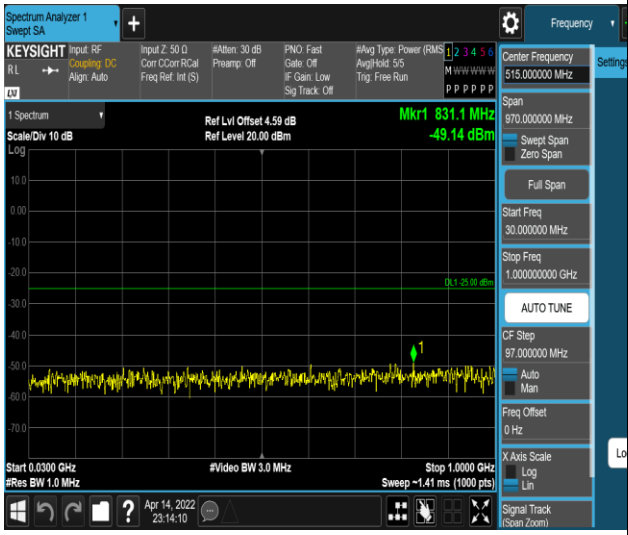
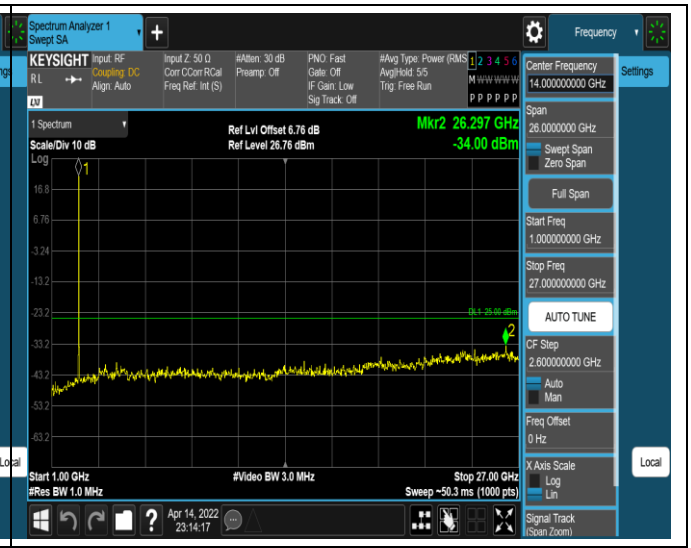
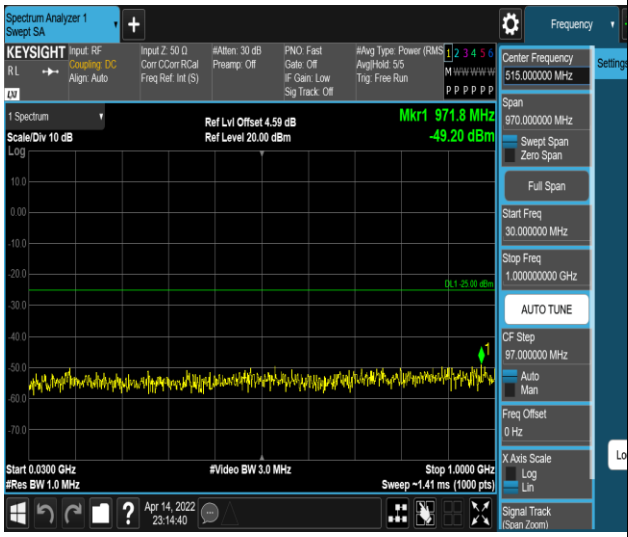


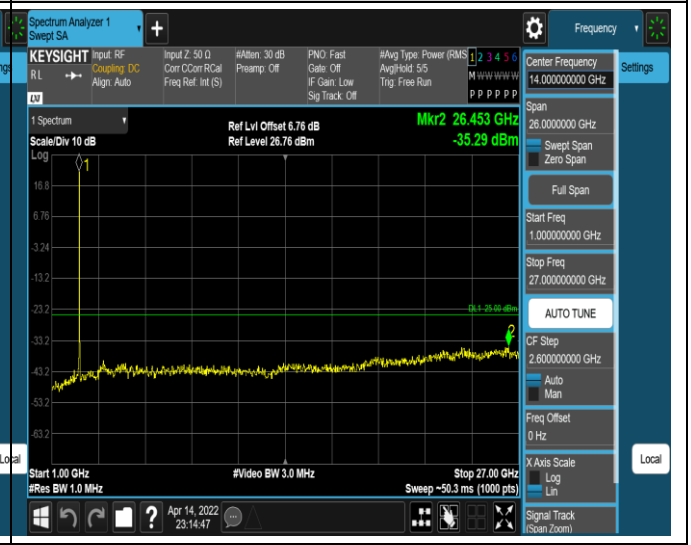
Band7-20MHz-QPSK-21100-1RB#0-Range1:30~1000MHz



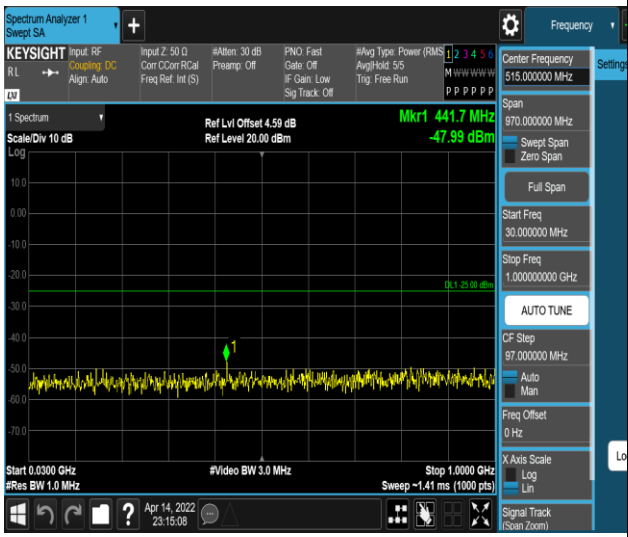
Band7-20MHz-QPSK-21100-1RB#0-Range2:1000~27000MHz



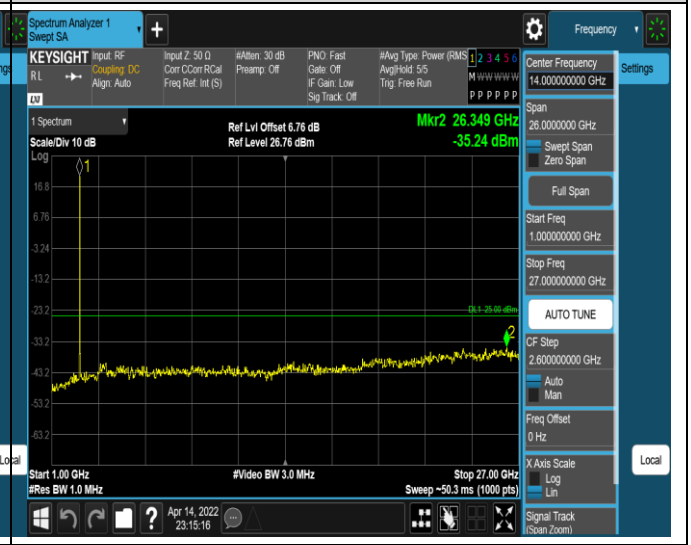
Band7-20MHz-QPSK-21350-1RB#0-Range1:30~1000MHz



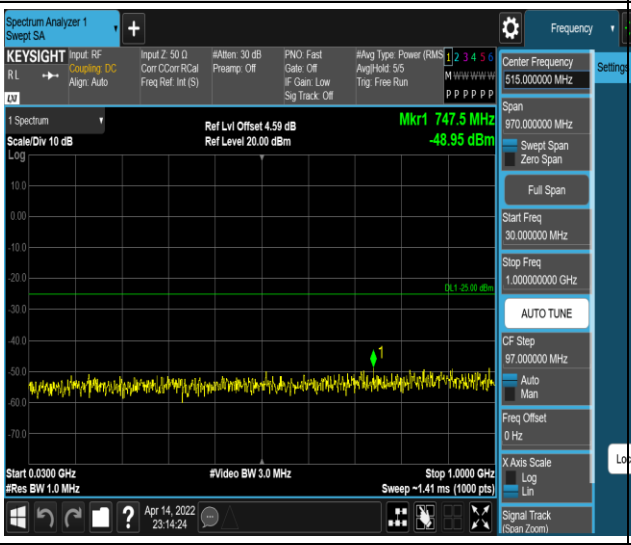
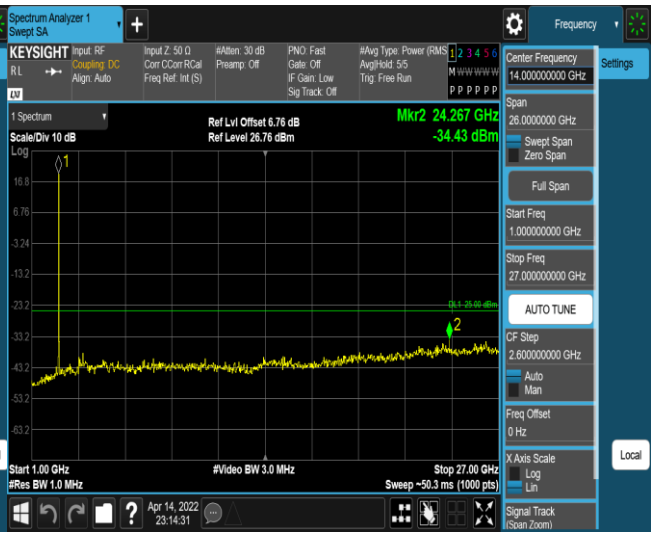
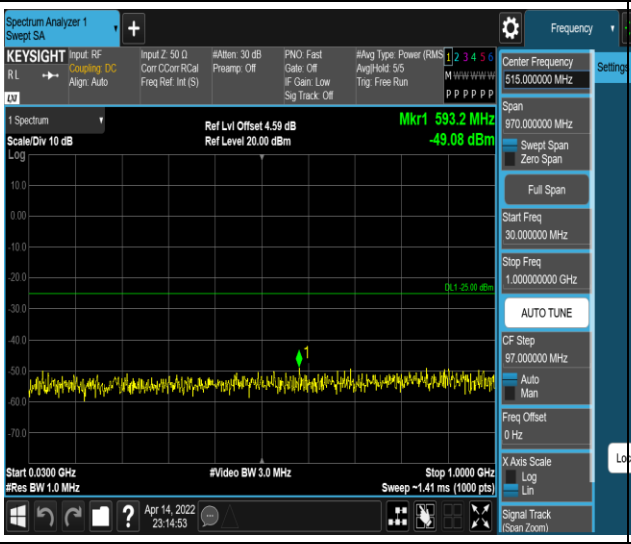
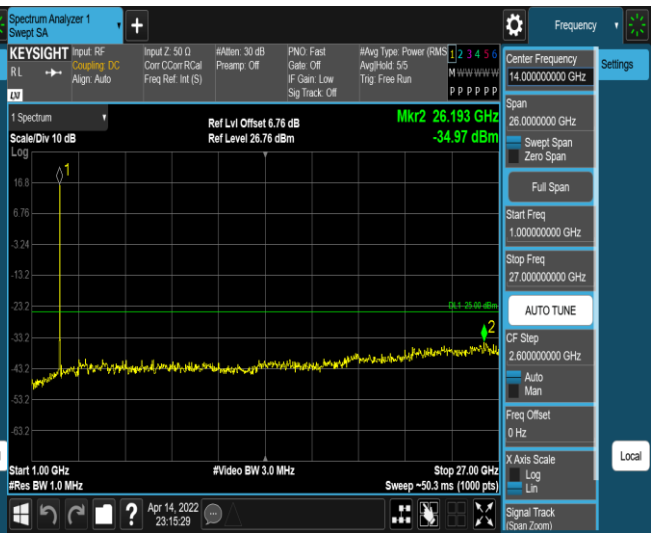
Band7-20MHz-QPSK-21350-1RB#0-Range2:1000~27000MHz

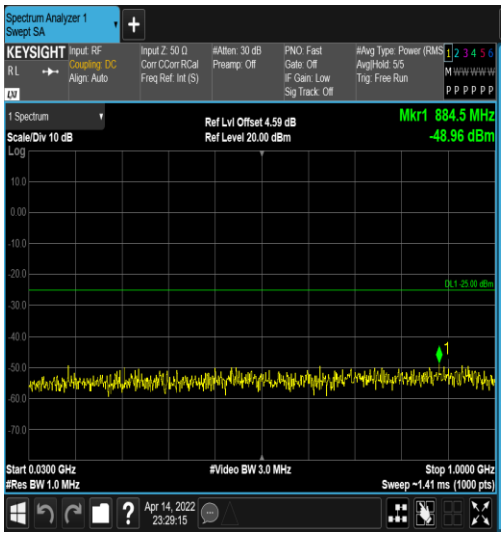
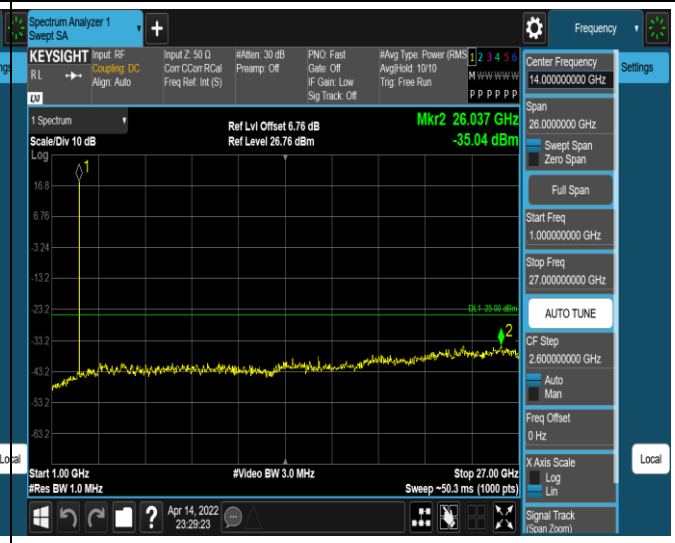
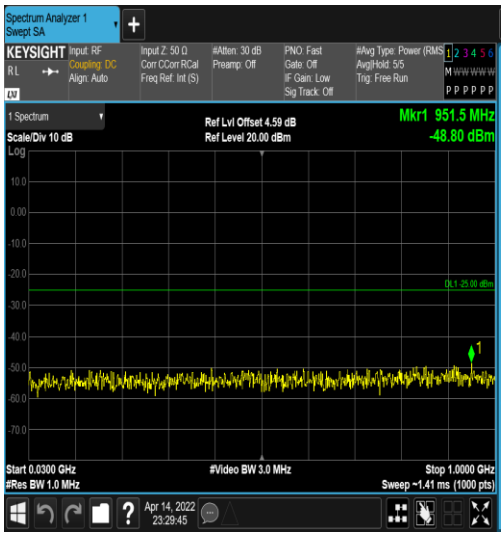
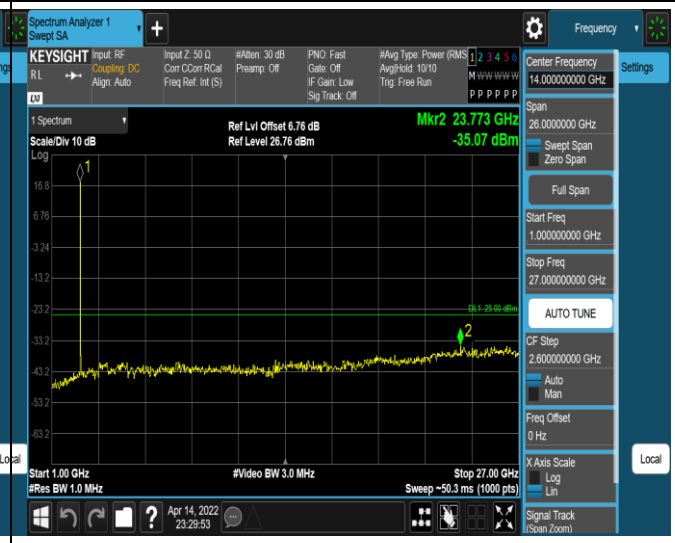


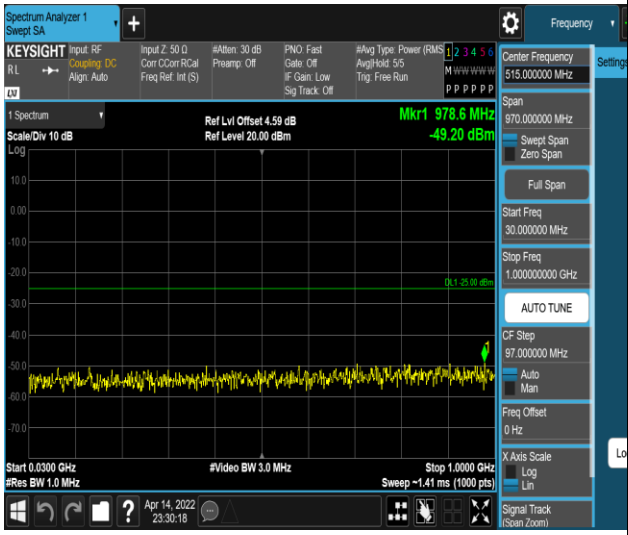
Band7-20MHz-16QAM-20850-1RB#0-Range1:30~



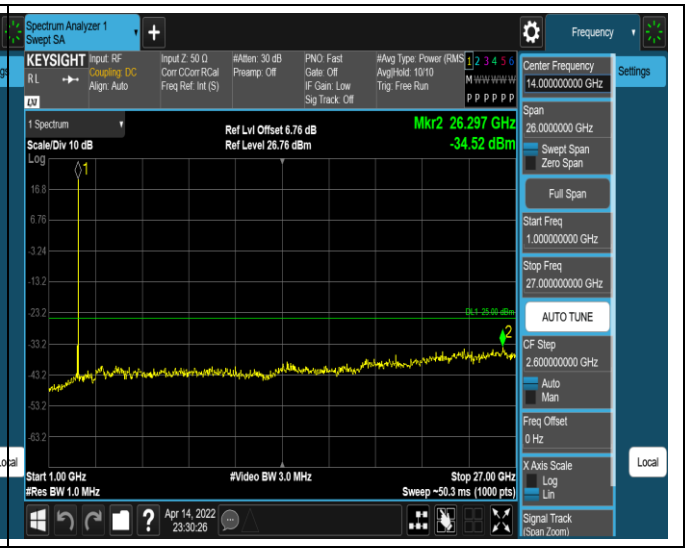
Band7-20MHz-16QAM-20850-1RB#0-Range2:1000~2

1000MHz	7000MHz
	
Band7-20MHz-16QAM-21100-1RB#0-Range1:30~1000MHz	Band7-20MHz-16QAM-21100-1RB#0-Range2:1000~27000MHz
	
Band7-20MHz-16QAM-21350-1RB#0-Range1:30~1000MHz	Band7-20MHz-16QAM-21350-1RB#0-Range2:1000~27000MHz
	

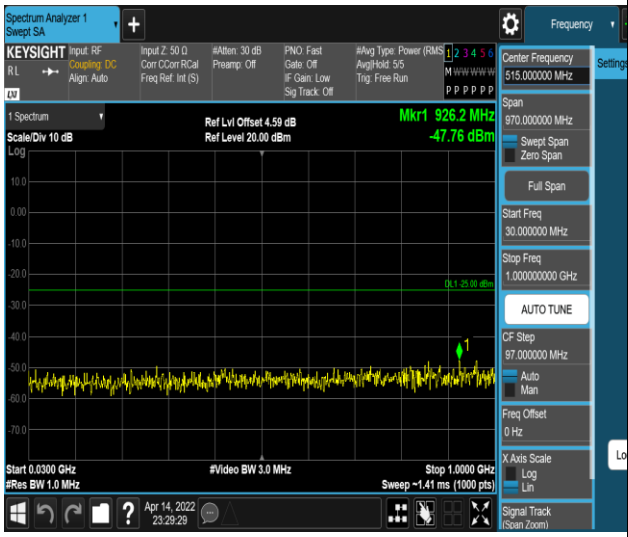
Band41-5MHz-QPSK-40065-1RB#0-Range1:30~1000MHz	Band41-5MHz-QPSK-40065-1RB#0-Range2:1000~27000MHz
	
Band41-5MHz-QPSK-40640-1RB#0-Range1:30~1000MHz	Band41-5MHz-QPSK-40640-1RB#0-Range2:1000~27000MHz
	
Band41-5MHz-QPSK-41215-1RB#0-Range1:30~1000MHz	Band41-5MHz-QPSK-41215-1RB#0-Range2:1000~27000MHz



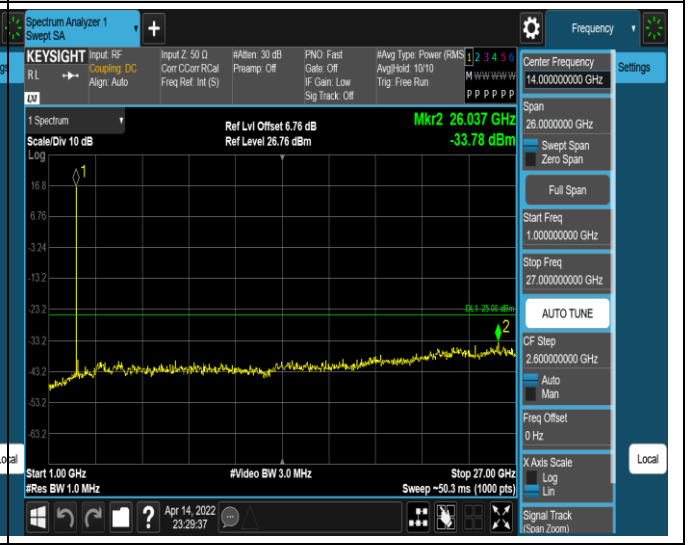
Band41-5MHz-16QAM-40065-1RB#0-Range1:30~1000MHz



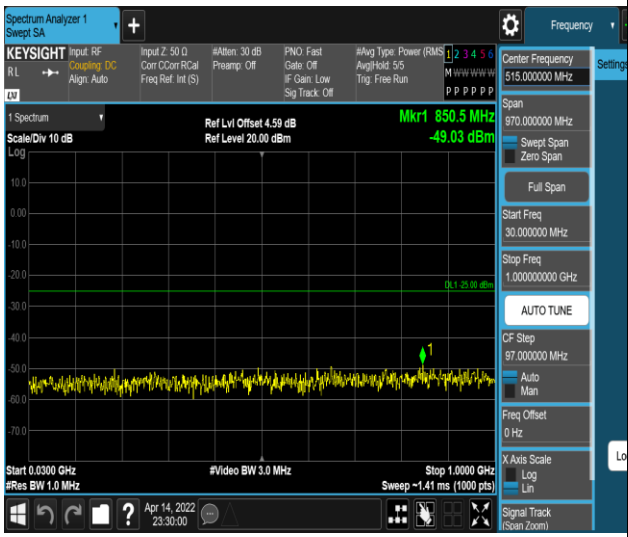
Band41-5MHz-16QAM-40065-1RB#0-Range2:1000~27000MHz



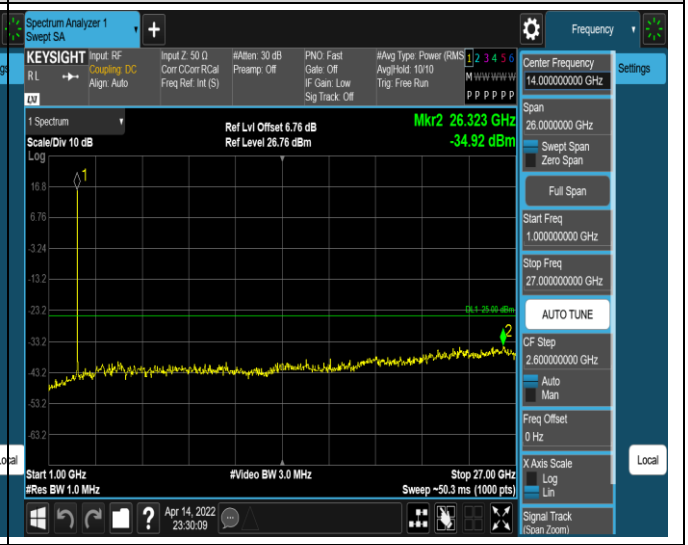
Band41-5MHz-16QAM-40640-1RB#0-Range1:30~1000MHz



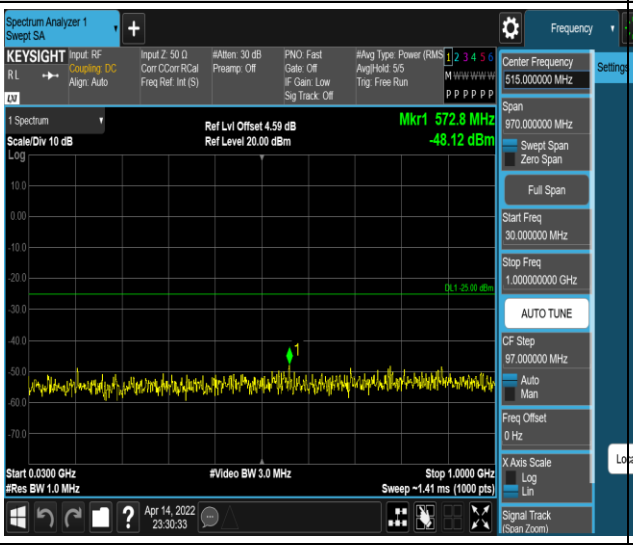
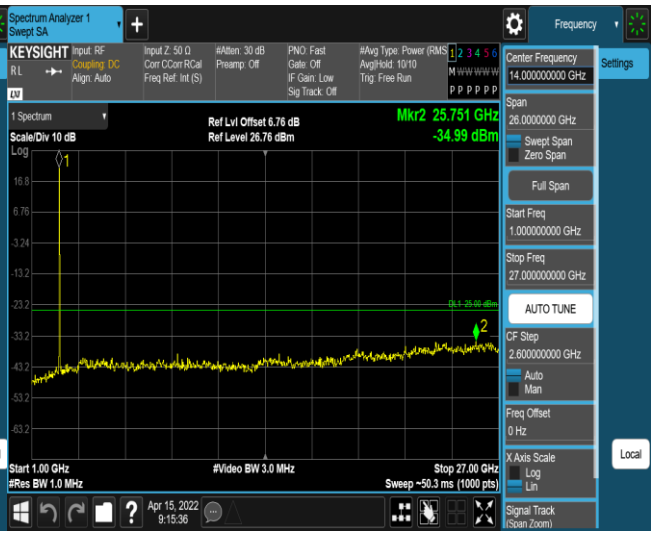
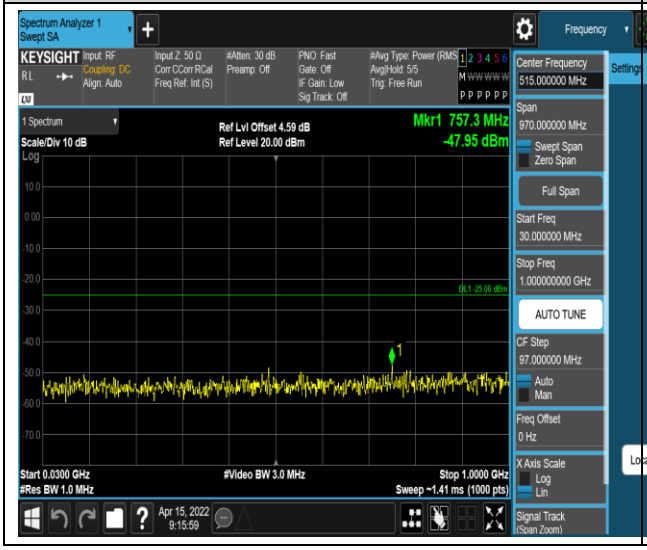
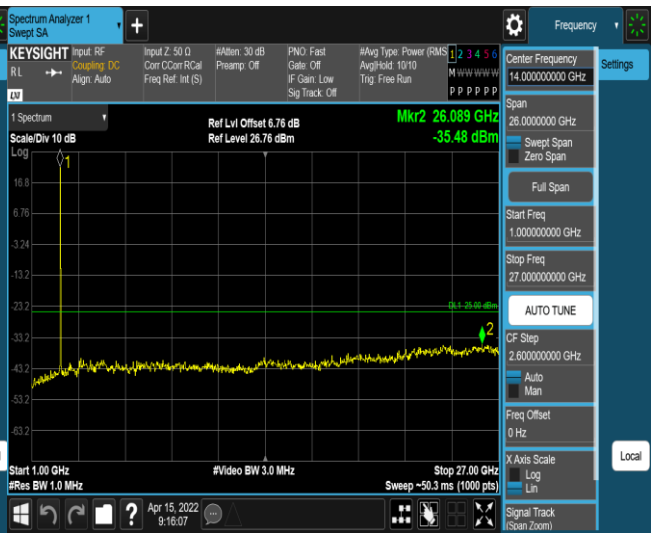
Band41-5MHz-16QAM-40640-1RB#0-Range2:1000~27000MHz

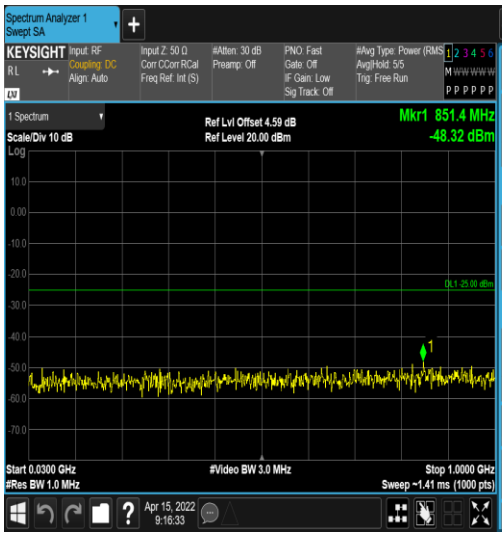
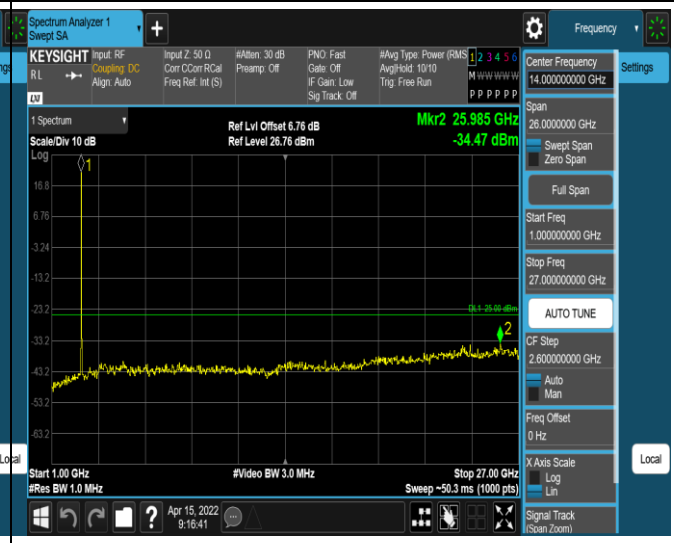
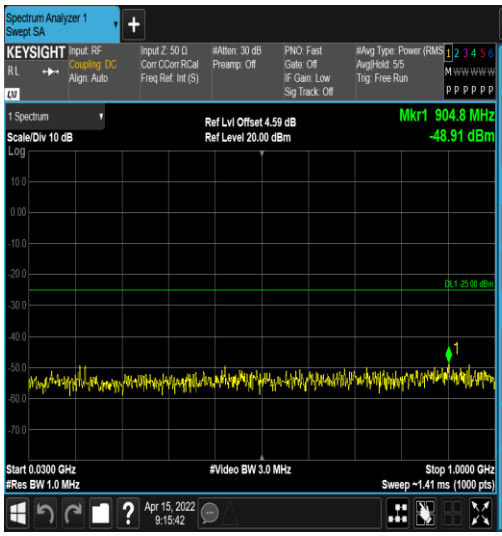
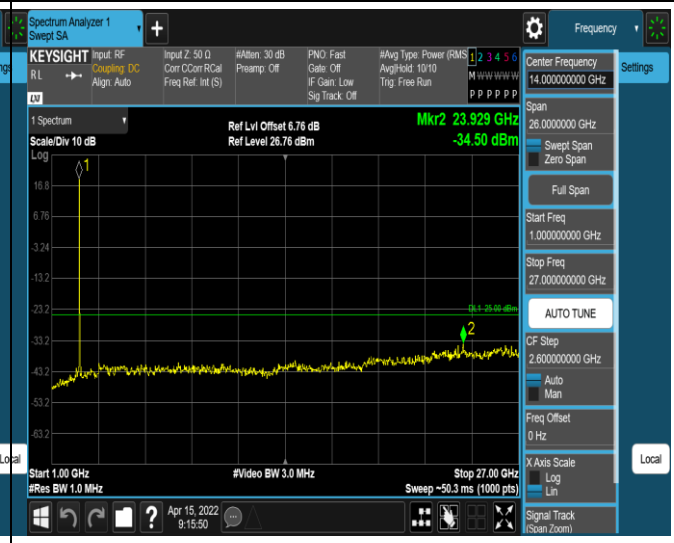


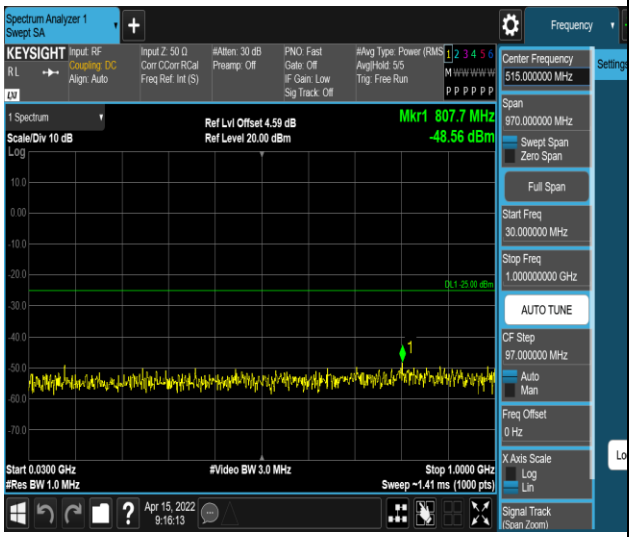
Band41-5MHz-16QAM-41215-1RB#0-Range1:30~



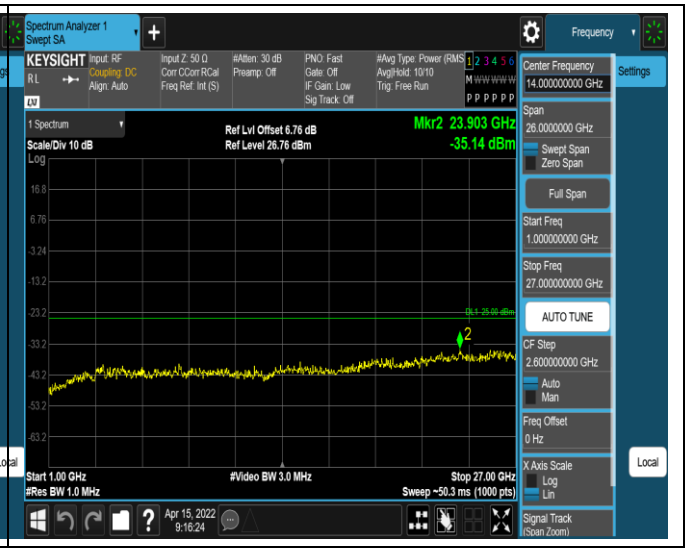
Band41-5MHz-16QAM-41215-1RB#0-Range2:1000~2

1000MHz	7000MHz
	
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
	

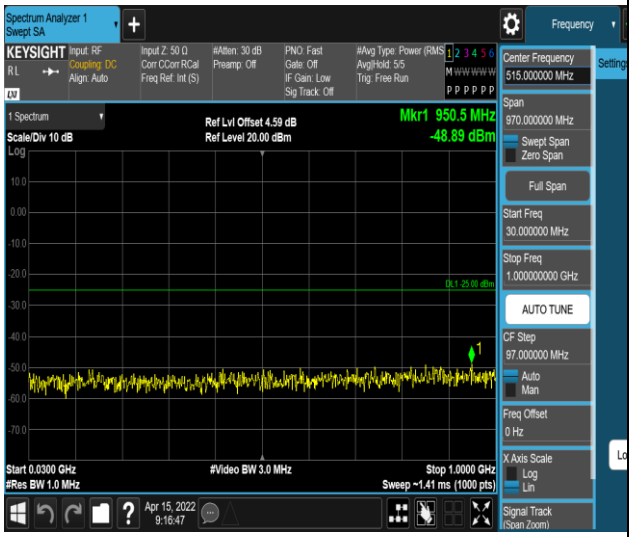
Band41-20MHz-QPSK-41140-1RB#0-Range1:30~1000MHz	Band41-20MHz-QPSK-41140-1RB#0-Range2:1000~27000MHz
	
Band41-20MHz-16QAM-40140-1RB#0-Range1:30~1000MHz	Band41-20MHz-16QAM-40140-1RB#0-Range2:1000~27000MHz
	
Band41-20MHz-16QAM-40640-1RB#0-Range1:30~1000MHz	Band41-20MHz-16QAM-40640-1RB#0-Range2:1000~27000MHz

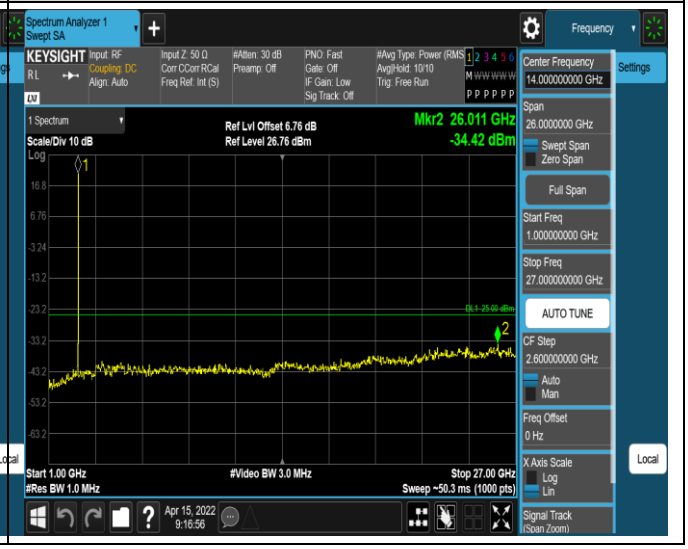


Band41-20MHz-16QAM-41140-1RB#0-Range1:30 ~1000MHz



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					
3.85	-30	35.99	0.019144	Within authorized band for Band 2	Pass
	-20	-27.92	-0.014851		
	-10	28.15	0.014973		
	0	49.74	0.026457		
	10	33.47	0.017803		
	20	48.45	0.025771		
	30	22.02	0.011713		
	40	44.67	0.023761		
	50	14.20	0.007553		
16QAM					
3.85	-30	-6.59	-0.003505	Within authorized band for Band 2	Pass
	-20	-35.65	-0.018963		
	-10	-34.15	-0.018165		
	0	-37.41	-0.019899		
	10	-36.19	-0.019250		
	20	-53.06	-0.028223		
	30	-42.47	-0.022590		
	40	-42.97	-0.022856		
	50	32.49	0.017282		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-14.09	-0.007495	Within authorized band for Band 2	Pass
	3.85	-61.61	-0.032771		
	4.40	29.68	0.015787		
16QAM					
25	3.45	19.45	0.010346	Within authorized band for Band 2	Pass
	3.85	11.74	0.006245		
	4.40	-17.62	-0.009372		
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					
3.85	-30	12.93	0.007463	Within authorized band for Band 4	Pass
	-20	27.25	0.015729		
	-10	44.37	0.025610		
	0	15.51	0.008952		
	10	22.79	0.013154		
	20	44.82	0.025870		
	30	17.42	0.010055		
	40	26.02	0.015019		
	50	20.18	0.011648		
16QAM					
3.85	-30	24.00	0.013853	Within authorized band for Band 4	Pass
	-20	14.51	0.008375		
	-10	41.70	0.024069		
	0	-18.67	-0.010776		
	10	15.91	0.009183		
	20	31.03	0.017911		
	30	10.54	0.006084		
	40	19.57	0.011296		
	50	29.70	0.017143		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	17.14	0.009893	Within authorized band for Band 4	Pass
	3.85	7.22	0.004167		
	4.40	41.23	0.023798		
16QAM					
25	3.45	36.19	0.020889	Within authorized band for Band 4	Pass
	3.85	40.43	0.023336		
	4.40	25.95	0.014978		
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					
3.85	-30	-12.13	-0.014501	±2.5	Pass
	-20	-25.36	-0.030317		
	-10	-32.43	-0.038769		
	0	-42.39	-0.050675		
	10	-44.85	-0.053616		
	20	-44.36	-0.053030		
	30	-44.57	-0.053282		
	40	6.59	0.007878		
	50	-3.85	-0.004603		
16QAM					
3.85	-30	47.14	0.056354	±2.5	Pass
	-20	6.24	0.007460		
	-10	14.88	0.017788		
	0	17.85	0.021339		
	10	22.14	0.026467		
	20	25.43	0.030400		
	30	27.52	0.032899		
	40	39.04	0.046671		
	50	41.91	0.050102		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	32.23	0.038530	±2.5	Pass
	3.85	24.10	0.028811		
	4.40	8.31	0.009934		
16QAM					
25	3.45	20.96	0.025057	±2.5	Pass
	3.85	-5.44	-0.006503		
	4.40	34.66	0.041435		
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					
3.85	-30	-43.04	-0.016978	Within authorized band for Band 7	Pass
	-20	-43.09	-0.016998		
	-10	18.73	0.007389		
	0	30.34	0.011968		
	10	48.75	0.019231		
	20	37.11	0.014639		
	30	44.17	0.017424		
	40	42.70	0.016844		
	50	33.36	0.013160		
16QAM					
3.85	-30	-16.45	-0.006489	Within authorized band for Band 7	Pass
	-20	58.92	0.023243		
	-10	18.14	0.007156		
	0	48.44	0.019108		
	10	43.75	0.017258		
	20	57.09	0.022521		
	30	38.21	0.015073		
	40	36.56	0.014422		
	50	50.34	0.019858		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	27.41	0.010813	Within authorized band for Band 7	Pass
	3.85	18.37	0.007247		
	4.40	-15.48	-0.006107		
16QAM					
25	3.45	-12.66	-0.004994	Within authorized band for Band 7	Pass
	3.85	-13.95	-0.005503		
	4.40	12.89	0.005085		
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					
3.85	-30	-48.92	-0.018852	Within authorized band for Band 41	Pass
	-20	-17.85	-0.006879		
	-10	-26.36	-0.010158		
	0	-36.81	-0.014185		
	10	-45.22	-0.017426		
	20	-45.73	-0.017622		
	30	-38.65	-0.014894		
	40	-38.48	-0.014829		
	50	-36.58	-0.014096		
16QAM					
3.85	-30	34.00	0.013102	Within authorized band for Band 41	Pass
	-20	57.49	0.022154		
	-10	56.46	0.021757		
	0	-28.92	-0.011145		
	10	-41.83	-0.016119		
	20	-29.98	-0.011553		
	30	-22.43	-0.008644		
	40	-12.76	-0.004917		
	50	-11.06	-0.004262		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	5.08	0.001958	Within authorized band for Band 41	Pass
	3.85	21.41	0.008250		
	4.40	-32.03	-0.012343		
16QAM					
25	3.45	20.50	0.007900	Within authorized band for Band41	Pass
	3.85	-44.26	-0.017056		
	4.40	51.60	0.019884		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

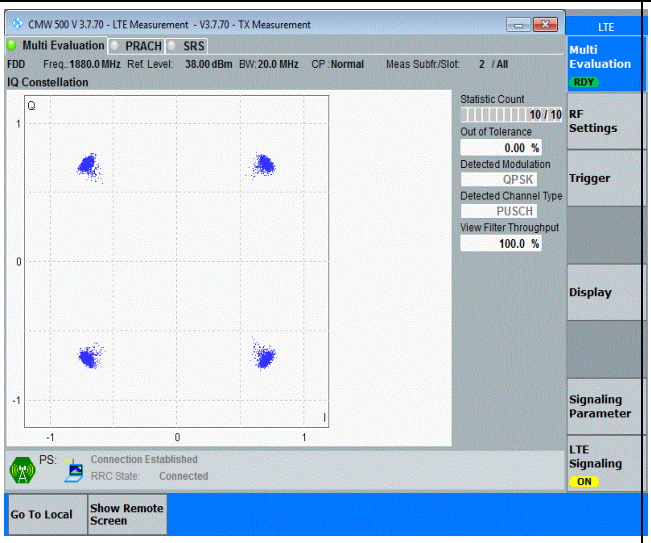
Test Result

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

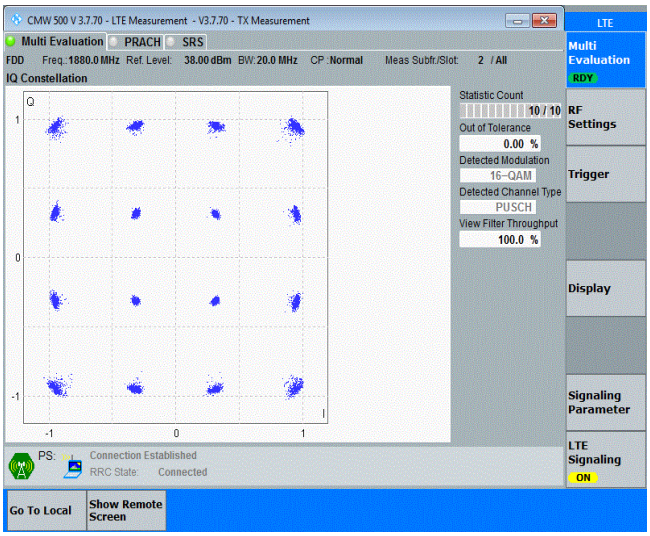
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

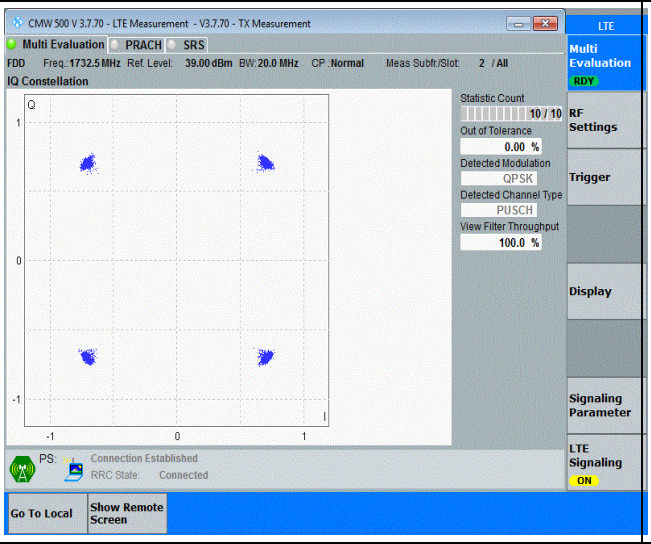
Band2-20MHz-QPSK-18900-100RB#0



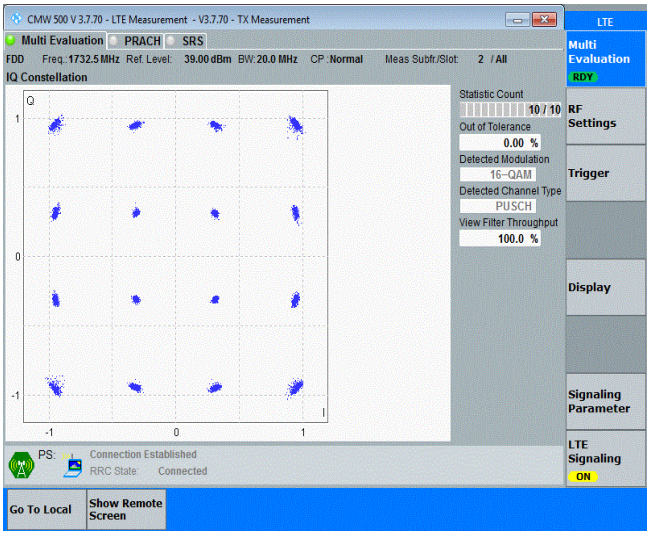
Band2-20MHz-16QAM-18900-100RB#0



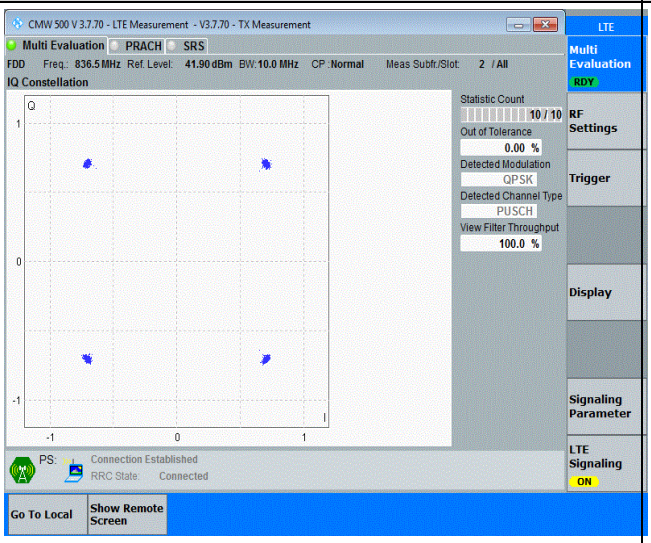
Band4-20MHz-QPSK-20175-100RB#0



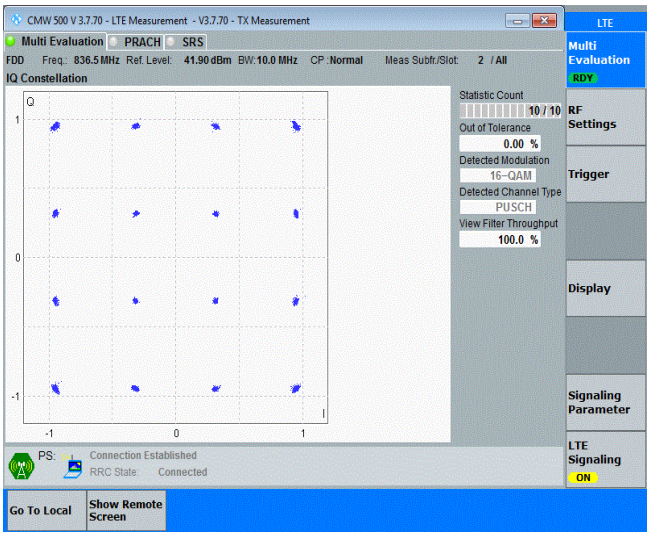
Band4-20MHz-16QAM-20175-100RB#0



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

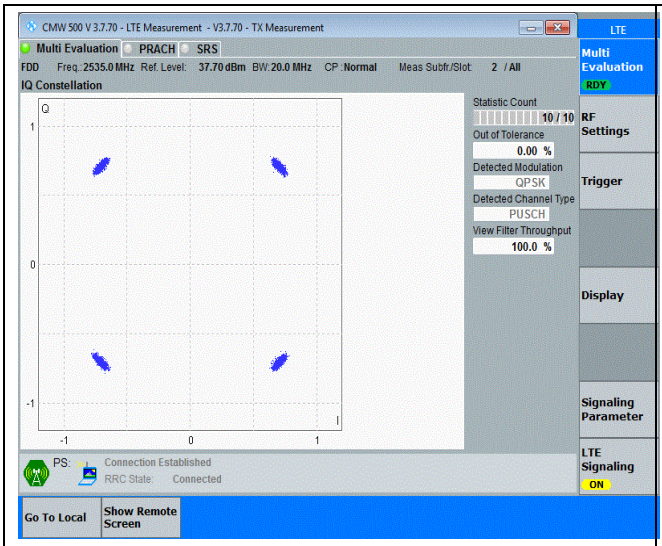


Band5-10MHz-16QAM-20525-50RB#0

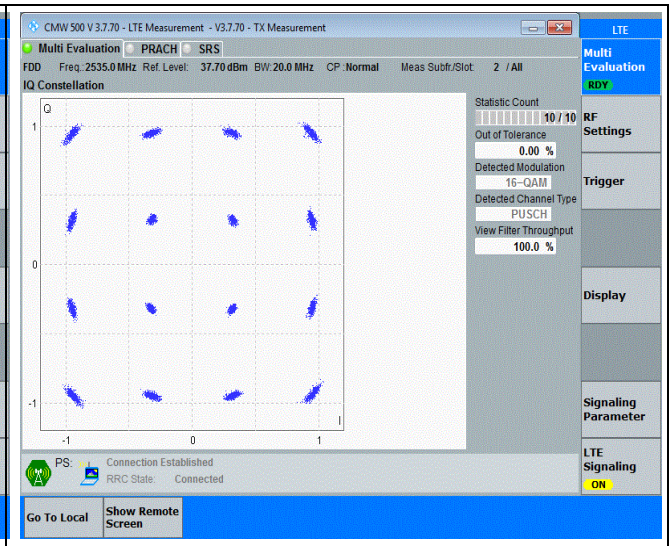
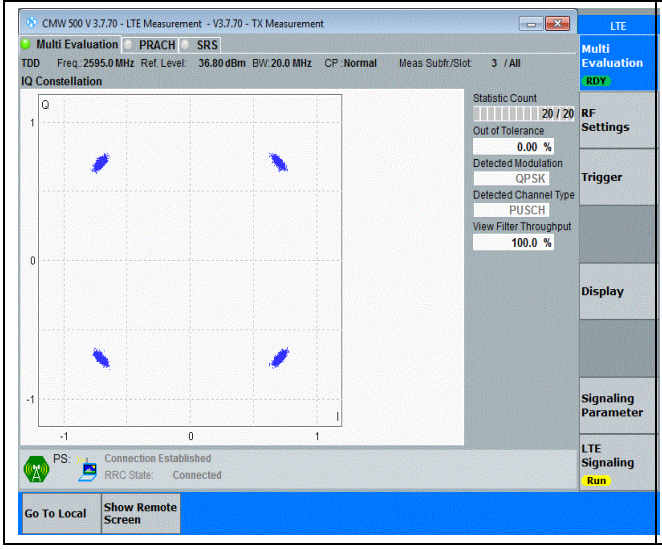
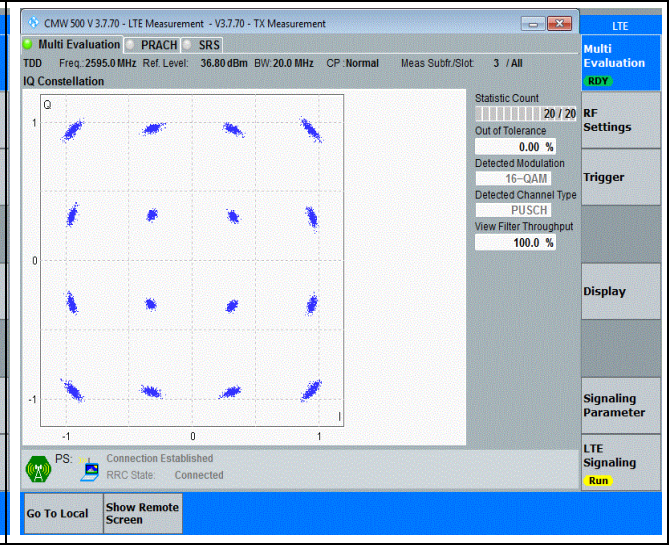


Band7-20MHz-QPSK-21100-100RB#0

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



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



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