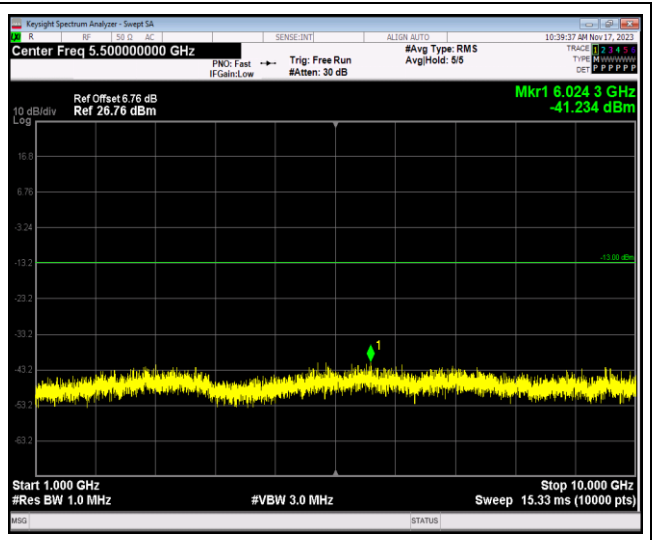
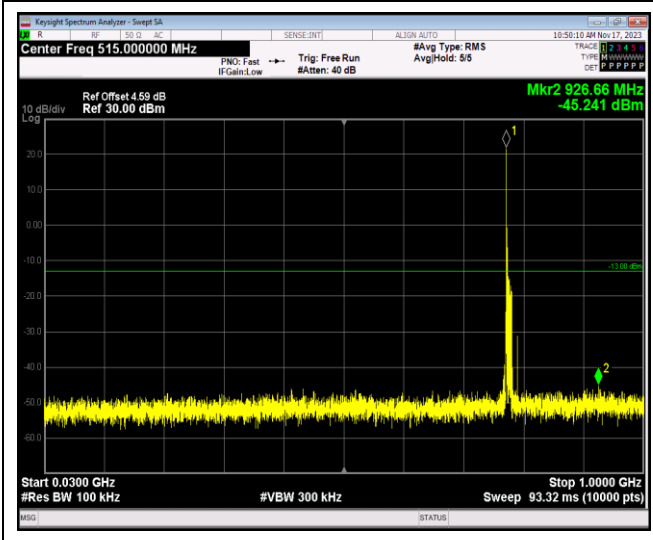


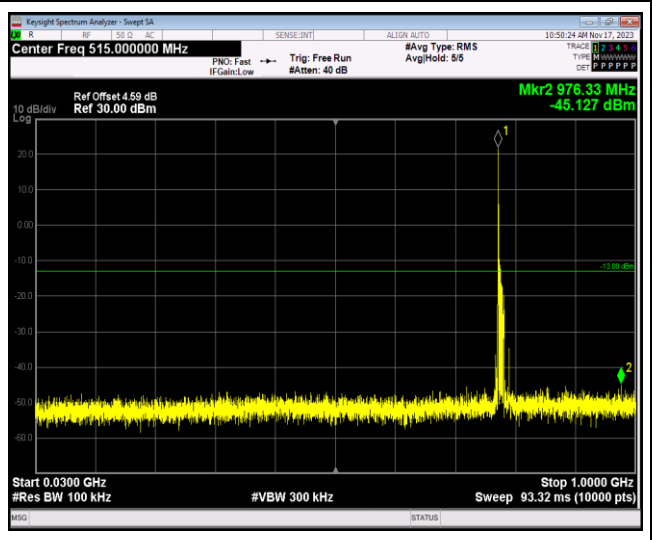
Band13-10MHz-QPSK-23230-1RB#0-Range1:30~1000MHz



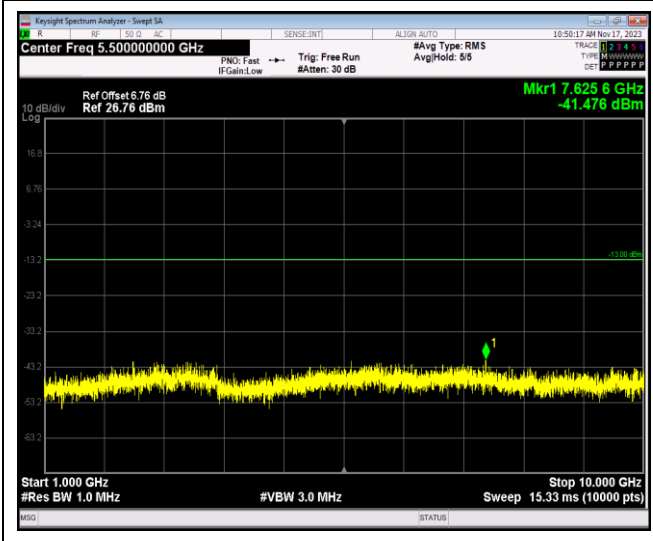
Band13-10MHz-QPSK-23230-1RB#0-Range3:30~1000MHz



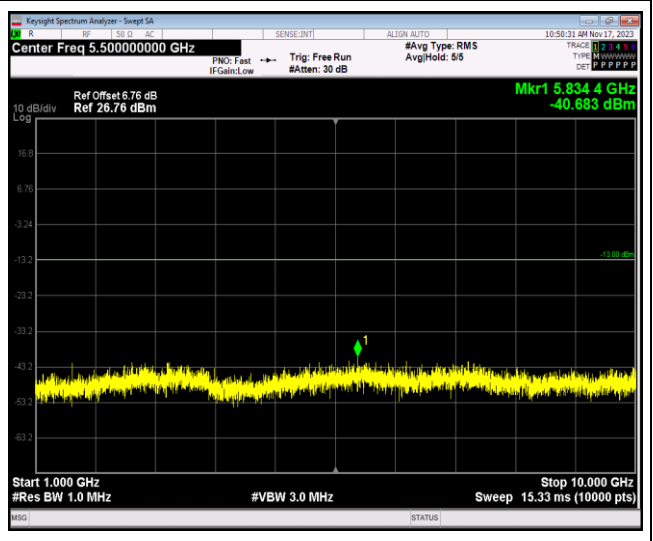
Band13-10MHz-QPSK-23230-1RB#0-Range2:1000~10000MHz



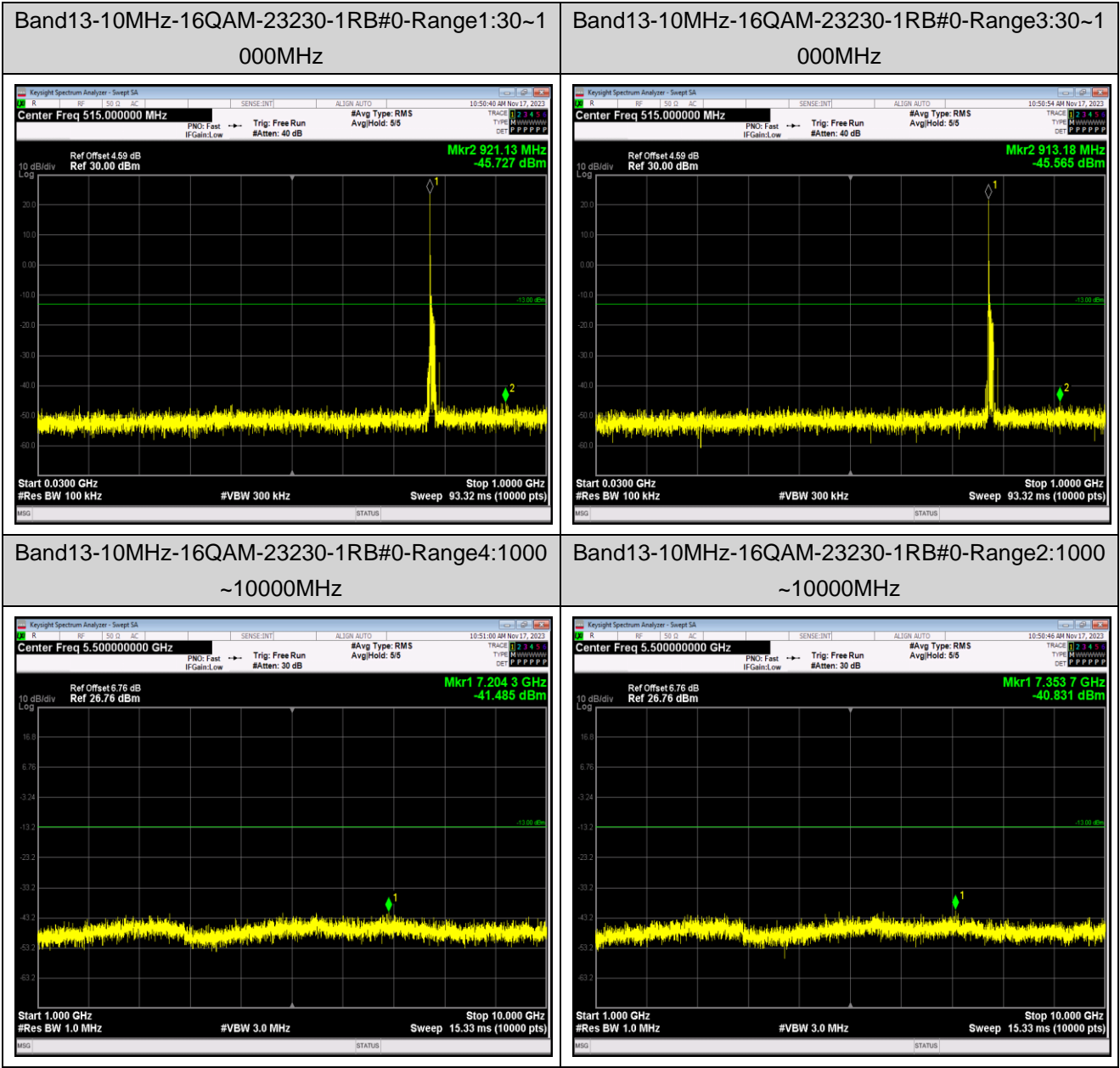
Band13-10MHz-QPSK-23230-1RB#0-Range4:1000~10000MHz



Band13-10MHz-QPSK-23230-1RB#0-Range1:30~1000MHz



Band13-10MHz-QPSK-23230-1RB#0-Range3:30~1000MHz



## 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					
3.80	-30	6.17	0.003282	Within authorized band for Band 2	Pass
	-20	3.45	0.001835		
	-10	7.37	0.003920		
	0	8.83	0.004697		
	10	5.16	0.002745		
	20	-8.47	-0.004505		
	30	4.01	0.002133		
	40	7.12	0.003787		
	50	12.04	0.006404		
16QAM					
3.80	-30	11.50	0.006117	Within authorized band for Band 2	Pass
	-20	6.32	0.003362		
	-10	-8.17	-0.004346		
	0	10.31	0.005484		
	10	-2.52	-0.001340		
	20	-18.53	-0.009856		
	30	-18.18	-0.009670		
	40	22.54	0.011989		
	50	3.36	0.001787		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	6.17	0.003282	Within authorized band for Band 2	Pass
	3.80	-2.65	-0.001410		
	4.35	8.54	0.004543		
16QAM					
25	3.50	16.72	0.008894	Within authorized band for Band 2	Pass
	3.80	3.76	0.002000		
	4.35	2.17	0.001154		

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					
3.80	-30	-9.58	-0.005530	Within authorized band for Band 4	Pass
	-20	-7.08	-0.004087		
	-10	-2.39	-0.001380		
	0	-4.11	-0.002372		
	10	3.75	0.002165		
	20	7.02	0.004052		
	30	5.79	0.003342		
	40	4.79	0.002765		
	50	8.01	0.004623		
16QAM					
3.80	-30	-10.36	-0.005980	Within authorized band for Band 4	Pass
	-20	-2.20	-0.001270		
	-10	3.76	0.002170		
	0	3.25	0.001876		
	10	4.59	0.002649		
	20	14.88	0.008589		
	30	15.95	0.009206		
	40	21.84	0.012606		
	50	23.89	0.013789		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-37.38	-0.021576	Within authorized band for Band 4	Pass
	3.80	-21.63	-0.012485		
	4.35	-9.58	-0.005530		
16QAM					
25	3.50	13.86	0.008000	Within authorized band for Band 4	Pass
	3.80	9.37	0.005408		
	4.35	-10.66	-0.006153		

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					
3.80	-30	-38.48	-0.015179	Within authorized band for Band 7	Pass
	-20	-31.74	-0.012521		
	-10	-44.69	-0.017629		
	0	-55.17	-0.021763		
	10	22.92	0.009041		
	20	32.00	0.012623		
	30	36.74	0.014493		
	40	48.75	0.019231		
	50	-6.47	-0.002552		
16QAM					
3.80	-30	45.78	0.018059	Within authorized band for Band 7	Pass
	-20	6.91	0.002726		
	-10	16.21	0.006394		
	0	30.74	0.012126		
	10	19.77	0.007799		
	20	16.19	0.006387		
	30	12.12	0.004781		
	40	21.84	0.008615		
	50	29.05	0.011460		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-24.48	-0.009657	Within authorized band for Band 7	Pass
	3.80	-27.74	-0.010943		
	4.35	-30.26	-0.011937		
16QAM					
25	3.50	24.25	0.009566	Within authorized band for Band 7	Pass
	3.80	6.91	0.002726		
	4.35	36.44	0.014375		

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

**LTE Band 13 part:**

Reference Frequency: LTE Band 13(10MHz) Middle channel=23230 Frequency=782MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	-15.25	-0.019501	Within authorized band for Band 13	Pass
	-20	-12.93	-0.016535		
	-10	-12.07	-0.015435		
	0	-11.52	-0.014731		
	10	-10.69	-0.013670		
	20	-11.53	-0.014744		
	30	-8.87	-0.011343		
	40	-7.88	-0.010077		
	50	-5.97	-0.007634		
16QAM					
3.80	-30	-6.72	-0.008593	Within authorized band for Band 13	Pass
	-20	-8.30	-0.010614		
	-10	-7.95	-0.010166		
	0	-3.82	-0.004885		
	10	-10.86	-0.013887		
	20	-9.04	-0.011560		
	30	-6.95	-0.008887		
	40	-1.86	-0.002379		
	50	2.07	0.002647		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-16.18	-0.020691	Within authorized band for Band 13	Pass
	3.80	-17.92	-0.022916		
	4.35	-15.86	-0.020281		
16QAM					
25	3.50	-9.37	-0.011982	Within authorized band for Band 13	Pass
	3.80	-3.89	-0.004974		
	4.35	-7.78	-0.009949		

*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
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band13	10MHz	QPSK	23230	50RB#0	PASS	PASS
Band13	10MHz	16QAM	23230	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

