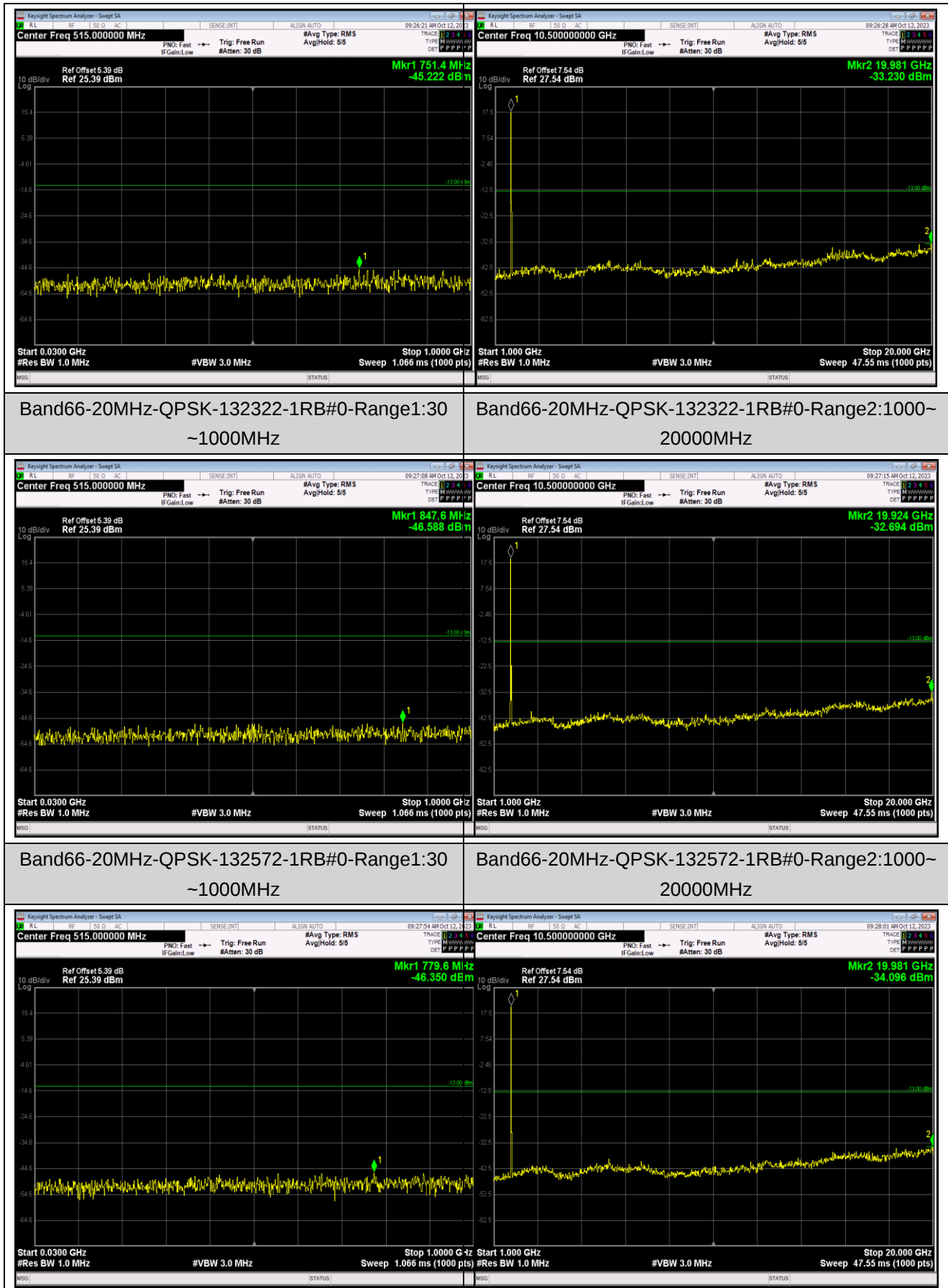
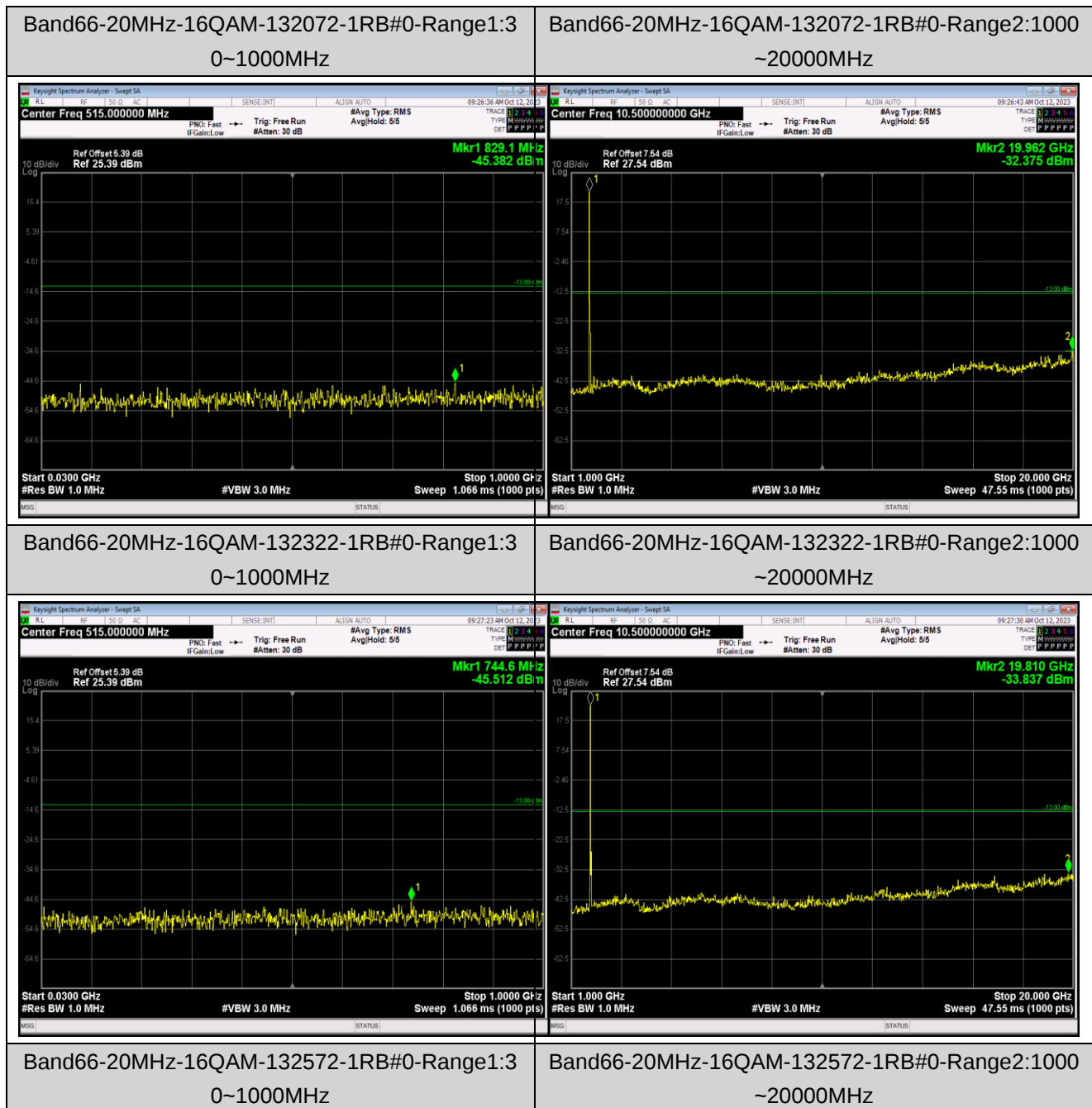
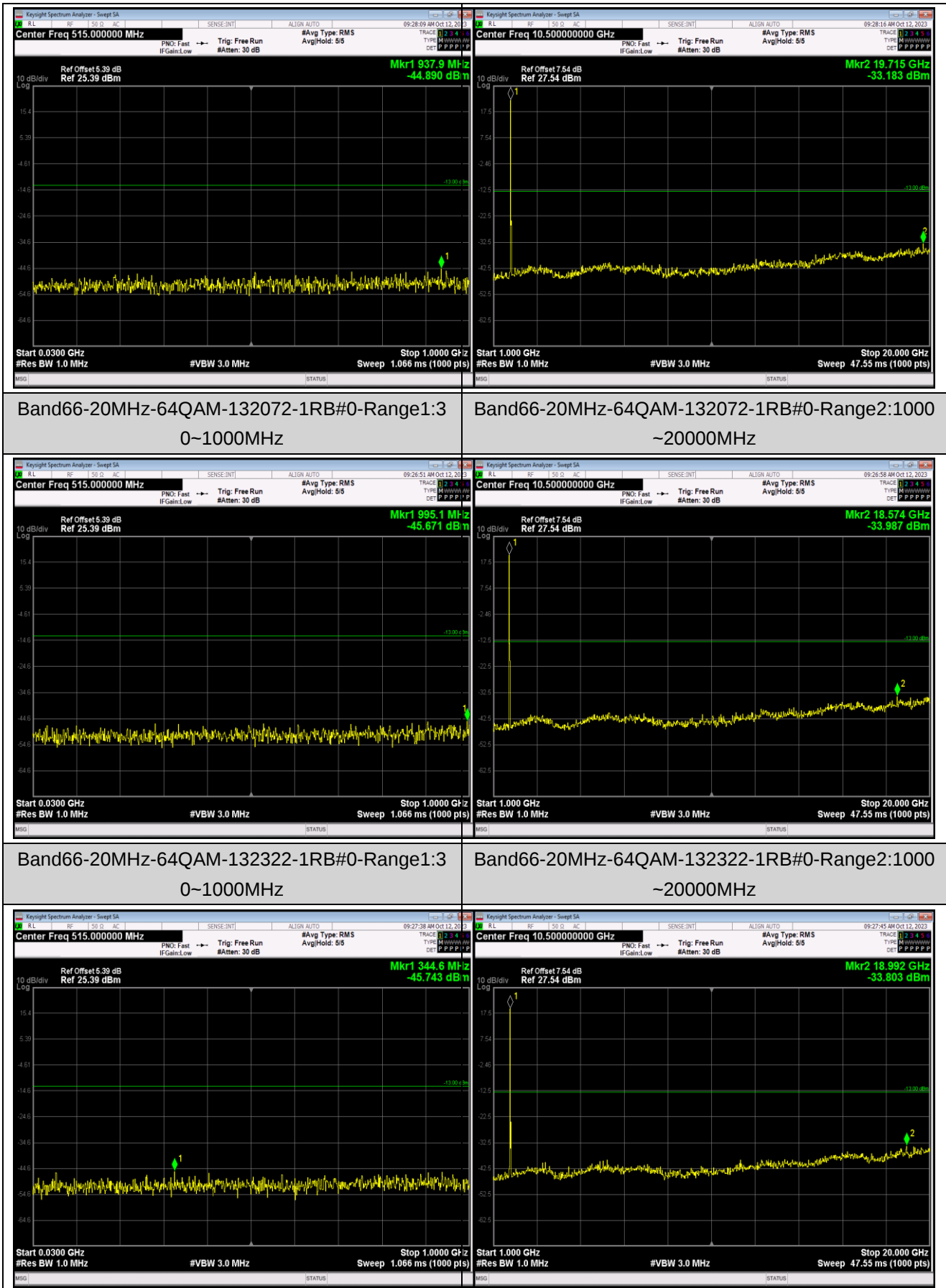
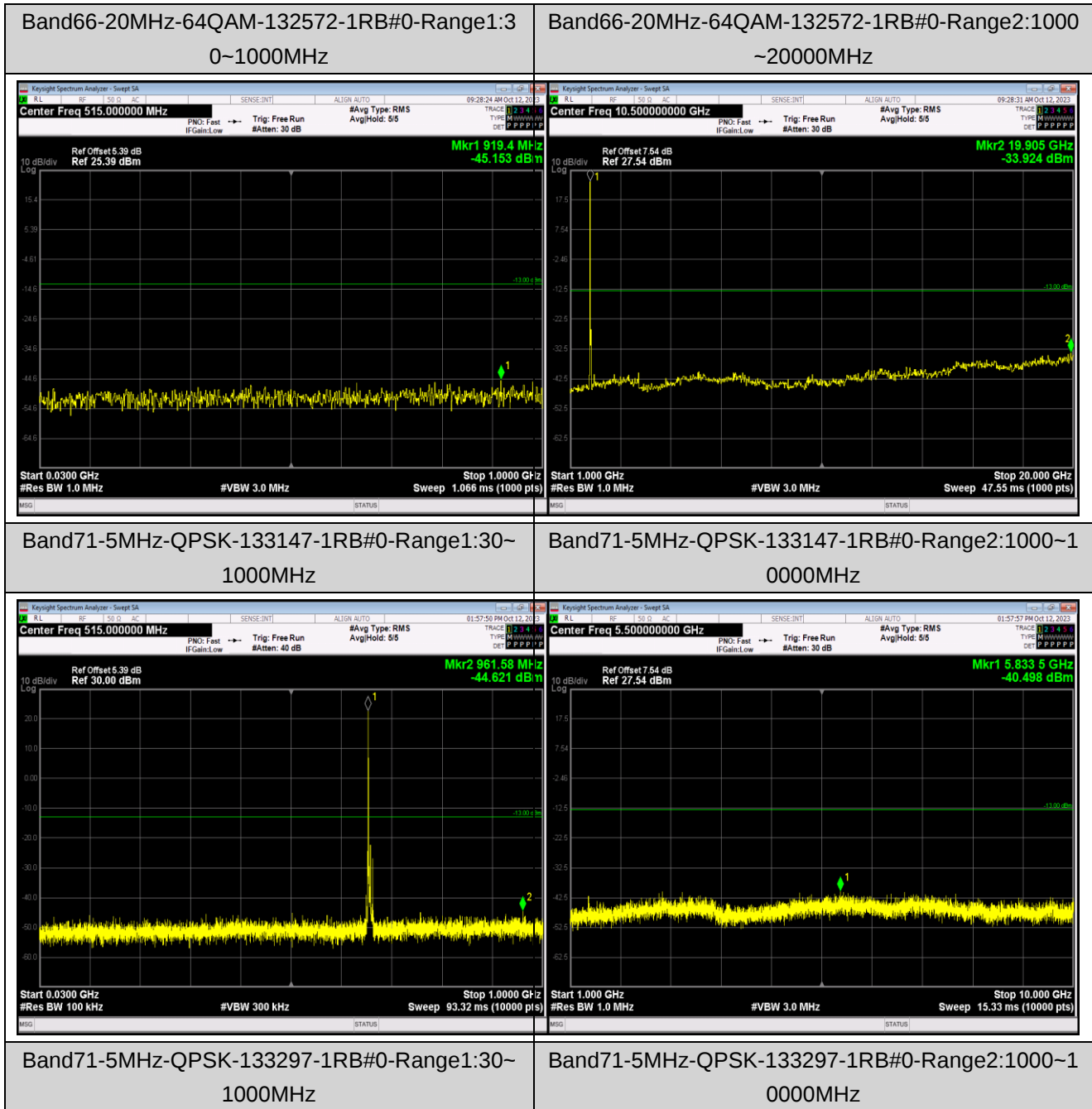
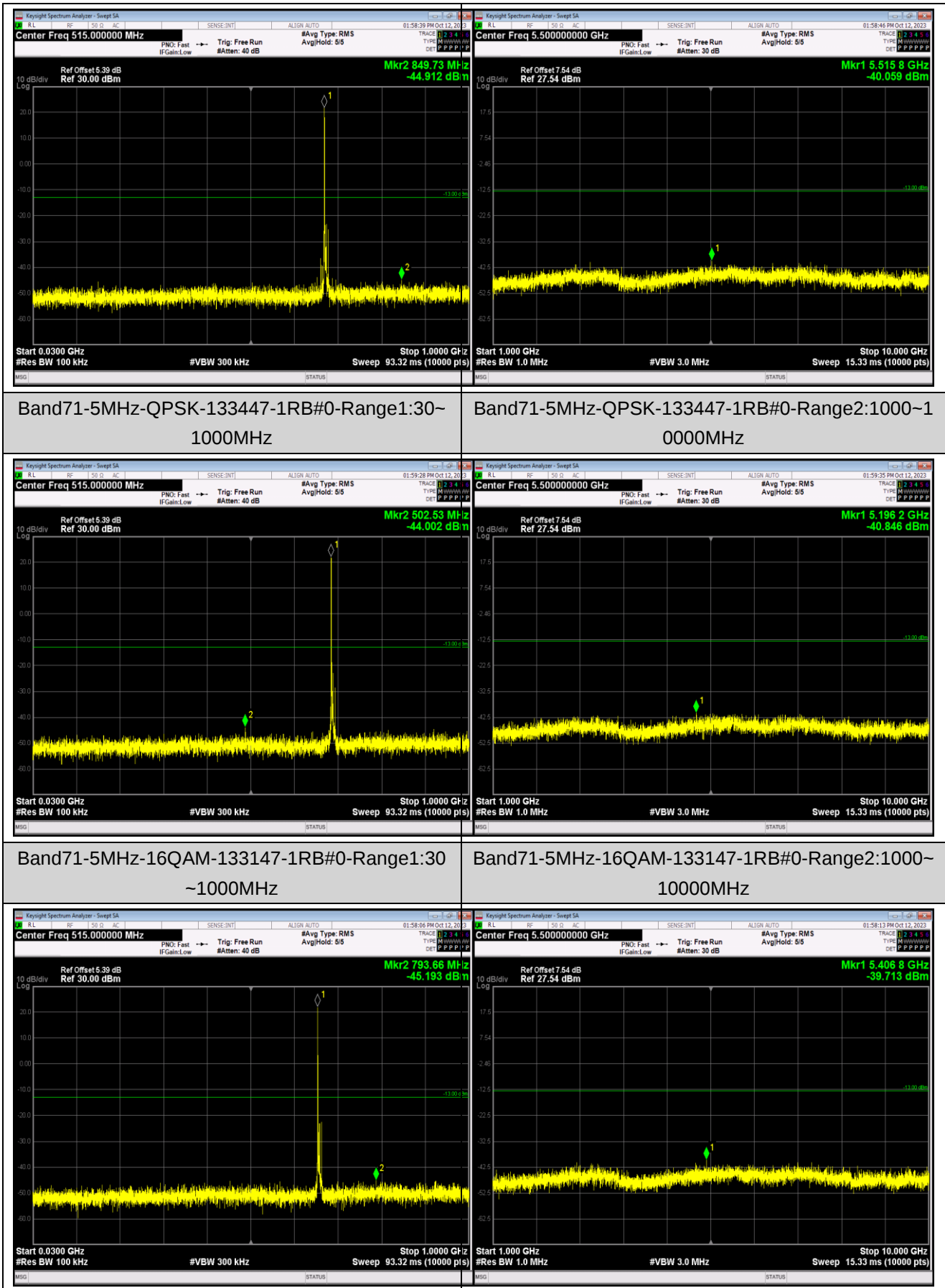


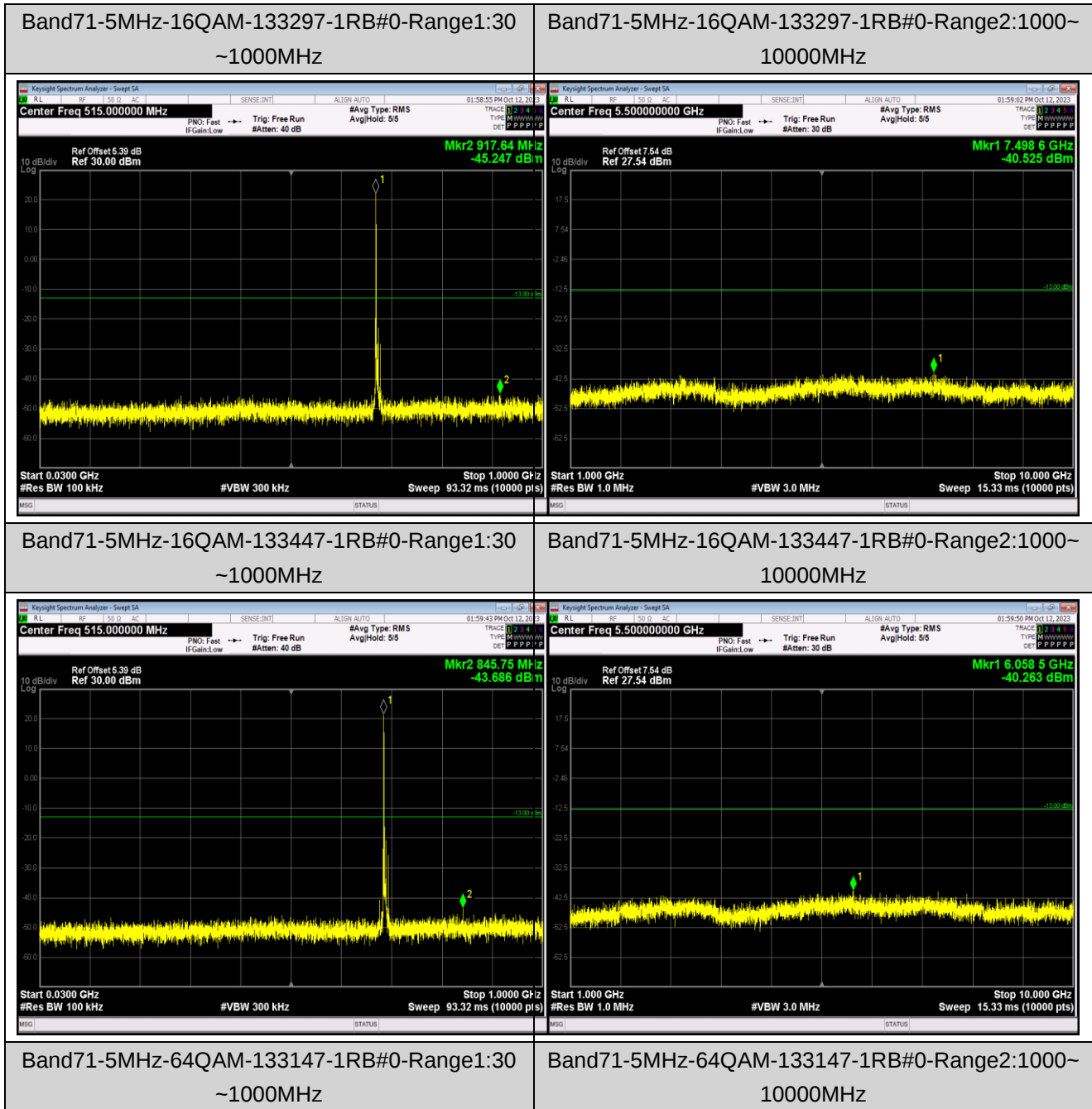


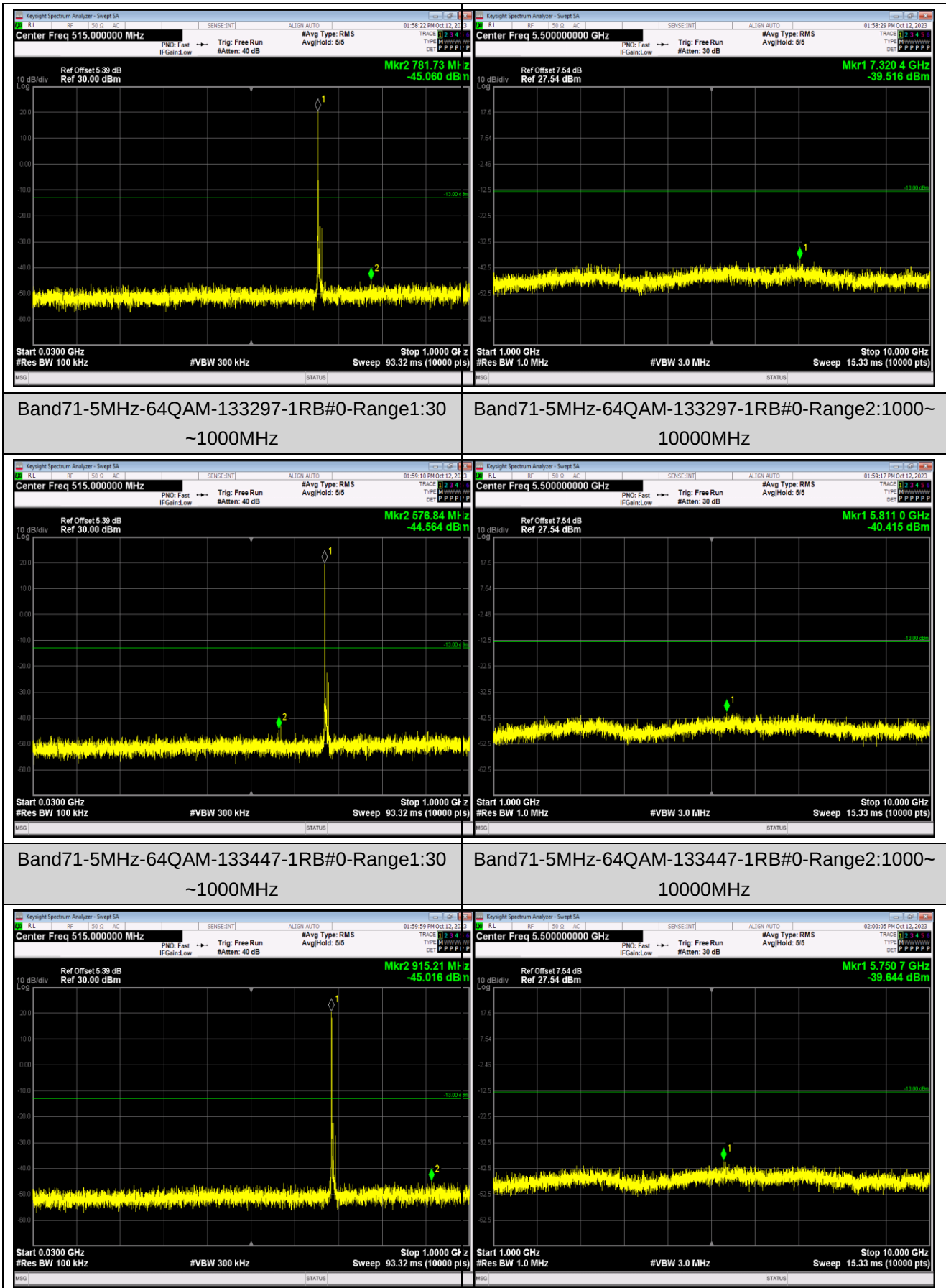


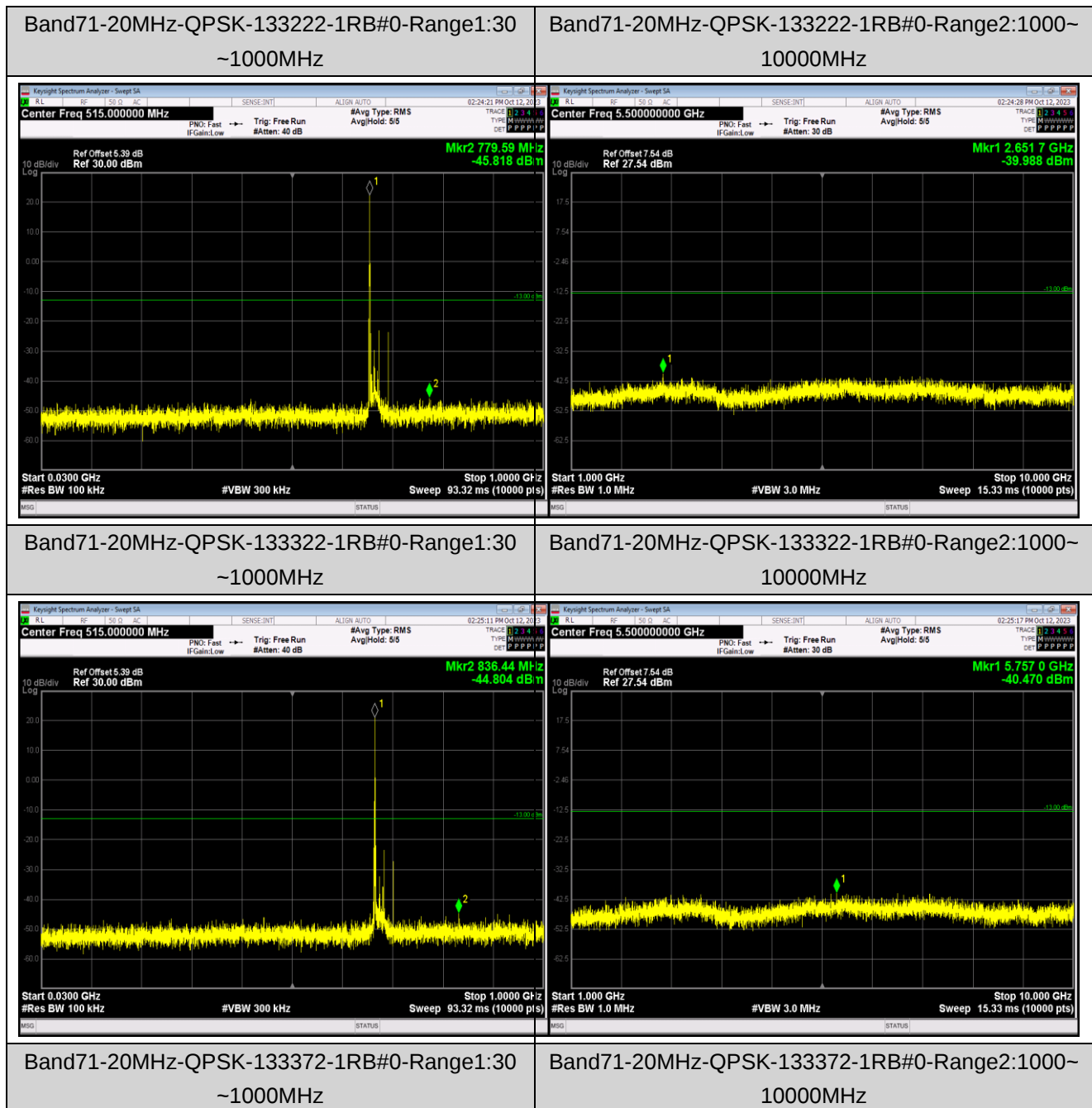


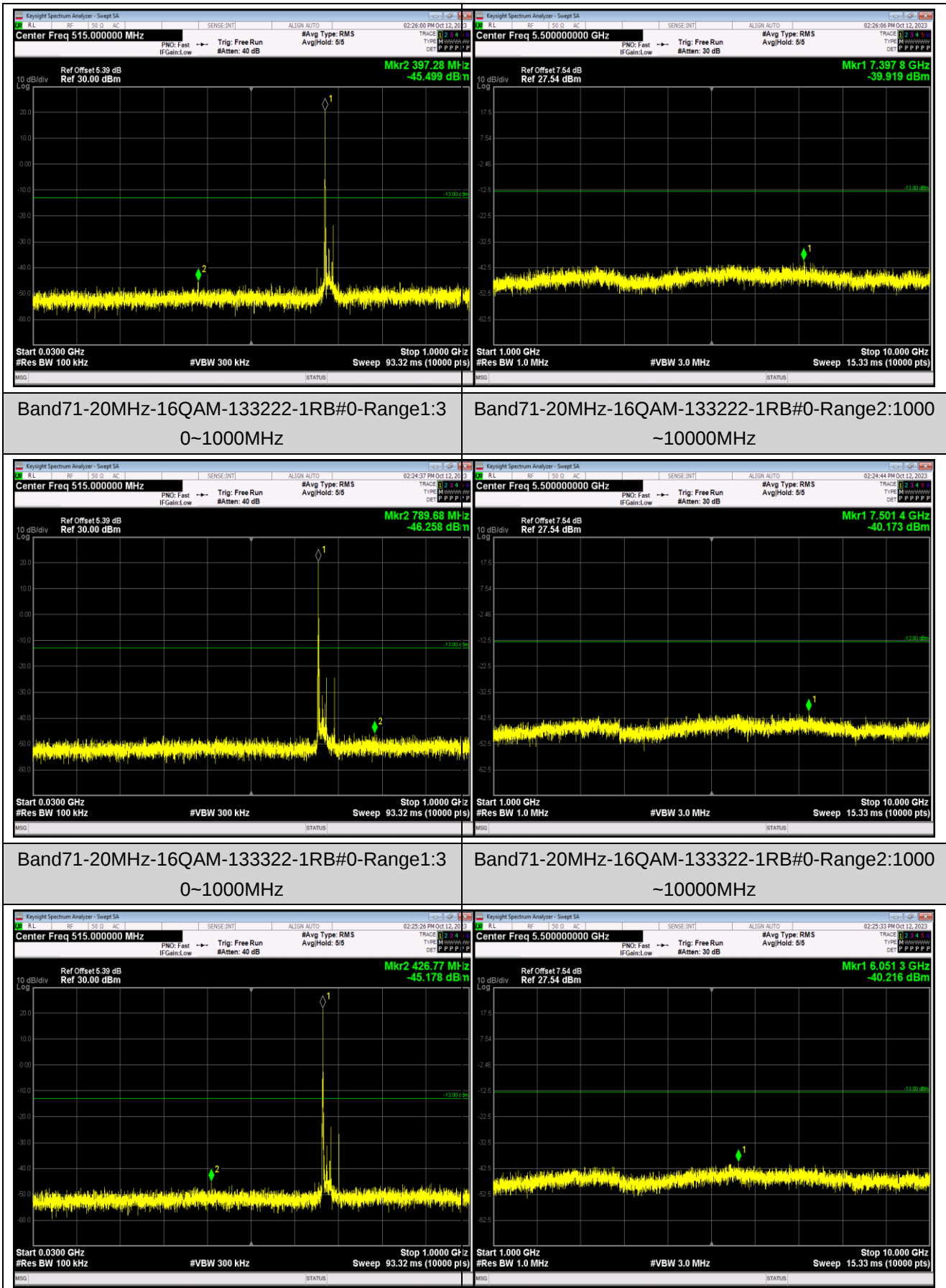


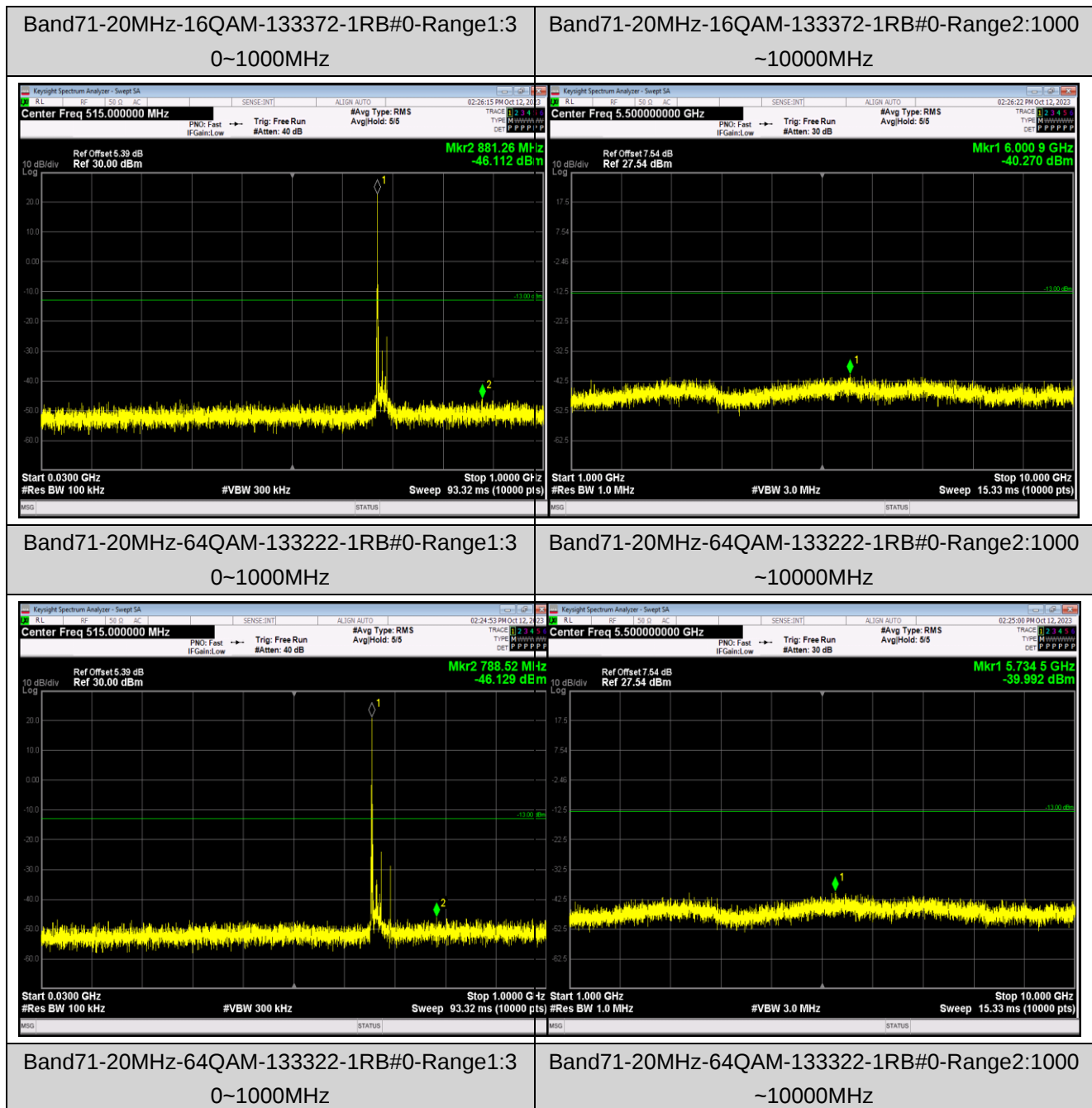


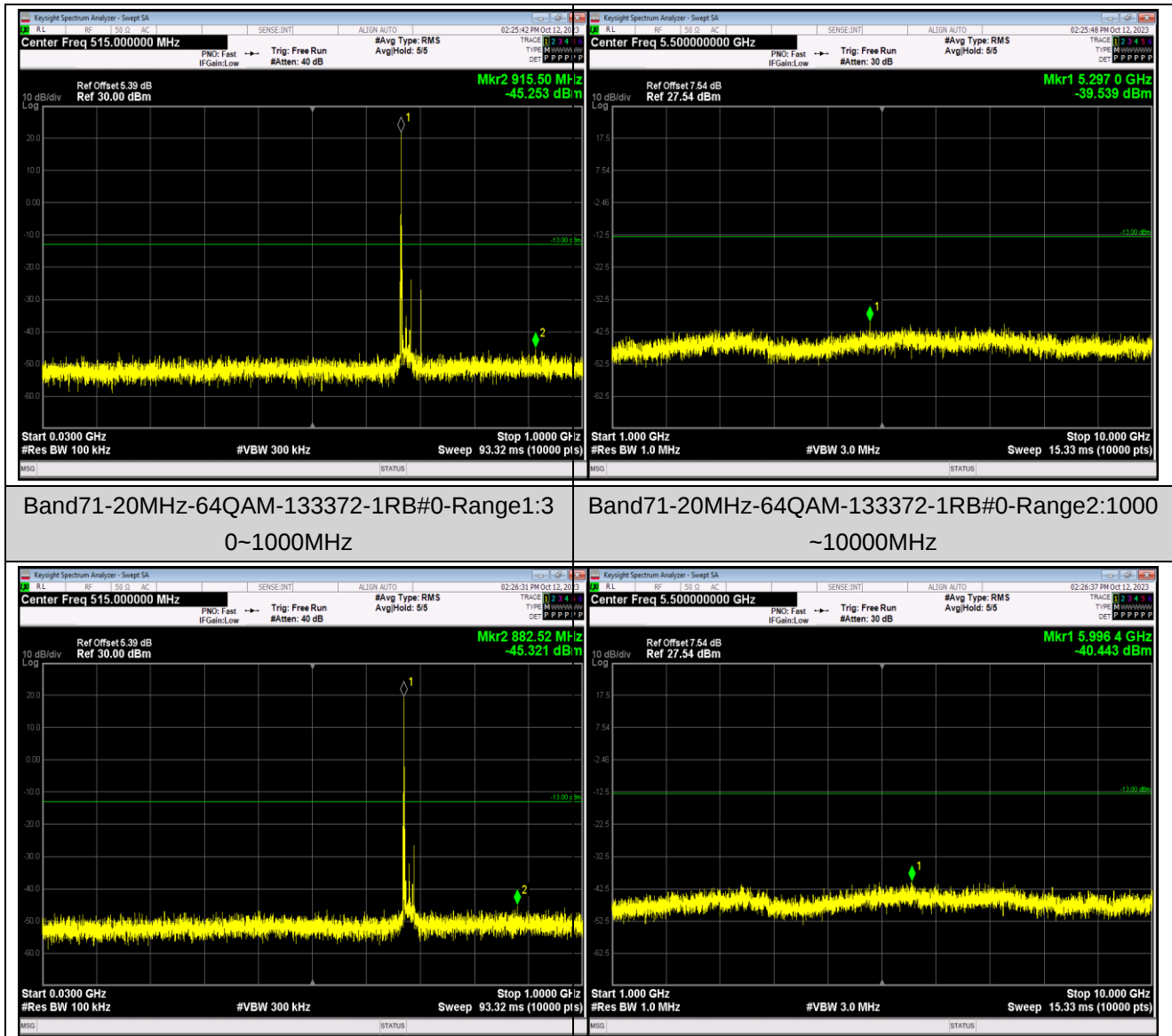












Appendix F: Frequency Stability

Test Result

LTE Band 2 part:

Reference Frequency: LTE Band 2 (10MHz) Middle channel=18900 Frequency=1880.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-14.55	-0.007739	Within authorized band for Band 2	Pass
	-20	-22.13	-0.011771		
	-10	-15.36	-0.008170		
	0	-19.13	-0.010176		
	10	-23.56	-0.012532		
	20	-23.33	-0.012410		
	30	-13.52	-0.007191		
	40	-17.05	-0.009069		
	50	-14.59	-0.007761		
16QAM					
3.80	-30	-23.29	-0.012388	Within authorized band for Band 2	Pass
	-20	-16.15	-0.008590		
	-10	-14.71	-0.007824		
	0	-17.87	-0.009505		
	10	-21.56	-0.011468		
	20	-18.15	-0.009654		
	30	-16.16	-0.008596		
	40	-23.85	-0.012686		
	50	-13.79	-0.007335		
64QAM					
3.80	-30	-18.88	-0.010043	Within authorized band for Band 2	Pass
	-20	-15.25	-0.008112		
	-10	-15.99	-0.008505		
	0	-10.54	-0.005606		
	10	-12.17	-0.006473		
	20	-20.16	-0.010723		
	30	-11.49	-0.006112		
	40	-5.54	-0.002947		
	50	-10.94	-0.005819		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-20.80	-0.011064	Within authorized band for Band 2	Pass
	3.80	-16.21	-0.008622		
	4.35	-18.81	-0.010005		
16QAM					
25	3.50	-24.39	-0.012973	Within authorized band for Band 2	Pass
	3.80	-17.32	-0.009213		
	4.35	-19.74	-0.010500		
64QAM					
25	3.50	-18.83	-0.010016	Within authorized band for Band 2	Pass
	3.80	-11.32	-0.006021		
	4.35	-17.38	-0.009245		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 Frequency=1732.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-9.91	-0.005720	Within authorized band for Band 4	Pass
	-20	-14.51	-0.008375		
	-10	-17.67	-0.010199		
	0	-14.62	-0.008439		
	10	-18.14	-0.010470		
	20	-9.21	-0.005316		
	30	-14.29	-0.008248		
	40	-15.81	-0.009126		
	50	-10.30	-0.005945		
16QAM					
3.80	-30	-11.77	-0.006794	Within authorized band for Band 4	Pass
	-20	-13.56	-0.007827		
	-10	-1.07	-0.000618		
	0	-6.64	-0.003833		
	10	5.54	0.003198		
	20	-15.45	-0.008918		
	30	-6.87	-0.003965		
	40	7.45	0.004300		
	50	-17.14	-0.009893		
64QAM					
3.80	-30	-12.12	-0.006996	Within authorized band for Band 4	Pass
	-20	-13.19	-0.007613		
	-10	-17.12	-0.009882		
	0	4.01	0.002315		
	10	-2.25	-0.001299		
	20	-19.20	-0.011082		
	30	12.50	0.007215		
	40	-16.32	-0.009420		
	50	-4.28	-0.002470		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-20.59	-0.011885	Within authorized band for Band 4	Pass
	3.80	-14.55	-0.008398		
	4.35	-14.52	-0.008381		
16QAM					
25	3.50	3.59	0.002072	Within authorized band for Band 4	Pass
	3.80	-13.22	-0.007631		
	4.35	-18.60	-0.010736		
64QAM					
25	3.50	-10.89	-0.006286	Within authorized band for Band 4	Pass
	3.80	-11.82	-0.006823		
	4.35	-11.03	-0.006367		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 5 part:

Reference Frequency: LTE Band 5(10MHz) Middle channel=20525 Frequency=836.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-10.11	-0.012086	±2.5	Pass
	-20	-11.42	-0.013652		
	-10	-15.84	-0.018936		
	0	-10.16	-0.012146		
	10	-15.18	-0.018147		
	20	-12.63	-0.015099		
	30	-6.59	-0.007878		
	40	-11.57	-0.013831		
	50	-12.09	-0.014453		
16QAM					
3.80	-30	-2.76	-0.003299	±2.5	Pass
	-20	-9.34	-0.011166		
	-10	-6.22	-0.007436		
	0	-9.84	-0.011763		
	10	-12.06	-0.014417		
	20	-6.01	-0.007185		
	30	-10.59	-0.012660		
	40	-6.52	-0.007794		
	50	-9.98	-0.011931		
64QAM					
3.80	-30	-10.29	-0.012301	±2.5	Pass
	-20	-6.29	-0.007519		
	-10	-9.53	-0.011393		
	0	-8.44	-0.010090		
	10	-10.34	-0.012361		
	20	-3.68	-0.004399		
	30	-5.89	-0.007041		
	40	-11.34	-0.013556		
	50	-9.50	-0.011357		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-14.78	-0.017669	±2.5	Pass
	3.80	-11.69	-0.013975		
	4.35	-11.06	-0.013222		
16QAM					
25	3.50	-9.70	-0.011596	±2.5	Pass
	3.80	-13.05	-0.015601		
	4.35	-10.53	-0.012588		
64QAM					
25	3.50	-6.12	-0.007316	±2.5	Pass
	3.80	-11.59	-0.013855		
	4.35	-11.96	-0.014298		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					