

Annex D

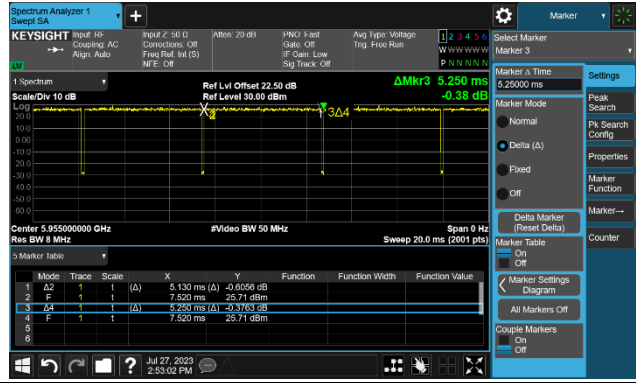
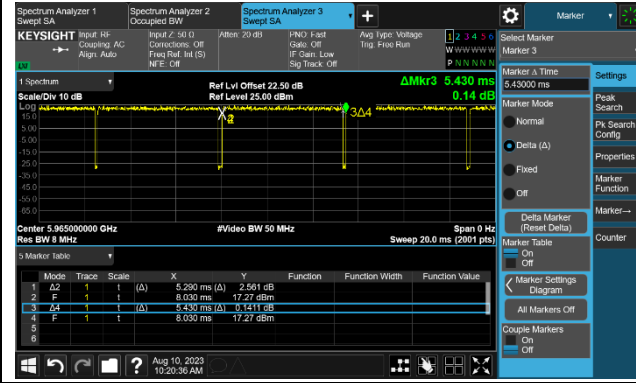
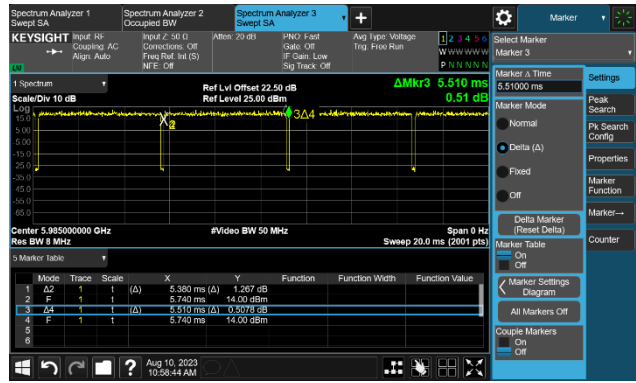
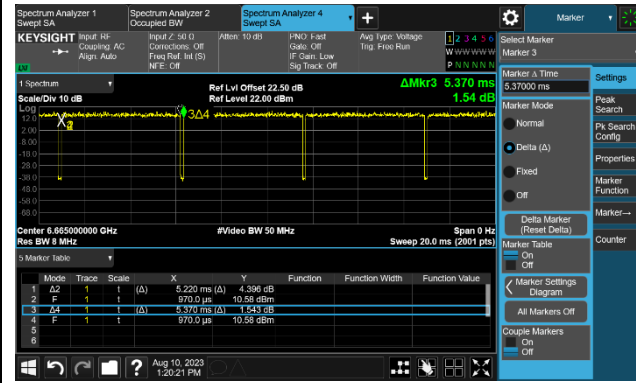
WLAN 802.11ax Test Result

Model No.: APEX0674

Description	Page
1. Duty Cycle Test Result	2
2. 26dB Bandwidth Test Result	3
3. Output Power Measurement Test Result.....	8
4. Power Spectral Density Measurement Test Result.....	9
5. In-Band Emission Measurement.....	18
6. Frequency Stability Test Result	34
7. Radiated Spurious Emission Measurement Test Result	35
8. Radiated Restricted Band Edge Measurement Test Result	109
9. AC Conducted Emissions Test Result	157

1. Duty Cycle Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-27~2023-08-10		

Test Mode	Duty Cycle
802.11ax-HE20	97.71%
802.11ax-HE40	97.42%
802.11ax-HE80	97.64%
802.11ax-HE160	97.21%
Duty Cycle (T = Transmission Duration)	
802.11ax-HE20 (T = 5.130ms)	802.11ax-HE40 (T = 5.290ms)
	
802.11ax-HE80 (T = 5.380ms)	802.11ax-HE160 (T = 5.220ms)
	

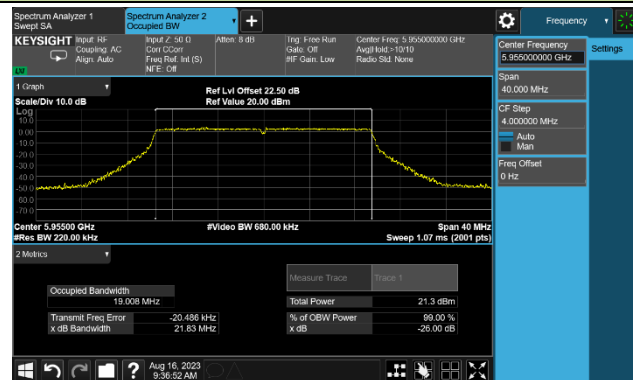
2. 26dB Bandwidth Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-08-16~2023-10-09		

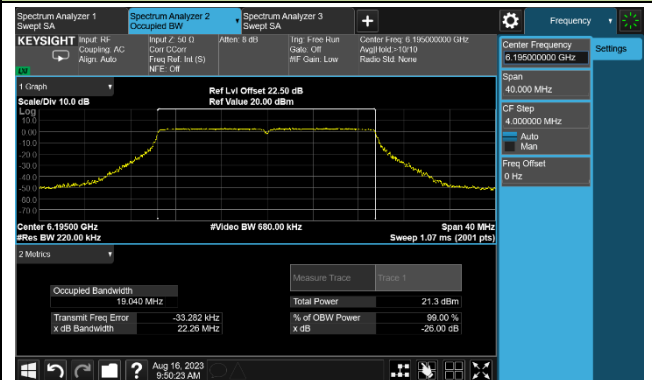
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Test Result
802.11ax-HE20	MCS0	1	5955	21.83	19.008	Pass
802.11ax-HE20	MCS0	49	6195	22.26	19.040	Pass
802.11ax-HE20	MCS0	93	6415	22.00	19.018	Pass
802.11ax-HE20	MCS0	117	6535	22.29	19.030	Pass
802.11ax-HE20	MCS0	153	6715	22.77	19.034	Pass
802.11ax-HE20	MCS0	181	6855	22.08	18.979	Pass
802.11ax-HE40	MCS0	3	5965	43.26	37.893	Pass
802.11ax-HE40	MCS0	51	6205	42.61	37.902	Pass
802.11ax-HE40	MCS0	91	6405	43.51	37.874	Pass
802.11ax-HE40	MCS0	123	6565	43.06	37.898	Pass
802.11ax-HE40	MCS0	147	6685	43.30	37.897	Pass
802.11ax-HE40	MCS0	179	6845	42.86	37.914	Pass
802.11ax-HE80	MCS0	7	5985	88.34	77.637	Pass
802.11ax-HE80	MCS0	55	6225	88.99	77.711	Pass
802.11ax-HE80	MCS0	87	6385	87.57	77.749	Pass
802.11ax-HE80	MCS0	135	6625	88.50	77.773	Pass
802.11ax-HE80	MCS0	151	6705	88.22	77.588	Pass
802.11ax-HE80	MCS0	167	6785	87.59	77.752	Pass
802.11ax-HE160	MCS0	15	6025	170.70	157.07	Pass
802.11ax-HE160	MCS0	47	6185	170.10	157.07	Pass
802.11ax-HE160	MCS0	79	6345	171.60	157.25	Pass
802.11ax-HE160	MCS0	143	6665	170.30	156.78	Pass

802.11ax-HE20 26dB Bandwidth

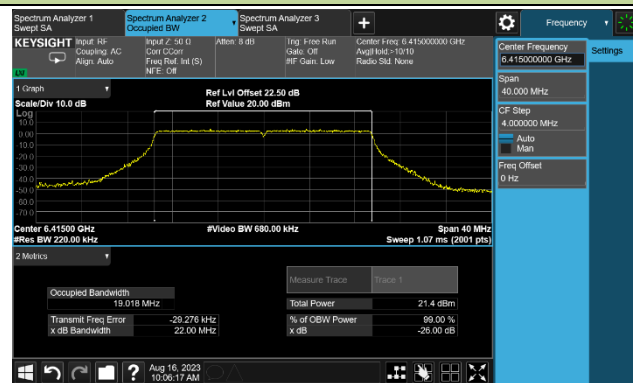
Channel 1 (5955MHz)



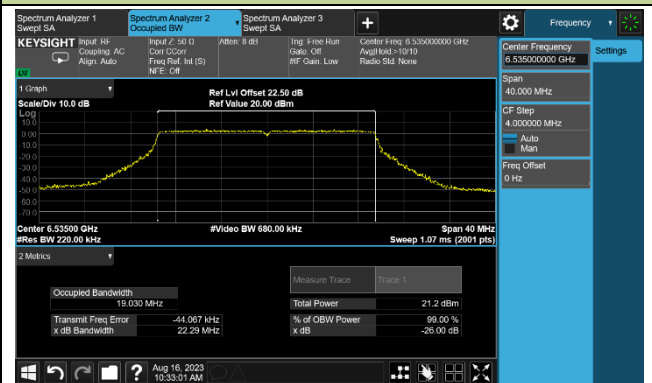
Channel 49 (6195MHz)



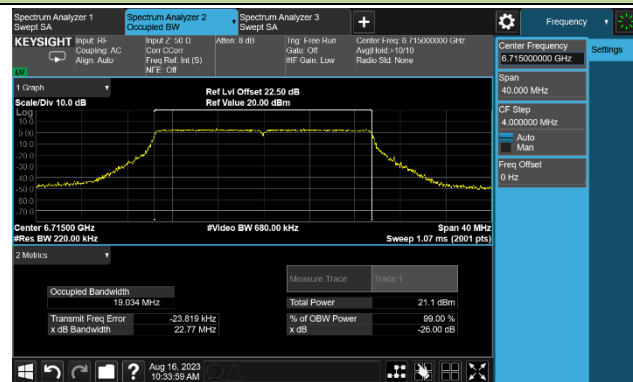
Channel 93 (6415MHz)



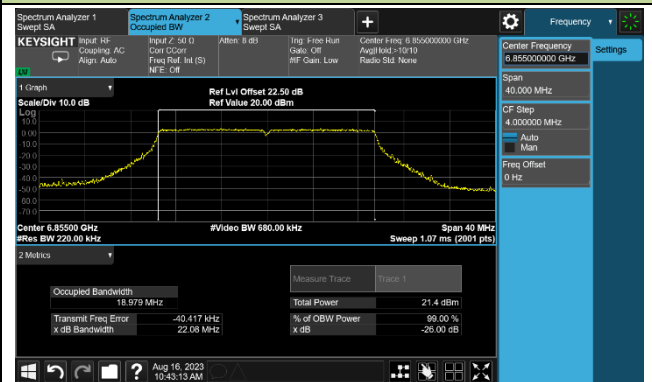
Channel 117 (6535MHz)



Channel 153 (6715MHz)

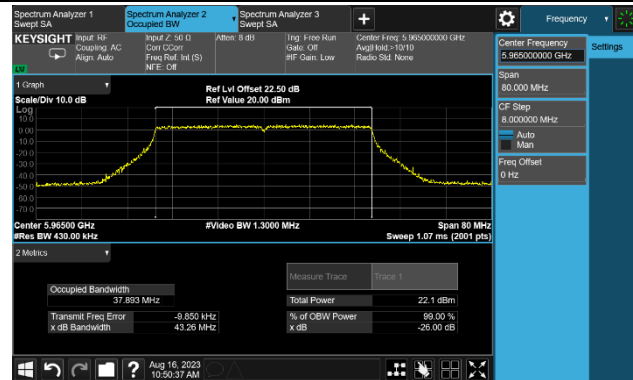


Channel 181 (6855MHz)

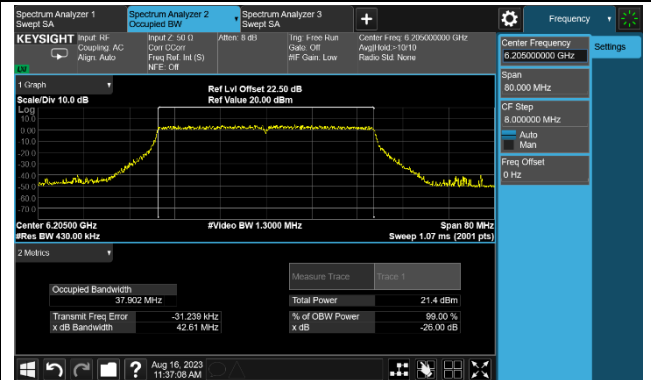


802.11ax-HE40 26dB Bandwidth

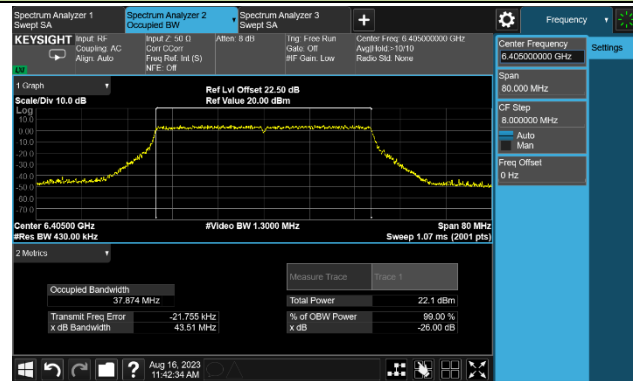
Channel 3 (5965MHz)



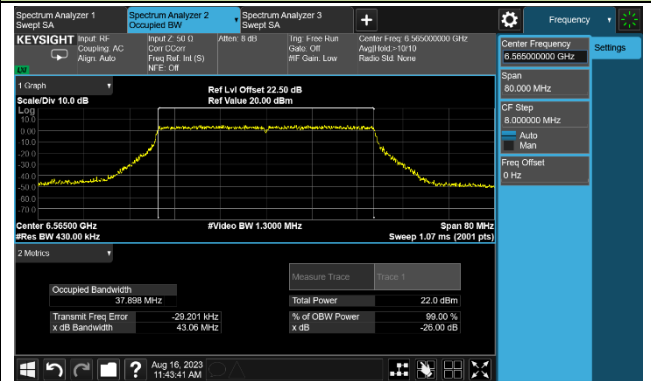
Channel 51 (6205MHz)



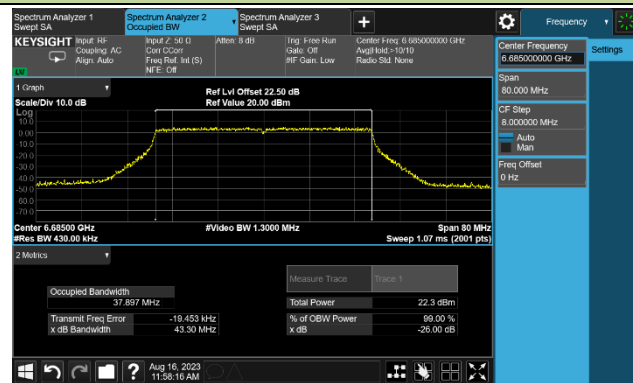
Channel 91 (6405MHz)



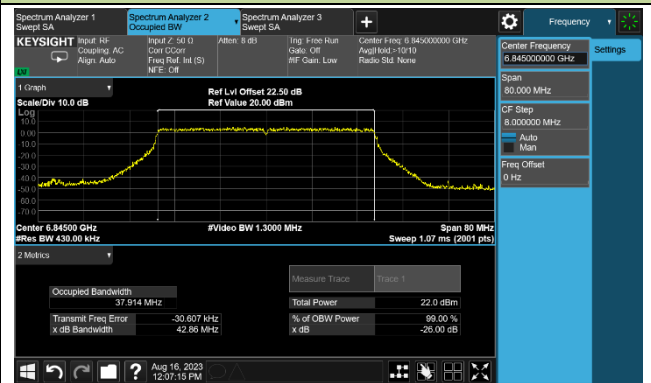
Channel 123 (6565MHz)



Channel 147 (6685MHz)

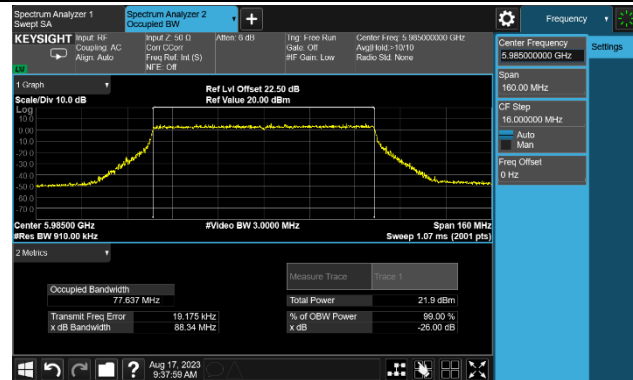


Channel 179 (6845MHz)

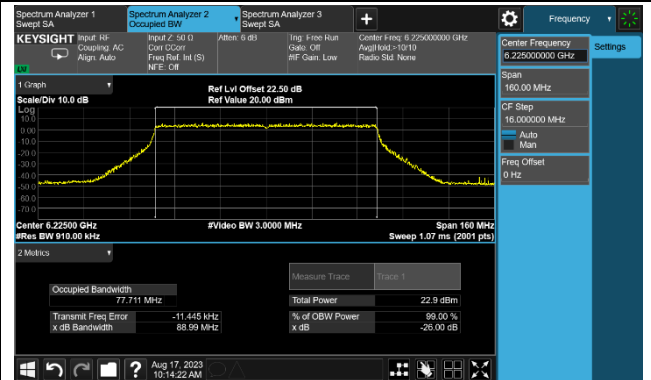


802.11ax-HE80 26dB Bandwidth

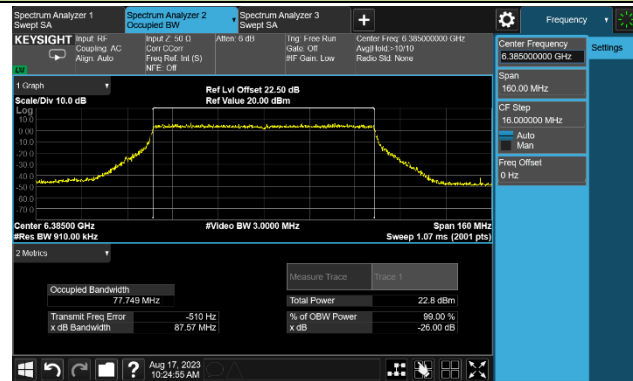
Channel 7 (5985MHz)



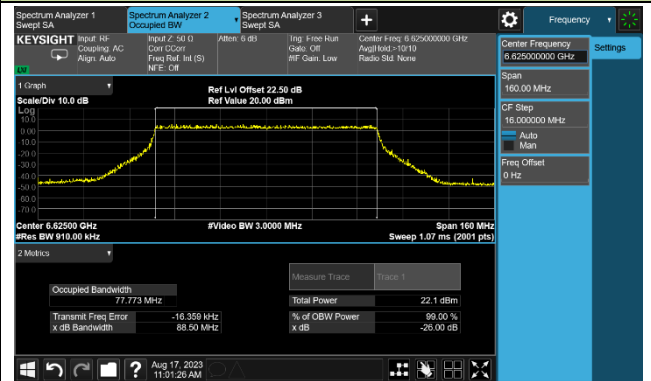
Channel 55 (6225MHz)



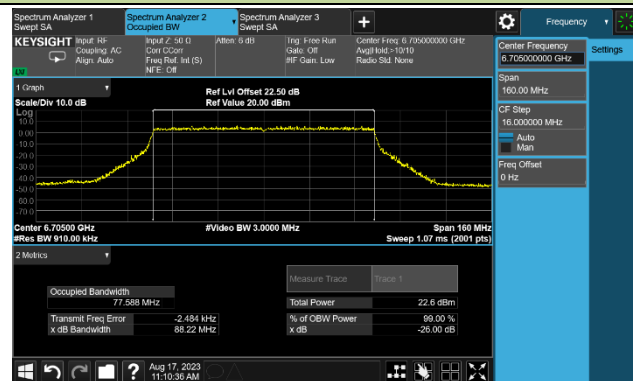
Channel 87 (6385MHz)



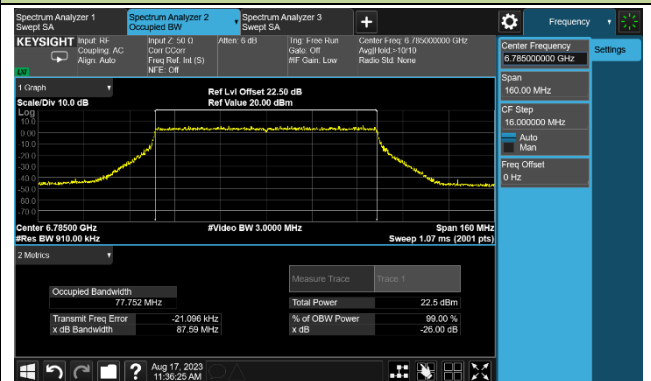
Channel 135 (6625MHz)



Channel 151 (6705MHz)

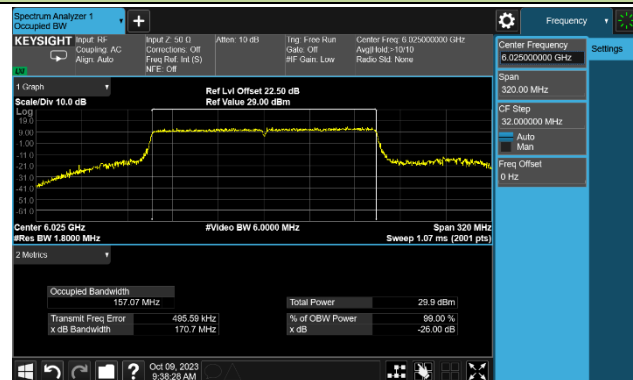


Channel 167 (6785MHz)

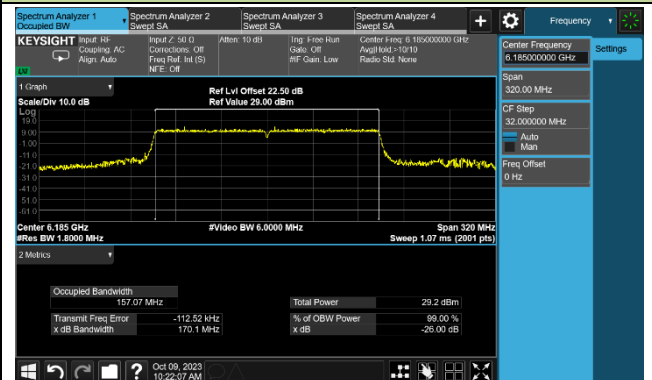


802.11ax-HE160 26dB Bandwidth

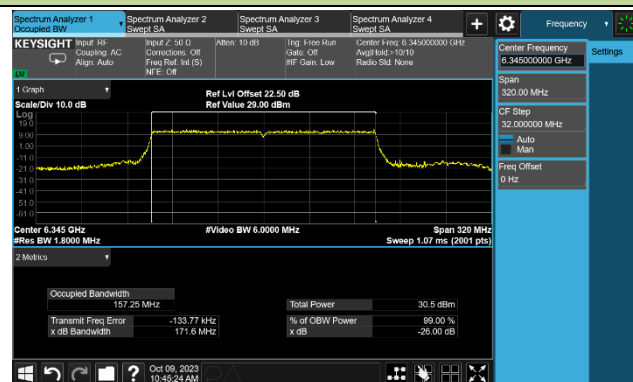
Channel 15 (6025MHz)



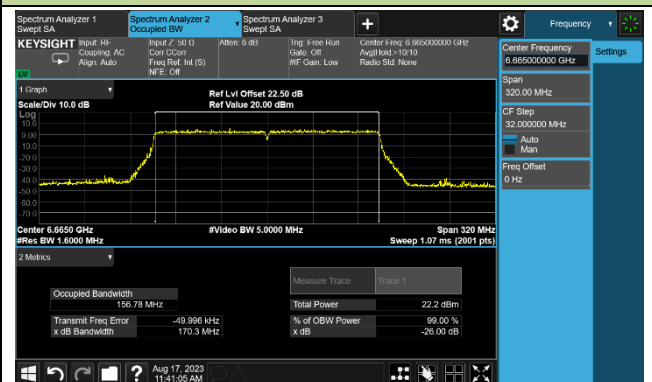
Channel 47 (6185MHz)



Channel 79 (6345MHz)



Channel 143 (6665MHz)



3. Output Power Measurement Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2024-09-15		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Power (dBm)	30 Degree EIRP (dBm)	Limit (dBm)	Result
802.11ax-HE20	MCS0	1	5955	15.13	15.43	18.29	20.63	≤ 21.00	Pass
802.11ax-HE20	MCS0	49	6195	15.08	15.66	18.39	20.73	≤ 21.00	Pass
802.11ax-HE20	MCS0	93	6415	14.91	15.32	18.13	20.47	≤ 21.00	Pass
802.11ax-HE20	MCS0	117	6535	15.47	15.38	18.44	20.78	≤ 21.00	Pass
802.11ax-HE20	MCS0	153	6715	15.13	15.43	18.29	20.63	≤ 21.00	Pass
802.11ax-HE20	MCS0	181	6855	15.05	15.52	18.30	20.64	≤ 21.00	Pass
802.11ax-HE40	MCS0	3	5965	15.21	15.51	18.37	20.71	≤ 21.00	Pass
802.11ax-HE40	MCS0	51	6205	15.31	15.57	18.45	20.79	≤ 21.00	Pass
802.11ax-HE40	MCS0	91	6405	15.06	15.25	18.17	20.51	≤ 21.00	Pass
802.11ax-HE40	MCS0	123	6565	15.42	15.35	18.40	20.74	≤ 21.00	Pass
802.11ax-HE40	MCS0	147	6685	15.29	15.38	18.35	20.69	≤ 21.00	Pass
802.11ax-HE40	MCS0	179	6845	15.38	15.36	18.38	20.72	≤ 21.00	Pass
802.11ax-HE80	MCS0	7	5985	15.28	15.49	18.40	20.74	≤ 21.00	Pass
802.11ax-HE80	MCS0	55	6225	15.16	15.55	18.37	20.71	≤ 21.00	Pass
802.11ax-HE80	MCS0	87	6385	14.85	15.12	18.00	20.34	≤ 21.00	Pass
802.11ax-HE80	MCS0	135	6625	15.12	15.28	18.21	20.55	≤ 21.00	Pass
802.11ax-HE80	MCS0	151	6705	15.29	15.25	18.28	20.62	≤ 21.00	Pass
802.11ax-HE80	MCS0	167	6785	14.90	15.36	18.15	20.49	≤ 21.00	Pass
802.11ax-HE160	MCS0	15	6025	15.09	15.52	18.32	20.66	≤ 21.00	Pass
802.11ax-HE160	MCS0	47	6185	15.25	15.43	18.35	20.69	≤ 21.00	Pass
802.11ax-HE160	MCS0	79	6345	15.05	15.52	18.30	20.64	≤ 21.00	Pass
802.11ax-HE160	MCS0	143	6665	14.98	15.28	18.14	20.48	≤ 21.00	Pass

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

Note 2: EIRP Above 30 Degree Angle (dBm) = Total Power (dBm) + 30 Degree Antenna Gain (dBi).

4. Power Spectral Density Measurement Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2024-09-17		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	PSD (dBm/MHz)		Duty Cycle (%)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)
				Ant 0	Ant 1			
802.11ax-HE20	MCS0	1	5955	2.405	2.518	97.71	12.373	≤ 23.00
802.11ax-HE20	MCS0	49	6195	2.402	3.193	97.71	12.726	≤ 23.00
802.11ax-HE20	MCS0	93	6415	2.092	2.512	97.71	12.218	≤ 23.00
802.11ax-HE20	MCS0	117	6535	2.189	2.766	97.71	12.398	≤ 23.00
802.11ax-HE20	MCS0	153	6715	2.467	2.634	97.71	12.462	≤ 23.00
802.11ax-HE20	MCS0	181	6855	2.022	2.905	97.71	12.397	≤ 23.00
802.11ax-HE40	MCS0	3	5965	-0.374	-0.272	97.42	9.601	≤ 23.00
802.11ax-HE40	MCS0	51	6205	-0.624	0.241	97.42	9.754	≤ 23.00
802.11ax-HE40	MCS0	91	6405	-0.891	-0.484	97.42	9.241	≤ 23.00
802.11ax-HE40	MCS0	123	6565	-0.966	-0.175	97.42	9.371	≤ 23.00
802.11ax-HE40	MCS0	147	6685	-0.401	-0.275	97.42	9.586	≤ 23.00
802.11ax-HE40	MCS0	179	6845	-0.613	-0.094	97.42	9.578	≤ 23.00
802.11ax-HE80	MCS0	7	5985	-2.837	-2.897	97.64	7.047	≤ 23.00
802.11ax-HE80	MCS0	55	6225	-3.489	-2.975	97.64	6.690	≤ 23.00
802.11ax-HE80	MCS0	87	6385	-3.965	-3.719	97.64	6.074	≤ 23.00
802.11ax-HE80	MCS0	135	6625	-3.713	-3.610	97.64	6.253	≤ 23.00
802.11ax-HE80	MCS0	151	6705	-3.468	-3.604	97.64	6.379	≤ 23.00
802.11ax-HE80	MCS0	167	6785	-3.595	-3.443	97.64	6.396	≤ 23.00
802.11ax-HE160	MCS0	15	6025	-6.122	-5.783	97.21	3.984	≤ 23.00
802.11ax-HE160	MCS0	47	6185	-6.286	-6.157	97.21	3.712	≤ 23.00
802.11ax-HE160	MCS0	79	6345	-6.510	-6.108	97.21	3.629	≤ 23.00
802.11ax-HE160	MCS0	143	6665	-6.428	-6.443	97.21	3.498	≤ 23.00

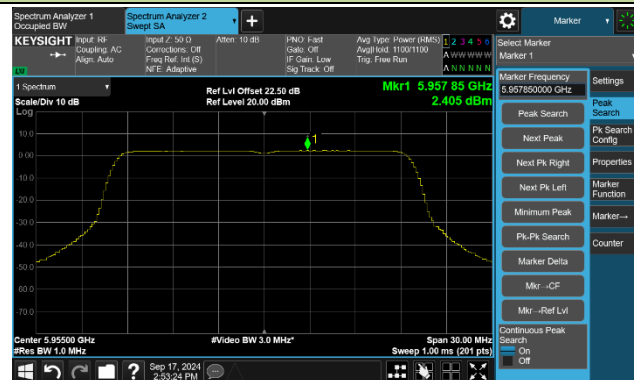
Note:

When EUT duty cycle < 98%, EIRP 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 Gain for PSD (dBi).

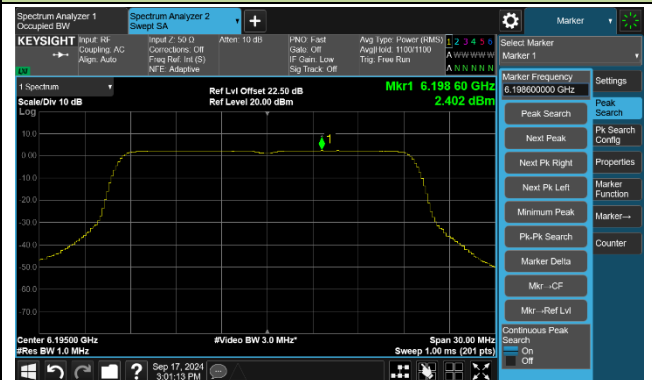
When EUT duty cycle ≥ 98%, EIRP PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$ (dBm/MHz) + Directional Gain for PSD (dBi).

802.11ax-HE20 Power Spectral Density- Ant 0

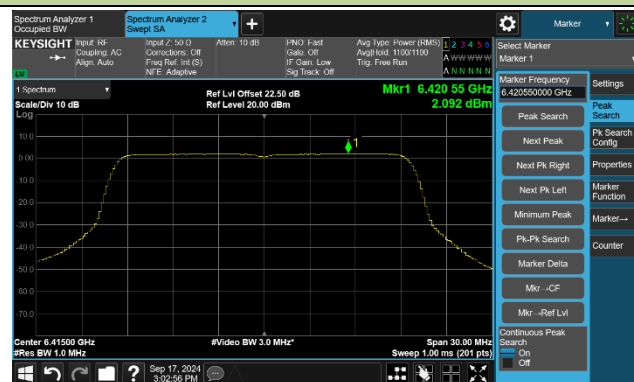
Channel 1 (5955MHz)



Channel 49 (6195MHz)



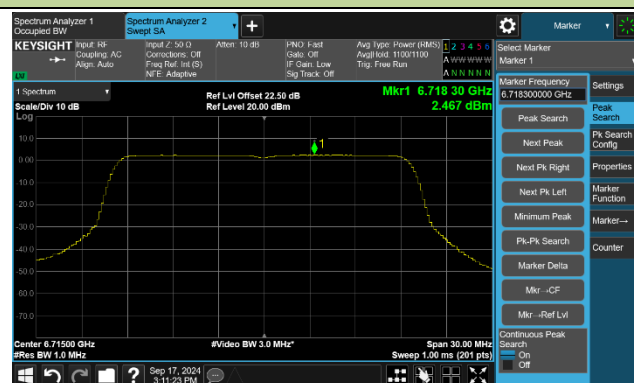
Channel 93 (6415MHz)



Channel 117 (6535MHz)



Channel 153 (6715MHz)

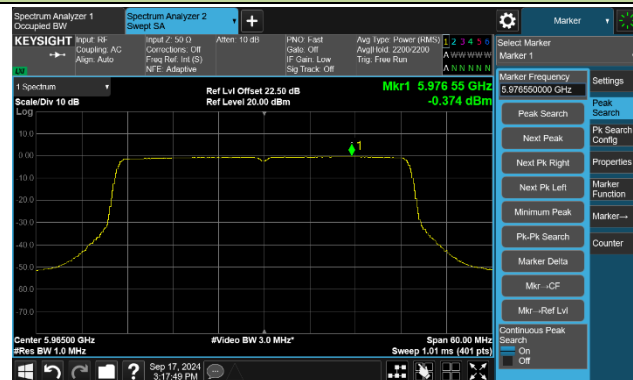


Channel 181 (6855MHz)

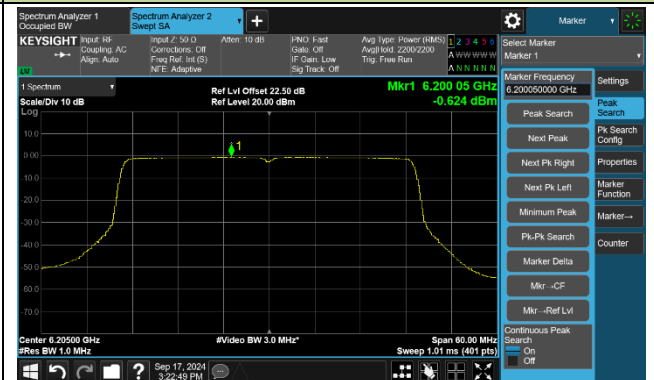


802.11ax-HE40 Power Spectral Density- Ant 0

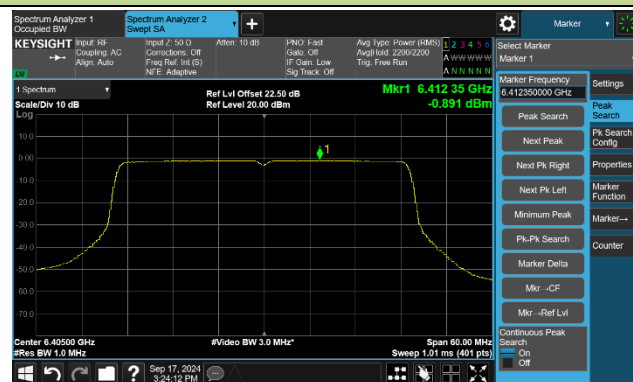
Channel 3 (5965MHz)



Channel 51 (6205MHz)



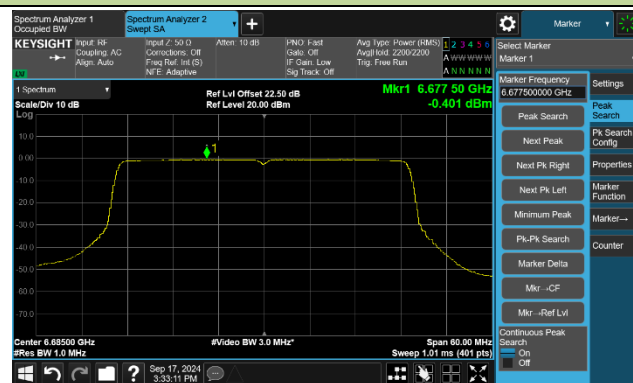
Channel 91 (6405MHz)



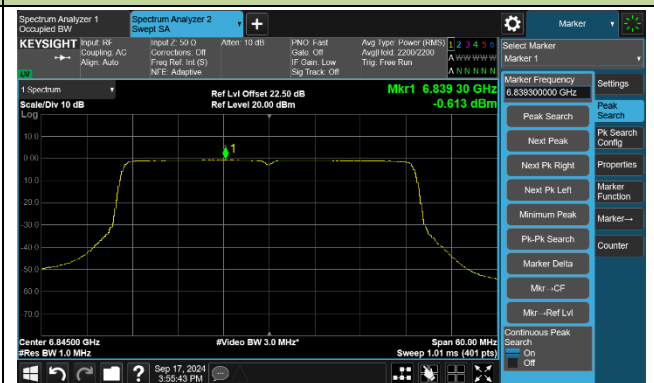
Channel 123 (6565MHz)



Channel 147 (6685MHz)

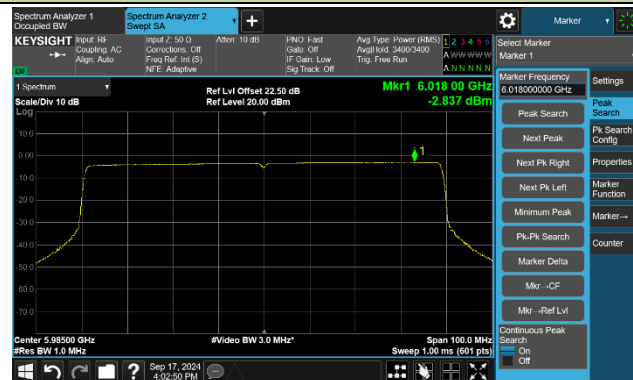


Channel 179 (6845MHz)

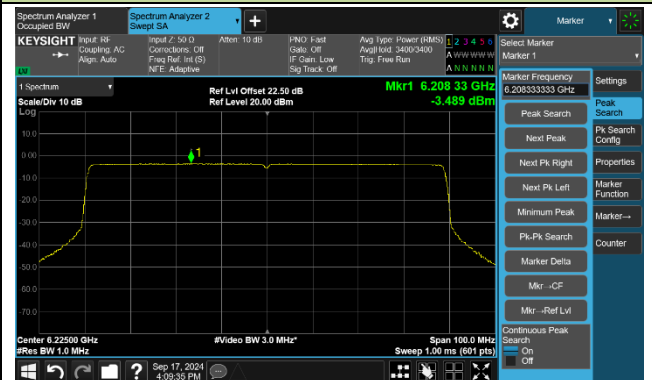


802.11ax-HE80 Power Spectral Density- Ant 0

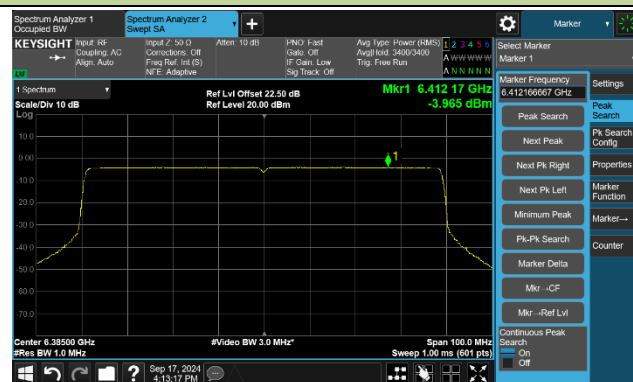
Channel 7 (5985MHz)



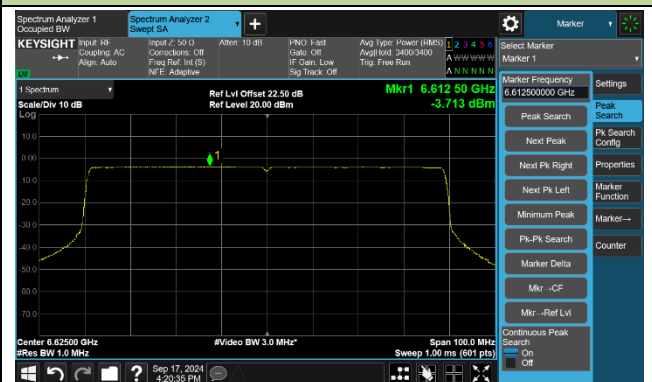
Channel 55 (6225MHz)



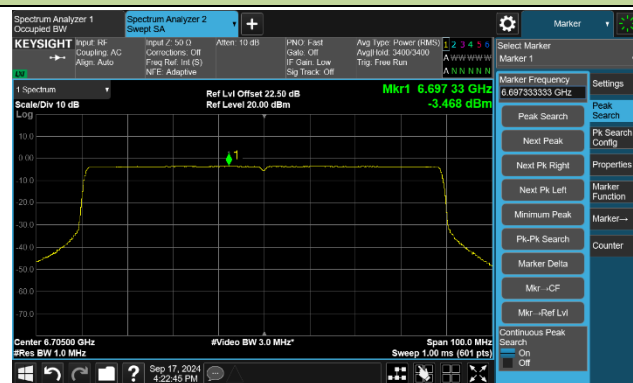
Channel 87 (6385MHz)



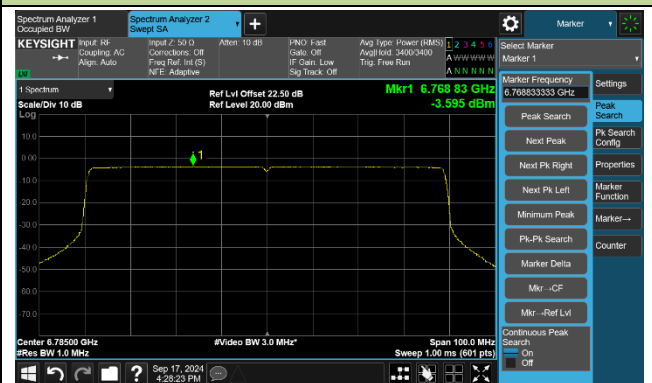
Channel 135 (6625MHz)



Channel 151 (6705MHz)

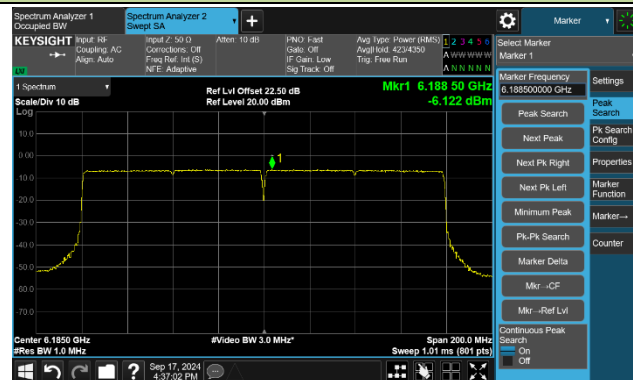


Channel 167 (6785MHz)

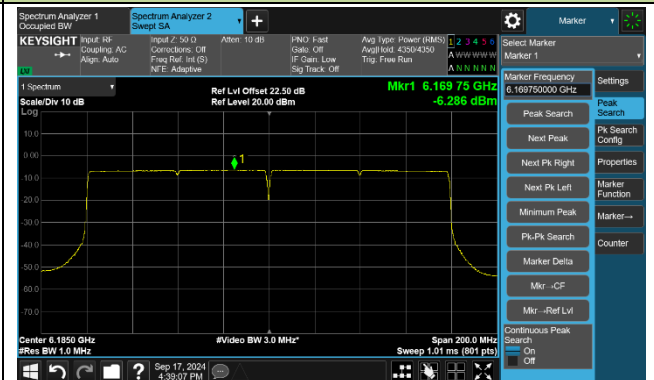


802.11ax-HE160 Power Spectral Density- Ant 0

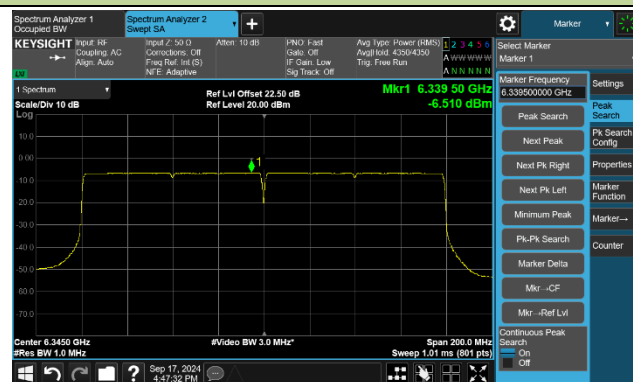
Channel 15 (6025MHz)



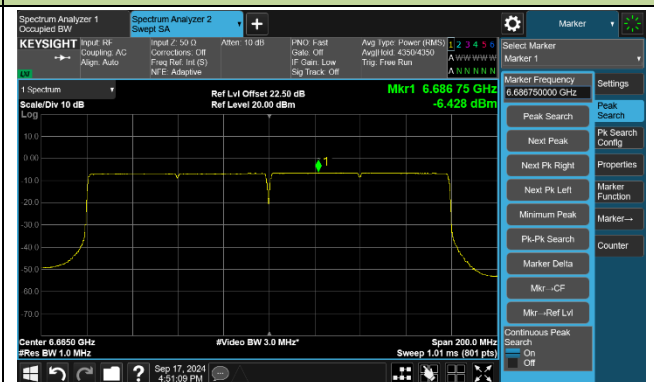
Channel 47 (6185MHz)



Channel 79 (6345MHz)

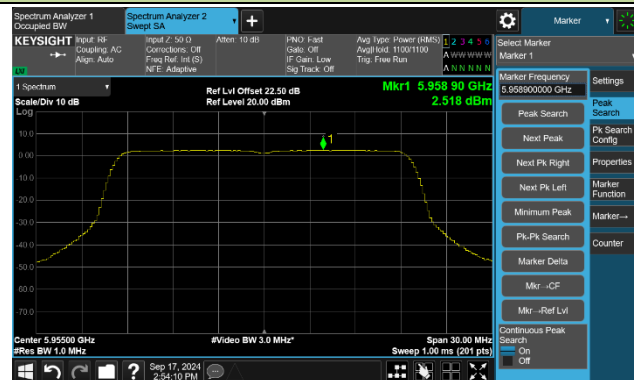


Channel 143 (6665MHz)

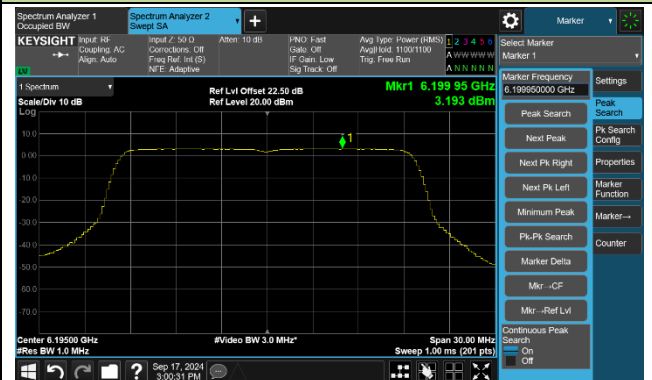


802.11ax-HE20 Power Spectral Density- Ant 1

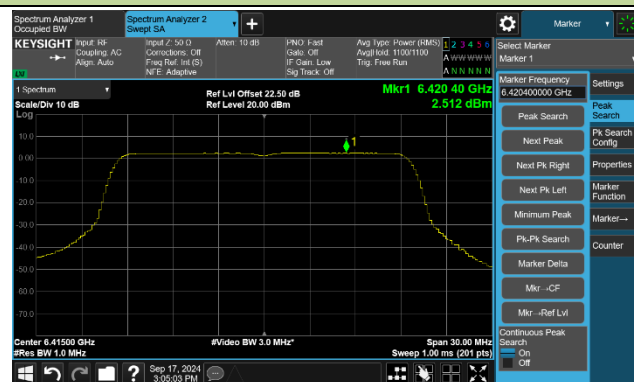
Channel 1 (5955MHz)



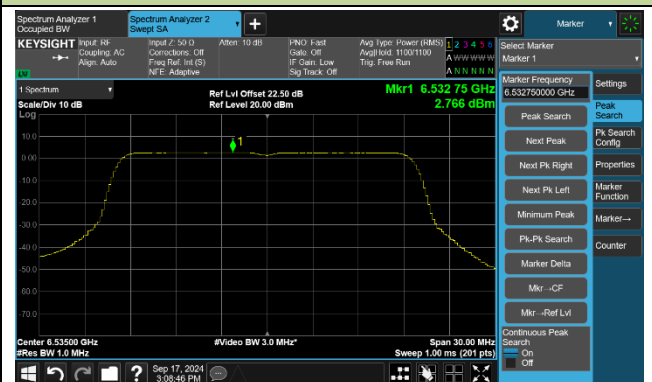
Channel 49 (6195MHz)



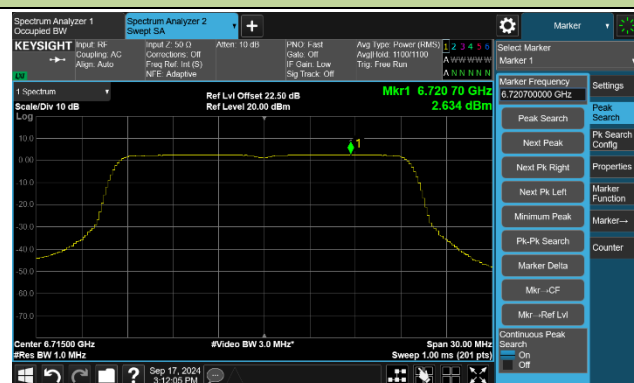
Channel 93 (6415MHz)



Channel 117 (6535MHz)



Channel 153 (6715MHz)

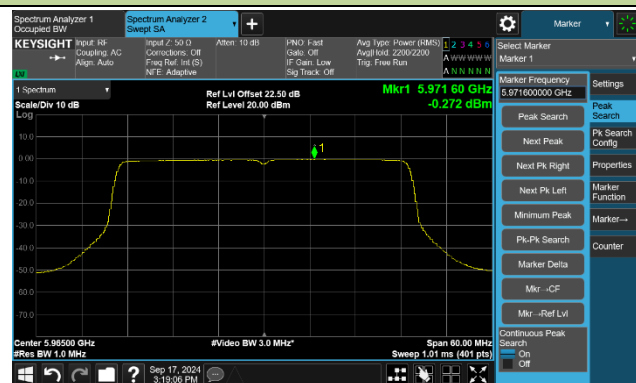


Channel 181 (6855MHz)

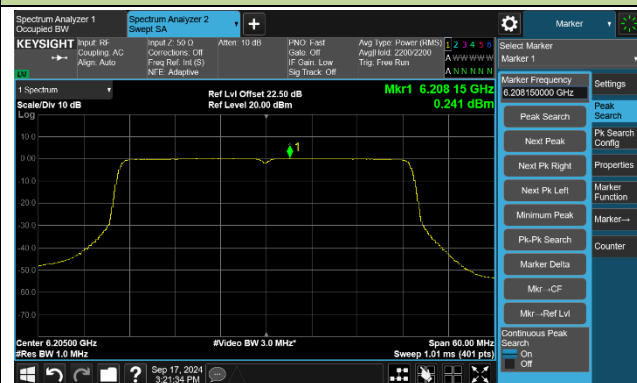


802.11ax-HE40 Power Spectral Density- Ant 1

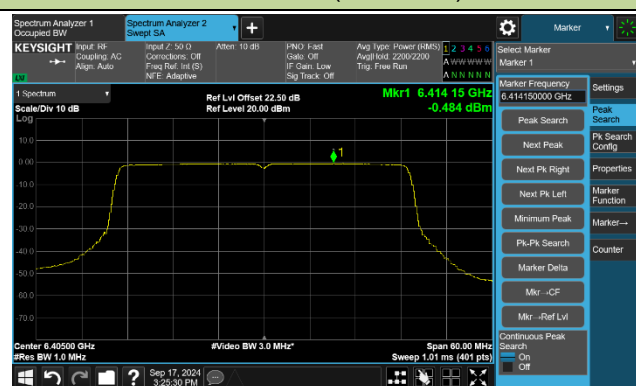
Channel 3 (5965MHz)



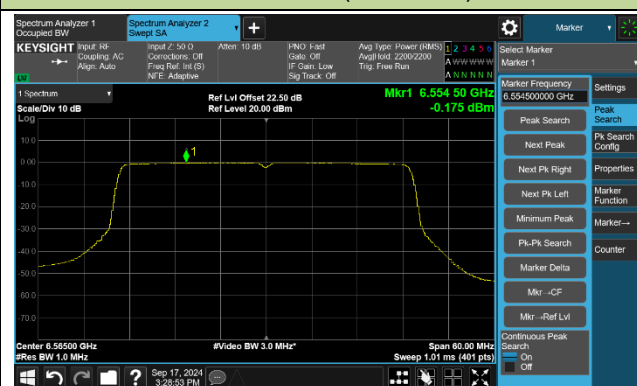
Channel 51 (6205MHz)



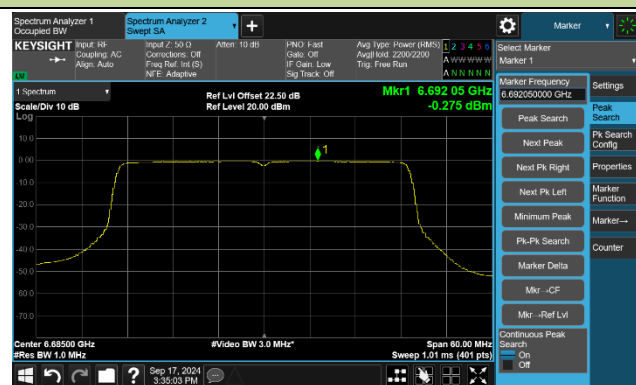
Channel 91 (6405MHz)



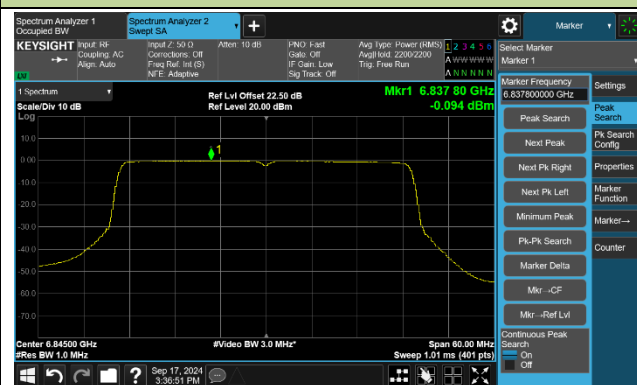
Channel 123 (6565MHz)



Channel 147 (6685MHz)

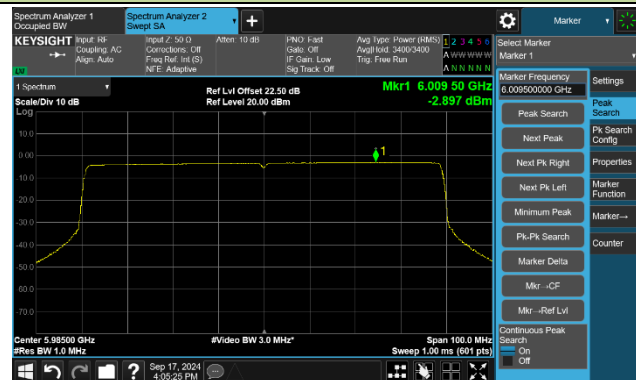


Channel 179 (6845MHz)

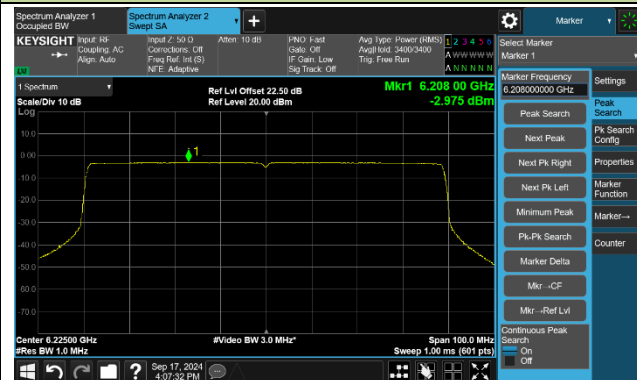


802.11ax-HE80 Power Spectral Density- Ant 1

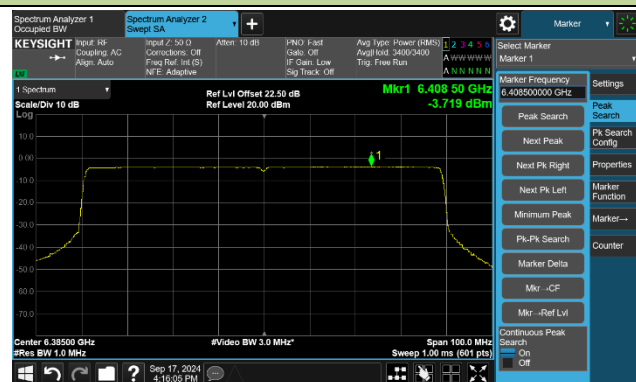
Channel 7 (5985MHz)



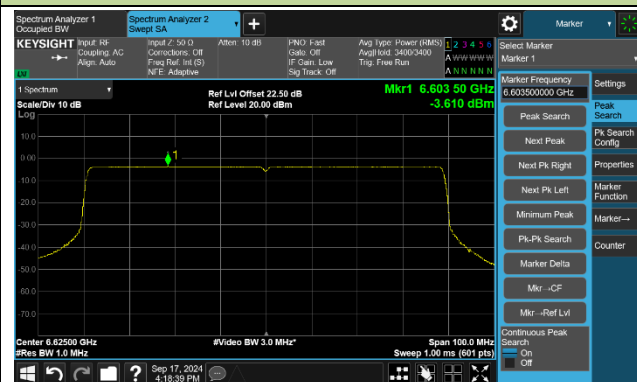
Channel 55 (6225MHz)



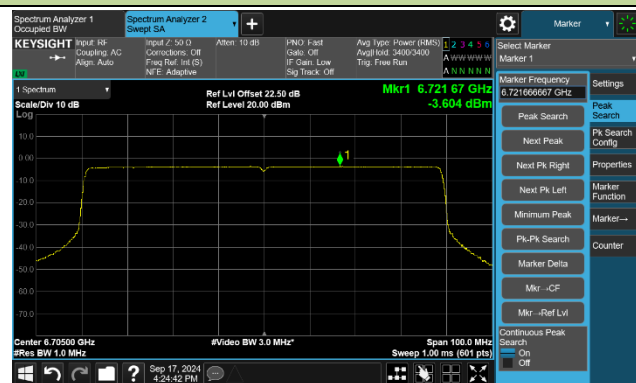
Channel 87 (6385MHz)



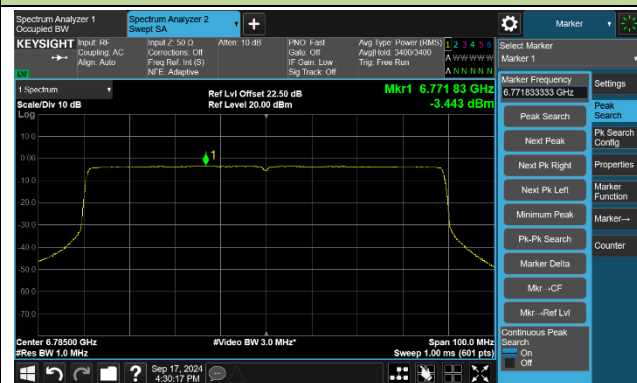
Channel 135 (6625MHz)



Channel 151 (6705MHz)

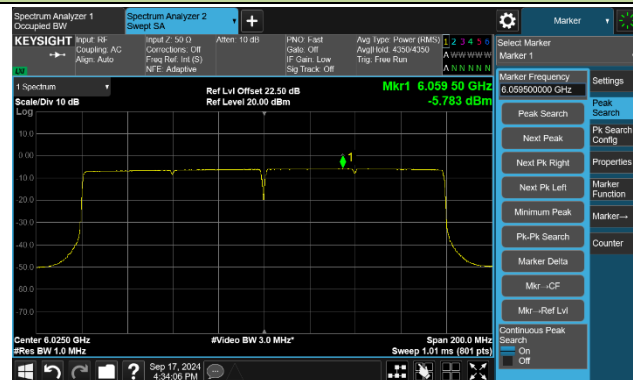


Channel 167 (6785MHz)

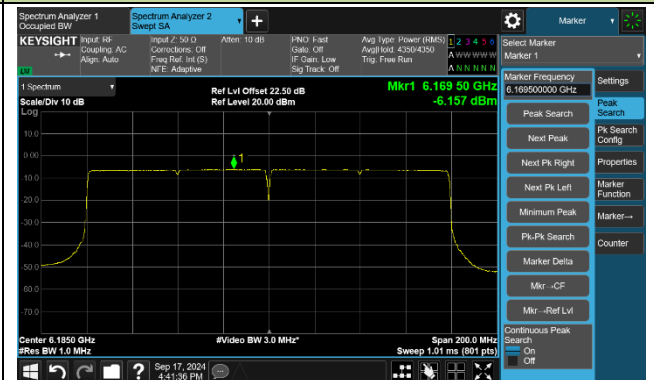


802.11ax-HE160 Power Spectral Density- Ant 1

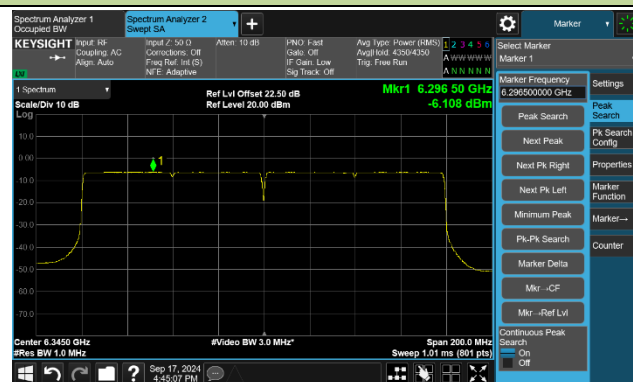
Channel 15 (6025MHz)



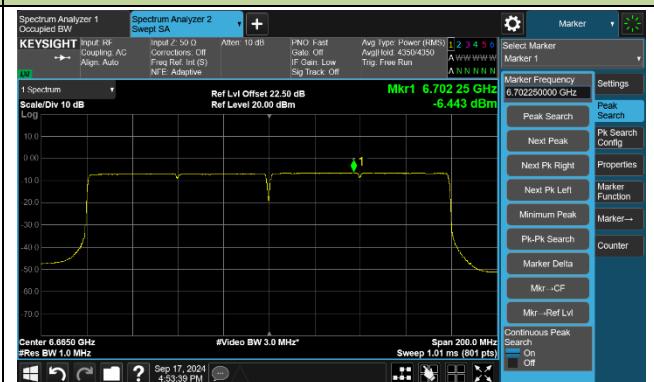
Channel 47 (6185MHz)



Channel 79 (6345MHz)

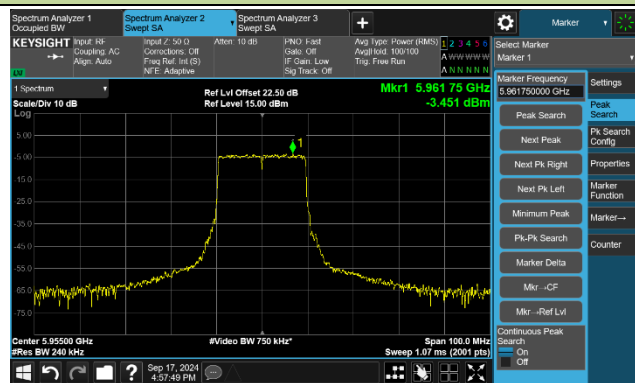
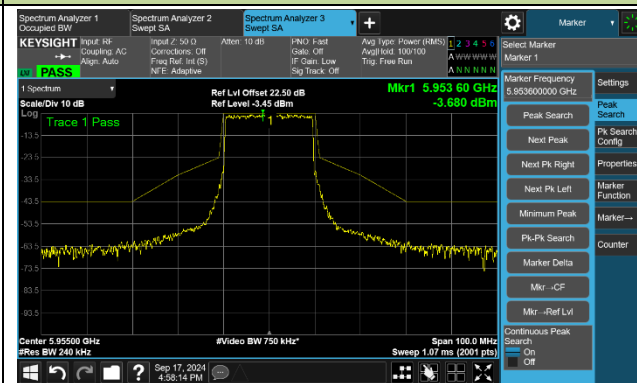
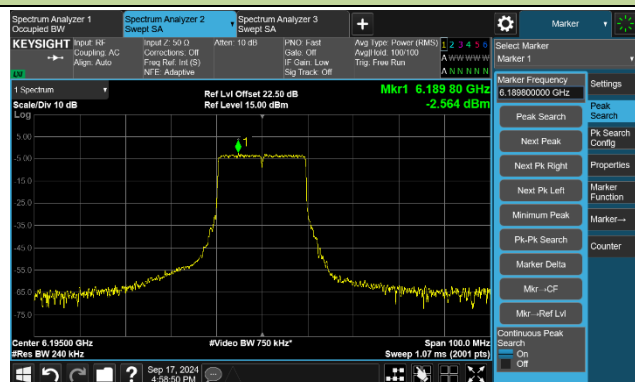
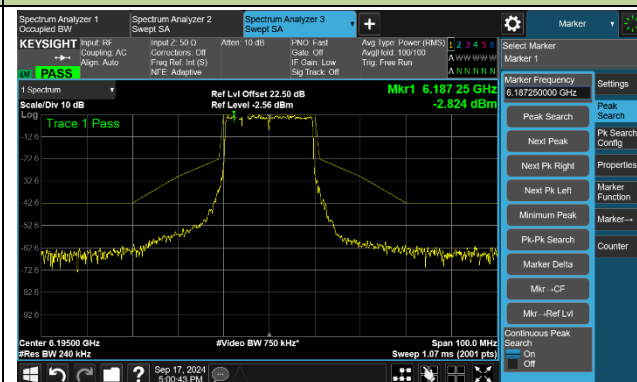


Channel 143 (6665MHz)



5. In-Band Emission Measurement

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-08-17~2024-09-06		

802.11ax-HE20 - Ant 0			
Channel 1 (5955MHz)			
The Reference Level		The Mask Data	
			
Channel 49 (6195MHz)			
The Reference Level		The Mask Data	
			
Channel 93 (6415MHz)			
The Reference Level		The Mask Data	
