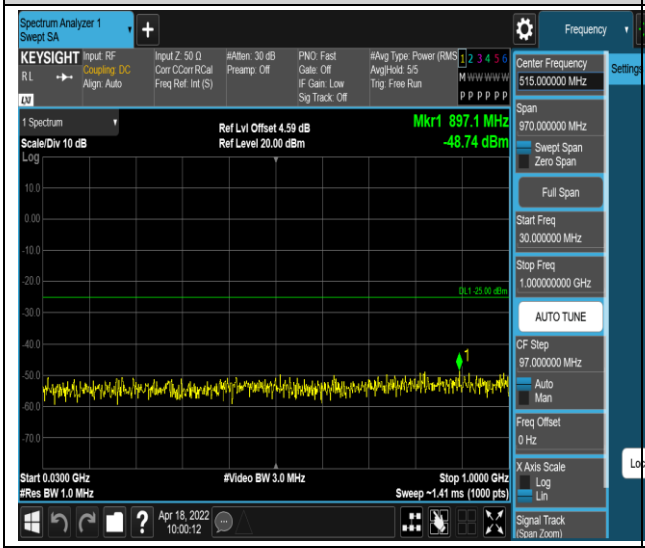
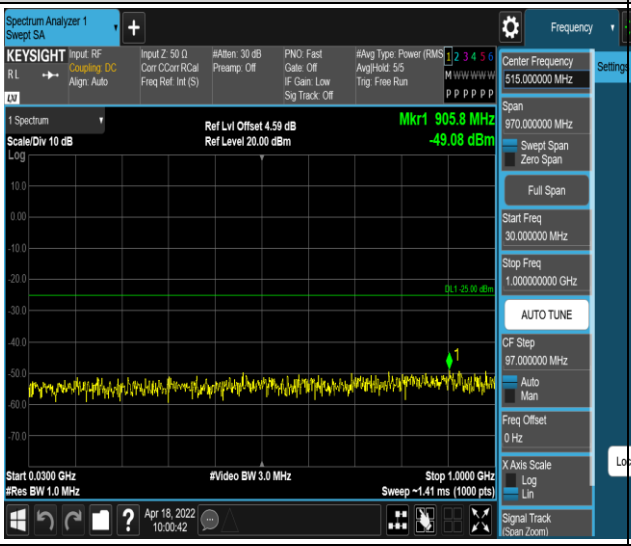
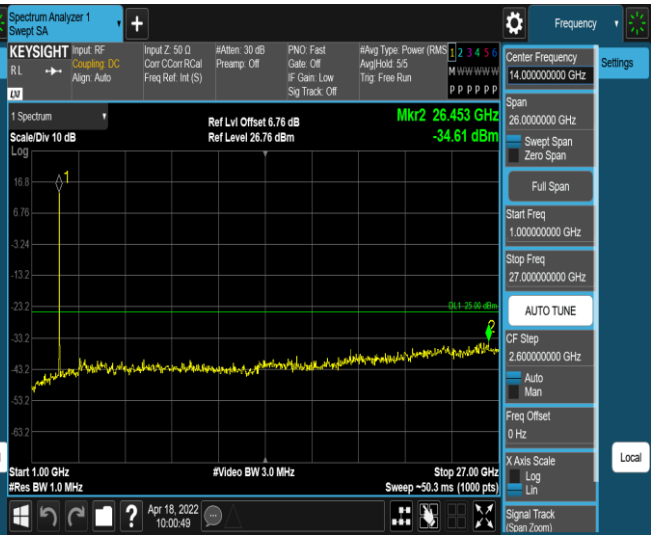
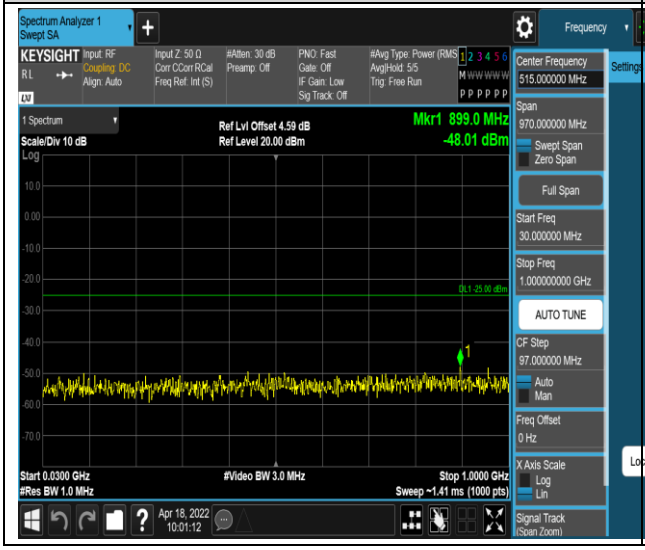
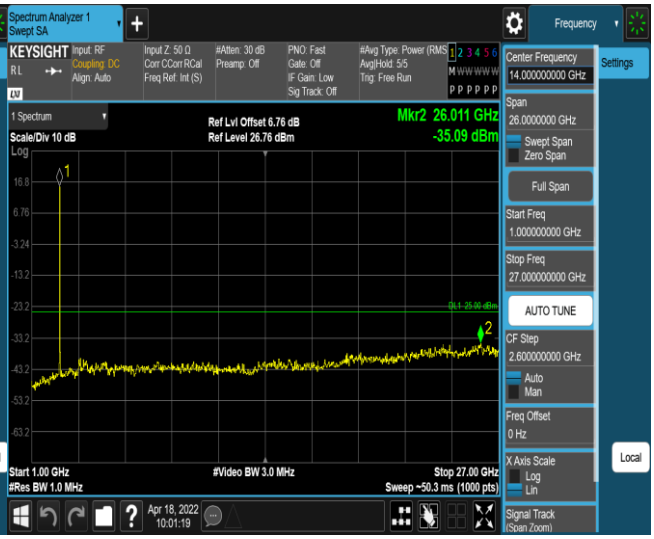
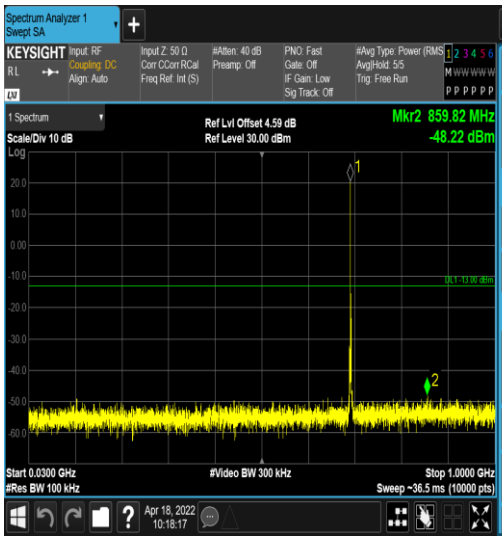
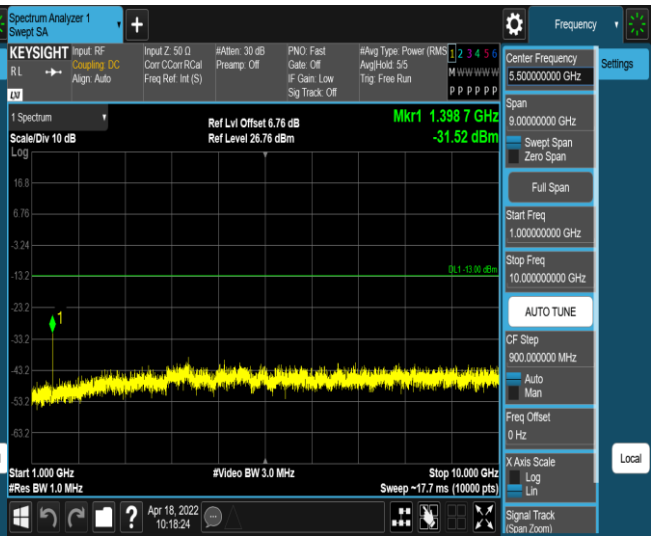
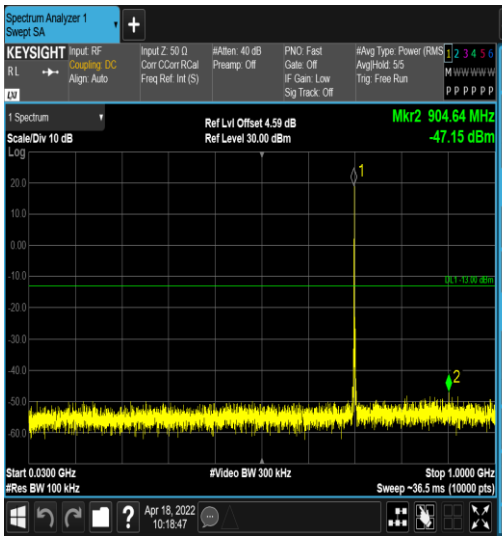
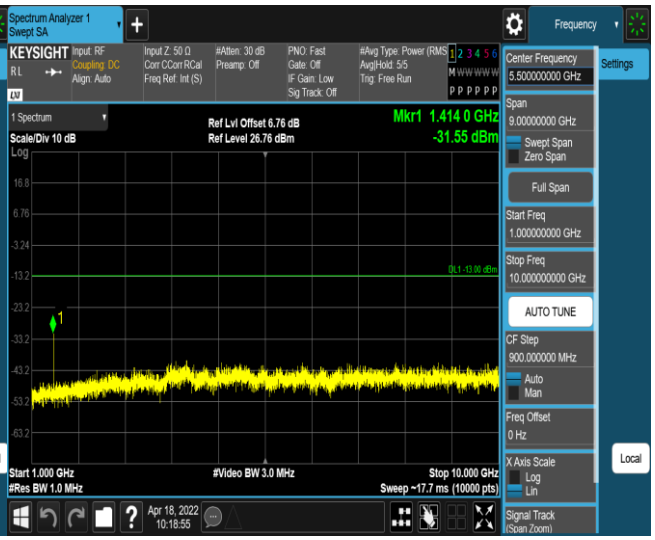
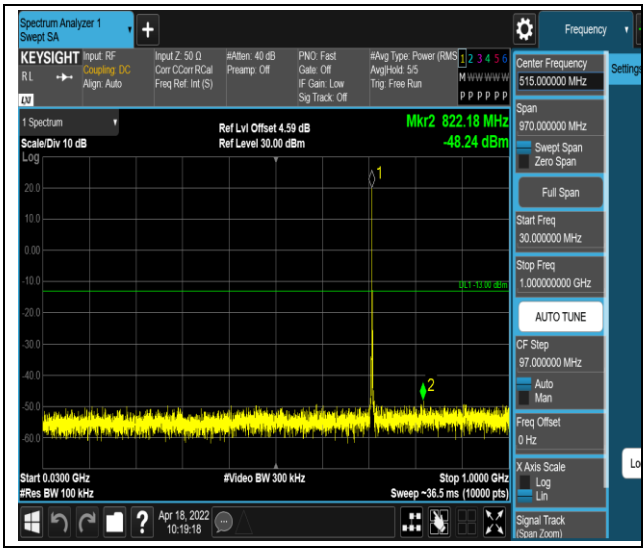
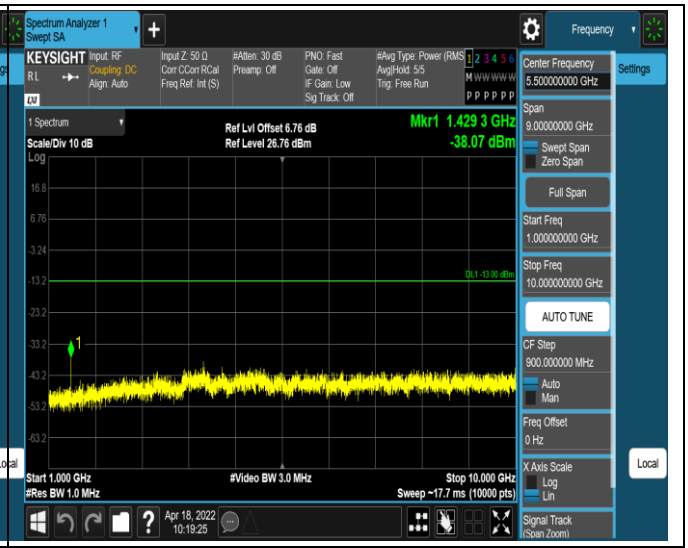
1000MHz	7000MHz
	
Band7-20MHz-16QAM-21100-1RB#0-Range1:30~1000MHz	Band7-20MHz-16QAM-21100-1RB#0-Range2:1000~27000MHz
	
Band7-20MHz-16QAM-21350-1RB#0-Range1:30~1000MHz	Band7-20MHz-16QAM-21350-1RB#0-Range2:1000~27000MHz
	

Band12-1.4MHz-QPSK-23017-1RB#0-Range1:30~1000MHz	Band12-1.4MHz-QPSK-23017-1RB#0-Range2:1000~10000MHz
	
Band12-1.4MHz-QPSK-23095-1RB#0-Range1:30~1000MHz	Band12-1.4MHz-QPSK-23095-1RB#0-Range2:1000~10000MHz
	
Band12-1.4MHz-QPSK-23173-1RB#0-Range1:30~1000MHz	Band12-1.4MHz-QPSK-23173-1RB#0-Range2:1000~10000MHz

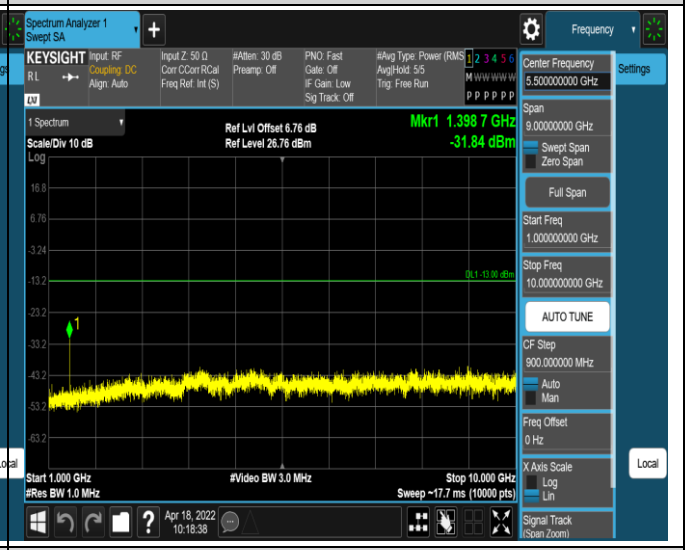


Band12-1.4MHz-16QAM-23017-1RB#0-Range1:30 ~1000MHz



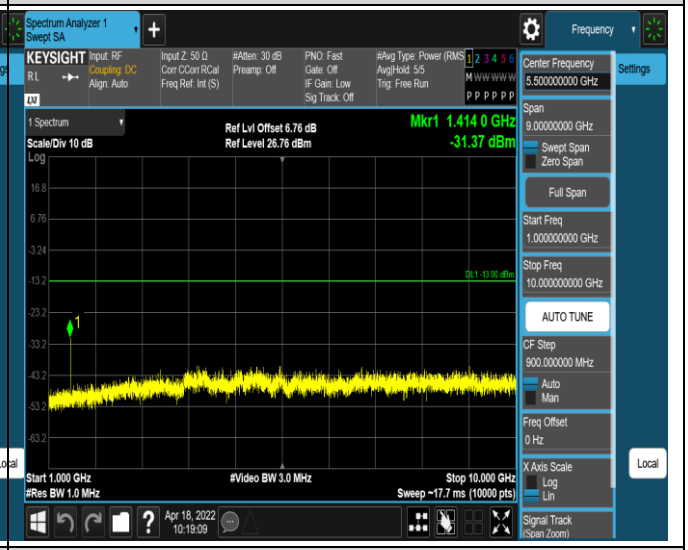
Band12-1.4MHz-16QAM-23017-1RB#0-Range2:1000 ~10000MHz

Band12-1.4MHz-16QAM-23095-1RB#0-Range1:30 ~1000MHz

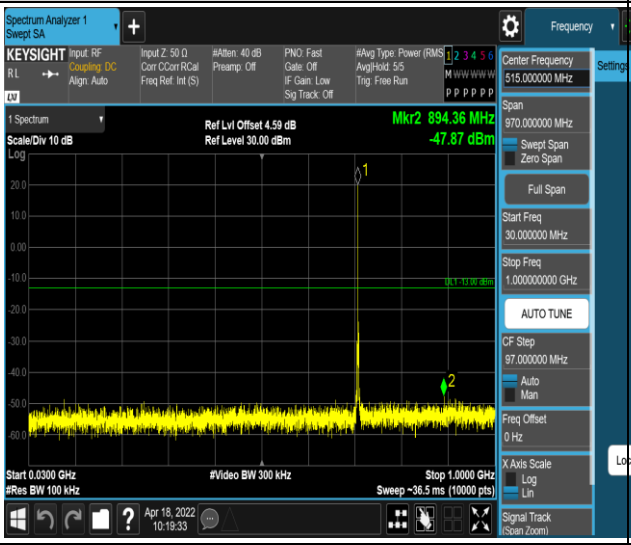
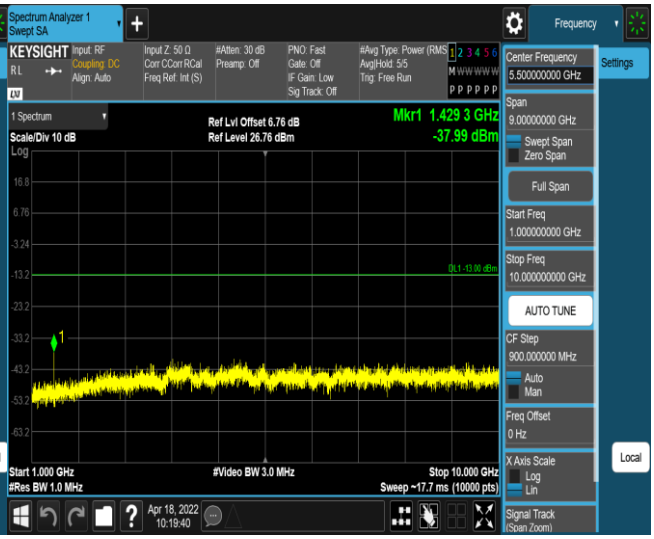
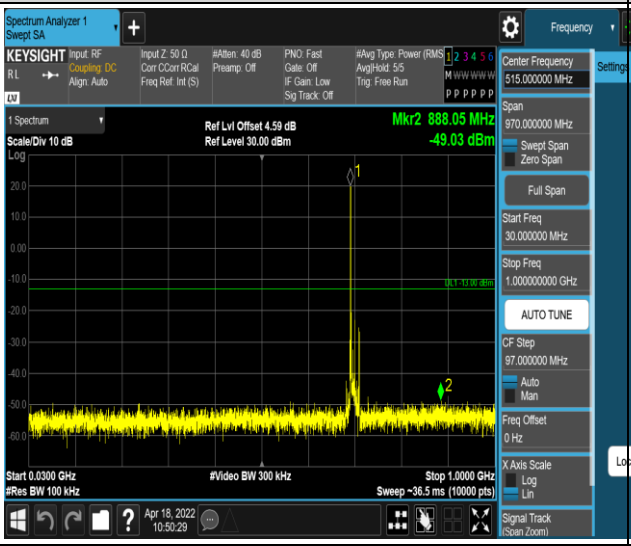
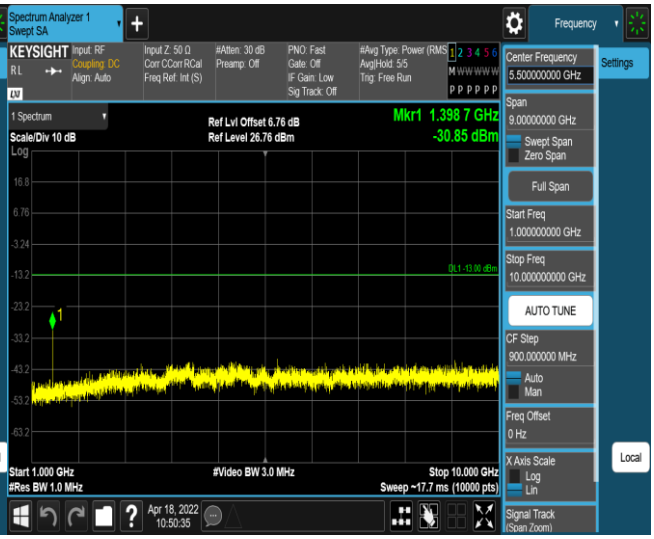
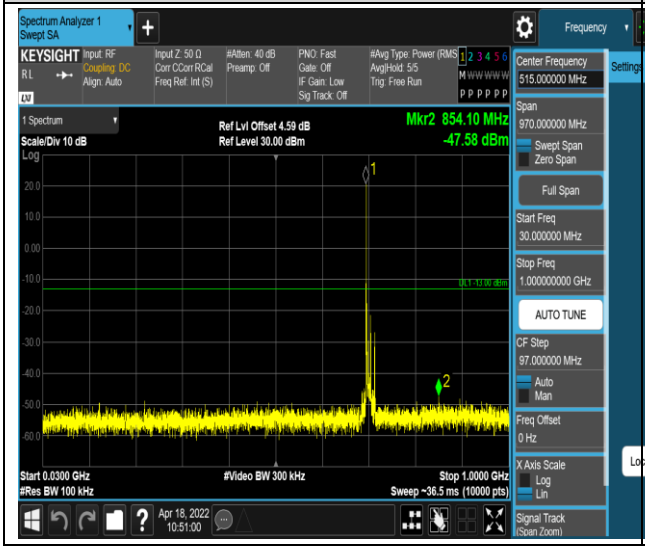
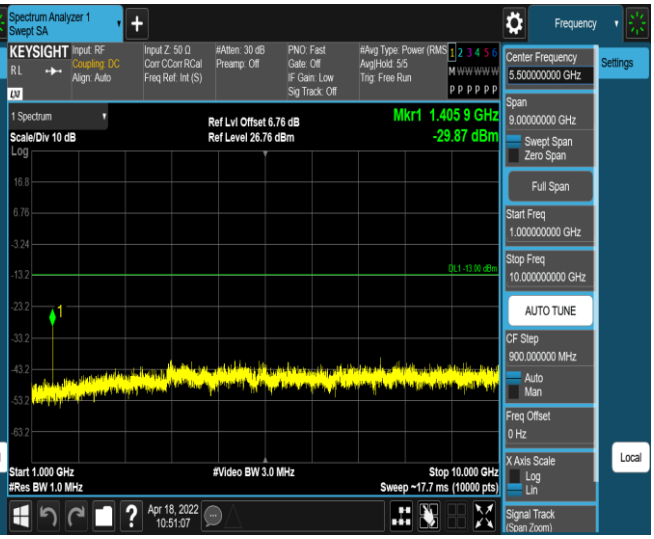


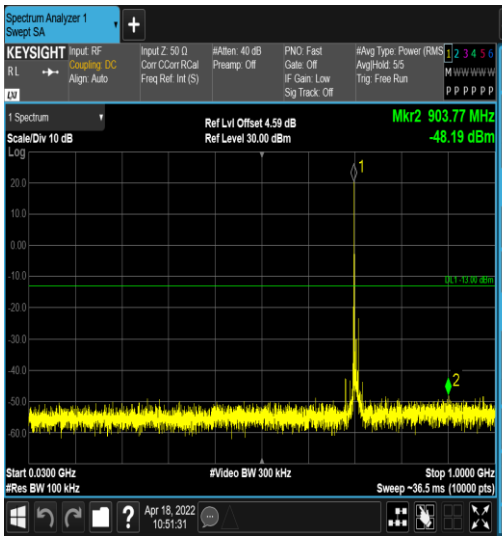
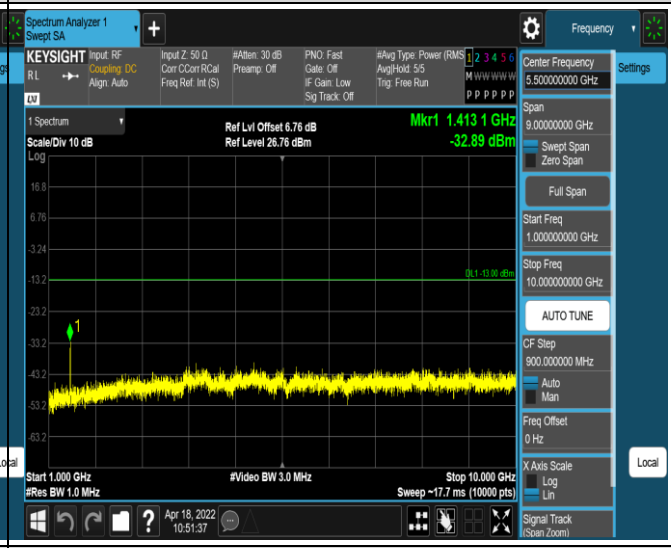
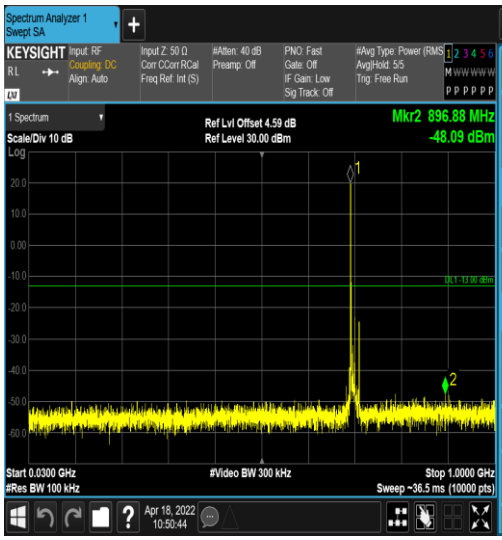
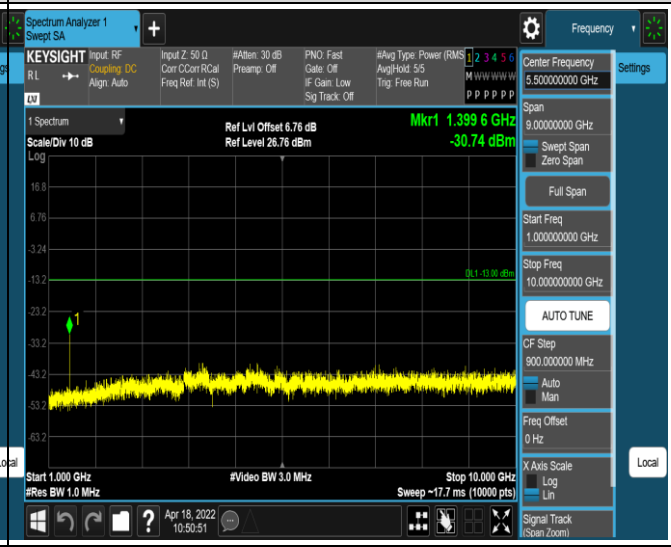
Band12-1.4MHz-16QAM-23095-1RB#0-Range2:1000 ~10000MHz

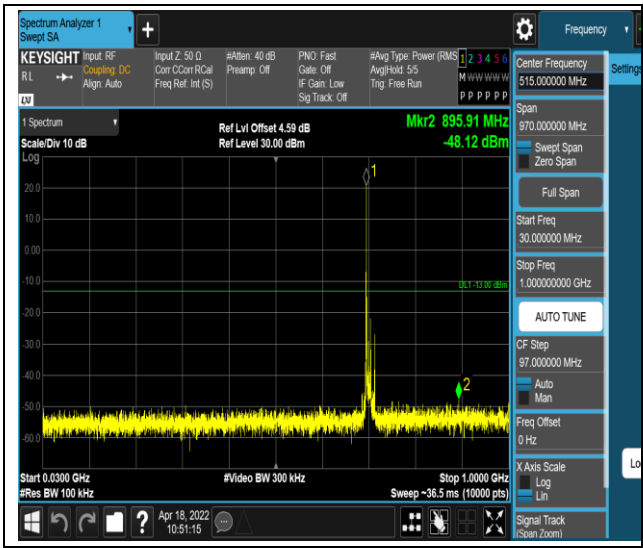
Band12-1.4MHz-16QAM-23173-1RB#0-Range1:30



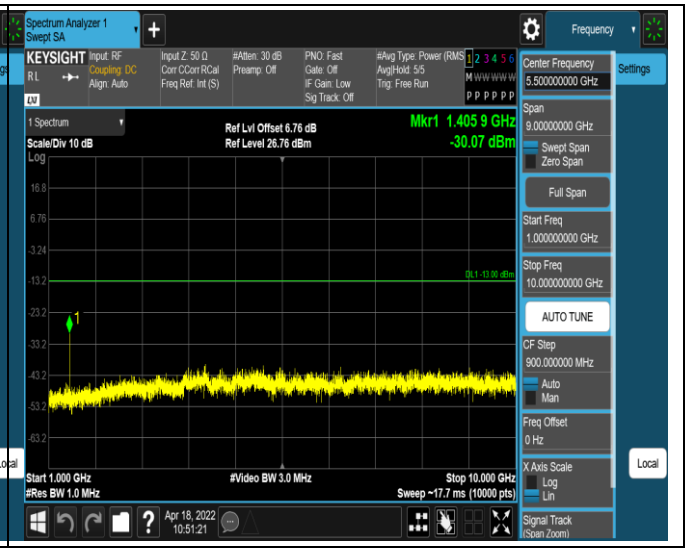
Band12-1.4MHz-16QAM-23173-1RB#0-Range2:1000

~1000MHz	~10000MHz
	
Band12-10MHz-QPSK-23060-1RB#0-Range1:30~1000MHz	Band12-10MHz-QPSK-23060-1RB#0-Range2:1000~10000MHz
	
Band12-10MHz-QPSK-23095-1RB#0-Range1:30~1000MHz	Band12-10MHz-QPSK-23095-1RB#0-Range2:1000~10000MHz
	

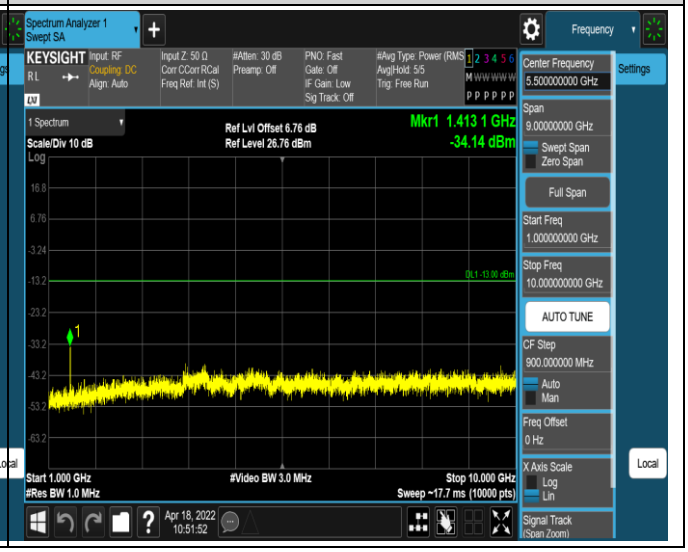
Band12-10MHz-QPSK-23130-1RB#0-Range1:30~1000MHz	Band12-10MHz-QPSK-23130-1RB#0-Range2:1000~10000MHz
	
Band12-10MHz-16QAM-23060-1RB#0-Range1:30~1000MHz	Band12-10MHz-16QAM-23060-1RB#0-Range2:1000~10000MHz
	
Band12-10MHz-16QAM-23095-1RB#0-Range1:30~1000MHz	Band12-10MHz-16QAM-23095-1RB#0-Range2:1000~10000MHz



Band12-10MHz-16QAM-23130-1RB#0-Range1:30 ~1000MHz



Band12-10MHz-16QAM-23130-1RB#0-Range2:1000~10000MHz



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	-12.27	-0.006527	Within authorized band for Band 2	Pass
	-20	-20.33	-0.010814		
	-10	-22.16	-0.011787		
	0	-21.36	-0.011362		
	10	-20.23	-0.010761		
	20	-11.37	-0.006048		

	30	268.78	0.142968		
	40	-4.23	-0.002250		
	50	-25.05	-0.013324		
16QAM					
3.70	-30	-15.72	-0.008362	Within authorized band for Band 2	Pass
	-20	-18.34	-0.009755		
	-10	-11.03	-0.005867		
	0	-9.28	-0.004936		
	10	-20.41	-0.010856		
	20	2.65	0.001410		
	30	4.99	0.002654		
	40	-4.38	-0.002330		
	50	-16.84	-0.008957		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-10.41	-0.005537	Within authorized band for Band 2	Pass
	3.70	-8.93	-0.004750		
	4.20	-20.27	-0.010782		
16QAM					
25	3.40	-15.12	-0.008043	Within authorized band for Band 2	Pass
	3.70	-21.19	-0.011271		
	4.20	-20.11	-0.010697		
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					
3.70	-30	-11.13	-0.006424	Within authorized band for Band 4	Pass
	-20	-4.73	-0.002730		
	-10	-7.72	-0.004456		
	0	-5.75	-0.003319		
	10	-8.34	-0.004814		
	20	-3.13	-0.001807		
	30	-7.02	-0.004052		
	40	-8.47	-0.004889		
	50	-5.21	-0.003007		
16QAM					
3.70	-30	-6.57	-0.003792	Within authorized band for Band 4	Pass
	-20	-7.05	-0.004069		
	-10	-9.77	-0.005639		
	0	-8.07	-0.004658		
	10	-7.32	-0.004225		
	20	-10.31	-0.005951		
	30	-10.50	-0.006061		
	40	-17.15	-0.009899		
	50	-10.07	-0.005812		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-6.49	-0.003746	Within authorized band for Band 4	Pass
	3.70	-6.67	-0.003850		
	4.20	-3.42	-0.001974		
16QAM					
25	3.40	-7.62	-0.004398	Within authorized band for Band 4	Pass
	3.70	-8.58	-0.004952		
	4.20	-7.93	-0.004577		
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	-5.95	-0.007113	±2.5	Pass
	-20	-11.01	-0.013162		
	-10	-8.10	-0.009683		
	0	-7.12	-0.008512		
	10	-11.47	-0.013712		
	20	-9.76	-0.011668		
	30	-5.48	-0.006551		
	40	-8.31	-0.009934		
	50	-9.86	-0.011787		
16QAM					
3.70	-30	-7.04	-0.008416	±2.5	Pass
	-20	-7.88	-0.009420		
	-10	-14.12	-0.016880		
	0	-13.15	-0.015720		
	10	-13.30	-0.015900		
	20	-7.25	-0.008667		
	30	-7.82	-0.009348		
	40	-8.25	-0.009863		
	50	-11.46	-0.013700		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-7.65	-0.009145	±2.5	Pass
	3.70	-7.84	-0.009372		
	4.20	-12.83	-0.015338		
16QAM					
25	3.40	-9.50	-0.011357	±2.5	Pass
	3.70	-6.92	-0.008273		
	4.20	-8.54	-0.010209		
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	-13.95	-0.005503	Within authorized band for Band 7	Pass
	-20	-13.00	-0.005128		
	-10	-17.31	-0.006828		
	0	-17.42	-0.006872		
	10	-19.60	-0.007732		
	20	-20.16	-0.007953		
	30	-15.08	-0.005949		
	40	-11.03	-0.004351		
	50	-12.53	-0.004943		
16QAM					
3.70	-30	-13.93	-0.005495	Within authorized band for Band 7	Pass
	-20	-7.14	-0.002817		
	-10	-13.05	-0.005148		
	0	10.17	0.004012		
	10	-11.99	-0.004730		
	20	10.54	0.004158		
	30	11.96	0.004718		
	40	-16.28	-0.006422		
	50	4.06	0.001602		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-8.54	-0.003369	Within authorized band for Band 7	Pass
	3.70	-21.49	-0.008477		
	4.20	-13.89	-0.005479		
16QAM					
25	3.40	-18.91	-0.007460	Within authorized band for Band 7	Pass
	3.70	9.10	0.003590		
	4.20	11.89	0.004690		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 12 part:

Reference Frequency: LTE Band 12(10MHz) Middle channel=23095 Frequency=707.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.70	-30	-11.50	-0.016254	Within authorized band for Band 12	Pass
	-20	-10.46	-0.014784		
	-10	-8.55	-0.012085		
	0	-6.52	-0.009216		
	10	-7.98	-0.011279		
	20	-14.32	-0.020240		
	30	-8.96	-0.012664		
	40	-14.41	-0.020367		
	50	-5.16	-0.007293		
16QAM					
3.70	-30	2.27	0.003208	Within authorized band for Band 12	Pass
	-20	-9.18	-0.012975		
	-10	-9.97	-0.014092		
	0	-4.89	-0.006912		
	10	-13.56	-0.019166		
	20	-4.28	-0.006049		
	30	-10.14	-0.014332		
	40	-9.38	-0.013258		
	50	-7.95	-0.011237		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.40	-9.13	-0.012905	Within authorized band for Band 12	Pass
	3.70	-7.24	-0.010233		
	4.20	-4.58	-0.006473		
16QAM					
25	3.40	-9.33	-0.013187	Within authorized band for Band 12	Pass
	3.70	-7.27	-0.010276		
	4.20	-4.39	-0.006205		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

Appendix G: Modulation Characteristics

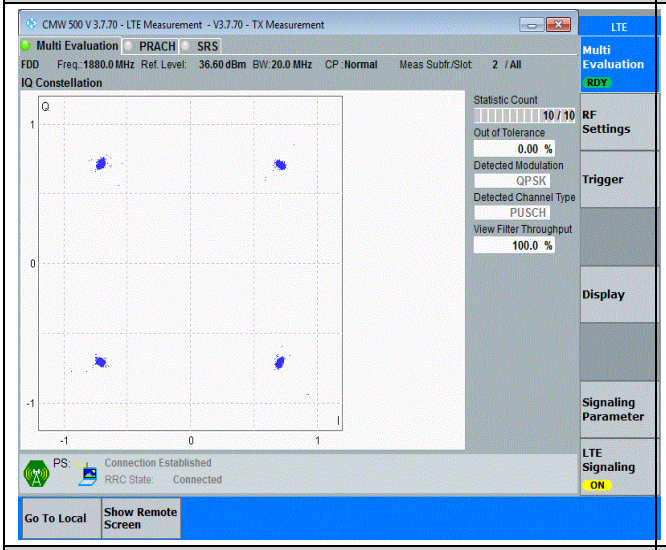
Test Result

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

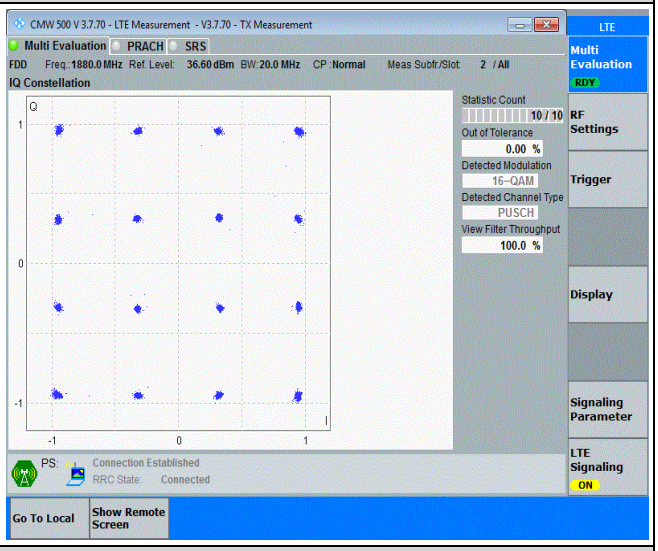
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

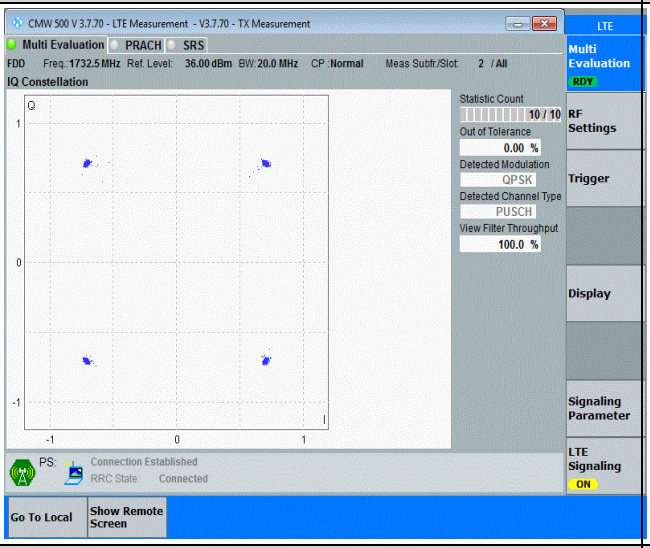
Band2-20MHz-QPSK-18900-100RB#0



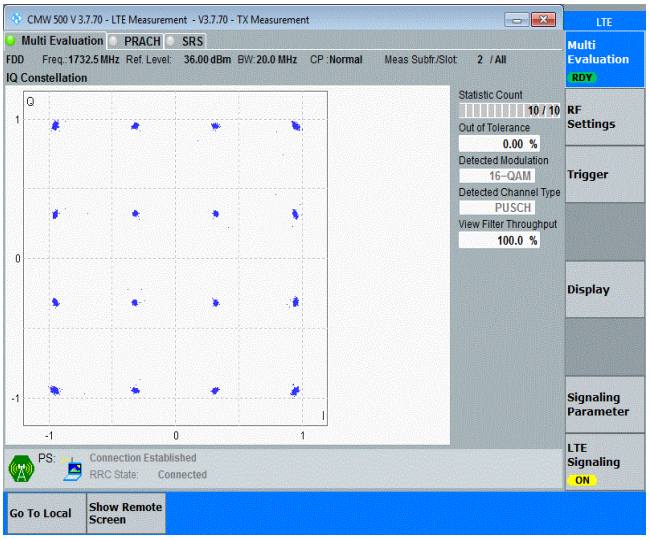
Band2-20MHz-16QAM-18900-100RB#0



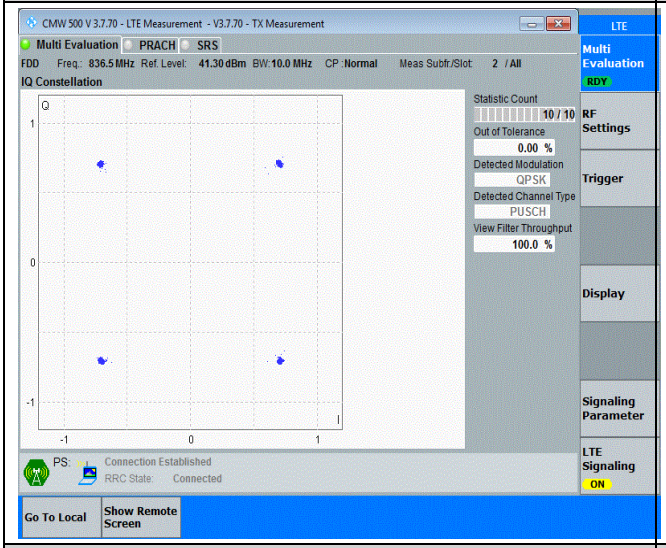
Band4-20MHz-QPSK-20175-100RB#0



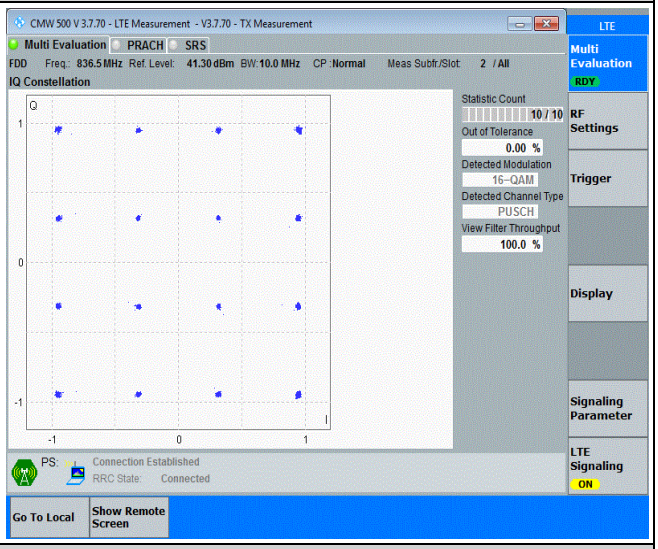
Band4-20MHz-16QAM-20175-100RB#0



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

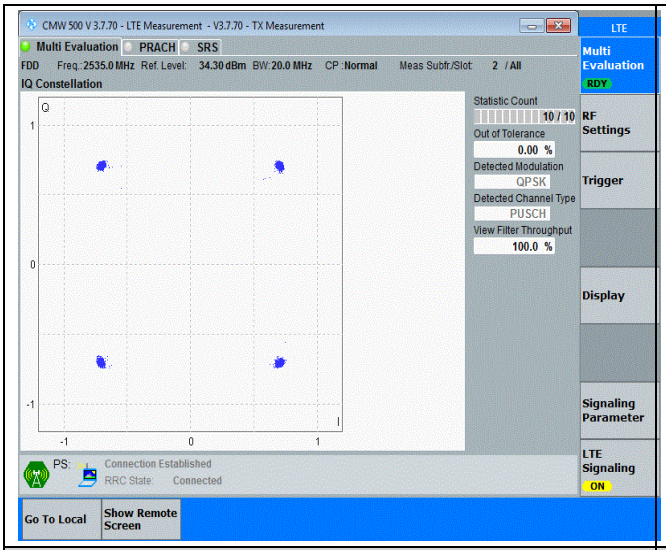


Band5-10MHz-16QAM-20525-50RB#0

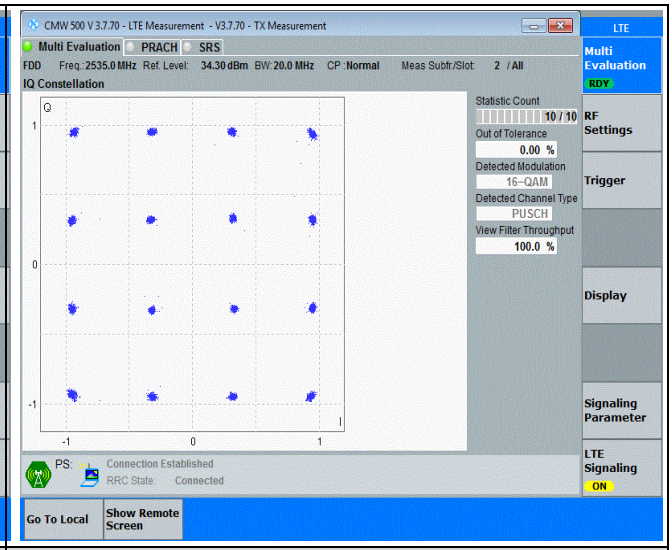
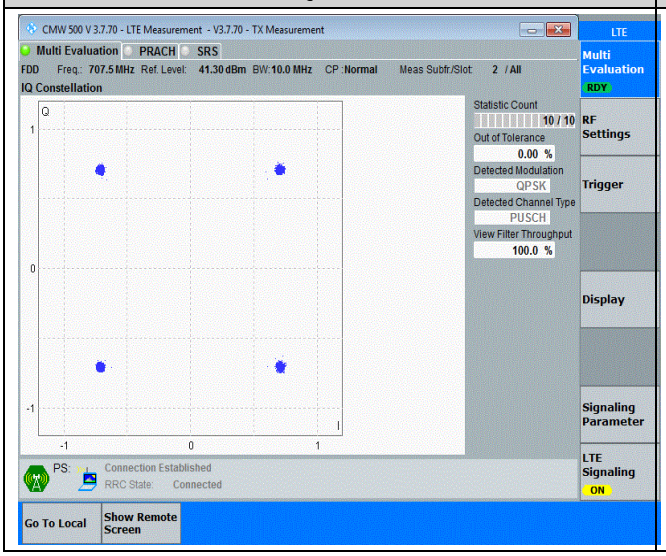
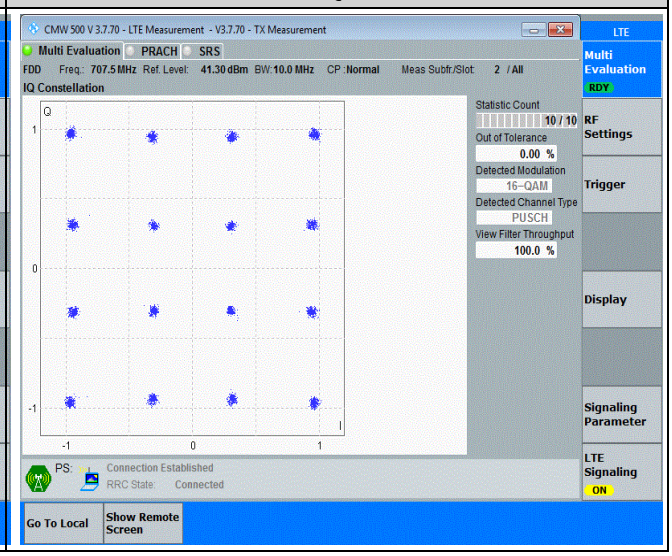


Band7-20MHz-QPSK-21100-100RB#0

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



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



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