

A.3 MAXIMUM POWER SPECTRAL DENSITY

Test Date	2022/07/13 ~ 14	Temp./Hum.	24-26°C/48-49%
Cable Loss	1.50dB	Tested By	Kuper Hsu
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) ^{Note2}	Limit (dBm/MHz)
			AUX	Main				
802.11ax-HE20	5	5955	-10.791	-10.719	N/A	2.150	-5.595	-1
		6175	-10.512	-10.562		2.150	-5.377	
		6415	-10.552	-10.749		2.050	-5.589	
	6	6435	-10.417	-10.313		2.050	-5.304	
		6475	-10.611	-10.420		2.050	-5.454	
		6515	-10.616	-10.502		2.050	-5.498	
	7	6535	-13.762	-13.256		2.050	-8.441	
		6695	-14.037	-13.122		2.050	-8.495	
		6855	-13.069	-13.081		2.000	-8.065	
	8	6875	-13.103	-13.341		2.000	-8.210	
		6995	-13.507	-13.192		2.000	-8.336	
		7115	-16.781	-16.371		2.000	-11.561	
802.11ax-HE40	5	5965	-9.973	-10.020	N/A	2.150	-4.836	
		6165	-10.027	-9.899		2.150	-4.802	
		6405	-9.787	-9.925		2.050	-4.795	
	6	6445	-9.467	-10.125		2.050	-4.723	
		6485	-9.970	-9.779		2.050	-4.813	
	7	6525	-10.073	-9.748		2.050	-4.847	
		6685	-10.747	-10.578		2.050	-5.601	
		6845	-10.317	-10.407		2.000	-5.351	
	8	6885	-10.379	-10.337		2.000	-5.348	
		7005	-10.451	-10.496		2.000	-5.463	
		7085	-10.421	-10.753		2.000	-5.574	

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

$$\text{Directional gain} = 10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N_{\text{ANT}}] \text{ dBi}$$

Directional gain:

$$5925\text{MHz: } 10 \log[(10^{2.0/10} + 10^{2.3/10})/2] = 2.15\text{dBi}$$

$$6525\text{MHz: } 10 \log[(10^{1.9/10} + 10^{2.2/10})/2] = 2.05\text{dBi}$$

$$7125\text{MHz: } 10 \log[(10^{1.9/10} + 10^{2.1/10})/2] = 2.00\text{dBi}$$

The MIMO is uncorrelated and supported SDM(Spatial Division Multiplexing) mode only. This radio device doesn't support beamforming and Cyclic Delay Diversity (CDD).

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) ^{Note2}	Limit (dBm/MHz)
			AUX	Main				
802.11ax-HE80	5	5985	-9.794	-9.876	N/A	2.150	-4.675	-1
		6145	-9.646	-9.588		2.150	-4.457	
		6385	-9.601	-9.284		2.050	-4.379	
	6	6465	-9.583	-9.637		2.050	-4.550	
		6545	-9.815	-9.571		2.050	-4.631	
		6625	-10.565	-10.627		2.050	-5.536	
	7	6705	-10.531	-10.571		2.050	-5.491	
		6785	-10.450	-10.312		2.050	-5.320	
		6865	-10.235	-10.349		2.000	-5.281	
	8	6945	-10.350	-10.418		2.000	-5.374	
		7025	-10.563	-10.627		2.000	-5.585	
		6025	-9.258	-9.537		N/A	2.150	
5	6185	-9.601	-9.936	2.150	-4.605			
	6345	-9.410	-9.315	2.050	-4.302			
	6505	-10.007	-9.681	2.050	-4.781			
7	6665	-10.182	-10.208	2.050	-5.135			
	6825	-10.328	-10.127	2.000	-5.216			
8	6985	-10.087	-9.719	2.000	-4.889			

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 = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N_{ANT}]$ dBi
 Directional gain:
 5925MHz: $10 \log[(10^{2.0/10} + 10^{2.3/10})/2] = 2.15$ dBi
 6525MHz: $10 \log[(10^{1.9/10} + 10^{2.2/10})/2] = 2.05$ dBi
 7125MHz: $10 \log[(10^{1.9/10} + 10^{2.1/10})/2] = 2.00$ dBi
 The MIMO is uncorrelated and supported SDM(Spatial Division Multiplexing) mode only. This radio device doesn't support beamforming and Cyclic Delay Diversity (CDD).

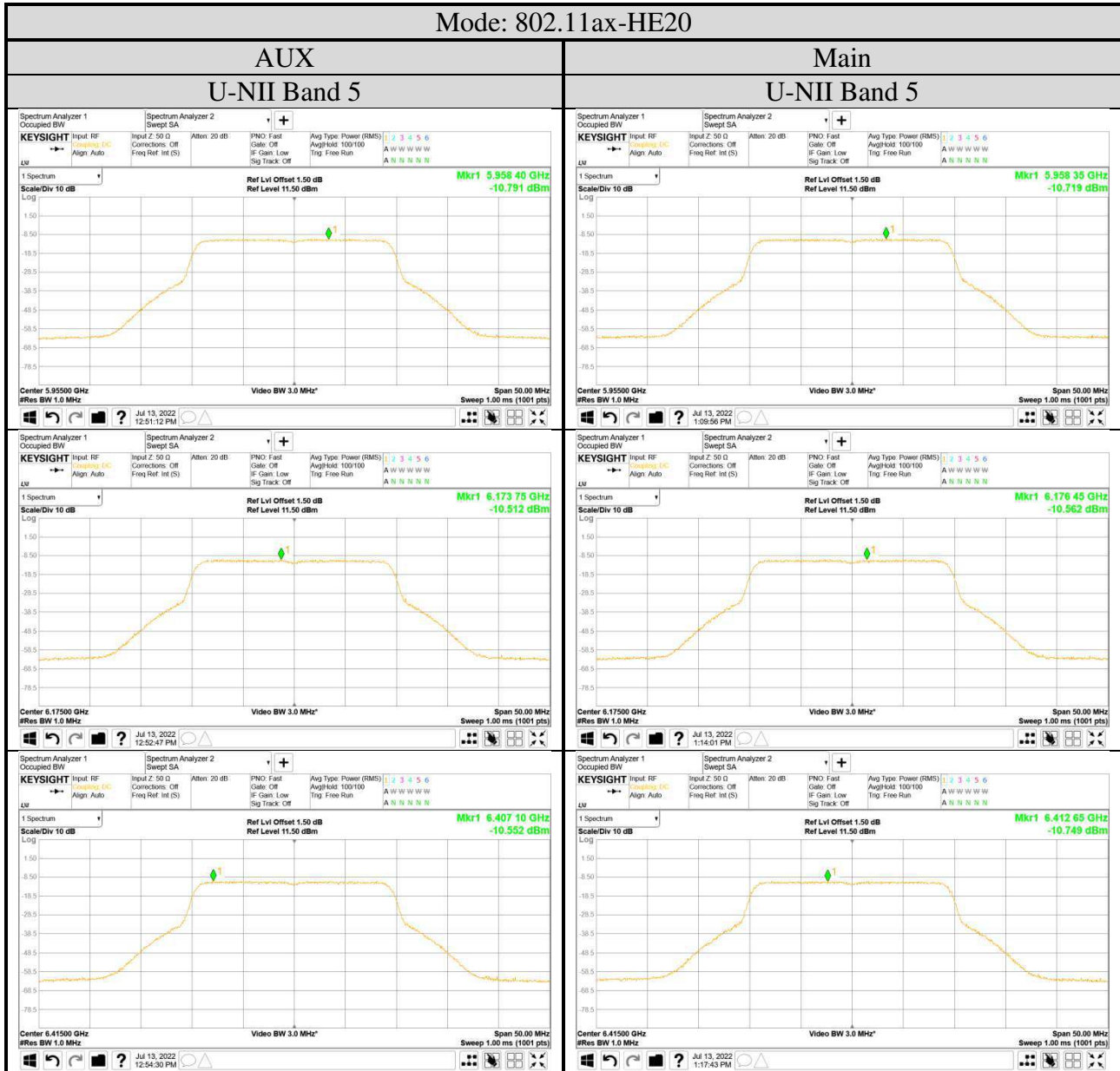
● OFDMA Modulation

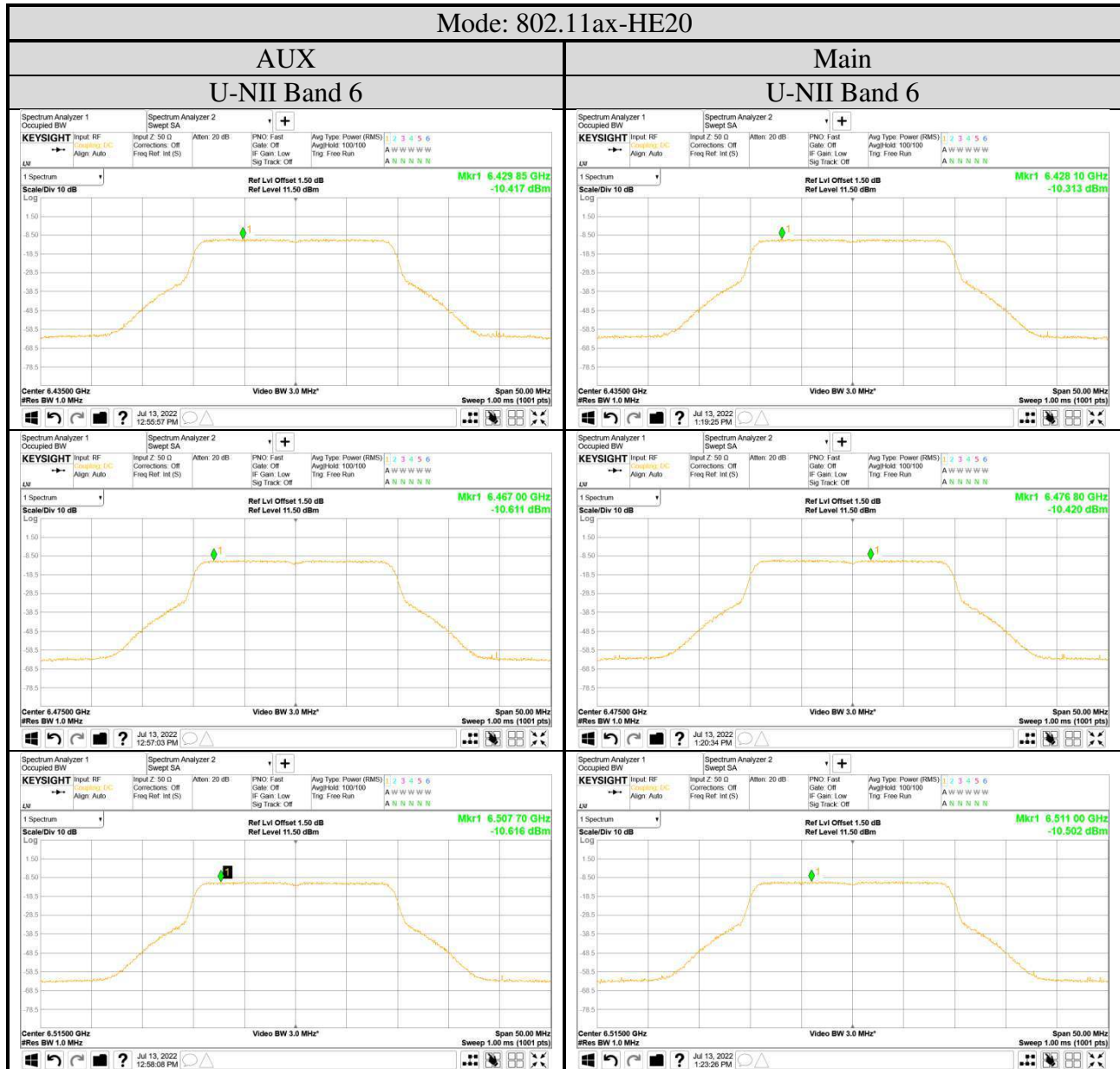
Tones	RU Index	Modulation Type	U-NII Band	Centre Frequency (MHz)	Power Spectral Density (dBm/MHz)		Duty Cycle Factor (dB) 10log(1/X)	Directional Gain (dBi) ^{Note3}	Total Power Spectral Density (dBm/1MHz) ^{Note2}	Limit (dBm/MHz)
					AUX	Main				
26T	18	802.11ax-HE80	5	5985	-10.624	-9.771	N/A	2.150	-5.016	-1
52T	44	802.11ax-HE80	5	5985	-9.347	-8.336	N/A	2.150	-3.652	
106T	54	802.11ax-HE20	5	5955	-9.157	-7.895	N/A	2.150	-3.320	
242T	62	802.11ax-HE160	5	6185	-9.737	-9.759	N/A	2.150	-4.588	
484T	66	802.11ax-HE160	5	6185	-10.215	-9.810	N/A	2.150	-4.847	
996T	67	802.11ax-HE80	5	6145	-9.777	-9.506	N/A	2.150	-4.479	

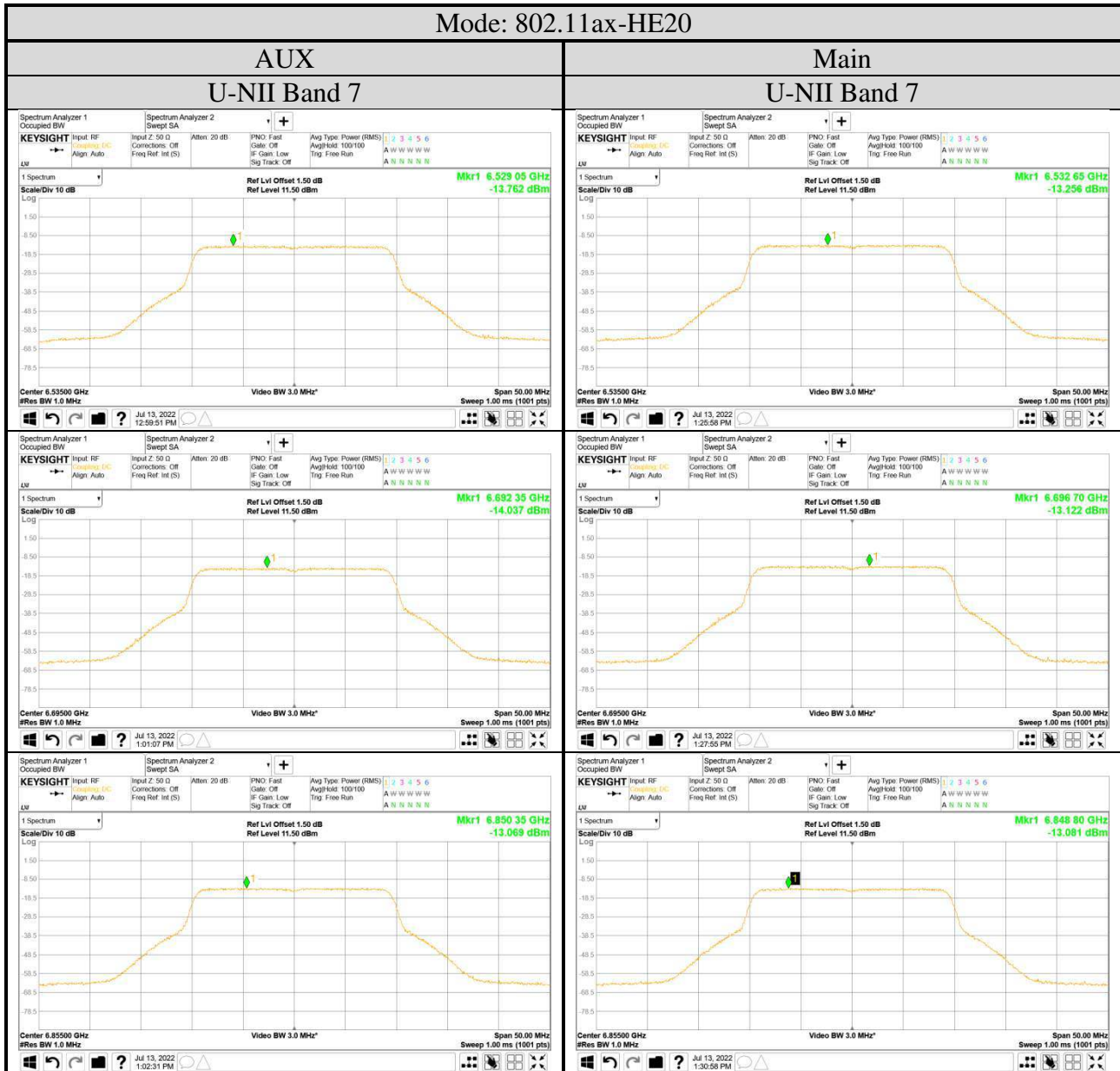
Note: 1. All results have been included cable loss [Please refer to KDB 662911 E 2) c)]
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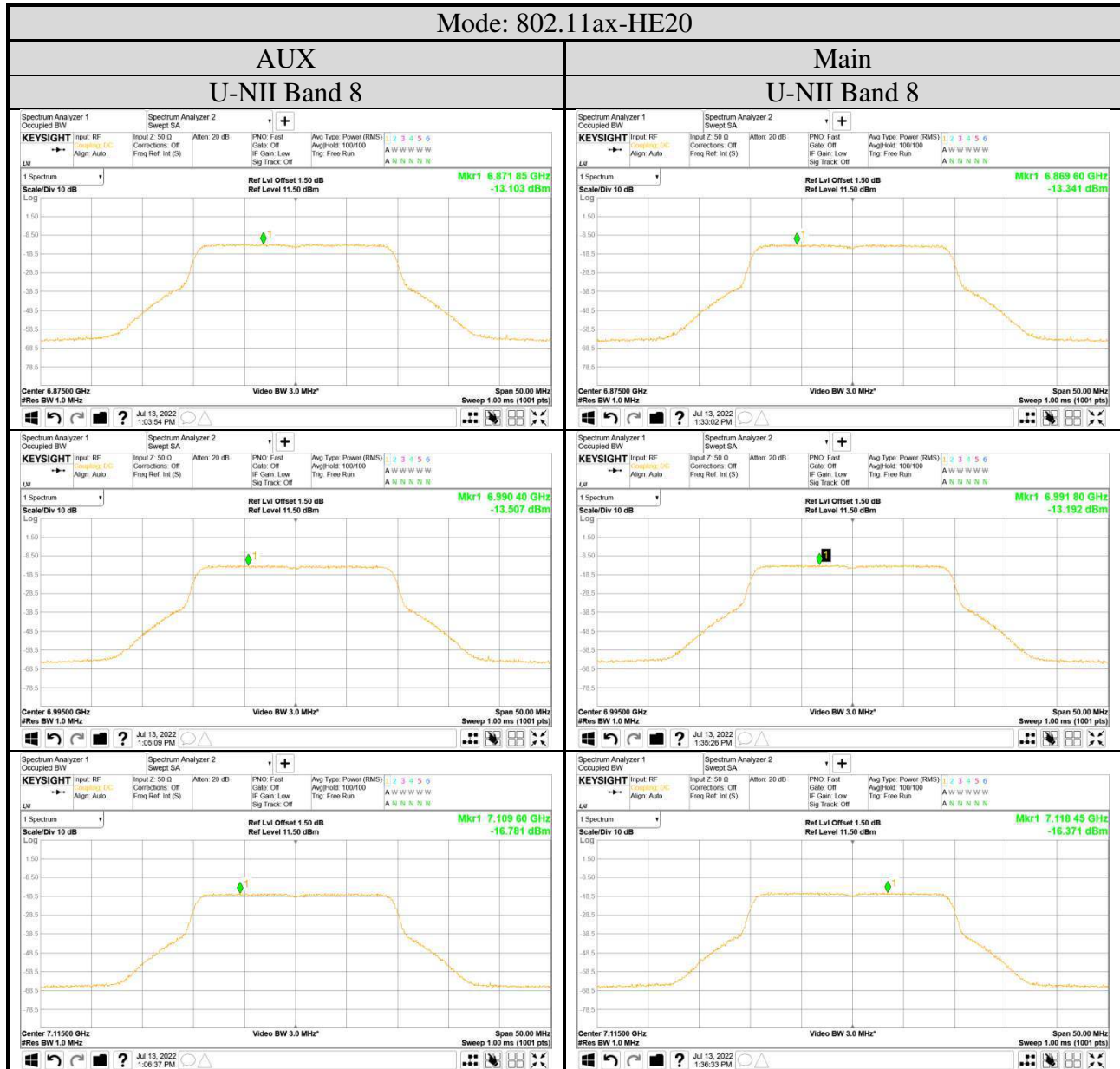
A.3.2 Measurement Plots

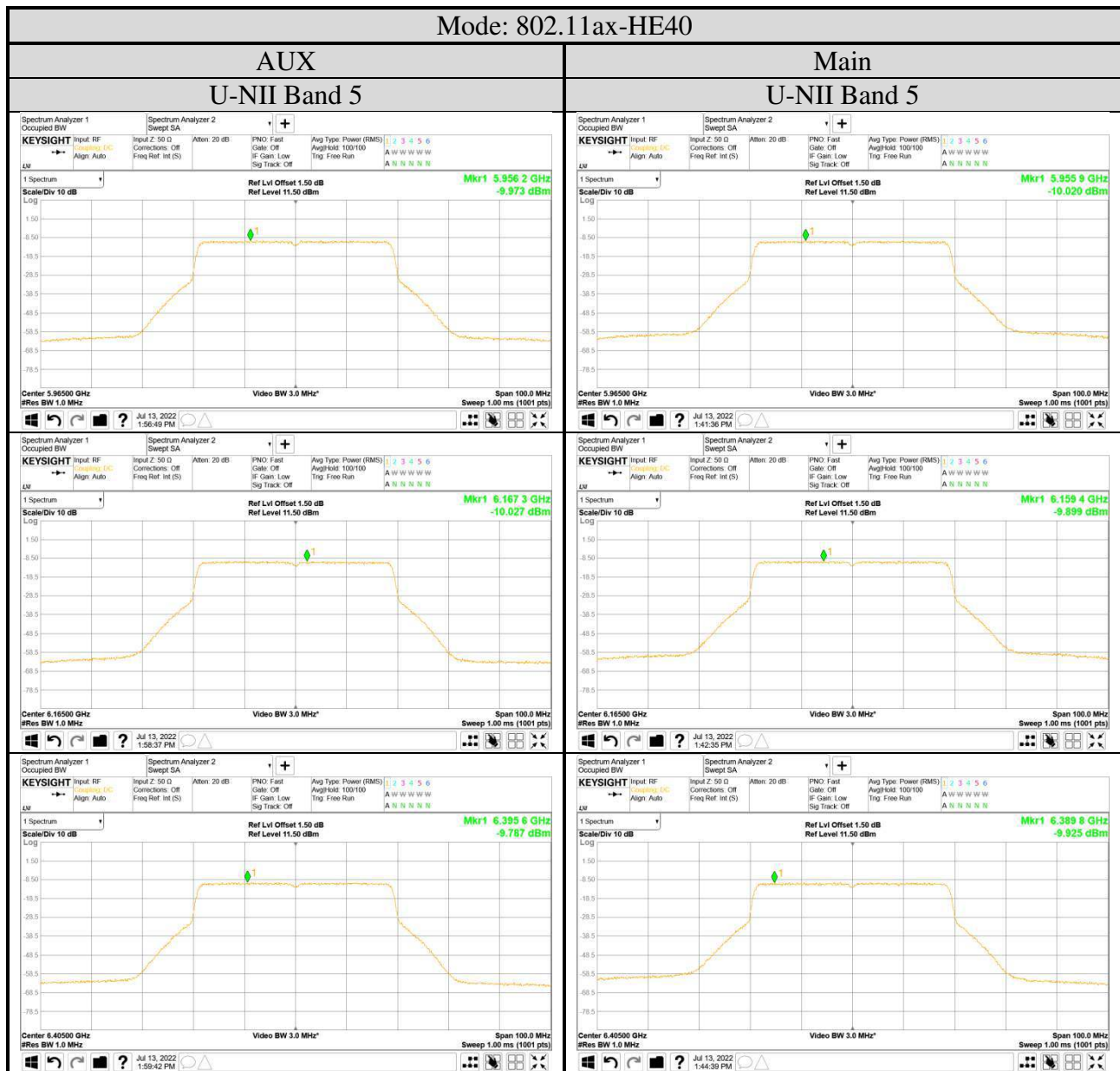
- OFDM Modulation

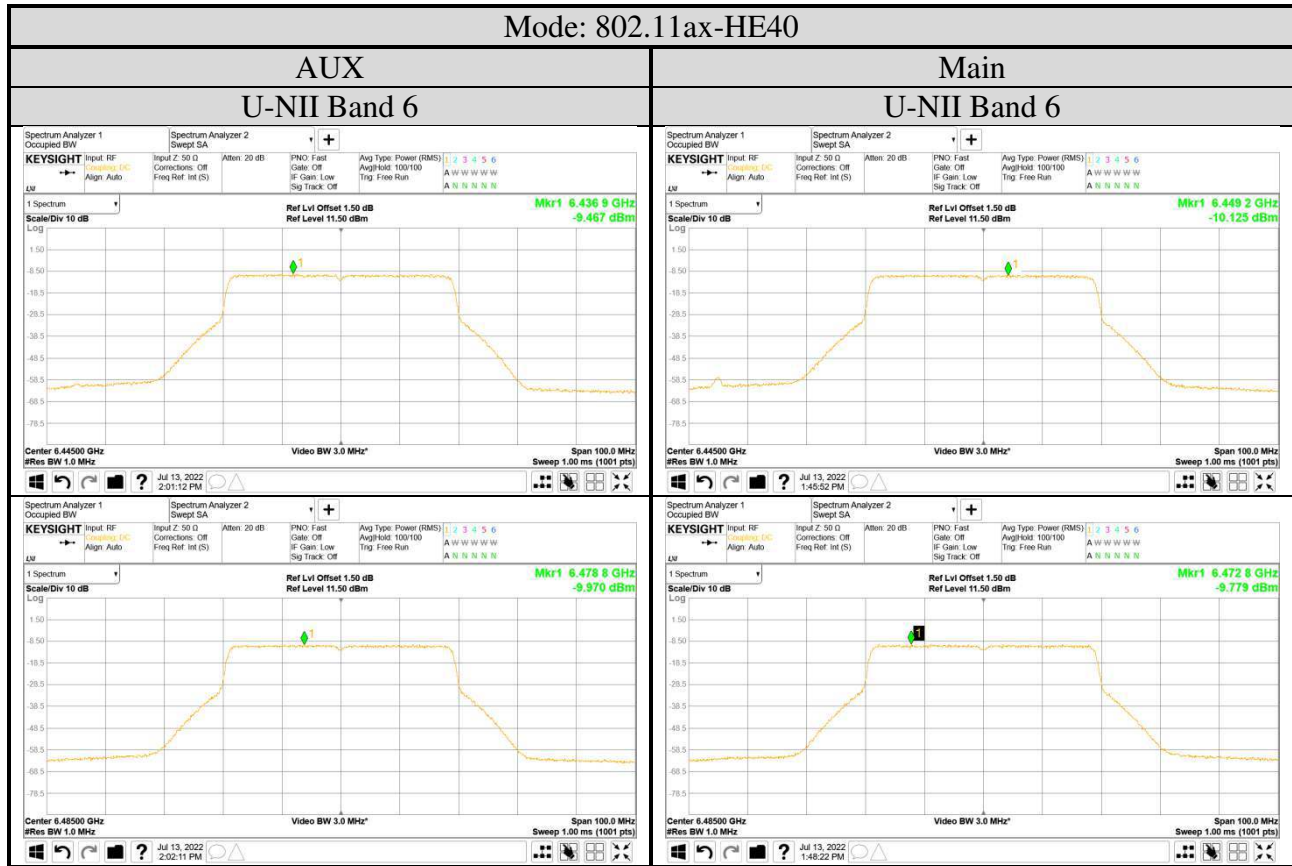


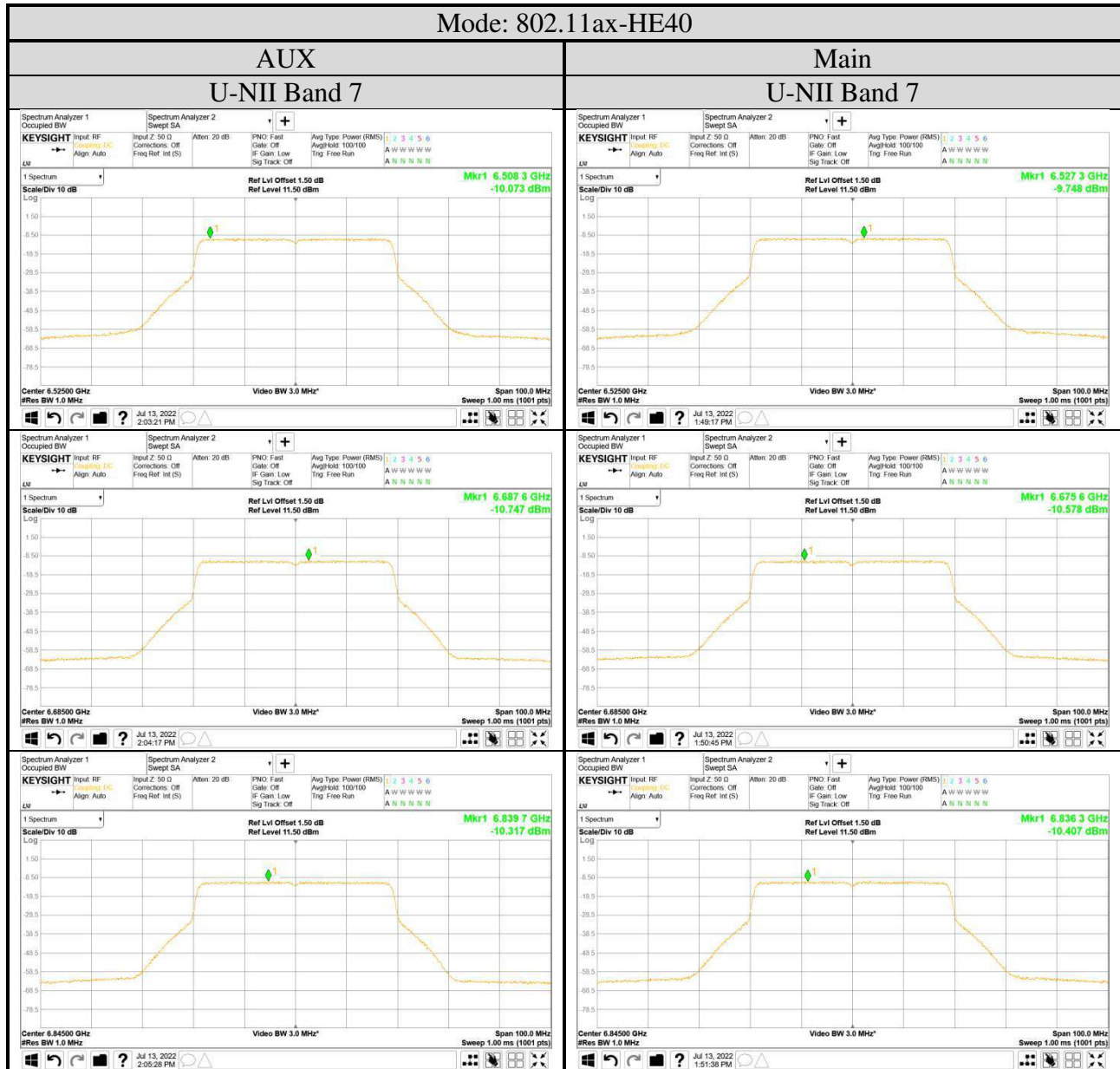


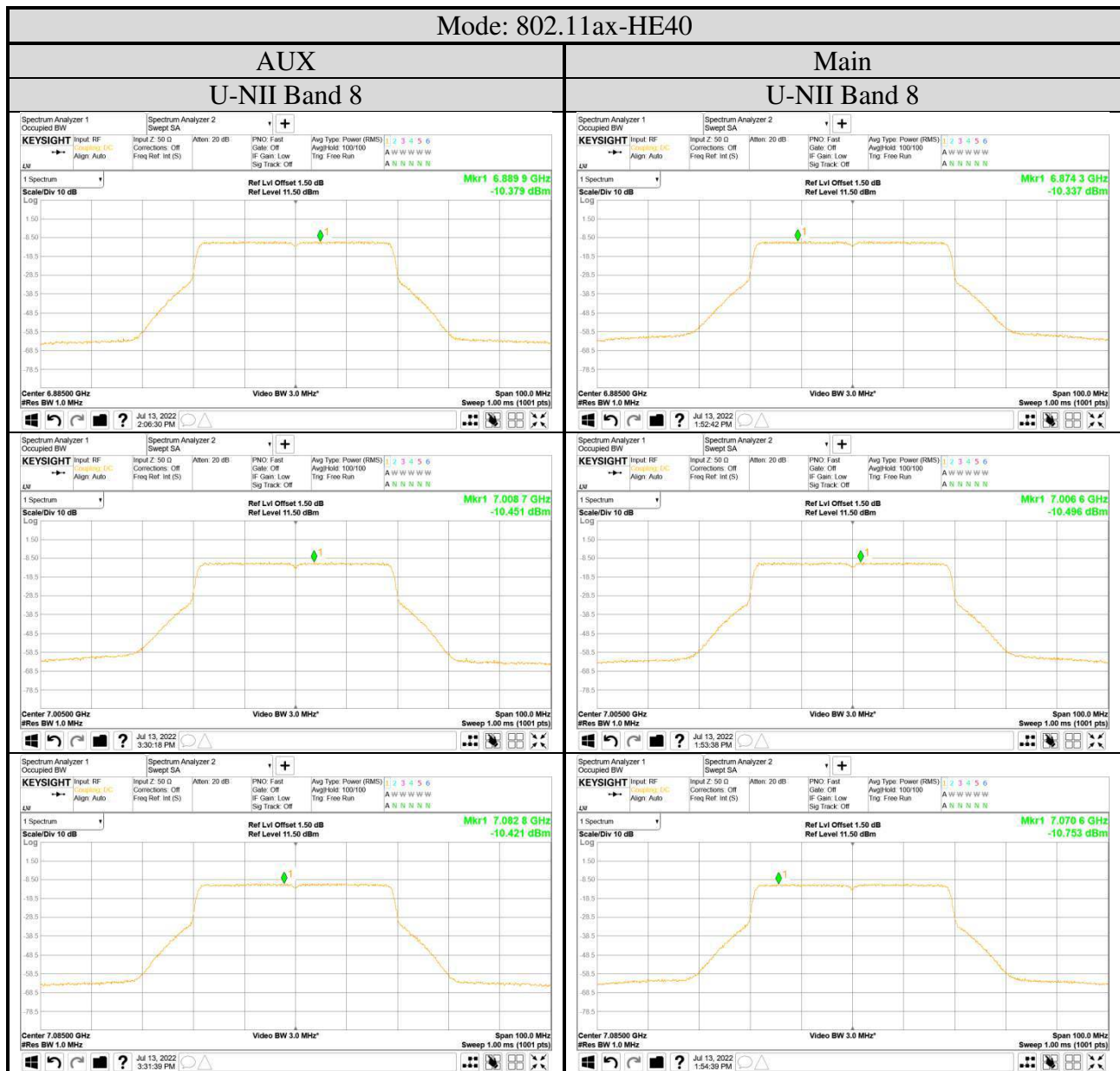


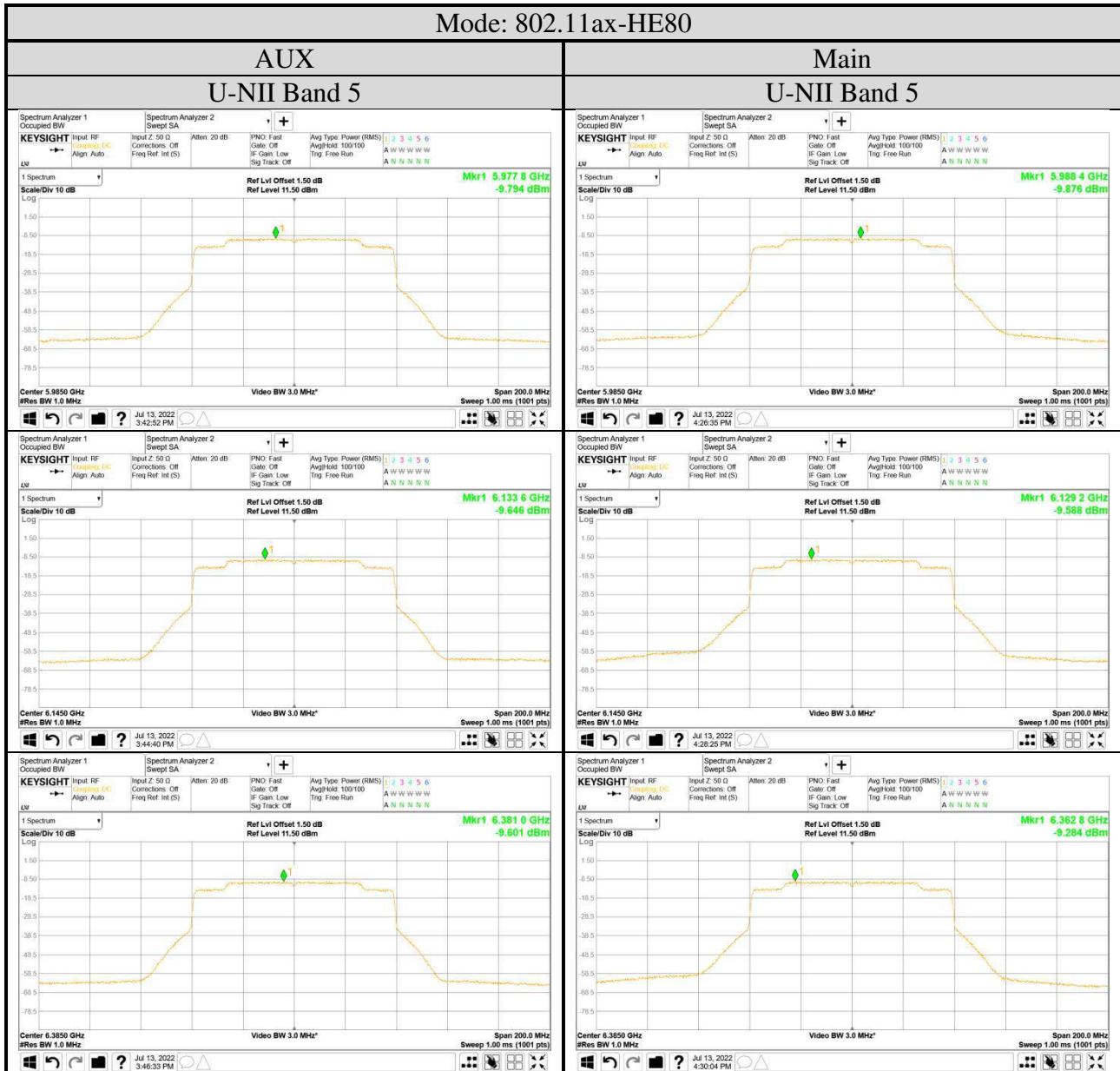


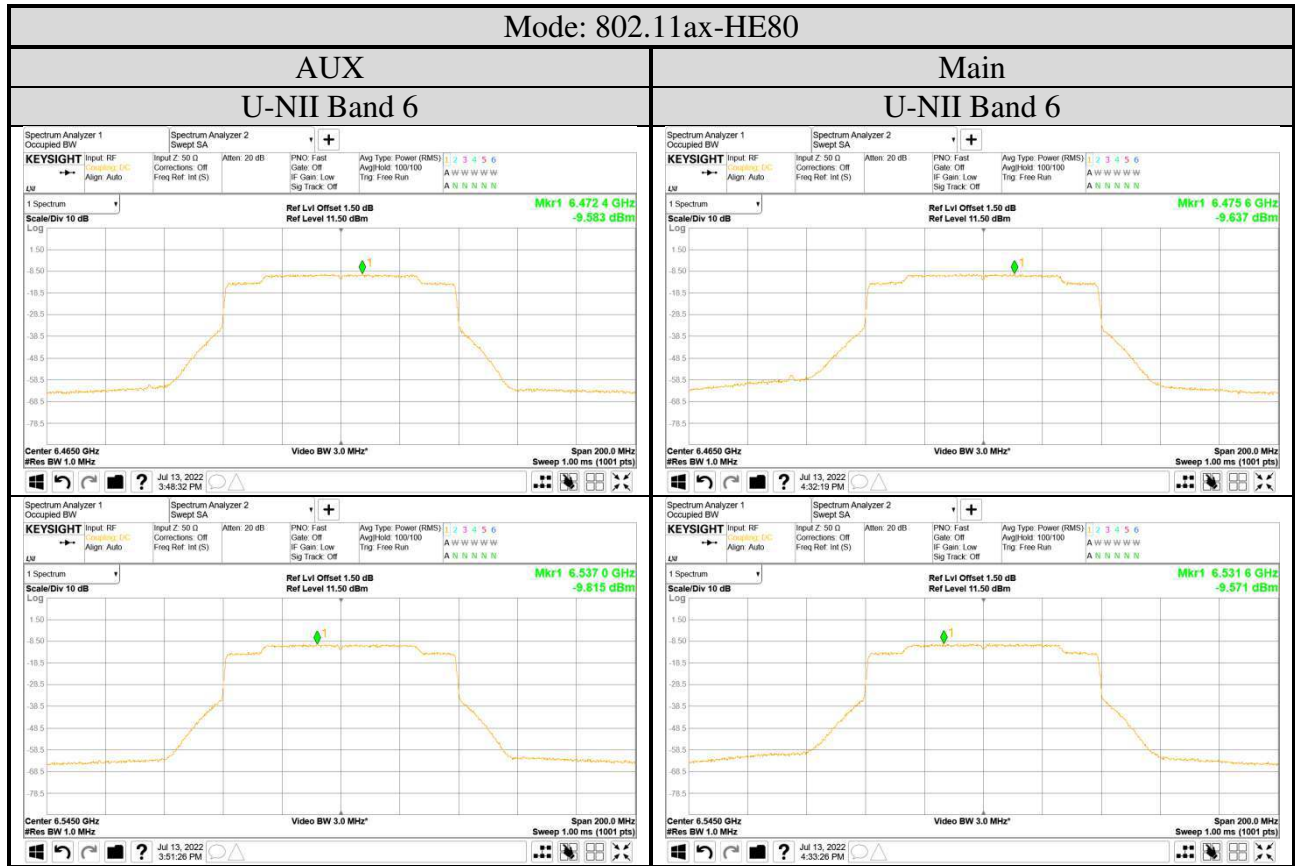


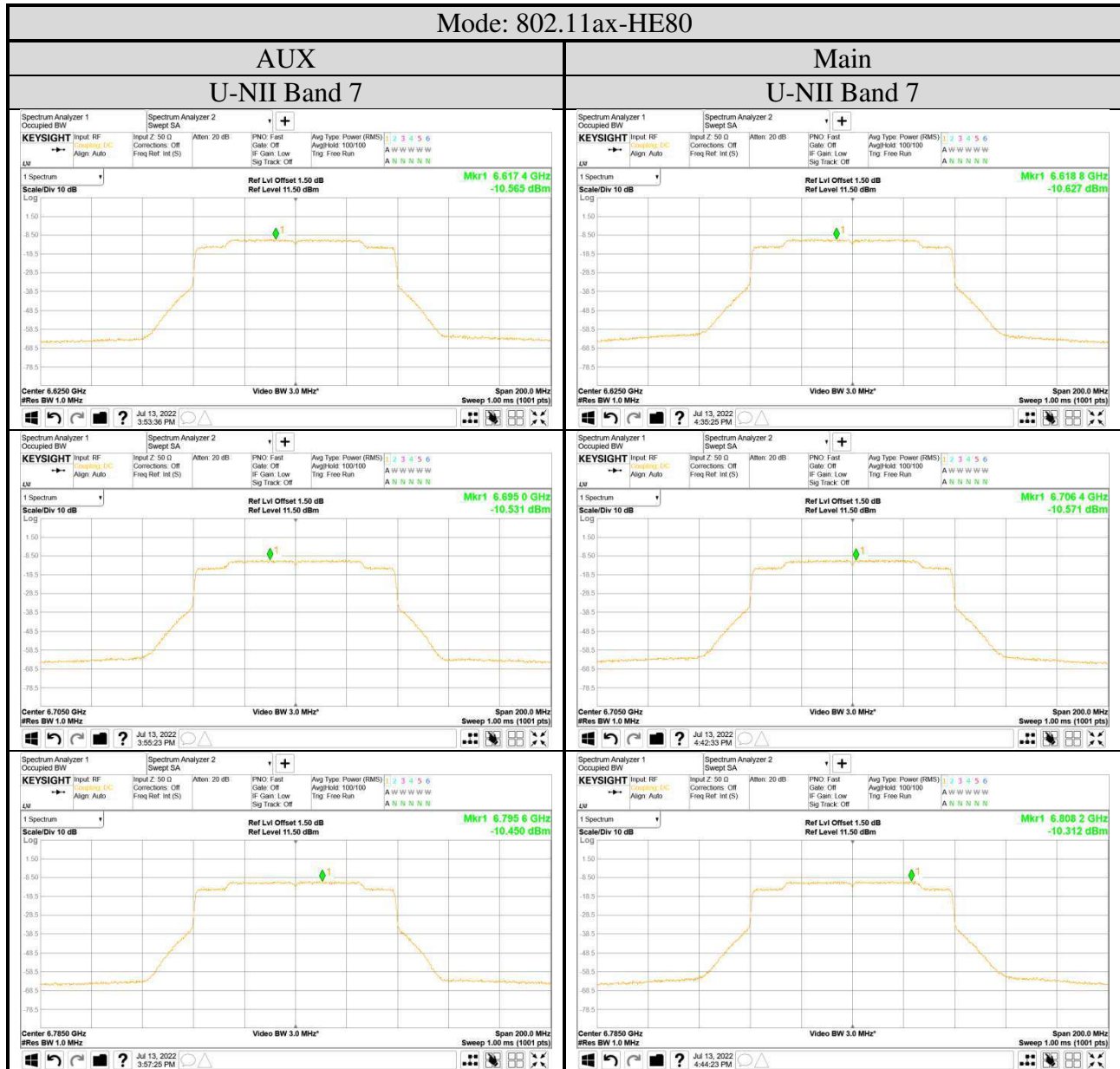


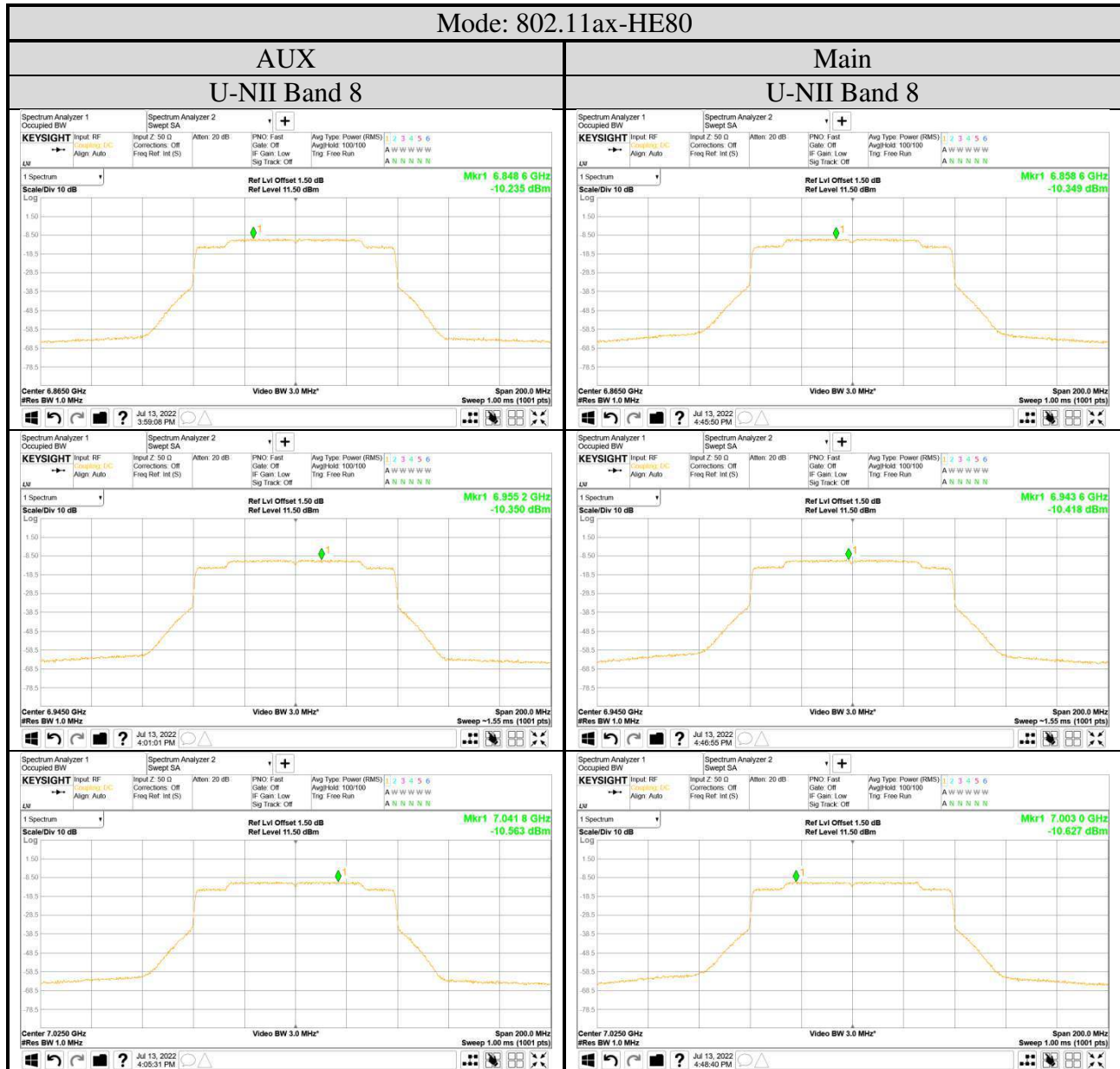


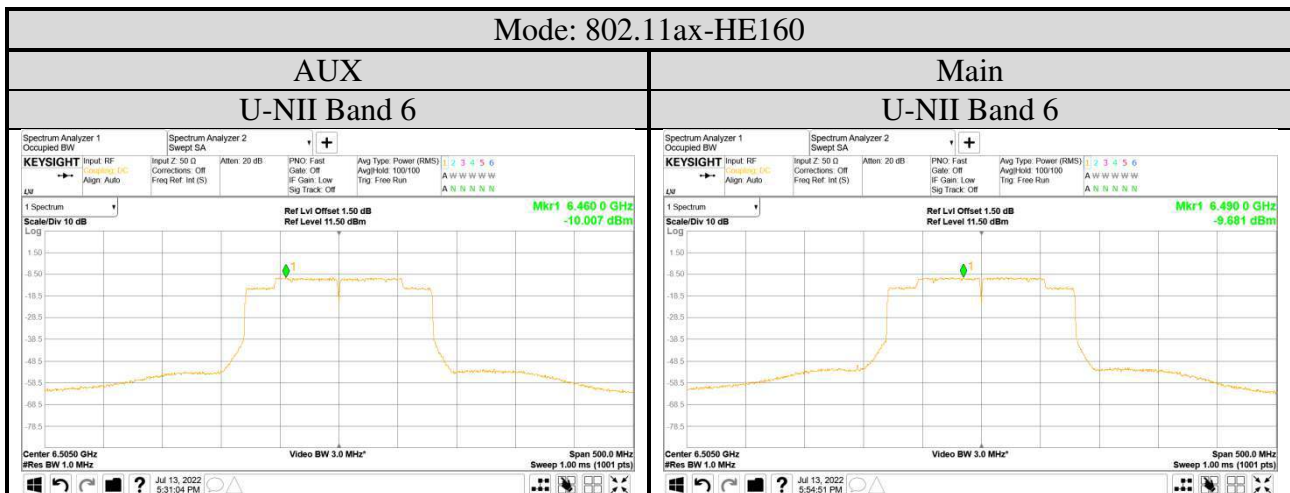
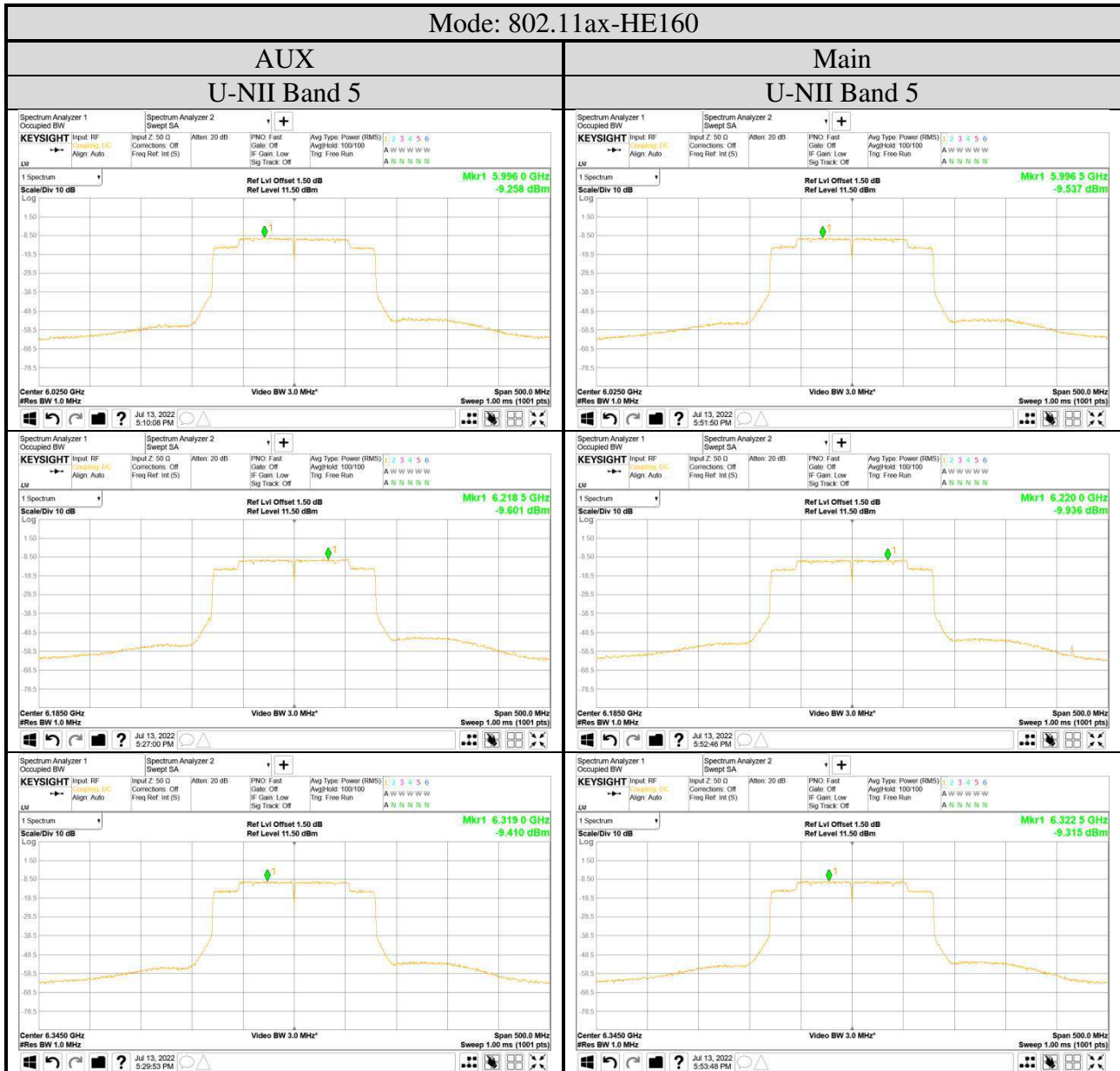


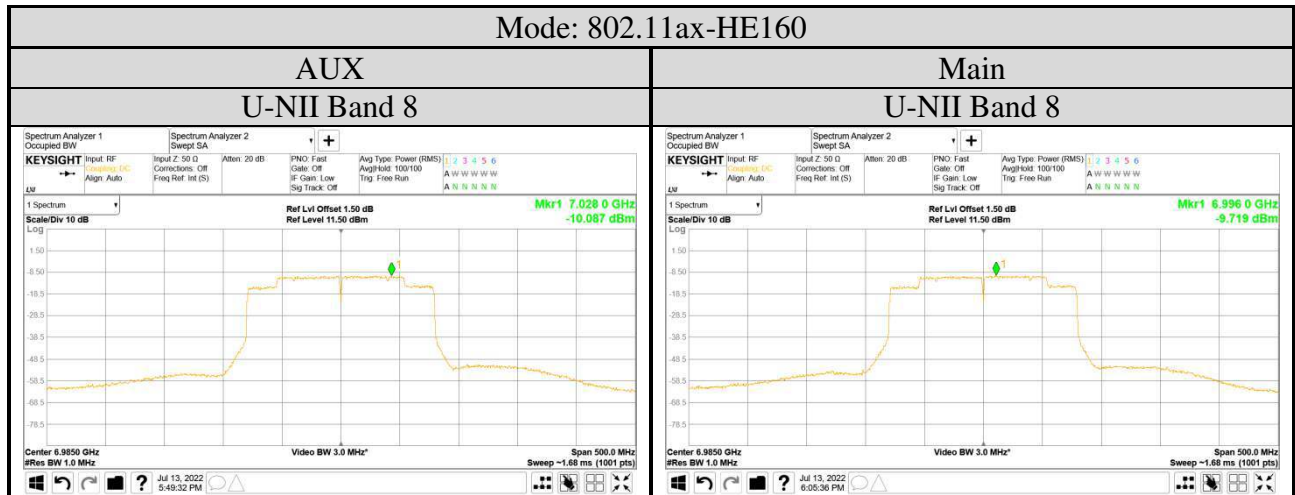
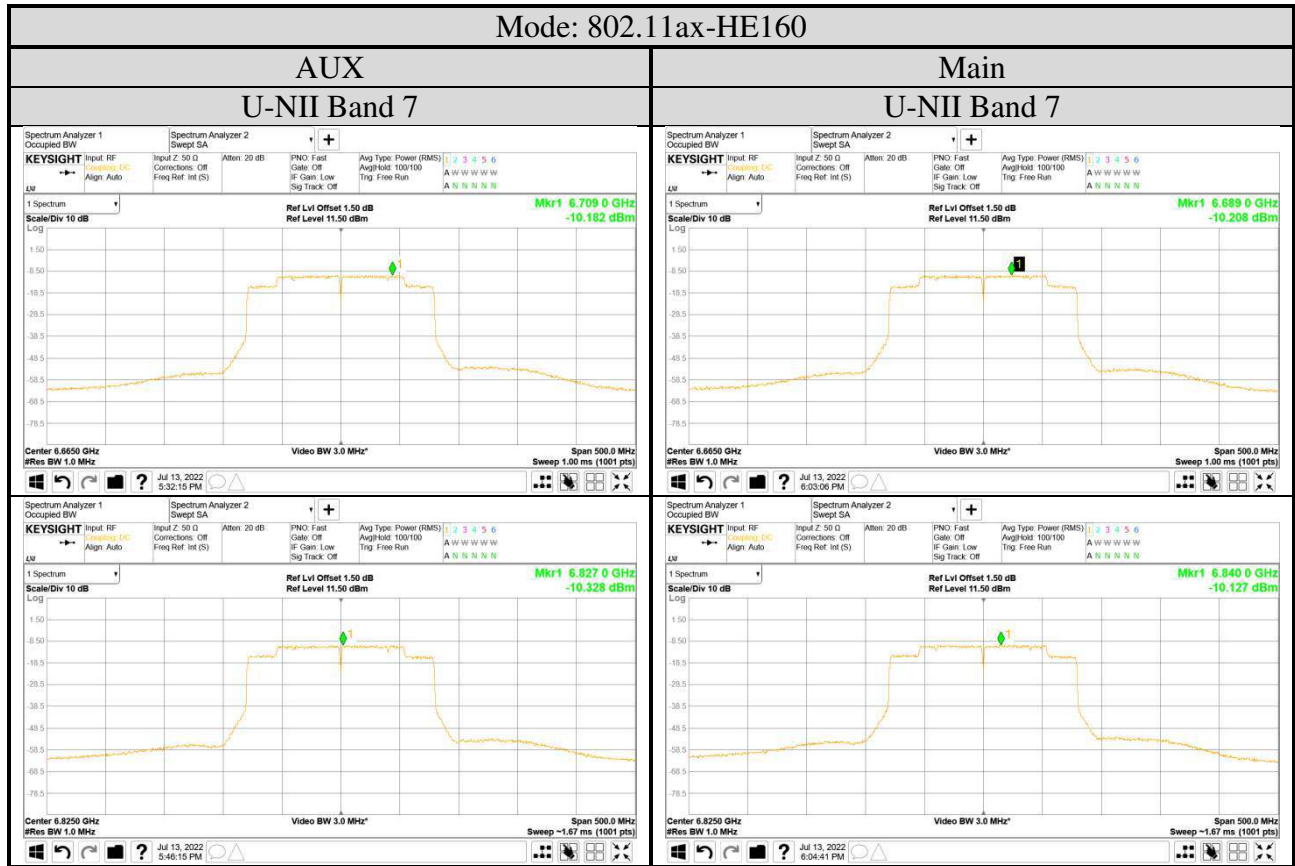




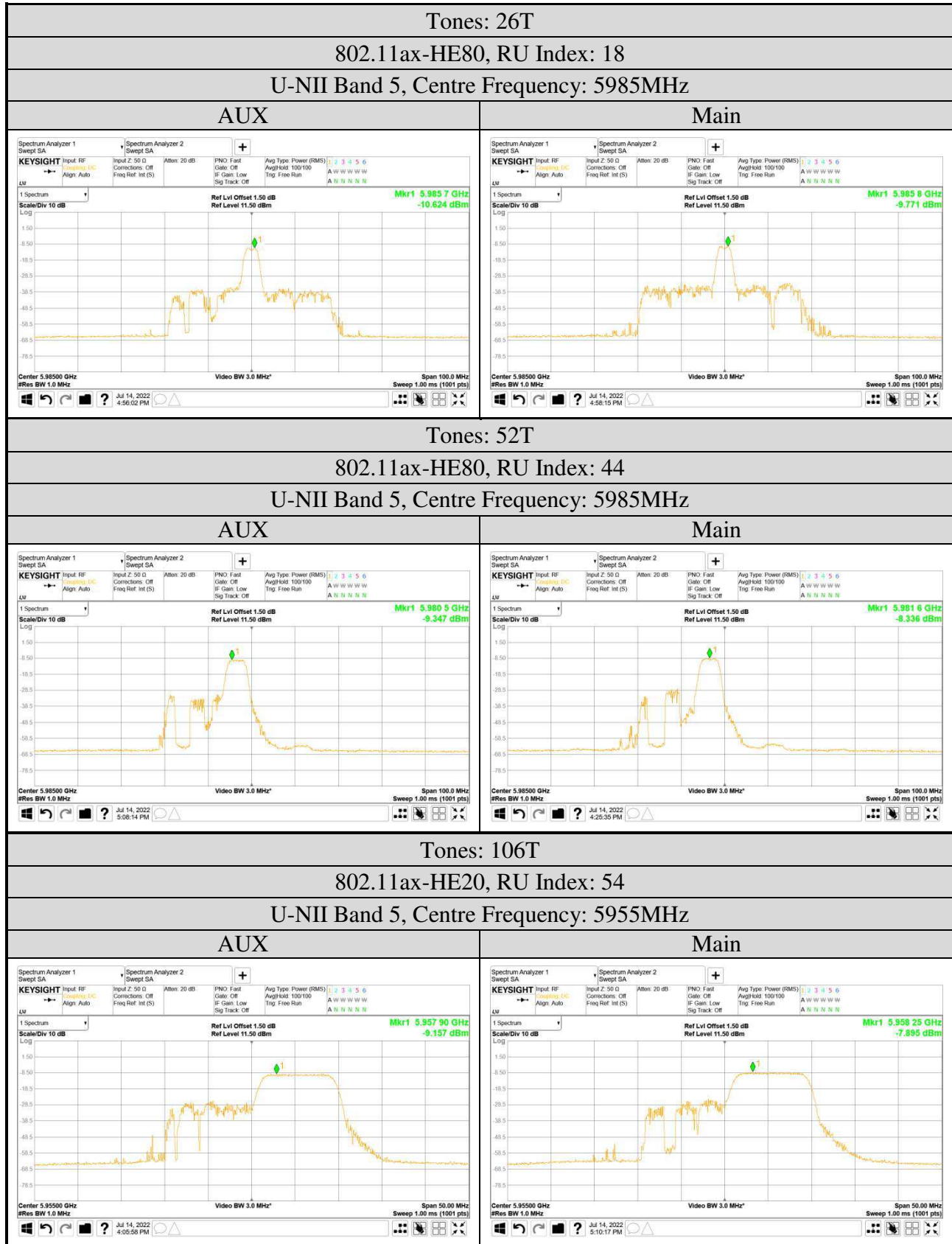




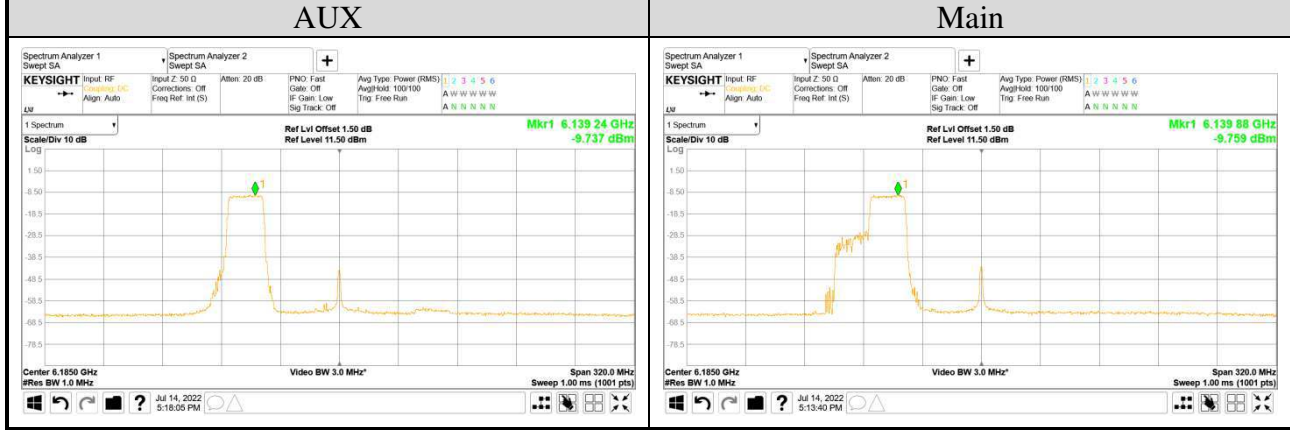




● OFDMA Modulation



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



Tones: 484T
802.11ax-HE160, RU Index: 66
U-NII Band 6, Centre Frequency: 6025MHz



Tones: 996T
802.11ax-HE80, RU Index: 67
U-NII Band 5, Centre Frequency: 6145MHz

