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					
7.78	-30	-5.06	-0.001996	Within authorized band for Band 7	Pass
	-20	-3.59	-0.001416		
	-10	-3.13	-0.001235		
	0	2.66	0.001049		
	10	2.39	0.000943		
	20	1.79	0.000706		
	30	3.03	0.001195		
	40	3.03	0.001195		
	50	-5.06	-0.001996		
16QAM					
7.78	-30	-4.88	-0.001925	Within authorized band for Band 7	Pass
	-20	2.32	0.000915		
	-10	-4.29	-0.001692		
	0	-5.08	-0.002004		
	10	2.27	0.000895		
	20	-4.91	-0.001937		
	30	-3.50	-0.001381		
	40	-5.44	-0.002146		
	50	4.43	0.001748		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	7.2	4.75	0.001874	Within authorized band for Band 7	Pass
	7.78	-2.65	-0.001045		
	8.96	-3.06	-0.001207		
16QAM					
25	7.2	4.03	0.001590	Within authorized band for Band 7	Pass
	7.78	-3.42	-0.001349		
	8.96	-3.40	-0.001341		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 12 part:

Reference Frequency: LTE Band 12(10MHz) Middle channel=23095 Frequency=707.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
7.78	-30	5.71	0.008071	Within authorized band for Band 12	Pass
	-20	-9.18	-0.012975		
	-10	-6.08	-0.008594		
	0	-7.04	-0.009951		
	10	-5.64	-0.007972		
	20	5.71	0.008071		
	30	4.13	0.005837		
	40	-3.76	-0.005314		
	50	6.55	0.009258		
16QAM					
7.78	-30	31.73	0.044848	Within authorized band for Band 12	Pass
	-20	-14.29	-0.020198		
	-10	19.93	0.028170		
	0	12.60	0.017809		
	10	20.66	0.029201		
	20	-20.87	-0.029498		
	30	-17.02	-0.024057		
	40	-24.70	-0.034912		
	50	26.01	0.036763		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	7.2	3.30	0.004664	Within authorized band for Band 12	Pass
	7.78	-1.99	-0.002813		
	8.96	2.70	0.003816		
16QAM					
25	7.2	12.49	0.017654	Within authorized band for Band 12	Pass
	7.78	-10.53	-0.014883		
	8.96	12.73	0.017993		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 17 part:

Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 Frequency=710.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
7.78	-30	5.59	0.007873	Within authorized band for Band 17	Pass
	-20	6.02	0.008479		
	-10	4.49	0.006324		
	0	6.15	0.008662		
	10	5.42	0.007634		
	20	5.59	0.007873		
	30	4.05	0.005704		
	40	6.85	0.009648		
	50	2.98	0.004197		
16QAM					
7.78	-30	-12.33	-0.017366	Within authorized band for Band 17	Pass
	-20	22.33	0.031451		
	-10	23.40	0.032958		
	0	-9.46	-0.013324		
	10	-14.32	-0.020169		
	20	-13.30	-0.018732		
	30	20.53	0.028915		
	40	-12.35	-0.017394		
	50	12.06	0.016986		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	7.2	6.42	0.009042	Within authorized band for Band 17	Pass
	7.78	-6.39	-0.009000		
	8.96	6.15	0.008662		
16QAM					
25	7.2	17.01	0.023958	Within authorized band for Band 17	Pass
	7.78	-11.16	-0.015718		
	8.96	9.53	0.013423		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 26 part:

Reference Frequency: LTE Band 26(10MHz) Middle channel=26740 Frequency=819.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
7.78	-30	-1.60	-0.001954	±2.5	Pass
	-20	1.86	0.002271		
	-10	-1.95	-0.002381		
	0	2.15	0.002625		
	10	1.82	0.002222		
	20	-2.29	-0.002796		
	30	-1.50	-0.001832		
	40	2.68	0.003272		
	50	-1.44	-0.001758		
16QAM					
7.78	-30	2.05	0.002503	±2.5	Pass
	-20	2.86	0.003492		
	-10	2.00	0.002442		
	0	-2.25	-0.002747		
	10	0.89	0.001087		
	20	1.66	0.002027		
	30	2.15	0.002625		
	40	1.86	0.002271		
	50	2.60	0.003175		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	7.2	3.56	0.004347	±2.5	Pass
	7.78	-1.24	-0.001514		
	8.96	3.22	0.003932		
16QAM					
25	7.2	-1.63	-0.001990	±2.5	Pass
	7.78	3.08	0.003761		
	8.96	2.55	0.003114		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 26 part:

Reference Frequency: LTE Band 26(10MHz) Middle channel=26915 Frequency=836.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
7.78	-30	-3.63	-0.004340	±2.5	Pass
	-20	-2.85	-0.003407		
	-10	-4.65	-0.005559		
	0	-2.85	-0.003407		
	10	-3.96	-0.004734		
	20	-2.43	-0.002905		
	30	-1.57	-0.001877		
	40	-2.17	-0.002594		
	50	-2.33	-0.002785		
16QAM					
7.78	-30	2.36	0.002821	±2.5	Pass
	-20	1.65	0.001973		
	-10	-2.36	-0.002821		
	0	-3.12	-0.003730		
	10	-2.46	-0.002941		
	20	-3.33	-0.003981		
	30	-1.46	-0.001745		
	40	1.93	0.002307		
	50	-1.83	-0.002188		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	7.2	1.67	0.001996	±2.5	Pass
	7.78	-3.19	-0.003814		
	8.96	-1.96	-0.002343		
16QAM					
25	7.2	-3.62	-0.004328	±2.5	Pass
	7.78	-3.05	-0.003646		
	8.96	1.29	0.001542		
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					
7.78	-30	-8.51	-0.003279	Within authorized band for Band 38	Pass
	-20	-4.72	-0.001819		
	-10	-9.04	-0.003484		
	0	-7.40	-0.002852		
	10	-4.33	-0.001669		
	20	4.05	0.001561		
	30	-3.92	-0.001511		
	40	-5.54	-0.002135		
	50	-5.72	-0.002204		
16QAM					
7.78	-30	-5.31	-0.002046	Within authorized band for Band 38	Pass
	-20	-7.02	-0.002705		
	-10	3.58	0.001380		
	0	-6.28	-0.002420		
	10	-6.95	-0.002678		
	20	-7.42	-0.002859		
	30	-4.21	-0.001622		
	40	-6.77	-0.002609		
	50	3.65	0.001407		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	7.2	-8.34	-0.003214	Within authorized band for Band 38	Pass
	7.78	-5.62	-0.002166		
	8.96	-4.59	-0.001769		
16QAM					
25	7.2	-6.27	-0.002416	Within authorized band for Band 38	Pass
	7.78	2.13	0.000821		
	8.96	-7.57	-0.002917		
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					
7.78	-30	-6.48	-0.002499	Within authorized band for Band 41	Pass
	-20	-7.68	-0.002962		
	-10	-6.02	-0.002322		
	0	-6.02	-0.002322		
	10	-9.24	-0.003563		
	20	-7.02	-0.002707		
	30	-5.75	-0.002218		
	40	-6.97	-0.002688		
	50	-5.05	-0.001948		
16QAM					
7.78	-30	-5.02	-0.001936	Within authorized band for Band 41	Pass
	-20	-5.28	-0.002036		
	-10	-4.94	-0.001905		
	0	-4.48	-0.001728		
	10	-3.46	-0.001334		
	20	-10.53	-0.004061		
	30	-7.93	-0.003058		
	40	-4.85	-0.001870		
	50	-6.92	-0.002669		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	7.2	-7.94	-0.003062	Within authorized band for Band 41	Pass
	7.78	-7.18	-0.002769		
	8.96	-6.22	-0.002399		
16QAM					
25	7.2	-6.04	-0.002329	Within authorized band for Band41	Pass
	7.78	-4.71	-0.001816		
	8.96	-8.57	-0.003305		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

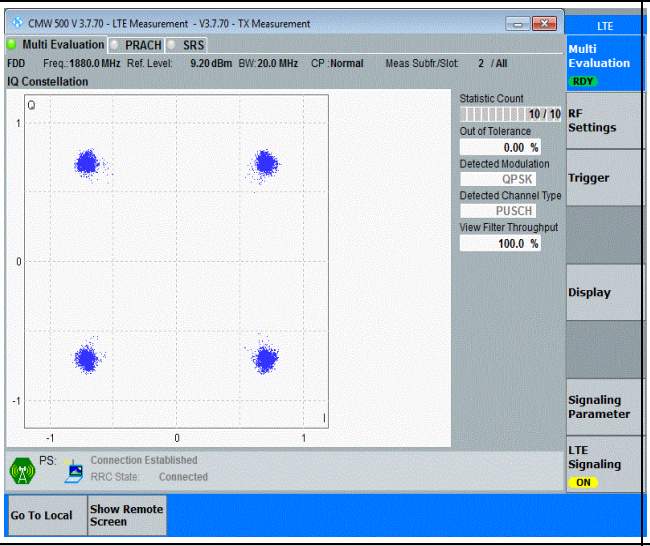
Test Result

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
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#0	PASS	PASS
Band26	10MHz	QPSK	26740	50RB#0	PASS	PASS
Band26	10MHz	16QAM	26740	50RB#0	PASS	PASS
Band26	15MHz	QPSK	26915	75RB#0	PASS	PASS
Band26	15MHz	16QAM	26915	75RB#0	PASS	PASS
Band41	20MHz	QPSK	40620	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40620	100RB#0	PASS	PASS

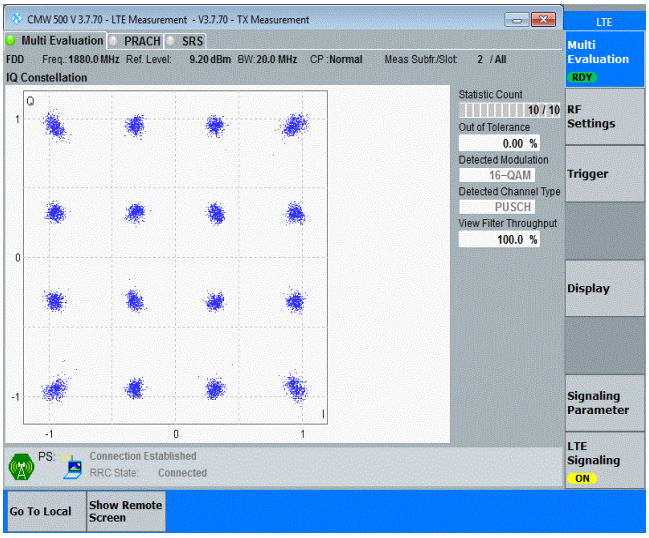
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

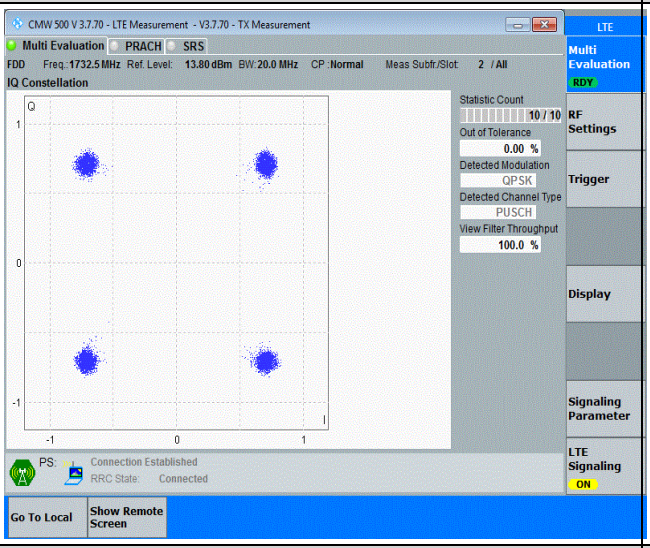
Band2-20MHz-QPSK-18900-100RB#0



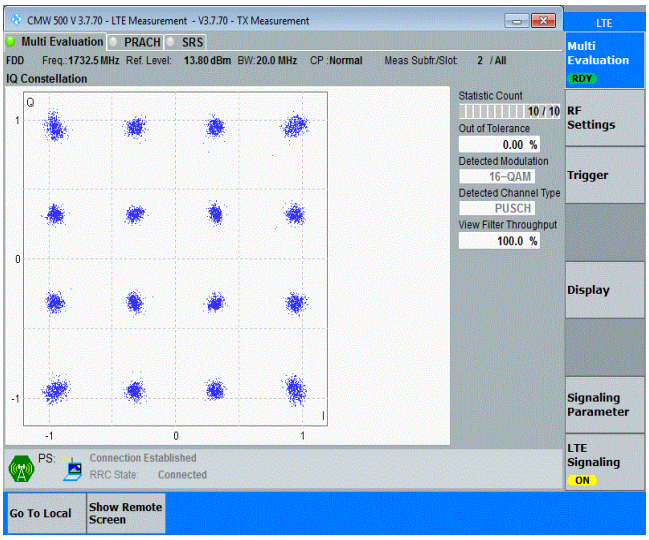
Band2-20MHz-16QAM-18900-100RB#0



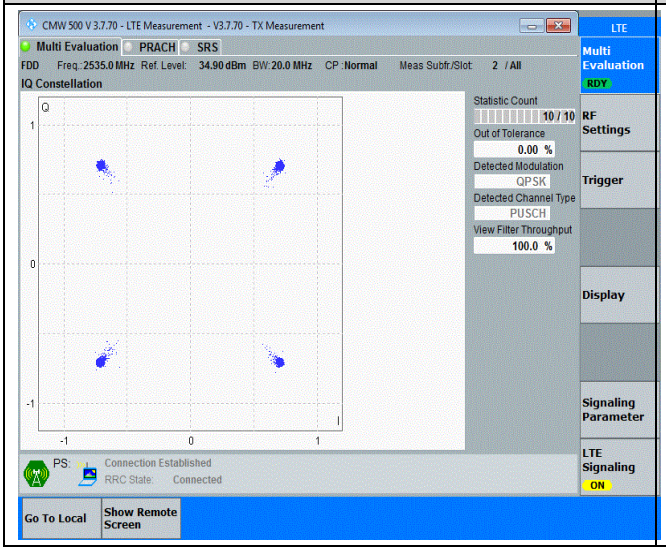
Band4-20MHz-QPSK-20175-100RB#0



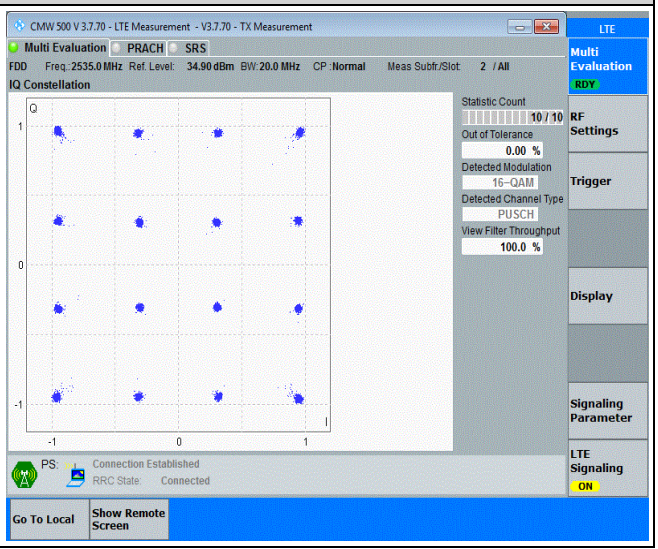
Band4-20MHz-16QAM-20175-100RB#0



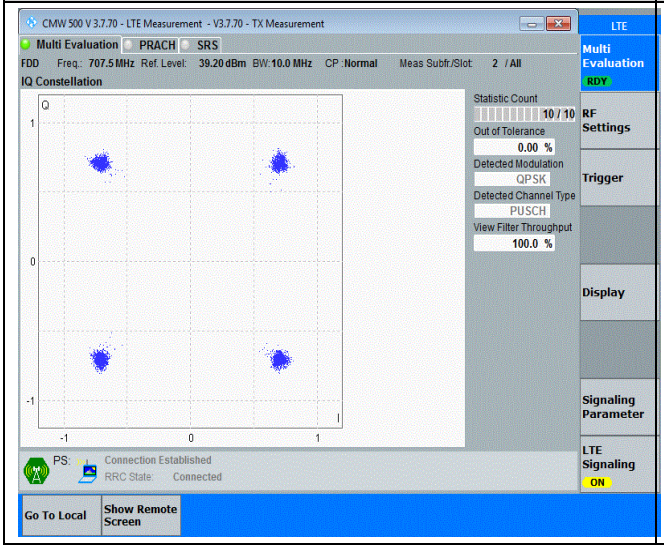
Band7-20MHz-QPSK-21100-100RB#0



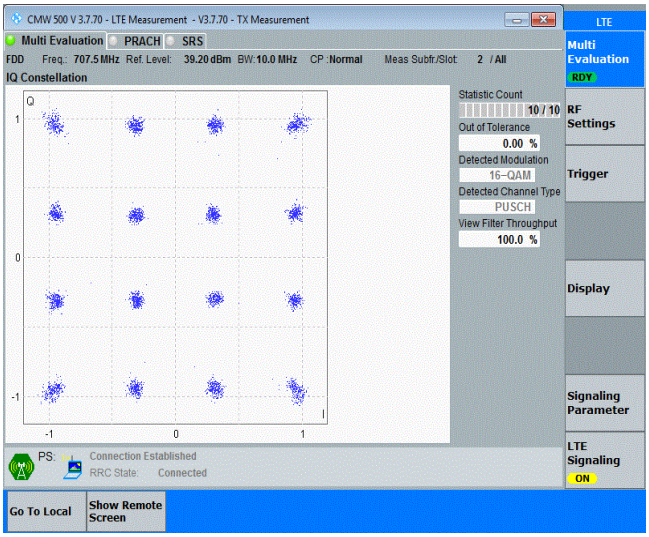
Band7-20MHz-16QAM-21100-100RB#0



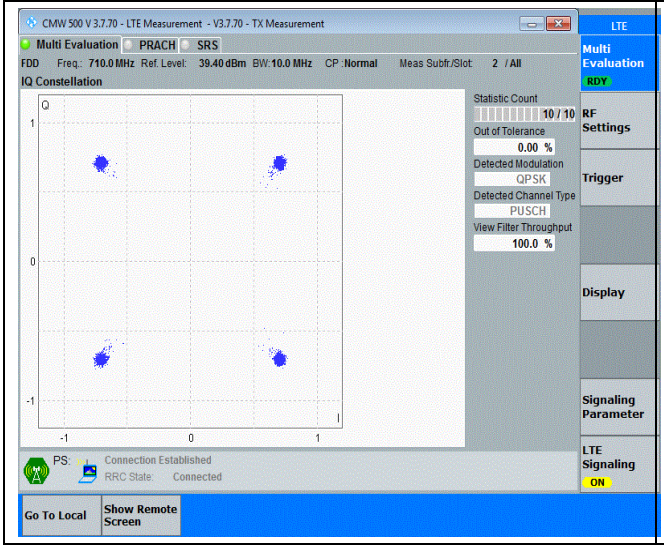
Band12-10MHz-QPSK-23095-50RB#0



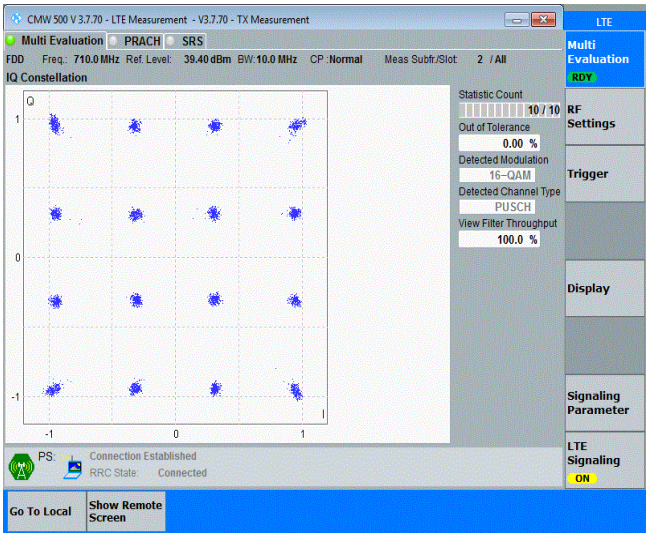
Band12-10MHz-16QAM-23095-50RB#0



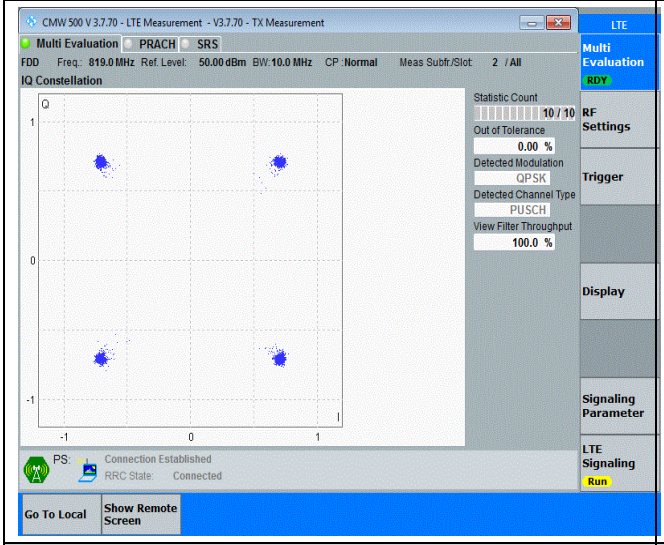
Band17-10MHz-QPSK-23790-50RB#0



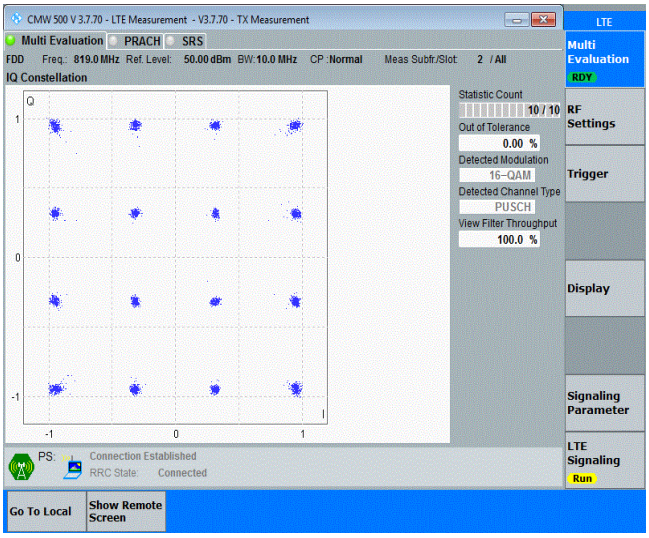
Band17-10MHz-16QAM-23790-50RB#0



Band26-10MHz-QPSK-26740-50RB#0

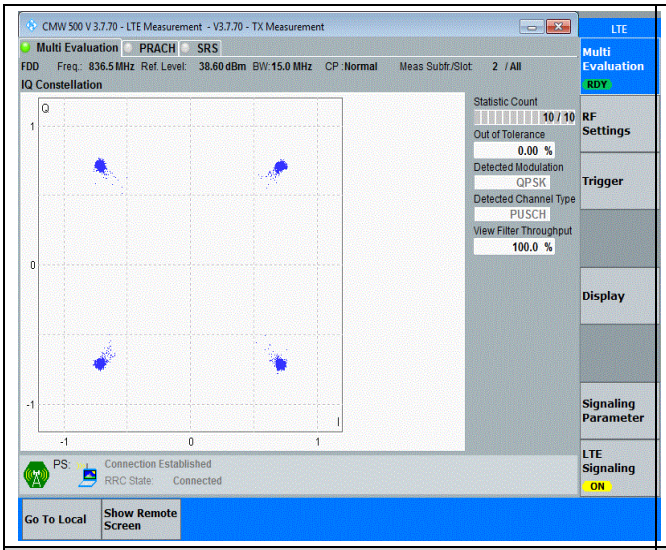


Band26-10MHz-16QAM-26740-50RB#0

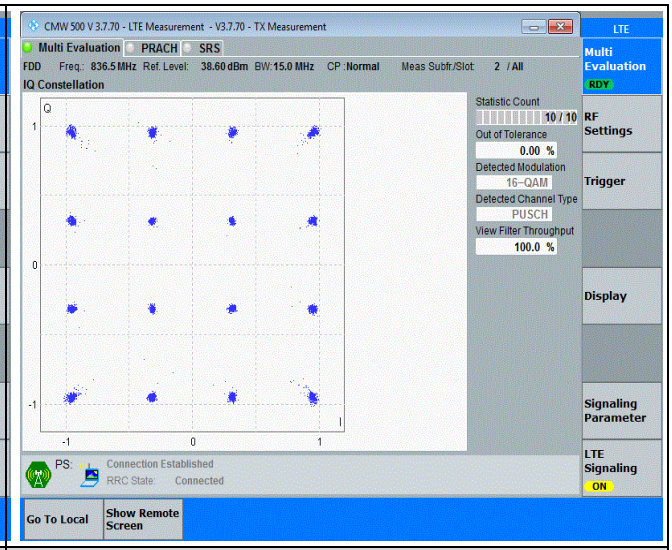
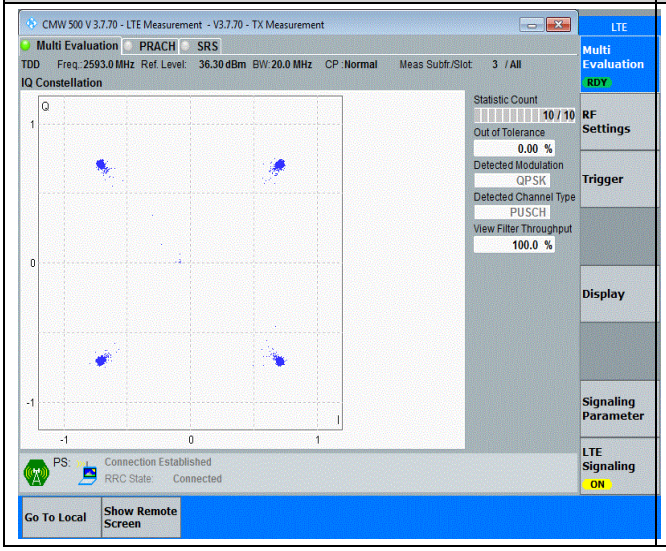
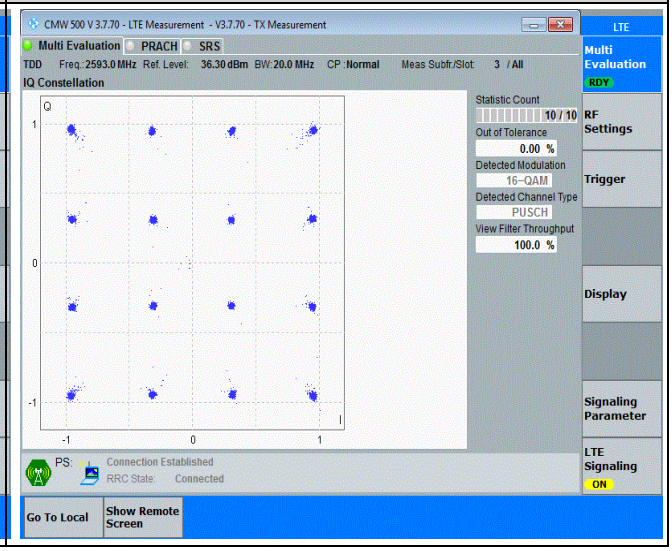


Band26-15MHz-QPSK-26915-75RB#0

Band26-15MHz-16QAM-26915-75RB#0



Band41-20MHz-QPSK-40620-100RB#0



Band41-20MHz-16QAM-40620-100RB#0