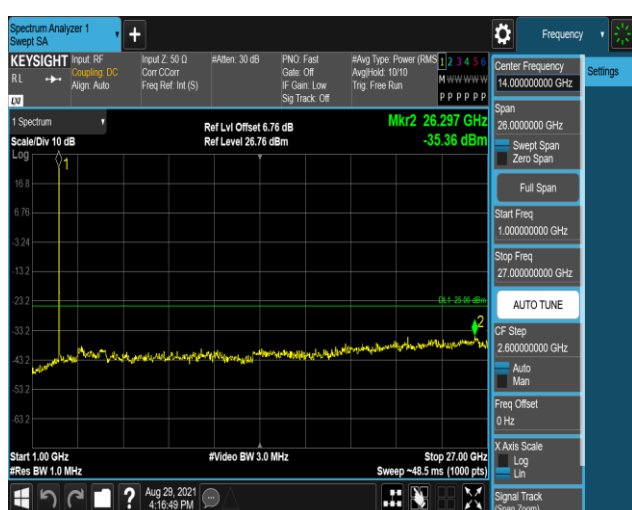


Band41-20MHz-OPSK-40140:30~1000MHz



Band41-20MHz-QPSK-40140:1000~27000MHz



Band41-20MHz-OPSK-40640:30~1000MHz



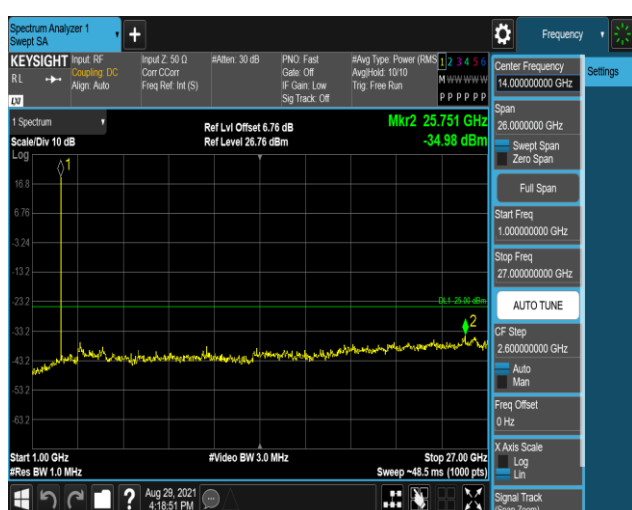
Band41-20MHz-OPSK-40640:1000~27000MHz



Band41-20MHz-QPSK-41140:30~1000MHz



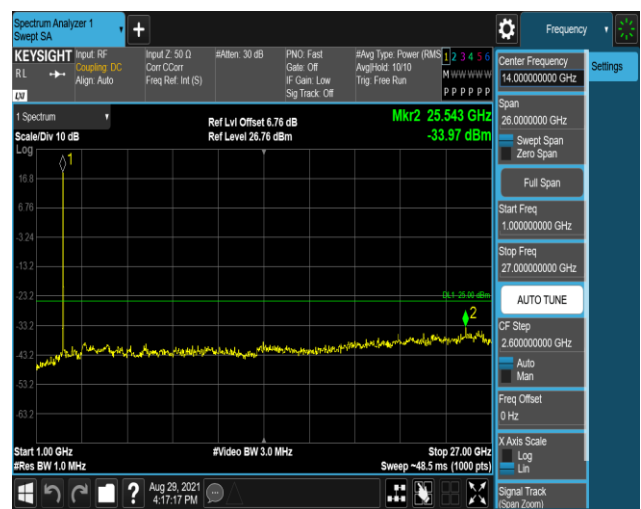
Band41-20MHz-QPSK-41140:1000~27000MHz



Band41-20MHz-16QAM-40140:30~1000MHz



Band41-20MHz-16QAM-40140:1000~27000MHz



Band41-20MHz-16QAM-40640:30~1000MHz



Band41-20MHz-16QAM-40640:1000~27000MHz



Band41-20MHz-16QAM-41140:30~1000MHz



Band41-20MHz-16QAM-41140:1000~27000MHz



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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	16.29	0.008665	Within authorized band for Band 2	Pass
	-20	40.44	0.021511		
	-10	12.70	0.006755		
	0	36.85	0.019601		
	10	20.89	0.011112		
	20	37.48	0.019936		
	30	10.79	0.005739		
	40	18.42	0.009798		
	50	25.35	0.013484		
16QAM					
3.85	-30	26.49	0.014090	Within authorized band for Band 2	Pass
	-20	-5.21	-0.002771		
	-10	6.90	0.003670		
	0	-5.18	-0.002755		
	10	5.01	0.002665		
	20	4.91	0.002612		
	30	15.58	0.008287		
	40	18.51	0.009846		
	50	25.41	0.013516		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	30.67	0.016314	Within authorized band for Band 2	Pass
	3.85	48.19	0.025633		
	4.40	34.33	0.018261		
16QAM					
25	3.50	41.83	0.022250	Within authorized band for Band 2	Pass
	3.85	36.56	0.019447		
	4.40	49.51	0.026335		
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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-16.44	-0.009489	Within authorized band for Band 4	Pass
	-20	-21.01	-0.012127		
	-10	-17.45	-0.010072		
	0	-15.34	-0.008854		
	10	-19.96	-0.011521		
	20	-16.52	-0.009535		
	30	-9.76	-0.005633		
	40	-10.87	-0.006274		
	50	-8.41	-0.004854		
16QAM					
3.85	-30	22.32	0.012883	Within authorized band for Band 4	Pass
	-20	31.70	0.018297		
	-10	37.31	0.021535		
	0	43.77	0.025264		
	10	-4.41	-0.002545		
	20	4.58	0.002644		
	30	7.68	0.004433		
	40	14.42	0.008323		
	50	17.97	0.010372		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-6.02	-0.003475	Within authorized band for Band 4	Pass
	3.85	19.10	0.011025		
	4.40	-15.95	-0.009206		
16QAM					
25	3.50	20.50	0.011833	Within authorized band for Band 4	Pass
	3.85	-9.17	-0.005293		
	4.40	40.44	0.023342		
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	-9.34	-0.011166	±2.5	Pass
	-20	-20.28	-0.024244		
	-10	-31.76	-0.037968		
	0	-36.69	-0.043861		
	10	-41.60	-0.049731		
	20	-44.63	-0.053353		
	30	-2.26	-0.002702		
	40	-7.10	-0.008488		
	50	-10.01	-0.011967		
16QAM					
3.85	-30	45.12	0.053939	±2.5	Pass
	-20	4.22	0.005045		
	-10	10.91	0.013042		
	0	13.98	0.016712		
	10	19.67	0.023515		
	20	20.63	0.024662		
	30	25.96	0.031034		
	40	27.44	0.032803		
	50	30.56	0.036533		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-32.10	-0.038374	±2.5	Pass
	3.85	15.29	0.018279		
	4.40	-27.51	-0.032887		
16QAM					
25	3.50	11.60	0.013867	±2.5	Pass
	3.85	-12.37	-0.014788		
	4.40	32.37	0.038697		
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	-20.50	-0.008087	Within authorized band for Band 7	Pass
	-20	-30.88	-0.012181		
	-10	-39.30	-0.015503		
	0	-43.62	-0.017207		
	10	-41.57	-0.016398		
	20	-47.39	-0.018694		
	30	-46.92	-0.018509		
	40	-49.65	-0.019586		
	50	-20.50	-0.008087		
16QAM					
3.85	-30	9.94	0.003921	Within authorized band for Band 7	Pass
	-20	20.11	0.007933		
	-10	42.59	0.016801		
	0	-10.07	-0.003972		
	10	5.66	0.002233		
	20	6.81	0.002686		
	30	30.57	0.012059		
	40	42.56	0.016789		
	50	42.13	0.016619		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-46.78	-0.018454	Within authorized band for Band 7	Pass
	3.85	44.88	0.017704		
	4.40	-32.62	-0.012868		
16QAM					
25	3.50	48.79	0.019247	Within authorized band for Band 7	Pass
	3.85	-10.96	-0.004323		
	4.40	49.55	0.019546		
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	-47.51	-0.018308	Within authorized band for Band 38	Pass
	-20	-64.52	-0.024863		
	-10	-86.13	-0.033191		
	0	-30.40	-0.011715		
	10	-48.04	-0.018513		
	20	-41.66	-0.016054		
	30	-60.31	-0.023241		
	40	-51.64	-0.019900		
	50	-58.08	-0.022382		
16QAM					
3.85	-30	-32.69	-0.012597	Within authorized band for Band 38	Pass
	-20	70.07	0.027002		
	-10	39.02	0.015037		
	0	44.16	0.017017		
	10	75.27	0.029006		
	20	78.56	0.030274		
	30	85.34	0.032886		
	40	86.52	0.033341		
	50	91.07	0.035094		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-75.43	-0.029067	Within authorized band for Band 38	Pass
	3.85	-43.92	-0.016925		
	4.40	-94.44	-0.036393		
16QAM					
25	3.50	58.47	0.022532	Within authorized band for Band 38	Pass
	3.85	-57.72	-0.022243		
	4.40	-42.20	-0.016262		
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	-65.03	-0.025060	Within authorized band for Band 41	Pass
	-20	-81.67	-0.031472		
	-10	-81.60	-0.031445		
	0	-50.97	-0.019642		
	10	-31.03	-0.011958		
	20	-52.13	-0.020089		
	30	-57.82	-0.022281		
	40	-52.56	-0.020254		
	50	-59.37	-0.022879		
16QAM					
3.85	-30	80.58	0.031052	Within authorized band for Band 41	Pass
	-20	99.99	0.038532		
	-10	-45.78	-0.017642		
	0	41.69	0.016066		
	10	44.22	0.017040		
	20	24.46	0.009426		
	30	79.67	0.030701		
	40	72.30	0.027861		
	50	43.39	0.016721		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-73.89	-0.028474	Within authorized band for Band 41	Pass
	3.85	53.63	0.020667		
	4.40	-73.00	-0.028131		
16QAM					
25	3.50	85.32	0.032879	Within authorized band for Band41	Pass
	3.85	-49.60	-0.019114		
	4.40	81.41	0.031372		
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

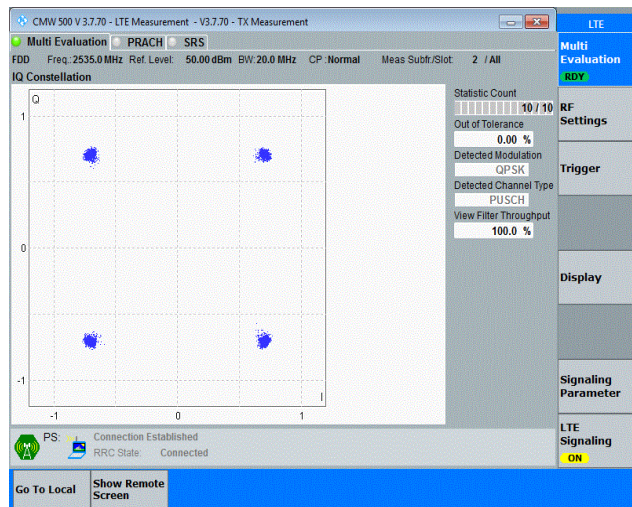
Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	100RB#0	PASS	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
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

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

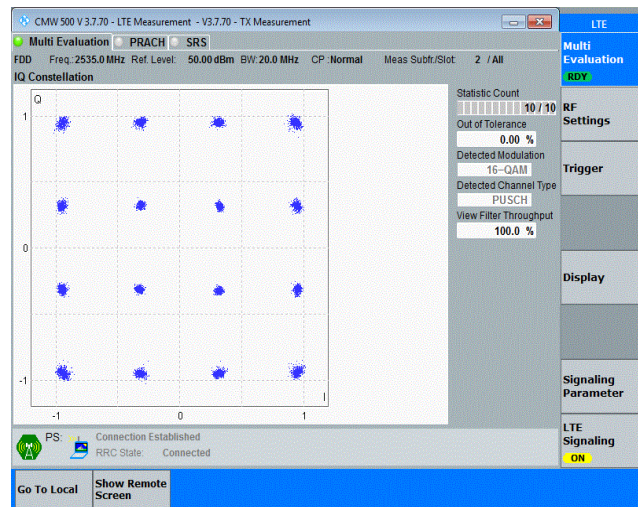
Test Graphs



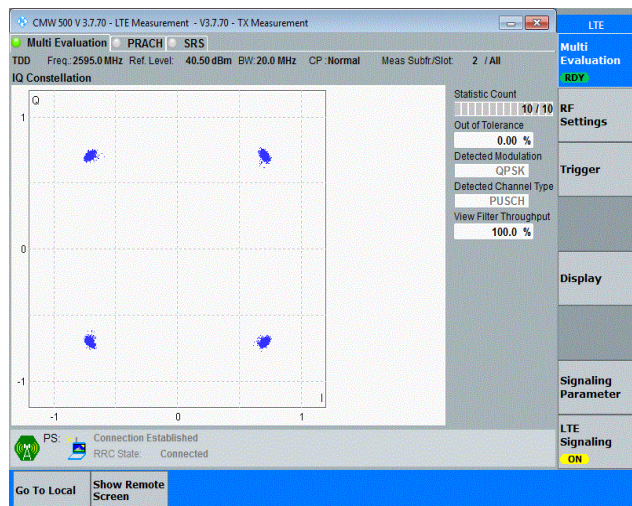
Band7-20MHz-QPSK-21100-100RB#0



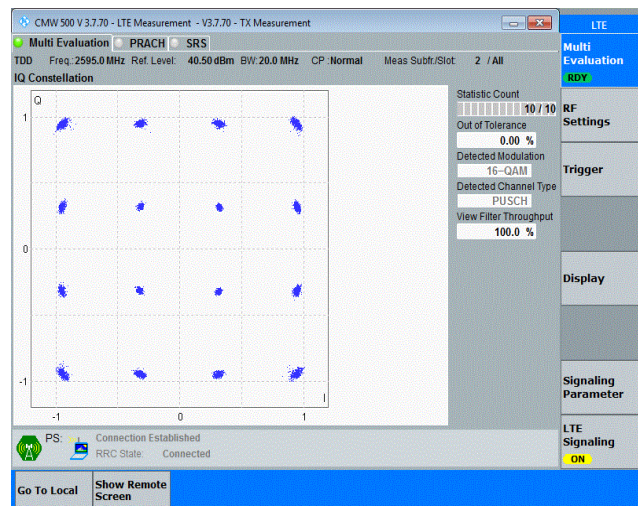
Band7-20MHz-16QAM-21100-100RB#0



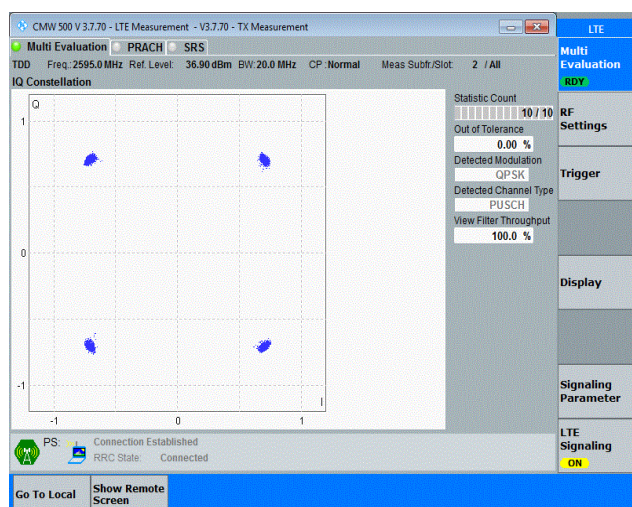
Band38-20MHz-QPSK-38000-100RB#0



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



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



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

