

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-7.90	-0.009444	±2.5	Pass
	3.80	-11.72	-0.014011		
	4.35	-8.75	-0.010460		
16QAM					
25	3.50	-7.57	-0.009050	±2.5	Pass
	3.80	-8.81	-0.010532		
	4.35	-8.23	-0.009839		
64QAM					
25	3.50	-13.86	-0.016569	±2.5	Pass
	3.80	-7.21	-0.008619		
	4.35	-8.64	-0.010329		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

LTE Band 12 part:

Reference Frequency: LTE Band 12(10MHz) Middle channel=23095 Frequency=707.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-6.91	-0.009767	Within authorized band for Band 12	Pass
	-20	-8.58	-0.012127		
	-10	-9.46	-0.013371		
	0	-4.95	-0.006996		
	10	-11.37	-0.016071		
	20	-7.51	-0.010615		
	30	-4.51	-0.006375		
	40	-4.33	-0.006120		
	50	-6.27	-0.008862		
16QAM					
3.80	-30	-7.28	-0.010290	Within authorized band for Band 12	Pass
	-20	-6.18	-0.008735		
	-10	-11.69	-0.016523		
	0	-13.93	-0.019689		
	10	-7.54	-0.010657		
	20	-11.50	-0.016254		
	30	-10.53	-0.014883		
	40	-14.48	-0.020466		
	50	-9.20	-0.013004		
64QAM					
3.80	-30	-12.33	-0.017428	Within authorized band for Band 12	Pass
	-20	-8.53	-0.012057		
	-10	-7.30	-0.010318		
	0	-10.07	-0.014233		
	10	-6.51	-0.009201		
	20	-9.57	-0.013527		
	30	-10.66	-0.015067		
	40	-11.97	-0.016919		
	50	-12.32	-0.017413		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-8.27	-0.011689	Within authorized band for Band 12	Pass
	3.80	-7.80	-0.011025		
	4.35	-9.76	-0.013795		
16QAM					
25	3.50	-10.20	-0.014417	Within authorized band for Band 12	Pass
	3.80	-8.63	-0.012198		
	4.35	-6.14	-0.008678		
64QAM					
25	3.50	-6.02	-0.008509	Within authorized band for Band 12	Pass
	3.80	-10.51	-0.014855		
	4.35	-9.91	-0.014007		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

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					
3.80	-30	-7.62	-0.010732	Within authorized band for Band 17	Pass
	-20	-10.29	-0.014493		
	-10	-8.34	-0.011746		
	0	-6.47	-0.009113		
	10	-12.42	-0.017493		
	20	-7.75	-0.010915		
	30	-8.35	-0.011761		
	40	-11.93	-0.016803		
	50	-10.37	-0.014606		
16QAM					
3.80	-30	-9.90	-0.013944	Within authorized band for Band 17	Pass
	-20	-8.68	-0.012225		
	-10	-5.32	-0.007493		
	0	3.05	0.004296		
	10	-7.22	-0.010169		
	20	-6.82	-0.009606		
	30	-9.46	-0.013324		
	40	-11.57	-0.016296		
	50	-10.26	-0.014451		
64QAM					
3.80	-30	-11.22	-0.015803	Within authorized band for Band 17	Pass
	-20	-8.13	-0.011451		
	-10	-8.44	-0.011887		
	0	-6.11	-0.008606		
	10	-14.10	-0.019859		
	20	-6.05	-0.008521		
	30	-7.34	-0.010338		
	40	-7.84	-0.011042		
	50	-5.14	-0.007239		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-4.25	-0.005986	Within authorized band for Band 17	Pass
	3.80	-6.94	-0.009775		
	4.35	-9.64	-0.013577		
16QAM					
25	3.50	-9.46	-0.013324	Within authorized band for Band 17	Pass
	3.80	-8.61	-0.012127		
	4.35	-14.68	-0.020676		
64QAM					
25	3.50	-14.53	-0.020465	Within authorized band for Band 17	Pass
	3.80	-9.38	-0.013211		
	4.35	-7.31	-0.010296		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

LTE Band 41 part:

Reference Frequency: LTE Band 41 (10MHz) Middle channel=40620 Frequency=2593.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-17.01	-0.006560	Within authorized band for Band 41	Pass
	-20	7.78	0.003000		
	-10	8.21	0.003166		
	0	-3.73	-0.001438		
	10	-13.99	-0.005395		
	20	-4.58	-0.001766		
	30	-14.82	-0.005715		
	40	-2.63	-0.001014		
	50	-11.30	-0.004358		
16QAM					
3.80	-30	-1.97	-0.000760	Within authorized band for Band 41	Pass
	-20	6.58	0.002538		
	-10	-9.50	-0.003664		
	0	-16.94	-0.006533		
	10	5.97	0.002302		
	20	-15.01	-0.005789		
	30	-17.82	-0.006872		
	40	-12.97	-0.005002		
	50	-12.76	-0.004921		
64QAM					
3.80	-30	-6.14	-0.002368	Within authorized band for Band 41	Pass
	-20	-14.65	-0.005650		
	-10	-11.87	-0.004578		
	0	-9.17	-0.003536		
	10	-19.87	-0.007663		
	20	6.38	0.002460		
	30	-12.60	-0.004859		
	40	-13.09	-0.005048		
	50	-12.26	-0.004728		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-21.14	-0.008153	Within authorized band for Band 41	Pass
	3.80	-10.69	-0.004123		
	4.35	-17.90	-0.006903		
16QAM					
25	3.50	-14.86	-0.005731	Within authorized band for Band41	Pass
	3.80	-3.79	-0.001462		
	4.35	3.82	0.001473		
64QAM					
25	3.50	-21.04	-0.008114	Within authorized band for Band41	Pass
	3.80	-14.99	-0.005781		
	4.35	-15.69	-0.006051		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

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					
3.80	-30	-13.00	-0.007450	Within authorized band for Band 66	Pass
	-20	-9.48	-0.005433		
	-10	-10.74	-0.006155		
	0	-13.66	-0.007828		
	10	-15.26	-0.008745		
	20	-9.20	-0.005272		
	30	-9.31	-0.005335		
	40	-11.66	-0.006682		
	50	-11.72	-0.006716		
16QAM					
3.80	-30	-6.47	-0.003708	Within authorized band for Band 66	Pass
	-20	-11.43	-0.006550		
	-10	6.82	0.003908		
	0	-11.62	-0.006659		
	10	-14.62	-0.008378		
	20	-13.93	-0.007983		
	30	-4.94	-0.002831		
	40	-9.06	-0.005192		
	50	-14.71	-0.008430		
64QAM					
3.80	-30	-14.55	-0.008338	Within authorized band for Band 66	Pass
	-20	-18.93	-0.010848		
	-10	9.97	0.005713		
	0	-12.72	-0.007289		
	10	-15.81	-0.009060		
	20	-13.90	-0.007966		
	30	-11.76	-0.006739		
	40	-11.69	-0.006699		
	50	-15.68	-0.008986		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-5.56	-0.003186	Within authorized band for Band 66	Pass
	3.80	-15.81	-0.009060		
	4.35	-10.79	-0.006183		
16QAM					
25	3.50	-11.04	-0.006327	Within authorized band for Band 66	Pass
	3.80	-9.74	-0.005582		
	4.35	-11.07	-0.006344		
64QAM					
25	3.50	-5.39	-0.003089	Within authorized band for Band 66	Pass
	3.80	-17.55	-0.010057		
	4.35	-7.22	-0.004138		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 71 part:

Reference Frequency: LTE Band 71 (10MHz) Middle channel=133297 Frequency=680.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-8.60	-0.012638	Within authorized band for Band 71	Pass
	-20	-6.98	-0.010257		
	-10	-8.74	-0.012843		
	0	-10.21	-0.015004		
	10	-12.30	-0.018075		
	20	-6.88	-0.010110		
	30	-12.06	-0.017722		
	40	-3.46	-0.005084		
	50	-7.50	-0.011021		
16QAM					
3.80	-30	-9.64	-0.014166	Within authorized band for Band 71	Pass
	-20	-12.02	-0.017663		
	-10	-7.75	-0.011389		
	0	-10.14	-0.014901		
	10	-8.85	-0.013005		
	20	-11.49	-0.016885		
	30	-9.46	-0.013902		
	40	-2.56	-0.003762		
	50	-5.42	-0.007965		
64QAM					
3.80	-30	-8.31	-0.012212	Within authorized band for Band 71	Pass
	-20	-8.00	-0.011756		
	-10	-8.13	-0.011947		
	0	-10.36	-0.015224		
	10	-11.42	-0.016782		
	20	-11.34	-0.016664		
	30	-8.11	-0.011918		
	40	-9.93	-0.014592		
	50	-7.40	-0.010874		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-9.03	-0.013270	Within authorized band for Band 71	Pass
	3.80	-7.60	-0.011168		
	4.35	-7.01	-0.010301		
16QAM					
25	3.50	-12.03	-0.017678	Within authorized band for Band 71	Pass
	3.80	-11.92	-0.017517		
	4.35	-12.55	-0.018442		
64QAM					
25	3.50	-7.61	-0.011183	Within authorized band for Band 71	Pass
	3.80	-7.27	-0.010683		
	4.35	-5.92	-0.008699		
<i>Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.</i>					

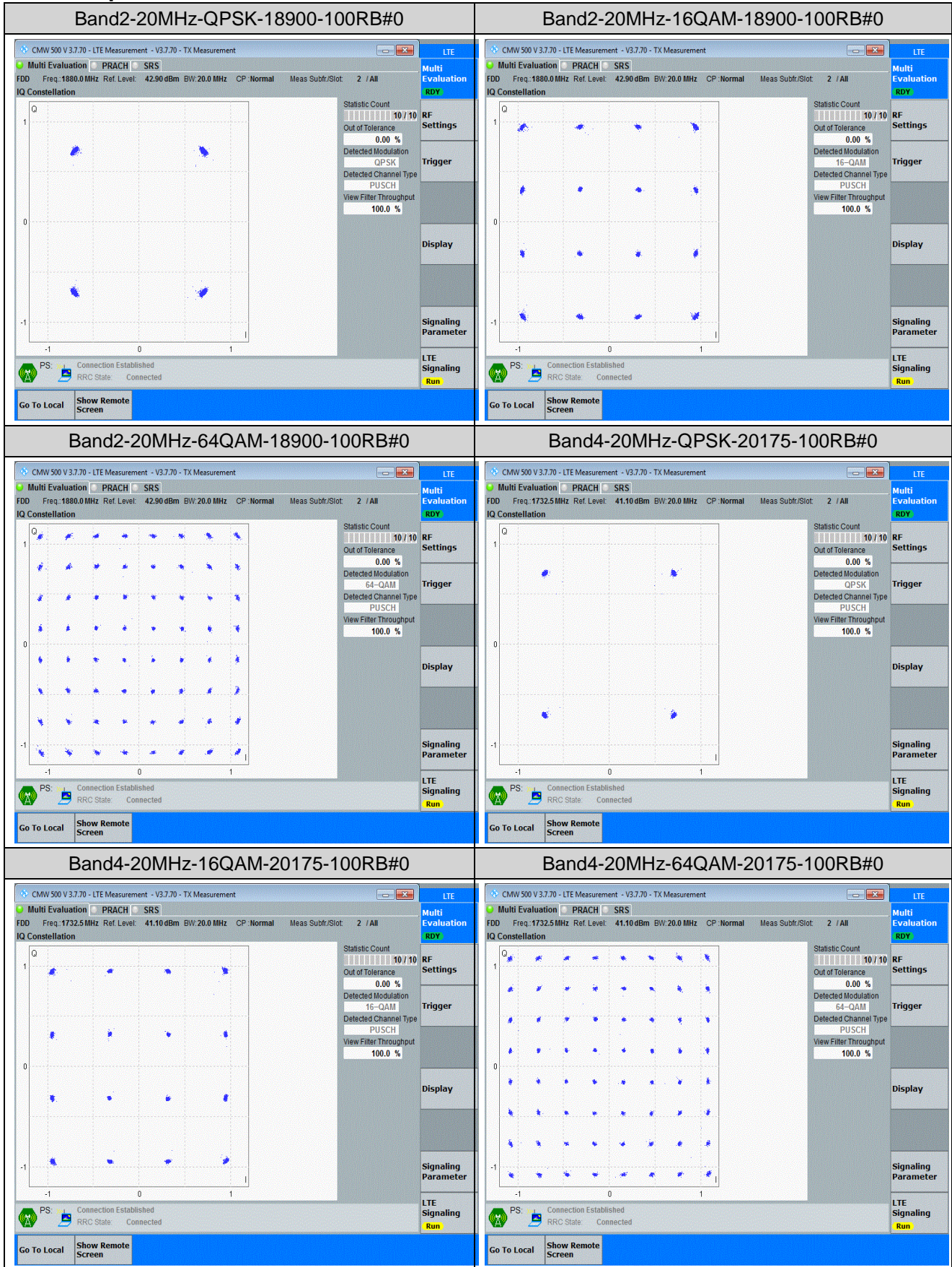
Appendix G: Modulation Characteristics

Test Result

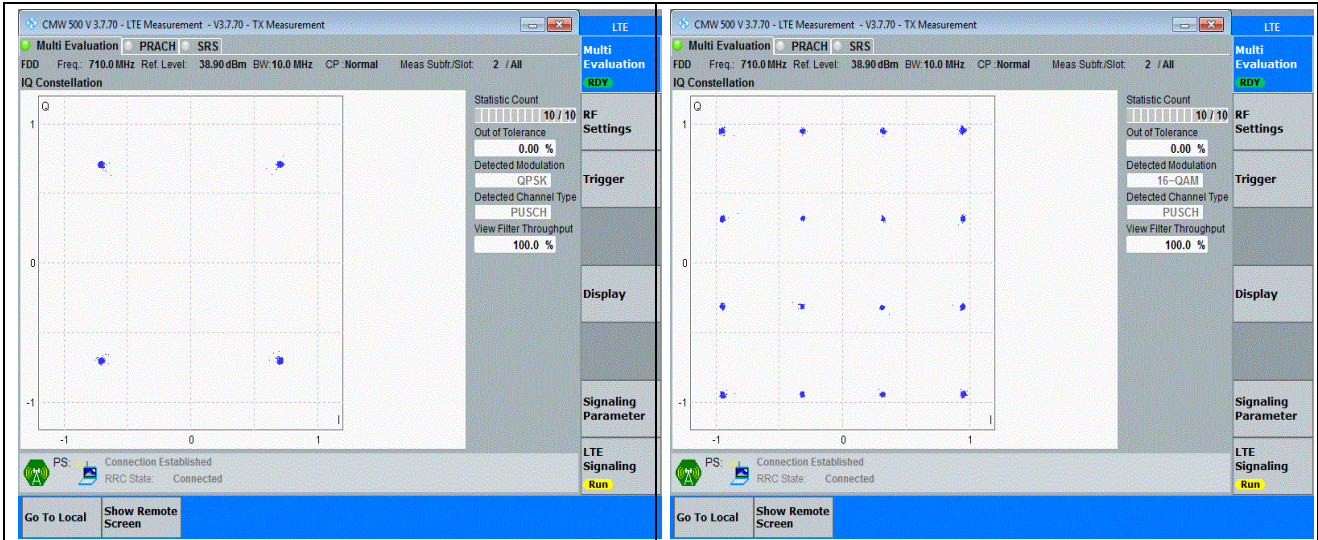
Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
Band2	20MHz	64QAM	18900	100RB#0	PASS	PASS
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	100RB#0	PASS	PASS
Band4	20MHz	64QAM	20175	100RB#0	PASS	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band5	10MHz	64QAM	20525	50RB#0	PASS	PASS
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band12	10MHz	64QAM	23095	50RB#0	PASS	PASS
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#0	PASS	PASS
Band17	10MHz	64QAM	23790	50RB#0	PASS	PASS
Band41	20MHz	QPSK	40620	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40620	100RB#0	PASS	PASS
Band41	20MHz	64QAM	40620	100RB#0	PASS	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS	PASS
Band66	20MHz	64QAM	132322	100RB#0	PASS	PASS
Band71	20MHz	QPSK	133322	100RB#0	PASS	PASS
Band71	20MHz	16QAM	133322	100RB#0	PASS	PASS
Band71	20MHz	64QAM	133322	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

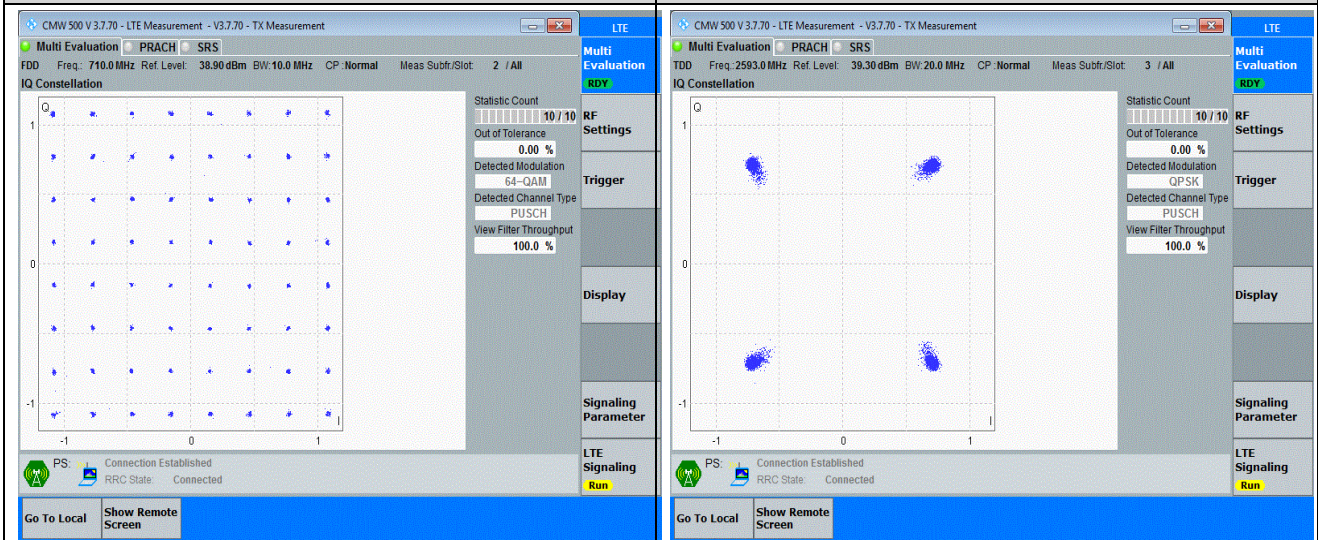


<p align="center">Band5-10MHz-QPSK-20525-50RB#0</p>	<p align="center">Band5-10MHz-16QAM-20525-50RB#0</p>
<p align="center">Band5-10MHz-64QAM-20525-50RB#0</p>	<p align="center">Band12-10MHz-QPSK-23095-50RB#0</p>
<p align="center">Band12-10MHz-16QAM-23095-50RB#0</p>	<p align="center">Band12-10MHz-64QAM-23095-50RB#0</p>
<p align="center">Band17-10MHz-QPSK-23790-50RB#0</p>	<p align="center">Band17-10MHz-16QAM-23790-50RB#0</p>



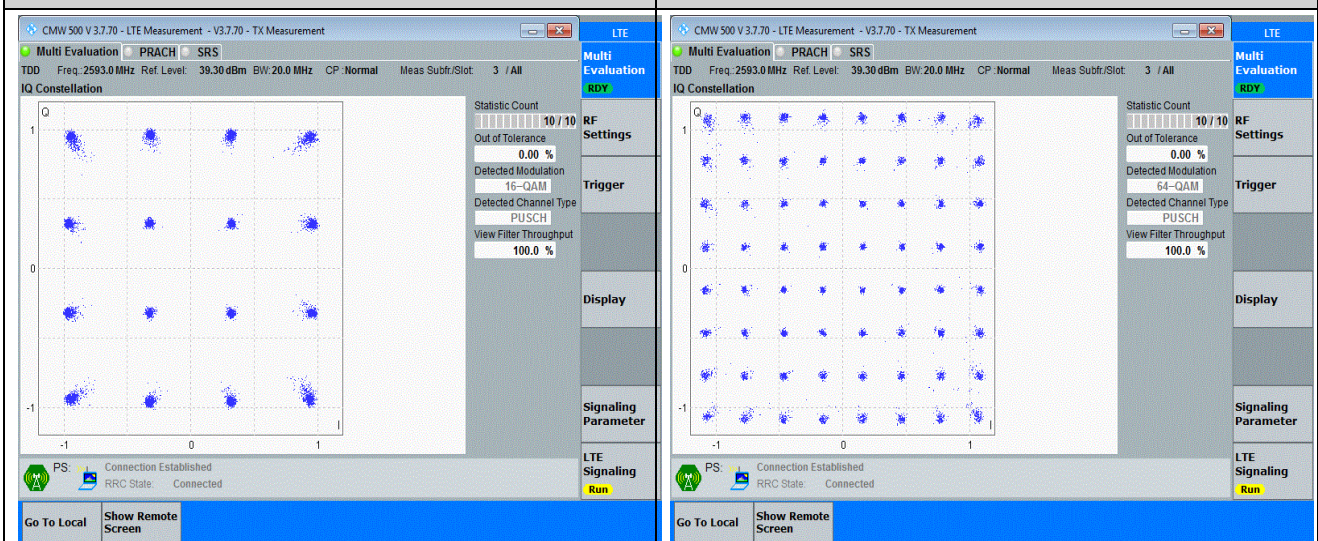
Band17-10MHz-64QAM-23790-50RB#0

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



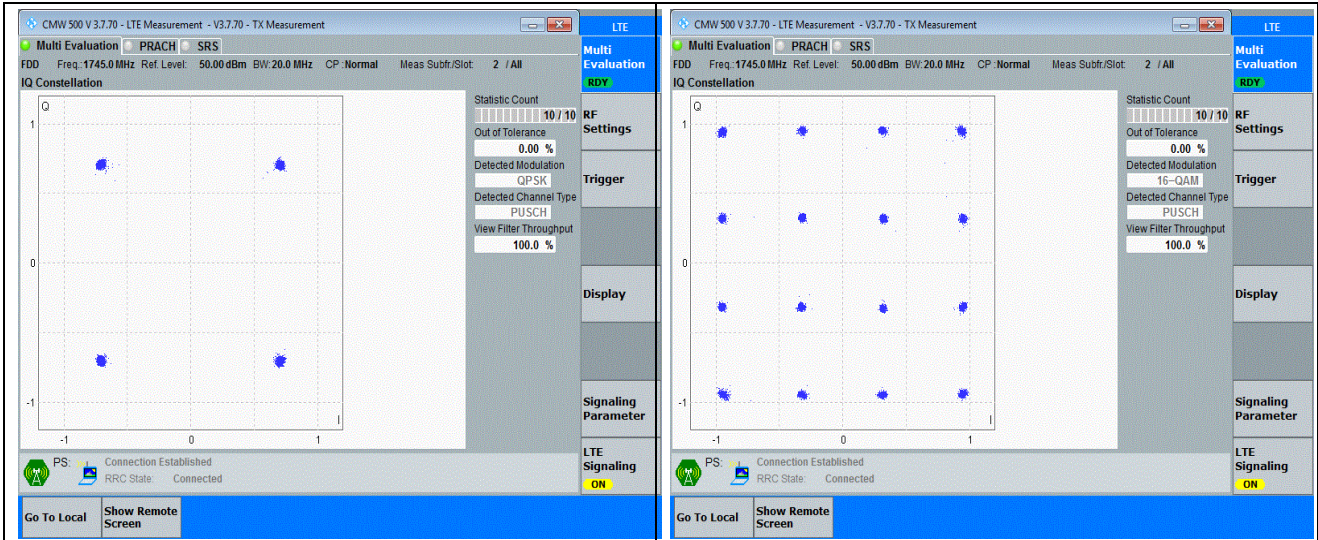
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Band41-20MHz-64QAM-40620-100RB#0



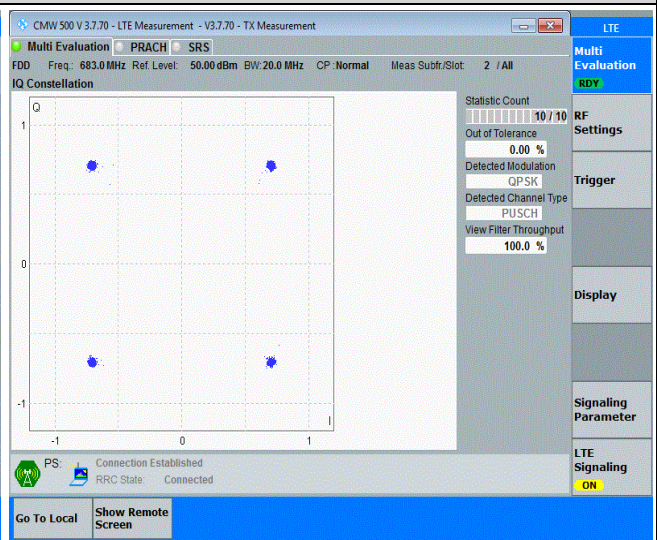
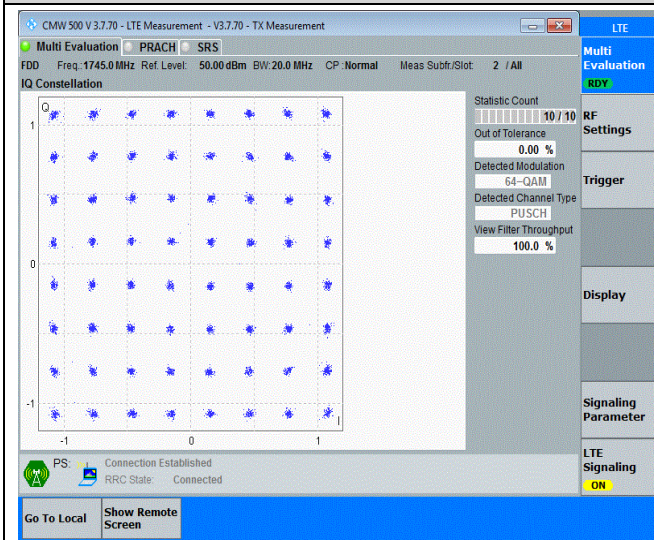
Band66-20MHz-QPSK-132322-100RB#0

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



Band66-20MHz-64QAM-132322-100RB#0

Band71-20MHz-QPSK-133322-100RB#0



Band71-20MHz-16QAM-133322-100RB#0

Band71-20MHz-64QAM-133322-100RB#0

