



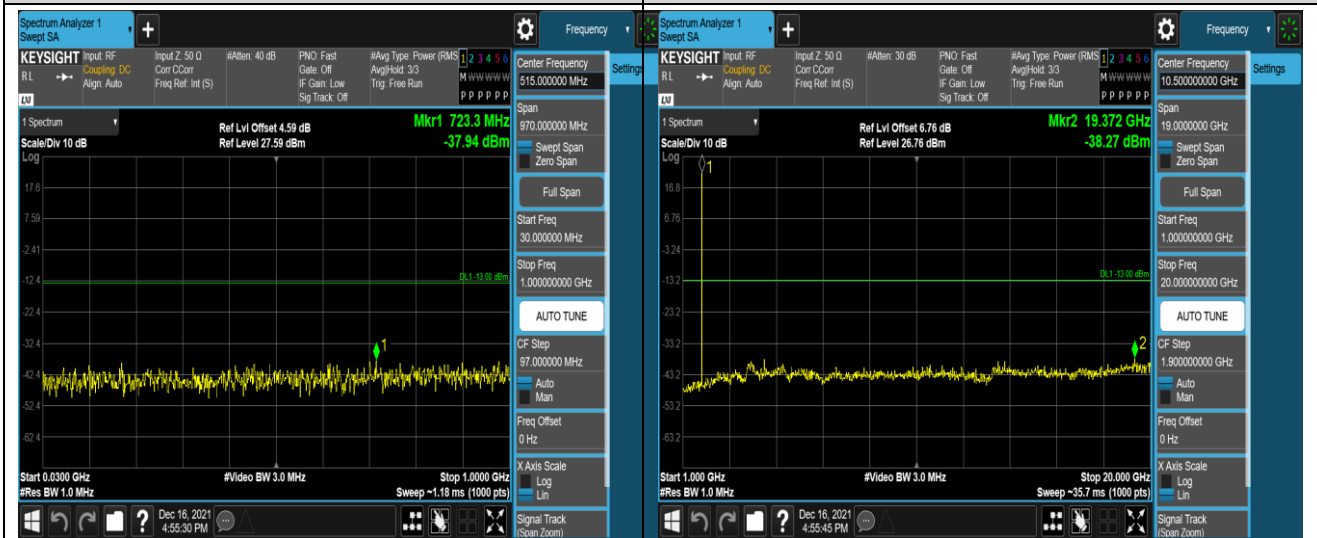
Band66-1.4MHz-QPSK-132322-1RB#0-Range1:30
~1000MHz

Band66-1.4MHz-QPSK-132322-1RB#0-Range2:1000
~20000MHz



Band66-1.4MHz-QPSK-132665-1RB#0-Range1:30
~1000MHz

Band66-1.4MHz-QPSK-132665-1RB#0-Range2:1000
~20000MHz

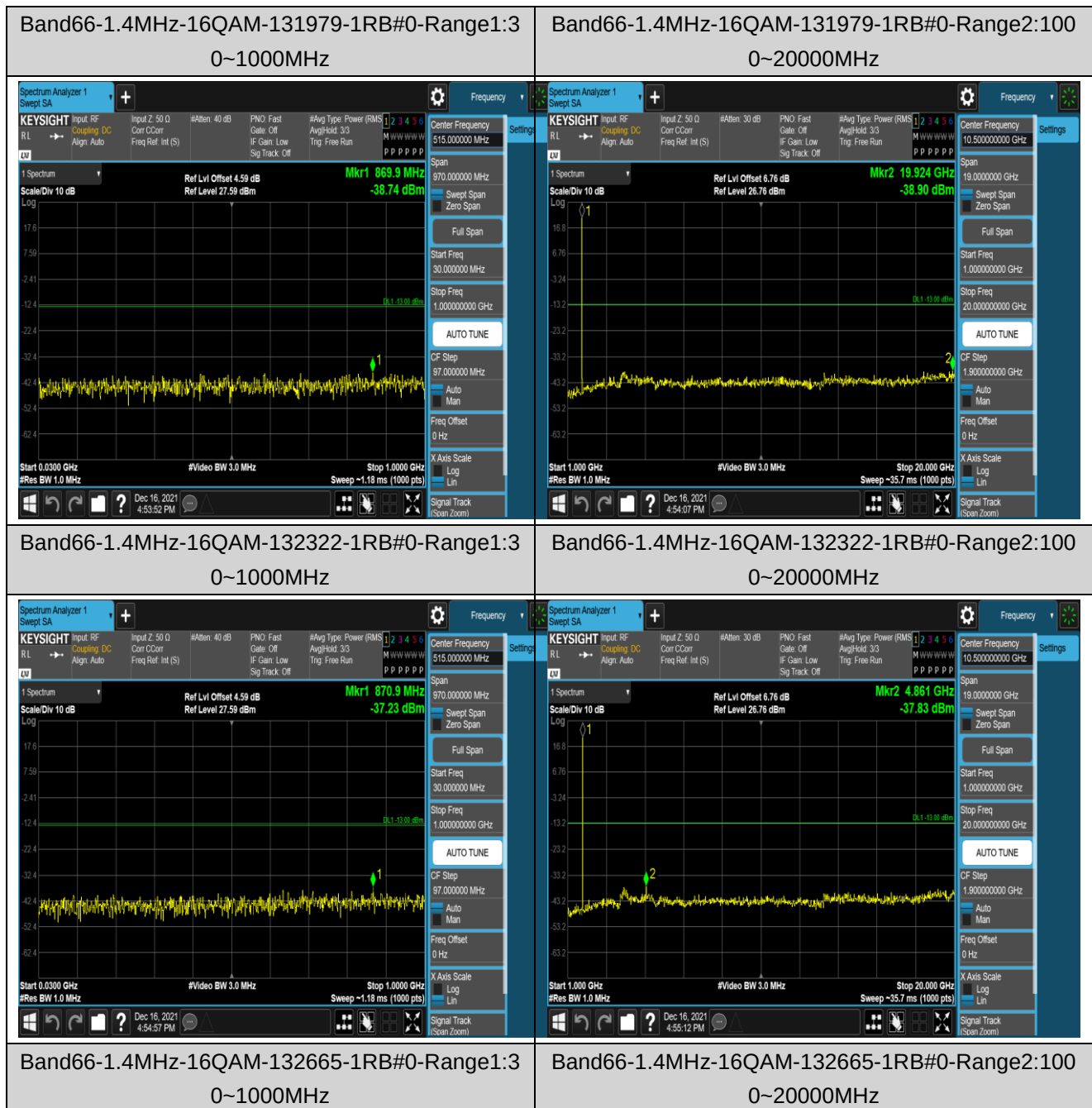


JianYan Testing Group Shenzhen Co., Ltd.

No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

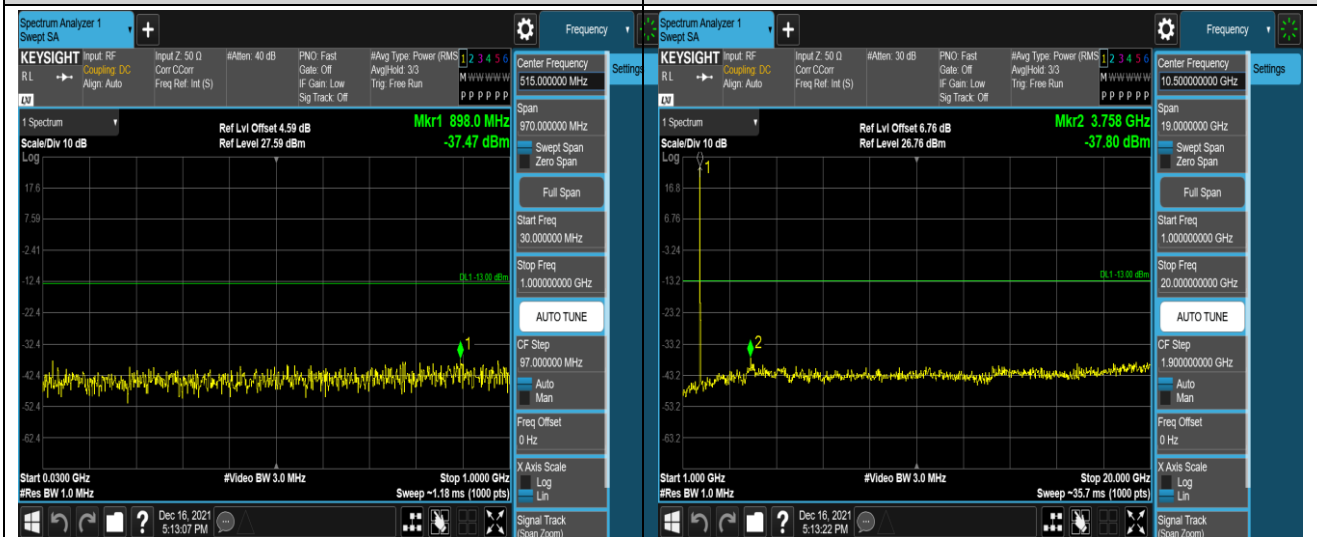
Project No.: JYTSZE2112041





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

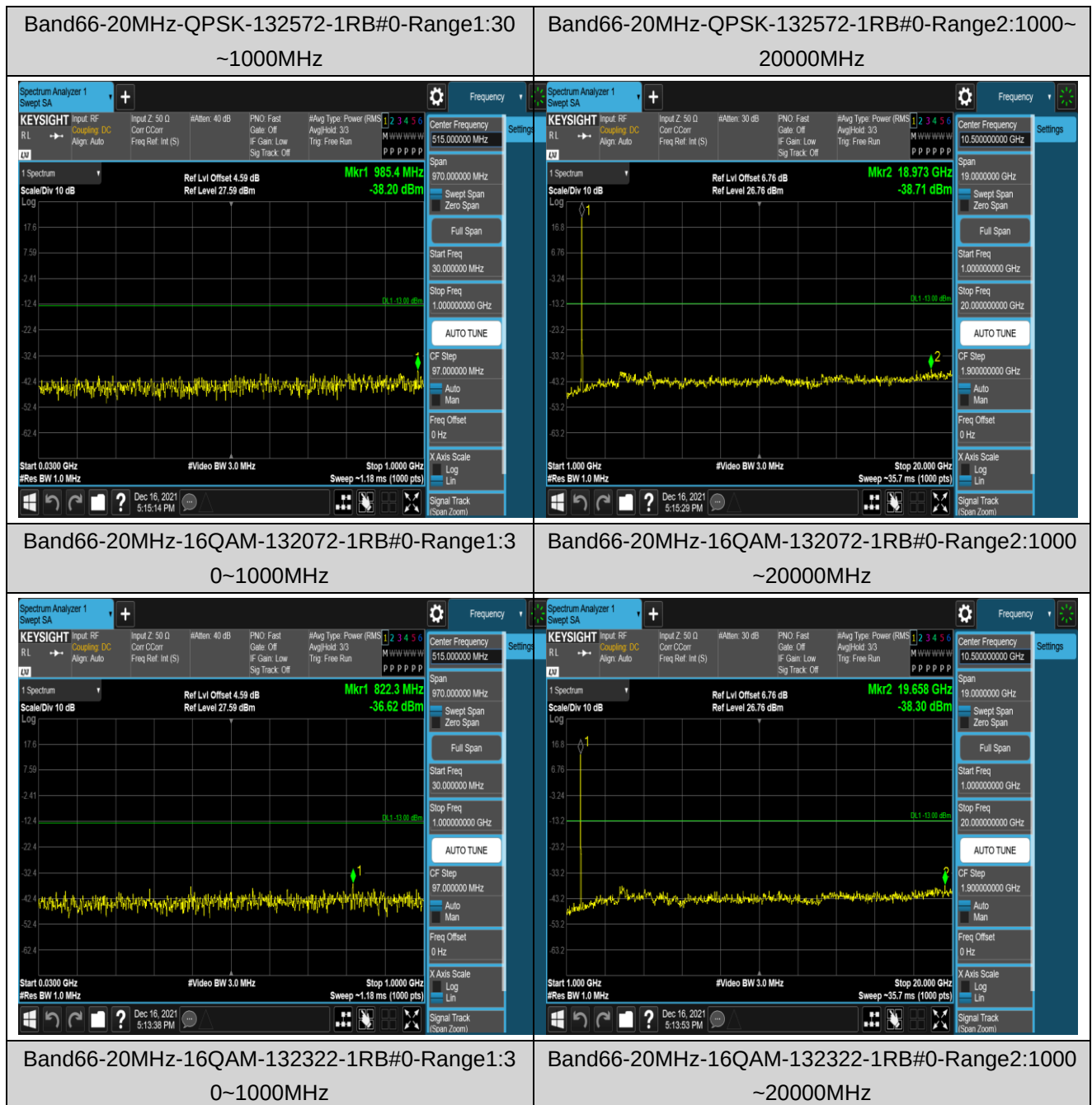
Band66-20MHz-QPSK-132072-1RB#0-Range2:1000~20000MHz

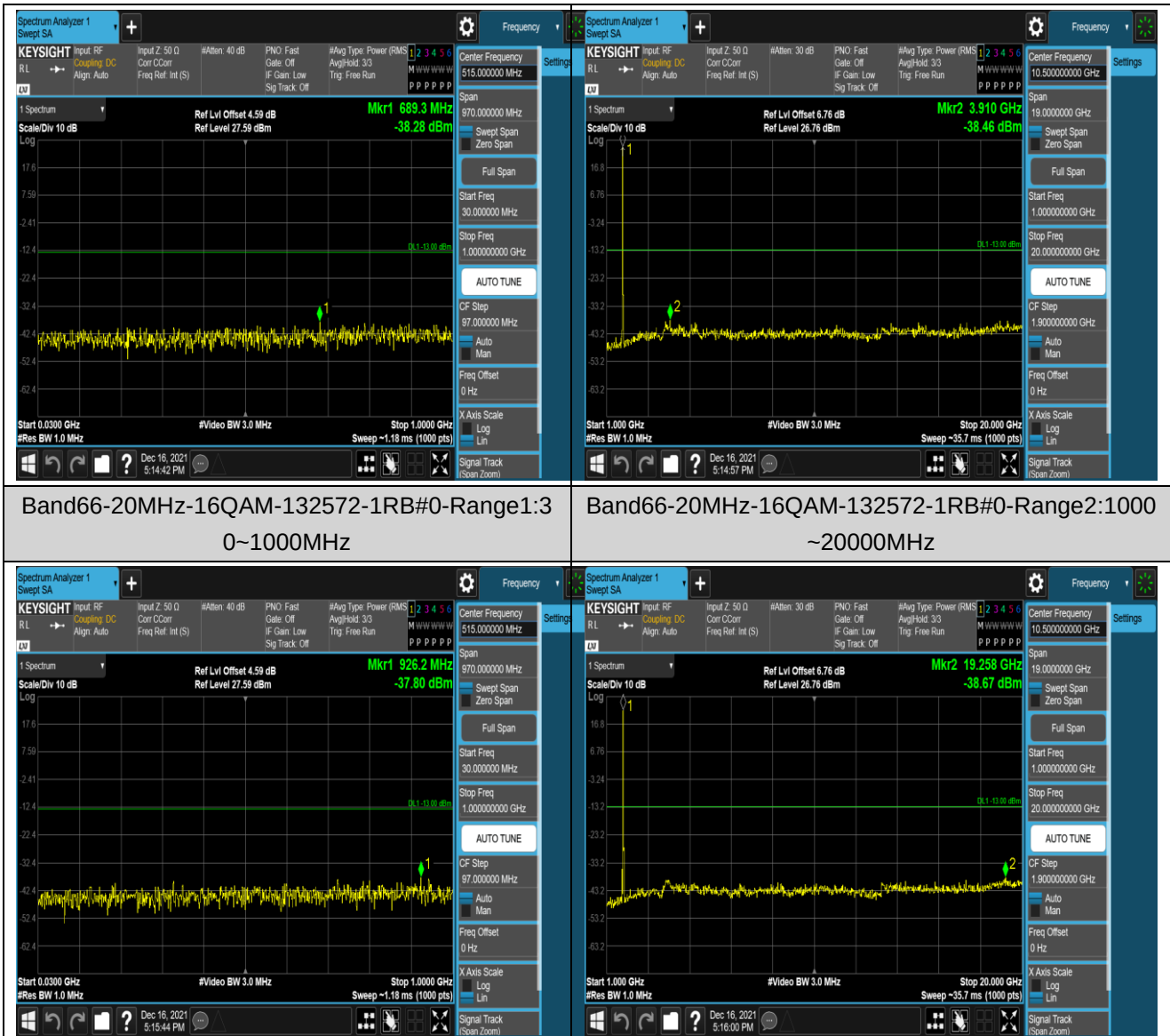


Band66-20MHz-QPSK-132322-1RB#0-Range1:30~1000MHz

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







Band66-20MHz-16QAM-132572-1RB#0-Range1:3
0~1000MHz

Band66-20MHz-16QAM-132572-1RB#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					
3.87	-30	5.87	0.003122	Within authorized band for Band 2	Pass
	-20	6.95	0.003697		
	-10	5.89	0.003133		
	0	3.29	0.001750		
	10	5.45	0.002899		
	20	-6.31	-0.003356		
	30	-3.55	-0.001888		
	40	-3.85	-0.002048		
	50	8.35	0.004441		
16QAM					
3.87	-30	2.76	0.001468	Within authorized band for Band 2	Pass
	-20	4.48	0.002383		
	-10	3.69	0.001963		
	0	6.78	0.003606		
	10	5.68	0.003021		
	20	5.04	0.002681		
	30	10.07	0.005356		
	40	6.69	0.003559		
	50	8.84	0.004702		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	9.47	0.005037	Within authorized band for Band 2	Pass
	3.87	-2.68	-0.001426		
	4.45	6.28	0.003340		
16QAM					
25	3.50	9.04	0.004809	Within authorized band for Band 2	Pass
	3.87	6.39	0.003399		
	4.45	5.21	0.002771		
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					
3.87	-30	-3.69	-0.004411	±2.5	Pass
	-20	-4.32	-0.005164		
	-10	-5.06	-0.006049		
	0	3.13	0.003742		
	10	2.66	0.003180		
	20	-2.27	-0.002714		
	30	-4.63	-0.005535		
	40	3.83	0.004579		
	50	1.24	0.001482		
16QAM					
3.87	-30	2.75	0.003288	±2.5	Pass
	-20	1.87	0.002236		
	-10	-3.55	-0.004244		
	0	-2.70	-0.003228		
	10	-3.82	-0.004567		
	20	-2.99	-0.003574		
	30	4.88	0.005834		
	40	4.55	0.005439		
	50	-3.49	-0.004172		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-4.08	-0.004877	±2.5	Pass
	3.87	2.60	0.003108		
	4.45	-2.57	-0.003072		
16QAM					
25	3.50	1.76	0.002104	±2.5	Pass
	3.87	-1.89	-0.002259		
	4.45	-5.71	-0.006826		
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					
3.87	-30	-3.91	-0.001542	Within authorized band for Band 7	Pass
	-20	5.18	0.002043		
	-10	-8.65	-0.003412		
	0	9.44	0.003724		
	10	-5.16	-0.002036		
	20	-9.51	-0.003751		
	30	4.42	0.001744		
	40	3.45	0.001361		
	50	8.38	0.003306		
16QAM					
3.87	-30	4.29	0.001692	Within authorized band for Band 7	Pass
	-20	6.91	0.002726		
	-10	-4.05	-0.001598		
	0	-6.28	-0.002477		
	10	-9.11	-0.003594		
	20	-15.32	-0.006043		
	30	7.07	0.002789		
	40	-6.64	-0.002619		
	50	3.98	0.001570		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-6.07	-0.002394	Within authorized band for Band 7	Pass
	3.87	-8.33	-0.003286		
	4.45	-5.76	-0.002272		
16QAM					
25	3.50	9.24	0.003645	Within authorized band for Band 7	Pass
	3.87	-1.87	-0.000738		
	4.45	7.35	0.002899		
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	1.54	0.002177	Within authorized band for Band 12	Pass
	-20	-5.68	-0.008028		
	-10	-2.75	-0.003887		
	0	-3.40	-0.004806		
	10	-3.73	-0.005272		
	20	-3.78	-0.005343		
	30	3.43	0.004848		
	40	3.19	0.004509		
	50	3.81	0.005385		
16QAM					
3.87	-30	-4.56	-0.006445	Within authorized band for Band 12	Pass
	-20	-3.62	-0.005117		
	-10	-4.78	-0.006756		
	0	-2.50	-0.003534		
	10	-2.37	-0.003350		
	20	-1.77	-0.002502		
	30	1.50	0.002120		
	40	-4.28	-0.006049		
	50	-4.75	-0.006714		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-2.80	-0.003958	Within authorized band for Band 12	Pass
	3.87	-2.00	-0.002827		
	4.45	1.26	0.001781		
16QAM					
25	3.50	3.12	0.004410	Within authorized band for Band 12	Pass
	3.87	-3.83	-0.005413		
	4.45	-3.46	-0.004890		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 17 part:

Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 Frequency=710.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	3.09	0.004352	Within authorized band for Band 17	Pass
	-20	-3.55	-0.005000		
	-10	-6.90	-0.009718		
	0	-6.44	-0.009070		
	10	-2.73	-0.003845		
	20	-2.56	-0.003606		
	30	-6.41	-0.009028		
	40	1.34	0.001887		
	50	-2.92	-0.004113		
16QAM					
3.87	-30	3.55	0.005000	Within authorized band for Band 17	Pass
	-20	-4.33	-0.006099		
	-10	1.47	0.002070		
	0	-1.14	-0.001606		
	10	-3.10	-0.004366		
	20	-5.08	-0.007155		
	30	-3.75	-0.005282		
	40	1.79	0.002521		
	50	2.07	0.002915		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-2.50	-0.003521	Within authorized band for Band 17	Pass
	3.87	1.89	0.002662		
	4.45	-2.10	-0.002958		
16QAM					
25	3.50	-2.19	-0.003085	Within authorized band for Band 17	Pass
	3.87	-4.21	-0.005930		
	4.45	-3.40	-0.004789		
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	10.80	0.004162	Within authorized band for Band 41	Pass
	-20	4.39	0.001692		
	-10	5.92	0.002281		
	0	-8.54	-0.003291		
	10	-8.91	-0.003434		
	20	-5.65	-0.002177		
	30	-6.57	-0.002532		
	40	7.98	0.003075		
	50	8.01	0.003087		
16QAM					
3.87	-30	4.62	0.001780	Within authorized band for Band 41	Pass
	-20	6.74	0.002597		
	-10	-5.97	-0.002301		
	0	-3.46	-0.001333		
	10	7.24	0.002790		
	20	4.31	0.001661		
	30	4.63	0.001784		
	40	6.18	0.002382		
	50	6.28	0.002420		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	4.55	0.001753	Within authorized band for Band 41	Pass
	3.87	5.99	0.002308		
	4.45	-6.92	-0.002667		
16QAM					
25	3.50	5.76	0.002220	Within authorized band for Band41	Pass
	3.87	12.00	0.004624		
	4.45	8.15	0.003141		
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	3.89	0.002229	Within authorized band for Band 66	Pass
	-20	11.24	0.006441		
	-10	3.50	0.002006		
	0	7.41	0.004246		
	10	2.47	0.001415		
	20	10.14	0.005811		
	30	5.79	0.003318		
	40	5.91	0.003387		
	50	4.59	0.002630		
16QAM					
3.87	-30	5.91	0.003387	Within authorized band for Band 66	Pass
	-20	3.42	0.001960		
	-10	6.04	0.003461		
	0	7.02	0.004023		
	10	8.64	0.004951		
	20	3.12	0.001788		
	30	4.39	0.002516		
	40	5.26	0.003014		
	50	-2.16	-0.001238		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	7.12	0.004080	Within authorized band for Band 66	Pass
	3.87	6.17	0.003536		
	4.45	3.42	0.001960		
16QAM					
25	3.50	7.93	0.004544	Within authorized band for Band 66	Pass
	3.87	5.49	0.003146		
	4.45	9.01	0.005163		
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
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
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#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

