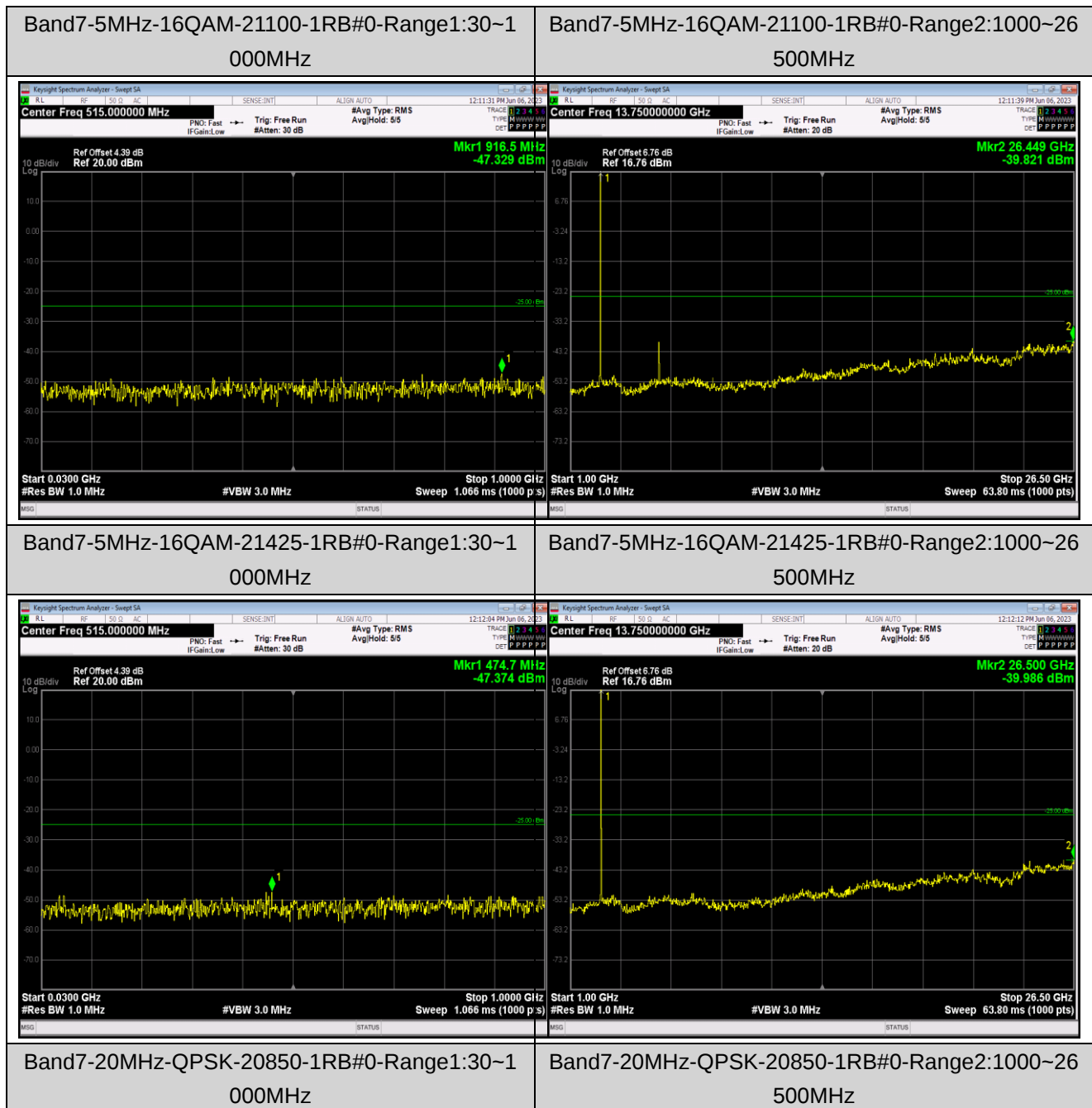
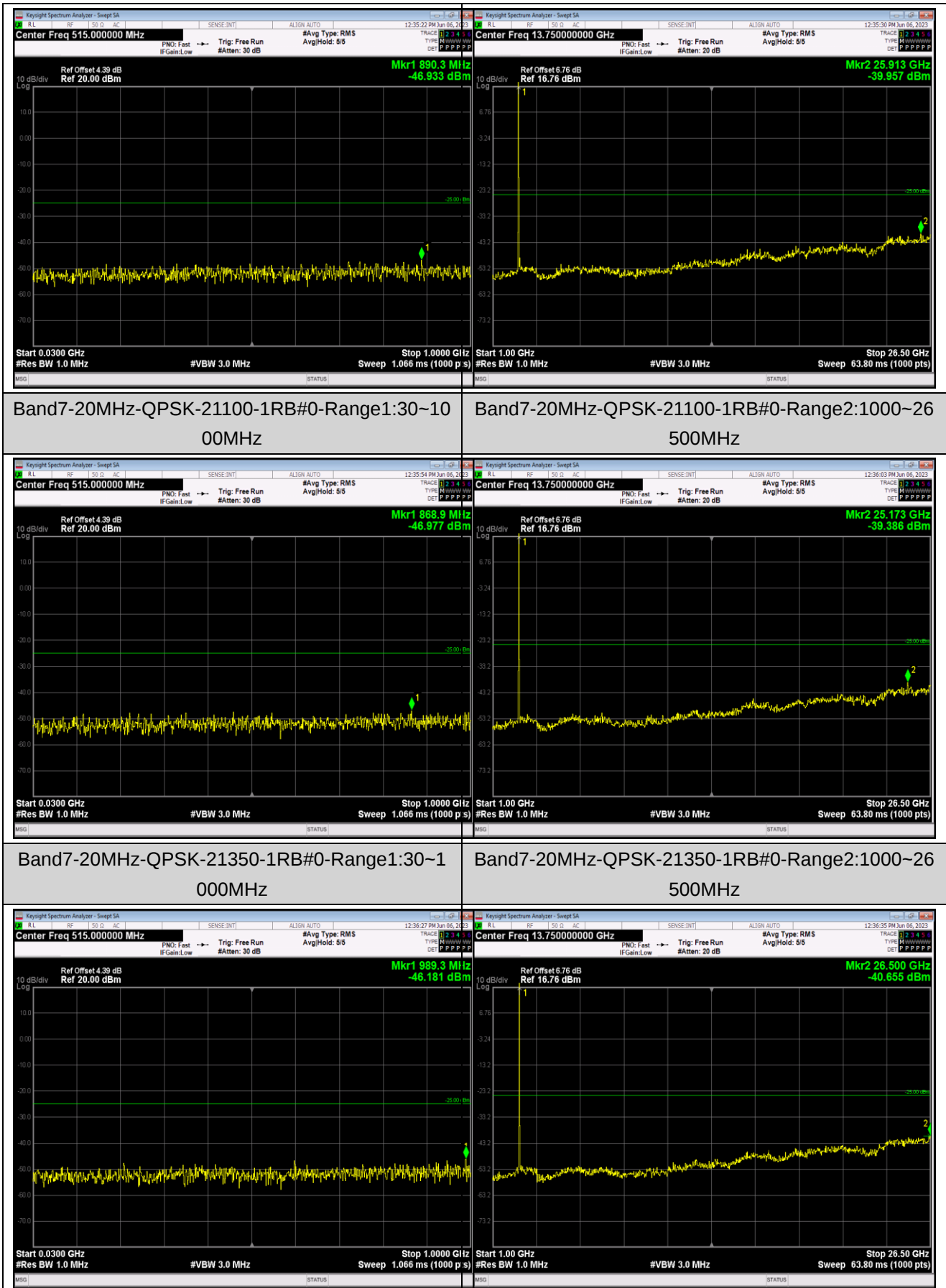
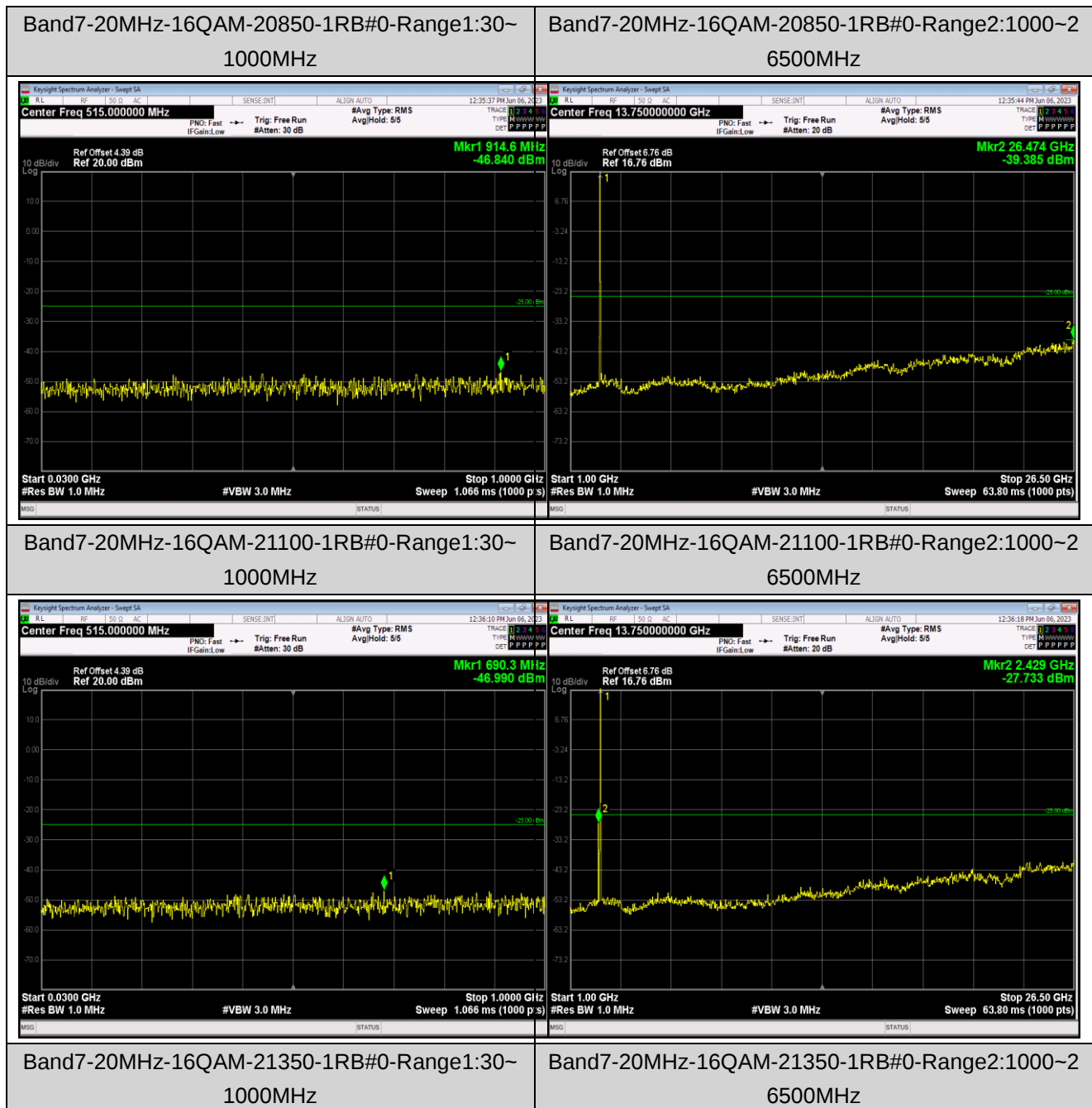
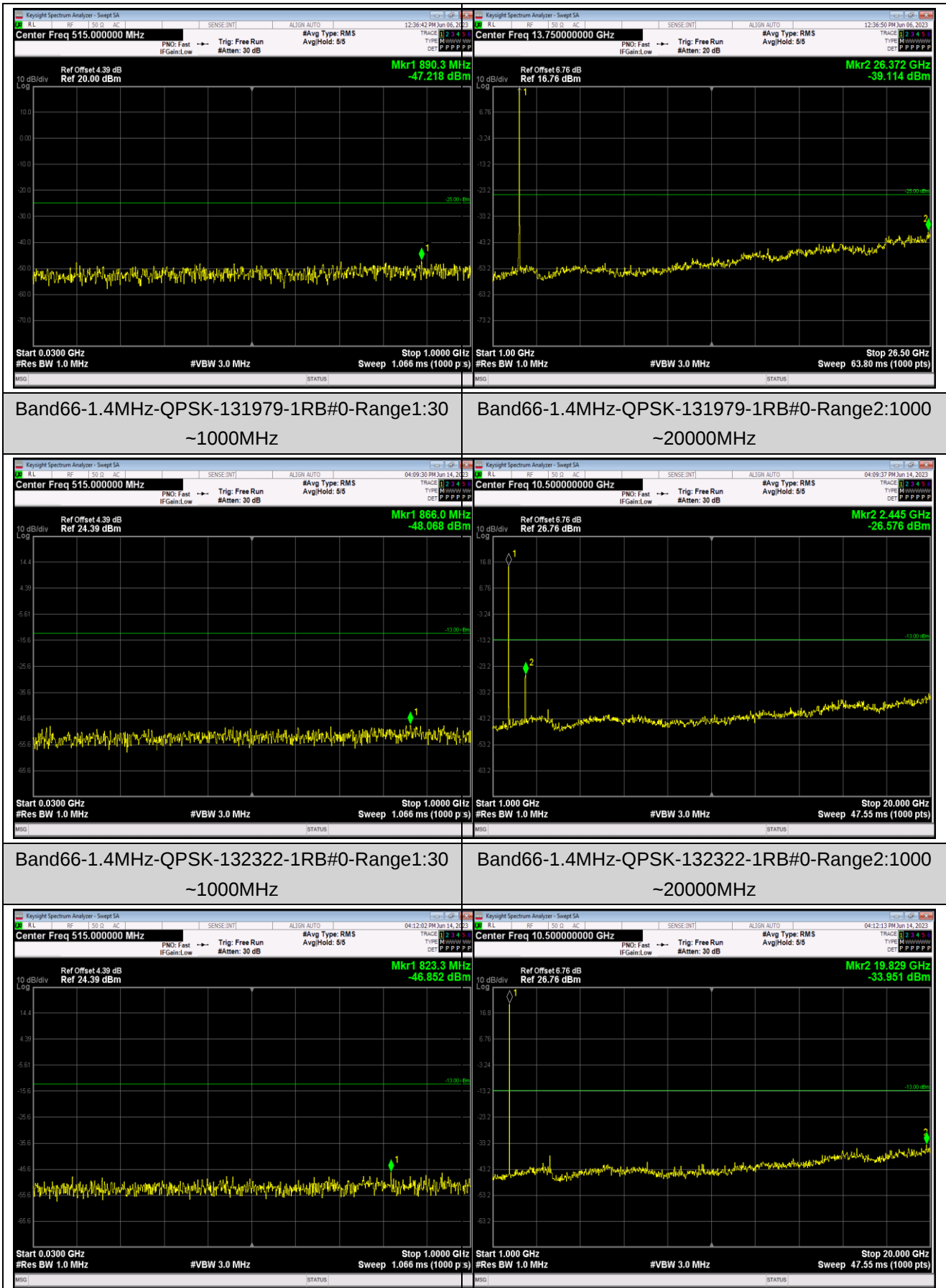
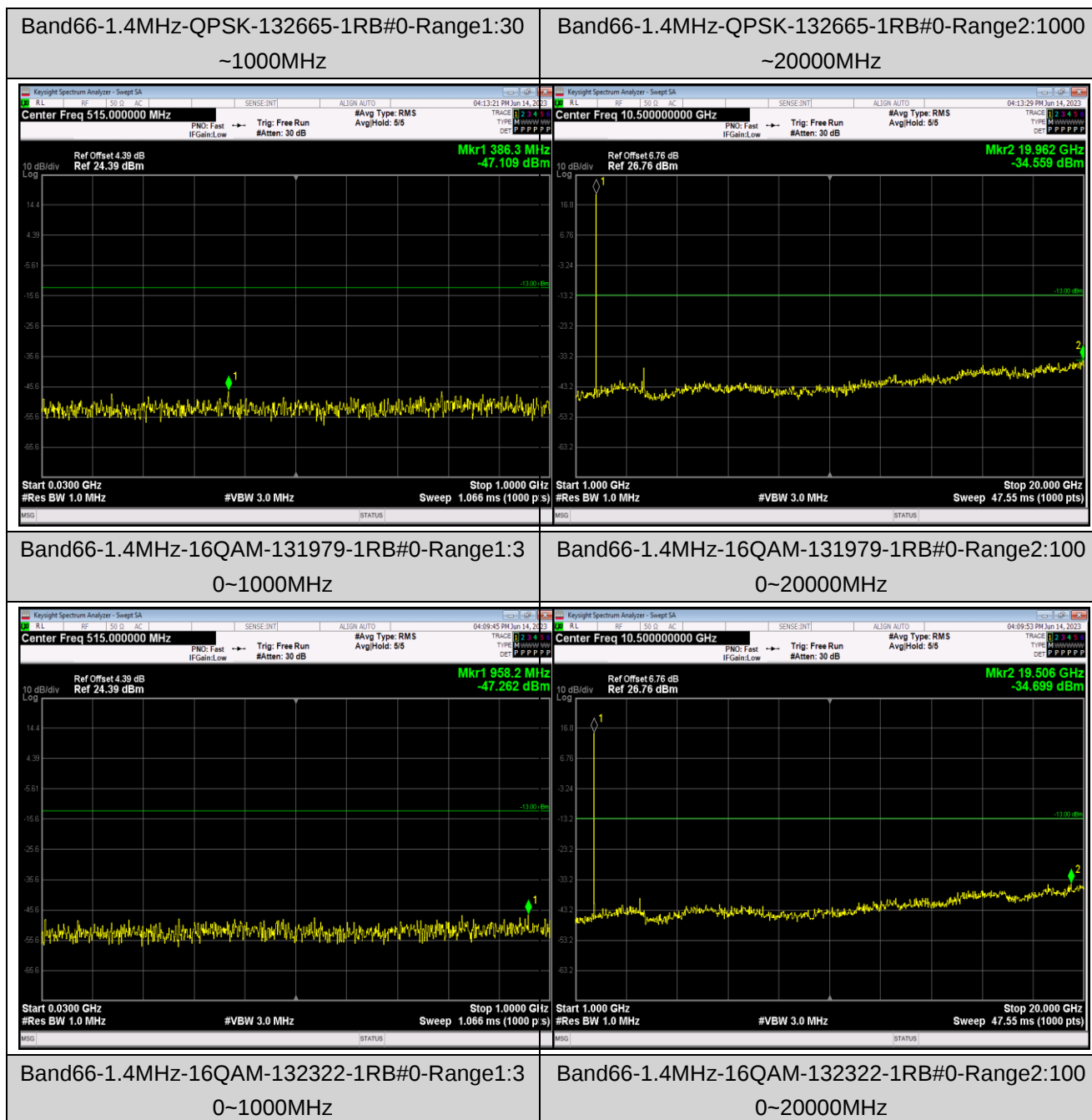


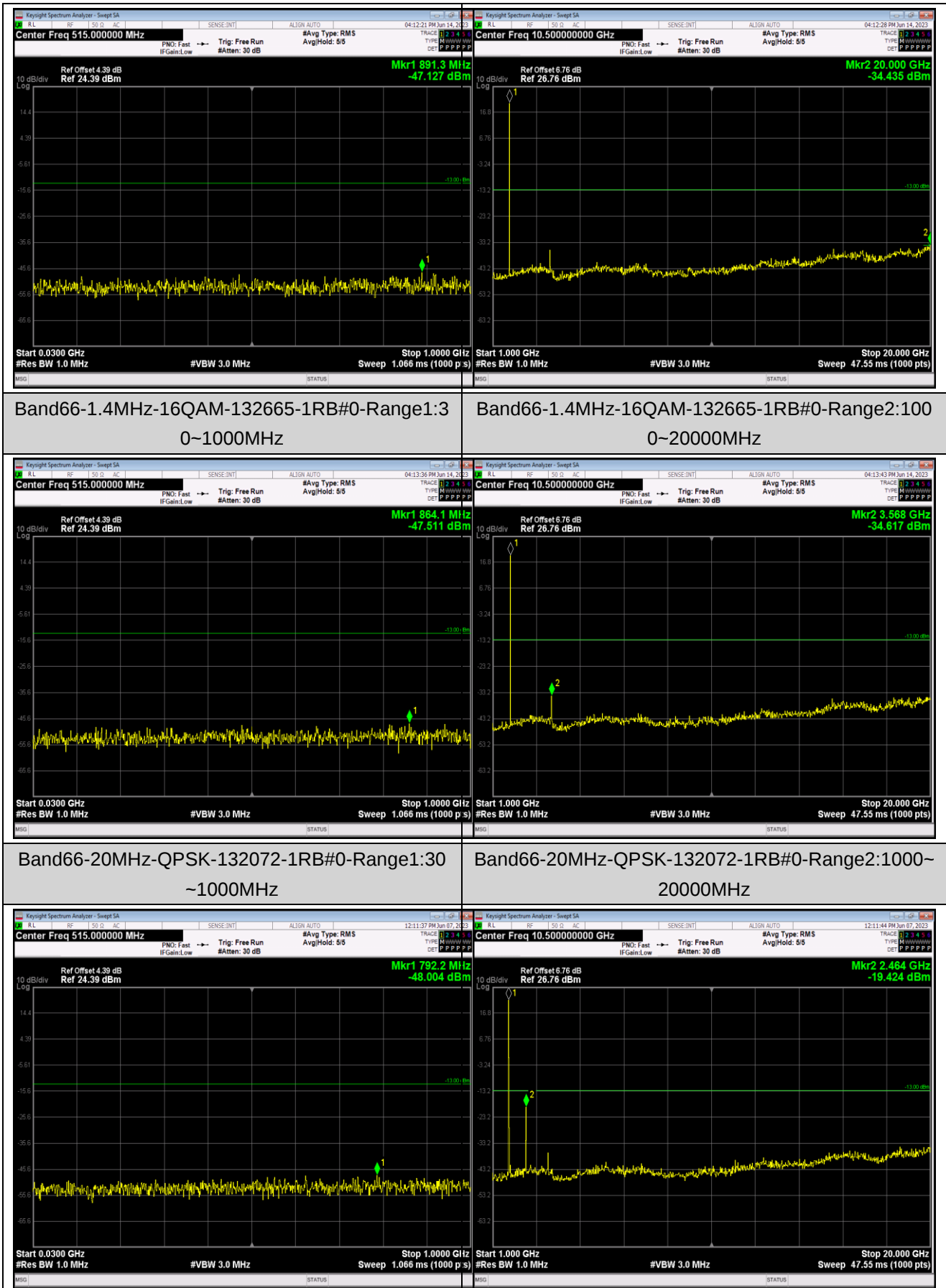


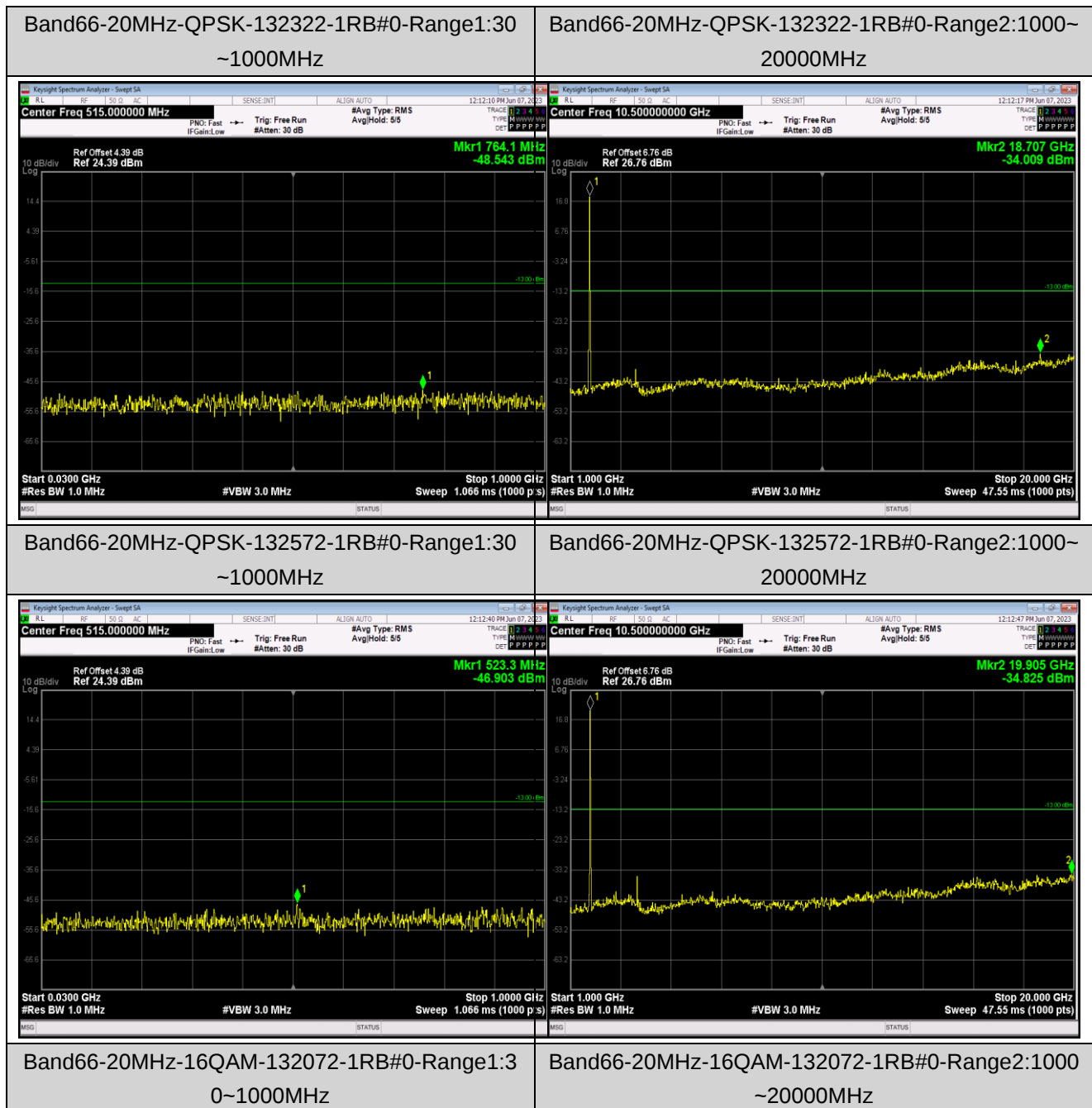


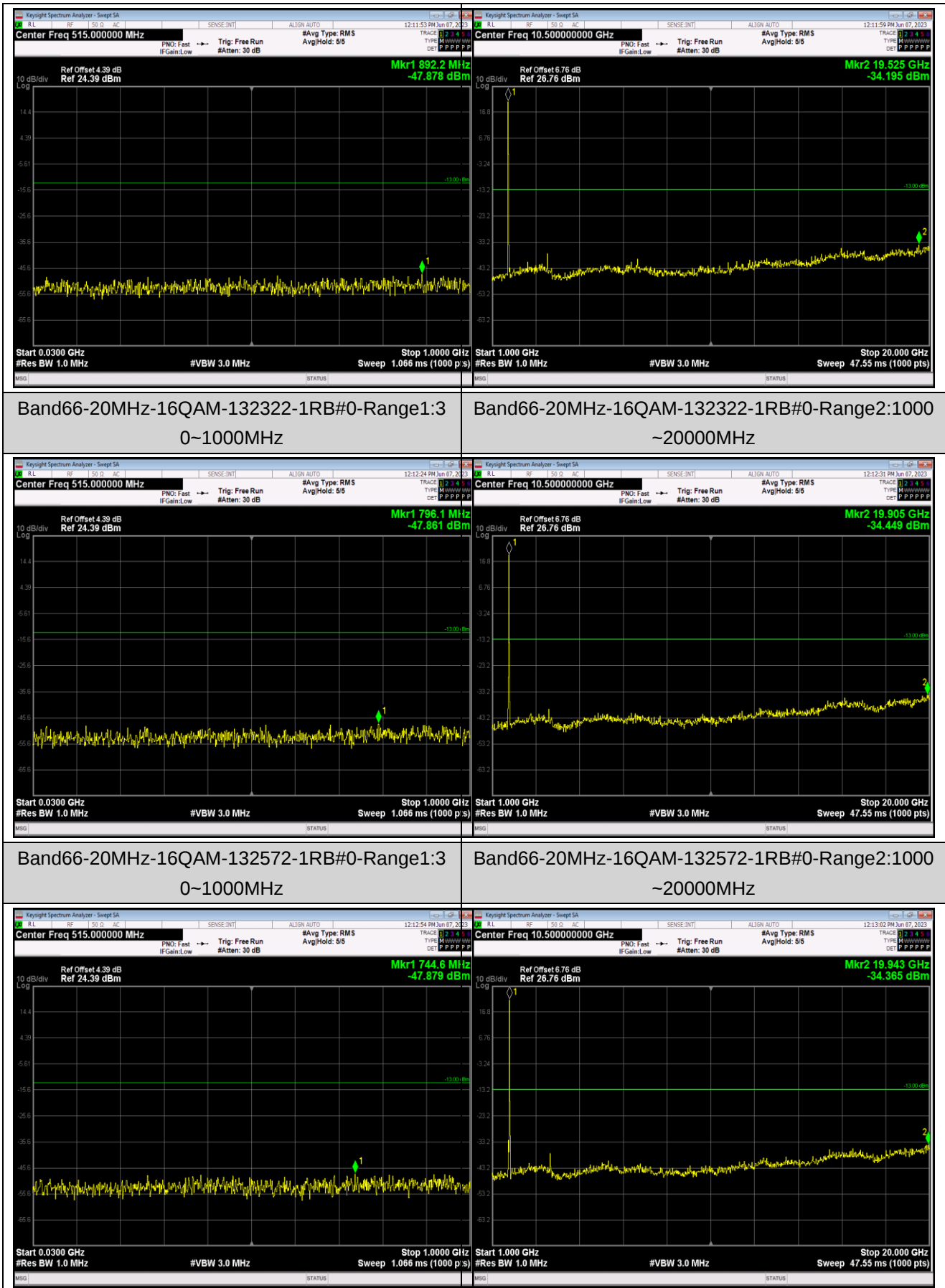












Appendix F: Frequency Stability

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					
3.70	-30	6.48	0.003447	Within authorized band for Band 2	Pass
	-20	5.82	0.003096		
	-10	7.91	0.004207		
	0	9.01	0.004793		
	10	10.27	0.005463		
	20	5.58	0.002968		
	30	-5.41	-0.002878		
	40	-16.71	-0.008888		
	50	-31.69	-0.016856		
16QAM					
3.70	-30	-29.24	-0.015553	Within authorized band for Band 2	Pass
	-20	-32.42	-0.017245		
	-10	-36.28	-0.019298		
	0	-36.88	-0.019617		
	10	-41.94	-0.022309		
	20	-40.61	-0.021601		
	30	-42.59	-0.022654		
	40	-46.48	-0.024723		
	50	-48.77	-0.025941		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-12.02	-0.006394	Within authorized band for Band 2	Pass
	3.70	-12.40	-0.006596		
	4.20	-6.38	-0.003394		
16QAM					
25	3.50	-19.93	-0.010601	Within authorized band for Band 2	Pass
	3.70	-5.66	-0.003011		
	4.20	-23.59	-0.012548		
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					
3.70	-30	28.28	0.016323	Within authorized band for Band 4	Pass
	-20	31.09	0.017945		
	-10	32.82	0.018944		
	0	37.69	0.021755		
	10	41.60	0.024012		
	20	41.38	0.023885		
	30	5.51	0.003180		
	40	3.78	0.002182		
	50	7.37	0.004254		
16QAM					
3.70	-30	-4.68	-0.002701	Within authorized band for Band 4	Pass
	-20	-6.98	-0.004029		
	-10	-7.14	-0.004121		
	0	-9.63	-0.005558		
	10	-9.77	-0.005639		
	20	-11.19	-0.006459		
	30	-14.59	-0.008421		
	40	-11.63	-0.006713		
	50	-11.26	-0.006499		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	19.15	0.011053	Within authorized band for Band 4	Pass
	3.70	18.28	0.010551		
	4.20	23.96	0.013830		
16QAM					
25	3.50	3.49	0.002014	Within authorized band for Band 4	Pass
	3.70	4.79	0.002765		
	4.20	-4.11	-0.002372		
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					
3.70	-30	26.68	0.031895	±2.5	Pass
	-20	28.81	0.034441		
	-10	28.48	0.034047		
	0	28.14	0.033640		
	10	27.07	0.032361		
	20	27.17	0.032481		
	30	25.65	0.030663		
	40	24.09	0.028799		
	50	23.62	0.028237		
16QAM					
3.70	-30	19.41	0.023204	±2.5	Pass
	-20	18.70	0.022355		
	-10	17.67	0.021124		
	0	17.94	0.021447		
	10	17.72	0.021184		
	20	15.95	0.019068		
	30	16.34	0.019534		
	40	15.19	0.018159		
	50	15.23	0.018207		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	18.05	0.021578	±2.5	Pass
	3.70	12.70	0.015182		
	4.20	26.54	0.031727		
16QAM					
25	3.50	21.10	0.025224	±2.5	Pass
	3.70	24.23	0.028966		
	4.20	20.73	0.024782		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 7 part:

Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.70	-30	9.13	0.003602	Within authorized band for Band 7	Pass
	-20	16.01	0.006316		
	-10	14.58	0.005751		
	0	20.86	0.008229		
	10	19.53	0.007704		
	20	22.62	0.008923		
	30	24.46	0.009649		
	40	28.65	0.011302		
	50	22.09	0.008714		
16QAM					
3.70	-30	9.36	0.003692	Within authorized band for Band 7	Pass
	-20	10.24	0.004039		
	-10	10.86	0.004284		
	0	9.13	0.003602		
	10	-8.88	-0.003503		
	20	6.42	0.002533		
	30	-6.68	-0.002635		
	40	-7.87	-0.003105		
	50	-11.69	-0.004611		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	41.89	0.016525	Within authorized band for Band 7	Pass
	3.70	24.25	0.009566		
	4.20	-8.85	-0.003491		
16QAM					
25	3.50	22.86	0.009018	Within authorized band for Band 7	Pass
	3.70	24.86	0.009807		
	4.20	19.48	0.007684		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 66 part:

Reference Frequency: LTE Band 66 (10MHz) Middle channel=132322 Frequency=1745.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.70	-30	19.07	0.010928	Within authorized band for Band 66	Pass
	-20	20.63	0.011822		
	-10	18.04	0.010338		
	0	19.35	0.011089		
	10	19.20	0.011003		
	20	20.20	0.011576		
	30	19.07	0.010928		
	40	19.77	0.011330		
	50	23.26	0.013330		
16QAM					
3.70	-30	15.96	0.009146	Within authorized band for Band 66	Pass
	-20	21.13	0.012109		
	-10	20.16	0.011553		
	0	23.62	0.013536		
	10	28.60	0.016390		
	20	29.38	0.016837		
	30	33.45	0.019169		
	40	-17.97	-0.010298		
	50	-18.00	-0.010315		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	16.51	0.009461	Within authorized band for Band 66	Pass
	3.70	13.16	0.007542		
	4.20	17.02	0.009754		
16QAM					
25	3.50	21.59	0.012372	Within authorized band for Band 66	Pass
	3.70	18.51	0.010607		
	4.20	16.79	0.009622		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
Band2	20MHz	64QAM	18900	100RB#0	PASS	PASS
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	100RB#0	PASS	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS	PASS

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

