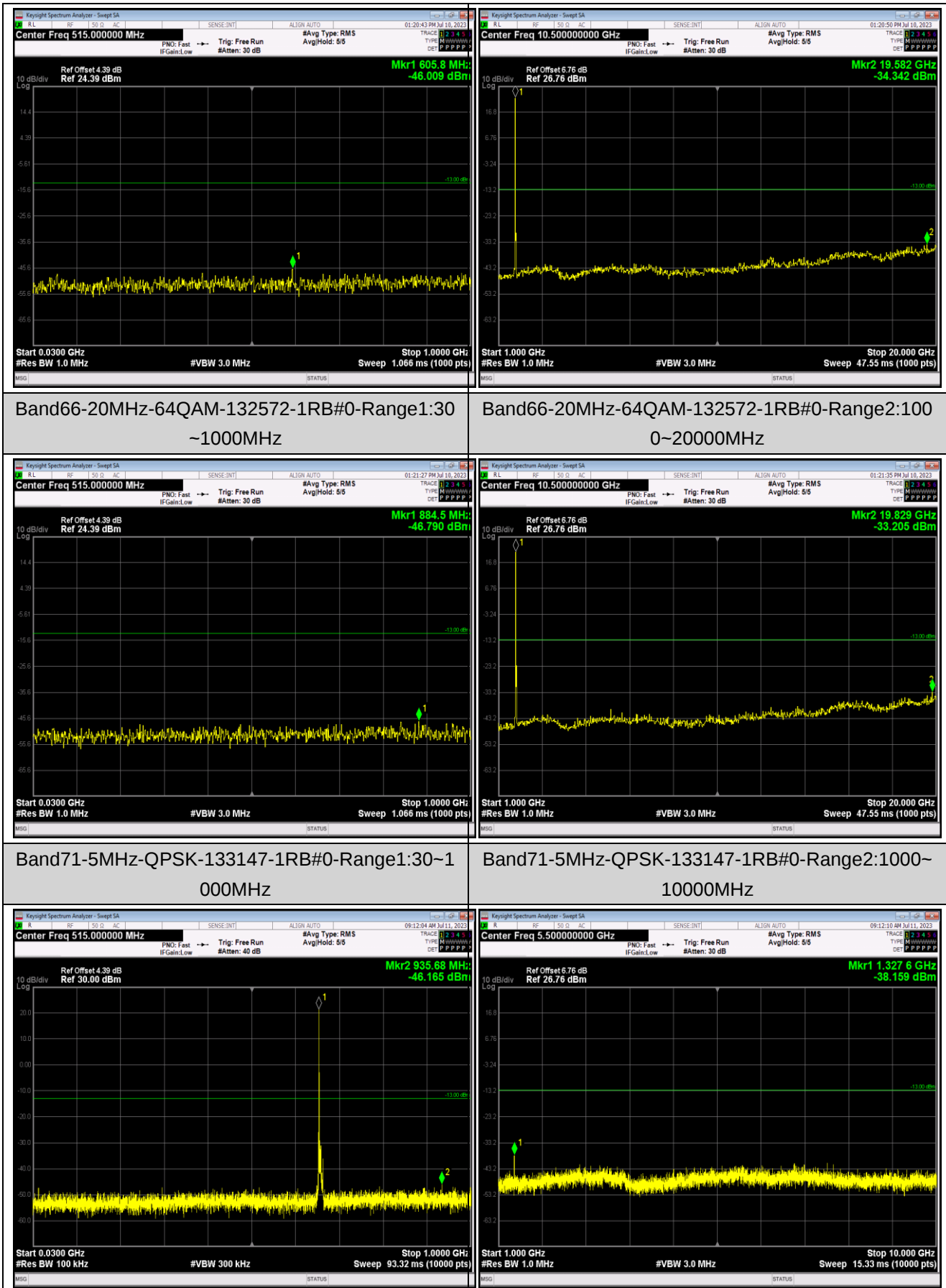
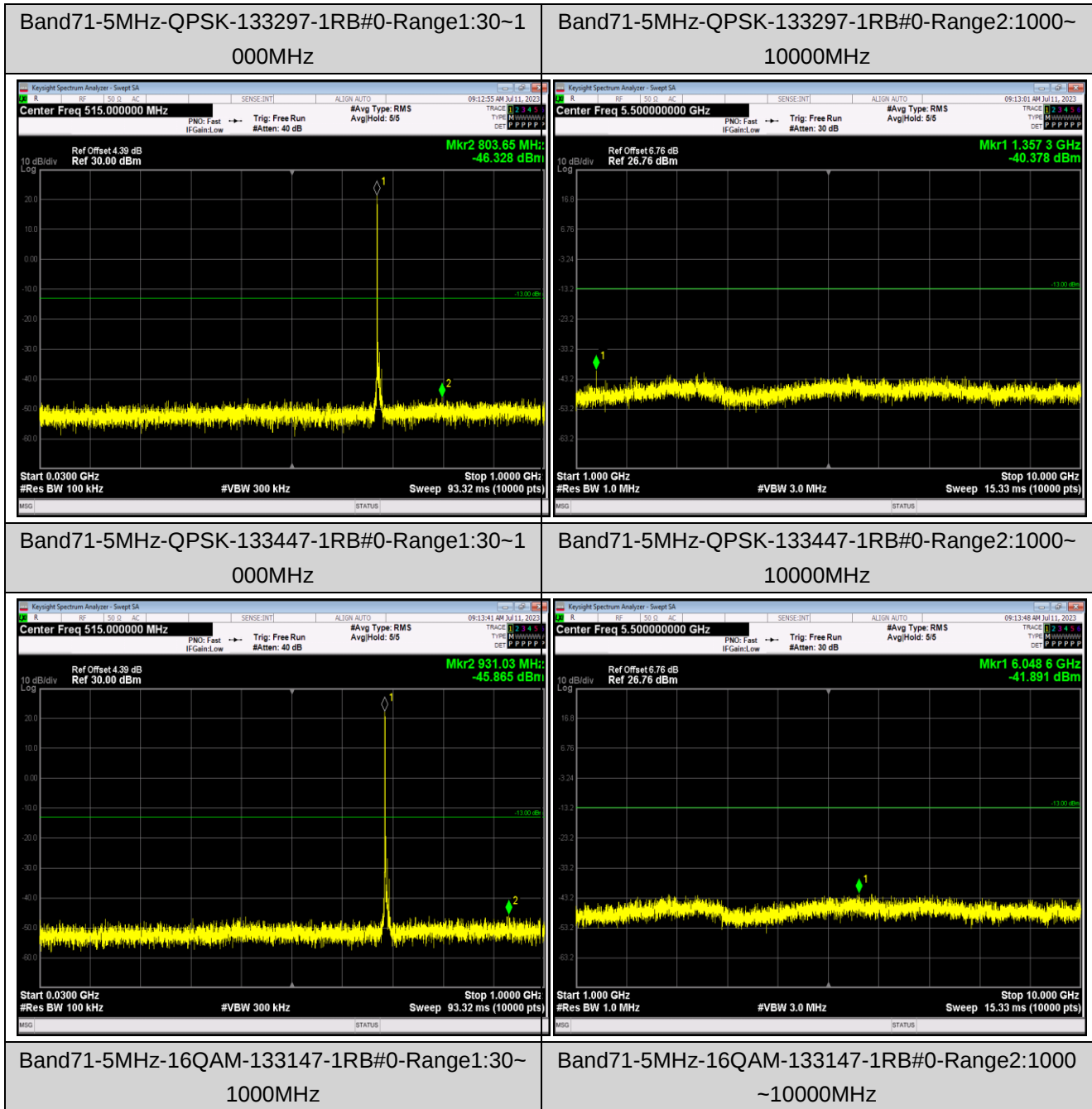
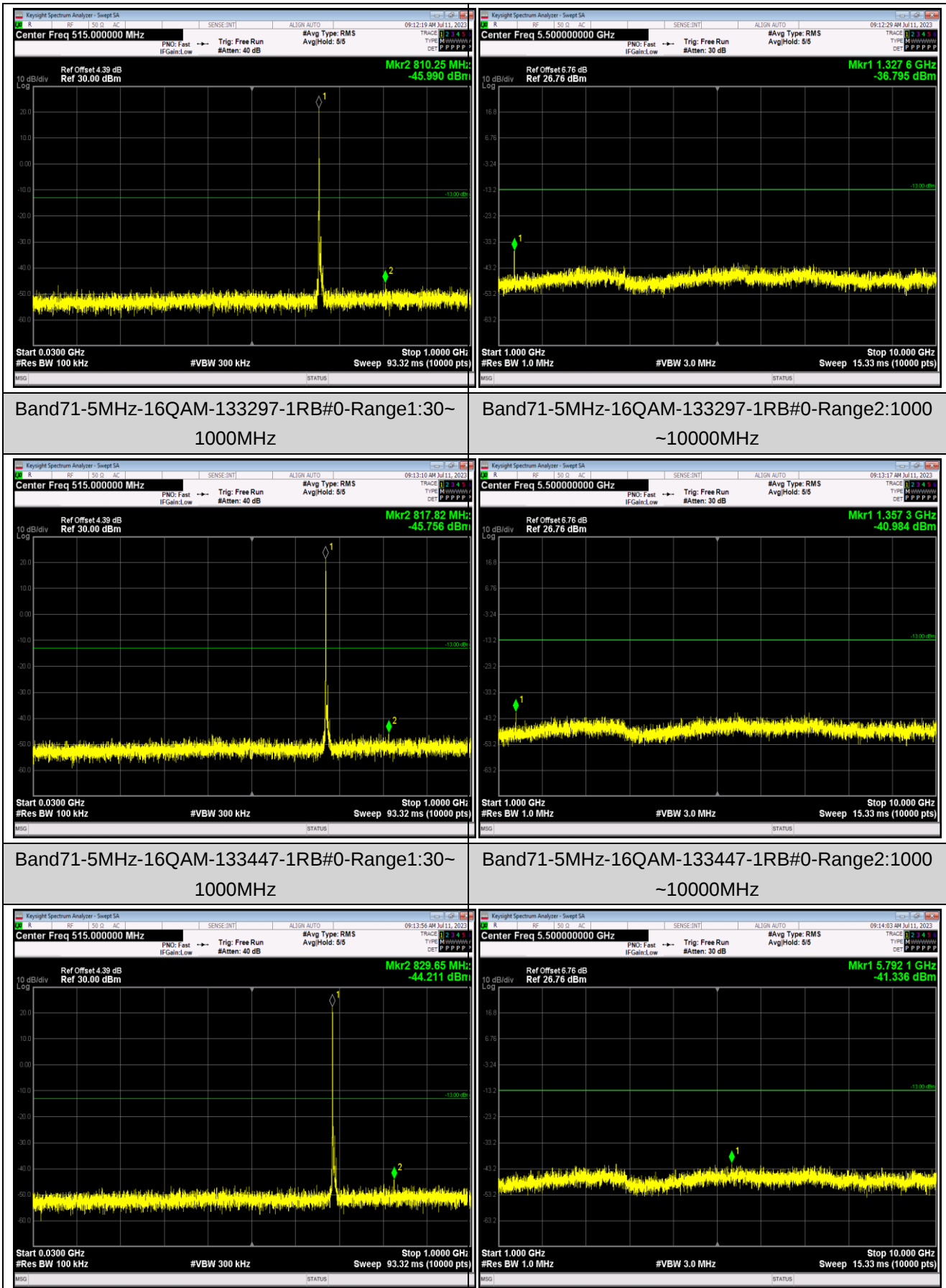
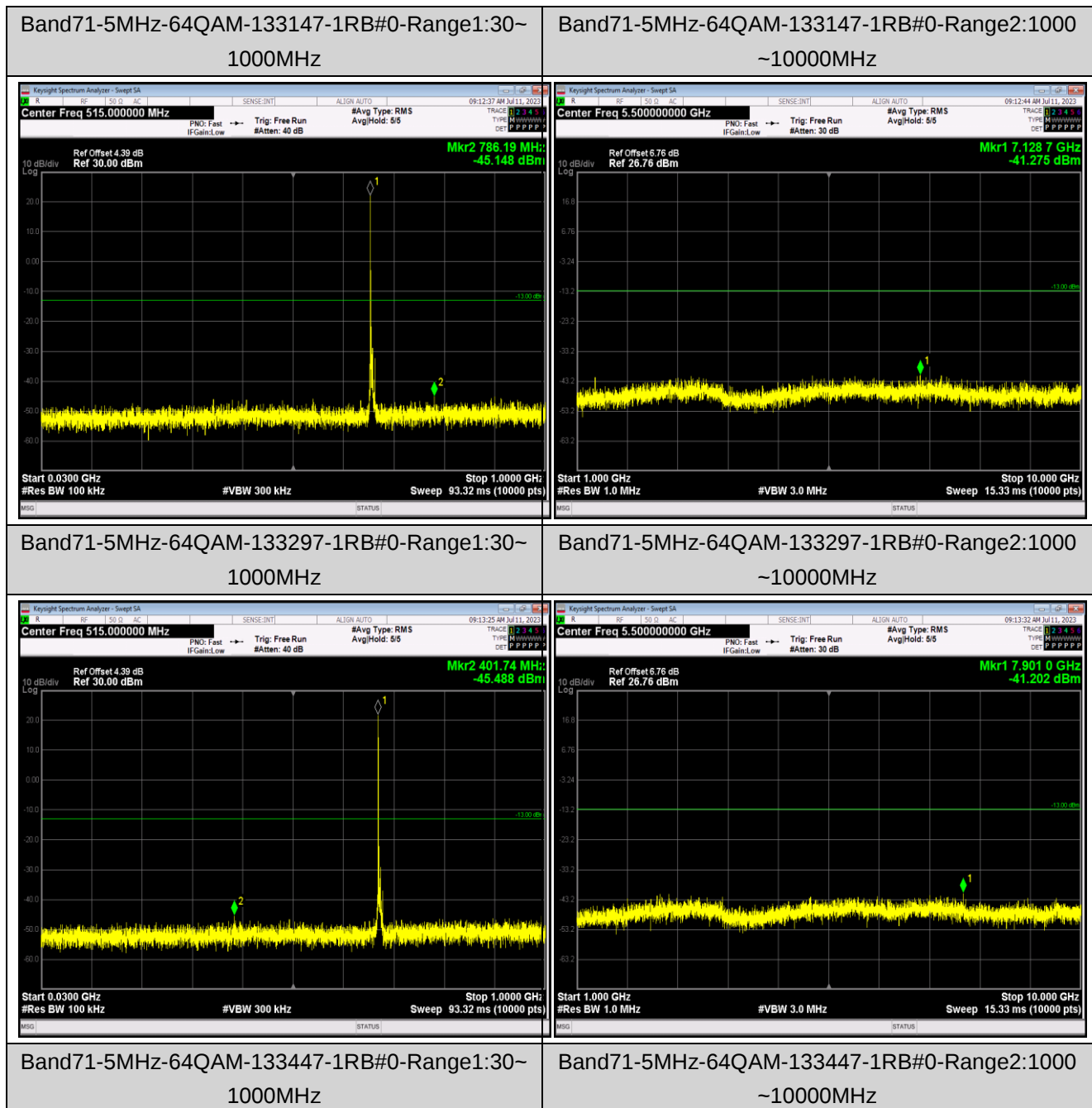
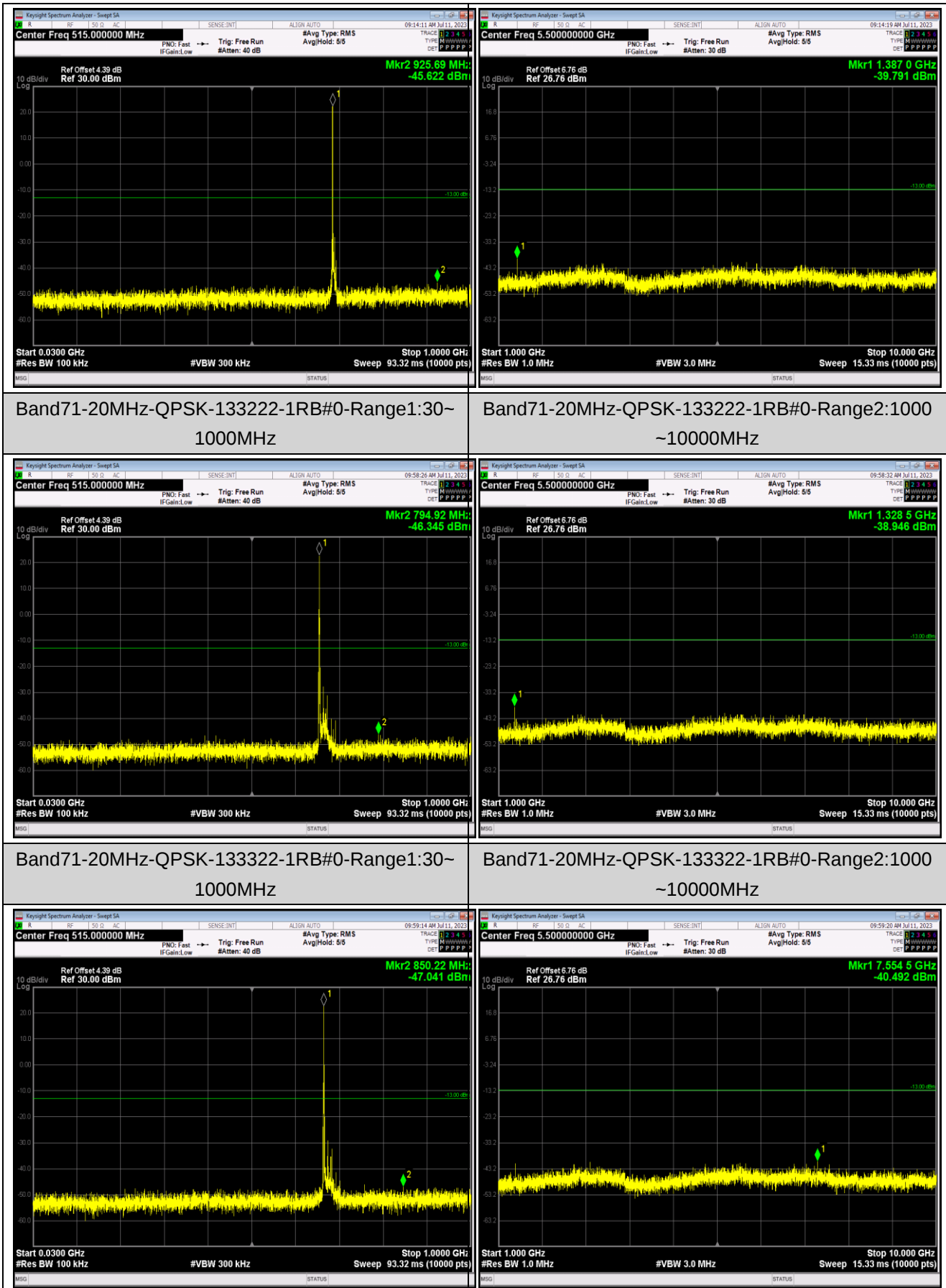


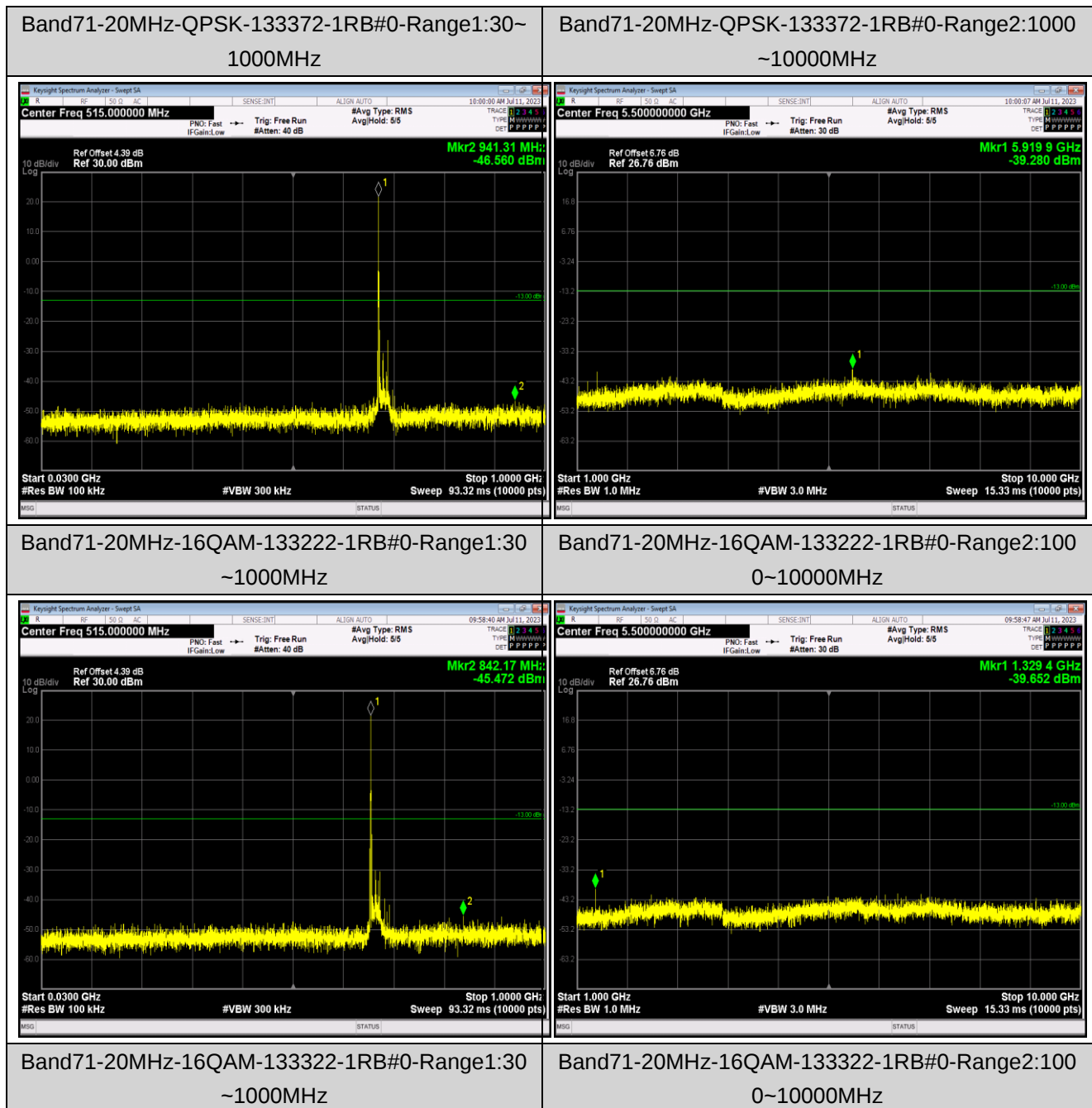


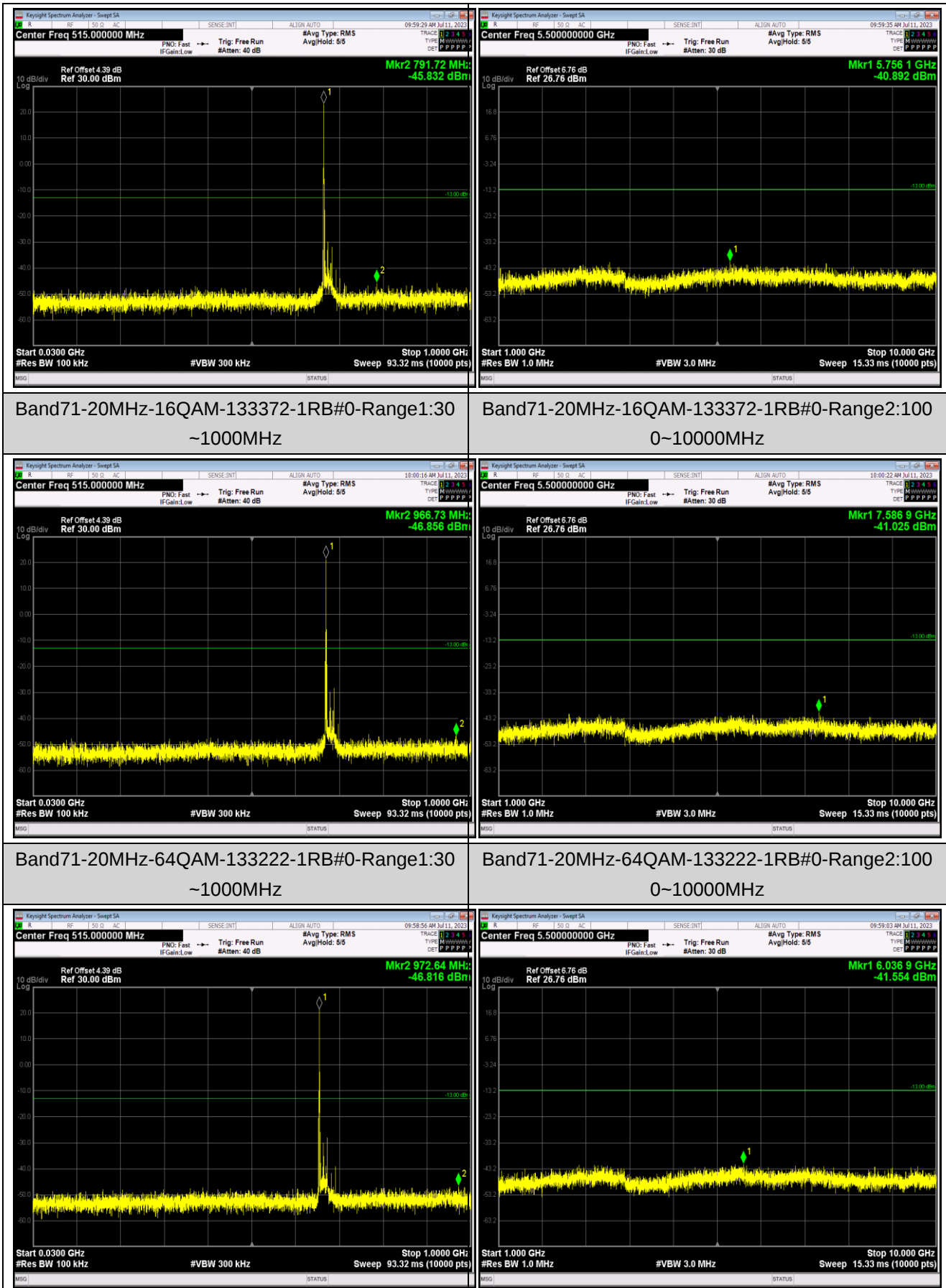


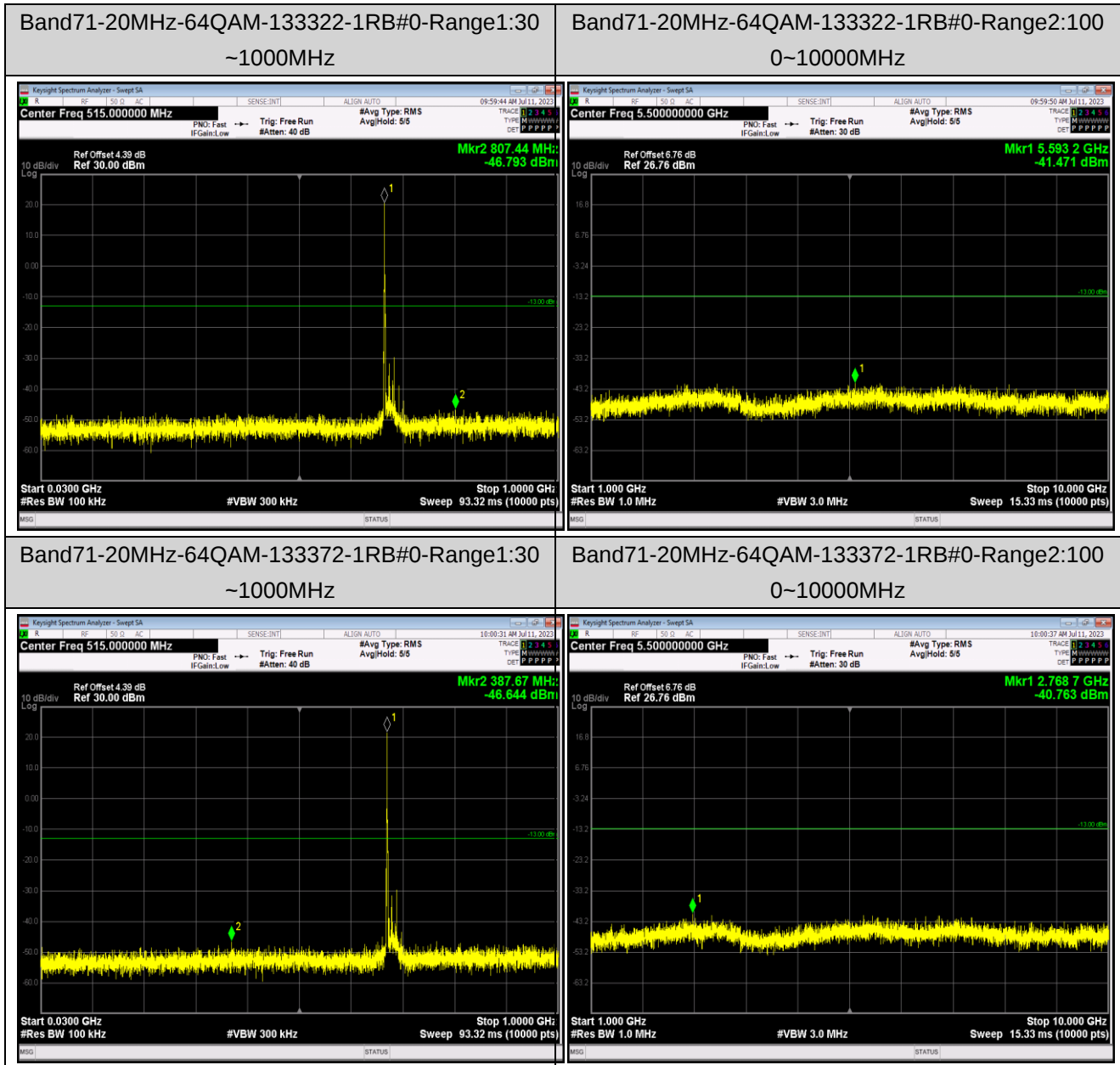












Appendix F: Frequency Stability

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					
3.85	-30	-17.44	-0.009277	Within authorized band for Band 2	Pass
	-20	-8.85	-0.004707		
	-10	-5.21	-0.002771		
	0	4.22	0.002245		
	10	-9.28	-0.004936		
	20	-13.22	-0.007032		
	30	-14.25	-0.007580		
	40	-18.81	-0.010005		
	50	-22.72	-0.012085		
16QAM					
3.85	-30	-15.54	-0.008266	Within authorized band for Band 2	Pass
	-20	-16.42	-0.008734		
	-10	-14.83	-0.007888		
	0	-10.99	-0.005846		
	10	-16.64	-0.008851		
	20	4.56	0.002426		
	30	-13.07	-0.006952		
	40	-11.47	-0.006101		
	50	-12.47	-0.006633		
64QAM					
3.85	-30	-4.09	-0.002176	Within authorized band for Band 2	Pass
	-20	2.32	0.001234		
	-10	-4.72	-0.002511		
	0	-12.96	-0.006894		
	10	-13.96	-0.007426		
	20	-8.64	-0.004596		
	30	-15.35	-0.008165		
	40	-12.80	-0.006809		
	50	-17.34	-0.009223		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-15.52	-0.008255	Within authorized band for Band 2	Pass
	3.85	-14.19	-0.007548		
	4.40	-13.18	-0.007011		
16QAM					
25	3.50	-20.31	-0.010803	Within authorized band for Band 2	Pass
	3.85	4.86	0.002585		
	4.40	-21.92	-0.011660		
64QAM					
25	3.50	-14.79	-0.007867	Within authorized band for Band 2	Pass
	3.85	-20.20	-0.010745		
	4.40	-14.16	-0.007532		
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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-8.45	-0.004877	Within authorized band for Band 4	Pass
	-20	-5.82	-0.003359		
	-10	-7.25	-0.004185		
	0	-17.18	-0.009916		
	10	-12.85	-0.007417		
	20	-8.00	-0.004618		
	30	-9.33	-0.005385		
	40	-10.91	-0.006297		
	50	-13.05	-0.007532		
16QAM					
3.85	-30	-17.17	-0.009911	Within authorized band for Band 4	Pass
	-20	-4.53	-0.002615		
	-10	-11.13	-0.006424		
	0	-12.09	-0.006978		
	10	-10.01	-0.005778		
	20	-12.85	-0.007417		
	30	-14.52	-0.008381		
	40	-2.03	-0.001172		
	50	-3.78	-0.002182		
64QAM					
3.85	-30	-12.60	-0.007273	Within authorized band for Band 4	Pass
	-20	-12.12	-0.006996		
	-10	3.09	0.001784		
	0	-10.31	-0.005951		
	10	-4.56	-0.002632		
	20	-10.36	-0.005980		
	30	-6.11	-0.003527		
	40	-9.88	-0.005703		
	50	-12.59	-0.007267		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-10.06	-0.005807	Within authorized band for Band 4	Pass
	3.85	-12.10	-0.006984		
	4.40	-12.30	-0.007100		
16QAM					
25	3.50	-13.46	-0.007769	Within authorized band for Band 4	Pass
	3.85	-13.89	-0.008017		
	4.40	-10.67	-0.006159		
64QAM					
25	3.50	-2.15	-0.001241	Within authorized band for Band 4	Pass
	3.85	-11.97	-0.006909		
	4.40	-5.62	-0.003244		
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					
3.85	-30	-9.93	-0.011871	±2.5	Pass
	-20	-10.11	-0.012086		
	-10	-8.53	-0.010197		
	0	-2.79	-0.003335		
	10	-10.81	-0.012923		
	20	-11.27	-0.013473		
	30	-6.95	-0.008308		
	40	-9.17	-0.010962		
	50	-8.57	-0.010245		
16QAM					
3.85	-30	-12.20	-0.014585	±2.5	Pass
	-20	-11.12	-0.013293		
	-10	-10.24	-0.012241		
	0	-8.77	-0.010484		
	10	-10.50	-0.012552		
	20	-7.55	-0.009026		
	30	-8.50	-0.010161		
	40	-2.05	-0.002451		
	50	-9.38	-0.011213		
64QAM					
3.85	-30	-10.46	-0.012504	±2.5	Pass
	-20	-9.74	-0.011644		
	-10	-8.65	-0.010341		
	0	-10.11	-0.012086		
	10	-5.59	-0.006683		
	20	-9.86	-0.011787		
	30	-14.92	-0.017836		
	40	-9.74	-0.011644		
	50	-9.33	-0.011154		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-9.48	-0.011333	±2.5	Pass
	3.85	-9.71	-0.011608		
	4.40	-11.32	-0.013533		
16QAM					
25	3.50	-1.65	-0.001973	±2.5	Pass
	3.85	-10.43	-0.012469		
	4.40	-13.22	-0.015804		
64QAM					
25	3.50	-10.23	-0.012230	±2.5	Pass
	3.85	-11.39	-0.013616		
	4.40	-5.29	-0.006324		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 12 part:

Reference Frequency: LTE Band 12(10MHz) Middle channel=23095 Frequency=707.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-10.66	-0.015067	Within authorized band for Band 12	Pass
	-20	-9.70	-0.013710		
	-10	-8.60	-0.012155		
	0	-4.81	-0.006799		
	10	-5.18	-0.007322		
	20	-10.60	-0.014982		
	30	-8.64	-0.012212		
	40	-8.75	-0.012367		
	50	-6.78	-0.009583		
16QAM					
3.85	-30	-7.20	-0.010177	Within authorized band for Band 12	Pass
	-20	-12.19	-0.017230		
	-10	-7.93	-0.011208		
	0	-7.77	-0.010982		
	10	-8.24	-0.011647		
	20	-7.21	-0.010191		
	30	-8.98	-0.012693		
	40	-6.49	-0.009173		
	50	-5.91	-0.008353		
64QAM					
3.85	-30	-6.24	-0.008820	Within authorized band for Band 12	Pass
	-20	-3.88	-0.005484		
	-10	-9.66	-0.013654		
	0	-7.22	-0.010205		
	10	-11.12	-0.015717		
	20	-9.34	-0.013201		
	30	-10.54	-0.014898		
	40	-9.06	-0.012806		
	50	-5.51	-0.007788		