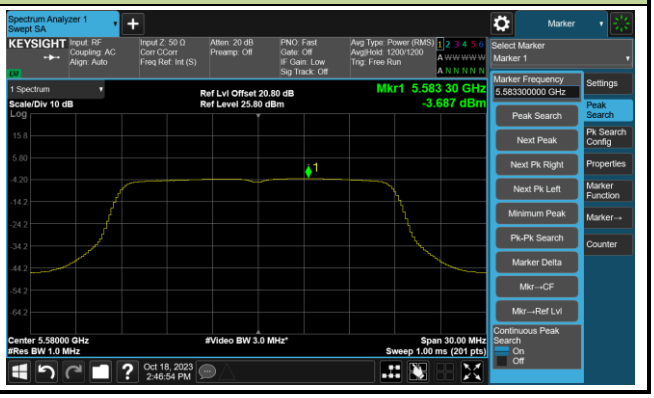
Channel 64 (5320MHz)

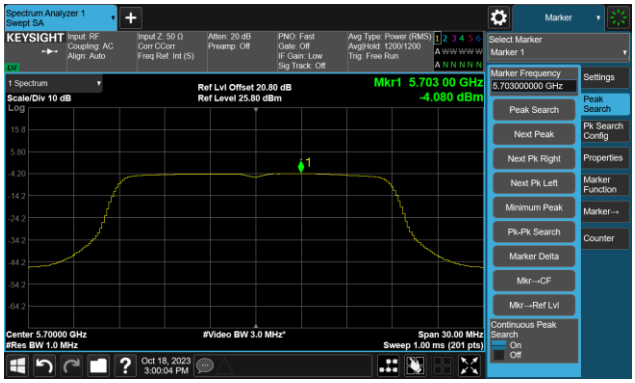
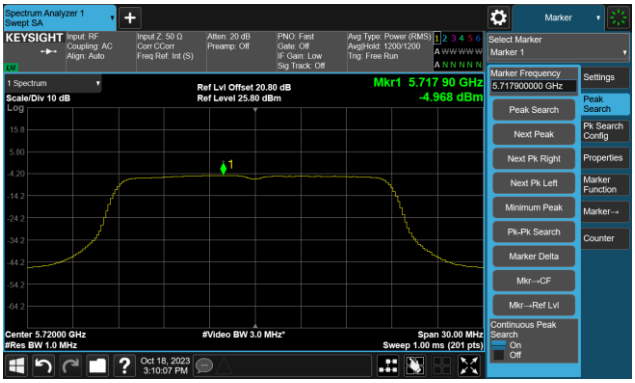
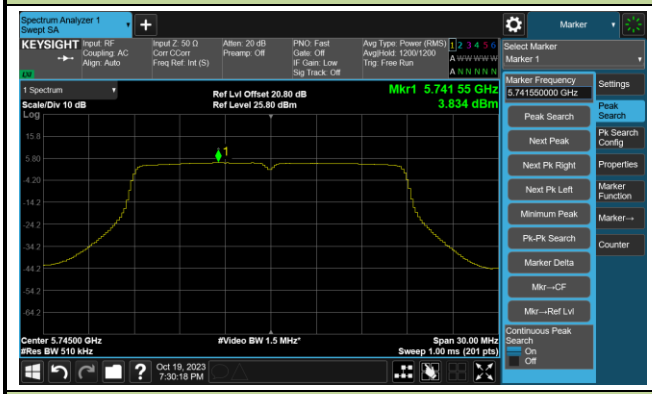
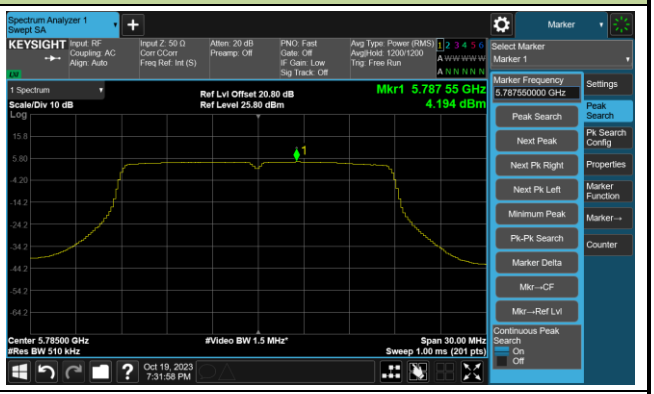
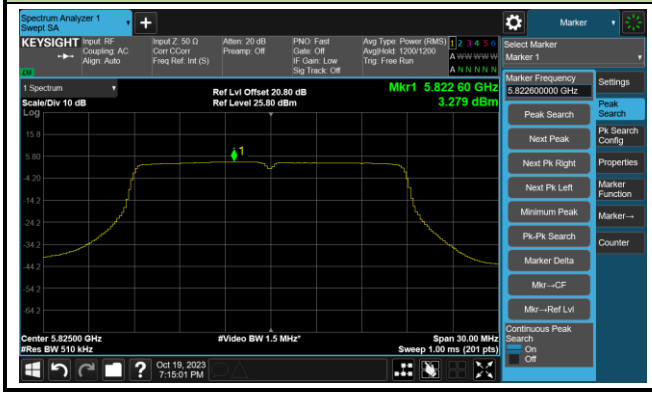


Channel 100 (5500MHz)



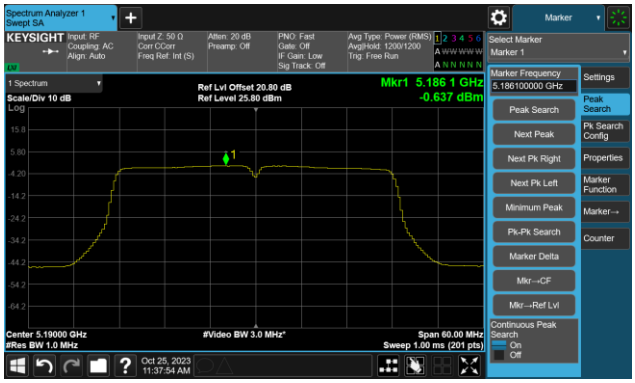
Channel 116 (5580MHz)



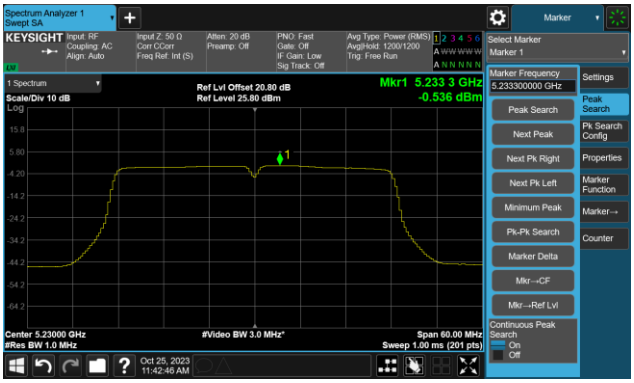
802.11ac-VHT20 Power Spectral Density- Ant 0	
Channel 140 (5700MHz)	Channel 144(5720MHz)
	
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	
Channel 165 (5825MHz)	
	

802.11ac-VHT40 Power Spectral Density- Ant 0

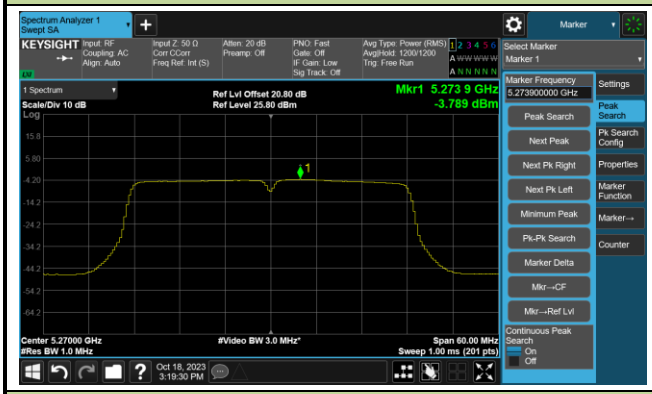
Channel 38 (5190MHz)



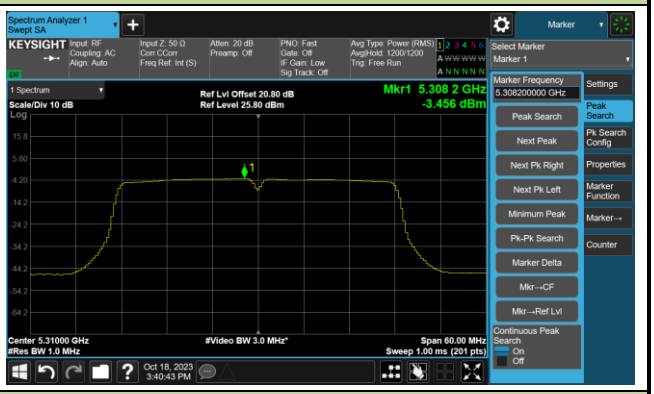
Channel 46 (5230MHz)



Channel 54 (5270MHz)

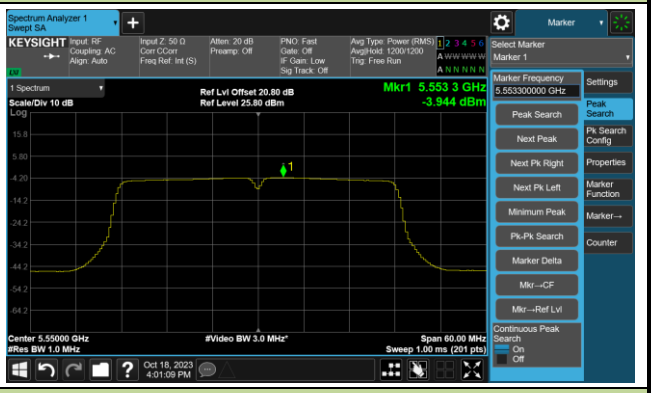


Channel 62 (5310MHz)

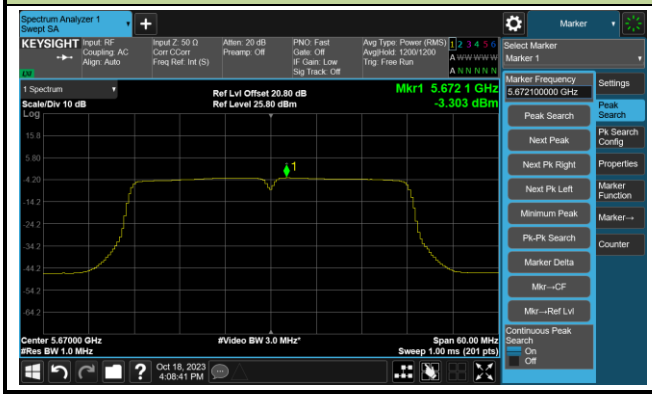


Channel 102 (5510MHz)

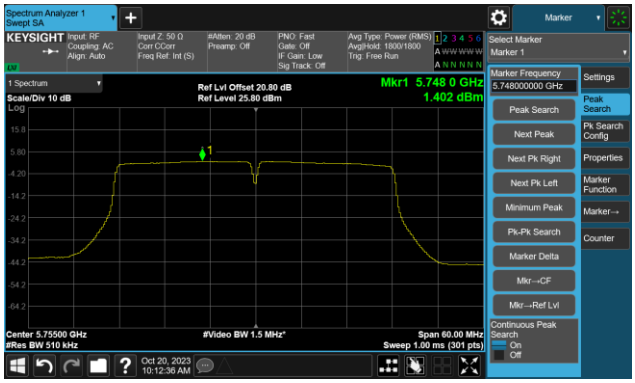
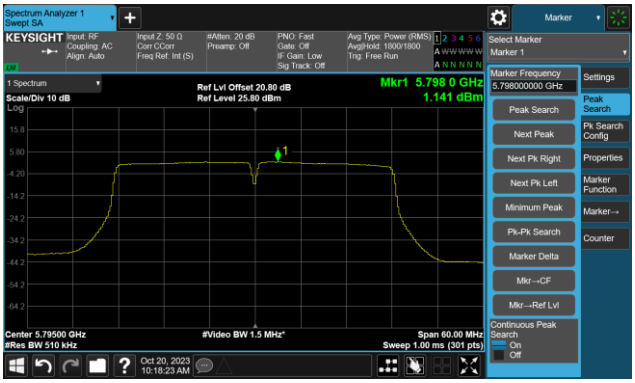
Channel 110 (5550MHz)



Channel 134 (5670MHz)

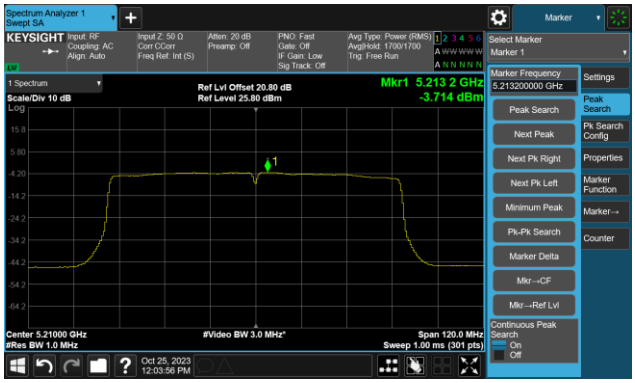


Channel 142(5710MHz)

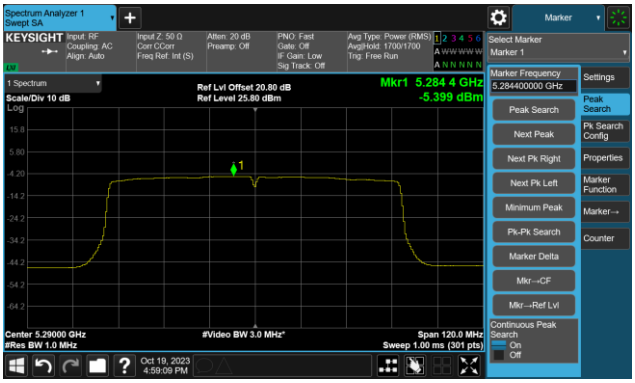
802.11ac-VHT40 Power Spectral Density- Ant 0	
Channel 151 (5755MHz)	Channel 159 (5795MHz)
	

802.11ac-VHT80 Power Spectral Density- Ant 0

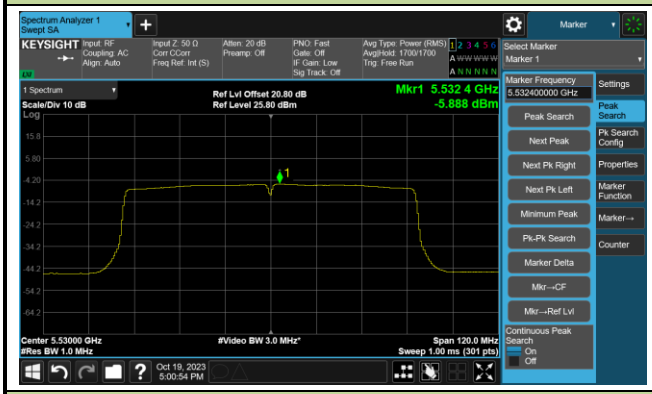
Channel 42 (5210MHz)



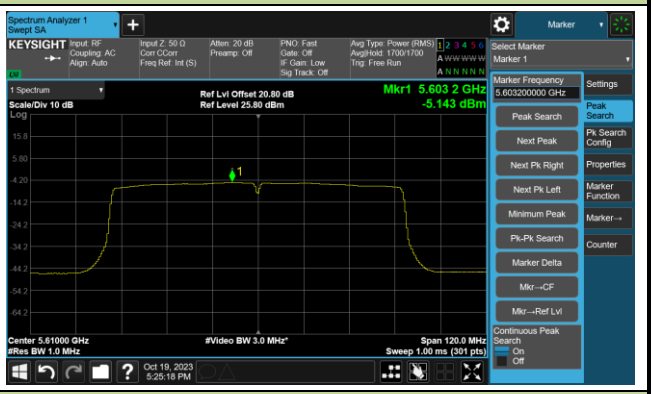
Channel 58 (5290MHz)



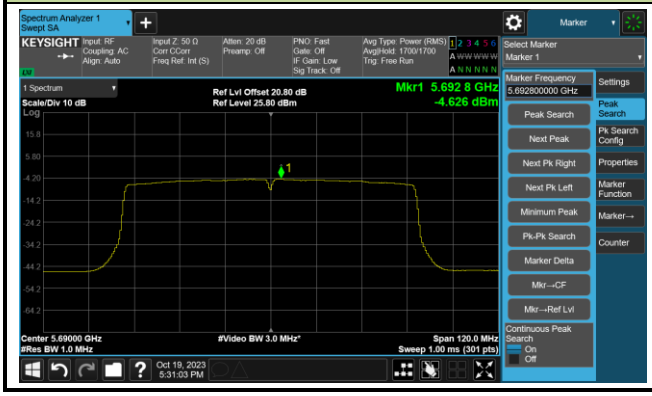
Channel 106 (5530MHz)



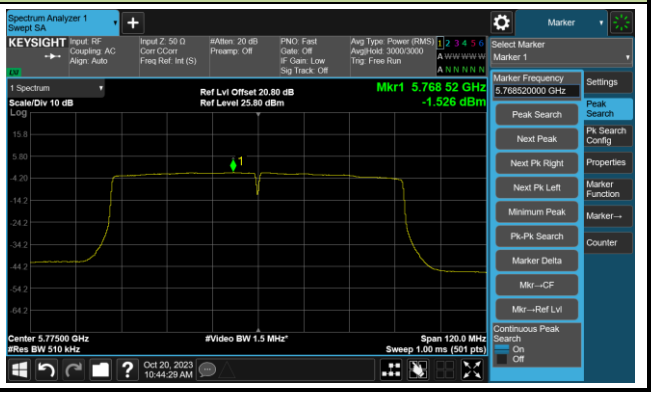
Channel 122 (5610MHz)



Channel 138 (5690MHz)

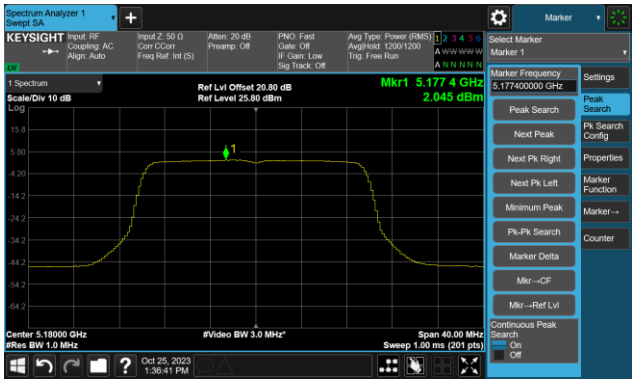


Channel 155 (5775MHz)

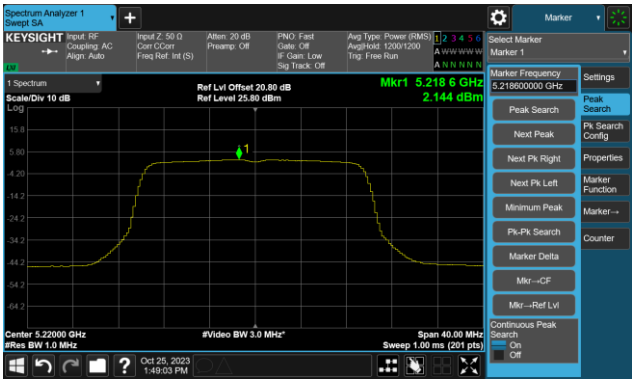


802.11ax-HE20 Power Spectral Density- Ant 0

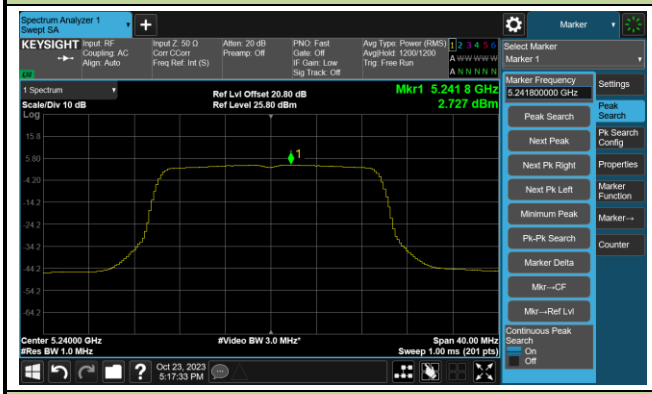
Channel 36 (5180MHz)



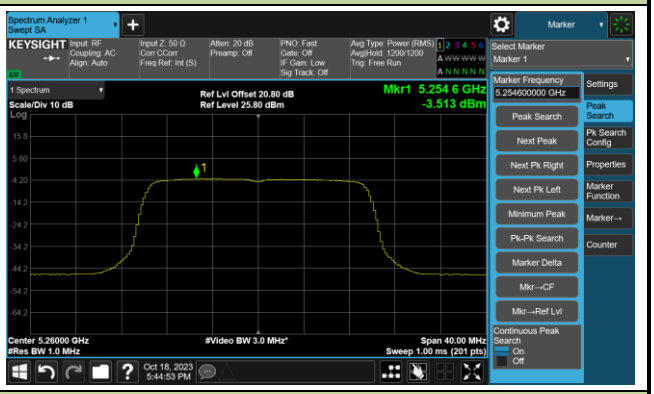
Channel 44 (5220MHz)



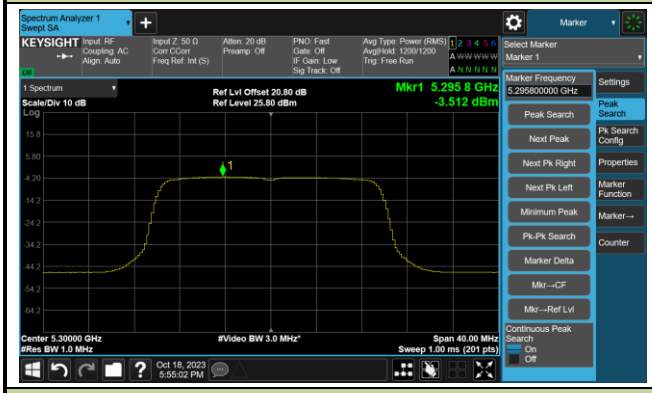
Channel 48 (5240MHz)



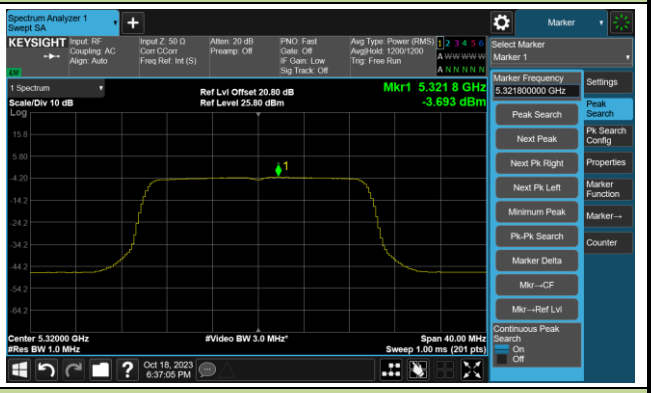
Channel 52 (5260MHz)



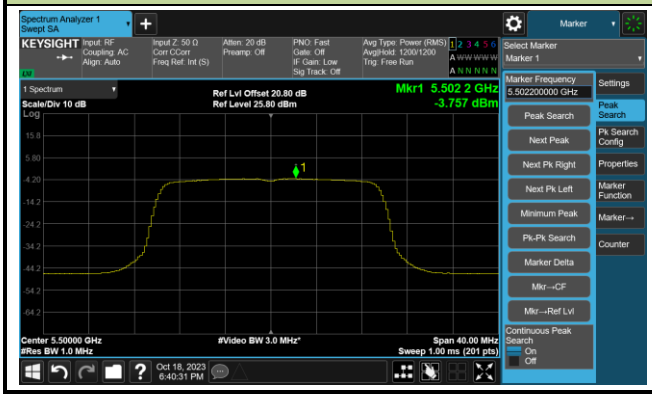
Channel 60 (5300MHz)



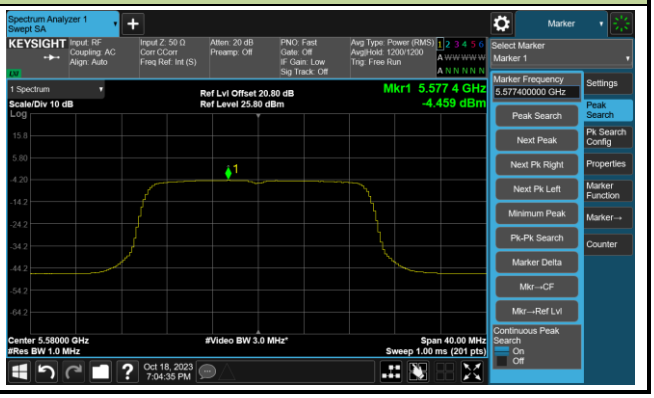
Channel 64 (5320MHz)

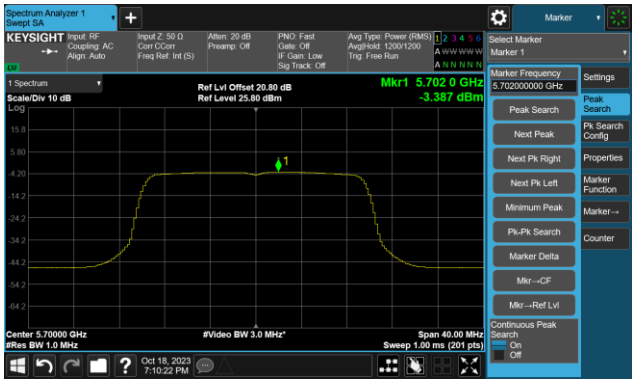
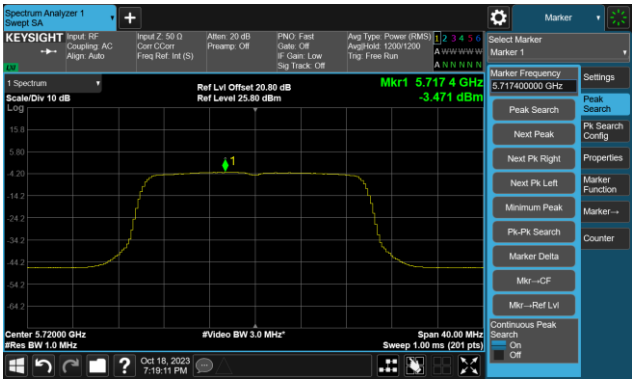
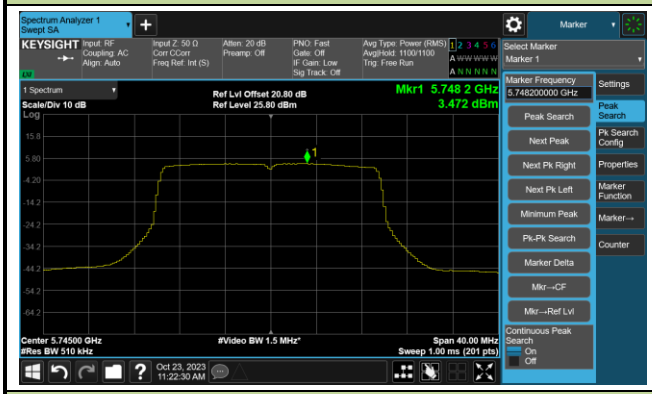
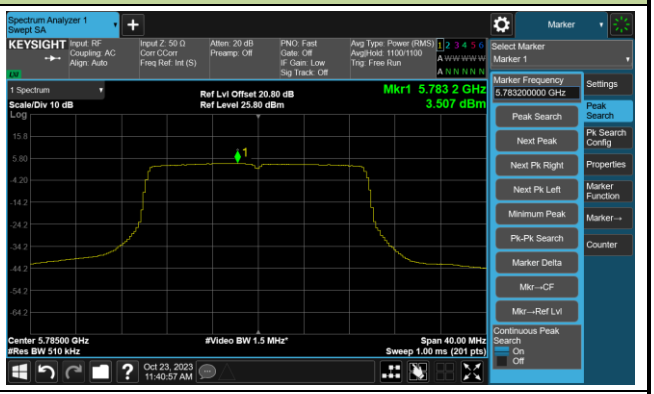
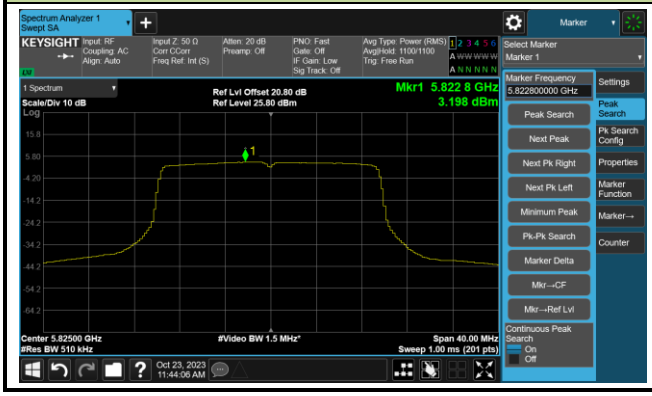


Channel 100 (5500MHz)



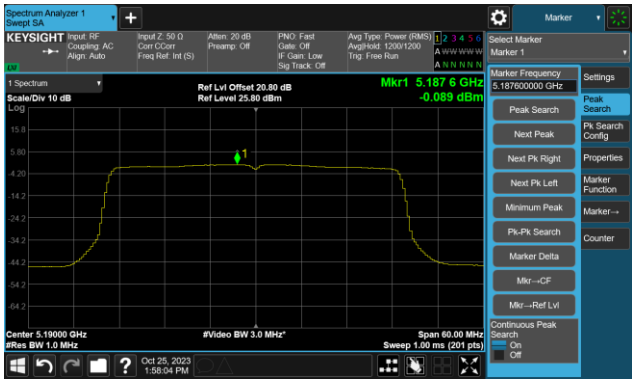
Channel 116 (5580MHz)



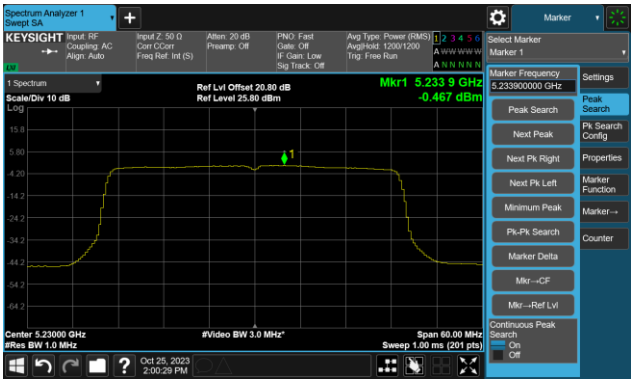
802.11ax-HE20 Power Spectral Density- Ant 0	
Channel 140 (5700MHz)	Channel 144(5720MHz)
	
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	
Channel 165 (5825MHz)	
	

802.11ax-HE40 Power Spectral Density- Ant 0

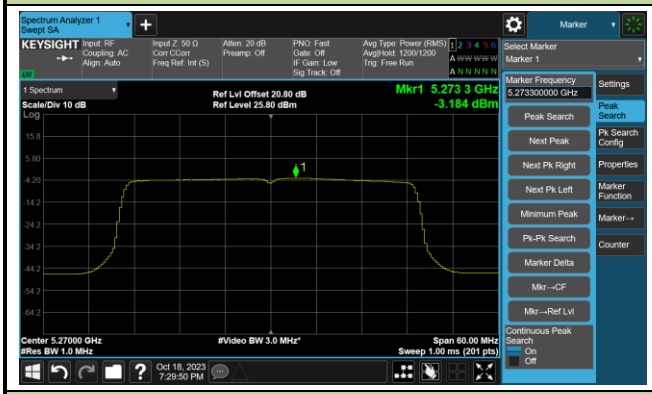
Channel 38 (5190MHz)



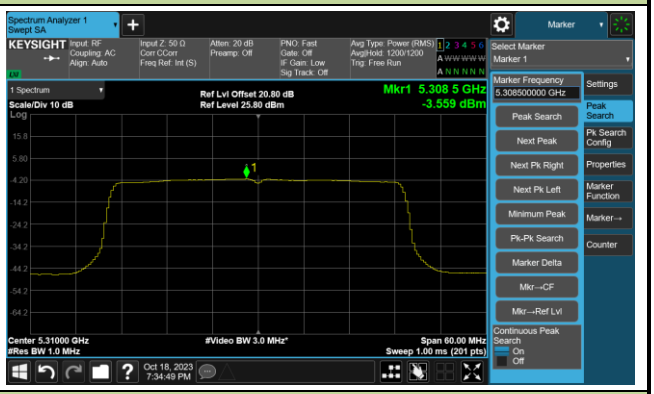
Channel 46 (5230MHz)



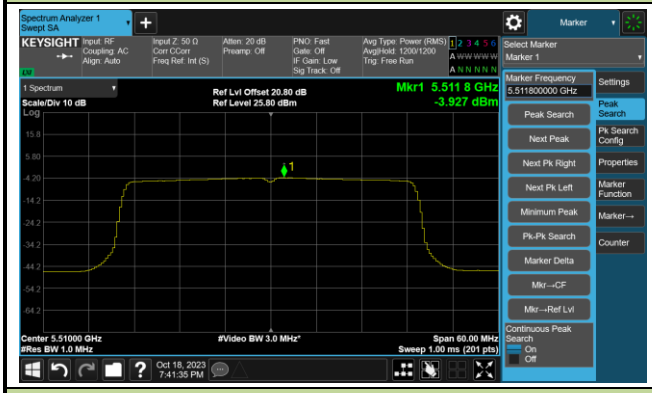
Channel 54 (5270MHz)



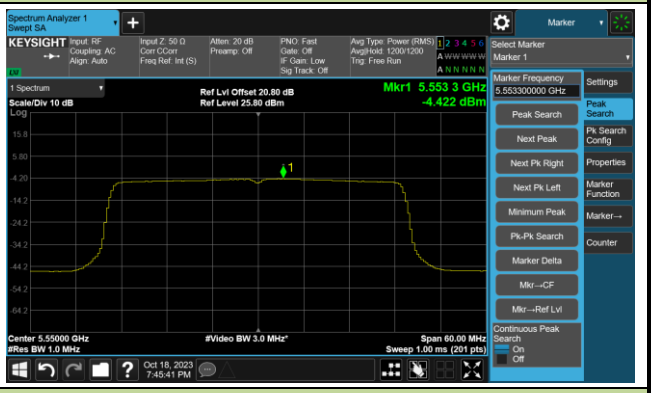
Channel 62 (5310MHz)



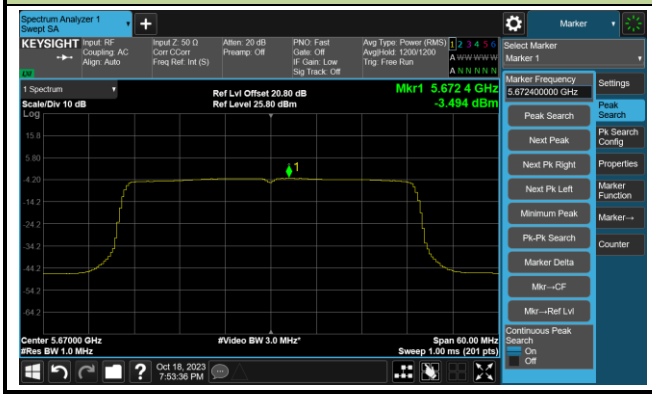
Channel 102 (5510MHz)



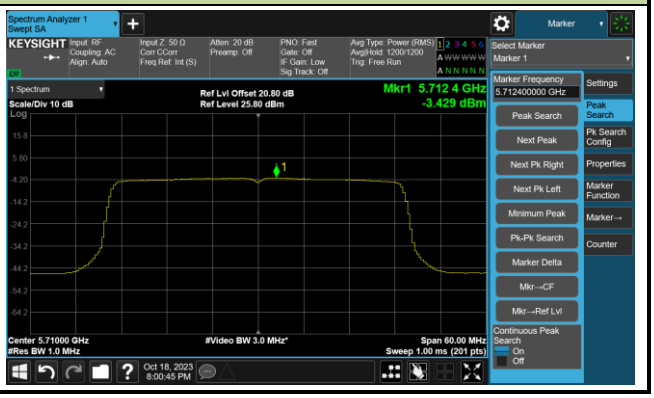
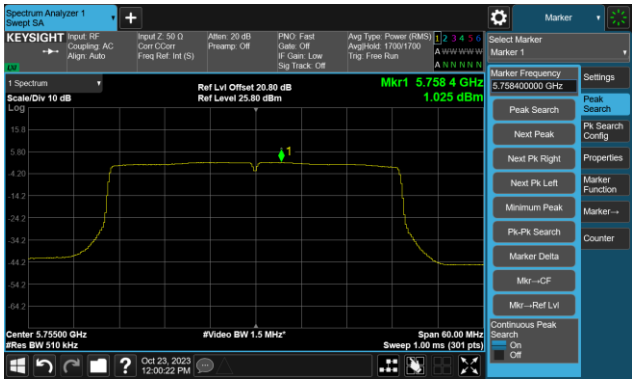
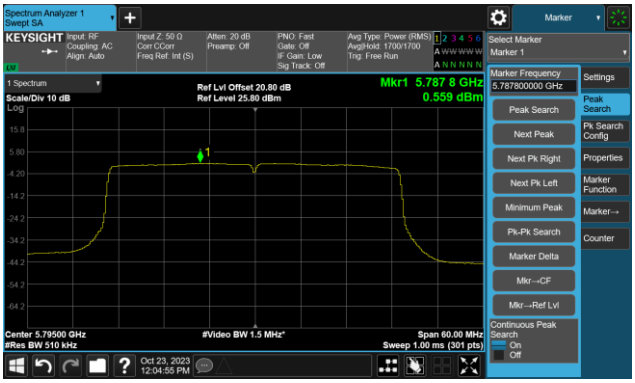
Channel 110 (5550MHz)



Channel 134 (5670MHz)



Channel 142(5710MHz)



802.11ax-HE40 Power Spectral Density- Ant 0	
Channel 151 (5755MHz)	Channel 159 (5795MHz)