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					
3.85	-30	-11.14	-0.01569	Within authorized band for Band 17	Pass
	-20	-3.39	-0.004775		
	-10	4.45	0.006268		
	0	-4.46	-0.006282		
	10	-10.21	-0.01438		
	20	-11.07	-0.015592		
	30	-12.53	-0.017648		
	40	-9.93	-0.013986		
	50	-9.2	-0.012958		
16QAM					
3.85	-30	-14.82	-0.020873	Within authorized band for Band 17	Pass
	-20	-10.46	-0.014732		
	-10	-9.47	-0.013338		
	0	-5.62	-0.007915		
	10	-10.1	-0.014225		
	20	-8.75	-0.012324		
	30	-11.44	-0.016113		
	40	-10.8	-0.015211		
	50	-4.62	-0.006507		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-12.22	-0.017211	Within authorized band for Band 17	Pass
	3.85	-10.29	-0.014493		
	4.40	-7.87	-0.011085		
16QAM					
25	3.50	-8.87	-0.012493	Within authorized band for Band 17	Pass
	3.85	-7.77	-0.010944		
	4.40	-9.36	-0.013183		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 25 part:

Reference Frequency: LTE Band 25(10MHz) Middle channel=26365 Frequency=1882.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-13.62	-0.007235	Within authorized band for Band 25	Pass
	-20	8.51	0.004521		
	-10	-5.69	-0.003023		
	0	-10.99	-0.005838		
	10	-14.46	-0.007681		
	20	-7.02	-0.003729		
	30	-16.02	-0.00851		
	40	-8.07	-0.004287		
	50	-16.32	-0.008669		
16QAM					
3.85	-30	-2.76	-0.001466	Within authorized band for Band 25	Pass
	-20	-13.18	-0.007001		
	-10	-11.6	-0.006162		
	0	-14.35	-0.007623		
	10	-11.64	-0.006183		
	20	-16.78	-0.008914		
	30	-5.56	-0.002954		
	40	-5.97	-0.003171		
	50	-12.63	-0.006709		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-8.2	-0.004356	Within authorized band for Band 25	Pass
	3.85	-15.42	-0.008191		
	4.40	-7.75	-0.004117		
16QAM					
25	3.50	-8.41	-0.004467	Within authorized band for Band 25	Pass
	3.85	-13.88	-0.007373		
	4.40	-9.66	-0.005131		
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					
3.85	-30	-6.9	-0.008425	Within authorized band for Band 26	Pass
	-20	-10.74	-0.013114		
	-10	-2.93	-0.003578		
	0	-13.59	-0.016593		
	10	-10.34	-0.012625		
	20	-7.35	-0.008974		
	30	-10.81	-0.013199		
	40	-8.05	-0.009829		
	50	-11.47	-0.014005		
16QAM					
3.85	-30	-9.98	-0.012186	Within authorized band for Band 26	Pass
	-20	-9.01	-0.011001		
	-10	-7.75	-0.009463		
	0	-12.22	-0.014921		
	10	-10.89	-0.013297		
	20	-6.69	-0.008168		
	30	-10.49	-0.012808		
	40	-7.82	-0.009548		
	50	-9.96	-0.012161		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-6.45	-0.007875	Within authorized band for Band 26	Pass
	3.85	-8.44	-0.010305		
	4.40	-9.88	-0.012063		
16QAM					
25	3.50	-7.55	-0.009219	Within authorized band for Band 26	Pass
	3.85	-12.72	-0.015531		
	4.40	-7.5	-0.009158		
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(15MHz) Middle channel=26915 Frequency=836.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-12.8	-0.015302	Within authorized band for Band 26	Pass
	-20	-7.28	-0.008703		
	-10	-5.11	-0.006109		
	0	-5.55	-0.006635		
	10	-2.76	-0.003299		
	20	-6.52	-0.007794		
	30	-7.54	-0.009014		
	40	-6.29	-0.007519		
	50	-5.68	-0.00679		
16QAM					
3.85	-30	-6.91	-0.008261	Within authorized band for Band 26	Pass
	-20	-13.45	-0.016079		
	-10	-10.79	-0.012899		
	0	-5.92	-0.007077		
	10	-6.25	-0.007472		
	20	-6.85	-0.008189		
	30	-8.2	-0.009803		
	40	-5.88	-0.007029		
	50	-6.38	-0.007627		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-7.91	-0.009456	Within authorized band for Band 26	Pass
	3.85	-4.99	-0.005965		
	4.40	-7.35	-0.008787		
16QAM					
25	3.50	-10.51	-0.012564	Within authorized band for Band 26	Pass
	3.85	-11.23	-0.013425		
	4.40	-8.4	-0.010042		
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					
3.85	-30	-13.66	-0.005264	Within authorized band for Band 38	Pass
	-20	-16.54	-0.006374		
	-10	-10.21	-0.003934		
	0	-19.28	-0.00743		
	10	-8.53	-0.003287		
	20	-13.85	-0.005337		
	30	-13.92	-0.005364		
	40	-12.5	-0.004817		
	50	-9.86	-0.0038		
16QAM					
3.85	-30	-7.84	-0.003021	Within authorized band for Band 38	Pass
	-20	-15.01	-0.005784		
	-10	-7.34	-0.002829		
	0	-17.25	-0.006647		
	10	-4.32	-0.001665		
	20	-18.42	-0.007098		
	30	-16.62	-0.006405		
	40	-6.24	-0.002405		
	50	-15.79	-0.006085		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-15.95	-0.006146	Within authorized band for Band 38	Pass
	3.85	-14.52	-0.005595		
	4.40	-14.29	-0.005507		
16QAM					
25	3.50	-15.99	-0.006162	Within authorized band for Band 38	Pass
	3.85	-7.31	-0.002817		
	4.40	-3.82	-0.001472		
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	-10.29	-0.003965	Within authorized band for Band 41	Pass
	-20	-4.46	-0.001719		
	-10	-9.74	-0.003753		
	0	-10.19	-0.003927		
	10	4.99	0.001923		
	20	-2.12	-0.000817		
	30	-11.13	-0.004289		
	40	-3.89	-0.001499		
	50	-7.75	-0.002987		
16QAM					
3.85	-30	-6.81	-0.002624	Within authorized band for Band 41	Pass
	-20	-9.98	-0.003846		
	-10	-14.23	-0.005484		
	0	-6.11	-0.002355		
	10	-10.59	-0.004081		
	20	4.06	0.001565		
	30	-11.99	-0.00462		
	40	3.82	0.001472		
	50	-11.73	-0.00452		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-11.37	-0.004382	Within authorized band for Band 41	Pass
	3.85	-13.56	-0.005225		
	4.40	7.22	0.002782		
16QAM					
25	3.50	-7.72	-0.002975	Within authorized band for Band41	Pass
	3.85	10.03	0.003865		
	4.40	-4.68	-0.001803		
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					
3.85	-30	-9	-0.005158	Within authorized band for Band 66	Pass
	-20	3.26	0.001868		
	-10	-10.37	-0.005943		
	0	5.66	0.003244		
	10	-6.59	-0.003777		
	20	-4.72	-0.002705		
	30	9.4	0.005387		
	40	-13.62	-0.007805		
	50	-10.39	-0.005954		
16QAM					
3.85	-30	4.51	0.002585	Within authorized band for Band 66	Pass
	-20	-9.7	-0.005559		
	-10	-2.13	-0.001221		
	0	-8.01	-0.00459		
	10	-10.21	-0.005851		
	20	-6.48	-0.003713		
	30	-8.21	-0.004705		
	40	-8.33	-0.004774		
	50	-4.72	-0.002705		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-12.19	-0.006986	Within authorized band for Band 66	Pass
	3.85	-12.92	-0.007404		
	4.40	3.06	0.001754		
16QAM					
25	3.50	-11.94	-0.006842	Within authorized band for Band 66	Pass
	3.85	-7.62	-0.004367		
	4.40	-8.4	-0.004814		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

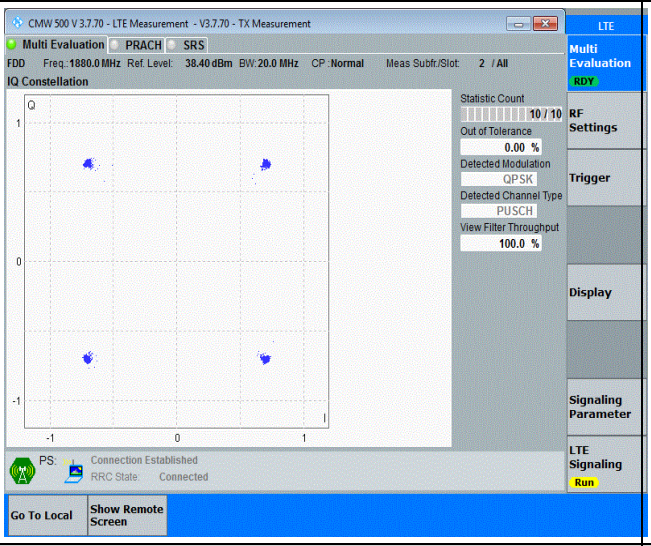
Test Result

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
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band13	10MHz	QPSK	23230	50RB#0	PASS	PASS
Band13	10MHz	16QAM	23230	50RB#0	PASS	PASS
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#0	PASS	PASS
Band25	20MHz	QPSK	26365	100RB#0	PASS	PASS
Band25	20MHz	16QAM	26365	100RB#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
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

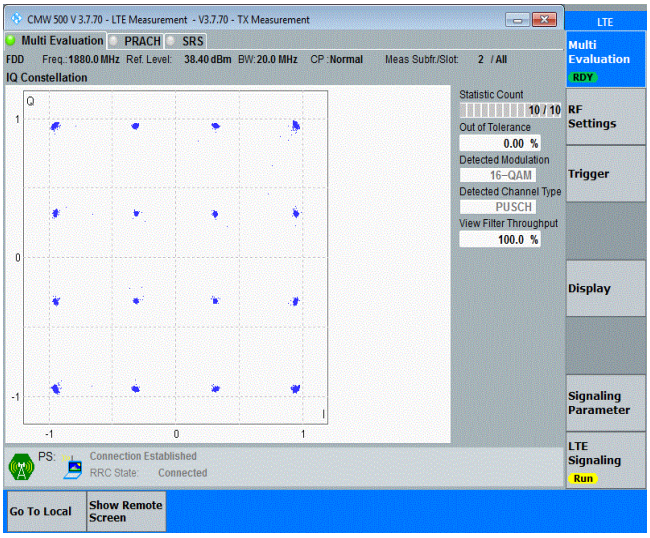
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

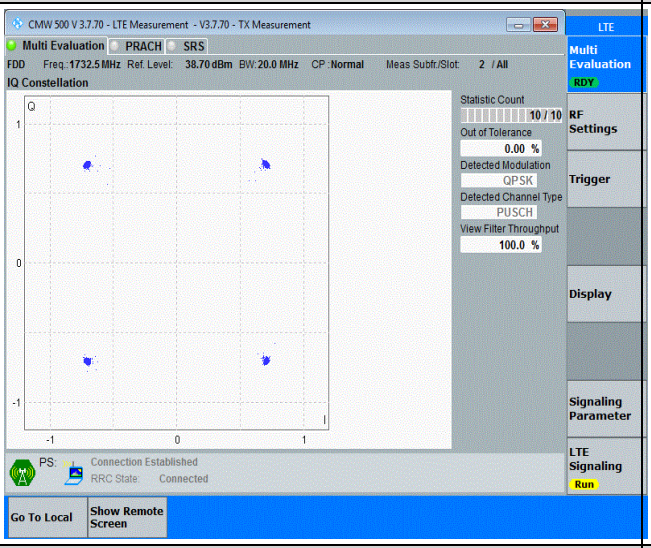
Band2-20MHz-QPSK-18900-100RB#0



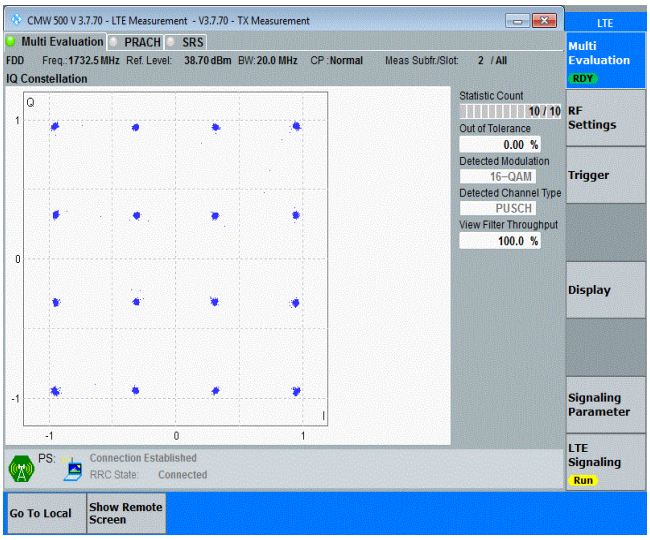
Band2-20MHz-16QAM-18900-100RB#0



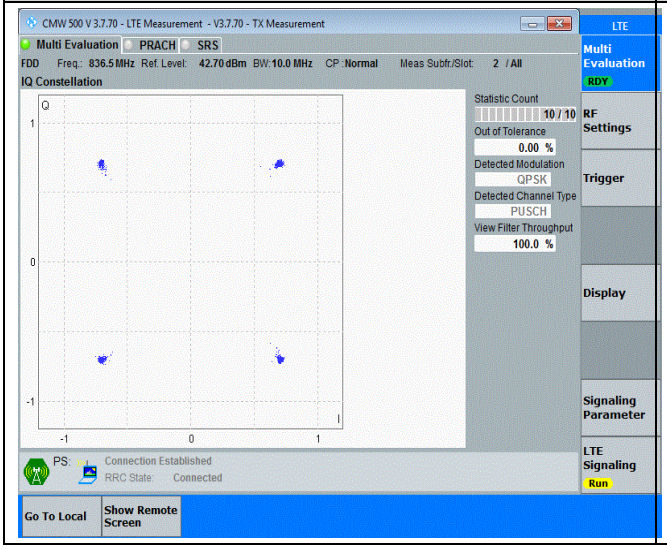
Band4-20MHz-QPSK-20175-100RB#0



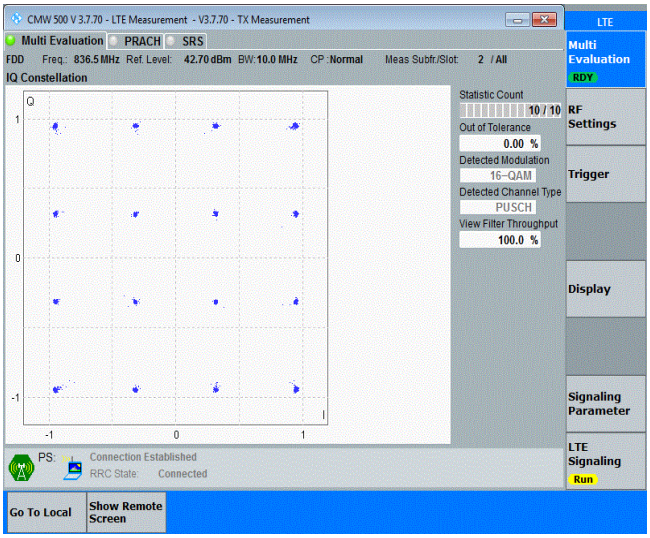
Band4-20MHz-16QAM-20175-100RB#0



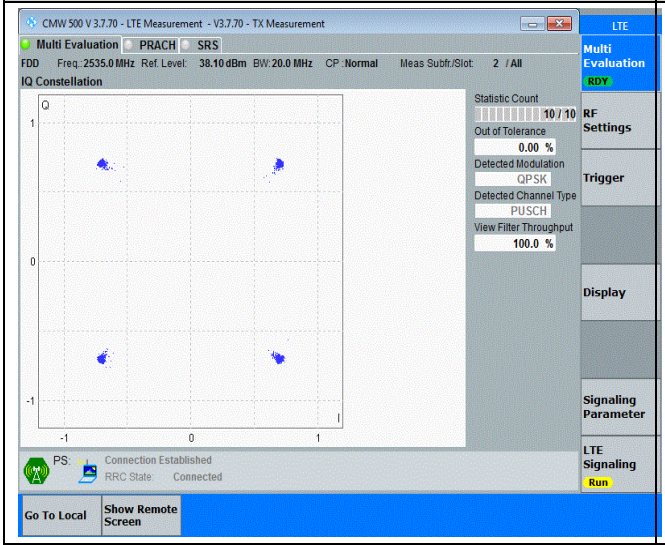
Band5-10MHz-QPSK-20525-50RB#0



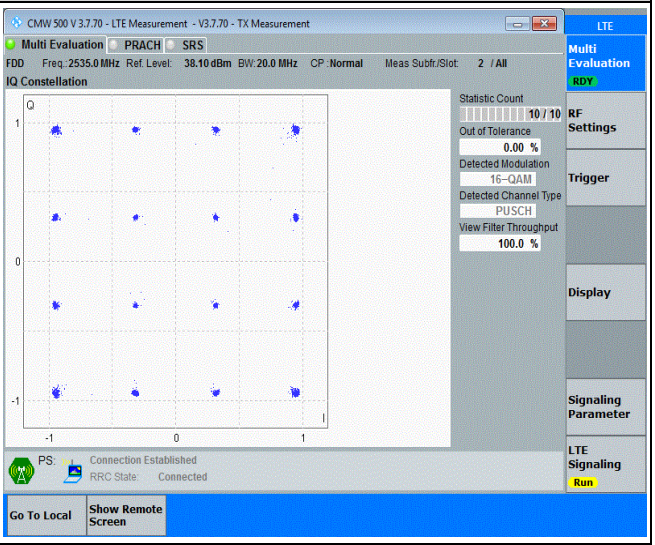
Band5-10MHz-16QAM-20525-50RB#0



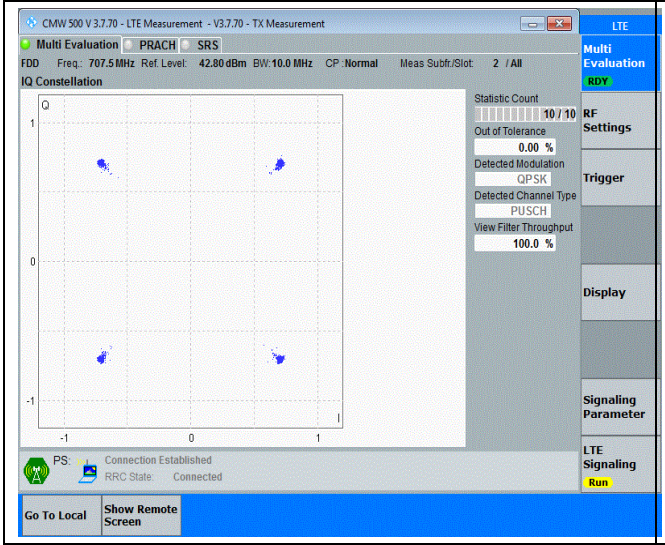
Band7-20MHz-QPSK-21100-100RB#0



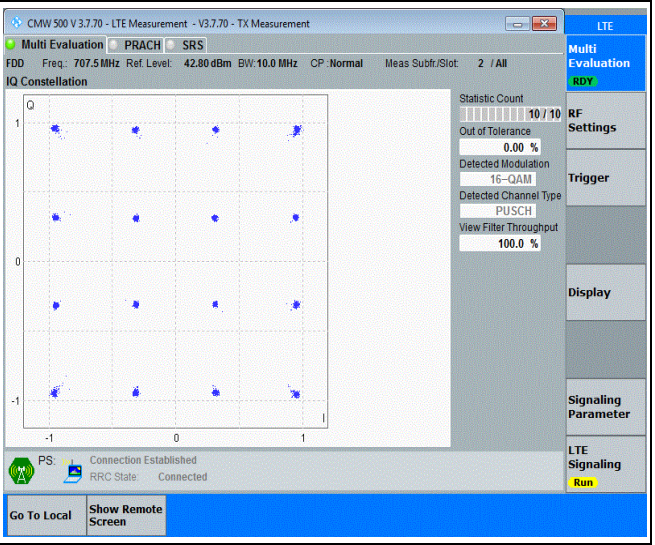
Band7-20MHz-16QAM-21100-100RB#0



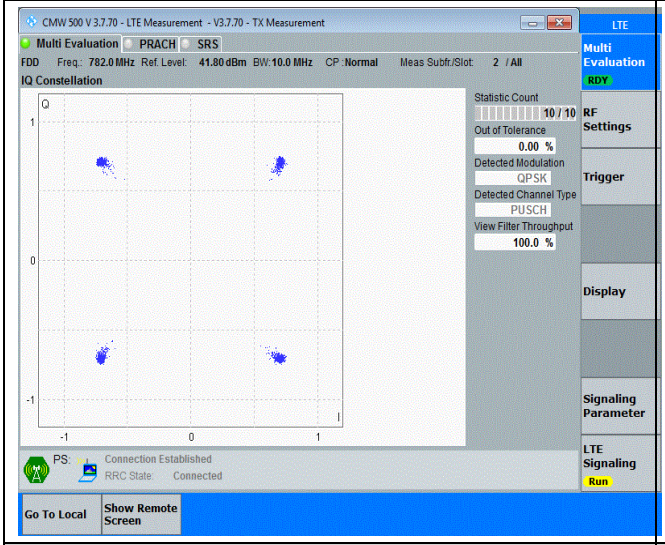
Band12-10MHz-QPSK-23095-50RB#0



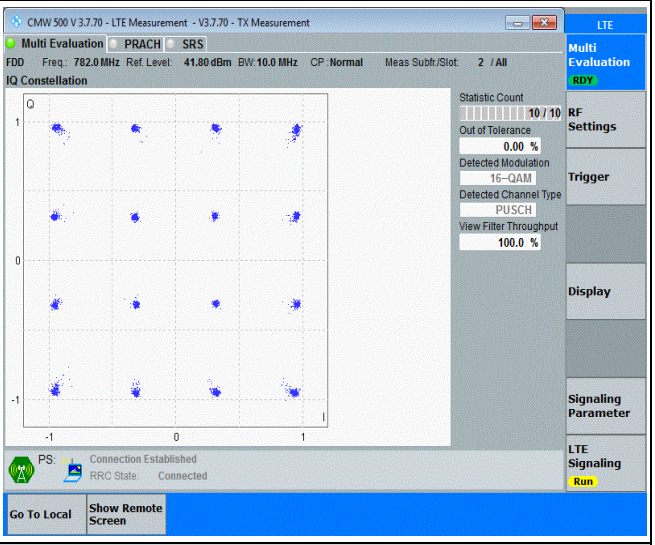
Band12-10MHz-16QAM-23095-50RB#0



Band13-10MHz-QPSK-23230-50RB#0

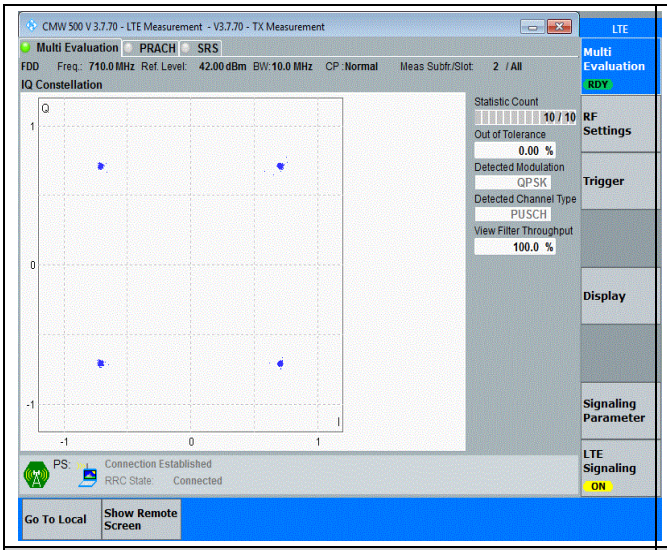


Band13-10MHz-16QAM-23230-50RB#0

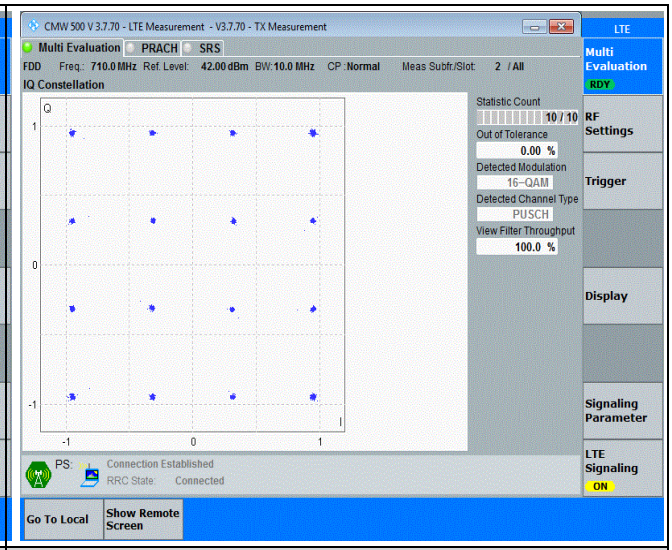


Band17-10MHz-QPSK-23790-50RB#0

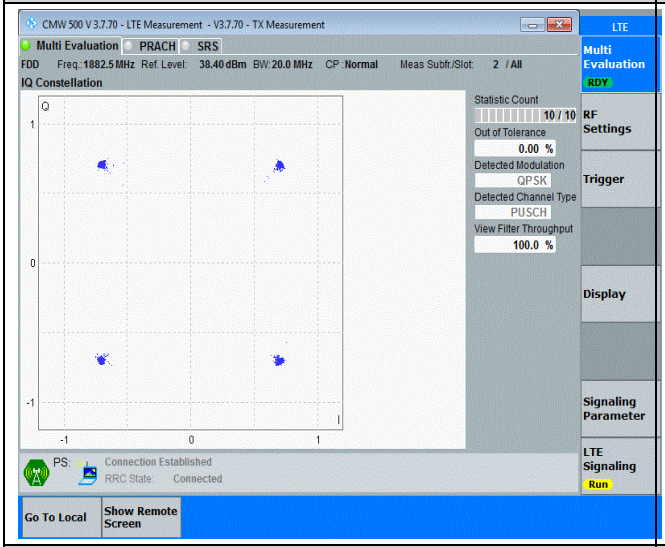
Band17-10MHz-16QAM-23790-50RB#0



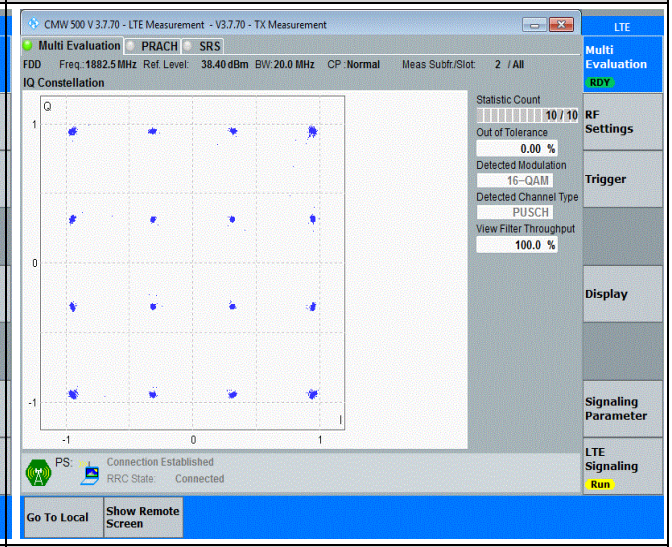
Band25-20MHz-QPSK-26365-100RB#0



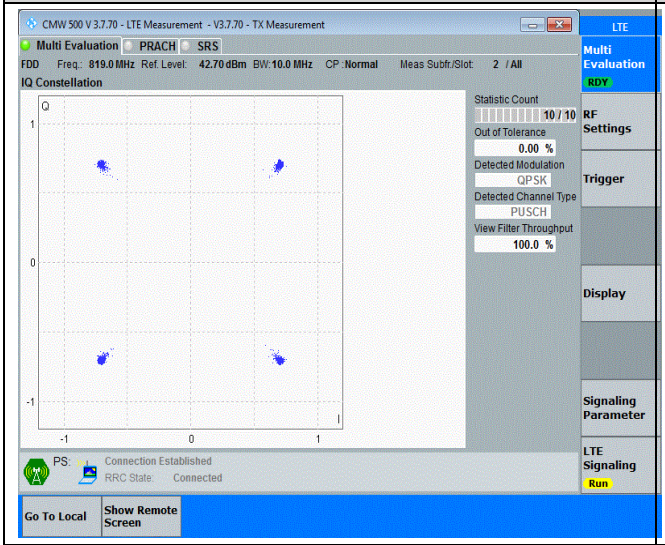
Band25-20MHz-16QAM-26365-100RB#0



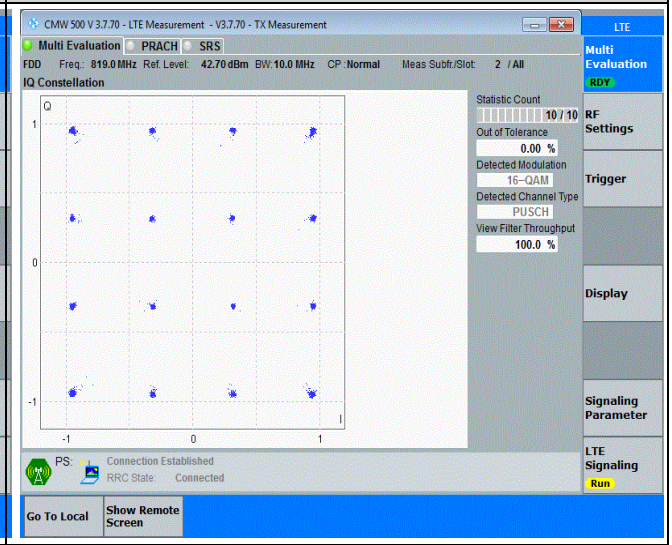
Band26-10MHz-QPSK-26740-50RB#0



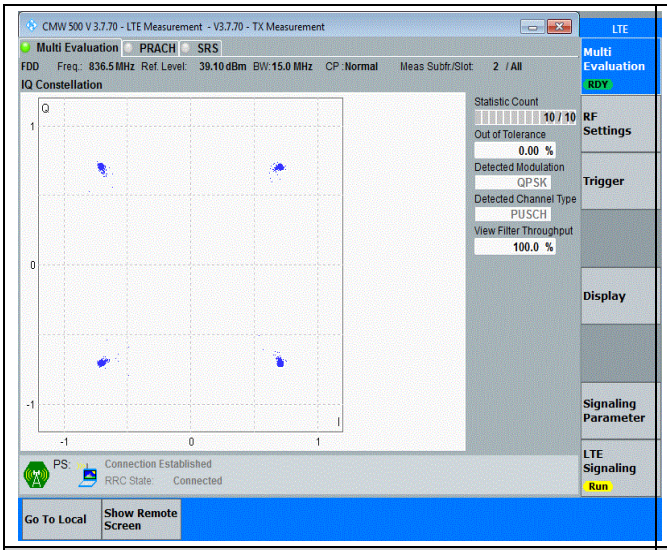
Band26-10MHz-16QAM-26740-50RB#0



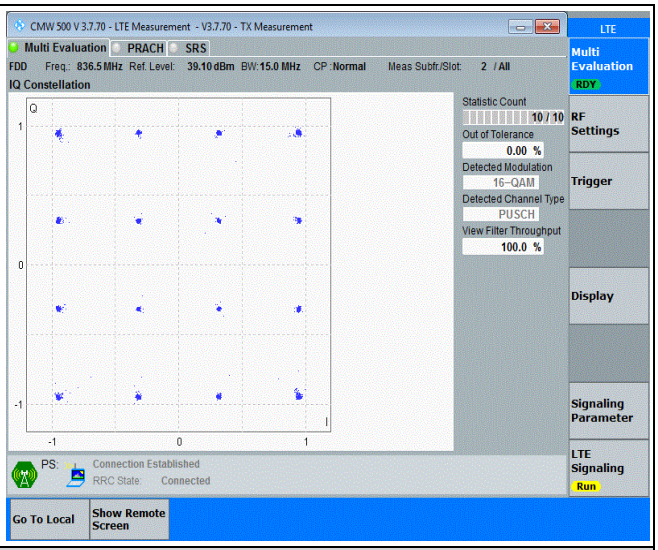
Band26-15MHz-QPSK-26915-75RB#0



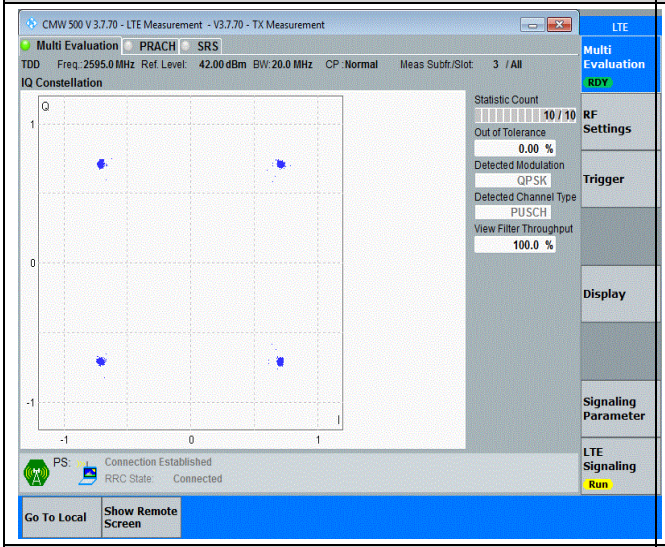
Band26-15MHz-16QAM-26915-75RB#0



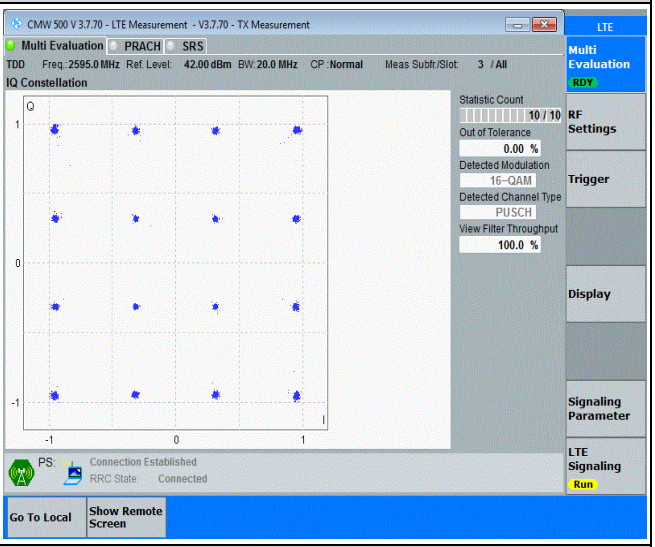
Band38-20MHz-QPSK-38000-100RB#0



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



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



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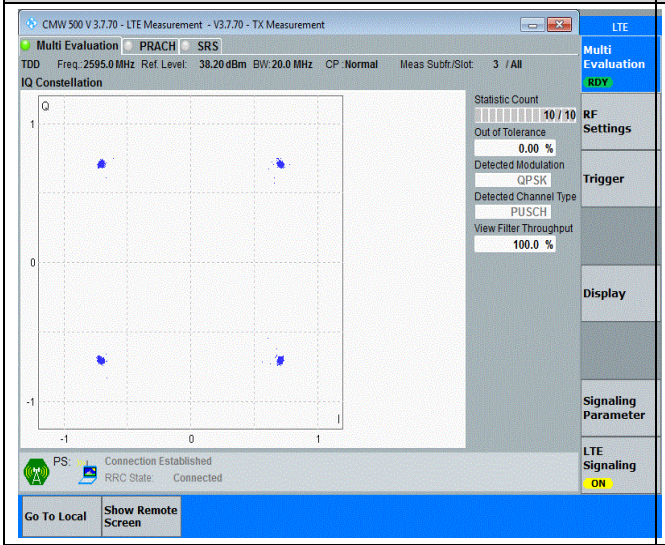

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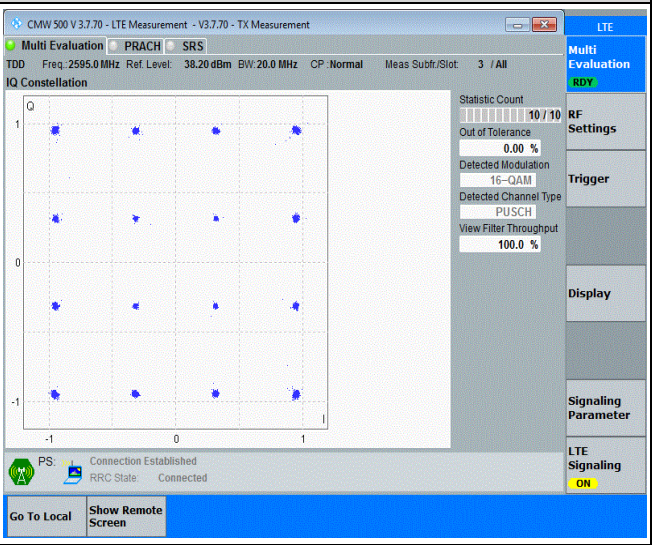
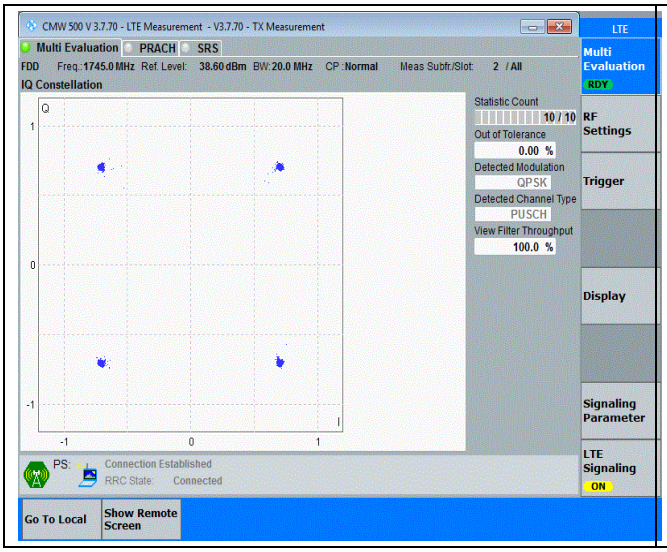
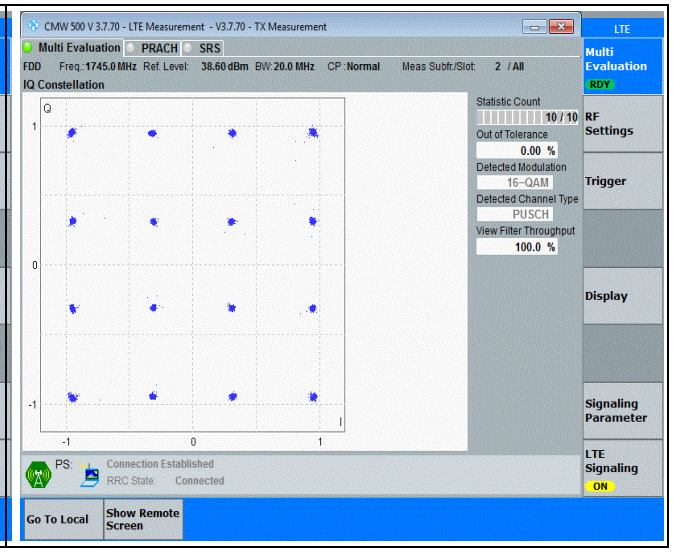


Band66-20MHz-16QAM-132322-100RB#0


CMW 500 V 3.7.70 - LTE Measurement - V3.7.70 - TX Measurement
Multi Evaluation
PRACH
SRS
FDD Freq.:1745.0 MHz Ref. Level: 38.60 dBm BW:20.0 MHz CP:Normal Meas Subfr./Slot: 2 / All
IQ Constellation
Statistic Count
10 / 10
Out of Tolerance
0.00 %
Detected Modulation
QPSK
Detected Channel Type
PUSCH
View Filter Throughput
100.0 %
LTE
Multi Evaluation
RDY
RF Settings
Trigger
Display
Signaling Parameter
LTE Signaling
ON
PS:
Connection Established
RRC State: Connected
Go To Local
Show Remote Screen


CMW 500 V 3.7.70 - LTE Measurement - V3.7.70 - TX Measurement
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FDD Freq.:1745.0 MHz Ref. Level: 38.60 dBm BW:20.0 MHz CP:Normal Meas Subfr./Slot: 2 / All
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Connection Established
RRC State: Connected
Go To Local
Show Remote Screen