

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-50.41	-0.026814	Within authorized band for Band 2	Pass
	3.85	-34.58	-0.018394		
	4.40	-53.23	-0.028314		
16QAM					
25	3.45	-30.68	-0.016319	Within authorized band for Band 2	Pass
	3.85	-39.44	-0.020979		
	4.40	-43.56	-0.023170		
64QAM					
25	3.45	-32.34	-0.017202	Within authorized band for Band 2	Pass
	3.85	-32.36	-0.017213		
	4.40	-25.72	-0.013681		
<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					
3.85	-30	-9.13	-0.010915	±2.5	Pass
	-20	-13.73	-0.016414		
	-10	-21.90	-0.026181		
	0	-18.67	-0.022319		
	10	-35.15	-0.042020		
	20	-32.42	-0.038757		
	30	-35.02	-0.041865		
	40	-32.82	-0.039235		
	50	-32.20	-0.038494		
16QAM					
3.85	-30	-5.82	-0.006958	±2.5	Pass
	-20	10.50	0.012552		
	-10	11.92	0.014250		
	0	24.46	0.029241		
	10	28.52	0.034094		
	20	31.97	0.038219		
	30	41.18	0.049229		
	40	45.58	0.054489		
	50	43.44	0.051931		
64QAM					
3.85	-30	26.59	0.031787	±2.5	Pass
	-20	39.40	0.047101		
	-10	46.51	0.055601		
	0	6.44	0.007699		
	10	7.87	0.009408		
	20	13.56	0.016210		
	30	19.77	0.023634		
	40	27.05	0.032337		
	50	30.81	0.036832		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	6.69	0.007998	±2.5	Pass
	3.85	15.51	0.018542		
	4.40	-5.24	-0.006264		
16QAM					
25	3.45	-28.37	-0.033915	±2.5	Pass
	3.85	-35.79	-0.042785		
	4.40	-13.55	-0.016198		
64QAM					
25	3.45	9.17	0.010962	±2.5	Pass
	3.85	50.50	0.060371		
	4.40	19.61	0.023443		
<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					
3.85	-30	24.05	0.009487	Within authorized band for Band 7	Pass
	-20	-42.47	-0.016753		
	-10	-15.13	-0.005968		
	0	-70.65	-0.027870		
	10	-38.24	-0.015085		
	20	-33.06	-0.013041		
	30	-17.24	-0.006801		
	40	-44.00	-0.017357		
	50	-57.85	-0.022821		
16QAM					
3.85	-30	26.82	0.010580	Within authorized band for Band 7	Pass
	-20	52.03	0.020525		
	-10	33.96	0.013396		
	0	43.22	0.017049		
	10	64.85	0.025582		
	20	-19.24	-0.007590		
	30	-9.94	-0.003921		
	40	-50.37	-0.019870		
	50	-39.45	-0.015562		
64QAM					
3.85	-30	14.93	0.005890	Within authorized band for Band 7	Pass
	-20	14.68	0.005791		
	-10	12.40	0.004892		
	0	14.49	0.005716		
	10	-21.36	-0.008426		
	20	-19.57	-0.007720		
	30	-34.96	-0.013791		
	40	-16.54	-0.006525		
	50	-34.02	-0.013420		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-31.54	-0.012442	Within authorized band for Band 7	Pass
	3.85	24.92	0.009830		
	4.40	-49.61	-0.019570		
16QAM					
25	3.45	-15.15	-0.005976	Within authorized band for Band 7	Pass
	3.85	-40.00	-0.015779		
	4.40	17.85	0.007041		
64QAM					
25	3.45	36.01	0.014205	Within authorized band for Band 7	Pass
	3.85	17.68	0.006974		
	4.40	26.51	0.010458		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

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					
3.85	-30	31.01	0.043830	Within authorized band for Band 12	Pass
	-20	30.36	0.042912		
	-10	35.75	0.050530		
	0	32.72	0.046247		
	10	35.22	0.049781		
	20	31.96	0.045173		
	30	38.41	0.054290		
	40	32.00	0.045230		
	50	32.46	0.045880		
16QAM					
3.85	-30	14.25	0.020141	Within authorized band for Band 12	Pass
	-20	22.02	0.031124		
	-10	33.43	0.047251		
	0	38.95	0.055053		
	10	43.46	0.061428		
	20	4.52	0.006389		
	30	10.29	0.014544		
	40	16.92	0.023915		
	50	25.52	0.036071		
64QAM					
3.85	-30	8.71	0.012311	Within authorized band for Band 12	Pass
	-20	23.03	0.032551		
	-10	33.63	0.047534		
	0	35.46	0.050120		
	10	44.09	0.062318		
	20	47.26	0.066799		
	30	-3.76	-0.005314		
	40	5.65	0.007986		
	50	10.57	0.014940		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	26.89	0.038007	Within authorized band for Band 12	Pass
	3.85	27.22	0.038473		
	4.40	26.69	0.037724		
16QAM					
25	3.45	45.48	0.064283	Within authorized band for Band 12	Pass
	3.85	32.70	0.046219		
	4.40	2.39	0.003378		
64QAM					
25	3.45	41.74	0.058996	Within authorized band for Band 12	Pass
	3.85	27.51	0.038883		
	4.40	-6.82	-0.009640		
<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					
3.85	-30	-65.85	-0.025376	Within authorized band for Band 41	Pass
	-20	-41.41	-0.015958		
	-10	-55.99	-0.021576		
	0	15.22	0.005865		
	10	-29.44	-0.011345		
	20	-44.12	-0.017002		
	30	-47.28	-0.018220		
	40	-33.32	-0.012840		
	50	-32.47	-0.012513		
16QAM					
3.85	-30	60.73	0.023403	Within authorized band for Band 41	Pass
	-20	13.33	0.005137		
	-10	52.86	0.020370		
	0	18.67	0.007195		
	10	23.27	0.008967		
	20	49.75	0.019171		
	30	43.93	0.016929		
	40	-10.30	-0.003969		
	50	16.21	0.006247		
64QAM					
3.85	-30	-28.04	-0.010805	Within authorized band for Band 41	Pass
	-20	41.03	0.015811		
	-10	28.41	0.010948		
	0	35.61	0.013723		
	10	44.36	0.017094		
	20	13.33	0.005137		
	30	20.93	0.008066		
	40	57.59	0.022193		
	50	48.01	0.018501		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-60.64	-0.023368	Within authorized band for Band 41	Pass
	3.85	-9.40	-0.003622		
	4.40	-73.54	-0.028339		
16QAM					
25	3.45	19.15	0.007380	Within authorized band for Band41	Pass
	3.85	-31.50	-0.012139		
	4.40	52.00	0.020039		
64QAM					
25	3.45	36.58	0.014096	Within authorized band for Band41	Pass
	3.85	41.27	0.015904		
	4.40	17.41	0.006709		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

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					
3.85	-30	-16.37	-0.009381	Within authorized band for Band 66	Pass
	-20	-57.09	-0.032716		
	-10	-45.42	-0.026029		
	0	-37.44	-0.021456		
	10	-53.20	-0.030487		
	20	-20.56	-0.011782		
	30	-39.38	-0.022567		
	40	-46.98	-0.026923		
	50	7.38	0.004229		
16QAM					
3.85	-30	33.96	0.019461	Within authorized band for Band 66	Pass
	-20	40.84	0.023404		
	-10	-10.81	-0.006195		
	0	-9.53	-0.005461		
	10	16.32	0.009352		
	20	21.57	0.012361		
	30	22.39	0.012831		
	40	24.85	0.014241		
	50	30.98	0.017754		
64QAM					
3.85	-30	27.62	0.015828	Within authorized band for Band 66	Pass
	-20	32.26	0.018487		
	-10	45.03	0.025805		
	0	28.67	0.016430		
	10	33.55	0.019226		
	20	15.96	0.009146		
	30	27.59	0.015811		
	40	-20.87	-0.011960		
	50	22.42	0.012848		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-26.19	-0.015009	Within authorized band for Band 66	Pass
	3.85	33.37	0.019123		
	4.40	-19.91	-0.011410		
16QAM					
25	3.45	10.74	0.006155	Within authorized band for Band 66	Pass
	3.85	-15.15	-0.008682		
	4.40	26.21	0.015020		
64QAM					
25	3.45	10.50	0.006017	Within authorized band for Band 66	Pass
	3.85	34.29	0.019650		
	4.40	39.67	0.022734		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

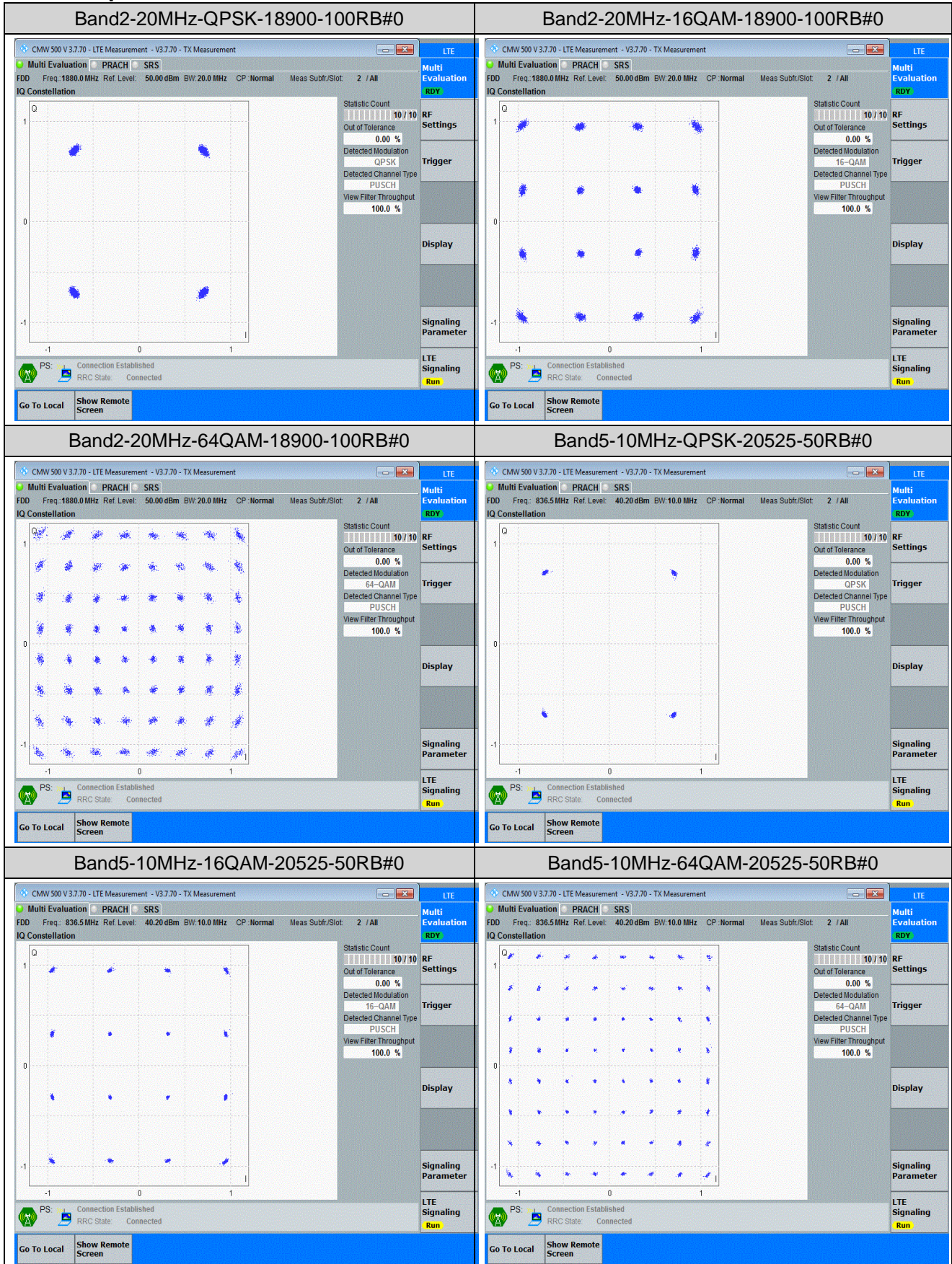
Appendix G: Modulation Characteristics

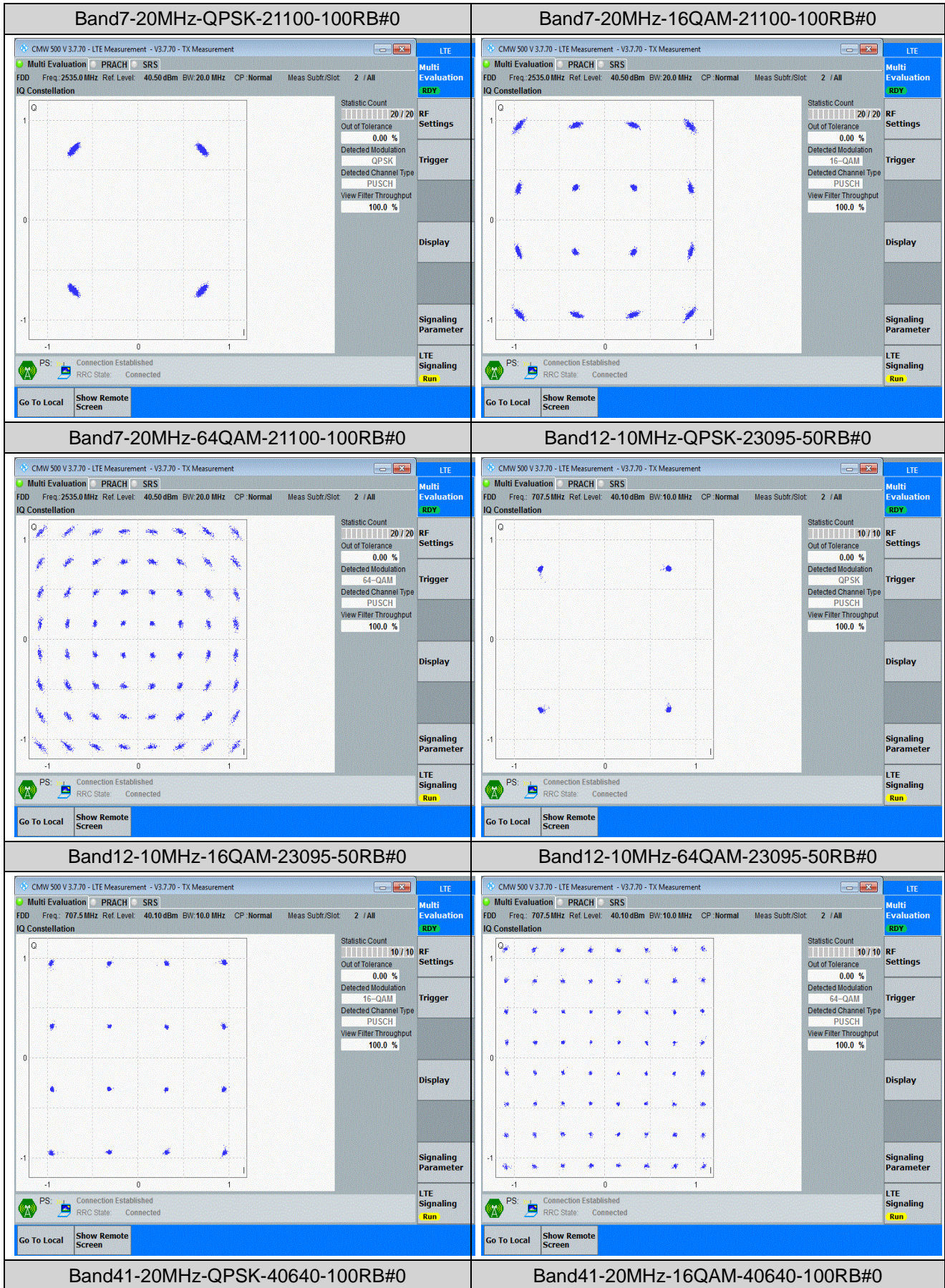
Test Result

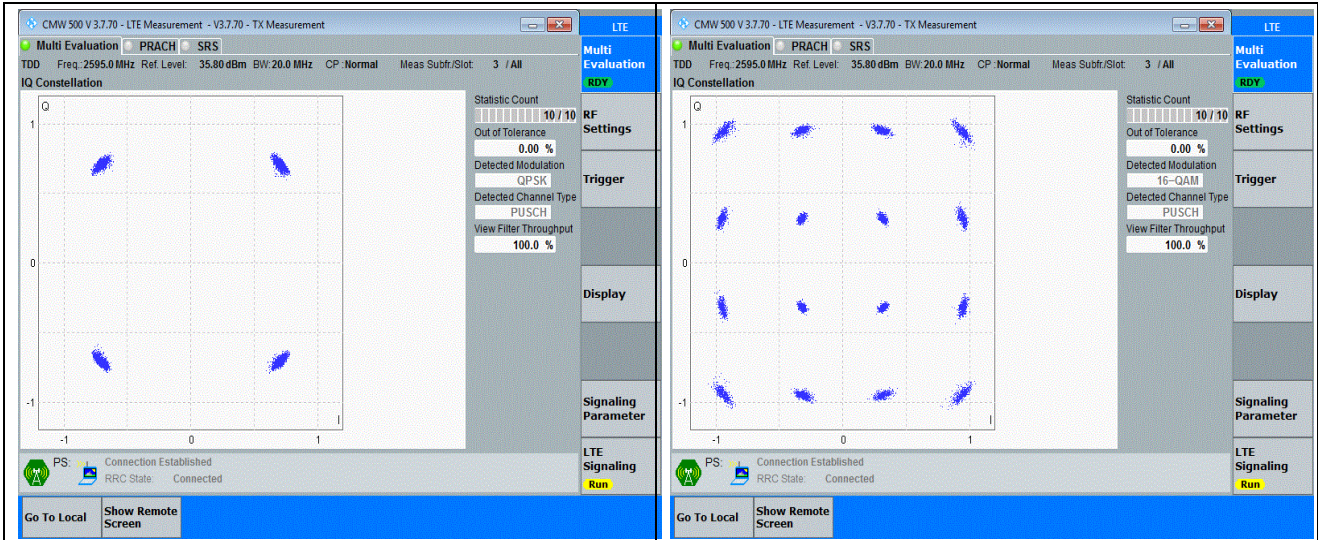
Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
Band2	20MHz	64QAM	18900	100RB#0	PASS	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band5	10MHz	64QAM	20525	50RB#0	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
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band12	10MHz	64QAM	23095	50RB#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
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

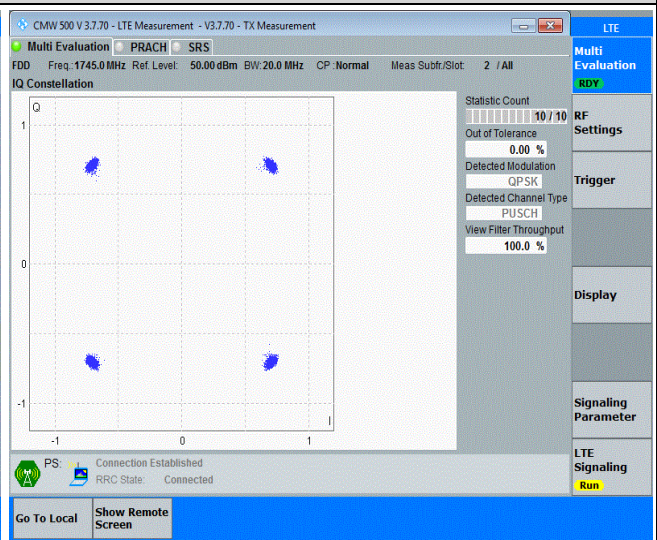
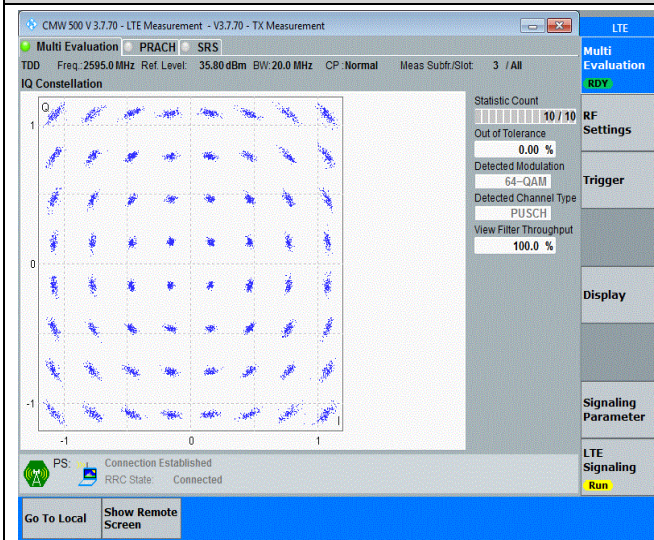






Band41-20MHz-64QAM-40640-100RB#0

Band66-20MHz-QPSK-132322-100RB#0



Band66-20MHz-16QAM-132322-100RB#0

Band66-20MHz-64QAM-132322-100RB#0

