



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					
7.60	-30	-9.04	-0.004809	Within authorized band for Band 2	Pass
	-20	-10.71	-0.005697		
	-10	-11.34	-0.006032		
	0	-11.39	-0.006059		
	10	-7.1	-0.003777		
	20	-9.31	-0.004952		
	30	-6.61	-0.003516		
	40	-6.42	-0.003415		
	50	-5.89	-0.003133		
16QAM					
7.60	-30	-9.27	-0.004931	Within authorized band for Band 2	Pass
	-20	-7.3	-0.003883		
	-10	-7.81	-0.004154		
	0	-8.93	-0.00475		
	10	-10.81	-0.00575		
	20	-7.05	-0.00375		
	30	-9.03	-0.004803		
	40	-10.87	-0.005782		
	50	-6.91	-0.003676		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	6.46	-12.15	-0.006463	Within authorized band for Band 2	Pass
	7.60	-11.39	-0.006059		
	8.74	-10.06	-0.005351		
16QAM					
25	6.46	-6.90	-0.003670	Within authorized band for Band 2	Pass
	7.60	-12.86	-0.006840		
	8.74	-8.68	-0.004617		

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					
7.60	-30	-8.7	-0.005022	Within authorized band for Band 4	Pass
	-20	-8.91	-0.005143		
	-10	-9.33	-0.005385		
	0	-9.04	-0.005218		
	10	-8.96	-0.005172		
	20	-6.47	-0.003734		
	30	-2.05	-0.001183		
	40	-8.37	-0.004831		
	50	-10.9	-0.006291		
16QAM					
7.60	-30	-4.28	-0.00247	Within authorized band for Band 4	Pass
	-20	-5.56	-0.003209		
	-10	-11.09	-0.006401		
	0	-9.03	-0.005212		
	10	-7.15	-0.004127		
	20	-11.36	-0.006557		
	30	-7.31	-0.004219		
	40	-5.08	-0.002932		
	50	-12.17	-0.007025		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	6.46	-7.08	-0.004087	Within authorized band for Band 4	Pass
	7.60	-10.94	-0.006315		
	8.74	-11.63	-0.006713		
16QAM					
25	6.46	-5.22	-0.003013	Within authorized band for Band 4	Pass
	7.60	-9.01	-0.005201		
	8.74	-6.57	-0.003792		
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					
7.60	-30	-12.3	-0.004852	Within authorized band for Band 7	Pass
	-20	-4.13	-0.001629		
	-10	5.91	0.002331		
	0	-10.51	-0.004146		
	10	-10.64	-0.004197		
	20	-12.85	-0.005069		
	30	-17.19	-0.006781		
	40	-8.04	-0.003172		
	50	-19.15	-0.007554		
16QAM					
7.60	-30	-16.19	-0.006387	Within authorized band for Band 7	Pass
	-20	-3.99	-0.001574		
	-10	-10.84	-0.004276		
	0	-13.28	-0.005239		
	10	-5.89	-0.002323		
	20	-14.42	-0.005688		
	30	-12.07	-0.004761		
	40	-11.53	-0.004548		
	50	-13.46	-0.00531		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	6.46	-8.24	-0.003250	Within authorized band for Band 7	Pass
	7.60	-17.82	-0.007030		
	8.74	-7.38	-0.002911		
16QAM					
25	6.46	-7.12	-0.002809	Within authorized band for Band 7	Pass
	7.60	-10.57	-0.004170		
	8.74	-5.09	-0.002008		

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
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	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



