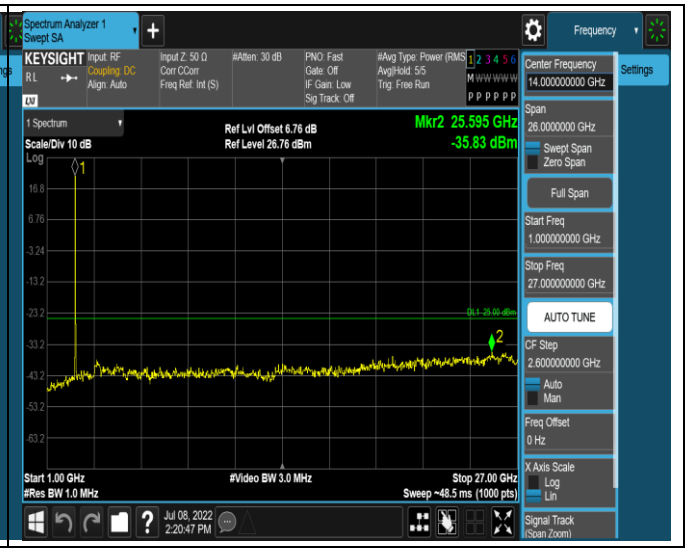
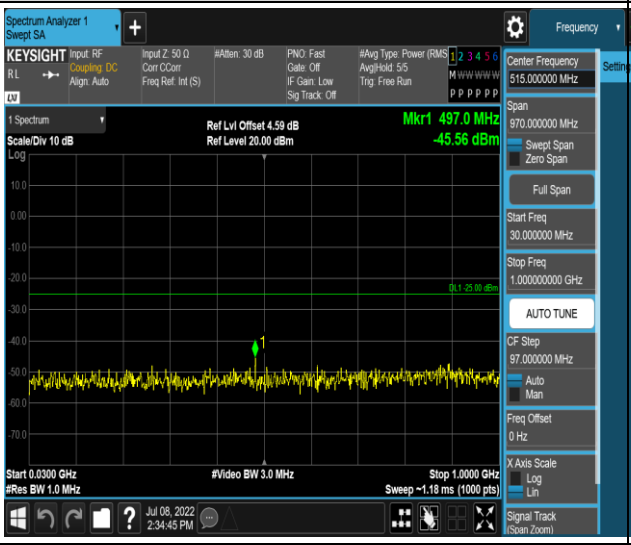
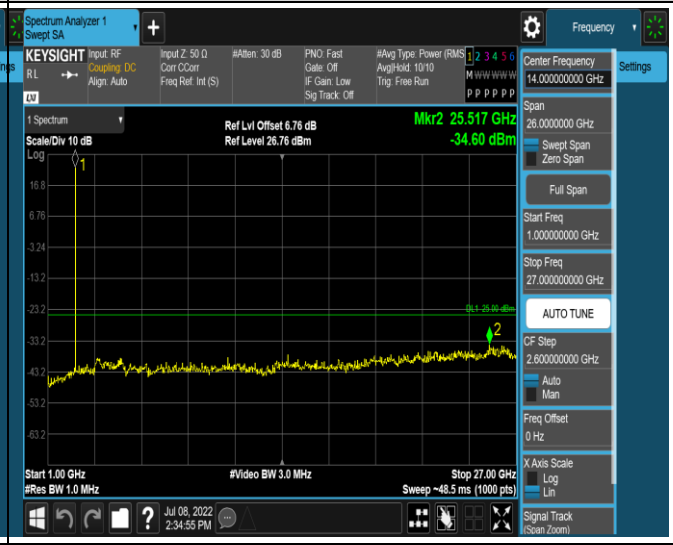
Band41-5MHz-QPSK-40065-1RB#0-Range1:30~1000MHz



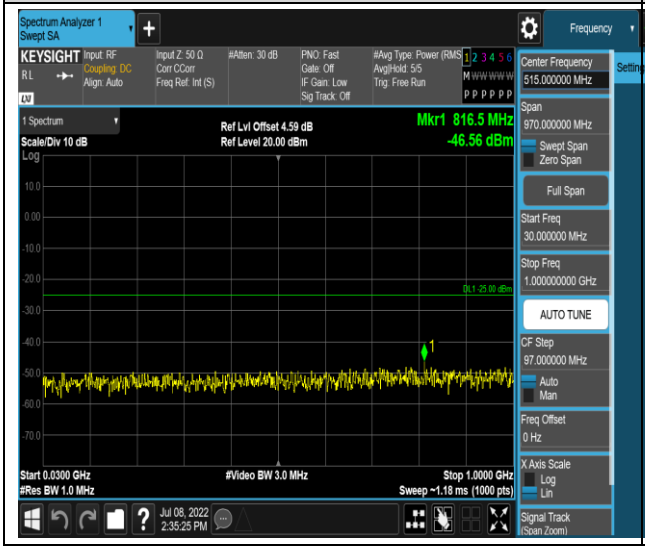
Band41-5MHz-QPSK-40065-1RB#0-Range2:1000~27000MHz

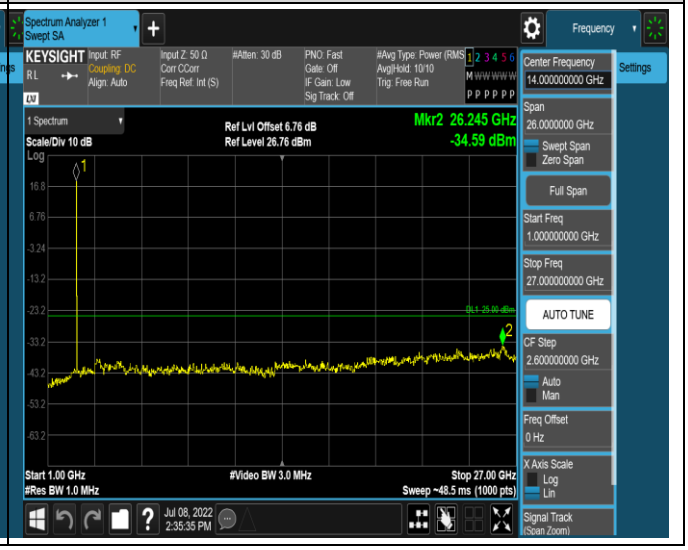


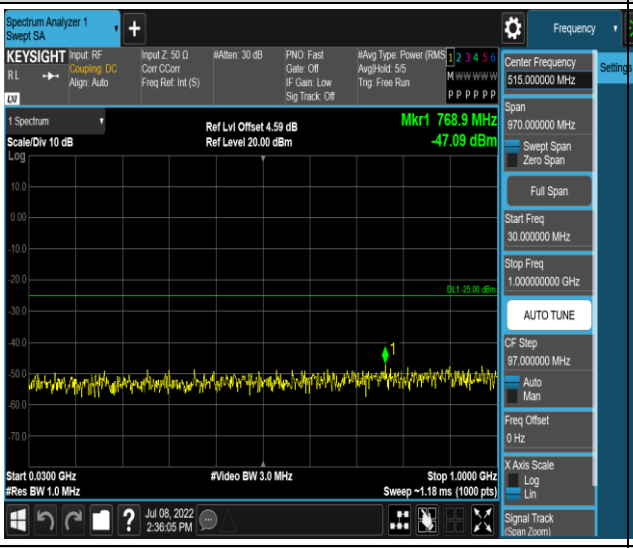
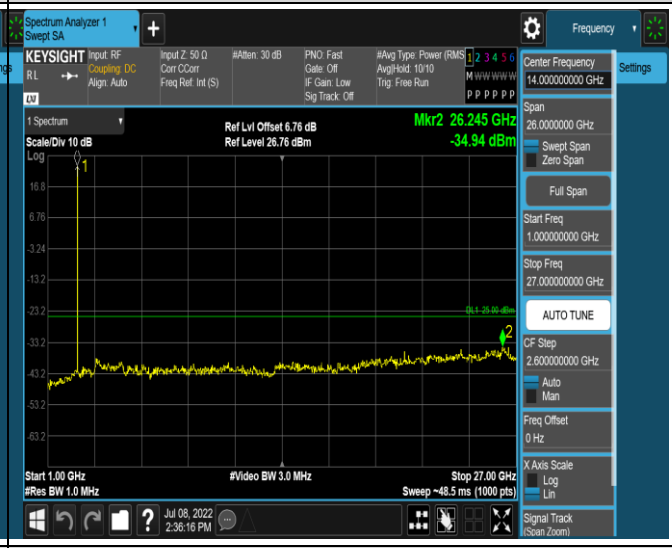
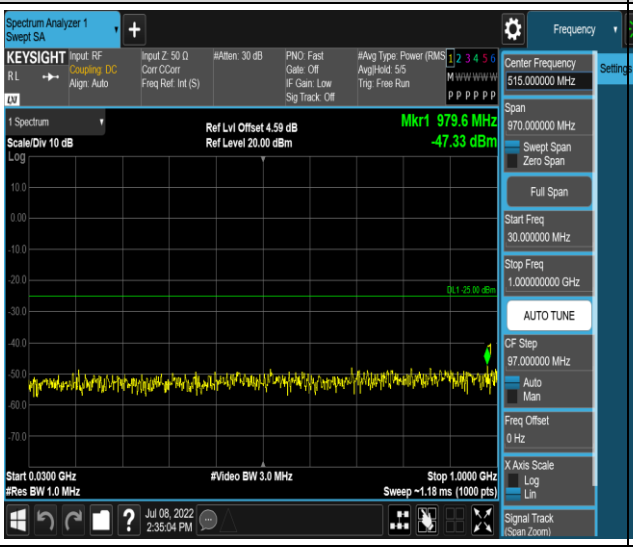
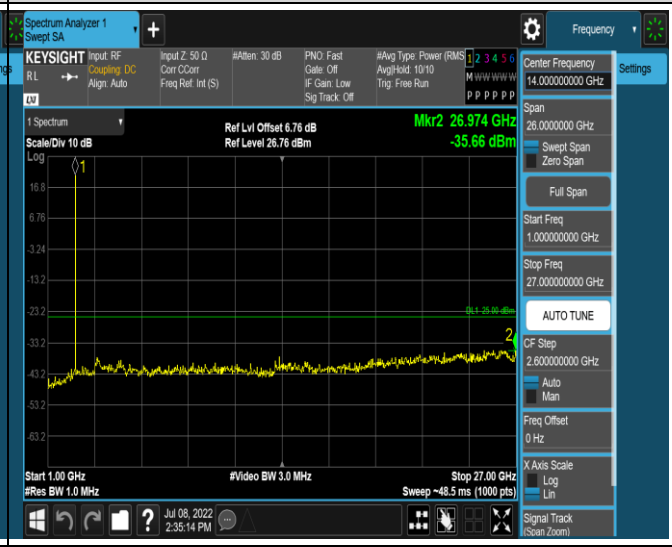
Band41-5MHz-QPSK-40640-1RB#0-Range1:30~1000MHz



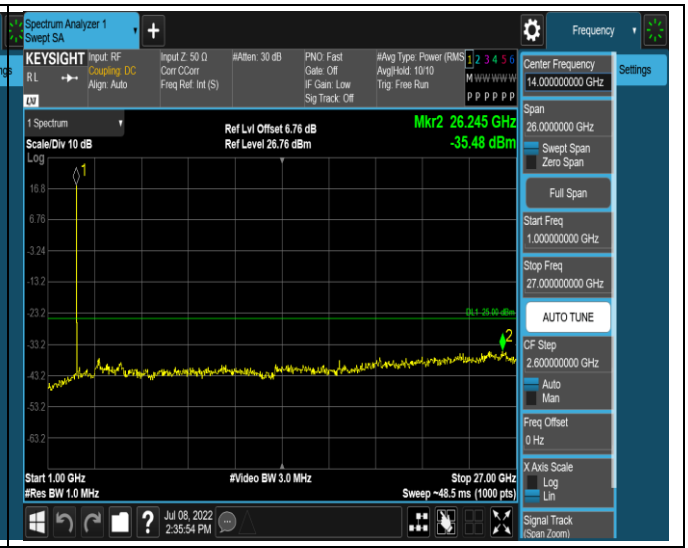
Band41-5MHz-QPSK-40640-1RB#0-Range2:1000~27000MHz





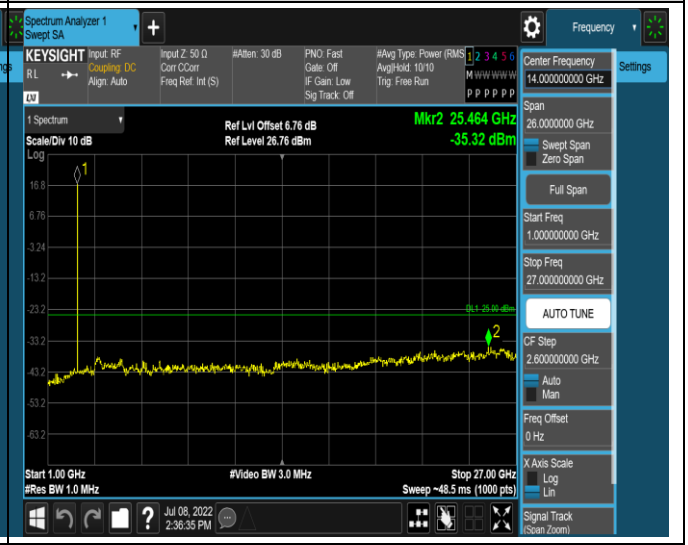
Band41-5MHz-QPSK-41215-1RB#0-Range1:30~1000MHz	Band41-5MHz-QPSK-41215-1RB#0-Range2:1000~27000MHz
	
Band41-5MHz-16QAM-40065-1RB#0-Range1:30~1000MHz	Band41-5MHz-16QAM-40065-1RB#0-Range2:1000~27000MHz
	
Band41-5MHz-16QAM-40640-1RB#0-Range1:30~1000MHz	Band41-5MHz-16QAM-40640-1RB#0-Range2:1000~27000MHz

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

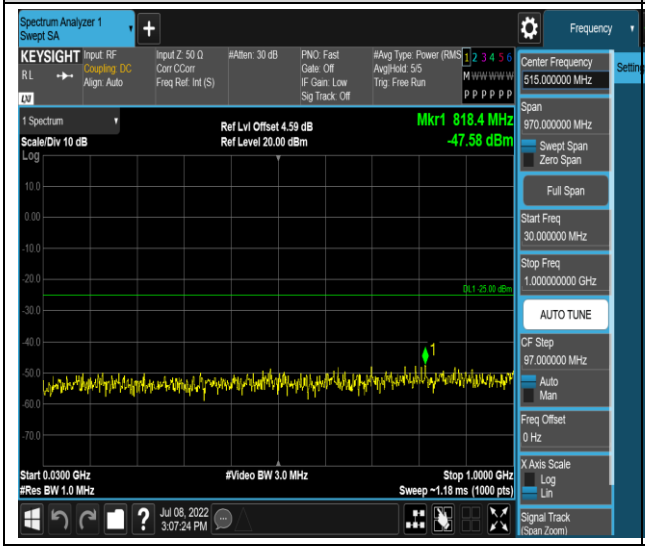


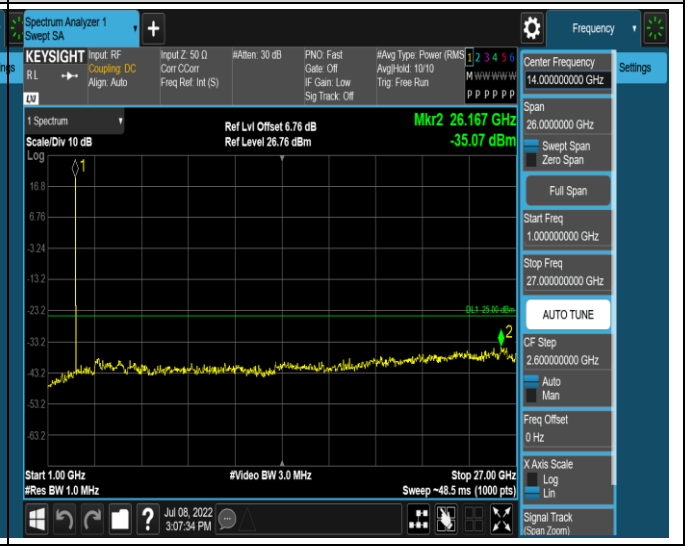
Band41-5MHz-16QAM-41215-1RB#0-Range2:1000~27000MHz

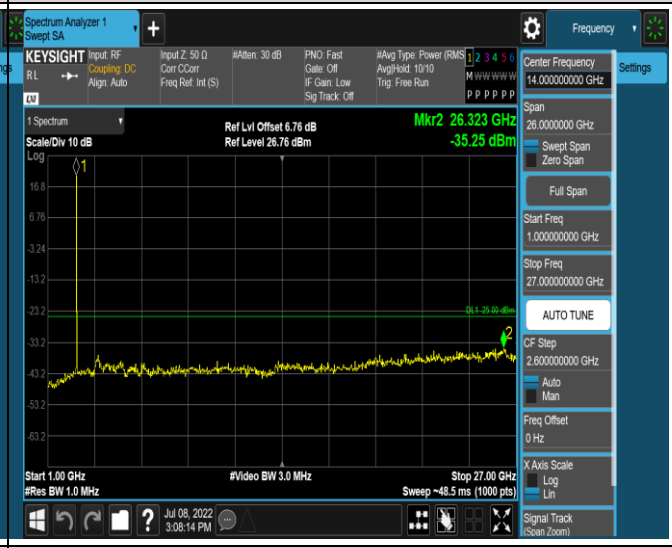
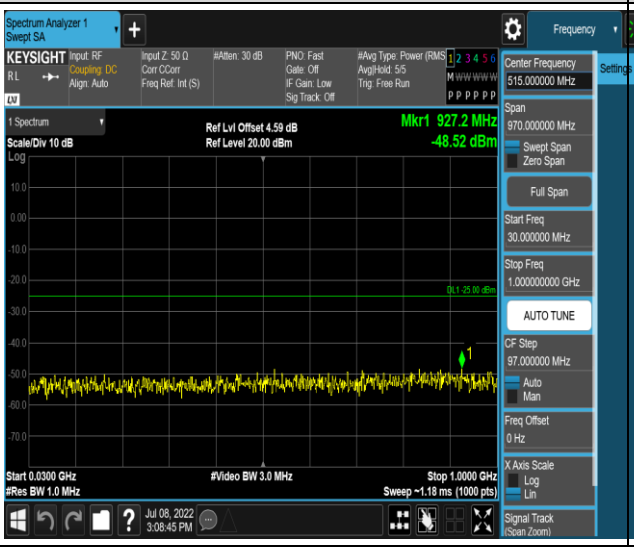
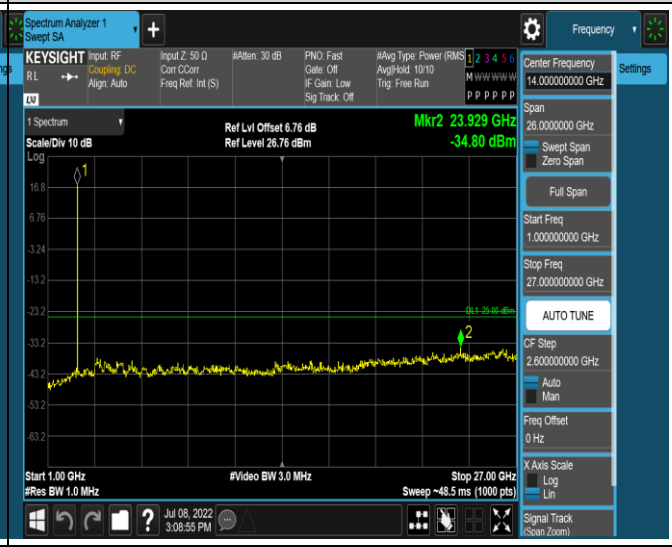
Band41-20MHz-QPSK-40140-1RB#0-Range1:30~1000MHz



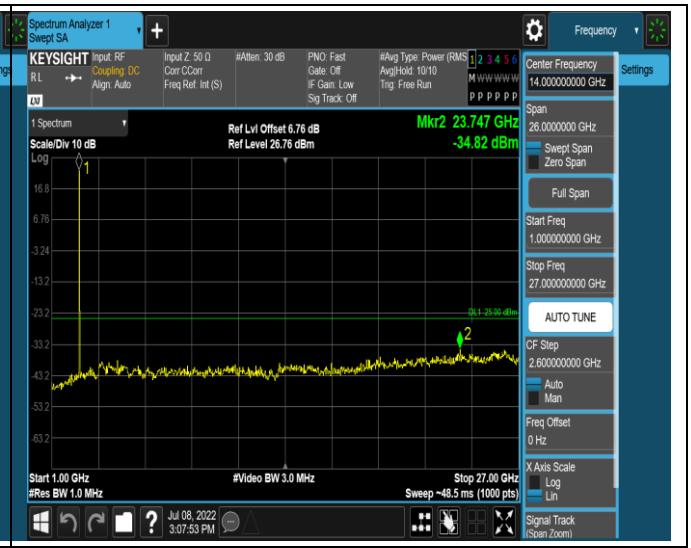
Band41-20MHz-QPSK-40140-1RB#0-Range2:1000~27000MHz



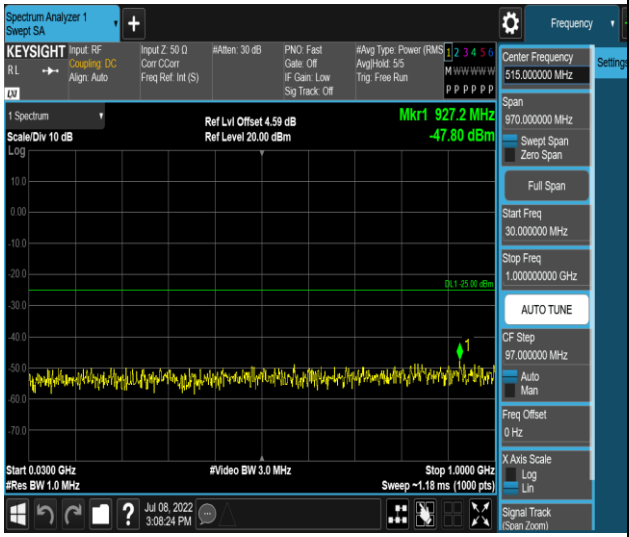


Band41-20MHz-QPSK-40640-1RB#0-Range1:30~1000MHz	Band41-20MHz-QPSK-40640-1RB#0-Range2:1000~27000MHz
	
Band41-20MHz-QPSK-41140-1RB#0-Range1:30~1000MHz	Band41-20MHz-QPSK-41140-1RB#0-Range2:1000~27000MHz
	
Band41-20MHz-16QAM-40140-1RB#0-Range1:30~1000MHz	Band41-20MHz-16QAM-40140-1RB#0-Range2:1000~27000MHz

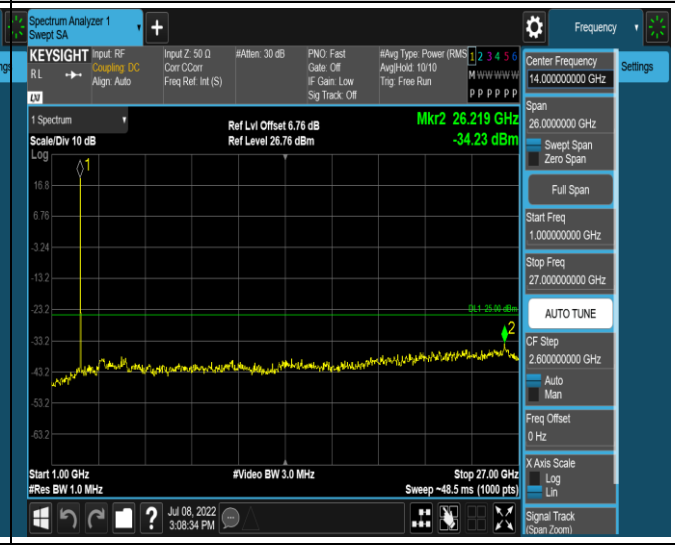
Band41-20MHz-16QAM-40640-1RB#0-Range1:30 ~1000MHz



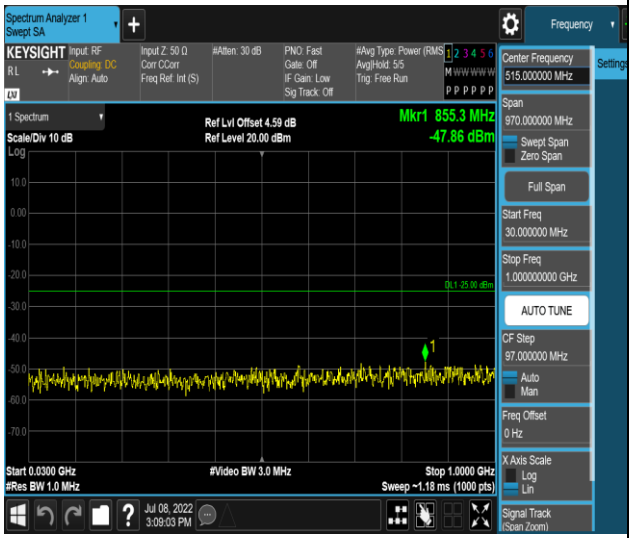
Band41-20MHz-16QAM-40640-1RB#0-Range2:1000~27000MHz

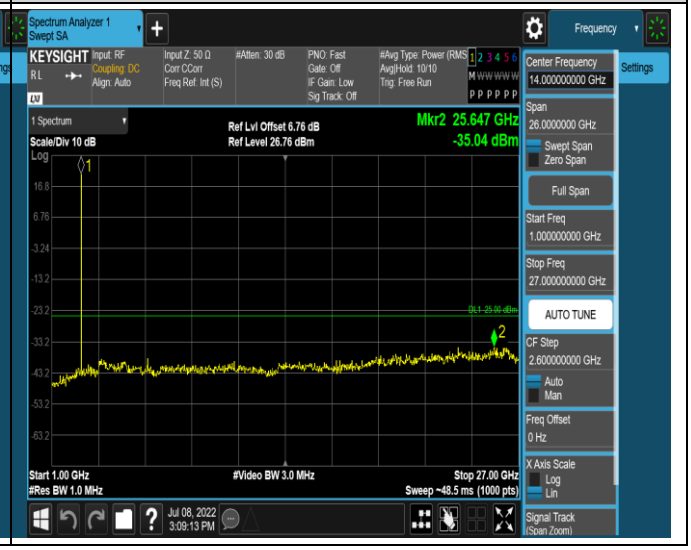


Band41-20MHz-16QAM-41140-1RB#0-Range1:30 ~1000MHz



Band41-20MHz-16QAM-41140-1RB#0-Range2:1000~27000MHz





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	-10.41	-0.005537	Within authorized band for Band 2	Pass
	-20	-10.07	-0.005356		
	-10	-16.28	-0.008660		
	0	7.78	0.004138		
	10	-15.09	-0.008027		
	20	-3.05	-0.001622		
	30	-18.27	-0.009718		
	40	-16.65	-0.008856		
	50	4.98	0.002649		
16QAM					
3.87	-30	-13.85	-0.007367	Within authorized band for Band 2	Pass
	-20	-12.66	-0.006734		
	-10	-10.80	-0.005745		
	0	-17.91	-0.009527		
	10	-9.16	-0.004872		
	20	-16.91	-0.008995		
	30	-8.91	-0.004739		
	40	-17.71	-0.009420		
	50	-12.56	-0.006681		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-17.24	-0.009170	Within authorized band for Band 2	Pass
	3.87	-8.70	-0.004628		
	4.45	-15.72	-0.008362		
16QAM					
25	3.50	-10.14	-0.005394	Within authorized band for Band 2	Pass
	3.87	-14.05	-0.007473		
	4.45	-18.10	-0.009628		
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	-13.00	-0.007504	Within authorized band for Band 4	Pass
	-20	-6.81	-0.003931		
	-10	-9.58	-0.005530		
	0	-5.48	-0.003163		
	10	-13.10	-0.007561		
	20	4.03	0.002326		
	30	-13.33	-0.007694		
	40	-9.53	-0.005501		
	50	-10.17	-0.005870		
16QAM					
3.87	-30	2.07	0.001195	Within authorized band for Band 4	Pass
	-20	-9.64	-0.005564		
	-10	-13.88	-0.008012		
	0	-15.44	-0.008912		
	10	3.85	0.002222		
	20	-13.59	-0.007844		
	30	-4.31	-0.002488		
	40	-6.15	-0.003550		
	50	-17.54	-0.010124		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-11.82	-0.006823	Within authorized band for Band 4	Pass
	3.87	12.69	0.007325		
	4.45	-12.96	-0.007481		
16QAM					
25	3.50	-11.72	-0.006765	Within authorized band for Band 4	Pass
	3.87	-11.80	-0.006811		
	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	-7.94	-0.009492	±2.5	Pass
	-20	-7.04	-0.008416		
	-10	-10.83	-0.012947		
	0	-12.69	-0.015170		
	10	-10.90	-0.013030		
	20	-6.87	-0.008213		
	30	-10.74	-0.012839		
	40	-11.69	-0.013975		
	50	-9.17	-0.010962		
16QAM					
3.87	-30	-7.41	-0.008858	±2.5	Pass
	-20	-10.20	-0.012194		
	-10	-9.36	-0.011189		
	0	-12.96	-0.015493		
	10	-10.01	-0.011967		
	20	-6.18	-0.007388		
	30	-3.26	-0.003897		
	40	-6.84	-0.008177		
	50	-8.84	-0.010568		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-8.08	-0.009659	±2.5	Pass
	3.87	-11.49	-0.013736		
	4.45	-10.67	-0.012756		
16QAM					
25	3.50	-6.61	-0.007902	±2.5	Pass
	3.87	-11.23	-0.013425		
	4.45	-11.97	-0.014310		
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	-10.61	-0.004185	Within authorized band for Band 7	Pass
	-20	-15.34	-0.006051		
	-10	-19.27	-0.007602		
	0	-11.77	-0.004643		
	10	-14.33	-0.005653		
	20	-17.78	-0.007014		
	30	-12.23	-0.004824		
	40	-15.16	-0.005980		
	50	-8.61	-0.003396		
16QAM					
3.87	-30	-15.61	-0.006158	Within authorized band for Band 7	Pass
	-20	-16.11	-0.006355		
	-10	6.11	0.002410		
	0	-4.86	-0.001917		
	10	13.89	0.005479		
	20	-15.52	-0.006122		
	30	-8.21	-0.003239		
	40	-13.45	-0.005306		
	50	-13.85	-0.005464		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	10.79	0.004256	Within authorized band for Band 7	Pass
	3.87	-19.11	-0.007538		
	4.45	-17.05	-0.006726		
16QAM					
25	3.50	-12.65	-0.004990	Within authorized band for Band 7	Pass
	3.87	-12.96	-0.005112		
	4.45	-11.33	-0.004469		
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	-16.61	-0.006401	Within authorized band for Band 41	Pass
	-20	-15.09	-0.005815		
	-10	-21.96	-0.008462		
	0	-10.60	-0.004085		
	10	2.96	0.001141		
	20	-14.55	-0.005607		
	30	11.16	0.004301		
	40	-12.16	-0.004686		
	50	4.36	0.001680		
16QAM					
3.87	-30	-12.32	-0.004748	Within authorized band for Band 41	Pass
	-20	-11.06	-0.004262		
	-10	3.81	0.001468		
	0	-14.05	-0.005414		
	10	-3.08	-0.001187		
	20	1.87	0.000721		
	30	-13.06	-0.005033		
	40	-3.43	-0.001322		
	50	-7.88	-0.003037		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-13.12	-0.005056	Within authorized band for Band 41	Pass
	3.87	-13.85	-0.005337		
	4.45	-12.43	-0.004790		
16QAM					
25	3.50	3.82	0.001472	Within authorized band for Band41	Pass
	3.87	-18.34	-0.007067		
	4.45	-18.75	-0.007225		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

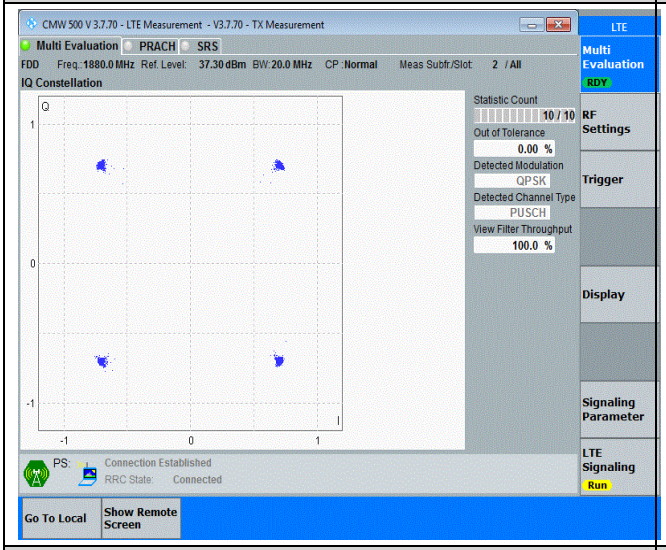
Test Result

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

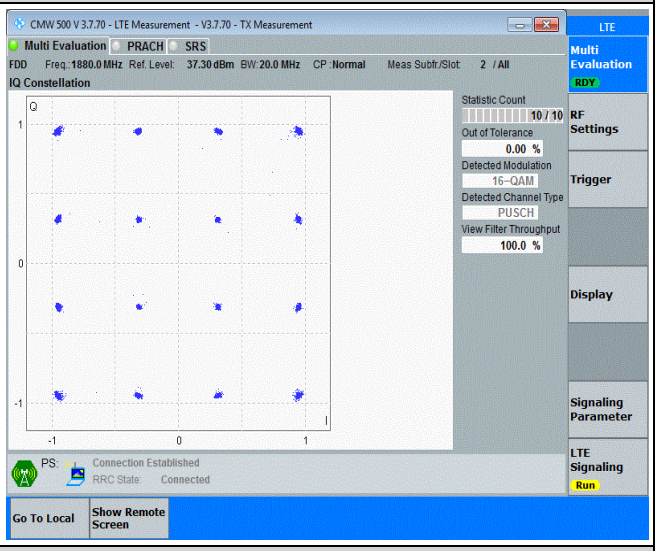
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

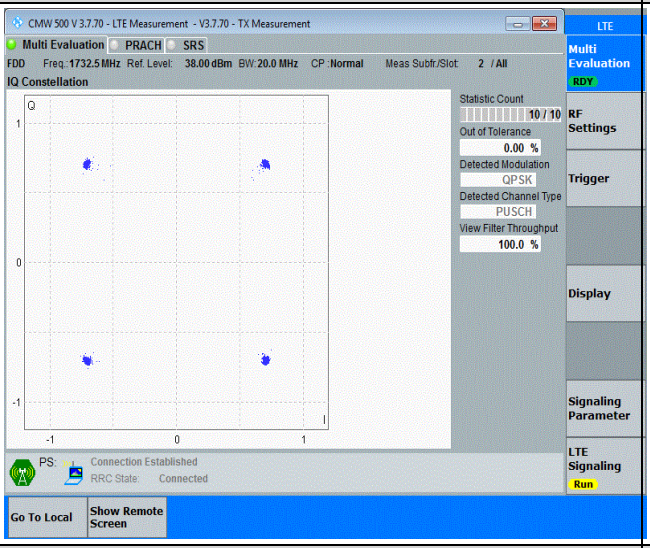
Band2-20MHz-QPSK-18900-100RB#0



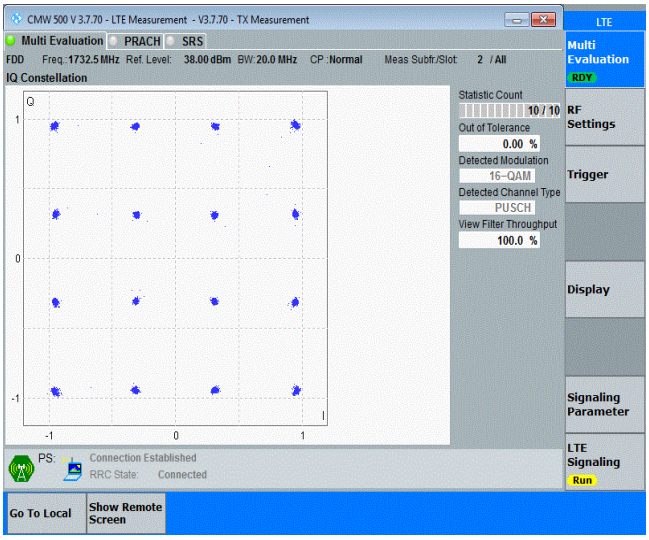
Band2-20MHz-16QAM-18900-100RB#0



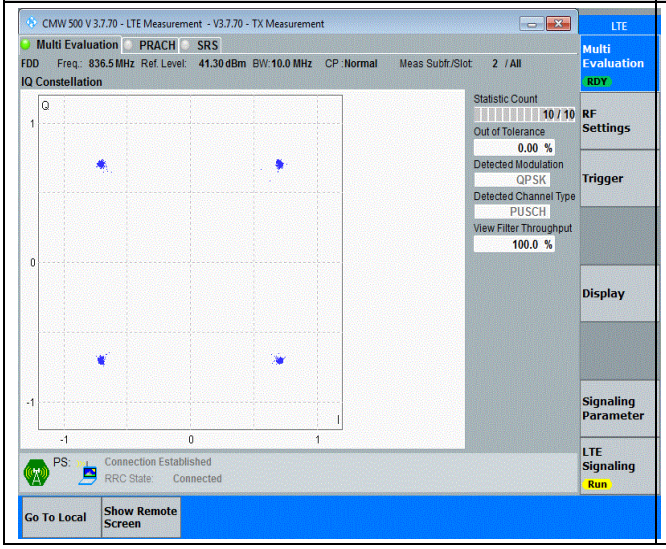
Band4-20MHz-QPSK-20175-100RB#0



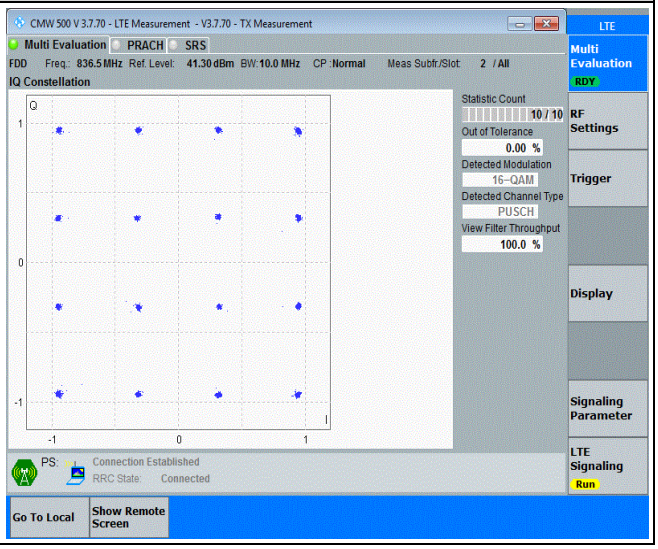
Band4-20MHz-16QAM-20175-100RB#0

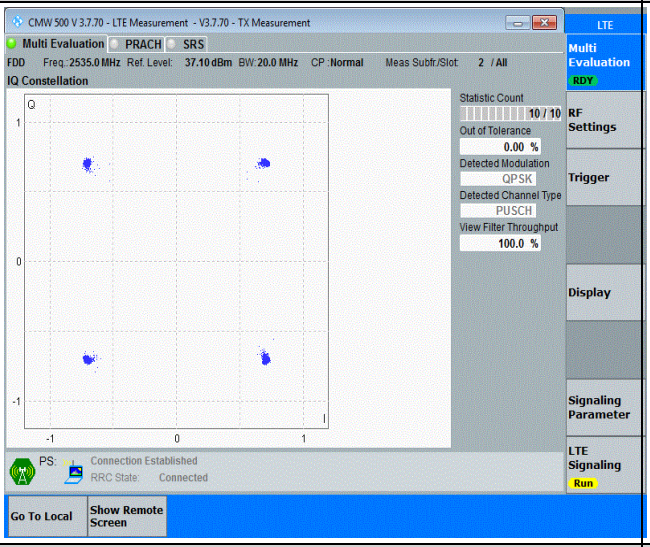
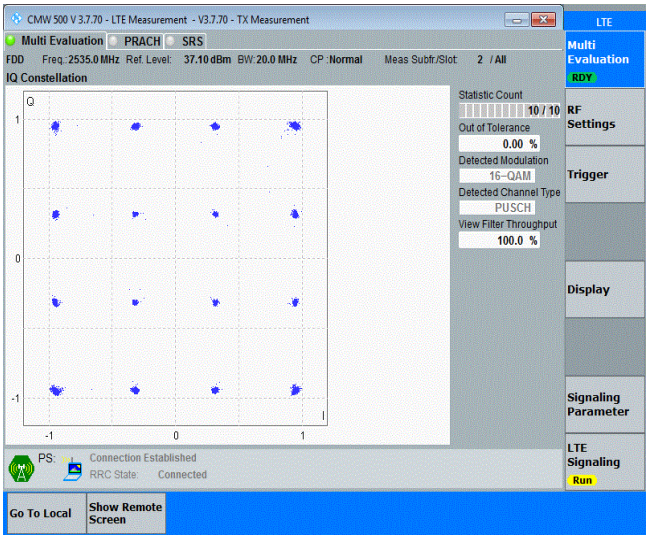
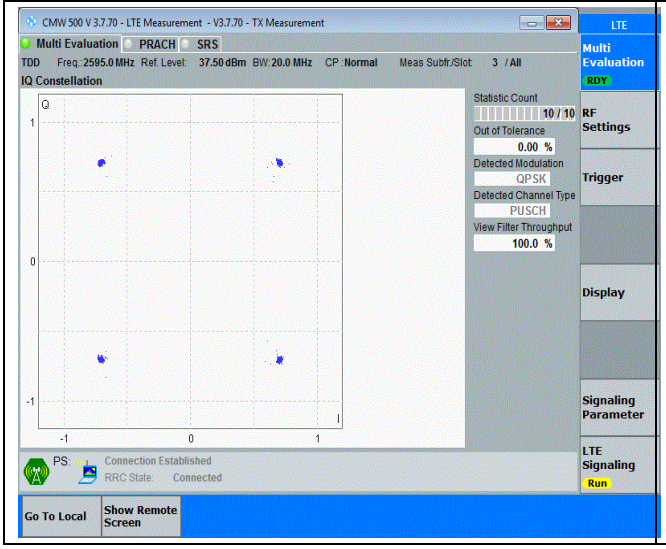
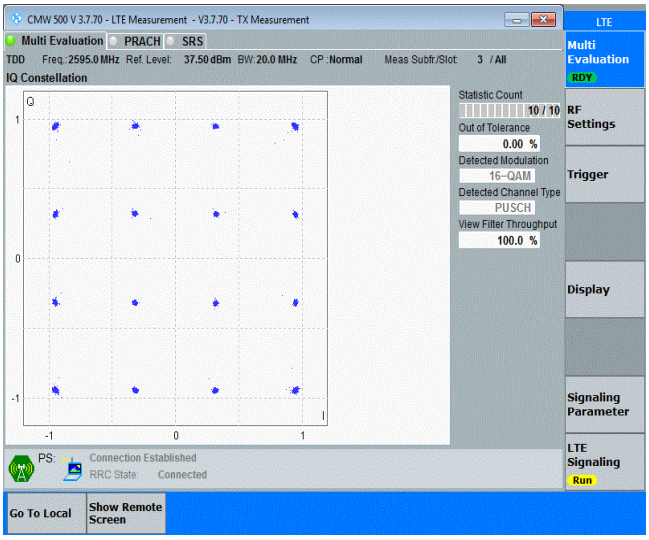


Band5-10MHz-QPSK-20525-50RB#0



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