

A.3 MAXIMUM POWER SPECTRAL DENSITY

Test Date	2022/10/31 ~ 11/02	Temp./Hum.	22 ~ 23°C/66 ~ 68%
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) ^{Note2}	Limit (dBm/MHz)		
			AUX	Main						
802.11ax-HE20	5	5955	-10.402	-10.967	N/A	2.90	-4.765	-1		
		6175	-10.557	-10.985		1.06	-6.695			
		6415	-10.530	-10.985		1.06	-6.681			
	6	6435	-10.604	-11.054		1.06	-6.753			
		6475	-10.397	-11.181		1.06	-6.701			
		6515	-10.089	-11.101		1.06	-6.495			
	7	6535	-11.097	-12.018		1.06	-7.463			
		6695	-11.370	-11.656		1.73	-6.770			
		6855	-11.449	-11.848		1.73	-6.904			
	8	6875	-11.338	-11.951		1.73	-6.893			
		6995	-11.613	-11.969		-0.67	-9.447			
		7115	-14.812	-14.536		-0.67	-12.332			
802.11ax-HE40	5	5965	-9.485	-9.962	N/A	2.90	-3.807	-1		
		6165	-10.373	-10.581		2.90	-4.565			
		6405	-10.189	-10.433		1.06	-6.239			
	6	6445	-10.329	-10.486		1.06	-6.336			
		6485	-10.177	-10.571		1.06	-6.299			
	7	6525	-10.159	-10.666		1.06	-6.335			
		6685	-10.665	-11.298		1.73	-6.230			
	8	6845	-10.956	-11.270		1.73	-6.370			
		6885	-10.990	-10.919		1.73	-6.214			
		7005	-10.884	-11.168		-0.67	-8.683			
			7085	-10.359		-10.618	-0.67		-8.146	

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:

$$5925\text{MHz: Directional gain} = 10 \log[(10^{2.9/10} + 10^{2.9/10})/2] = 2.90\text{dBi}$$

$$6425\text{MHz: Directional gain} = 10 \log[(10^{0.7/10} + 10^{1.4/10})/2] = 1.06\text{dBi}$$

$$6825\text{MHz: Directional gain} = 10 \log[(10^{0.3/10} + 10^{2.8/10})/2] = 1.73\text{dBi}$$

$$7125\text{MHz: Directional gain} = 10 \log[(10^{-3.4/10} + 10^{1.0/10})/2] = -0.67\text{dBi}$$

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	-9.477	-9.766	N/A	2.90	-3.709	-1
		6145	-9.692	-10.041		2.90	-3.953	
		6385	-9.768	-9.746		1.06	-5.687	
	6	6465	-9.592	-9.889		1.06	-5.668	
		6545	-9.681	-10.046		1.06	-5.789	
		6625	-10.551	-10.638		1.73	-5.854	
	7	6705	-10.499	-10.580		1.73	-5.799	
		6785	-10.465	-10.906		1.73	-5.940	
		6865	-10.696	-11.089		1.73	-6.148	
	8	6945	-10.758	-11.059		1.73	-6.166	
		7025	-10.452	-10.865		-0.67	-8.313	
		6025	-9.311	-9.736		2.90	-3.608	
802.11ax-HE160	5	6185	-9.205	-9.499	1.06	-5.279		
		6345	-9.285	-9.405	1.06	-5.274		
		6505	-9.001	-9.466	1.06	-5.157		
	7	6665	-9.893	-10.317	1.73	-5.360		
		6825	-10.174	-10.573	1.73	-5.629		
	8	6985	-10.216	-10.314	-0.67	-7.924		

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: Directional gain = $10 \log[(10^{2.9/10} + 10^{2.9/10})/2] = 2.90$ dBi
 6425MHz: Directional gain = $10 \log[(10^{0.7/10} + 10^{1.4/10})/2] = 1.06$ dBi
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 7125MHz: Directional gain = $10 \log[(10^{-3.4/10} + 10^{1.0/10})/2] = -0.67$ 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).

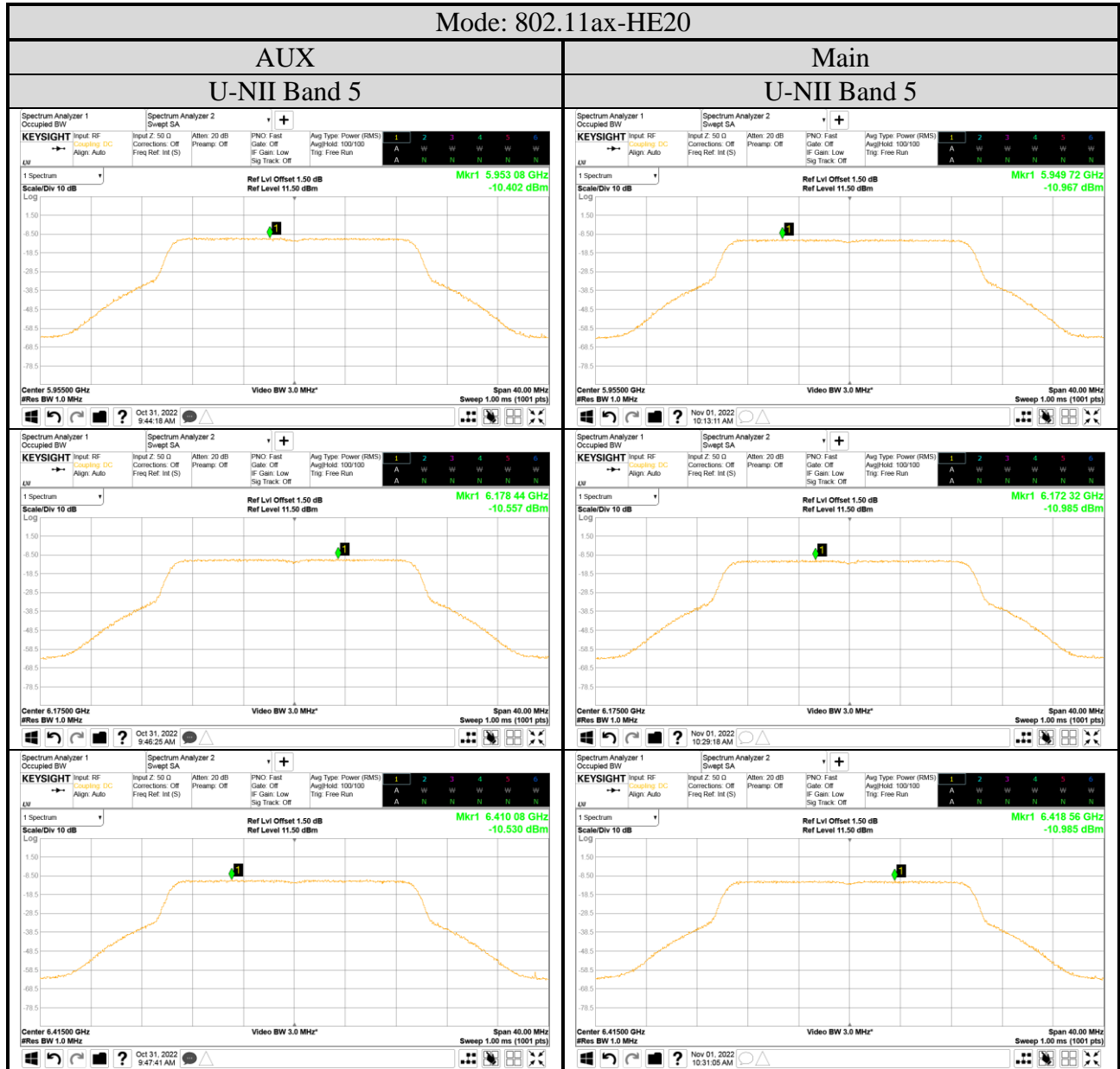
● OFDMA Modulation

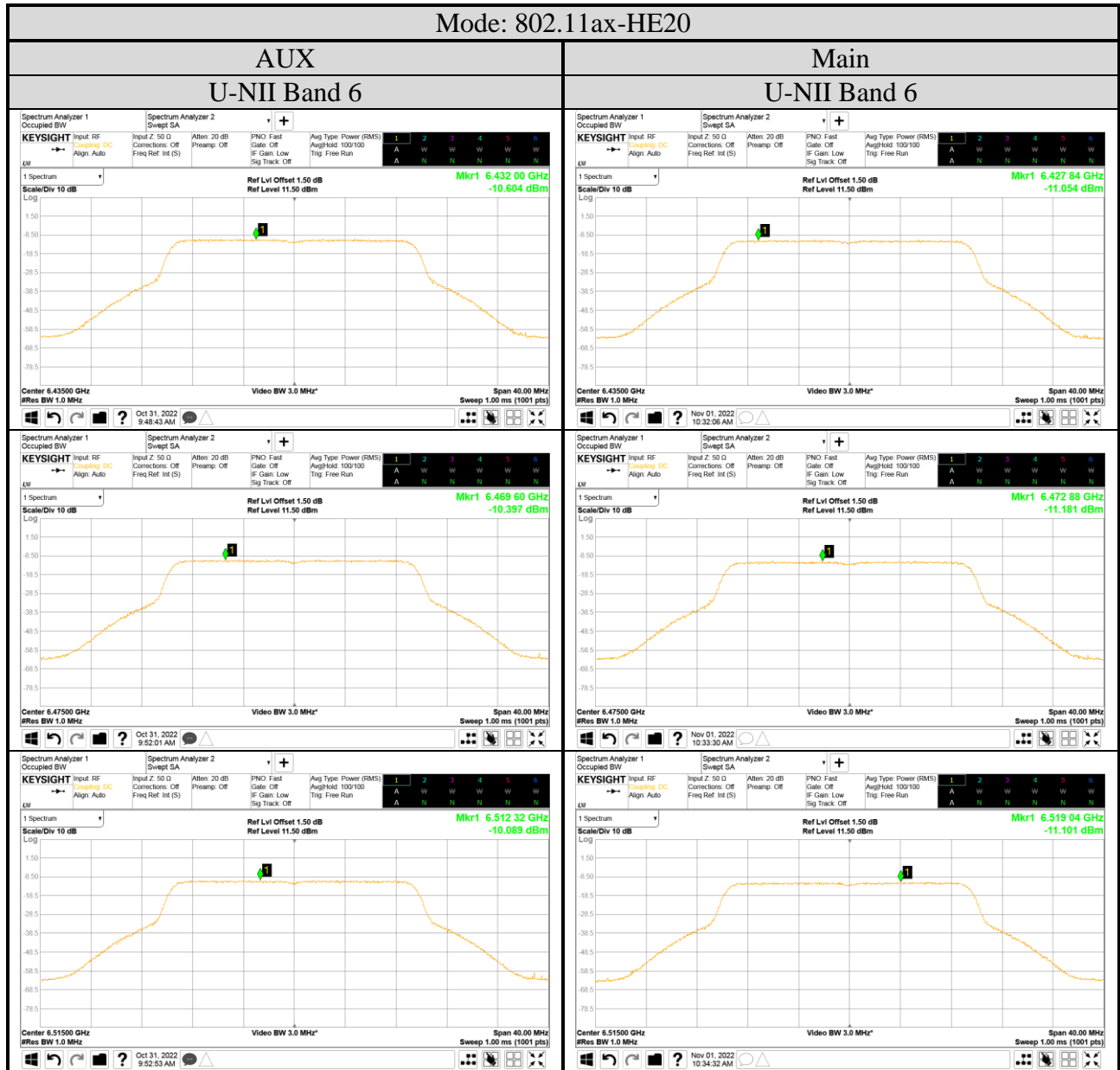
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					AUX	Main				
26T	18	802.11ax-HE80	5	5985	-10.667	-10.487	0.132	2.90	-4.534	-1
52T	44	802.11ax-HE80	5	5985	-9.060	-9.506	0.119	2.90	-3.248	
106T	56	802.11ax-HE80	5	5985	-8.794	-9.321	N/A	2.90	-3.139	
242T	62	802.11ax-HE80	5	5985	-9.644	-10.576	0.123	2.90	-4.052	
484T	65	802.11ax-HE40	5	5965	-9.409	-10.121	N/A	2.90	-3.840	
996T	67	802.11ax-HE160	5	6025	-9.131	-9.688	0.132	2.90	-3.358	

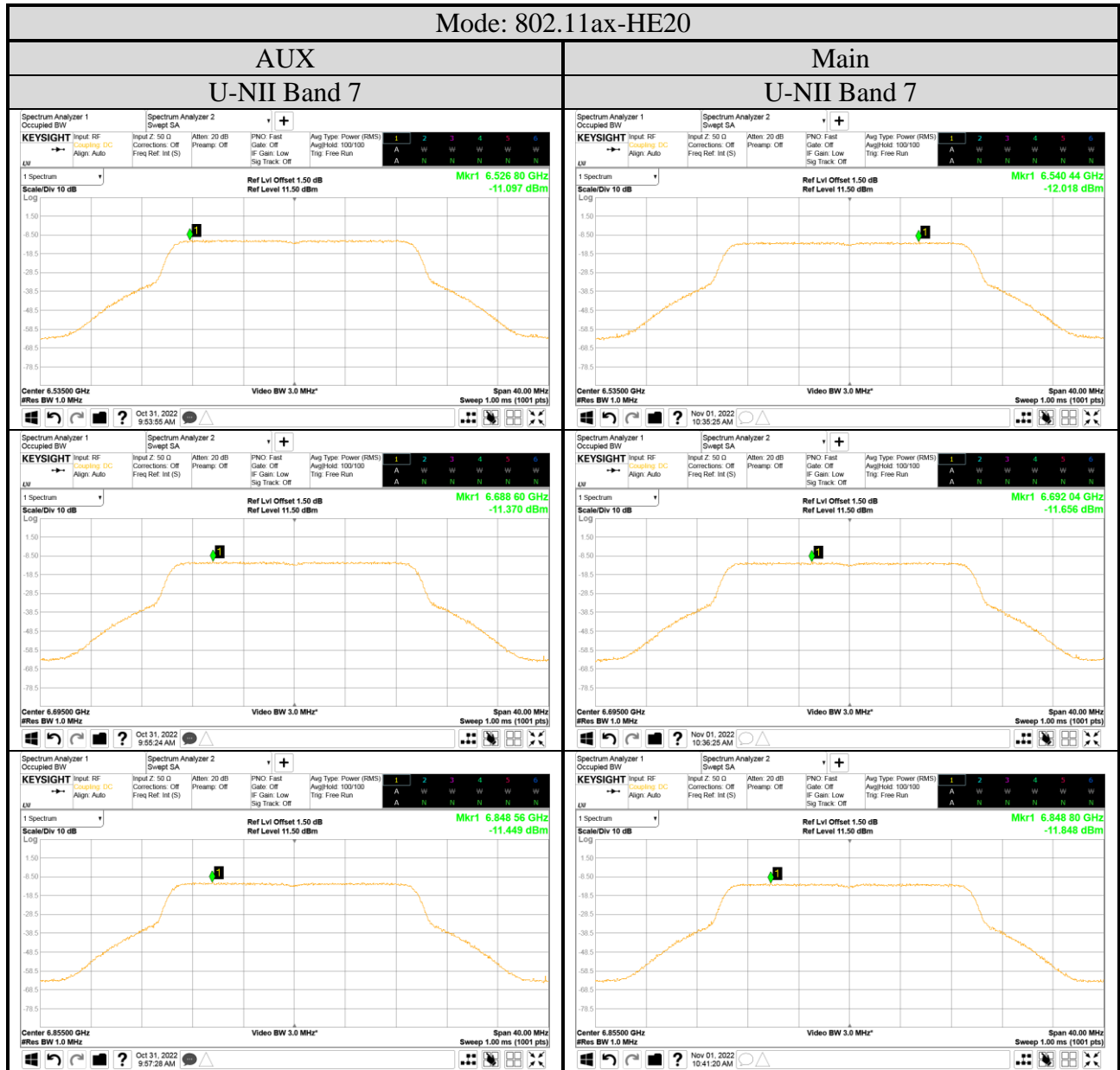
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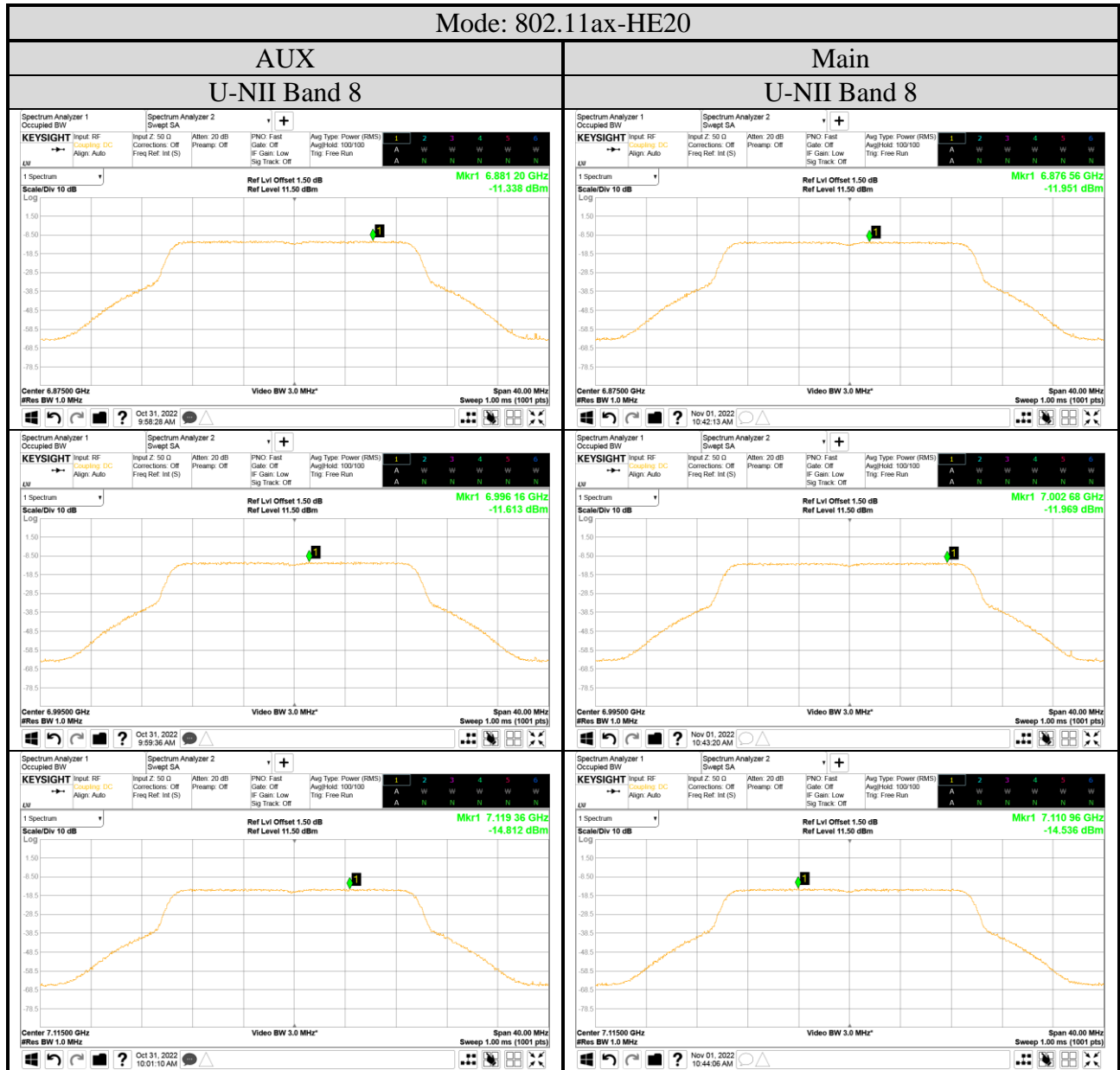
A.3.2 Measurement Plots

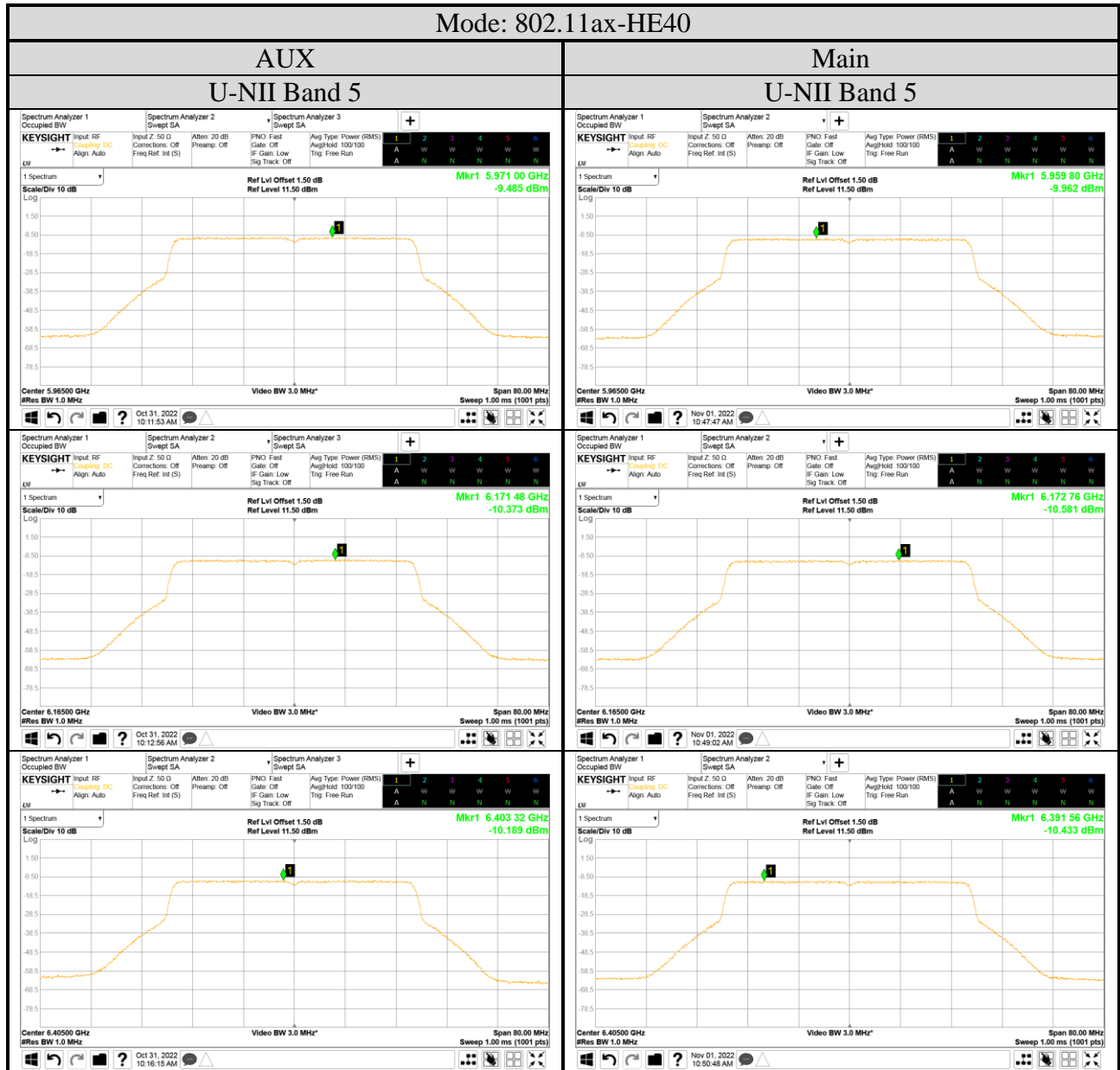
- OFDM Modulation

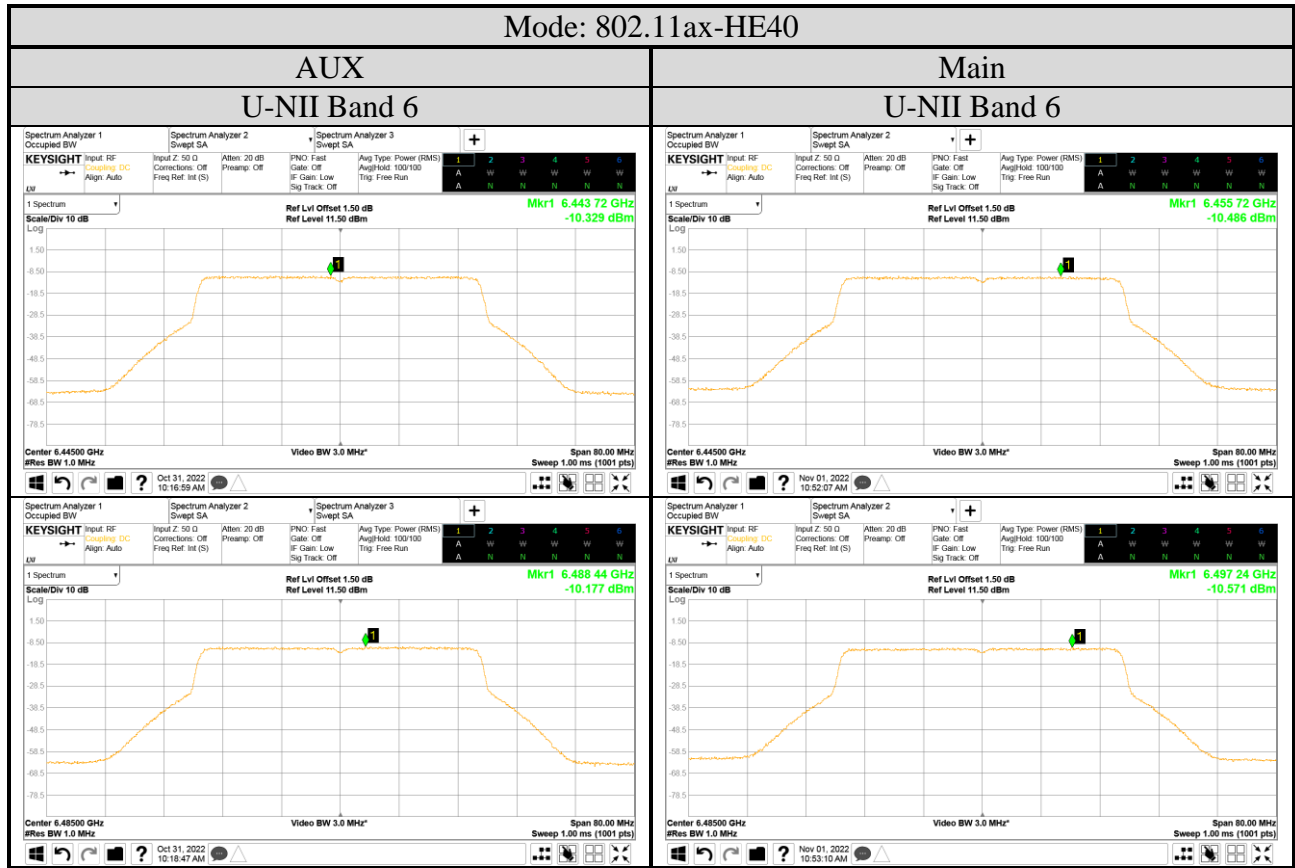


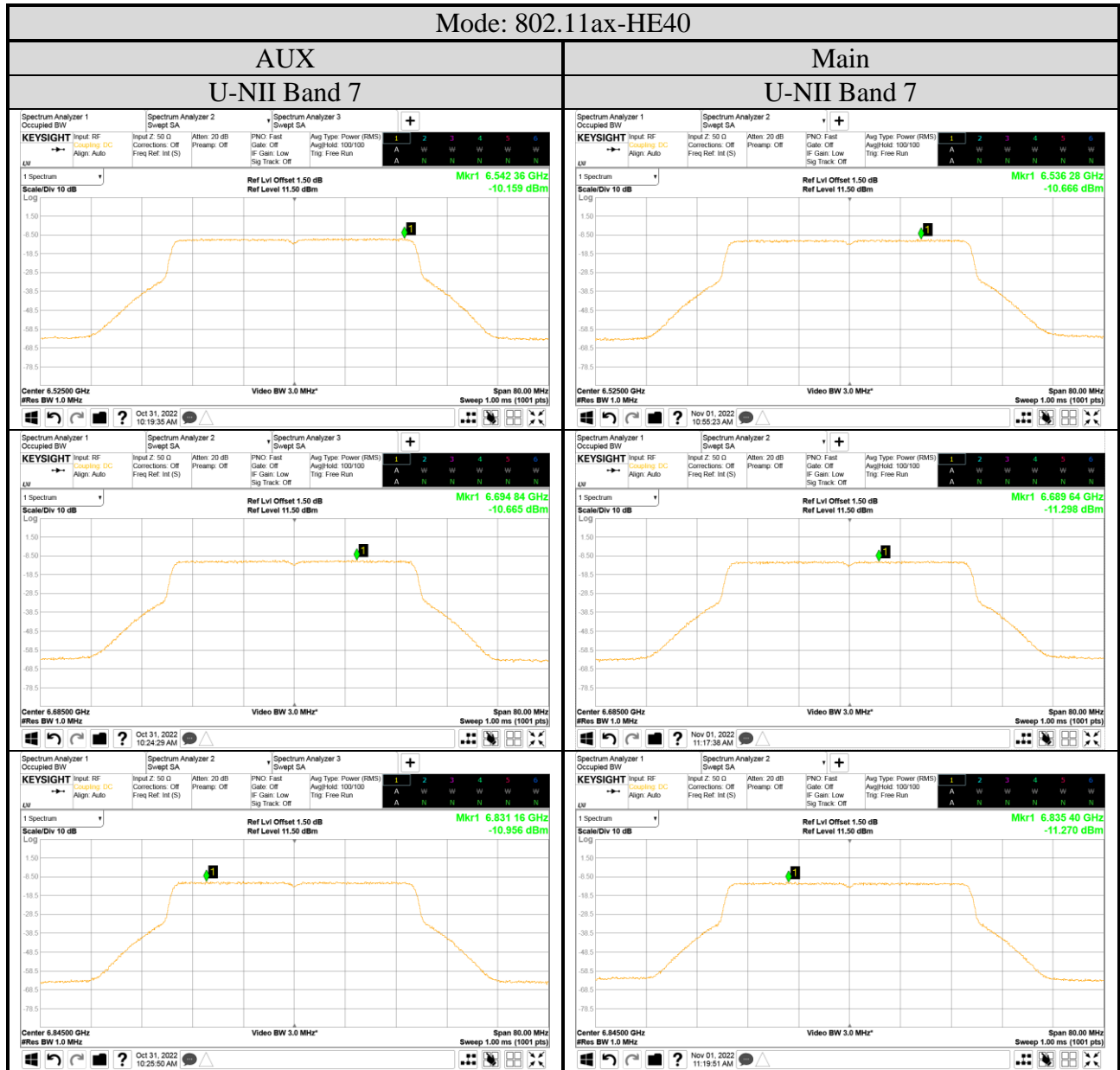


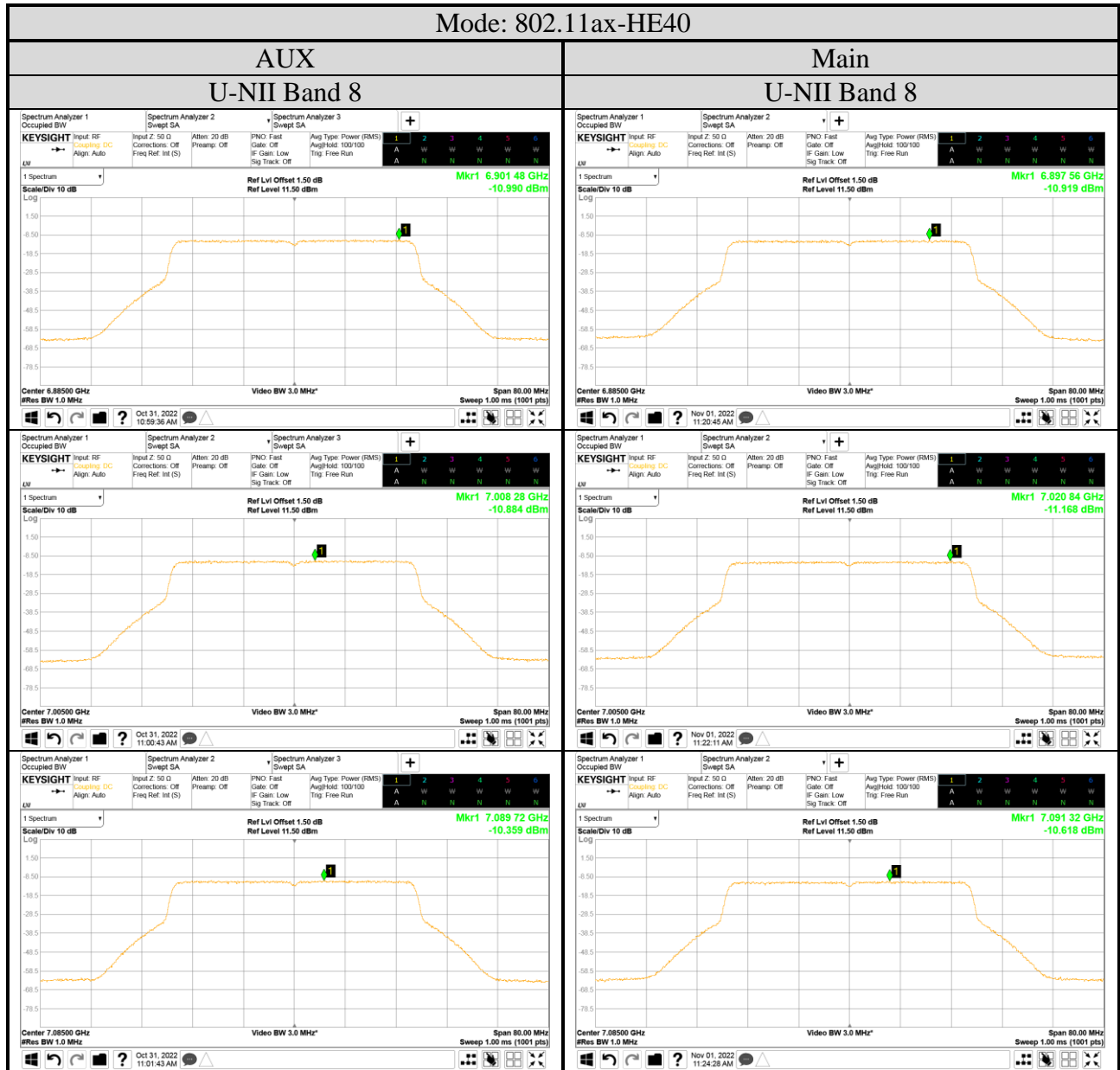


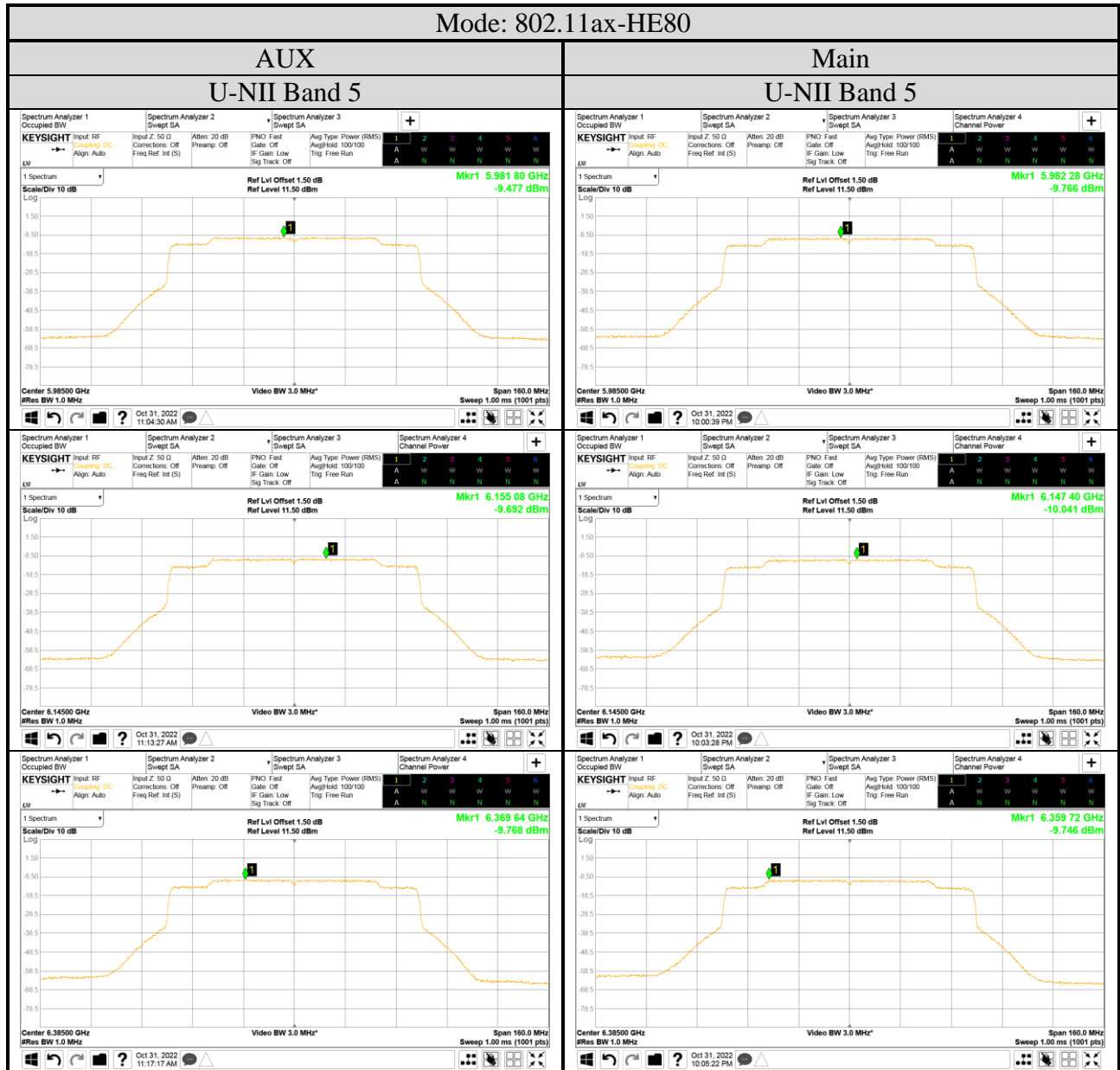


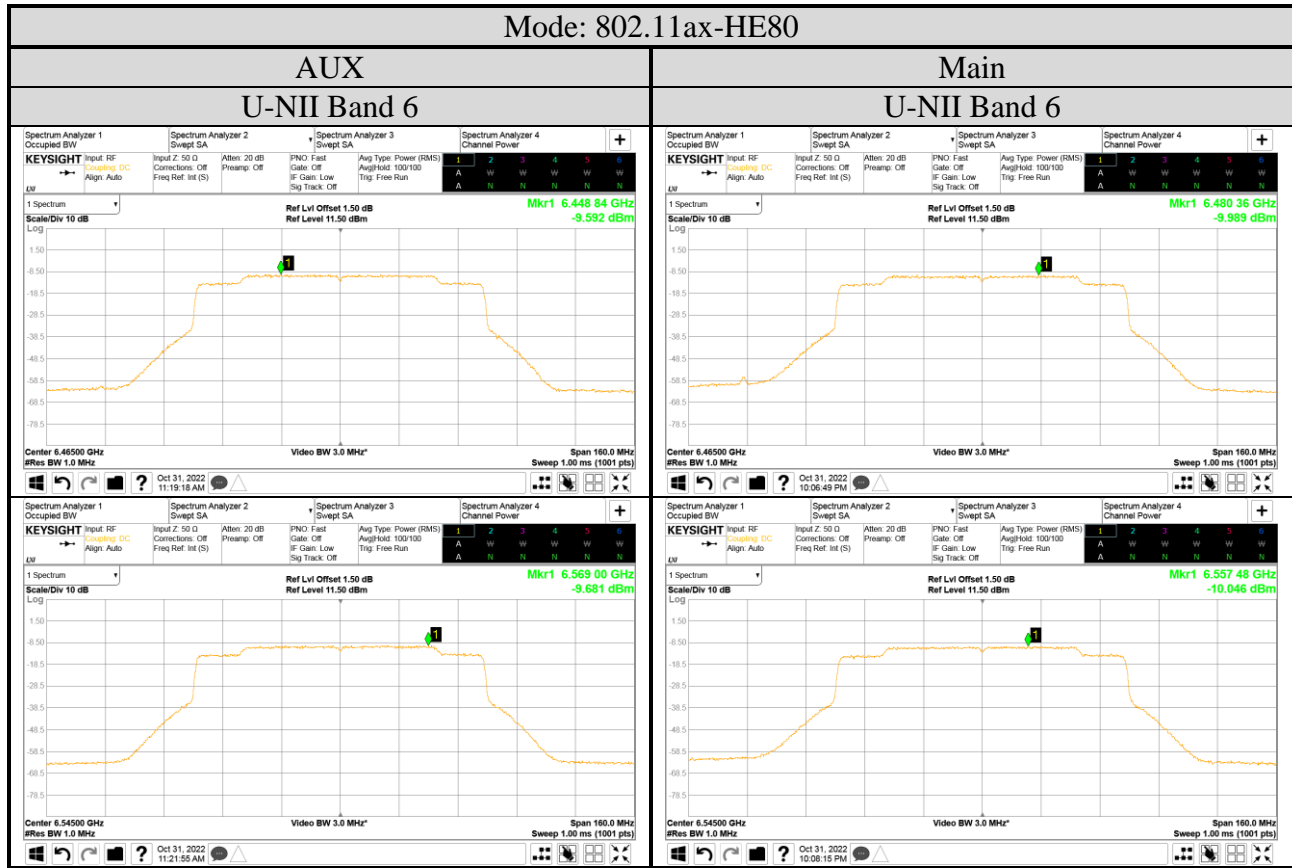


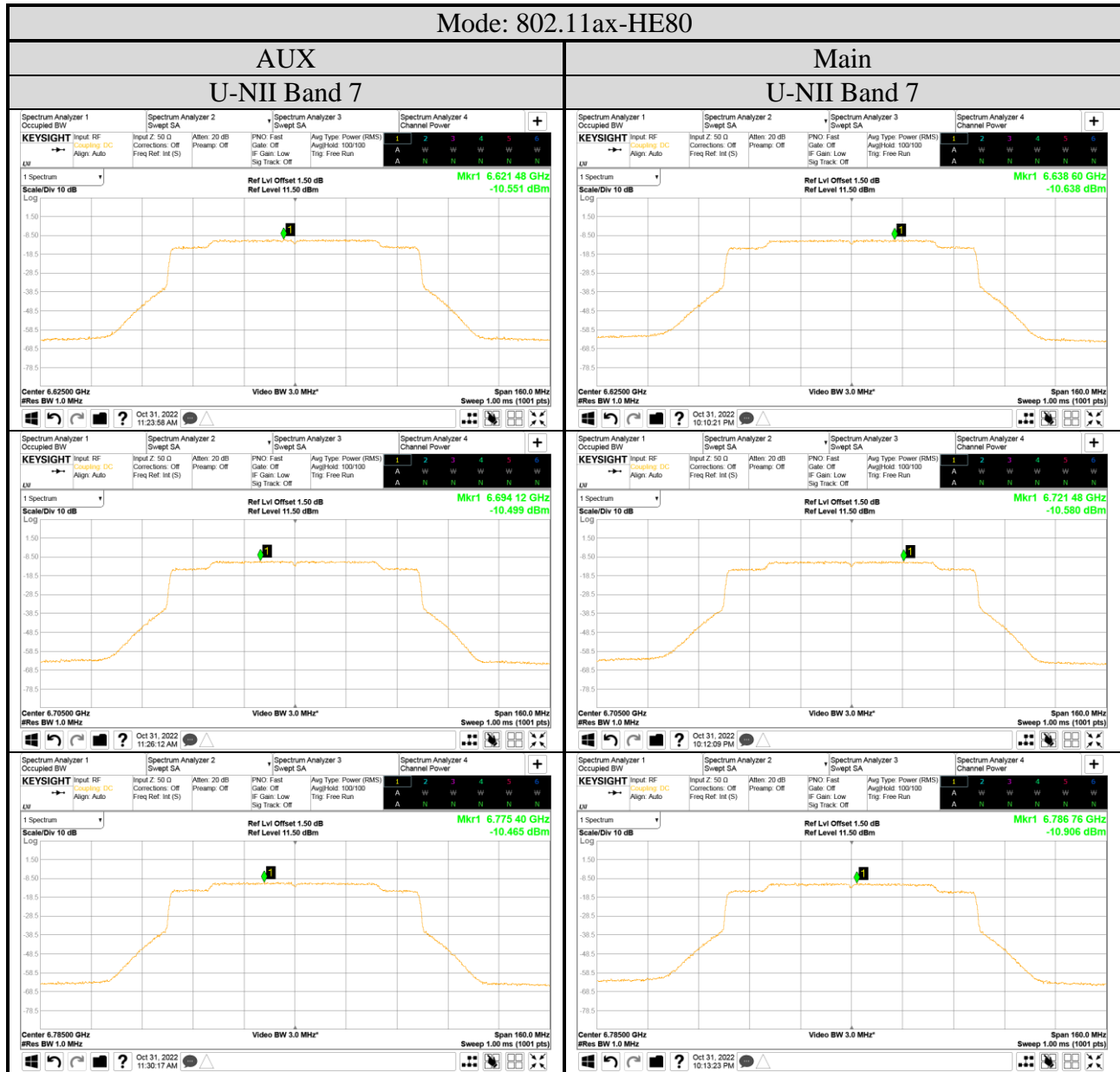


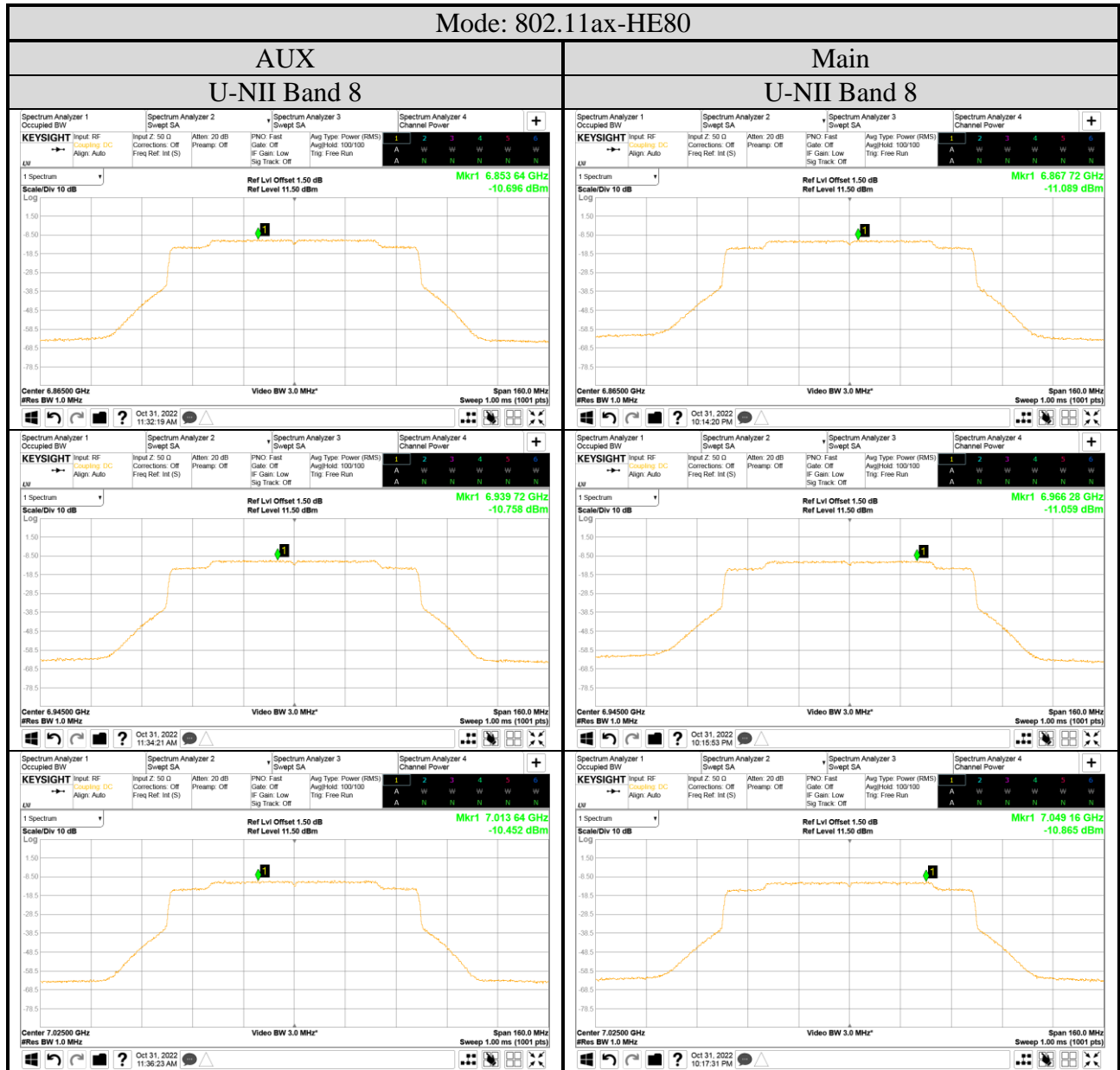


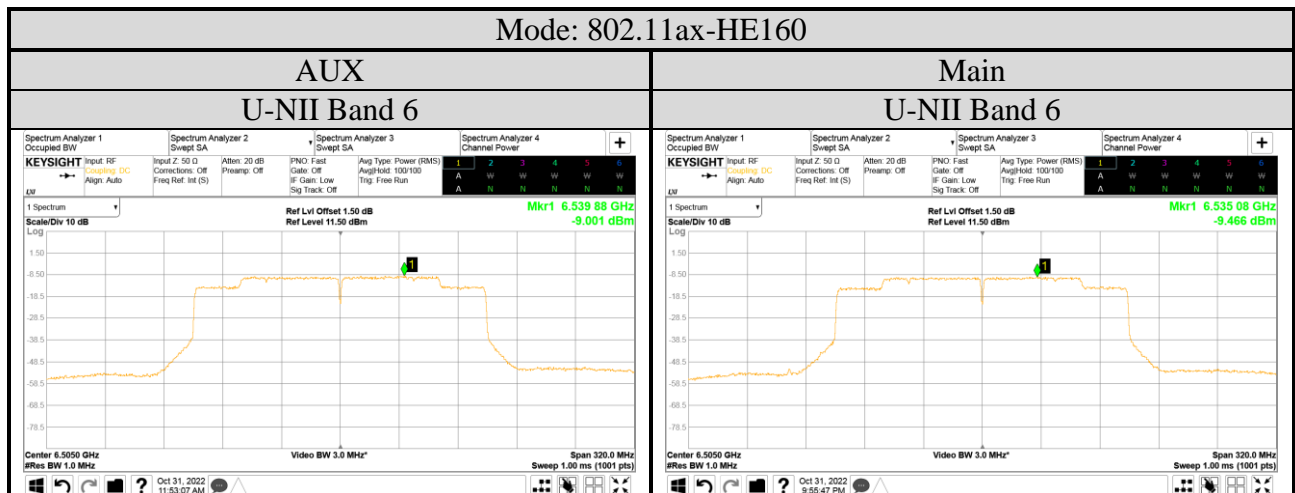
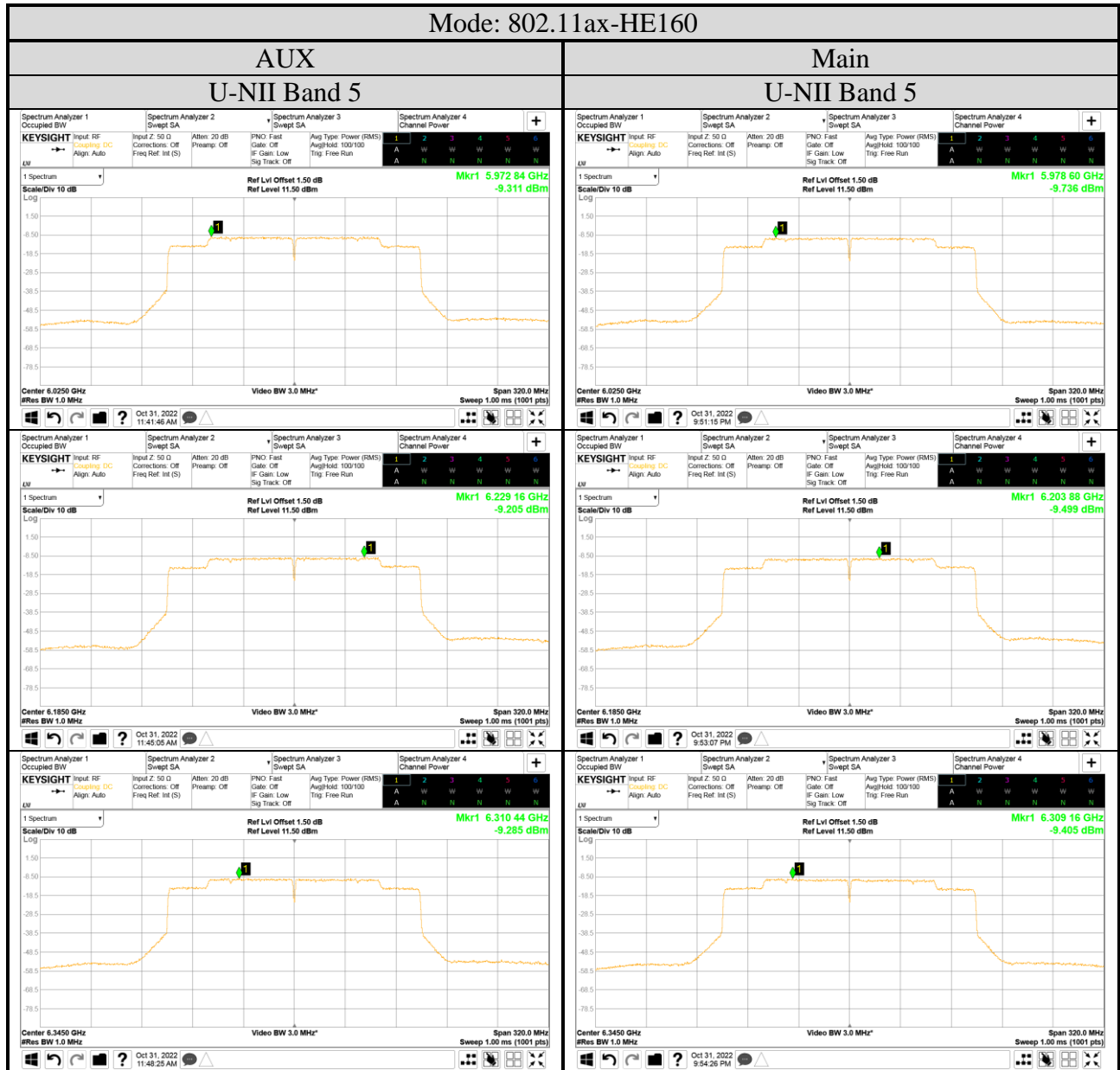


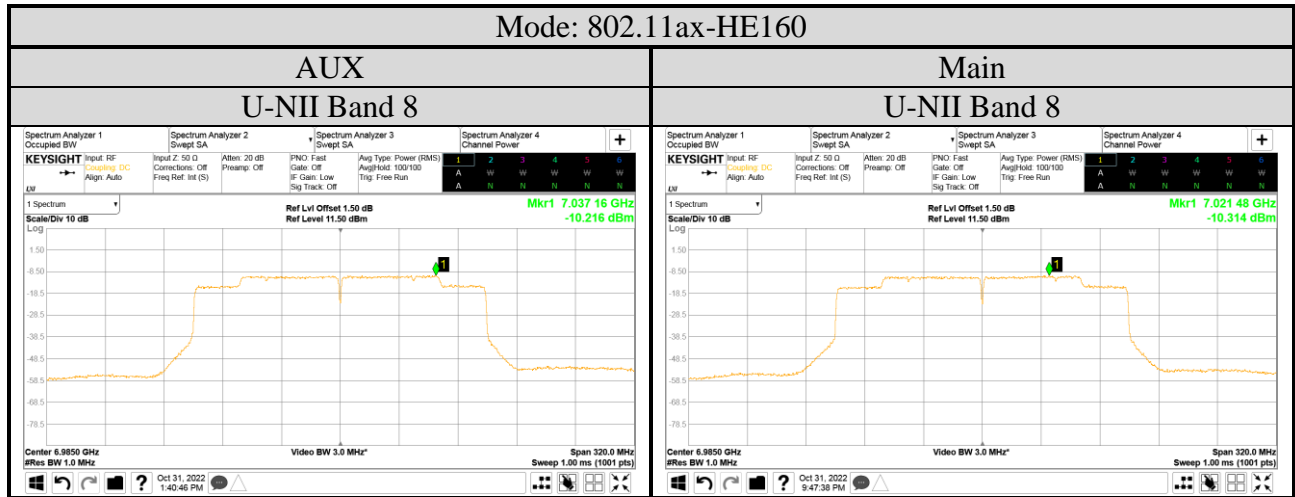
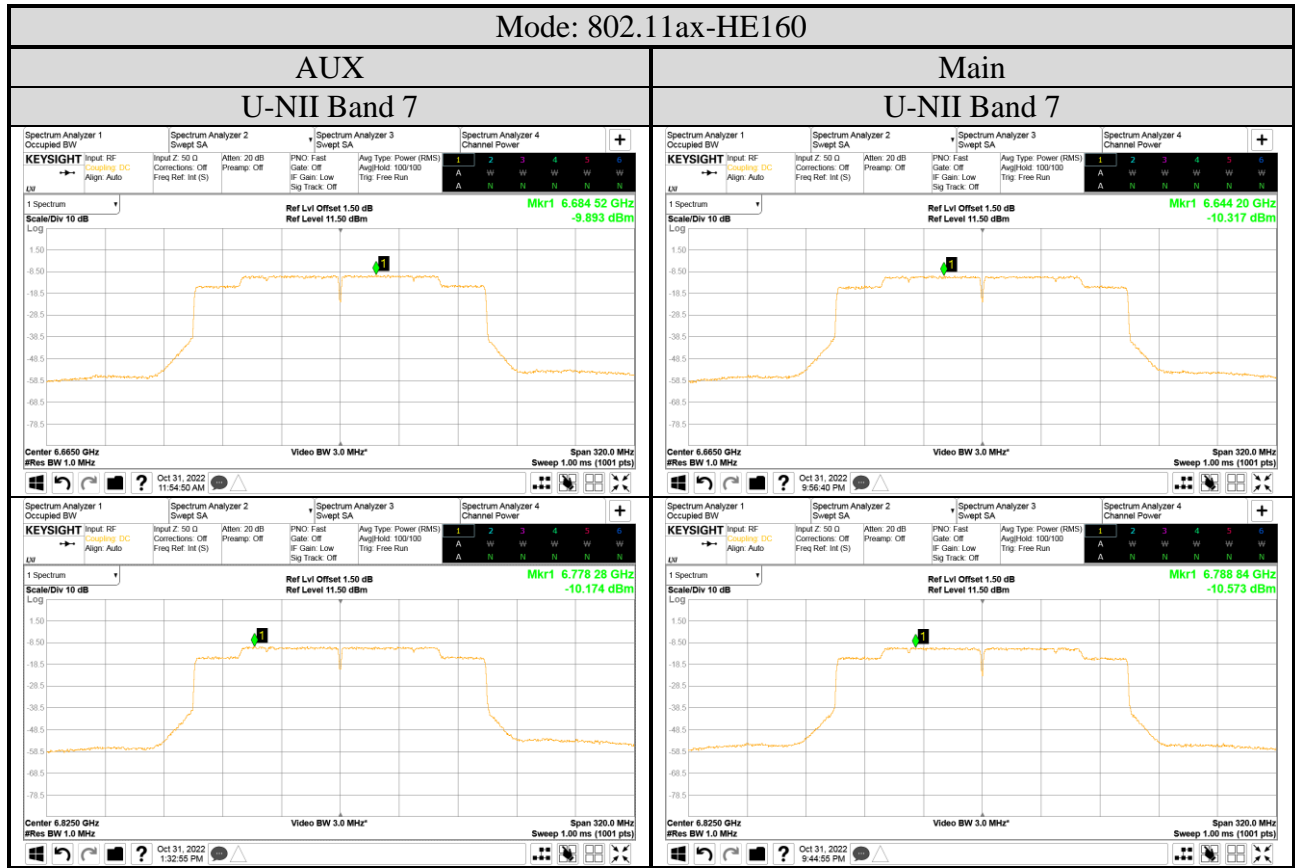












● OFDMA Modulation

