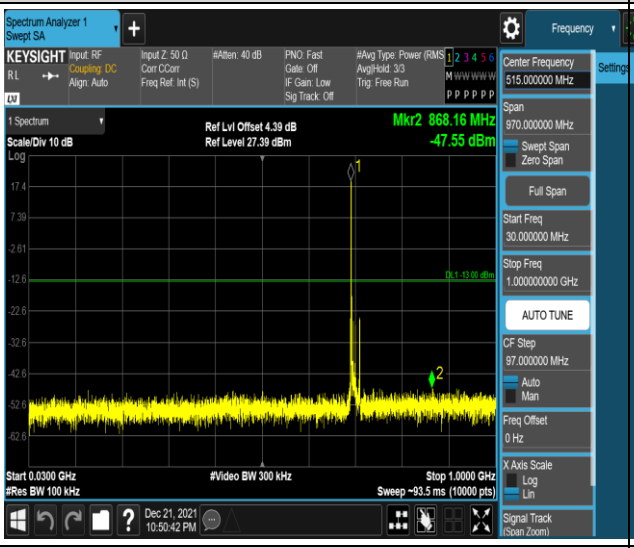
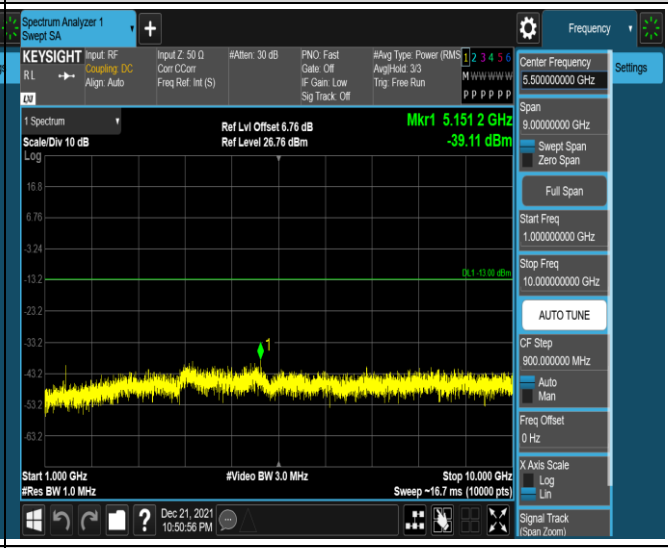
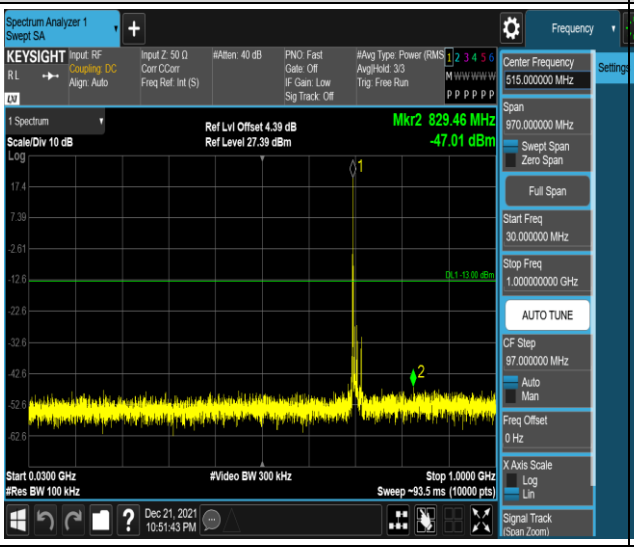
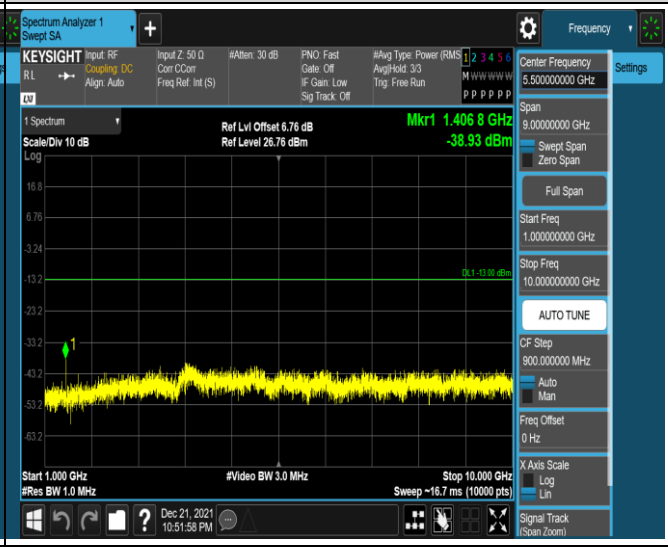
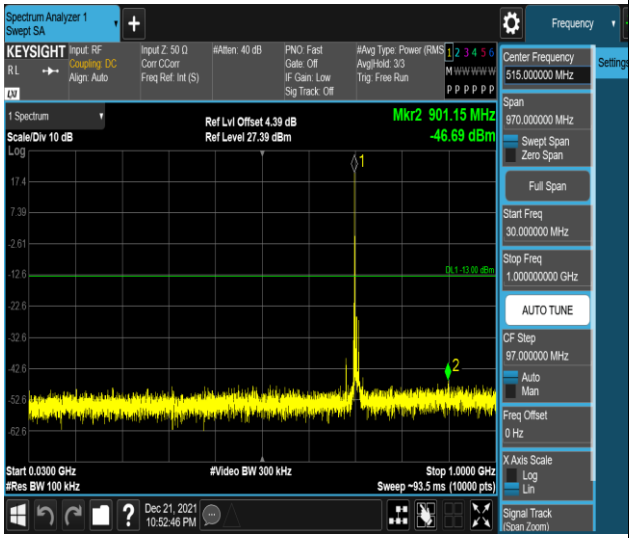
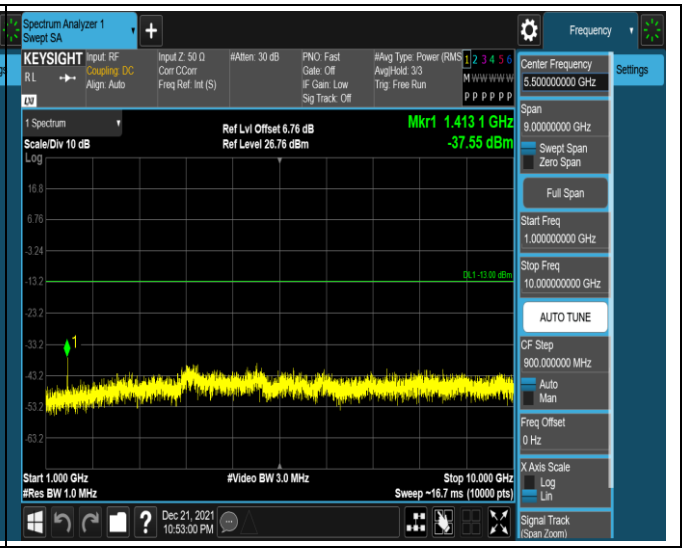
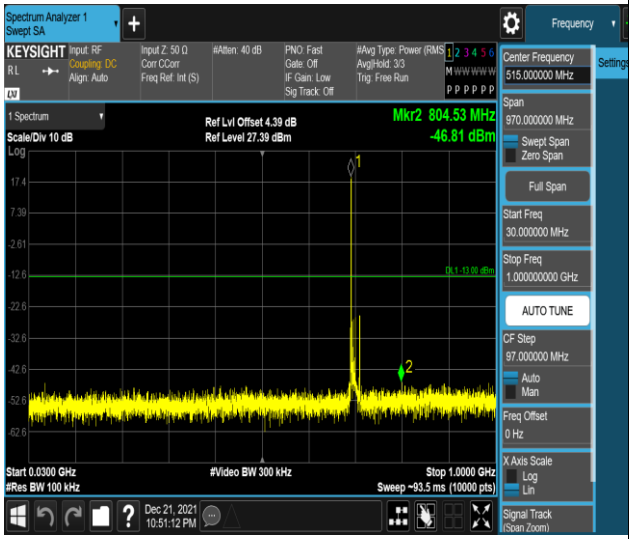
Band12-10MHz-QPSK-23060-1RB#0-Range1:30~1000MHz	Band12-10MHz-QPSK-23060-1RB#0-Range2:1000~10000MHz
	
Band12-10MHz-QPSK-23095-1RB#0-Range1:30~1000MHz	Band12-10MHz-QPSK-23095-1RB#0-Range2:1000~10000MHz
	
Band12-10MHz-QPSK-23130-1RB#0-Range1:30~1000MHz	Band12-10MHz-QPSK-23130-1RB#0-Range2:1000~10000MHz



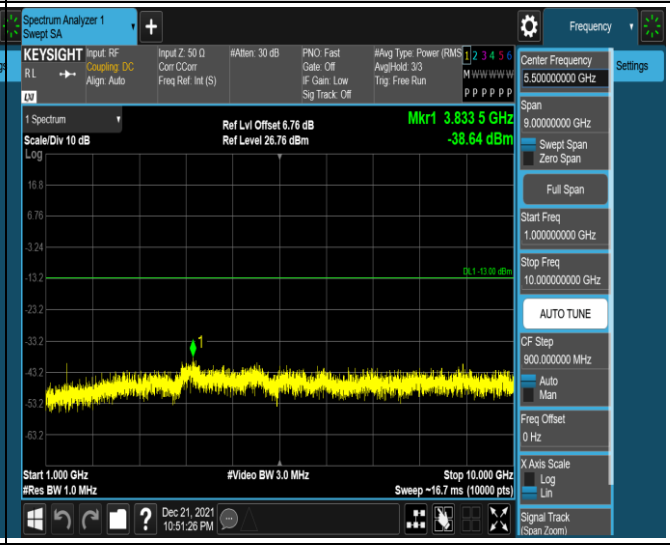
Band12-10MHz-16QAM-23060-1RB#0-Range1:30~1000MHz



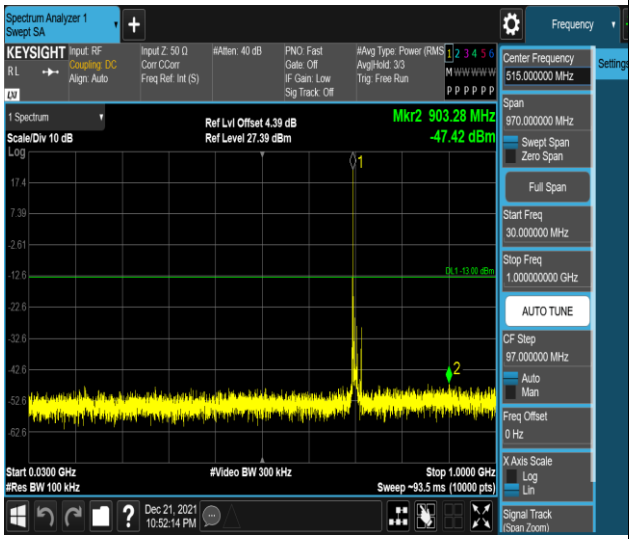
Band12-10MHz-16QAM-23060-1RB#0-Range2:1000~10000MHz

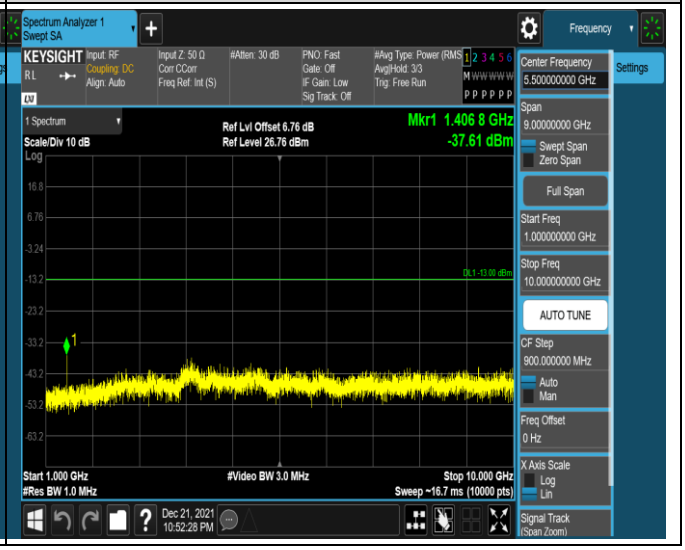


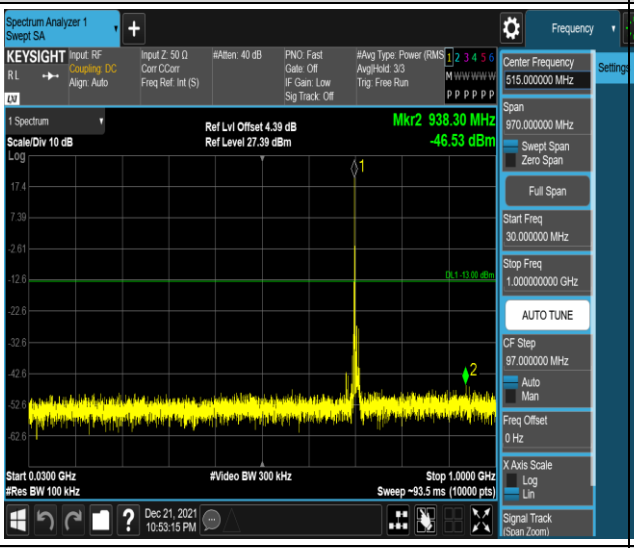
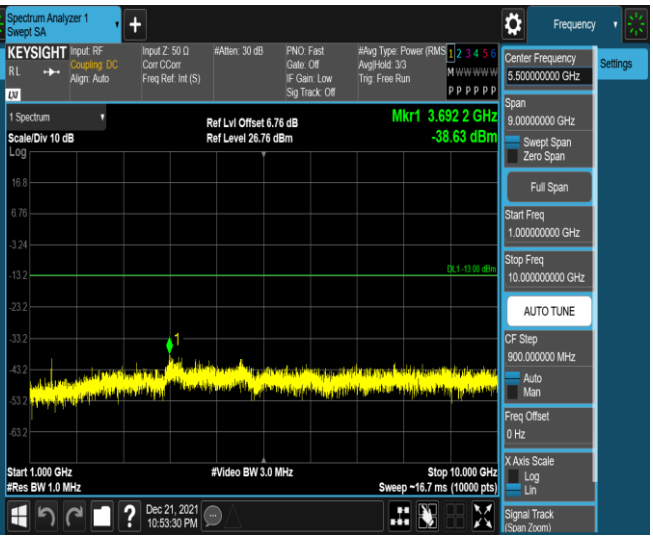
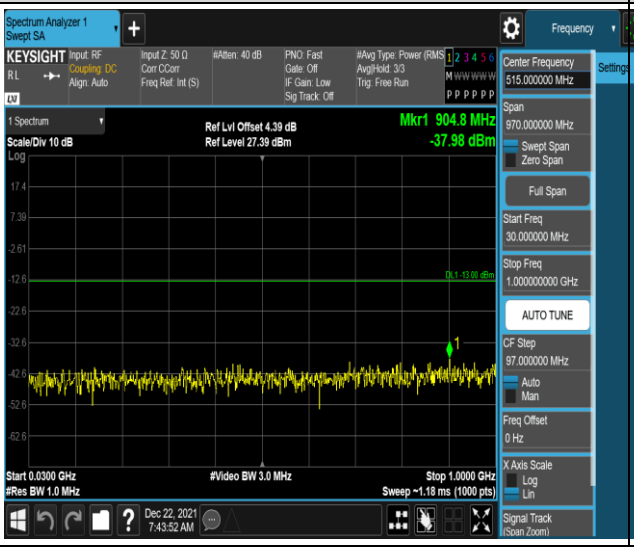
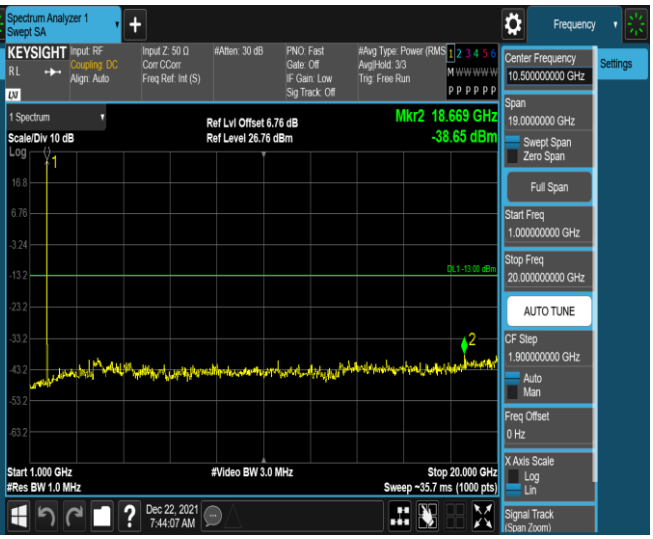
Band12-10MHz-16QAM-23095-1RB#0-Range1:30~1000MHz

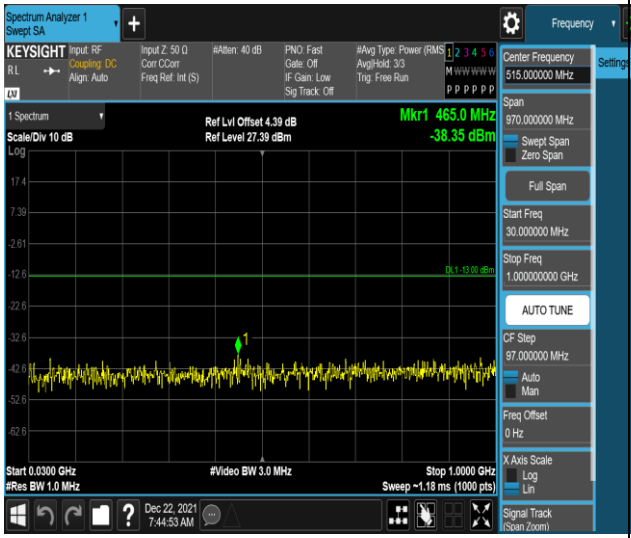


Band12-10MHz-16QAM-23095-1RB#0-Range2:1000~10000MHz

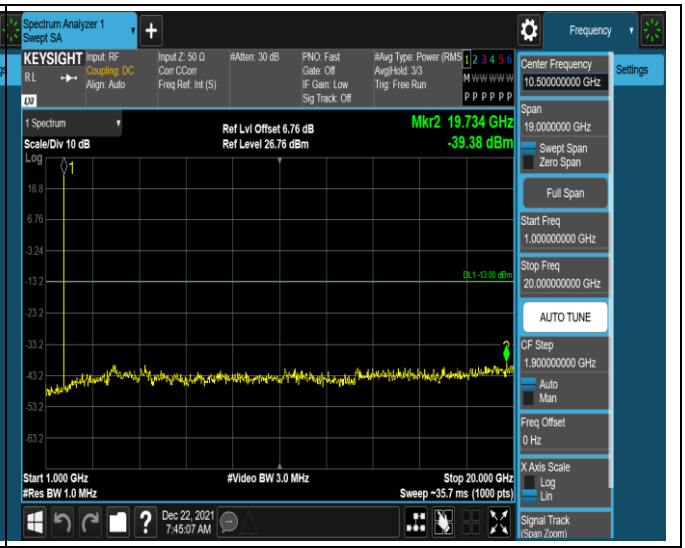




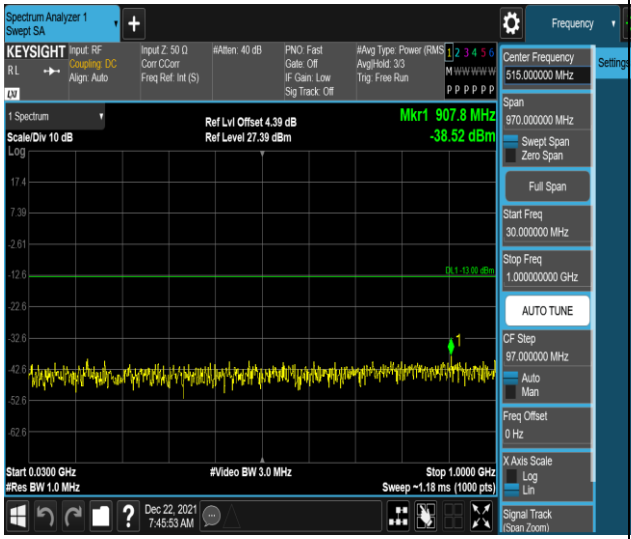
Band12-10MHz-16QAM-23130-1RB#0-Range1:30~1000MHz	Band12-10MHz-16QAM-23130-1RB#0-Range2:1000~10000MHz
	
Band66-1.4MHz-QPSK-131979-1RB#0-Range1:30~1000MHz	Band66-1.4MHz-QPSK-131979-1RB#0-Range2:1000~20000MHz
	
Band66-1.4MHz-QPSK-132322-1RB#0-Range1:30~1000MHz	Band66-1.4MHz-QPSK-132322-1RB#0-Range2:1000~20000MHz



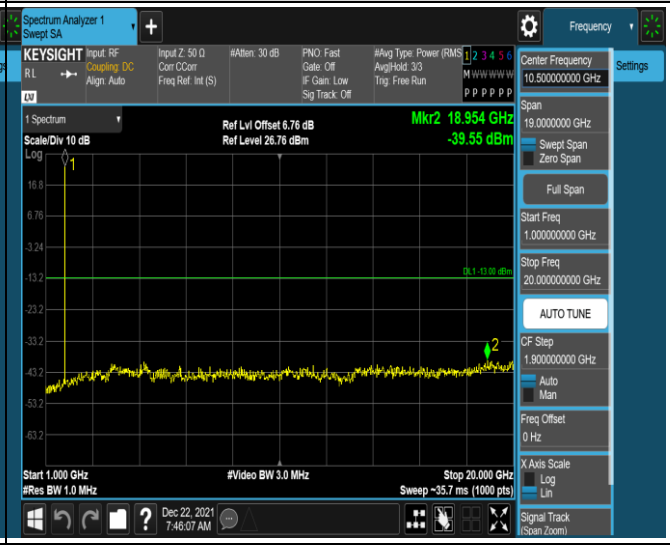
Band66-1.4MHz-QPSK-132665-1RB#0-Range1:30~1000MHz



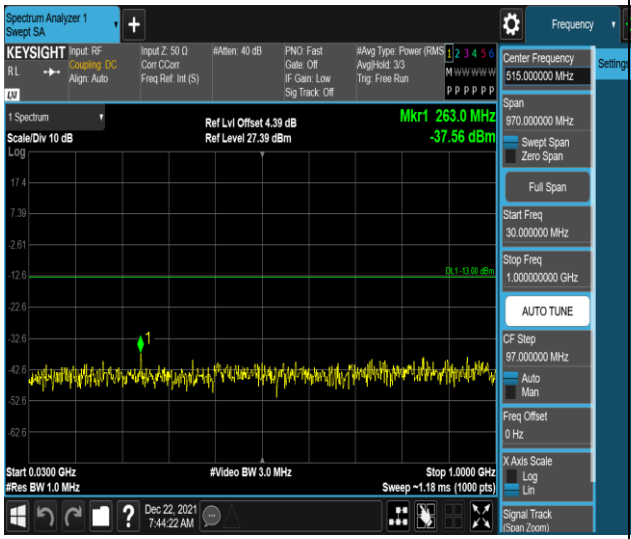
Band66-1.4MHz-QPSK-132665-1RB#0-Range2:1000~20000MHz

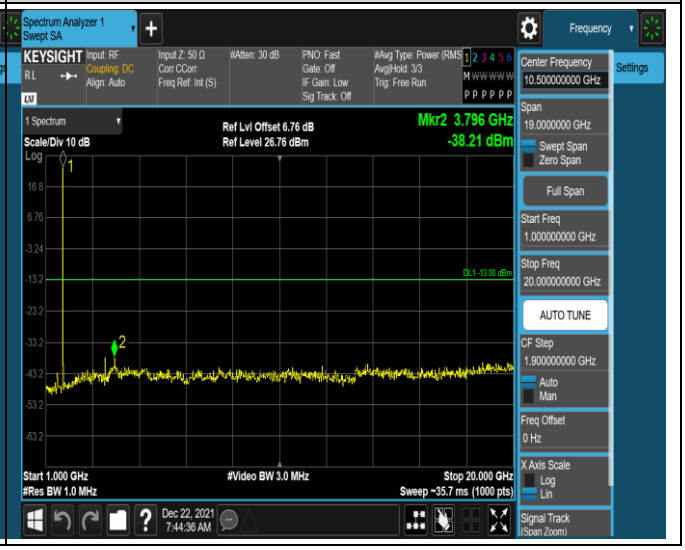


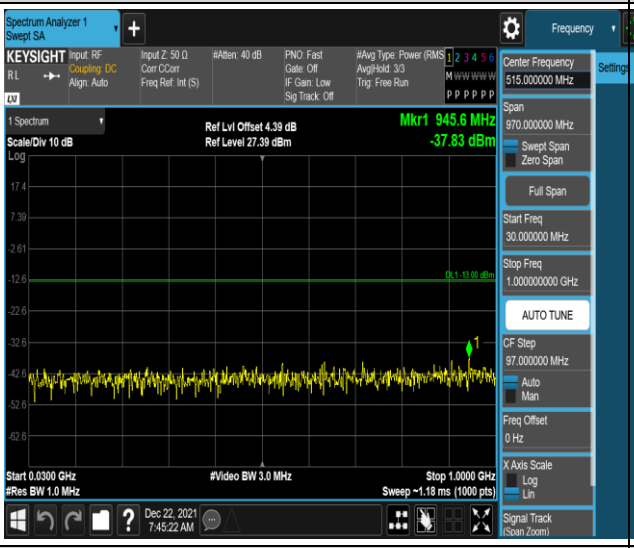
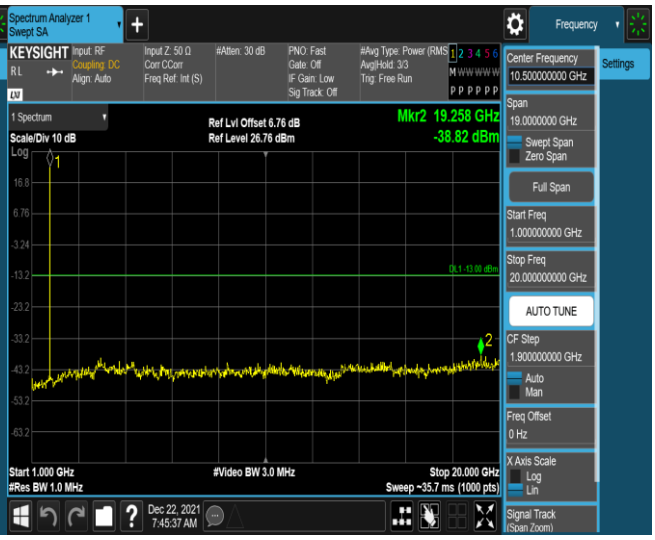
Band66-1.4MHz-16QAM-131979-1RB#0-Range1:30~1000MHz



Band66-1.4MHz-16QAM-131979-1RB#0-Range2:1000~20000MHz





Band66-1.4MHz-16QAM-132322-1RB#0-Range1:30~1000MHz	Band66-1.4MHz-16QAM-132322-1RB#0-Range2:1000~20000MHz
	
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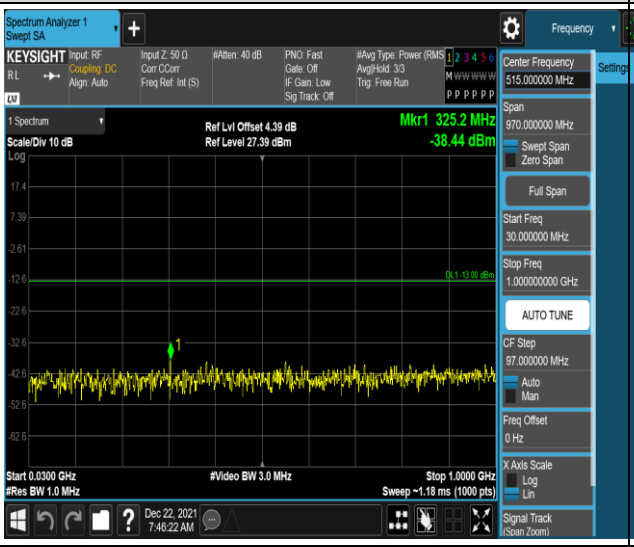
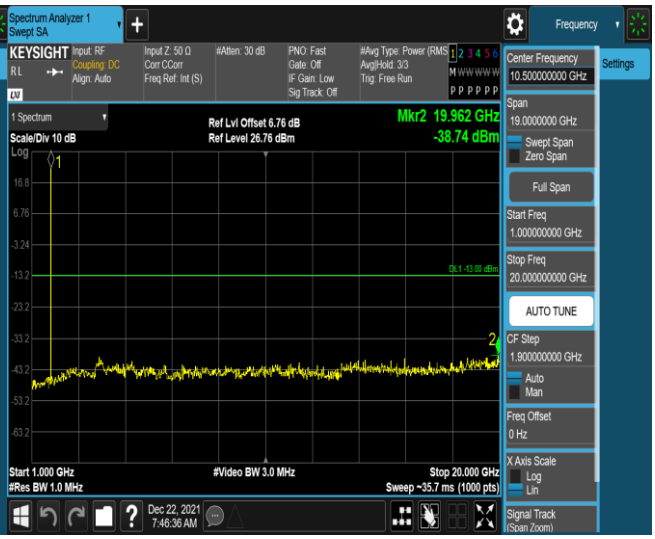
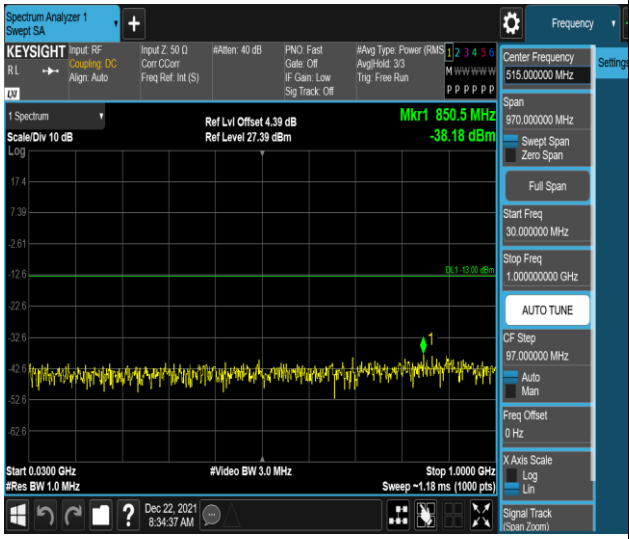
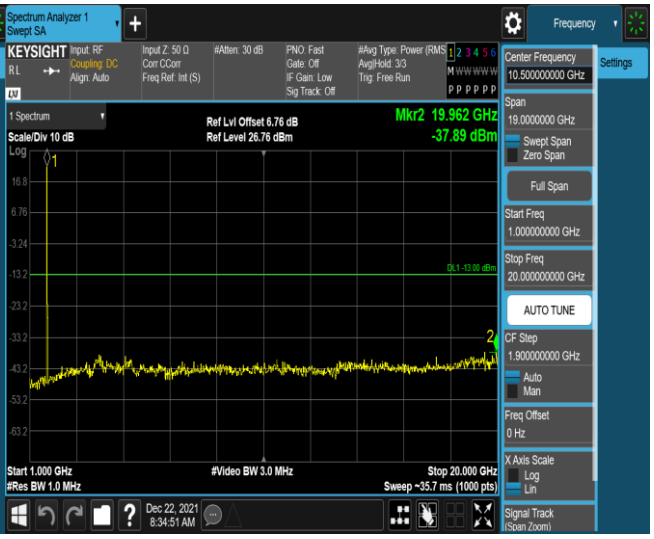
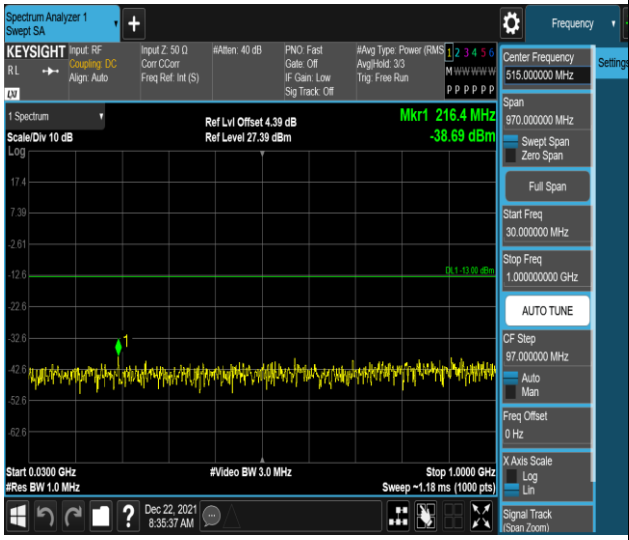
	
Band66-20MHz-QPSK-132072-1RB#0-Range1:30~1000MHz	Band66-20MHz-QPSK-132072-1RB#0-Range2:1000~20000MHz



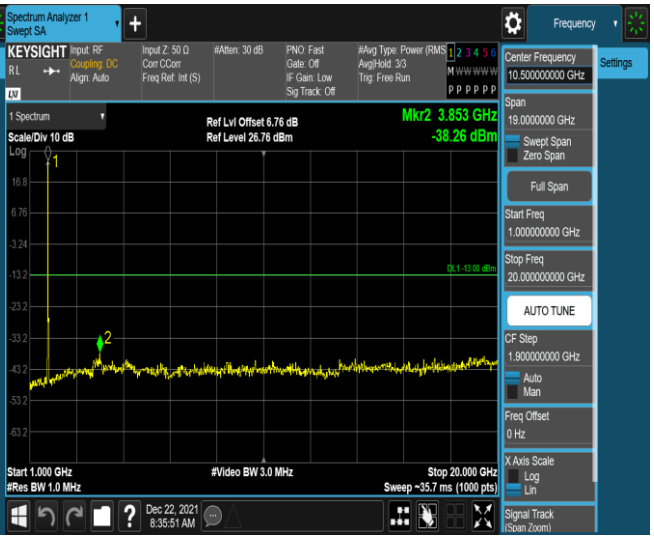
Band66-20MHz-QPSK-132322-1RB#0-Range1:30~1000MHz



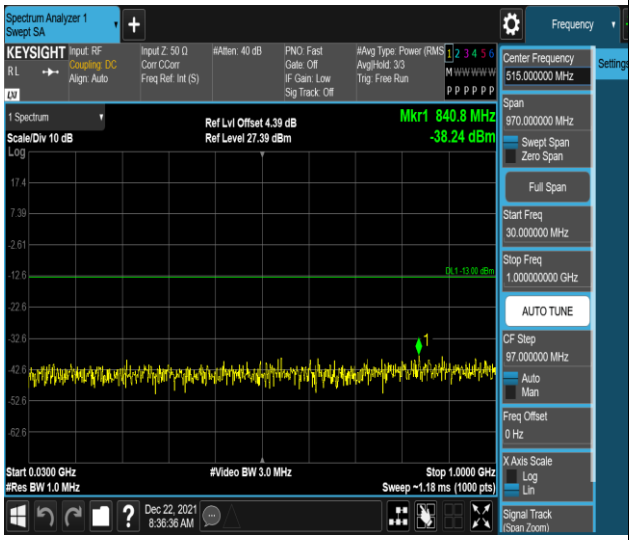
Band66-20MHz-QPSK-132322-1RB#0-Range2:1000~20000MHz

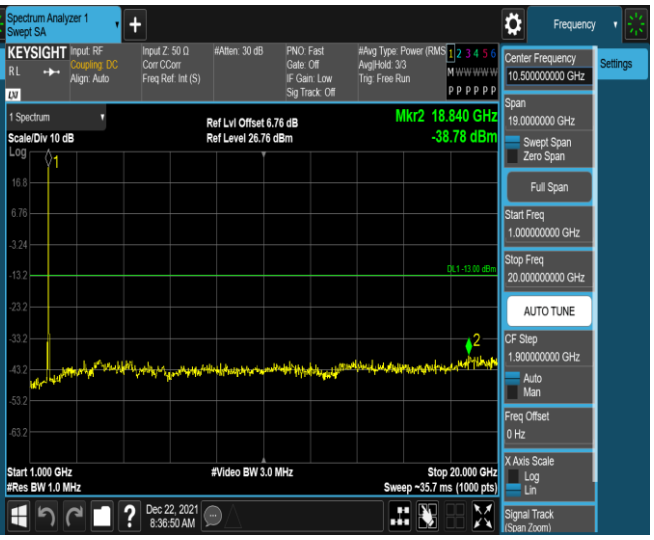


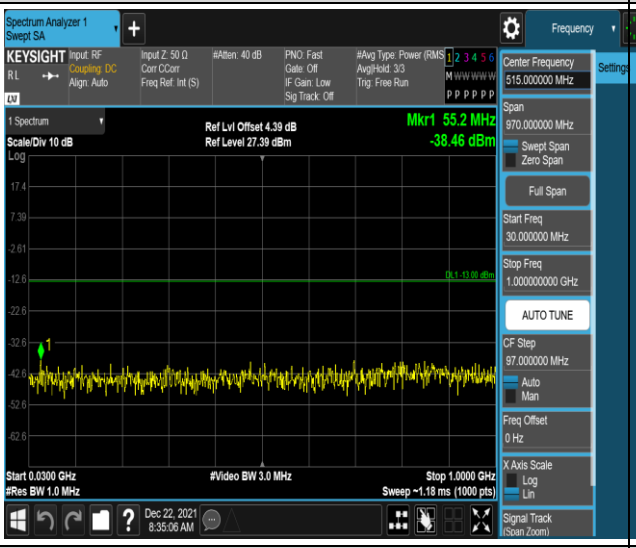
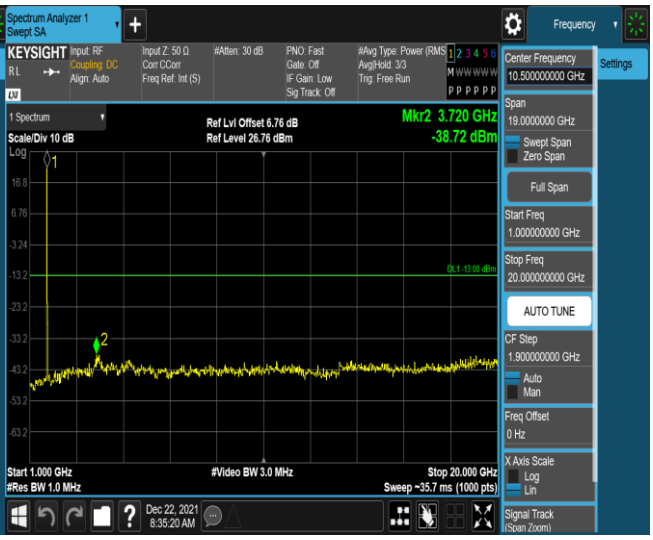
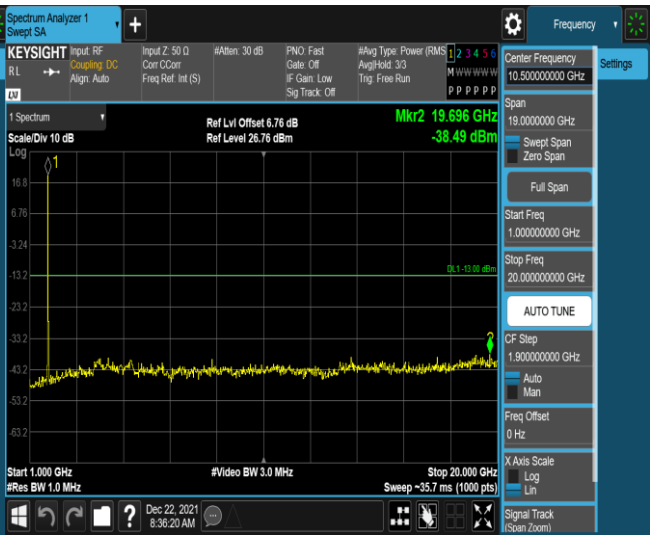
Band66-20MHz-QPSK-132572-1RB#0-Range1:30~1000MHz

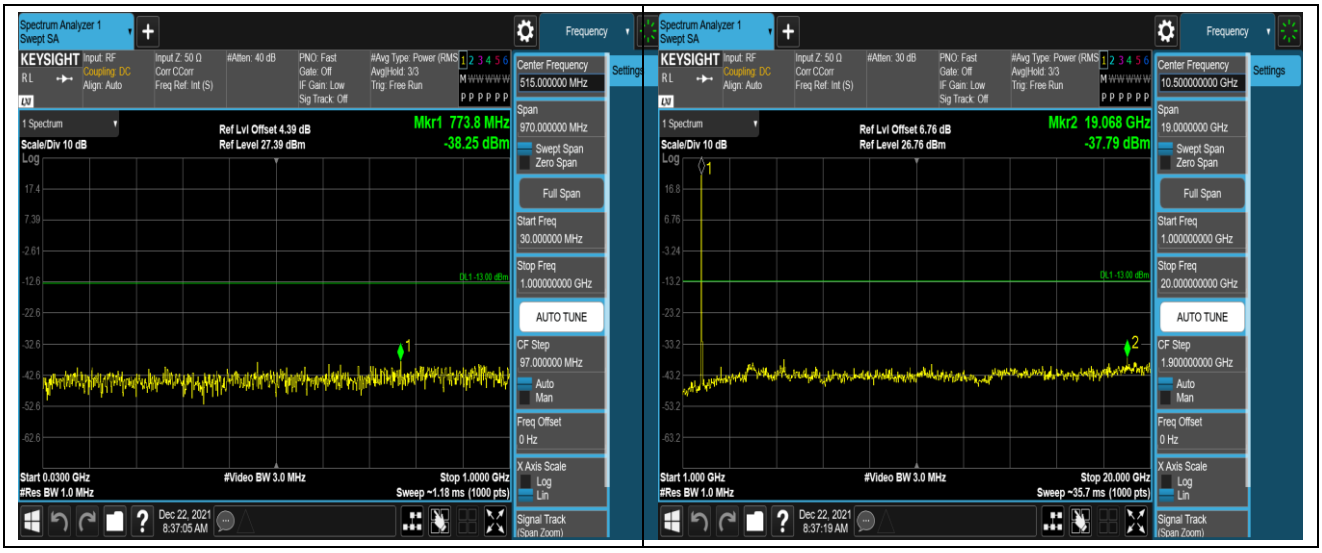


Band66-20MHz-QPSK-132572-1RB#0-Range2:1000~20000MHz





Band66-20MHz-16QAM-132072-1RB#0-Range1:30~1000MHz	Band66-20MHz-16QAM-132072-1RB#0-Range2:1000~20000MHz
	
Band66-20MHz-16QAM-132322-1RB#0-Range1:30~1000MHz	Band66-20MHz-16QAM-132322-1RB#0-Range2:1000~20000MHz
	
Band66-20MHz-16QAM-132572-1RB#0-Range1:30~1000MHz	Band66-20MHz-16QAM-132572-1RB#0-Range2:1000~20000MHz


Spectrum Analyzer 1
Swept SA
KEYSIGHT
Frequency
Ref Lvl Offset 4.39 dB
Ref Level 27.39 dBm
Mkr1 773.8 MHz
-38.25 dBm
Scale/Div 10 dB
Center Frequency
515.000000 MHz
Span
970.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
AUTO TUNE
CF Step
97.000000 MHz
Freq Offset
0 Hz
Start 0.0300 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz
Stop 1.0000 GHz
Sweep ~1.18 ms (1000 pts)
Dec 22, 2021
8:37:05 AM
Spectrum Analyzer 1
Swept SA
KEYSIGHT
Frequency
Ref Lvl Offset 6.76 dB
Ref Level 26.76 dBm
Mkr2 19.068 GHz
-37.79 dBm
Scale/Div 10 dB
Center Frequency
10.500000000 GHz
Span
19.0000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
20.000000000 GHz
AUTO TUNE
CF Step
1.900000000 GHz
Freq Offset
0 Hz
Start 1.000 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz
Stop 20.000 GHz
Sweep ~35.7 ms (1000 pts)
Dec 22, 2021
8:37:19 AM

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	-9.28	-0.004936	Within authorized band for Band 2	Pass
	-20	4.68	0.002489		
	-10	-14.88	-0.007915		
	0	-18.87	-0.010037		
	10	-10.53	-0.005601		
	20	-18.97	-0.010090		
	30	-4.92	-0.002617		
	40	-24.22	-0.012883		
	50	-3.78	-0.002011		
16QAM					
3.70	-30	-14.41	-0.007665	Within authorized band for Band 2	Pass
	-20	-7.72	-0.004106		
	-10	-11.00	-0.005851		
	0	-15.95	-0.008484		
	10	-21.19	-0.011271		
	20	-10.04	-0.005340		
	30	-19.38	-0.010309		
	40	-18.74	-0.009968		
	50	-9.10	-0.004840		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-12.39	-0.006590	Within authorized band for Band 2	Pass
	3.70	-13.96	-0.007426		
	4.25	-12.79	-0.006803		
16QAM					
25	3.50	-20.06	-0.010670	Within authorized band for Band 2	Pass
	3.70	-17.61	-0.009367		
	4.25	-10.83	-0.005761		
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 4(10MHz) Middle channel=20175 Frequency=1732.5MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.70	-30	-13.92	-0.016641	Within authorized band for Band 4	Pass
	-20	-9.90	-0.011835		
	-10	-11.47	-0.013712		
	0	-8.37	-0.010006		
	10	-9.31	-0.011130		
	20	-7.11	-0.008500		
	30	-4.43	-0.005296		
	40	-7.44	-0.008894		
	50	-6.31	-0.007543		
16QAM					
3.70	-30	-8.24	-0.009851	Within authorized band for Band 4	Pass
	-20	-6.31	-0.007543		
	-10	-16.79	-0.020072		
	0	-8.87	-0.010604		
	10	-3.16	-0.003778		
	20	-11.10	-0.013270		
	30	-6.45	-0.007711		
	40	-10.83	-0.012947		
	50	-6.24	-0.007460		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-10.77	-0.012875	Within authorized band for Band 4	Pass
	3.70	-14.71	-0.017585		
	4.25	-8.21	-0.009815		
16QAM					
25	3.50	-8.10	-0.009683	Within authorized band for Band 4	Pass
	3.70	-12.82	-0.015326		
	4.25	-9.77	-0.011680		
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	-6.75	-0.009541	Within authorized band for Band 12	Pass
	-20	-12.13	-0.017145		
	-10	-10.54	-0.014898		
	0	-11.09	-0.015675		
	10	-10.61	-0.014996		
	20	-11.39	-0.016099		
	30	-5.87	-0.008297		
	40	-8.15	-0.011519		
	50	-7.95	-0.011237		
16QAM					
3.70	-30	-12.79	-0.018078	Within authorized band for Band 12	Pass
	-20	-12.09	-0.017088		
	-10	-11.09	-0.015675		
	0	-8.96	-0.012664		
	10	-10.46	-0.014784		
	20	-8.03	-0.011350		
	30	-4.76	-0.006728		
	40	-6.31	-0.008919		
	50	-8.50	-0.012014		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-9.28	-0.013117	Within authorized band for Band 12	Pass
	3.70	-10.49	-0.014827		
	4.25	-12.92	-0.018261		
16QAM					
25	3.50	-4.08	-0.005767	Within authorized band for Band 12	Pass
	3.70	-9.86	-0.013936		
	4.25	-5.51	-0.007788		
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					
3.70	-30	-6.52	-0.003736	Within authorized band for Band 66	Pass
	-20	-16.45	-0.009427		
	-10	-9.71	-0.005564		
	0	-13.43	-0.007696		
	10	-3.32	-0.001903		
	20	-9.16	-0.005249		
	30	-10.31	-0.005908		
	40	-12.70	-0.007278		
	50	-6.91	-0.003960		
16QAM					
3.70	-30	-15.21	-0.008716	Within authorized band for Band 66	Pass
	-20	-10.10	-0.005788		
	-10	-19.86	-0.011381		
	0	-11.57	-0.006630		
	10	-5.18	-0.002968		
	20	-16.24	-0.009307		
	30	-13.65	-0.007822		
	40	-16.48	-0.009444		
	50	-13.18	-0.007553		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-19.15	-0.010974	Within authorized band for Band 66	Pass
	3.70	-16.12	-0.009238		
	4.25	-4.72	-0.002705		
16QAM					
25	3.50	-16.99	-0.009736	Within authorized band for Band 66	Pass
	3.70	-2.99	-0.001713		
	4.25	-15.15	-0.008682		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

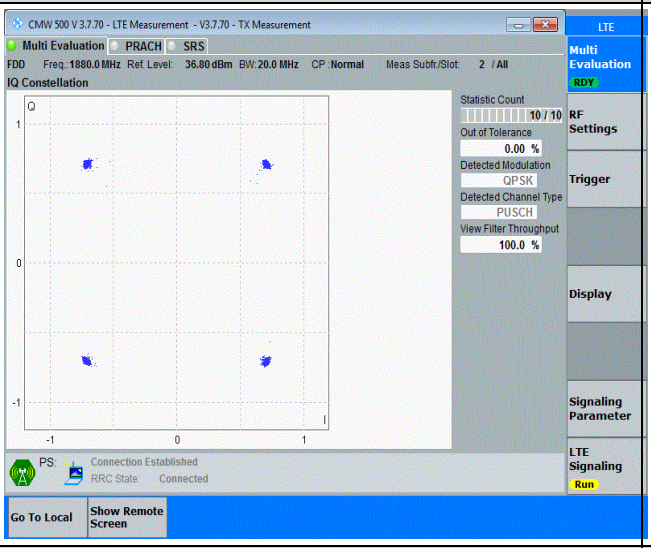
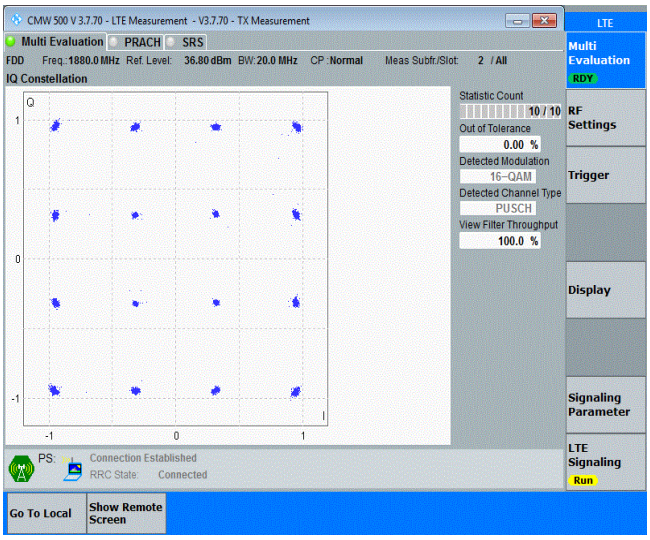
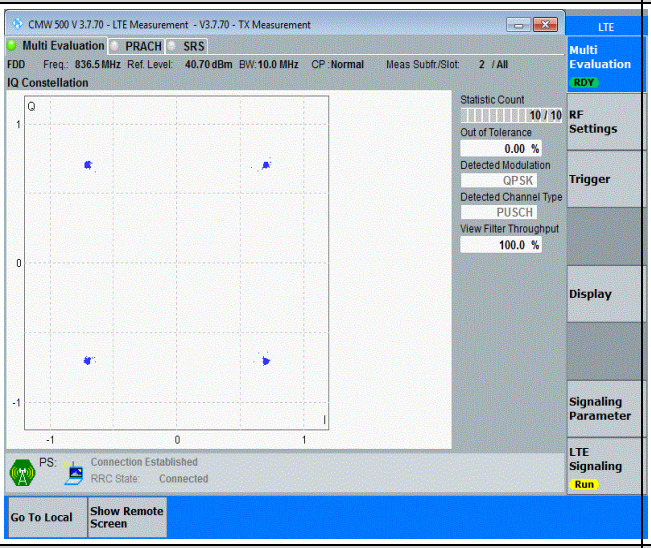
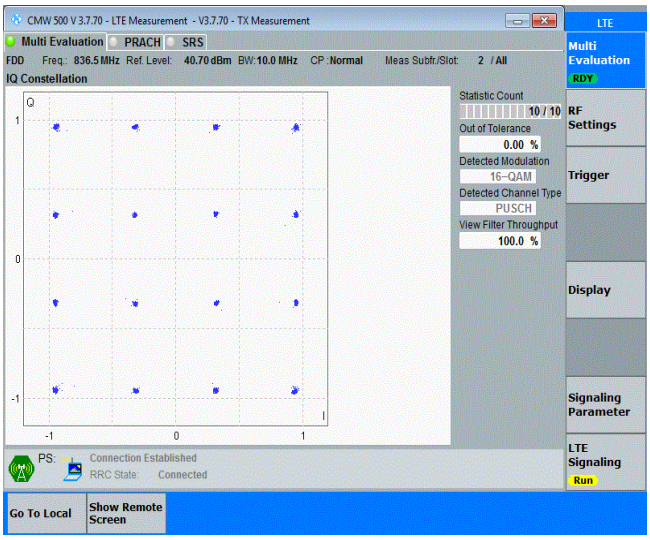
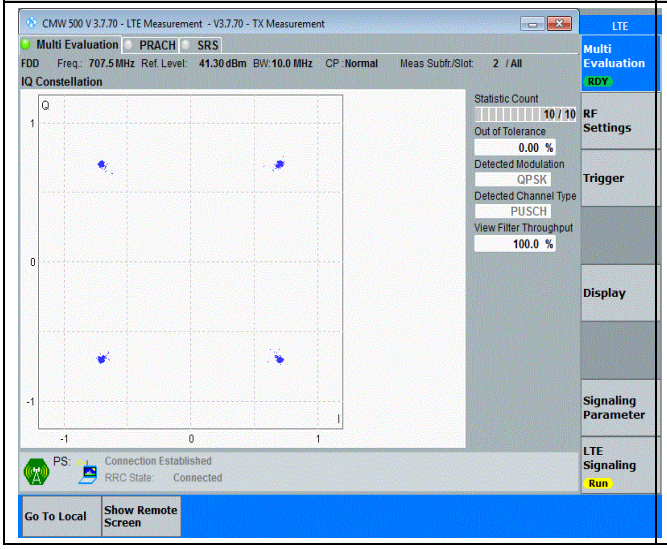
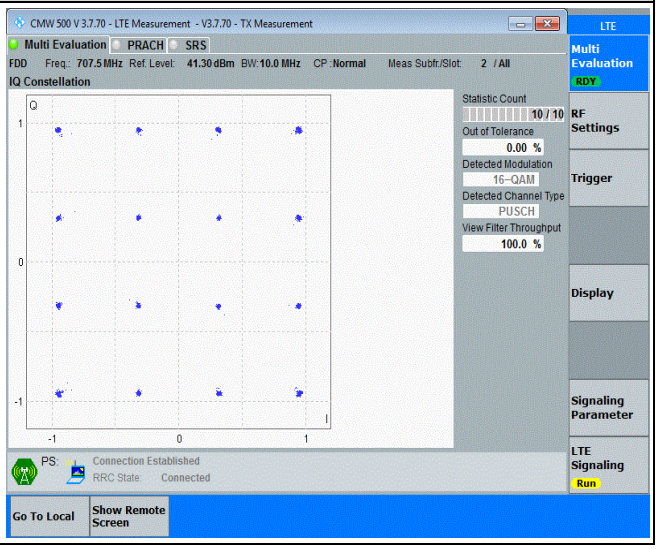
Appendix G: Modulation Characteristics

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
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#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
	
Band5-10MHz-QPSK-20525-50RB#0	Band5-10MHz-16QAM-20525-50RB#0
	
Band12-10MHz-QPSK-23095-50RB#0	Band12-10MHz-16QAM-23095-50RB#0
	

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