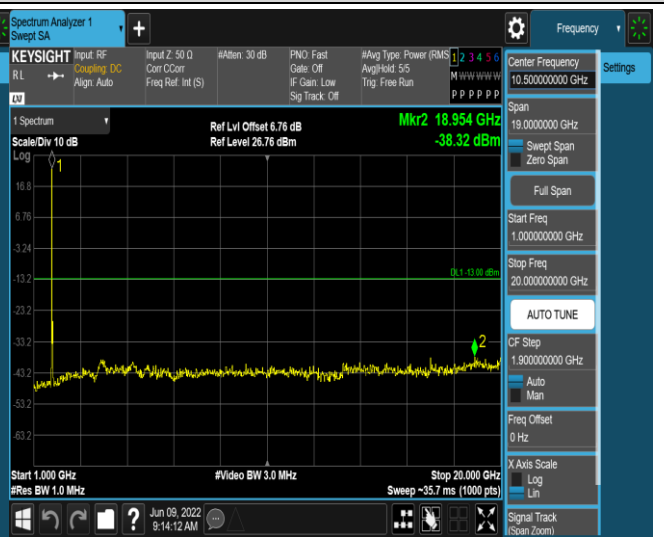
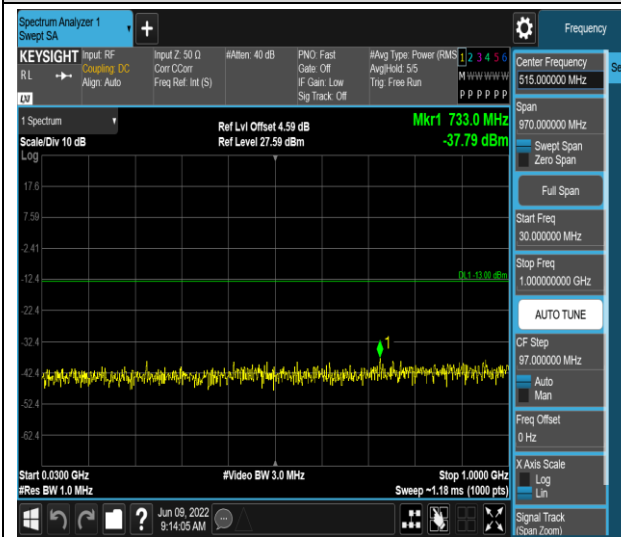


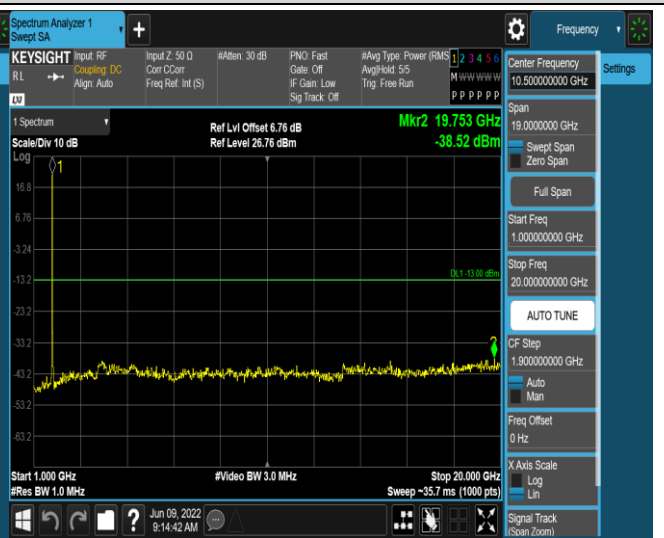
Band66-20MHz-16QAM-132322-1RB#0-Range1:3
0~1000MHz

Band66-20MHz-16QAM-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					
3.89	-30	-21.83	-0.011612	Within authorized band for Band 2	Pass
	-20	-21.82	-0.011606		
	-10	-12.66	-0.006734		
	0	-17.91	-0.009527		
	10	-20.13	-0.010707		
	20	11.80	0.006277		
	30	-6.55	-0.003484		
	40	-17.98	-0.009564		
	50	19.76	0.010511		
16QAM					
3.89	-30	-21.40	-0.011383	Within authorized band for Band 2	Pass
	-20	-9.91	-0.005271		
	-10	-12.30	-0.006543		
	0	-10.21	-0.005431		
	10	-18.90	-0.010053		
	20	-20.56	-0.010936		
	30	-18.53	-0.009856		
	40	-22.10	-0.011755		
	50	-17.67	-0.009399		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-27.28	-0.014511	Within authorized band for Band 2	Pass
	3.89	-20.34	-0.010819		
	4.48	-19.77	-0.010516		
16QAM					
25	3.45	15.65	0.008324	Within authorized band for Band 2	Pass
	3.89	-13.56	-0.007213		
	4.48	-20.97	-0.011154		

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					
3.89	-30	-9.14	-0.010926	±2.5	Pass
	-20	-16.94	-0.020251		
	-10	-8.97	-0.010723		
	0	-12.33	-0.014740		
	10	-7.35	-0.008787		
	20	-12.67	-0.015146		
	30	-6.97	-0.008332		
	40	-10.34	-0.012361		
	50	-2.92	-0.003491		
16QAM					
3.89	-30	-8.00	-0.009564	±2.5	Pass
	-20	-6.07	-0.007256		
	-10	-10.29	-0.012301		
	0	-8.15	-0.009743		
	10	-11.67	-0.013951		
	20	-11.93	-0.014262		
	30	-16.18	-0.019342		
	40	-9.23	-0.011034		
	50	-3.72	-0.004447		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-6.95	-0.008308	±2.5	Pass
	3.89	-16.18	-0.019342		
	4.48	-13.45	-0.016079		
16QAM					
25	3.45	-18.67	-0.022319	±2.5	Pass
	3.89	-9.40	-0.011237		
	4.48	3.12	0.003730		

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					
3.89	-30	19.90	0.007850	Within authorized band for Band 7	Pass
	-20	-19.60	-0.007732		
	-10	13.22	0.005215		
	0	-26.09	-0.010292		
	10	-19.04	-0.007511		
	20	-24.05	-0.009487		
	30	-17.58	-0.006935		
	40	-33.26	-0.013120		
	50	18.97	0.007483		
16QAM					
3.89	-30	-36.05	-0.014221	Within authorized band for Band 7	Pass
	-20	-20.34	-0.008024		
	-10	-14.20	-0.005602		
	0	26.09	0.010292		
	10	20.44	0.008063		
	20	16.91	0.006671		
	30	18.91	0.007460		
	40	20.77	0.008193		
	50	14.91	0.005882		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	22.06	0.008702	Within authorized band for Band 7	Pass
	3.89	23.37	0.009219		
	4.48	-20.04	-0.007905		
16QAM					
25	3.45	-19.74	-0.007787	Within authorized band for Band 7	Pass
	3.89	-15.65	-0.006174		
	4.48	-22.59	-0.008911		

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					
3.89	-30	-10.71	-0.015138	±2.5	Pass
	-20	-8.67	-0.012254		
	-10	-15.22	-0.021512		
	0	-11.04	-0.015604		
	10	-11.86	-0.016763		
	20	-9.11	-0.012876		
	30	-1.82	-0.002572		
	40	-3.86	-0.005456		
	50	-11.82	-0.016707		
16QAM					
3.89	-30	-18.48	-0.026120	±2.5	Pass
	-20	-8.58	-0.012127		
	-10	-13.69	-0.019350		
	0	-10.51	-0.014855		
	10	-10.39	-0.014686		
	20	-8.94	-0.012636		
	30	-10.29	-0.014544		
	40	-12.83	-0.018134		
	50	-7.22	-0.010205		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-13.78	-0.019477	±2.5	Pass
	3.89	-6.51	-0.009201		
	4.48	-3.22	-0.004551		
16QAM					
25	3.45	-9.40	-0.013286	±2.5	Pass
	3.89	-11.16	-0.015774		
	4.48	-7.57	-0.010700		

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					
3.89	-30	-14.59	-0.020549	±2.5	Pass
	-20	-11.66	-0.016423		
	-10	-9.97	-0.014042		
	0	-12.23	-0.017225		
	10	-7.22	-0.010169		
	20	-16.65	-0.023451		
	30	-10.73	-0.015113		
	40	-11.20	-0.015775		
	50	-12.77	-0.017986		
16QAM					
3.89	-30	-5.79	-0.008155	±2.5	Pass
	-20	-11.24	-0.015831		
	-10	-7.65	-0.010775		
	0	-12.92	-0.018197		
	10	-9.73	-0.013704		
	20	-14.58	-0.020535		
	30	-12.40	-0.017465		
	40	-10.91	-0.015366		
	50	-12.47	-0.017563		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-17.14	-0.024141	±2.5	Pass
	3.89	-11.13	-0.015676		
	4.48	-10.97	-0.015451		
16QAM					
25	3.45	-10.64	-0.014986	±2.5	Pass
	3.89	-8.90	-0.012535		
	4.48	-11.36	-0.016000		

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					
3.89	-30	-16.67	-0.006424	Within authorized band for Band 41	Pass
	-20	-26.76	-0.010312		
	-10	-7.37	-0.002840		
	0	-33.26	-0.012817		
	10	12.85	0.004952		
	20	-12.83	-0.004944		
	30	15.72	0.006058		
	40	13.02	0.005017		
	50	-28.28	-0.010898		
16QAM					
3.89	-30	20.81	0.008019	Within authorized band for Band 41	Pass
	-20	-37.74	-0.014543		
	-10	10.07	0.003881		
	0	-24.19	-0.009322		
	10	12.89	0.004967		
	20	17.09	0.006586		
	30	-25.96	-0.010004		
	40	-15.09	-0.005815		
	50	-28.75	-0.011079		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-24.25	-0.009345	Within authorized band for Band 41	Pass
	3.89	16.84	0.006489		
	4.48	13.13	0.005060		
16QAM					
25	3.45	16.65	0.006416	Within authorized band for Band41	Pass
	3.89	-14.49	-0.005584		
	4.48	-25.98	-0.010012		

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					
3.89	-30	-11.30	-0.006476	Within authorized band for Band 66	Pass
	-20	-27.17	-0.015570		
	-10	-13.82	-0.007920		
	0	8.27	0.004739		
	10	-15.91	-0.009117		
	20	9.80	0.005616		
	30	-33.47	-0.019181		
	40	-13.00	-0.007450		
	50	-12.93	-0.007410		
16QAM					
3.89	-30	-21.53	-0.012338	Within authorized band for Band 66	Pass
	-20	7.45	0.004269		
	-10	-13.68	-0.007840		
	0	-11.16	-0.006395		
	10	14.52	0.008321		
	20	-20.53	-0.011765		
	30	-10.04	-0.005754		
	40	-12.20	-0.006991		
	50	9.66	0.005536		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	5.39	0.003089	Within authorized band for Band 66	Pass
	3.89	-15.71	-0.009003		
	4.48	-14.13	-0.008097		
16QAM					
25	3.45	9.80	0.005616	Within authorized band for Band 66	Pass
	3.89	-7.94	-0.004550		
	4.48	18.90	0.010831		

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

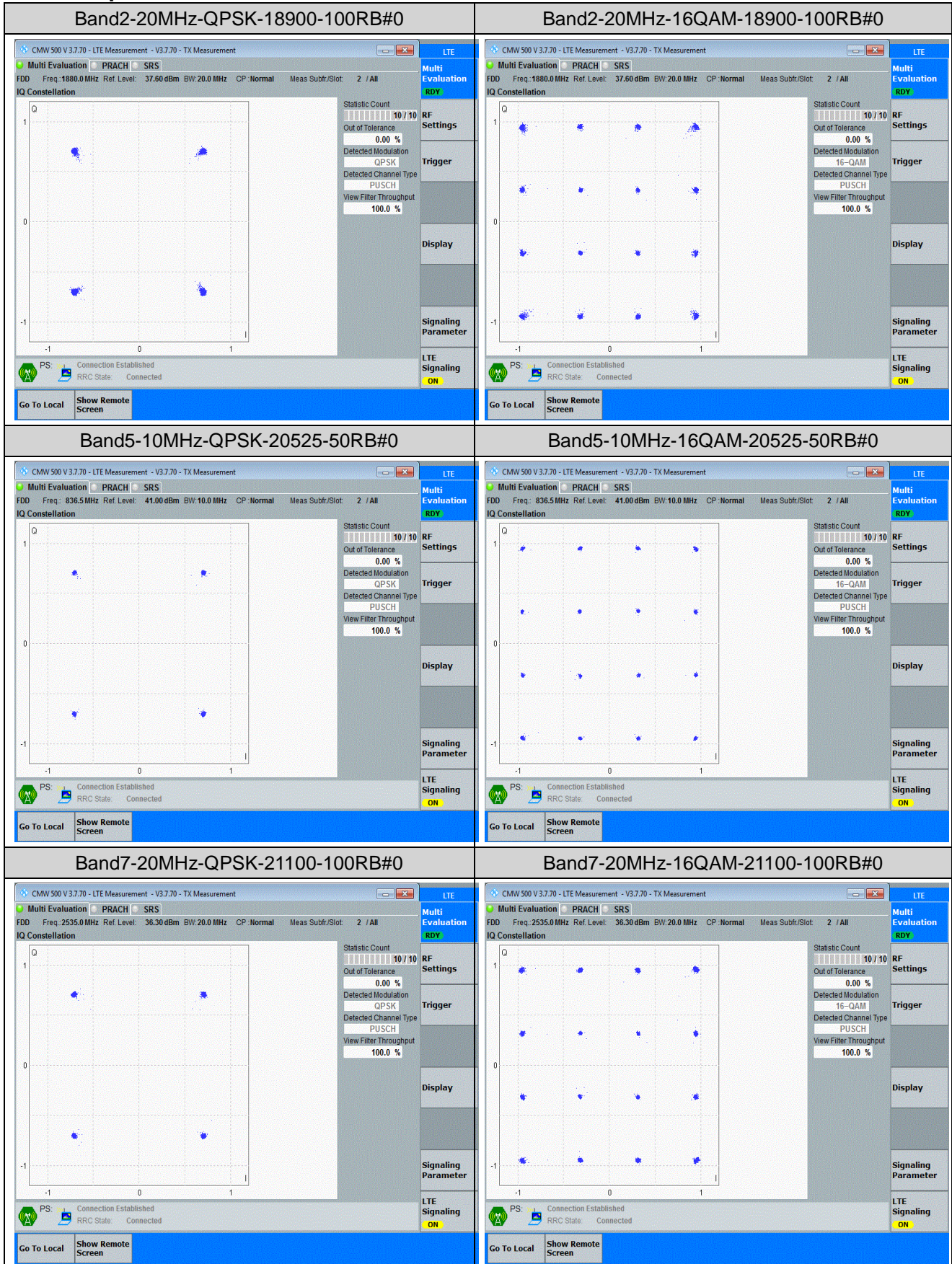
Appendix G: Modulation Characteristics

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



<p align="center">Band12-10MHz-QPSK-23095-50RB#0</p>	<p align="center">Band12-10MHz-16QAM-23095-50RB#0</p>
<p align="center">Band17-10MHz-QPSK-23790-50RB#0</p>	<p align="center">Band17-10MHz-16QAM-23790-50RB#0</p>
<p align="center">Band41-20MHz-QPSK-40640-100RB#0</p>	<p align="center">Band41-20MHz-16QAM-40640-100RB#0</p>
<p align="center">Band66-20MHz-QPSK-132322-100RB#0</p>	<p align="center">Band66-20MHz-16QAM-132322-100RB#0</p>

