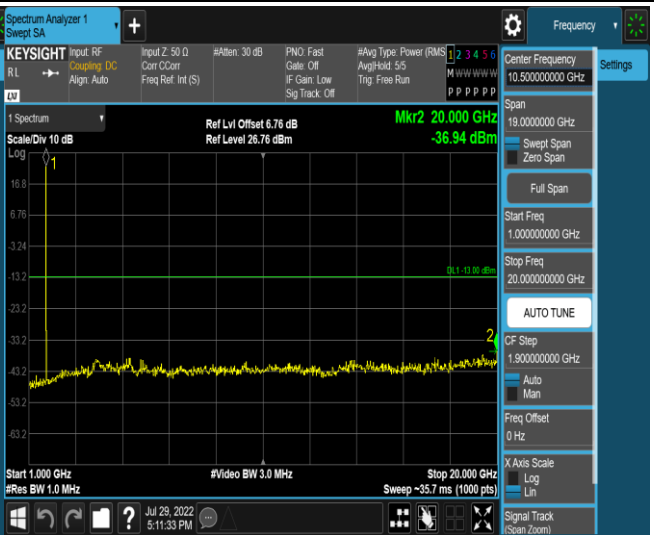
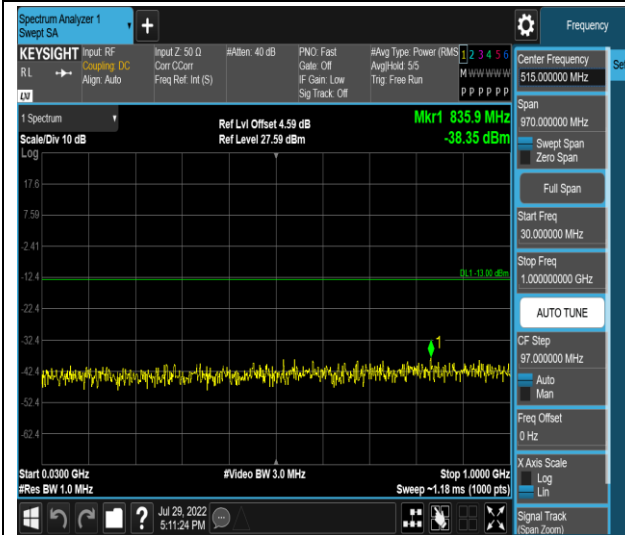


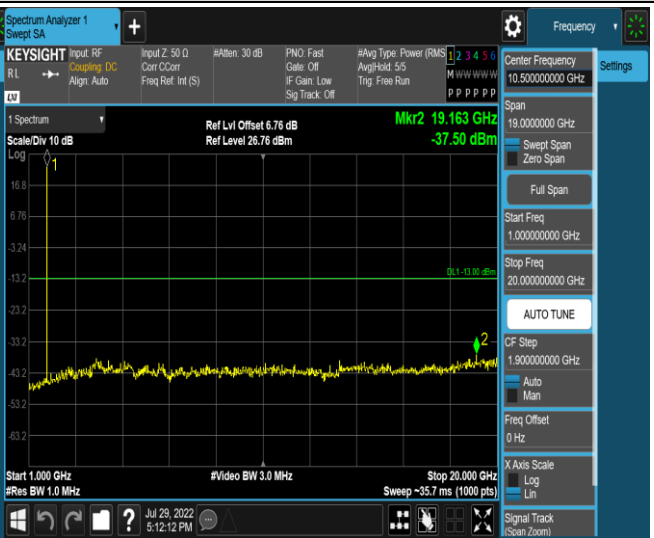
Band66-1.4MHz-16QAM-131979-1RB#0-Range1:3
0~1000MHz

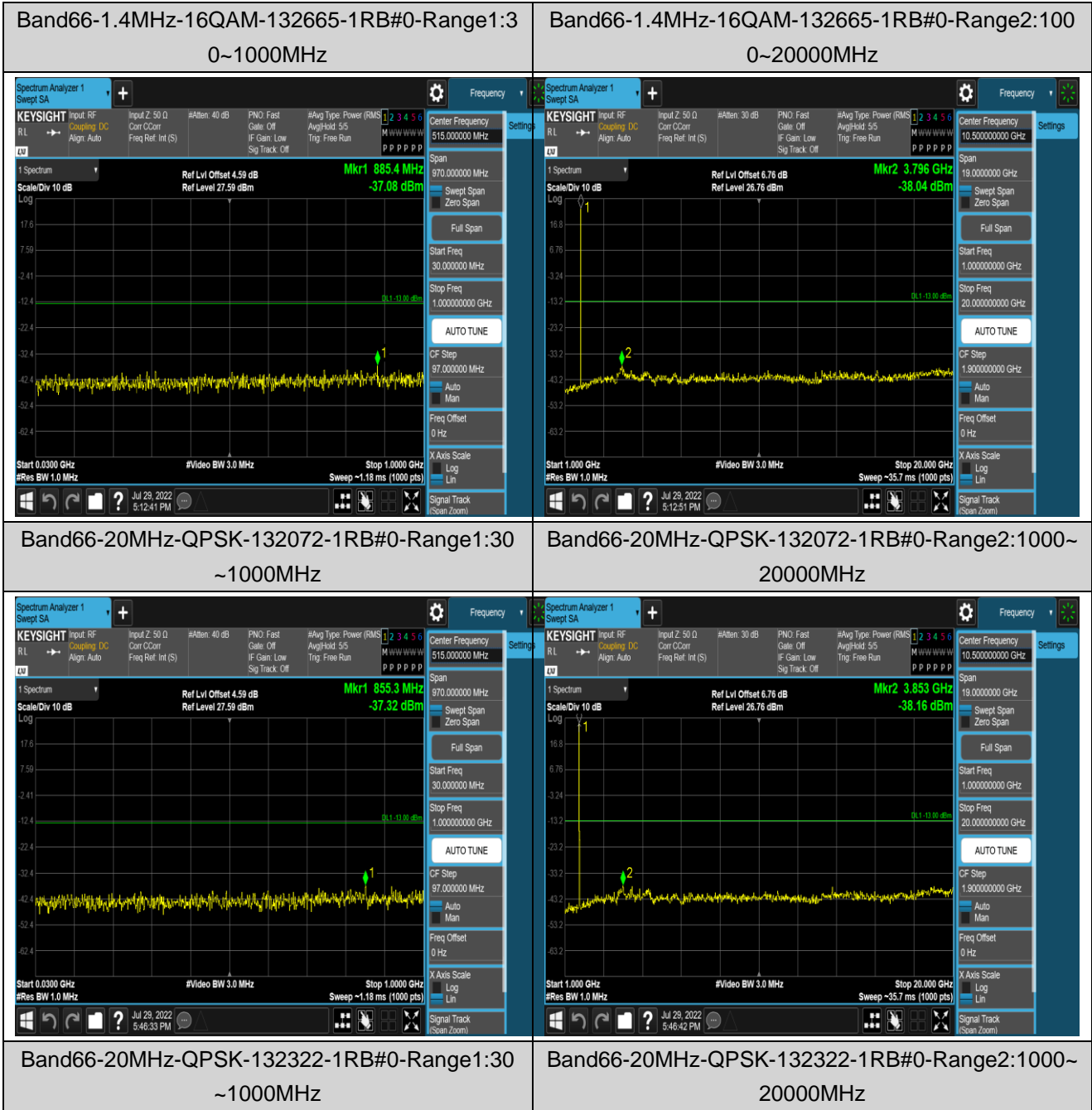
Band66-1.4MHz-16QAM-131979-1RB#0-Range2:100
0~20000MHz



Band66-1.4MHz-16QAM-132322-1RB#0-Range1:3
0~1000MHz

Band66-1.4MHz-16QAM-132322-1RB#0-Range2:100
0~20000MHz







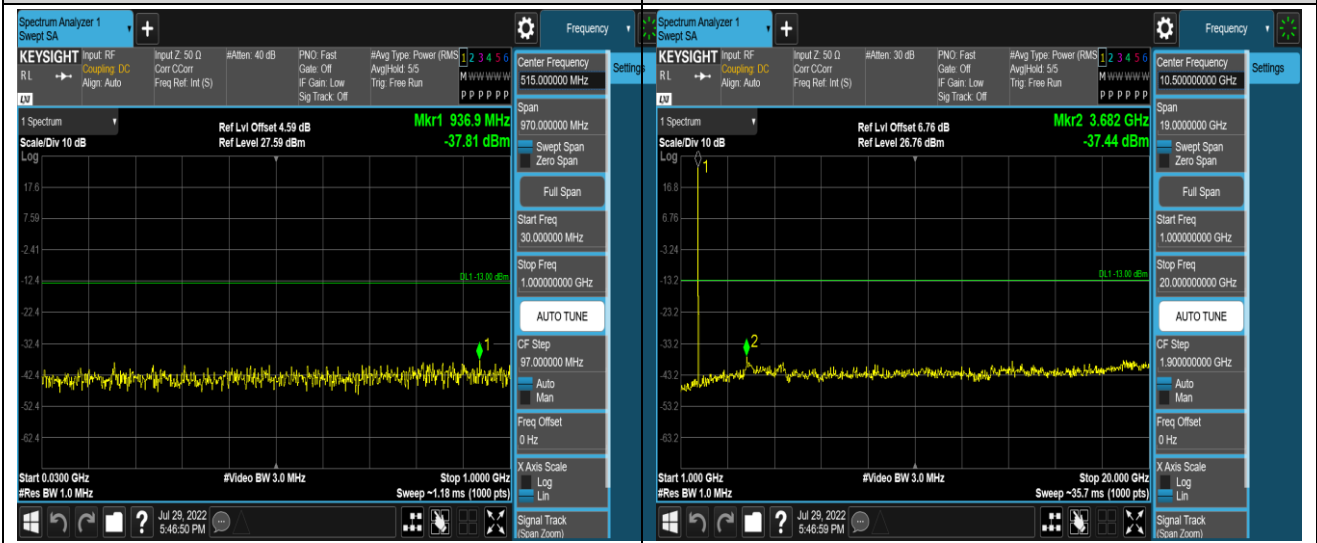
Band66-20MHz-QPSK-132572-1RB#0-Range1:30
~1000MHz

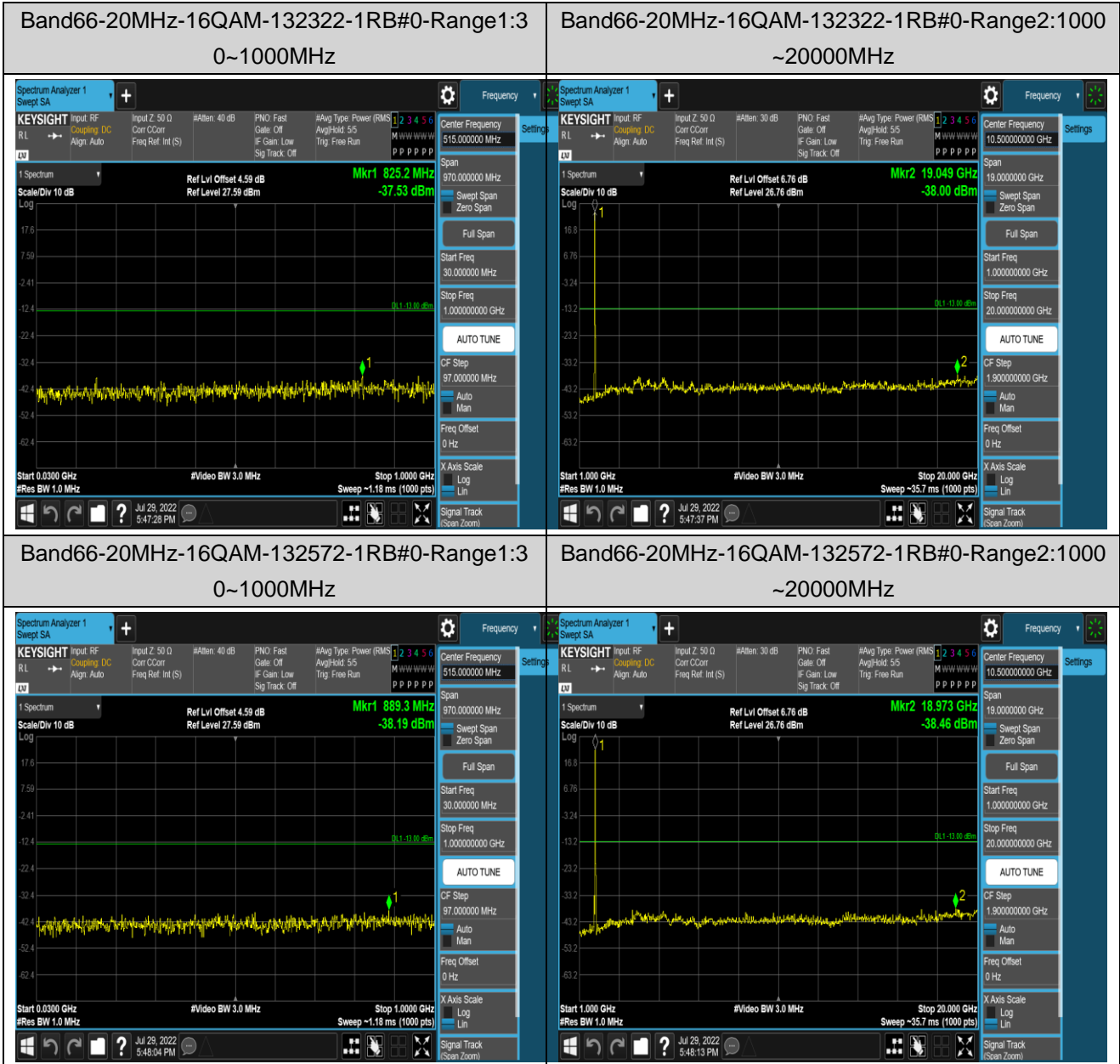
Band66-20MHz-QPSK-132572-1RB#0-Range2:1000~
20000MHz



Band66-20MHz-16QAM-132072-1RB#0-Range1:3
0~1000MHz

Band66-20MHz-16QAM-132072-1RB#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					
3.85	-30	-16.88	-0.008979	Within authorized band for Band 2	Pass
	-20	-24.03	-0.012782		
	-10	-3.39	-0.001803		
	0	-22.26	-0.011840		
	10	-16.75	-0.008910		
	20	-22.04	-0.011723		
	30	-19.57	-0.010410		
	40	-15.11	-0.008037		
	50	-10.99	-0.005846		
16QAM					
3.85	-30	-26.99	-0.014356	Within authorized band for Band 2	Pass
	-20	-14.92	-0.007936		
	-10	-6.44	-0.003426		
	0	-5.39	-0.002867		
	10	-7.70	-0.004096		
	20	-4.89	-0.002601		
	30	-16.19	-0.008612		
	40	-22.20	-0.011809		
	50	7.24	0.003851		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-16.26	-0.008649	Within authorized band for Band 2	Pass
	3.85	-19.87	-0.010569		
	4.43	-19.48	-0.010362		
16QAM					
25	3.50	-6.92	-0.003681	Within authorized band for Band 2	Pass
	3.85	-19.80	-0.010532		
	4.43	-4.66	-0.002479		

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					
3.85	-30	7.11	0.004104	Within authorized band for Band 4	Pass
	-20	-18.15	-0.010476		
	-10	3.73	0.002153		
	0	-3.68	-0.002124		
	10	2.56	0.001478		
	20	-8.27	-0.004773		
	30	3.53	0.002038		
	40	19.97	0.011527		
	50	-3.12	-0.001801		
16QAM					
3.85	-30	-20.31	-0.011723	Within authorized band for Band 4	Pass
	-20	-16.91	-0.009760		
	-10	17.47	0.010084		
	0	-14.59	-0.008421		
	10	-10.69	-0.006170		
	20	2.49	0.001437		
	30	16.06	0.009270		
	40	16.77	0.009680		
	50	-6.85	-0.003954		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	6.04	0.003486	Within authorized band for Band 4	Pass
	3.85	-12.75	-0.007359		
	4.43	-12.22	-0.007053		
16QAM					
25	3.50	-3.05	-0.001760	Within authorized band for Band 4	Pass
	3.85	-11.97	-0.006909		
	4.43	2.86	0.001651		

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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-8.85	-0.010580	±2.5	Pass
	-20	-9.38	-0.011213		
	-10	-7.22	-0.008631		
	0	-5.44	-0.006503		
	10	-6.92	-0.008273		
	20	-13.19	-0.015768		
	30	-11.74	-0.014035		
	40	-15.62	-0.018673		
	50	-3.43	-0.004100		
16QAM					
3.85	-30	-5.69	-0.006802	±2.5	Pass
	-20	-11.29	-0.013497		
	-10	-9.81	-0.011727		
	0	-10.56	-0.012624		
	10	-8.05	-0.009623		
	20	-7.64	-0.009133		
	30	-10.34	-0.012361		
	40	-11.57	-0.013831		
	50	-14.52	-0.017358		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-8.98	-0.010735	±2.5	Pass
	3.85	-12.60	-0.015063		
	4.43	-12.46	-0.014895		
16QAM					
25	3.50	-13.48	-0.016115	±2.5	Pass
	3.85	-11.12	-0.013293		
	4.43	-8.81	-0.010532		

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					
3.85	-30	-16.47	-0.006497	Within authorized band for Band 7	Pass
	-20	14.98	0.005909		
	-10	-14.48	-0.005712		
	0	-16.41	-0.006473		
	10	-6.22	-0.002454		
	20	-24.93	-0.009834		
	30	-16.74	-0.006604		
	40	-3.83	-0.001511		
	50	-7.25	-0.002860		
16QAM					
3.85	-30	-13.73	-0.005416	Within authorized band for Band 7	Pass
	-20	-5.87	-0.002316		
	-10	-6.74	-0.002659		
	0	-15.03	-0.005929		
	10	-5.55	-0.002189		
	20	-9.64	-0.003803		
	30	-17.14	-0.006761		
	40	13.72	0.005412		
	50	-9.20	-0.003629		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	11.03	0.004351	Within authorized band for Band 7	Pass
	3.85	-17.98	-0.007093		
	4.43	-20.74	-0.008181		
16QAM					
25	3.50	-18.05	-0.007120	Within authorized band for Band 7	Pass
	3.85	-15.92	-0.006280		
	4.43	-16.19	-0.006387		

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	-7.84	-0.011081	Within authorized band for Band 12	Pass
	-20	-12.75	-0.018021		
	-10	-12.46	-0.017611		
	0	-14.08	-0.019901		
	10	-8.47	-0.011972		
	20	-12.75	-0.018021		
	30	-8.23	-0.011633		
	40	-3.66	-0.005173		
	50	-3.93	-0.005555		
16QAM					
3.85	-30	-4.35	-0.006148	Within authorized band for Band 12	Pass
	-20	-3.40	-0.004806		
	-10	-8.28	-0.011703		
	0	-13.02	-0.018403		
	10	-7.41	-0.010473		
	20	-9.98	-0.014106		
	30	-8.31	-0.011746		
	40	-10.03	-0.014177		
	50	-11.97	-0.016919		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-10.69	-0.015110	Within authorized band for Band 12	Pass
	3.85	-10.76	-0.015208		
	4.43	-10.87	-0.015364		
16QAM					
25	3.50	-8.94	-0.012636	Within authorized band for Band 12	Pass
	3.85	-9.47	-0.013385		
	4.43	-15.23	-0.021527		

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	-5.64	-0.003232	Within authorized band for Band 66	Pass
	-20	-9.40	-0.005387		
	-10	3.40	0.001948		
	0	2.90	0.001662		
	10	-12.87	-0.007375		
	20	-9.48	-0.005433		
	30	6.57	0.003765		
	40	-6.09	-0.003490		
	50	-10.23	-0.005862		
16QAM					
3.85	-30	-9.08	-0.005203	Within authorized band for Band 66	Pass
	-20	3.20	0.001834		
	-10	-10.11	-0.005794		
	0	6.34	0.003633		
	10	-14.28	-0.008183		
	20	-11.07	-0.006344		
	30	-18.58	-0.010648		
	40	-12.19	-0.006986		
	50	-12.77	-0.007318		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-14.25	-0.008166	Within authorized band for Band 66	Pass
	3.85	3.19	0.001828		
	4.43	-11.76	-0.006739		
16QAM					
25	3.50	2.65	0.001519	Within authorized band for Band 66	Pass
	3.85	-9.63	-0.005519		
	4.43	-10.70	-0.006132		

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
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
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#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

