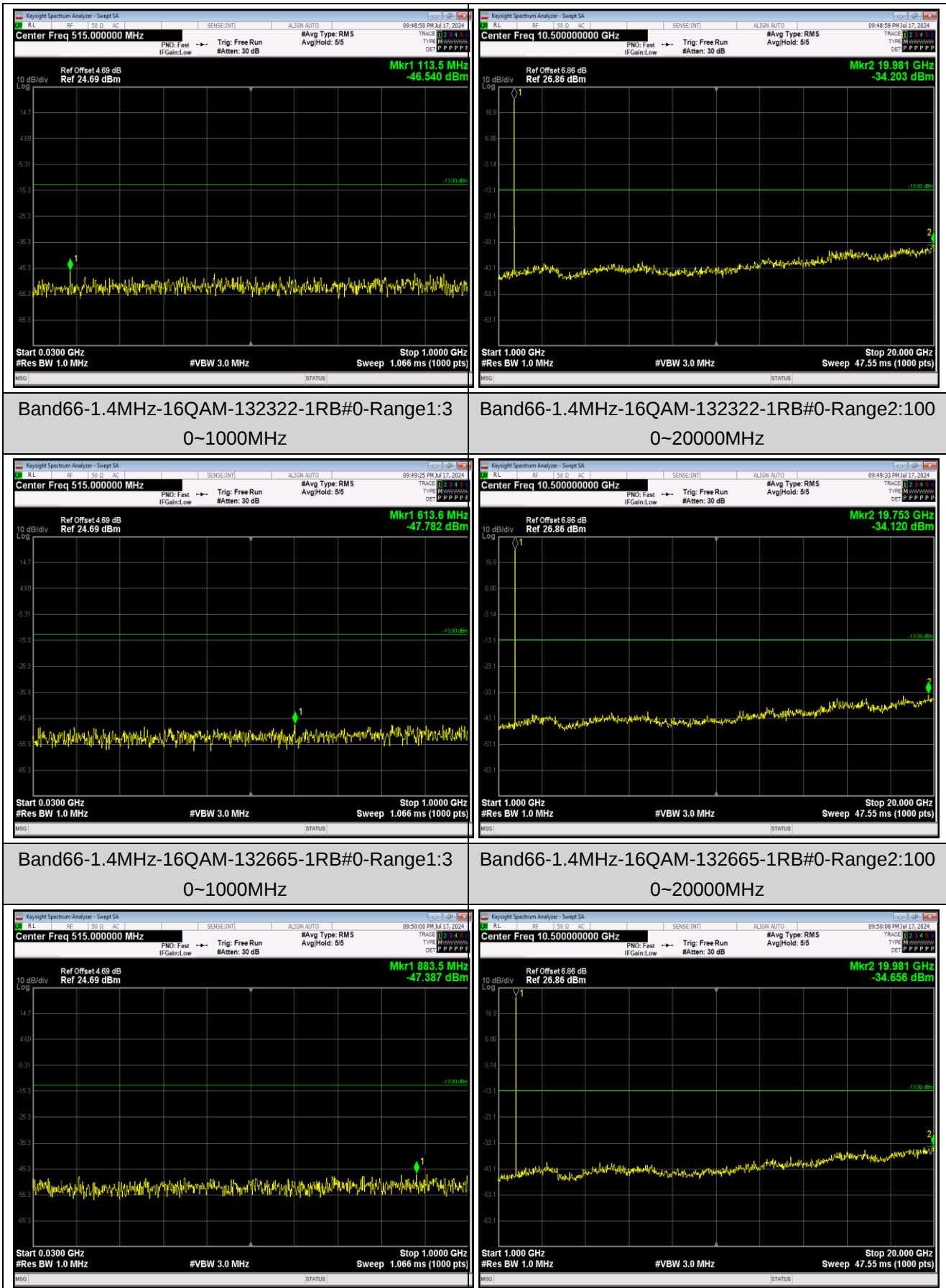
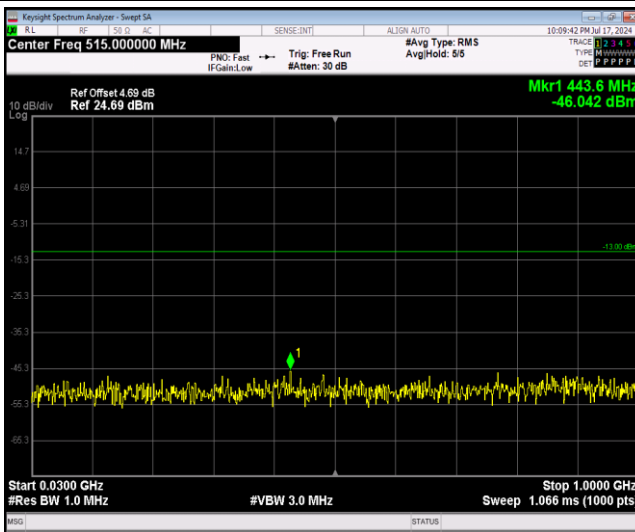
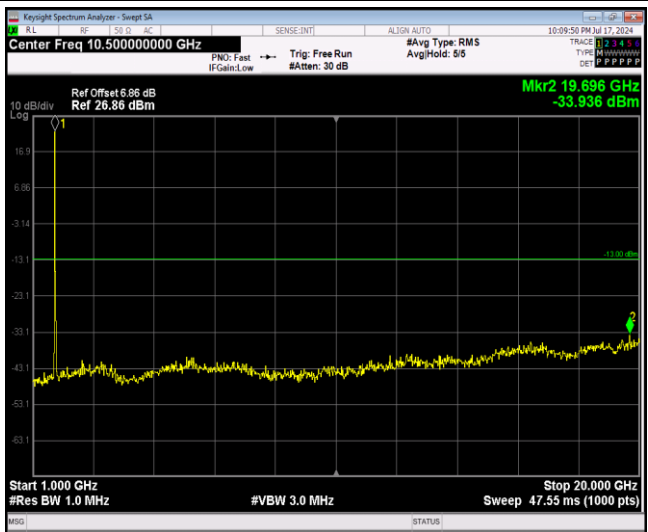




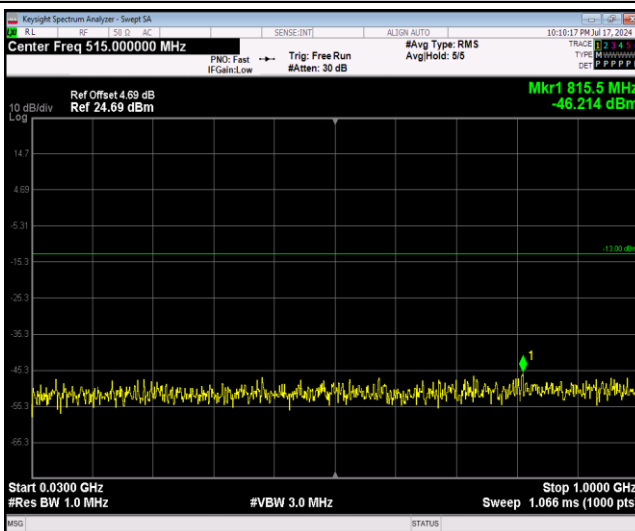
Band66-20MHz-QPSK-132072-1RB#0-Range1:30~1000MHz



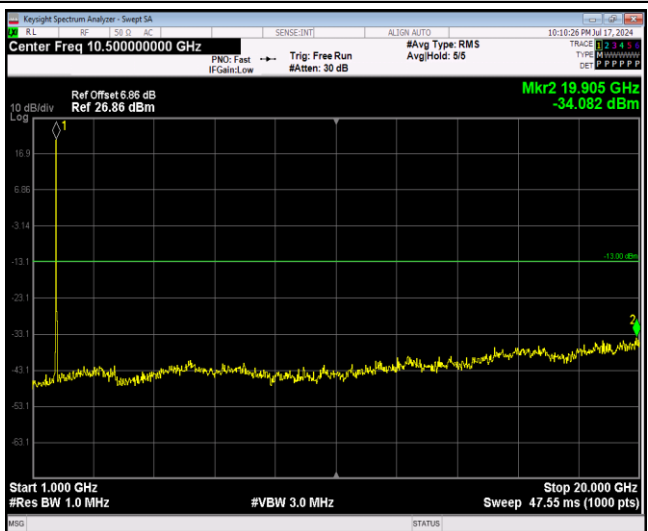
Band66-20MHz-QPSK-132072-1RB#0-Range2:1000~20000MHz



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



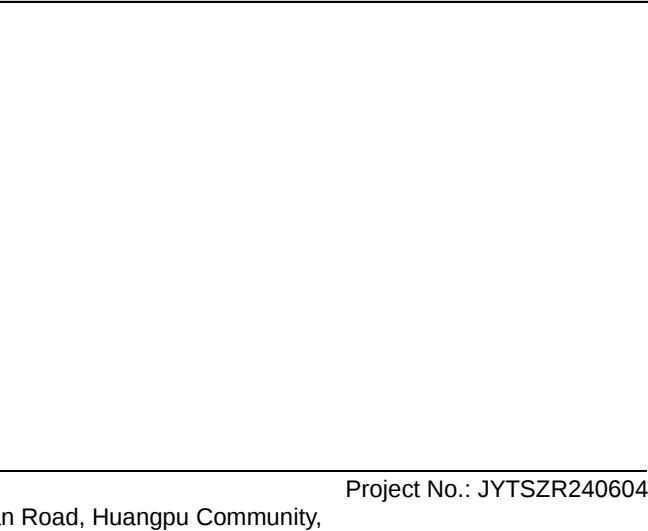
Band66-20MHz-QPSK-132322-1RB#0-Range2:1000~20000MHz

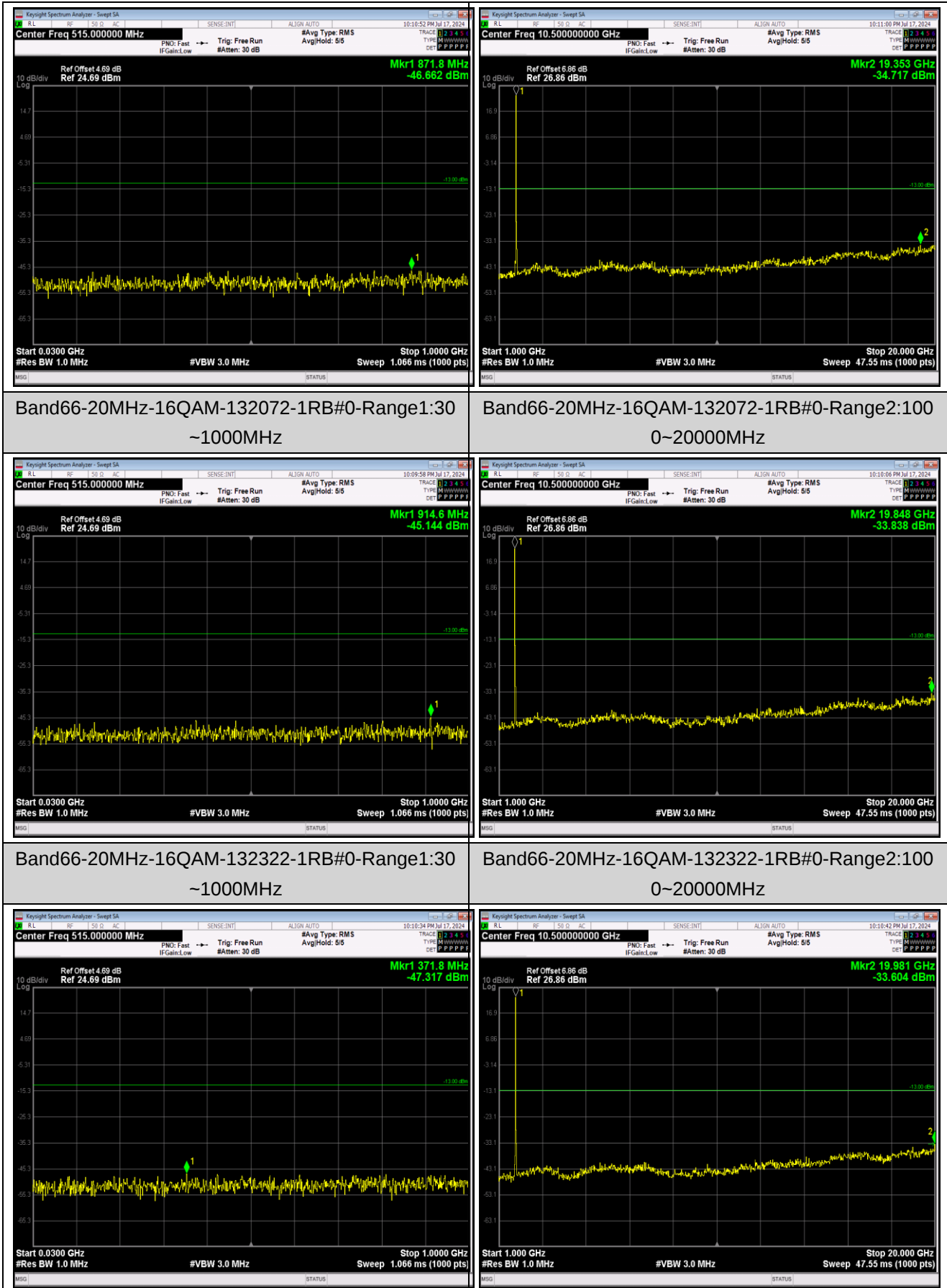


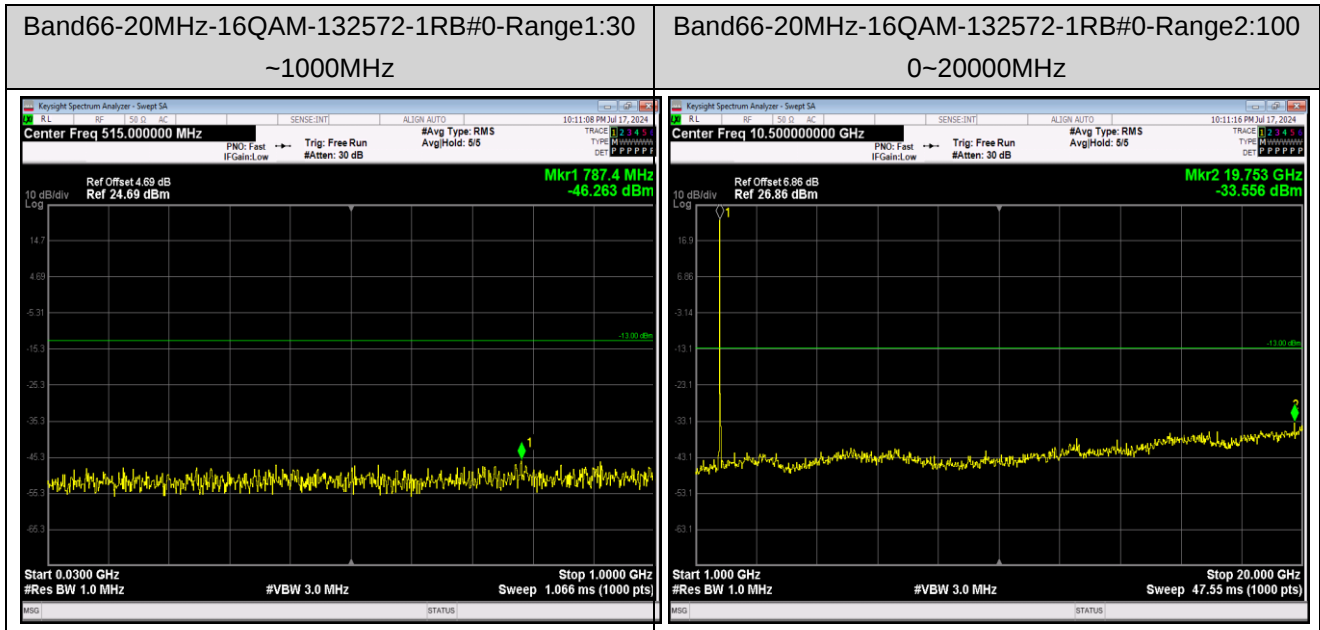
Band66-20MHz-QPSK-132572-1RB#0-Range1:30~1000MHz



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







Appendix F: Frequency Stability

Test Result

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					
3.87	-30	-10.73	-0.004233	Within authorized band for Band 7	Pass
	-20	-13.43	-0.005298		
	-10	-17.72	-0.006990		
	0	-14.35	-0.005661		
	10	-6.88	-0.002714		
	20	-8.57	-0.003381		
	30	-7.94	-0.003132		
	40	-8.24	-0.003250		
	50	-9.26	-0.003653		
16QAM					
3.87	-30	-11.70	-0.004615	Within authorized band for Band 7	Pass
	-20	-10.30	-0.004063		
	-10	-9.53	-0.003759		
	0	10.90	0.004300		
	10	-9.00	-0.003550		
	20	-5.68	-0.002241		
	30	5.65	0.002229		
	40	-12.59	-0.004966		
	50	3.38	0.001333		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-9.67	-0.003815	Within authorized band for Band 7	Pass
	3.87	-16.74	-0.006604		
	4.45	-14.42	-0.005688		
16QAM					
25	3.40	-3.66	-0.001444	Within authorized band for Band 7	Pass
	3.87	-8.31	-0.003278		
	4.45	-14.16	-0.005586		
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					
3.87	-30	-10.47	-0.014799	Within authorized band for Band 12	Pass
	-20	-7.30	-0.010318		
	-10	-8.08	-0.011420		
	0	-10.96	-0.015491		
	10	-9.06	-0.012806		
	20	-6.28	-0.008876		
	30	-7.11	-0.010049		
	40	-3.30	-0.004664		
	50	-8.00	-0.011307		
16QAM					
3.87	-30	-8.87	-0.012537	Within authorized band for Band 12	Pass
	-20	-7.50	-0.010601		
	-10	-8.50	-0.012014		
	0	-6.32	-0.008933		
	10	-4.58	-0.006473		
	20	-12.39	-0.017512		
	30	-7.12	-0.010064		
	40	-4.62	-0.006530		
	50	-5.98	-0.008452		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-8.81	-0.012452	Within authorized band for Band 12	Pass
	3.87	-8.98	-0.012693		
	4.45	-7.10	-0.010035		
16QAM					
25	3.40	-8.21	-0.011604	Within authorized band for Band 12	Pass
	3.87	-4.42	-0.006247		
	4.45	-3.95	-0.005583		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 13 part:

Reference Frequency: LTE Band 13(10MHz) Middle channel=23230 Frequency=782.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-5.51	-0.007046	Within authorized band for Band 17	Pass
	-20	-10.17	-0.013005		
	-10	-10.19	-0.013031		
	0	-13.85	-0.017711		
	10	-11.90	-0.015217		
	20	-10.96	-0.014015		
	30	-12.02	-0.015371		
	40	-8.05	-0.010294		
	50	-11.20	-0.014322		
16QAM					
3.87	-30	-6.12	-0.007826	Within authorized band for Band 17	Pass
	-20	-11.89	-0.015205		
	-10	-5.58	-0.007136		
	0	-3.59	-0.004591		
	10	-7.32	-0.009361		
	20	-8.77	-0.011215		
	30	-6.90	-0.008824		
	40	-6.18	-0.007903		
	50	-8.33	-0.010652		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-6.04	-0.007724	Within authorized band for Band 17	Pass
	3.87	-8.31	-0.010627		
	4.45	-9.30	-0.011893		
16QAM					
25	3.40	-3.49	-0.004463	Within authorized band for Band 17	Pass
	3.87	-8.34	-0.010665		
	4.45	-6.95	-0.008887		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 25 part:

Reference Frequency: LTE Band 25(10MHz) Middle channel=26365 Frequency=1882.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-16.26	-0.008637	Within authorized band for Band 38	Pass
	-20	-10.24	-0.005440		
	-10	-9.93	-0.005275		
	0	-12.26	-0.006513		
	10	-12.80	-0.006799		
	20	-12.55	-0.006667		
	30	-9.87	-0.005243		
	40	-12.09	-0.006422		
	50	-10.56	-0.005610		
16QAM					
3.87	-30	-8.94	-0.004749	Within authorized band for Band 38	Pass
	-20	-14.45	-0.007676		
	-10	-14.23	-0.007559		
	0	-11.30	-0.006003		
	10	-8.71	-0.004627		
	20	-13.05	-0.006932		
	30	-11.14	-0.005918		
	40	-2.85	-0.001514		
	50	-14.12	-0.007501		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-6.61	-0.003511	Within authorized band for Band 38	Pass
	3.87	-16.16	-0.008584		
	4.45	-11.63	-0.006178		
16QAM					
25	3.40	-11.13	-0.005912	Within authorized band for Band 38	Pass
	3.87	-10.40	-0.005525		
	4.45	-11.54	-0.006130		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 26 part:

Reference Frequency: LTE Band 26(10MHz) Middle channel=26740 Frequency=819.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-7.32	-0.008938	Within authorized band for Band 38	Pass
	-20	-6.69	-0.008168		
	-10	-3.93	-0.004799		
	0	-6.55	-0.007998		
	10	-6.95	-0.008486		
	20	-3.89	-0.004750		
	30	-8.47	-0.010342		
	40	-4.21	-0.005140		
	50	-7.65	-0.009341		
16QAM					
3.87	-30	-12.85	-0.015690	Within authorized band for Band 38	Pass
	-20	-8.61	-0.010513		
	-10	-4.31	-0.005263		
	0	-10.09	-0.012320		
	10	-5.65	-0.006899		
	20	-12.27	-0.014982		
	30	-5.82	-0.007106		
	40	-10.47	-0.012784		
	50	-8.05	-0.009829		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-2.29	-0.002796	Within authorized band for Band 38	Pass
	3.87	-10.39	-0.012686		
	4.45	-5.66	-0.006911		
16QAM					
25	3.40	-7.74	-0.009451	Within authorized band for Band 38	Pass
	3.87	-10.96	-0.013382		
	4.45	-9.98	-0.012186		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 26 part:

Reference Frequency: LTE Band 26(10MHz) Middle channel=26915 Frequency=836.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-7.15	-0.008548	Within authorized band for Band 38	Pass
	-20	-7.04	-0.008416		
	-10	-9.13	-0.010915		
	0	-6.15	-0.007352		
	10	-11.96	-0.014298		
	20	-4.22	-0.005045		
	30	-11.32	-0.013533		
	40	-12.20	-0.014585		
	50	-12.12	-0.014489		
16QAM					
3.87	-30	-13.50	-0.016139	Within authorized band for Band 38	Pass
	-20	-9.31	-0.011130		
	-10	-14.82	-0.017717		
	0	-6.02	-0.007197		
	10	-11.53	-0.013784		
	20	-8.67	-0.010365		
	30	-5.54	-0.006623		
	40	-9.71	-0.011608		
	50	-9.86	-0.011787		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-5.55	-0.006635	Within authorized band for Band 38	Pass
	3.87	-8.58	-0.010257		
	4.45	-9.00	-0.010759		
16QAM					
25	3.40	-9.27	-0.011082	Within authorized band for Band 38	Pass
	3.87	-14.72	-0.017597		
	4.45	-12.15	-0.014525		
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	-9.50	-0.003661	Within authorized band for Band 41	Pass
	-20	-8.93	-0.003441		
	-10	-16.26	-0.006266		
	0	-17.40	-0.006705		
	10	-14.29	-0.005507		
	20	-10.79	-0.004158		
	30	-4.08	-0.001572		
	40	-16.21	-0.006247		
	50	-3.36	-0.001295		
16QAM					
3.87	-30	-15.82	-0.006096	Within authorized band for Band 41	Pass
	-20	-3.88	-0.001495		
	-10	-8.54	-0.003291		
	0	-8.17	-0.003148		
	10	-15.36	-0.005919		
	20	-8.17	-0.003148		
	30	-12.73	-0.004906		
	40	-10.86	-0.004185		
	50	-11.17	-0.004304		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-18.05	-0.006956	Within authorized band for Band 41	Pass
	3.87	-10.60	-0.004085		
	4.45	-4.12	-0.001588		
16QAM					
25	3.40	-4.45	-0.001715	Within authorized band for Band41	Pass
	3.87	-9.63	-0.003711		
	4.45	-16.69	-0.006432		
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	-4.58	-0.002625	Within authorized band for Band 66	Pass
	-20	-6.39	-0.003662		
	-10	-4.41	-0.002527		
	0	-8.33	-0.004774		
	10	-5.56	-0.003186		
	20	-3.39	-0.001943		
	30	-4.48	-0.002567		
	40	-8.24	-0.004722		
	50	-10.77	-0.006172		
16QAM					
3.87	-30	-4.18	-0.002395	Within authorized band for Band 66	Pass
	-20	-8.68	-0.004974		
	-10	-8.07	-0.004625		
	0	-7.90	-0.004527		
	10	-3.55	-0.002034		
	20	-6.17	-0.003536		
	30	-13.02	-0.007461		
	40	-3.05	-0.001748		
	50	-7.98	-0.004573		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-3.88	-0.002223	Within authorized band for Band 66	Pass
	3.87	-12.40	-0.007106		
	4.45	-3.16	-0.001811		
16QAM					
25	3.40	-8.91	-0.005106	Within authorized band for Band 66	Pass
	3.87	-5.18	-0.002968		
	4.45	-10.74	-0.006155		
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
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
Band13	10MHz	QPSK	23230	50RB#0	PASS	PASS
Band13	10MHz	16QAM	23230	50RB#0	PASS	PASS
Band25	20MHz	QPSK	26365	100RB#0	PASS	PASS
Band25	20MHz	16QAM	26365	100RB#0	PASS	PASS
Band26	10MHz	QPSK	26740	50RB#0	PASS	PASS
Band26	10MHz	16QAM	26740	50RB#0	PASS	PASS
Band26	15MHz	QPSK	26915	75RB#0	PASS	PASS
Band26	15MHz	16QAM	26915	75RB#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

