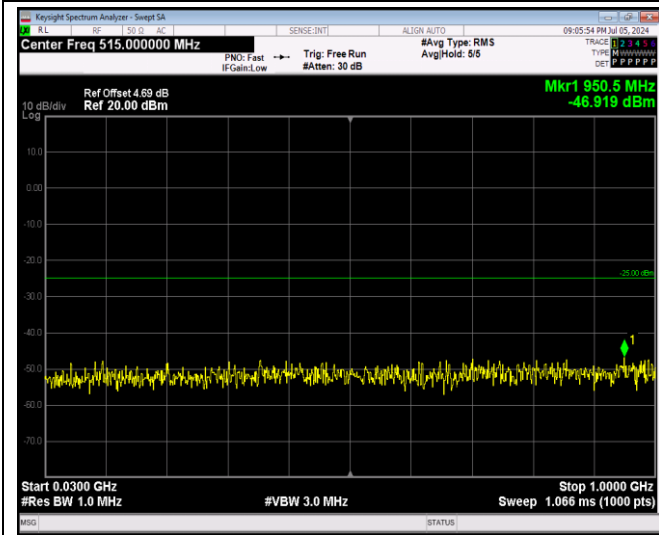


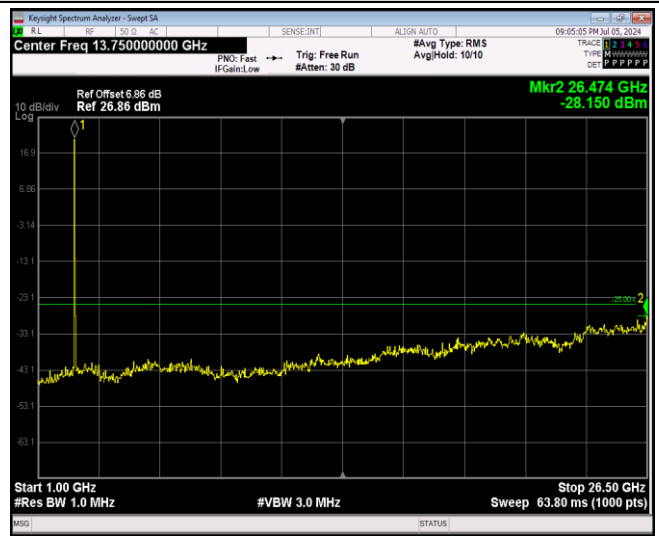
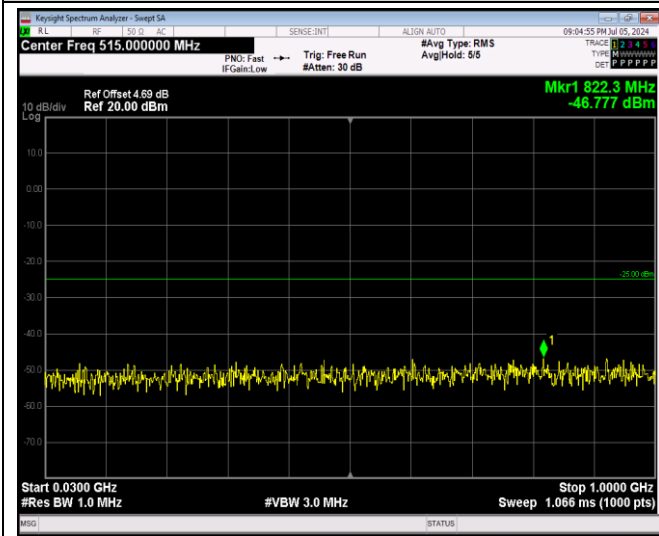
Band41-20MHz-QPSK-41140-1RB#0-Range1:30~1000MHz

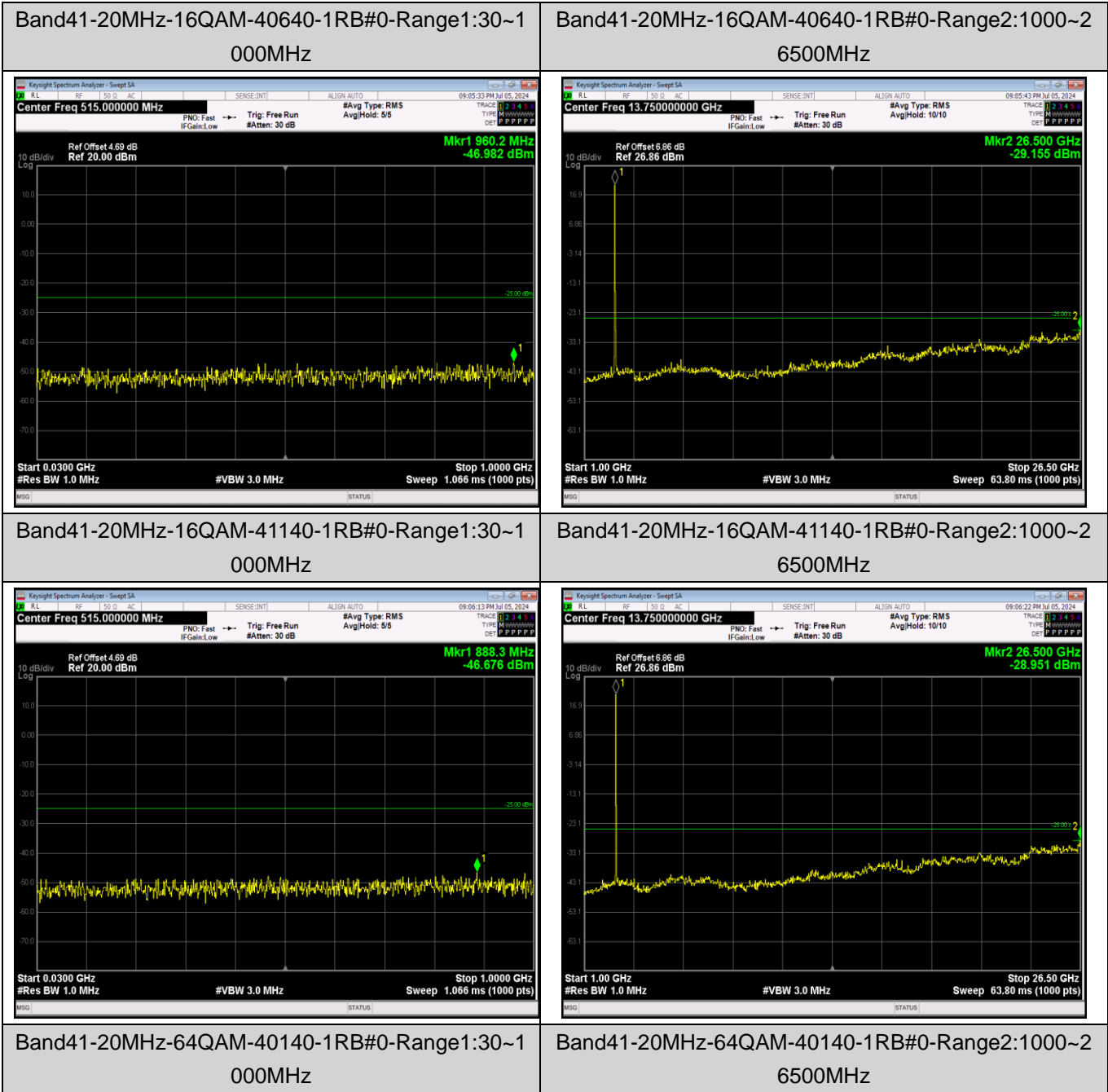
Band41-20MHz-QPSK-41140-1RB#0-Range2:1000~26500MHz

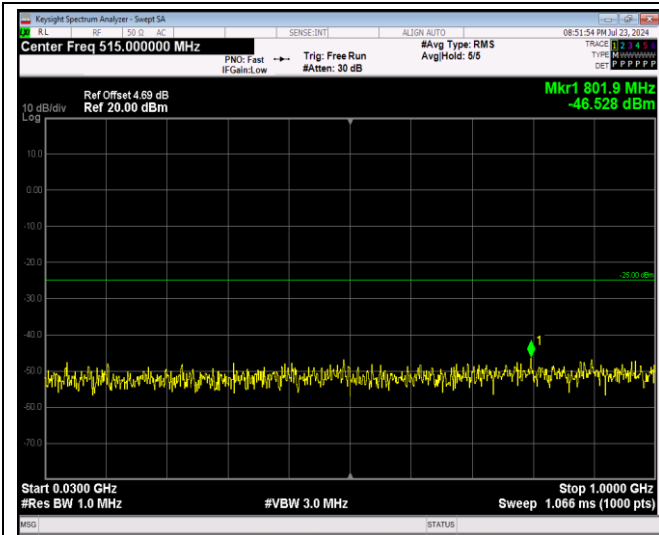


Band41-20MHz-16QAM-40140-1RB#0-Range1:30~1000MHz

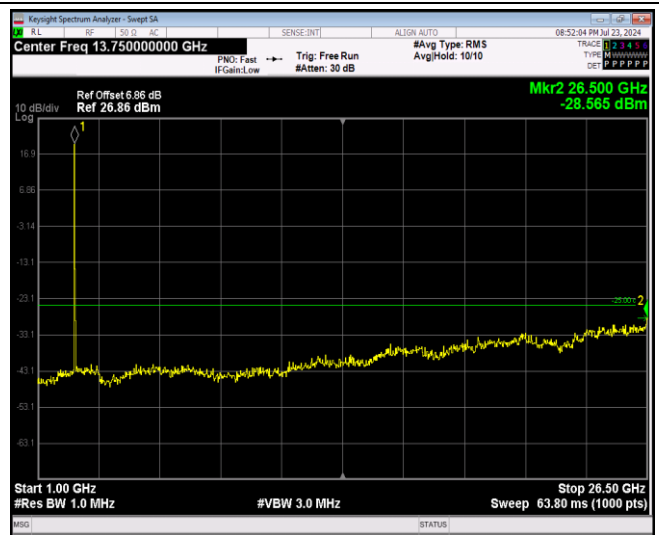
Band41-20MHz-16QAM-40140-1RB#0-Range2:1000~26500MHz



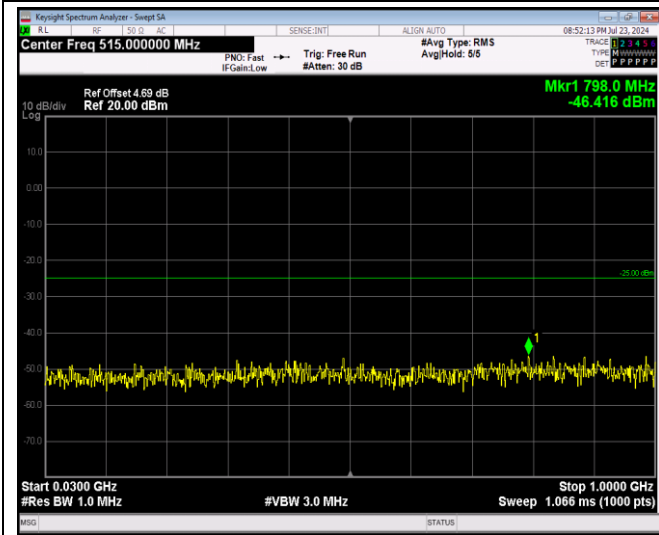




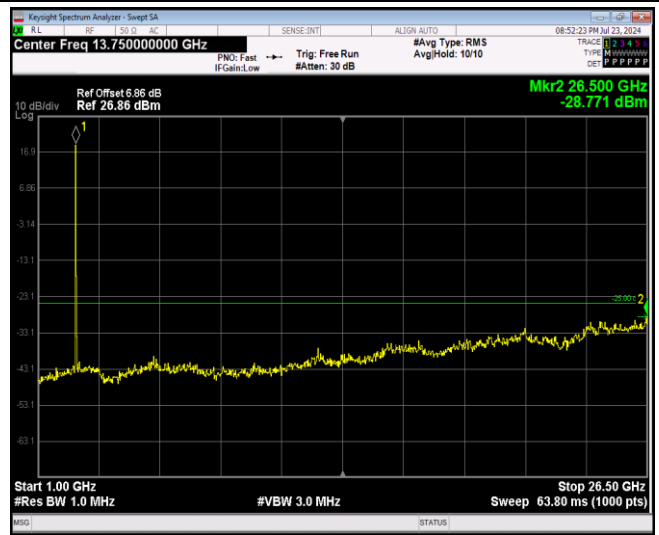
Band41-20MHz-64QAM-40640-1RB#0-Range1:30~1000MHz



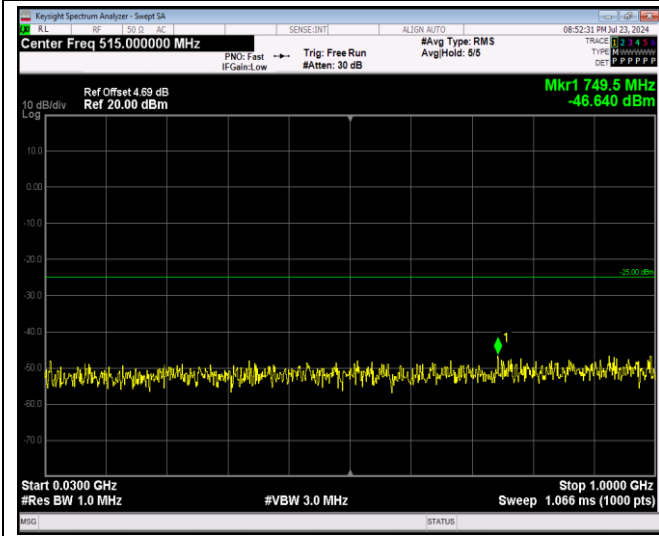
Band41-20MHz-64QAM-40640-1RB#0-Range2:1000~26500MHz



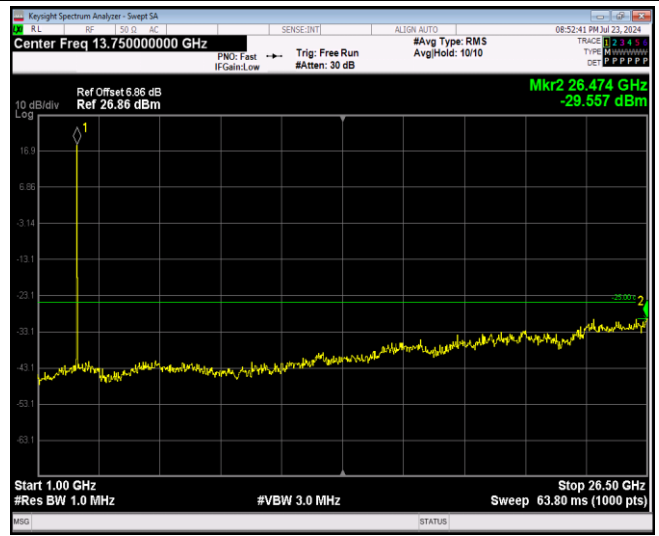
Band41-20MHz-64QAM-41140-1RB#0-Range1:30~1000MHz



Band41-20MHz-64QAM-41140-1RB#0-Range2:1000~26500MHz



Band41-20MHz-64QAM-40640-1RB#0-Range1:30~1000MHz



Band41-20MHz-64QAM-41140-1RB#0-Range2:1000~26500MHz

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	-7.93	-0.004218	Within authorized band for Band 2	Pass
	-20	9.18	0.004883		
	-10	9.58	0.005096		
	0	7.15	0.003803		
	10	9.13	0.004856		
	20	-8.41	-0.004473		
	30	11.42	0.006074		
	40	-3.96	-0.002106		
	50	-4.31	-0.002293		
16QAM					
3.87	-30	7.84	0.004170	Within authorized band for Band 2	Pass
	-20	6.12	0.003255		
	-10	-5.32	-0.002830		
	0	9.51	0.005059		
	10	6.71	0.003569		
	20	8.41	0.004473		
	30	-2.75	-0.001463		
	40	11.03	0.005867		
	50	10.46	0.005564		
64QAM					
3.87	-30	-9.71	-0.005165	Within authorized band for Band 2	Pass
	-20	-7.55	-0.004016		
	-10	-3.19	-0.001697		
	0	9.74	0.005181		
	10	-11.54	-0.006138		
	20	-8.27	-0.004399		
	30	3.93	0.002090		
	40	-7.68	-0.004085		
	50	-3.40	-0.001809		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	4.02	0.002138	Within authorized band for Band 2	Pass
	3.87	-8.10	-0.004309		
	4.45	-10.31	-0.005484		
16QAM					
25	3.45	6.81	0.003622	Within authorized band for Band 2	Pass
	3.87	-10.46	-0.005564		
	4.45	5.62	0.002989		
64QAM					
25	3.45	-8.57	-0.004559	Within authorized band for Band 2	Pass
	3.87	11.70	0.006223		
	4.45	-9.03	-0.004803		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

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					
3.87	-30	-9.34	-0.005391	Within authorized band for Band 4	Pass
	-20	-4.95	-0.002857		
	-10	-11.07	-0.006390		
	0	-9.78	-0.005645		
	10	-8.81	-0.005085		
	20	-15.52	-0.008958		
	30	-7.18	-0.004144		
	40	-8.97	-0.005177		
	50	-9.06	-0.005229		
16QAM					
3.87	-30	-7.87	-0.004543	Within authorized band for Band 4	Pass
	-20	-6.15	-0.003550		
	-10	-7.90	-0.004560		
	0	-7.28	-0.004202		
	10	1.73	0.000999		
	20	5.94	0.003429		
	30	-5.68	-0.003278		
	40	4.43	0.002557		
	50	-7.37	-0.004254		
64QAM					
3.87	-30	-4.69	-0.002707	Within authorized band for Band 4	Pass
	-20	-3.73	-0.002153		
	-10	-8.41	-0.004854		
	0	-6.32	-0.003648		
	10	6.67	0.003850		
	20	-12.50	-0.007215		
	30	-7.01	-0.004046		
	40	14.75	0.008514		
	50	-13.45	-0.007763		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-8.05	-0.004646	Within authorized band for Band 4	Pass
	3.87	-8.83	-0.005097		
	4.45	2.22	0.001281		
16QAM					
25	3.45	-8.38	-0.004837	Within authorized band for Band 4	Pass
	3.87	-9.91	-0.005720		
	4.45	-4.69	-0.002707		
64QAM					
25	3.45	-11.64	-0.006719	Within authorized band for Band 4	Pass
	3.87	-9.90	-0.005714		
	4.45	-8.63	-0.004981		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

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	-10.33	-0.012349	±2.5	Pass
	-20	-7.37	-0.008811		
	-10	-8.18	-0.009779		
	0	-4.13	-0.004937		
	10	-5.95	-0.007113		
	20	-7.21	-0.008619		
	30	-4.45	-0.005320		
	40	-5.41	-0.006467		
	50	-7.82	-0.009348		
16QAM					
3.87	-30	-6.82	-0.008153	±2.5	Pass
	-20	-8.45	-0.010102		
	-10	-10.27	-0.012277		
	0	-5.21	-0.006228		
	10	3.42	0.004088		
	20	-8.33	-0.009958		
	30	-5.04	-0.006025		
	40	-6.58	-0.007866		
	50	-6.34	-0.007579		
64QAM					
3.87	-30	-8.44	-0.010090	±2.5	Pass
	-20	-7.10	-0.008488		
	-10	4.12	0.004925		
	0	-9.33	-0.011154		
	10	-2.79	-0.003335		
	20	-1.36	-0.001626		
	30	-7.52	-0.008990		
	40	-8.28	-0.009898		
	50	-5.68	-0.006790		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-9.57	-0.011441	±2.5	Pass
	3.87	-7.98	-0.009540		
	4.45	-6.84	-0.008177		
16QAM					
25	3.45	-8.53	-0.010197	±2.5	Pass
	3.87	-4.98	-0.005953		
	4.45	-6.54	-0.007818		
64QAM					
25	3.45	-9.44	-0.011285	±2.5	Pass
	3.87	-9.40	-0.011237		
	4.45	1.96	0.002343		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

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	-3.29	-0.001298	Within authorized band for Band 7	Pass
	-20	-10.86	-0.004284		
	-10	-21.17	-0.008351		
	0	-11.60	-0.004576		
	10	-5.55	-0.002189		
	20	13.53	0.005337		
	30	-8.18	-0.003227		
	40	-17.12	-0.006753		
	50	12.73	0.005022		
16QAM					
3.87	-30	-9.01	-0.003554	Within authorized band for Band 7	Pass
	-20	-11.53	-0.004548		
	-10	-16.69	-0.006584		
	0	7.77	0.003065		
	10	-15.01	-0.005921		
	20	8.20	0.003235		
	30	-14.45	-0.005700		
	40	7.54	0.002974		
	50	-11.30	-0.004458		
64QAM					
3.87	-30	15.25	0.006016	Within authorized band for Band 7	Pass
	-20	-15.28	-0.006028		
	-10	4.82	0.001901		
	0	13.09	0.005164		
	10	-15.03	-0.005929		
	20	-15.88	-0.006264		
	30	14.42	0.005688		
	40	-4.85	-0.001913		
	50	-16.64	-0.006564		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-12.62	-0.004978	Within authorized band for Band 7	Pass
	3.87	-11.70	-0.004615		
	4.45	-14.33	-0.005653		
16QAM					
25	3.45	-15.44	-0.006091	Within authorized band for Band 7	Pass
	3.87	-7.85	-0.003097		
	4.45	-15.09	-0.005953		
64QAM					
25	3.45	8.14	0.003211	Within authorized band for Band 7	Pass
	3.87	16.81	0.006631		
	4.45	-15.61	-0.006158		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

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	-11.17	-0.004304		
	-10	-8.91	-0.003434		
	0	-2.37	-0.000913		
	10	-10.43	-0.004019		
	20	-9.44	-0.003638		
	30	2.96	0.001141		
	40	-6.42	-0.002474		
	50	-5.36	-0.002066		
16QAM					
3.87	-30	-9.63	-0.003711	Within authorized band for Band 41	Pass
	-20	5.99	0.002308		
	-10	-6.92	-0.002667		
	0	-10.14	-0.003908		
	10	-4.35	-0.001676		
	20	-5.89	-0.002270		
	30	2.65	0.001021		
	40	-9.38	-0.003615		
	50	-10.49	-0.004042		
64QAM					
3.87	-30	-8.05	-0.003102	Within authorized band for Band 41	Pass
	-20	-6.71	-0.002586		
	-10	-3.10	-0.001195		
	0	-12.32	-0.004748		
	10	-8.23	-0.003171		
	20	-13.86	-0.005341		
	30	-8.98	-0.003461		
	40	9.37	0.003611		
	50	-2.82	-0.001087		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-8.60	-0.003314	Within authorized band for Band 41	Pass
	3.87	-5.95	-0.002293		
	4.45	-7.64	-0.002944		
16QAM					
25	3.45	8.44	0.003252	Within authorized band for Band41	Pass
	3.87	-10.39	-0.004004		
	4.45	-5.82	-0.002243		
64QAM					
25	3.45	-5.97	-0.002301	Within authorized band for Band41	Pass
	3.87	-7.30	-0.002813		
	4.45	-8.78	-0.003383		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

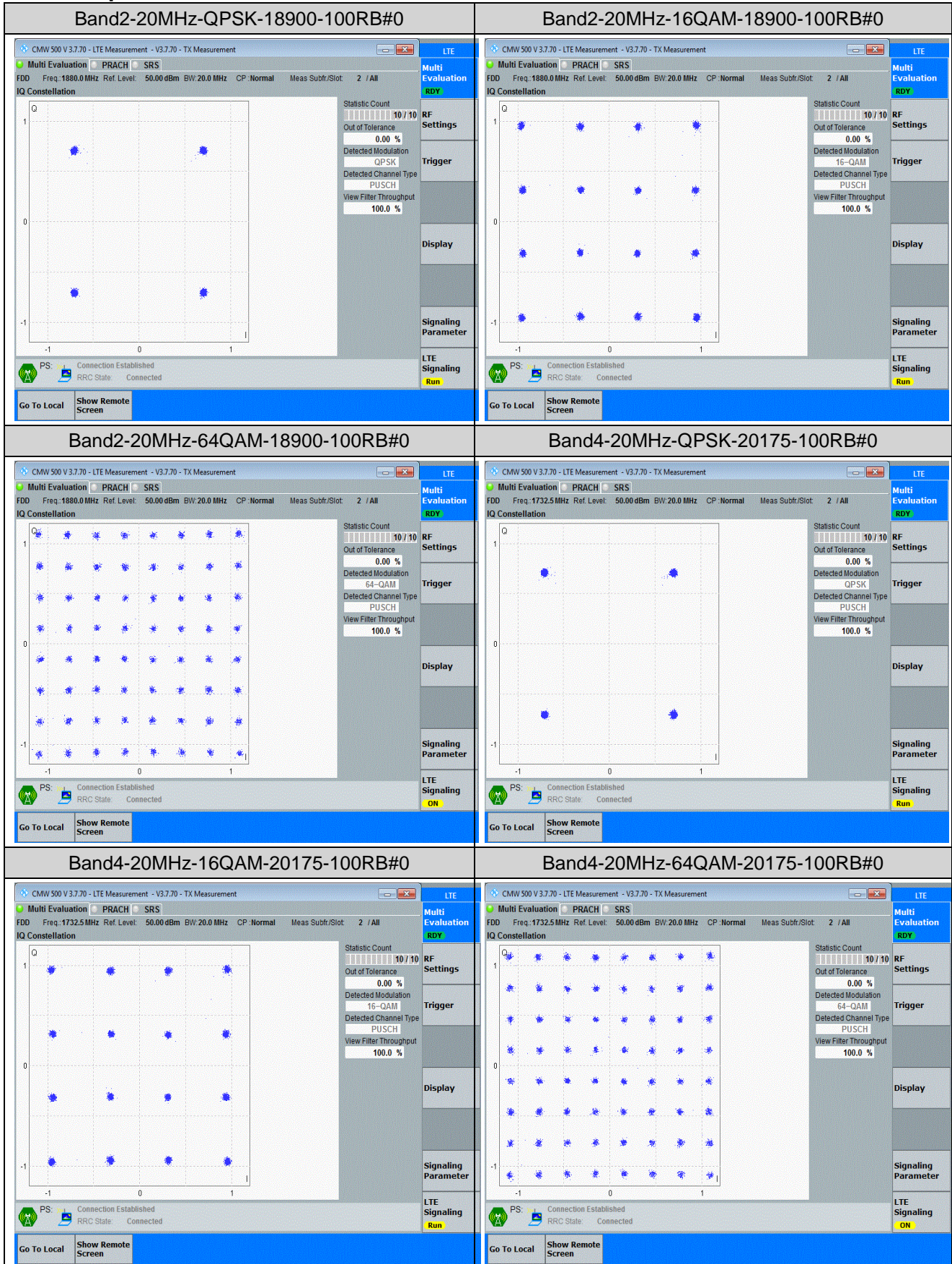
Appendix G: Modulation Characteristics

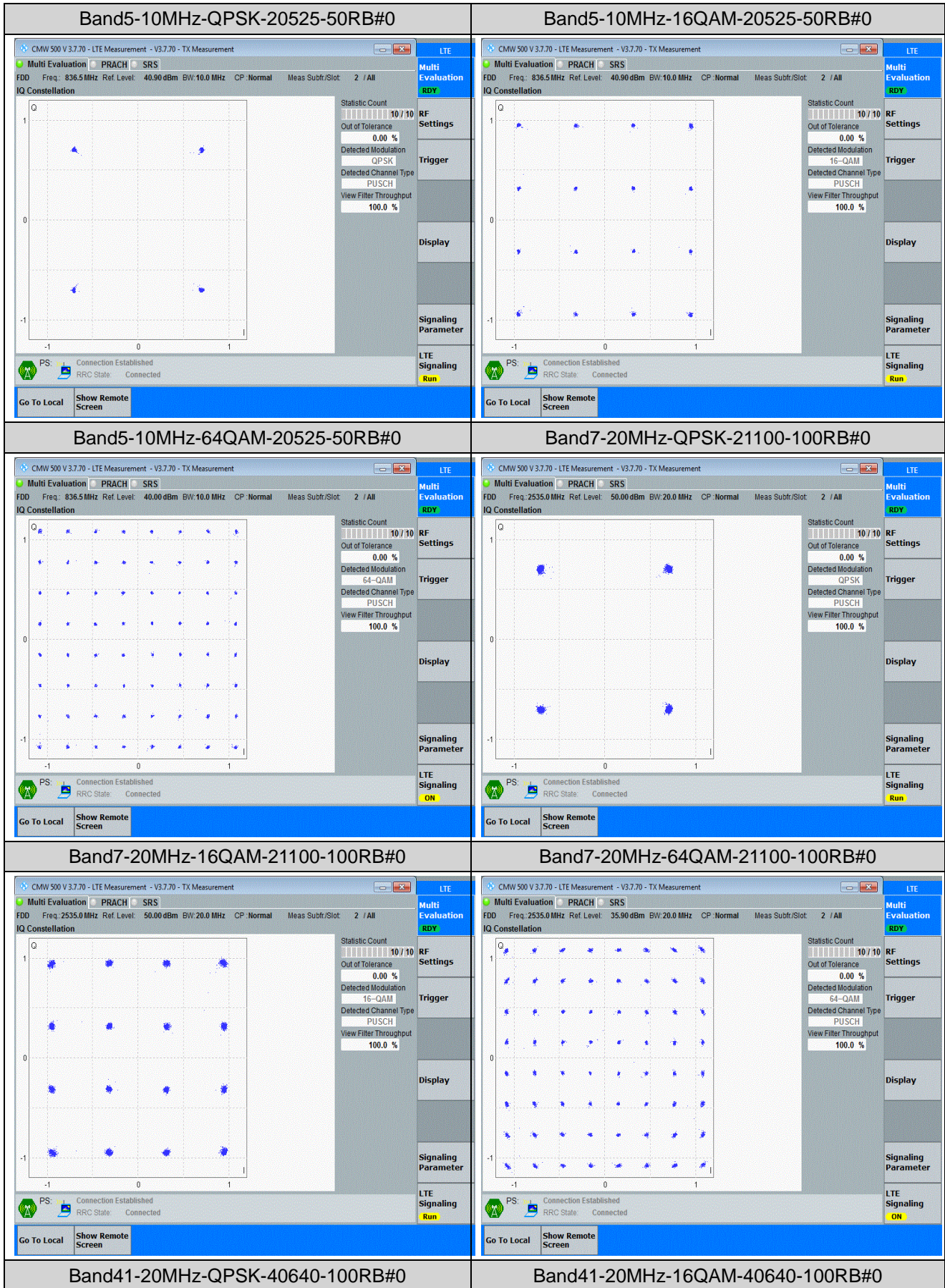
Test Result

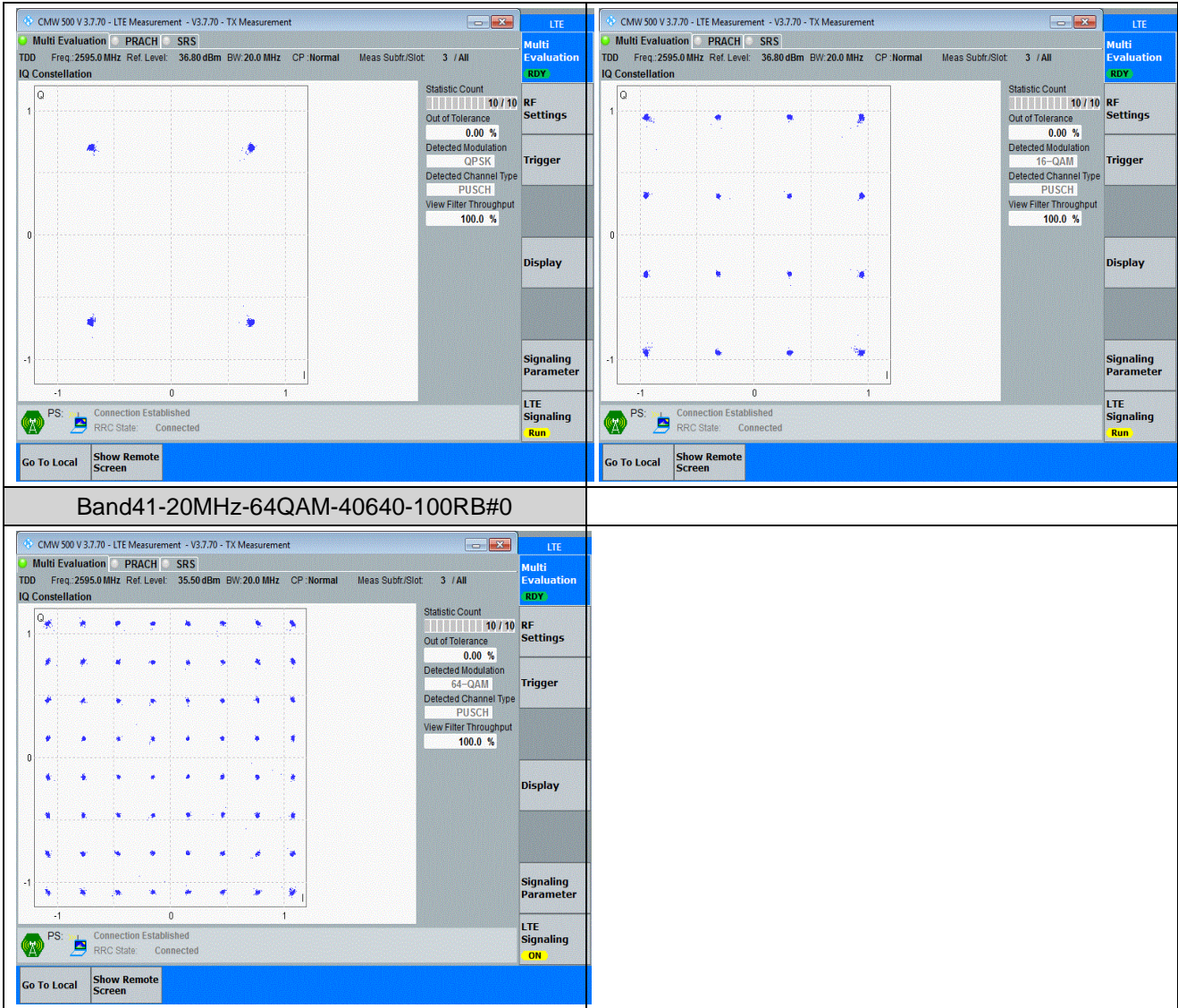
Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
Band2	20MHz	64QAM	18900	100RB#0	PASS	PASS
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	100RB#0	PASS	PASS
Band4	20MHz	64QAM	20175	100RB#0	PASS	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band5	10MHz	64QAM	20525	50RB#0	PASS	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band7	20MHz	64QAM	21100	100RB#0	PASS	PASS
Band41	20MHz	QPSK	40640	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40640	100RB#0	PASS	PASS
Band41	20MHz	64QAM	40640	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







Band41-20MHz-64QAM-40640-100RB#0