Audix Technology Corp.
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A.3 MAXIMUM POWER SPECTRAL DENSITY

Test Date	2022/11/02~03	Temp./Hum.	22 ~ 25℃/62 ~ 66%
Cable Loss	1.50dB	Tested By	Sam Chang
Test Voltage	AC 120V 60Hz (Via AC Adapter)		

A.3.1 Power Spectral Density Result

- OFDM Modulation

Modulation Type	U-NII Band	Centre Frequency (MHz)	Power Spectral Density (dBm/MHz)		Duty Cycle Factor (dB) 10log(1/X)	Directional Gain (dBi) Note3	Total Power Spectral Density (dBm/1MHz) Note 2	Limit (dBm/MHz)
			AUX	Main				
802.11ax-HE20	5	5955	-9.871	-11.317	N/A	4.490	-3.034	-1
		6175	-10.113	-11.571		4.490	-3.281	
		6415	-9.916	-11.263		2.600	-4.927	
	6	6435	-9.857	-11.358		2.600	-4.933	
		6475	-9.879	-11.227		2.600	-4.891	
		6515	-10.200	-11.531		2.600	-5.204	
	7	6535	-10.789	-12.568		2.600	-5.978	
		6695	-10.663	-12.546		2.600	-5.893	
		6855	-11.057	-12.335		3.070	-5.569	
	8	6875	-11.121	-12.655		3.070	-5.740	
		6995	-10.555	-12.102		3.070	-5.180	
		7115	-14.565	-15.523		3.070	-8.937	
802.11ax-HE40	5	5965	-9.636	-10.353	N/A	4.490	-2.479	
		6165	-9.720	-10.536		4.490	-2.609	
		6405	-9.534	-10.402		2.600	-4.336	
	6	6445	-9.549	-10.356		2.600	-4.323	
		6485	-9.599	-10.424		2.600	-4.382	
	7	6525	-9.887	-10.630		2.600	-4.632	
		6685	-10.545	-11.227		2.600	-5.262	
		6845	-10.679	-11.686		3.070	-5.073	
	8	6885	-10.761	-11.517		3.070	-5.042	
		7005	-10.254	-11.165		3.070	-4.605	
		7085	-10.264	-10.993		3.070	-4.533	

Note: 1. All results have been included cable loss [Please refer to KDB 662911 E 2) c)]
2. According to KDB 662911 D01 E)2)a), Total Power Spectral Density (dBm/1MHz) = Sum to individual PSD (dBm/1MHz) + Duty Cycle Factor (dB) when duty cycle is less than 98%. + Directional Gain.
3. According to KDB 662911 D01 d) ii), transmit signals are completely uncorrelated, then
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10})/N_{ANT}]$ dBi
Directional gain:
5925MHz: Directional gain = $10 \log[(10^{2.48/10} + 10^{5.85/10})/2]$= 4.49dBi
6525MHz: Directional gain = $10 \log[(10^{2.50/10} + 10^{2.70/10})/2]$= 2.60dBi
7125MHz: Directional gain = $10 \log[(10^{1.89/10} + 10^{3.99/10})/2]$= 3.07dBi
The MIMO is uncorrelated and supported SDM(Spatial Division Multiplexing) mode only. This radio device doesn't support beamforming and Cyclic Delay Diversity (CDD).

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Modulation Type	U-NII Band	Centre Frequency (MHz)	Power Spectral Density (dBm/MHz)		Duty Cycle Factor (dB) 10log(1/X)	Directional Gain (dBi) Note3	Total Power Spectral Density (dBm/1MHz) Note 2	Limit (dBm/MHz)
			AUX	Main				
802.11ax-HE80	5	5985	-9.567	-10.100	N/A	4.490	-2.325	-1
		6145	-9.671	-10.193		4.490	-2.424	
		6385	-9.340	-9.913		2.600	-4.007	
	6	6465	-9.610	-10.272		2.600	-4.318	
		6545	-9.624	-10.451		2.600	-4.408	
	7	6625	-10.196	-11.542		2.600	-5.207	
		6705	-10.490	-11.205		2.600	-5.223	
		6785	-10.786	-11.337		2.600	-5.442	
	8	6865	-10.824	-11.479		3.070	-5.059	
		6945	-10.583	-10.996		3.070	-4.704	
		7025	-10.559	-10.896		3.070	-4.644	
802.11ax-HE160	5	6025	-9.792	-9.792	N/A	4.490	-2.292	
		6185	-9.719	-9.719		4.490	-2.219	
		6345	-9.515	-9.515		2.600	-3.905	
	6	6505	-9.671	-9.671		2.600	-4.061	
	7	6665	-10.404	-10.404		2.600	-4.794	
		6825	-10.671	-10.671		3.070	-4.591	
	8	6985	-10.282	-10.282		3.070	-4.202	

Note: 1. All results have been included cable loss [Please refer to KDB 662911 E 2) c)]
2. According to KDB 662911 D01 E)2)a), Total Power Spectral Density (dBm/1MHz) = Sum to individual PSD (dBm/1MHz) + Duty Cycle Factor (dB) when duty cycle is less than 98%. + Directional Gain.
3. According to KDB 662911 D01 d) ii), transmit signals are completely uncorrelated, then
Directional gain = 10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi
Directional gain:
5925MHz: Directional gain = 10 log[($10^{2.48/10}$ +$10^{5.85/10}$)/2]= 4.49dBi
6525MHz: Directional gain = 10 log[($10^{2.50/10}$ +$10^{2.70/10}$)/2]= 2.60dBi
7125MHz: Directional gain = 10 log[($10^{1.89/10}$ +$10^{3.99/10}$)/2]= 3.07dBi
The MIMO is uncorrelated and supported SDM(Spatial Division Multiplexing) mode only. This radio device doesn't support beamforming and Cyclic Delay Diversity (CDD).

- OFDMA Modulation

Tones	RU Index	Modulation Type	U-NII Band	Centre Frequency (MHz)	Power Spectral Density (dBm/MHz)		Duty Cycle Factor (dB) 10log(1/X)	Directional Gain (dBi) Note3	Total Power Spectral Density (dBm/1MHz) Note 2	Limit (dBm/MHz)
					AUX	Main				
26T	18	802.11ax-HE80	5	5985	-11.060	-10.386	0.223	4.490	-2.987	-1
52T	44	802.11ax-HE80	5	5985	-9.757	-8.860	0.119	4.490	-1.666	
106T	56	802.11ax-HE80	5	5985	-9.320	-9.038	N/A	4.490	-1.676	
242T	62	802.11ax-HE160	5	6025	-10.489	-11.568	0.150	4.490	-3.345	
484T	65	802.11ax-HE40	5	5965	-9.978	-10.852	N/A	4.490	-2.893	
996T	67	802.11ax-HE160	5	6185	-9.761	-10.232	0.159	4.490	-2.331	

Note: 1. All results have been included cable loss [Please refer to KDB 662911 E 2) c)]
2. According to KDB 662911 D01 E)2)a), Total Power Spectral Density (dBm/1MHz) = Sum to individual PSD (dBm/1MHz) + Duty Cycle Factor (dB) when duty cycle is less than 98%. + Directional Gain.
3. According to KDB 662911 D01 d) ii), transmit signals are completely uncorrelated, then
Directional gain = 10 log[($10^{G1/10}$ + $10^{G2/10}$ + … + $10^{GN/10}$)/N_{ANT}] dBi
Directional gain:
5925MHz: Directional gain = 10 log[($10^{2.48/10}$ +$10^{5.85/10}$)/2]= 4.49dBi
6525MHz: Directional gain = 10 log[($10^{2.50/10}$ +$10^{2.70/10}$)/2]= 2.60dBi
7125MHz: Directional gain = 10 log[($10^{1.89/10}$ +$10^{3.99/10}$)/2]= 3.07dBi
The MIMO is uncorrelated and supported SDM(Spatial Division Multiplexing) mode only. This radio device doesn't support beamforming and Cyclic Delay Diversity (CDD).

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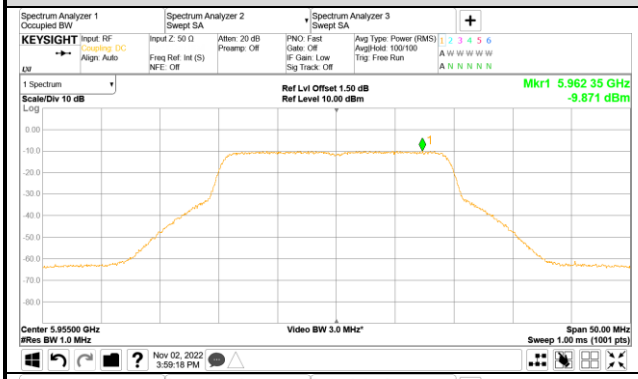
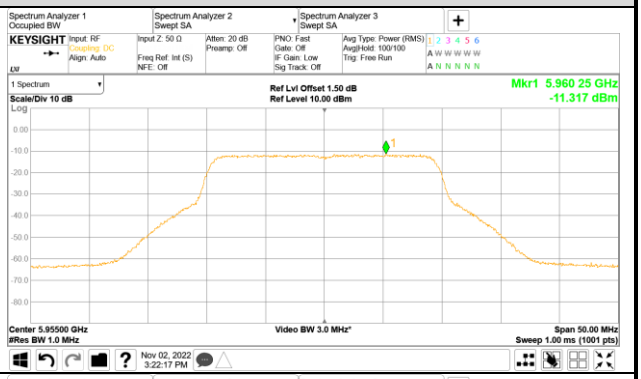
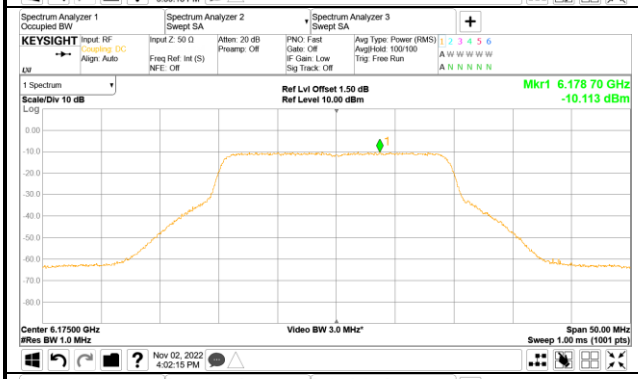
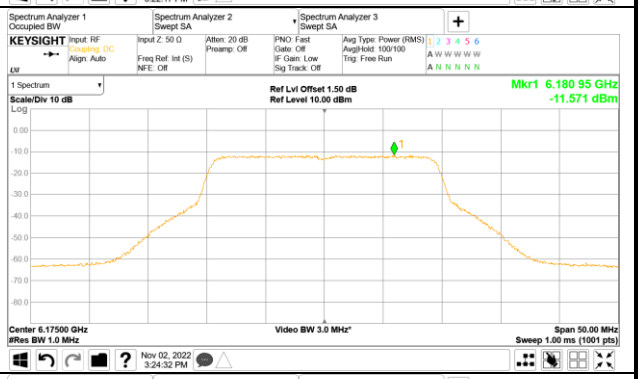
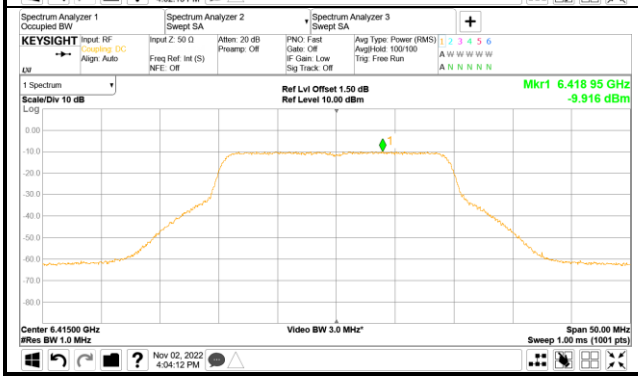
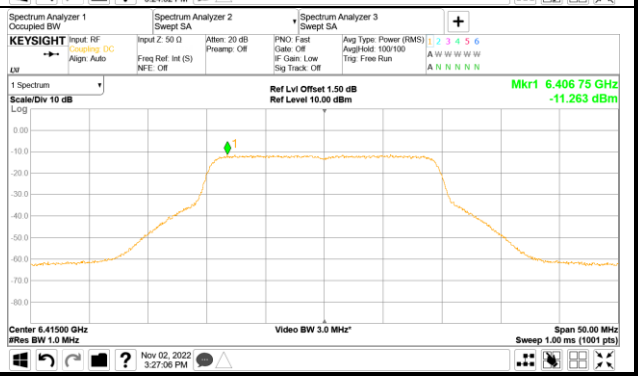
A.3.2 Measurement Plots

- OFDM Modulation

Mode: 802.11ax-HE20	
AUX	Main
U-NII Band 5	U-NII Band 5
	
	
	

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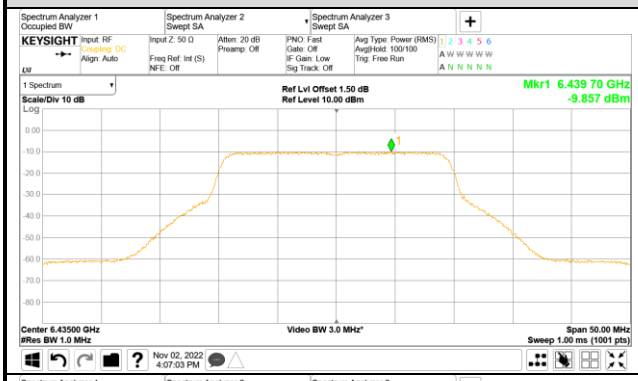
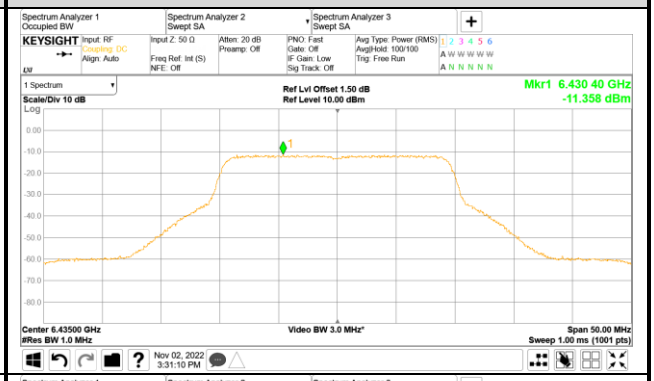
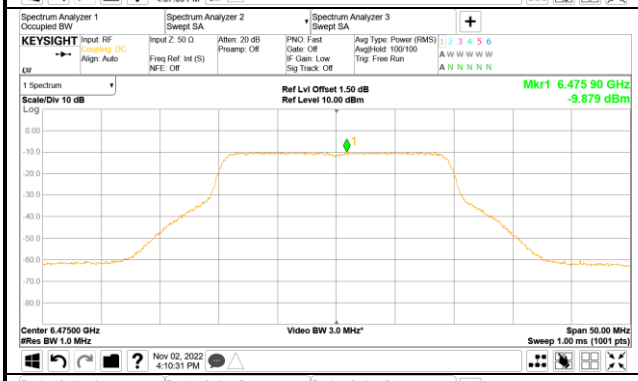
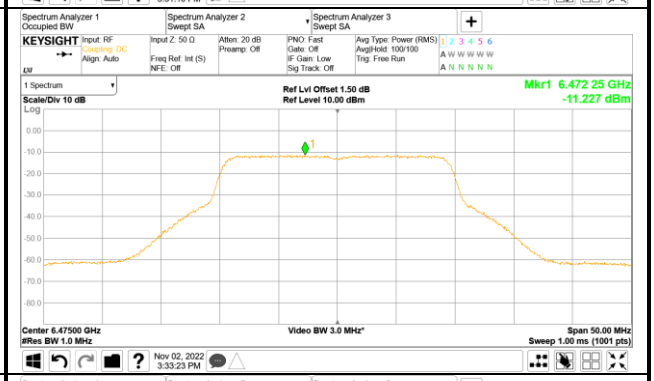
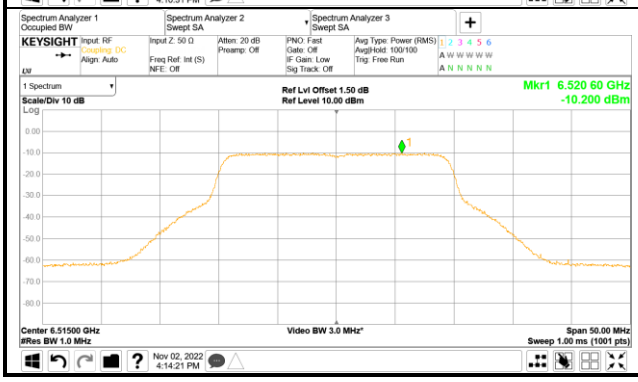
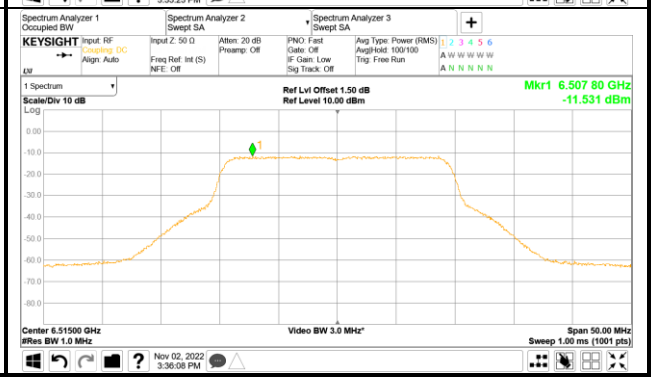
Mode: 802.11ax-HE20	
AUX	Main
U-NII Band 6	U-NII Band 6
	
	
	

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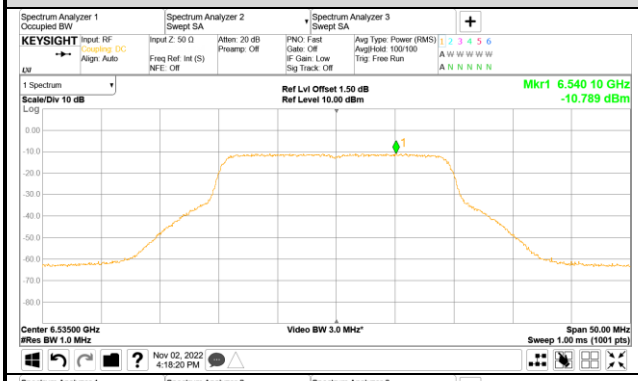
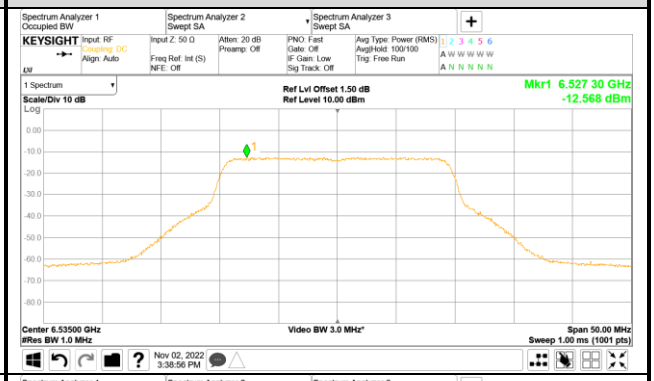
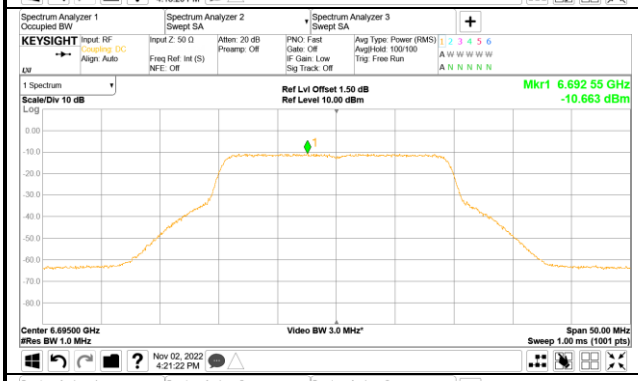
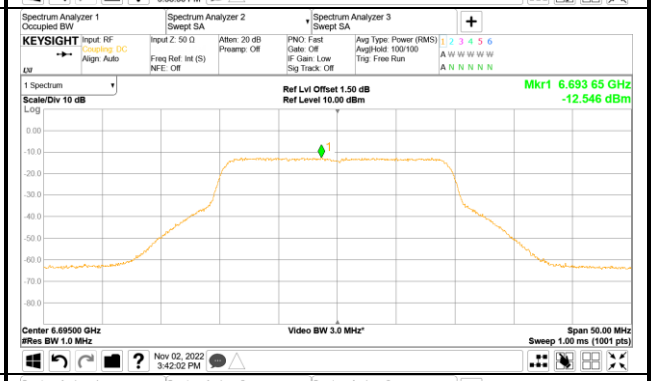
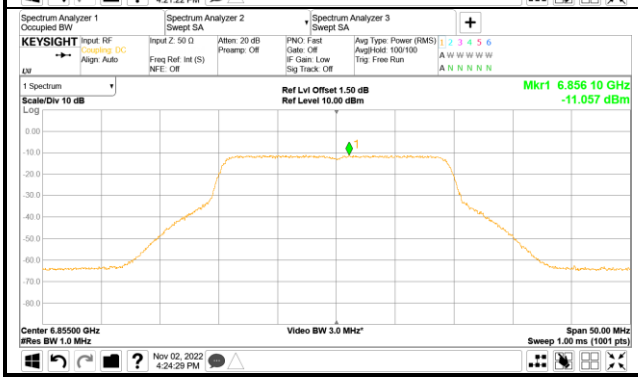
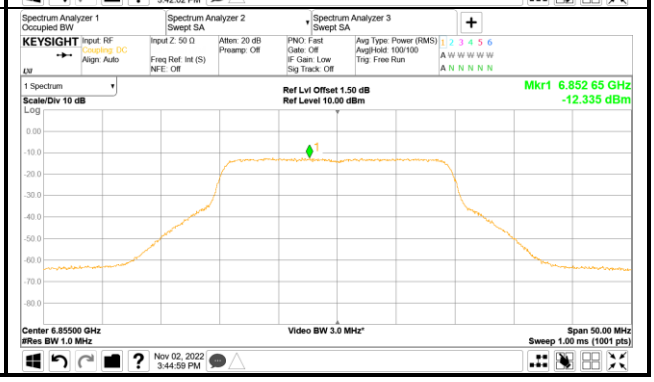
Mode: 802.11ax-HE20	
AUX	Main
U-NII Band 7	U-NII Band 7
	
	
	

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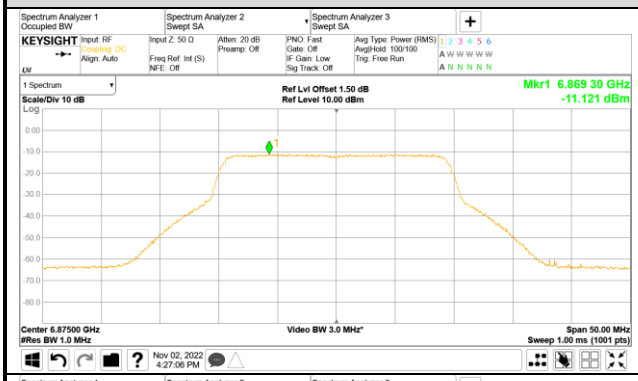
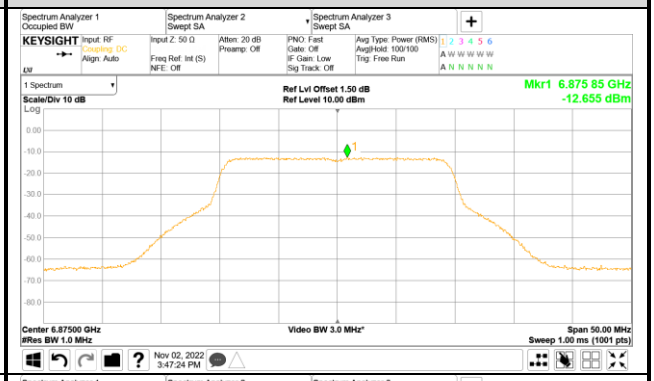
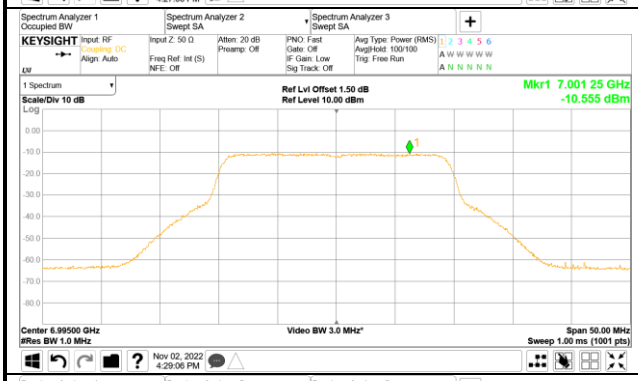
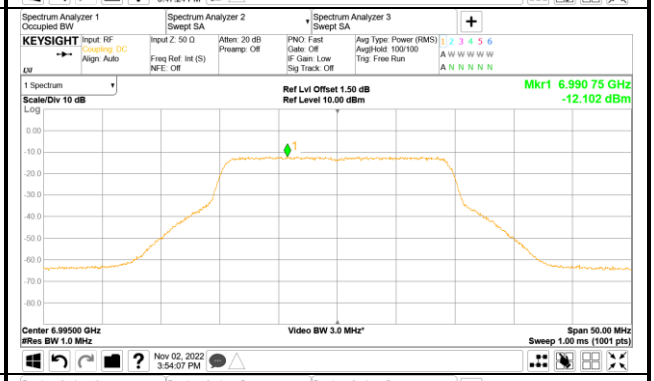
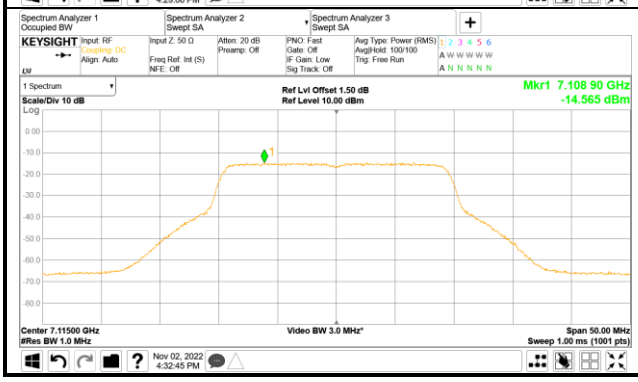
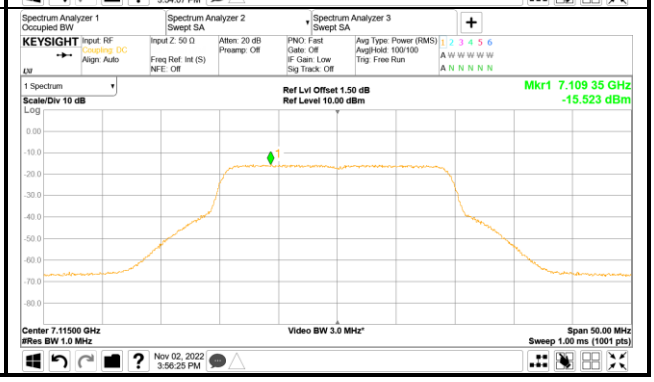
Mode: 802.11ax-HE20	
AUX	Main
U-NII Band 8	U-NII Band 8
	
	
	

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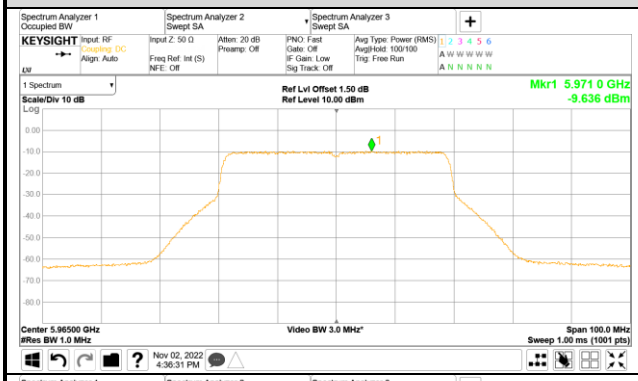
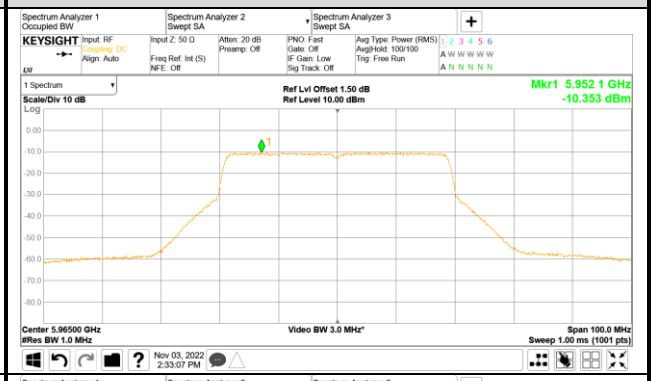
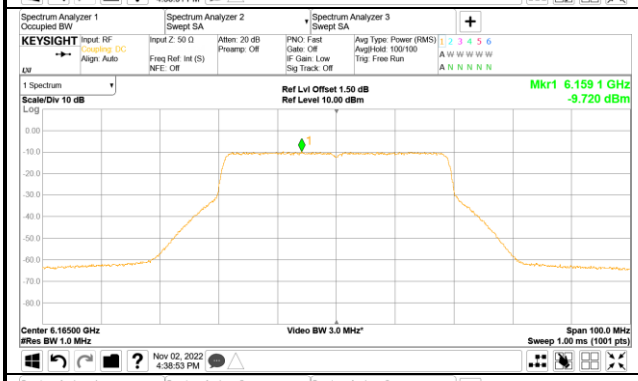
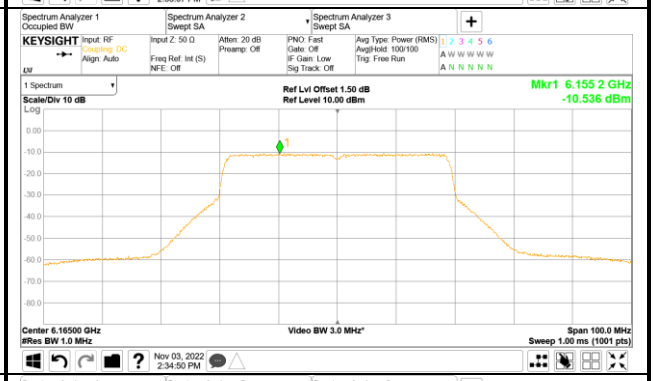
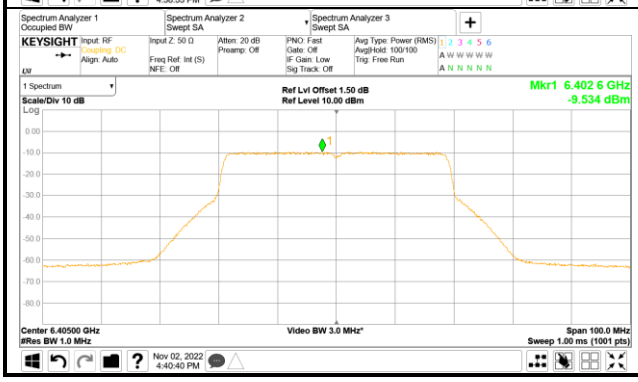
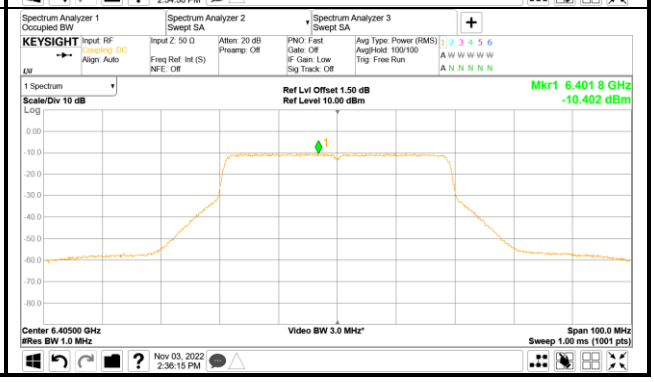
Mode: 802.11ax-HE40	
AUX	Main
U-NII Band 5	U-NII Band 5
	
	
	

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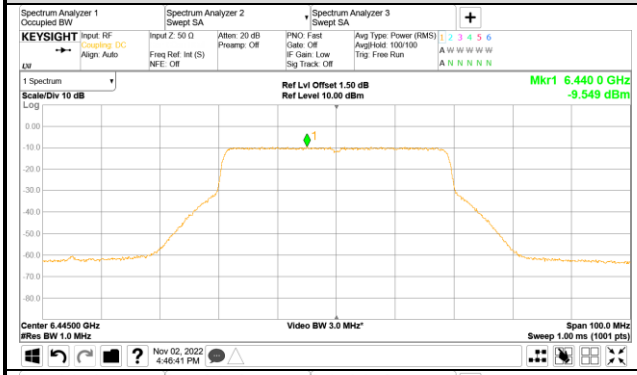
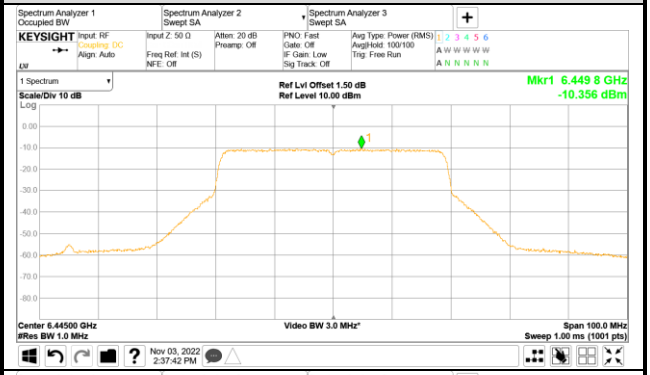
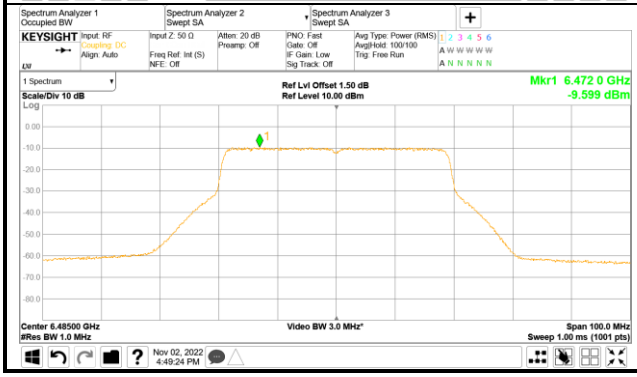
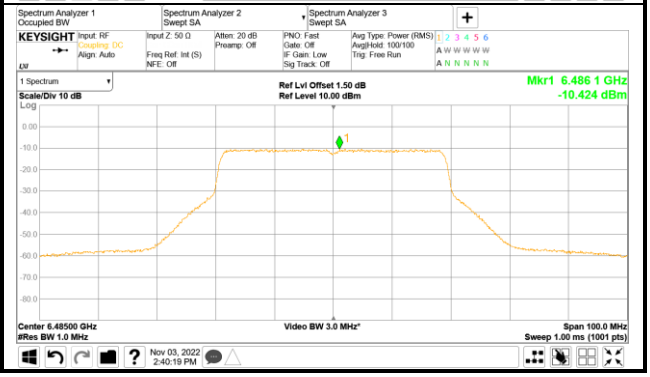
Mode: 802.11ax-HE40	
AUX	Main
U-NII Band 6	U-NII Band 6
	
	

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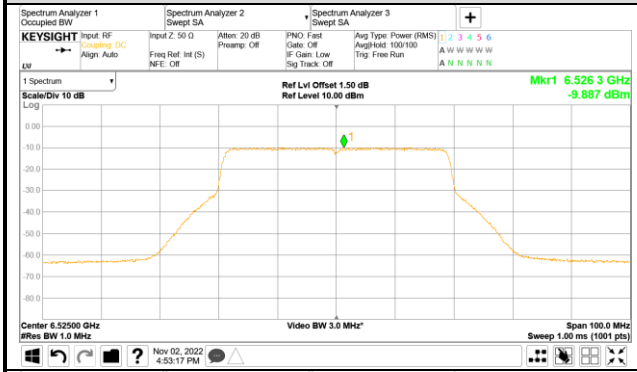
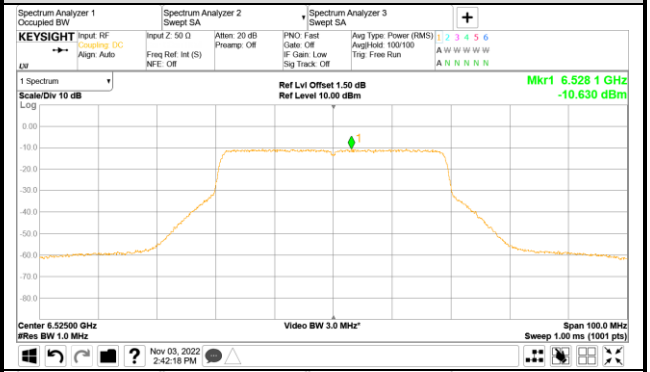
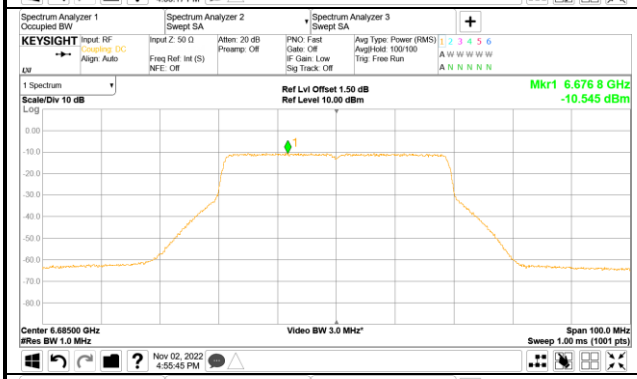
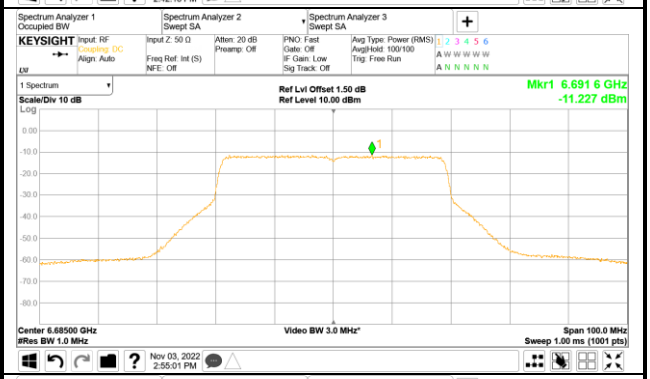
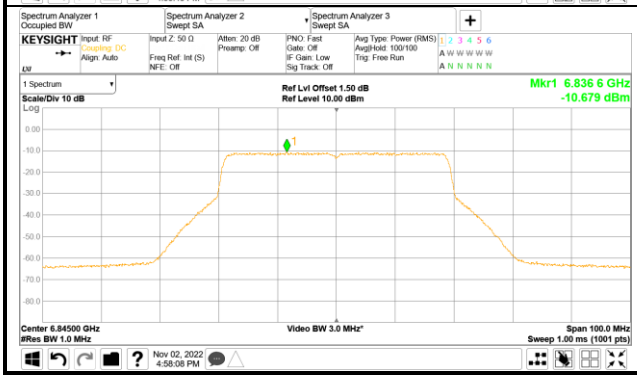
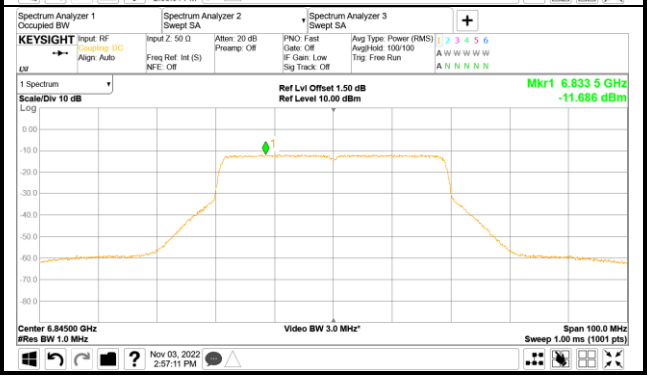
Mode: 802.11ax-HE40	
AUX	Main
U-NII Band 7	U-NII Band 7
	
	
	

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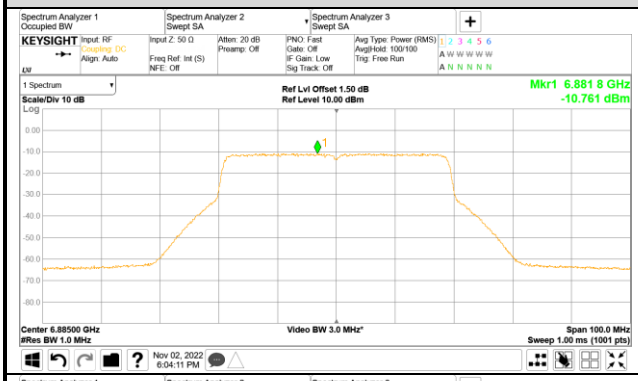
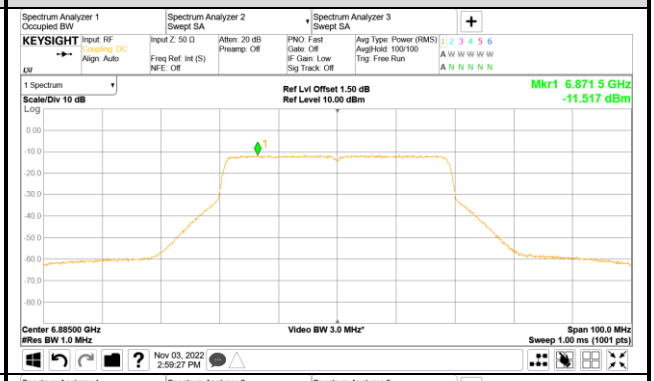
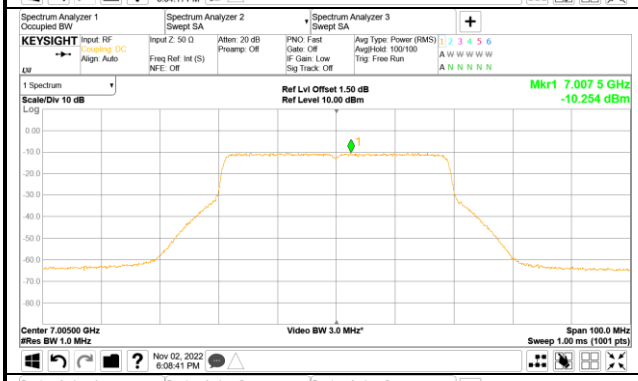
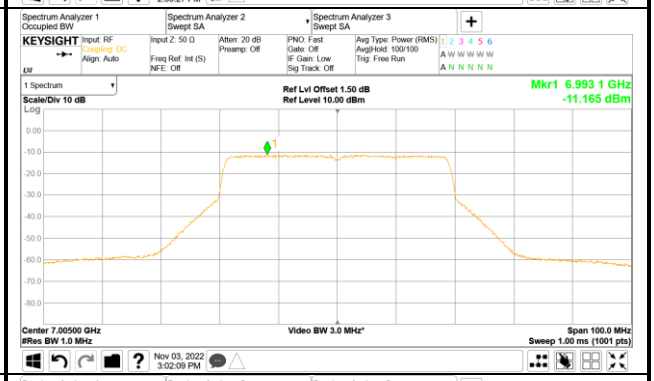
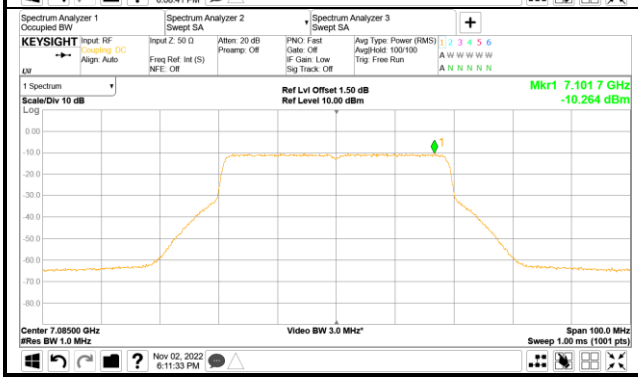
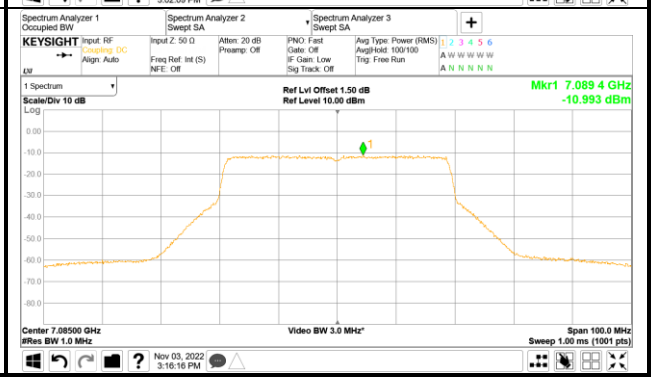
Mode: 802.11ax-HE40	
AUX	Main
U-NII Band 8	U-NII Band 8
	
	
	

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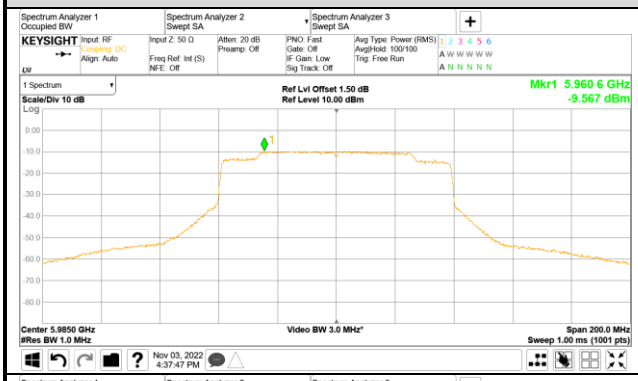
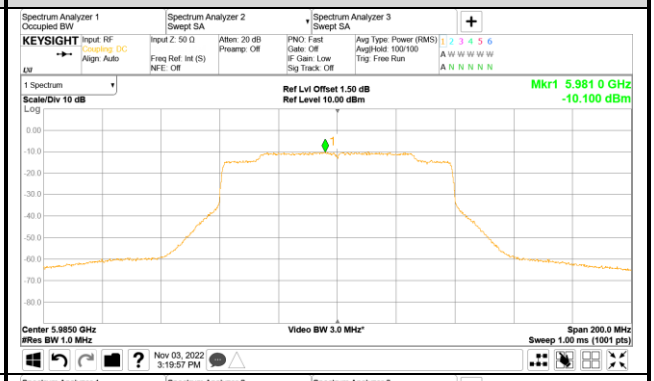
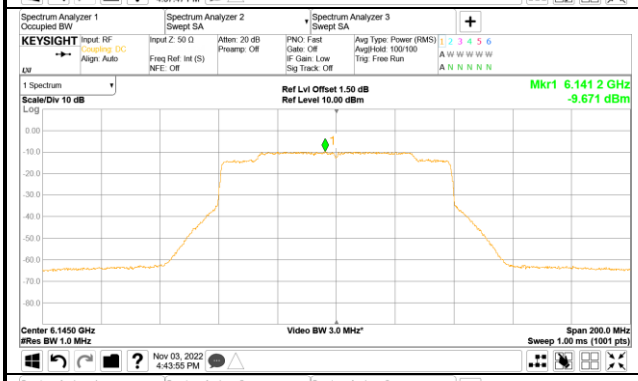
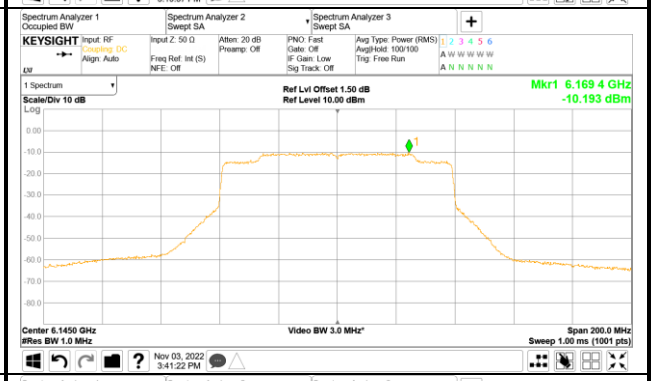
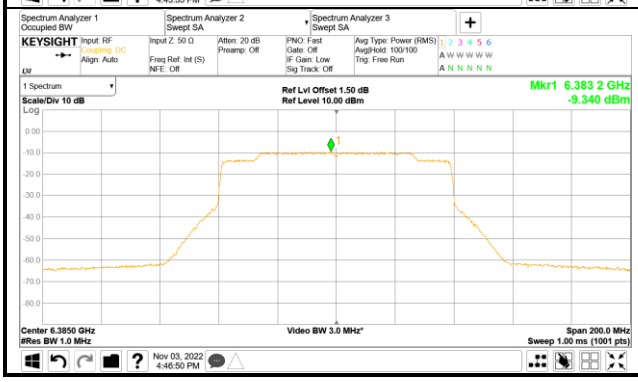
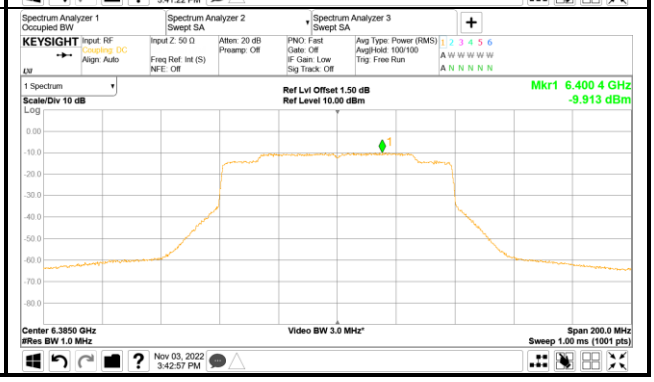
Mode: 802.11ax-HE80	
AUX	Main
U-NII Band 5	U-NII Band 5
	
	
	

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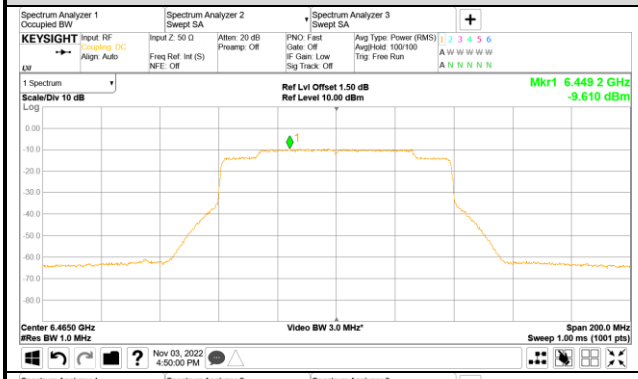
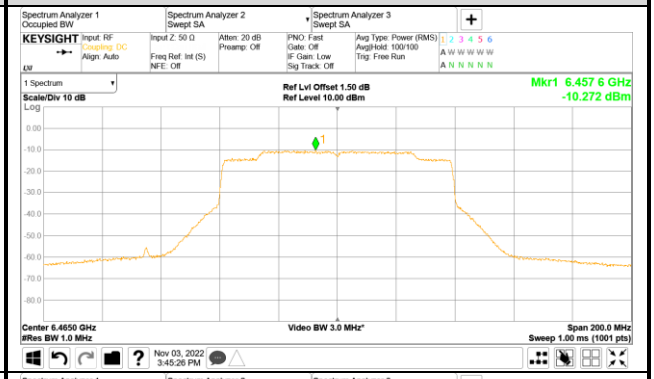
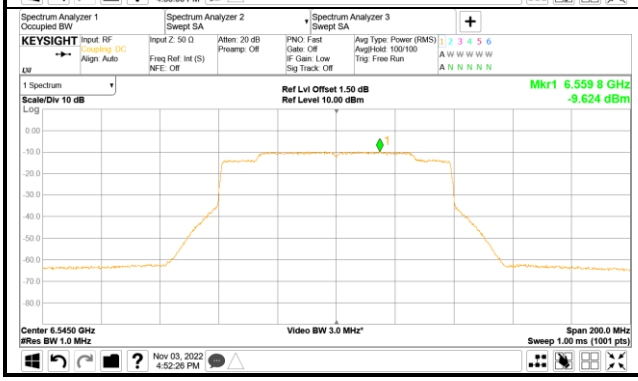
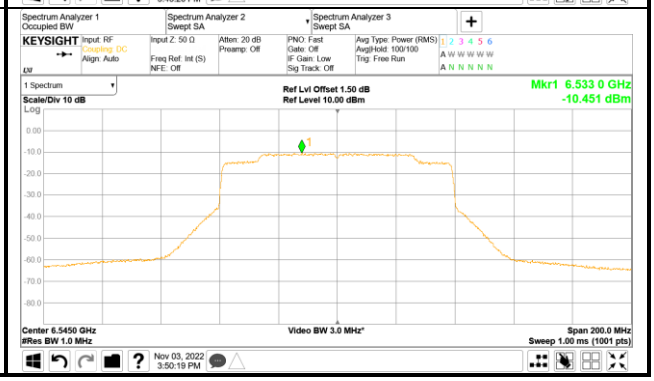
Mode: 802.11ax-HE80	
AUX	Main
U-NII Band 6	U-NII Band 6
	
	

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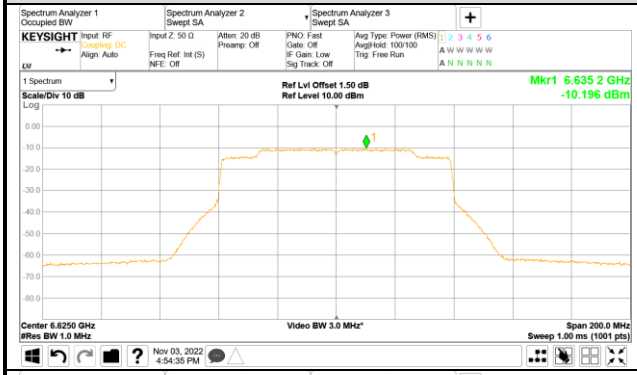
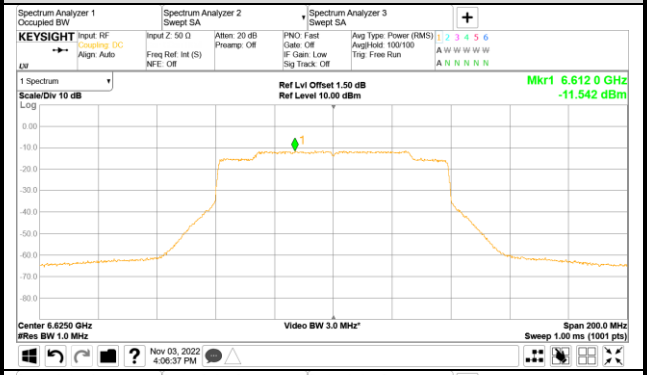
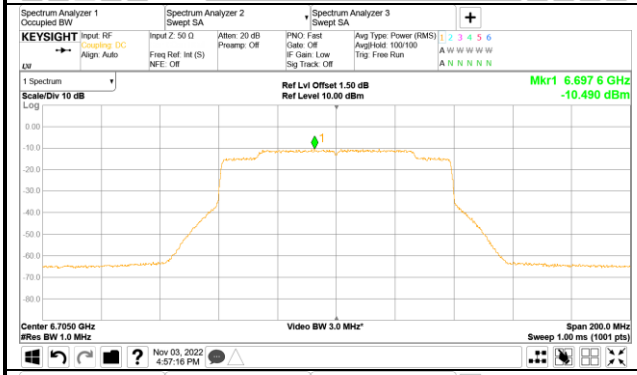
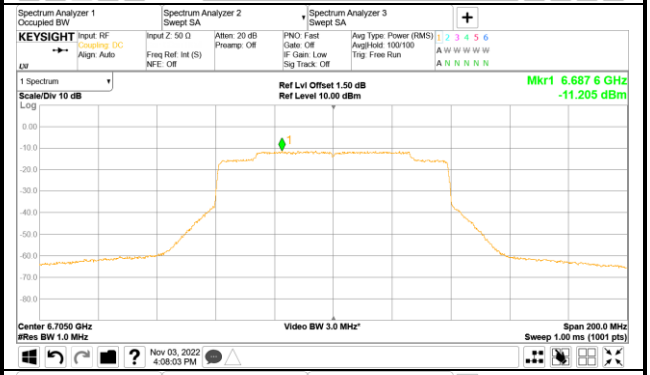
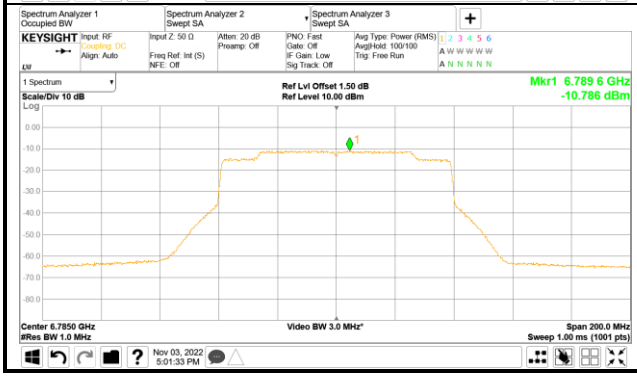
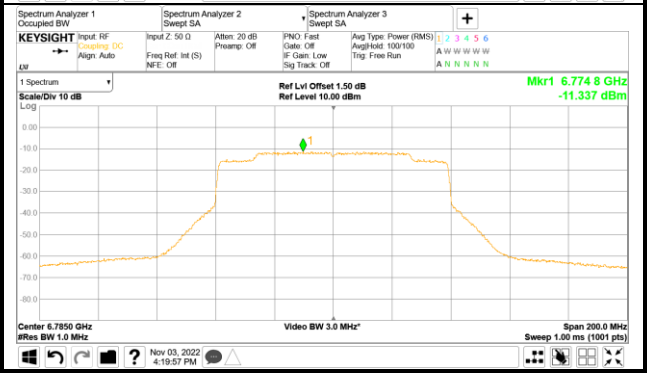
Mode: 802.11ax-HE80	
AUX	Main
U-NII Band 7	U-NII Band 7
	
	
	

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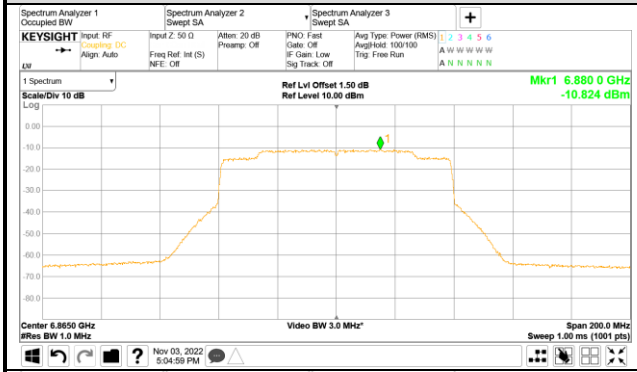
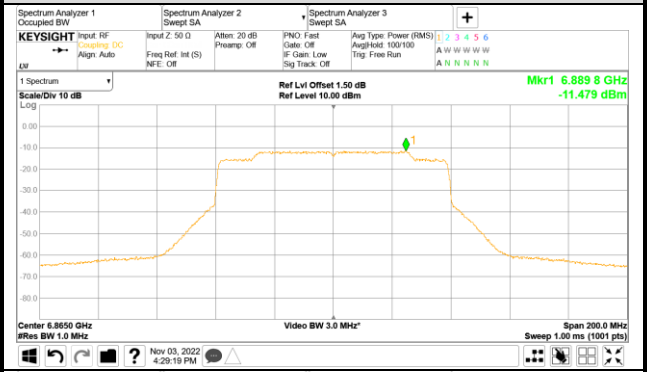
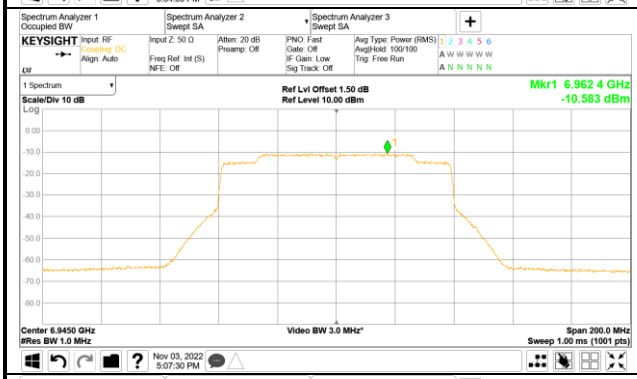
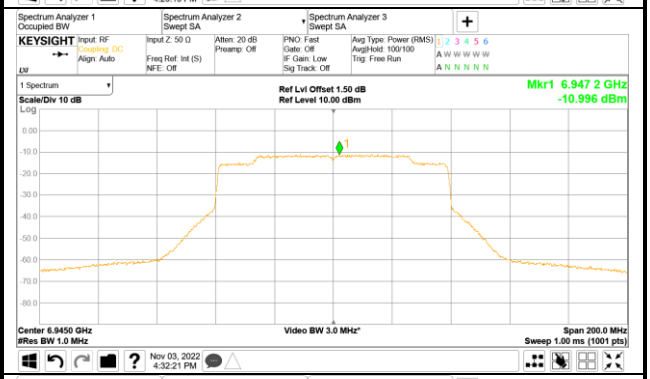
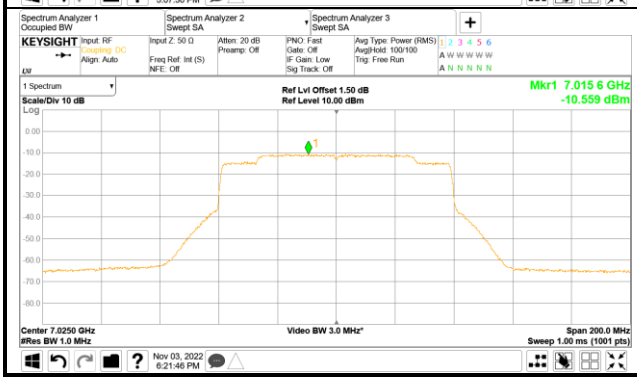
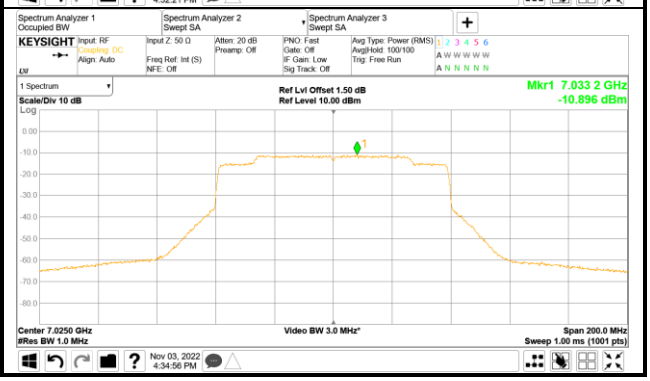
Mode: 802.11ax-HE80	
AUX	Main
U-NII Band 8	U-NII Band 8
	
	
	

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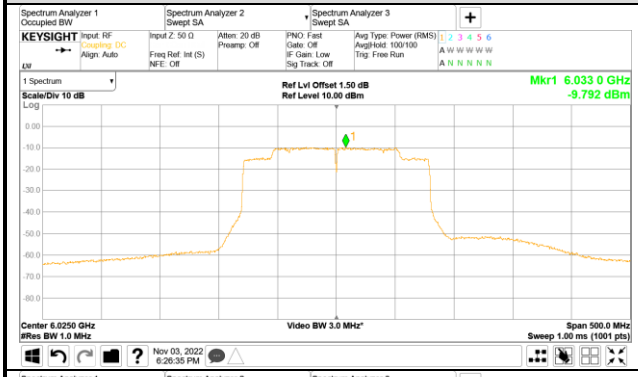
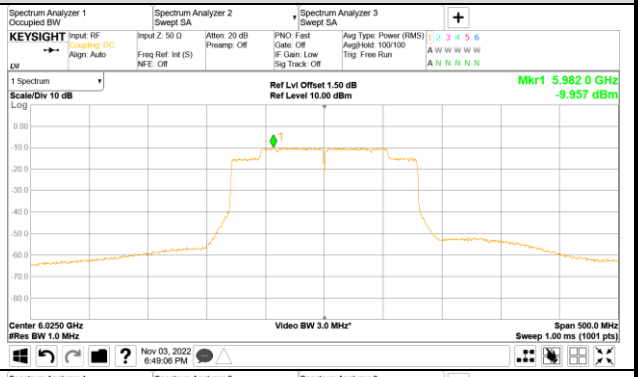
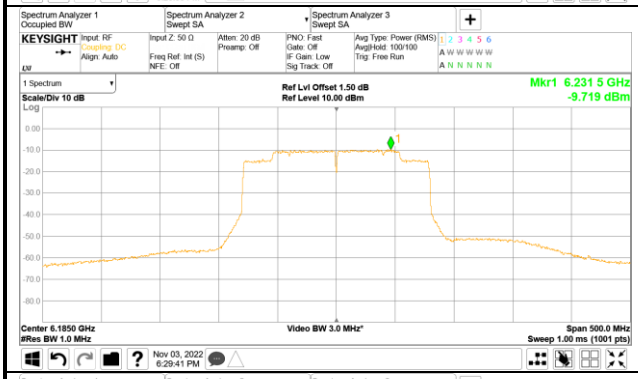
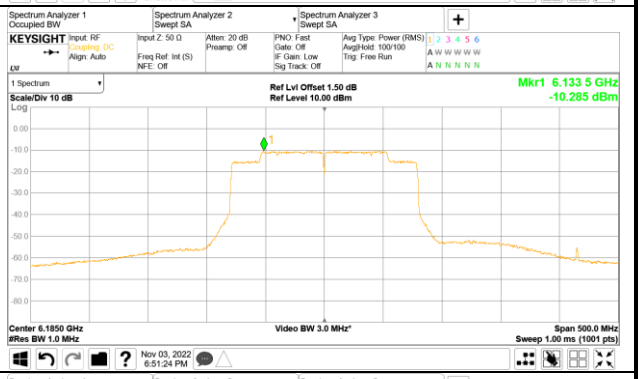
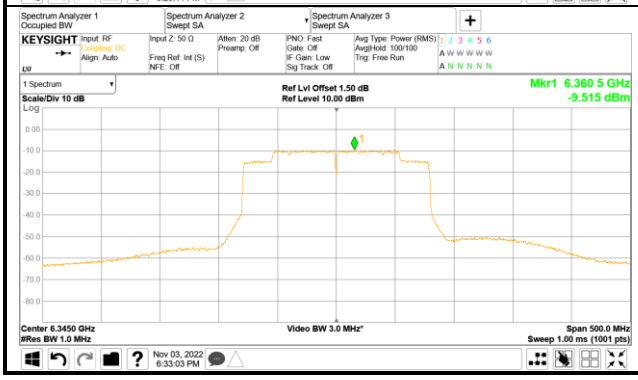
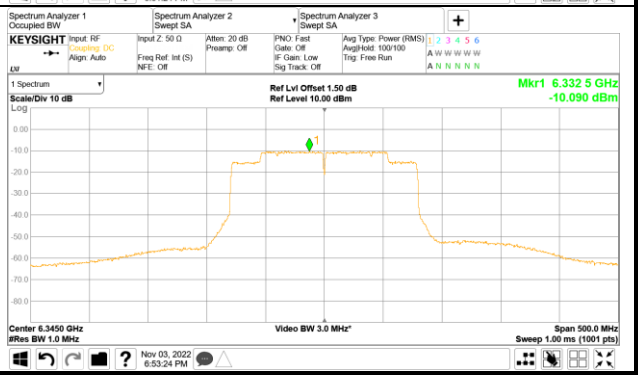
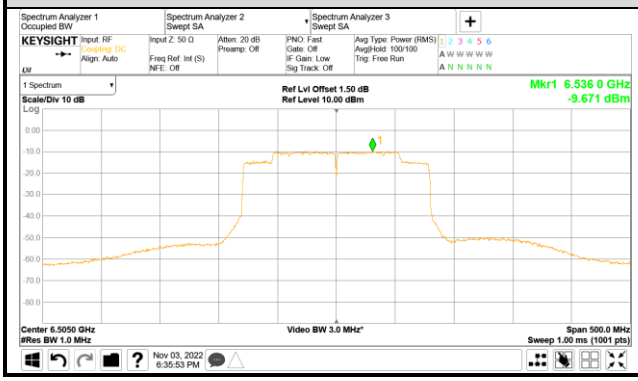
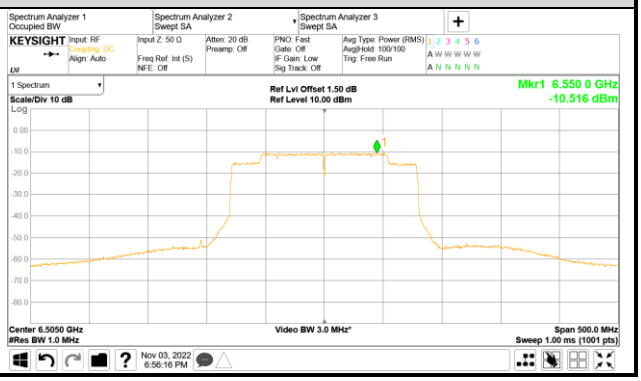
Mode: 802.11ax-HE160	
AUX	Main
U-NII Band 5	U-NII Band 5
	
	
	

Mode: 802.11ax-HE160	
AUX	Main
U-NII Band 6	U-NII Band 6
	

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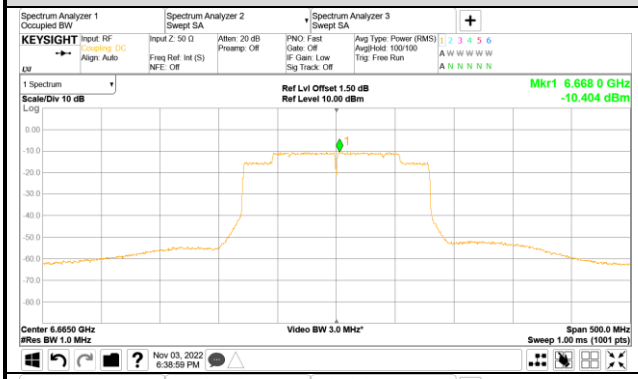
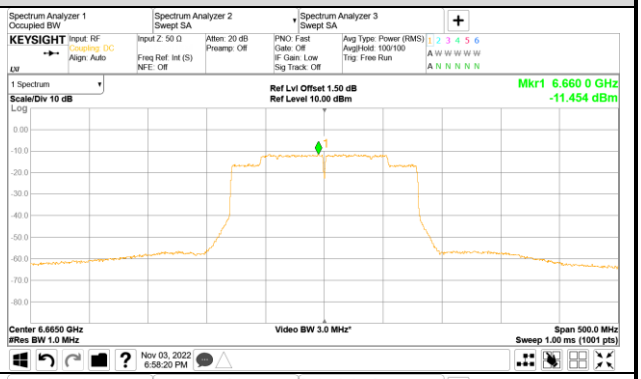
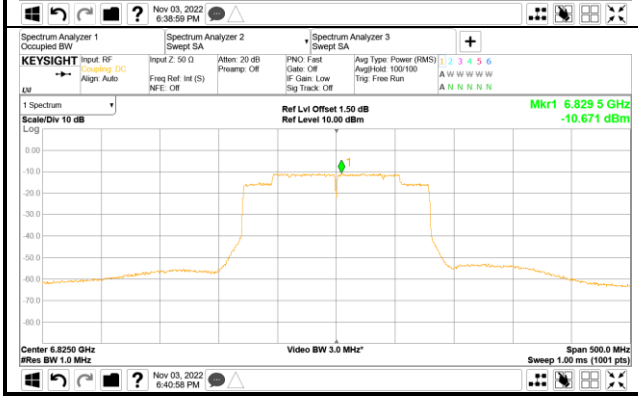
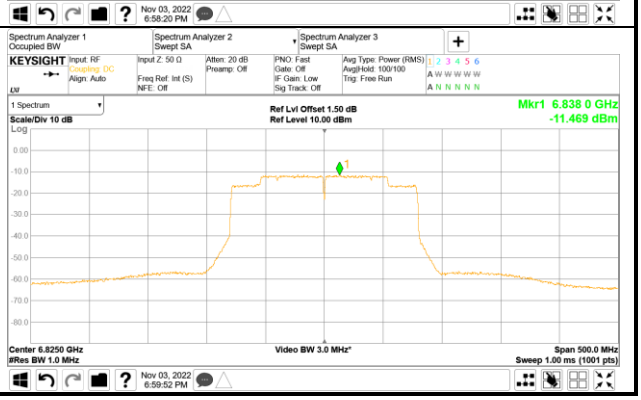
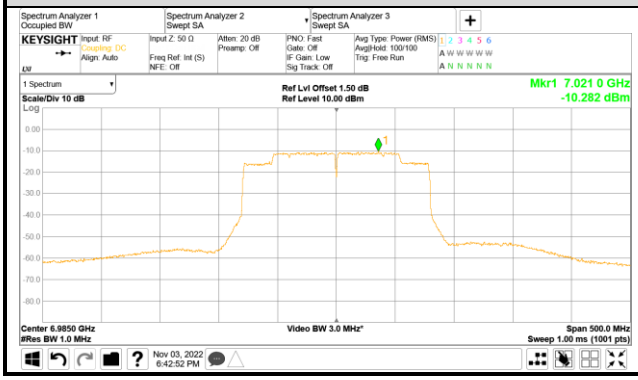
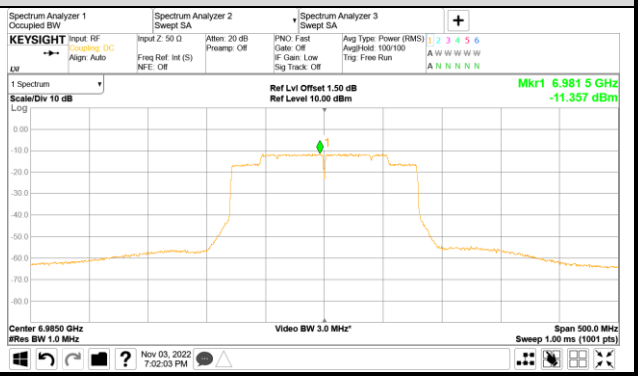
Mode: 802.11ax-HE160	
AUX	Main
U-NII Band 7	U-NII Band 7
	
	

Mode: 802.11ax-HE160	
AUX	Main
U-NII Band 8	U-NII Band 8
	

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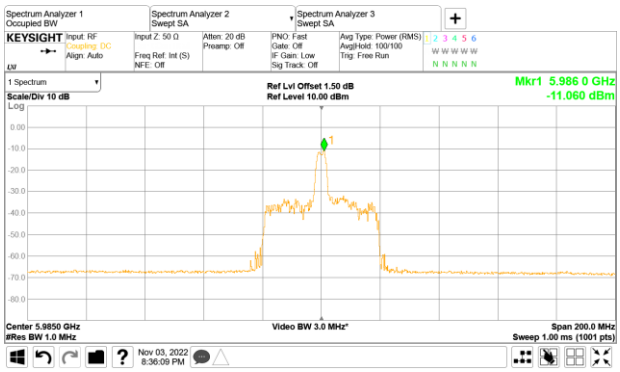
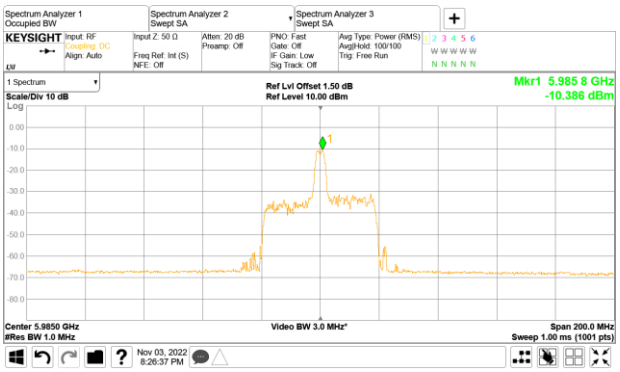
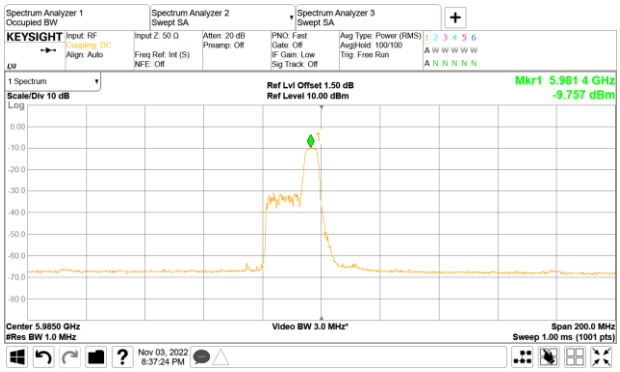
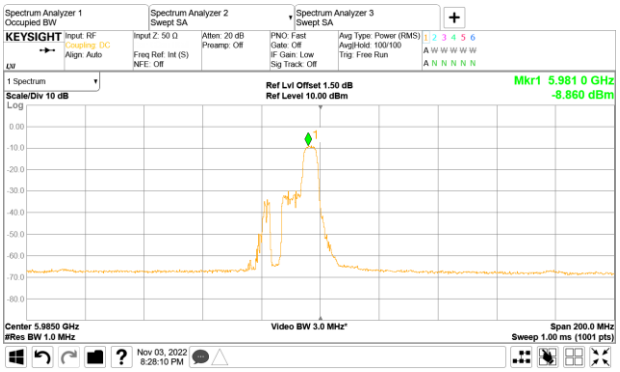
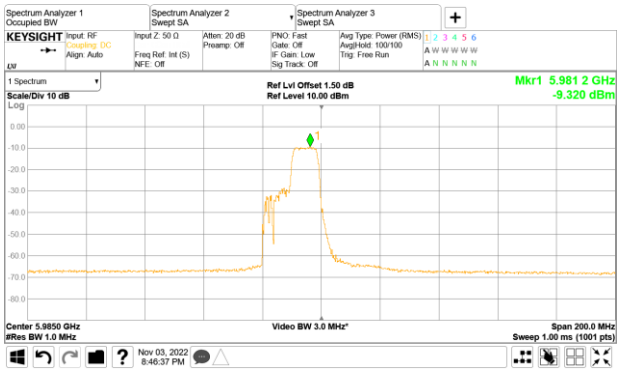
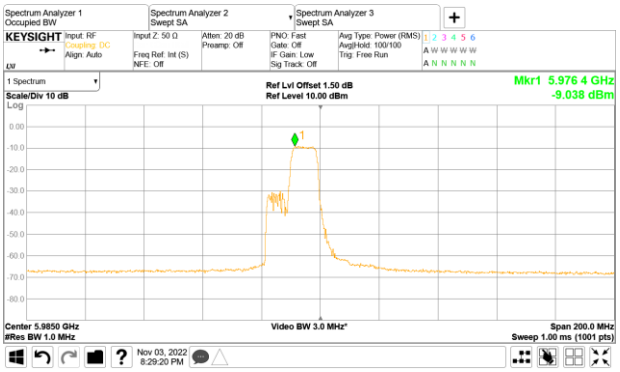
- OFDMA Modulation

Tones: 26T	
802.11ax-HE80, RU Index: 18	
U-NII Band 5, Centre Frequency: 5985MHz	
AUX	Main
	

Tones: 52T	
802.11ax-HE80, RU Index: 44	
U-NII Band 5, Centre Frequency: 5985MHz	
AUX	Main
	

Tones: 106T	
802.11ax-HE80, RU Index: 56	
U-NII Band 5, Centre Frequency: 5985MHz	
AUX	Main
	

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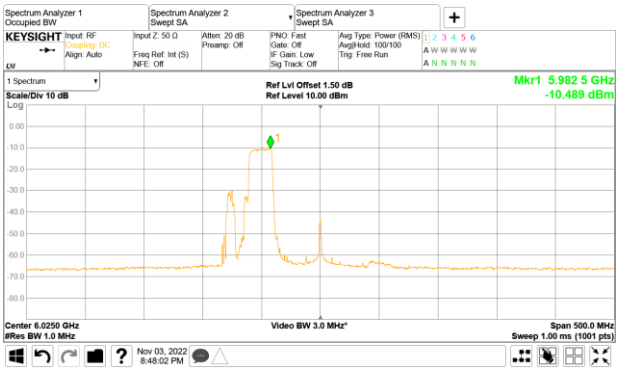
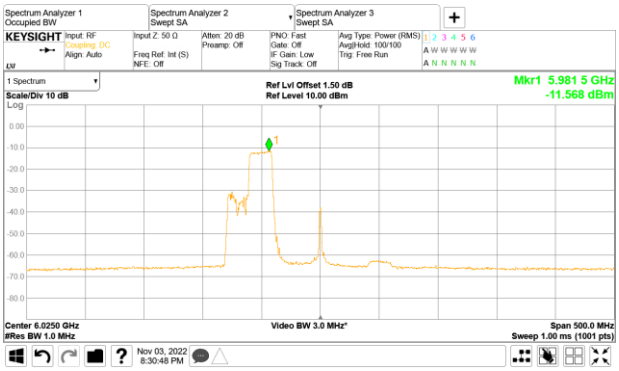
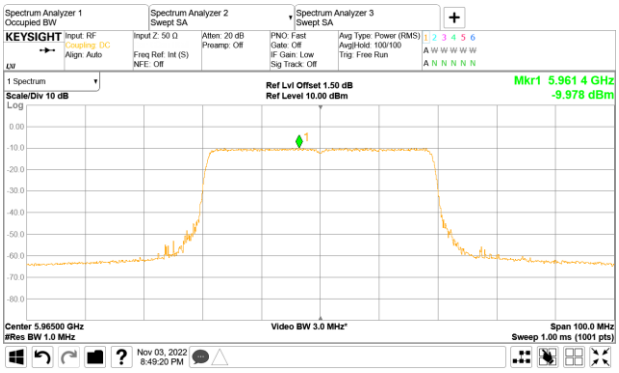
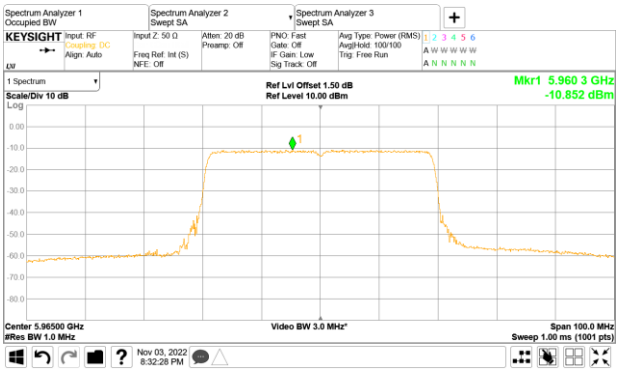
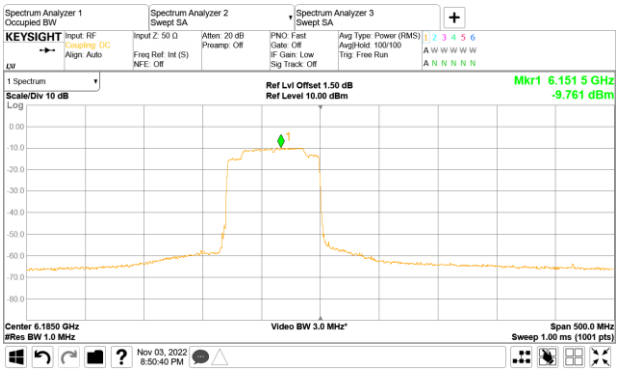
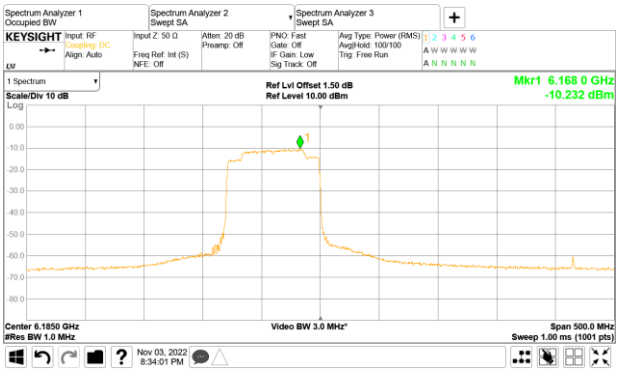
Tones: 242T	
802.11ax-HE160, RU Index: 62	
U-NII Band 5, Centre Frequency: 6025MHz	
AUX	Main
	

Tones: 484T	
802.11ax-HE40, RU Index: 65	
U-NII Band 6, Centre Frequency: 5965MHz	
AUX	Main
	

Tones: 996T	
802.11ax-HE160, RU Index: 67	
U-NII Band 5, Centre Frequency: 6185MHz	
AUX	Main
	

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