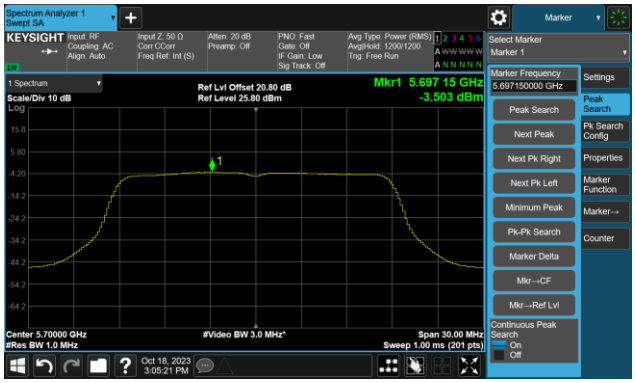
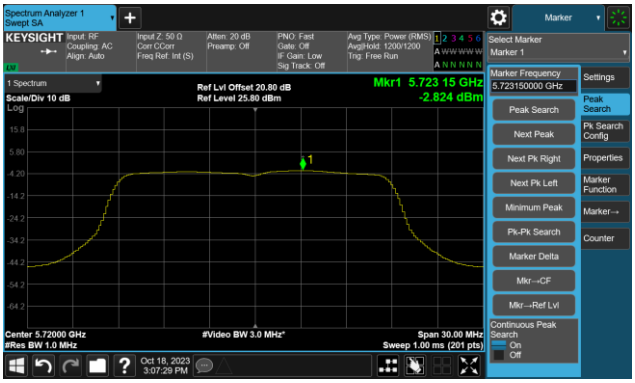
802.11ac-VHT20 Power Spectral Density- Ant 3

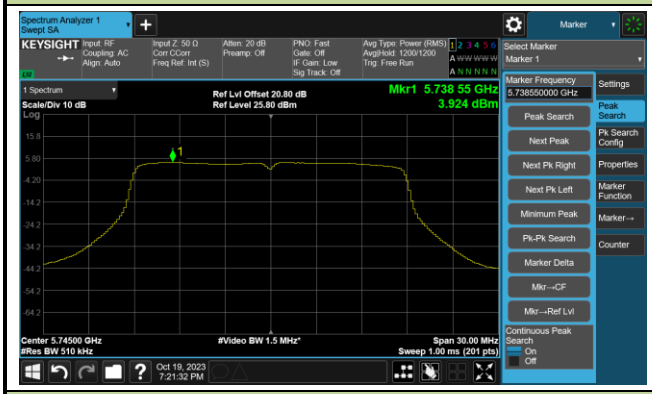
Channel 140 (5700MHz)



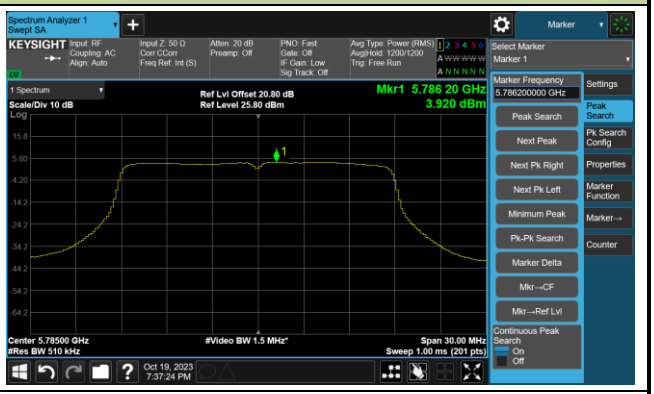
Channel 144(5720MHz)



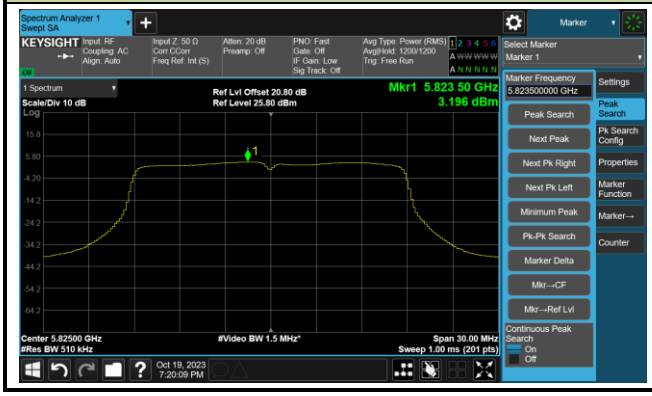
Channel 149 (5745MHz)



Channel 157 (5785MHz)

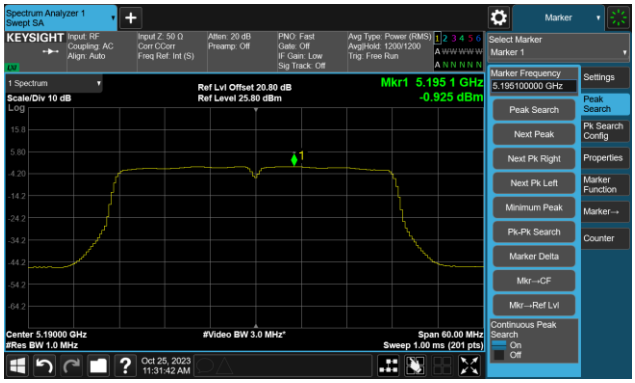


Channel 165 (5825MHz)

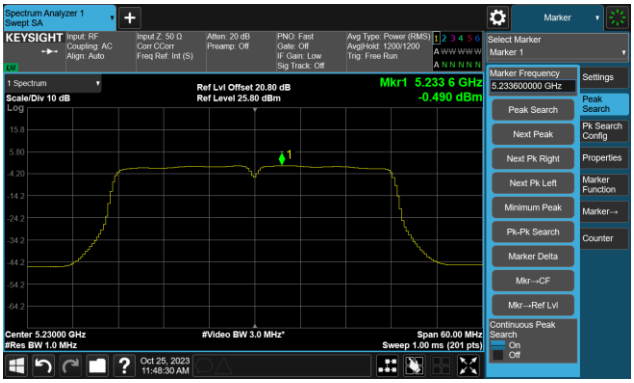


802.11ac-VHT40 Power Spectral Density- Ant 3

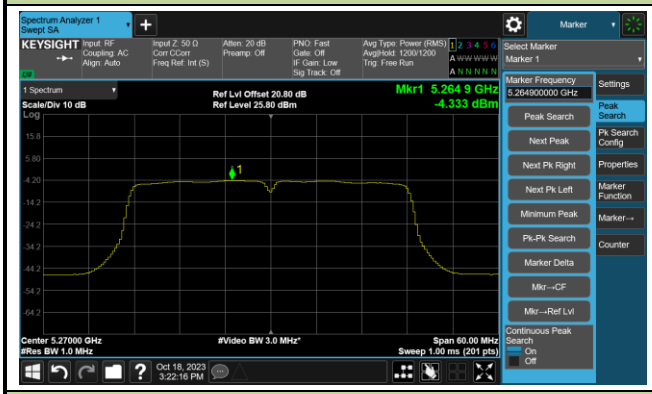
Channel 38 (5190MHz)



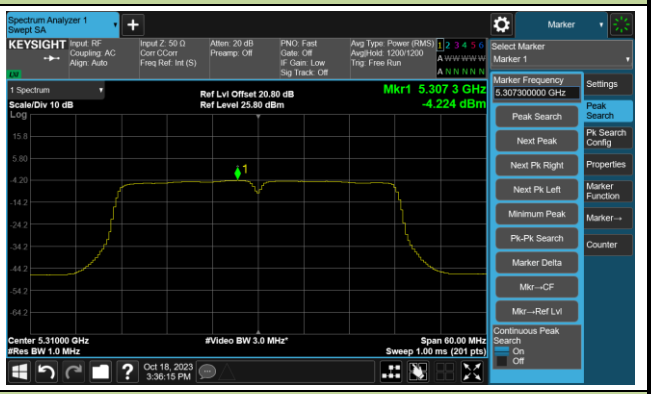
Channel 46 (5230MHz)



Channel 54 (5270MHz)

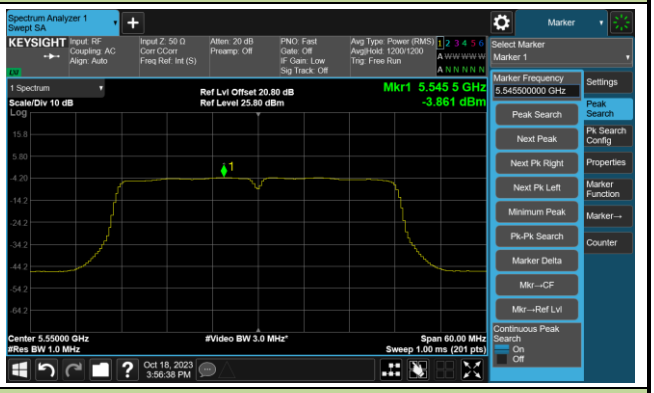


Channel 62 (5310MHz)

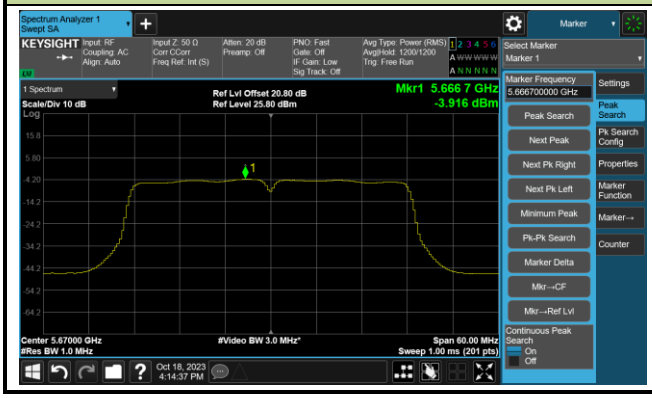


Channel 102 (5510MHz)

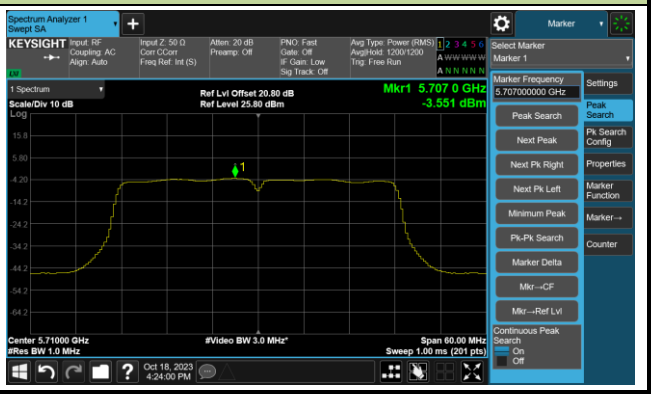
Channel 110 (5550MHz)

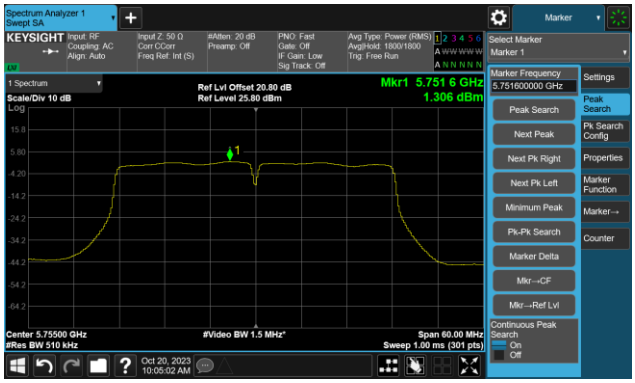
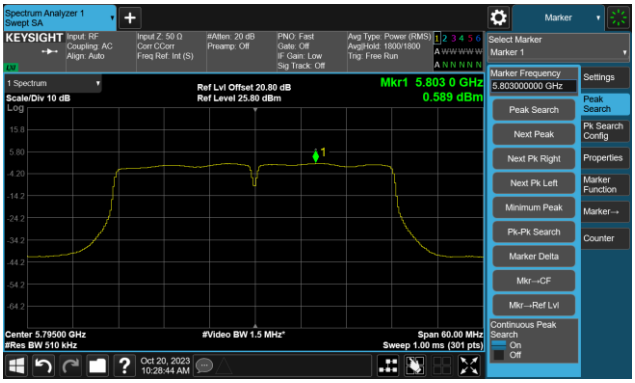


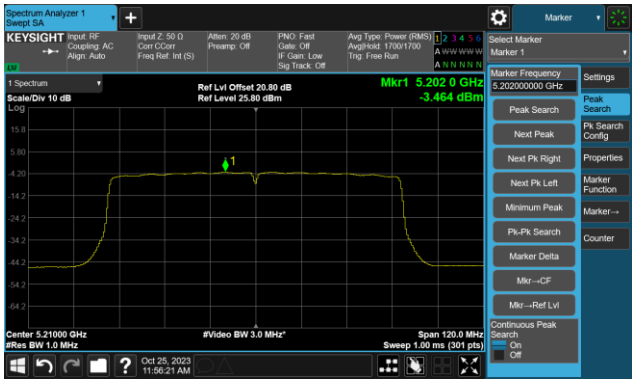
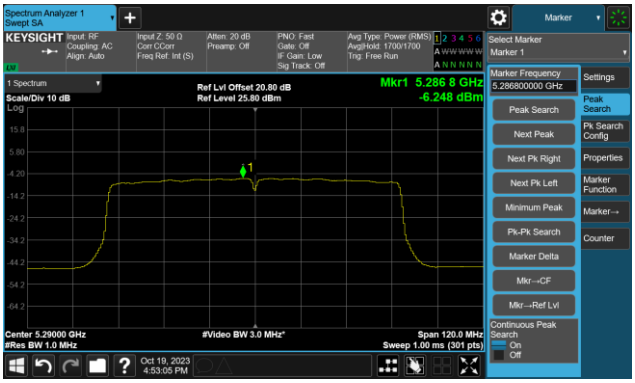
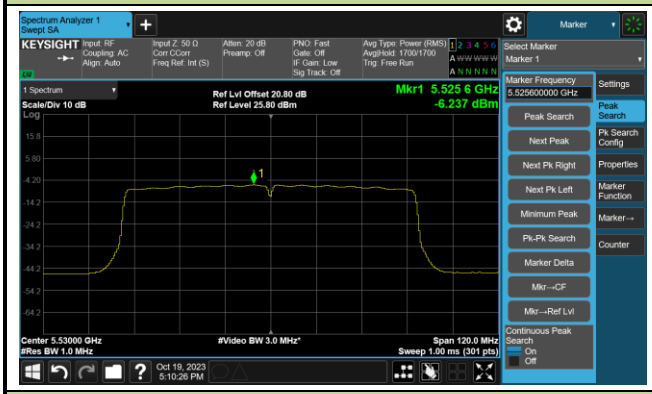
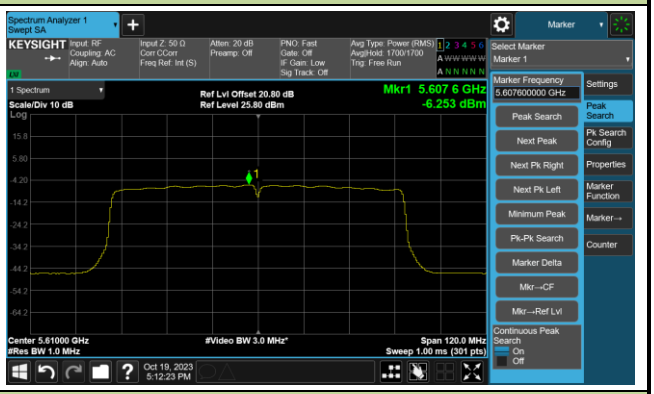
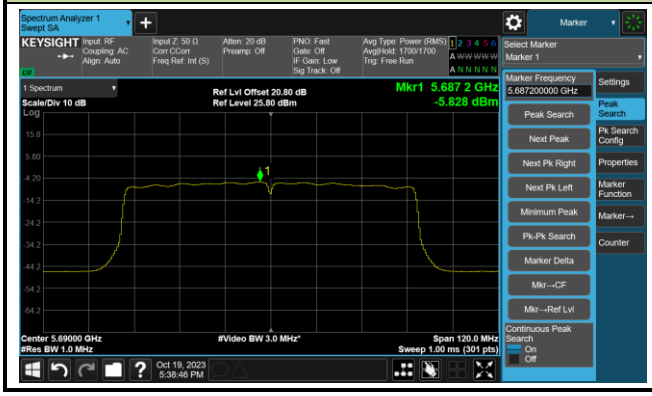
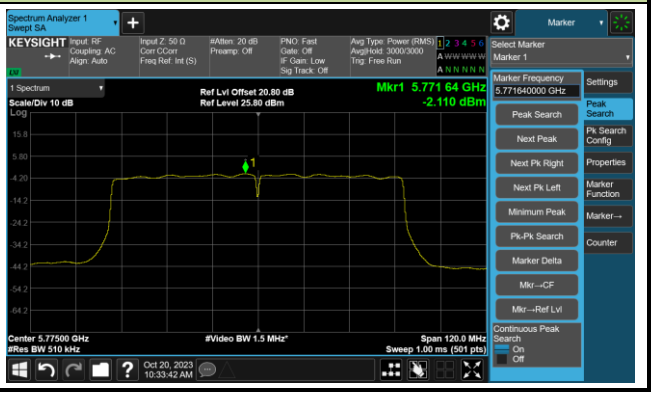
Channel 134 (5670MHz)



Channel 142(5710MHz)

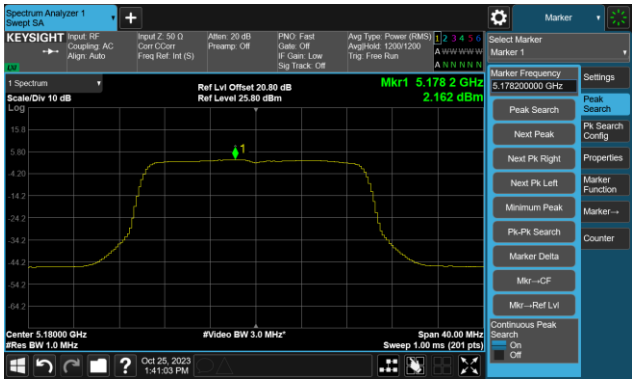


802.11ac-VHT40 Power Spectral Density- Ant 3	
Channel 151 (5755MHz)	Channel 159 (5795MHz)
	

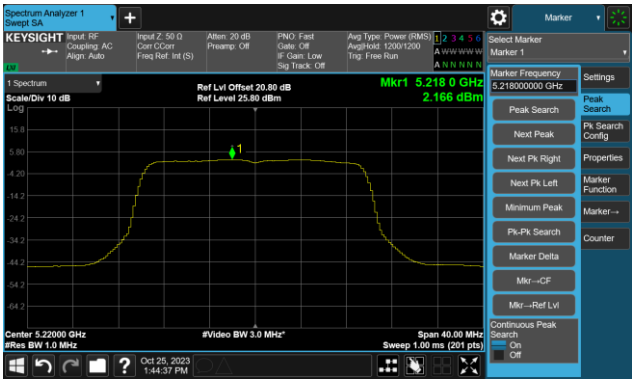
802.11ac-VHT80 Power Spectral Density- Ant 3	
Channel 42 (5210MHz)	Channel 58 (5290MHz)
	
Channel 106 (5530MHz)	Channel 122 (5610MHz)
	
Channel 138 (5690MHz)	Channel 155 (5775MHz)
	

802.11ax-HE20 Power Spectral Density- Ant 3

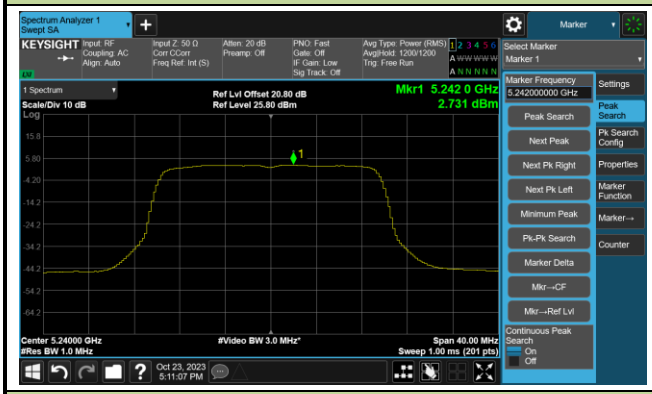
Channel 36 (5180MHz)



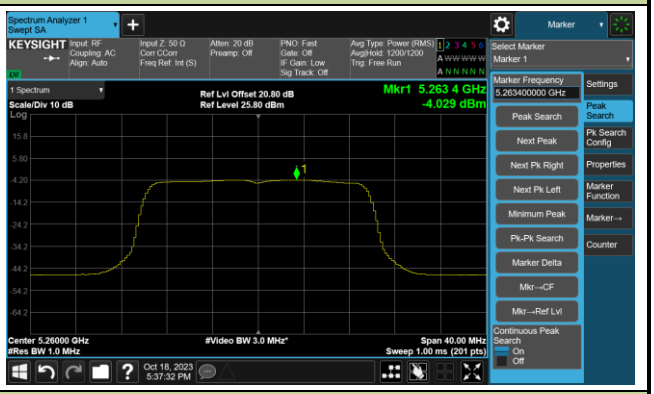
Channel 44 (5220MHz)



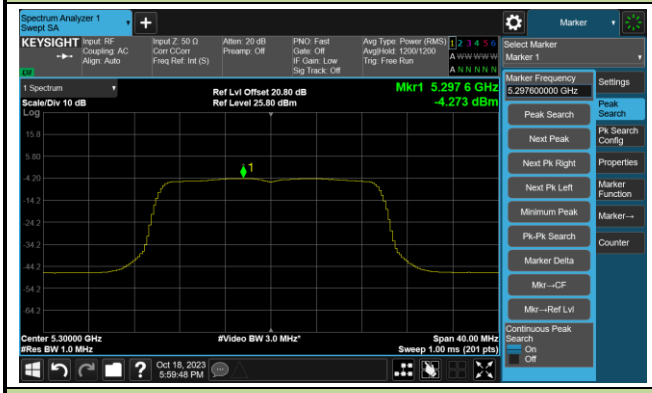
Channel 48 (5240MHz)



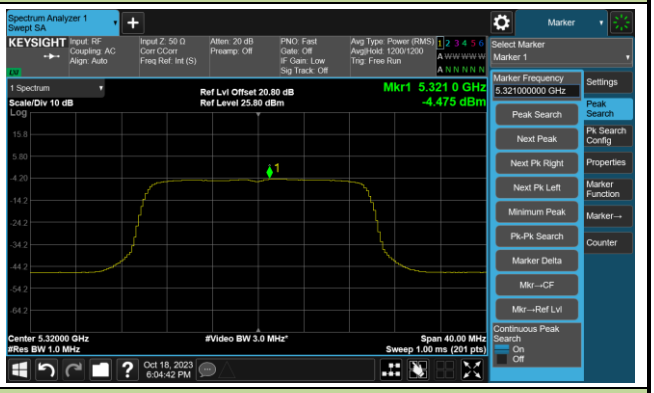
Channel 52 (5260MHz)



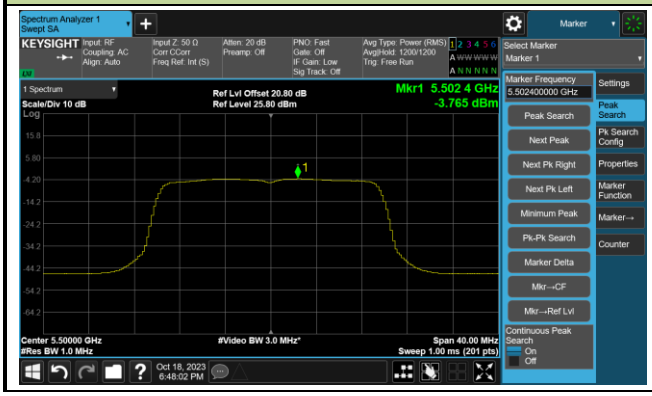
Channel 60 (5300MHz)



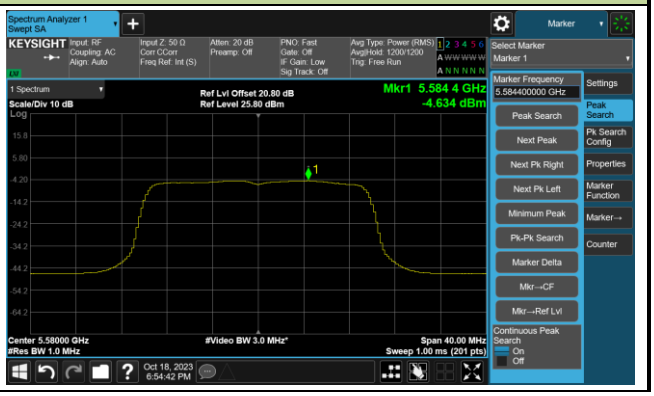
Channel 64 (5320MHz)

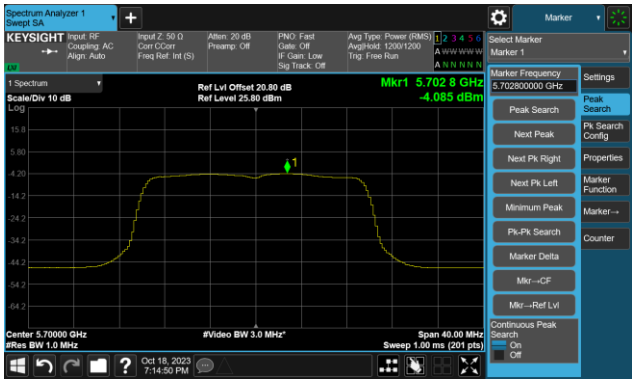
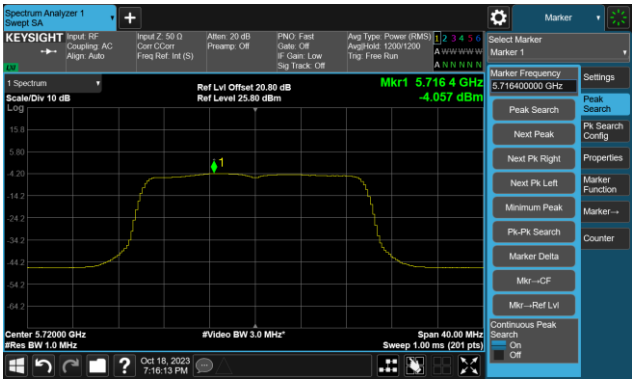
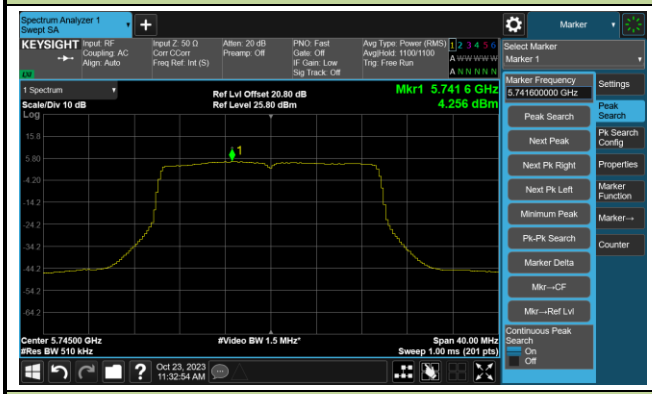
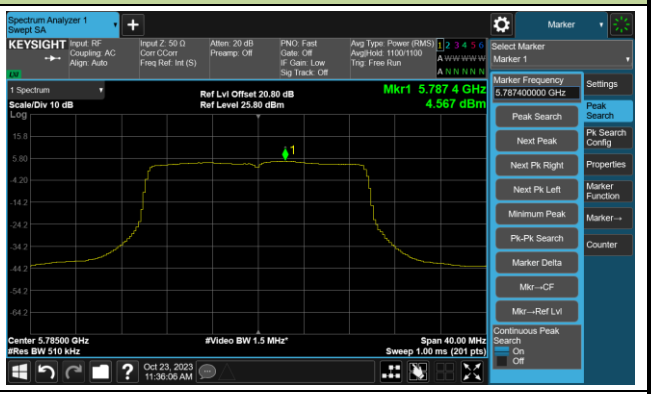
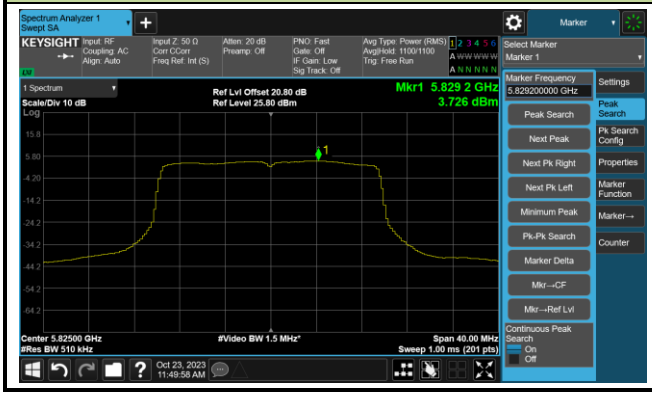


Channel 100 (5500MHz)



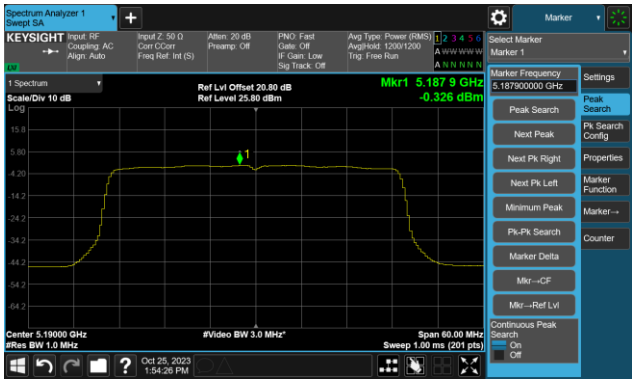
Channel 116 (5580MHz)



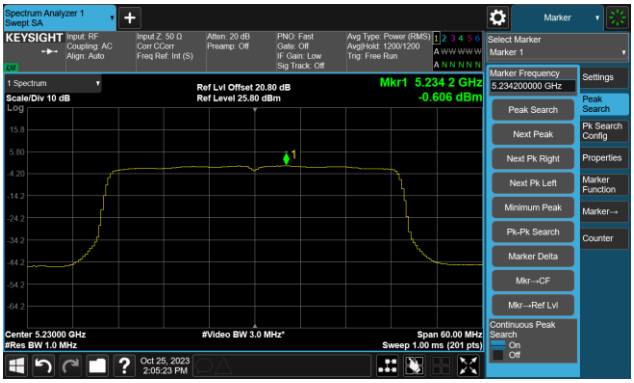
802.11ax-HE20 Power Spectral Density- Ant 3	
Channel 140 (5700MHz)	Channel 144(5720MHz)
	
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	
Channel 165 (5825MHz)	
	

802.11ax-HE40 Power Spectral Density- Ant 3

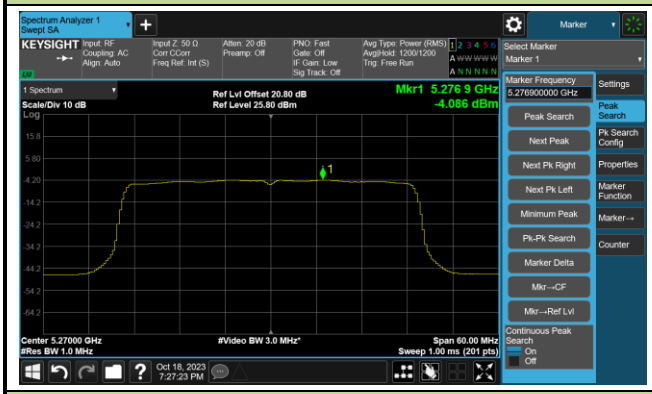
Channel 38 (5190MHz)



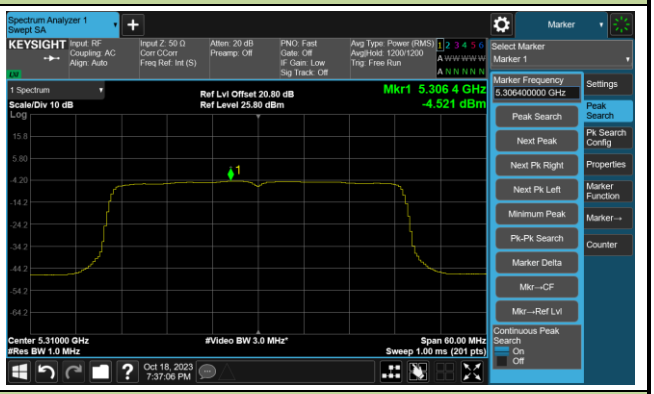
Channel 46 (5230MHz)



Channel 54 (5270MHz)

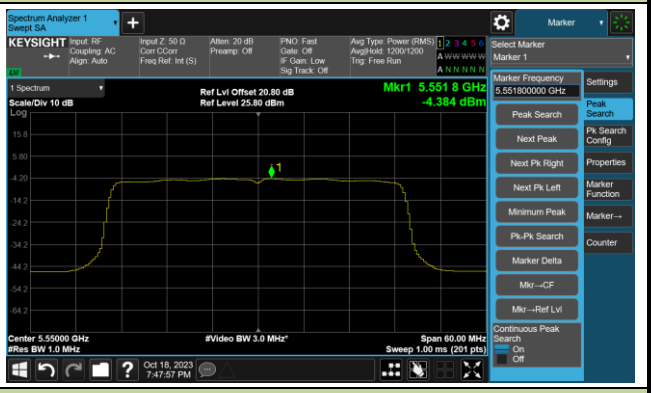


Channel 62 (5310MHz)



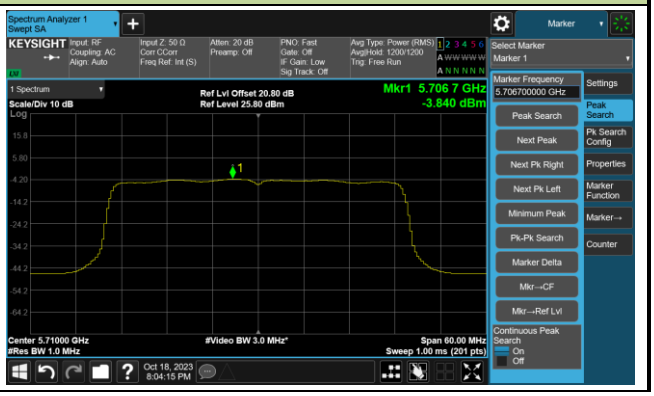
Channel 102 (5510MHz)

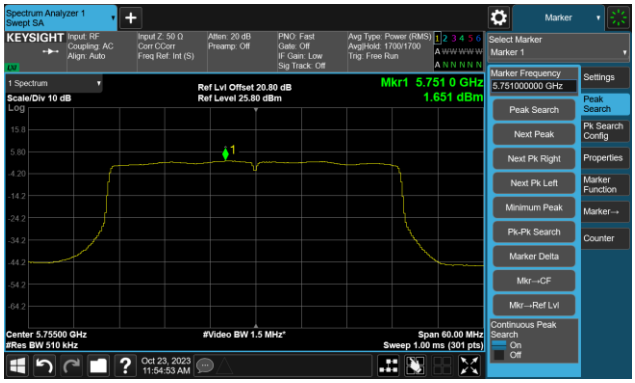
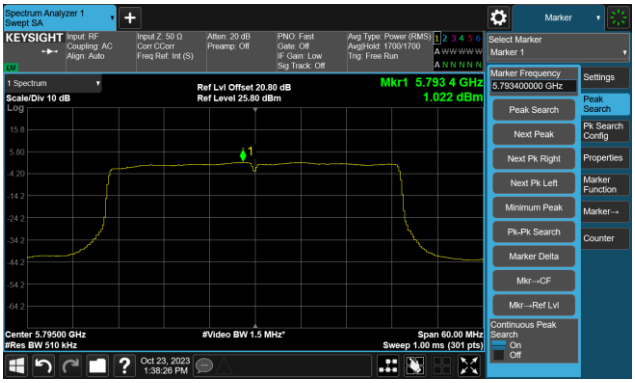
Channel 110 (5550MHz)

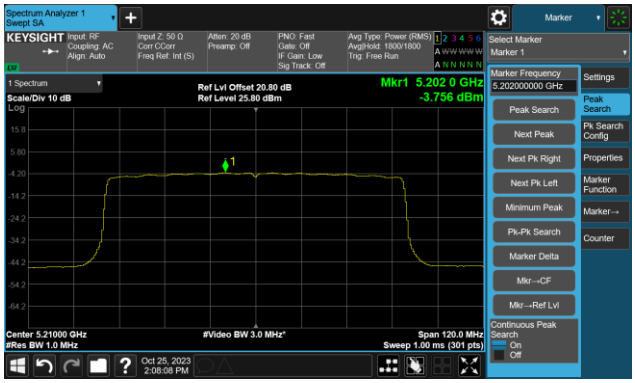
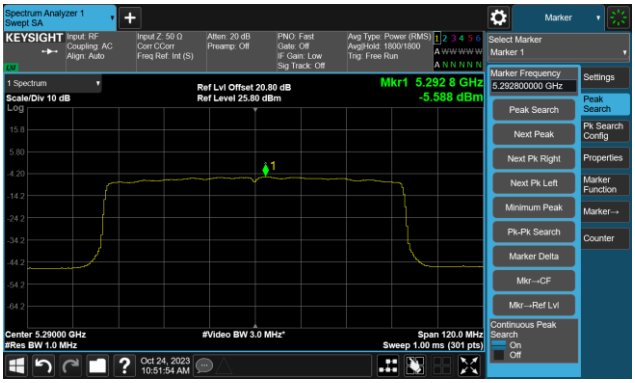
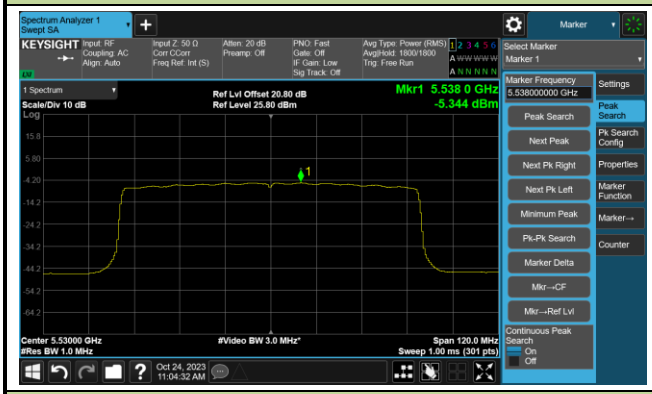
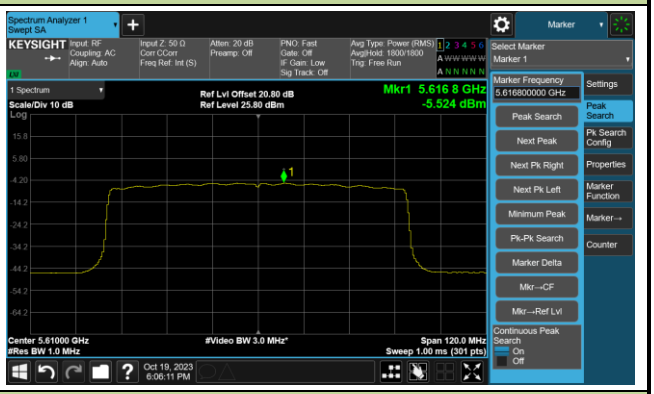
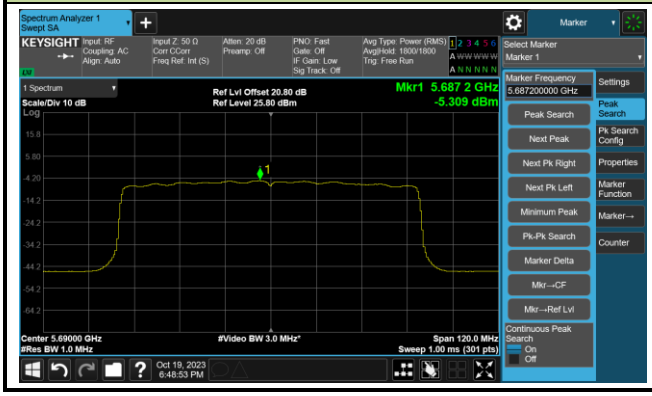
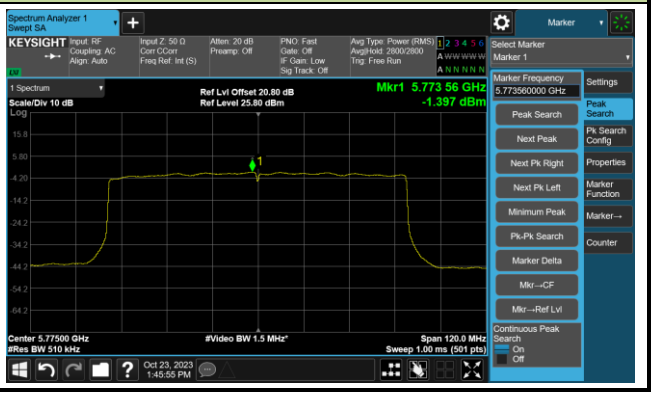


Channel 134 (5670MHz)

Channel 142(5710MHz)



802.11ax-HE40 Power Spectral Density- Ant 3	
Channel 151 (5755MHz)	Channel 159 (5795MHz)
	

802.11ax-HE80 Power Spectral Density- Ant 3	
Channel 42 (5210MHz)	Channel 58 (5290MHz)
	
Channel 106 (5530MHz)	Channel 122 (5610MHz)
	
Channel 138 (5690MHz)	Channel 155 (5775MHz)
	

Test Site	SIP-TR1	Test Engineer	Alisa Deng
Test Date	2023-10-13~2023-10-27	Antenna Model No.	TQJ-2458D9
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			
11a	6Mbps	36	5180	-4.56	-4.02	-5.03	-4.37	95.62	1.74	≤ 9.71
11a	6Mbps	44	5220	-4.52	-4.25	-4.56	-4.47	95.62	1.77	≤ 9.71
11a	6Mbps	48	5240	-4.72	-4.40	-4.46	-4.43	95.62	1.71	≤ 9.71
11a	6Mbps	52	5260	-5.68	-5.71	-5.84	-5.79	95.62	0.46	≤ 1.06
11a	6Mbps	60	5300	-5.61	-5.68	-5.60	-5.64	95.62	0.58	≤ 1.06
11a	6Mbps	64	5320	-5.94	-5.37	-5.39	-5.77	95.62	0.60	≤ 1.06
11a	6Mbps	100	5500	-5.86	-6.31	-5.48	-6.45	95.62	0.21	≤ 1.06
11a	6Mbps	116	5580	-5.98	-6.74	-4.42	-4.82	95.62	0.82	≤ 1.06
11a	6Mbps	140	5700	-6.01	-5.92	-6.17	-5.43	95.62	0.35	≤ 1.06
11a	6Mbps	144	5720	-5.89	-6.29	-6.00	-5.19	95.62	0.39	≤ 1.06
11ac-VHT20	MCS0	36	5180	-5.26	-4.87	-5.53	-4.70	93.57	1.23	≤ 9.71
11ac-VHT20	MCS0	44	5220	-5.26	-4.65	-5.34	-4.89	93.57	1.29	≤ 9.71
11ac-VHT20	MCS0	48	5240	-5.51	-4.71	-5.56	-6.46	93.57	0.79	≤ 9.71
11ac-VHT20	MCS0	52	5260	-6.06	-6.14	-6.50	-6.19	93.57	0.09	≤ 1.06
11ac-VHT20	MCS0	60	5300	-6.38	-6.29	-6.10	-6.68	93.57	-0.05	≤ 1.06
11ac-VHT20	MCS0	64	5320	-6.44	-6.20	-5.74	-6.45	93.57	0.11	≤ 1.06
11ac-VHT20	MCS0	100	5500	-5.73	-5.52	-5.35	-5.46	93.57	0.79	≤ 1.06
11ac-VHT20	MCS0	116	5580	-6.34	-6.78	-6.50	-6.33	93.57	-0.17	≤ 1.06
11ac-VHT20	MCS0	140	5700	-6.04	-6.11	-6.41	-5.33	93.57	0.36	≤ 1.06
11ac-VHT20	MCS0	144	5720	-5.78	-6.38	-5.74	-4.87	93.57	0.65	≤ 1.06
11ac-VHT40	MCS0	38	5190	-7.98	-7.51	-8.32	-7.57	91.71	-1.44	≤ 9.71
11ac-VHT40	MCS0	46	5230	-8.14	-8.61	-8.54	-9.17	91.71	-2.20	≤ 9.71
11ac-VHT40	MCS0	54	5270	-5.95	-5.57	-5.92	-5.98	91.71	0.54	≤ 1.06
11ac-VHT40	MCS0	62	5310	-5.95	-5.49	-6.23	-6.14	91.71	0.45	≤ 1.06
11ac-VHT40	MCS0	102	5510	-5.96	-6.78	-6.21	-6.23	91.71	0.11	≤ 1.06
11ac-VHT40	MCS0	110	5550	-5.81	-6.17	-5.41	-5.88	91.71	0.59	≤ 1.06
11ac-VHT40	MCS0	134	5670	-6.26	-6.60	-6.36	-5.51	91.71	0.23	≤ 1.06
11ac-VHT40	MCS0	142	5710	-6.36	-6.69	-6.22	-5.41	91.71	0.26	≤ 1.06

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			
11ac-VHT80	MCS0	42	5210	-12.85	-11.35	-12.27	-12.35	92.64	-5.82	≤ 9.71
11ac-VHT80	MCS0	58	5290	-5.62	-5.46	-5.54	-5.73	92.64	0.77	≤ 1.06
11ac-VHT80	MCS0	106	5530	-5.62	-6.22	-5.24	-5.82	92.64	0.64	≤ 1.06
11ac-VHT80	MCS0	122	5610	-5.40	-6.34	-5.52	-5.64	92.64	0.64	≤ 1.06
11ac-VHT80	MCS0	138	5690	-5.86	-6.57	-5.93	-5.75	92.64	0.34	≤ 1.06
11ax-HE20	MCS0	36	5180	-6.88	-5.46	-6.35	-6.04	95.10	0.09	≤ 9.71
11ax-HE20	MCS0	44	5220	-7.07	-6.11	-6.25	-6.51	95.10	-0.23	≤ 9.71
11ax-HE20	MCS0	48	5240	-7.29	-5.83	-5.69	-6.49	95.10	-0.04	≤ 9.71
11ax-HE20	MCS0	52	5260	-5.77	-6.04	-6.41	-6.51	95.10	0.07	≤ 1.06
11ax-HE20	MCS0	60	5300	-6.46	-6.13	-6.92	-6.35	95.10	-0.21	≤ 1.06
11ax-HE20	MCS0	64	5320	-6.68	-5.98	-6.36	-6.43	95.10	-0.12	≤ 1.06
11ax-HE20	MCS0	100	5500	-6.23	-6.36	-6.19	-6.32	95.10	-0.03	≤ 1.06
11ax-HE20	MCS0	116	5580	-5.05	-6.03	-5.06	-5.57	95.10	0.83	≤ 1.06
11ax-HE20	MCS0	140	5700	-5.84	-6.45	-6.02	-5.40	95.10	0.33	≤ 1.06
11ax-HE20	MCS0	144	5720	-6.00	-6.42	-6.19	-5.16	95.10	0.32	≤ 1.06
11ax-HE40	MCS0	38	5190	-9.65	-8.15	-9.17	-9.09	93.30	-2.66	≤ 9.71
11ax-HE40	MCS0	46	5230	-9.78	-8.30	-8.40	-9.16	93.30	-2.55	≤ 9.71
11ax-HE40	MCS0	54	5270	-5.44	-5.89	-5.92	-5.88	93.30	0.54	≤ 1.06
11ax-HE40	MCS0	62	5310	-6.90	-6.30	-6.58	-6.73	93.30	-0.30	≤ 1.06
11ax-HE40	MCS0	102	5510	-6.20	-6.70	-6.41	-6.20	93.30	-0.05	≤ 1.06
11ax-HE40	MCS0	110	5550	-6.00	-6.54	-5.96	-5.93	93.30	0.22	≤ 1.06
11ax-HE40	MCS0	134	5670	-5.39	-6.61	-5.63	-5.02	93.30	0.70	≤ 1.06
11ax-HE40	MCS0	142	5710	-6.27	-6.84	-6.05	-5.22	93.30	0.27	≤ 1.06
11ax-HE80	MCS0	42	5210	-12.47	-10.99	-11.86	-11.96	94.43	-5.51	≤ 9.71
11ax-HE80	MCS0	58	5290	-5.60	-5.68	-5.68	-5.52	94.43	0.65	≤ 1.06
11ax-HE80	MCS0	106	5530	-5.45	-5.79	-5.10	-5.52	94.43	0.81	≤ 1.06
11ax-HE80	MCS0	122	5610	-5.44	-6.51	-5.68	-5.50	94.43	0.51	≤ 1.06
11ax-HE80	MCS0	138	5690	-5.77	-6.55	-6.13	-5.73	94.43	0.24	≤ 1.06

Note 1: When EUT duty cycle < 98%, the total PSD (dBm/MHz) =10*log {$10^{(\text{Ant 0 AVGPSD}/10)}$ + $10^{(\text{Ant 1 AVGPSD}/10)}$ +$10^{(\text{Ant 2 AVGPSD}/10)}$ + $10^{(\text{Ant 3 AVGPSD}/10)}$} +10*log (1/Duty cycle).

When EUT duty cycle ≥ 98%, the total PSD (dBm/MHz) =10*log {$10^{(\text{Ant 0 AVGPSD}/10)}$ + $10^{(\text{Ant 1 AVGPSD}/10)}$ +$10^{(\text{Ant 2 AVGPSD}/10)}$ + $10^{(\text{Ant 3 AVGPSD}/10)}$}.

Note 2:

For 5125 - 5250MHz Band: PSD Limit (dBm/MHz) = 17 - (13.29 - 6) = 9.71dBm/MHz

For 5250 - 5350MHz&5470 - 5725MHz Band: Average Power Limit (dBm) = 11 - (15.94 - 6) = 1.06dBm/MHz.

Test Site	WZ-SR5	Test Engineer	Luis Yang
Test Date	2023-10-14~2023-10-17	Antenna Model No.	TQJ-2458D9
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			
11a	6Mbps	149	5745	5.48	5.39	6.03	6.54	95.62	12.10	≤ 20.58
11a	6Mbps	157	5785	5.10	5.74	5.59	6.32	95.62	11.92	≤ 20.58
11a	6Mbps	165	5825	5.29	5.44	5.38	5.61	95.62	11.65	≤ 20.58
11ac-VHT20	MCS0	149	5745	4.44	4.42	5.13	5.87	93.57	11.31	≤ 20.58
11ac-VHT20	MCS0	157	5785	5.25	5.16	5.59	6.19	93.57	11.88	≤ 20.58
11ac-VHT20	MCS0	165	5825	4.36	4.31	4.71	5.46	93.57	11.04	≤ 20.58
11ac-VHT40	MCS0	151	5755	2.19	1.66	2.48	3.07	91.71	8.78	≤ 20.58
11ac-VHT40	MCS0	159	5795	2.18	2.30	2.33	2.99	91.71	8.86	≤ 20.58
11ac-VHT80	MCS0	155	5775	-0.77	-0.74	-0.44	0.05	92.64	5.89	≤ 20.58
11ax-HE20	MCS0	149	5745	4.75	5.00	5.51	6.14	95.10	11.62	≤ 20.58
11ax-HE20	MCS0	157	5785	4.26	4.45	4.72	5.46	95.10	10.99	≤ 20.58
11ax-HE20	MCS0	165	5825	3.73	4.09	4.04	4.55	95.10	10.35	≤ 20.58
11ax-HE40	MCS0	151	5755	0.90	1.18	1.97	2.71	93.30	8.07	≤ 20.58
11ax-HE40	MCS0	159	5795	0.53	0.87	0.98	1.54	93.30	7.32	≤ 20.58
11ax-HE80	MCS0	155	5775	-1.41	-1.76	-1.37	-1.01	94.43	4.89	≤ 20.58

Note 1:

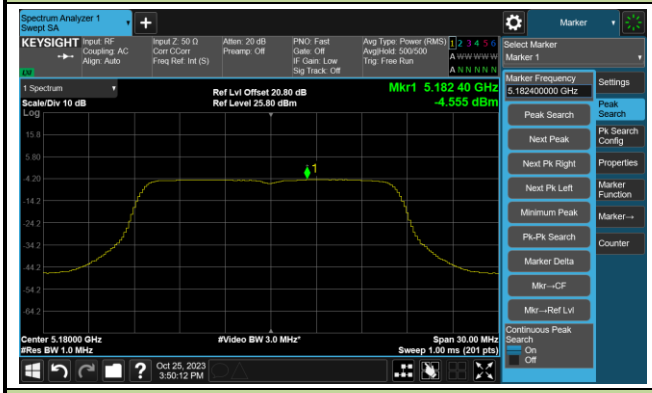
When EUT duty cycle < 98%, the total PSD (dBm/510kHz) =10*log {$10^{(\text{Ant 0 AVGPSD}/10)}$ + $10^{(\text{Ant 1 AVGPSD}/10)}$ +$10^{(\text{Ant 2 AVGPSD}/10)}$ + $10^{(\text{Ant 3 AVGPSD}/10)}$} +10*log (1/Duty cycle).

When EUT duty cycle ≥ 98%, the total PSD (dBm/510kHz) =10*log {$10^{(\text{Ant 0 AVGPSD}/10)}$ + $10^{(\text{Ant 1 AVGPSD}/10)}$ +$10^{(\text{Ant 2 AVGPSD}/10)}$ + $10^{(\text{Ant 3 AVGPSD}/10)}$}.

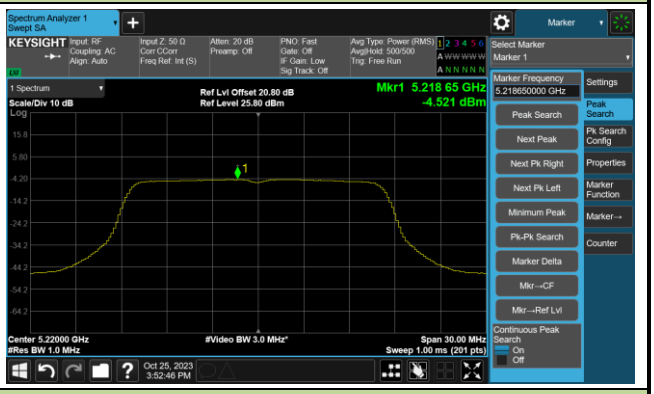
Note 2: PSD Limit (dBm/500KHz) = 30 - (15.42 - 6) = 20.58dBm/500KHz.

802.11a Power Spectral Density- Ant 0

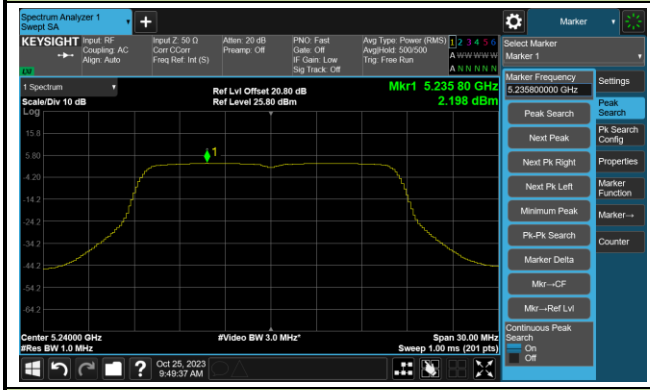
Channel 36 (5180MHz)



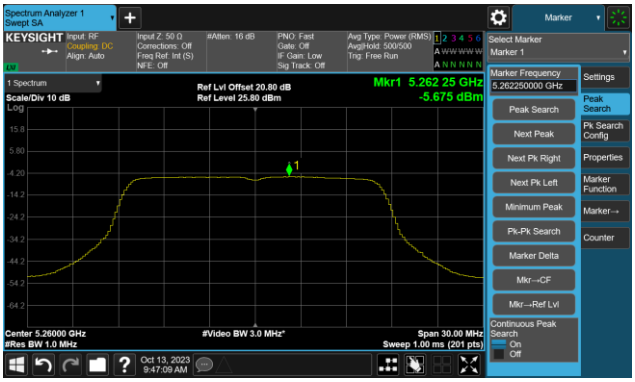
Channel 44 (5220MHz)



Channel 48 (5240MHz)

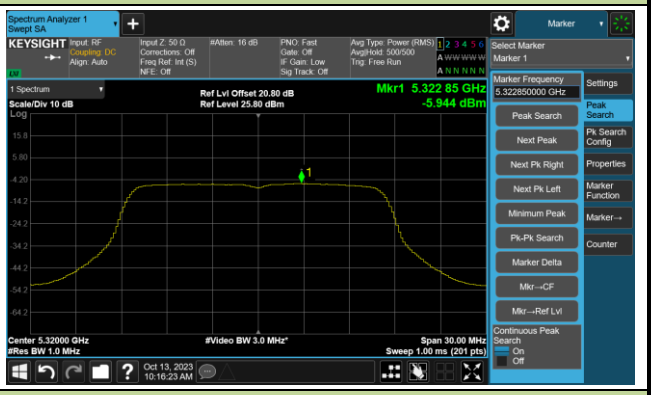


Channel 52 (5260MHz)

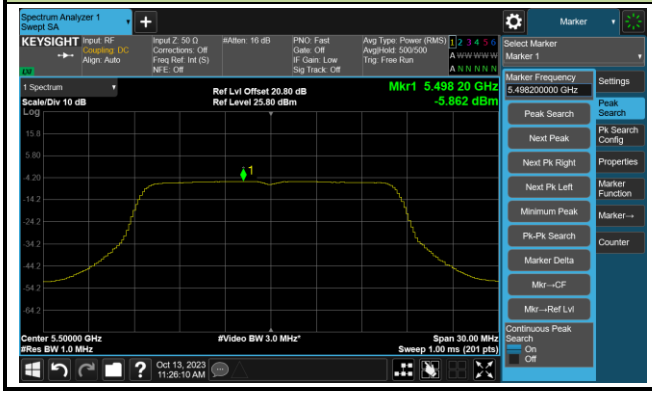


Channel 60 (5300MHz)

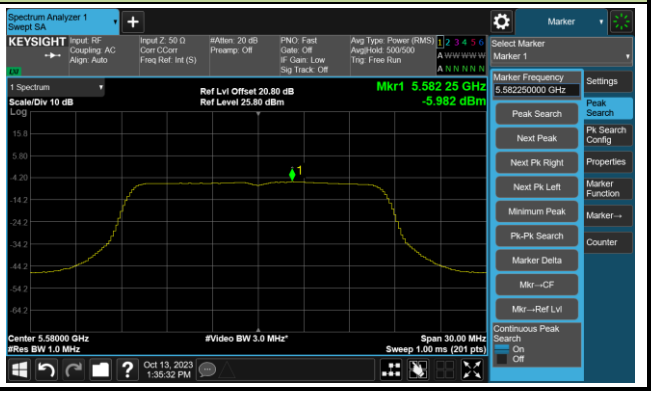
Channel 64 (5320MHz)

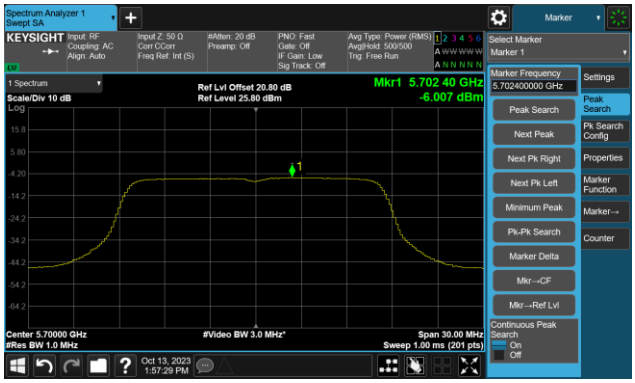
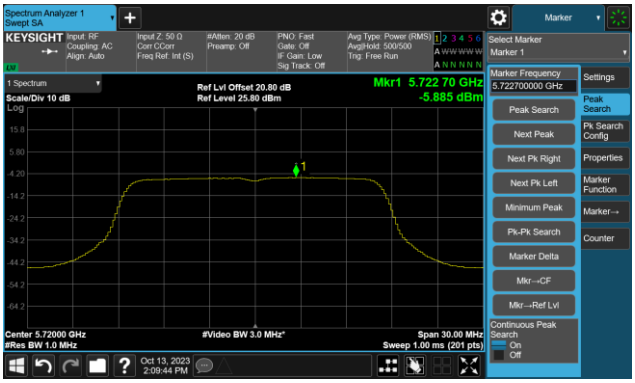
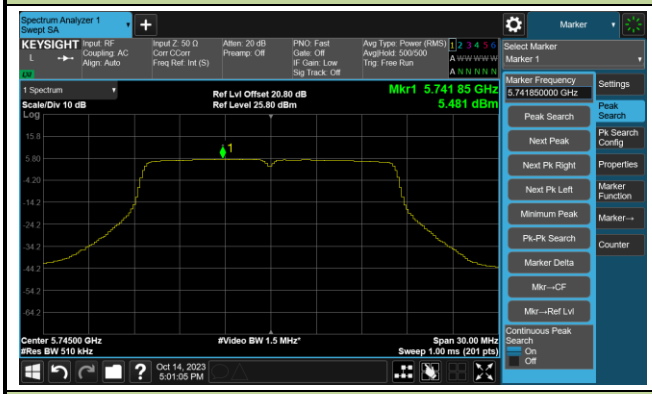
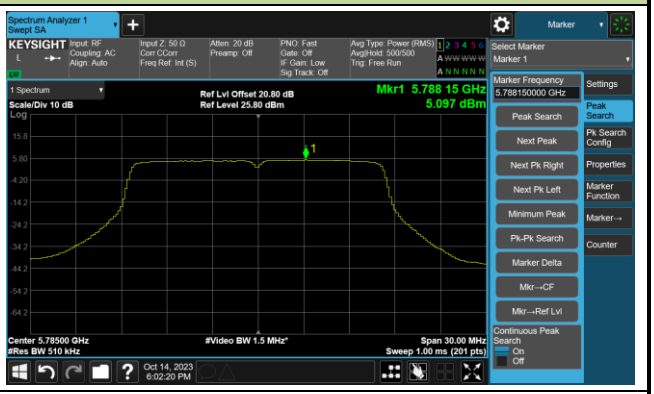
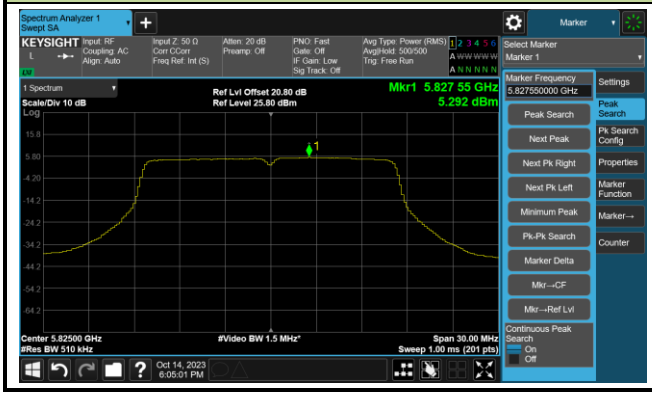


Channel 100 (5500MHz)



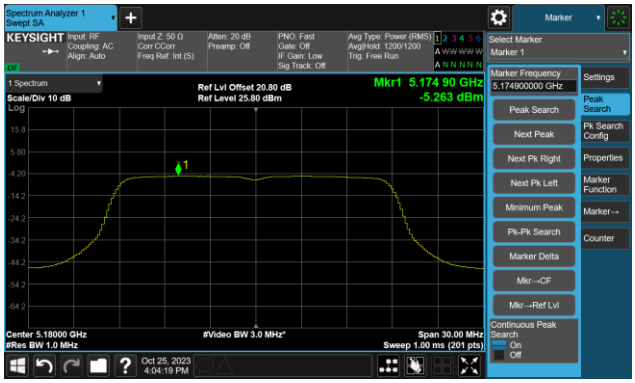
Channel 116 (5580MHz)



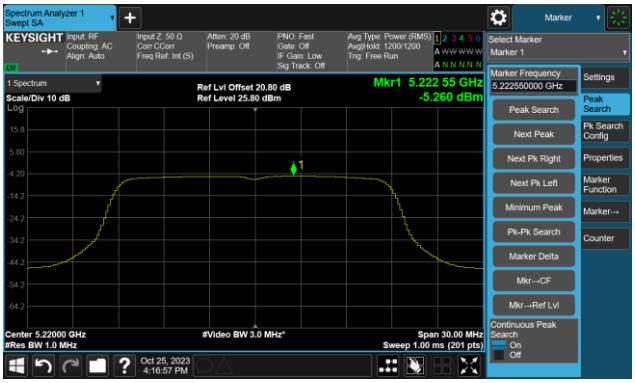
802.11a Power Spectral Density- Ant 0	
Channel 140 (5700MHz)	Channel 144(5720MHz)
	
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	
Channel 165 (5825MHz)	
	

802.11ac-VHT20 Power Spectral Density- Ant 0

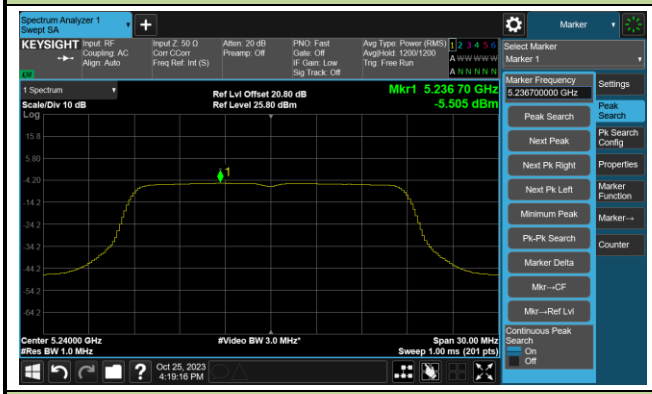
Channel 36 (5180MHz)



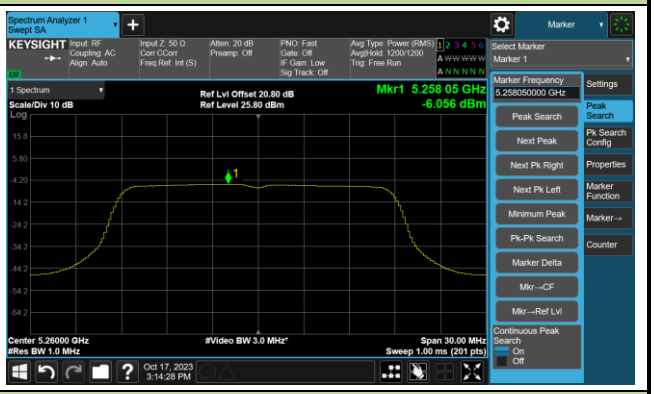
Channel 44 (5220MHz)



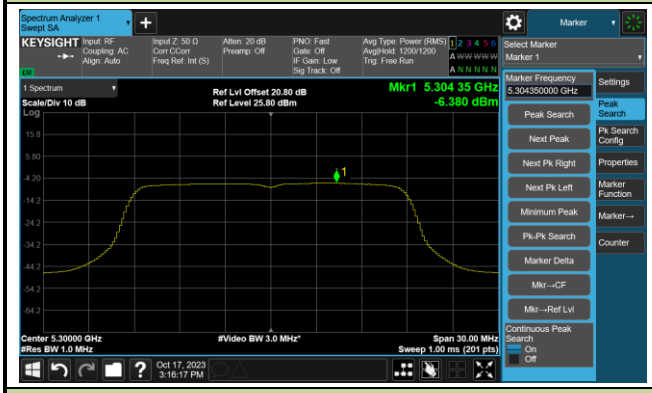
Channel 48 (5240MHz)



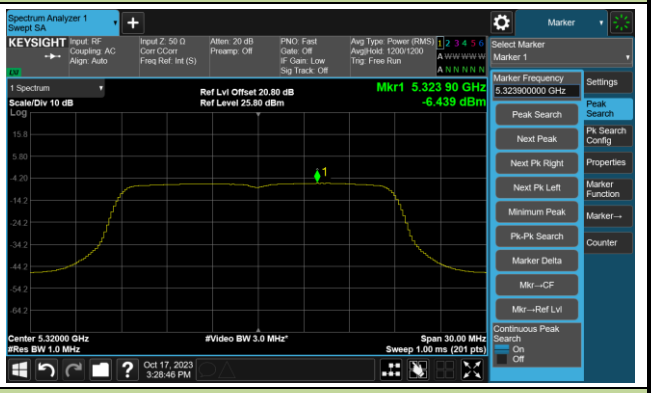
Channel 52 (5260MHz)



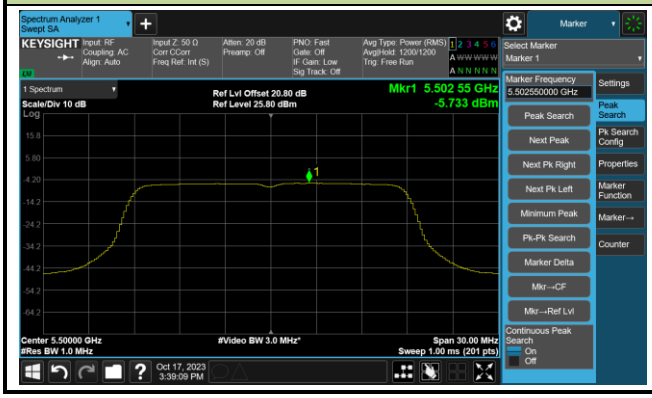
Channel 60 (5300MHz)



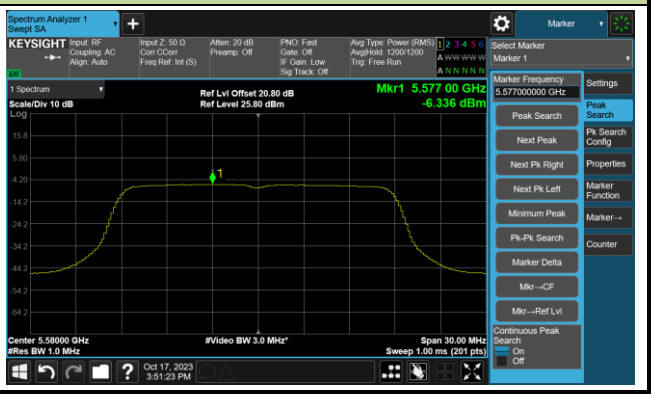
Channel 64 (5320MHz)

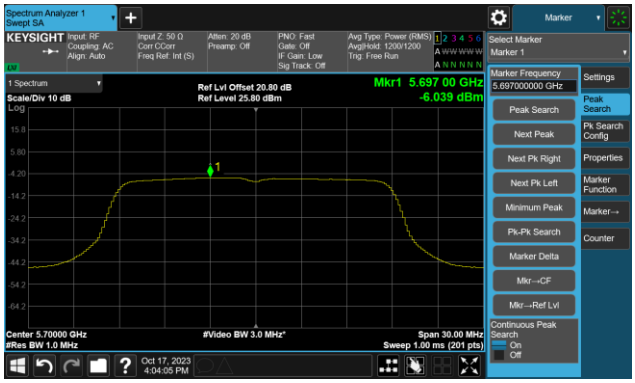
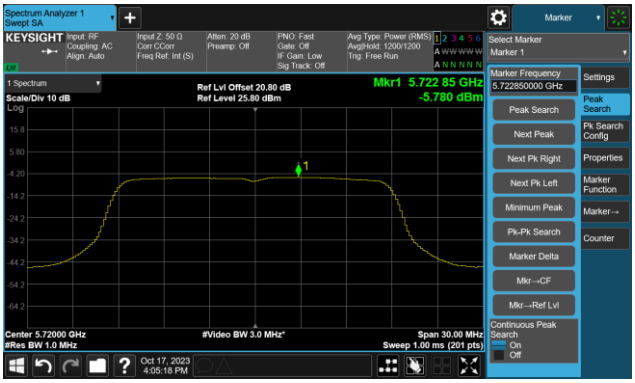
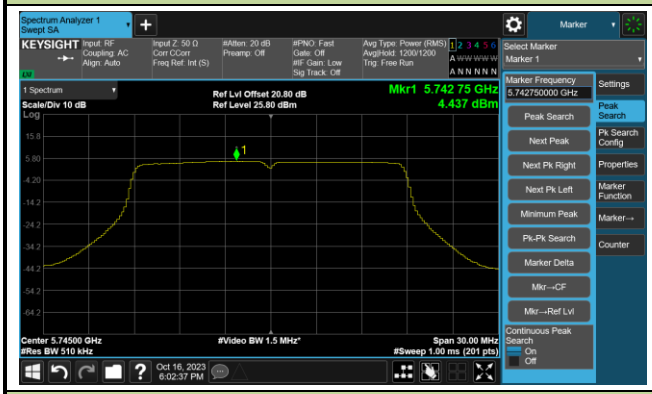
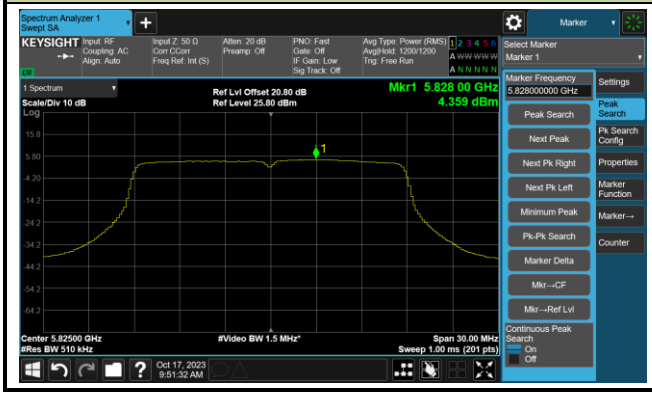


Channel 100 (5500MHz)



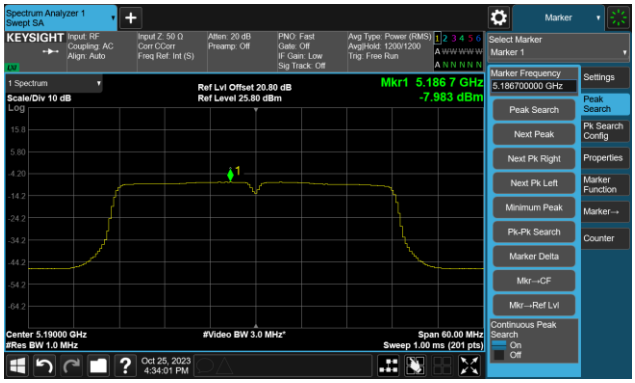
Channel 116 (5580MHz)



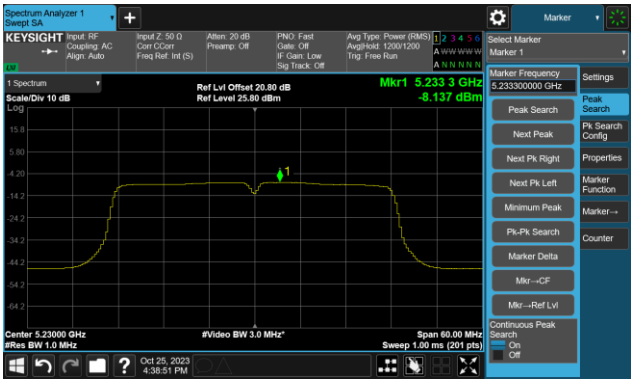
802.11ac-VHT20 Power Spectral Density- Ant 0	
Channel 140 (5700MHz)	Channel 144(5720MHz)
	
Channel 149 (5745MHz)	Channel 157 (5785MHz)
	
Channel 165 (5825MHz)	
	

802.11ac-VHT40 Power Spectral Density- Ant 0

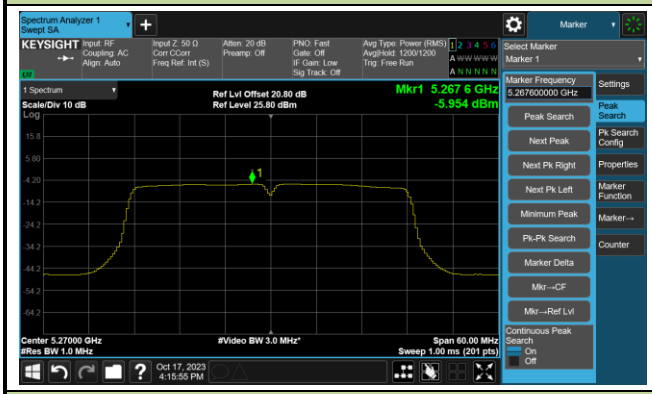
Channel 38 (5190MHz)



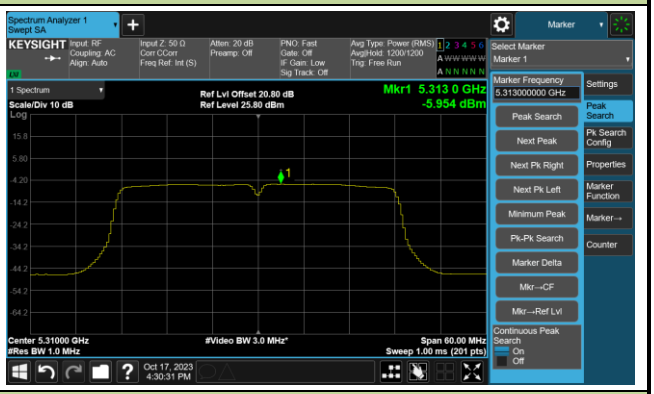
Channel 46 (5230MHz)



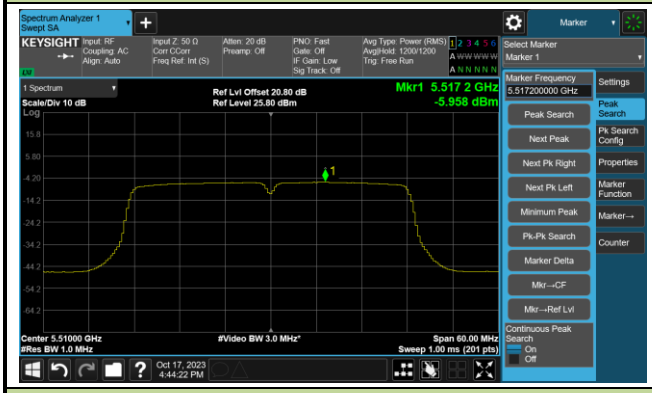
Channel 54 (5270MHz)



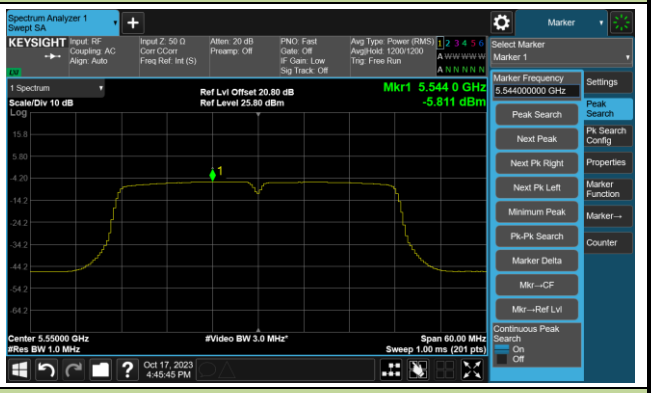
Channel 62 (5310MHz)



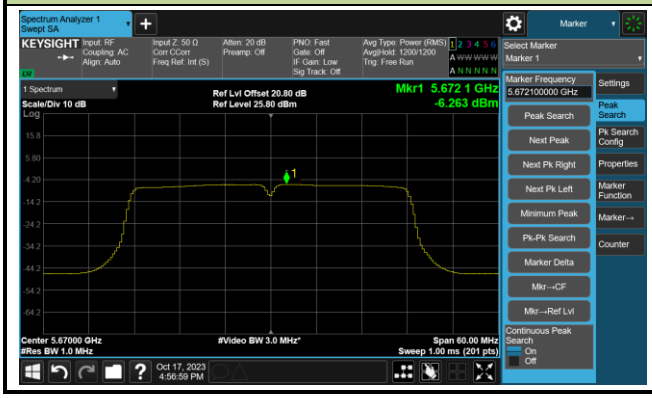
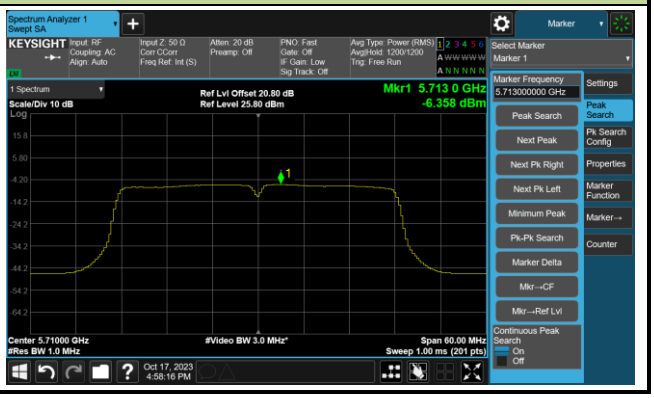
Channel 102 (5510MHz)



Channel 110 (5550MHz)



Channel 134 (5670MHz)



Channel 142(5710MHz)