

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 Frequency=1732.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-12.59	-0.007267	Within authorized band for Band 4	Pass
	-20	-16.75	-0.009668		
	-10	-9.38	-0.005414		
	0	-14.85	-0.008571		
	10	8.01	0.004623		
	20	-15.52	-0.008958		
	30	-11.22	-0.006476		
	40	-9.57	-0.005524		
	50	-13.19	-0.007613		
16QAM					
3.85	-30	-6.47	-0.003734	Within authorized band for Band 4	Pass
	-20	-16.87	-0.009737		
	-10	8.44	0.004872		
	0	-7.44	-0.004294		
	10	7.88	0.004548		
	20	8.81	0.005085		
	30	-10.99	-0.006343		
	40	11.56	0.006672		
	50	-9.77	-0.005639		
64QAM					
3.85	-30	-12.52	-0.007227	Within authorized band for Band 4	Pass
	-20	-9.27	-0.005351		
	-10	-10.47	-0.006043		
	0	4.38	0.002528		
	10	-15.13	-0.008733		
	20	-11.13	-0.006424		
	30	-14.61	-0.008433		
	40	-14.41	-0.008317		
	50	-12.72	-0.007342		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-13.83	-0.007983	Within authorized band for Band 4	Pass
	3.85	-10.49	-0.006055		
	4.40	-16.64	-0.009605		
16QAM					
25	3.50	-9.04	-0.005218	Within authorized band for Band 4	Pass
	3.85	-14.69	-0.008479		
	4.40	-12.62	-0.007284		
64QAM					
25	3.50	4.01	0.002315	Within authorized band for Band 4	Pass
	3.85	-6.69	-0.003861		
	4.40	-10.66	-0.006153		
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	-6.71	-0.008022	±2.5	Pass
	-20	-4.12	-0.004925		
	-10	-9.28	-0.011094		
	0	-9.51	-0.011369		
	10	-5.68	-0.006790		
	20	-3.12	-0.003730		
	30	-7.62	-0.009109		
	40	-15.35	-0.018350		
	50	-15.48	-0.018506		
16QAM					
3.85	-30	-8.43	-0.010078	±2.5	Pass
	-20	-11.83	-0.014142		
	-10	-12.22	-0.014608		
	0	-12.13	-0.014501		
	10	-8.57	-0.010245		
	20	-10.36	-0.012385		
	30	-9.60	-0.011476		
	40	-10.44	-0.012481		
	50	-8.87	-0.010604		
64QAM					
3.85	-30	-11.74	-0.014035	±2.5	Pass
	-20	-7.17	-0.008571		
	-10	-8.27	-0.009886		
	0	-7.98	-0.009540		
	10	-6.05	-0.007233		
	20	-2.46	-0.002941		
	30	-11.72	-0.014011		
	40	-5.04	-0.006025		
	50	-12.49	-0.014931		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-12.17	-0.014549	±2.5	Pass
	3.85	-3.30	-0.003945		
	4.40	-8.43	-0.010078		
16QAM					
25	3.50	-10.57	-0.012636	±2.5	Pass
	3.85	-8.17	-0.009767		
	4.40	-11.17	-0.013353		
64QAM					
25	3.50	3.52	0.004208	±2.5	Pass
	3.85	-7.22	-0.008631		
	4.40	-8.31	-0.009934		
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	-6.72	-0.009498	Within authorized band for Band 12	Pass
	-20	-13.20	-0.018657		
	-10	-14.18	-0.020042		
	0	-8.74	-0.012353		
	10	-11.67	-0.016495		
	20	-12.23	-0.017286		
	30	-9.07	-0.012820		
	40	-7.47	-0.010558		
	50	-6.34	-0.008961		
16QAM					
3.85	-30	-10.90	-0.015406	Within authorized band for Band 12	Pass
	-20	-12.45	-0.017597		
	-10	-10.53	-0.014883		
	0	-9.27	-0.013102		
	10	-5.41	-0.007647		
	20	-3.65	-0.005159		
	30	-11.13	-0.015731		
	40	-11.04	-0.015604		
	50	-7.24	-0.010233		
64QAM					
3.85	-30	-12.04	-0.017018	Within authorized band for Band 12	Pass
	-20	-13.33	-0.018841		
	-10	-11.83	-0.016721		
	0	-6.17	-0.008721		
	10	-9.58	-0.013541		
	20	-3.19	-0.004509		
	30	-8.25	-0.011661		
	40	-15.96	-0.022558		
	50	-2.27	-0.003208		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-8.57	-0.012113	Within authorized band for Band 12	Pass
	3.85	-10.20	-0.014417		
	4.40	-6.48	-0.009159		
16QAM					
25	3.50	-7.38	-0.010431	Within authorized band for Band 12	Pass
	3.85	-8.55	-0.012085		
	4.40	-13.20	-0.018657		
64QAM					
25	3.50	-4.73	-0.006686	Within authorized band for Band 12	Pass
	3.85	-8.65	-0.012226		
	4.40	-9.13	-0.012905		
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	-19.00	-0.010888	Within authorized band for Band 66	Pass
	-20	-8.15	-0.004670		
	-10	-14.91	-0.008544		
	0	-9.78	-0.005605		
	10	-4.75	-0.002722		
	20	-2.80	-0.001605		
	30	-14.32	-0.008206		
	40	-5.49	-0.003146		
	50	-10.86	-0.006223		
16QAM					
3.85	-30	-14.05	-0.008052	Within authorized band for Band 66	Pass
	-20	-9.11	-0.005221		
	-10	-12.55	-0.007192		
	0	-18.78	-0.010762		
	10	-10.60	-0.006074		
	20	-3.28	-0.001880		
	30	-17.60	-0.010086		
	40	-14.39	-0.008246		
	50	-1.57	-0.000900		
64QAM					
3.85	-30	-11.17	-0.006401	Within authorized band for Band 66	Pass
	-20	-10.64	-0.006097		
	-10	-15.01	-0.008602		
	0	-6.85	-0.003926		
	10	3.92	0.002246		
	20	7.28	0.004172		
	30	-12.77	-0.007318		
	40	-9.00	-0.005158		
	50	-13.60	-0.007794		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	3.26	0.001868	Within authorized band for Band 66	Pass
	3.85	-18.55	-0.010630		
	4.40	-15.02	-0.008607		
16QAM					
25	3.50	-3.13	-0.001794	Within authorized band for Band 66	Pass
	3.85	-4.23	-0.002424		
	4.40	-16.28	-0.009330		
64QAM					
25	3.50	-14.55	-0.008338	Within authorized band for Band 66	Pass
	3.85	-11.60	-0.006648		
	4.40	-15.78	-0.009043		
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
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	100RB#0	PASS	PASS
Band4	20MHz	64QAM	20175	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
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band12	10MHz	64QAM	23095	50RB#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





