Band25-20MHz-QPSK-26140:30~1000MHz

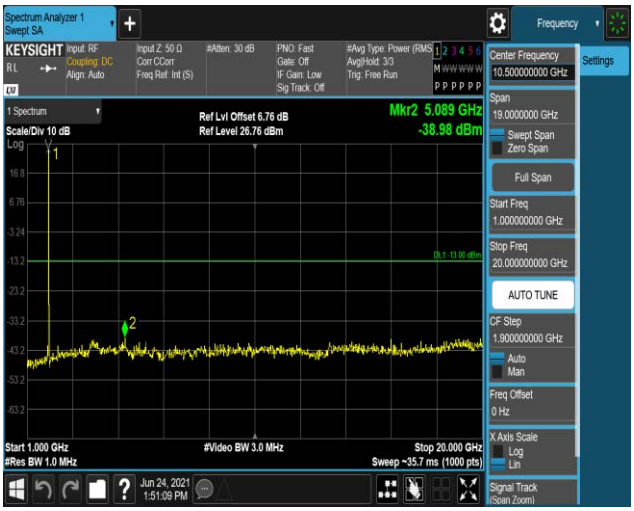
Band25-20MHz-QPSK-26140:1000~20000MHz

Band25-20MHz-QPSK-26365:30~1000MHz

Band25-20MHz-QPSK-26365:1000~20000MHz

Band25-20MHz-QPSK-26590:30~1000MHz

Band25-20MHz-QPSK-26590:1000~20000MHz



Band25-20MHz-16QAM-26140:30~1000MHz

Band25-20MHz-16QAM-26140:1000~20000MHz

Band25-20MHz-16QAM-26365:30~1000MHz

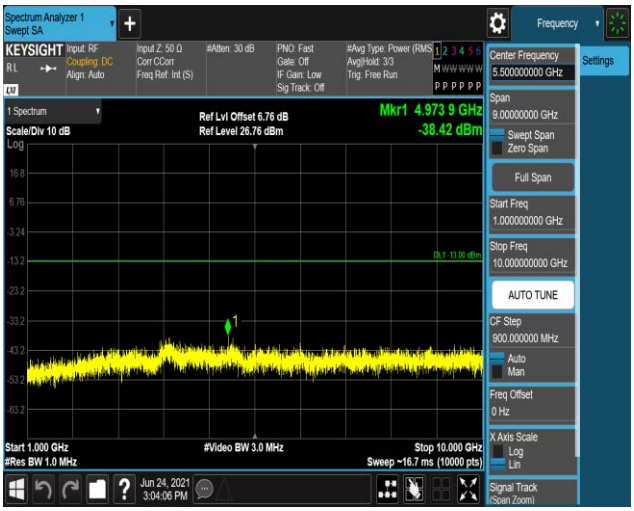
Band25-20MHz-16QAM-26365:1000~20000MHz

Band25-20MHz-16QAM-26590:30~1000MHz

Band25-20MHz-16QAM-26590:1000~20000MHz

Band26-1.4MHz-QPSK-26697:30~1000MHz

Band26-1.4MHz-QPSK-26697:1000~10000MHz

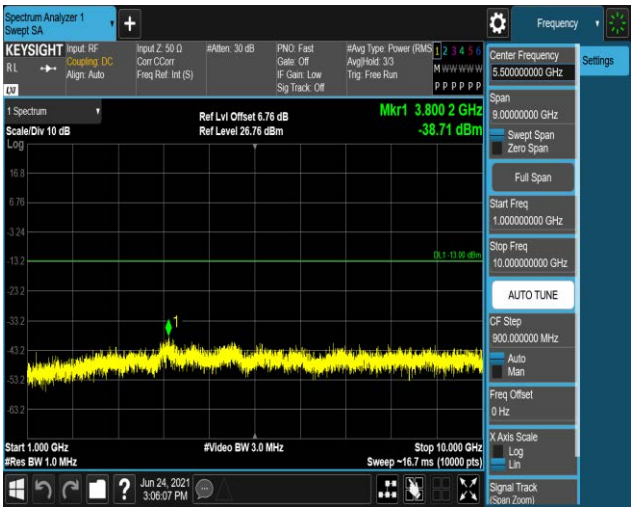


Band26-1.4MHz-QPSK-26740:30~1000MHz

Band26-1.4MHz-QPSK-26740:1000~10000MHz

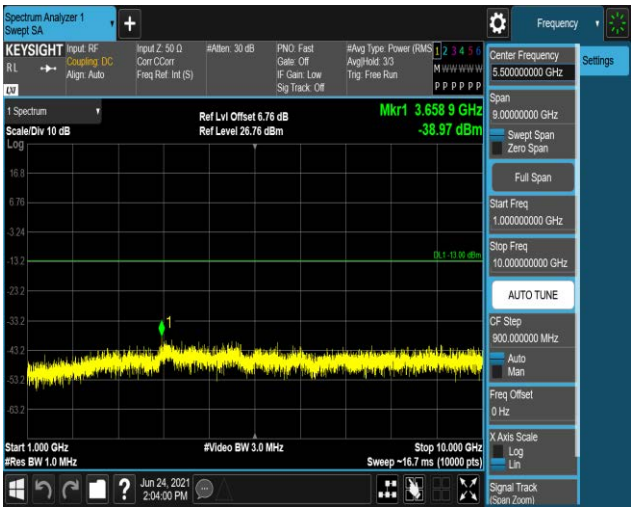
Band26-1.4MHz-QPSK-26783:30~1000MHz

Band26-1.4MHz-QPSK-26783:1000~10000MHz



Band26-1.4MHz-QPSK-26797:30~1000MHz

Band26-1.4MHz-QPSK-26797:1000~10000MHz



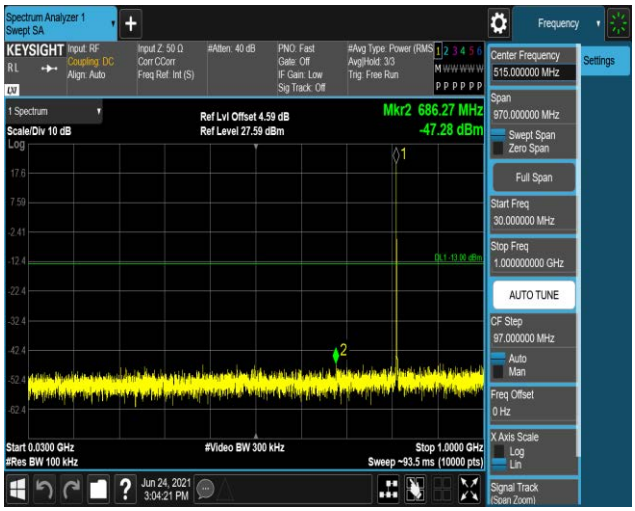
Band26-1.4MHz-QPSK-26915:30~1000MHz

Band26-1.4MHz-QPSK-26915:1000~10000MHz

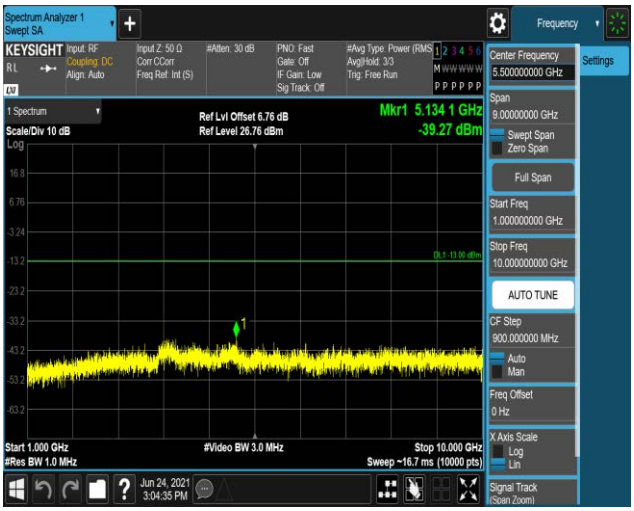
Band26-1.4MHz-QPSK-27033:30~1000MHz

Band26-1.4MHz-QPSK-27033:1000~10000MHz

Band26-1.4MHz-16QAM-26697:30~1000MHz

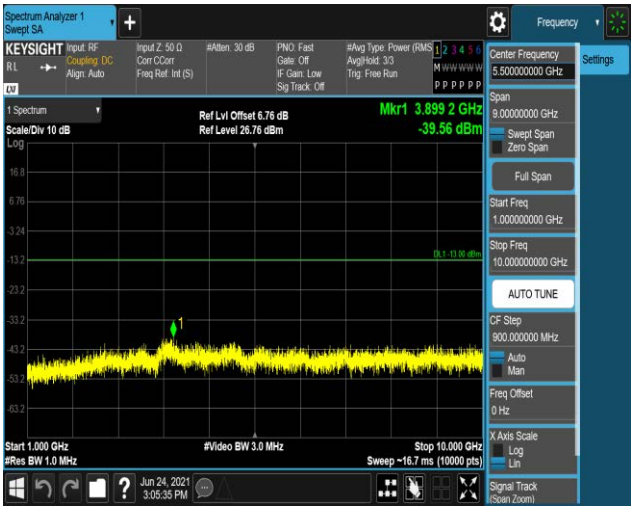


Band26-1.4MHz-16QAM-26697:1000~10000MHz



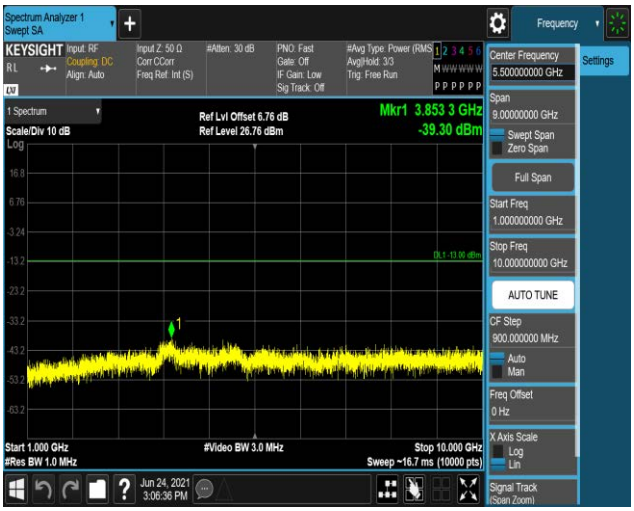
Band26-1.4MHz-16QAM-26740:30~1000MHz

Band26-1.4MHz-16QAM-26740:1000~10000MHz

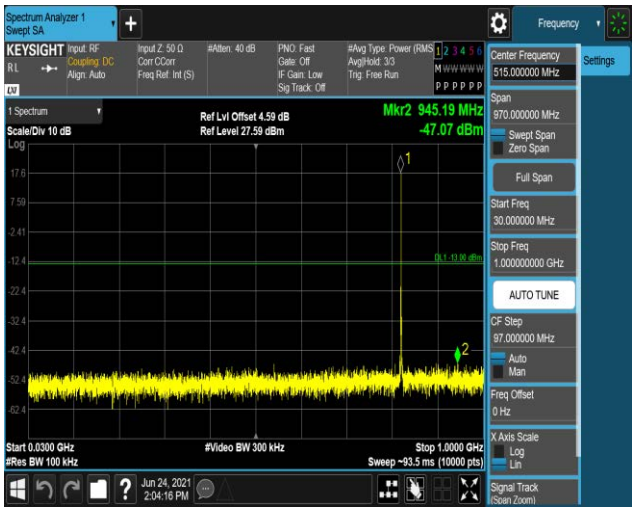


Band26-1.4MHz-16QAM-26783:30~1000MHz

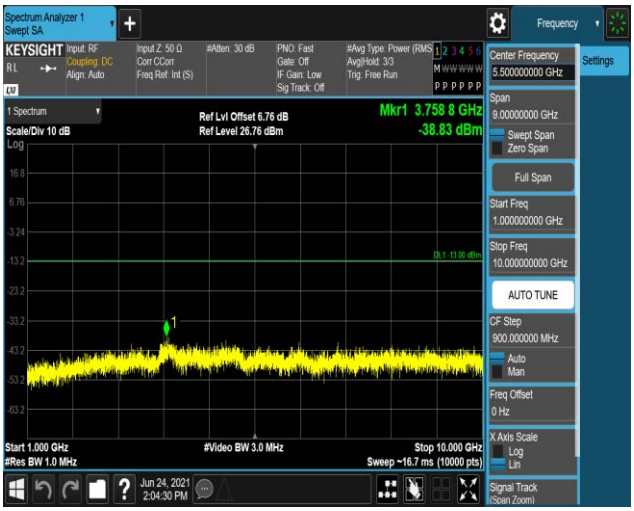
Band26-1.4MHz-16QAM-26783:1000~10000MHz



Band26-1.4MHz-16QAM-26797:30~1000MHz

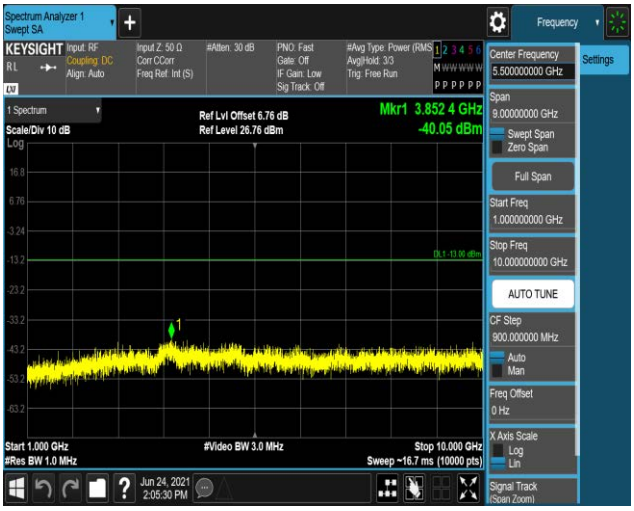


Band26-1.4MHz-16QAM-26797:1000~10000MHz

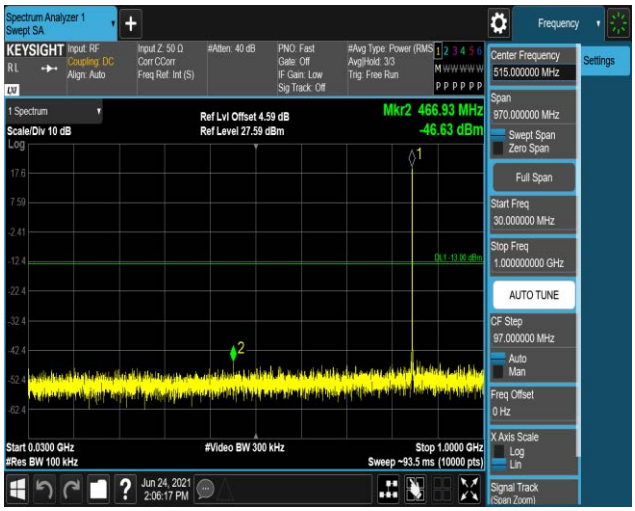


Band26-1.4MHz-16QAM-26915:30~1000MHz

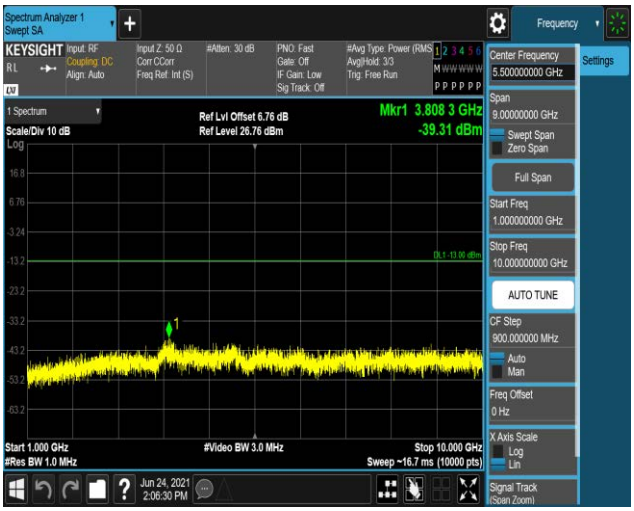
Band26-1.4MHz-16QAM-26915:1000~10000MHz



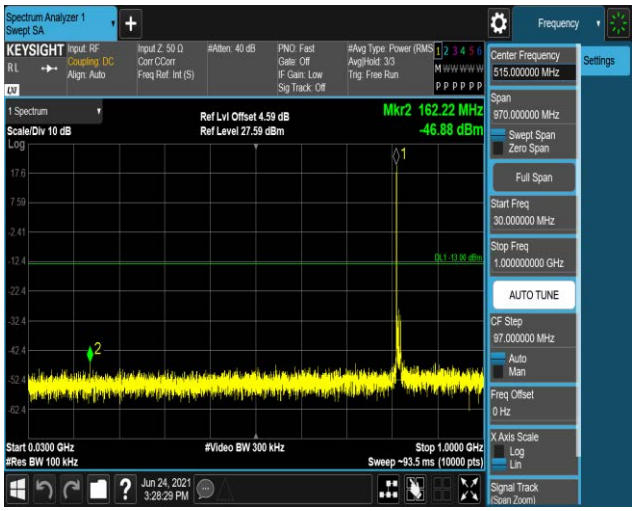
Band26-1.4MHz-16QAM-27033:30~1000MHz



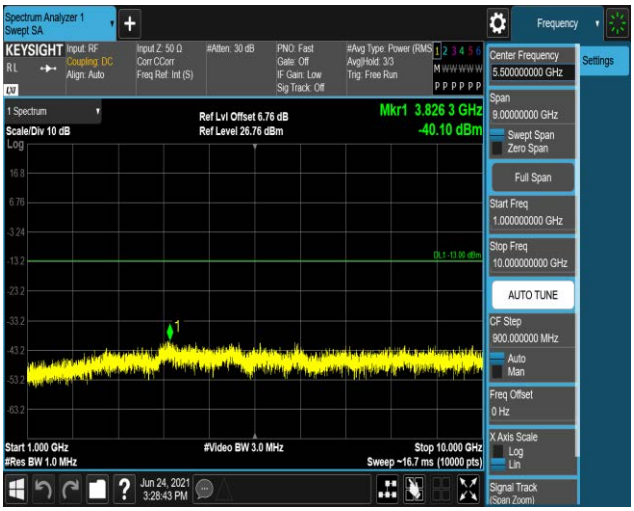
Band26-1.4MHz-16QAM-27033:1000~10000MHz



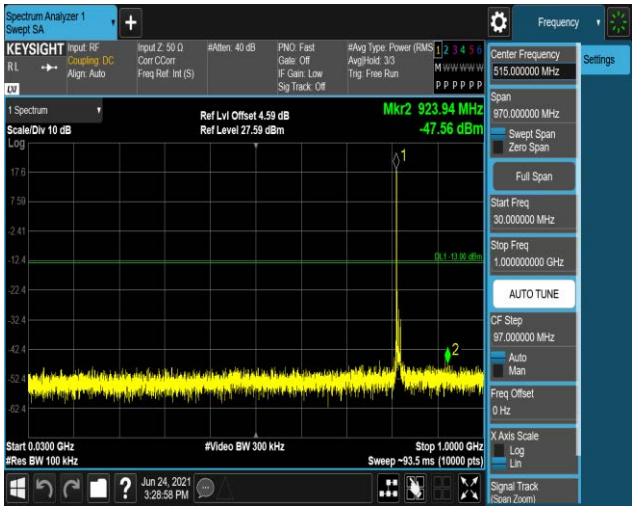
Band26-10MHz-QPSK-26740:30~1000MHz



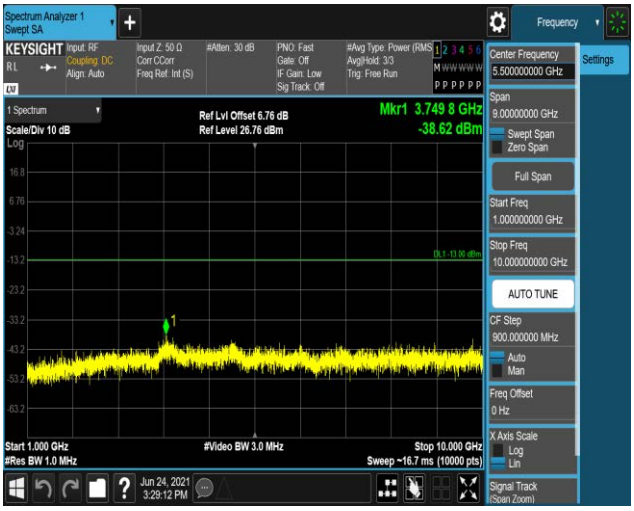
Band26-10MHz-QPSK-26740:1000~10000MHz



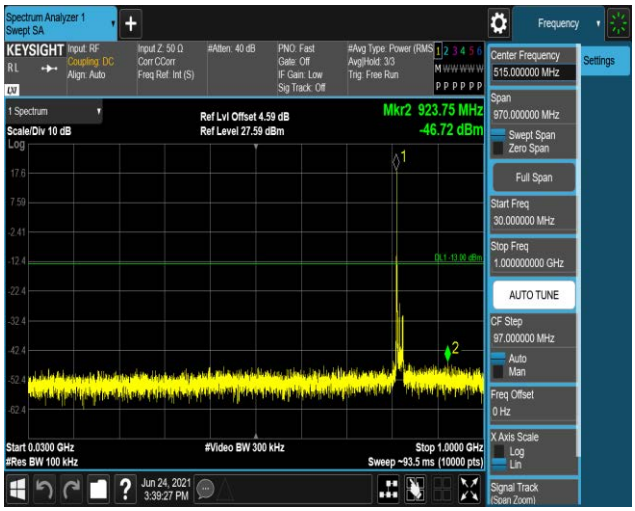
Band26-10MHz-16QAM-26740:30~1000MHz



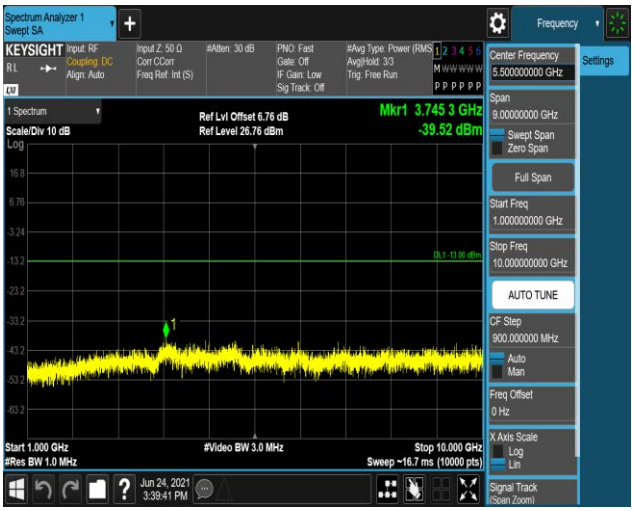
Band26-10MHz-16QAM-26740:1000~10000MHz



Band26-15MHz-QPSK-26765:30~1000MHz



Band26-15MHz-QPSK-26765:1000~10000MHz

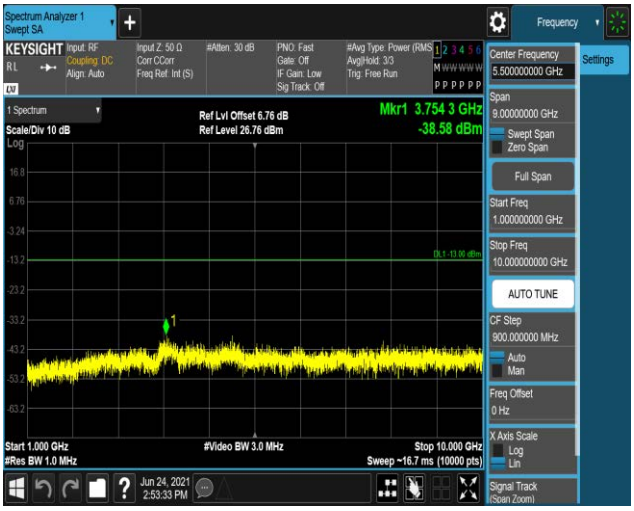


Band26-15MHz-QPSK-26865:30~1000MHz

Band26-15MHz-QPSK-26865:1000~10000MHz

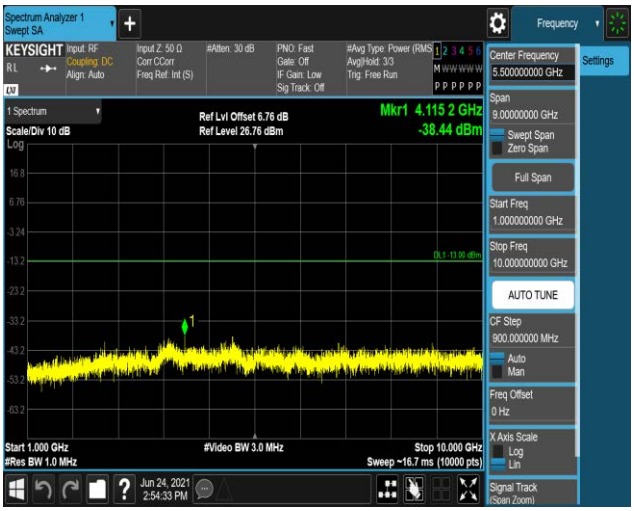
Band26-15MHz-QPSK-26915:30~1000MHz

Band26-15MHz-QPSK-26915:1000~10000MHz

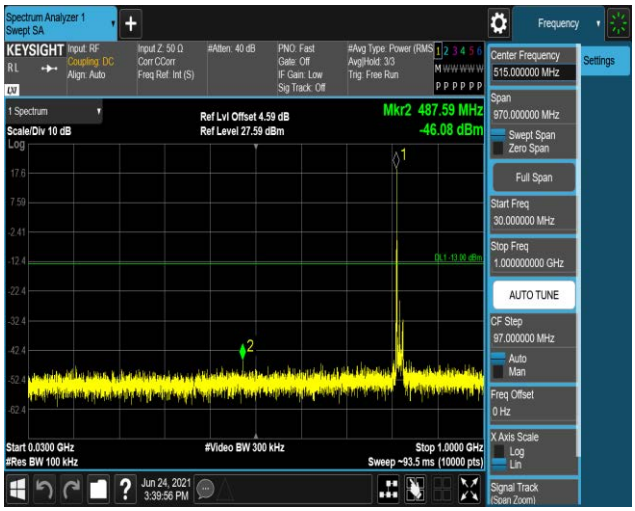


Band26-15MHz-QPSK-26965:30~1000MHz

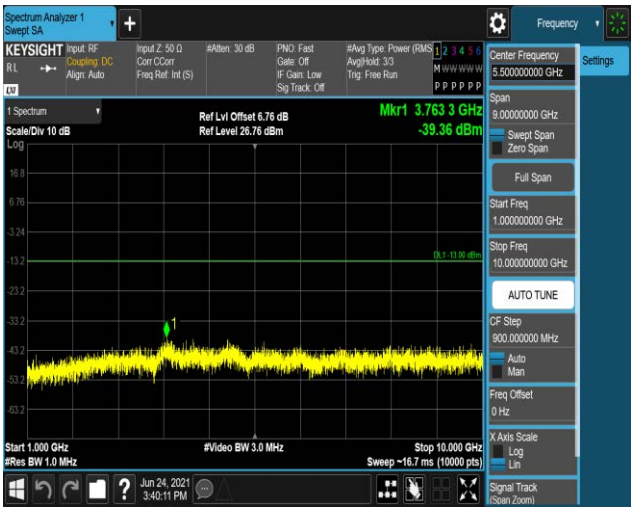
Band26-15MHz-QPSK-26965:1000~10000MHz



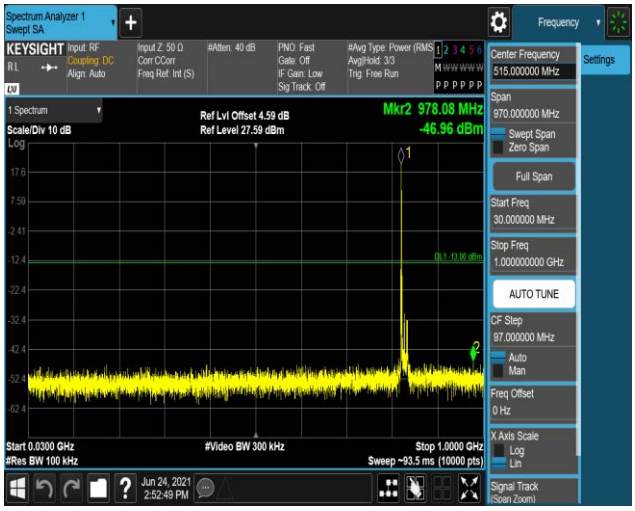
Band26-15MHz-16QAM-26765:30~1000MHz



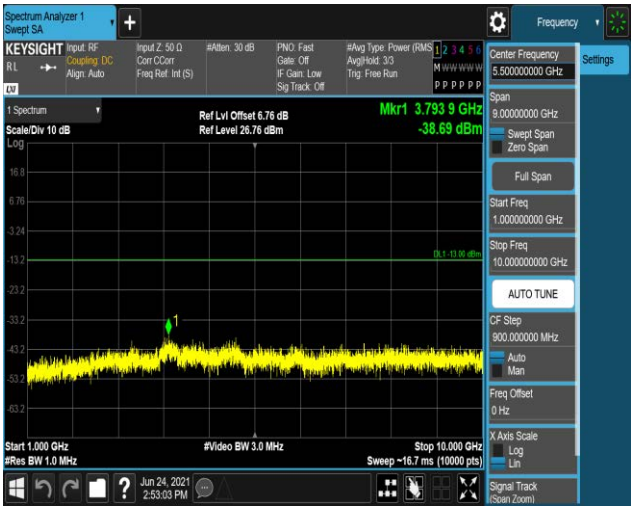
Band26-15MHz-16QAM-26765:1000~10000MHz



Band26-15MHz-16QAM-26865:30~1000MHz

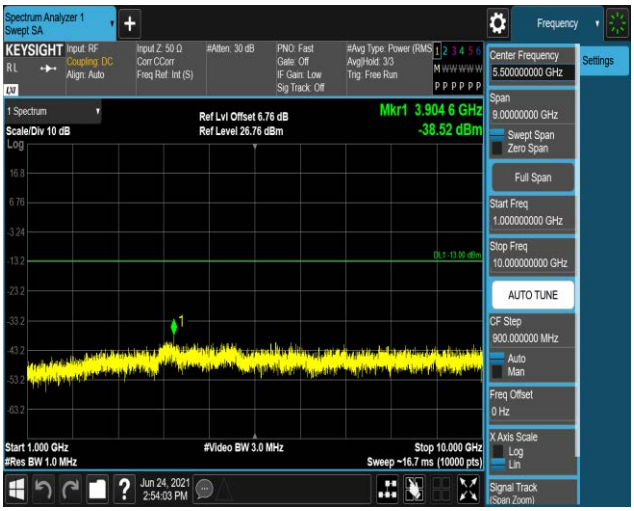


Band26-15MHz-16QAM-26865:1000~10000MHz



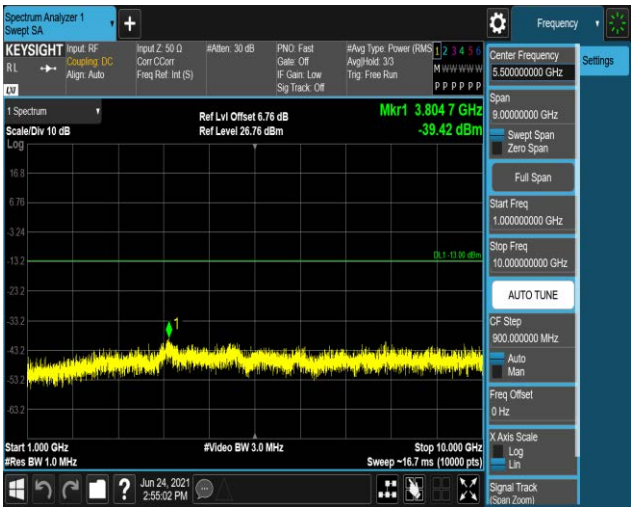
Band26-15MHz-16QAM-26915:30~1000MHz

Band26-15MHz-16QAM-26915:1000~10000MHz



Band26-15MHz-16QAM-26965:30~1000MHz

Band26-15MHz-16QAM-26965:1000~10000MHz



Band66-1.4MHz-QPSK-131979:30~1000MHz

Band66-1.4MHz-QPSK-131979:1000~20000MHz

Band66-1.4MHz-QPSK-132322:30~1000MHz

Band66-1.4MHz-QPSK-132322:1000~20000MHz

Band66-1.4MHz-QPSK-132665:30~1000MHz

Band66-1.4MHz-QPSK-132665:1000~20000MHz

Band66-1.4MHz-16QAM-131979:30~1000MHz

Band66-1.4MHz-16QAM-131979:1000~20000MHz

Band66-1.4MHz-16QAM-132322:30~1000MHz

Band66-1.4MHz-16QAM-132322:1000~20000MHz

Band66-1.4MHz-16QAM-132665:30~1000MHz

Band66-1.4MHz-16QAM-132665:1000~20000MHz

Band66-20MHz-QPSK-132072:30~1000MHz

Band66-20MHz-QPSK-132072:1000~20000MHz

Band66-20MHz-QPSK-132322:30~1000MHz

Band66-20MHz-QPSK-132322:1000~20000MHz

Band66-20MHz-QPSK-132572:30~1000MHz

Band66-20MHz-QPSK-132572:1000~20000MHz

Band66-20MHz-16QAM-132072:30~1000MHz

Band66-20MHz-16QAM-132072:1000~20000MHz

Band66-20MHz-16QAM-132322:30~1000MHz

Band66-20MHz-16QAM-132322:1000~20000MHz

Band66-20MHz-16QAM-132572:30~1000MHz	Band66-20MHz-16QAM-132572:1000~20000MHz

Appendix F: Frequency Stability

Test Result:

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					
3.87	-30	4.51	0.001779	Within authorized band for Band 7	Pass
	-20	12.90	0.005089		
	-10	12.19	0.004809		
	0	15.59	0.006150		
	10	5.55	0.002189		
	20	6.31	0.002489		
	30	11.90	0.004694		
	40	17.28	0.006817		
	50	9.30	0.003669		
16QAM					
3.87	-30	-12.10	-0.004773	Within authorized band for Band 7	Pass
	-20	6.02	0.002375		
	-10	-8.78	-0.003464		
	0	13.03	0.005140		
	10	16.84	0.006643		
	20	7.31	0.002884		
	30	4.05	0.001598		
	40	8.54	0.003369		
	50	4.49	0.001771		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	15.02	0.005925	Within authorized band for Band 7	Pass
	3.87	7.80	0.003077		
	4.45	13.63	0.005377		
16QAM					
25	3.50	12.96	0.005112	Within authorized band for Band 7	Pass
	3.87	-10.44	-0.004118		
	4.45	13.40	0.005286		
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					
3.87	-30	-4.61	-0.006516	Within authorized band for Band 12	Pass
	-20	-4.55	-0.006431		
	-10	-4.21	-0.005951		
	0	-0.92	-0.001300		
	10	-4.39	-0.006205		
	20	-8.33	-0.011774		
	30	-4.66	-0.006587		
	40	0.97	0.001371		
	50	1.46	0.002064		
16QAM					
3.87	-30	4.02	0.005682	Within authorized band for Band 12	Pass
	-20	2.59	0.003661		
	-10	0.99	0.001399		
	0	6.24	0.008820		
	10	-3.58	-0.005060		
	20	-3.65	-0.005159		
	30	-5.01	-0.007081		
	40	5.01	0.007081		
	50	-5.15	-0.007279		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	4.98	0.007039	Within authorized band for Band 12	Pass
	3.87	-4.71	-0.006657		
	4.45	3.75	0.005300		
16QAM					
25	3.50	4.32	0.006106	Within authorized band for Band 12	Pass
	3.87	-1.36	-0.001922		
	4.45	4.53	0.006403		
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					
3.87	-30	9.97	0.005296	Within authorized band for Band 25	Pass
	-20	10.53	0.005594		
	-10	3.91	0.002077		
	0	13.46	0.007150		
	10	2.89	0.001535		
	20	3.99	0.002120		
	30	6.61	0.003511		
	40	11.53	0.006125		
	50	-8.28	-0.004398		
16QAM					
3.87	-30	13.13	0.006975	Within authorized band for Band 25	Pass
	-20	-2.92	-0.001551		
	-10	10.84	0.005758		
	0	11.39	0.006050		
	10	-9.18	-0.004876		
	20	-7.84	-0.004165		
	30	13.26	0.007044		
	40	-4.29	-0.002279		
	50	9.70	0.005153		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	7.08	0.003761	Within authorized band for Band 25	Pass
	3.87	7.15	0.003798		
	4.45	4.43	0.002353		
16QAM					
25	3.50	10.30	0.005471	Within authorized band for Band 25	Pass
	3.87	-4.69	-0.002491		
	4.45	-7.04	-0.003740		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 26 part (Part 90):

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					
3.87	-30	-3.00	-0.003663	±2.5	Pass
	-20	1.95	0.002381		
	-10	4.82	0.005885		
	0	2.29	0.002796		
	10	-2.59	-0.003162		
	20	-6.85	-0.008364		
	30	2.13	0.002601		
	40	-2.46	-0.003004		
	50	-7.15	-0.008730		
16QAM					
3.87	-30	4.05	0.004945	±2.5	Pass
	-20	4.01	0.004896		
	-10	1.65	0.002015		
	0	2.25	0.002747		
	10	-4.92	-0.006007		
	20	2.15	0.002625		
	30	3.02	0.003687		
	40	2.16	0.002637		
	50	1.57	0.001917		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	5.98	0.007302	±2.5	Pass
	3.87	-2.53	-0.003089		
	4.45	-3.59	-0.004383		
16QAM					
25	3.50	6.24	0.007619	±2.5	Pass
	3.87	-2.92	-0.003565		
	4.45	5.11	0.006239		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 26 part (Part 22):

Reference Frequency: LTE Band 26(10MHz) Middle channel=26915 Frequency=836.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-1.69	-0.002020	±2.5	Pass
	-20	-6.11	-0.007304		
	-10	4.21	0.005033		
	0	-5.26	-0.006288		
	10	-5.21	-0.006228		
	20	-6.19	-0.007400		
	30	-6.28	-0.007507		
	40	4.19	0.005009		
	50	-2.06	-0.002463		
16QAM					
3.87	-30	-1.52	-0.001817	±2.5	Pass
	-20	-4.02	-0.004806		
	-10	2.16	0.002582		
	0	-2.62	-0.003132		
	10	-3.69	-0.004411		
	20	-4.42	-0.005284		
	30	-5.08	-0.006073		
	40	-2.39	-0.002857		
	50	-5.79	-0.006922		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-4.72	-0.005643	±2.5	Pass
	3.87	-3.88	-0.004638		
	4.45	-1.86	-0.002224		
16QAM					
25	3.50	1.65	0.001973	±2.5	Pass
	3.87	-0.86	-0.001028		
	4.45	5.54	0.006623		
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					
3.87	-30	13.68	0.007840	Within authorized band for Band 66	Pass
	-20	-11.97	-0.006860		
	-10	8.87	0.005083		
	0	7.32	0.004195		
	10	11.13	0.006378		
	20	7.55	0.004327		
	30	5.72	0.003278		
	40	7.18	0.004115		
	50	6.87	0.003937		
16QAM					
3.87	-30	4.66	0.002670	Within authorized band for Band 66	Pass
	-20	3.59	0.002057		
	-10	4.68	0.002682		
	0	12.95	0.007421		
	10	13.80	0.007908		
	20	3.86	0.002212		
	30	13.03	0.007467		
	40	5.29	0.003032		
	50	3.10	0.001777		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	11.96	0.006854	Within authorized band for Band 66	Pass
	3.87	3.69	0.002115		
	4.45	7.48	0.004287		
16QAM					
25	3.50	7.57	0.004338	Within authorized band for Band 66	Pass
	3.87	10.54	0.006040		
	4.45	10.31	0.005908		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

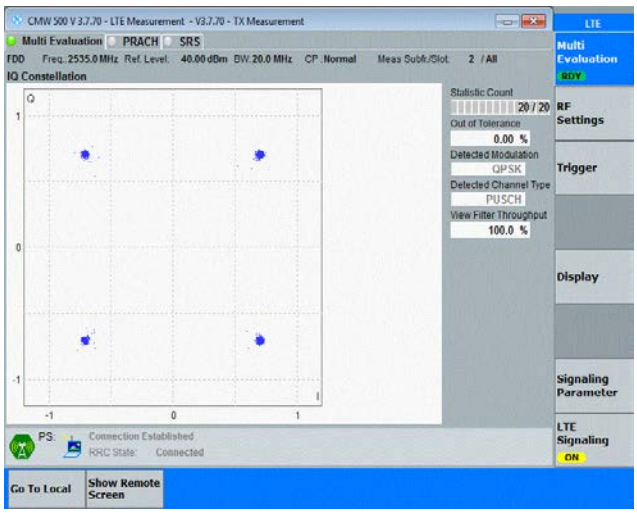
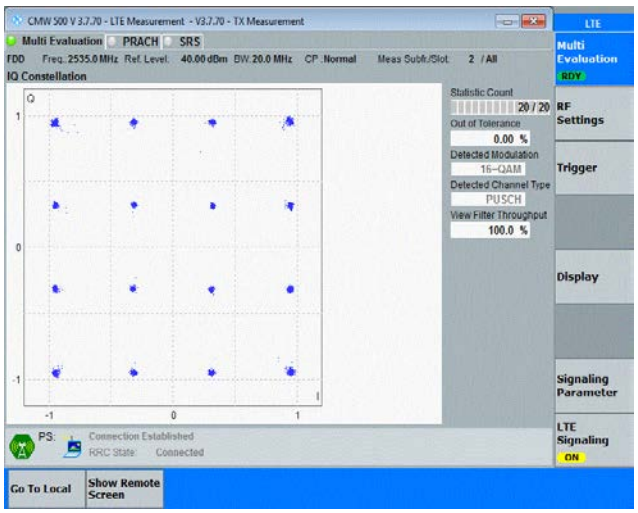
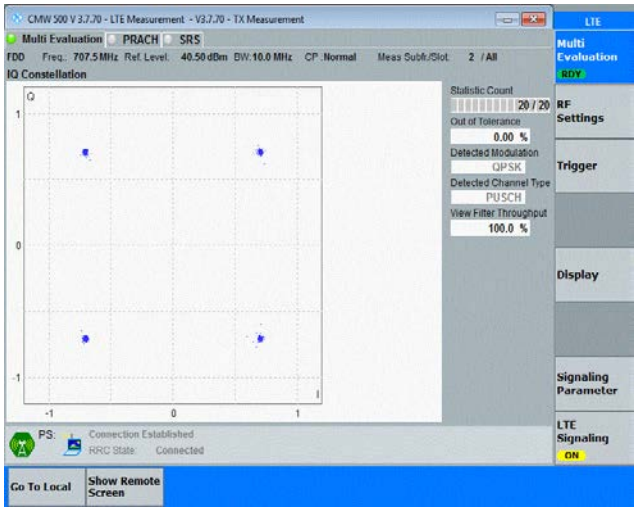
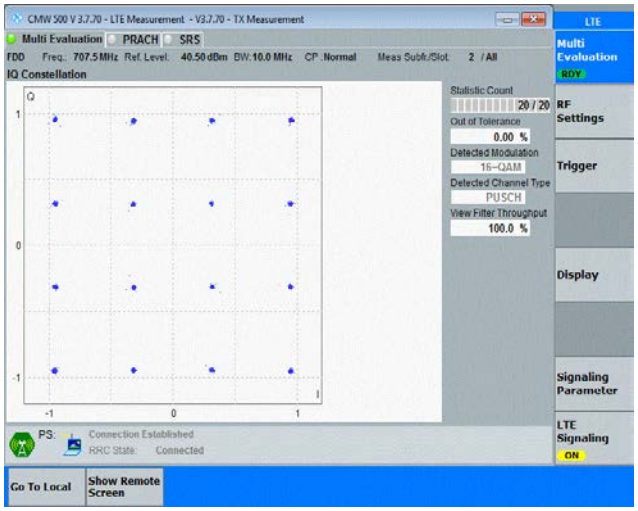
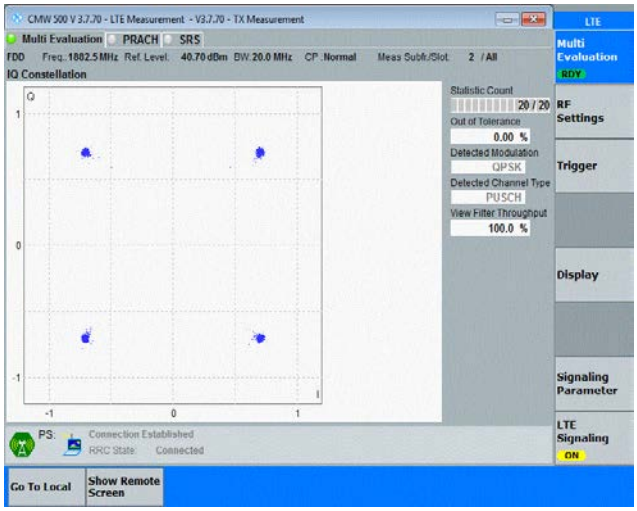
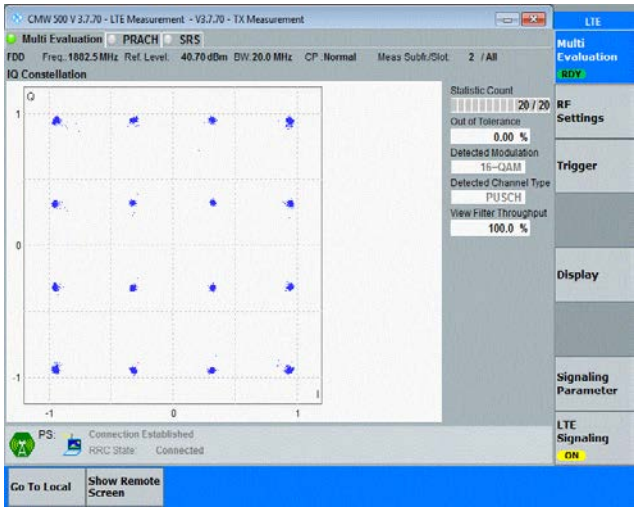
Appendix G: Modulation Characteristics

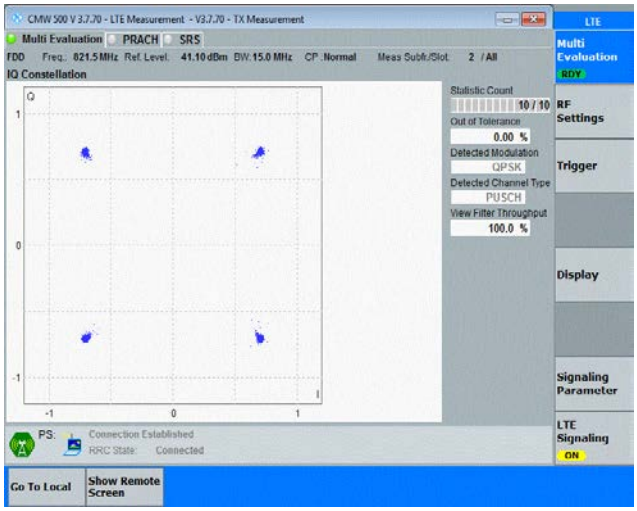
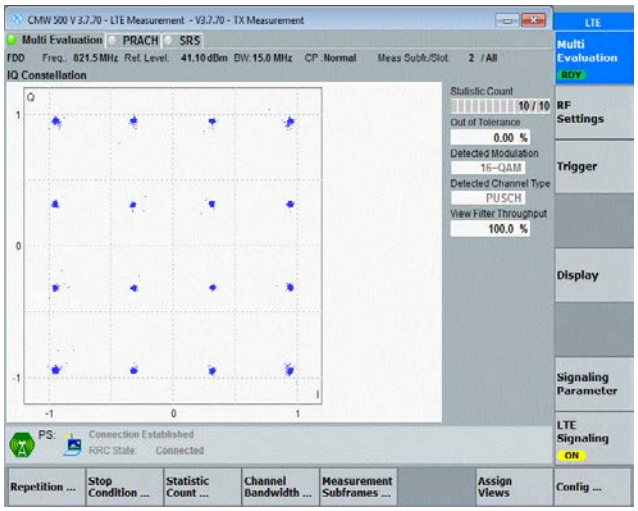
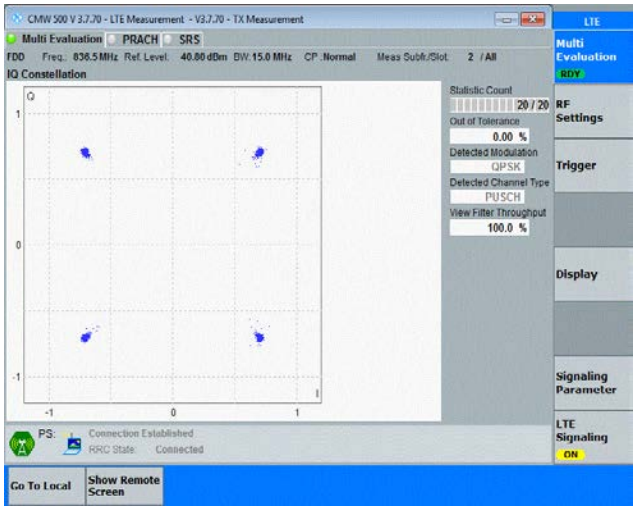
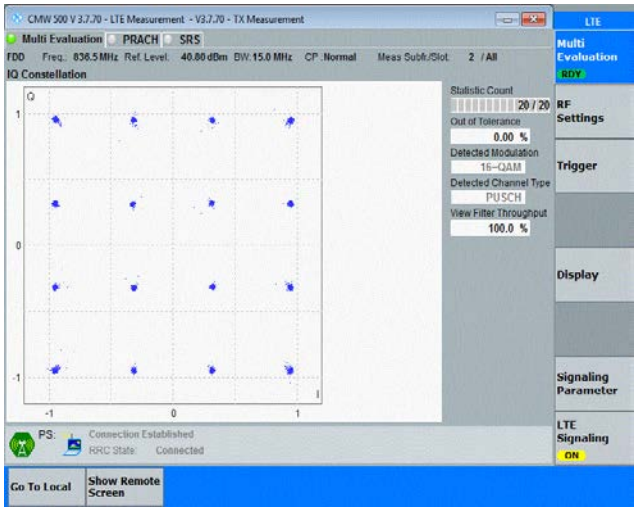
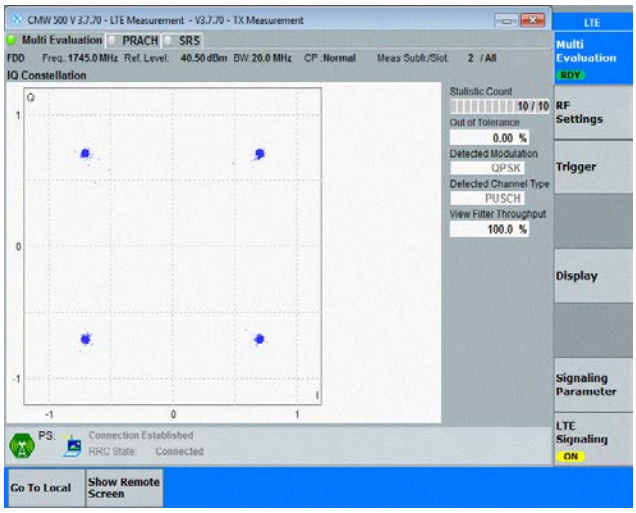
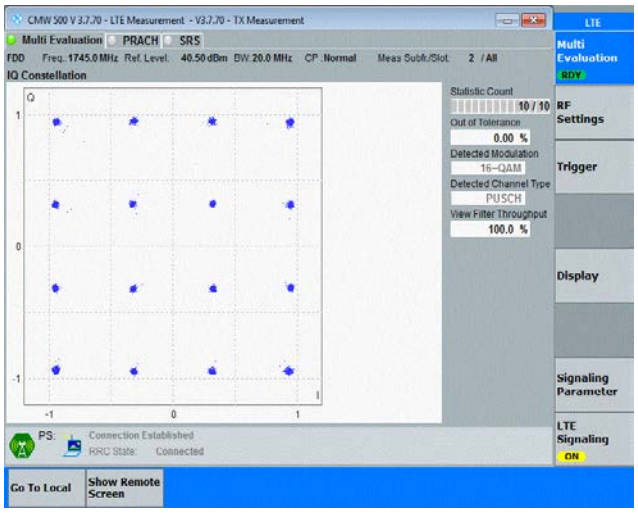
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
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
Band25	20MHz	QPSK	26365	100RB#0	PASS	PASS
Band25	20MHz	16QAM	26365	100RB#0	PASS	PASS
Band26	15MHz	QPSK	26765	75RB#0	PASS	PASS
Band26	15MHz	QPSK	26915	75RB#0	PASS	PASS
Band26	15MHz	16QAM	26765	75RB#0	PASS	PASS
Band26	15MHz	16QAM	26915	75RB#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

Band7-20MHz-QPSK-21100-100RB#0	Band7-20MHz-16QAM-21100-100RB#0
	
Band12-10MHz-QPSK-23095-50RB#0	Band12-10MHz-16QAM-23095-50RB#0
	
Band25-20MHz-QPSK-26365-100RB#0	Band25-20MHz-16QAM-26365-100RB#0
	

Band26-15MHz-QPSK-26765-75RB#0	Band26-15MHz-16QAM-26765-75RB#0
	
Band26-15MHz-QPSK-26915-75RB#0	Band26-15MHz-16QAM-26915-75RB#0
	
Band66-20MHz-QPSK-132322-100RB#0	Band66-20MHz-16QAM-132322-100RB#0