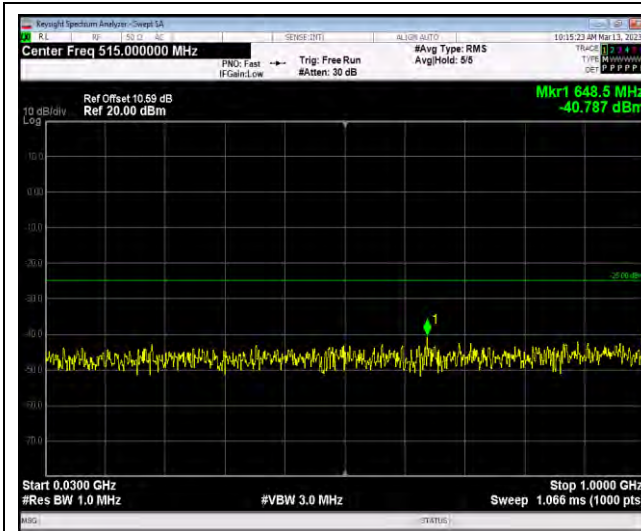
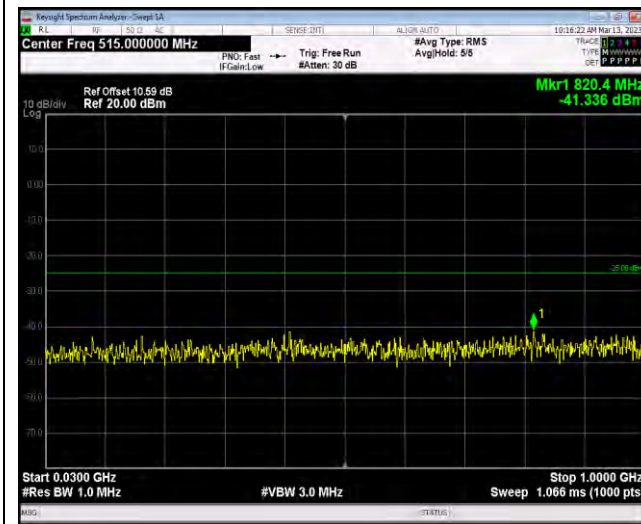




Band7-20MHz-16QAM-21350-1RB#0-Range1:30~1000MHz



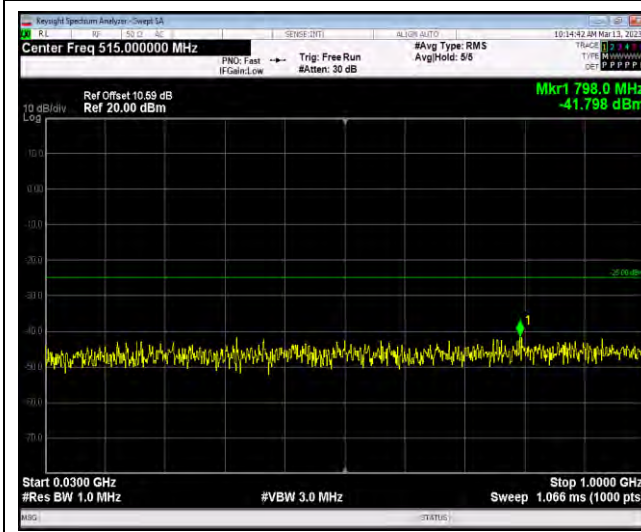
Band7-20MHz-16QAM-21350-1RB#0-Range2:1000~6500MHz

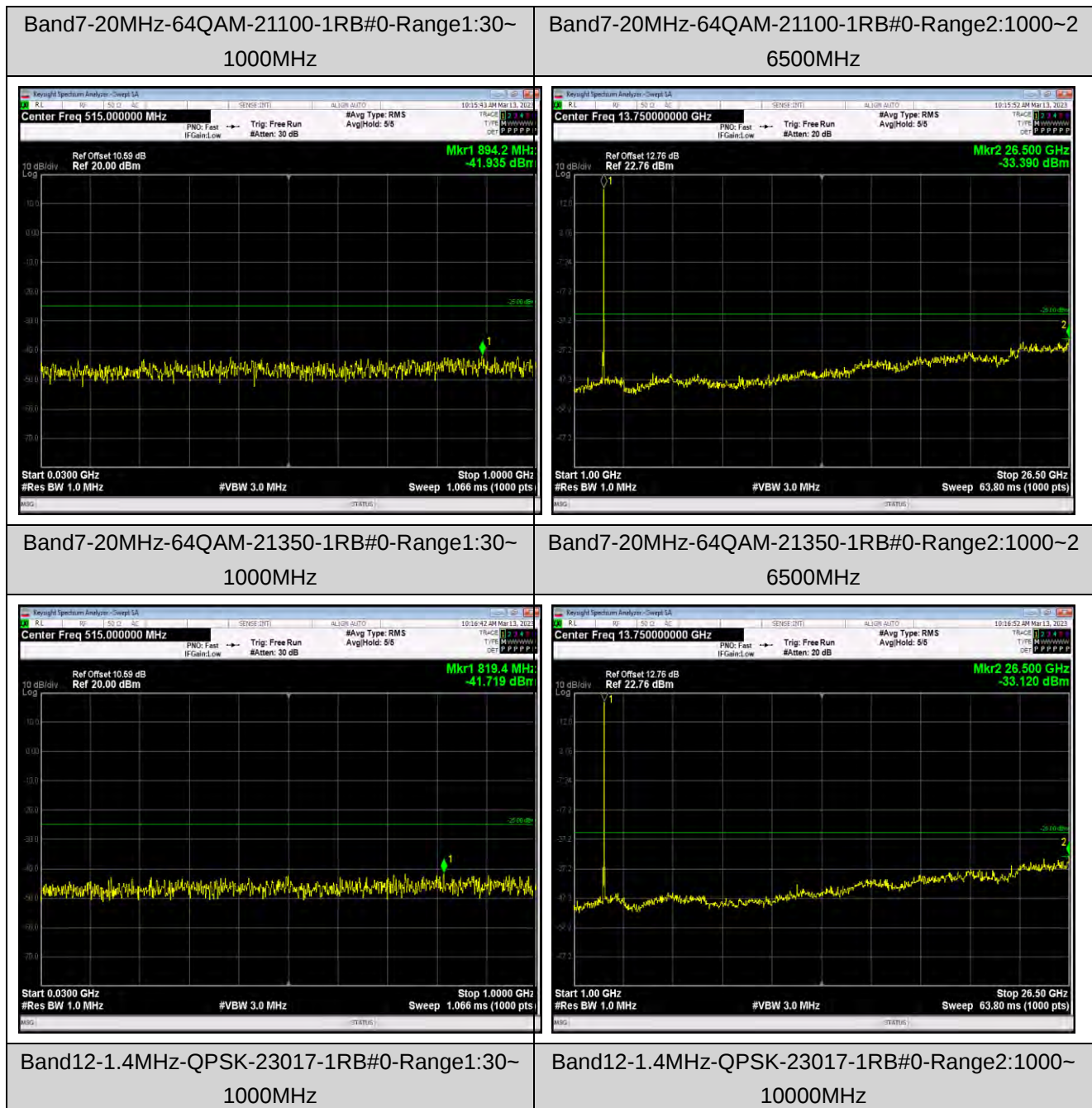


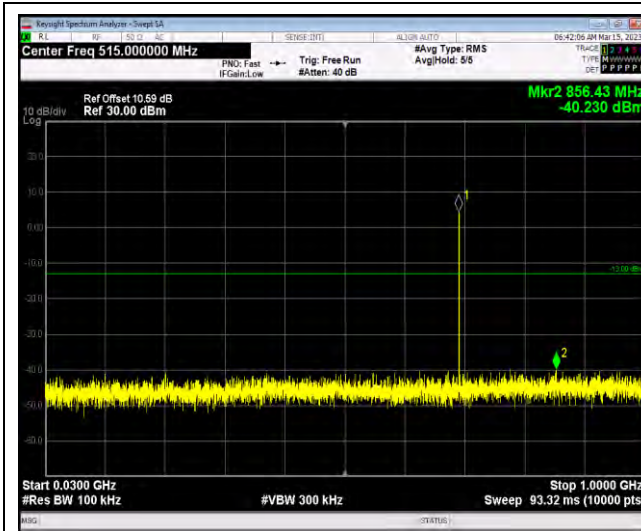
Band7-20MHz-64QAM-20850-1RB#0-Range1:30~1000MHz



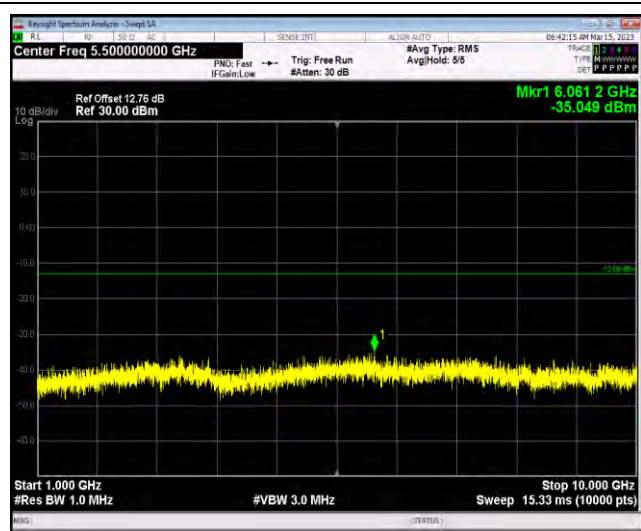
Band7-20MHz-64QAM-20850-1RB#0-Range2:1000~6500MHz



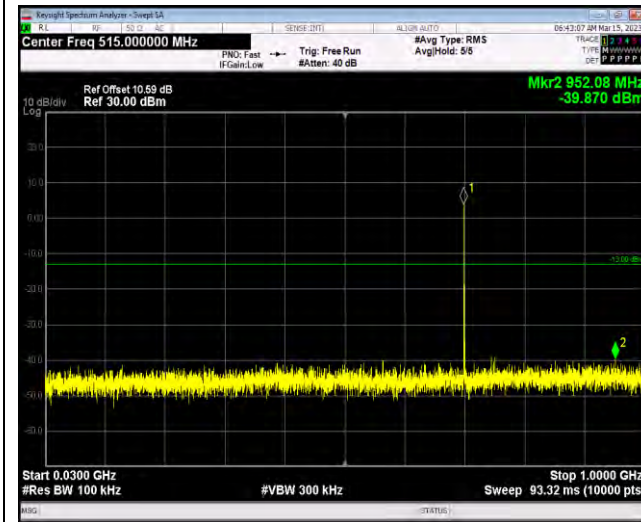




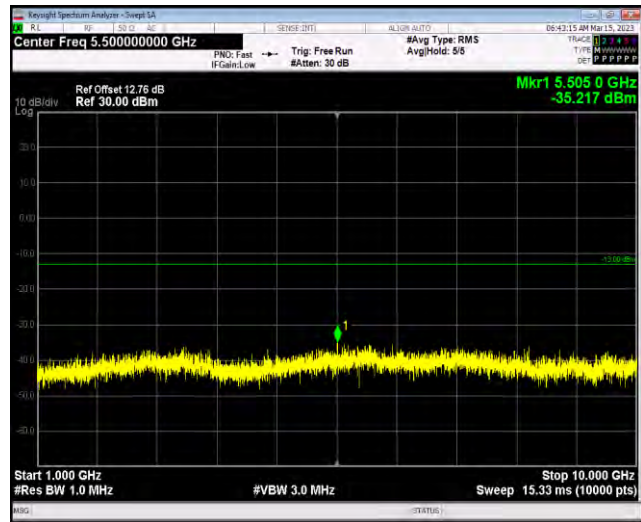
Band12-1.4MHz-QPSK-23095-1RB#0-Range1:30~1000MHz



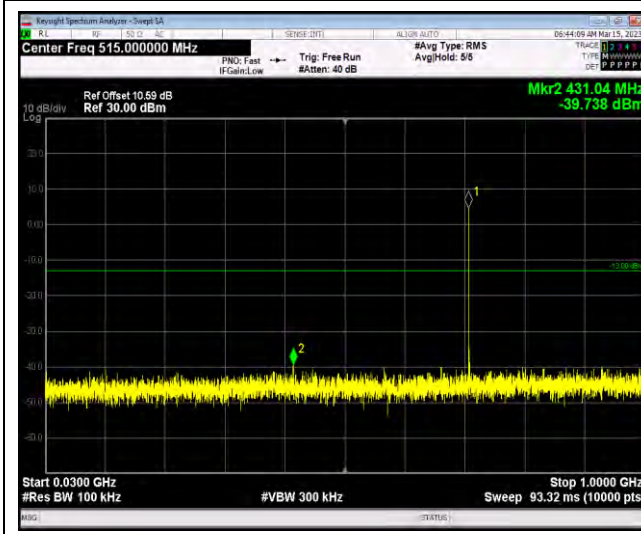
Band12-1.4MHz-QPSK-23095-1RB#0-Range2:1000~10000MHz

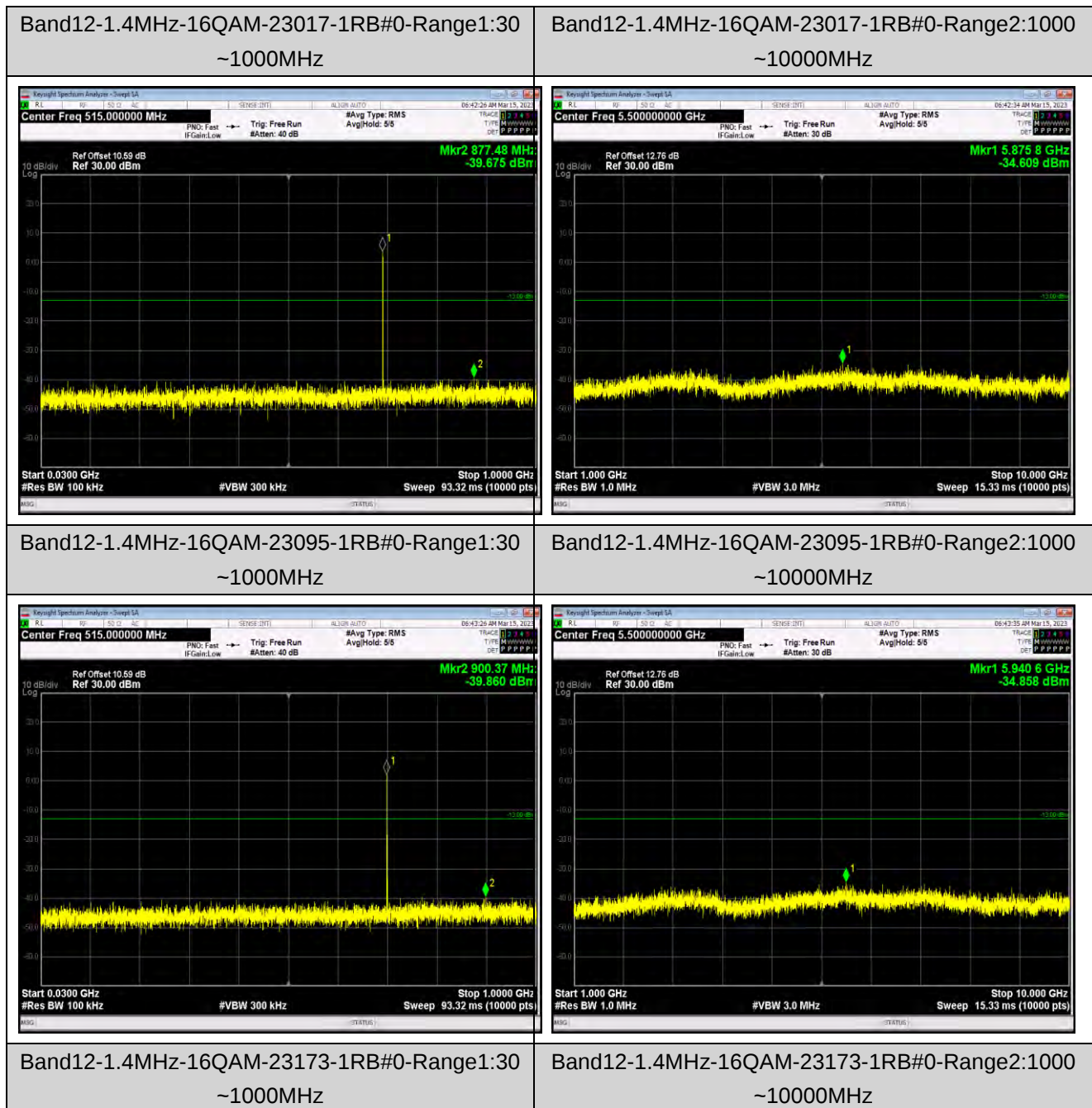


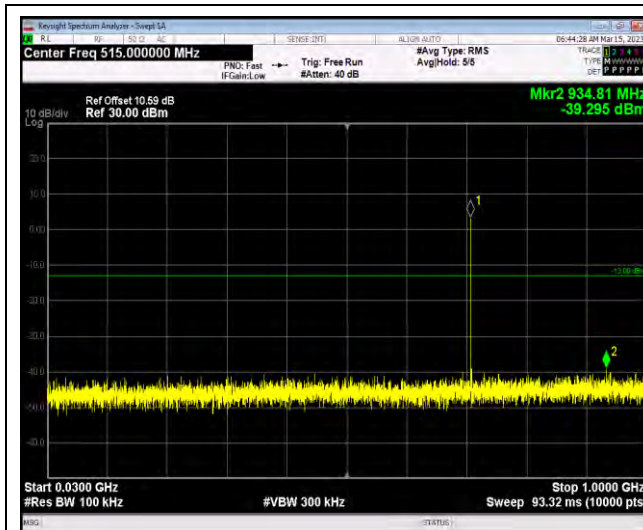
Band12-1.4MHz-QPSK-23173-1RB#0-Range1:30~1000MHz



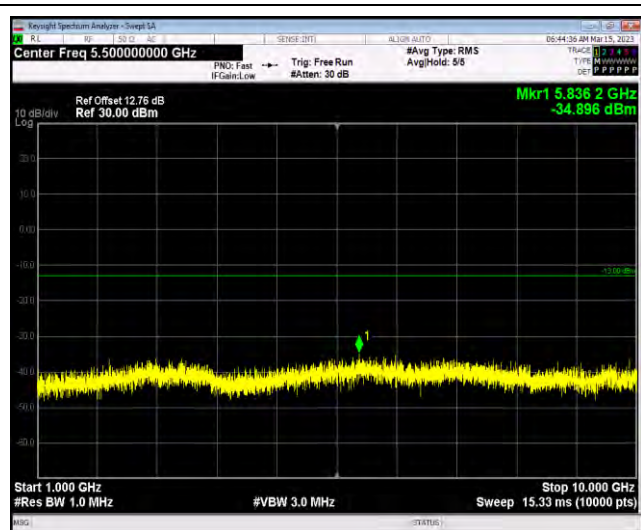
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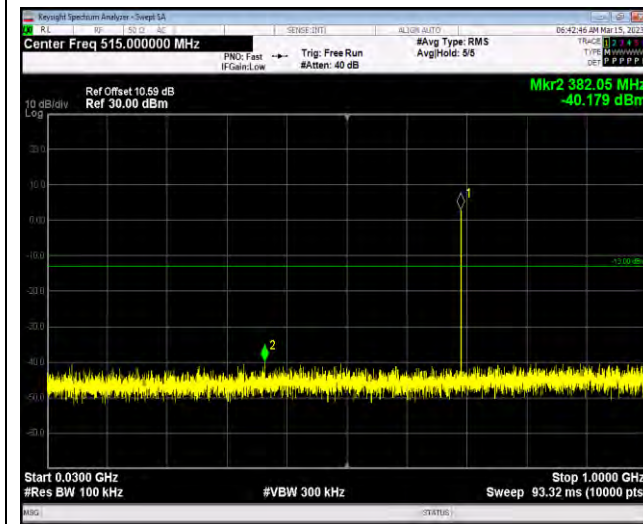




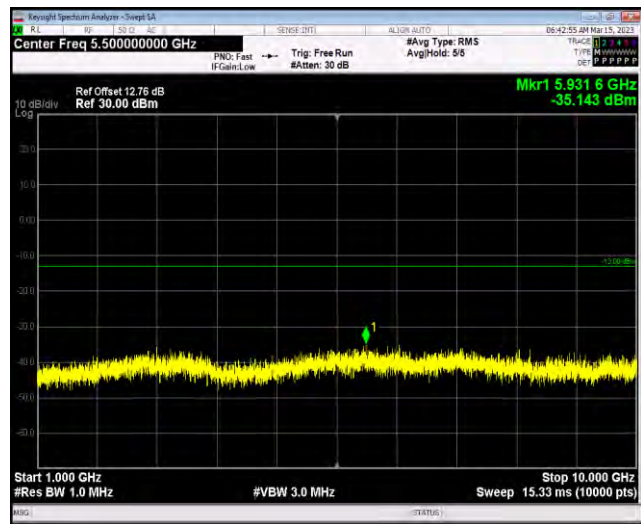
Band12-1.4MHz-64QAM-23017-1RB#0-Range1:30
~1000MHz



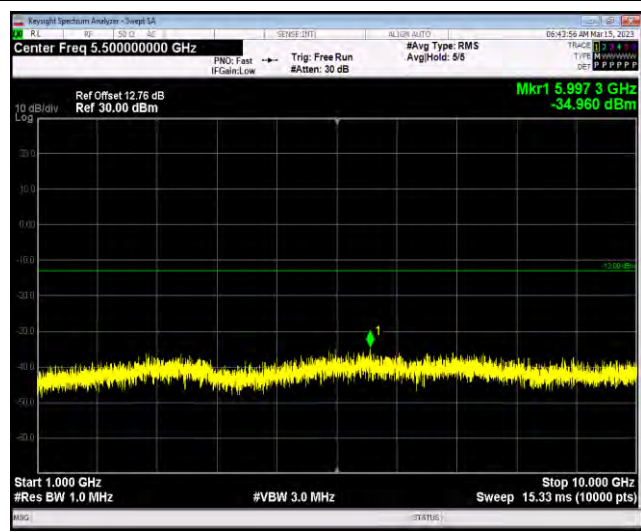
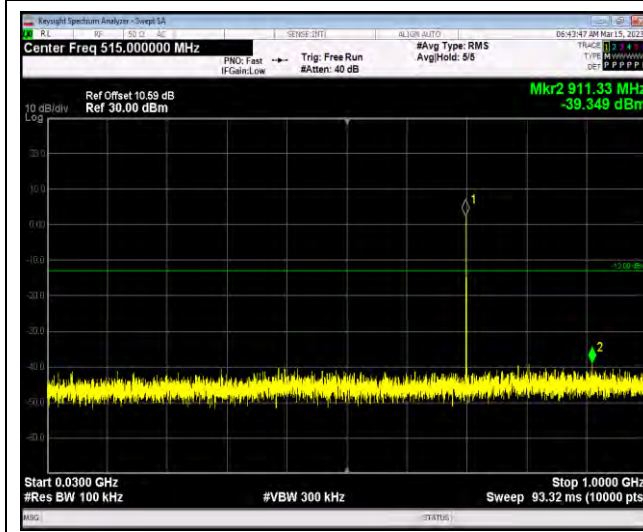
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~10000MHz

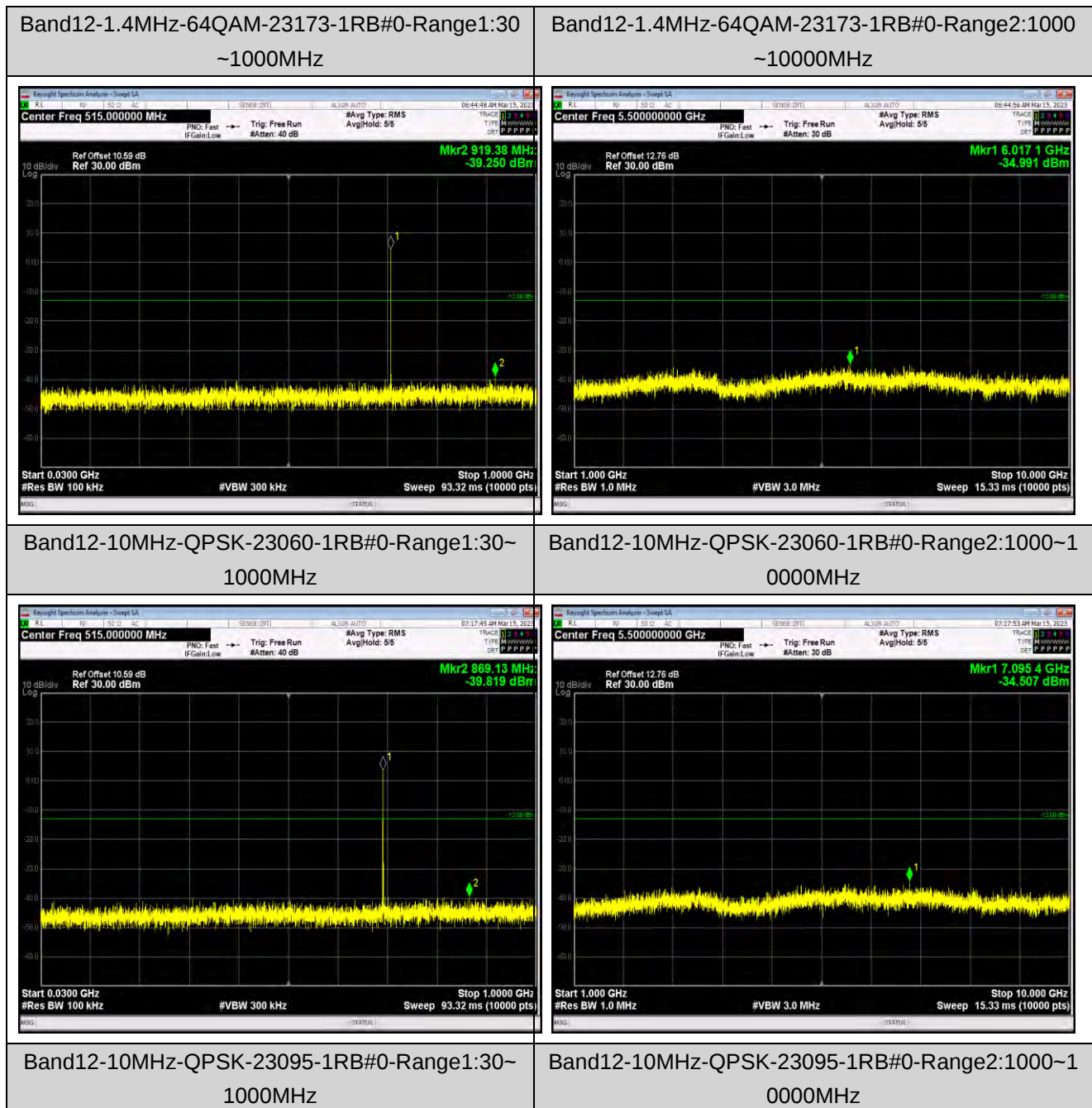


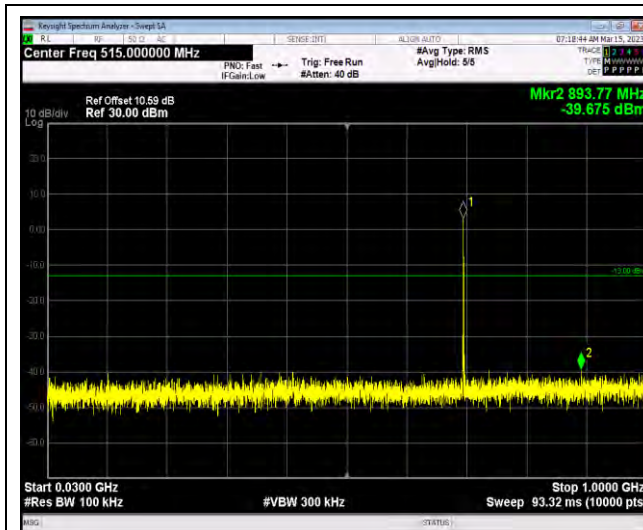
Band12-1.4MHz-64QAM-23095-1RB#0-Range1:30
~1000MHz



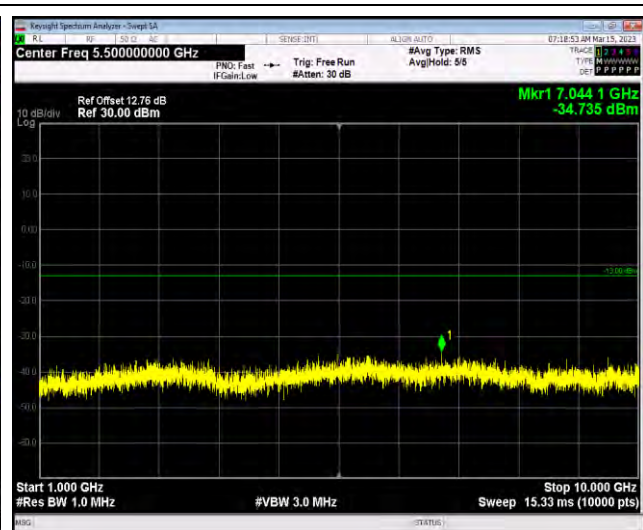
Band12-1.4MHz-64QAM-23095-1RB#0-Range2:1000
~10000MHz



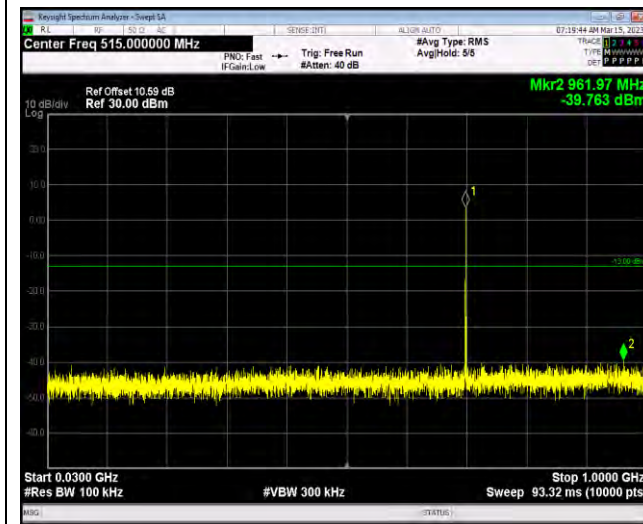




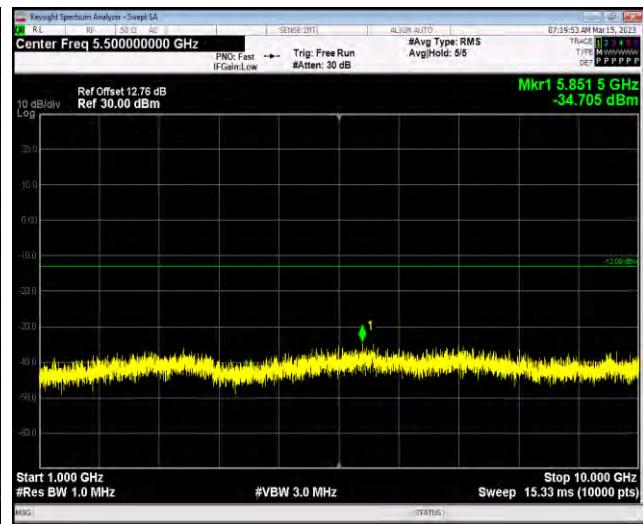
Band12-10MHz-QPSK-23130-1RB#0-Range1:30~1000MHz



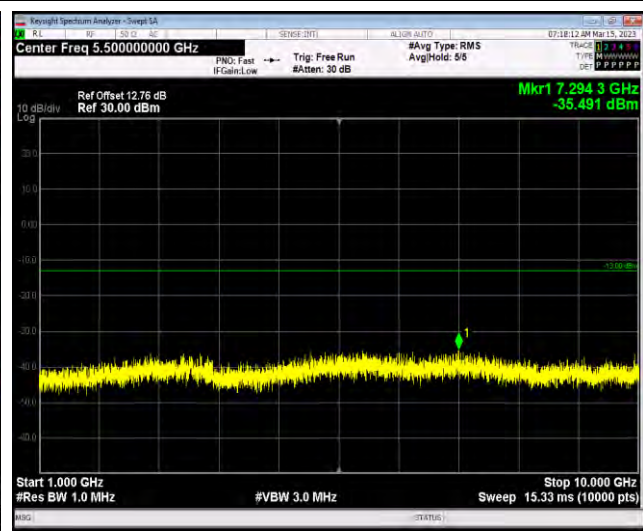
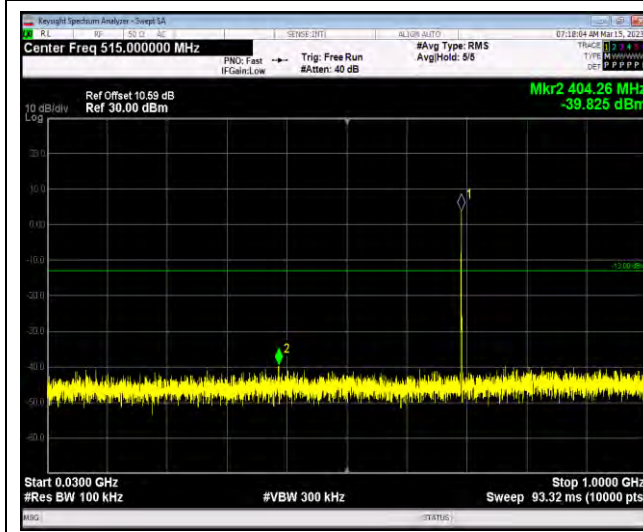
Band12-10MHz-QPSK-23130-1RB#0-Range2:1000~10000MHz



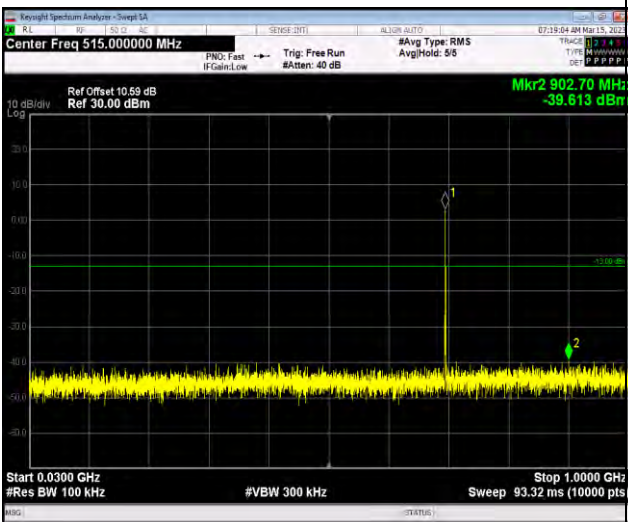
Band12-10MHz-16QAM-23060-1RB#0-Range1:30~1000MHz



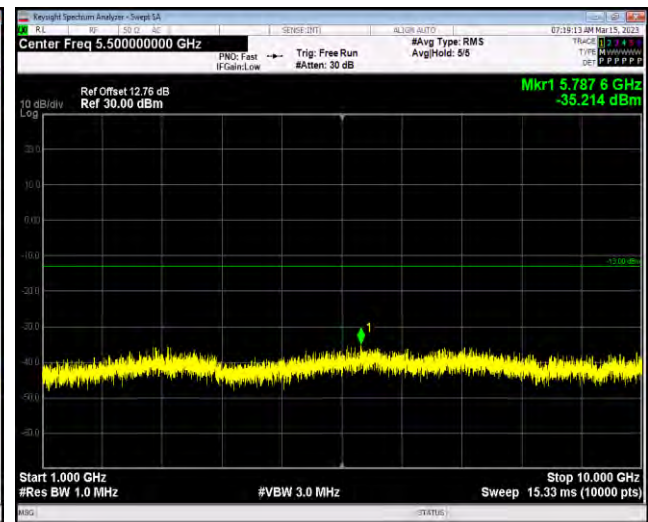
Band12-10MHz-16QAM-23060-1RB#0-Range2:1000~10000MHz



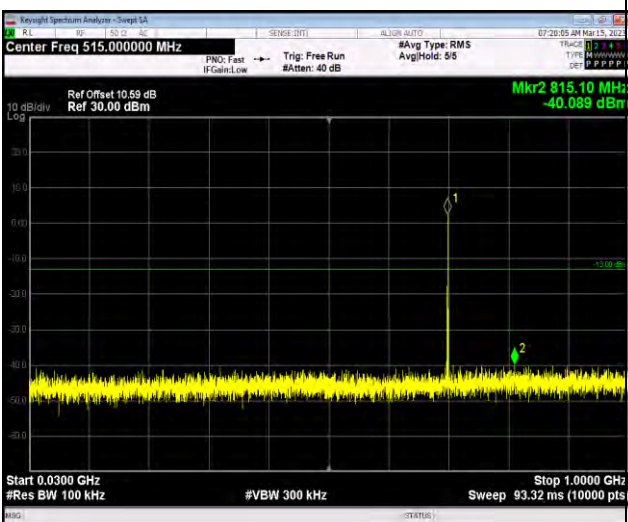
Band12-10MHz-16QAM-23095-1RB#0-Range1:30
~1000MHz



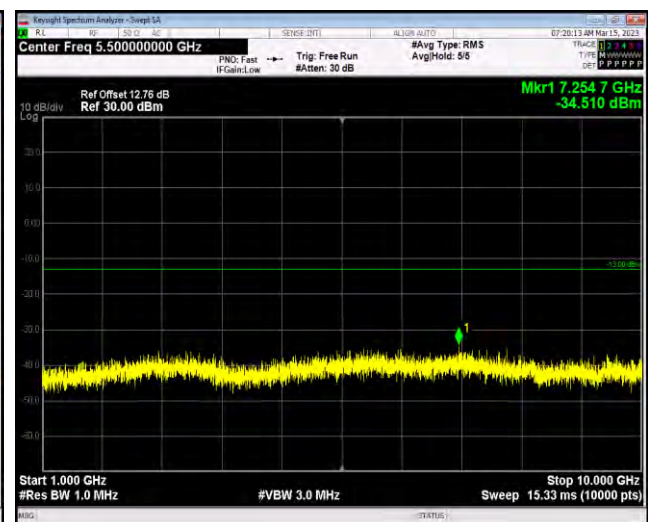
Band12-10MHz-16QAM-23095-1RB#0-Range2:1000~
10000MHz



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



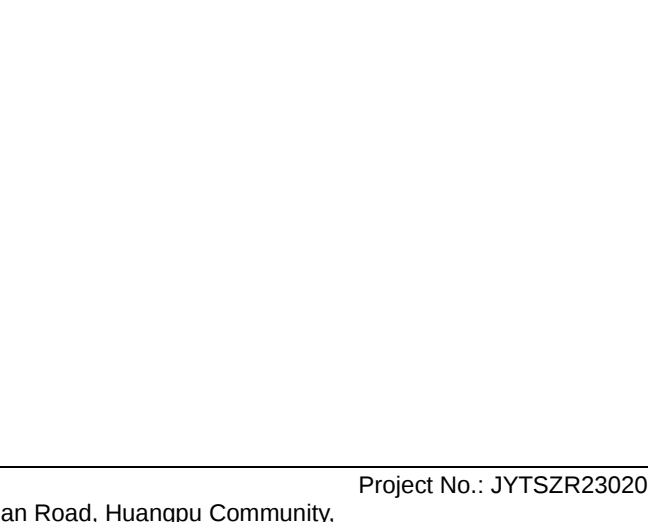
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10000MHz

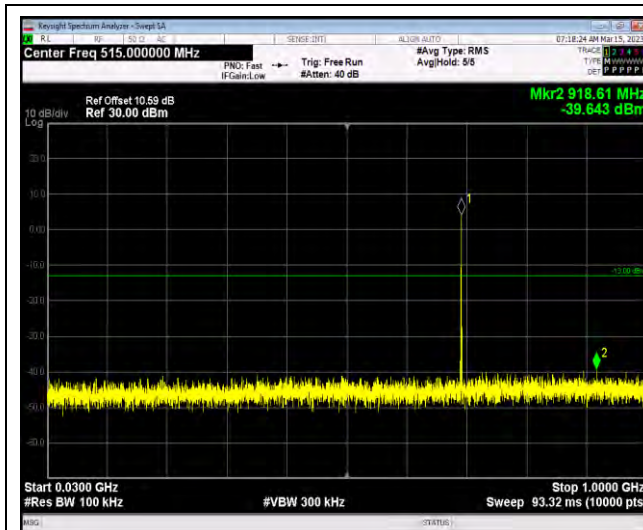


Band12-10MHz-64QAM-23060-1RB#0-Range1:30
~1000MHz

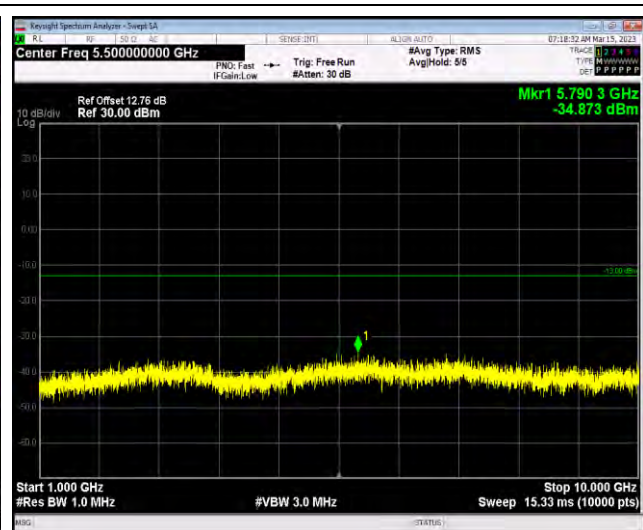


Band12-10MHz-64QAM-23060-1RB#0-Range2:1000~
10000MHz

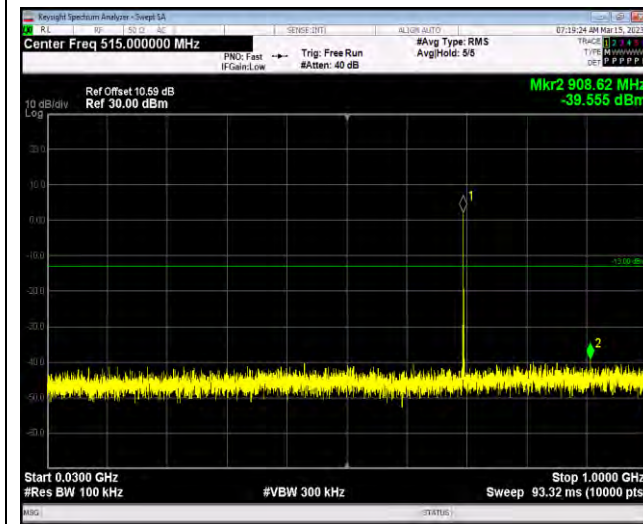




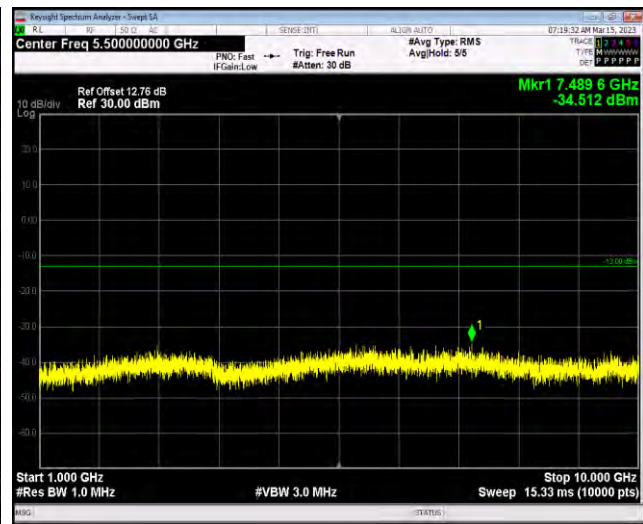
Band12-10MHz-64QAM-23095-1RB#0-Range1:30
~1000MHz



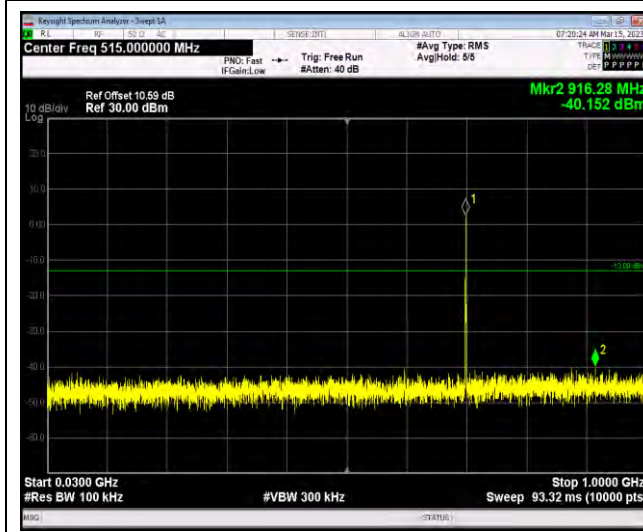
Band12-10MHz-64QAM-23095-1RB#0-Range2:1000~
10000MHz



Band12-10MHz-64QAM-23130-1RB#0-Range1:30
~1000MHz



Band12-10MHz-64QAM-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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-18.24	-0.009702	Within authorized band for Band 2	Pass
	-20	9.96	0.005298		
	-10	-31.49	-0.016750		
	0	-24.33	-0.012941		
	10	-22.06	-0.011734		
	20	-18.87	-0.010037		
	30	-15.88	-0.008447		
	40	-19.58	-0.010415		
	50	-16.51	-0.008782		
16QAM					
3.85	-30	-18.97	-0.010090	Within authorized band for Band 2	Pass
	-20	-7.17	-0.003814		
	-10	-21.10	-0.011223		
	0	-28.60	-0.015213		
	10	-19.67	-0.010463		
	20	10.00	0.005319		
	30	-16.02	-0.008521		
	40	11.86	0.006309		
	50	4.91	0.002612		
64QAM					
3.85	-30	5.92	0.003149	Within authorized band for Band 2	Pass
	-20	7.00	0.003723		
	-10	-21.21	-0.011282		
	0	-21.77	-0.011580		
	10	10.56	0.005617		
	20	-16.51	-0.008782		
	30	-5.09	-0.002707		
	40	-28.34	-0.015074		
	50	13.20	0.007021		
Voltage					
Temperature	Power supplied	Frequency error		Limit (ppm)	Result

(°C)	(Vdc)	Hz	ppm		
QPSK					
25	3.50	-40.25	-0.021410	Within authorized band for Band 2	Pass
	3.85	-23.49	-0.012495		
	4.43	8.37	0.004452		
16QAM					
25	3.50	-3.62	-0.001926	Within authorized band for Band 2	Pass
	3.85	-29.97	-0.015941		
	4.43	4.51	0.002399		
64QAM					
25	3.50	12.67	0.006739	Within authorized band for Band 2	Pass
	3.85	-7.12	-0.003787		
	4.43	-21.69	-0.011537		
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	-17.95	-0.010361	Within authorized band for Band 4	Pass
	-20	-23.67	-0.013662		
	-10	-20.04	-0.011567		
	0	-24.98	-0.014418		
	10	-4.33	-0.002499		
	20	-20.53	-0.011850		
	30	-23.76	-0.013714		
	40	-16.26	-0.009385		
	50	11.92	0.006880		
16QAM					
3.85	-30	5.94	0.003429	Within authorized band for Band 4	Pass
	-20	-13.89	-0.008017		
	-10	-14.76	-0.008519		
	0	-12.07	-0.006967		
	10	-11.69	-0.006747		
	20	-3.96	-0.002286		
	30	-25.53	-0.014736		
	40	20.31	0.011723		
	50	-5.88	-0.003394		
64QAM					
3.85	-30	-18.70	-0.010794	Within authorized band for Band 4	Pass
	-20	-9.81	-0.005662		
	-10	16.71	0.009645		
	0	-15.96	-0.009212		
	10	-23.99	-0.013847		
	20	-16.99	-0.009807		
	30	-19.84	-0.011452		
	40	-21.84	-0.012606		
	50	1.77	0.001022		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					

25	3.50	-25.02	-0.014442	Within authorized band for Band 4	Pass
	3.85	-26.51	-0.015302		
	4.43	15.12	0.008727		
16QAM					
25	3.50	-10.74	-0.006199	Within authorized band for Band 4	Pass
	3.85	-21.29	-0.012289		
	4.43	4.42	0.002551		
64QAM					
25	3.50	13.29	0.007671	Within authorized band for Band 4	Pass
	3.85	18.15	0.010476		
	4.43	7.97	0.004600		
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					
3.85	-30	4.02	0.004806	±2.5	Pass
	-20	-12.63	-0.015099		
	-10	-8.08	-0.009659		
	0	-3.62	-0.004328		
	10	-5.06	-0.006049		
	20	-5.89	-0.007041		
	30	-12.45	-0.014883		
	40	-11.66	-0.013939		
	50	4.73	0.005655		
16QAM					
3.85	-30	-12.00	-0.014345	±2.5	Pass
	-20	-18.05	-0.021578		
	-10	-10.13	-0.012110		
	0	-8.67	-0.010365		
	10	-6.29	-0.007519		
	20	-14.31	-0.017107		
	30	-9.68	-0.011572		
	40	-15.54	-0.018577		
	50	-11.97	-0.014310		
64QAM					
3.85	-30	-13.15	-0.015720	±2.5	Pass
	-20	-8.94	-0.010687		
	-10	-10.94	-0.013078		
	0	-11.19	-0.013377		
	10	12.07	0.014429		
	20	-3.92	-0.004686		
	30	5.97	0.007137		
	40	-12.06	-0.014417		
	50	-10.61	-0.012684		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					

25	3.50	-6.65	-0.007950	±2.5	Pass
	3.85	-21.44	-0.025631		
	4.43	-11.73	-0.014023		
16QAM					
25	3.50	12.12	0.014489	±2.5	Pass
	3.85	-4.52	-0.005403		
	4.43	10.14	0.012122		
64QAM					
25	3.50	-15.01	-0.017944	±2.5	Pass
	3.85	-7.25	-0.008667		
	4.43	-12.70	-0.015182		
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					
3.85	-30	-13.25	-0.005227	Within authorized band for Band 7	Pass
	-20	-12.93	-0.005101		
	-10	-11.26	-0.004442		
	0	-16.87	-0.006655		
	10	-17.38	-0.006856		
	20	-20.91	-0.008249		
	30	-23.00	-0.009073		
	40	12.80	0.005049		
	50	-11.16	-0.004402		
16QAM					
3.85	-30	-18.75	-0.007396	Within authorized band for Band 7	Pass
	-20	-17.32	-0.006832		
	-10	19.80	0.007811		
	0	19.81	0.007815		
	10	18.77	0.007404		
	20	19.80	0.007811		
	30	-12.46	-0.004915		
	40	15.55	0.006134		
	50	17.64	0.006959		
64QAM					
3.85	-30	-10.64	-0.004197	Within authorized band for Band 7	Pass
	-20	-17.61	-0.006947		
	-10	-18.18	-0.007172		
	0	-16.22	-0.006398		
	10	-15.18	-0.005988		
	20	14.91	0.005882		
	30	-15.35	-0.006055		
	40	-23.57	-0.009298		
	50	-21.99	-0.008675		
Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					

25	3.50	11.10	0.004379	Within authorized band for	Pass
	3.85	11.33	0.004469		
	4.43	-16.18	-0.006383		
16QAM					
25	3.50	15.19	0.005992	Within authorized band for	Pass
	3.85	-13.65	-0.005385		
	4.43	-16.62	-0.006556		
64QAM					
25	3.50	-14.91	-0.005882	Within authorized band for	Pass
	3.85	8.97	0.003538		
	4.43	-19.44	-0.007669		
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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-6.35	-0.008975	Within authorized band for Band 12	Pass
	-20	-8.55	-0.012085		
	-10	-10.59	-0.014968		
	0	-9.28	-0.013117		
	10	-5.66	-0.008000		
	20	-4.13	-0.005837		
	30	-8.48	-0.011986		
	40	-6.44	-0.009102		
	50	-6.61	-0.009343		
16QAM					
3.85	-30	-12.55	-0.017739	Within authorized band for Band 12	Pass
	-20	-9.27	-0.013102		
	-10	-10.59	-0.014968		
	0	-7.00	-0.009894		
	10	-12.39	-0.017512		
	20	-16.39	-0.023166		
	30	-2.03	-0.002869		
	40	-9.51	-0.013442		
	50	-8.13	-0.011491		
64QAM					
3.85	-30	-9.76	-0.013795	Within authorized band for Band 12	Pass
	-20	5.15	0.007279		
	-10	-8.93	-0.012622		
	0	-7.44	-0.010516		
	10	-9.61	-0.013583		
	20	-6.07	-0.008580		
	30	-8.54	-0.012071		
	40	-9.18	-0.012975		
	50	-8.27	-0.011689		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					

25	3.50	-11.17	-0.015788	Within authorized band for Band 12	Pass
	3.85	-11.22	-0.015859		
	4.43	-8.71	-0.012311		
16QAM					
25	3.50	-9.64	-0.013625	Within authorized band for Band 12	Pass
	3.85	-11.00	-0.015548		
	4.43	-9.04	-0.012777		
64QAM					
25	3.50	-4.73	-0.006686	Within authorized band for Band 12	Pass
	3.85	-14.18	-0.020042		
	4.43	-9.03	-0.012763		
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
Band2	20MHz	64QAM	18900	100RB#0	PASS	PASS
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	100RB#0	PASS	PASS
Band4	20MHz	64QAM	20175	100RB#0	PASS	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band5	10MHz	64QAM	20525	50RB#0	PASS	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band7	20MHz	64QAM	21100	100RB#0	PASS	PASS
Band12	10MHz	QPSK	23095	50RB#0	PASS	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS	PASS
Band12	10MHz	64QAM	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

