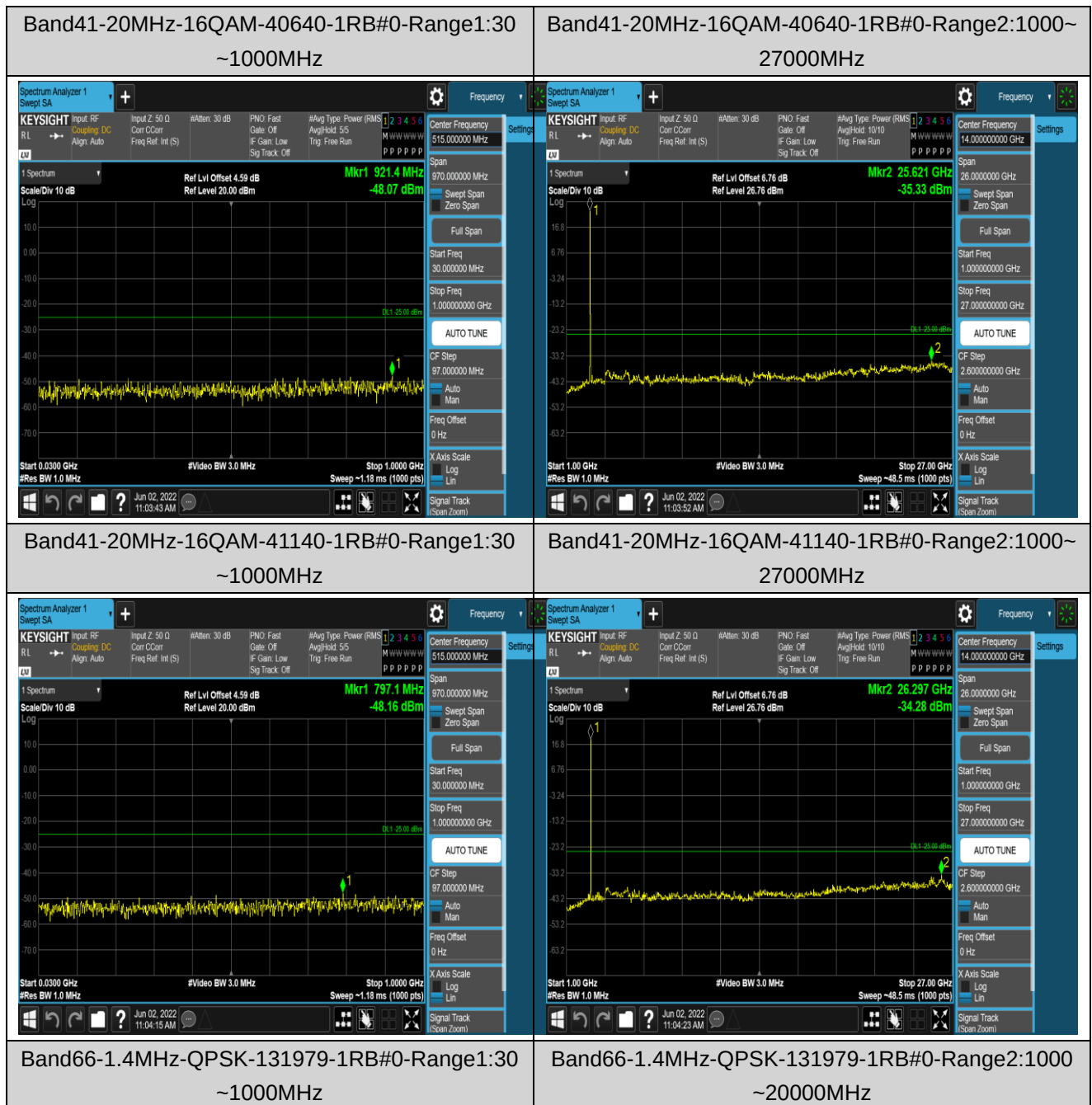
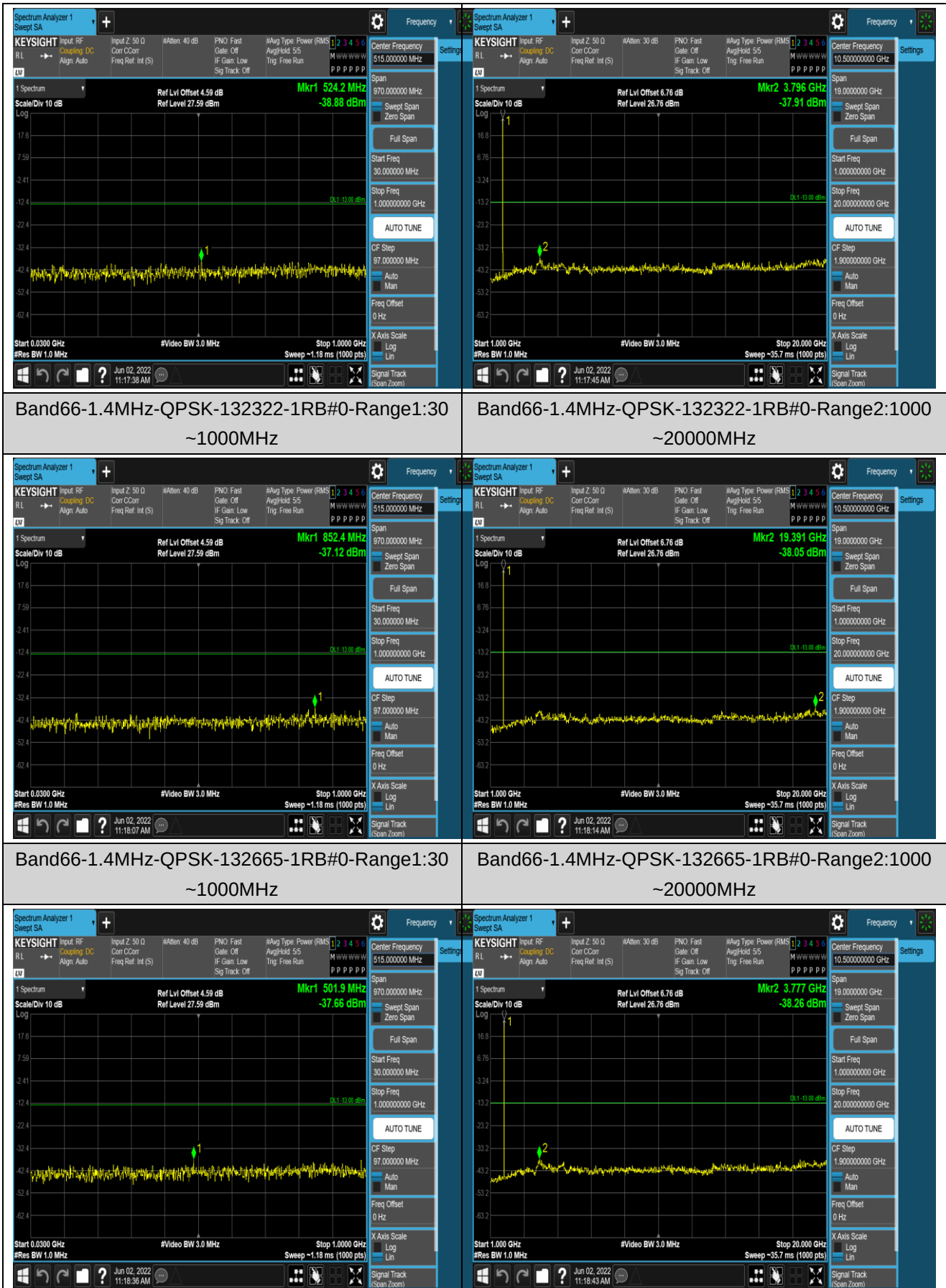






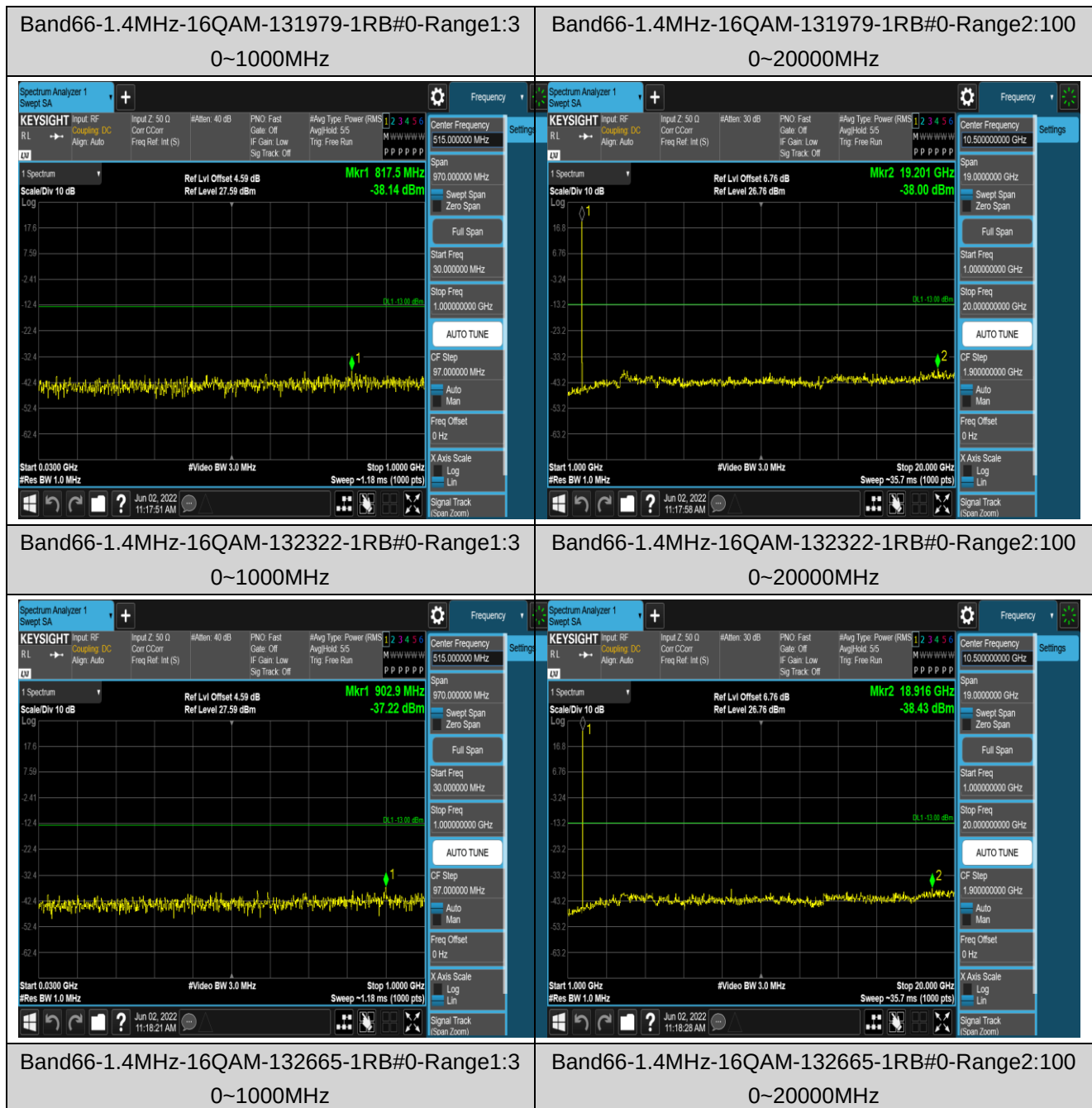
JianYan Testing Group Shenzhen Co., Ltd.

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Band66-20MHz-QPSK-132072-1RB#0-Range1:30
~1000MHz

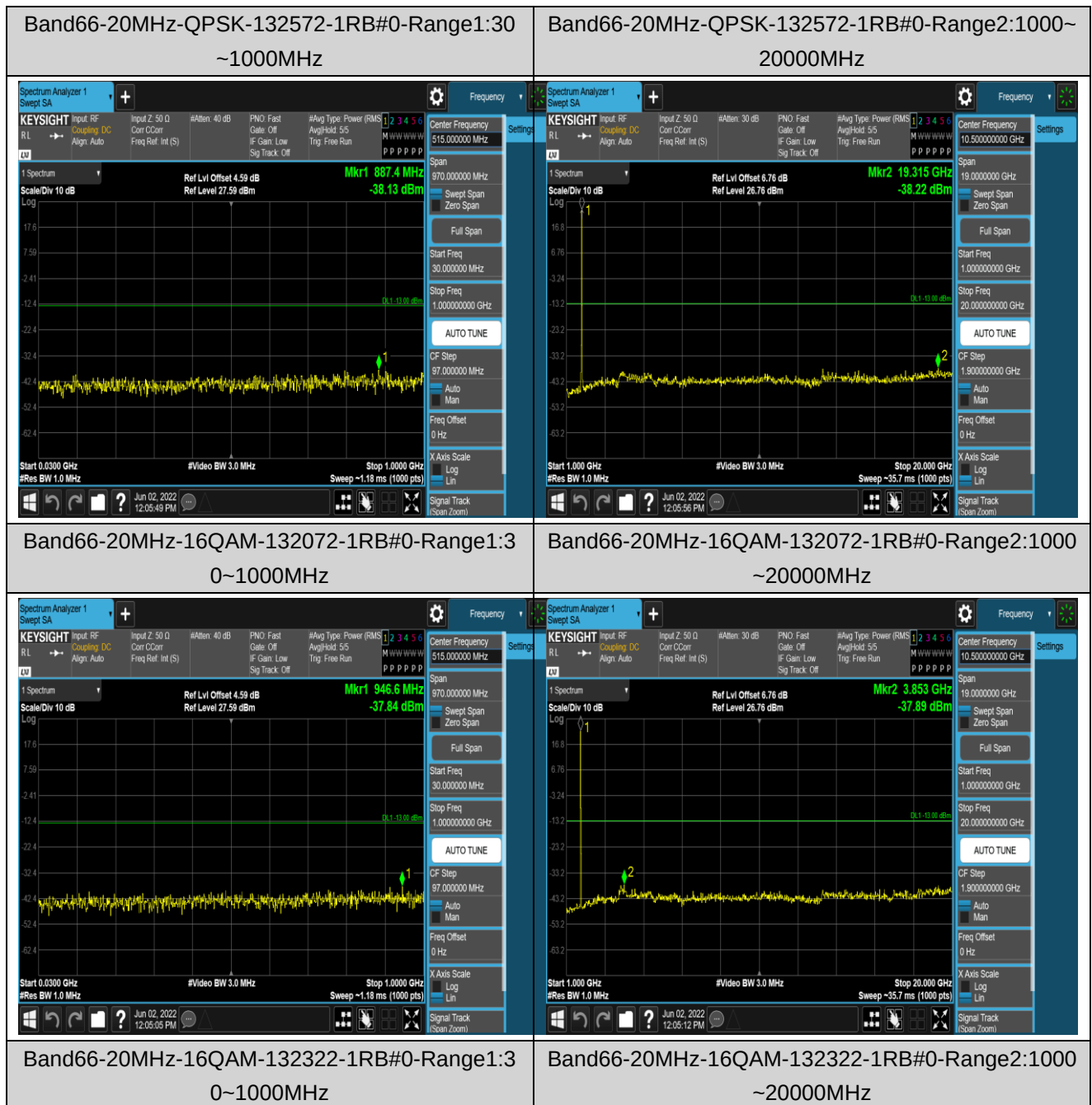
Band66-20MHz-QPSK-132072-1RB#0-Range2:1000~
20000MHz

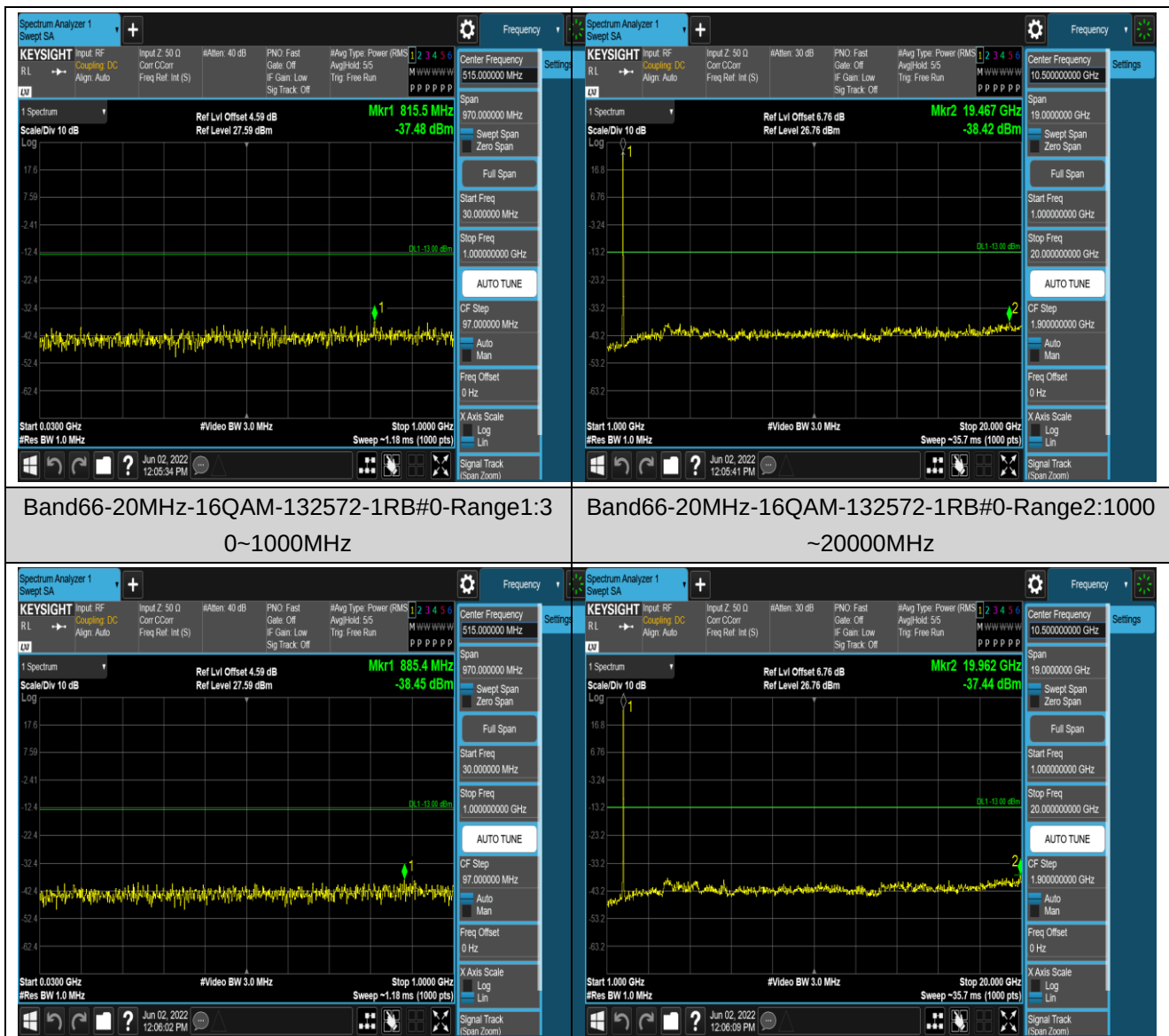


Band66-20MHz-QPSK-132322-1RB#0-Range1:30
~1000MHz

Band66-20MHz-QPSK-132322-1RB#0-Range2:1000~
20000MHz







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	-7.64	-0.004064	Within authorized band for Band 2	Pass
	-20	-4.63	-0.002463		
	-10	8.20	0.004362		
	0	8.68	0.004617		
	10	-12.59	-0.006697		
	20	10.00	0.005319		
	30	7.68	0.004085		
	40	-15.09	-0.008027		
	50	4.41	0.002346		
16QAM					
3.87	-30	-12.29	-0.006537	Within authorized band for Band 2	Pass
	-20	4.41	0.002346		
	-10	-11.66	-0.006202		
	0	-8.67	-0.004612		
	10	-2.56	-0.001362		
	20	-3.86	-0.002053		
	30	-13.86	-0.007372		
	40	-11.86	-0.006309		
	50	8.33	0.004431		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-8.74	-0.004649	Within authorized band for Band 2	Pass
	3.87	-12.37	-0.006580		
	4.40	7.45	0.003963		
16QAM					
25	3.50	-6.32	-0.003362	Within authorized band for Band 2	Pass
	3.87	8.90	0.004734		
	4.40	-9.86	-0.005245		
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	-6.22	-0.007436	±2.5	Pass
	-20	-7.91	-0.009456		
	-10	-7.28	-0.008703		
	0	-3.02	-0.003610		
	10	-6.41	-0.007663		
	20	-11.27	-0.013473		
	30	-7.64	-0.009133		
	40	-7.84	-0.009372		
	50	-7.35	-0.008787		
16QAM					
3.87	-30	-10.17	-0.012158	±2.5	Pass
	-20	-5.46	-0.006527		
	-10	-5.79	-0.006922		
	0	-8.44	-0.010090		
	10	-3.38	-0.004041		
	20	-4.21	-0.005033		
	30	-5.45	-0.006515		
	40	-1.23	-0.001470		
	50	-7.70	-0.009205		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-6.01	-0.007185	±2.5	Pass
	3.87	-7.37	-0.008811		
	4.40	-5.84	-0.006981		
16QAM					
25	3.50	-3.53	-0.004220	±2.5	Pass
	3.87	-5.58	-0.006671		
	4.40	-8.40	-0.010042		
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	9.24	0.003645	Within authorized band for Band 7	Pass
	-20	-3.58	-0.001412		
	-10	-12.22	-0.004821		
	0	-12.79	-0.005045		
	10	-14.13	-0.005574		
	20	-6.85	-0.002702		
	30	-9.48	-0.003740		
	40	-7.75	-0.003057		
	50	9.36	0.003692		
16QAM					
3.87	-30	-3.22	-0.001270	Within authorized band for Band 7	Pass
	-20	-12.59	-0.004966		
	-10	-13.15	-0.005187		
	0	-5.74	-0.002264		
	10	-3.43	-0.001353		
	20	8.75	0.003452		
	30	-11.89	-0.004690		
	40	-21.30	-0.008402		
	50	-15.54	-0.006130		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-13.35	-0.005266	Within authorized band for Band 7	Pass
	3.87	-30.00	-0.011834		
	4.40	-11.89	-0.004690		
16QAM					
25	3.50	-12.90	-0.005089	Within authorized band for Band 7	Pass
	3.87	3.86	0.001523		
	4.40	11.26	0.004442		
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					
3.87	-30	-3.72	-0.005258	±2.5	Pass
	-20	-4.35	-0.006148		
	-10	-5.51	-0.007788		
	0	-6.91	-0.009767		
	10	-3.99	-0.005640		
	20	-1.76	-0.002488		
	30	-3.19	-0.004509		
	40	-1.52	-0.002148		
	50	-5.42	-0.007661		
16QAM					
3.87	-30	2.03	0.002869	±2.5	Pass
	-20	-6.09	-0.008608		
	-10	-6.88	-0.009724		
	0	-4.22	-0.005965		
	10	-2.17	-0.003067		
	20	-3.58	-0.005060		
	30	-4.09	-0.005781		
	40	-5.21	-0.007364		
	50	-4.36	-0.006163		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-6.77	-0.009569	±2.5	Pass
	3.87	-10.31	-0.014572		
	4.40	-4.18	-0.005908		
16QAM					
25	3.50	-8.34	-0.011788	±2.5	Pass
	3.87	-3.83	-0.005413		
	4.40	-4.55	-0.006431		
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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-3.20	-0.004507	±2.5	Pass
	-20	-7.21	-0.010155		
	-10	-8.18	-0.011521		
	0	-8.73	-0.012296		
	10	-4.94	-0.006958		
	20	-6.58	-0.009268		
	30	-4.89	-0.006887		
	40	-6.72	-0.009465		
	50	-6.65	-0.009366		
16QAM					
3.87	-30	-6.14	-0.008648	±2.5	Pass
	-20	-5.14	-0.007239		
	-10	-7.20	-0.010141		
	0	-2.35	-0.003310		
	10	-5.28	-0.007437		
	20	-4.29	-0.006042		
	30	-5.49	-0.007732		
	40	-5.48	-0.007718		
	50	-6.47	-0.009113		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-4.96	-0.006986	±2.5	Pass
	3.87	-9.04	-0.012732		
	4.40	-7.02	-0.009887		
16QAM					
25	3.50	-6.29	-0.008859	±2.5	Pass
	3.87	-1.37	-0.001930		
	4.40	-4.49	-0.006324		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this					

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	-7.34	-0.002829	Within authorized band for Band 41	Pass
	-20	-4.53	-0.001746		
	-10	-5.48	-0.002112		
	0	-7.98	-0.003075		
	10	-10.93	-0.004212		
	20	-6.28	-0.002420		
	30	-5.95	-0.002293		
	40	-6.74	-0.002597		
	50	-5.51	-0.002123		
16QAM					
3.87	-30	-4.45	-0.001715	Within authorized band for Band 41	Pass
	-20	-9.46	-0.003645		
	-10	-8.01	-0.003087		
	0	-10.71	-0.004127		
	10	7.30	0.002813		
	20	-5.94	-0.002289		
	30	-3.53	-0.001360		
	40	6.84	0.002636		
	50	-7.81	-0.003010		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	6.59	0.002539	Within authorized band for Band 41	Pass
	3.87	-15.41	-0.005938		
	4.40	-7.32	-0.002821		
16QAM					
25	3.50	5.38	0.002073	Within authorized band for Band41	Pass
	3.87	-9.43	-0.003634		
	4.40	-5.75	-0.002216		
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	-4.56	-0.002613	Within authorized band for Band 66	Pass
	-20	6.54	0.003748		
	-10	-7.08	-0.004057		
	0	-7.15	-0.004097		
	10	6.65	0.003811		
	20	-9.53	-0.005461		
	30	-12.39	-0.007100		
	40	-13.62	-0.007805		
	50	-9.37	-0.005370		
16QAM					
3.87	-30	8.51	0.004877	Within authorized band for Band 66	Pass
	-20	-7.68	-0.004401		
	-10	1.90	0.001089		
	0	-1.24	-0.000711		
	10	5.88	0.003370		
	20	-8.67	-0.004968		
	30	2.05	0.001175		
	40	-5.02	-0.002877		
	50	6.88	0.003943		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-6.37	-0.003650	Within authorized band for Band 66	Pass
	3.87	8.51	0.004877		
	4.40	-7.50	-0.004298		
16QAM					
25	3.50	-5.75	-0.003295	Within authorized band for Band 66	Pass
	3.87	-9.28	-0.005318		
	4.40	-8.35	-0.004785		
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
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
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#0	PASS	PASS
Band41	20MHz	QPSK	40640	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40640	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

