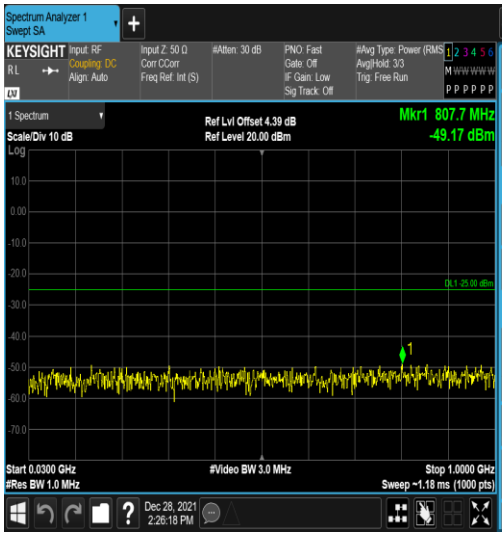
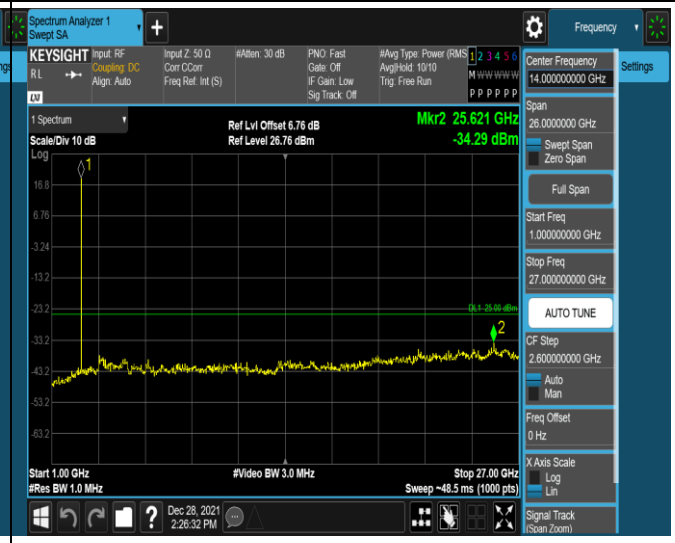
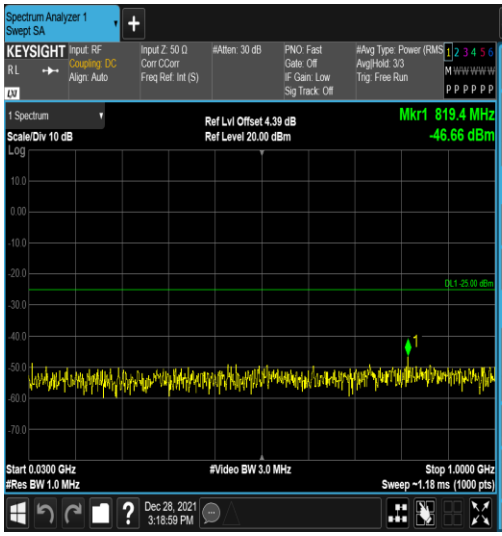
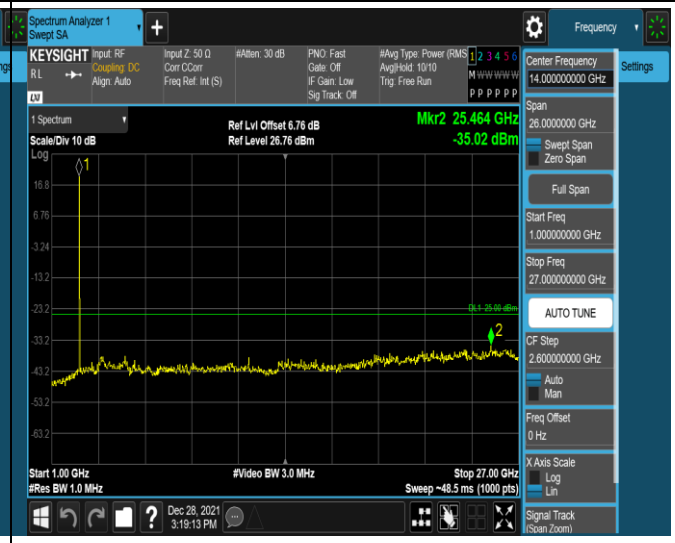
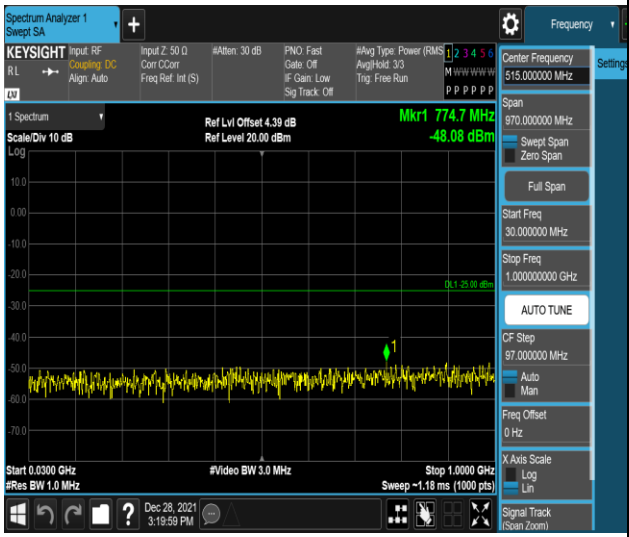
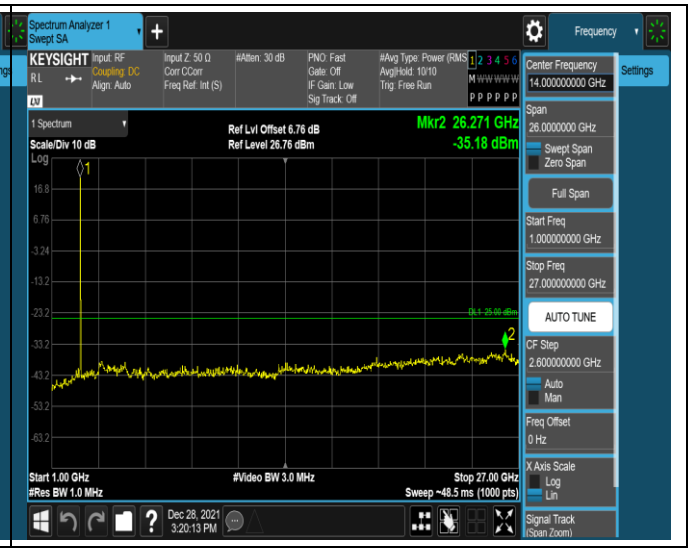
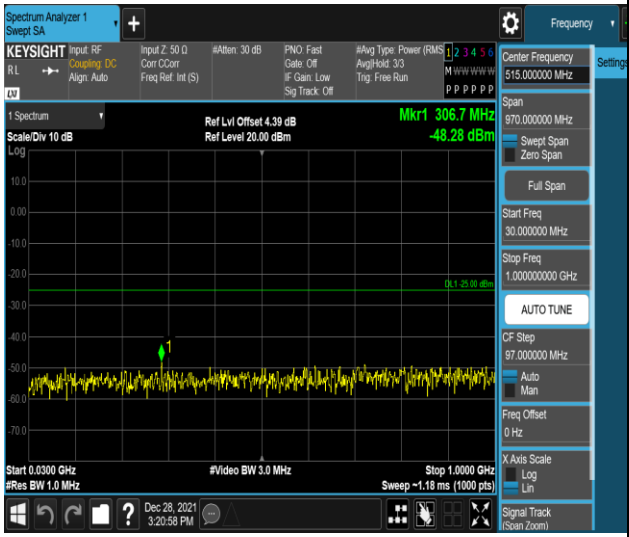
Band41-5MHz-16QAM-41215-1RB#0-Range1:30~1000MHz	Band41-5MHz-16QAM-41215-1RB#0-Range2:1000~27000MHz
	
Band41-20MHz-QPSK-40140-1RB#0-Range1:30~1000MHz	Band41-20MHz-QPSK-40140-1RB#0-Range2:1000~27000MHz
	
Band41-20MHz-QPSK-40640-1RB#0-Range1:30~1000MHz	Band41-20MHz-QPSK-40640-1RB#0-Range2:1000~27000MHz



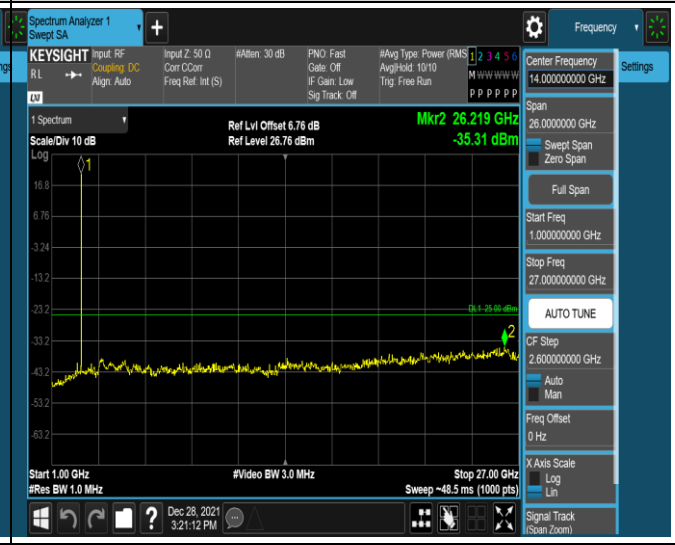
Band41-20MHz-QPSK-41140-1RB#0-Range1:30~1000MHz



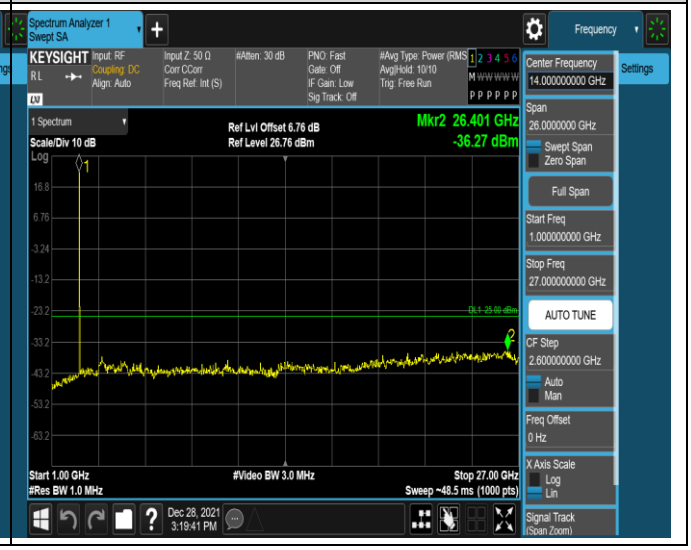
Band41-20MHz-QPSK-41140-1RB#0-Range2:1000~27000MHz

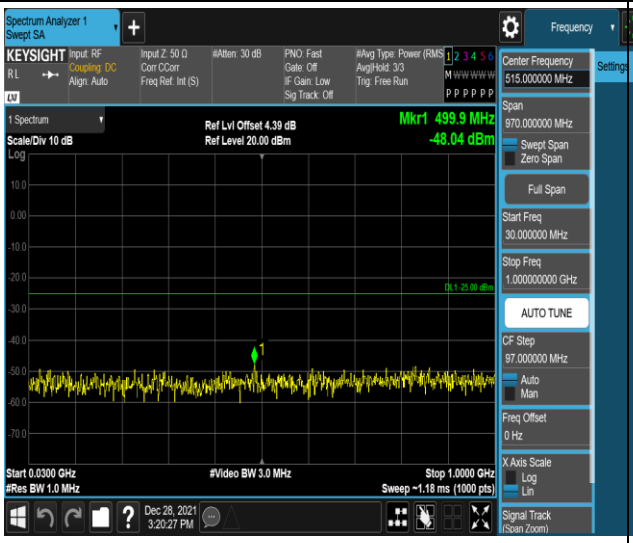
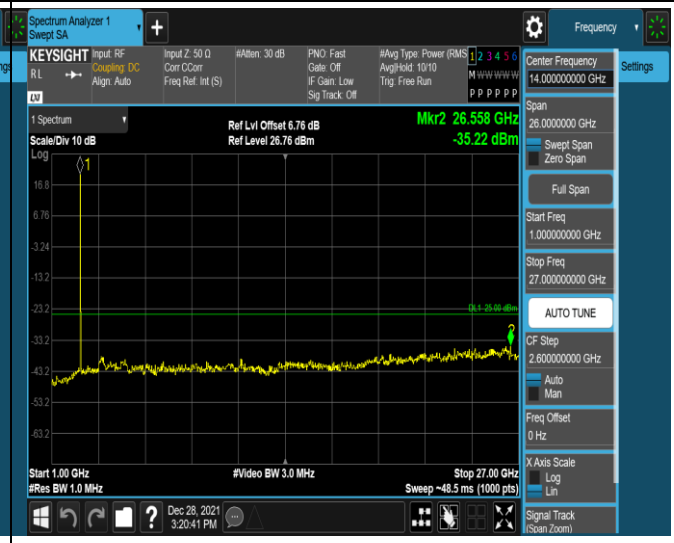
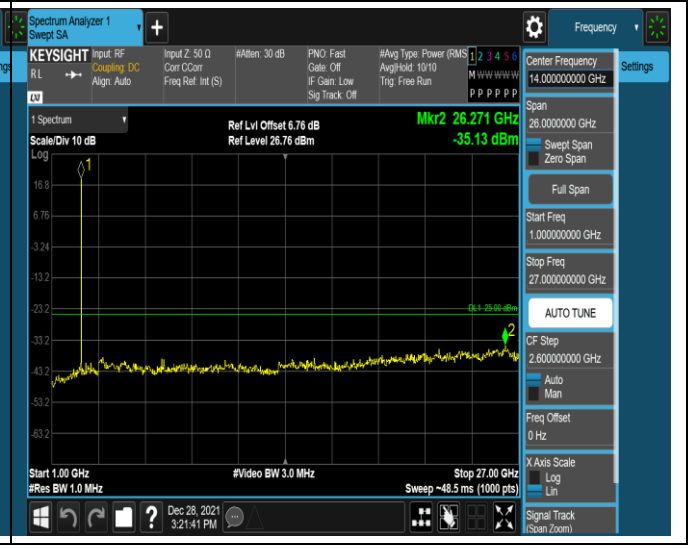


Band41-20MHz-16QAM-40140-1RB#0-Range1:30~1000MHz



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	-17.85	-0.009495	Within authorized band for Band 2	Pass
	-20	-15.71	-0.008356		
	-10	-11.73	-0.006239		
	0	-15.64	-0.008319		
	10	-12.73	-0.006771		
	20	-11.47	-0.006101		
	30	-17.51	-0.009314		
	40	-13.59	-0.007229		
	50	-15.11	-0.008037		
16QAM					
3.87	-30	-13.23	-0.007037	Within authorized band for Band 2	Pass
	-20	-16.91	-0.008995		
	-10	-7.95	-0.004229		
	0	-11.1	-0.005904		
	10	-7.62	-0.004053		
	20	-10.49	-0.00558		
	30	-3.75	-0.001995		
	40	-9.87	-0.00525		
	50	-11.33	-0.006027		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-10.76	-0.005723	Within authorized band for Band 2	Pass
	3.87	-15.84	-0.008426		
	4.45	-3.36	-0.001787		
16QAM					
25	3.50	-18.47	-0.009824	Within authorized band for Band 2	Pass
	3.87	-17.71	-0.00942		
	4.45	-14.86	-0.007904		
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	-9.61	-0.005547	Within authorized band for Band 4	Pass
	-20	-5.38	-0.003105		
	-10	-7.34	-0.004237		
	0	-9.08	-0.005241		
	10	-6.15	-0.00355		
	20	-13.6	-0.00785		
	30	-12.55	-0.007244		
	40	-15.46	-0.008924		
	50	-4.15	-0.002395		
16QAM					
3.87	-30	-7.31	-0.004219	Within authorized band for Band 4	Pass
	-20	6.38	0.003683		
	-10	6.54	0.003775		
	0	-8.74	-0.005045		
	10	5.55	0.003203		
	20	-7.57	-0.004369		
	30	-11.44	-0.006603		
	40	-6.37	-0.003677		
	50	-10.73	-0.006193		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-6.41	-0.0037	Within authorized band for Band 4	Pass
	3.87	-5.48	-0.003163		
	4.45	-8.67	-0.005004		
16QAM					
25	3.50	-12.6	-0.007273	Within authorized band for Band 4	Pass
	3.87	-4.26	-0.002459		
	4.45	-9.6	-0.005541		
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	-6.68	-0.007986	±2.5	Pass
	-20	-9.31	-0.01113		
	-10	-15.12	-0.018075		
	0	-4.51	-0.005392		
	10	-5.55	-0.006635		
	20	-9.71	-0.011608		
	30	-9.13	-0.010915		
	40	-10.46	-0.012504		
	50	-9.06	-0.010831		
16QAM					
3.87	-30	-7.68	-0.009181	±2.5	Pass
	-20	-15.16	-0.018123		
	-10	-10.01	-0.011967		
	0	-10.74	-0.012839		
	10	-5.61	-0.006707		
	20	-7.87	-0.009408		
	30	-5.12	-0.006121		
	40	-2.22	-0.002654		
	50	-5.71	-0.006826		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-10.56	-0.012624	±2.5	Pass
	3.87	-7.85	-0.009384		
	4.45	-8.38	-0.010018		
16QAM					
25	3.50	-10.83	-0.012947	±2.5	Pass
	3.87	-7.48	-0.008942		
	4.45	-9.98	-0.011931		
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	18.57	0.007325	Within authorized band for Band 7	Pass
	-20	13.5	0.005325		
	-10	-19.73	-0.007783		
	0	-21.64	-0.008536		
	10	-17.45	-0.006884		
	20	-13.52	-0.005333		
	30	3.83	0.001511		
	40	-21.47	-0.008469		
	50	5.48	0.002162		
16QAM					
3.87	-30	-14.33	-0.005653	Within authorized band for Band 7	Pass
	-20	-17.72	-0.00699		
	-10	10.1	0.003984		
	0	-18.47	-0.007286		
	10	10.13	0.003996		
	20	7.24	0.002856		
	30	6.91	0.002726		
	40	8.1	0.003195		
	50	-16.29	-0.006426		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	6.87	0.00271	Within authorized band for Band 7	Pass
	3.87	-21	-0.008284		
	4.45	-17.4	-0.006864		
16QAM					
25	3.50	-15.85	-0.006252	Within authorized band for Band 7	Pass
	3.87	-17.9	-0.007061		
	4.45	-19.34	-0.007629		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 38 part:

Reference Frequency: LTE Band 38(10MHz) Middle channel=38000 Frequency=2595.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-8.8	-0.003391	Within authorized band for Band 38	Pass
	-20	-8.2	-0.00316		
	-10	-10.3	-0.003969		
	0	-10.33	-0.003981		
	10	-12.59	-0.004852		
	20	-12.39	-0.004775		
	30	-9.76	-0.003761		
	40	-7.45	-0.002871		
	50	-14.48	-0.00558		
16QAM					
3.87	-30	-5.72	-0.002204	Within authorized band for Band 38	Pass
	-20	-10.16	-0.003915		
	-10	5.09	0.001961		
	0	-4.63	-0.001784		
	10	-4.65	-0.001792		
	20	-3.59	-0.001383		
	30	-3.03	-0.001168		
	40	-9.04	-0.003484		
	50	6.25	0.002408		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-11.4	-0.004393	Within authorized band for Band 38	Pass
	3.87	-13.13	-0.00506		
	4.45	-11.94	-0.004601		
16QAM					
25	3.50	-8.27	-0.003187	Within authorized band for Band 38	Pass
	3.87	-13.15	-0.005067		
	4.45	-8.25	-0.003179		
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	17.29	0.006663	Within authorized band for Band 41	Pass
	-20	-10.23	-0.003942		
	-10	3.73	0.001437		
	0	9.87	0.003803		
	10	-16.49	-0.006355		
	20	-16.92	-0.00652		
	30	-17.55	-0.006763		
	40	-22.12	-0.008524		
	50	-3.13	-0.001206		
16QAM					
3.87	-30	7.22	0.002782	Within authorized band for Band 41	Pass
	-20	-13.55	-0.005222		
	-10	-15.16	-0.005842		
	0	7.61	0.002933		
	10	-17.42	-0.006713		
	20	-12.25	-0.004721		
	30	-15.32	-0.005904		
	40	-5.54	-0.002135		
	50	-19.73	-0.007603		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-14.06	-0.005418	Within authorized band for Band 41	Pass
	3.87	-21.41	-0.00825		
	4.45	-3.08	-0.001187		
16QAM					
25	3.50	-18.87	-0.007272	Within authorized band for Band41	Pass
	3.87	-22.87	-0.008813		
	4.45	5.42	0.002089		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

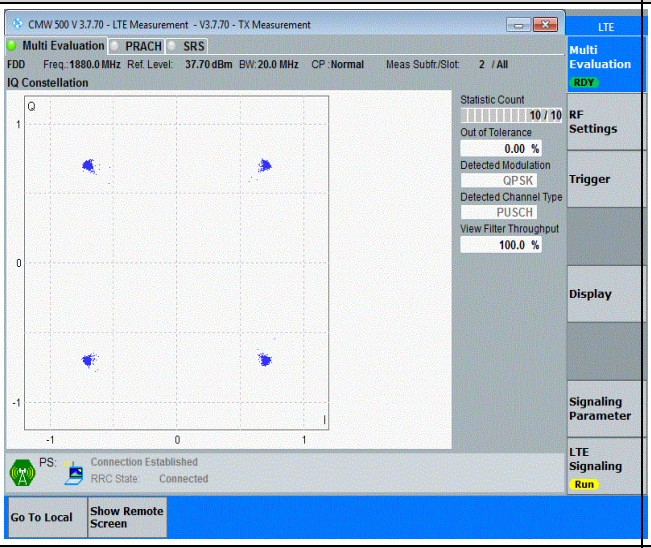
Test Result

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
Band38	20MHz	QPSK	38000	100RB#0	PASS	PASS
Band38	20MHz	16QAM	38000	100RB#0	PASS	PASS
Band41	20MHz	QPSK	40640	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40640	100RB#0	PASS	PASS

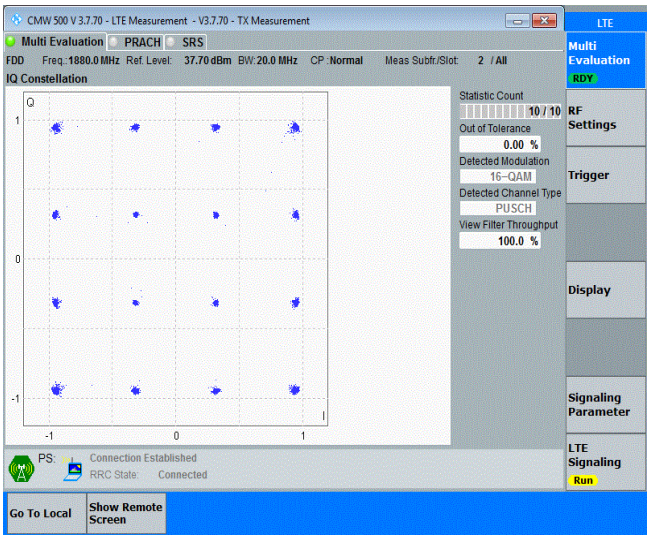
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

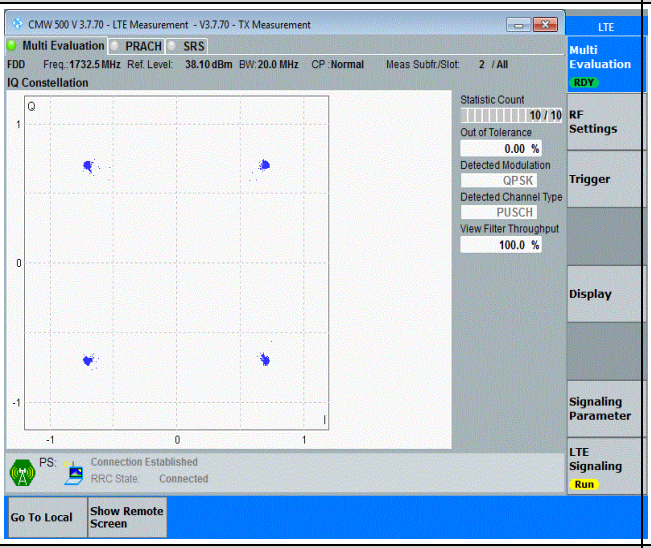
Band2-20MHz-QPSK-18900-100RB#0



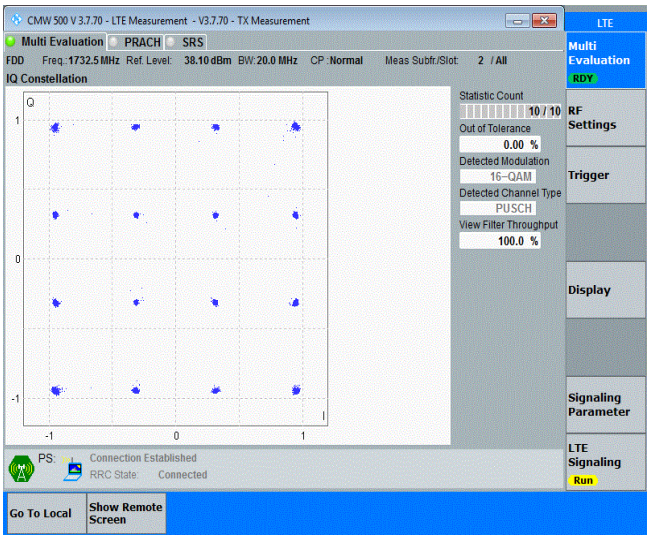
Band2-20MHz-16QAM-18900-100RB#0



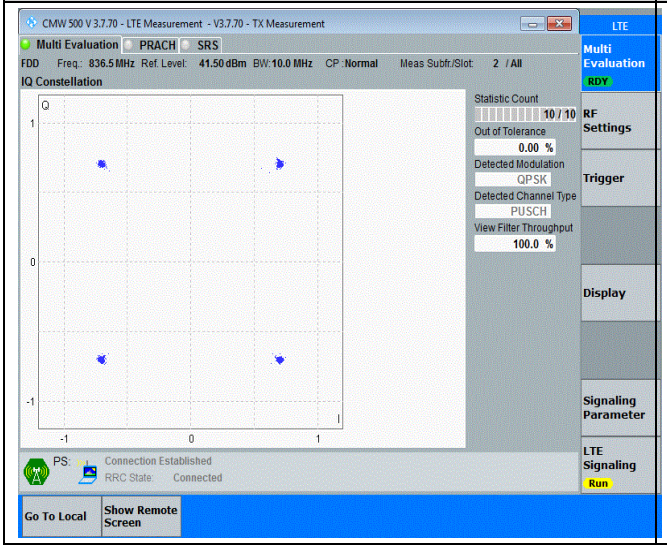
Band4-20MHz-QPSK-20175-100RB#0



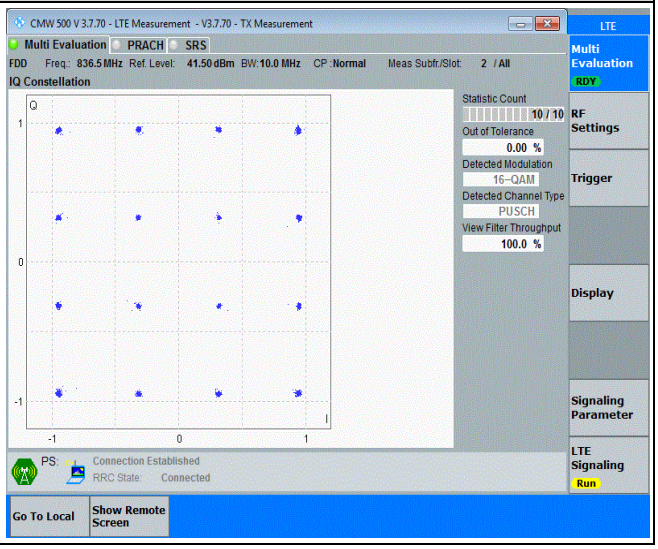
Band4-20MHz-16QAM-20175-100RB#0



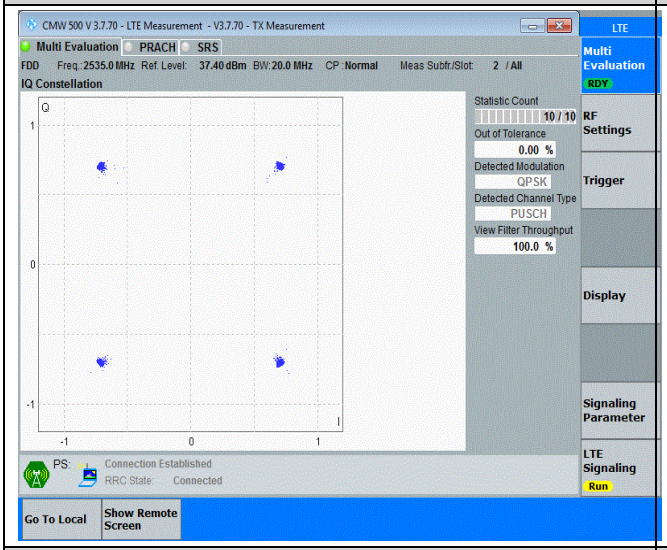
Band5-10MHz-QPSK-20525-50RB#0



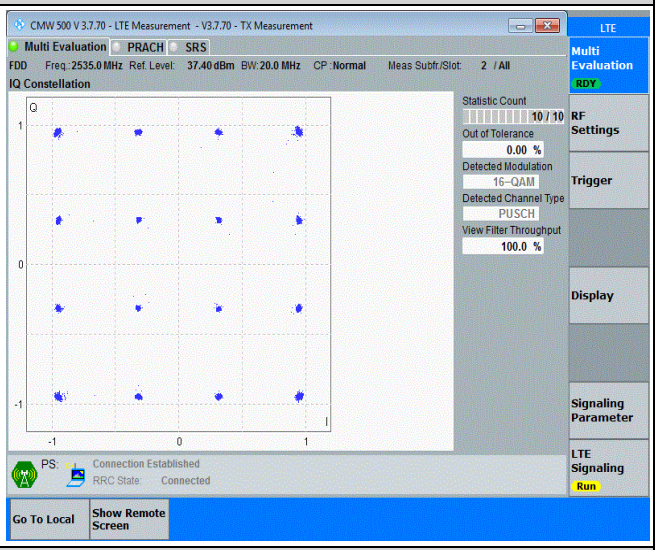
Band5-10MHz-16QAM-20525-50RB#0



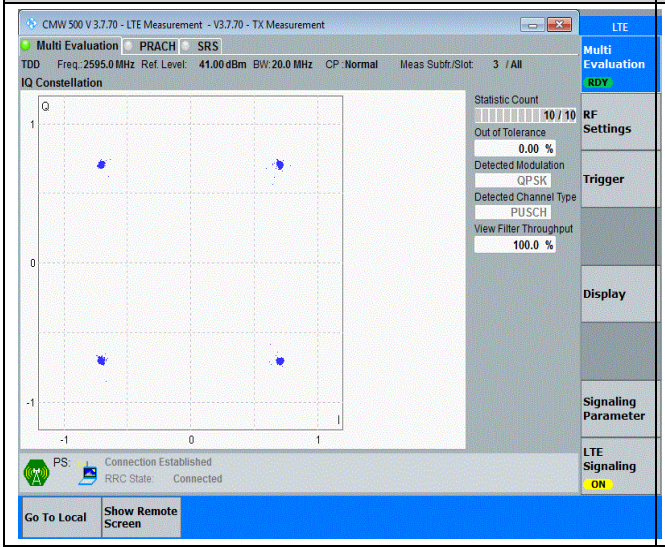
Band7-20MHz-QPSK-21100-100RB#0



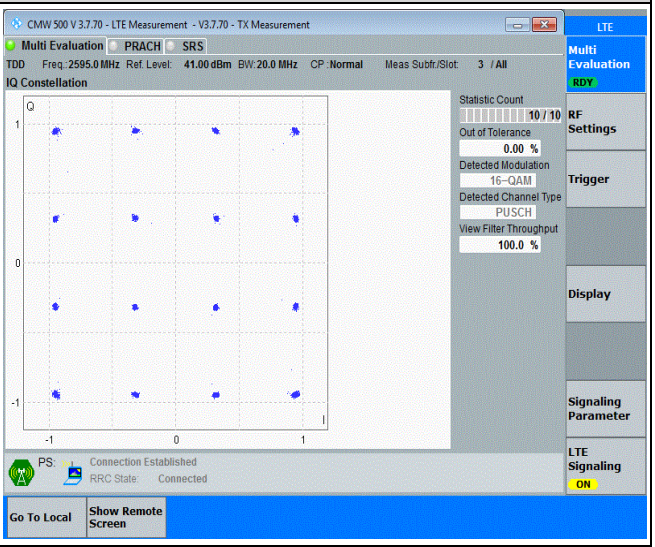
Band7-20MHz-16QAM-21100-100RB#0



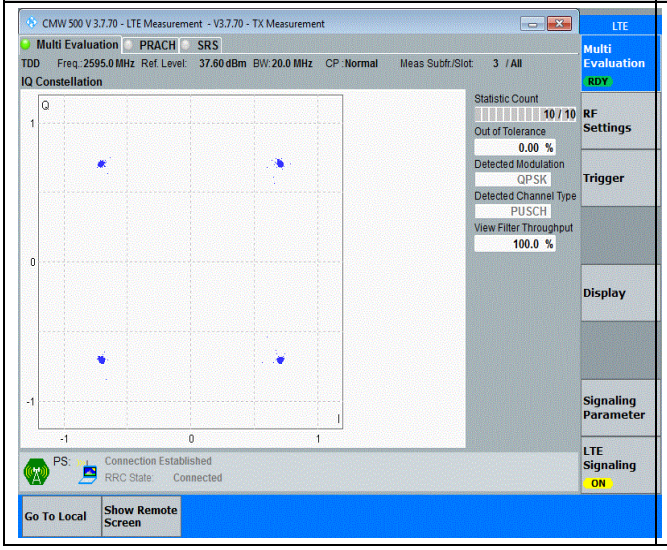
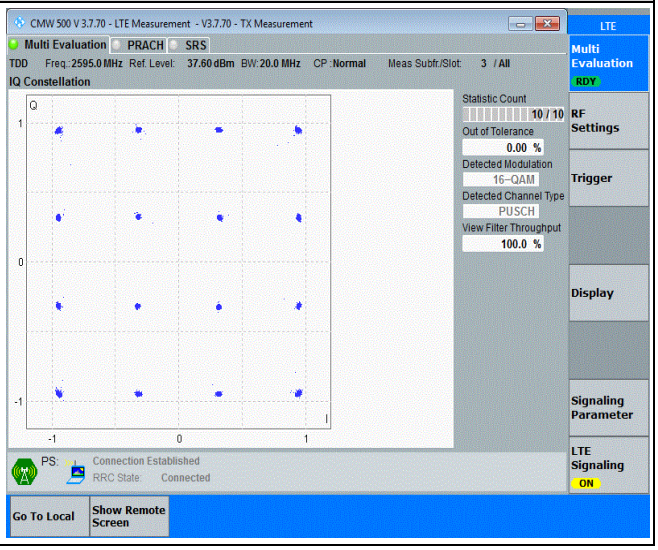
Band38-20MHz-QPSK-38000-100RB#0



Band38-20MHz-16QAM-38000-100RB#0



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



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