

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-11.33	-0.013545	±2.5	Pass
	3.87	-12.62	-0.015087		
	4.45	-9.90	-0.011835		
16QAM					
25	3.45	-8.63	-0.010317	±2.5	Pass
	3.87	-9.53	-0.011393		
	4.45	-8.35	-0.009982		
64QAM					
25	3.45	-5.02	-0.006001	±2.5	Pass
	3.87	-9.07	-0.010843		
	4.45	-9.07	-0.010843		
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	-22.62	-0.008923	Within authorized band for Band 7	Pass
	-20	-21.80	-0.008600		
	-10	-12.72	-0.005018		
	0	15.28	0.006028		
	10	16.64	0.006564		
	20	-14.19	-0.005598		
	30	-2.35	-0.000927		
	40	-24.25	-0.009566		
	50	-14.46	-0.005704		
16QAM					
3.87	-30	-15.28	-0.006028	Within authorized band for Band 7	Pass
	-20	16.08	0.006343		
	-10	15.54	0.006130		
	0	-16.88	-0.006659		
	10	-15.69	-0.006189		
	20	-22.52	-0.008884		
	30	-17.84	-0.007037		
	40	14.95	0.005897		
	50	-20.93	-0.008256		
64QAM					
3.87	-30	-19.63	-0.007744	Within authorized band for Band 7	Pass
	-20	8.38	0.003306		
	-10	-16.91	-0.006671		
	0	-10.10	-0.003984		
	10	10.80	0.004260		
	20	-12.76	-0.005034		
	30	19.84	0.007826		
	40	-8.44	-0.003329		
	50	11.12	0.004387		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-22.97	-0.009061	Within authorized band for Band 7	Pass
	3.87	-22.02	-0.008686		
	4.45	-15.31	-0.006039		
16QAM					
25	3.45	14.31	0.005645	Within authorized band for Band 7	Pass
	3.87	-15.69	-0.006189		
	4.45	-16.95	-0.006686		
64QAM					
25	3.45	-16.91	-0.006671	Within authorized band for Band 7	Pass
	3.87	16.51	0.006513		
	4.45	-19.00	-0.007495		
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	-9.44	-0.013343	Within authorized band for Band 12	Pass
	-20	-13.05	-0.018445		
	-10	-4.23	-0.005979		
	0	-11.37	-0.016071		
	10	-5.24	-0.007406		
	20	-8.14	-0.011505		
	30	-7.37	-0.010417		
	40	-3.26	-0.004608		
	50	-11.17	-0.015788		
16QAM					
3.87	-30	-8.68	-0.012269	Within authorized band for Band 12	Pass
	-20	-10.66	-0.015067		
	-10	-11.46	-0.016198		
	0	-10.41	-0.014714		
	10	-6.65	-0.009399		
	20	-1.75	-0.002473		
	30	-6.95	-0.009823		
	40	-9.43	-0.013329		
	50	-3.83	-0.005413		
64QAM					
3.87	-30	-8.15	-0.011519	Within authorized band for Band 12	Pass
	-20	-7.61	-0.010756		
	-10	-8.57	-0.012113		
	0	-8.65	-0.012226		
	10	-11.23	-0.015873		
	20	-7.07	-0.009993		
	30	-5.05	-0.007138		
	40	-6.88	-0.009724		
	50	-6.81	-0.009625		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-12.22	-0.017272	Within authorized band for Band 12	Pass
	3.87	-9.66	-0.013654		
	4.45	-9.93	-0.014035		
16QAM					
25	3.45	-11.07	-0.015647	Within authorized band for Band 12	Pass
	3.87	-10.11	-0.014290		
	4.45	-10.69	-0.015110		
64QAM					
25	3.45	-10.86	-0.015350	Within authorized band for Band 12	Pass
	3.87	-11.33	-0.016014		
	4.45	-5.61	-0.007929		
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	-13.52	-0.005210	Within authorized band for Band 41	Pass
	-20	5.85	0.002254		
	-10	-21.37	-0.008235		
	0	-16.18	-0.006235		
	10	-22.90	-0.008825		
	20	-6.27	-0.002416		
	30	-17.95	-0.006917		
	40	-14.53	-0.005599		
	50	-15.26	-0.005881		
16QAM					
3.87	-30	-22.17	-0.008543	Within authorized band for Band 41	Pass
	-20	-23.15	-0.008921		
	-10	-13.03	-0.005021		
	0	-23.15	-0.008921		
	10	-16.47	-0.006347		
	20	-20.04	-0.007723		
	30	-18.88	-0.007276		
	40	6.74	0.002597		
	50	-19.37	-0.007464		
64QAM					
3.87	-30	-17.37	-0.006694	Within authorized band for Band 41	Pass
	-20	12.92	0.004979		
	-10	-20.34	-0.007838		
	0	-22.42	-0.008640		
	10	13.02	0.005017		
	20	-22.44	-0.008647		
	30	4.33	0.001669		
	40	-11.64	-0.004486		
	50	13.75	0.005299		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-21.23	-0.008181	Within authorized band for Band 41	Pass
	3.87	-26.28	-0.010127		
	4.45	-16.54	-0.006374		
16QAM					
25	3.45	3.49	0.001345	Within authorized band for Band41	Pass
	3.87	-28.20	-0.010867		
	4.45	-16.58	-0.006389		
64QAM					
25	3.45	-14.82	-0.005711	Within authorized band for Band41	Pass
	3.87	-19.04	-0.007337		
	4.45	-6.69	-0.002578		
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	-10.54	-0.006040	Within authorized band for Band 66	Pass
	-20	-22.19	-0.012716		
	-10	-14.73	-0.008441		
	0	-10.39	-0.005954		
	10	-13.82	-0.007920		
	20	-12.47	-0.007146		
	30	-15.16	-0.008688		
	40	-4.43	-0.002539		
	50	-11.84	-0.006785		
16QAM					
3.87	-30	-12.77	-0.007318	Within authorized band for Band 66	Pass
	-20	-11.79	-0.006756		
	-10	-13.59	-0.007788		
	0	-11.93	-0.006837		
	10	6.17	0.003536		
	20	-6.75	-0.003868		
	30	-9.54	-0.005467		
	40	-9.28	-0.005318		
	50	-5.94	-0.003404		
64QAM					
3.87	-30	-4.66	-0.002670	Within authorized band for Band 66	Pass
	-20	-10.24	-0.005868		
	-10	-8.98	-0.005146		
	0	-7.71	-0.004418		
	10	-16.81	-0.009633		
	20	8.07	0.004625		
	30	7.98	0.004573		
	40	-6.57	-0.003765		
	50	-4.29	-0.002458		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-13.25	-0.007593	Within authorized band for Band 66	Pass
	3.87	-13.23	-0.007582		
	4.45	-10.17	-0.005828		
16QAM					
25	3.45	-4.33	-0.002481	Within authorized band for Band 66	Pass
	3.87	-4.69	-0.002688		
	4.45	-12.19	-0.006986		
64QAM					
25	3.45	-16.94	-0.009708	Within authorized band for Band 66	Pass
	3.87	-10.37	-0.005943		
	4.45	10.46	0.005994		
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
Band41	20MHz	QPSK	40640	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40640	100RB#0	PASS	PASS
Band41	20MHz	64QAM	40640	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.

Test Graphs





