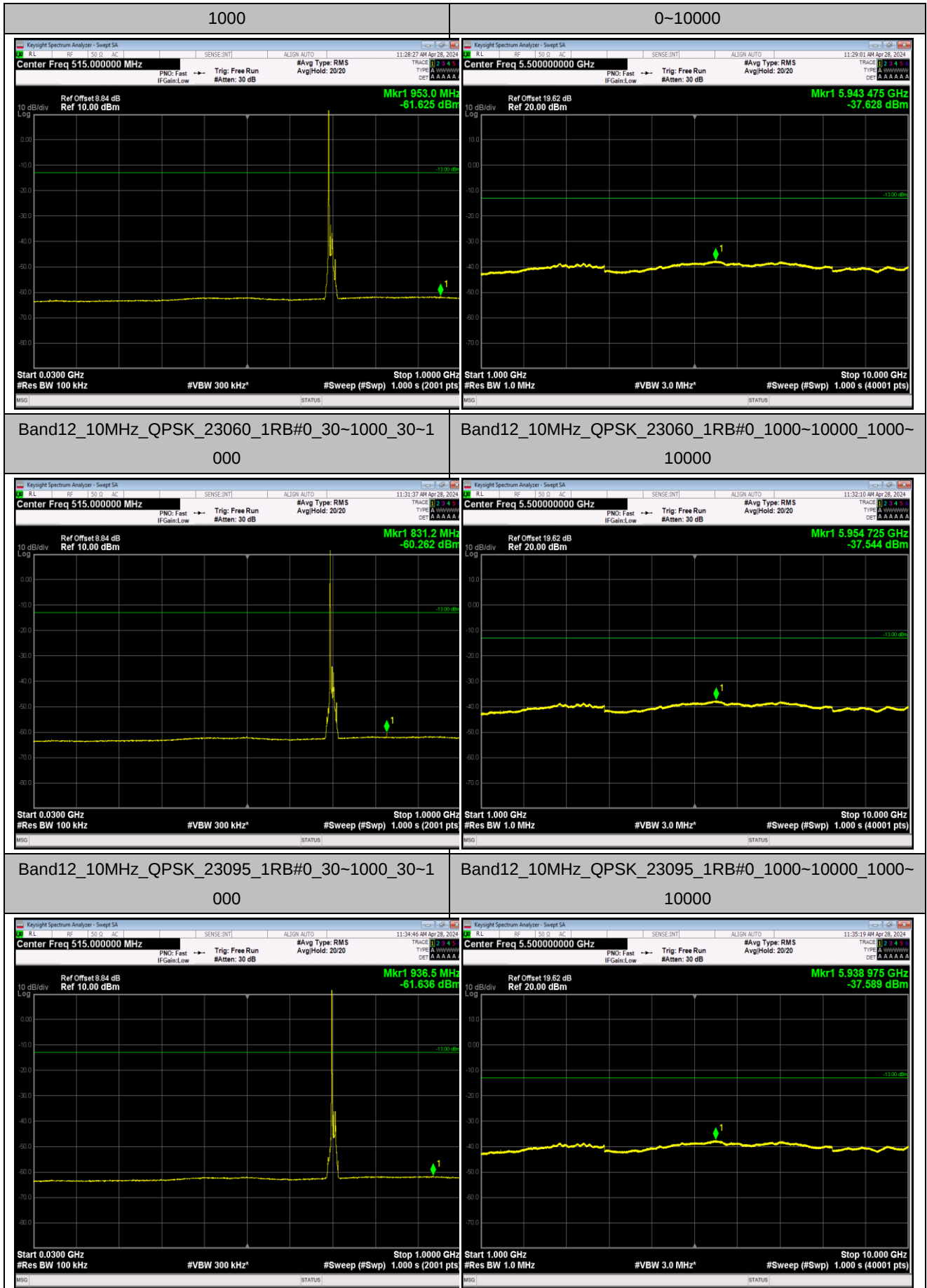
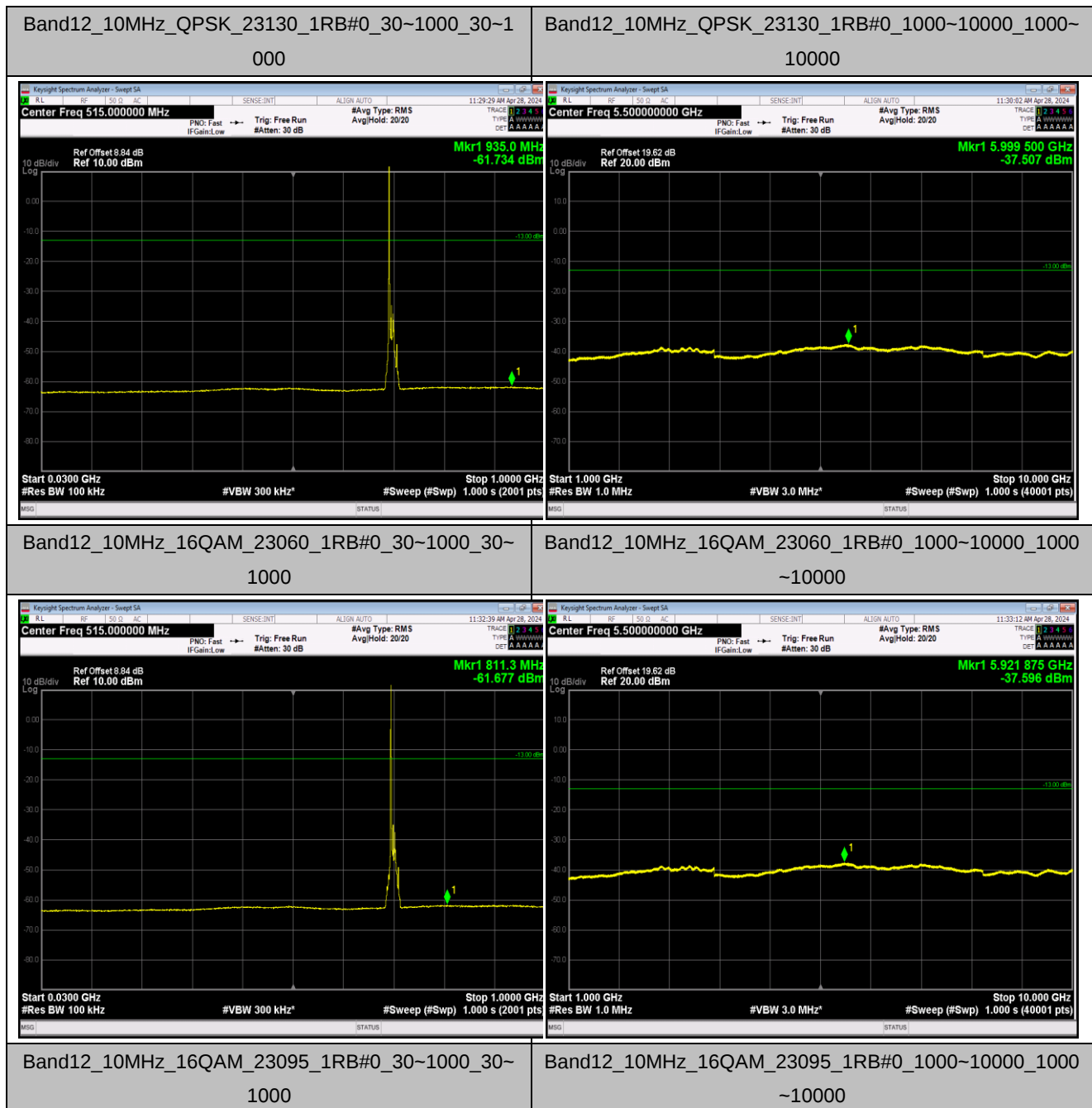
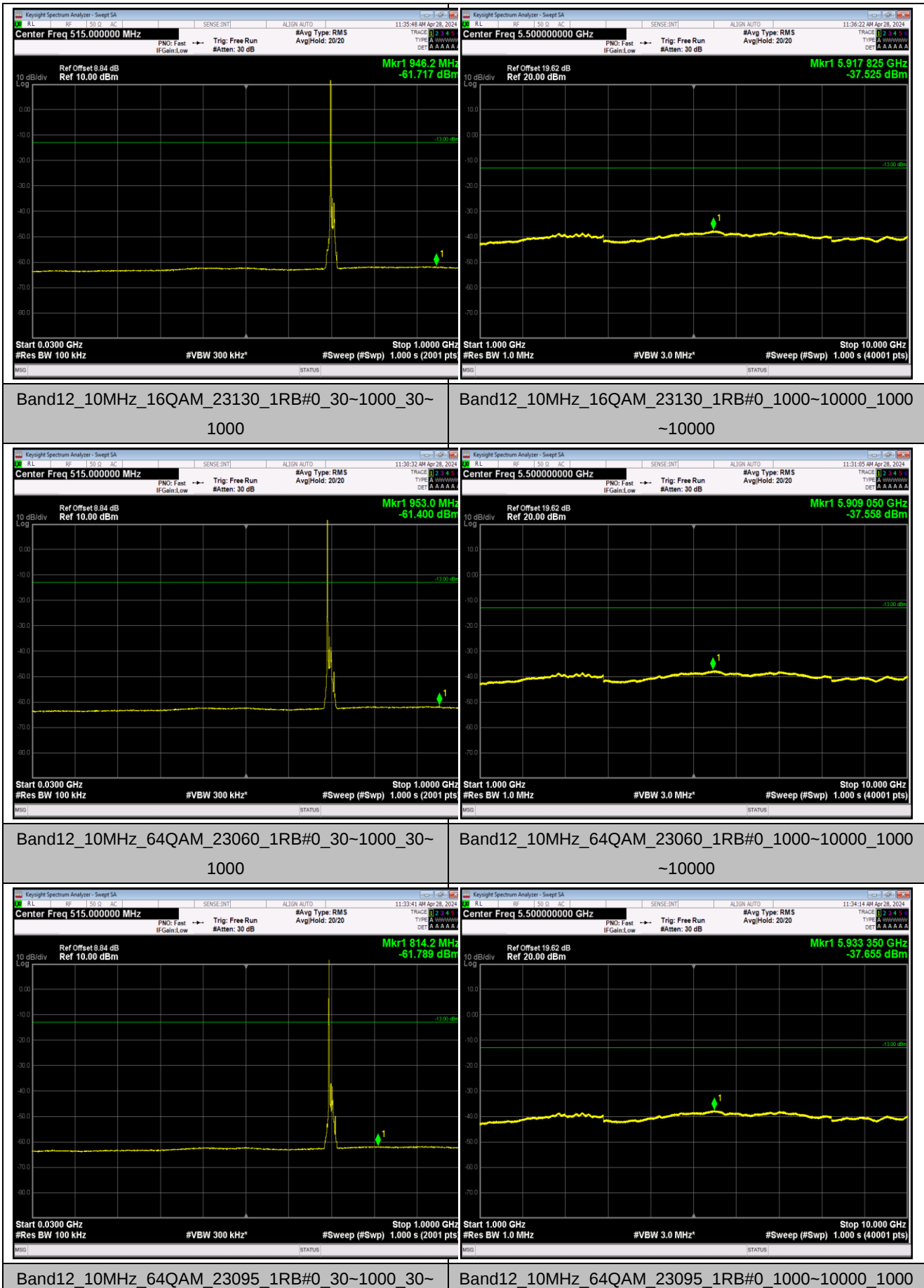
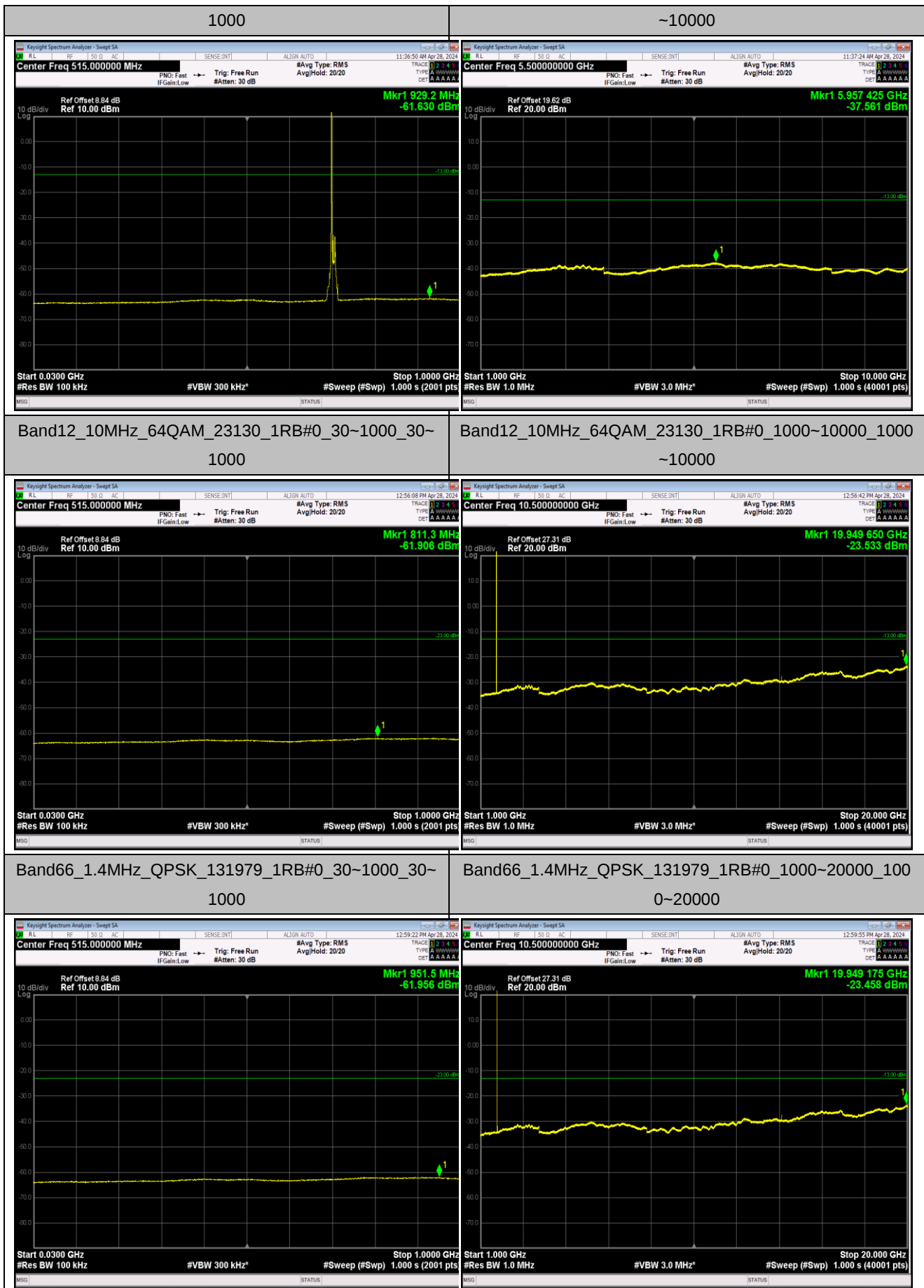
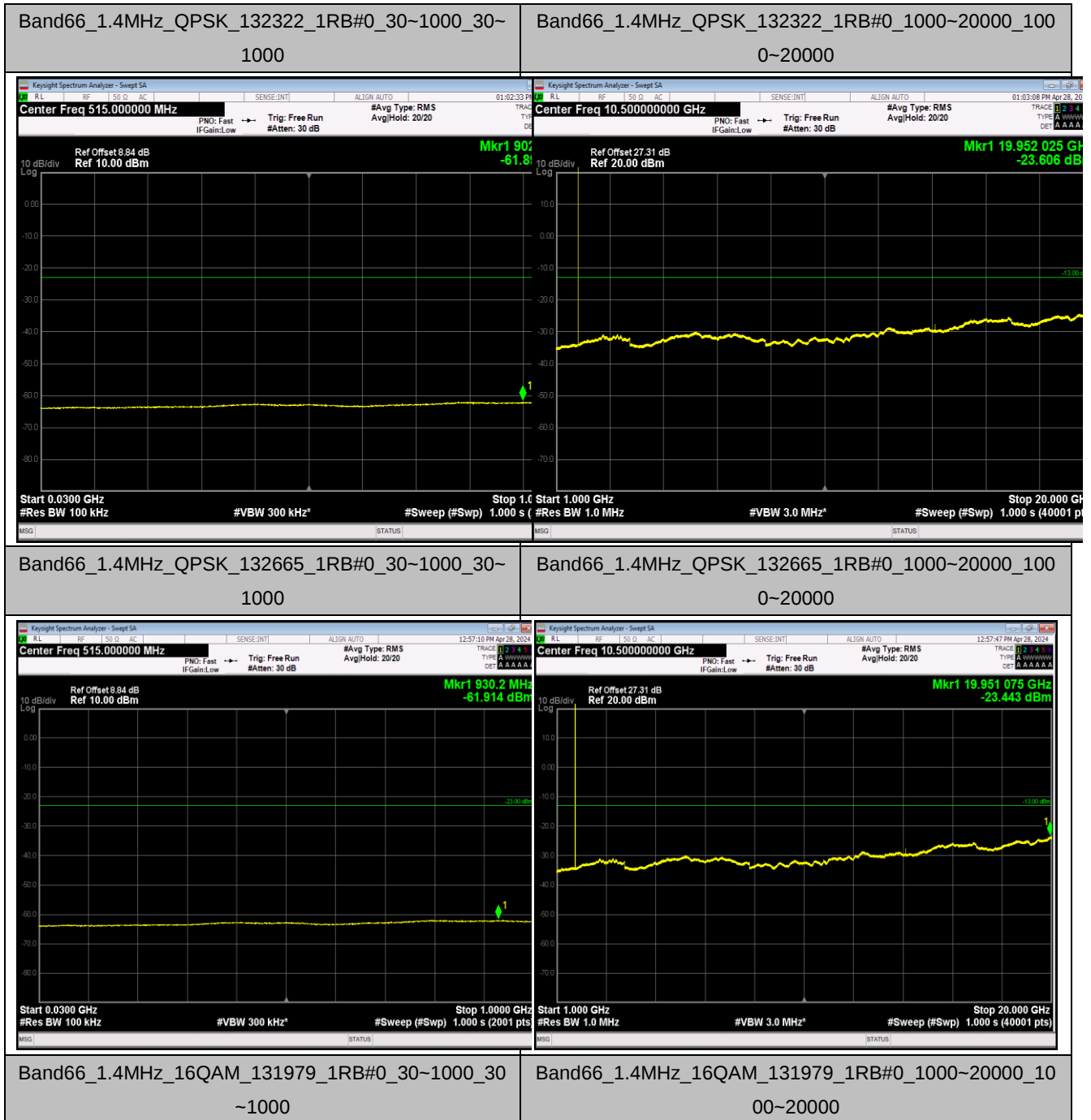


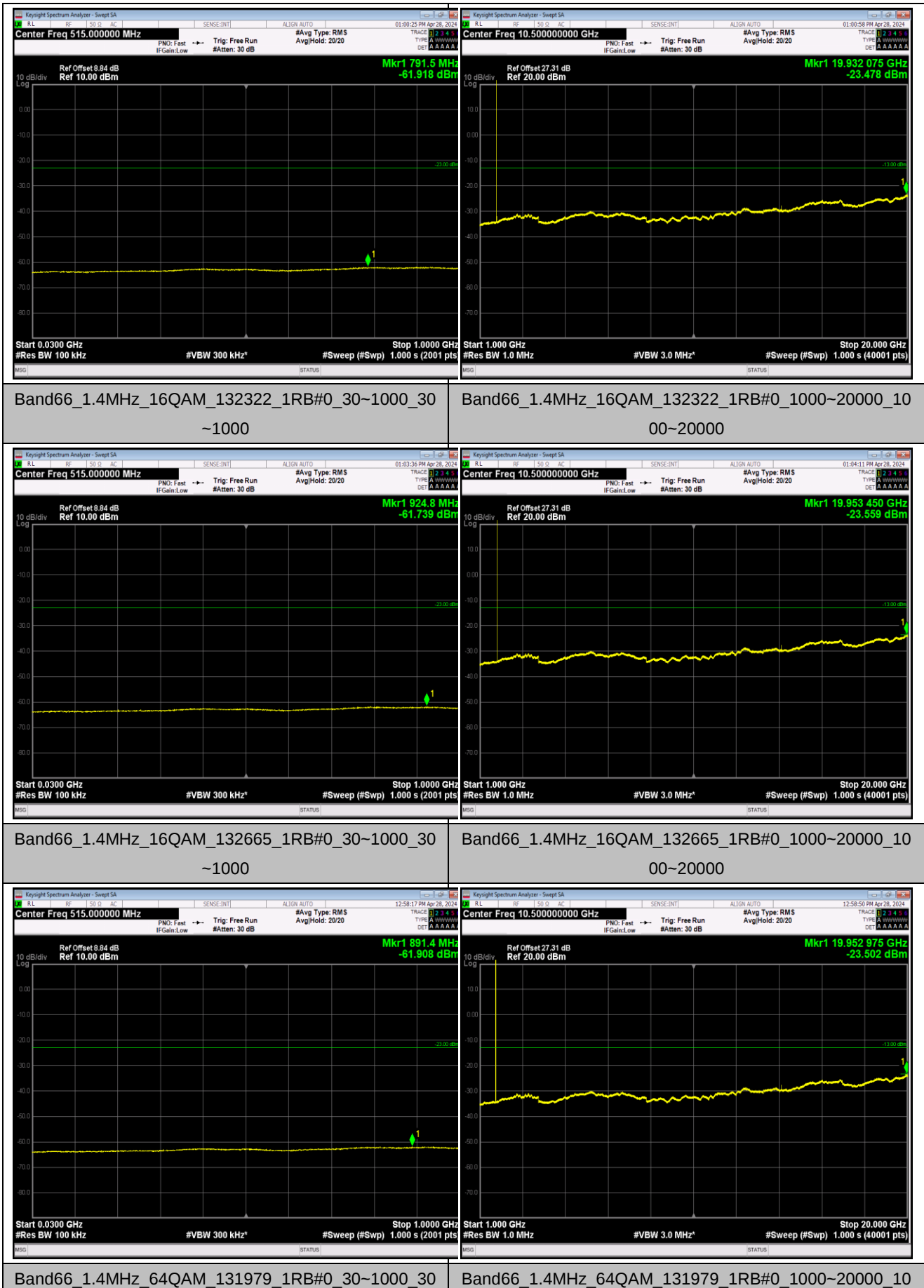


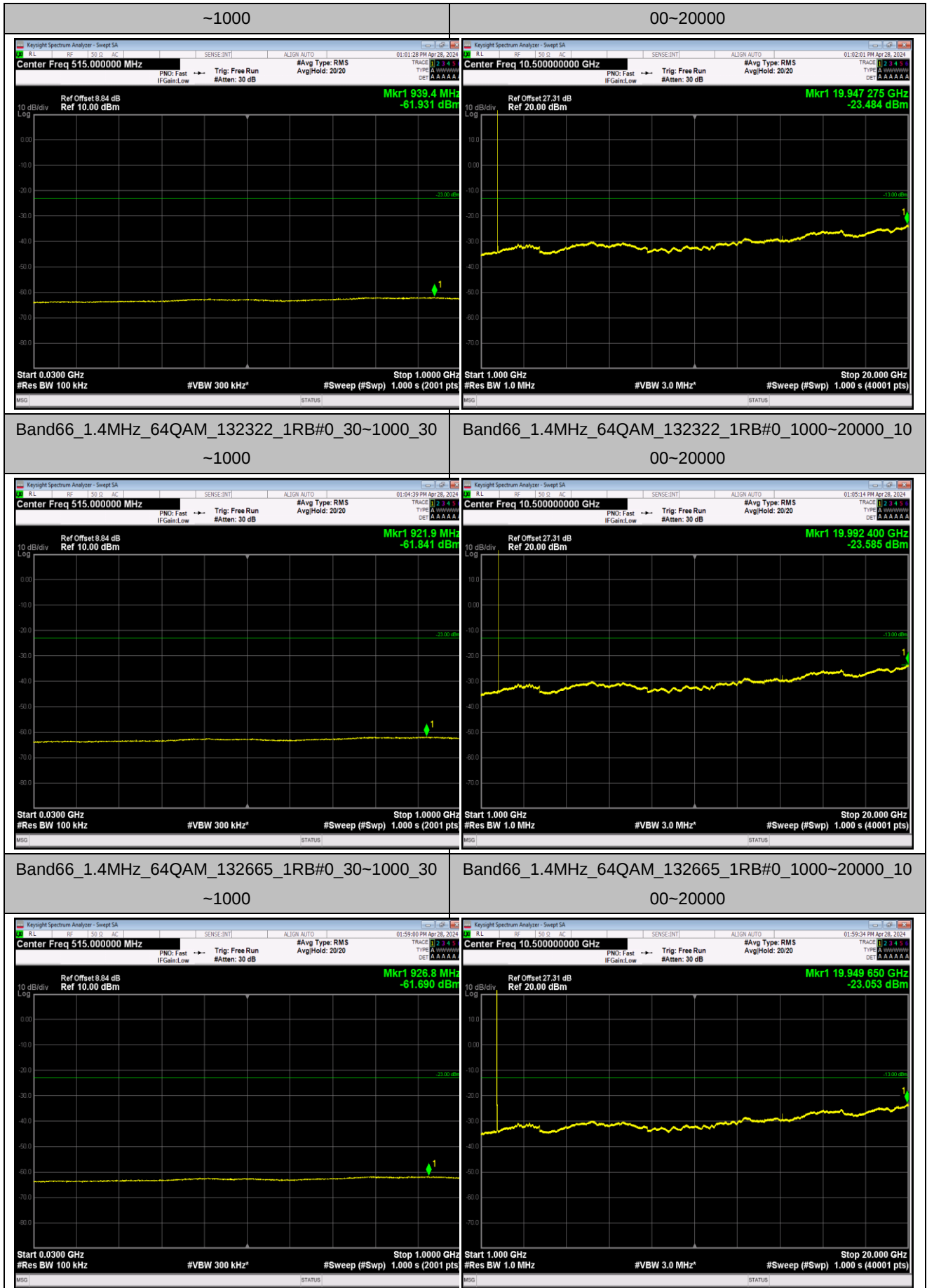


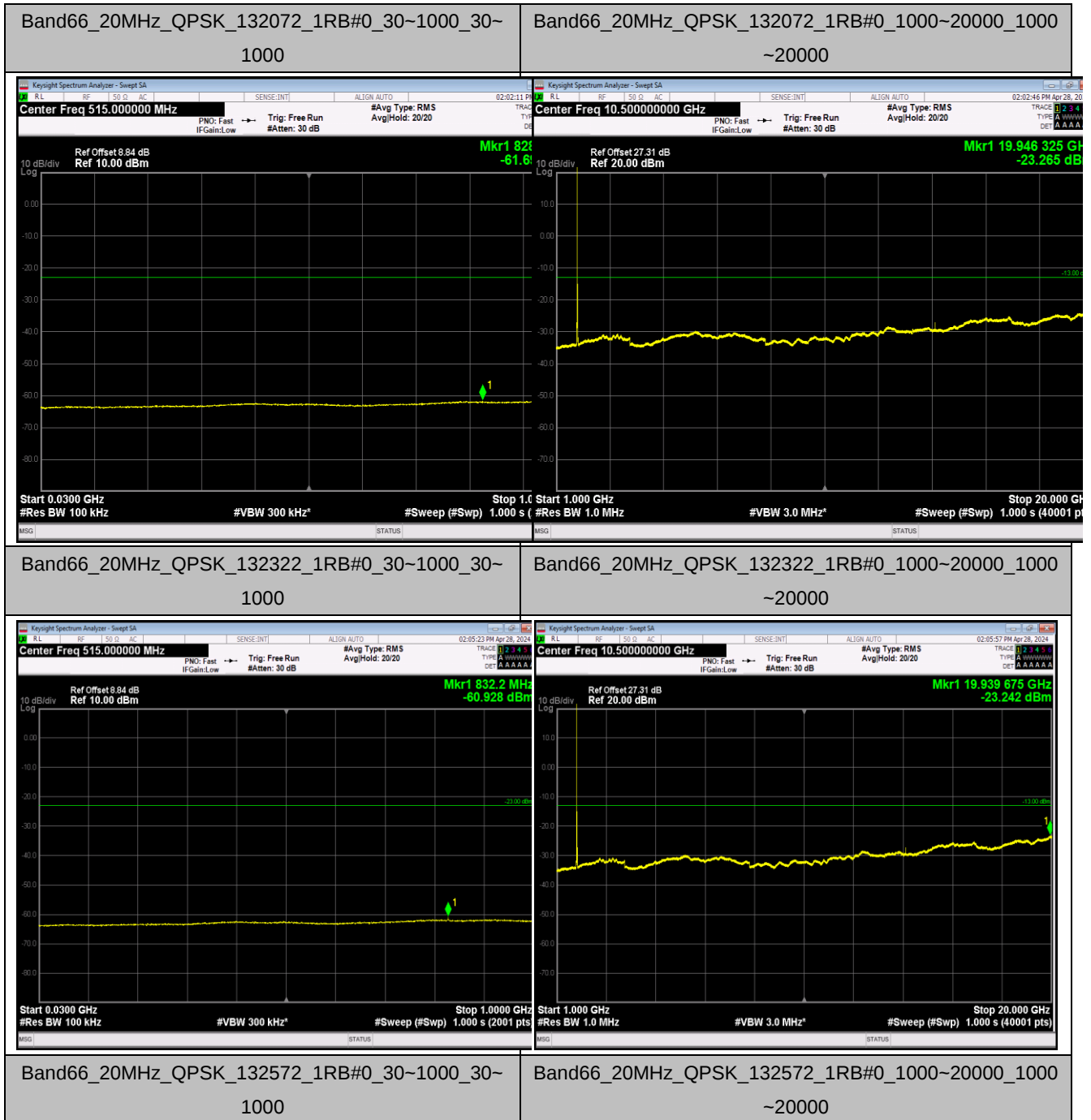


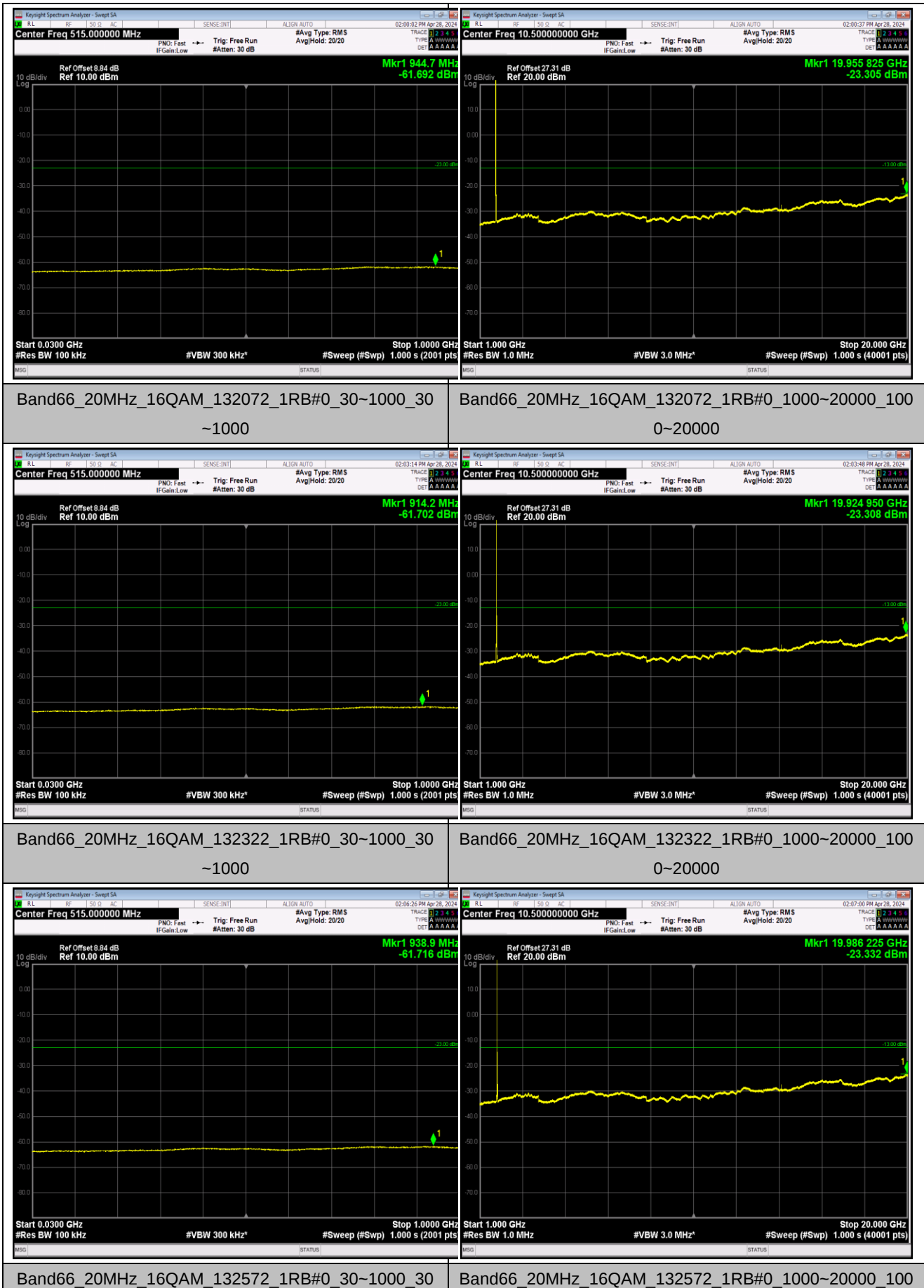


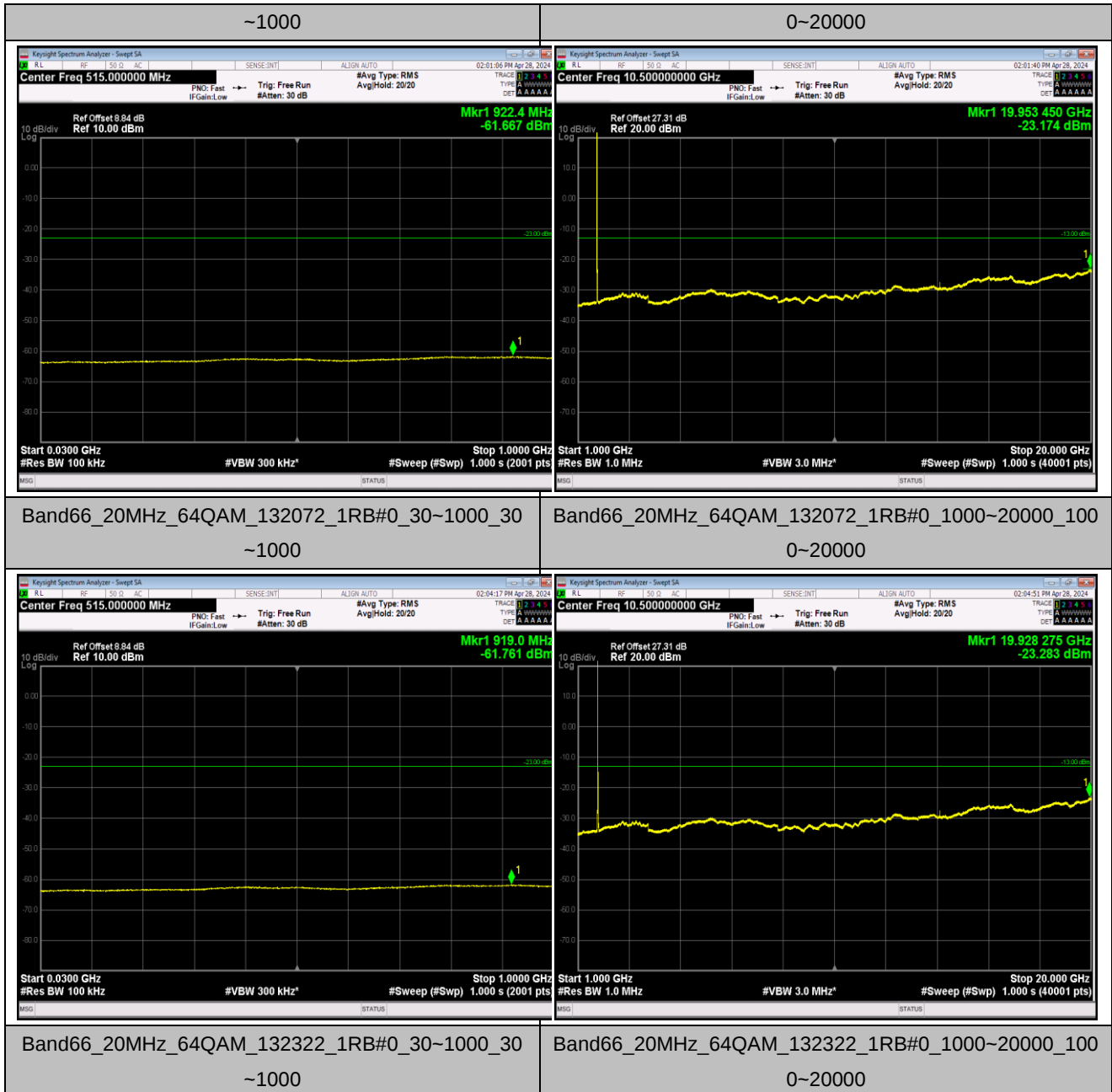


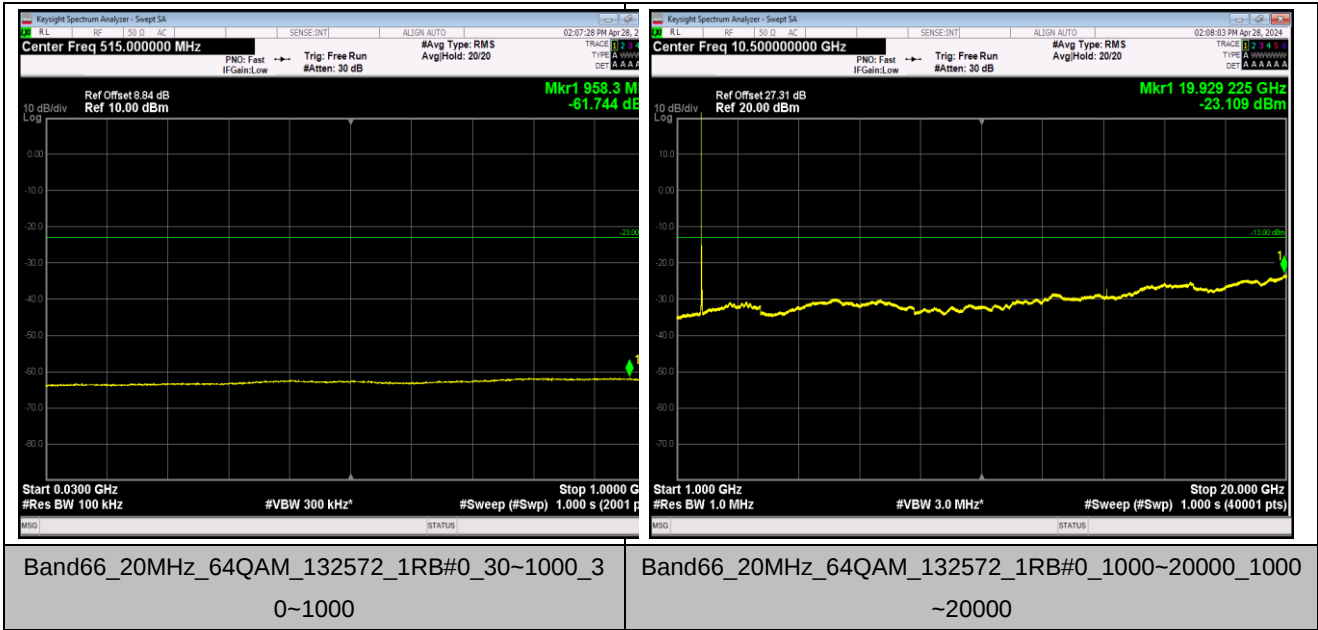












Appendix F: Frequency Stability

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	-10.84	-0.005766	Within authorized band for Band 2	Pass
	-20	-11.64	-0.006191		
	-10	11.22	0.005968		
	0	9.98	0.005309		
	10	9.56	0.005085		
	20	-14.13	-0.007516		
	30	-10.30	-0.005479		
	40	-14.05	-0.007473		
	50	10.19	0.005420		
16QAM					
3.85	-30	-11.30	-0.006011	Within authorized band for Band 2	Pass
	-20	-10.23	-0.005441		
	-10	4.73	0.002516		
	0	-11.60	-0.006170		
	10	-14.33	-0.007622		
	20	-11.83	-0.006293		
	30	3.56	0.001894		
	40	10.67	0.005676		
	50	-12.90	-0.006862		
64QAM					
3.85	-30	-17.47	-0.009293	Within authorized band for Band 2	Pass
	-20	-14.23	-0.007569		
	-10	10.84	0.005766		
	0	11.14	0.005926		
	10	-12.02	-0.006394		
	20	9.38	0.004989		
	30	8.25	0.004388		
	40	11.03	0.005867		
	50	11.67	0.006207		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	10.59	0.005633	Within authorized band for Band 2	Pass
	3.85	-15.31	-0.008144		
	4.40	-13.95	-0.007420		
16QAM					
25	3.45	12.66	0.006734	Within authorized band for Band 2	Pass
	3.85	11.57	0.006154		
	4.40	-13.15	-0.006995		
64QAM					
25	3.45	-9.81	-0.005218	Within authorized band for Band 2	Pass
	3.85	10.49	0.005580		
	4.40	-11.94	-0.006351		
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	-7.38	-0.008822	±2.5	Pass
	-20	-5.58	-0.006671		
	-10	-7.15	-0.008548		
	0	-8.50	-0.010161		
	10	-8.67	-0.010365		
	20	-8.20	-0.009803		
	30	-5.54	-0.006623		
	40	-6.84	-0.008177		
	50	-5.26	-0.006288		
16QAM					
3.85	-30	-9.38	-0.011213	±2.5	Pass
	-20	-6.75	-0.008069		
	-10	4.12	0.004925		
	0	-4.81	-0.005750		
	10	-8.00	-0.009564		
	20	-13.36	-0.015971		
	30	-6.71	-0.008022		
	40	-8.47	-0.010126		
	50	-11.53	-0.013784		
64QAM					
3.85	-30	-7.70	-0.009205	±2.5	Pass
	-20	-4.16	-0.004973		
	-10	-9.18	-0.010974		
	0	-4.15	-0.004961		
	10	-4.33	-0.005176		
	20	-6.11	-0.007304		
	30	-6.98	-0.008344		
	40	-9.00	-0.010759		
	50	-9.14	-0.010926		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-6.29	-0.007519	±2.5	Pass
	3.85	-13.59	-0.016246		
	4.40	-7.75	-0.009265		
16QAM					
25	3.45	-2.83	-0.003383	±2.5	Pass
	3.85	-6.21	-0.007424		
	4.40	-39.44	-0.047149		
64QAM					
25	3.45	-9.18	-0.010974	±2.5	Pass
	3.85	-8.78	-0.010496		
	4.40	-7.74	-0.009253		
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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	1.19	0.001682	Within authorized band for Band 12	Pass
	-20	5.38	0.007604		
	-10	3.78	0.005343		
	0	1.63	0.002304		
	10	-3.76	-0.005314		
	20	-3.69	-0.005216		
	30	-2.22	-0.003138		
	40	2.86	0.004042		
	50	2.83	0.004000		
16QAM					
3.85	-30	12.47	0.017625	Within authorized band for Band 12	Pass
	-20	3.69	0.005216		
	-10	-3.68	-0.005201		
	0	-3.65	-0.005159		
	10	-6.34	-0.008961		
	20	-3.06	-0.004325		
	30	-5.25	-0.007420		
	40	-4.56	-0.006445		
	50	-16.55	-0.023392		
64QAM					
3.85	-30	-3.28	-0.004636	Within authorized band for Band 12	Pass
	-20	-3.98	-0.005625		
	-10	-5.41	-0.007647		
	0	-5.18	-0.007322		
	10	-9.53	-0.013470		
	20	-2.39	-0.003378		
	30	-3.46	-0.004890		
	40	-2.65	-0.003746		
	50	-4.21	-0.005951		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-3.53	-0.004989	Within authorized band for Band 12	Pass
	3.85	-5.58	-0.007887		
	4.40	3.00	0.004240		
16QAM					
25	3.45	-2.72	-0.003845	Within authorized band for Band 12	Pass
	3.85	-4.95	-0.006996		
	4.40	5.95	0.008410		
64QAM					
25	3.45	-4.19	-0.005922	Within authorized band for Band 12	Pass
	3.85	-3.78	-0.005343		
	4.40	-2.89	-0.004085		
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					
3.85	-30	-13.00	-0.007450	Within authorized band for Band 66	Pass
	-20	15.66	0.008974		
	-10	-9.53	-0.005461		
	0	12.02	0.006888		
	10	-11.76	-0.006739		
	20	-10.24	-0.005868		
	30	-9.01	-0.005163		
	40	-11.79	-0.006756		
	50	6.24	0.003576		
16QAM					
3.85	-30	9.06	0.005192	Within authorized band for Band 66	Pass
	-20	7.54	0.004321		
	-10	-15.89	-0.009106		
	0	8.20	0.004699		
	10	-8.05	-0.004613		
	20	10.19	0.005840		
	30	9.10	0.005215		
	40	7.94	0.004550		
	50	-11.70	-0.006705		
64QAM					
3.85	-30	10.96	0.006281	Within authorized band for Band 66	Pass
	-20	-13.36	-0.007656		
	-10	-13.65	-0.007822		
	0	-10.61	-0.006080		
	10	-9.80	-0.005616		
	20	-8.70	-0.004986		
	30	2.35	0.001347		
	40	-13.69	-0.007845		
	50	10.06	0.005765		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-13.66	-0.007828	Within authorized band for Band 66	Pass
	3.85	-18.94	-0.010854		
	4.40	-19.18	-0.010991		
16QAM					
25	3.45	-8.23	-0.004716	Within authorized band for Band 66	Pass
	3.85	-9.87	-0.005656		
	4.40	-10.73	-0.006149		
64QAM					
25	3.45	4.88	0.002797	Within authorized band for Band 66	Pass
	3.85	-12.10	-0.006934		
	4.40	-11.29	-0.006470		
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	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS
Band2	20MHz	64QAM	18900	100RB#0	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS
Band5	10MHz	64QAM	20525	50RB#0	PASS
Band12	10MHz	QPSK	23095	50RB#0	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS
Band12	10MHz	64QAM	23095	50RB#0	PASS
Band17	10MHz	QPSK	23790	50RB#0	PASS
Band17	10MHz	16QAM	23790	50RB#0	PASS
Band17	10MHz	64QAM	23790	50RB#0	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS
Band66	20MHz	64QAM	132322	100RB#0	PASS

Test Graphs

