

A.3 MAXIMUM POWER SPECTRAL DENSITY

Test Date	2022/07/12~13	Temp./Hum.	25~26°C/42~50%
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) Note 2	Limit
			AUX	Main				
802.11ax-HE20	5	5955	-9.475	-9.993	N/A	2.15	-4.566	1 dBm/MHz
		6175	-9.543	-10.212	N/A	2.15	-4.704	
		6415	-9.484	-10.616	N/A	2.05	-4.953	
	6	6435	-9.448	-10.791	N/A	2.05	-5.007	
		6475	-9.557	-10.409	N/A	2.05	-4.902	
		6515	-9.634	-10.083	N/A	2.05	-4.792	
	7	6535	-11.940	-12.866	N/A	2.05	-7.318	
		6695	-12.814	-13.152	N/A	2.05	-7.919	
		6855	-12.364	-13.240	N/A	2.00	-7.770	
	8	6875	-12.536	-13.130	N/A	2.00	-7.813	
		6995	-11.542	-12.032	N/A	2.00	-6.770	
		7115	-15.087	-15.010	N/A	2.00	-10.038	
802.11ax-HE40	5	5965	-8.663	-9.520	N/A	2.15	-5.910	
		6165	-9.511	-9.992	N/A	2.15	-4.585	
		6405	-9.103	-10.051	N/A	2.05	-4.491	
	6	6445	-9.372	-10.431	N/A	2.05	-4.809	
		6485	-9.557	-10.207	N/A	2.05	-4.810	
		6525	-9.646	-9.992	N/A	2.05	-4.755	
	7	6685	-10.191	-10.506	N/A	2.05	-5.285	
		6845	-10.161	-11.030	N/A	2.00	-5.564	
		6885	-10.318	-10.814	N/A	2.00	-5.549	
	8	7005	-10.068	-10.352	N/A	2.00	-5.197	
		7085	-9.734	-10.399	N/A	2.00	-5.043	
		7125	-9.734	-10.399	N/A	2.00	-5.043	
802.11ax-HE80	5	5985	-9.295	-9.812	N/A	2.15	-4.386	
		6145	-9.237	-9.777	N/A	2.15	-4.338	
		6385	-9.257	-10.315	N/A	2.05	-4.694	
	6	6465	-9.271	-10.208	N/A	2.05	-4.654	
		6545	-9.078	-9.980	N/A	2.05	-4.445	
		6625	-9.839	-11.183	N/A	2.05	-5.399	
	7	6705	-9.901	-10.350	N/A	2.05	-5.059	
		6785	-10.051	-10.629	N/A	2.05	-5.270	
		6865	-10.019	-10.939	N/A	2.00	-5.444	
	8	6945	-10.020	-10.900	N/A	2.00	-5.427	
		7025	-10.347	-10.652	N/A	2.00	-5.487	
		7065	-10.347	-10.652	N/A	2.00	-5.487	
802.11ax-HE160	5	6025	-9.482	-9.192	N/A	2.15	-4.174	
		6185	-8.983	-8.957	N/A	2.15	-3.810	
		6345	-9.053	-9.088	N/A	2.05	-4.010	
	6	6505	-9.008	-9.035	N/A	2.05	-3.961	
		6665	-9.621	-10.040	N/A	2.05	-4.765	
	7	6825	-10.005	-10.332	N/A	2.00	-5.155	
		6865	-10.005	-10.332	N/A	2.00	-5.155	
		6985	-9.876	-9.809	N/A	2.00	-4.832	

Note: 1. All results have been included cable.
 2. According to KDB 662911 D01 E2)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) Note 2	Limit
					AUX	Main				
26T	18	802.11ax-HE80	5	5985	-9.583	-10.253	0.141	2.15	-4.604	1dBm/MHz
52T	44	802.11ax-HE80	5	5985	-7.882	-8.694	0.141	2.15	-2.968	
106T	54	802.11ax-HE20	5	5955	-7.875	-8.608	0.141	2.15	-2.925	
242T	62	802.11ax-HE160	5	6185	-8.585	-9.536	0.141	2.15	-3.733	
484T	66	802.11ax-HE160	5	6025	-8.847	-9.598	0.150	2.15	-3.896	
996T	67	802.11ax-HE80	5	5985	-8.626	-8.971	0.141	2.15	-3.494	

Note: 1. All results have been included cable.

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:

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

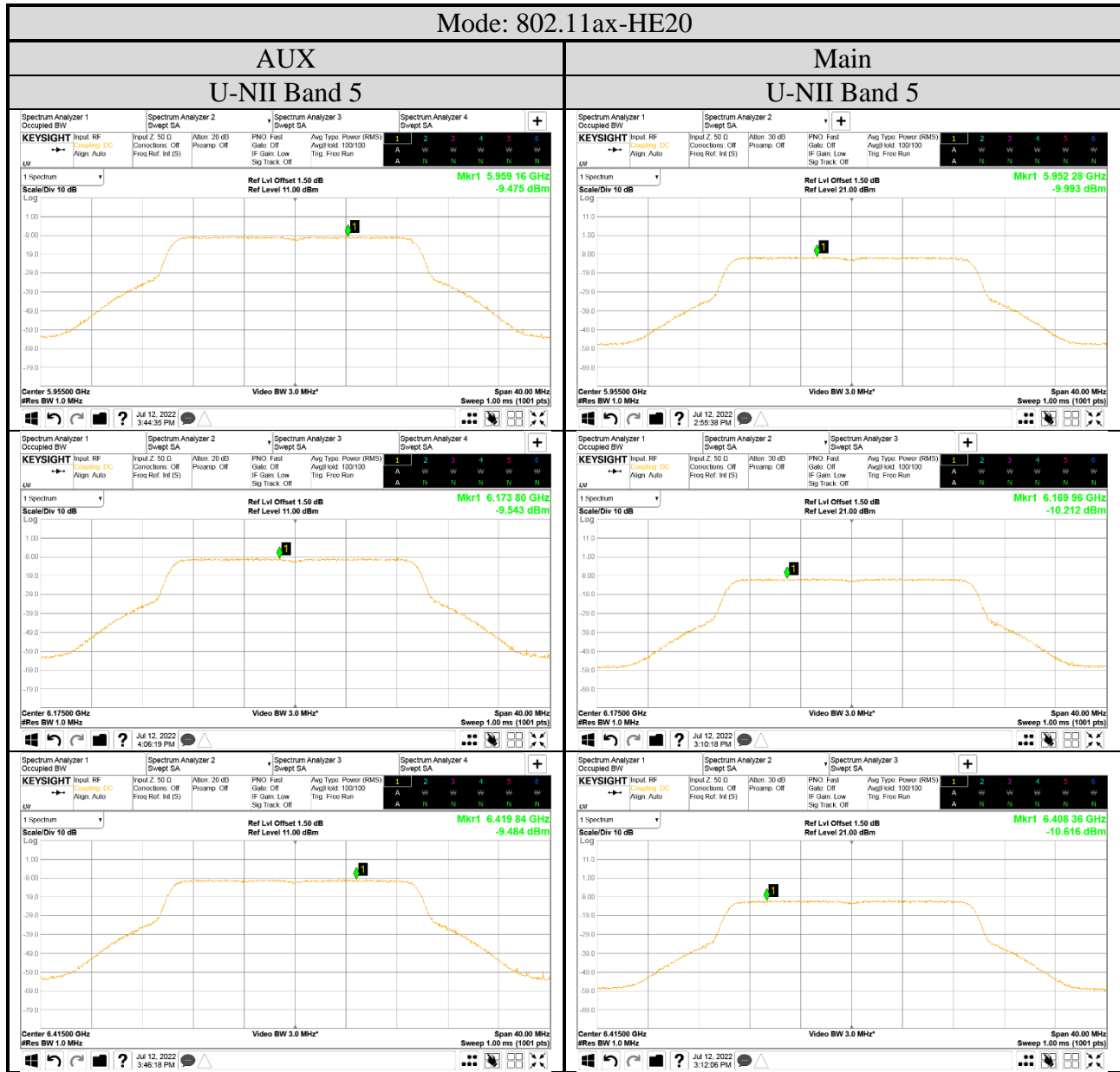
$$6525\text{MHz: } 10 \log[(10^{1.9/10} + 10^{2.2/10})/2] = 2.05\text{dBi}$$

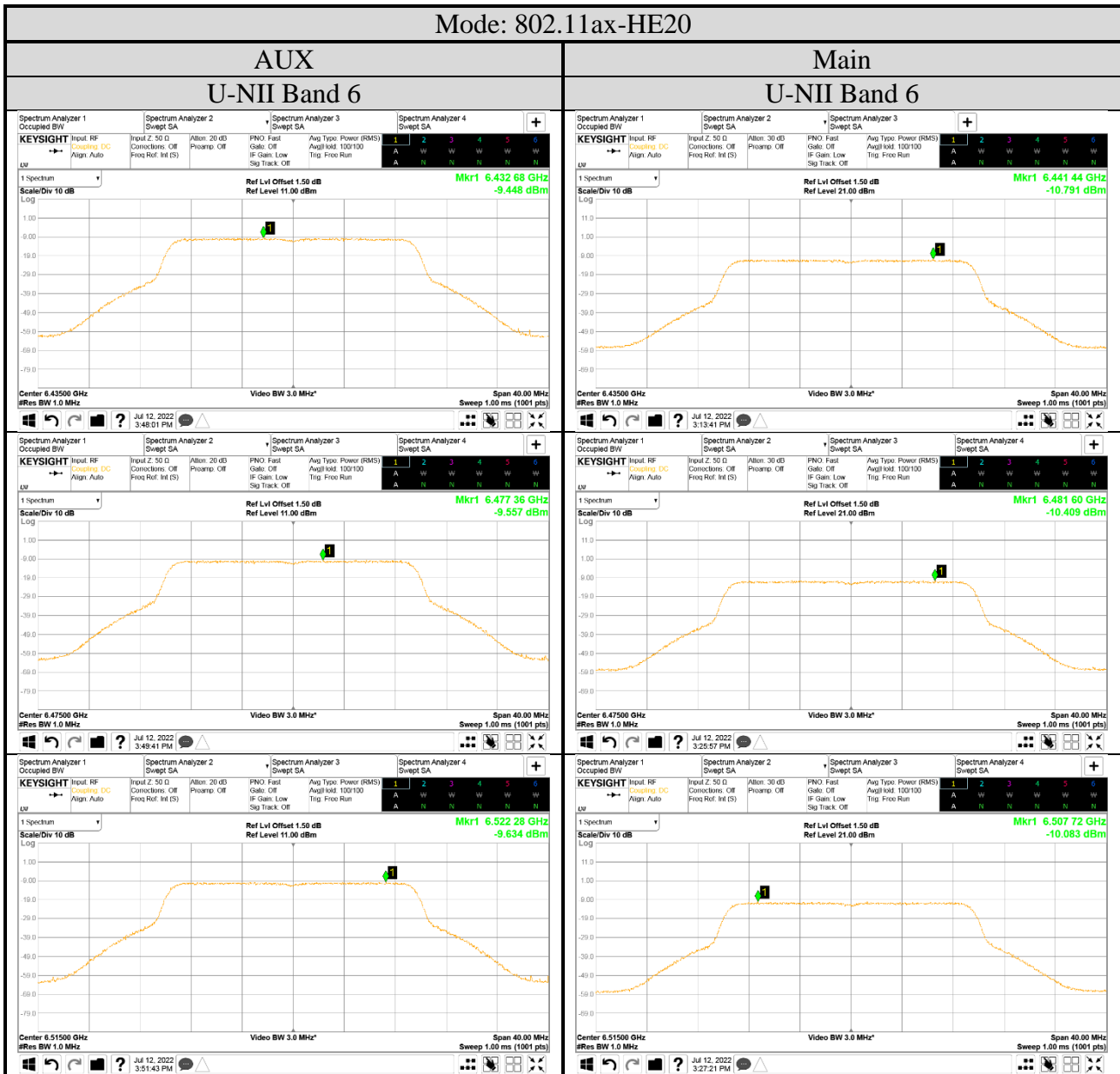
$$7125\text{MHz: } 10 \log[(10^{1.9/10} + 10^{2.1/10})/2] = 2.00\text{dBi}$$

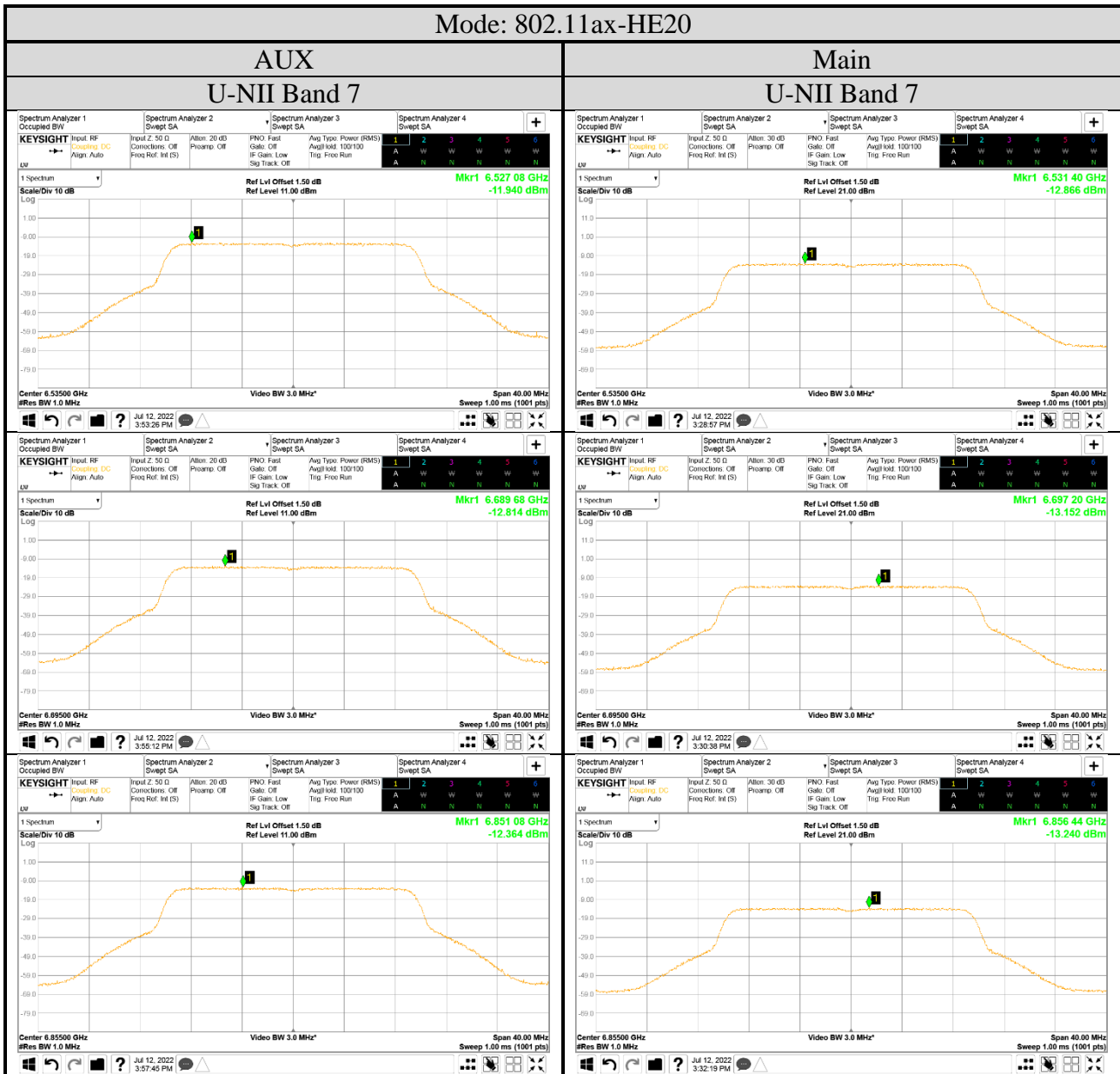
The MIMO is uncorrelated and supported SDM(Spatial Division Multiplexing) mode only. This radio device doesn't support beamforming and Cyclic Delay Diversity (CDD).

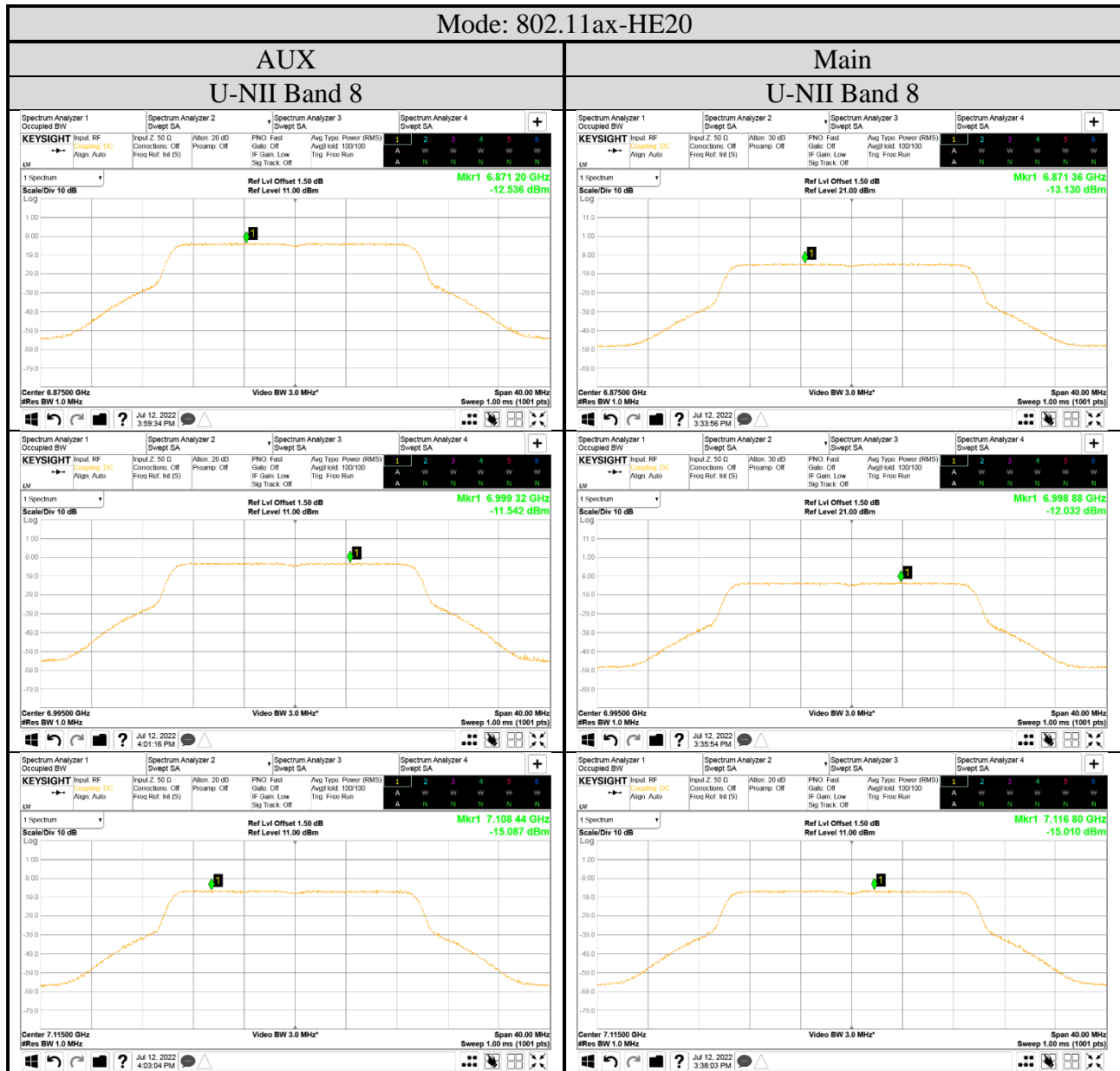
A.3.2 Measurement Plots

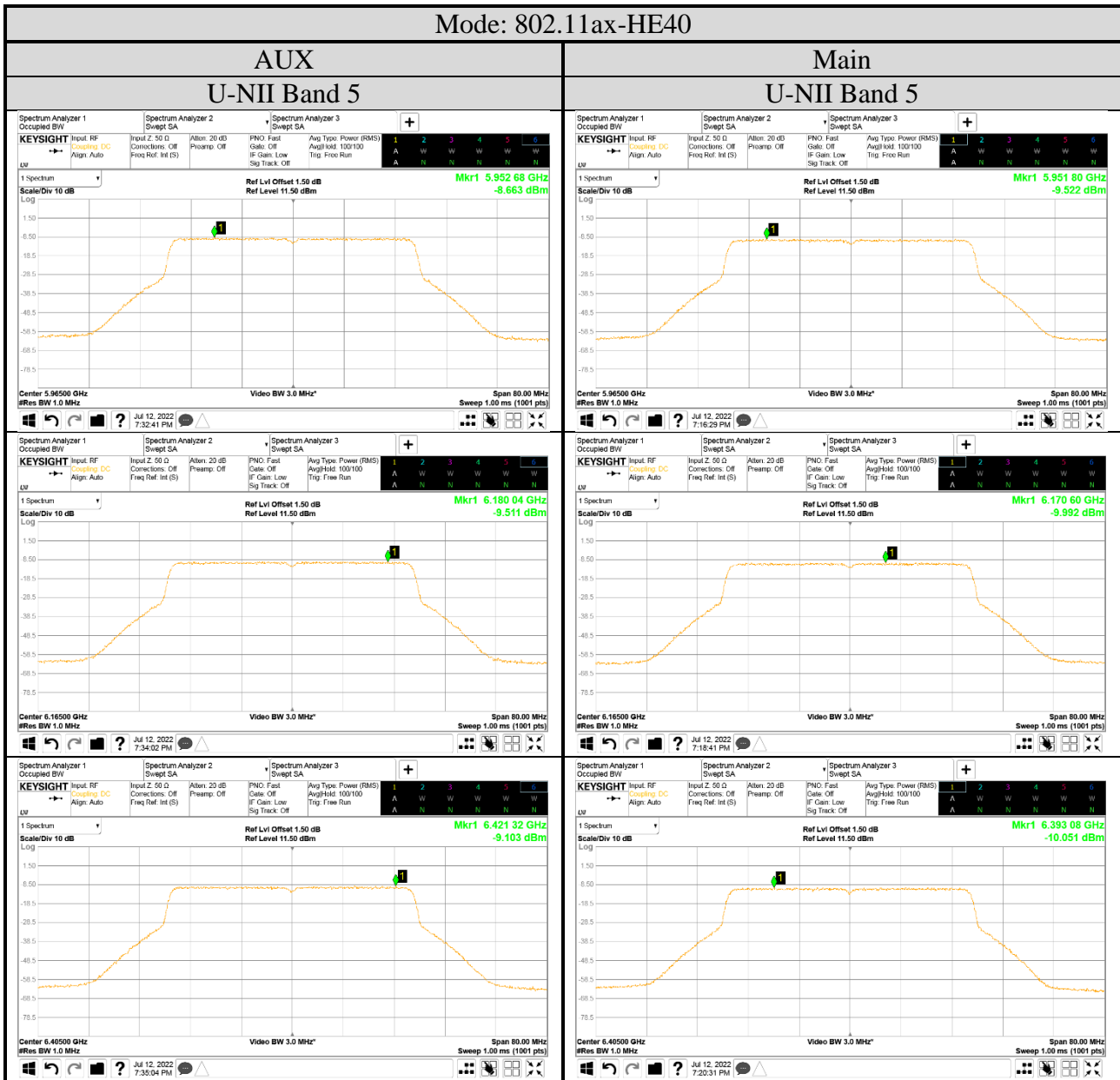
● OFDM Modulation

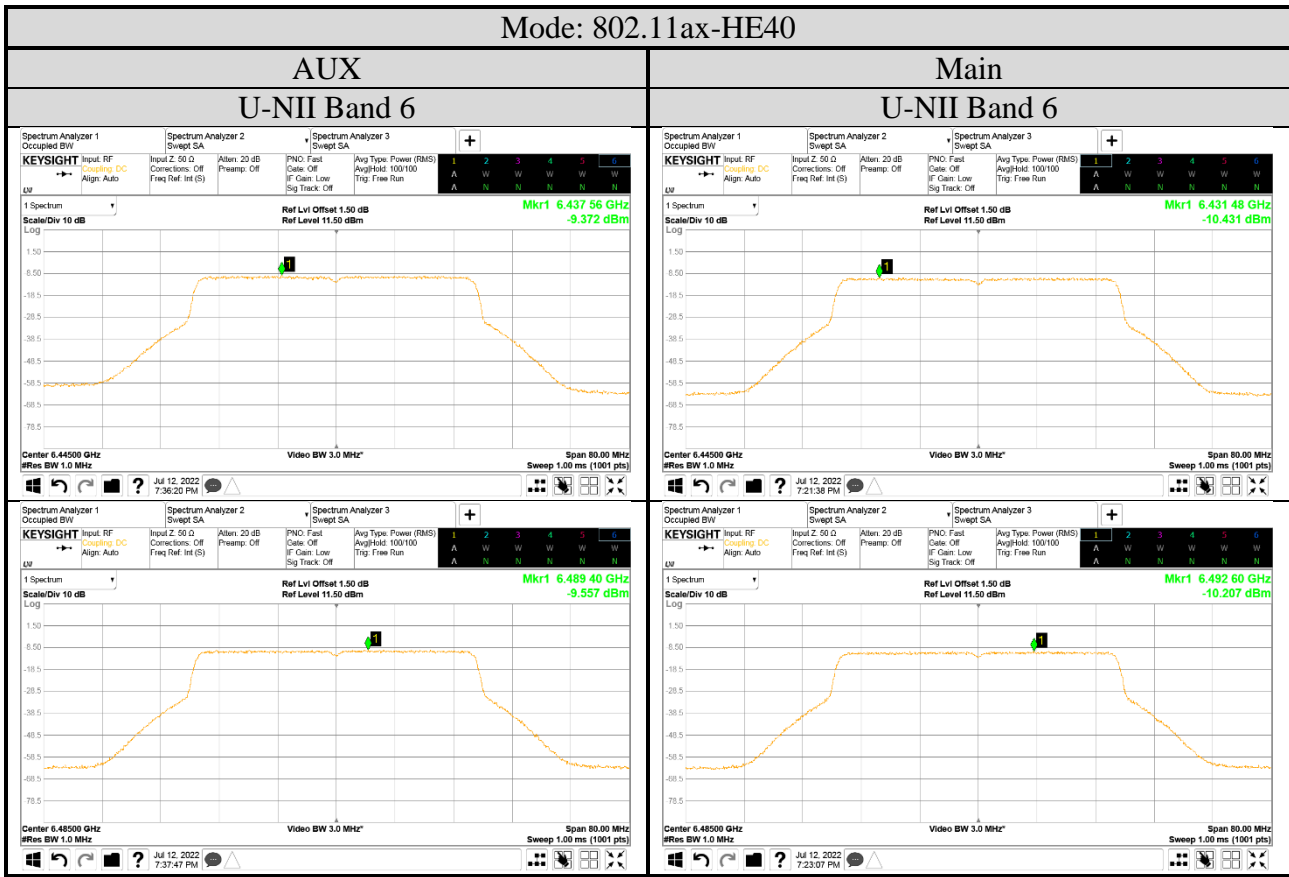


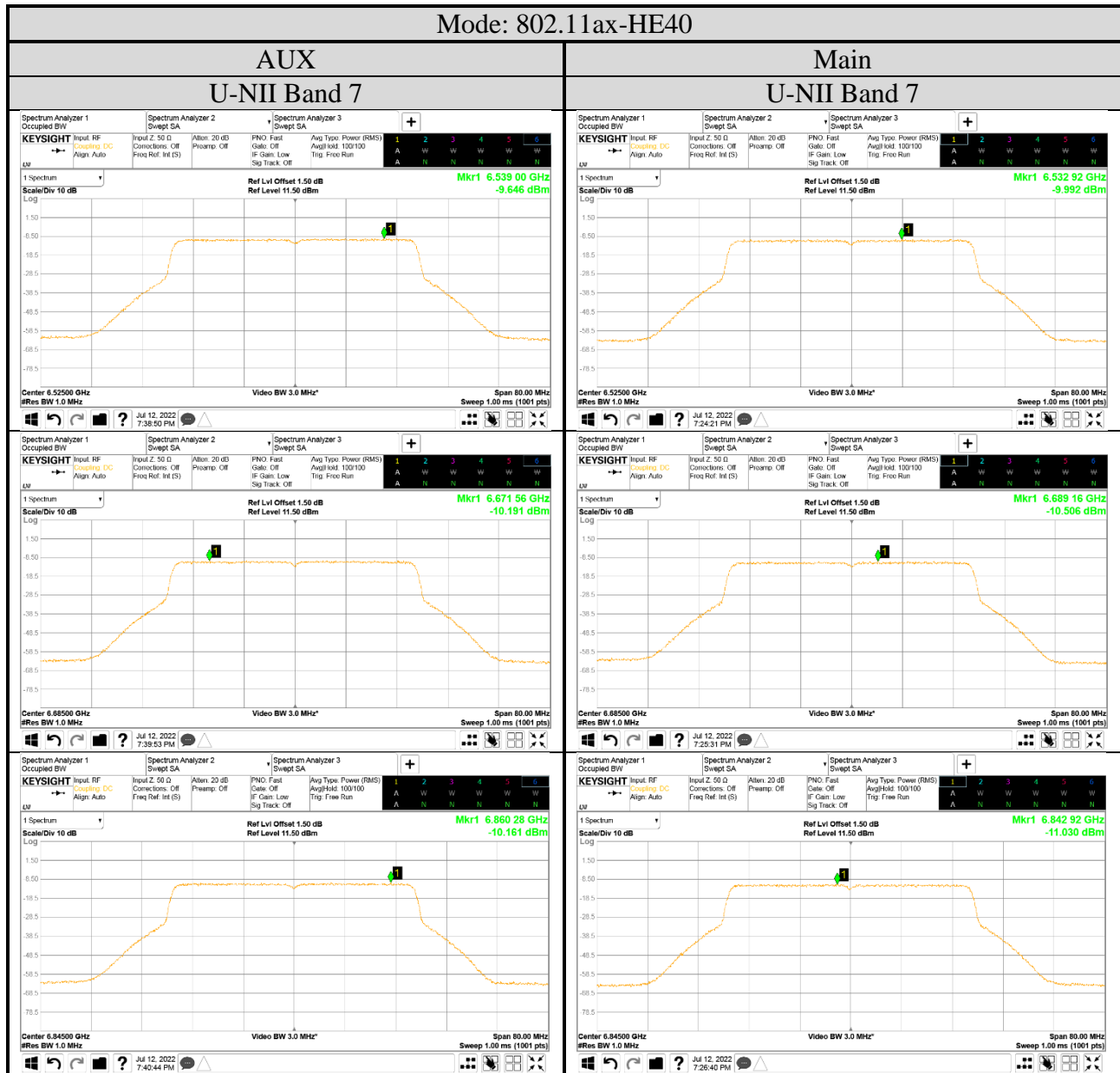


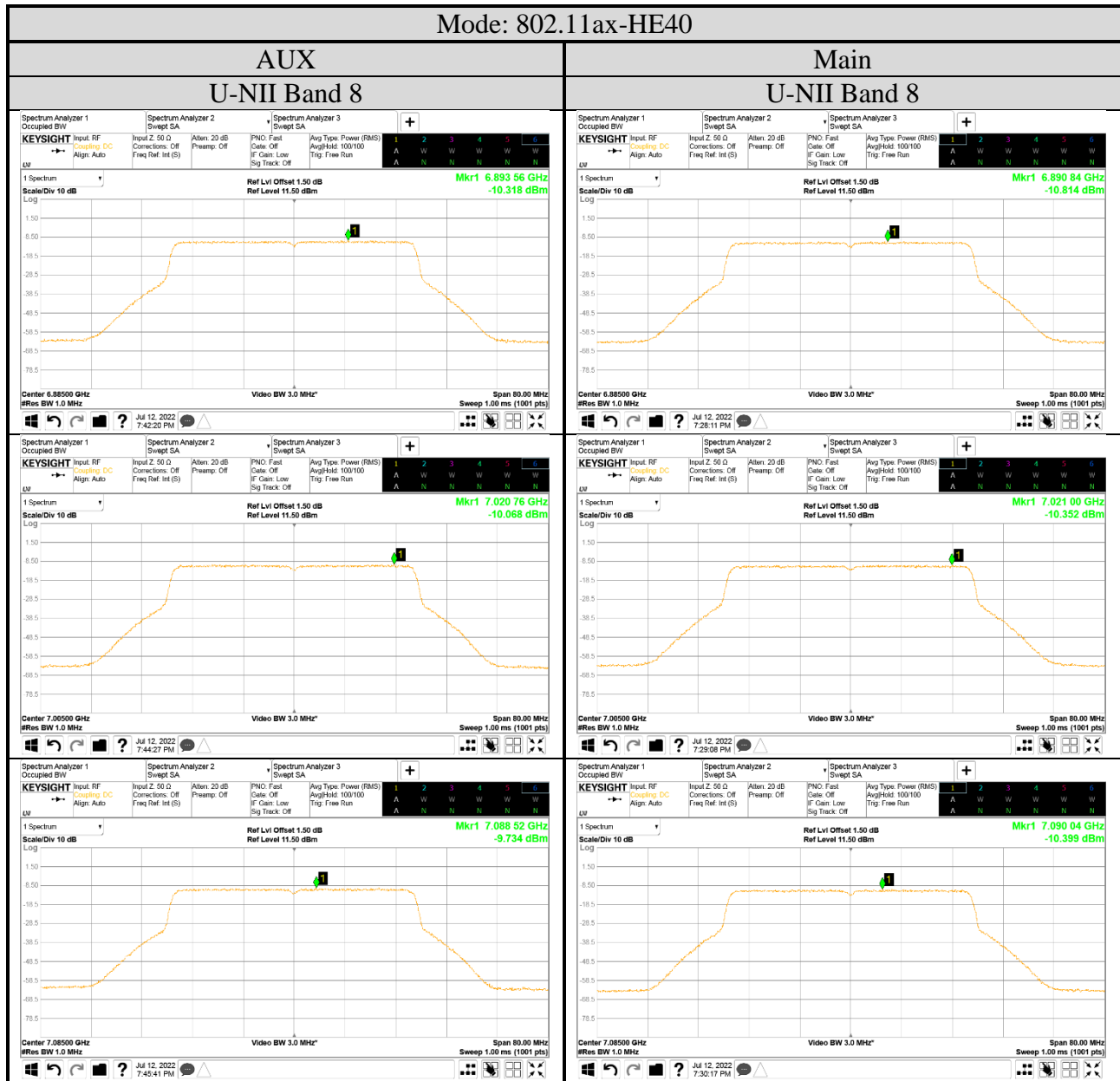


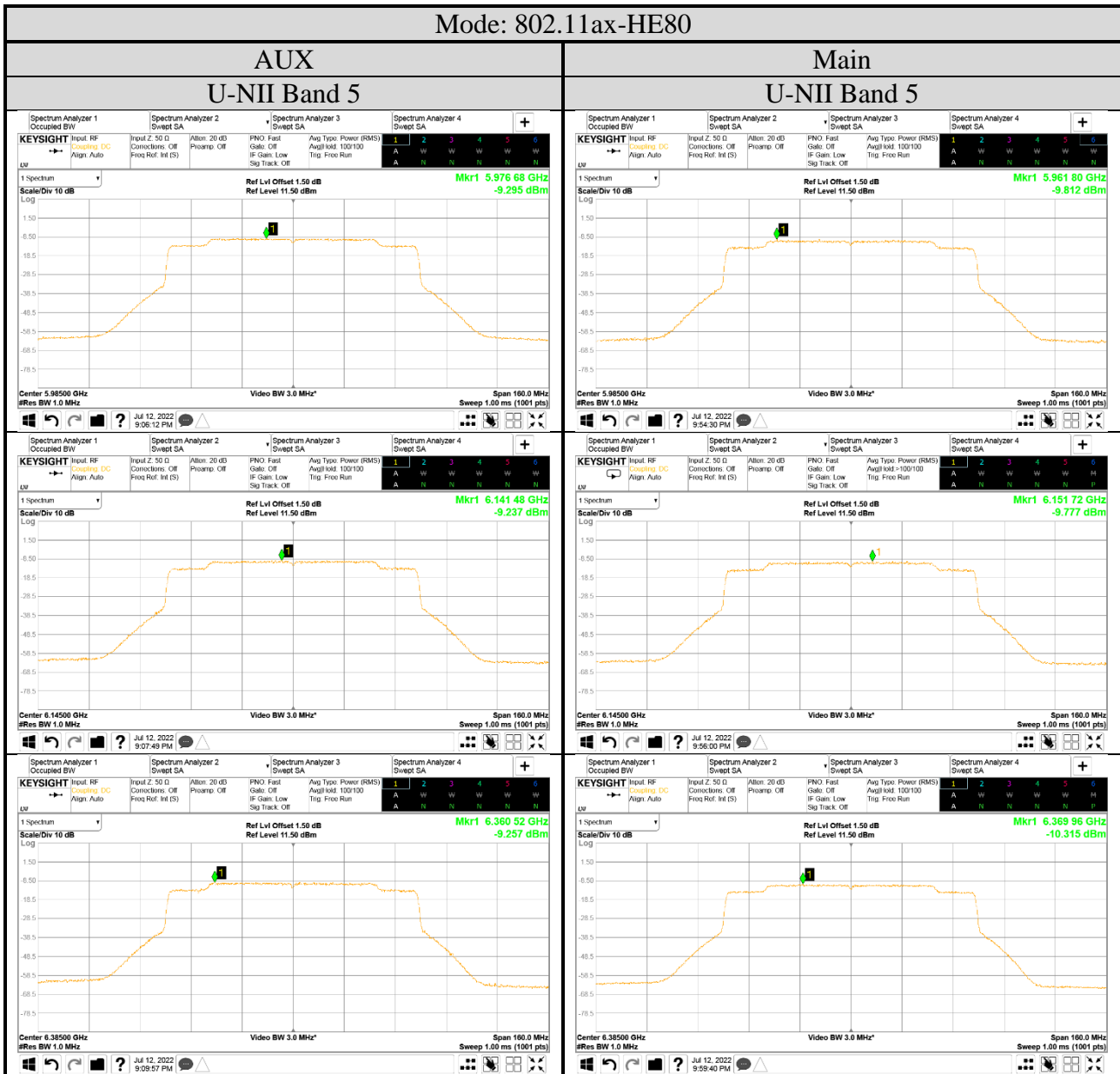


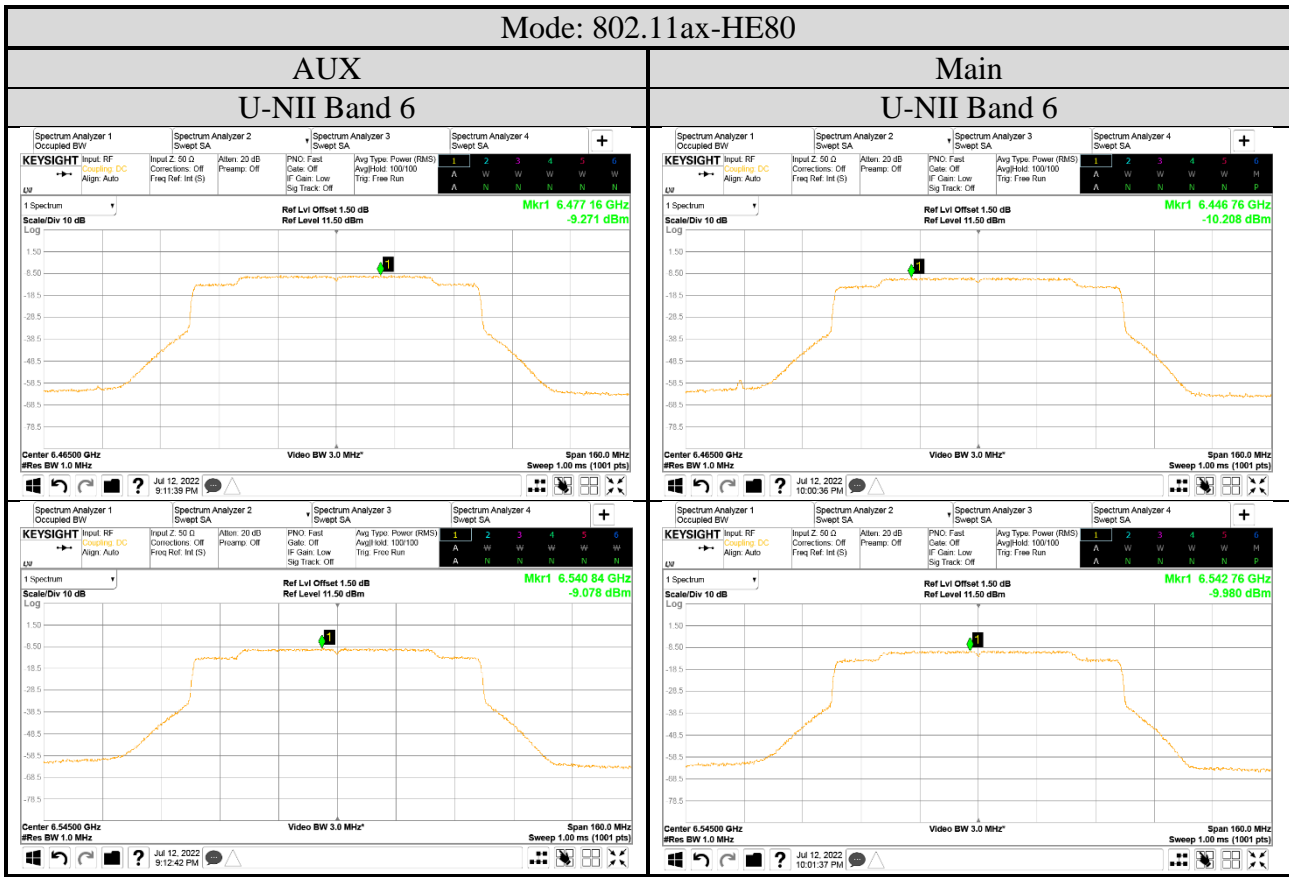


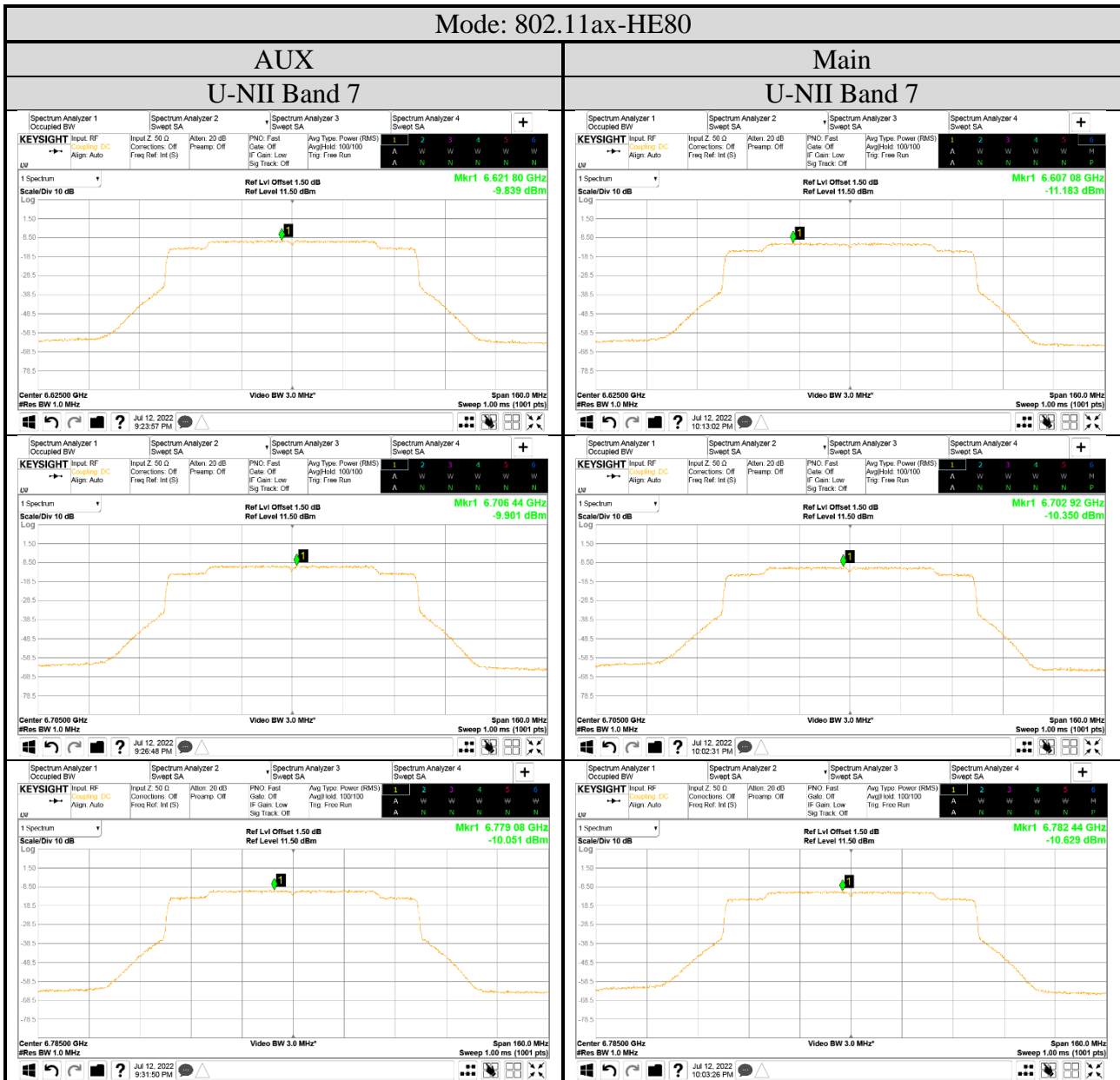


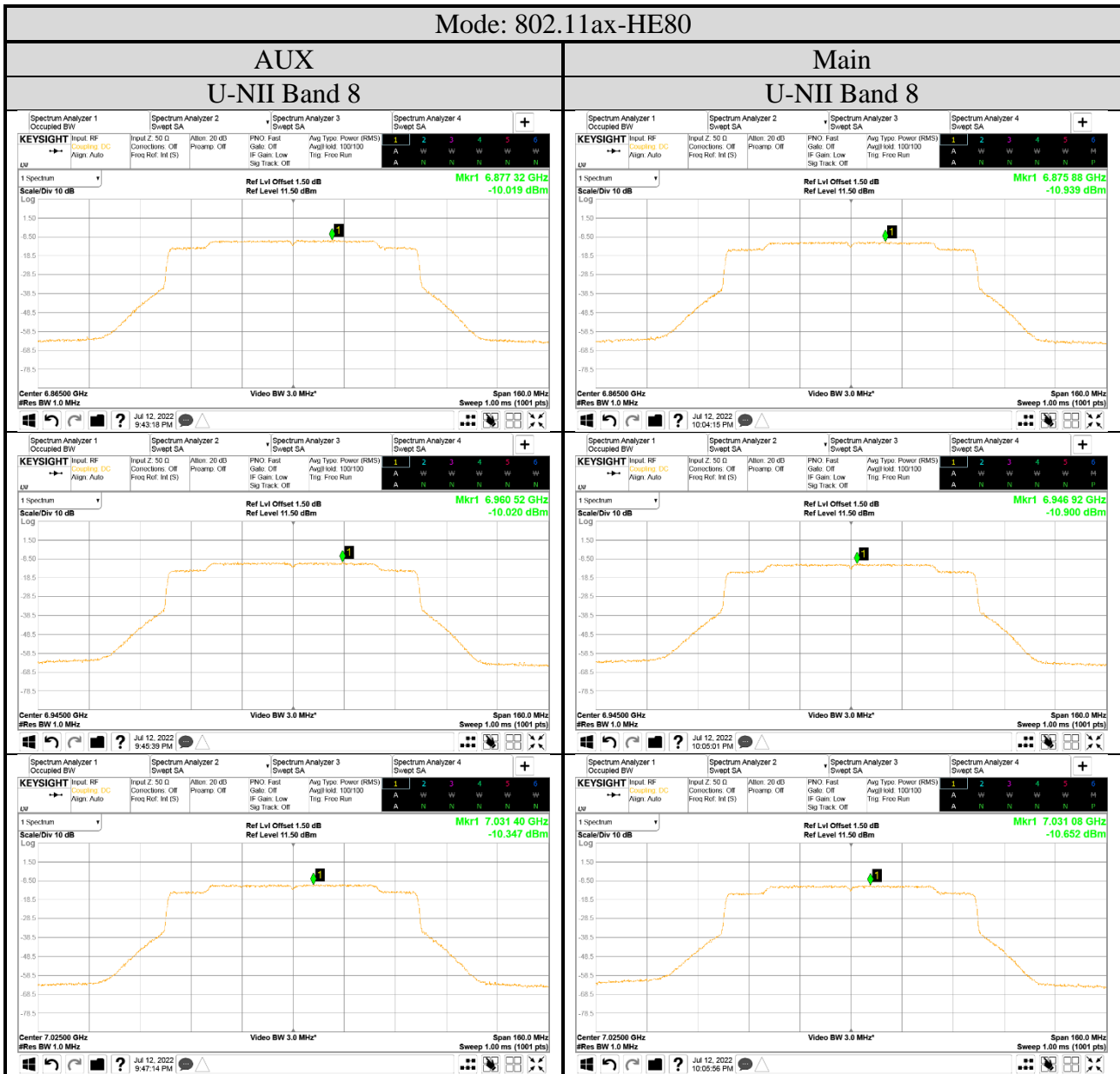


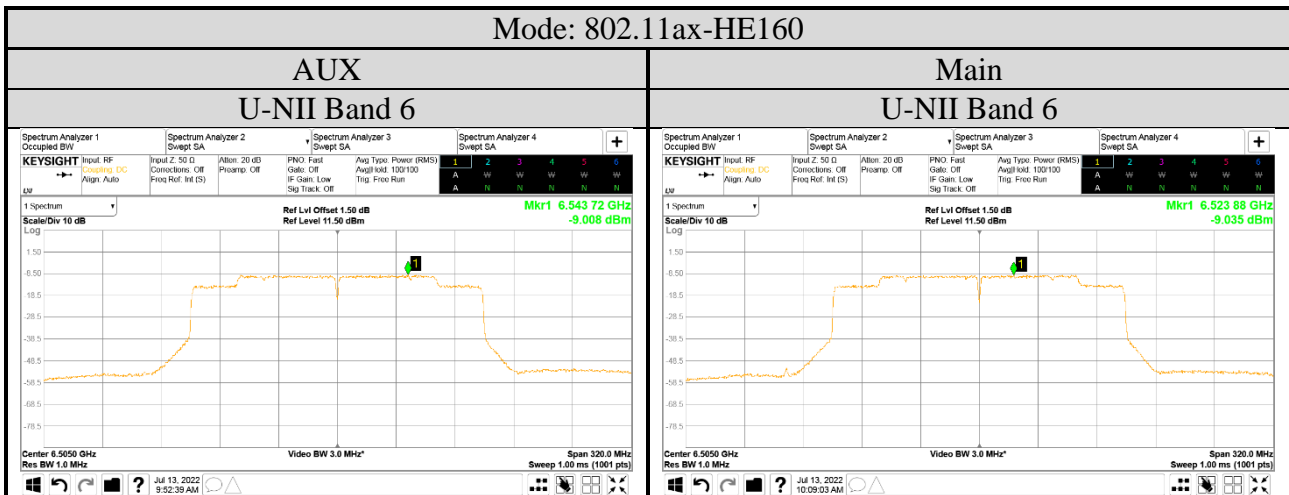
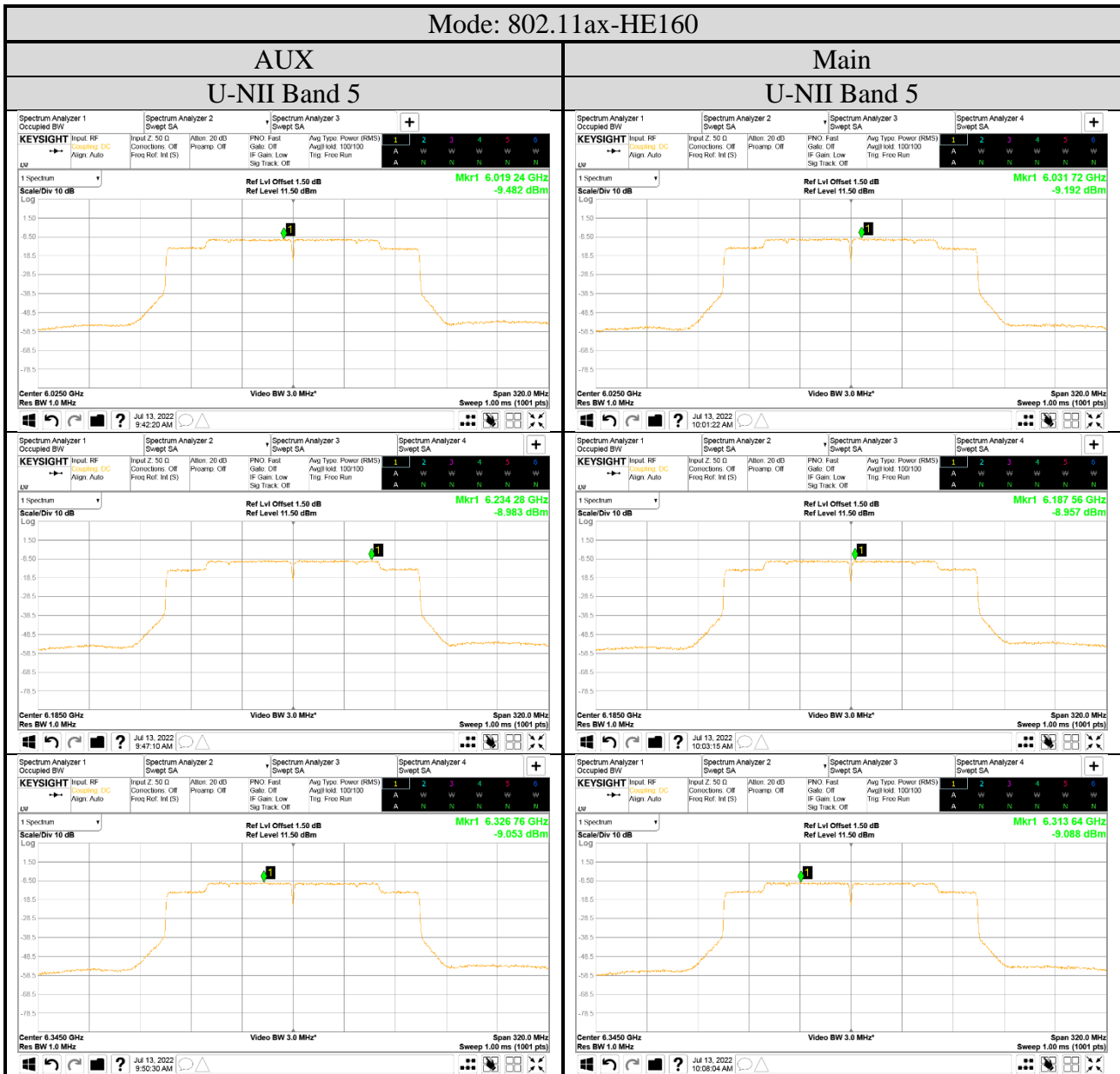


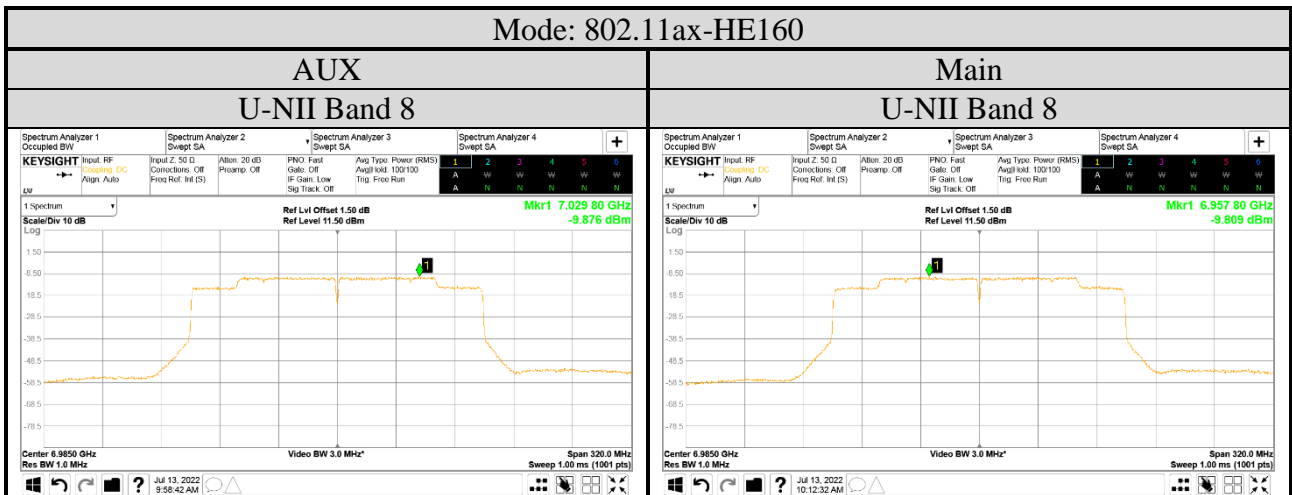
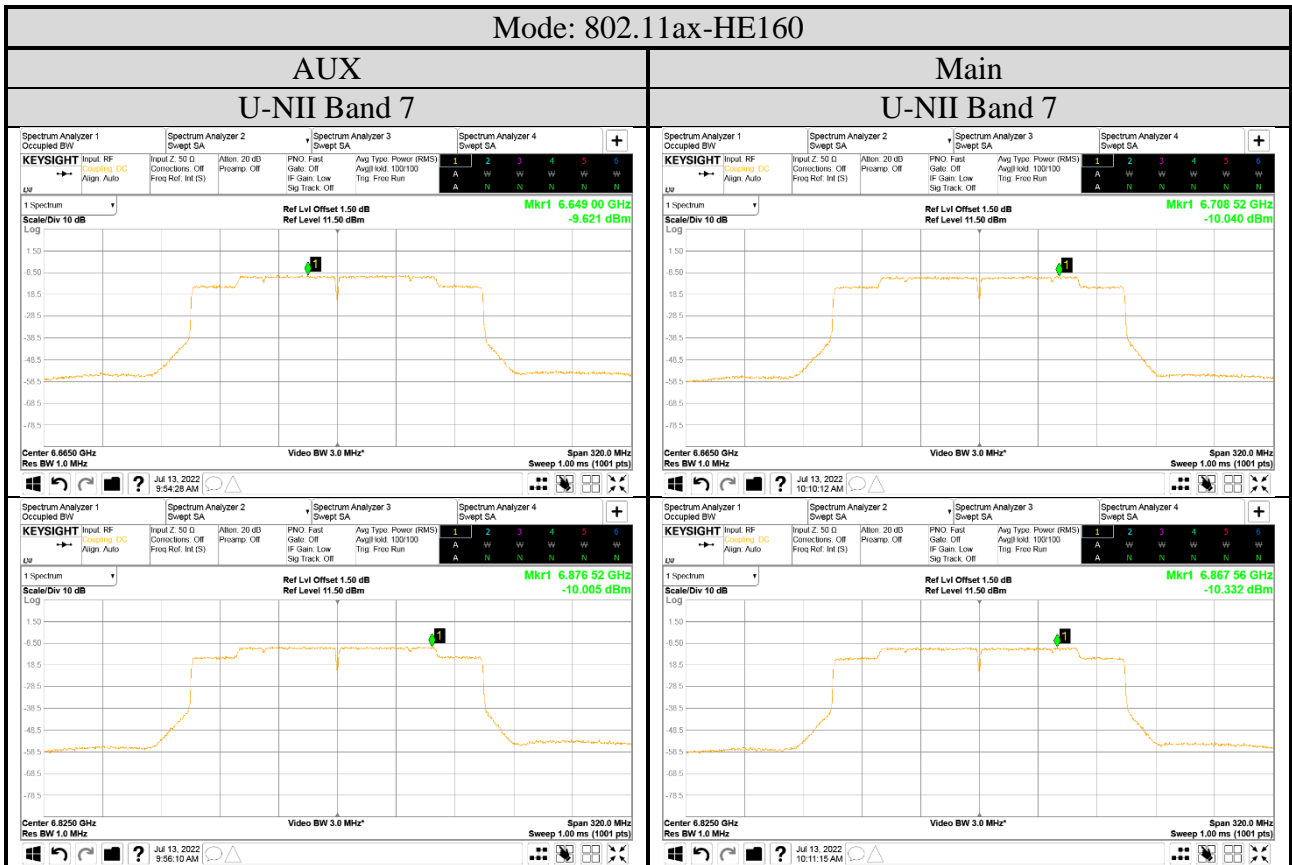






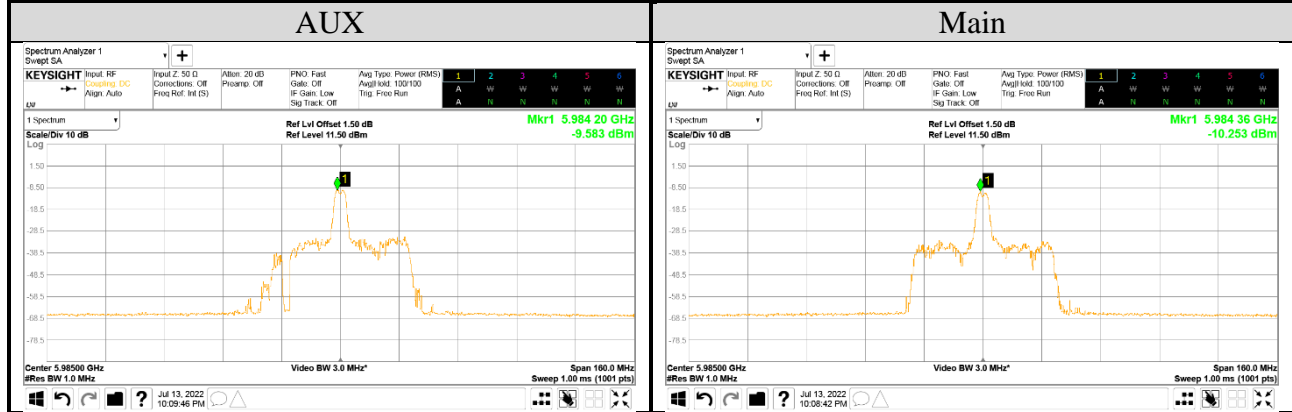




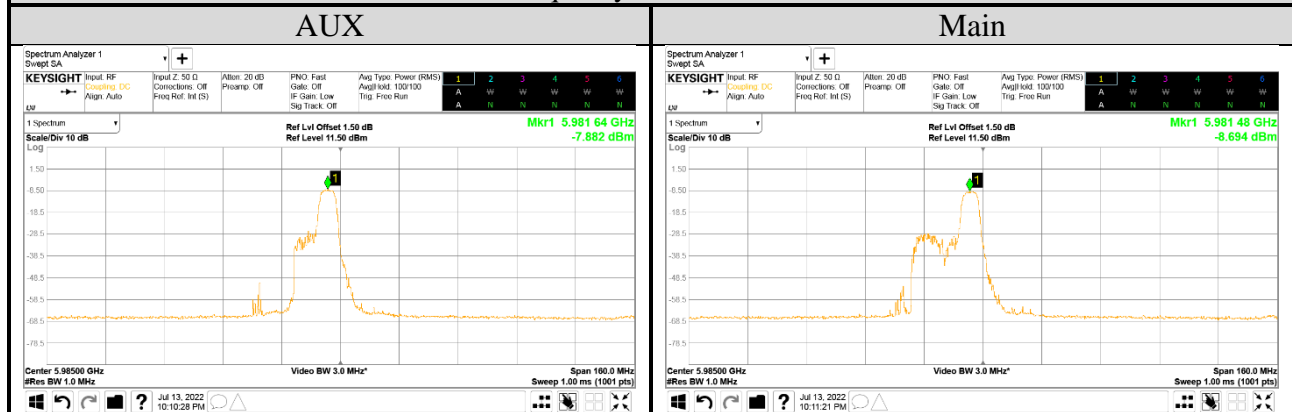


● OFDMA Modulation

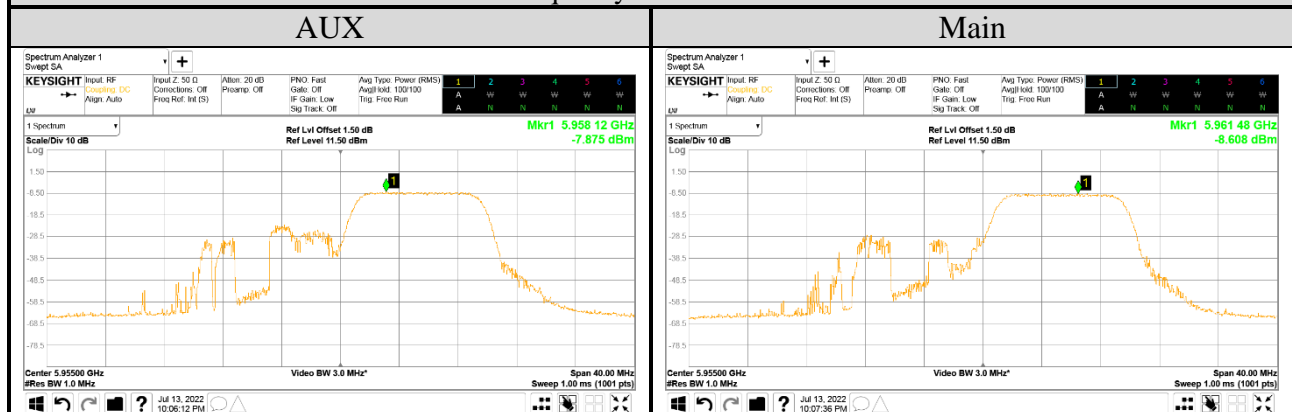
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RU Index:	18
Mode:	802.11ax-HE80
U-NII Band:	5
Centre Frequency:	5985MHz



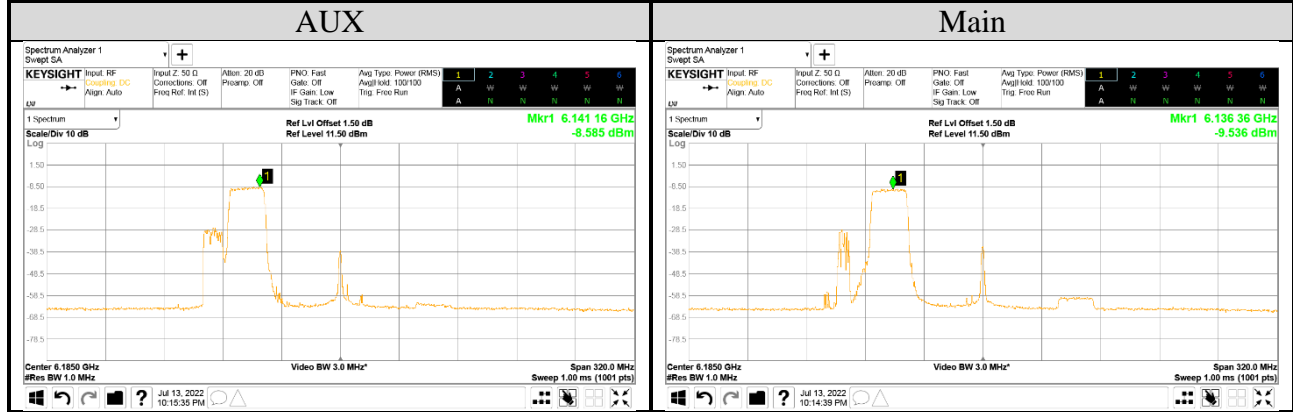
Tones:	52T
RU Index:	44
Mode:	802.11ax-HE80
U-NII Band:	5
Centre Frequency:	5985MHz



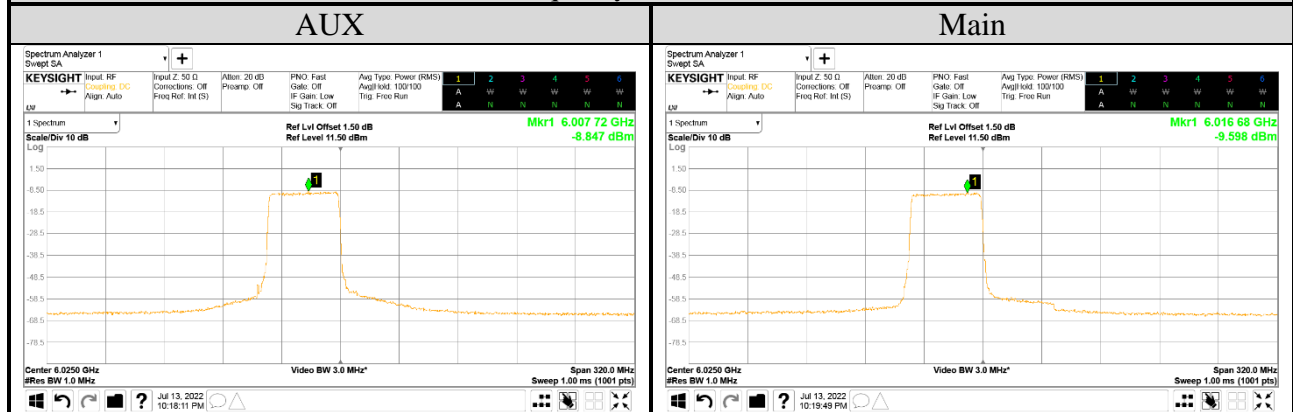
Tones:	106T
RU Index:	54
Mode:	802.11ax-HE20
U-NII Band:	5
Centre Frequency:	5955MHz



Tones:	242T
RU Index:	62
Mode:	802.11ax-HE160
U-NII Band:	5
Centre Frequency:	6185MHz



Tones:	484T
RU Index:	66
Mode:	802.11ax-HE80
U-NII Band:	5
Centre Frequency:	6025MHz



Tones:	996T
RU Index:	67
Mode:	802.11ax-HE80
U-NII Band:	5
Centre Frequency:	5985MHz

