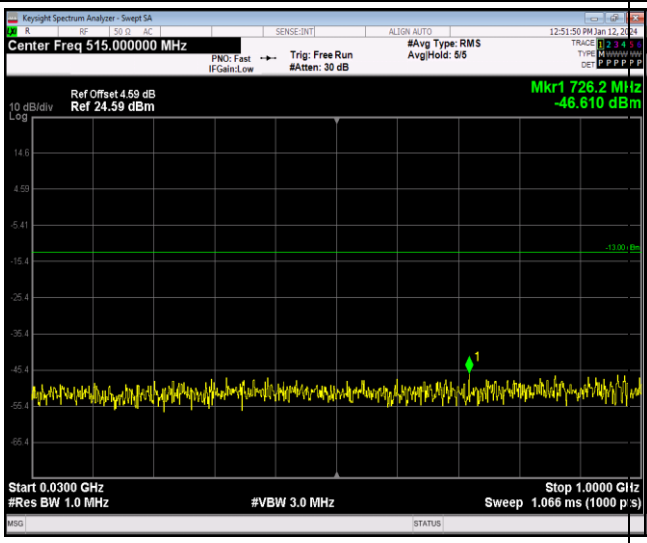
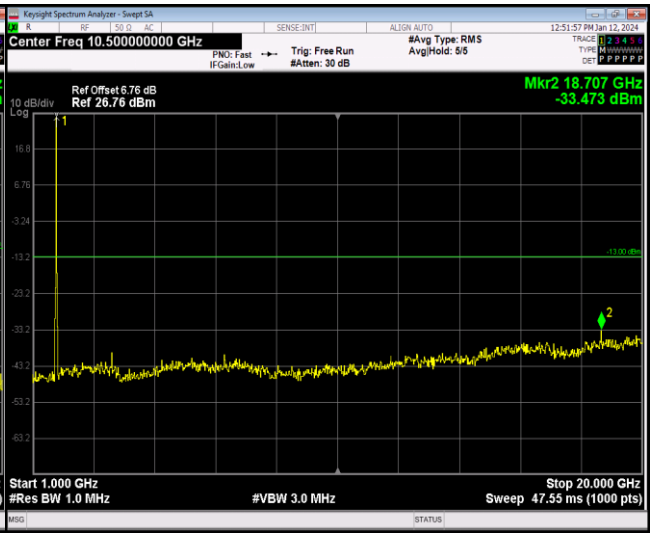
Band66-20MHz-16QAM-132322-1RB#0-Range1:30~1000MHz	Band66-20MHz-16QAM-132322-1RB#0-Range2:1000~20000MHz
	
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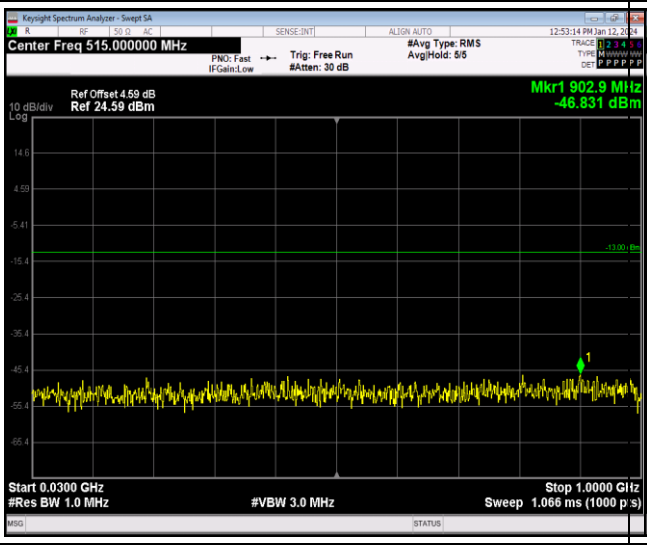	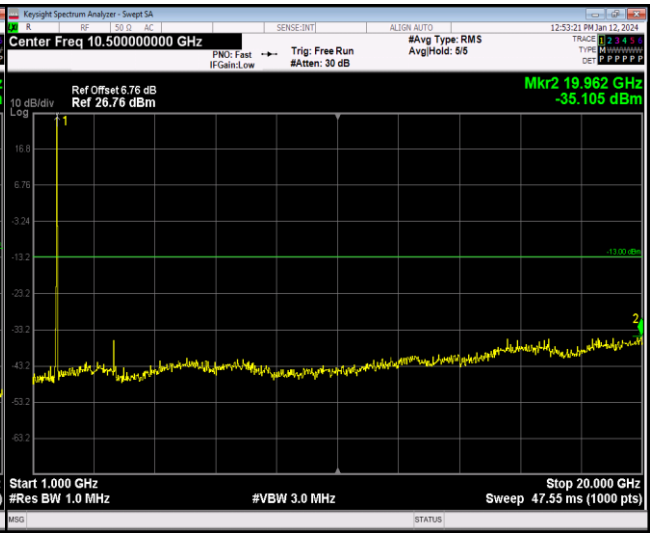
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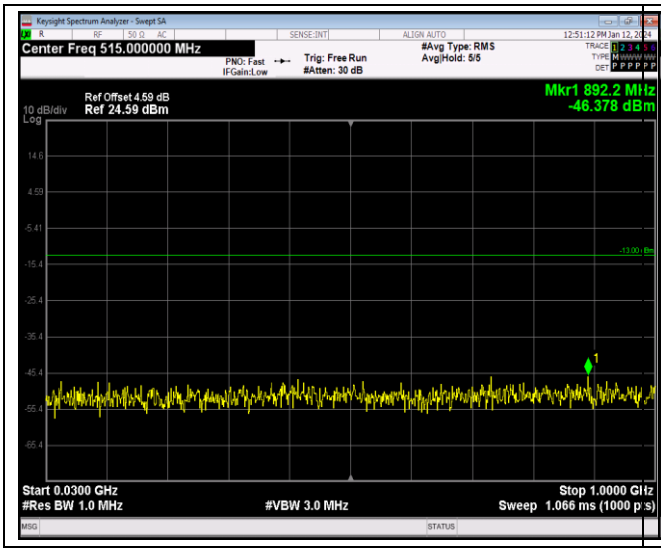
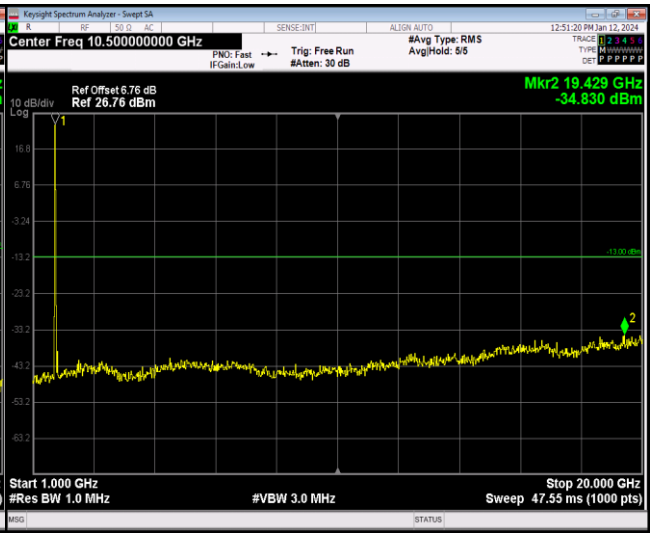
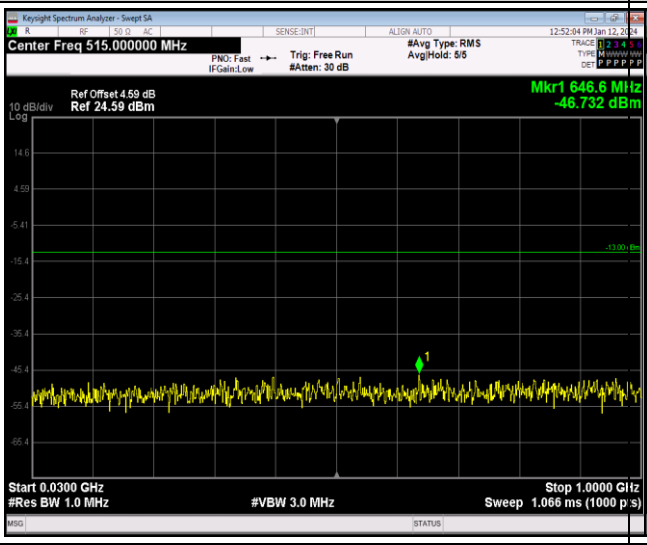


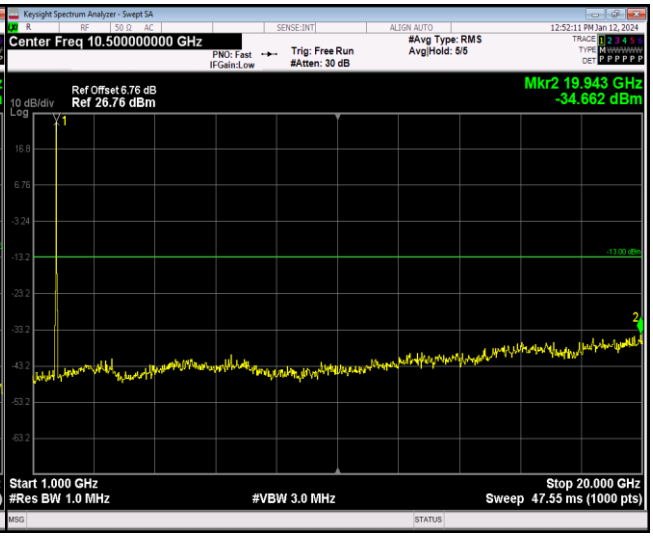
Band66-20MHz-64QAM-132322-1RB#0-Range1:30~1000MHz



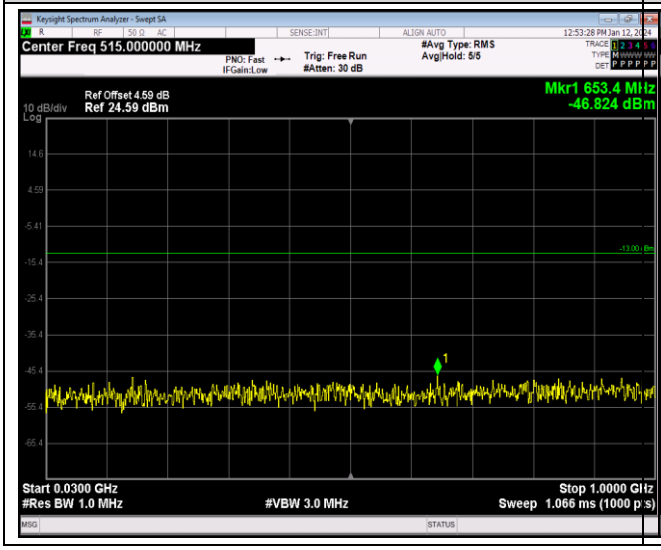
Band66-20MHz-64QAM-132322-1RB#0-Range2:1000~20000MHz



Band66-20MHz-64QAM-132572-1RB#0-Range1:30~1000MHz



Band66-20MHz-64QAM-132572-1RB#0-Range2:1000~20000MHz



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					
3.70	-30	-38.91	-0.020697	Within authorized band for Band 2	Pass
	-20	-41.70	-0.022181		
	-10	-9.98	-0.005309		
	0	-39.95	-0.021250		
	10	-55.56	-0.029553		
	20	-15.03	-0.007995		
	30	-25.98	-0.013819		
	40	-29.88	-0.015894		
	50	-29.24	-0.015553		
16QAM					
3.70	-30	-33.03	-0.017569	Within authorized band for Band 2	Pass
	-20	-42.01	-0.022346		
	-10	-6.78	-0.003606		
	0	-24.92	-0.013255		
	10	-37.44	-0.019915		
	20	-42.13	-0.022410		
	30	-17.19	-0.009144		
	40	-36.54	-0.019436		
	50	15.15	0.008059		
64QAM					
3.70	-30	-25.23	-0.013420	Within authorized band for Band 2	Pass
	-20	-42.54	-0.022628		
	-10	4.36	0.002319		
	0	-17.40	-0.009255		
	10	-26.56	-0.014128		
	20	-31.34	-0.016670		
	30	-44.37	-0.023601		
	40	-20.70	-0.011011		
	50	-30.23	-0.016080		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-17.85	-0.009495	Within authorized band for Band 2	Pass
	3.70	29.05	0.015452		
	4.20	-13.20	-0.007021		
16QAM					
25	3.45	-11.06	-0.005883	Within authorized band for Band 2	Pass
	3.70	-28.31	-0.015059		
	4.20	-19.57	-0.010410		
64QAM					
25	3.45	-37.25	-0.019814	Within authorized band for Band 2	Pass
	3.70	-14.99	-0.007973		
	4.20	-52.73	-0.028048		
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					
3.70	-30	2.78	0.003323	±2.5	Pass
	-20	-6.84	-0.008177		
	-10	-10.37	-0.012397		
	0	-15.26	-0.018243		
	10	-22.09	-0.026408		
	20	-28.81	-0.034441		
	30	-36.16	-0.043228		
	40	-34.15	-0.040825		
	50	-33.30	-0.039809		
16QAM					
3.70	-30	-33.39	-0.039916	±2.5	Pass
	-20	-33.87	-0.040490		
	-10	-32.53	-0.038888		
	0	-32.10	-0.038374		
	10	-30.13	-0.036019		
	20	-22.92	-0.027400		
	30	-14.85	-0.017753		
	40	-7.87	-0.009408		
	50	-4.12	-0.004925		
64QAM					
3.70	-30	35.26	0.042152	±2.5	Pass
	-20	40.84	0.048822		
	-10	8.55	0.010221		
	0	18.37	0.021961		
	10	32.90	0.039331		
	20	40.60	0.048536		
	30	43.52	0.052026		
	40	48.12	0.057525		
	50	-3.19	-0.003814		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	26.29	0.031429	±2.5	Pass
	3.70	36.69	0.043861		
	4.20	15.91	0.019020		
16QAM					
25	3.45	-34.23	-0.040921	±2.5	Pass
	3.70	-33.77	-0.040371		
	4.20	-35.32	-0.042224		
64QAM					
25	3.45	13.45	0.016079	±2.5	Pass
	3.70	4.11	0.004913		
	4.20	25.32	0.030269		
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					
3.70	-30	36.12	0.014249	Within authorized band for Band 7	Pass
	-20	34.92	0.013775		
	-10	36.59	0.014434		
	0	37.91	0.014955		
	10	44.00	0.017357		
	20	-20.56	-0.008110		
	30	14.43	0.005692		
	40	36.36	0.014343		
	50	47.49	0.018734		
16QAM					
3.70	-30	34.40	0.013570	Within authorized band for Band 7	Pass
	-20	45.46	0.017933		
	-10	6.55	0.002584		
	0	44.23	0.017448		
	10	29.57	0.011665		
	20	38.54	0.015203		
	30	25.32	0.009988		
	40	21.54	0.008497		
	50	-10.16	-0.004008		
64QAM					
3.70	-30	49.47	0.019515	Within authorized band for Band 7	Pass
	-20	26.45	0.010434		
	-10	18.38	0.007250		
	0	36.54	0.014414		
	10	43.85	0.017298		
	20	-11.46	-0.004521		
	30	15.32	0.006043		
	40	33.89	0.013369		
	50	50.41	0.019886		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	8.85	0.003491	Within authorized band for Band 7	Pass
	3.70	43.34	0.017097		
	4.20	25.12	0.009909		
16QAM					
25	3.45	49.60	0.019566	Within authorized band for Band 7	Pass
	3.70	8.81	0.003475		
	4.20	19.56	0.007716		
64QAM					
25	3.45	32.42	0.012789	Within authorized band for Band 7	Pass
	3.70	43.64	0.017215		
	4.20	13.62	0.005373		
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					
3.70	-30	-37.92	-0.014613	Within authorized band for Band 41	Pass
	-20	-9.31	-0.003588		
	-10	-37.32	-0.014382		
	0	-19.67	-0.007580		
	10	-53.10	-0.020462		
	20	-49.94	-0.019245		
	30	-19.25	-0.007418		
	40	-44.56	-0.017171		
	50	-16.08	-0.006197		
16QAM					
3.70	-30	11.66	0.004493	Within authorized band for Band 41	Pass
	-20	11.94	0.004601		
	-10	17.32	0.006674		
	0	29.44	0.011345		
	10	38.37	0.014786		
	20	40.34	0.015545		
	30	52.40	0.020193		
	40	-17.67	-0.006809		
	50	-13.70	-0.005279		
64QAM					
3.70	-30	17.90	0.006898	Within authorized band for Band 41	Pass
	-20	14.46	0.005572		
	-10	5.01	0.001931		
	0	35.59	0.013715		
	10	-10.54	-0.004062		
	20	38.04	0.014659		
	30	35.31	0.013607		
	40	8.81	0.003395		
	50	35.13	0.013538		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	28.14	0.010844	Within authorized band for Band 41	Pass
	3.70	21.41	0.008250		
	4.20	-7.91	-0.003048		
16QAM					
25	3.45	-50.53	-0.019472	Within authorized band for Band41	Pass
	3.70	-46.58	-0.017950		
	4.20	-59.22	-0.022821		
64QAM					
25	3.45	19.03	0.007333	Within authorized band for Band41	Pass
	3.70	5.39	0.002077		
	4.20	36.36	0.014012		
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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.70	-30	-27.81	-0.015937	Within authorized band for Band 66	Pass
	-20	-29.64	-0.016986		
	-10	-52.16	-0.029891		
	0	-44.23	-0.025347		
	10	-30.31	-0.017370		
	20	-38.11	-0.021840		
	30	-40.14	-0.023003		
	40	-44.76	-0.025650		
	50	-16.72	-0.009582		
16QAM					
3.70	-30	-23.78	-0.013628	Within authorized band for Band 66	Pass
	-20	-19.10	-0.010946		
	-10	-22.77	-0.013049		
	0	-18.91	-0.010837		
	10	-12.27	-0.007032		
	20	8.91	0.005106		
	30	-23.76	-0.013616		
	40	-50.81	-0.029117		
	50	-38.67	-0.022160		
64QAM					
3.70	-30	-5.35	-0.003066	Within authorized band for Band 66	Pass
	-20	-11.30	-0.006476		
	-10	-15.95	-0.009140		
	0	-18.51	-0.010607		
	10	-30.73	-0.017610		
	20	3.12	0.001788		
	30	-3.99	-0.002287		
	40	-8.30	-0.004756		
	50	-13.18	-0.007553		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	9.21	0.005278	Within authorized band for Band 66	Pass
	3.70	21.04	0.012057		
	4.20	-40.94	-0.023461		
16QAM					
25	3.45	-25.48	-0.014602	Within authorized band for Band 66	Pass
	3.70	-9.43	-0.005404		
	4.20	-30.80	-0.017650		
64QAM					
25	3.45	-39.95	-0.022894	Within authorized band for Band 66	Pass
	3.70	-25.22	-0.014453		
	4.20	9.13	0.005232		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

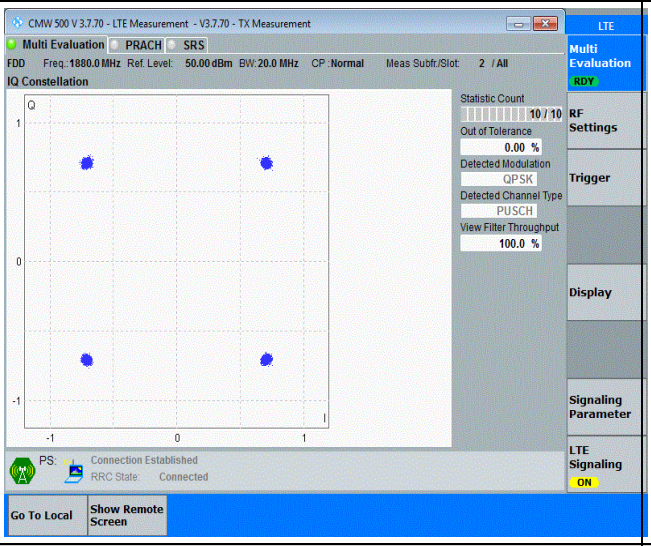
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
Band2	20MHz	64QAM	18900	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
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band7	20MHz	64QAM	21100	100RB#0	PASS	PASS
Band41	20MHz	QPSK	40640	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40640	100RB#0	PASS	PASS
Band41	20MHz	64QAM	40640	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

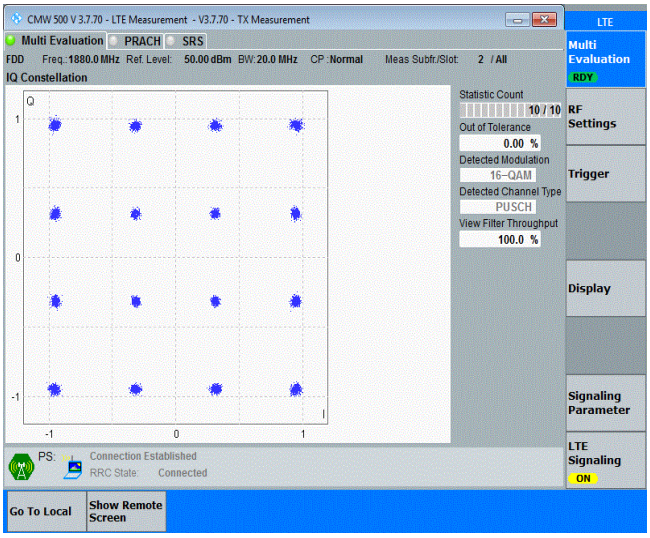
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

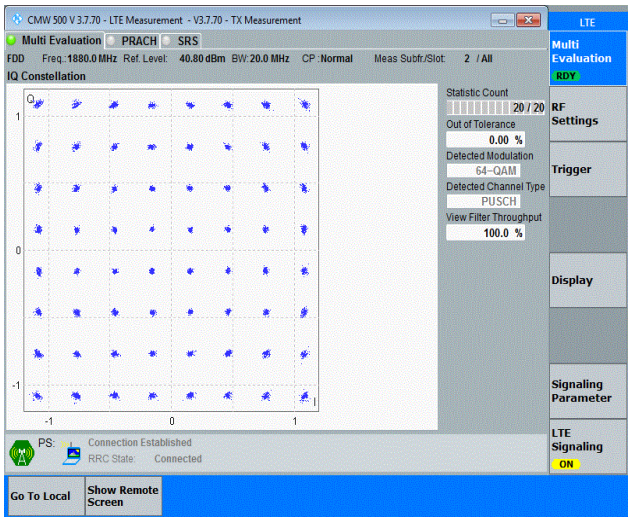
Band2-20MHz-QPSK-18900-100RB#0



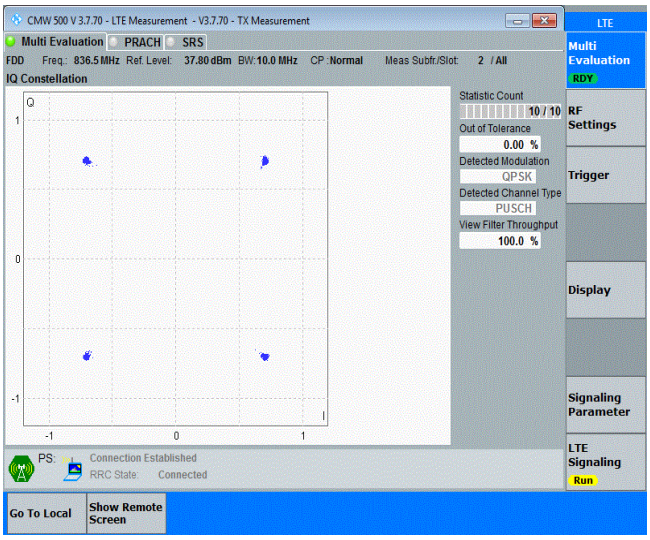
Band2-20MHz-16QAM-18900-100RB#0



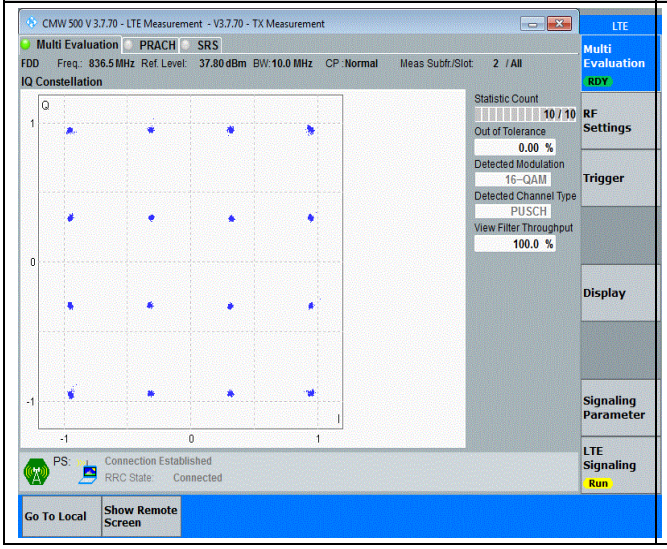
Band2-20MHz-64QAM-18900-100RB#0



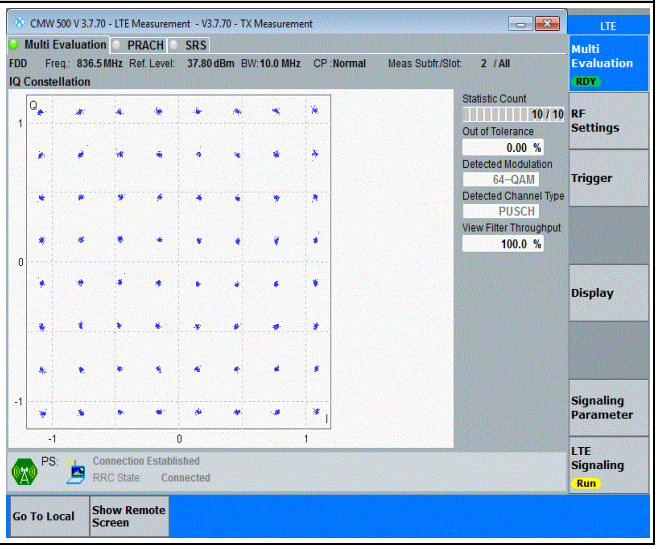
Band5-10MHz-QPSK-20525-50RB#0



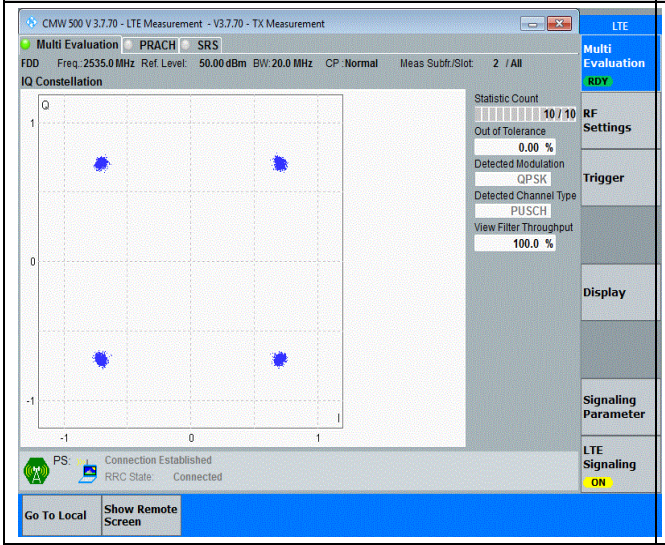
Band5-10MHz-16QAM-20525-50RB#0



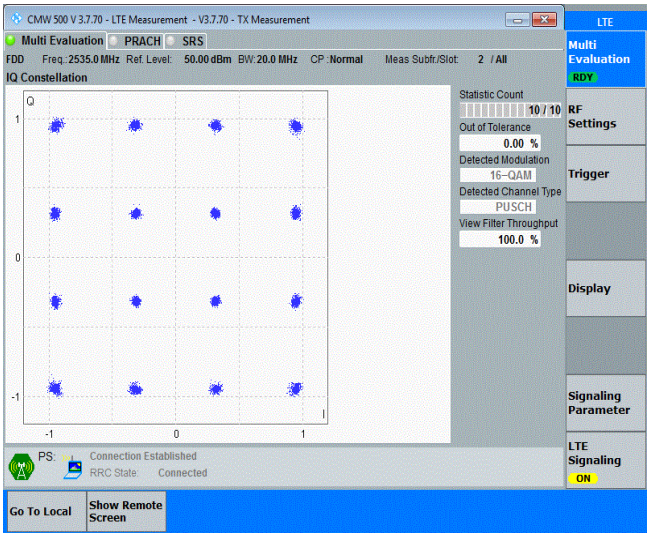
Band5-10MHz-64QAM-20525-50RB#0



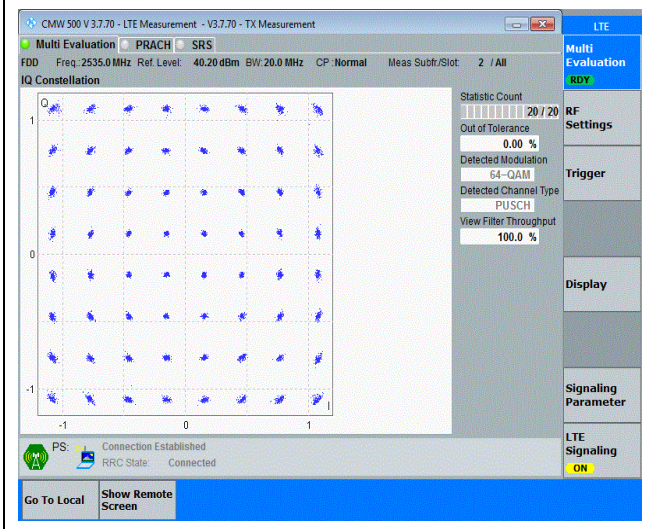
Band7-20MHz-QPSK-21100-100RB#0



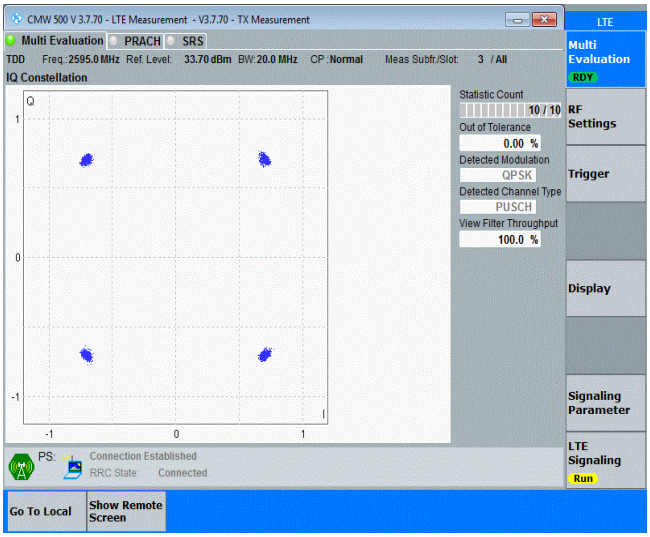
Band7-20MHz-16QAM-21100-100RB#0



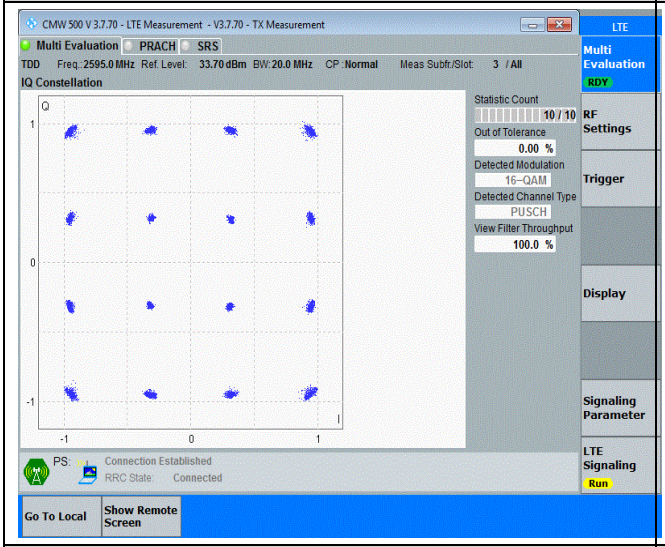
Band7-20MHz-64QAM-21100-100RB#0



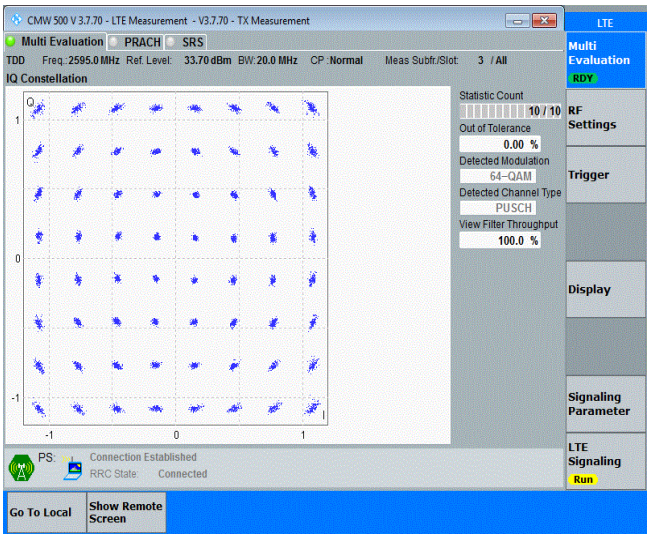
Band41-20MHz-QPSK-40640-100RB#0



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

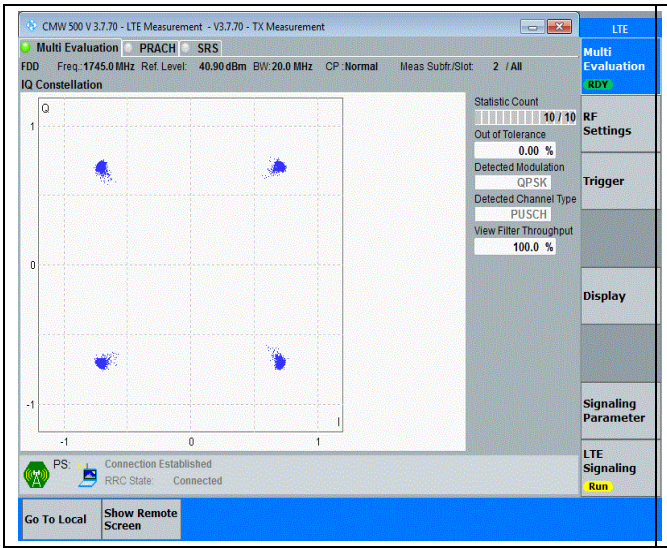


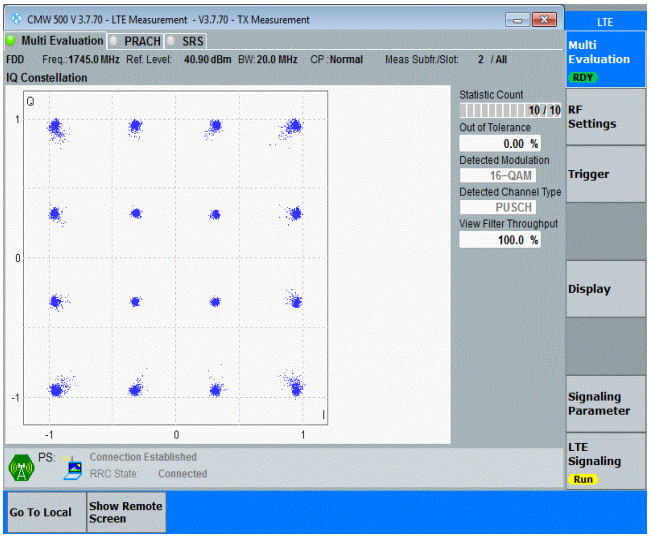
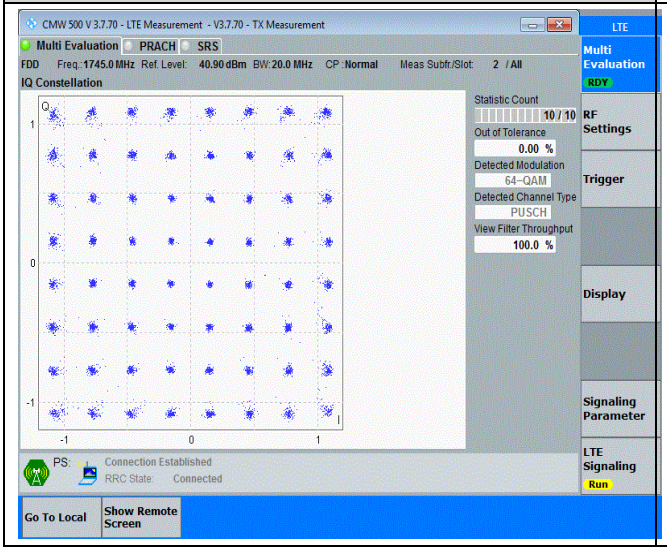
Band41-20MHz-64QAM-40640-100RB#0



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

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





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