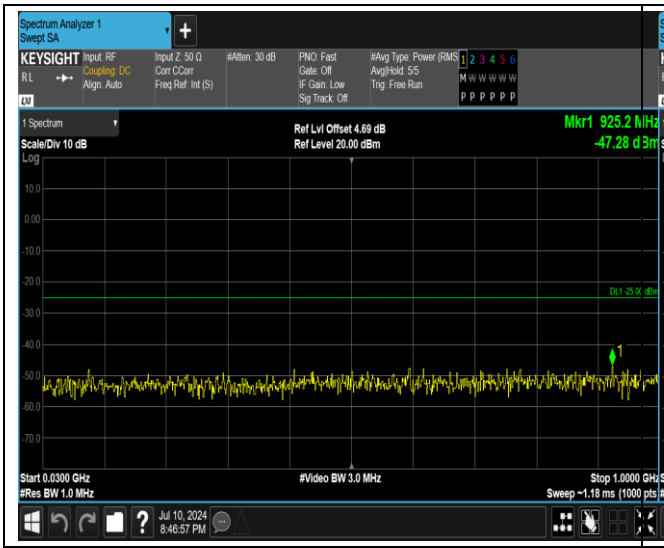
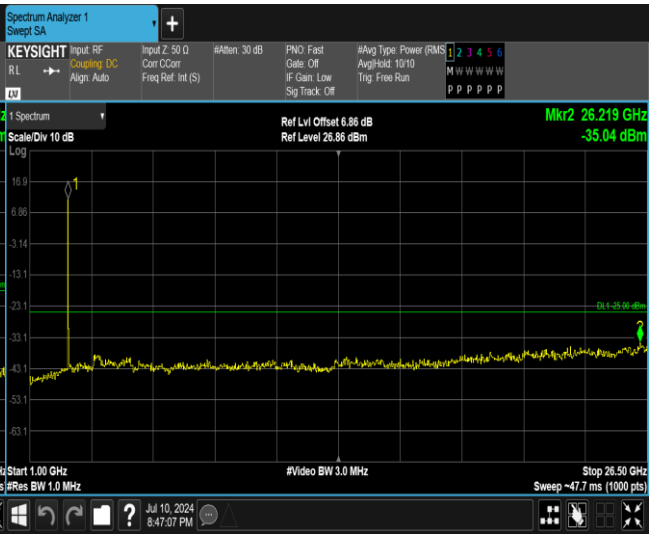
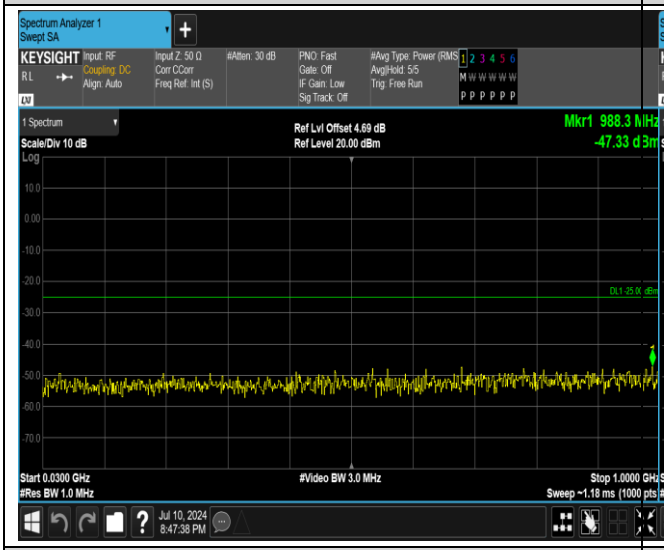


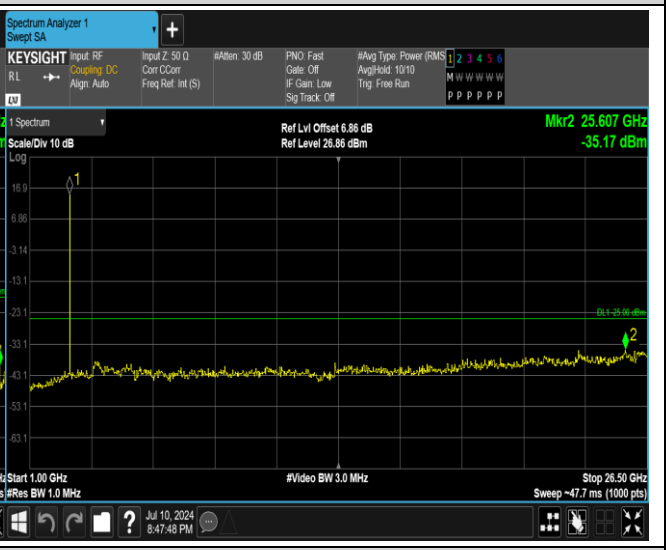
Band41-5MHz-16QAM-41215-1RB#0-Range1:30~1000MHz



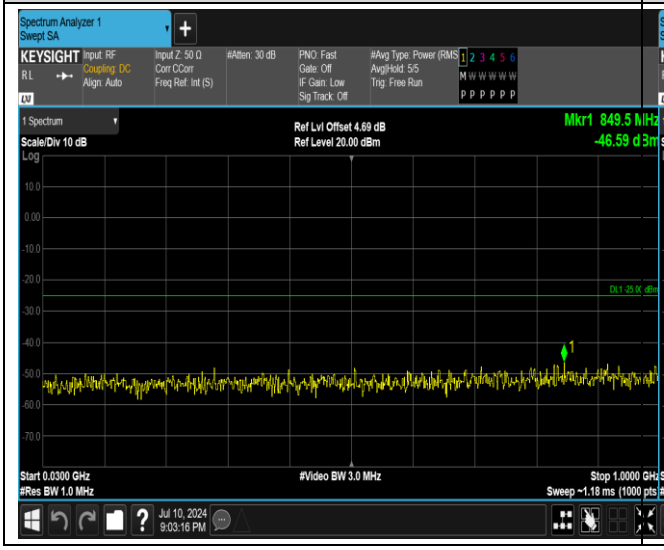
Band41-5MHz-16QAM-41215-1RB#0-Range2:1000~26500MHz

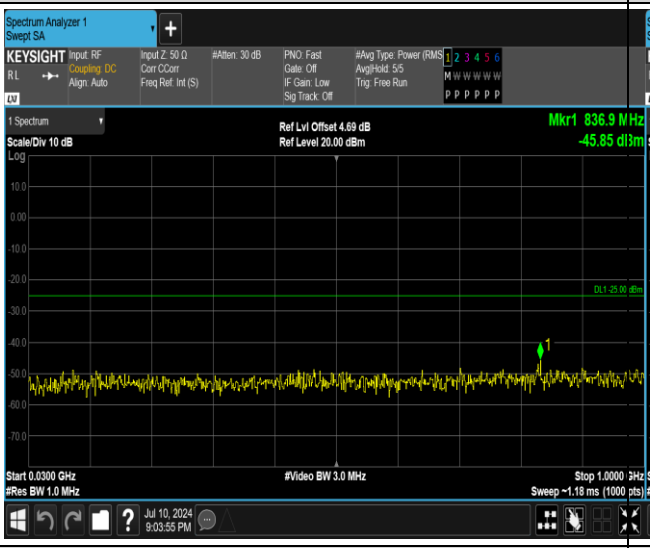
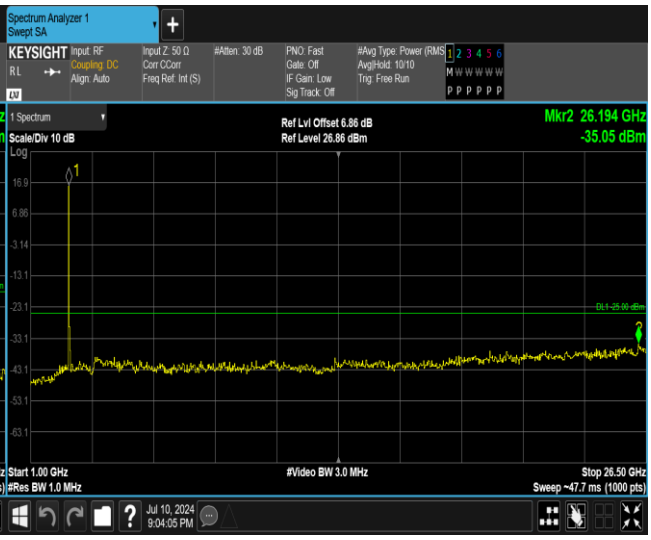
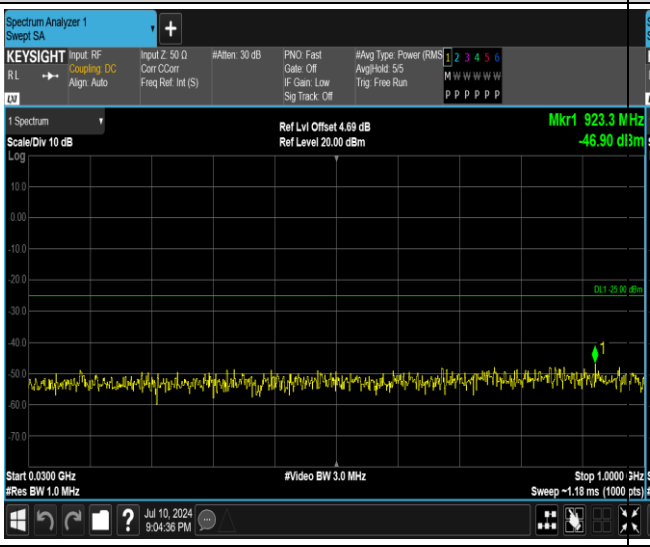
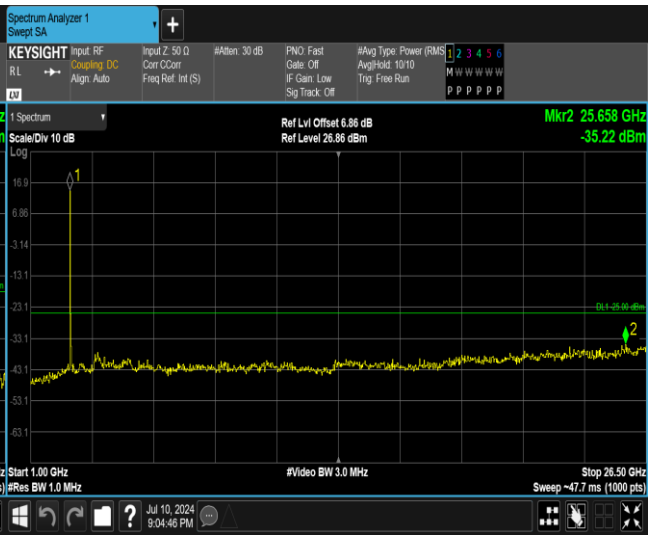


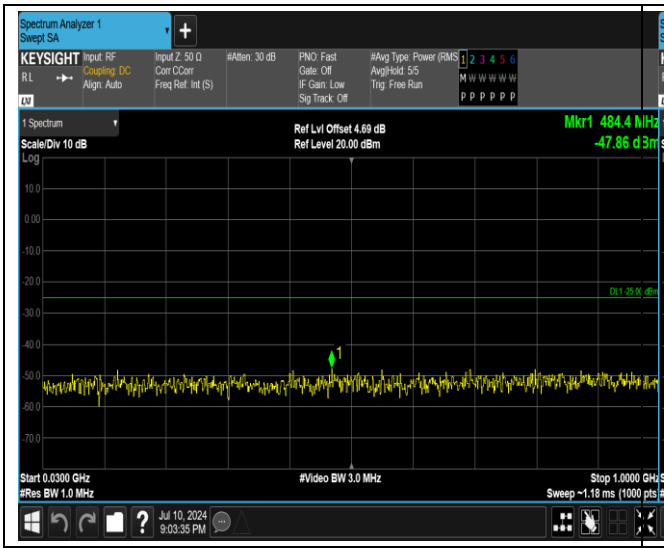
Band41-20MHz-QPSK-40140-1RB#0-Range1:30~1000MHz



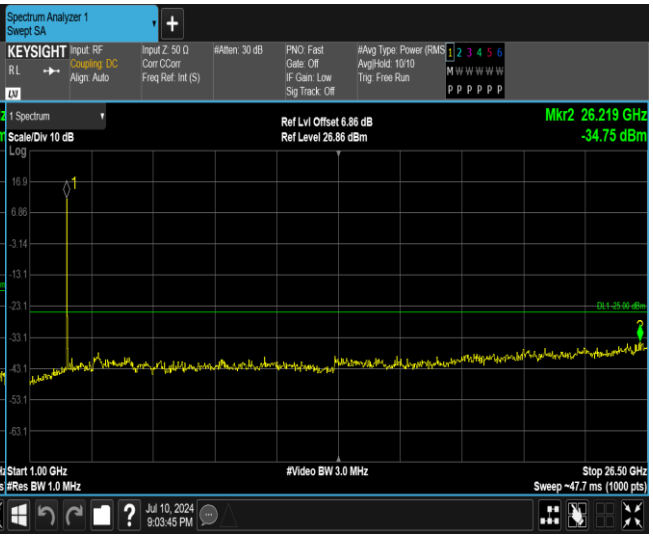
Band41-20MHz-QPSK-40140-1RB#0-Range2:1000~26500MHz



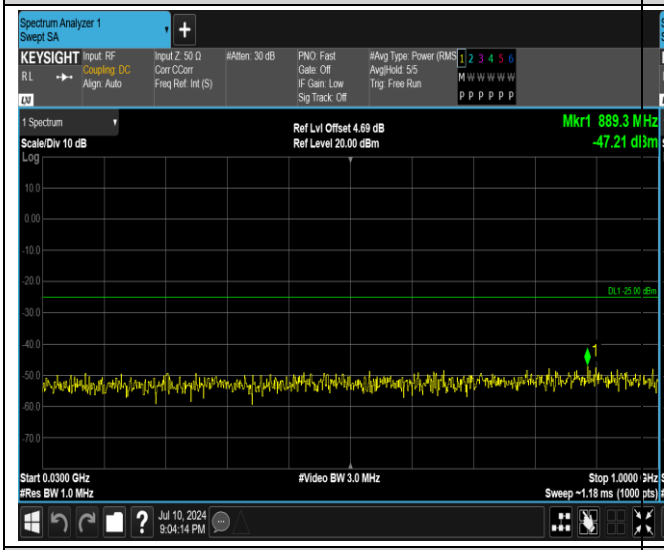
Band41-20MHz-QPSK-40640-1RB#0-Range1:30~1000MHz	Band41-20MHz-QPSK-40640-1RB#0-Range2:1000~26500MHz
	
Band41-20MHz-QPSK-41140-1RB#0-Range1:30~1000MHz	Band41-20MHz-QPSK-41140-1RB#0-Range2:1000~26500MHz
	
Band41-20MHz-16QAM-40140-1RB#0-Range1:30~1000MHz	Band41-20MHz-16QAM-40140-1RB#0-Range2:1000~26500MHz



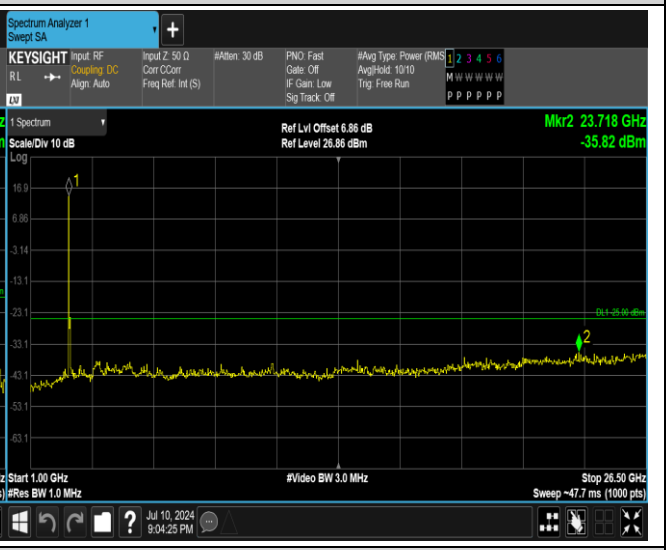
Band41-20MHz-16QAM-40640-1RB#0-Range1:30 ~1000MHz



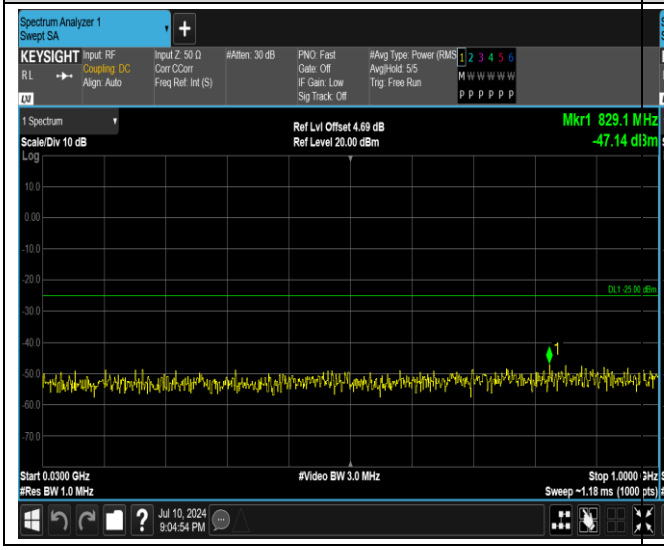
Band41-20MHz-16QAM-40640-1RB#0-Range2:1000~26500MHz

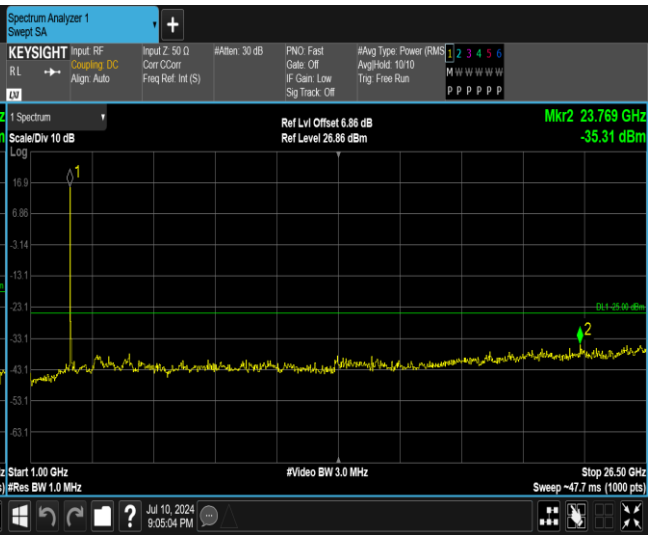


Band41-20MHz-16QAM-41140-1RB#0-Range1:30 ~1000MHz



Band41-20MHz-16QAM-41140-1RB#0-Range2:1000~26500MHz





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	-9.81	-0.005218	Within authorized band for Band 2	Pass
	-20	-8.73	-0.004644		
	-10	-15.11	-0.008037		
	0	-8.24	-0.004383		
	10	-10.84	-0.005766		
	20	-8.34	-0.004436		
	30	-10.14	-0.005394		
	40	-8.80	-0.004681		
	50	-6.22	-0.003309		
16QAM					
3.87	-30	-12.20	-0.006489	Within authorized band for Band 2	Pass
	-20	-5.41	-0.002878		
	-10	6.94	0.003691		
	0	-11.60	-0.006170		
	10	3.96	0.002106		
	20	-7.98	-0.004245		
	30	-2.52	-0.001340		
	40	-7.00	-0.003723		
	50	-10.36	-0.005511		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-13.09	-0.006963	Within authorized band for Band 2	Pass
	3.87	-15.35	-0.008165		
	4.45	-11.83	-0.006293		
16QAM					
25	3.45	-5.48	-0.002915	Within authorized band for Band 2	Pass
	3.87	-8.58	-0.004564		
	4.45	-9.26	-0.004926		
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	6.85	0.003954	Within authorized band for Band 4	Pass
	-20	-10.36	-0.005980		
	-10	4.66	0.002690		
	0	-8.38	-0.004837		
	10	5.98	0.003452		
	20	-5.72	-0.003302		
	30	-8.23	-0.004750		
	40	-10.53	-0.006078		
	50	3.72	0.002147		
16QAM					
3.87	-30	-3.86	-0.002228	Within authorized band for Band 4	Pass
	-20	-7.88	-0.004548		
	-10	-11.12	-0.006418		
	0	-10.94	-0.006315		
	10	-9.94	-0.005737		
	20	-9.81	-0.005662		
	30	-8.18	-0.004722		
	40	-8.14	-0.004698		
	50	-8.65	-0.004993		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-9.98	-0.005760	Within authorized band for Band 4	Pass
	3.87	-10.96	-0.006326		
	4.45	-6.41	-0.003700		
16QAM					
25	3.45	-3.43	-0.001980	Within authorized band for Band 4	Pass
	3.87	-9.21	-0.005316		
	4.45	-11.72	-0.006765		
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	-3.62	-0.004328	±2.5	Pass
	-20	-11.57	-0.013831		
	-10	-7.44	-0.008894		
	0	-3.69	-0.004411		
	10	-8.05	-0.009623		
	20	-9.76	-0.011668		
	30	-12.69	-0.015170		
	40	-9.10	-0.010879		
	50	-12.27	-0.014668		
16QAM					
3.87	-30	-4.15	-0.004961	±2.5	Pass
	-20	-7.81	-0.009337		
	-10	-6.41	-0.007663		
	0	-8.44	-0.010090		
	10	-8.40	-0.010042		
	20	-12.27	-0.014668		
	30	-9.13	-0.010915		
	40	-8.13	-0.009719		
	50	-10.63	-0.012708		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-9.74	-0.011644	±2.5	Pass
	3.87	-9.76	-0.011668		
	4.45	-8.83	-0.010556		
16QAM					
25	3.45	-8.23	-0.009839	±2.5	Pass
	3.87	-12.32	-0.014728		
	4.45	-5.31	-0.006348		
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	-13.56	-0.005349	Within authorized band for Band 7	Pass
	-20	-8.45	-0.003333		
	-10	-13.42	-0.005294		
	0	-9.50	-0.003748		
	10	-12.13	-0.004785		
	20	-6.77	-0.002671		
	30	-10.96	-0.004323		
	40	-12.50	-0.004931		
	50	-8.40	-0.003314		
16QAM					
3.87	-30	-7.24	-0.002856	Within authorized band for Band 7	Pass
	-20	2.70	0.001065		
	-10	-8.34	-0.003290		
	0	-11.01	-0.004343		
	10	-10.00	-0.003945		
	20	-2.95	-0.001164		
	30	-10.21	-0.004028		
	40	-10.81	-0.004264		
	50	-7.07	-0.002789		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	4.73	0.001866	Within authorized band for Band 7	Pass
	3.87	-9.41	-0.003712		
	4.45	-9.06	-0.003574		
16QAM					
25	3.45	-4.99	-0.001968	Within authorized band for Band 7	Pass
	3.87	-8.50	-0.003353		
	4.45	-6.27	-0.002473		
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	-13.22	-0.005094	Within authorized band for Band 41	Pass
	-20	-7.47	-0.002879		
	-10	-11.59	-0.004466		
	0	-11.34	-0.004370		
	10	-8.18	-0.003152		
	20	-11.99	-0.004620		
	30	-14.20	-0.005472		
	40	-8.93	-0.003441		
	50	-11.56	-0.004455		
16QAM					
3.87	-30	-10.57	-0.004073	Within authorized band for Band 41	Pass
	-20	-14.83	-0.005715		
	-10	-7.07	-0.002724		
	0	-15.61	-0.006015		
	10	-14.29	-0.005507		
	20	-9.61	-0.003703		
	30	-9.94	-0.003830		
	40	-13.95	-0.005376		
	50	-9.53	-0.003672		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-12.16	-0.004686	Within authorized band for Band 41	Pass
	3.87	-12.12	-0.004671		
	4.45	-7.64	-0.002944		
16QAM					
25	3.45	-11.47	-0.004420	Within authorized band for Band41	Pass
	3.87	-14.55	-0.005607		
	4.45	-8.07	-0.003110		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

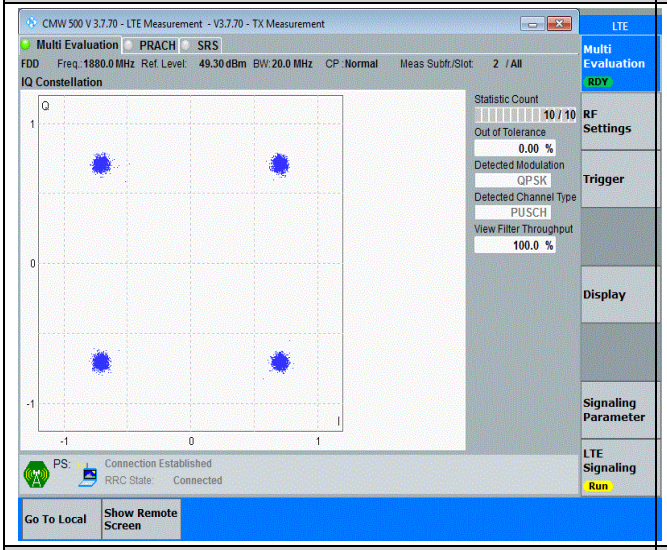
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	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
Band41	20MHz	QPSK	40640	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40640	100RB#0	PASS	PASS

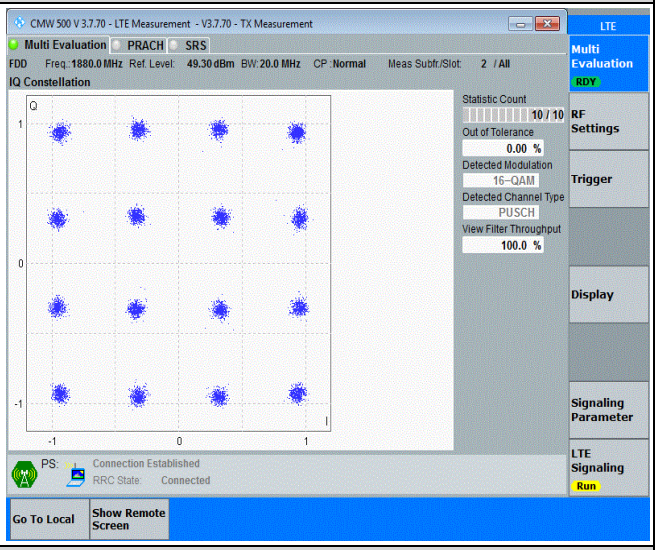
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

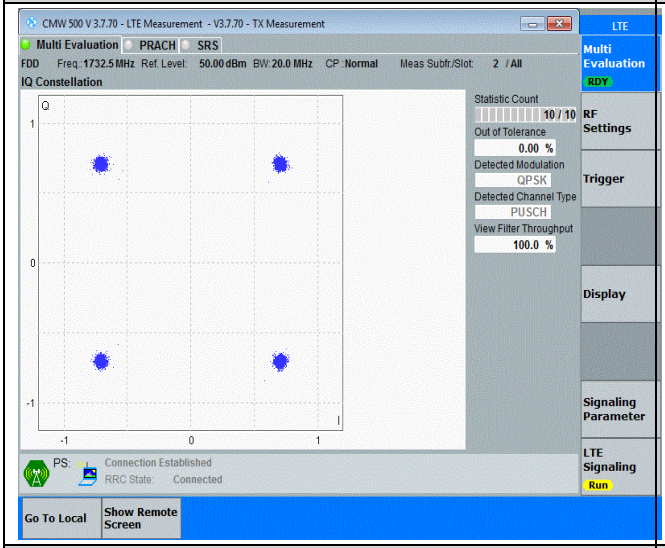
Band2-20MHz-QPSK-18900-100RB#0



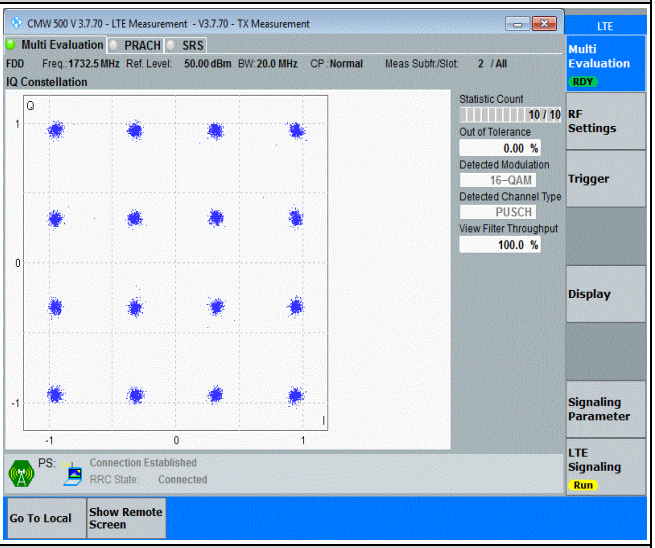
Band2-20MHz-16QAM-18900-100RB#0



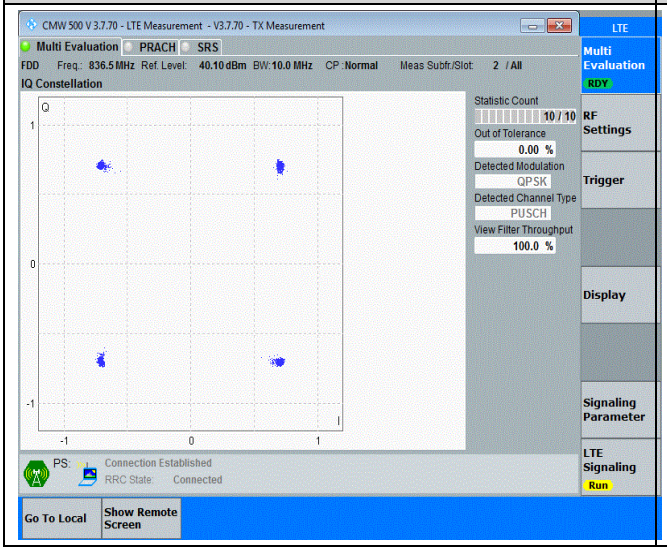
Band4-20MHz-QPSK-20175-100RB#0



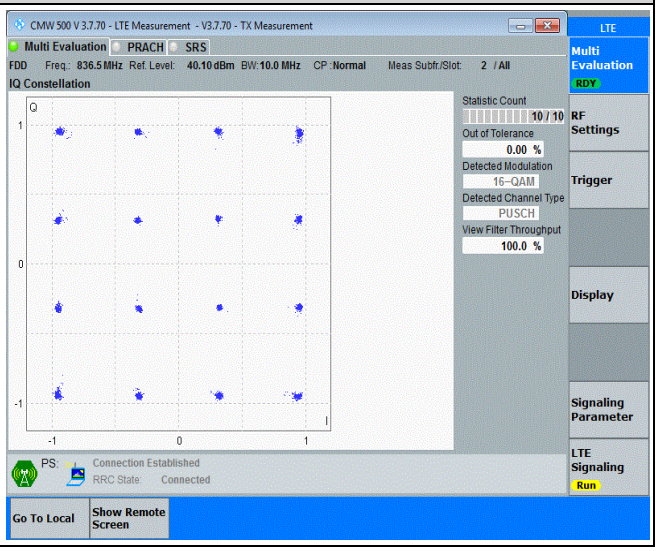
Band4-20MHz-16QAM-20175-100RB#0



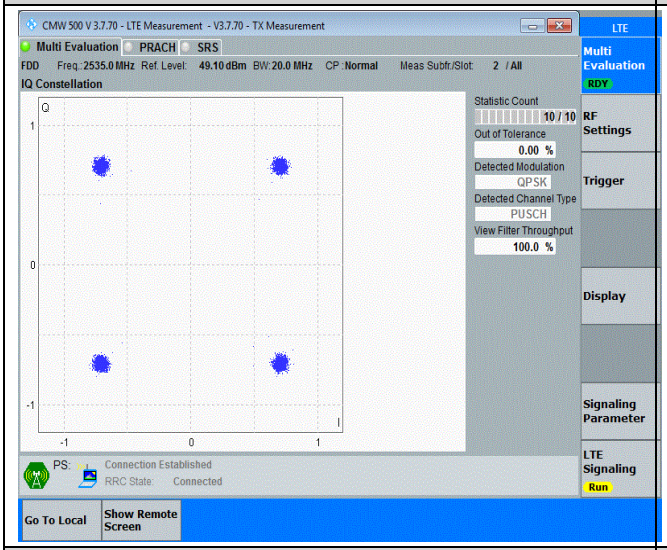
Band5-10MHz-QPSK-20525-50RB#0



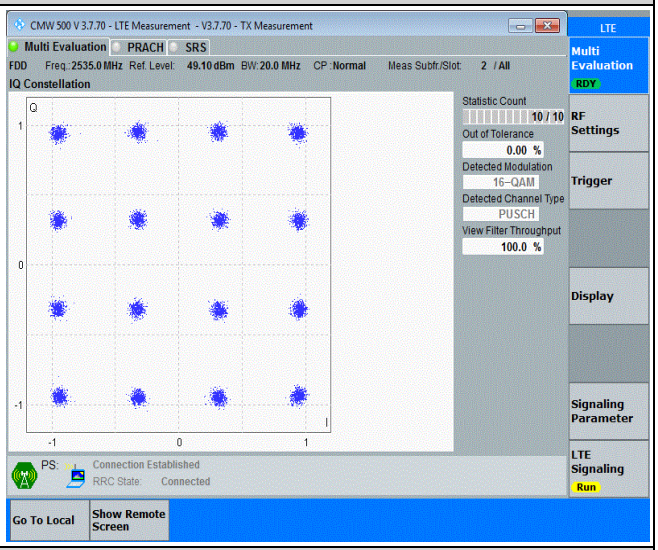
Band5-10MHz-16QAM-20525-50RB#0



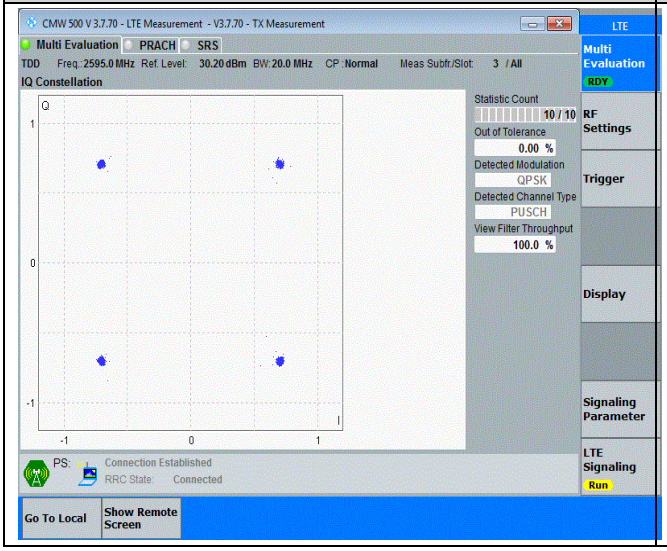
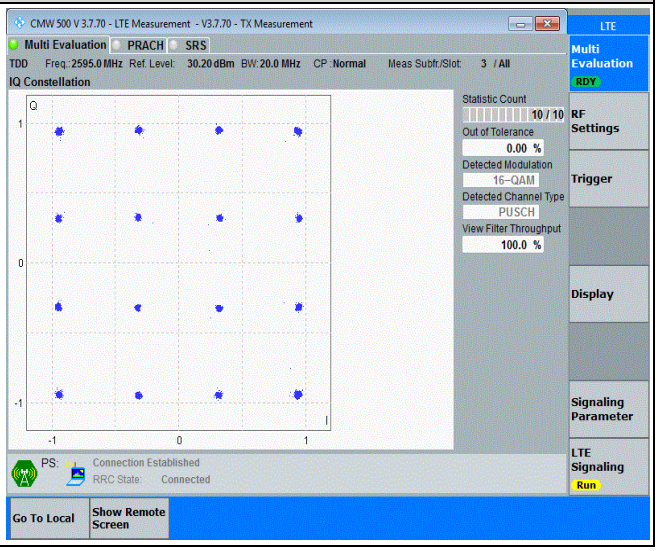
Band7-20MHz-QPSK-21100-100RB#0



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



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



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