

A.3 MAXIMUM POWER SPECTRAL DENSITY

Test Date	2022/10/31 ~ 11/01	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
- Test SKU: SKU #1 (With INPAQ ANT)

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/1 MHz) ^{Note2}	Limit (dBm/MHz)
			AUX	Main				
802.11ax-HE20	5	5955	-11.357	-12.691	N/A	3.920	-5.043	-1
		6175	-13.336	-12.825		3.920	-6.143	
		6415	-12.084	-12.264		3.860	-5.303	
	6	6435	-11.762	-12.257		3.860	-5.132	
		6475	-11.443	-12.334		3.860	-4.995	
		6515	-11.619	-12.113		3.860	-4.989	
	7	6535	-12.241	-13.052		3.860	-5.757	
		6695	-12.161	-13.616		3.860	-5.958	
		6855	-12.196	-13.667		3.290	-6.569	
	8	6875	-12.103	-13.655		3.290	-6.510	
		6995	-11.252	-12.928		3.290	-5.709	
		7115	-14.599	-15.889		3.290	-8.896	
802.11ax-HE40	5	5965	-11.552	-12.072	N/A	3.920	-4.874	-1
		6165	-11.801	-12.161		3.920	-5.047	
		6405	-11.028	-11.246		3.860	-4.265	
	6	6445	-10.825	-11.326		3.860	-4.198	
		6485	-10.902	-11.699		3.860	-4.412	
		6525	-11.153	-11.727		3.860	-4.560	
	7	6685	-12.155	-12.742		3.860	-5.568	
		6845	-12.163	-13.027		3.290	-6.273	
		6885	-12.191	-12.322		3.290	-5.956	
	8	7005	-11.328	-12.081		3.290	-5.388	
		7085	-11.468	-12.282		3.290	-5.556	

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 = $10 \log[(10^{4.3/10} + 10^{3.5/10})/2]$ = 3.92dBi

6525MHz: Directional gain = $10 \log[(10^{4.2/10} + 10^{3.5/10})/2]$ = 3.86dBi

7125MHz: Directional gain = $10 \log[(10^{4.1/10} + 10^{2.3/10})/2]$ = 3.29dBi

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) ^{Note 2}	Limit (dBm/MHz)
			AUX	Main				
802.11ax-HE80	5	5985	-11.618	-11.351	N/A	3.920	-4.552	-1
		6145	-11.642	-11.762		3.920	-4.771	
		6385	-10.961	-11.411		3.860	-4.310	
	6	6465	-10.845	-11.464		3.860	-4.273	
		6545	-10.918	-11.537		3.860	-4.346	
		6625	-11.482	-12.417		3.860	-5.054	
	7	6705	-11.955	-12.787		3.860	-5.481	
		6785	-12.030	-12.675		3.860	-5.470	
		6865	-12.103	-12.803		3.290	-6.139	
	8	6945	-11.865	-12.291		3.290	-5.772	
		7025	-11.576	-11.656		3.290	-5.316	
		6025	-11.776	-11.635		N/A	3.920	
5	6185	-11.606	-11.712	3.920	-4.728			
	6345	-11.146	-11.520	3.860	-4.459			
	6505	-11.228	-11.455	3.860	-4.470			
7	6665	-12.135	-12.322	3.860	-5.357			
	6825	-12.102	-12.267	3.290	-5.883			
8	6985	-11.744	-11.906	3.290	-5.524			

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:

$$5925\text{MHz: Directional gain} = 10 \log[(10^{4.3/10} + 10^{3.5/10})/2] = 3.92\text{dBi}$$

$$6525\text{MHz: Directional gain} = 10 \log[(10^{4.2/10} + 10^{3.5/10})/2] = 3.86\text{dBi}$$

$$7125\text{MHz: Directional gain} = 10 \log[(10^{4.1/10} + 10^{2.3/10})/2] = 3.29\text{dBi}$$

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

● **Test SKU: SKU #1 (With LUXSHARE-ICT ANT)**

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/1 MHz) ^{Note2}	Limit (dBm/MHz)	
			AUX	Main					
802.11ax-HE20	5	5955	-11.357	-12.691	N/A	3.920	-5.043	-1	
		6175	-13.336	-12.825		3.920	-6.143		
		6415	-12.084	-12.264		2.480	-6.683		
	6	6435	-11.762	-12.257		2.480	-6.512		
		6475	-11.443	-12.334		2.480	-6.375		
		6515	-11.619	-12.113		2.480	-6.369		
	7	6535	-12.241	-13.052		2.480	-7.137		
		6695	-12.161	-13.616		2.480	-7.338		
		6855	-12.196	-13.667		-2.990	-12.849		
	8	6875	-12.103	-13.655		-2.990	-12.790		
		6995	-11.252	-12.928		-2.990	-11.989		
		7115	-14.599	-15.889		-2.990	-15.176		
	802.11ax-HE40	5	5965	-11.552		-12.072	3.920		-4.874
			6165	-11.801		-12.161	3.920		-5.047
			6405	-11.028		-11.246	2.480		-5.645
6		6445	-10.825	-11.326	2.480	-5.578			
		6485	-10.902	-11.699	2.480	-5.792			
7		6525	-11.153	-11.727	2.480	-5.940			
		6685	-12.155	-12.742	2.480	-6.948			
8		6845	-12.163	-13.027	-2.990	-12.553			
		6885	-12.191	-12.322	-2.990	-12.236			
		7005	-11.328	-12.081	-2.990	-11.668			
		7085	-11.468	-12.282	-2.990	-11.836			

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 = $10 \log[(10^{4.7/10} + 10^{2.9/10})/2]$ = 3.92dBi
 6525MHz: Directional gain = $10 \log[(10^{1.3/10} + 10^{3.4/10})/2]$ = 2.48dBi
 7125MHz: Directional gain = $10 \log[(10^{-1.6/10} + 10^{-4.9/10})/2]$ = -2.99dBi
 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) ^{Note 2}	Limit (dBm/MHz)
			AUX	Main				
802.11ax-HE80	5	5985	-11.618	-11.351	N/A	3.920	-4.552	-1
		6145	-11.642	-11.762		3.920	-4.771	
		6385	-10.961	-11.411		2.480	-5.690	
	6	6465	-10.845	-11.464		2.480	-5.653	
		6545	-10.918	-11.537		2.480	-5.726	
		6625	-11.482	-12.417		2.480	-6.434	
	7	6705	-11.955	-12.787		2.480	-6.861	
		6785	-12.030	-12.675		2.480	-6.850	
		6865	-12.103	-12.803		-2.990	-12.419	
	8	6945	-11.865	-12.291		-2.990	-12.052	
		7025	-11.576	-11.656		-2.990	-11.596	
		6025	-11.776	-11.635		N/A	3.920	
5	6185	-11.606	-11.712	3.920	-4.728			
	6345	-11.146	-11.520	2.480	-5.839			
	6505	-11.228	-11.455	2.480	-5.850			
7	6665	-12.135	-12.322	2.480	-6.737			
	6825	-12.102	-12.267	-2.990	-12.163			
	6985	-11.744	-11.906	-2.990	-11.804			

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

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

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$$6525\text{MHz: Directional gain} = 10 \log[(10^{1.3/10} + 10^{3.4/10})/2] = 2.48\text{dBi}$$

$$7125\text{MHz: Directional gain} = 10 \log[(10^{-1.6/10} + 10^{-4.9/10})/2] = -2.99\text{dBi}$$

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

- OFDMA Modulation
- Test SKU: SKU #1 (With INPAQ ANT)

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	-10.849	-10.413	0.278	3.92	-3.417	-1
52T	44	802.11ax-HE80	5	5985	-9.471	-9.094	0.146	3.92	-2.202	
106T	56	802.11ax-HE80	5	5985	-9.315	-9.014	N/A	3.92	-2.232	
242T	62	802.11ax-HE80	5	5985	-9.717	-11.702	0.150	3.92	-3.517	
484T	65	802.11ax-HE40	5	5965	-10.003	-10.121	N/A	3.92	-3.131	
996T	67	802.11ax-HE160	5	6345	-9.332	-10.153	0.159	3.86	-2.694	

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
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 7125MHz: Directional gain = $10 \log[(10^{4.1/10} + 10^{2.3/10})/2]$ = 3.29dBi
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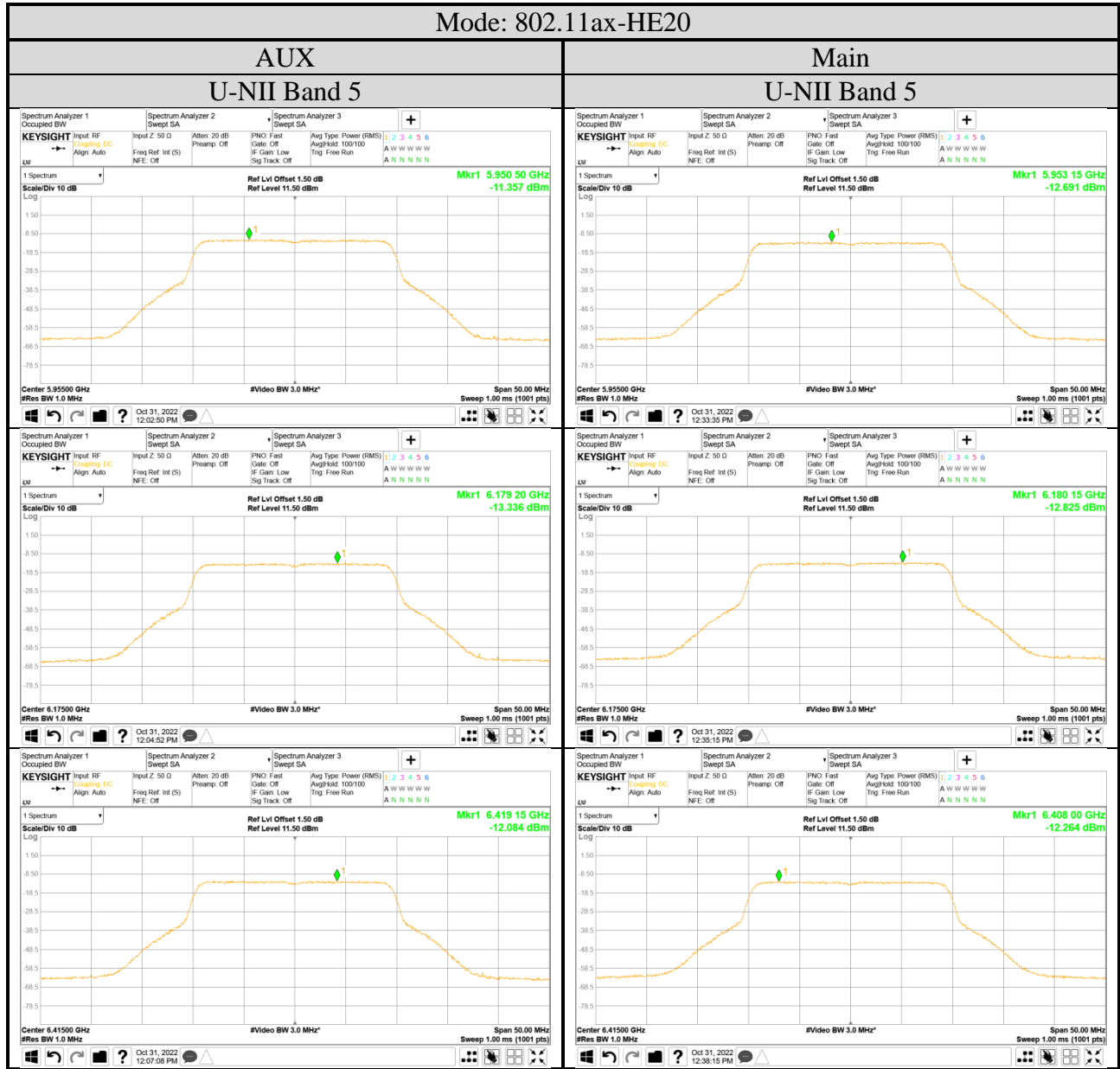
- Test SKU: SKU #1 (With LUXSHARE-ICT ANT)

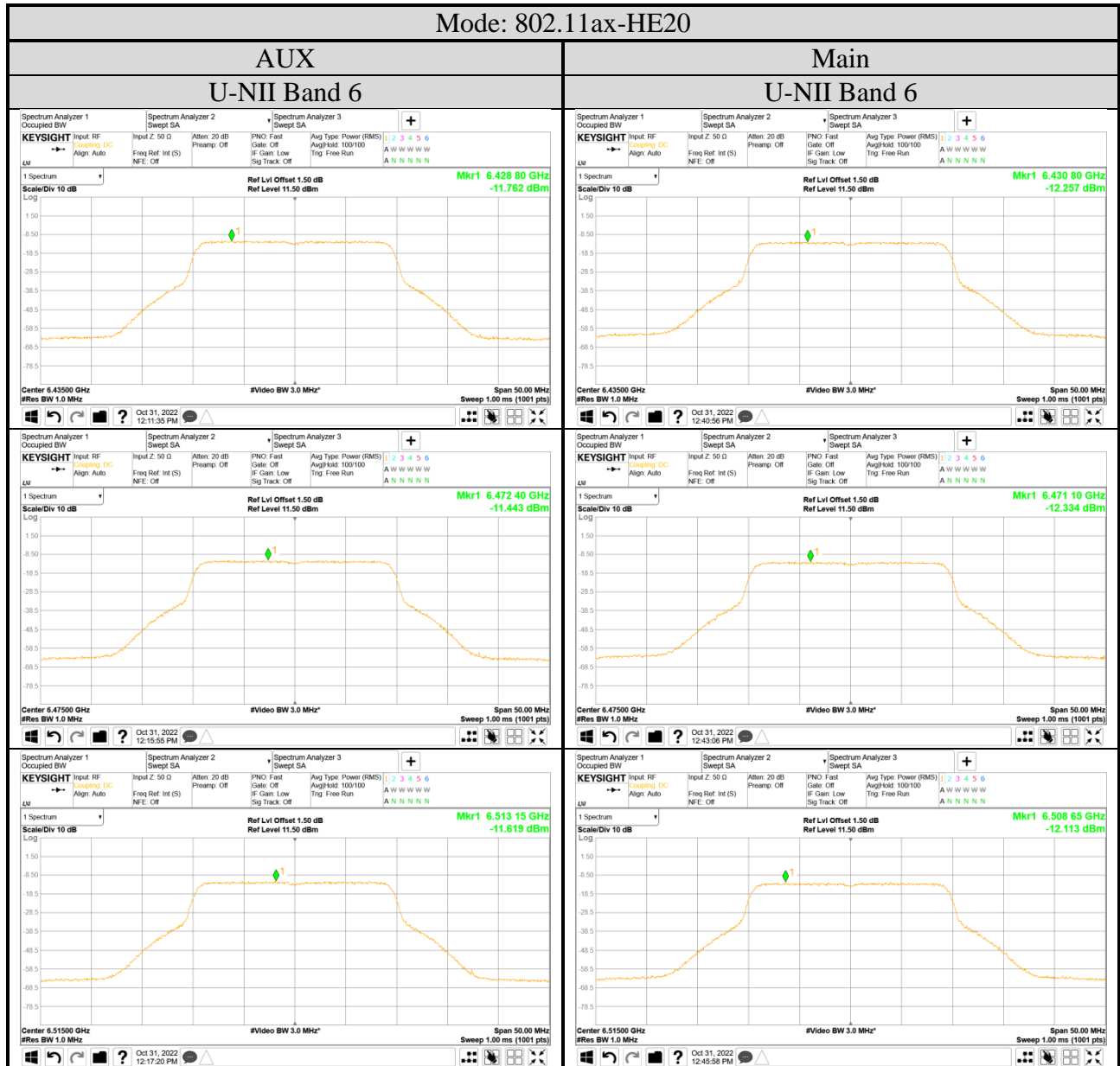
Tones	RU Index	Modulation Type	U-NII Band	Centre Frequency (MHz)	Power Spectral Density (dBm/MHz)		Duty Cycle Factor (dB) 10log(1/X)	Directional Gain (dBi) Note3	Total Power Spectral Density (dBm/1MHz) Note2	Limit (dBm/MHz)
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106T	56	802.11ax-HE80	5	5985	-9.315	-9.014	N/A	3.92	-2.232	
242T	62	802.11ax-HE80	5	5985	-9.717	-11.702	0.150	3.92	-3.517	
484T	65	802.11ax-HE40	5	5965	-10.003	-10.121	N/A	3.92	-3.131	
996T	67	802.11ax-HE160	5	6345	-9.332	-10.153	0.159	2.48	-4.074	

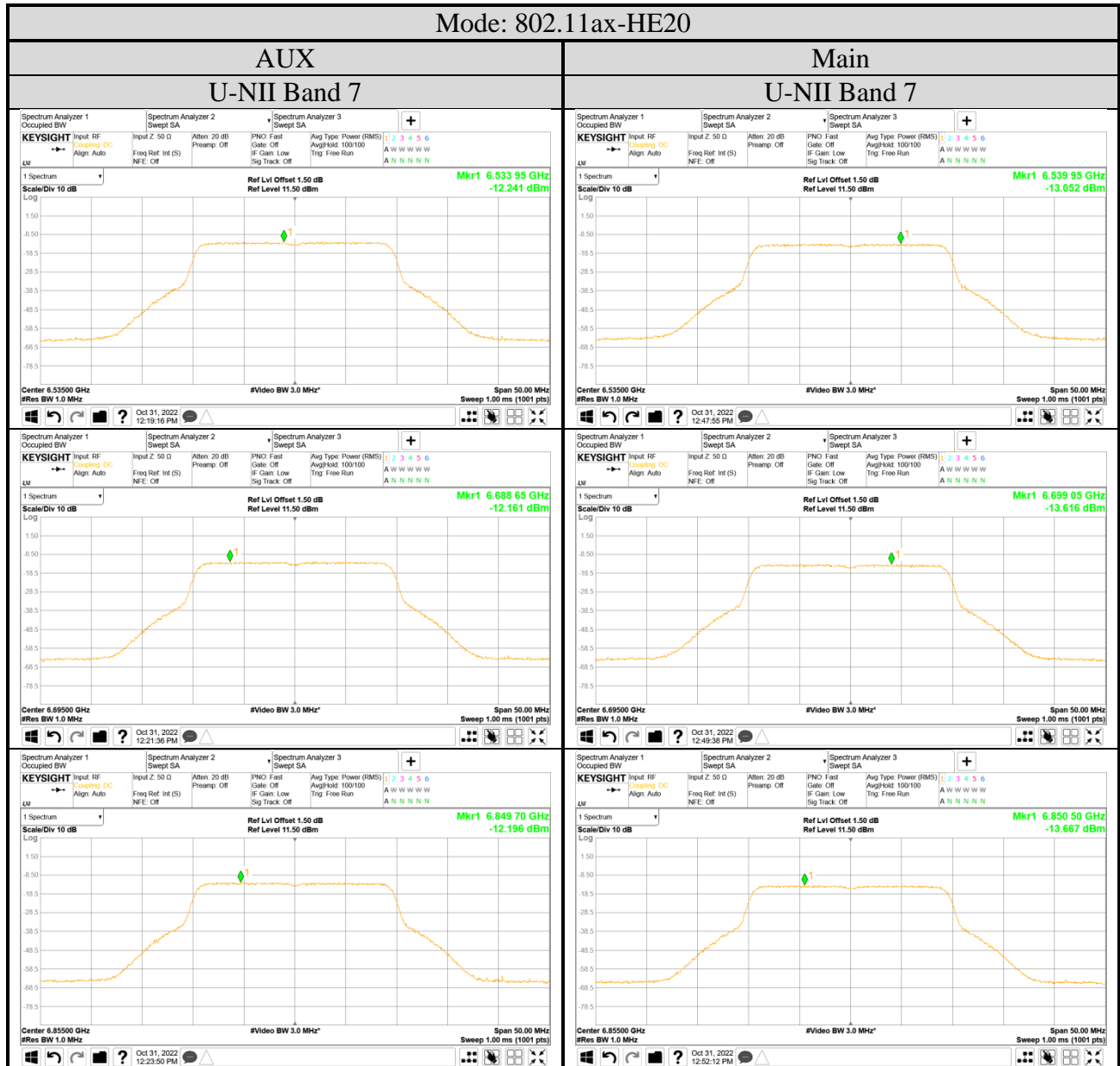
Note: 1. All results have been included cable loss [Please refer to KDB 662911 E 2) c)]
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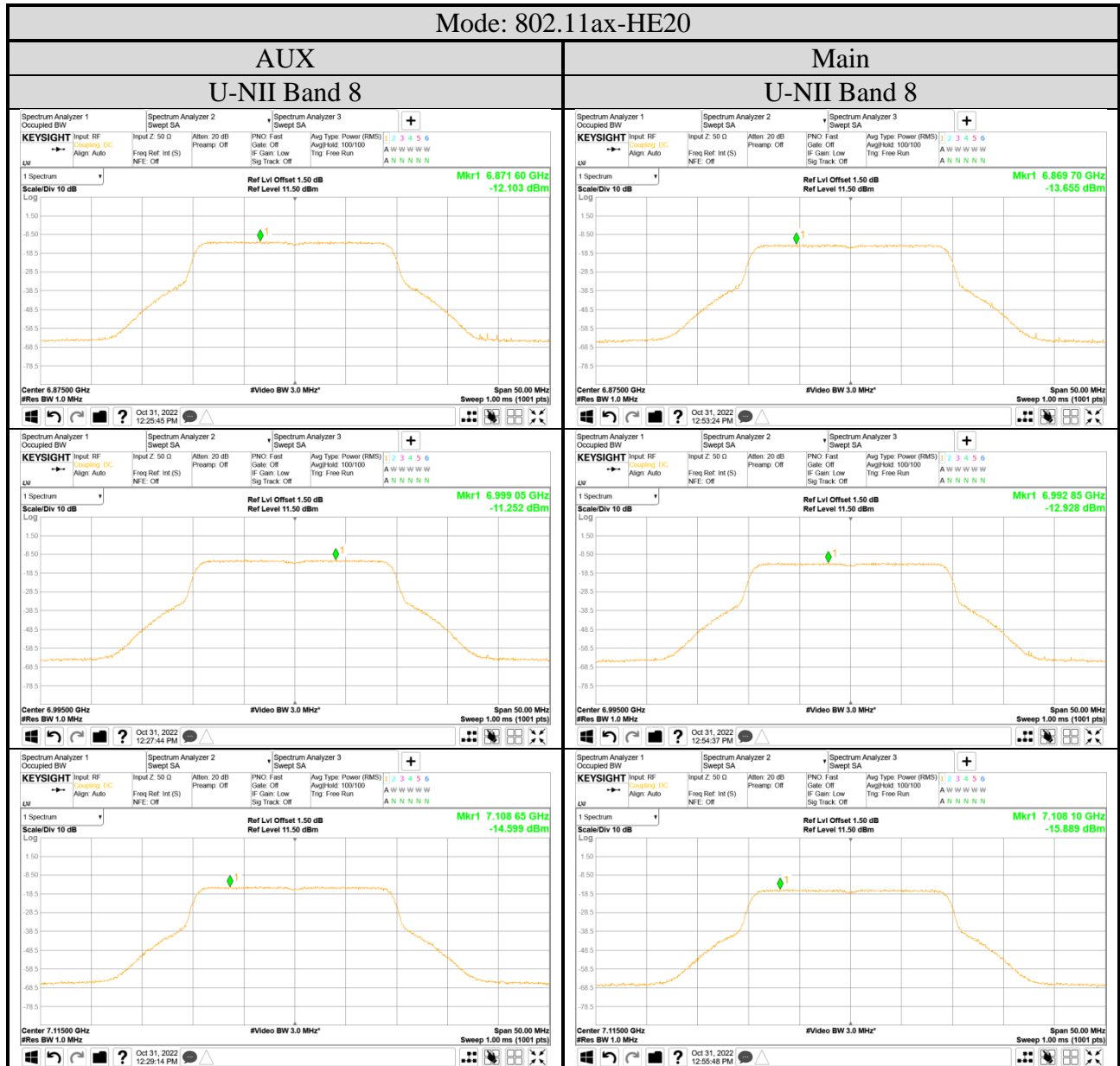
A.3.2 Measurement Plots

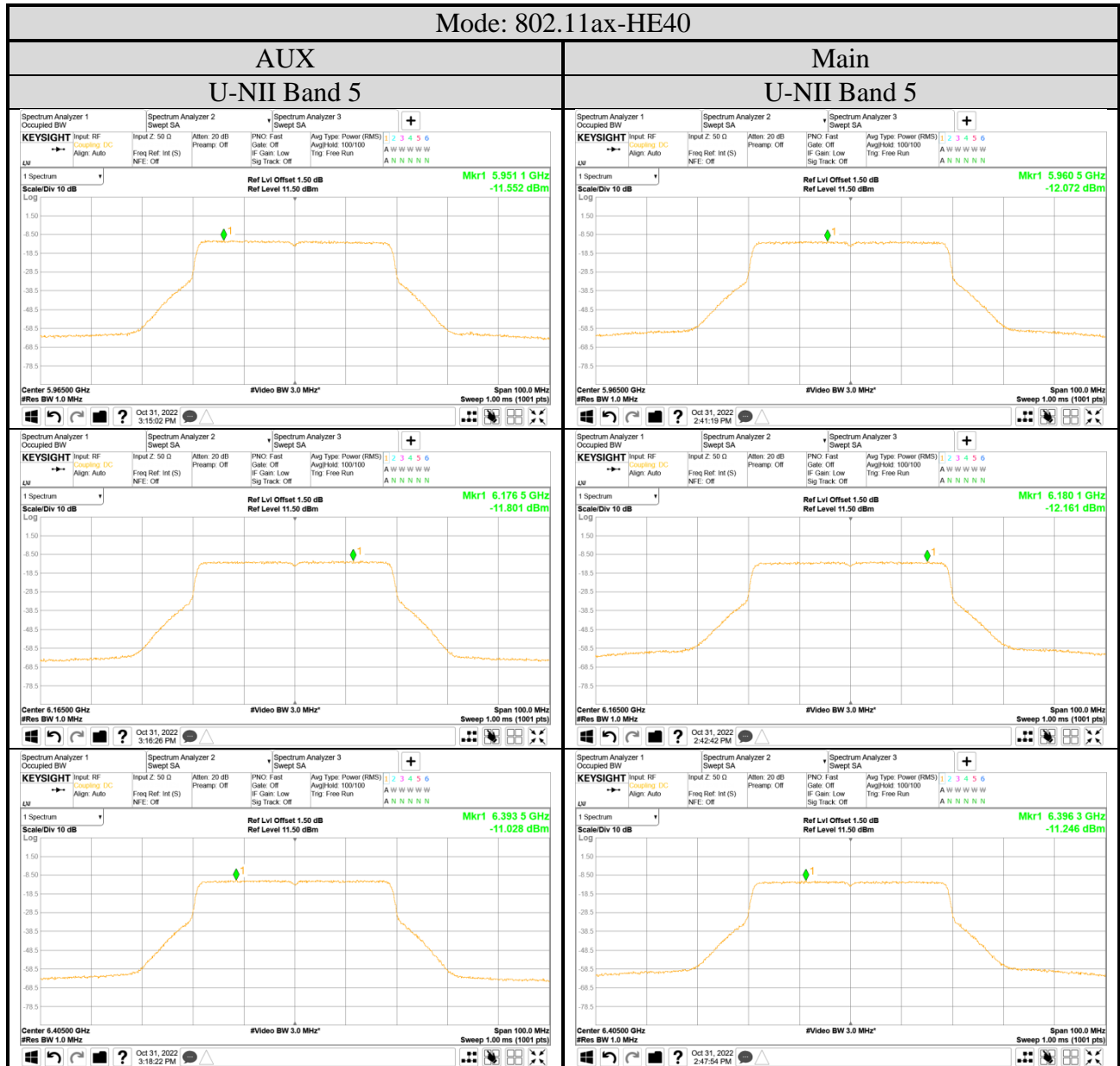
- OFDM Modulation

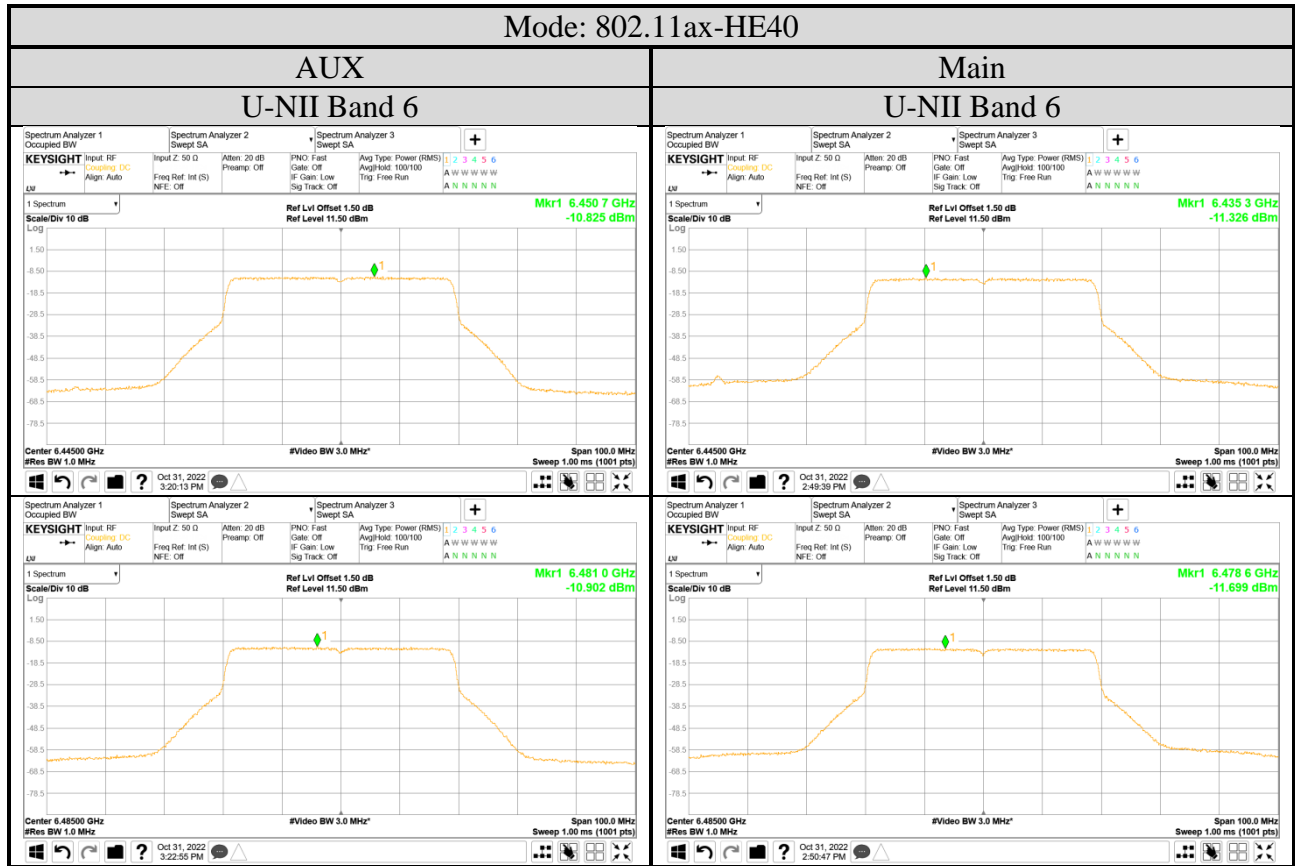


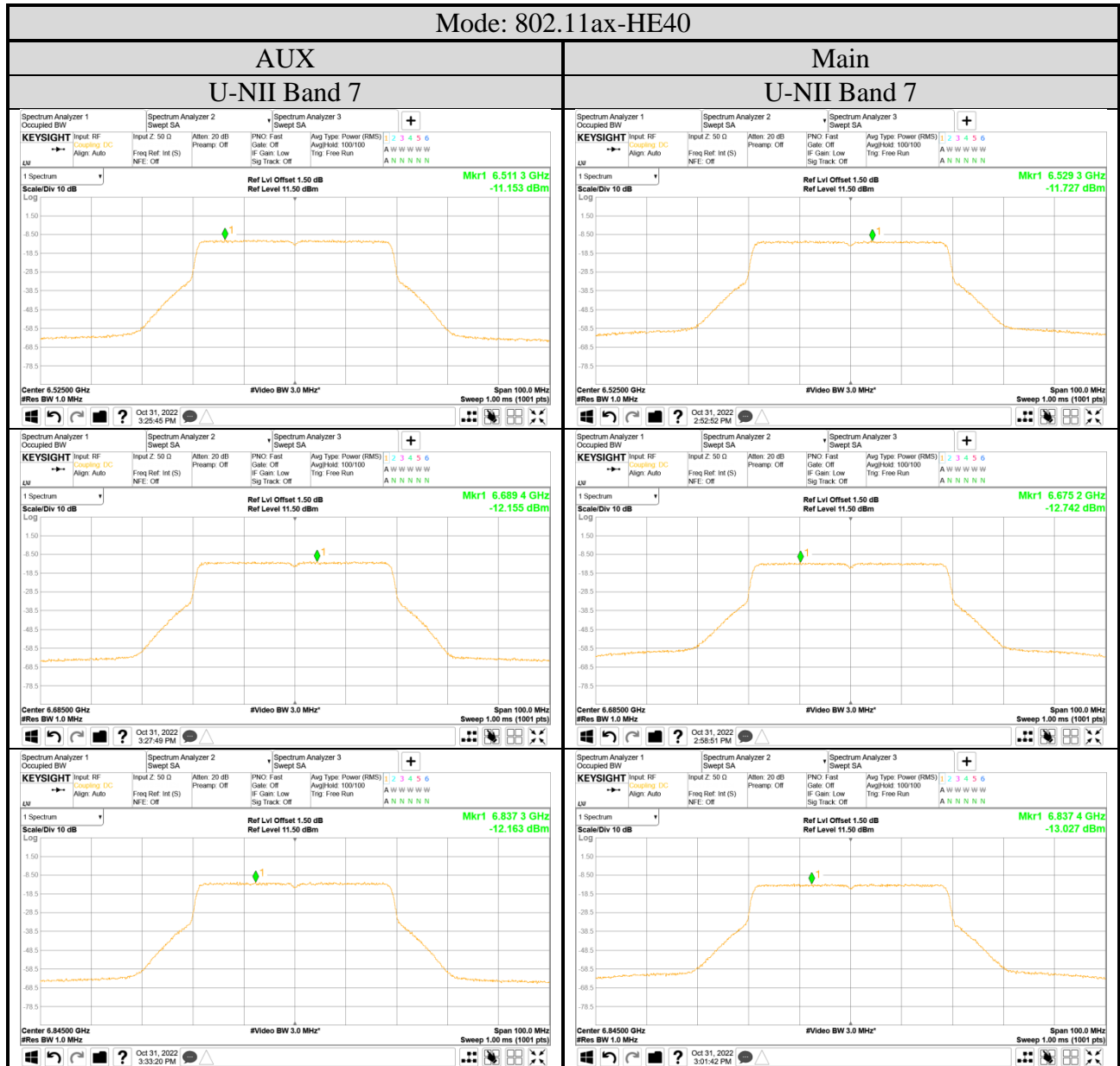


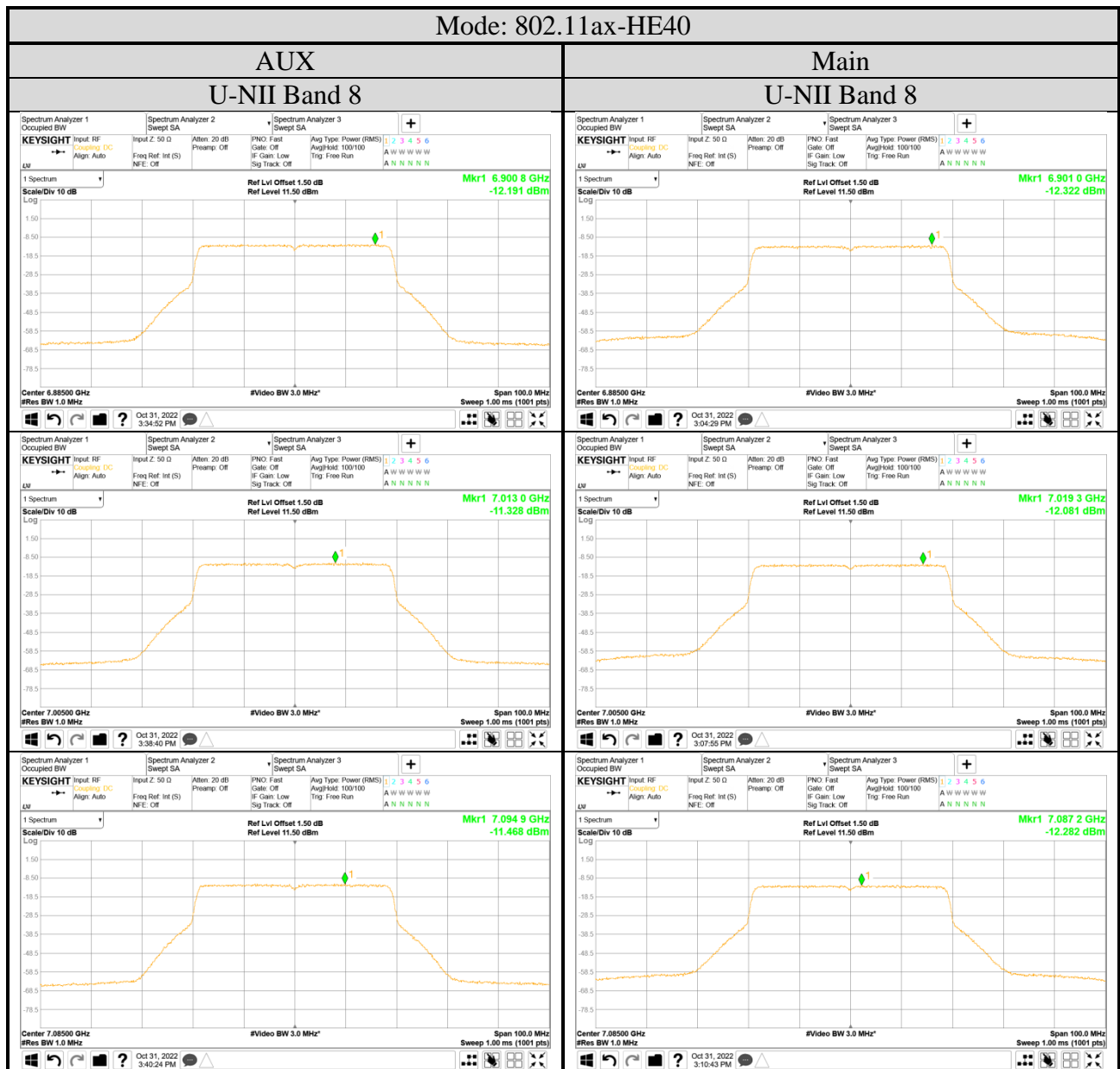


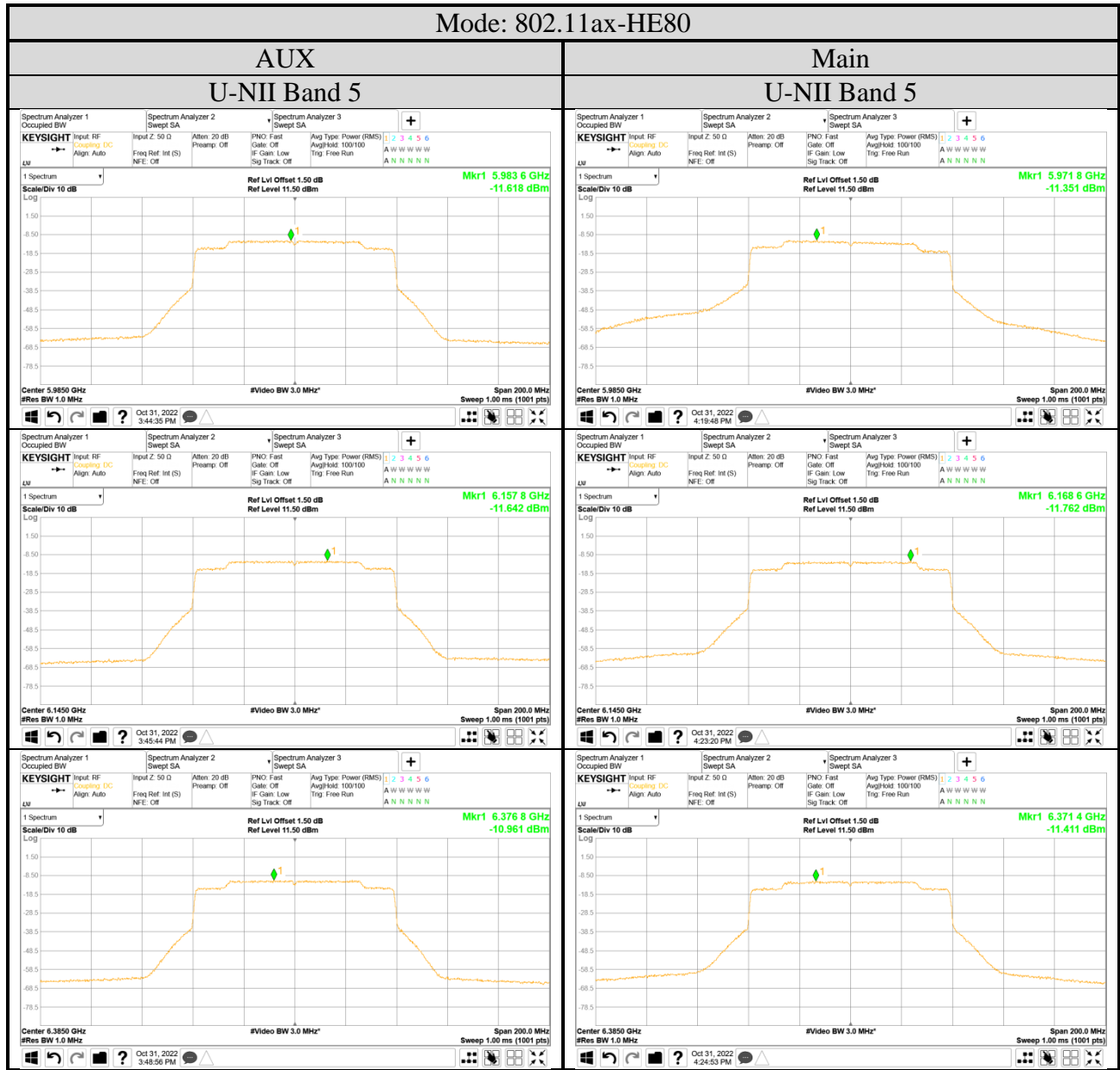


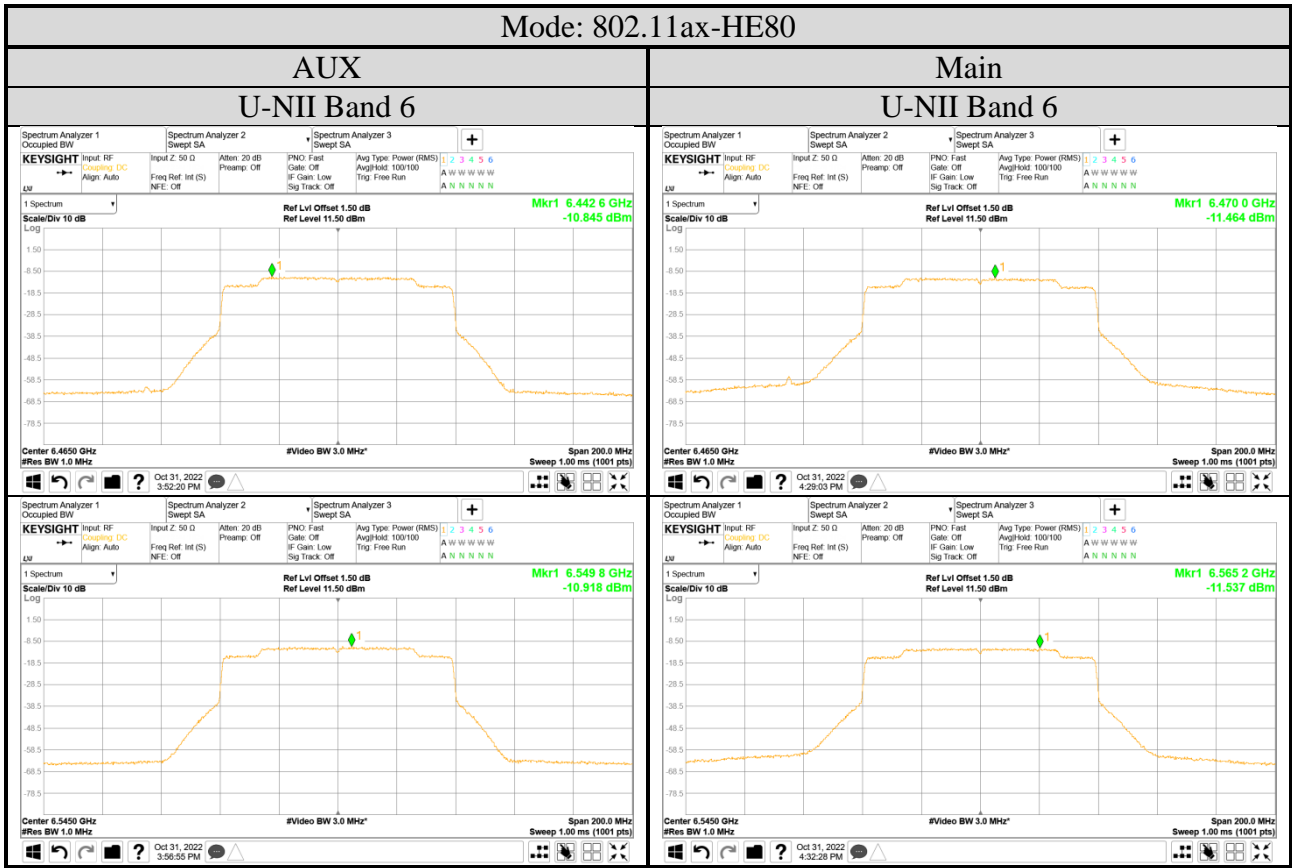


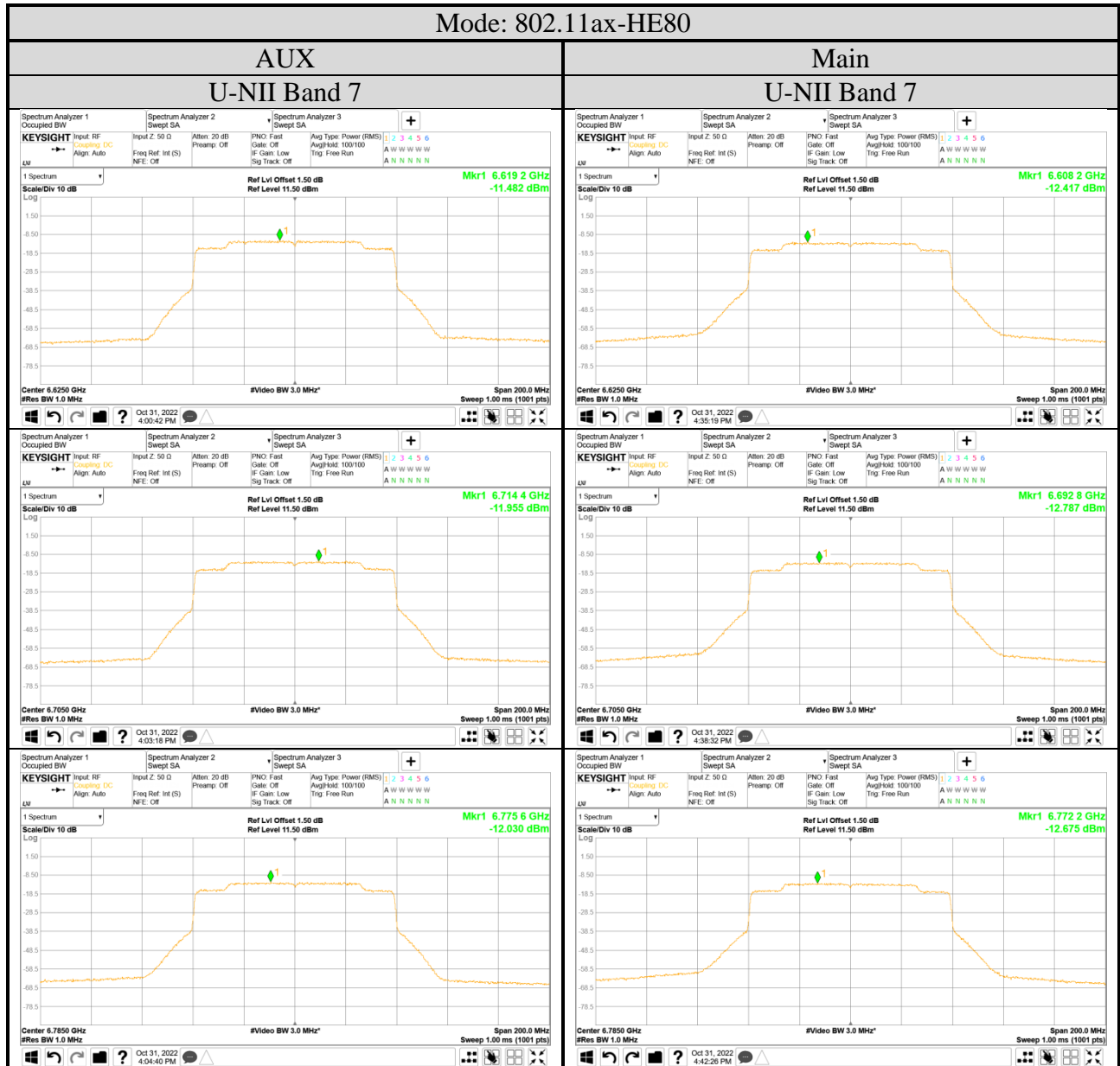


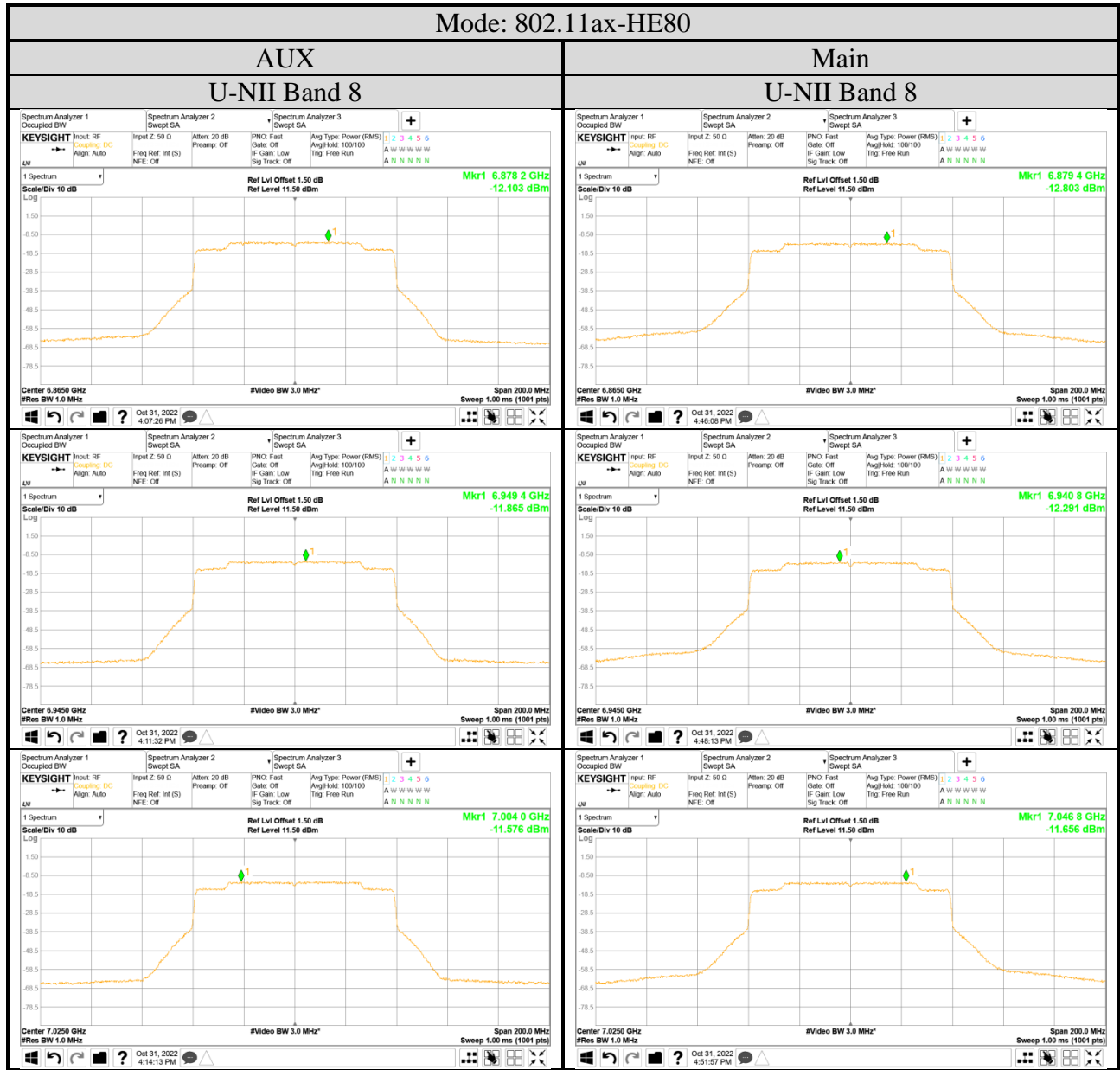


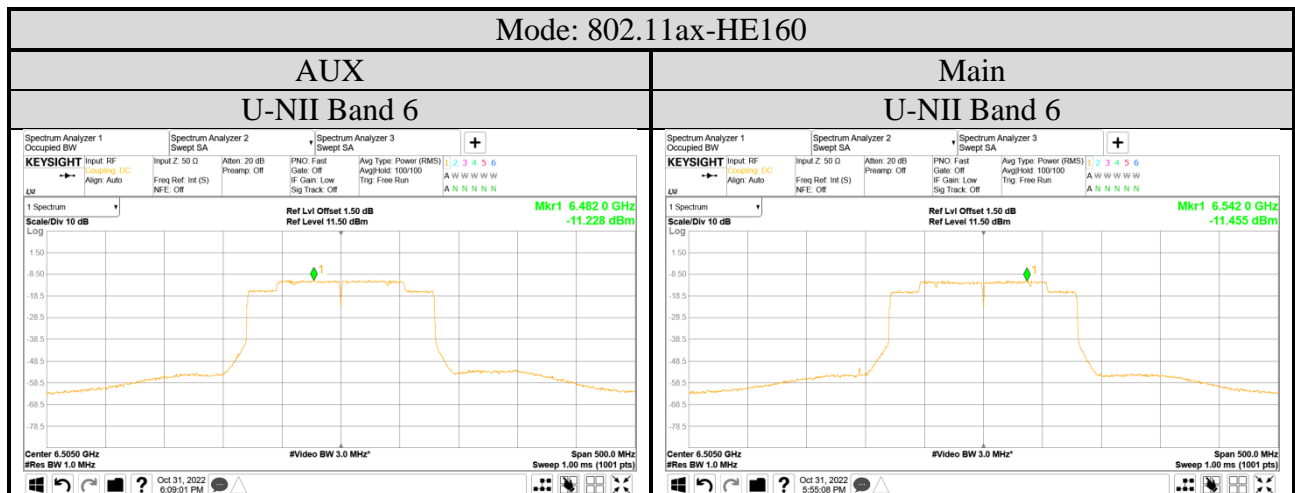
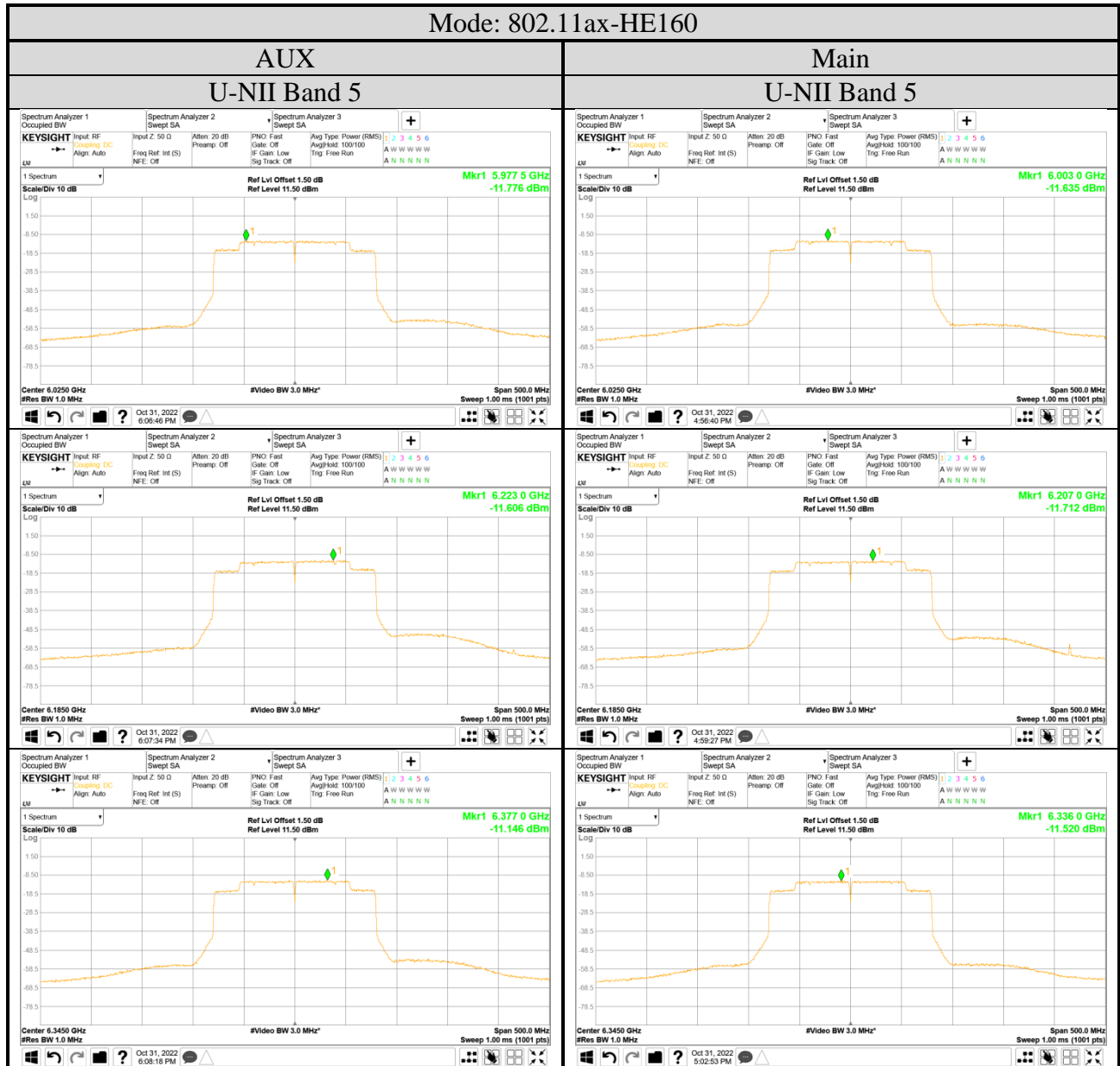


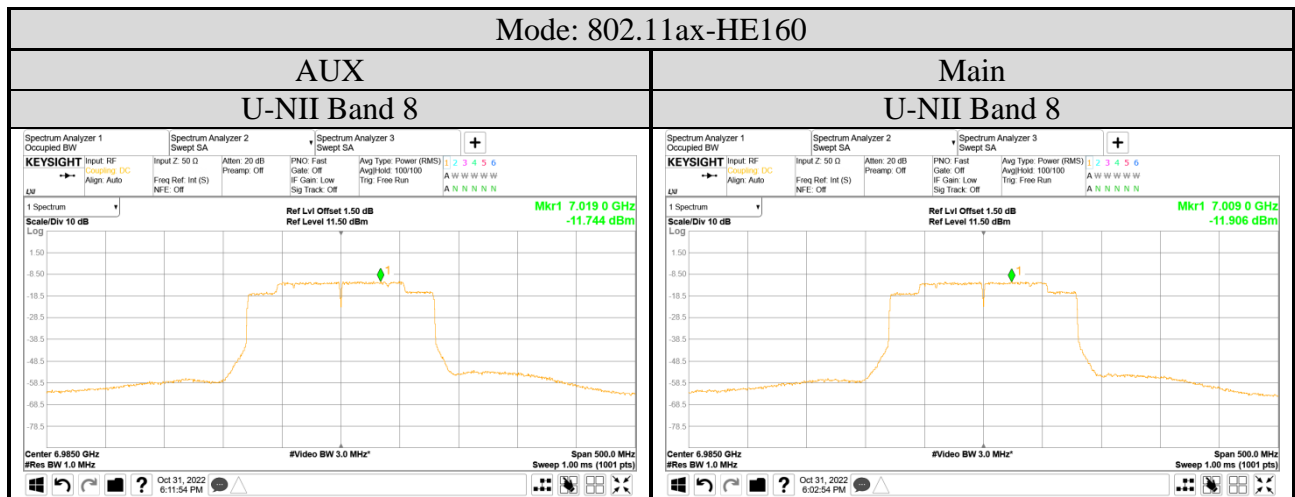
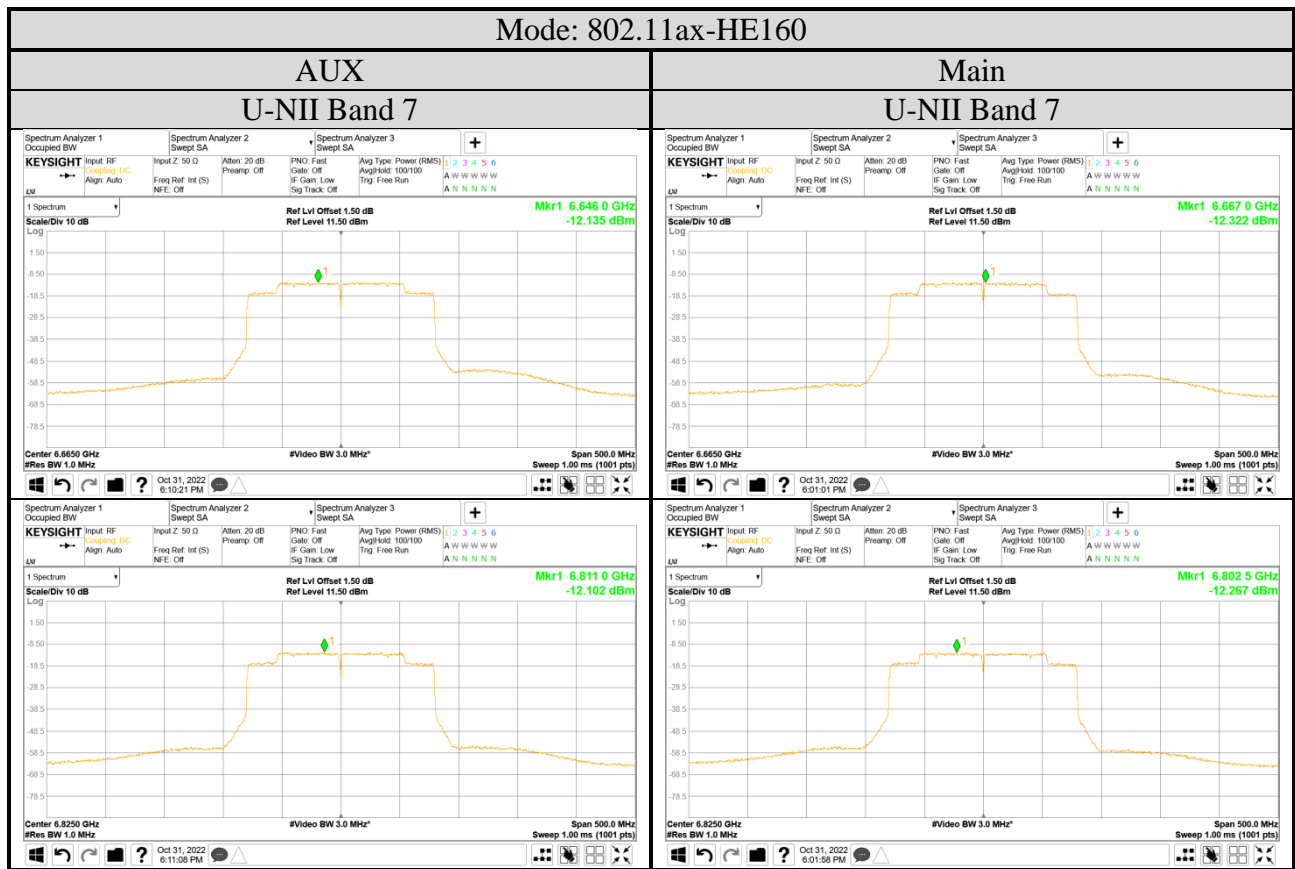












● OFDMA Modulation

