

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 Frequency=1732.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	18.17	0.010488	Within authorized band for Band 4	Pass
	-20	20.64	0.011913		
	-10	31.60	0.018240		
	0	8.53	0.004924		
	10	9.91	0.005720		
	20	16.16	0.009328		
	30	19.94	0.011509		
	40	-10.16	-0.005864		
	50	-6.95	-0.004012		
16QAM					
3.85	-30	29.55	0.017056	Within authorized band for Band 4	Pass
	-20	15.29	0.008825		
	-10	29.55	0.017056		
	0	13.02	0.007515		
	10	40.93	0.023625		
	20	23.22	0.013403		
	30	33.40	0.019278		
	40	48.49	0.027988		
	50	23.32	0.013460		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-22.22	-0.012825	Within authorized band for Band 4	Pass
	3.85	-27.82	-0.016058		
	4.40	-5.81	-0.003354		
16QAM					
25	3.50	10.20	0.005887	Within authorized band for Band 4	Pass
	3.85	-5.41	-0.003123		
	4.40	37.95	0.021905		

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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-11.59	-0.013855	±2.5	Pass
	-20	-13.19	-0.015768		
	-10	-16.35	-0.019546		
	0	-20.04	-0.023957		
	10	-26.69	-0.031907		
	20	-29.68	-0.035481		
	30	-37.29	-0.044579		
	40	-41.20	-0.049253		
	50	-45.46	-0.054345		
16QAM					
3.85	-30	-45.22	-0.054059	±2.5	Pass
	-20	-44.49	-0.053186		
	-10	-46.95	-0.056127		
	0	-48.75	-0.058279		
	10	-44.35	-0.053019		
	20	-43.10	-0.051524		
	30	-39.20	-0.046862		
	40	-39.21	-0.046874		
	50	-44.25	-0.052899		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-12.00	-0.014345	±2.5	Pass
	3.85	-7.91	-0.009456		
	4.40	-9.60	-0.011476		
16QAM					
25	3.50	-45.88	-0.054848	±2.5	Pass
	3.85	-47.56	-0.056856		
	4.40	-43.63	-0.052158		

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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-48.07	-0.018963	Within authorized band for Band 7	Pass
	-20	-61.68	-0.024331		
	-10	14.46	0.005704		
	0	-11.07	-0.004367		
	10	-23.60	-0.009310		
	20	-36.26	-0.014304		
	30	-41.54	-0.016387		
	40	-15.18	-0.005988		
	50	-19.43	-0.007665		
16QAM					
3.85	-30	25.84	0.010193	Within authorized band for Band 7	Pass
	-20	36.66	0.014462		
	-10	43.75	0.017258		
	0	18.63	0.007349		
	10	34.09	0.013448		
	20	49.97	0.019712		
	30	61.81	0.024383		
	40	19.87	0.007838		
	50	22.07	0.008706		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-42.50	-0.016765	Within authorized band for Band 7	Pass
	3.85	-25.09	-0.009897		
	4.40	-49.58	-0.019558		
16QAM					
25	3.50	10.13	0.003996	Within authorized band for Band 7	Pass
	3.85	-16.78	-0.006619		
	4.40	25.69	0.010134		

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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-11.39	-0.016042	Within authorized band for Band 17	Pass
	-20	-7.14	-0.010056		
	-10	4.51	0.006352		
	0	10.86	0.015296		
	10	14.53	0.020465		
	20	17.27	0.024324		
	30	19.05	0.026831		
	40	20.03	0.028211		
	50	20.86	0.029380		
16QAM					
3.85	-30	38.58	0.054338	Within authorized band for Band 17	Pass
	-20	40.87	0.057563		
	-10	50.13	0.070606		
	0	49.80	0.070141		
	10	-10.40	-0.014648		
	20	-3.69	-0.005197		
	30	-5.09	-0.007169		
	40	7.64	0.010761		
	50	12.10	0.017042		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-26.34	-0.037099	Within authorized band for Band 17	Pass
	3.85	-9.94	-0.014000		
	4.40	-2.73	-0.003845		
16QAM					
25	3.50	30.81	0.043394	Within authorized band for Band 17	Pass
	3.85	23.89	0.033648		
	4.40	32.69	0.046042		

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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-60.35	-0.023256	Within authorized band for Band 38	Pass
	-20	-58.24	-0.022443		
	-10	-57.29	-0.022077		
	0	-54.77	-0.021106		
	10	8.55	0.003295		
	20	-9.24	-0.003561		
	30	-9.54	-0.003676		
	40	-12.72	-0.004902		
	50	-7.22	-0.002782		
16QAM					
3.85	-30	-17.61	-0.006786	Within authorized band for Band 38	Pass
	-20	-11.49	-0.004428		
	-10	-10.71	-0.004127		
	0	12.77	0.004921		
	10	15.59	0.006008		
	20	18.35	0.007071		
	30	22.96	0.008848		
	40	22.04	0.008493		
	50	18.65	0.007187		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-59.02	-0.022744	Within authorized band for Band 38	Pass
	3.85	-36.36	-0.014012		
	4.40	-58.49	-0.022539		
16QAM					
25	3.50	32.83	0.012651	Within authorized band for Band 38	Pass
	3.85	-7.25	-0.002794		
	4.40	50.88	0.019607		

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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	6.51	0.002509	Within authorized band for Band 41	Pass
	-20	15.69	0.006046		
	-10	27.41	0.010563		
	0	33.70	0.012987		
	10	43.56	0.016786		
	20	31.14	0.012000		
	30	42.47	0.016366		
	40	17.60	0.006782		
	50	26.11	0.010062		
16QAM					
3.85	-30	-8.87	-0.003418	Within authorized band for Band 41	Pass
	-20	25.69	0.009900		
	-10	39.18	0.015098		
	0	51.01	0.019657		
	10	26.18	0.010089		
	20	30.88	0.011900		
	30	43.37	0.016713		
	40	-19.13	-0.007372		
	50	-12.32	-0.004748		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-15.41	-0.005938	Within authorized band for Band 41	Pass
	3.85	-24.32	-0.009372		
	4.40	-13.03	-0.005021		
16QAM					
25	3.50	29.43	0.011341	Within authorized band for Band41	Pass
	3.85	36.41	0.014031		
	4.40	49.32	0.019006		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

## LTE Band 66 part:

Reference Frequency: LTE Band 66 (10MHz) Middle channel=132322 Frequency=1745.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	56.71	0.032499	Within authorized band for Band 66	Pass
	-20	15.26	0.008745		
	-10	34.17	0.019582		
	0	18.12	0.010384		
	10	33.33	0.019100		
	20	14.58	0.008355		
	30	28.21	0.016166		
	40	-6.79	-0.003891		
	50	23.98	0.013742		
16QAM					
3.85	-30	40.20	0.023037	Within authorized band for Band 66	Pass
	-20	25.71	0.014734		
	-10	51.83	0.029702		
	0	29.41	0.016854		
	10	43.60	0.024986		
	20	15.49	0.008877		
	30	28.25	0.016189		
	40	39.77	0.022791		
	50	15.79	0.009049		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	18.93	0.010848	Within authorized band for Band 66	Pass
	3.85	13.32	0.007633		
	4.40	33.60	0.019255		
16QAM					
25	3.50	-8.08	-0.004630	Within authorized band for Band 66	Pass
	3.85	36.03	0.020648		
	4.40	27.32	0.015656		

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

## Appendix G: Modulation Characteristics

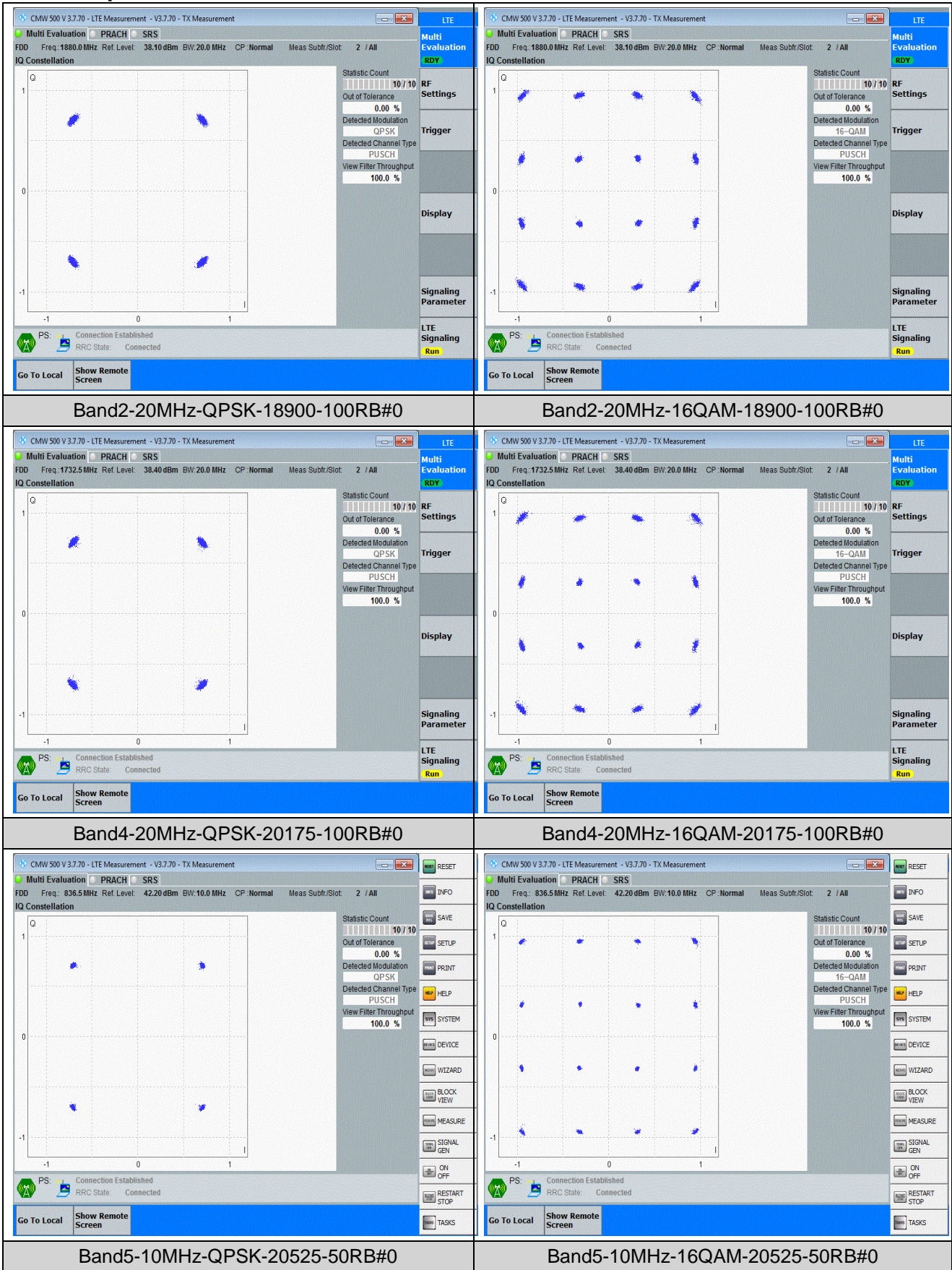
### Test Result

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
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#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
Band66	20MHz	QPSK	132322	100RB#0	PASS	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS	PASS

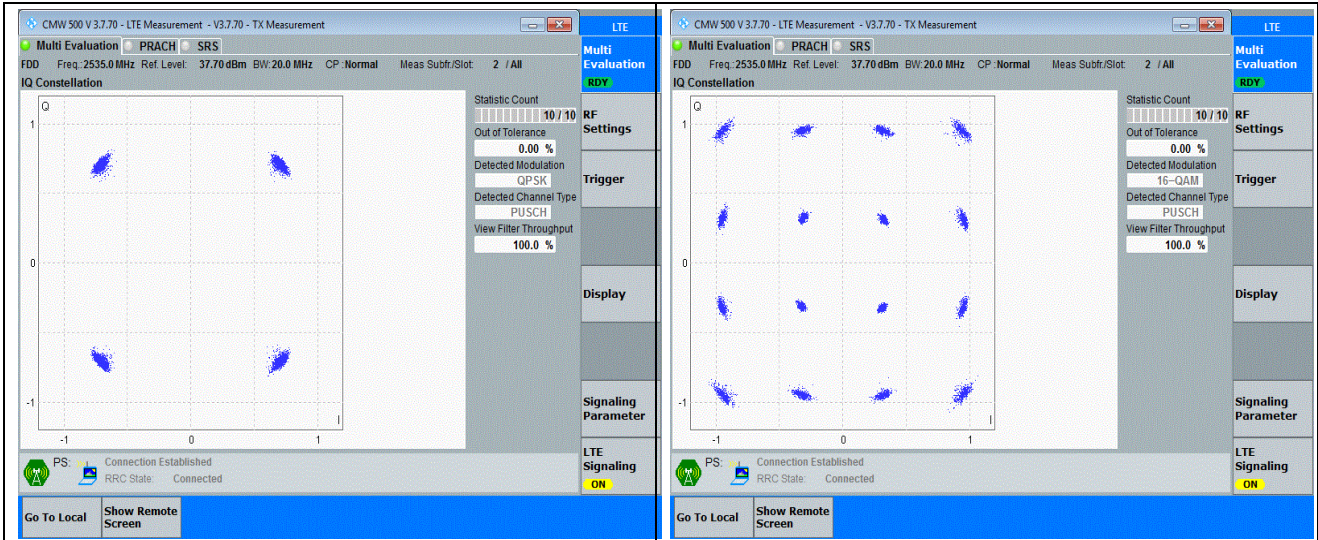
*Remark: All bandwidth had been tested, but only the worst case data displayed in this report.*



### Test Graphs

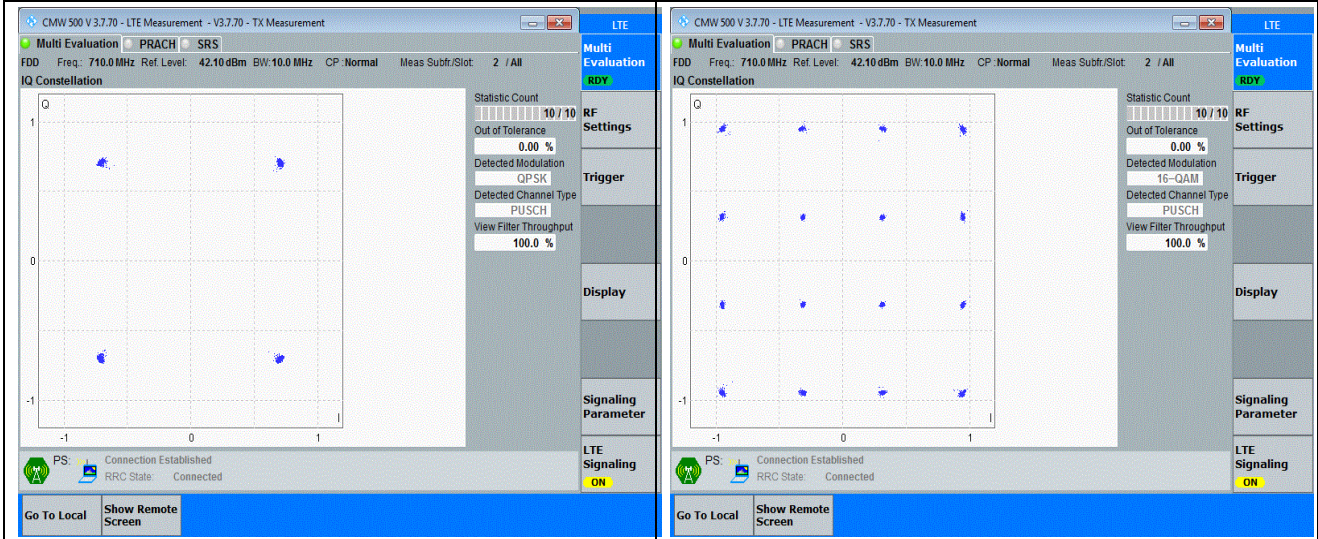






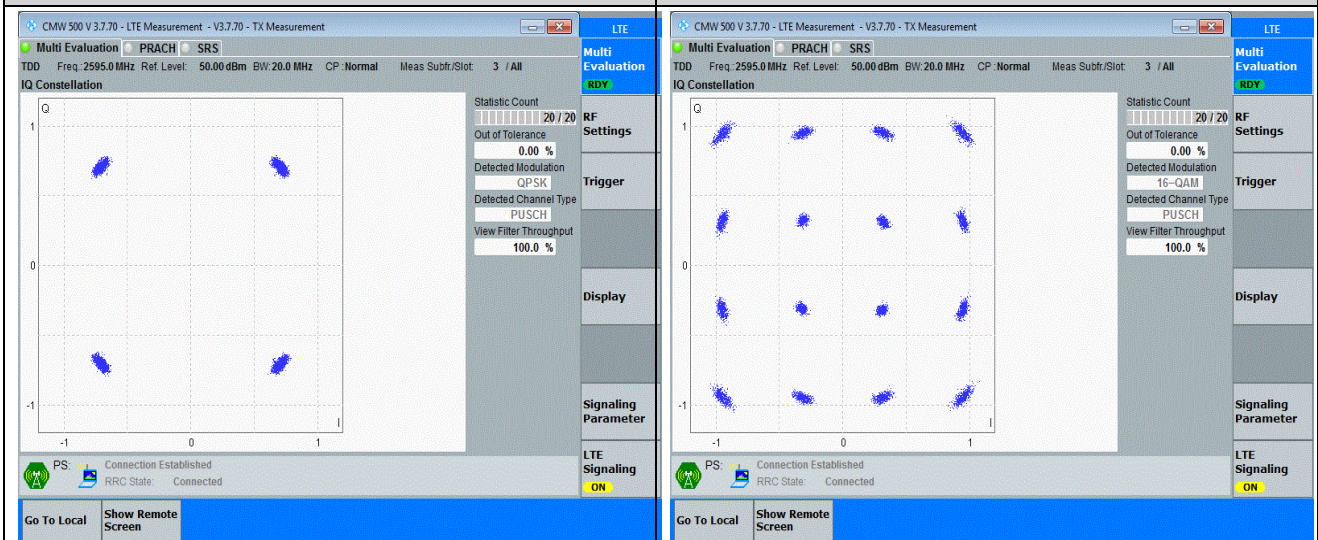
Band7-20MHz-QPSK-21100-100RB#0

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



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

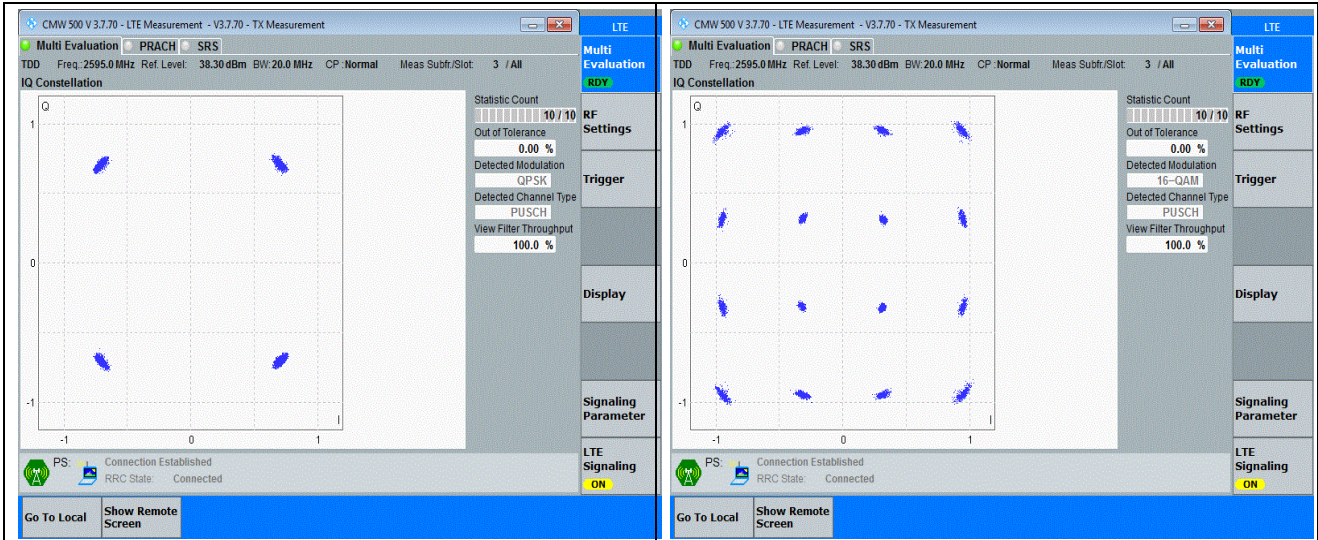
Band17-10MHz-16QAM-23790-50RB#0



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

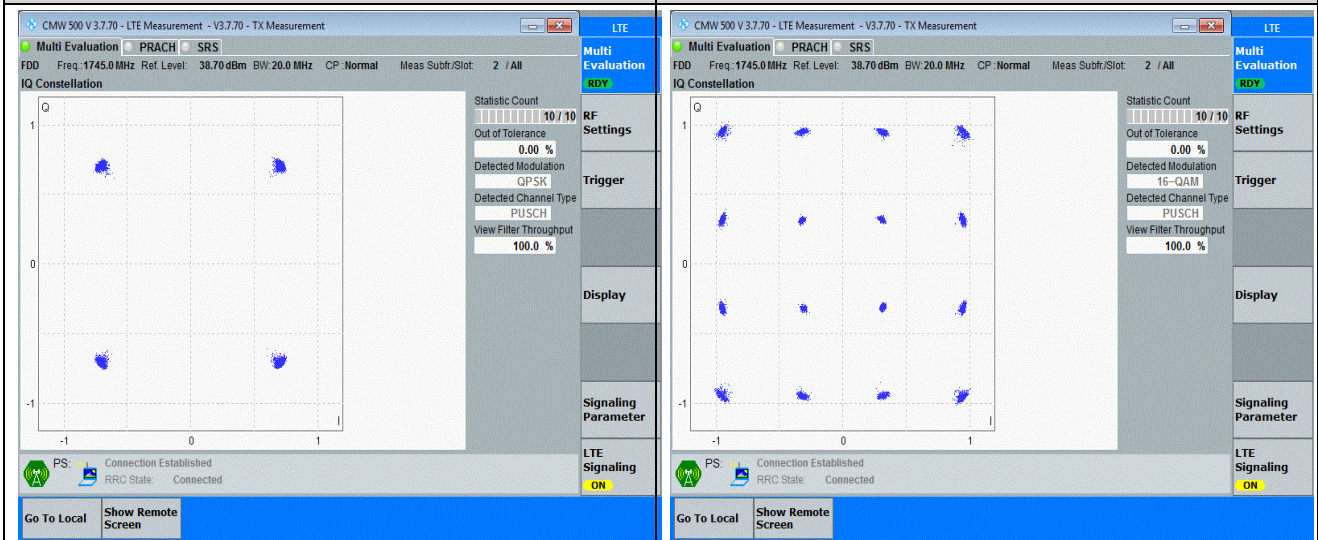
Band38-20MHz-16QAM-38000-100RB#0





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

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



Band66-20MHz-QPSK-132322-100RB#0

Band66-20MHz-16QAM-132322-100RB#0