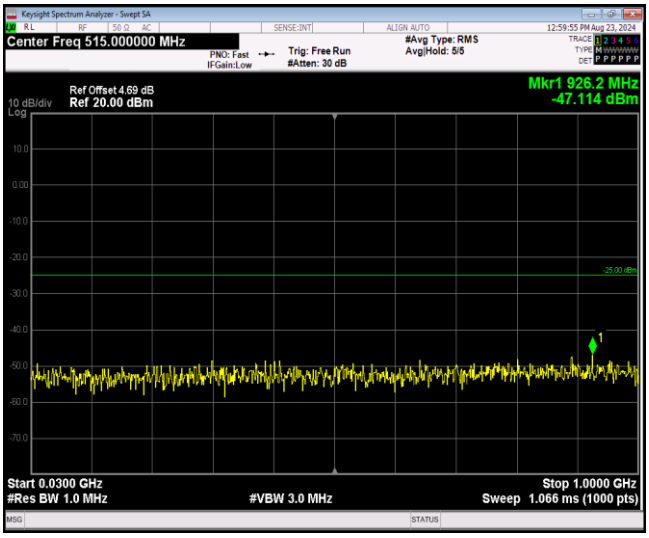
Band41-20MHz-16QAM-40640-1RB#0-Range1:30~1000MHz	Band41-20MHz-16QAM-40640-1RB#0-Range2:1000~26500MHz
	
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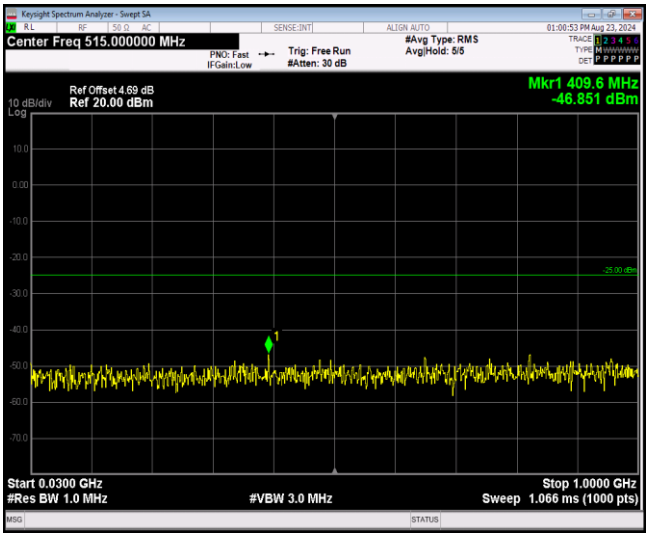	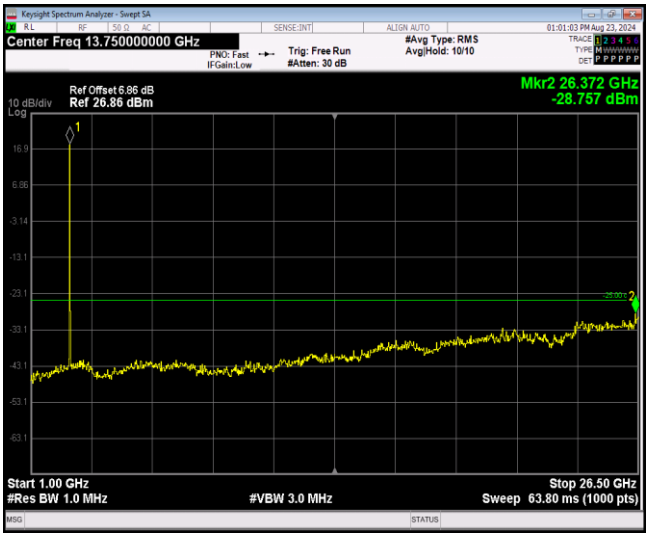
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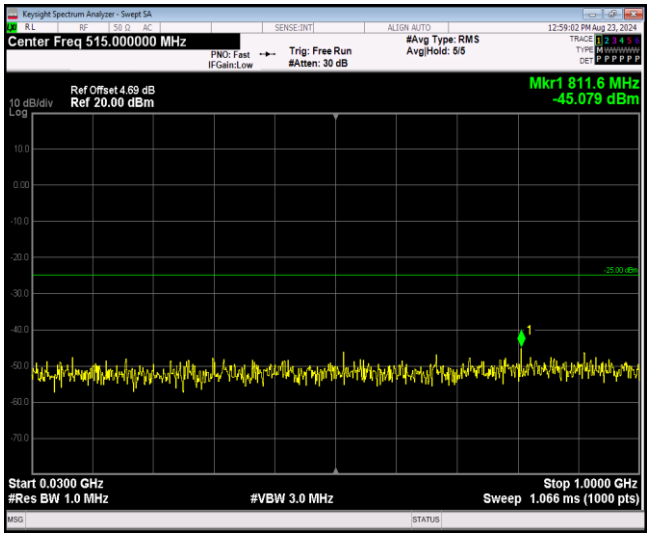
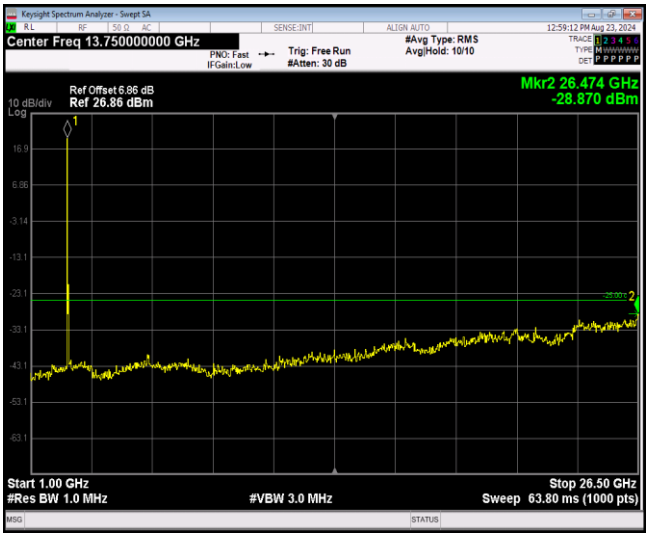
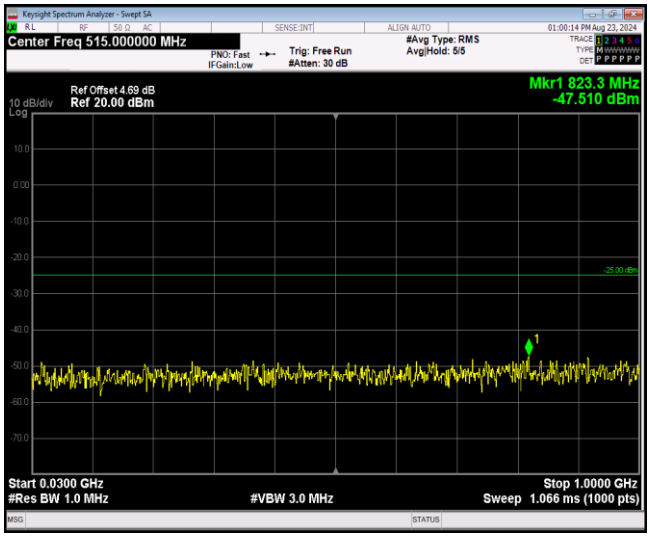


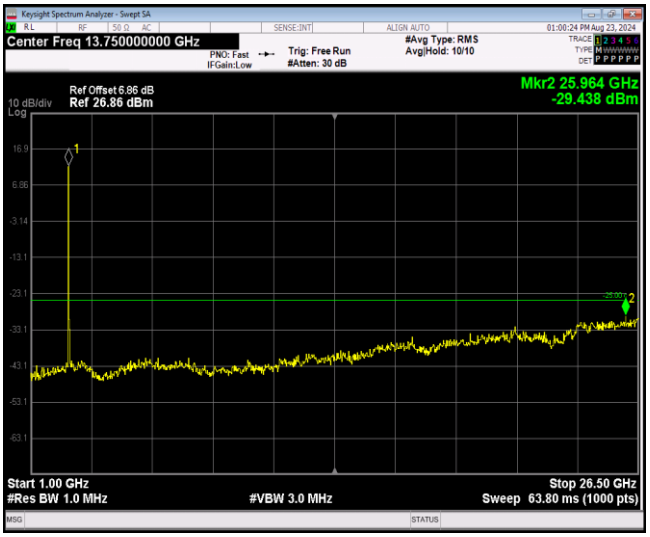
Band41-20MHz-64QAM-40640-1RB#0-Range1:30~1000MHz



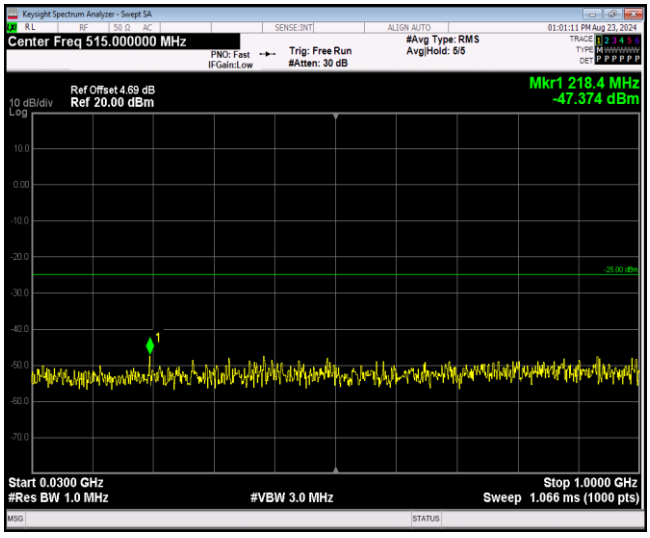
Band41-20MHz-64QAM-40640-1RB#0-Range2:1000~26500MHz

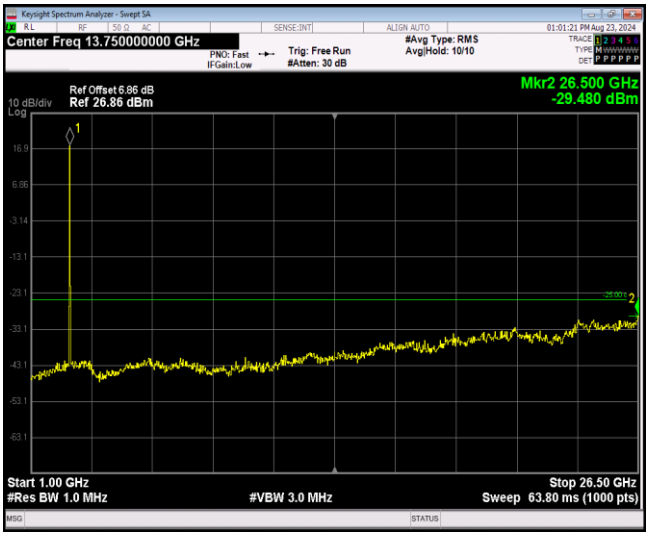


Band41-20MHz-64QAM-41140-1RB#0-Range1:30~1000MHz



Band41-20MHz-64QAM-41140-1RB#0-Range2:1000~26500MHz





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					
3.85	-30	6.87	0.003654	Within authorized band for Band 2	Pass
	-20	7.47	0.003973		
	-10	-10.10	-0.005372		
	0	-3.42	-0.001819		
	10	-12.77	-0.006793		
	20	-4.31	-0.002293		
	30	-16.32	-0.008681		
	40	-10.26	-0.005457		
	50	-13.96	-0.007426		
16QAM					
3.85	-30	-17.09	-0.009090	Within authorized band for Band 2	Pass
	-20	-16.05	-0.008537		
	-10	-12.20	-0.006489		
	0	-17.82	-0.009479		
	10	-24.22	-0.012883		
	20	-17.44	-0.009277		
	30	-13.18	-0.007011		
	40	-19.14	-0.010181		
	50	-18.21	-0.009686		
64QAM					
3.85	-30	-12.65	-0.006729	Within authorized band for Band 2	Pass
	-20	-18.77	-0.009984		
	-10	-12.60	-0.006702		
	0	-13.02	-0.006926		
	10	-17.58	-0.009351		
	20	-6.45	-0.003431		
	30	-14.91	-0.007931		
	40	-11.72	-0.006234		
	50	3.29	0.001750		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	-15.75	-0.008378	Within authorized band for Band 2	Pass
	3.85	-22.37	-0.011899		
	4.40	-7.90	-0.004202		
16QAM					
25	3.00	-17.91	-0.009527	Within authorized band for Band 2	Pass
	3.85	-9.03	-0.004803		
	4.40	-18.24	-0.009702		
64QAM					
25	3.00	-18.47	-0.009824	Within authorized band for Band 2	Pass
	3.85	-20.07	-0.010676		
	4.40	-14.26	-0.007585		
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					
3.85	-30	-11.04	-0.006372	Within authorized band for Band 4	Pass
	-20	-10.26	-0.005922		
	-10	6.25	0.003608		
	0	-14.33	-0.008271		
	10	-19.68	-0.011359		
	20	-6.22	-0.003590		
	30	-12.55	-0.007244		
	40	-13.65	-0.007879		
	50	-9.10	-0.005253		
16QAM					
3.85	-30	-12.80	-0.007388	Within authorized band for Band 4	Pass
	-20	-11.69	-0.006747		
	-10	-10.77	-0.006216		
	0	-19.58	-0.011302		
	10	-14.00	-0.008081		
	20	-5.51	-0.003180		
	30	-14.99	-0.008652		
	40	6.29	0.003631		
	50	-8.74	-0.005045		
64QAM					
3.85	-30	-4.09	-0.002361	Within authorized band for Band 4	Pass
	-20	-15.89	-0.009172		
	-10	-12.45	-0.007186		
	0	-18.37	-0.010603		
	10	-9.04	-0.005218		
	20	8.68	0.005010		
	30	-9.10	-0.005253		
	40	-6.52	-0.003763		
	50	-11.00	-0.006349		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	-10.01	-0.005778	Within authorized band for Band 4	Pass
	3.85	-11.00	-0.006349		
	4.40	-13.09	-0.007556		
16QAM					
25	3.00	-10.80	-0.006234	Within authorized band for Band 4	Pass
	3.85	-2.92	-0.001685		
	4.40	-10.83	-0.006251		
64QAM					
25	3.00	-11.27	-0.006505	Within authorized band for Band 4	Pass
	3.85	-10.61	-0.006124		
	4.40	3.23	0.001864		
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					
3.85	-30	-8.30	-0.009922	±2.5	Pass
	-20	-7.97	-0.009528		
	-10	-13.15	-0.015720		
	0	-9.97	-0.011919		
	10	-9.67	-0.011560		
	20	-9.47	-0.011321		
	30	-5.31	-0.006348		
	40	-8.71	-0.010412		
	50	-10.96	-0.013102		
16QAM					
3.85	-30	-11.69	-0.013975	±2.5	Pass
	-20	-7.50	-0.008966		
	-10	-9.60	-0.011476		
	0	-8.07	-0.009647		
	10	-8.54	-0.010209		
	20	-9.86	-0.011787		
	30	-6.69	-0.007998		
	40	-10.11	-0.012086		
	50	-8.24	-0.009851		
64QAM					
3.85	-30	-7.78	-0.009301	±2.5	Pass
	-20	-11.34	-0.013556		
	-10	-11.67	-0.013951		
	0	-10.46	-0.012504		
	10	-7.70	-0.009205		
	20	-6.92	-0.008273		
	30	-9.74	-0.011644		
	40	-9.38	-0.011213		
	50	-8.41	-0.010054		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	-5.46	-0.006527	±2.5	Pass
	3.85	-14.85	-0.017753		
	4.40	-10.61	-0.012684		
16QAM					
25	3.00	-10.26	-0.012265	±2.5	Pass
	3.85	-9.81	-0.011727		
	4.40	-10.71	-0.012803		
64QAM					
25	3.00	-8.96	-0.010711	±2.5	Pass
	3.85	-8.25	-0.009863		
	4.40	-11.32	-0.013533		
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					
3.85	-30	-12.76	-0.005034	Within authorized band for Band 7	Pass
	-20	9.06	0.003574		
	-10	11.59	0.004572		
	0	-14.09	-0.005558		
	10	-11.43	-0.004509		
	20	-15.86	-0.006256		
	30	-15.22	-0.006004		
	40	-12.96	-0.005112		
	50	-60.41	-0.023830		
16QAM					
3.85	-30	-16.42	-0.006477	Within authorized band for Band 7	Pass
	-20	-26.59	-0.010489		
	-10	2.49	0.000982		
	0	-15.78	-0.006225		
	10	-19.18	-0.007566		
	20	-16.25	-0.006410		
	30	-18.22	-0.007187		
	40	-25.91	-0.010221		
	50	-18.51	-0.007302		
64QAM					
3.85	-30	-17.21	-0.006789	Within authorized band for Band 7	Pass
	-20	-14.28	-0.005633		
	-10	-17.14	-0.006761		
	0	10.74	0.004237		
	10	-14.20	-0.005602		
	20	-18.08	-0.007132		
	30	-21.13	-0.008335		
	40	-5.94	-0.002343		
	50	-15.72	-0.006201		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	-11.17	-0.004406	Within authorized band for Band 7	Pass
	3.85	-21.63	-0.008533		
	4.40	9.83	0.003878		
16QAM					
25	3.00	-14.52	-0.005728	Within authorized band for Band 7	Pass
	3.85	-16.61	-0.006552		
	4.40	-14.76	-0.005822		
64QAM					
25	3.00	-15.08	-0.005949	Within authorized band for Band 7	Pass
	3.85	-15.85	-0.006252		
	4.40	-16.68	-0.006580		
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					
3.85	-30	-8.90	-0.003430	Within authorized band for Band 41	Pass
	-20	-14.88	-0.005734		
	-10	-13.90	-0.005356		
	0	-17.87	-0.006886		
	10	-13.55	-0.005222		
	20	-7.08	-0.002728		
	30	-17.11	-0.006593		
	40	-15.45	-0.005954		
	50	-15.25	-0.005877		
16QAM					
3.85	-30	-18.04	-0.006952	Within authorized band for Band 41	Pass
	-20	-20.51	-0.007904		
	-10	-16.21	-0.006247		
	0	-3.53	-0.001360		
	10	-13.29	-0.005121		
	20	-9.20	-0.003545		
	30	-14.66	-0.005649		
	40	-11.79	-0.004543		
	50	-16.82	-0.006482		
64QAM					
3.85	-30	-6.92	-0.002667	Within authorized band for Band 41	Pass
	-20	-14.51	-0.005592		
	-10	-16.16	-0.006227		
	0	-16.19	-0.006239		
	10	-11.90	-0.004586		
	20	-9.06	-0.003491		
	30	-13.29	-0.005121		
	40	-15.72	-0.006058		
	50	-13.78	-0.005310		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.00	-11.70	-0.004509	Within authorized band for Band 41	Pass
	3.85	-13.15	-0.005067		
	4.40	-15.89	-0.006123		
16QAM					
25	3.00	-14.49	-0.005584	Within authorized band for Band41	Pass
	3.85	-13.52	-0.005210		
	4.40	-16.88	-0.006505		
64QAM					
25	3.00	-15.68	-0.006042	Within authorized band for Band41	Pass
	3.85	-9.60	-0.003699		
	4.40	-14.43	-0.005561		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

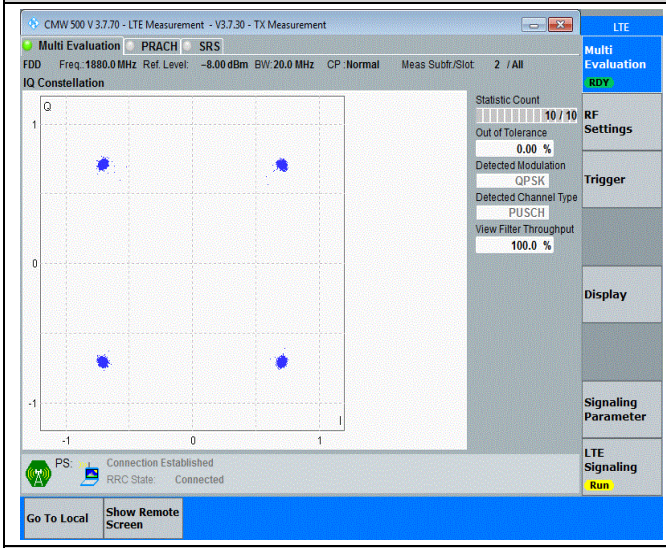
Test Result

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
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
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

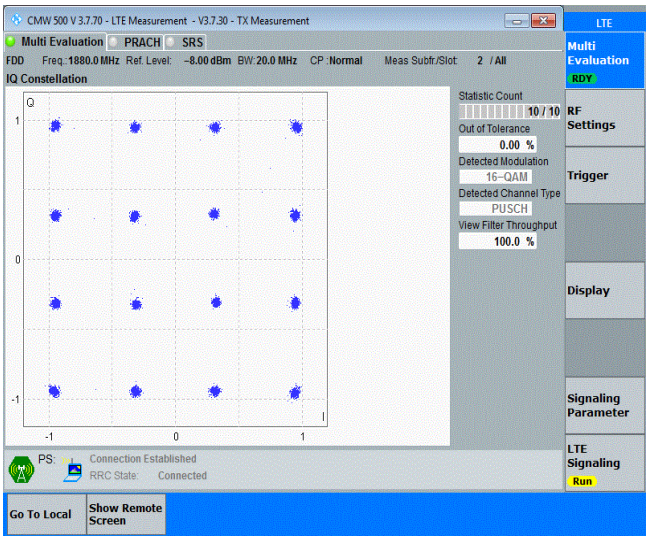
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

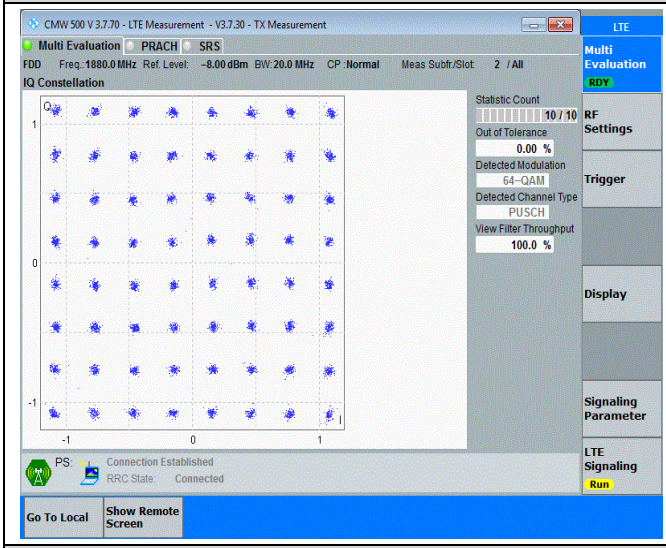
Band2-20MHz-QPSK-18900-100RB#0



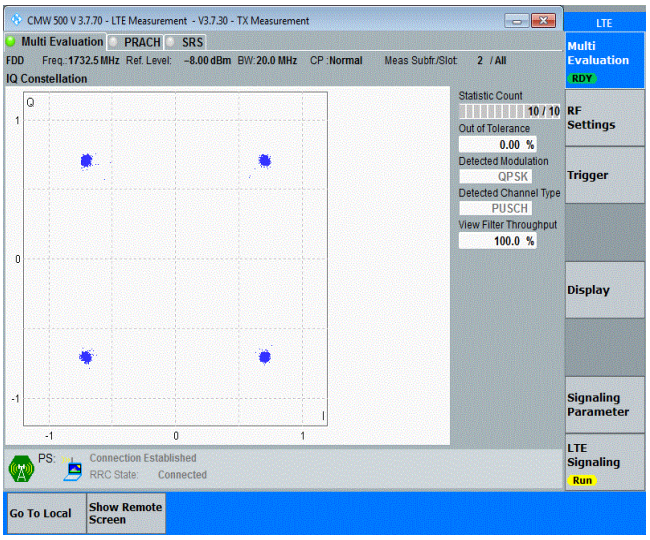
Band2-20MHz-16QAM-18900-100RB#0



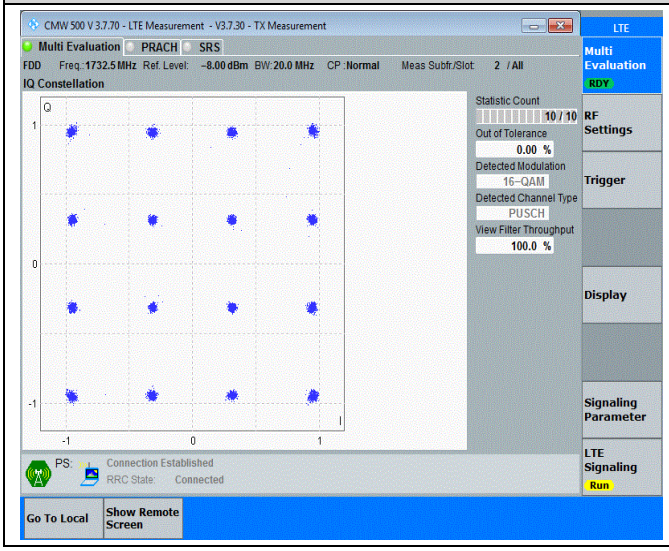
Band2-20MHz-64QAM-18900-100RB#0



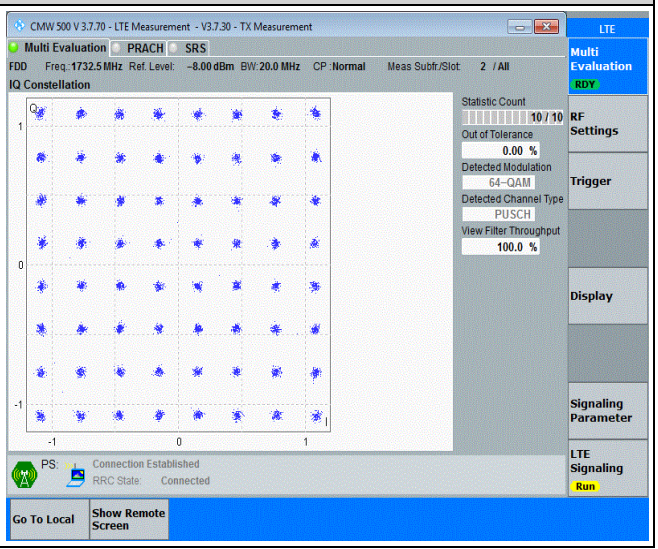
Band4-20MHz-QPSK-20175-100RB#0



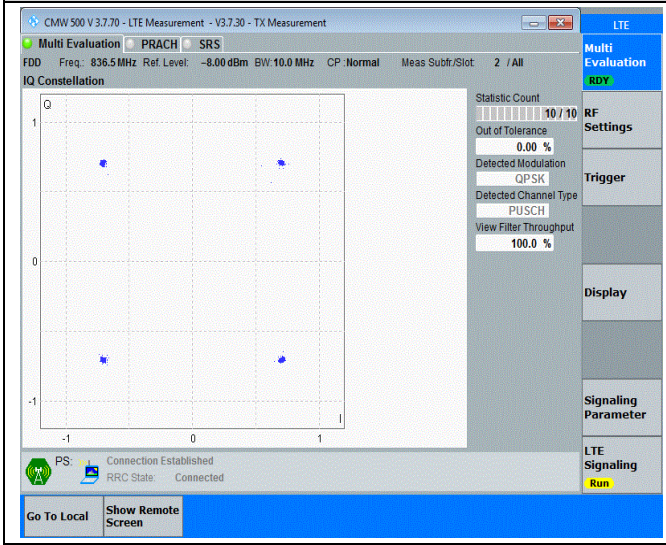
Band4-20MHz-16QAM-20175-100RB#0



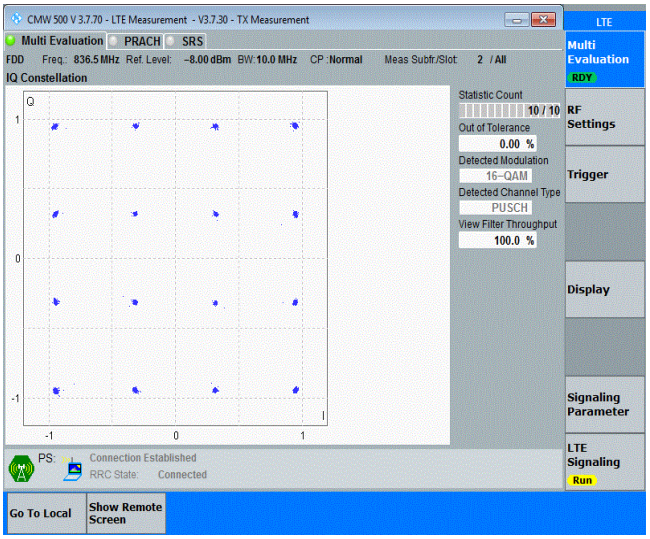
Band4-20MHz-64QAM-20175-100RB#0



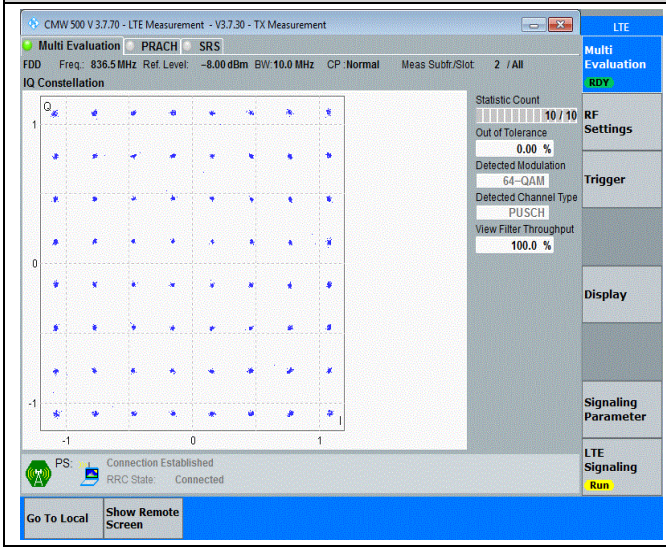
Band5-10MHz-QPSK-20525-50RB#0



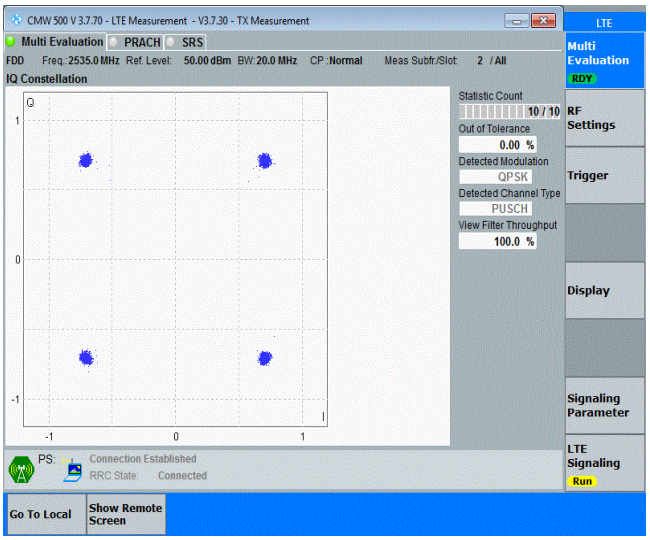
Band5-10MHz-16QAM-20525-50RB#0



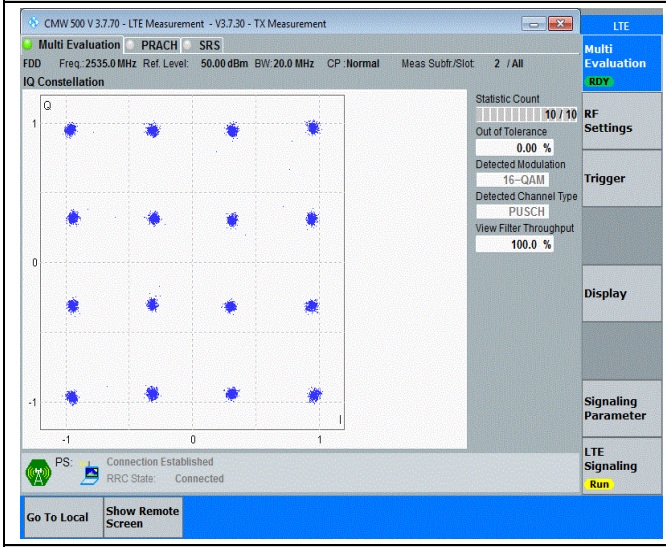
Band5-10MHz-64QAM-20525-50RB#0



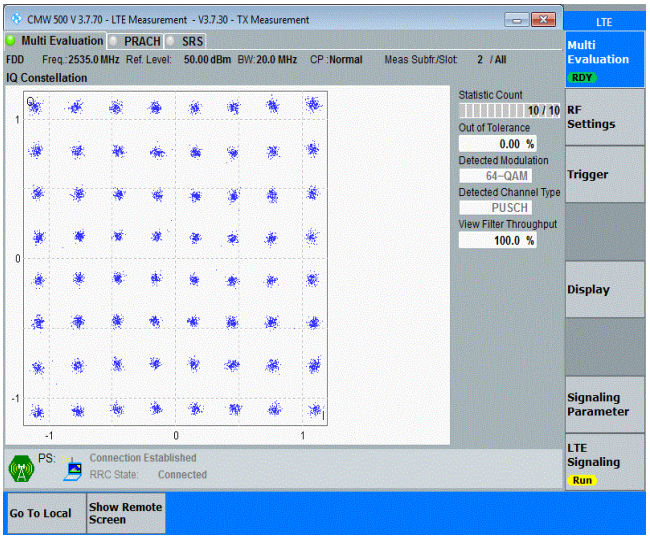
Band7-20MHz-QPSK-21100-100RB#0



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

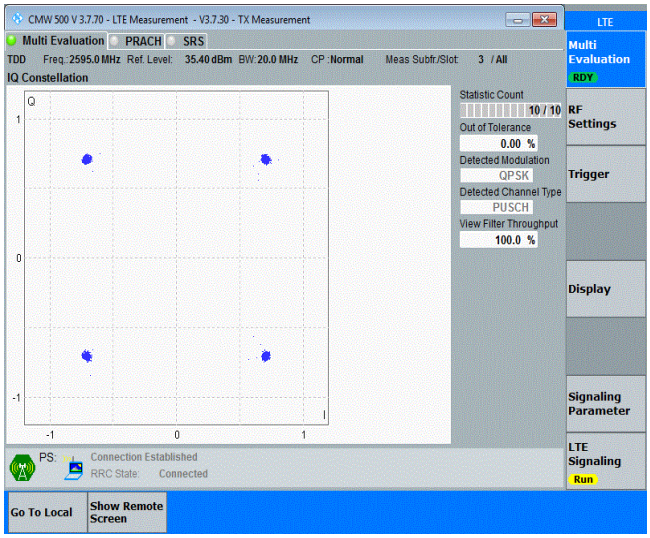


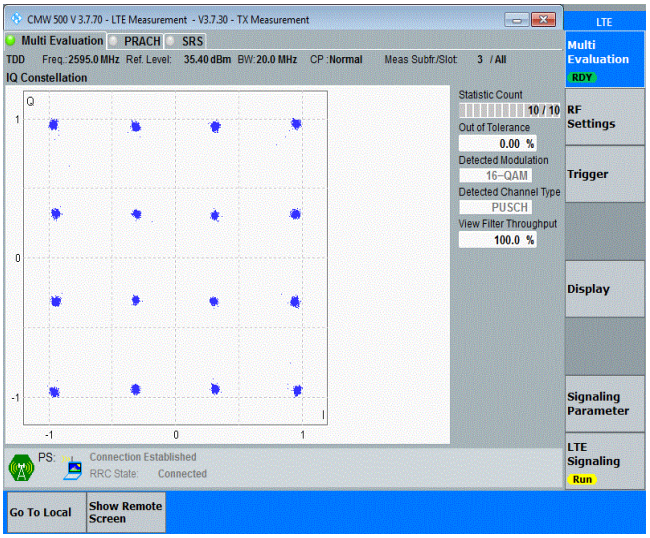
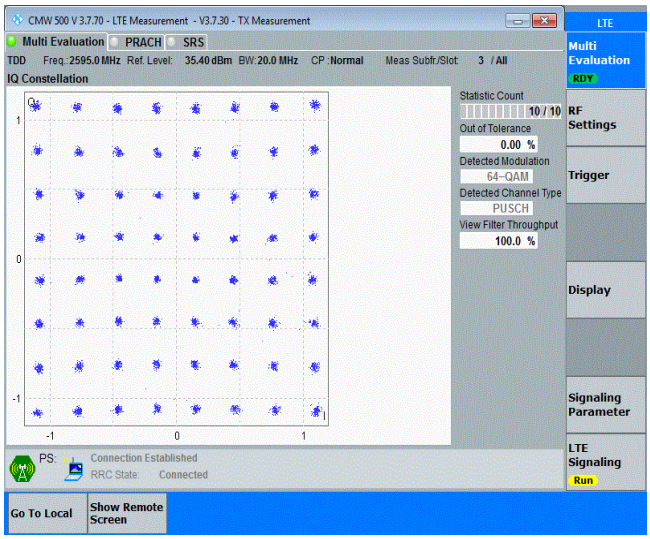
Band7-20MHz-64QAM-21100-100RB#0



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

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

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