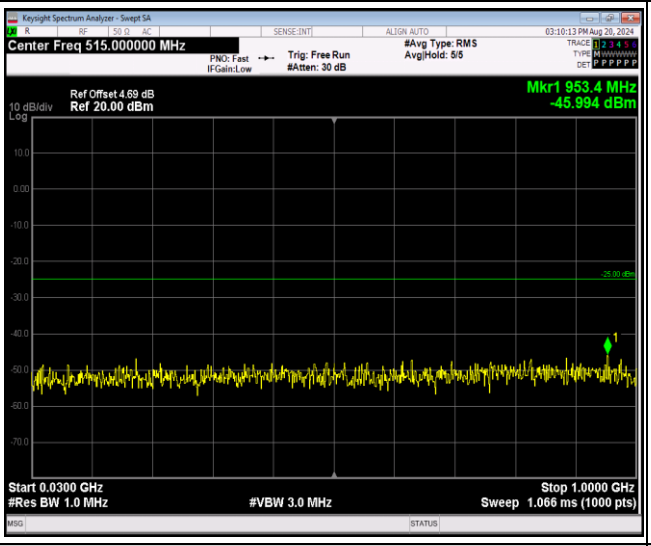
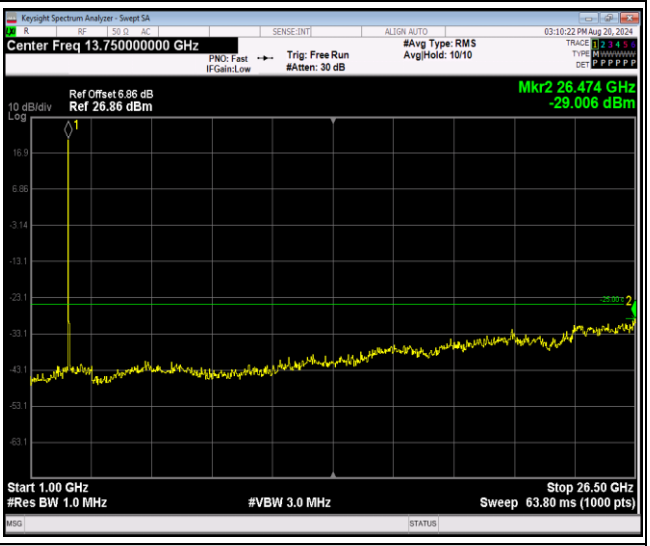
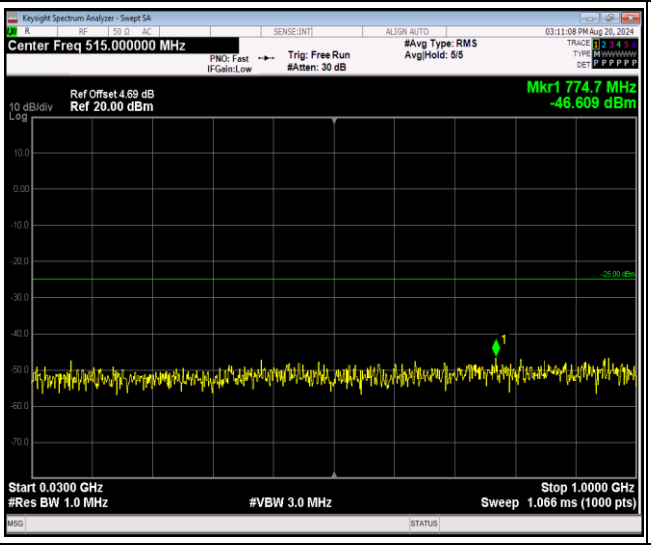
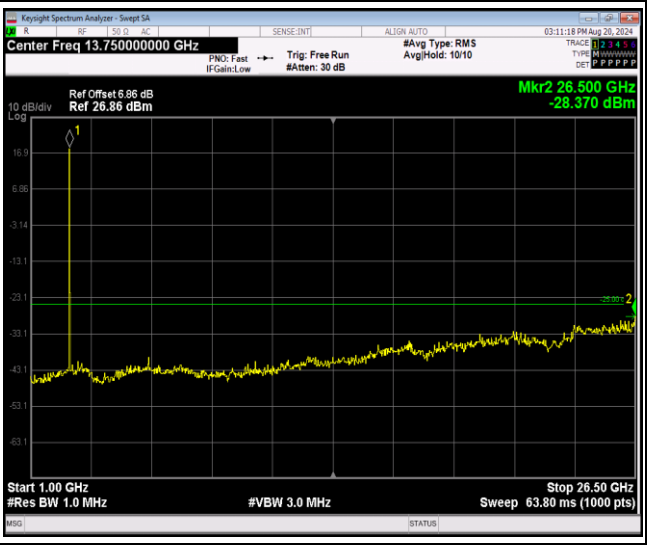
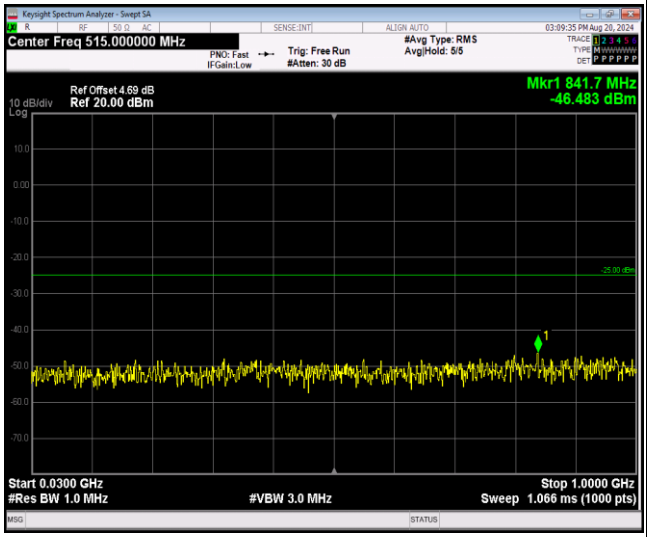
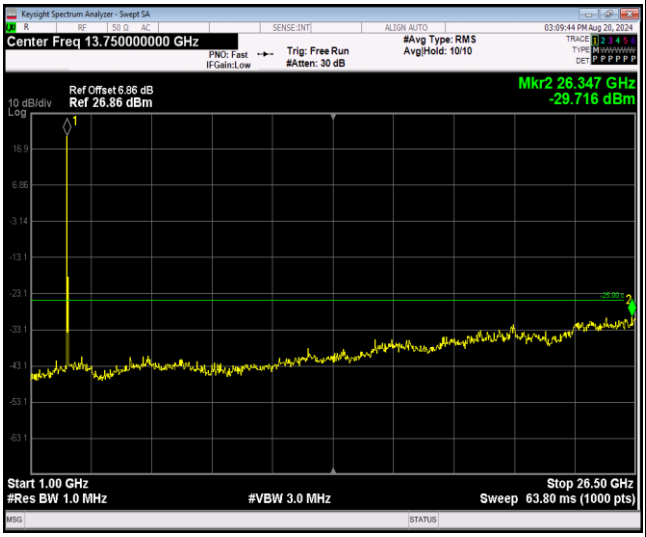
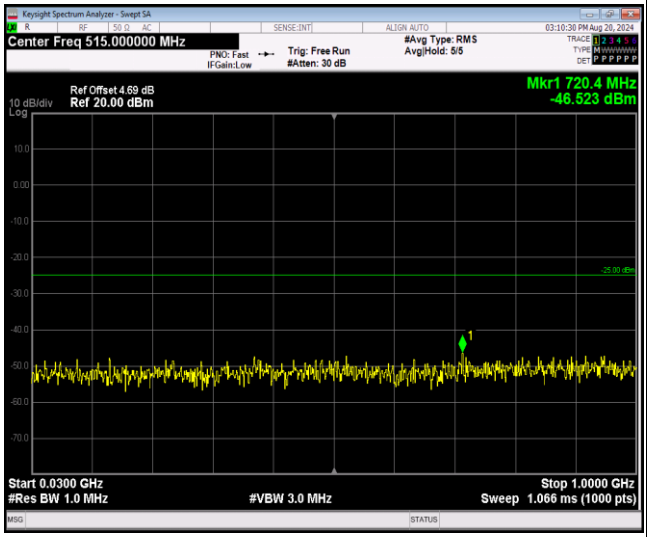
Band41-20MHz-16QAM-40640-1RB#0-Range1:30~1000MHz	Band41-20MHz-16QAM-40640-1RB#0-Range2:1000~26500MHz
	
Band41-20MHz-16QAM-41140-1RB#0-Range1:30~1000MHz	Band41-20MHz-16QAM-41140-1RB#0-Range2:1000~26500MHz
	
Band41-20MHz-64QAM-40140-1RB#0-Range1:30~1000MHz	Band41-20MHz-64QAM-40140-1RB#0-Range2:1000~26500MHz



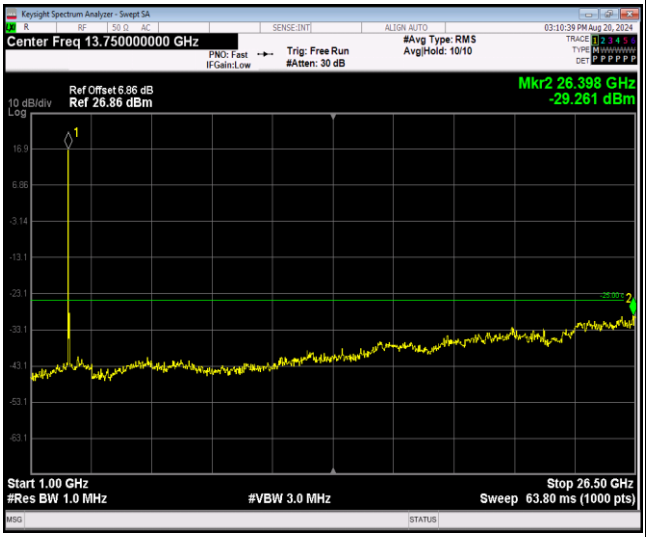
Band41-20MHz-64QAM-40640-1RB#0-Range1:30~1000MHz



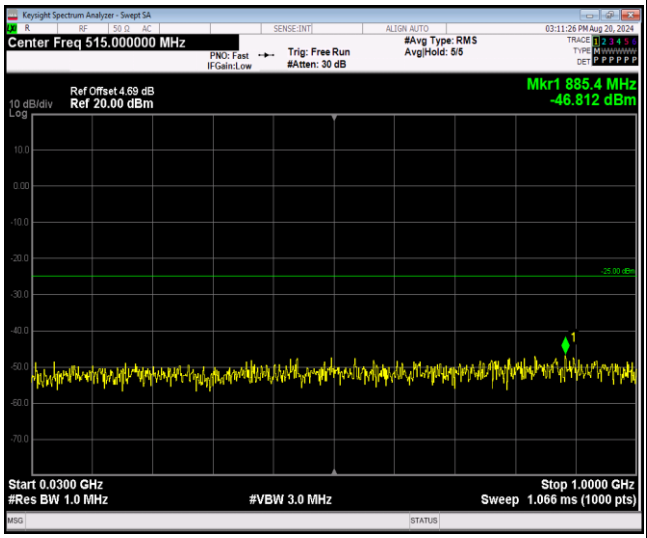
Band41-20MHz-64QAM-40640-1RB#0-Range2:1000~26500MHz

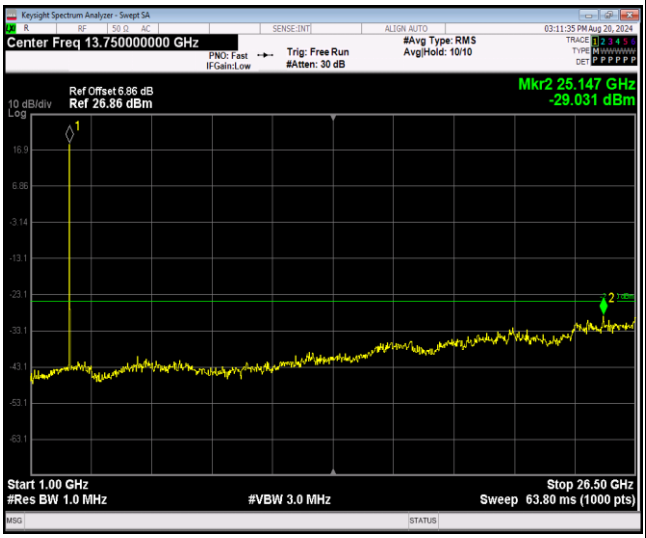


Band41-20MHz-64QAM-41140-1RB#0-Range1:30~1000MHz



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





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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-16.02	-0.008521	Within authorized band for Band 2	Pass
	-20	-17.07	-0.009080		
	-10	-17.85	-0.009495		
	0	-14.63	-0.007782		
	10	-16.18	-0.008606		
	20	-15.45	-0.008218		
	30	-19.41	-0.010324		
	40	-16.24	-0.008638		
	50	-13.86	-0.007372		
16QAM					
3.87	-30	-19.07	-0.010144	Within authorized band for Band 2	Pass
	-20	-11.54	-0.006138		
	-10	-16.29	-0.008665		
	0	-13.13	-0.006984		
	10	-14.71	-0.007824		
	20	-14.35	-0.007633		
	30	-15.15	-0.008059		
	40	-16.51	-0.008782		
	50	-19.96	-0.010617		
64QAM					
3.87	-30	-16.91	-0.008995	Within authorized band for Band 2	Pass
	-20	-8.60	-0.004574		
	-10	-13.59	-0.007229		
	0	-11.90	-0.006330		
	10	-18.10	-0.009628		
	20	-15.21	-0.008090		
	30	3.82	0.002032		
	40	-17.40	-0.009255		
	50	-13.90	-0.007394		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-11.54	-0.006138	Within authorized band for Band 2	Pass
	3.87	-19.60	-0.010426		
	4.45	-9.83	-0.005229		
16QAM					
25	3.45	-20.54	-0.010926	Within authorized band for Band 2	Pass
	3.87	-11.84	-0.006298		
	4.45	-12.77	-0.006793		
64QAM					
25	3.45	-14.63	-0.007782	Within authorized band for Band 2	Pass
	3.87	-16.94	-0.009011		
	4.45	-15.51	-0.008250		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 Frequency=1732.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-15.64	-0.009027	Within authorized band for Band 4	Pass
	-20	2.90	0.001674		
	-10	4.45	0.002569		
	0	-15.74	-0.009085		
	10	-8.37	-0.004831		
	20	-12.16	-0.007019		
	30	-8.45	-0.004877		
	40	-13.69	-0.007902		
	50	-2.10	-0.001212		
16QAM					
3.87	-30	-11.29	-0.006517	Within authorized band for Band 4	Pass
	-20	-16.05	-0.009264		
	-10	-12.85	-0.007417		
	0	-10.00	-0.005772		
	10	-8.85	-0.005108		
	20	-14.66	-0.008462		
	30	8.48	0.004895		
	40	2.47	0.001426		
	50	-3.46	-0.001997		
64QAM					
3.87	-30	-19.41	-0.011203	Within authorized band for Band 4	Pass
	-20	-13.18	-0.007608		
	-10	-2.75	-0.001587		
	0	-15.34	-0.008854		
	10	-11.17	-0.006447		
	20	-10.21	-0.005893		
	30	2.45	0.001414		
	40	-10.69	-0.006170		
	50	2.89	0.001668		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-11.69	-0.006747	Within authorized band for Band 4	Pass
	3.87	-18.73	-0.010811		
	4.45	-3.55	-0.002049		
16QAM					
25	3.45	-19.15	-0.011053	Within authorized band for Band 4	Pass
	3.87	-12.96	-0.007481		
	4.45	-13.02	-0.007515		
64QAM					
25	3.45	-14.41	-0.008317	Within authorized band for Band 4	Pass
	3.87	-9.03	-0.005212		
	4.45	-14.78	-0.008531		
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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-8.70	-0.010400	±2.5	Pass
	-20	-8.96	-0.010711		
	-10	-9.31	-0.011130		
	0	-10.33	-0.012349		
	10	-11.50	-0.013748		
	20	-5.04	-0.006025		
	30	-9.71	-0.011608		
	40	-5.88	-0.007029		
	50	-9.53	-0.011393		
16QAM					
3.87	-30	-9.67	-0.011560	±2.5	Pass
	-20	-4.51	-0.005392		
	-10	-6.45	-0.007711		
	0	-7.01	-0.008380		
	10	-12.04	-0.014393		
	20	-11.04	-0.013198		
	30	-7.38	-0.008822		
	40	-6.24	-0.007460		
	50	-5.32	-0.006360		
64QAM					
3.87	-30	-11.76	-0.014059	±2.5	Pass
	-20	-3.78	-0.004519		
	-10	-9.66	-0.011548		
	0	-10.36	-0.012385		
	10	-3.42	-0.004088		
	20	-10.40	-0.012433		
	30	-4.49	-0.005368		
	40	-8.20	-0.009803		
	50	-12.95	-0.015481		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-12.39	-0.014812	±2.5	Pass
	3.87	-14.05	-0.016796		
	4.45	-7.68	-0.009181		
16QAM					
25	3.45	-7.24	-0.008655	±2.5	Pass
	3.87	-12.99	-0.015529		
	4.45	-8.61	-0.010293		
64QAM					
25	3.45	-11.92	-0.014250	±2.5	Pass
	3.87	-6.82	-0.008153		
	4.45	-6.44	-0.007699		
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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	6.55	0.002584	Within authorized band for Band 7	Pass
	-20	3.93	0.001550		
	-10	-14.02	-0.005531		
	0	-13.06	-0.005152		
	10	-14.42	-0.005688		
	20	-13.95	-0.005503		
	30	12.13	0.004785		
	40	-8.97	-0.003538		
	50	-13.92	-0.005491		
16QAM					
3.87	-30	-17.15	-0.006765	Within authorized band for Band 7	Pass
	-20	-16.98	-0.006698		
	-10	7.38	0.002911		
	0	-14.08	-0.005554		
	10	-17.41	-0.006868		
	20	10.16	0.004008		
	30	-13.86	-0.005467		
	40	8.28	0.003266		
	50	-21.57	-0.008509		
64QAM					
3.87	-30	-15.42	-0.006083	Within authorized band for Band 7	Pass
	-20	-15.41	-0.006079		
	-10	13.28	0.005239		
	0	13.19	0.005203		
	10	-14.96	-0.005901		
	20	-19.11	-0.007538		
	30	-14.83	-0.005850		
	40	-9.90	-0.003905		
	50	-23.13	-0.009124		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	10.66	0.004205	Within authorized band for Band 7	Pass
	3.87	-20.07	-0.007917		
	4.45	13.36	0.005270		
16QAM					
25	3.45	-13.30	-0.005247	Within authorized band for Band 7	Pass
	3.87	-16.06	-0.006335		
	4.45	-16.21	-0.006394		
64QAM					
25	3.45	13.20	0.005207	Within authorized band for Band 7	Pass
	3.87	13.06	0.005152		
	4.45	-14.31	-0.005645		
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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-10.70	-0.004123	Within authorized band for Band 41	Pass
	-20	-4.68	-0.001803		
	-10	-14.09	-0.005430		
	0	-14.48	-0.005580		
	10	-9.68	-0.003730		
	20	-14.49	-0.005584		
	30	-13.92	-0.005364		
	40	-12.65	-0.004875		
	50	-15.26	-0.005881		
16QAM					
3.87	-30	-6.78	-0.002613	Within authorized band for Band 41	Pass
	-20	-15.64	-0.006027		
	-10	-16.72	-0.006443		
	0	-14.41	-0.005553		
	10	-10.76	-0.004146		
	20	-16.37	-0.006308		
	30	-5.31	-0.002046		
	40	-13.55	-0.005222		
	50	-16.14	-0.006220		
64QAM					
3.87	-30	-17.38	-0.006697	Within authorized band for Band 41	Pass
	-20	-11.37	-0.004382		
	-10	-6.94	-0.002674		
	0	-9.68	-0.003730		
	10	-8.07	-0.003110		
	20	-5.61	-0.002162		
	30	-4.94	-0.001904		
	40	-8.55	-0.003295		
	50	-16.21	-0.006247		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-14.43	-0.005561	Within authorized band for Band 41	Pass
	3.87	-8.54	-0.003291		
	4.45	-15.66	-0.006035		
16QAM					
25	3.45	-5.74	-0.002212	Within authorized band for Band41	Pass
	3.87	-10.70	-0.004123		
	4.45	-7.18	-0.002767		
64QAM					
25	3.45	-12.02	-0.004632	Within authorized band for Band41	Pass
	3.87	-12.13	-0.004674		
	4.45	-14.88	-0.005734		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

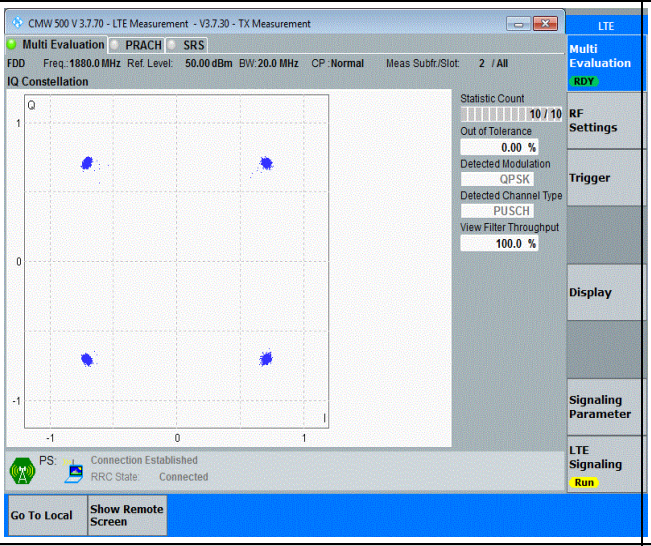
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
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

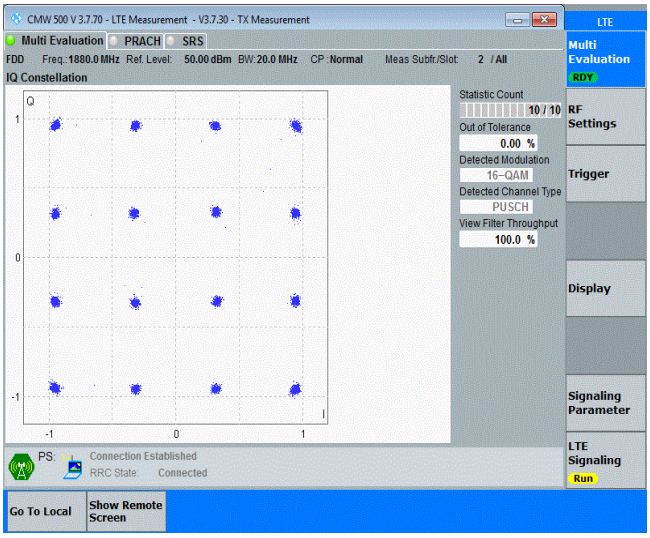
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

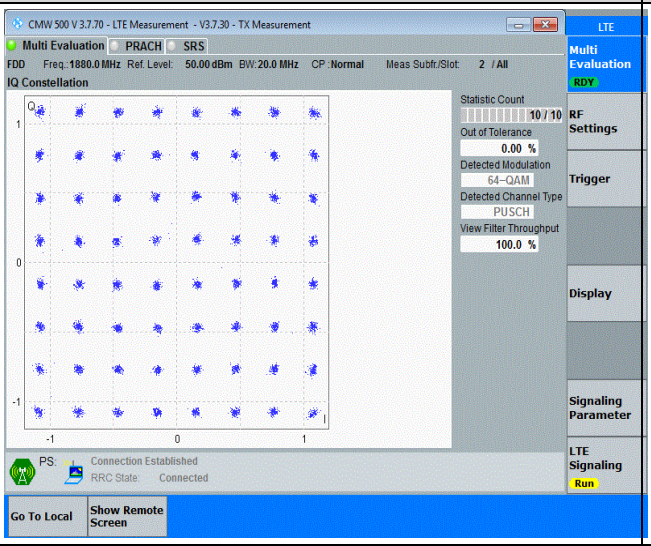
Band2-20MHz-QPSK-18900-100RB#0



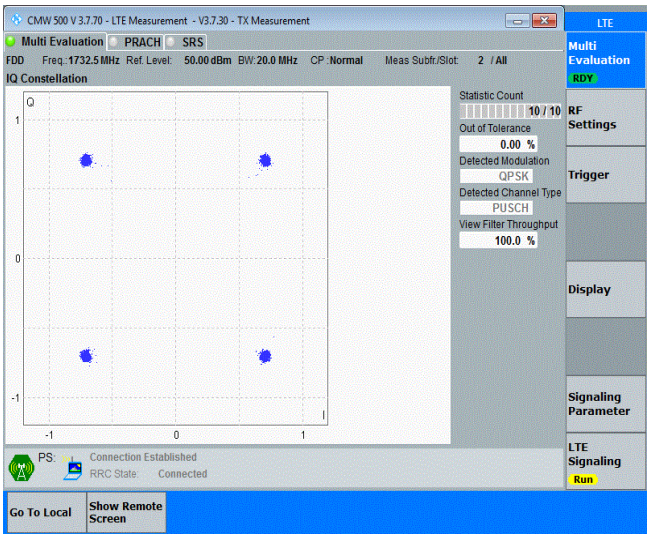
Band2-20MHz-16QAM-18900-100RB#0



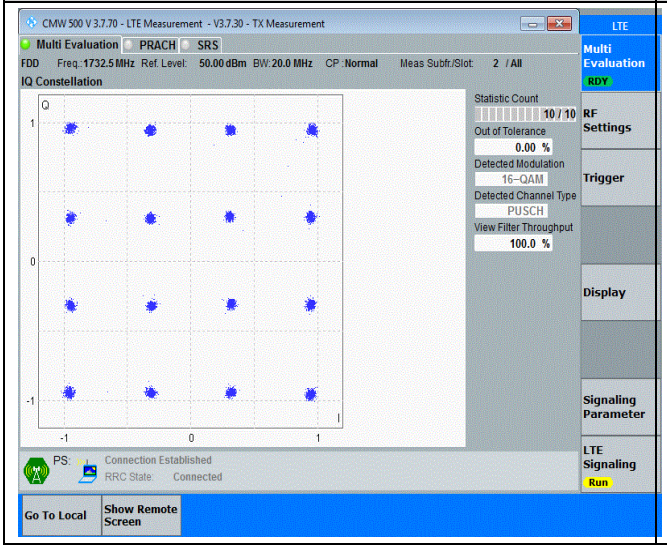
Band2-20MHz-64QAM-18900-100RB#0



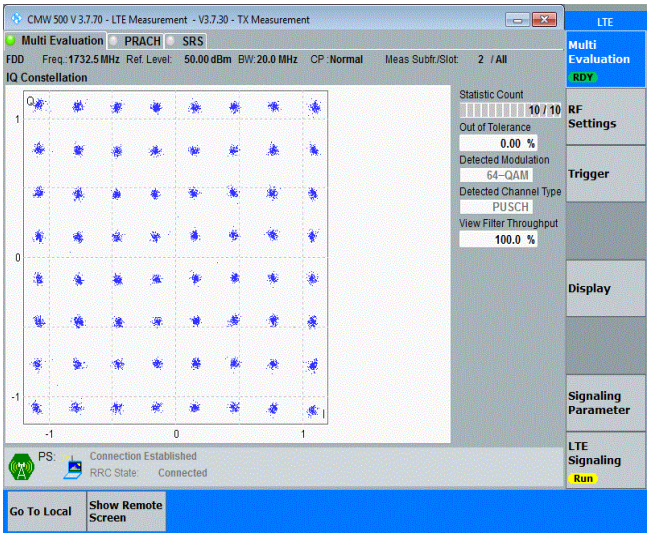
Band4-20MHz-QPSK-20175-100RB#0



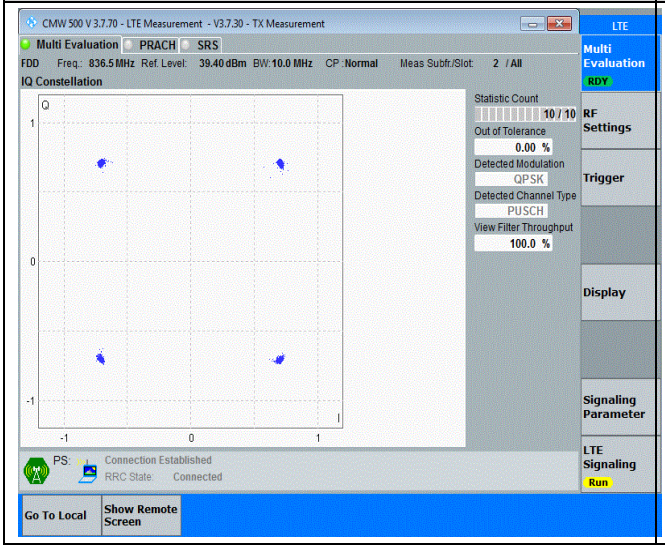
Band4-20MHz-16QAM-20175-100RB#0



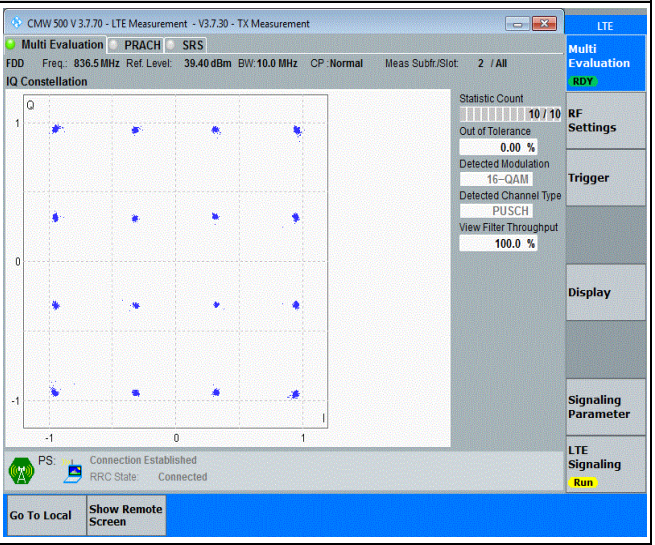
Band4-20MHz-64QAM-20175-100RB#0



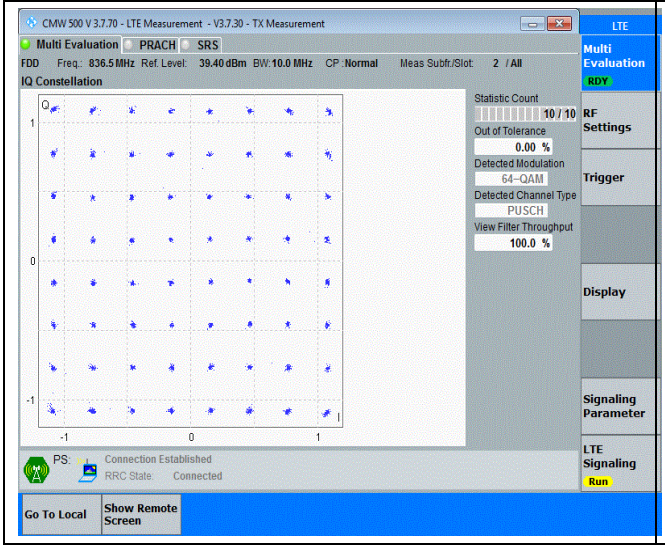
Band5-10MHz-QPSK-20525-50RB#0



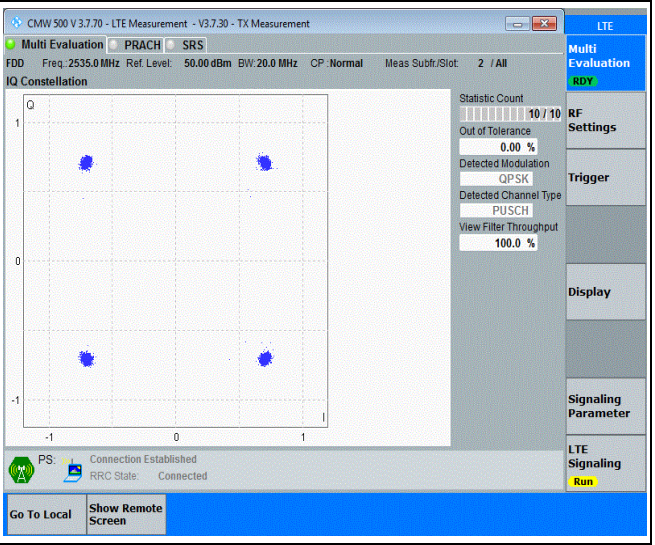
Band5-10MHz-16QAM-20525-50RB#0



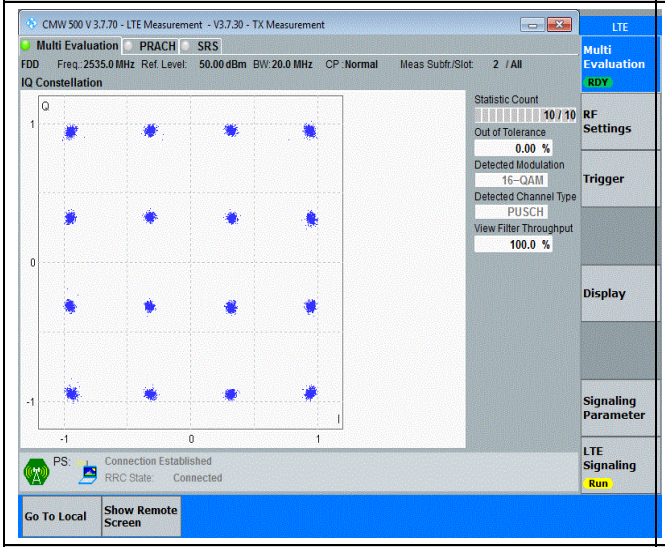
Band5-10MHz-64QAM-20525-50RB#0



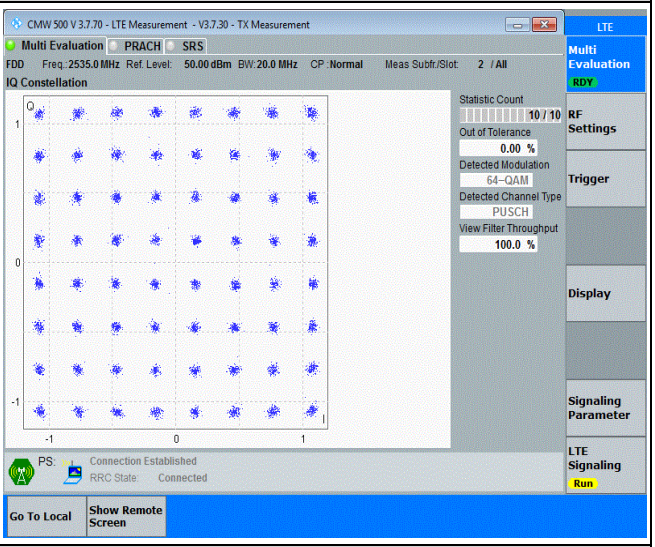
Band7-20MHz-QPSK-21100-100RB#0



Band7-20MHz-16QAM-21100-100RB#0

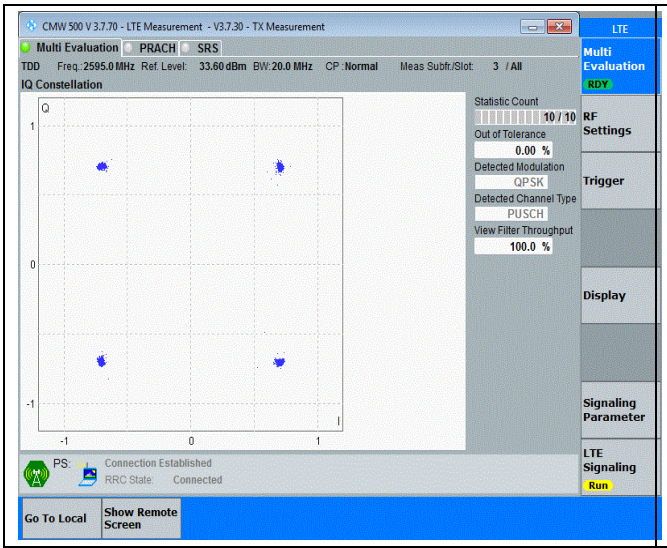


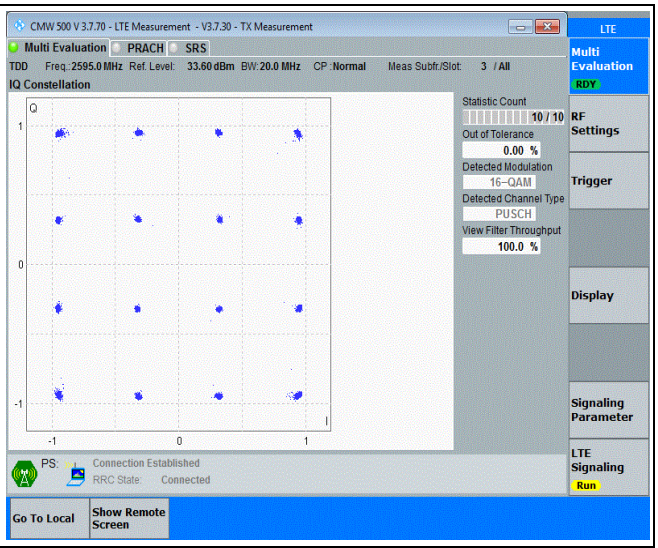
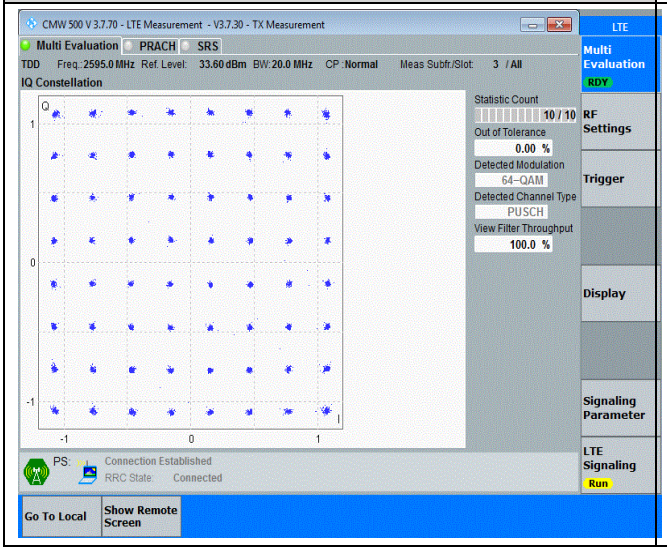
Band7-20MHz-64QAM-21100-100RB#0



Band41-20MHz-QPSK-40640-100RB#0

Band41-20MHz-16QAM-40640-100RB#0





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