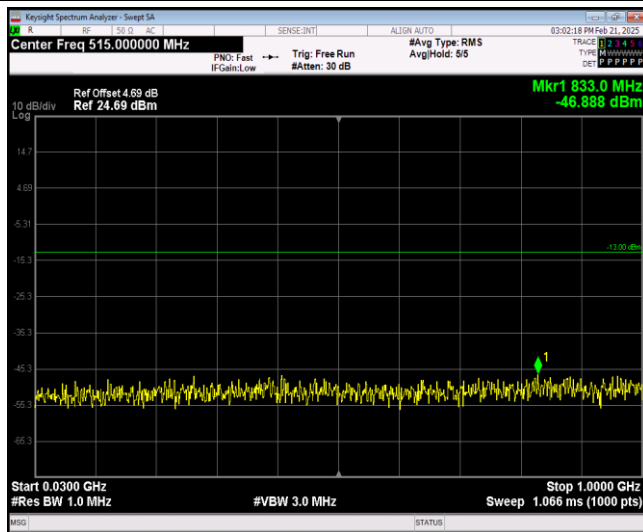
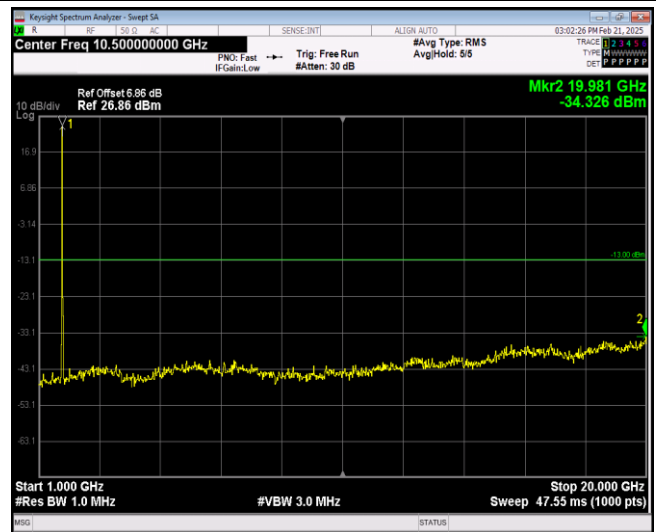


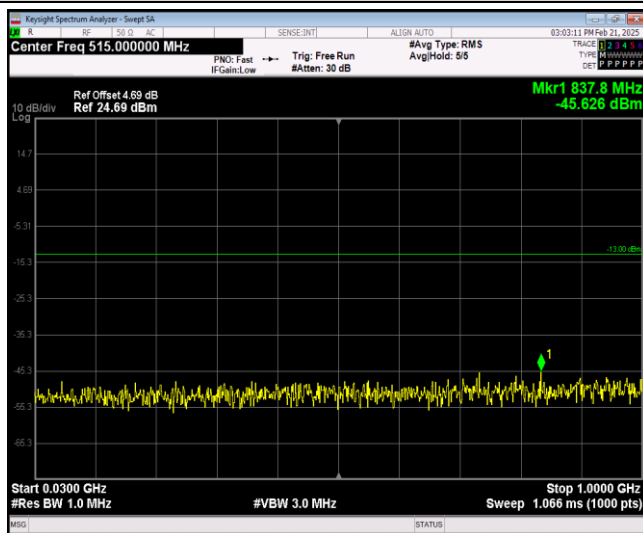
Band66-20MHz-16QAM-132322-1RB#0-Range1:30~
1000MHz



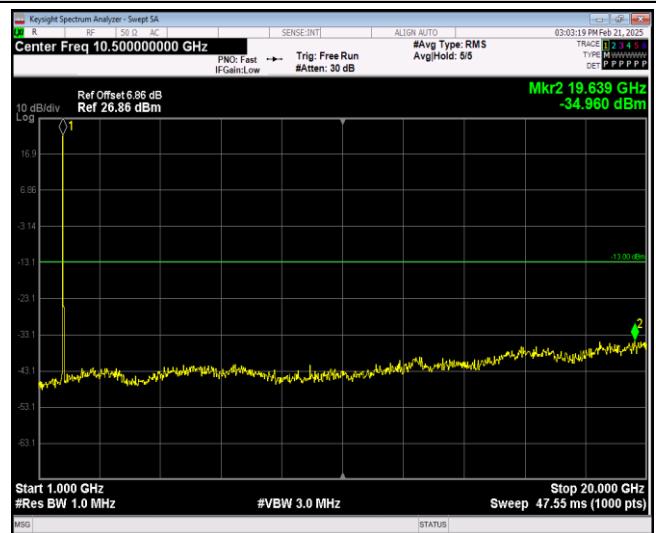
Band66-20MHz-16QAM-132322-1RB#0-Range2:100
0~20000MHz



Band66-20MHz-16QAM-132572-1RB#0-Range1:30~
1000MHz

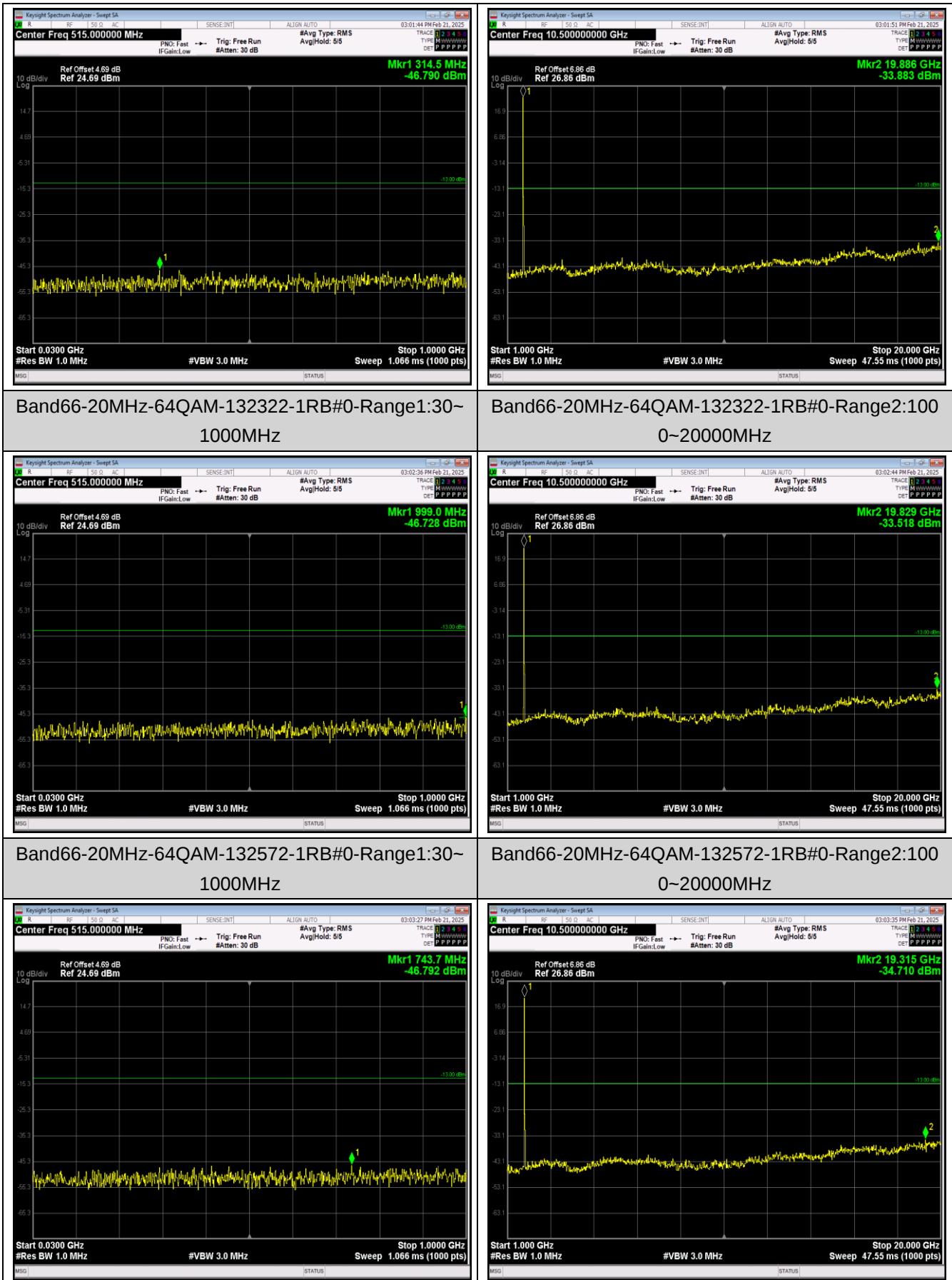


Band66-20MHz-16QAM-132572-1RB#0-Range2:100
0~20000MHz



Band66-20MHz-64QAM-132072-1RB#0-Range1:30~
1000MHz

Band66-20MHz-64QAM-132072-1RB#0-Range2:100
0~20000MHz



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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	19.80	0.007811	Within authorized band for Band 7	Pass
	-20	-17.31	-0.006828		
	-10	16.08	0.006343		
	0	18.01	0.007105		
	10	14.25	0.005621		
	20	9.06	0.003574		
	30	-26.61	-0.010497		
	40	-16.91	-0.006671		
	50	-14.00	-0.005523		
16QAM					
3.87	-30	-17.55	-0.006923	Within authorized band for Band 7	Pass
	-20	8.83	0.003483		
	-10	15.59	0.006150		
	0	7.70	0.003037		
	10	-21.09	-0.008320		
	20	16.26	0.006414		
	30	-18.55	-0.007318		
	40	18.28	0.007211		
	50	-19.98	-0.007882		
64QAM					
3.87	-30	16.45	0.006489	Within authorized band for Band 7	Pass
	-20	-13.96	-0.005507		
	-10	6.65	0.002623		
	0	-11.34	-0.004473		
	10	-15.81	-0.006237		
	20	19.04	0.007511		
	30	3.10	0.001223		
	40	-12.96	-0.005112		
	50	2.32	0.000915		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.30	3.02	0.001191	Within authorized band for Band 7	Pass
	3.87	4.71	0.001858		
	4.45	-15.26	-0.006020		
16QAM					
25	3.30	-14.51	-0.005724	Within authorized band for Band 7	Pass
	3.87	17.84	0.007037		
	4.45	-20.11	-0.007933		
64QAM					
25	3.30	-14.15	-0.005582	Within authorized band for Band 7	Pass
	3.87	14.89	0.005874		
	4.45	-21.86	-0.008623		
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	4.39	0.006205	Within authorized band for Band 12	Pass
	-20	-4.84	-0.006841		
	-10	-4.22	-0.005965		
	0	-4.48	-0.006332		
	10	4.52	0.006389		
	20	4.03	0.005696		
	30	3.35	0.004735		
	40	4.43	0.006261		
	50	-4.38	-0.006191		
16QAM					
3.87	-30	-4.12	-0.005823	Within authorized band for Band 12	Pass
	-20	5.01	0.007081		
	-10	2.02	0.002855		
	0	1.20	0.001696		
	10	5.76	0.008141		
	20	-7.64	-0.010799		
	30	-6.17	-0.008721		
	40	7.08	0.010007		
	50	4.39	0.006205		
64QAM					
3.87	-30	-5.72	-0.008085	Within authorized band for Band 12	Pass
	-20	6.27	0.008862		
	-10	6.11	0.008636		
	0	5.98	0.008452		
	10	-4.56	-0.006445		
	20	6.38	0.009018		
	30	7.07	0.009993		
	40	-4.62	-0.006530		
	50	3.28	0.004636		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.30	3.33	0.004707	Within authorized band for Band 12	Pass
	3.87	-4.15	-0.005866		
	4.45	7.87	0.011124		
16QAM					
25	3.30	-2.00	-0.002827	Within authorized band for Band 12	Pass
	3.87	-3.40	-0.004806		
	4.45	-4.53	-0.006403		
64QAM					
25	3.30	-2.82	-0.003986	Within authorized band for Band 12	Pass
	3.87	-6.28	-0.008876		
	4.45	5.26	0.007435		
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	-11.79	-0.006263	Within authorized band for Band 25	Pass
	-20	-8.44	-0.004483		
	-10	-14.99	-0.007963		
	0	-4.51	-0.002396		
	10	12.09	0.006422		
	20	-12.36	-0.006566		
	30	8.40	0.004462		
	40	-13.46	-0.007150		
	50	-7.45	-0.003958		
16QAM					
3.87	-30	-12.80	-0.006799	Within authorized band for Band 25	Pass
	-20	9.37	0.004977		
	-10	-6.49	-0.003448		
	0	-15.23	-0.008090		
	10	-14.69	-0.007803		
	20	-8.14	-0.004324		
	30	-14.23	-0.007559		
	40	9.50	0.005046		
	50	13.09	0.006954		
64QAM					
3.87	-30	-6.35	-0.003373	Within authorized band for Band 25	Pass
	-20	-3.98	-0.002114		
	-10	3.88	0.002061		
	0	5.34	0.002837		
	10	-12.73	-0.006762		
	20	7.37	0.003915		
	30	-8.15	-0.004329		
	40	-3.99	-0.002120		
	50	-11.60	-0.006162		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.30	11.90	0.006321	Within authorized band for Band 25	Pass
	3.87	6.25	0.003320		
	4.45	-8.61	-0.004574		
16QAM					
25	3.30	3.93	0.002088	Within authorized band for Band 25	Pass
	3.87	-8.48	-0.004505		
	4.45	13.80	0.007331		
64QAM					
25	3.30	10.04	0.005333	Within authorized band for Band 25	Pass
	3.87	-2.82	-0.001498		
	4.45	-8.75	-0.004648		
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	-3.66	-0.004469	Within authorized band for Band 26	Pass
	-20	5.21	0.006361		
	-10	-6.94	-0.008474		
	0	-6.62	-0.008083		
	10	2.37	0.002894		
	20	1.82	0.002222		
	30	-3.36	-0.004103		
	40	6.04	0.007375		
	50	-9.47	-0.011563		
16QAM					
3.87	-30	5.88	0.007179	Within authorized band for Band 26	Pass
	-20	5.21	0.006361		
	-10	5.32	0.006496		
	0	-3.99	-0.004872		
	10	2.06	0.002515		
	20	8.07	0.009853		
	30	7.68	0.009377		
	40	3.05	0.003724		
	50	8.28	0.010110		
64QAM					
3.87	-30	-4.38	-0.005348	Within authorized band for Band 26	Pass
	-20	6.18	0.007546		
	-10	2.68	0.003272		
	0	5.35	0.006532		
	10	-4.22	-0.005153		
	20	5.55	0.006777		
	30	11.53	0.014078		
	40	-4.95	-0.006044		
	50	-4.53	-0.005531		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.30	-1.76	-0.002149	Within authorized band for Band 26	Pass
	3.87	-3.63	-0.004432		
	4.45	-7.44	-0.009084		
16QAM					
25	3.30	-5.16	-0.006300	Within authorized band for Band 26	Pass
	3.87	6.52	0.007961		
	4.45	-4.12	-0.005031		
64QAM					
25	3.30	6.52	0.007961	Within authorized band for Band 26	Pass
	3.87	3.73	0.004554		
	4.45	-5.97	-0.007289		
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	-4.61	-0.005511	Within authorized band for Band 26	Pass
	-20	-6.28	-0.007507		
	-10	-6.42	-0.007675		
	0	4.22	0.005045		
	10	5.55	0.006635		
	20	5.02	0.006001		
	30	-6.69	-0.007998		
	40	-7.34	-0.008775		
	50	-1.20	-0.001435		
16QAM					
3.87	-30	-5.71	-0.006826	Within authorized band for Band 26	Pass
	-20	-4.81	-0.005750		
	-10	-5.14	-0.006145		
	0	-4.69	-0.005607		
	10	-4.72	-0.005643		
	20	-1.24	-0.001482		
	30	4.36	0.005212		
	40	-5.76	-0.006886		
	50	-6.37	-0.007615		
64QAM					
3.87	-30	-12.04	-0.014393	Within authorized band for Band 26	Pass
	-20	3.50	0.004184		
	-10	-8.30	-0.009922		
	0	-5.14	-0.006145		
	10	-6.27	-0.007496		
	20	0.96	0.001148		
	30	-7.20	-0.008607		
	40	-7.47	-0.008930		
	50	-5.85	-0.006993		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.30	-6.51	-0.007782	Within authorized band for Band 26	Pass
	3.87	-4.56	-0.005451		
	4.45	-8.74	-0.010448		
16QAM					
25	3.30	-5.85	-0.006993	Within authorized band for Band 26	Pass
	3.87	-5.36	-0.006408		
	4.45	-5.56	-0.006647		
64QAM					
25	3.30	-8.43	-0.010078	Within authorized band for Band 26	Pass
	3.87	-2.80	-0.003347		
	4.45	-7.70	-0.009205		
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=40620 Frequency=2593.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	13.55	0.005226	Within authorized band for Band 41	Pass
	-20	-15.13	-0.005835		
	-10	3.81	0.001469		
	0	-9.36	-0.003610		
	10	5.02	0.001936		
	20	-13.43	-0.005179		
	30	7.22	0.002784		
	40	14.95	0.005766		
	50	11.90	0.004589		
16QAM					
3.87	-30	8.07	0.003112	Within authorized band for Band 41	Pass
	-20	15.96	0.006155		
	-10	-3.03	-0.001169		
	0	-4.02	-0.001550		
	10	10.76	0.004150		
	20	-10.33	-0.003984		
	30	-14.18	-0.005469		
	40	-11.44	-0.004412		
	50	7.93	0.003058		
64QAM					
3.87	-30	-9.44	-0.003641	Within authorized band for Band 41	Pass
	-20	13.79	0.005318		
	-10	-5.24	-0.002021		
	0	13.16	0.005075		
	10	7.34	0.002831		
	20	-3.71	-0.001431		
	30	10.19	0.003930		
	40	-8.93	-0.003444		
	50	8.77	0.003382		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.30	14.46	0.005577	Within authorized band for Band 41	Pass
	3.87	-8.64	-0.003332		
	4.45	-4.41	-0.001701		
16QAM					
25	3.30	-13.52	-0.005214	Within authorized band for Band41	Pass
	3.87	17.80	0.006865		
	4.45	-4.81	-0.001855		
64QAM					
25	3.30	15.95	0.006151	Within authorized band for Band41	Pass
	3.87	-14.79	-0.005704		
	4.45	15.39	0.005935		
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	-8.81	-0.005049	Within authorized band for Band 66	Pass
	-20	-6.62	-0.003794		
	-10	6.02	0.003450		
	0	8.84	0.005066		
	10	11.89	0.006814		
	20	-3.66	-0.002097		
	30	12.77	0.007318		
	40	16.67	0.009553		
	50	11.00	0.006304		
16QAM					
3.87	-30	1.23	0.000705	Within authorized band for Band 66	Pass
	-20	3.82	0.002189		
	-10	7.35	0.004212		
	0	-8.38	-0.004802		
	10	-9.27	-0.005312		
	20	4.33	0.002481		
	30	8.85	0.005072		
	40	-9.81	-0.005622		
	50	-5.91	-0.003387		
64QAM					
3.87	-30	13.29	0.007616	Within authorized band for Band 66	Pass
	-20	12.39	0.007100		
	-10	13.58	0.007782		
	0	15.66	0.008974		
	10	-3.40	-0.001948		
	20	15.82	0.009066		
	30	-4.96	-0.002842		
	40	-4.42	-0.002533		
	50	6.61	0.003788		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.30	11.69	0.006699	Within authorized band for Band 66	Pass
	3.87	12.09	0.006928		
	4.45	7.84	0.004493		
16QAM					
25	3.30	14.49	0.008304	Within authorized band for Band 66	Pass
	3.87	-7.71	-0.004418		
	4.45	12.40	0.007106		
64QAM					
25	3.30	13.26	0.007599	Within authorized band for Band 66	Pass
	3.87	8.63	0.004946		
	4.45	13.53	0.007754		
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
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
Band25	20MHz	QPSK	26365	100RB#0	PASS	PASS
Band25	20MHz	16QAM	26365	100RB#0	PASS	PASS
Band25	20MHz	64QAM	26365	100RB#0	PASS	PASS
Band26	10MHz	QPSK	26740	50RB#0	PASS	PASS
Band26	10MHz	16QAM	26740	50RB#0	PASS	PASS
Band26	10MHz	64QAM	26740	50RB#0	PASS	PASS
Band26	15MHz	QPSK	26915	75RB#0	PASS	PASS
Band26	15MHz	16QAM	26915	75RB#0	PASS	PASS
Band26	15MHz	64QAM	26915	75RB#0	PASS	PASS
Band41	20MHz	QPSK	40620	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40620	100RB#0	PASS	PASS
Band41	20MHz	64QAM	40620	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

