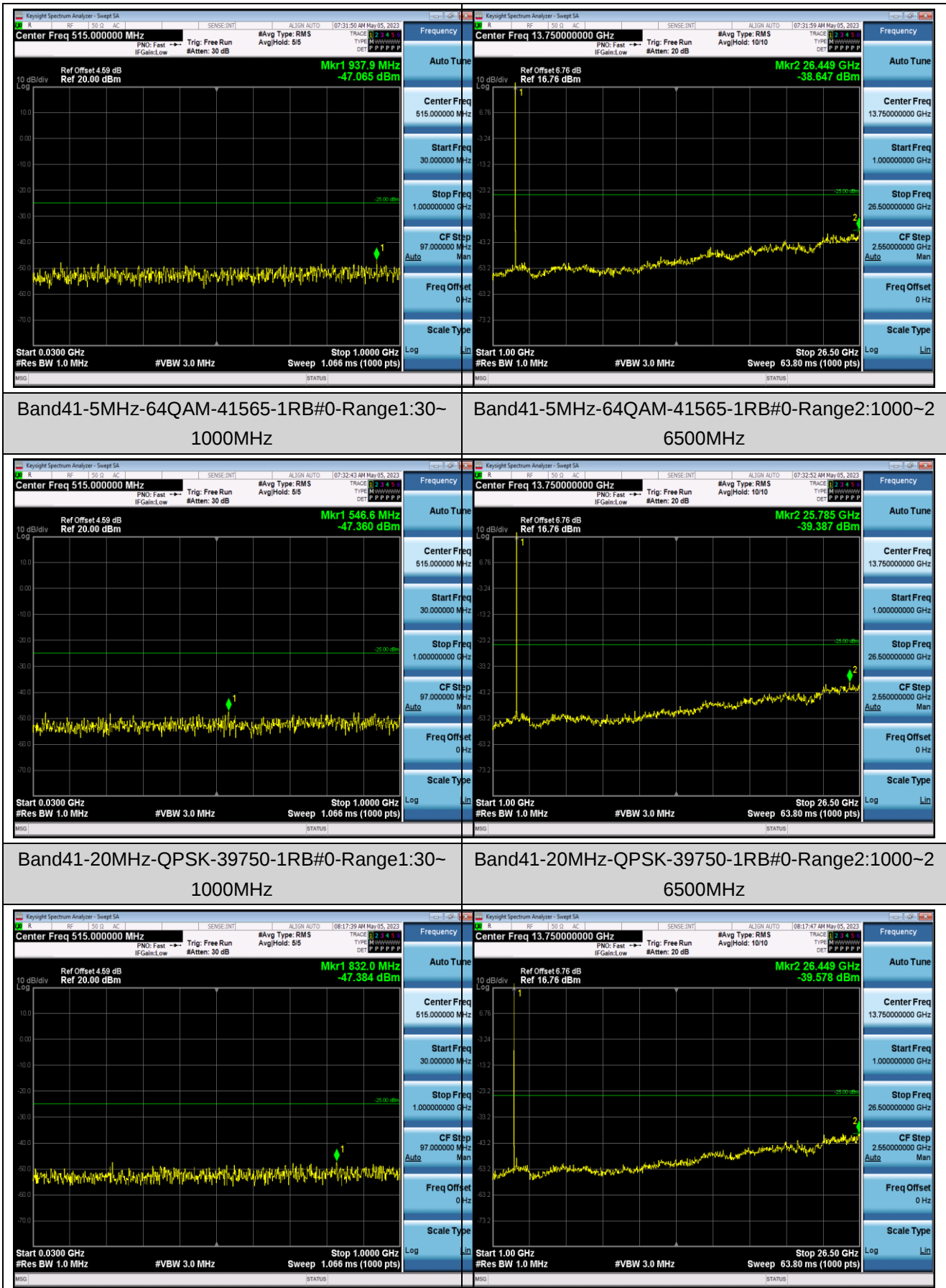
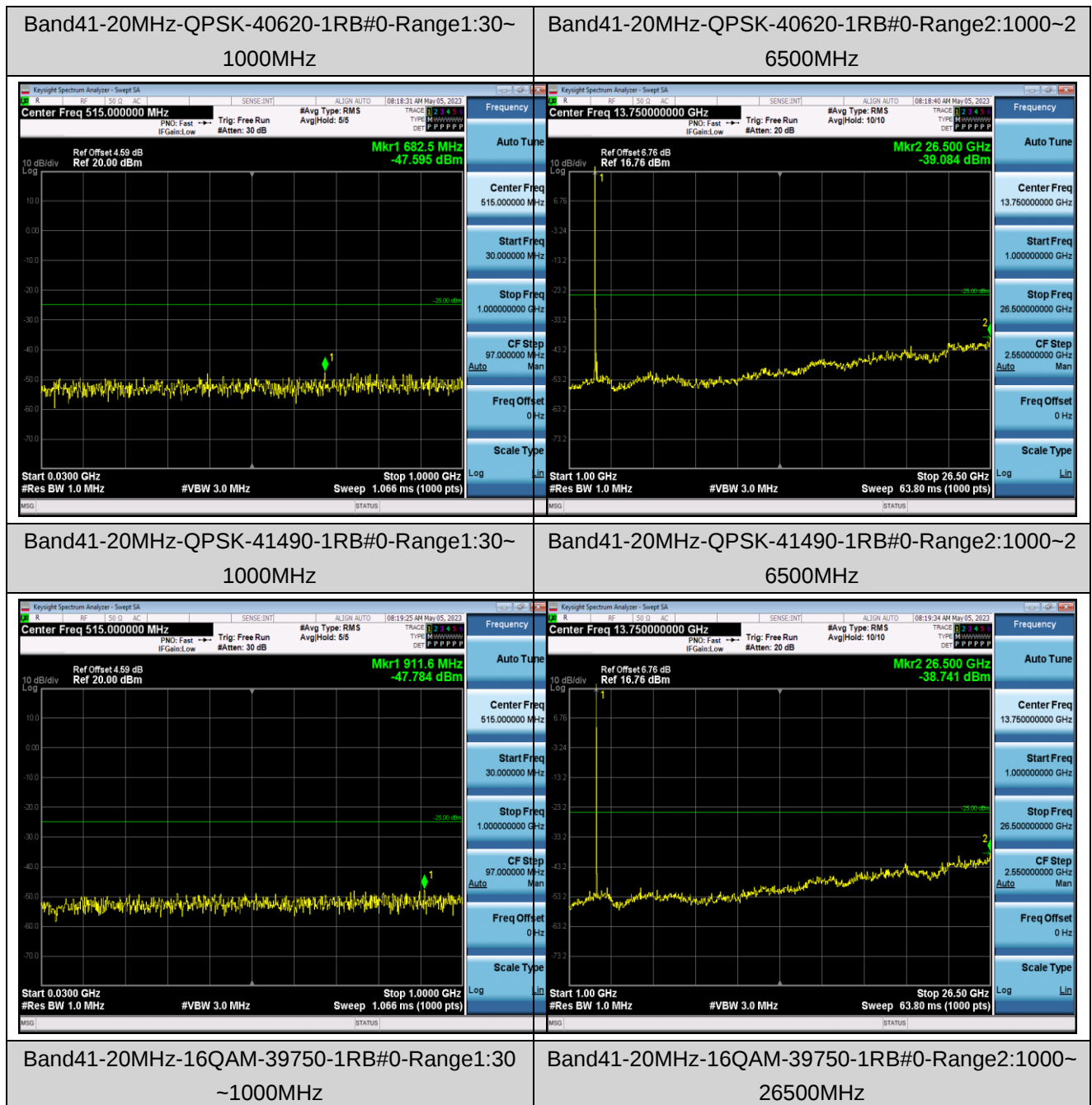
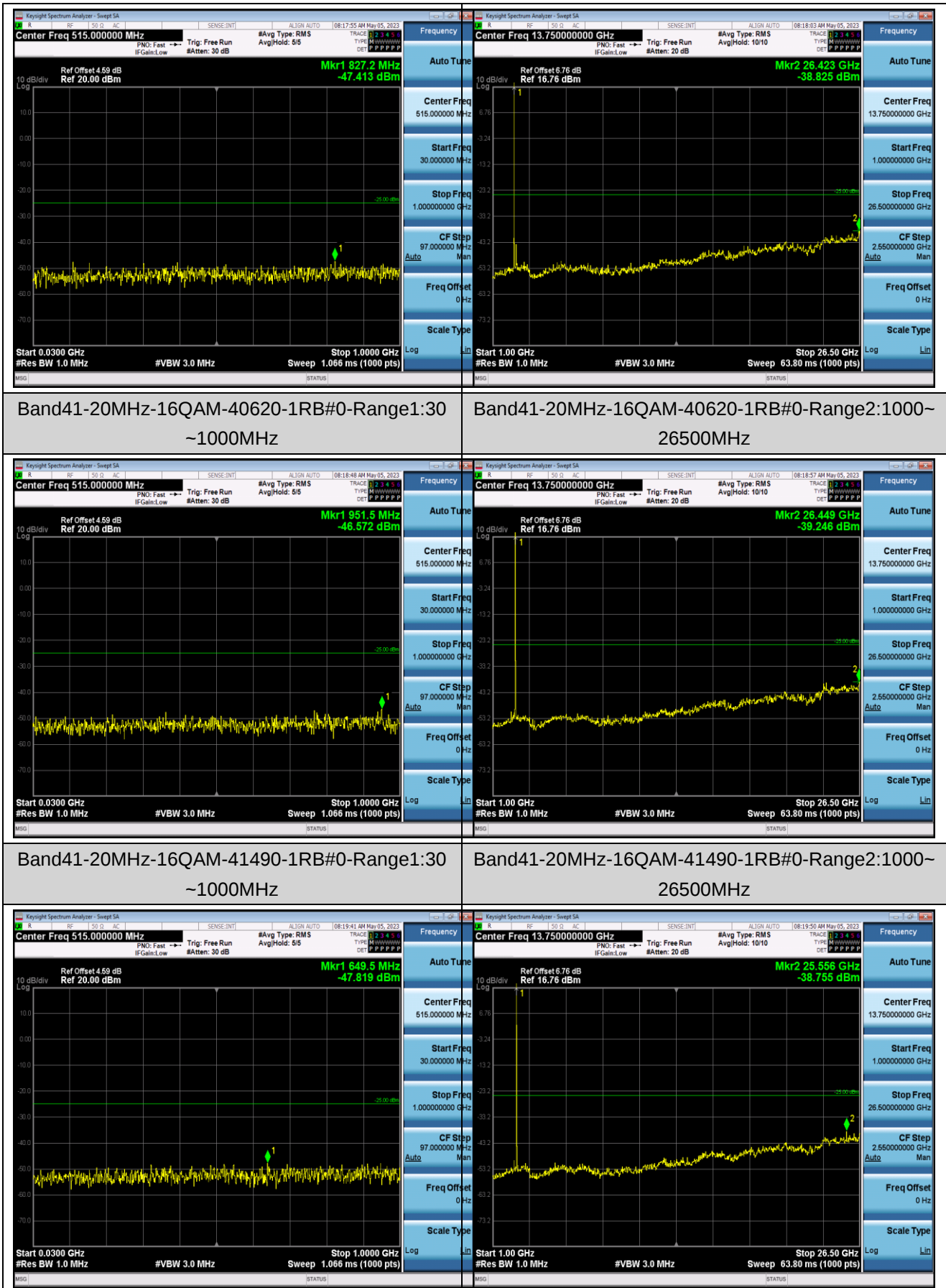






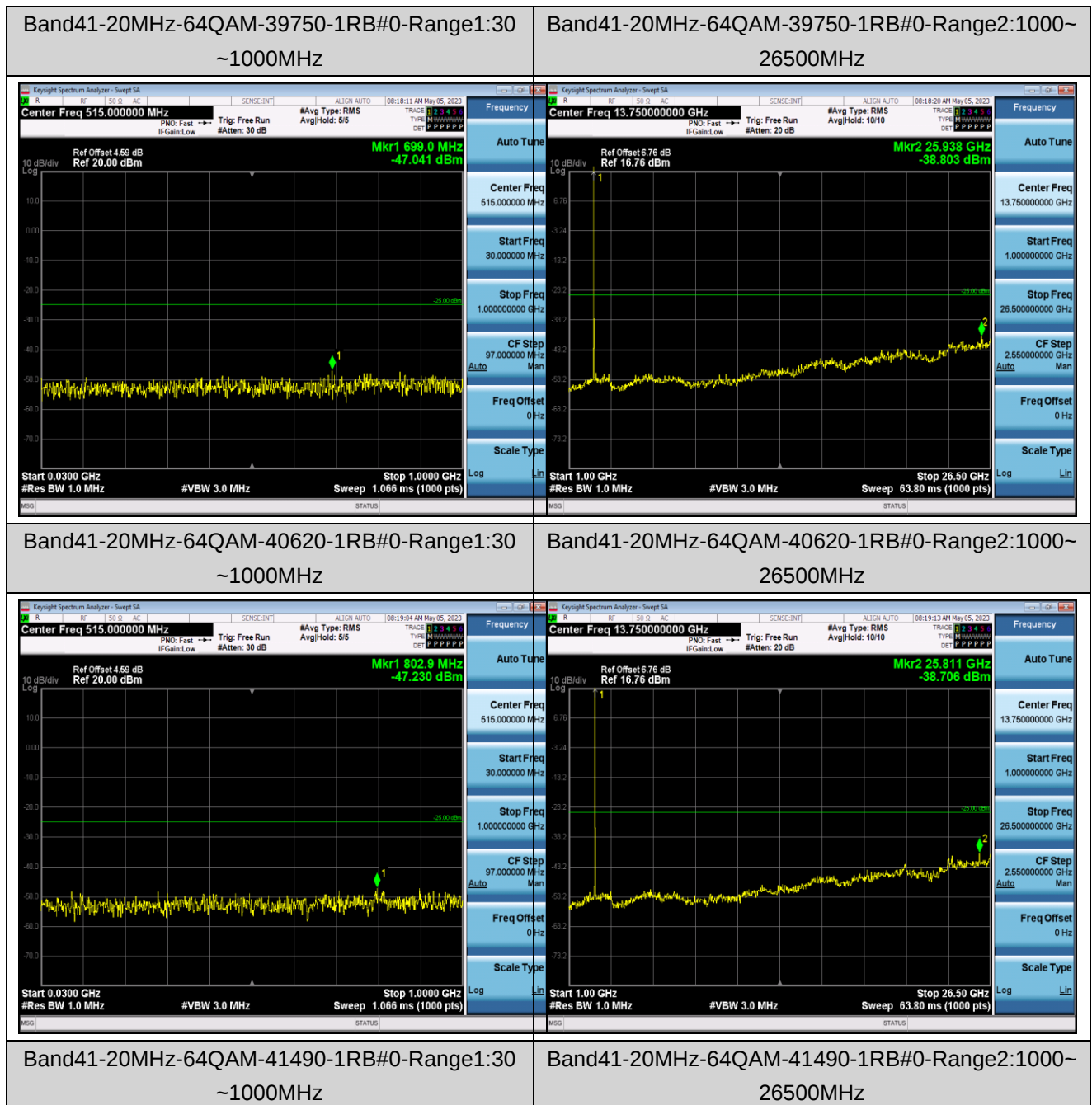


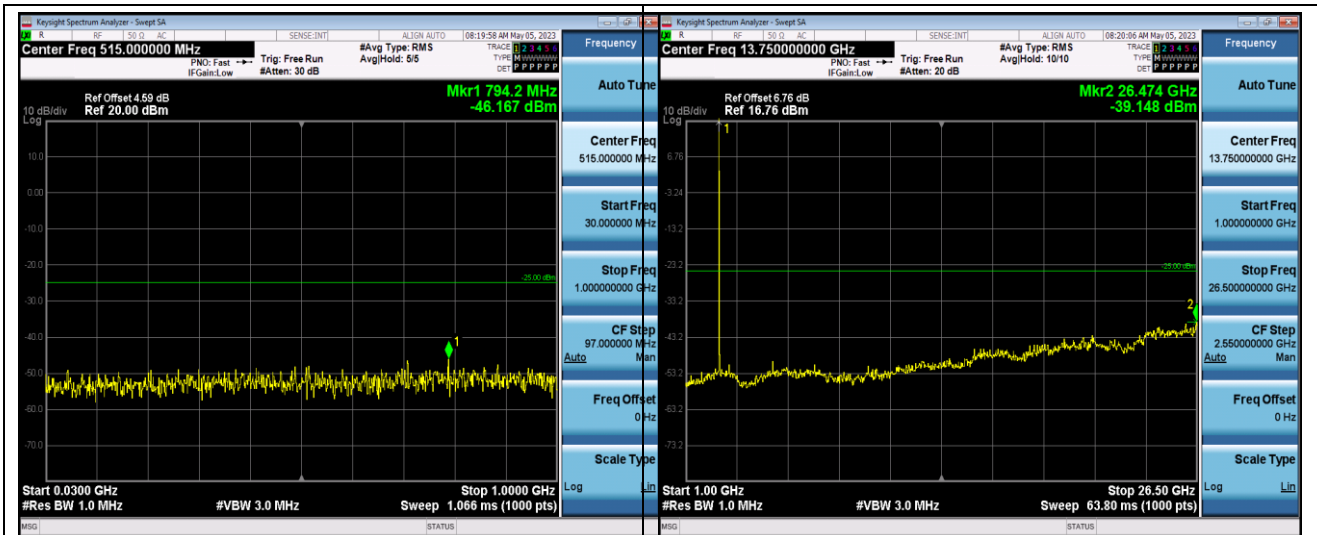
JianYan Testing Group Shenzhen Co., Ltd.

No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

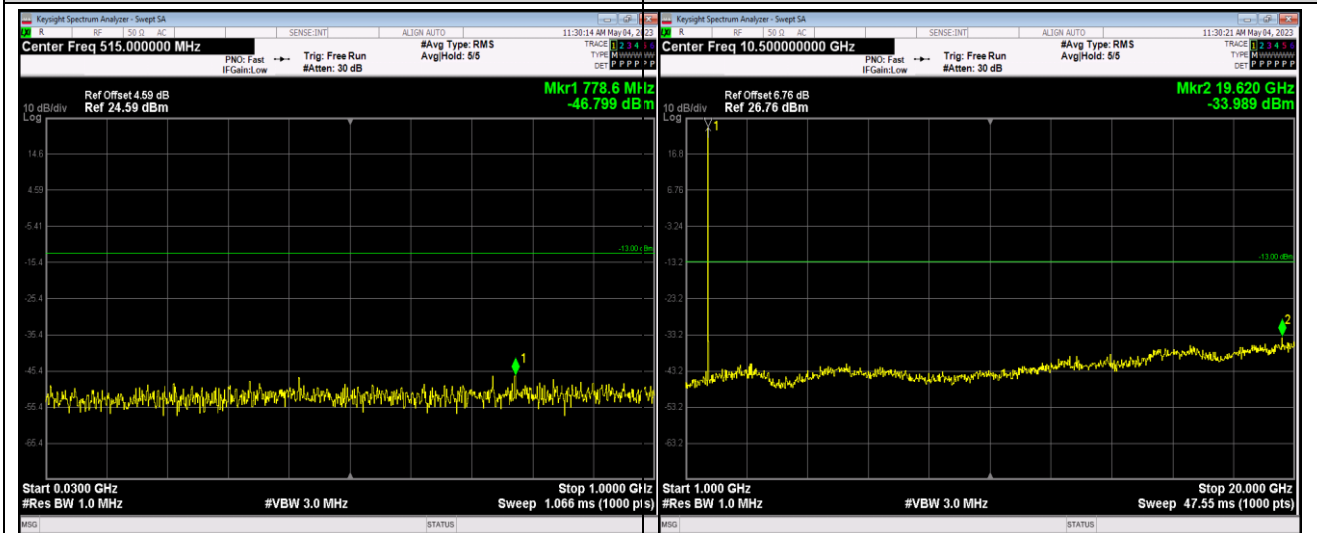
Project No.: JYTSZR2304043





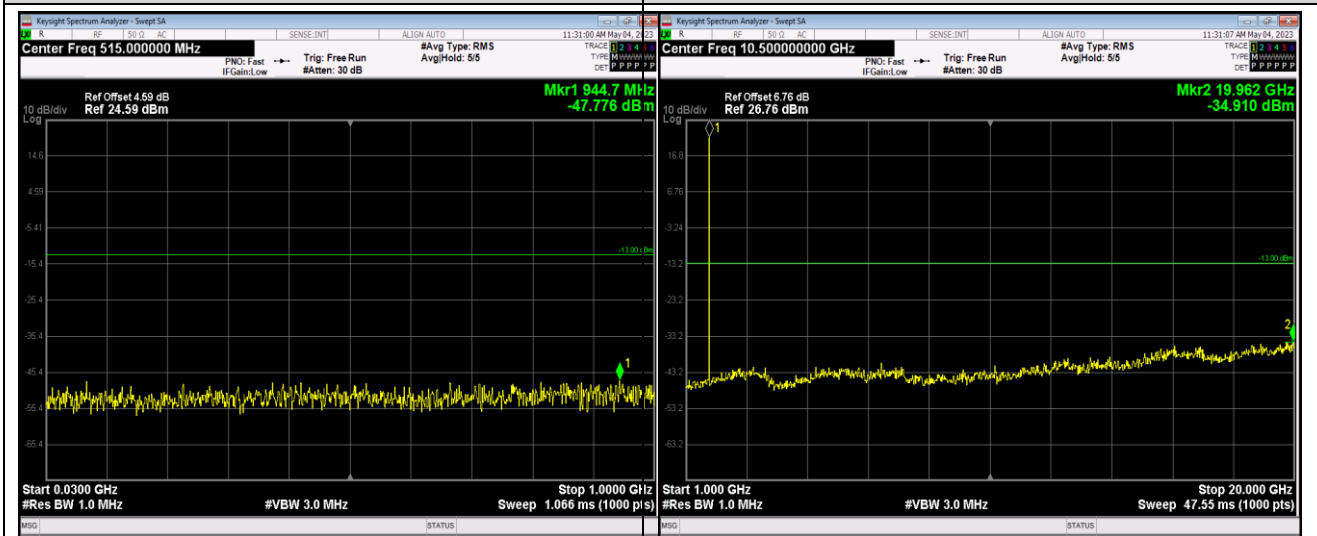
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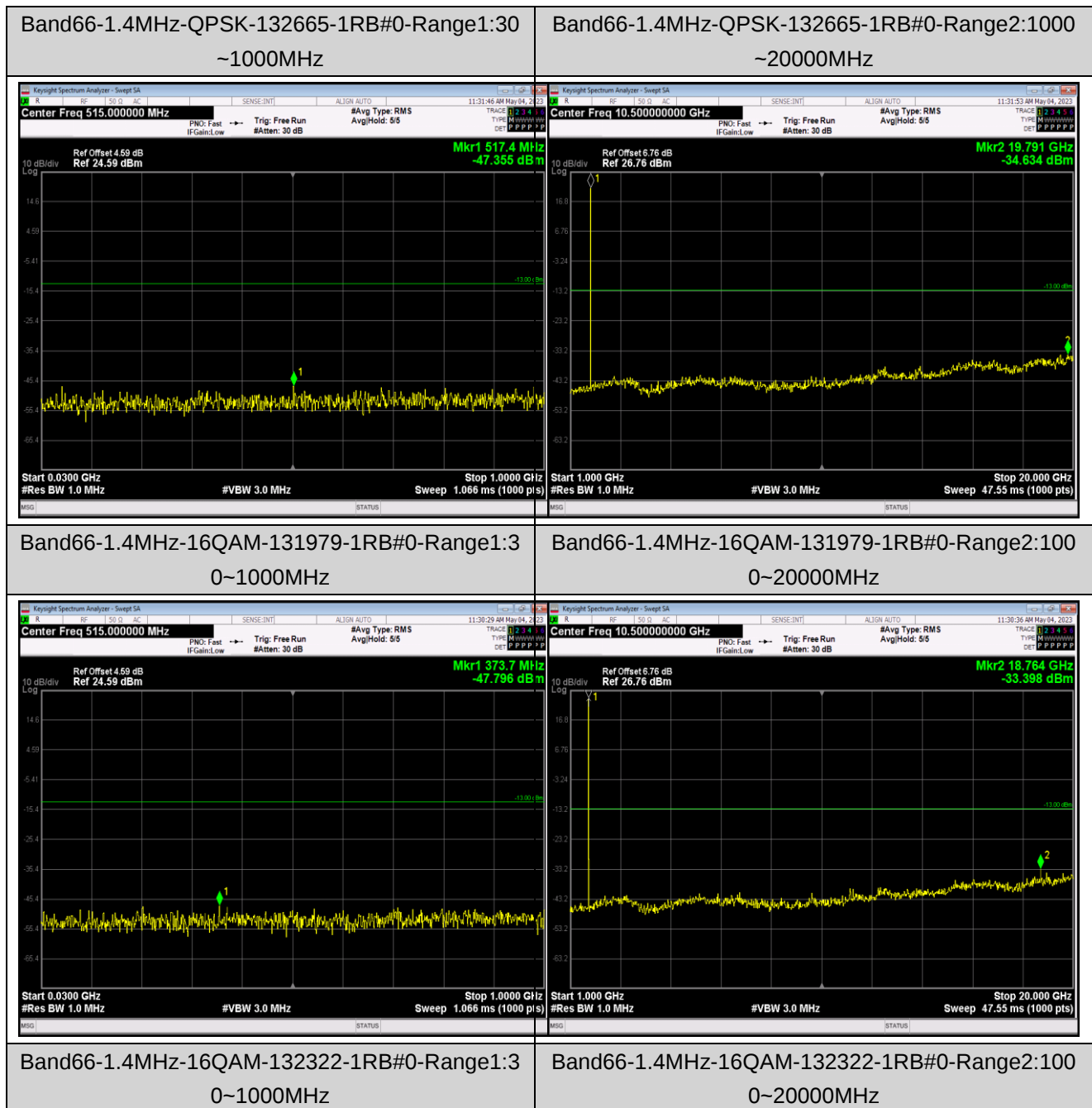
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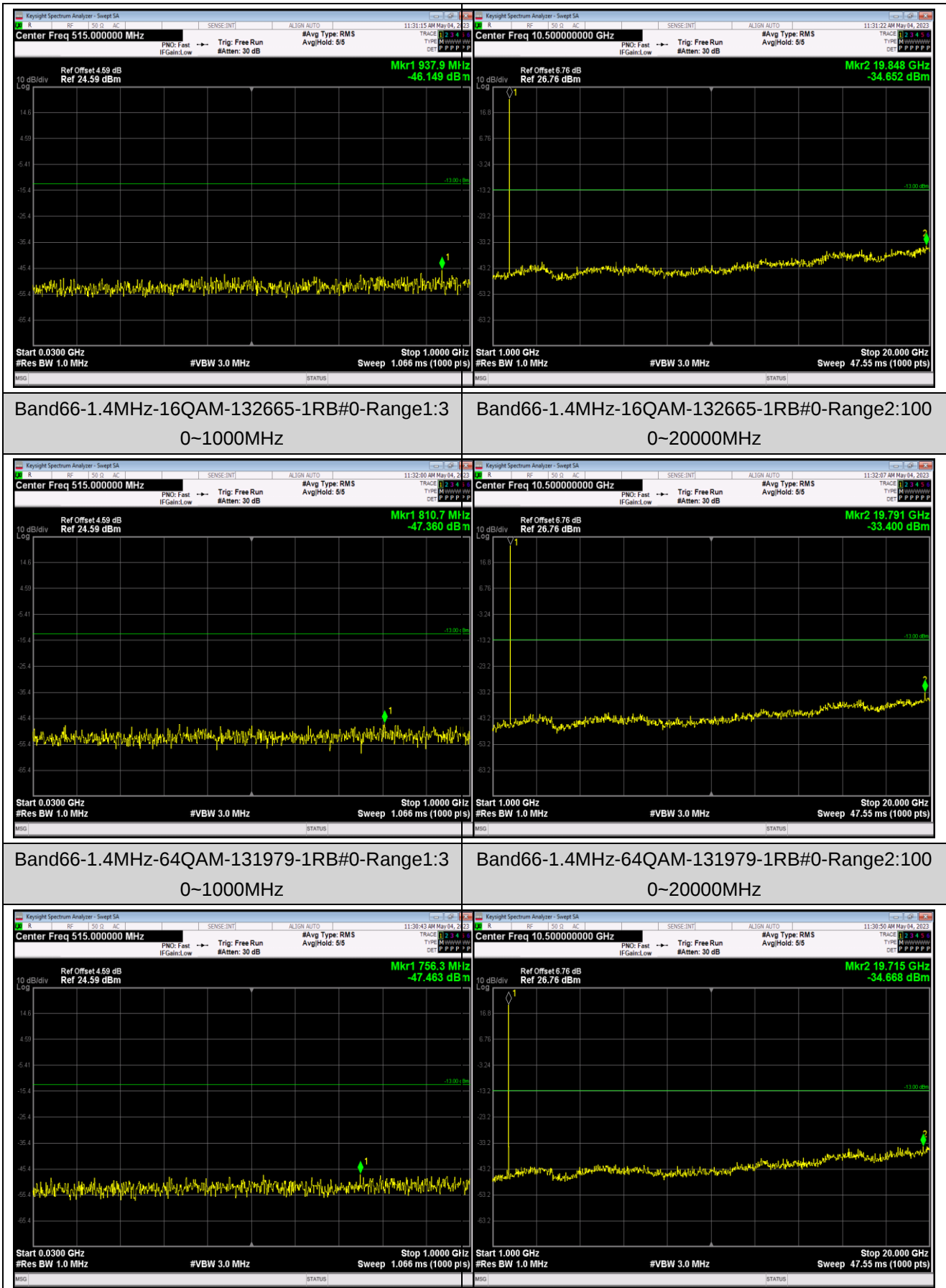


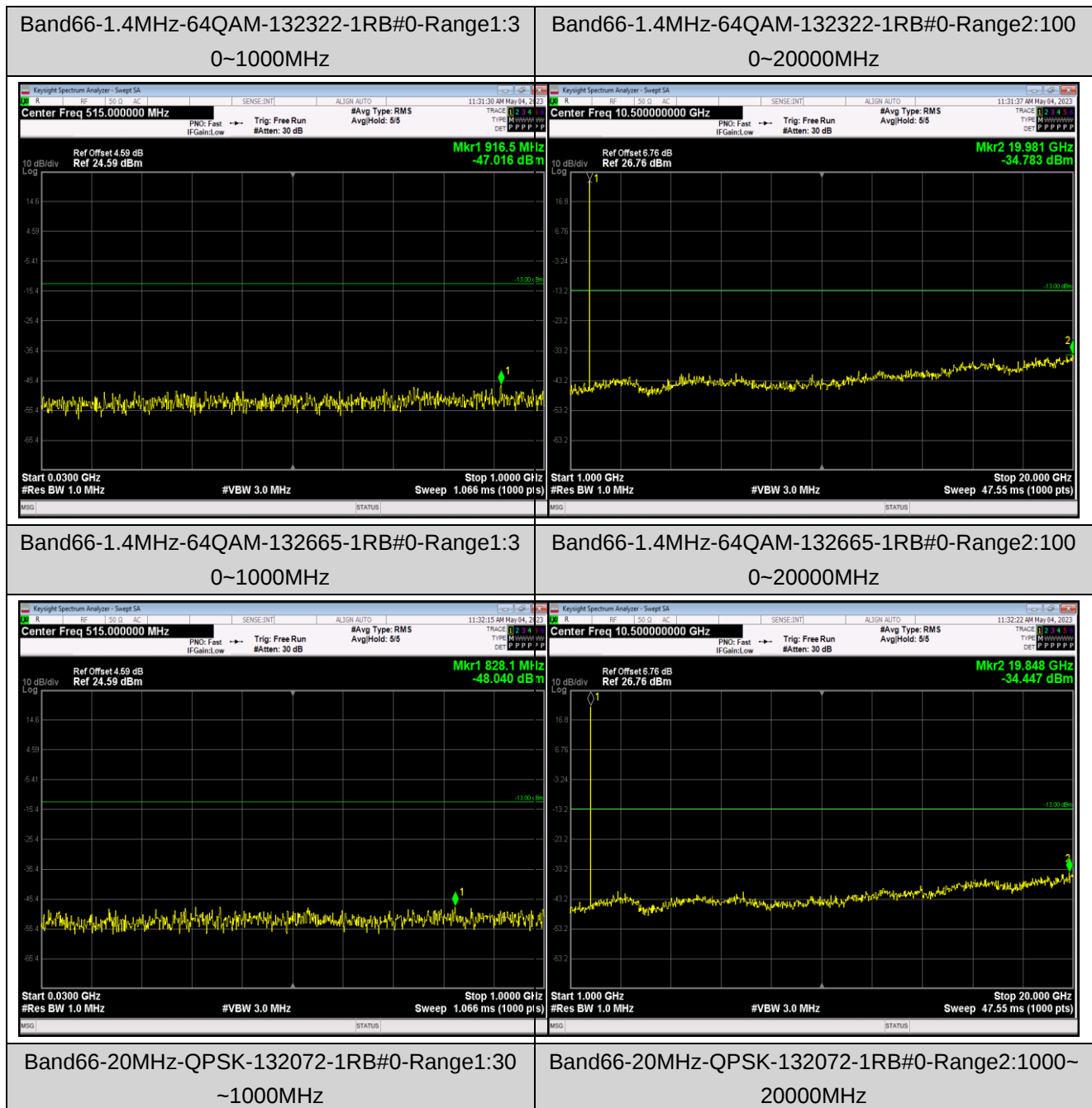
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~1000MHz

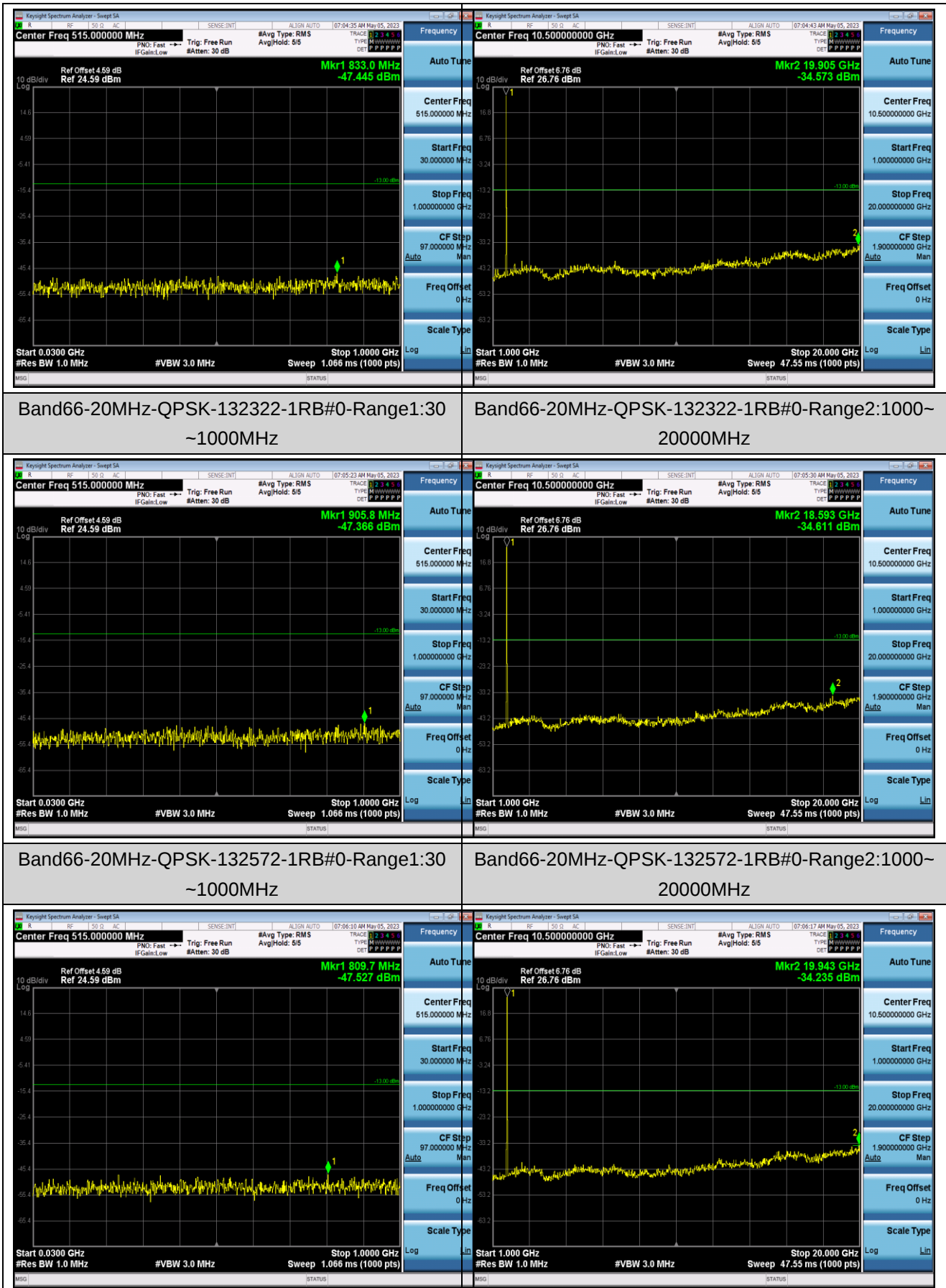
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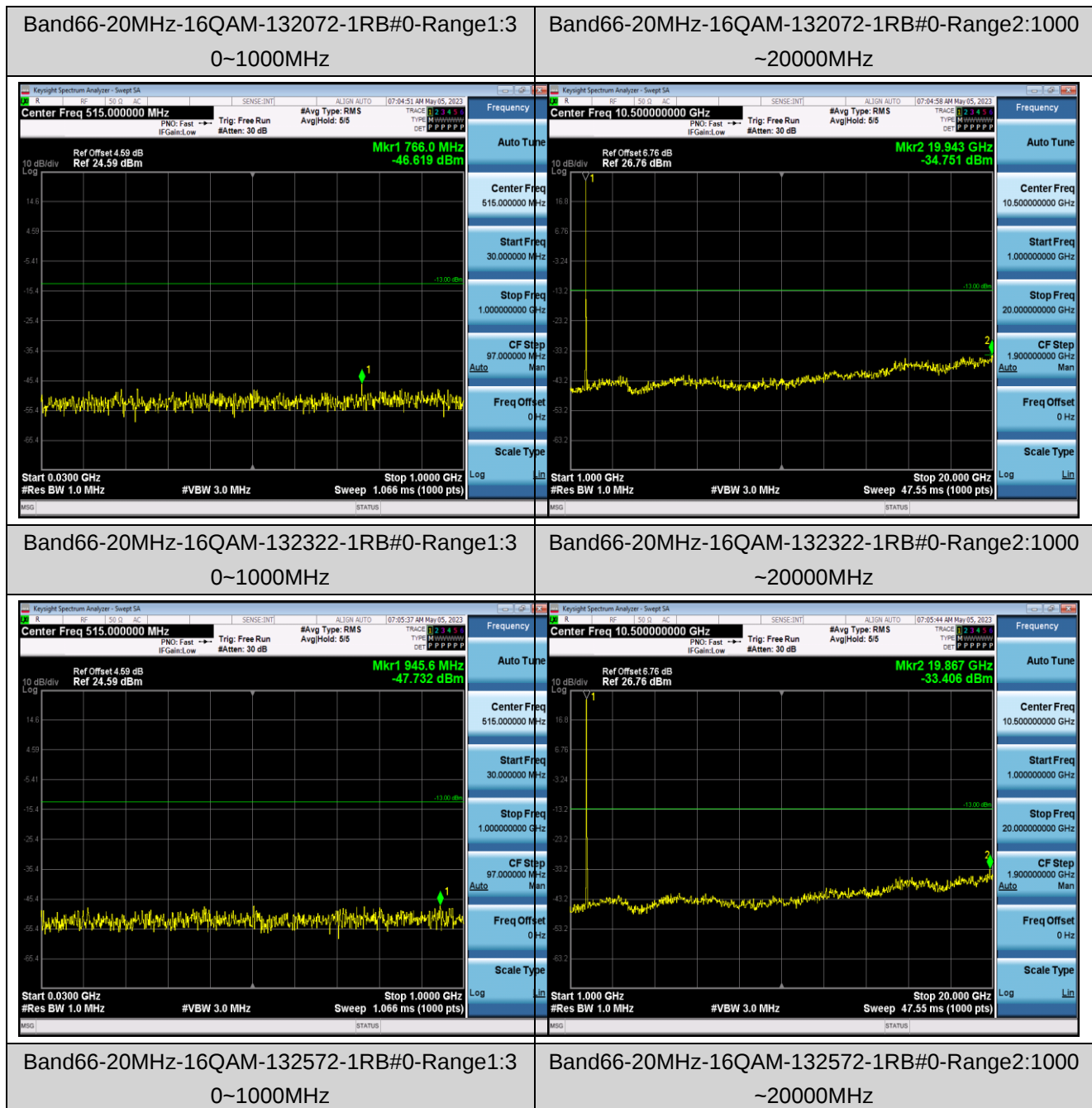


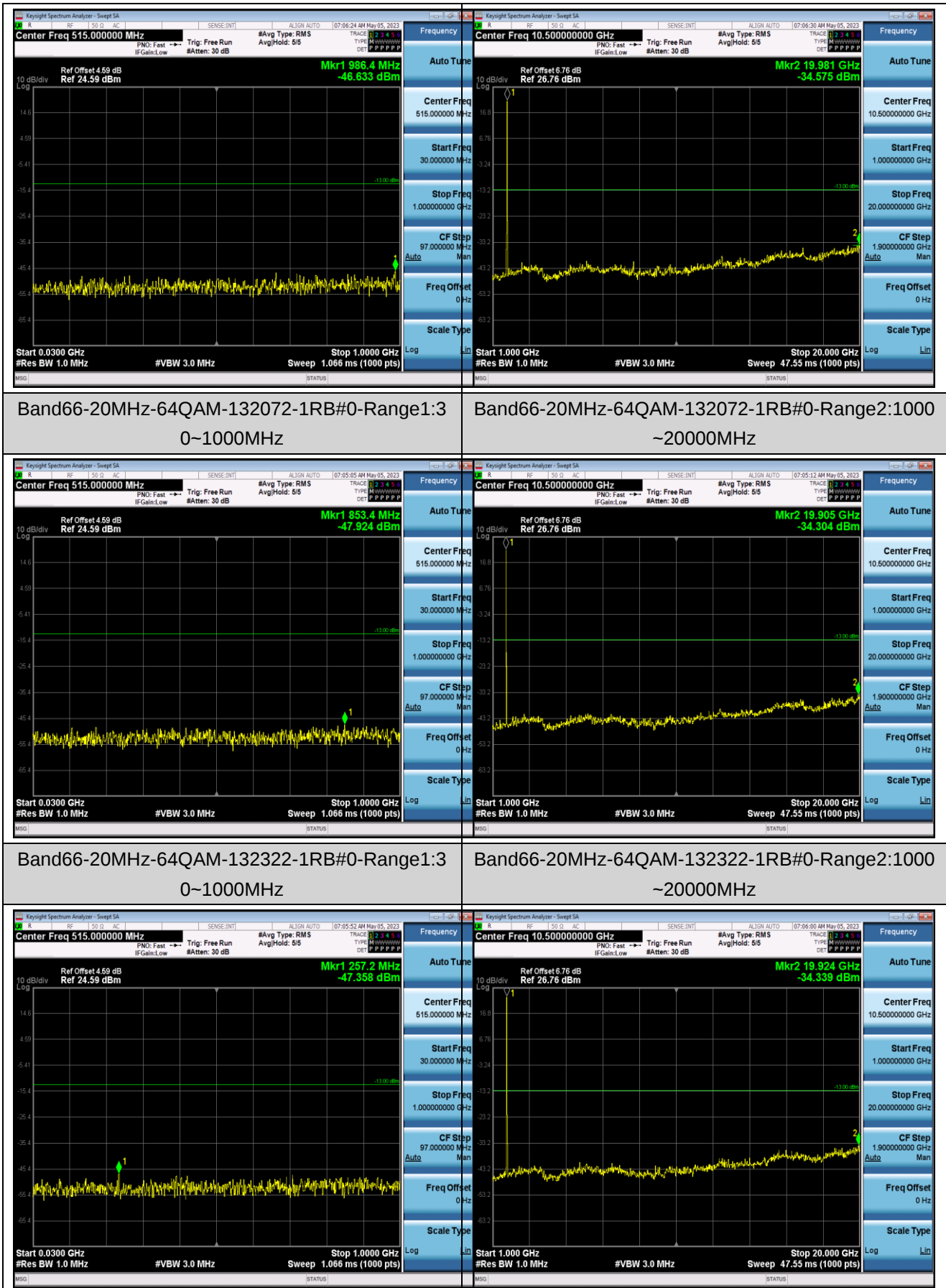


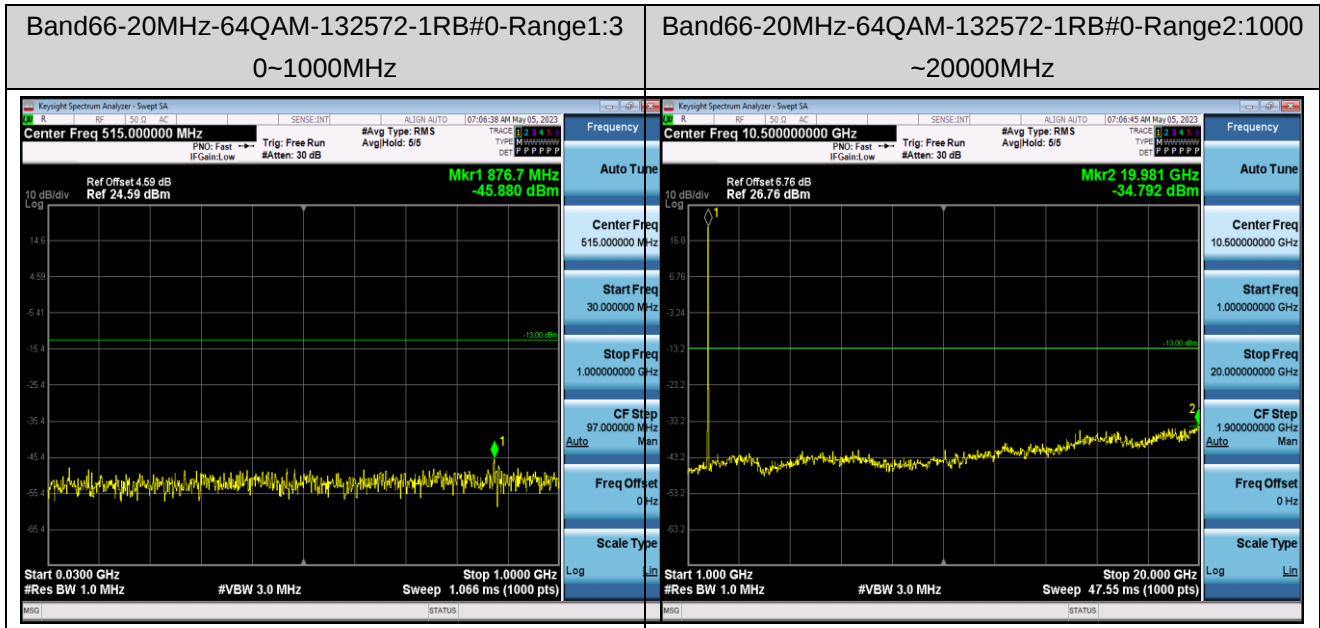












Appendix F: Frequency Stability

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					
3.87	-30	4.61	0.002452	Within authorized band for Band 2	Pass
	-20	7.81	0.004154		
	-10	7.50	0.003989		
	0	8.71	0.004633		
	10	7.78	0.004138		
	20	-4.48	-0.002383		
	30	9.56	0.005085		
	40	6.14	0.003266		
	50	9.68	0.005149		
16QAM					
3.87	-30	7.22	0.003840	Within authorized band for Band 2	Pass
	-20	3.86	0.002053		
	-10	8.68	0.004617		
	0	7.58	0.004032		
	10	6.65	0.003537		
	20	10.34	0.005500		
	30	7.27	0.003867		
	40	5.89	0.003133		
	50	4.75	0.002527		
64QAM					
3.87	-30	3.16	0.001681	Within authorized band for Band 2	Pass
	-20	6.87	0.003654		
	-10	6.04	0.003213		
	0	3.71	0.001973		
	10	5.42	0.002883		
	20	9.20	0.004894		
	30	7.51	0.003995		
	40	8.33	0.004431		
	50	7.27	0.003867		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	5.65	0.003005	Within authorized band for Band 2	Pass
	3.87	-4.59	-0.002441		
	4.45	12.72	0.006766		
16QAM					
25	3.45	7.37	0.003920	Within authorized band for Band 2	Pass
	3.87	8.96	0.004766		
	4.45	6.42	0.003415		
64QAM					
25	3.45	6.19	0.003293	Within authorized band for Band 2	Pass
	3.87	6.95	0.003697		
	4.45	8.21	0.004367		
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					
3.87	-30	-3.83	-0.004579	±2.5	Pass
	-20	-2.02	-0.002415		
	-10	-7.17	-0.008571		
	0	-6.02	-0.007197		
	10	-5.62	-0.006718		
	20	-3.83	-0.004579		
	30	-4.21	-0.005033		
	40	-8.51	-0.010173		
	50	-4.65	-0.005559		
16QAM					
3.87	-30	-2.32	-0.002773	±2.5	Pass
	-20	-6.77	-0.008093		
	-10	-2.46	-0.002941		
	0	1.44	0.001721		
	10	-2.85	-0.003407		
	20	-2.05	-0.002451		
	30	-3.89	-0.004650		
	40	-3.12	-0.003730		
	50	-3.62	-0.004328		
64QAM					
3.87	-30	-1.52	-0.001817	±2.5	Pass
	-20	-4.85	-0.005798		
	-10	-1.97	-0.002355		
	0	-4.23	-0.005057		
	10	-3.89	-0.004650		
	20	-5.64	-0.006742		
	30	-4.84	-0.005786		
	40	-3.69	-0.004411		
	50	-2.52	-0.003013		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-5.35	-0.006396	±2.5	Pass
	3.87	-4.35	-0.005200		
	4.45	-2.25	-0.002690		
16QAM					
25	3.45	-3.43	-0.004100	±2.5	Pass
	3.87	-6.15	-0.007352		
	4.45	-5.54	-0.006623		
64QAM					
25	3.45	-5.41	-0.006467	±2.5	Pass
	3.87	-3.66	-0.004375		
	4.45	-2.65	-0.003168		
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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-11.33	-0.004469	Within authorized band for Band 7	Pass
	-20	-10.24	-0.004039		
	-10	-4.63	-0.001826		
	0	11.40	0.004497		
	10	8.05	0.003176		
	20	-11.19	-0.004414		
	30	10.97	0.004327		
	40	-7.04	-0.002777		
	50	6.62	0.002611		
16QAM					
3.87	-30	-3.79	-0.001495	Within authorized band for Band 7	Pass
	-20	-11.62	-0.004584		
	-10	-3.32	-0.001310		
	0	9.26	0.003653		
	10	-9.76	-0.003850		
	20	-4.81	-0.001897		
	30	-6.61	-0.002607		
	40	5.36	0.002114		
	50	7.74	0.003053		
64QAM					
3.87	-30	-15.84	-0.006249	Within authorized band for Band 7	Pass
	-20	-15.58	-0.006146		
	-10	-10.64	-0.004197		
	0	-14.15	-0.005582		
	10	-11.49	-0.004533		
	20	-14.35	-0.005661		
	30	-12.95	-0.005108		
	40	2.90	0.001144		
	50	-8.20	-0.003235		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-6.97	-0.002750	Within authorized band for Band 7	Pass
	3.87	8.98	0.003542		
	4.45	-11.03	-0.004351		
16QAM					
25	3.45	6.88	0.002714	Within authorized band for Band 7	Pass
	3.87	-5.66	-0.002233		
	4.45	-9.07	-0.003578		
64QAM					
25	3.45	-17.27	-0.006813	Within authorized band for Band 7	Pass
	3.87	5.92	0.002335		
	4.45	4.18	0.001649		
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					
3.87	-30	-3.72	-0.005258	Within authorized band for Band 12	Pass
	-20	1.34	0.001894		
	-10	-3.40	-0.004806		
	0	4.63	0.006544		
	10	-3.68	-0.005201		
	20	2.39	0.003378		
	30	-4.09	-0.005781		
	40	-4.69	-0.006629		
	50	3.79	0.005357		
16QAM					
3.87	-30	-3.95	-0.005583	Within authorized band for Band 12	Pass
	-20	-3.33	-0.004707		
	-10	2.89	0.004085		
	0	-6.65	-0.009399		
	10	-3.30	-0.004664		
	20	-3.88	-0.005484		
	30	-2.69	-0.003802		
	40	2.37	0.003350		
	50	-7.00	-0.009894		
64QAM					
3.87	-30	-4.88	-0.006898	Within authorized band for Band 12	Pass
	-20	-3.98	-0.005625		
	-10	1.44	0.002035		
	0	-2.89	-0.004085		
	10	-6.28	-0.008876		
	20	2.62	0.003703		
	30	2.60	0.003675		
	40	-6.91	-0.009767		
	50	5.85	0.008269		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-2.82	-0.003986	Within authorized band for Band 12	Pass
	3.87	-4.66	-0.006587		
	4.45	-1.93	-0.002728		
16QAM					
25	3.45	-4.51	-0.006375	Within authorized band for Band 12	Pass
	3.87	-2.63	-0.003717		
	4.45	-5.41	-0.007647		
64QAM					
25	3.45	3.73	0.005272	Within authorized band for Band 12	Pass
	3.87	3.43	0.004848		
	4.45	7.32	0.010346		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 17 part:

Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 Frequency=710.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-4.71	-0.006634	Within authorized band for Band 17	Pass
	-20	-5.66	-0.007972		
	-10	2.86	0.004028		
	0	-6.44	-0.009070		
	10	-3.71	-0.005225		
	20	-6.27	-0.008831		
	30	-6.41	-0.009028		
	40	-5.89	-0.008296		
	50	-5.72	-0.008056		
16QAM					
3.87	-30	-4.98	-0.007014	Within authorized band for Band 17	Pass
	-20	1.36	0.001915		
	-10	-2.88	-0.004056		
	0	-6.44	-0.009070		
	10	1.52	0.002141		
	20	-5.12	-0.007211		
	30	-1.97	-0.002775		
	40	-4.95	-0.006972		
	50	-4.98	-0.007014		
64QAM					
3.87	-30	-2.60	-0.003662	Within authorized band for Band 17	Pass
	-20	-6.79	-0.009563		
	-10	-6.68	-0.009408		
	0	-7.12	-0.010028		
	10	-5.72	-0.008056		
	20	3.09	0.004352		
	30	1.82	0.002563		
	40	-1.50	-0.002113		
	50	-6.24	-0.008789		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-3.48	-0.004901	Within authorized band for Band 17	Pass
	3.87	-6.07	-0.008549		
	4.45	-5.29	-0.007451		
16QAM					
25	3.45	-5.75	-0.008099	Within authorized band for Band 17	Pass
	3.87	-1.72	-0.002423		
	4.45	-9.01	-0.012690		
64QAM					
25	3.45	-4.35	-0.006127	Within authorized band for Band 17	Pass
	3.87	-3.95	-0.005563		
	4.45	-6.55	-0.009225		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 41 part:

Reference Frequency: LTE Band 41 (10MHz) Middle channel=40640 Frequency=2595.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	4.36	0.001681	Within authorized band for Band 41	Pass
	-20	9.50	0.003664		
	-10	4.88	0.001882		
	0	7.61	0.002935		
	10	7.61	0.002935		
	20	4.65	0.001793		
	30	7.35	0.002835		
	40	-3.91	-0.001508		
	50	2.69	0.001037		
16QAM					
3.87	-30	-2.99	-0.001153	Within authorized band for Band 41	Pass
	-20	6.91	0.002665		
	-10	7.00	0.002700		
	0	7.42	0.002862		
	10	4.91	0.001894		
	20	8.48	0.003270		
	30	4.95	0.001909		
	40	6.98	0.002692		
	50	3.53	0.001361		
64QAM					
3.87	-30	1.90	0.000733	Within authorized band for Band 41	Pass
	-20	5.08	0.001959		
	-10	5.08	0.001959		
	0	4.71	0.001816		
	10	7.30	0.002815		
	20	3.65	0.001408		
	30	-2.45	-0.000945		
	40	-3.71	-0.001431		
	50	5.12	0.001975		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	5.79	0.002233	Within authorized band for Band 41	Pass
	3.87	3.60	0.001388		
	4.45	4.84	0.001867		
16QAM					
25	3.45	8.80	0.003394	Within authorized band for Band41	Pass
	3.87	3.83	0.001477		
	4.45	7.85	0.003027		
64QAM					
25	3.45	6.55	0.002526	Within authorized band for Band41	Pass
	3.87	3.13	0.001207		
	4.45	4.12	0.001589		
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					
3.87	-30	14.18	0.008126	Within authorized band for Band 66	Pass
	-20	15.92	0.009123		
	-10	7.58	0.004344		
	0	-3.46	-0.001983		
	10	-5.44	-0.003117		
	20	5.56	0.003186		
	30	3.60	0.002063		
	40	3.20	0.001834		
	50	13.13	0.007524		
16QAM					
3.87	-30	-7.97	-0.004567	Within authorized band for Band 66	Pass
	-20	11.76	0.006739		
	-10	-2.39	-0.001370		
	0	7.62	0.004367		
	10	-10.24	-0.005868		
	20	4.41	0.002527		
	30	-5.84	-0.003347		
	40	7.58	0.004344		
	50	12.76	0.007312		
64QAM					
3.87	-30	10.09	0.005782	Within authorized band for Band 66	Pass
	-20	-4.89	-0.002802		
	-10	5.84	0.003347		
	0	1.80	0.001032		
	10	3.48	0.001994		
	20	-5.16	-0.002957		
	30	-12.53	-0.007181		
	40	5.35	0.003066		
	50	-10.07	-0.005771		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	2.37	0.001358	Within authorized band for Band 66	Pass
	3.87	11.63	0.006665		
	4.45	13.76	0.007885		
16QAM					
25	3.45	12.63	0.007238	Within authorized band for Band 66	Pass
	3.87	-2.60	-0.001490		
	4.45	-6.64	-0.003805		
64QAM					
25	3.45	8.70	0.004986	Within authorized band for Band 66	Pass
	3.87	6.07	0.003479		
	4.45	-7.72	-0.004424		
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
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band5	10MHz	64QAM	20525	50RB#0	PASS	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band7	20MHz	64QAM	21100	100RB#0	PASS	PASS
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band12	10MHz	64QAM	23095	50RB#0	PASS	PASS
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#0	PASS	PASS
Band17	10MHz	64QAM	23790	50RB#0	PASS	PASS
Band41	20MHz	QPSK	40620	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40620	100RB#0	PASS	PASS
Band41	20MHz	64QAM	40620	100RB#0	PASS	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS	PASS
Band66	20MHz	64QAM	132322	100RB#0	PASS	PASS

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