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A.3 MAXIMUM POWER SPECTRAL DENSITY

Test Date	2023/03/07 ~ 24	Temp./Hum.	22 ~ 24℃/42 ~ 63%
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	-11.027	-10.408	N/A	2.13	-5.566	-1
		6175	-10.981	-10.873		2.13	-5.786	
		6415	-10.527	-10.082		2.10	-5.189	
	6	6435	-10.417	-10.342		2.10	-5.269	
		6475	-10.479	-10.289		2.10	-5.273	
		6515	-10.891	-10.872		2.10	-5.771	
	7	6535	-11.811	-11.707		2.10	-6.648	
		6695	-12.104	-12.365		2.10	-7.122	
		6855	-12.159	-12.276		2.36	-6.847	
	8	6875	-11.993	-12.014		2.36	-6.633	
		6995	-11.642	-11.663		2.36	-6.282	
		7115	-14.507	-15.415		2.36	-9.567	
802.11ax-HE40	5	5965	-10.043	-9.747	N/A	2.13	-4.752	
		6165	-9.859	-10.001		2.13	-4.789	
		6405	-9.478	-9.585		2.10	-4.421	
	6	6445	-10.260	-9.490		2.10	-4.748	
		6485	-10.575	-9.947		2.10	-5.139	
	7	6525	-10.763	-10.081		2.10	-5.298	
		6685	-11.440	-11.086		2.10	-6.149	
		6845	-11.474	-11.162		2.36	-5.945	
	8	6885	-11.172	-10.868		2.36	-5.647	
		7005	-11.185	-10.666		2.36	-5.547	
		7085	-11.152	-10.893		2.36	-5.650	

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[($10^{2.6/10}$ +$10^{1.6/10}$)/2]= 2.13dBi|
6525MHz: Directional gain = 10 log[($10^{2.2/10}$ +$10^{2.0/10}$)/2]= 2.10dBi
7125MHz: Directional gain = 10 log[($10^{2.1/10}$ +$10^{2.6/10}$)/2]= 2.36dBi
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	-10.053	-9.830	N/A	2.13	-4.800	-1
		6145	-9.819	-10.209		2.13	-4.869	
		6385	-9.883	-9.754		2.10	-4.708	
	6	6465	-10.041	-9.696		2.10	-4.755	
		6545	-10.217	-10.477		2.10	-5.235	
	7	6625	-11.301	-11.376		2.10	-6.228	
		6705	-11.131	-11.444		2.10	-6.174	
		6785	-11.485	-11.232		2.10	-6.246	
	8	6865	-10.971	-11.050		2.36	-5.640	
		6945	-11.083	-11.083		2.36	-5.713	
		7025	-10.914	-11.038		2.36	-5.605	
802.11ax-HE160	5	6025	-9.875	-9.877	N/A	2.13	-4.736	
		6185	-9.801	-10.298		2.13	-4.902	
		6345	-10.012	-10.066		2.10	-4.929	
	6	6505	-10.069	-10.359		2.10	-5.101	
	7	6665	-11.006	-10.843		2.10	-5.813	
		6825	-10.976	-10.838		2.36	-5.536	
	8	6985	-10.892	-10.718		2.36	-5.434	

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 $\log[(10^{2.6/10} + 10^{1.6/10})/2]$= 2.13dBi|
6525MHz: Directional gain = 10 $\log[(10^{2.2/10} + 10^{2.0/10})/2]$= 2.10dBi
7125MHz: Directional gain = 10 $\log[(10^{2.1/10} + 10^{2.6/10})/2]$= 2.36dBi
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	-10.196	-9.756	0.223	2.13	-4.607	-1
52T	39	802.11ax-HE20	5	5955	-9.136	-9.137	0.119	2.13	-3.877	
106T	56	802.11ax-HE80	5	5985	-9.239	-9.060	N/A	2.13	-4.008	
242T	62	802.11ax-HE160	5	6185	-11.902	-11.824	0.150	2.13	-6.573	
484T	65	802.11ax-HE80	6	6545	-10.515	-10.641	N/A	2.10	-5.467	
996T	67	802.11ax-HE160	5	6345	-9.526	-9.982	0.159	2.10	-4.479	

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 $\log[(10^{2.6/10} + 10^{1.6/10})/2]$= 2.13dBi|
6525MHz: Directional gain = 10 $\log[(10^{2.2/10} + 10^{2.0/10})/2]$= 2.10dBi
7125MHz: Directional gain = 10 $\log[(10^{2.1/10} + 10^{2.6/10})/2]$= 2.36dBi
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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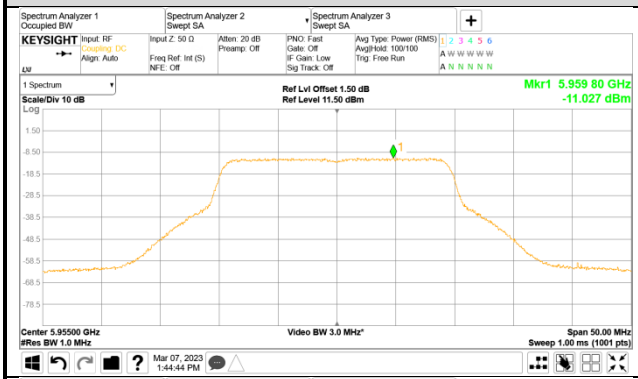
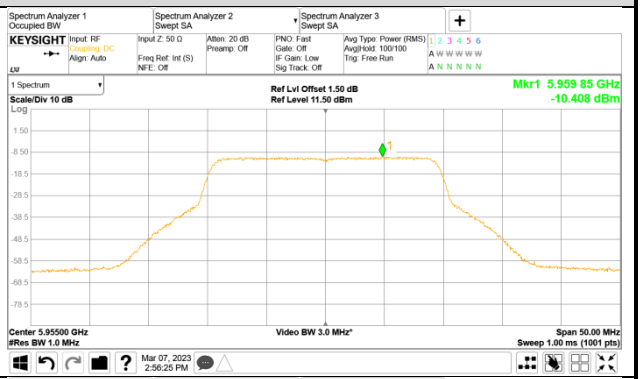
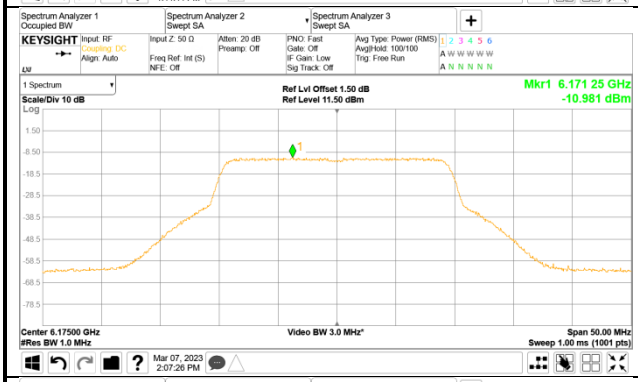
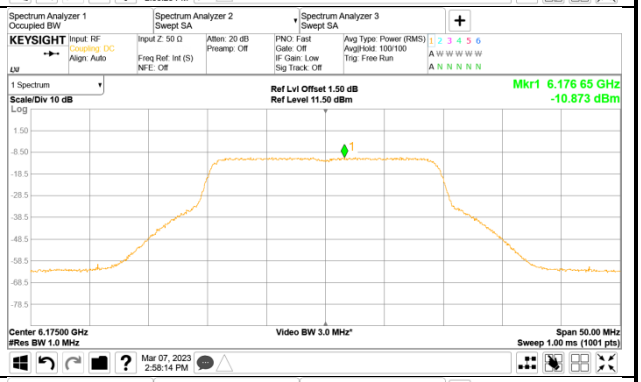
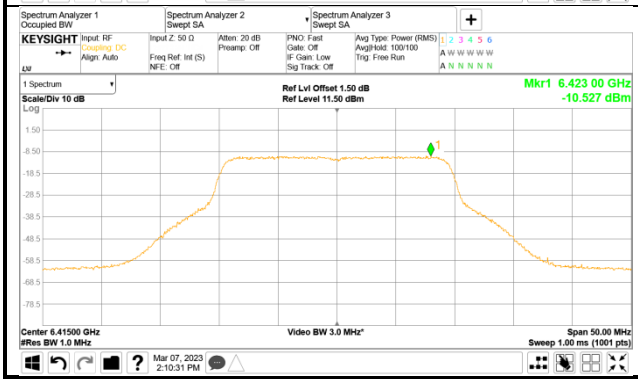
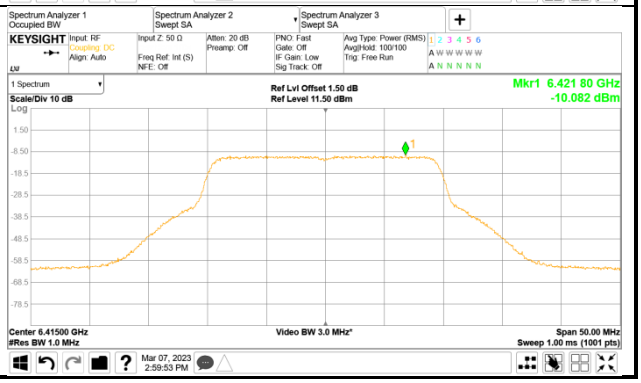
A.3.2 Measurement Plots

- OFDM Modulation

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

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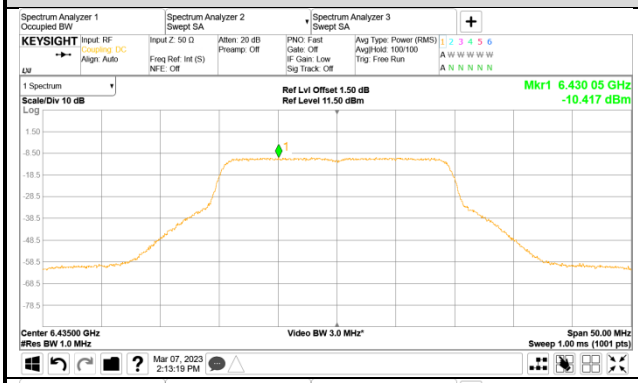
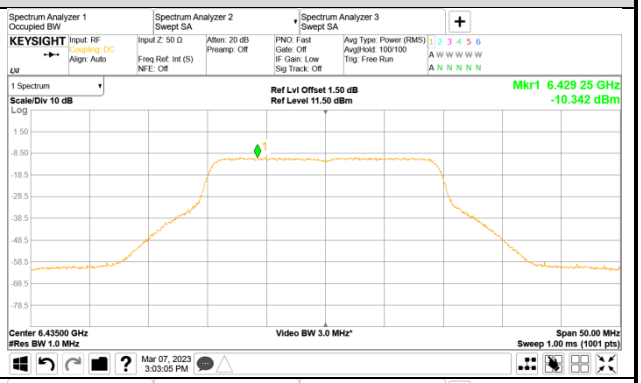
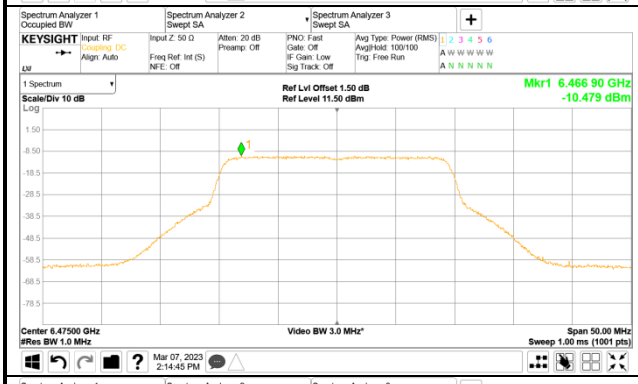
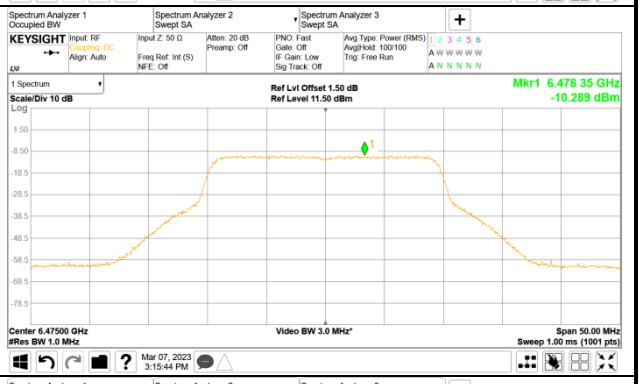
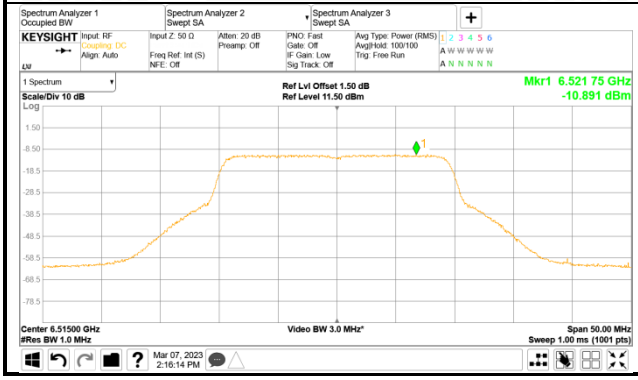
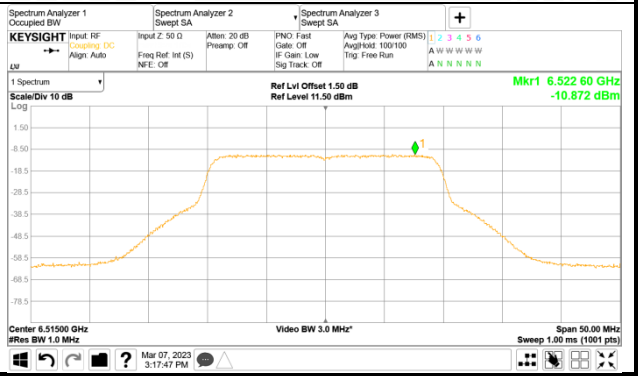
Mode: 802.11ax-HE20	
AUX	Main
U-NII Band 6	U-NII Band 6
	
	
	

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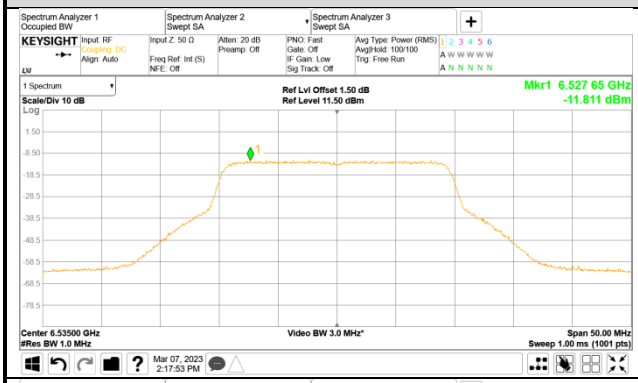
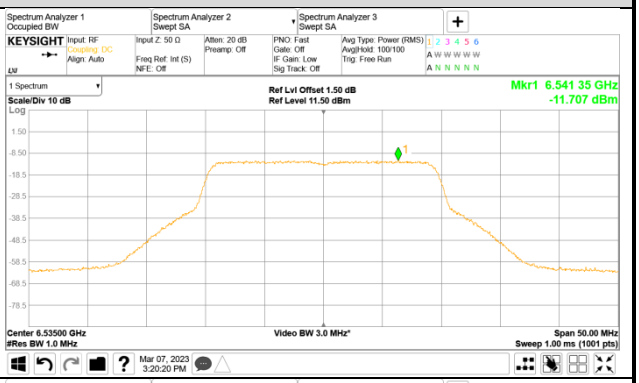
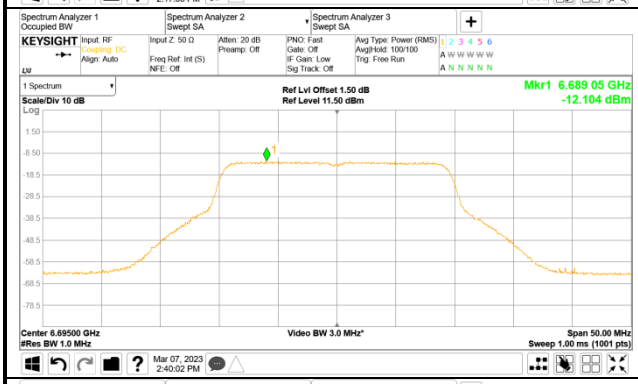
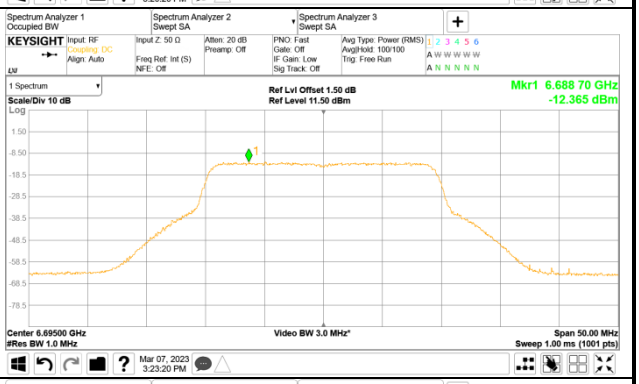
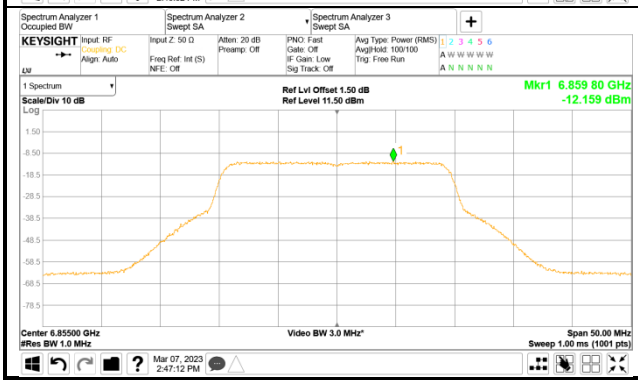
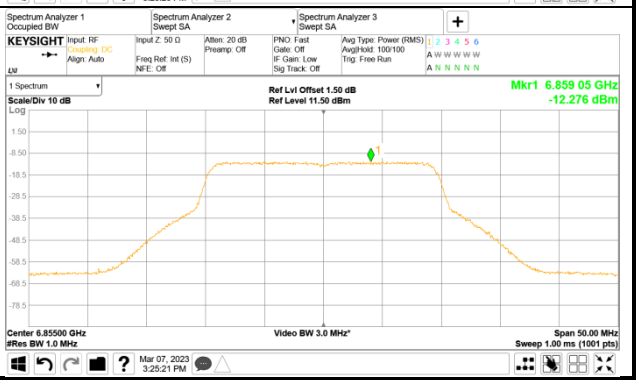
Mode: 802.11ax-HE20	
AUX	Main
U-NII Band 7	U-NII Band 7
	
	
	

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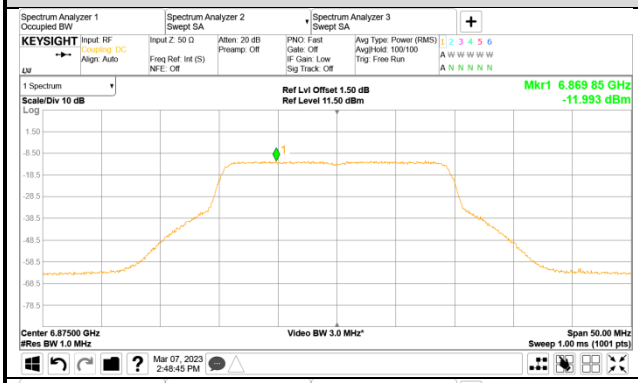
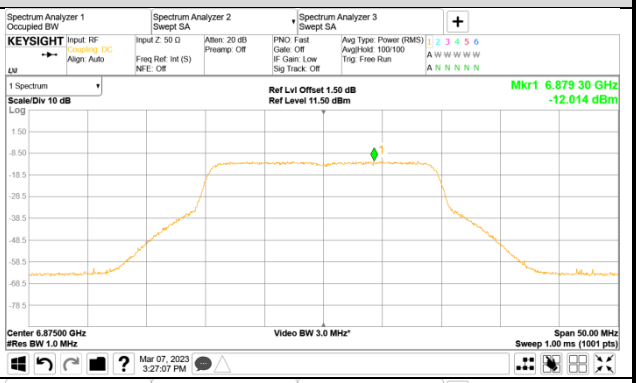
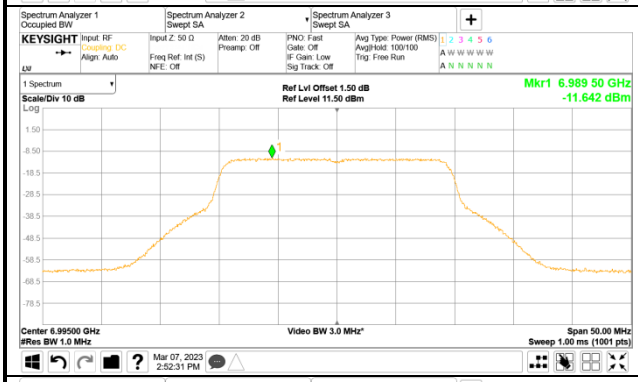
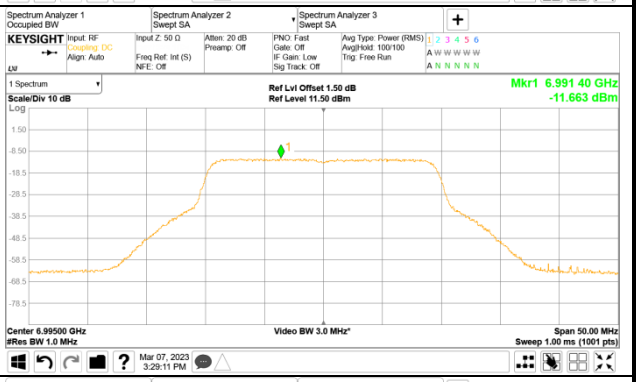
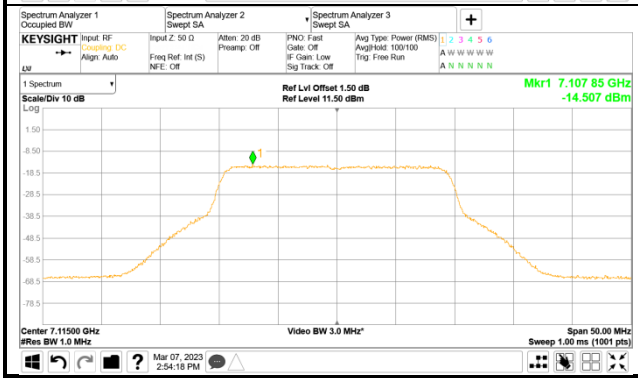
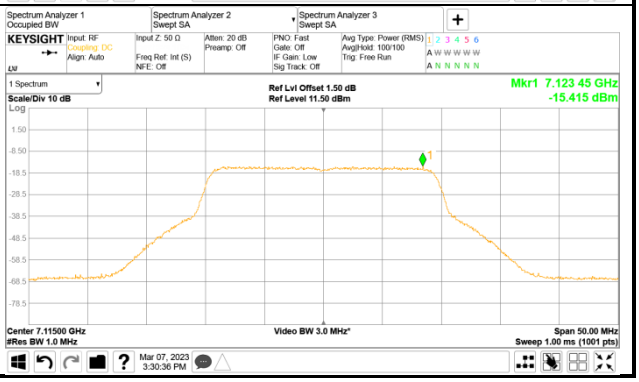
Mode: 802.11ax-HE20	
AUX	Main
U-NII Band 8	U-NII Band 8
	
	
	

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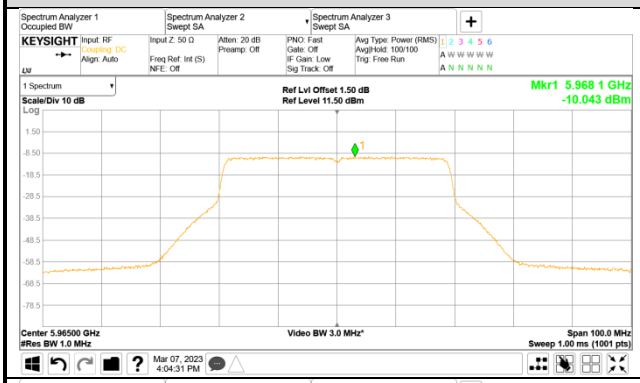
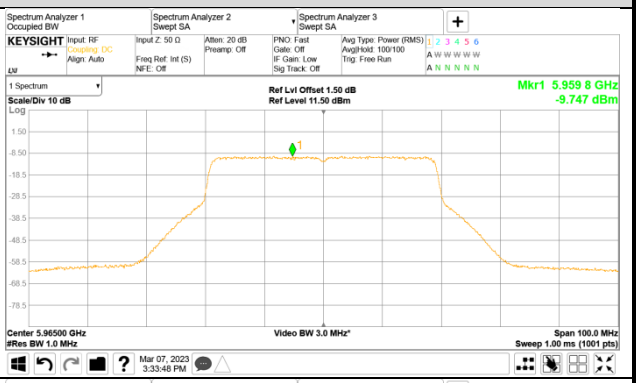
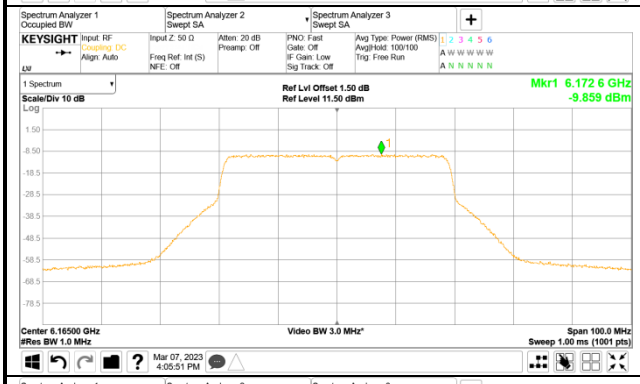
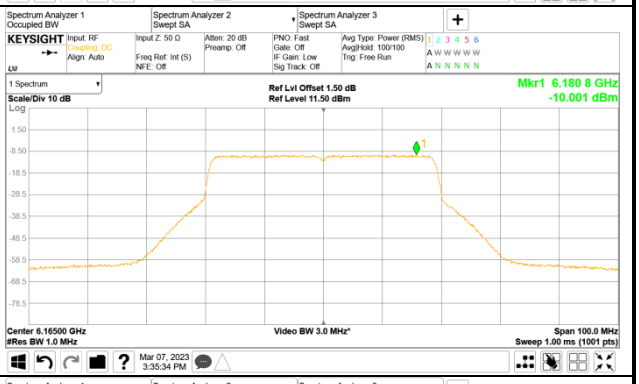
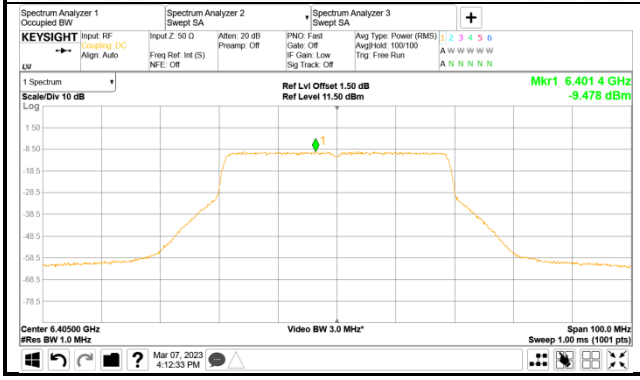
Mode: 802.11ax-HE40	
AUX	Main
U-NII Band 5	U-NII Band 5

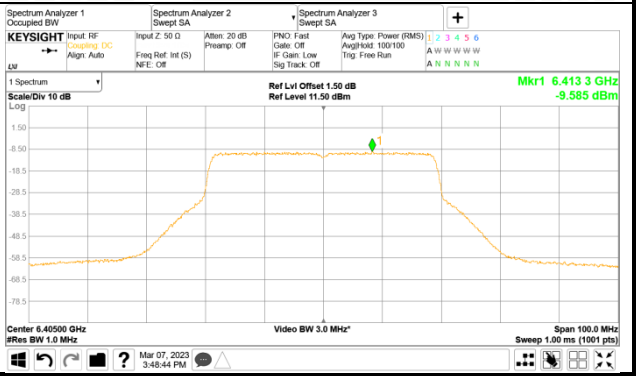












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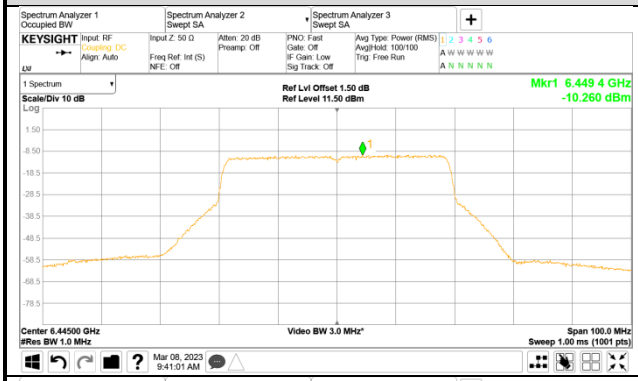
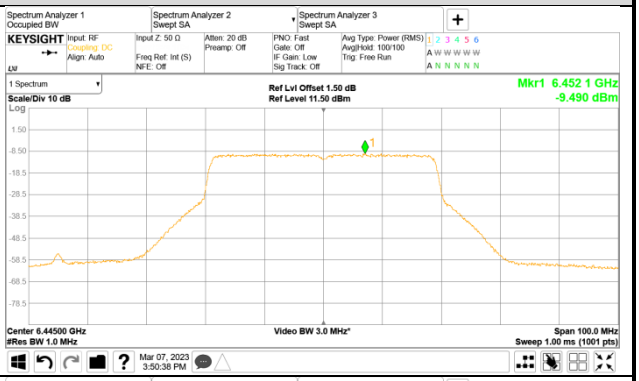
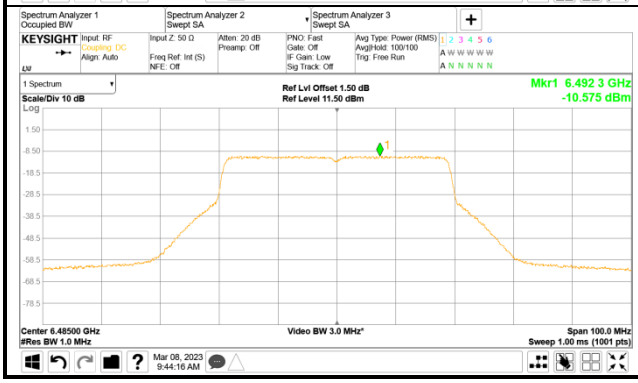
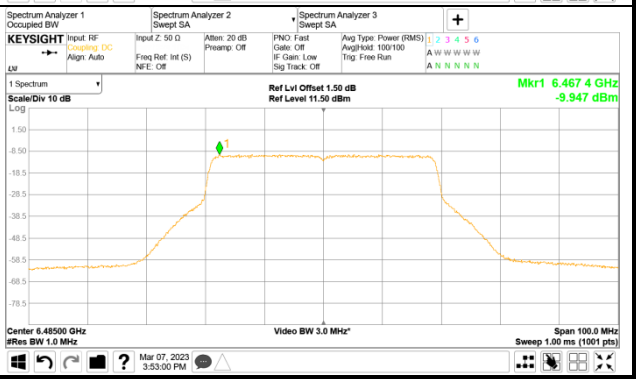
Mode: 802.11ax-HE40	
AUX	Main
U-NII Band 6	U-NII Band 6
	
	

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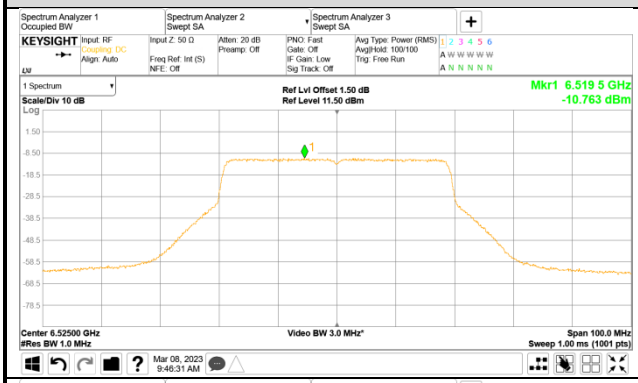
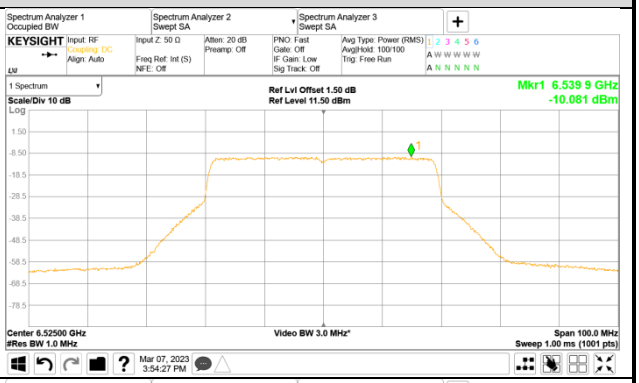
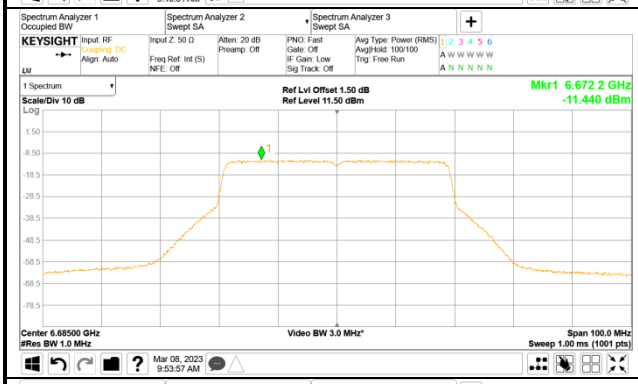
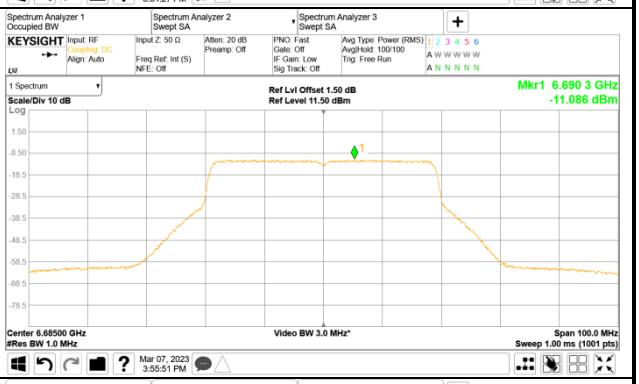
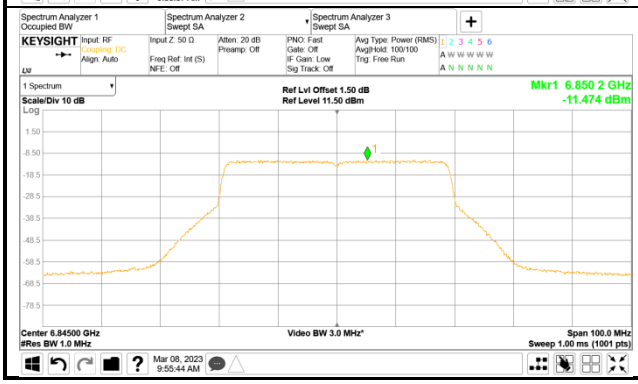
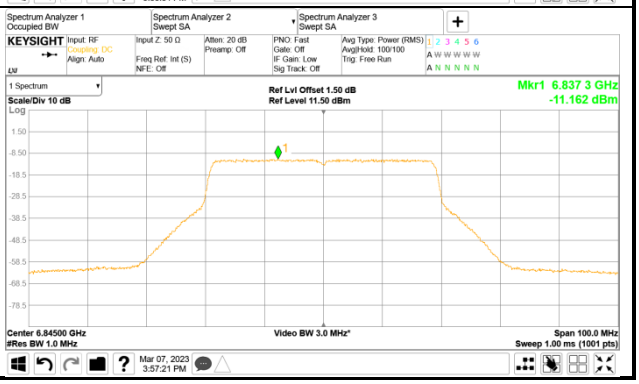
Mode: 802.11ax-HE40	
AUX	Main
U-NII Band 7	U-NII Band 7
	
	
	

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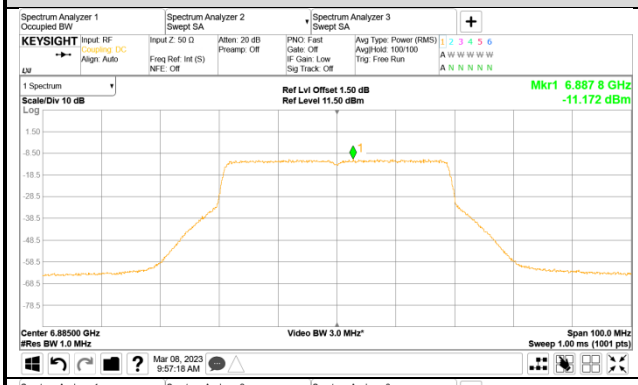
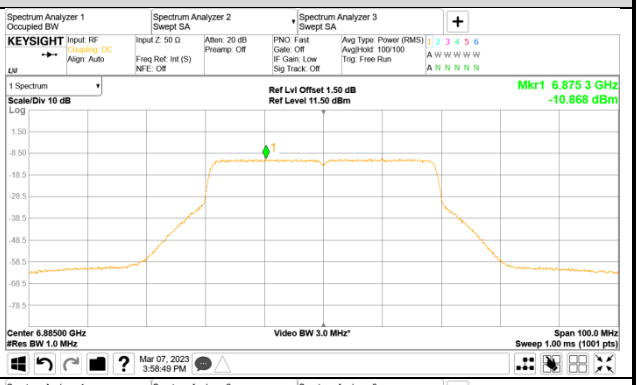
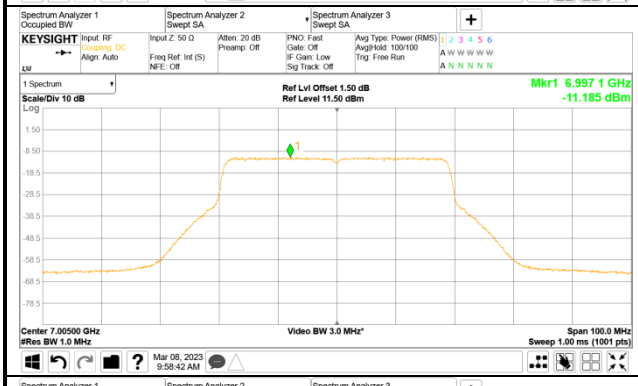
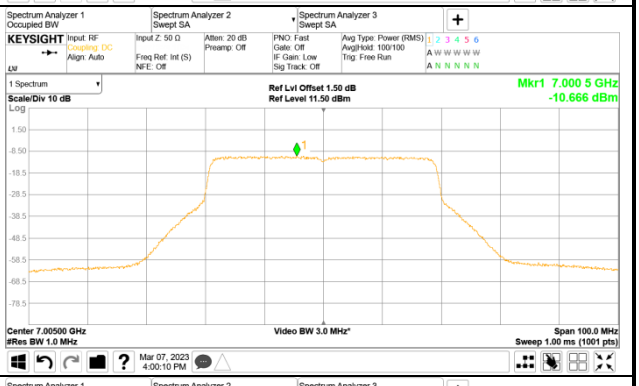
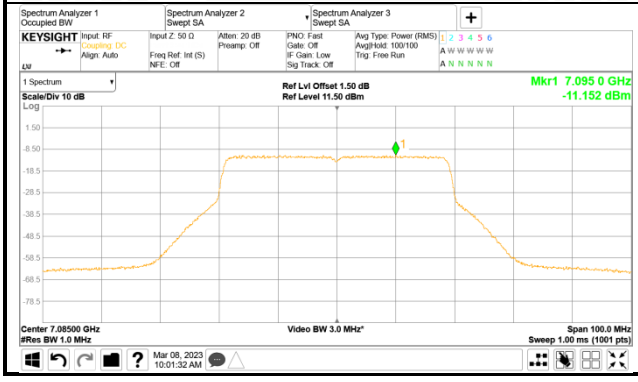
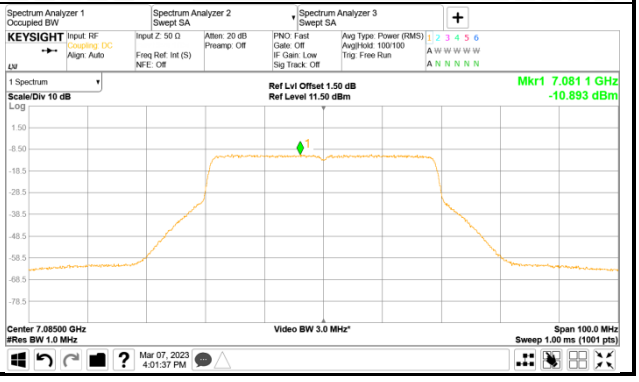
AUX	Main
U-NII Band 8	U-NII Band 8
	
	
	

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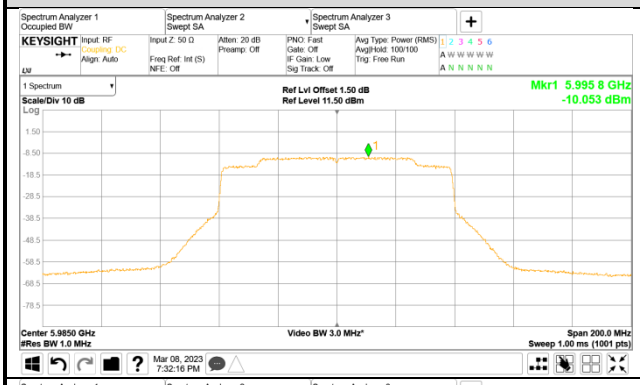
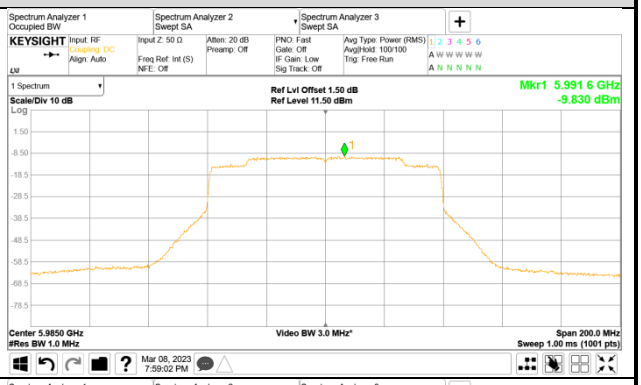
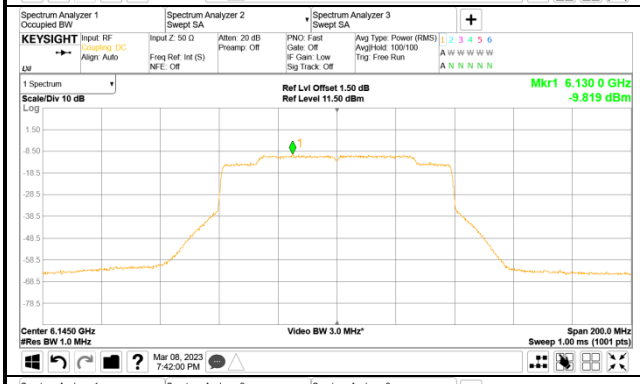
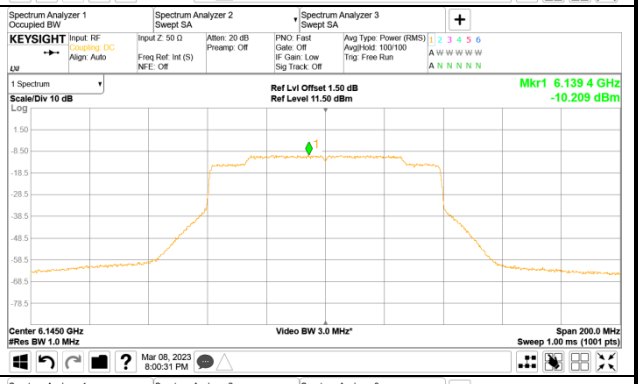
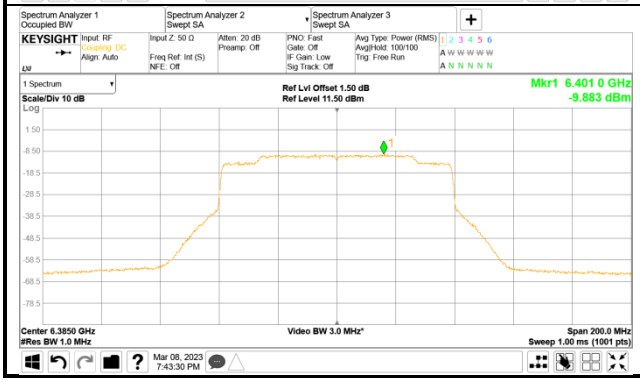
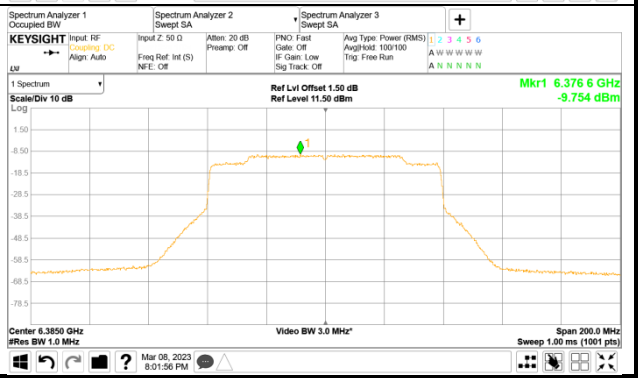
Mode: 802.11ax-HE80	
AUX	Main
U-NII Band 5	U-NII Band 5
	
	
	

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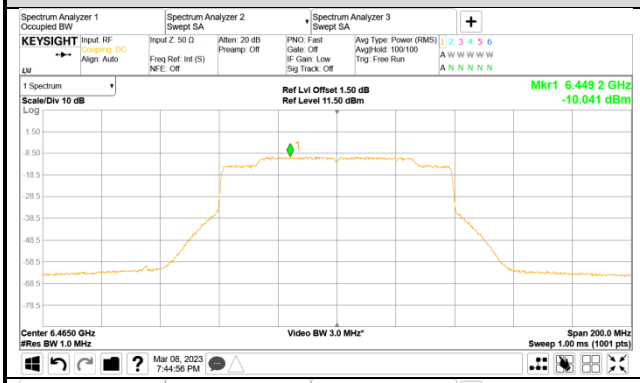
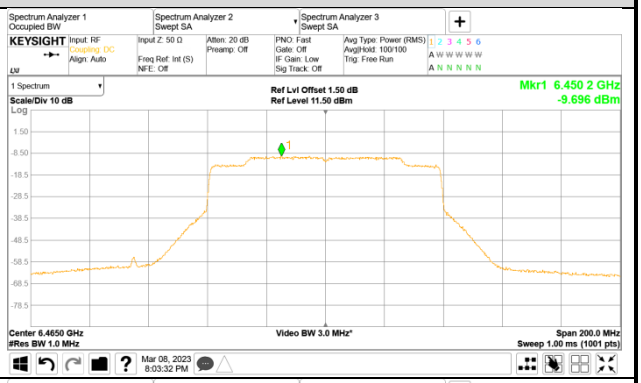
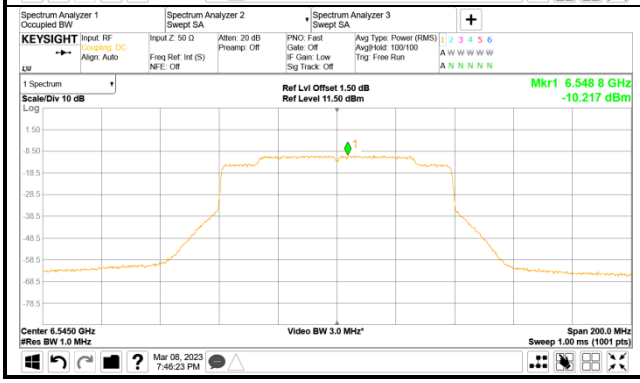
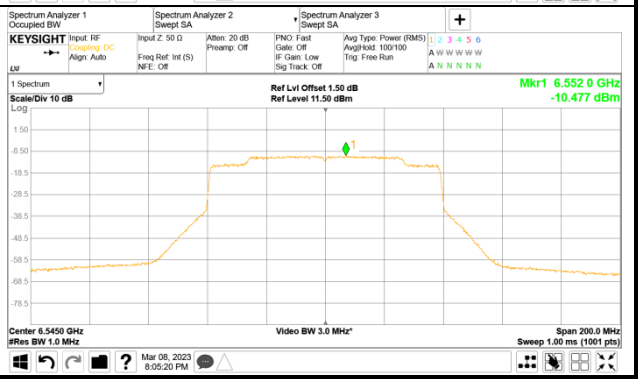
AUX	Main
U-NII Band 6	U-NII Band 6
	
	

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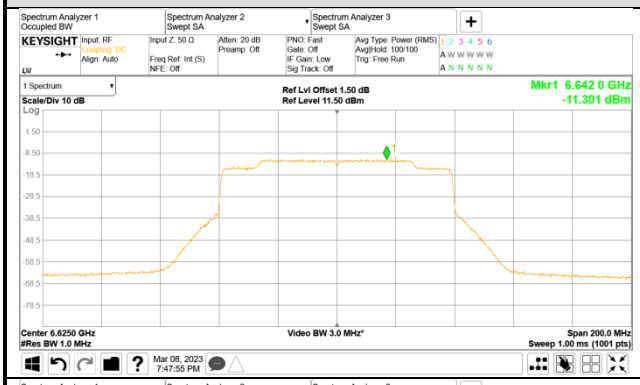
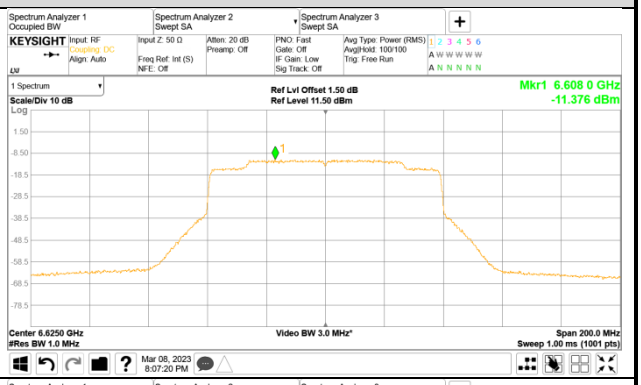
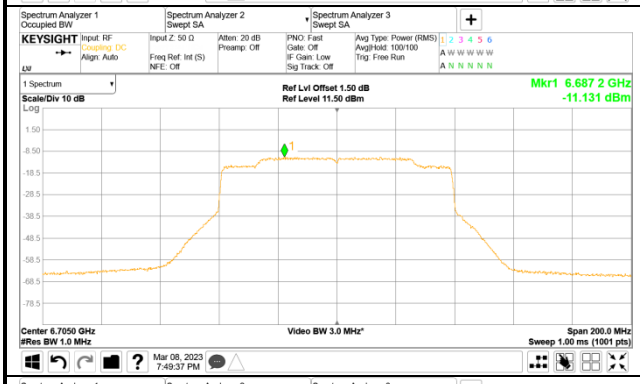
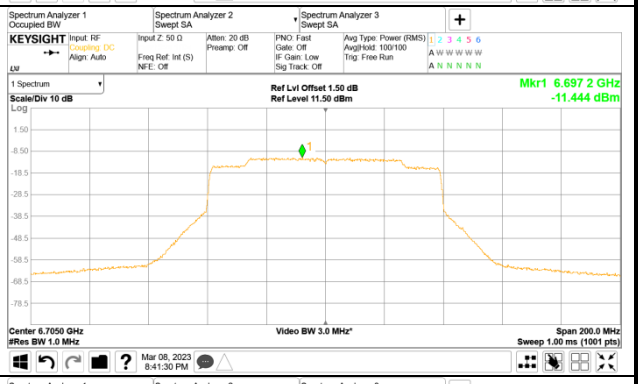
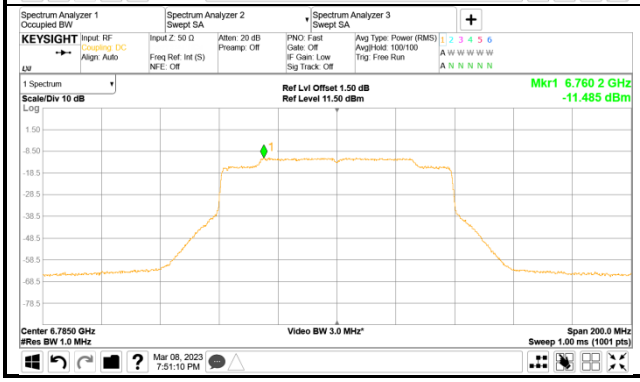
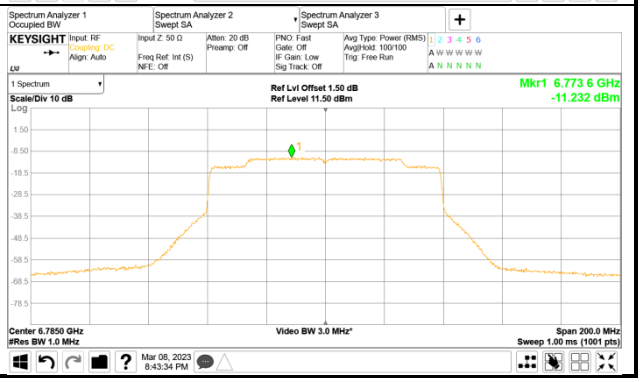
Mode: 802.11ax-HE80	
AUX	Main
U-NII Band 7	U-NII Band 7
	
	
	

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AUX	Main
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