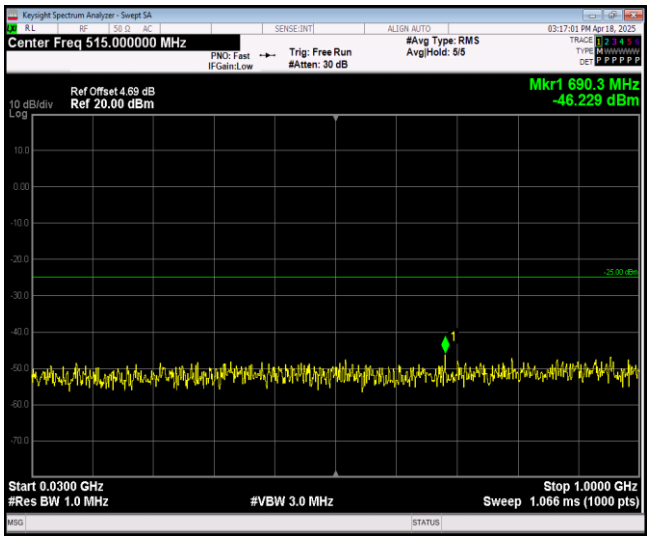
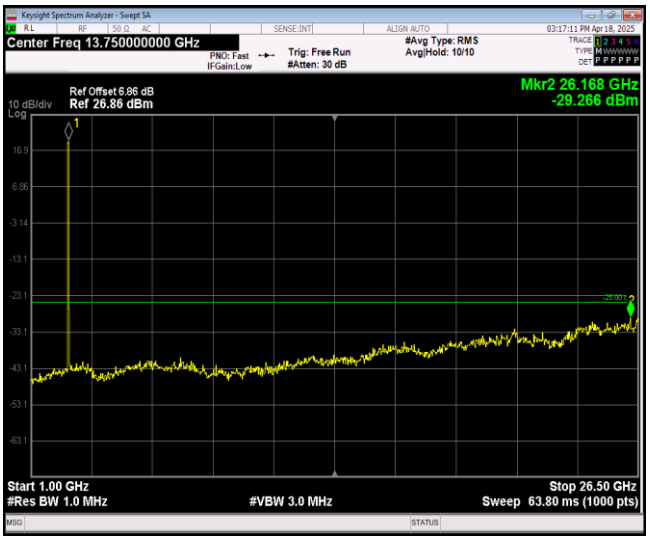
Band38-5MHz-16QAM-37775-1RB#0-Range1:30~1000MHz	Band38-5MHz-16QAM-37775-1RB#0-Range2:1000~26500MHz
	
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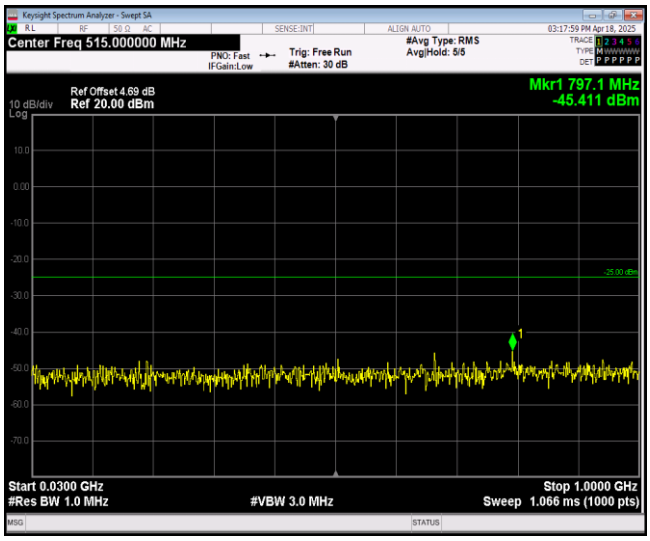	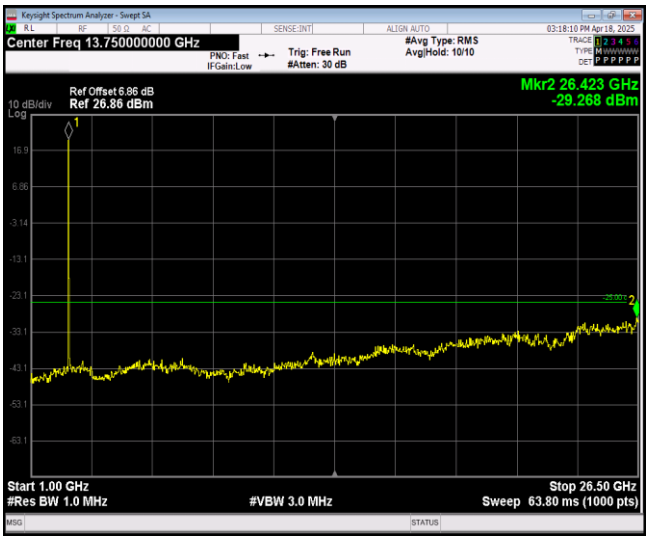
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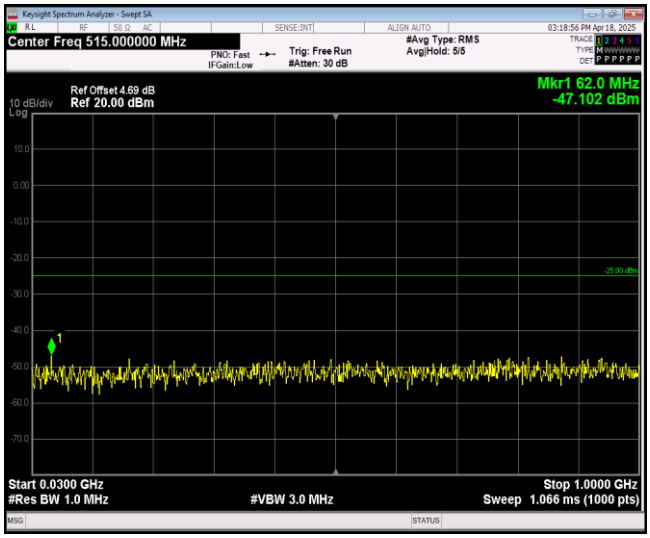

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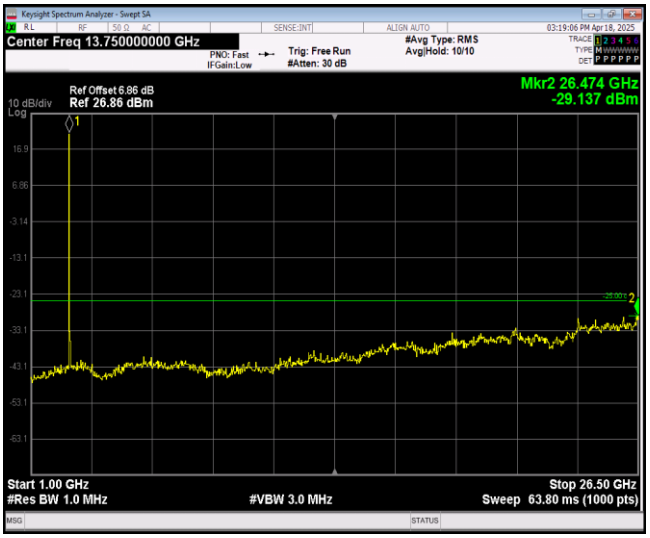

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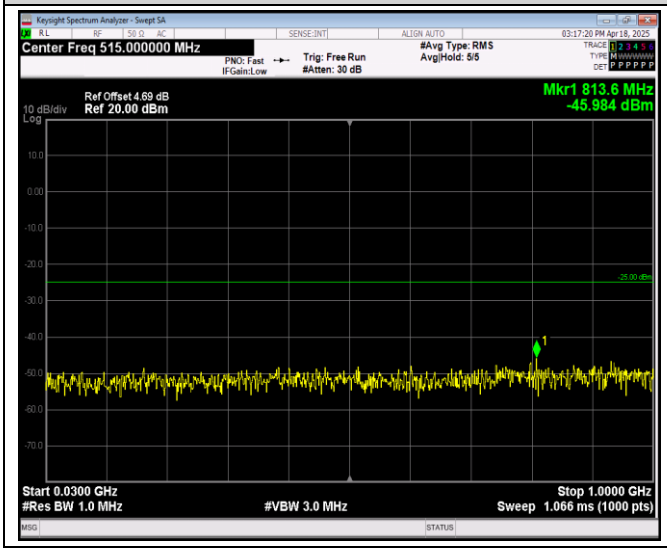

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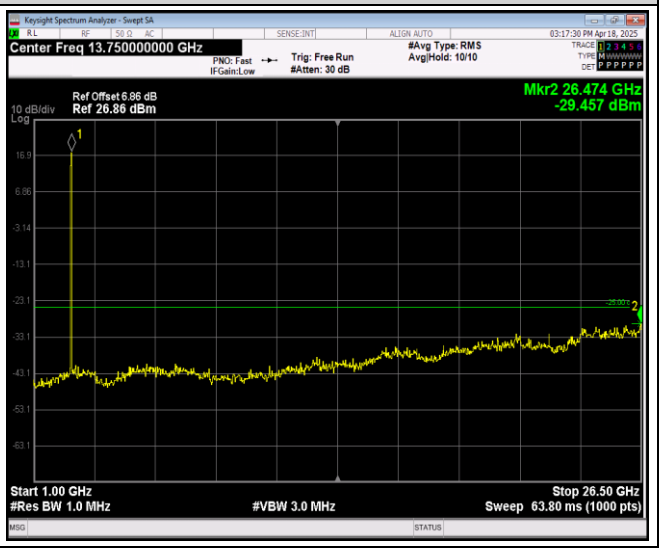
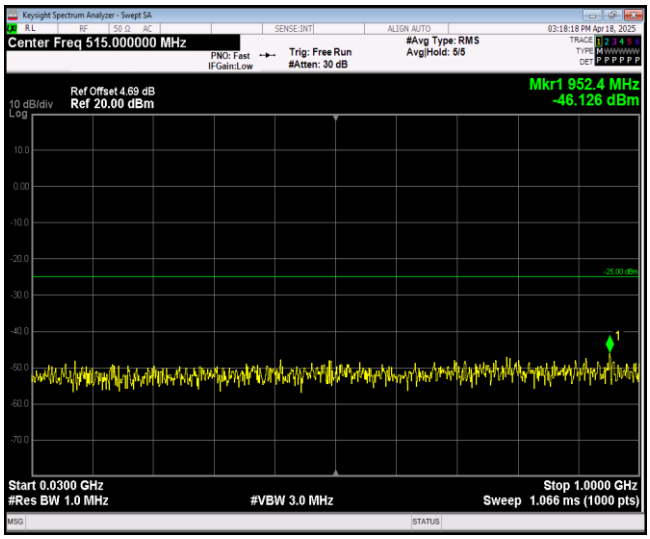
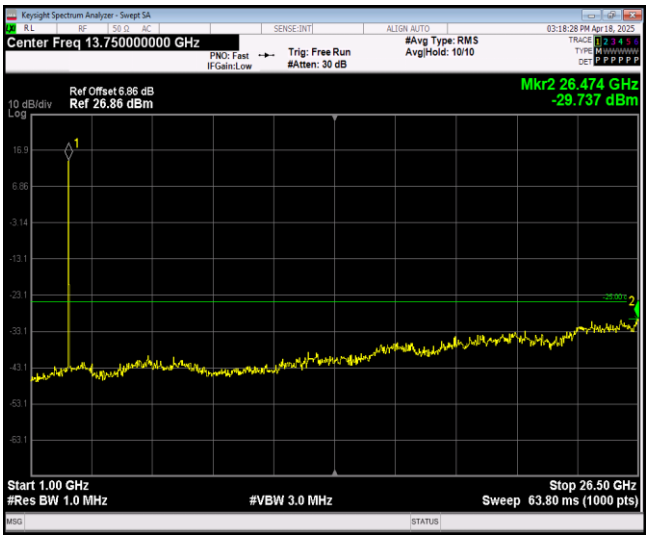


Band38-5MHz-64QAM-38000-1RB#0-Range2:1000~26500MHz





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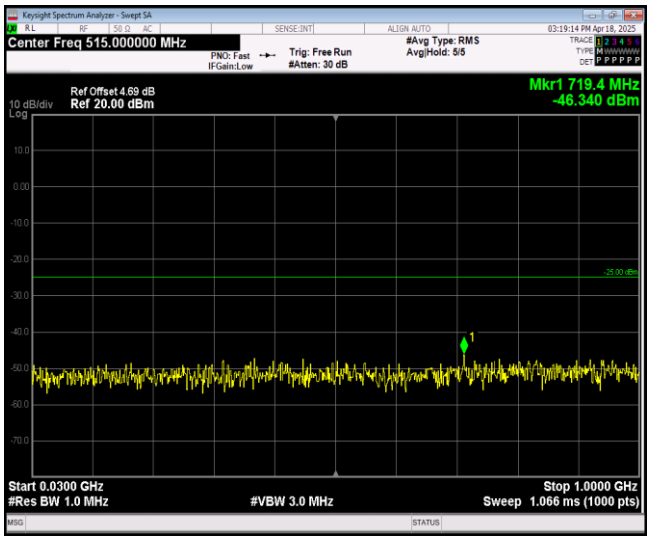
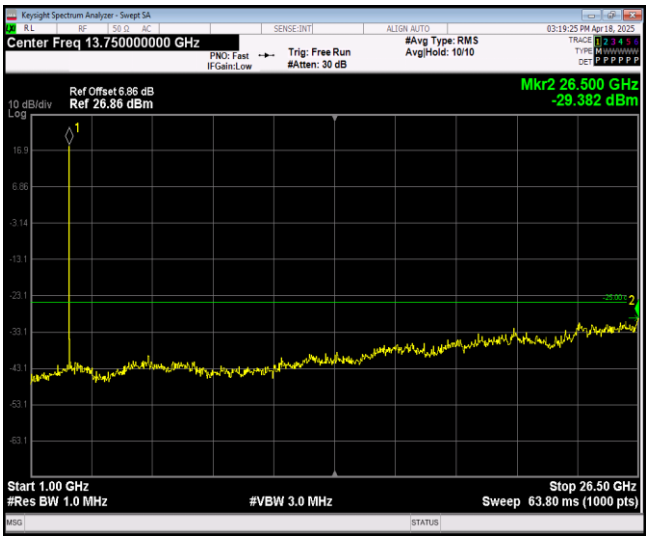
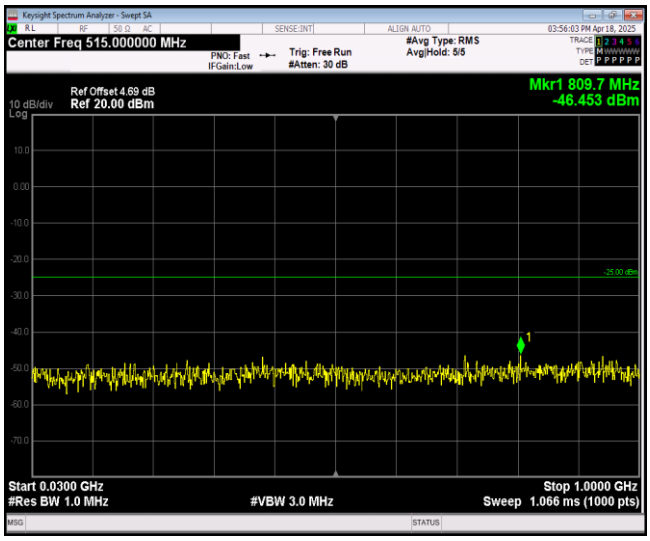
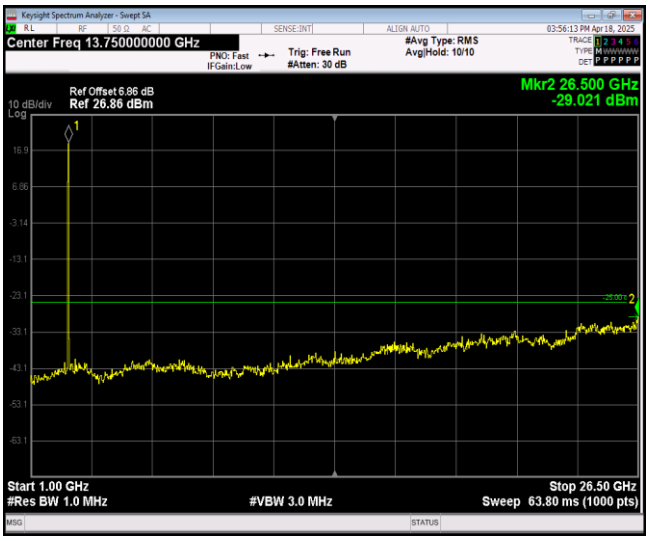
	
Band38-20MHz-QPSK-37850-1RB#0-Range1:30~1000MHz	Band38-20MHz-QPSK-37850-1RB#0-Range2:1000~26500MHz
	
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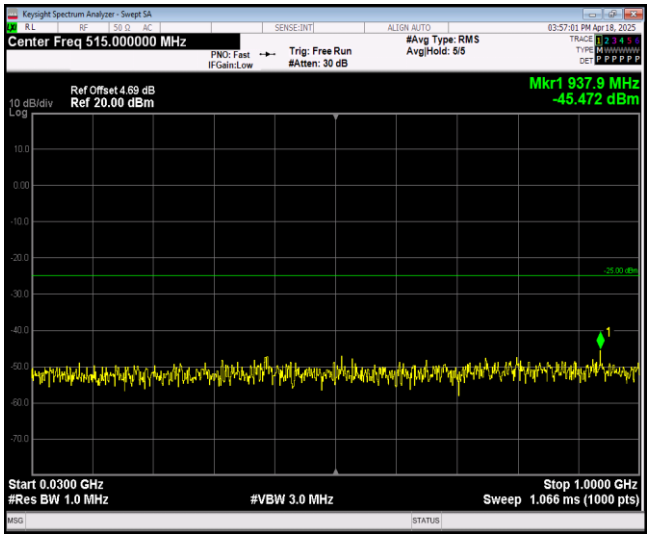

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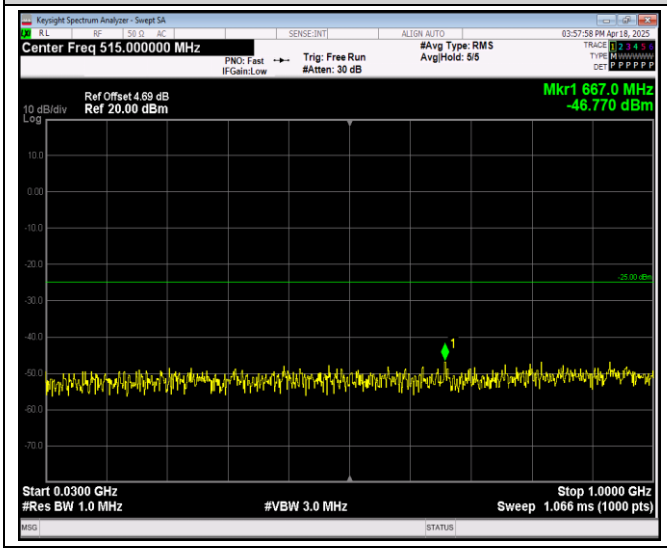
Band38-20MHz-QPSK-38150-1RB#0-Range2:1000~26500MHz



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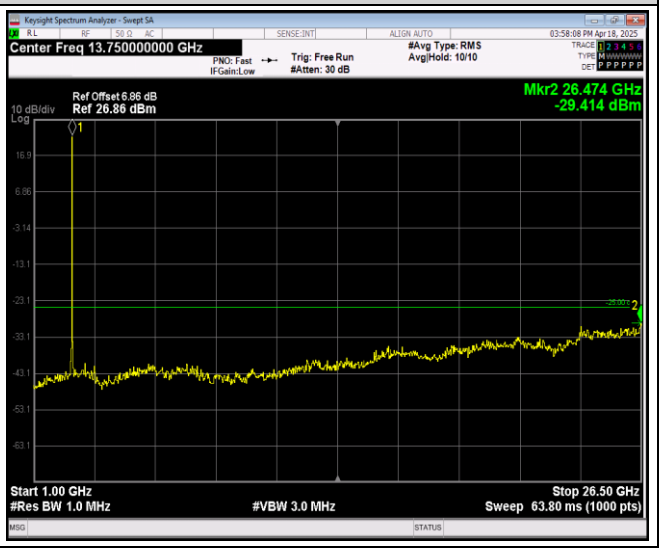

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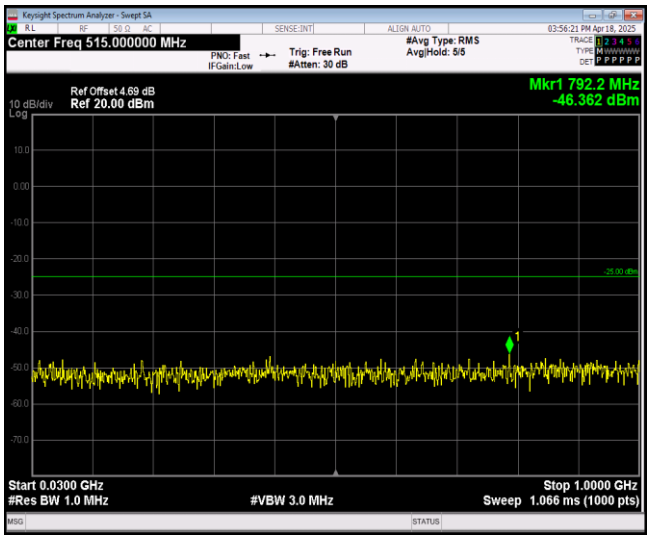
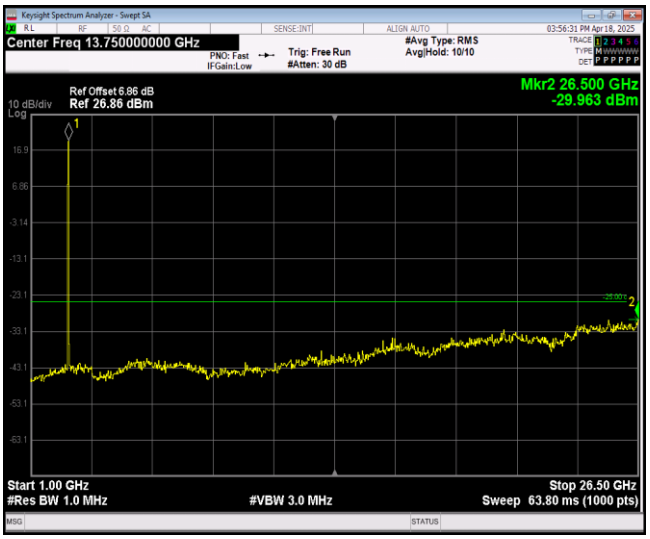
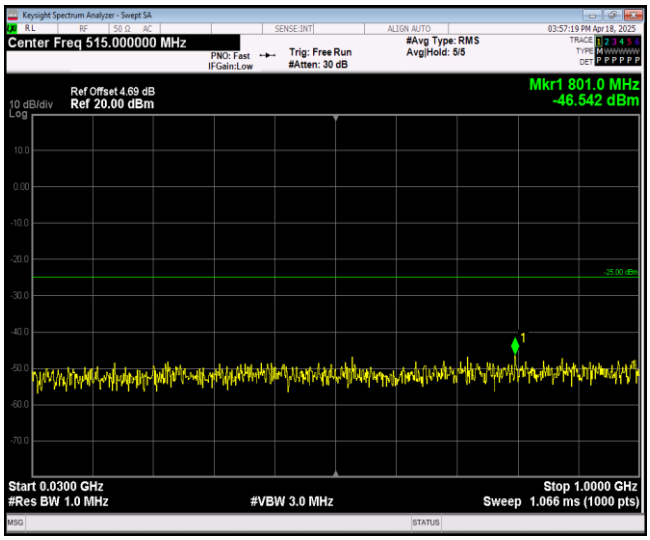
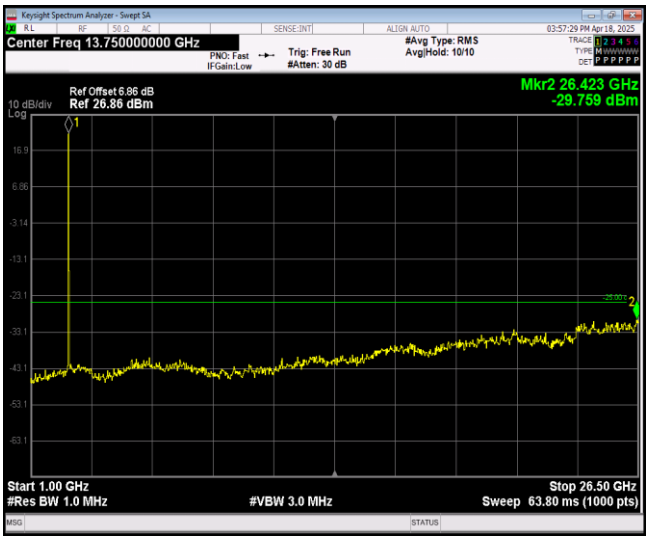




Band38-20MHz-16QAM-38000-1RB#0-Range1:30~1000MHz	Band38-20MHz-16QAM-38000-1RB#0-Range2:1000~26500MHz
	
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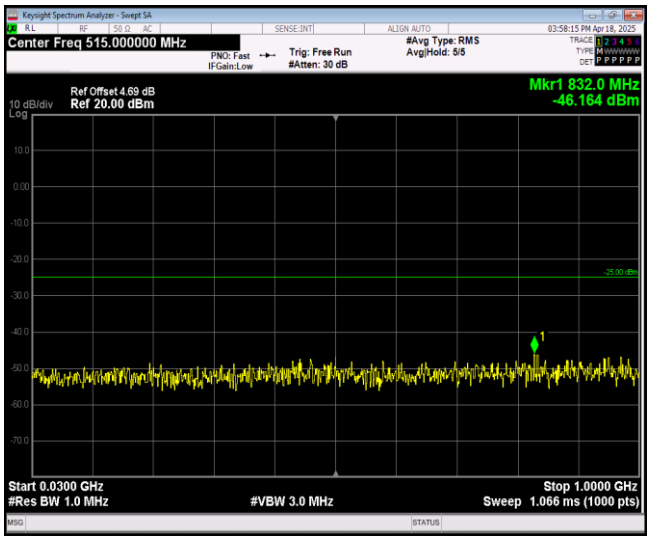
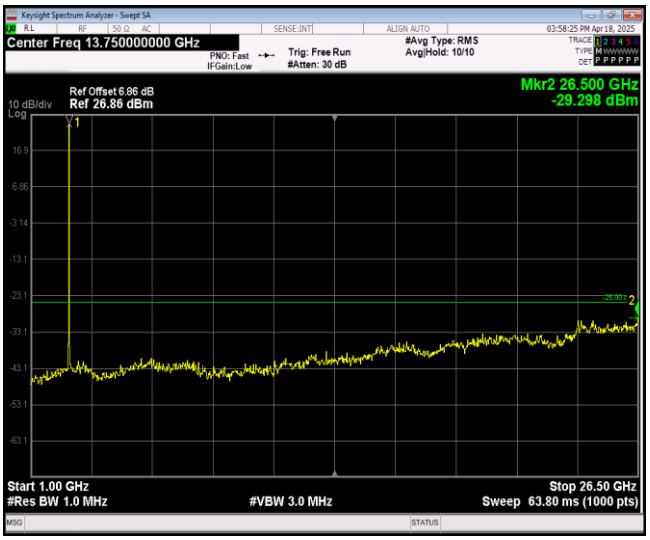
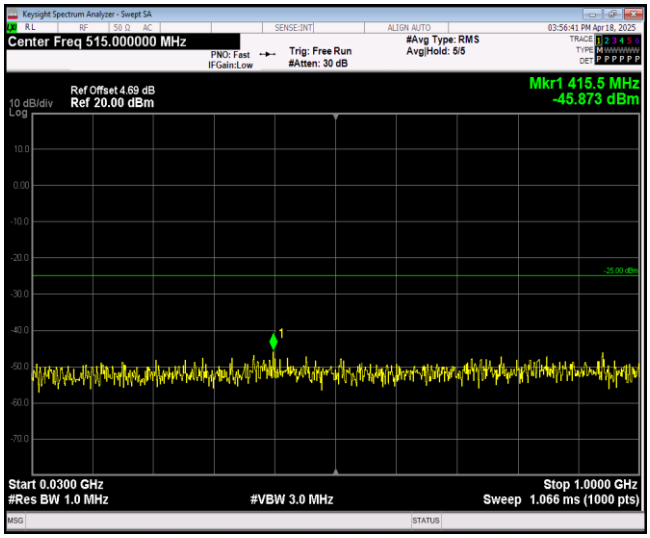
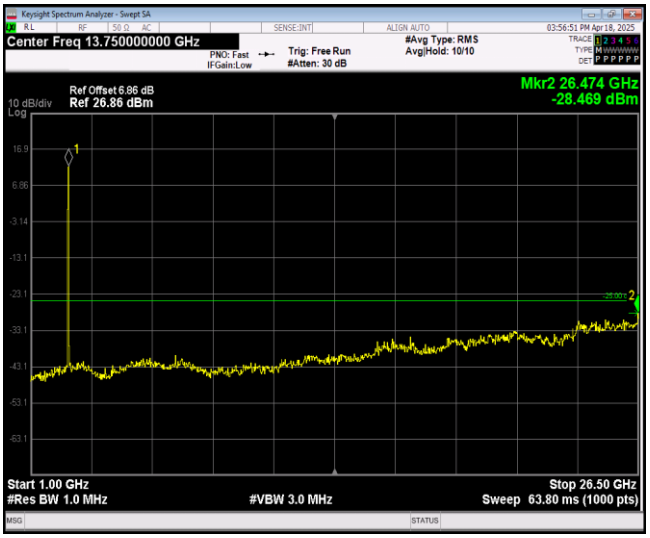
	
Band38-20MHz-64QAM-37850-1RB#0-Range1:30~1000MHz	Band38-20MHz-64QAM-37850-1RB#0-Range2:1000~26500MHz



Band38-20MHz-64QAM-38000-1RB#0-Range1:30~1000MHz



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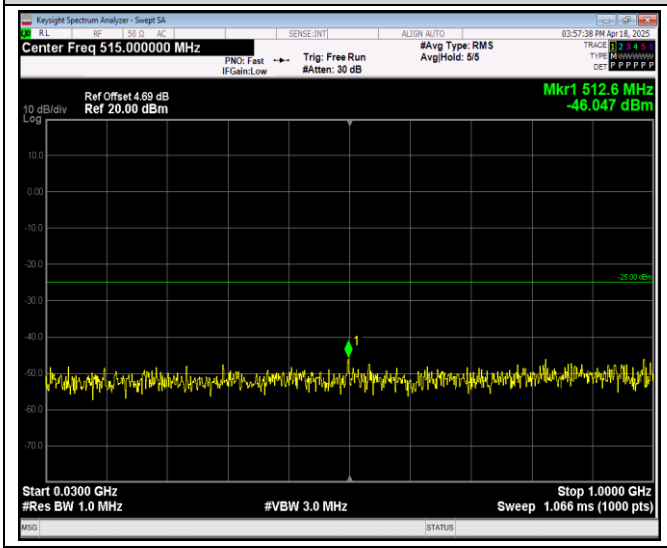
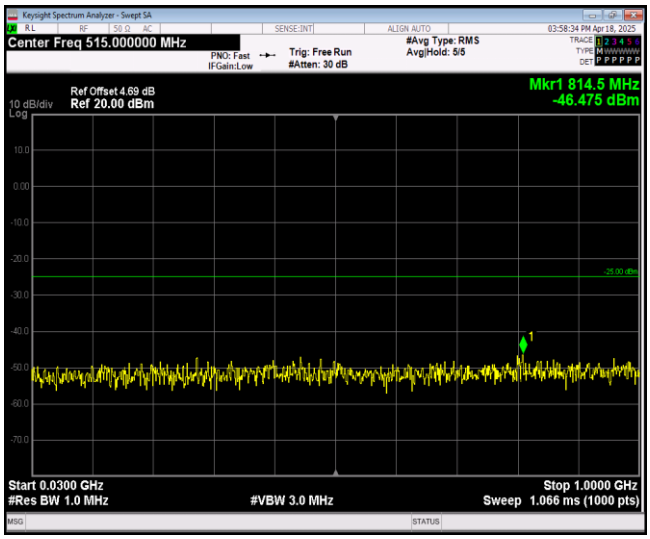
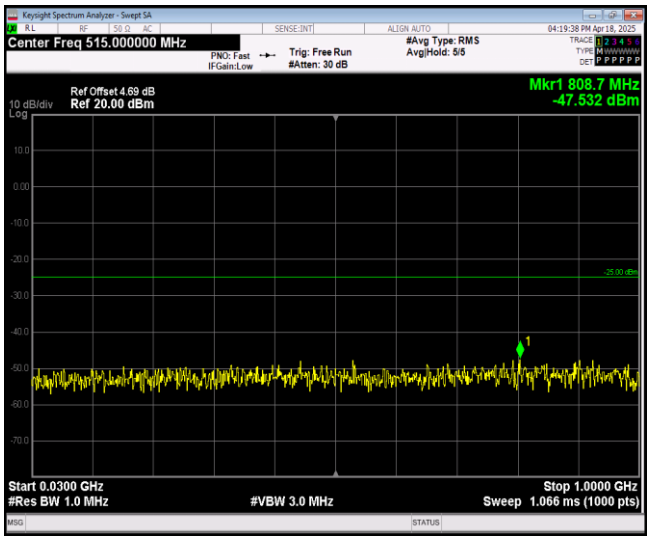
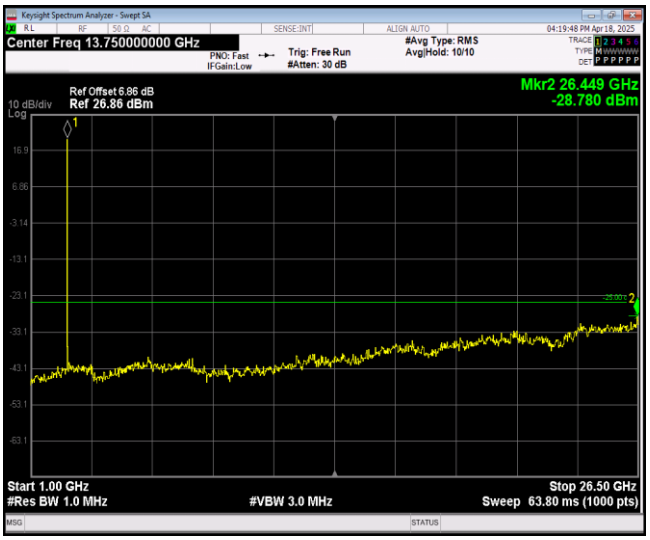


Band38-20MHz-64QAM-38150-1RB#0-Range1:30~1000MHz

Band38-20MHz-64QAM-38150-1RB#0-Range2:1000~26500MHz



Band41-5MHz-QPSK-40065-1RB#0-Range1:30~1000MHz	Band41-5MHz-QPSK-40065-1RB#0-Range2:1000~26500MHz
	
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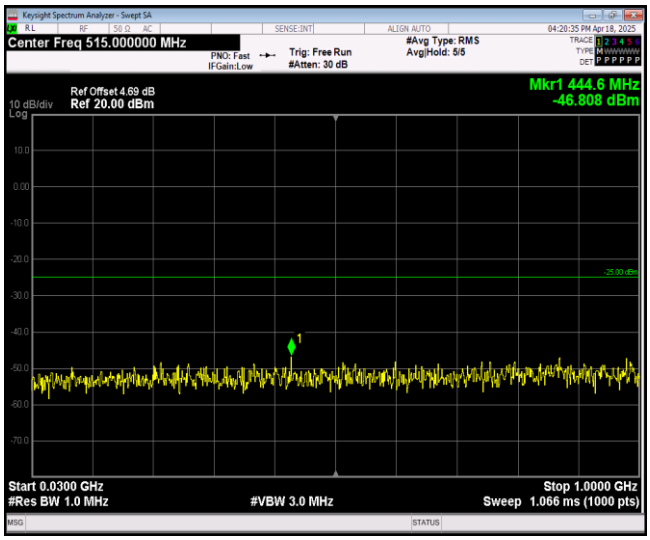
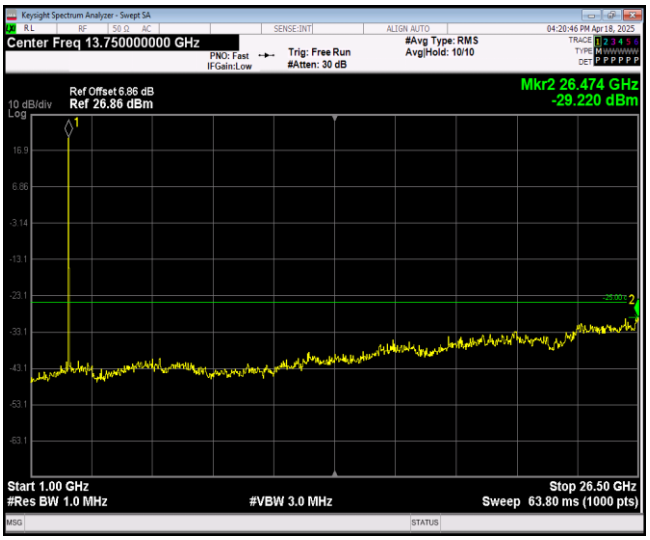
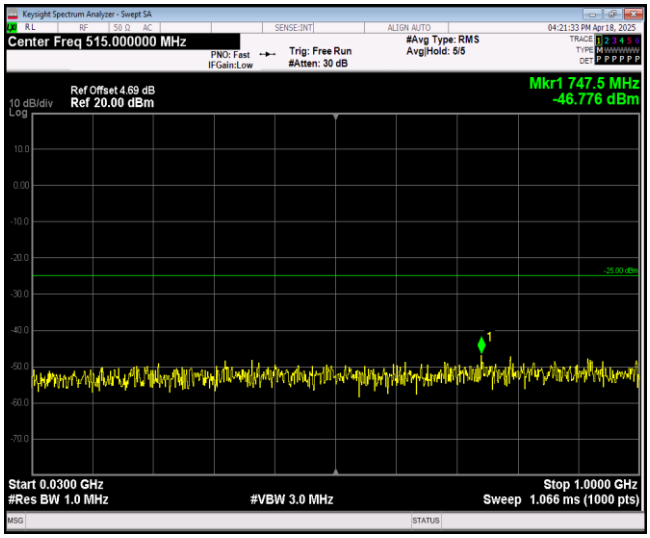
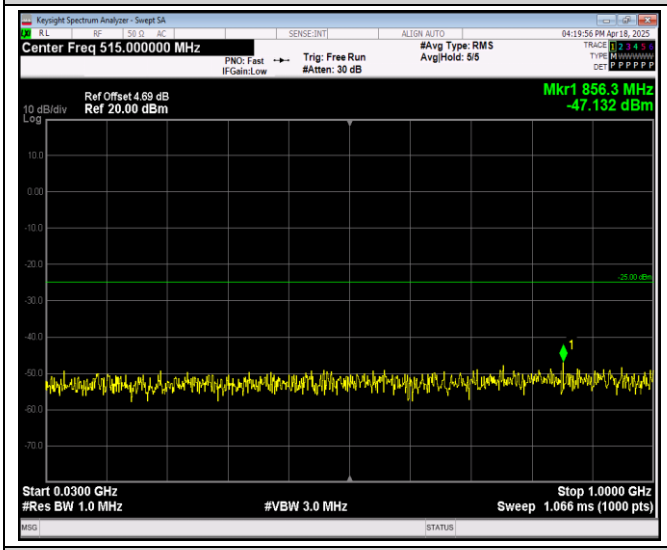
	
Band41-5MHz-QPSK-41215-1RB#0-Range1:30~1000MHz	Band41-5MHz-QPSK-41215-1RB#0-Range2:1000~26500MHz



Band41-5MHz-16QAM-40065-1RB#0-Range1:30~1000MHz

Band41-5MHz-16QAM-40065-1RB#0-Range2:1000~26500MHz



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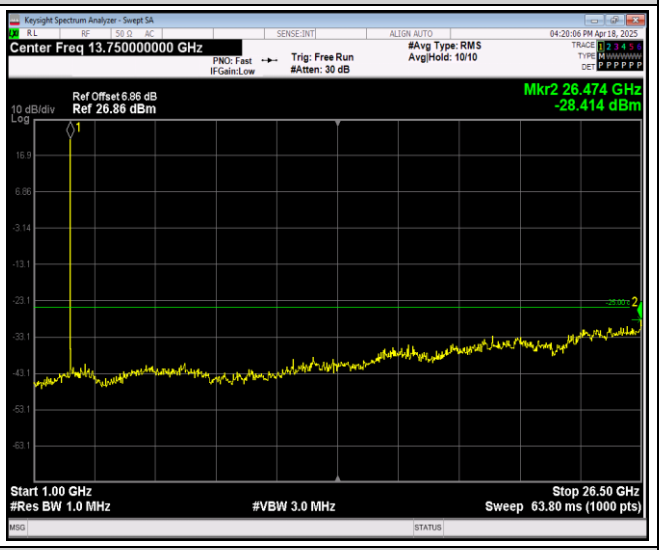
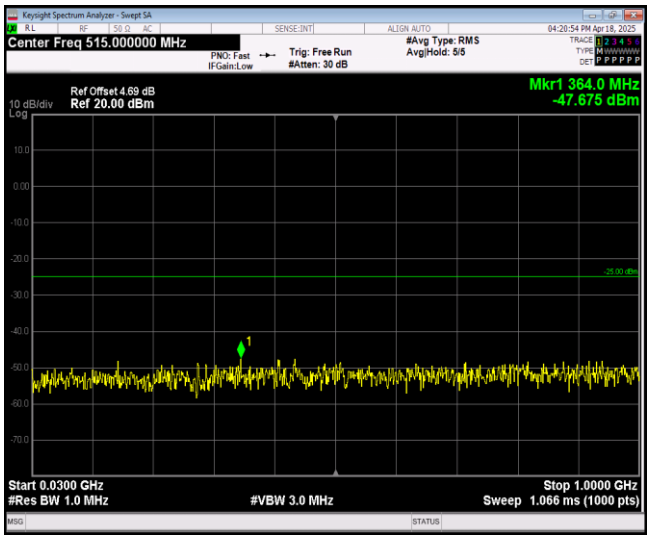
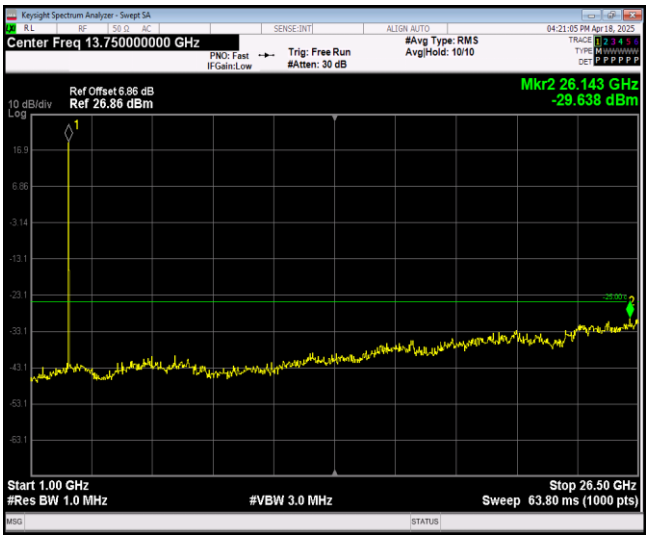
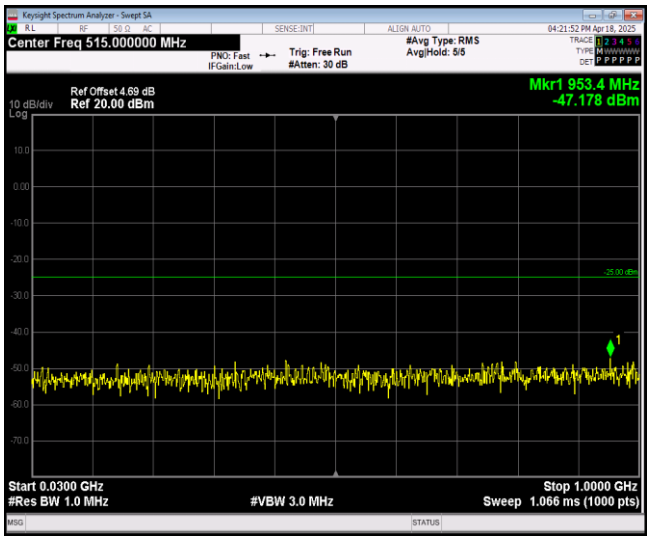
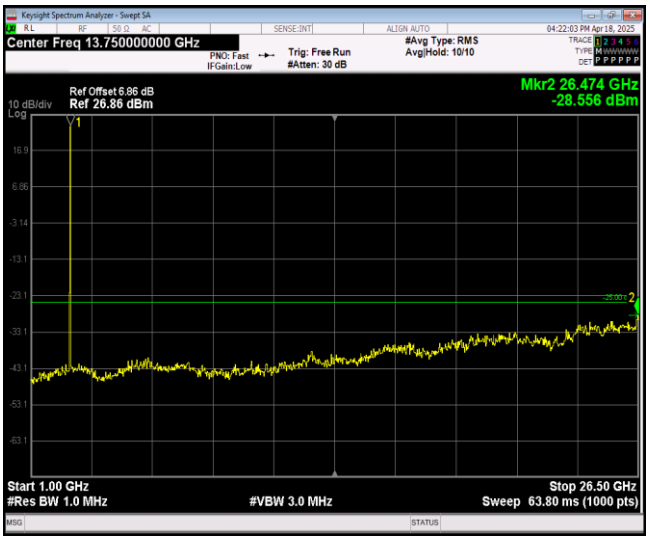
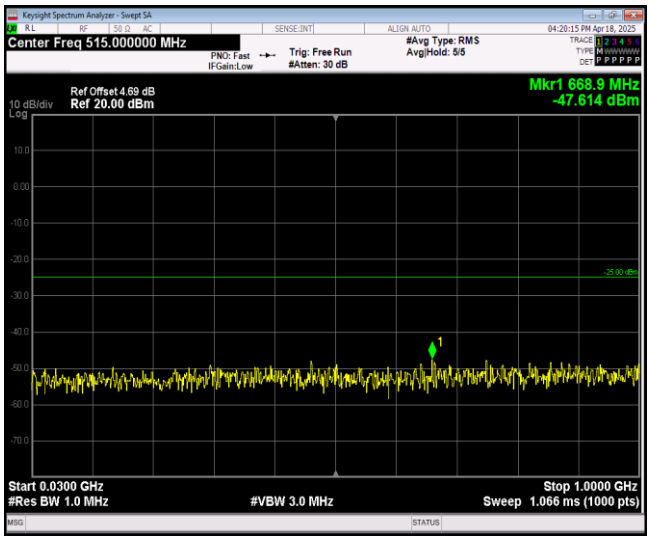
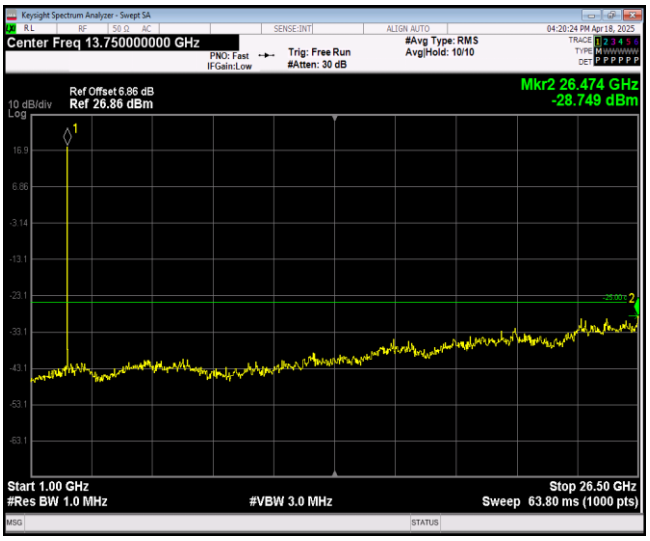


Band41-5MHz-16QAM-40640-1RB#0-Range2:1000~26500MHz





Band41-5MHz-16QAM-41215-1RB#0-Range1:30~1000MHz	Band41-5MHz-16QAM-41215-1RB#0-Range2:1000~26500MHz
	
Band41-5MHz-64QAM-40065-1RB#0-Range1:30~1000MHz	Band41-5MHz-64QAM-40065-1RB#0-Range2:1000~26500MHz
	
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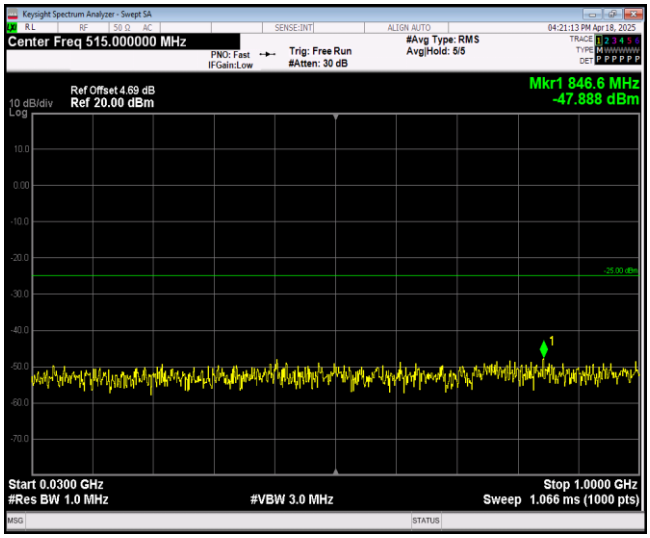
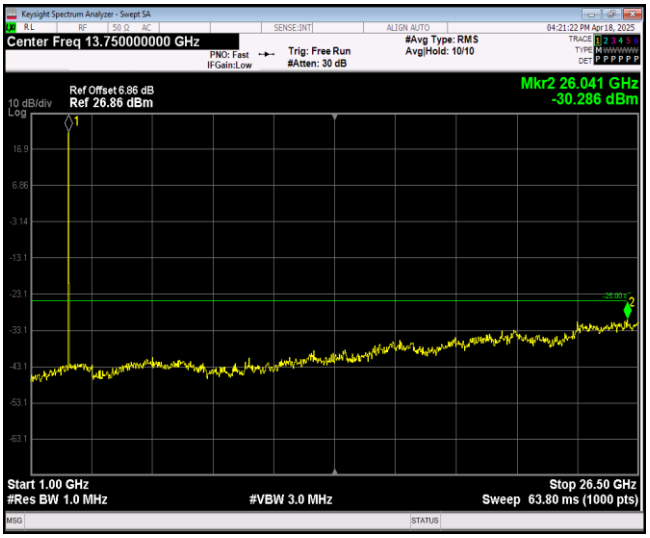
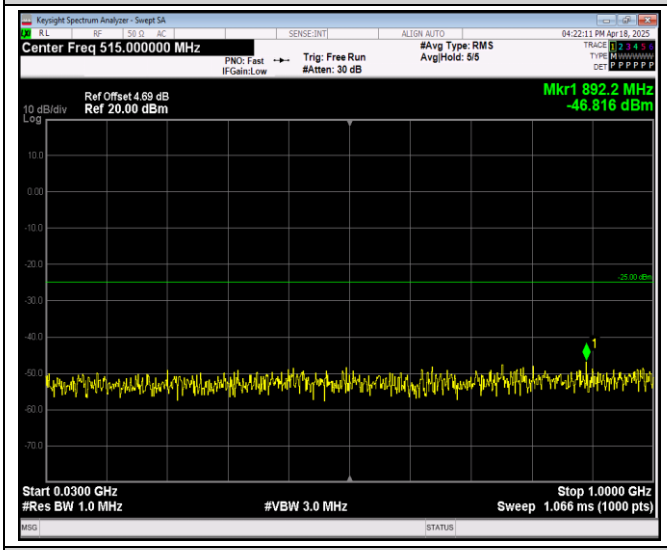


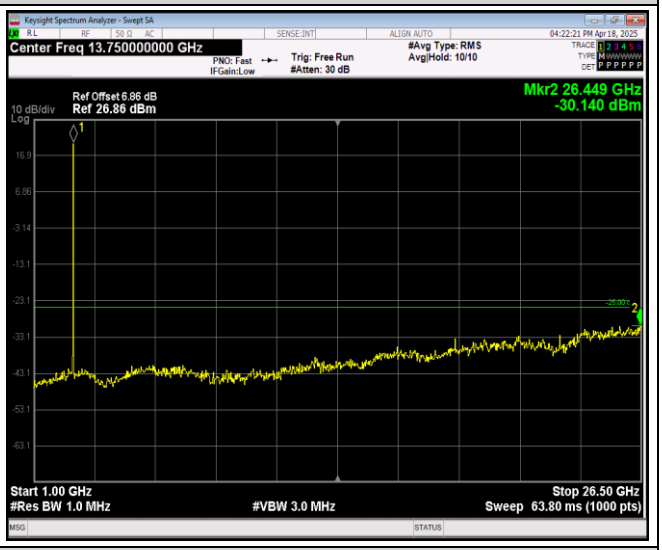
Band41-5MHz-64QAM-41215-1RB#0-Range1:30~1000MHz



Band41-5MHz-64QAM-41215-1RB#0-Range2:1000~26500MHz



Band41-20MHz-QPSK-40140-1RB#0-Range1:30~1000MHz



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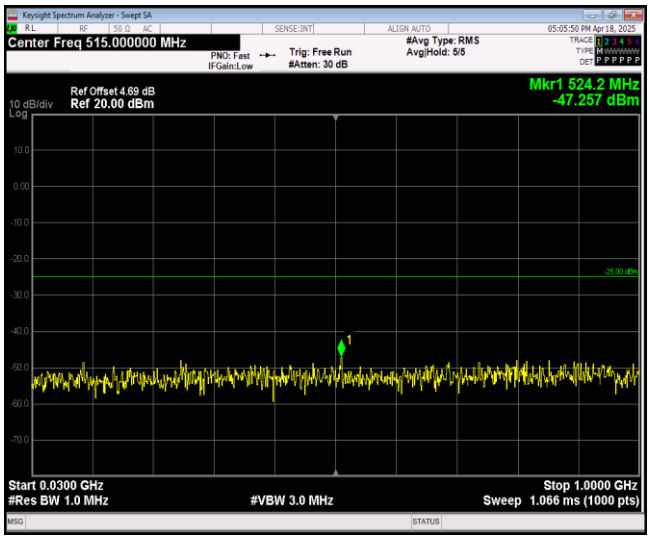
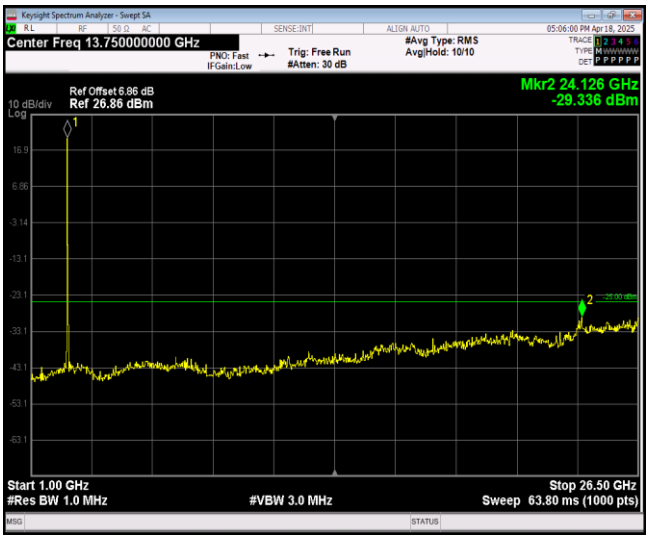
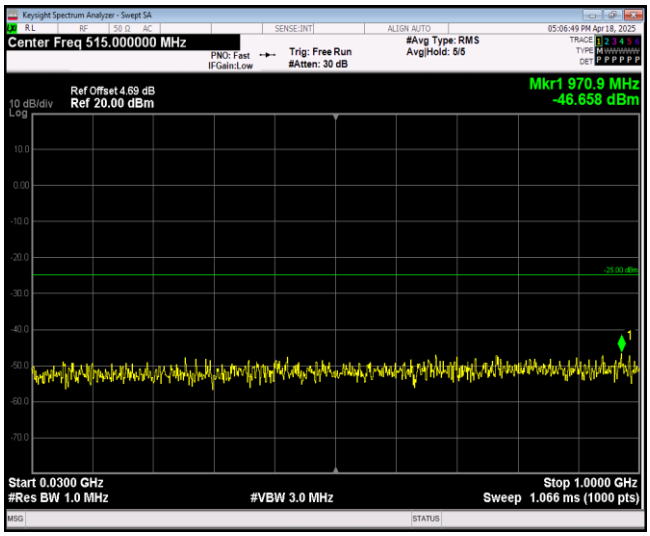
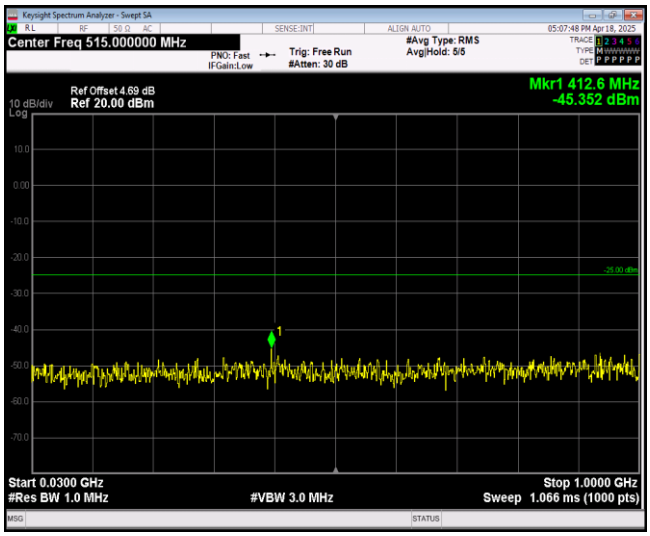
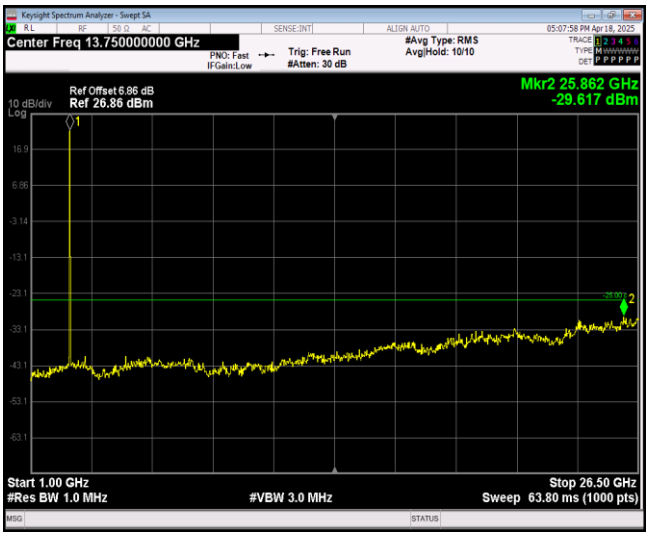
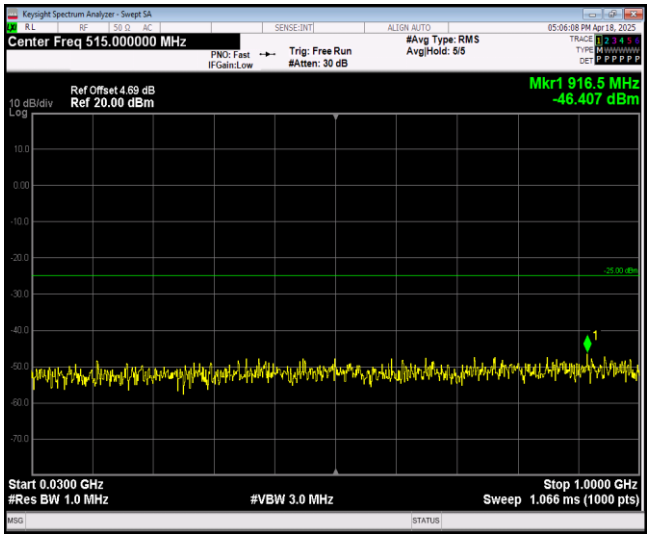




Band41-20MHz-QPSK-40640-1RB#0-Range1:30~1000MHz	Band41-20MHz-QPSK-40640-1RB#0-Range2:1000~26500MHz
	
Band41-20MHz-QPSK-41140-1RB#0-Range1:30~1000MHz	Band41-20MHz-QPSK-41140-1RB#0-Range2:1000~26500MHz
	
Band41-20MHz-16QAM-40140-1RB#0-Range1:30~1000MHz	Band41-20MHz-16QAM-40140-1RB#0-Range2:1000~26500MHz



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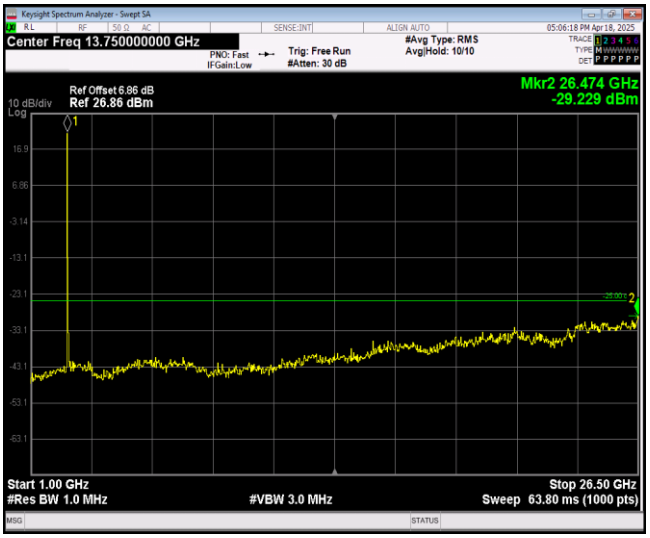
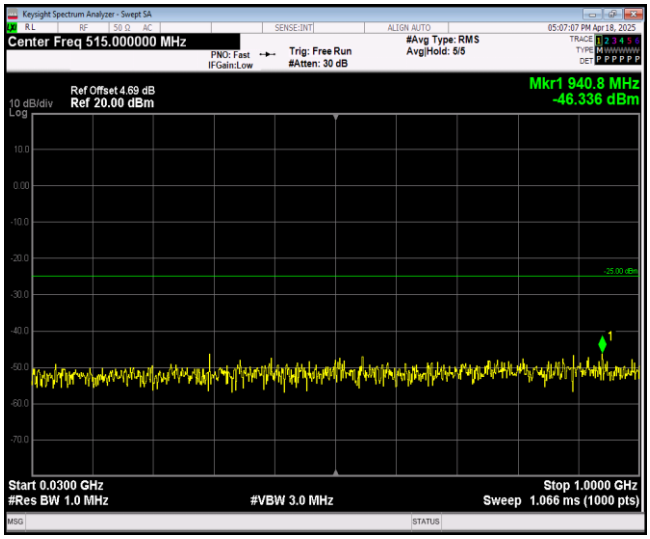
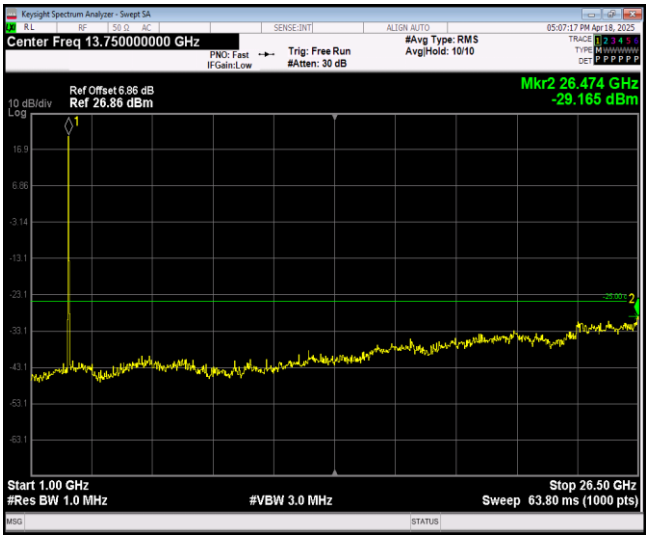


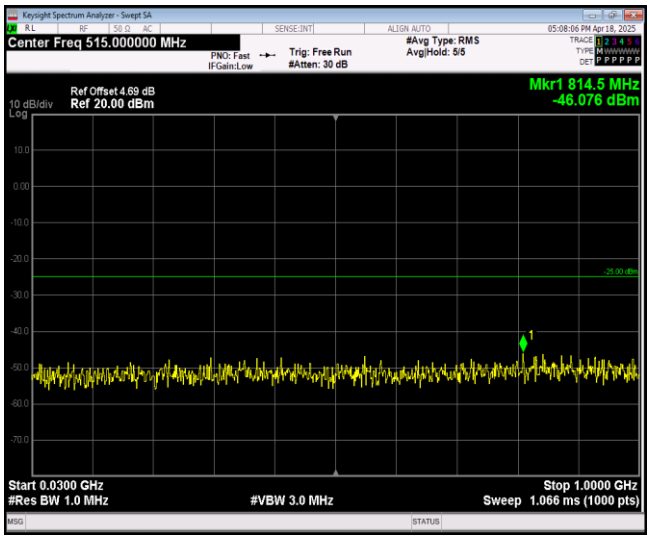
Band41-20MHz-16QAM-40640-1RB#0-Range2:1000~26500MHz

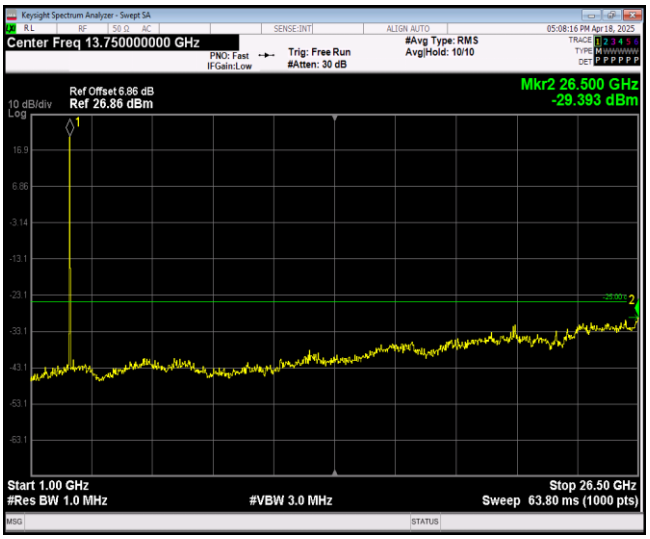


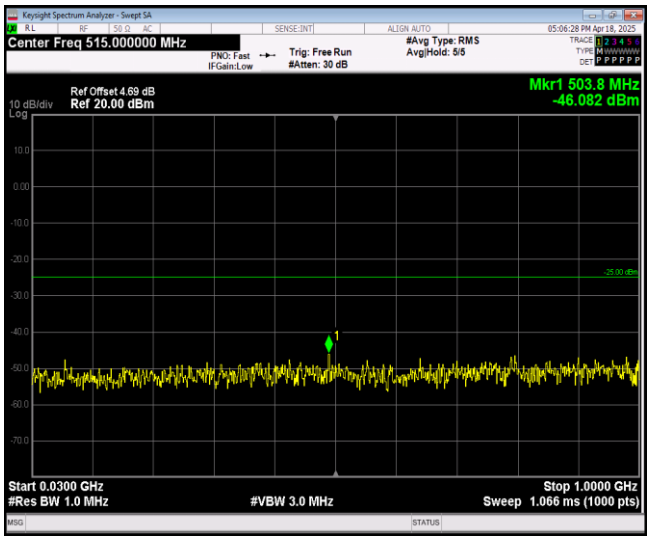
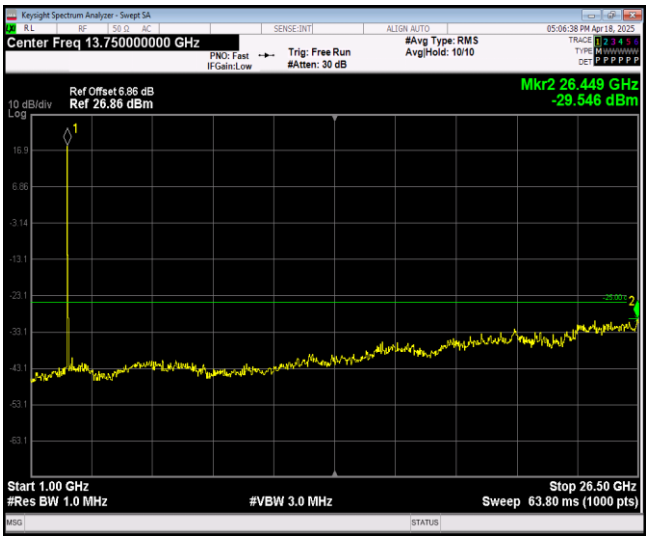
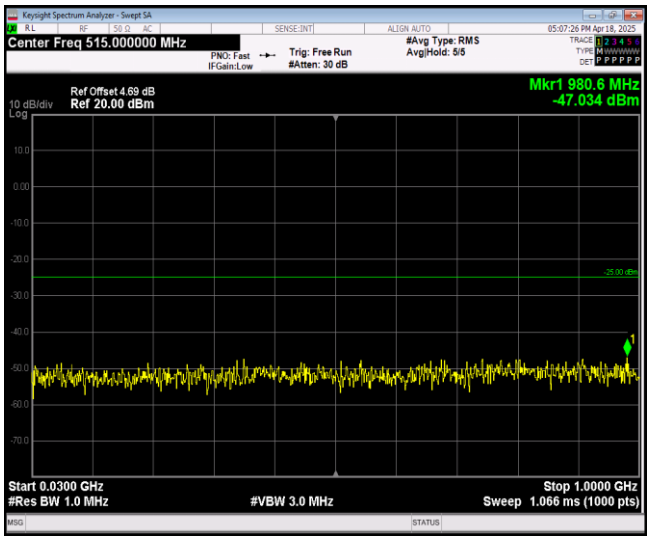
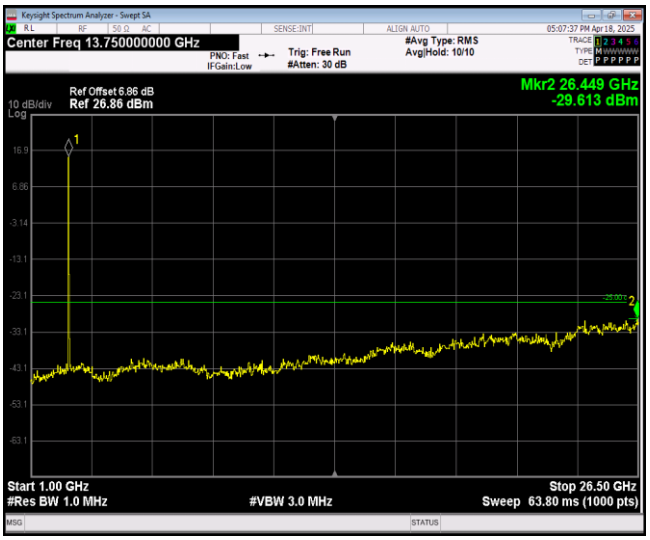
Band41-20MHz-16QAM-41140-1RB#0-Range1:30~1000MHz

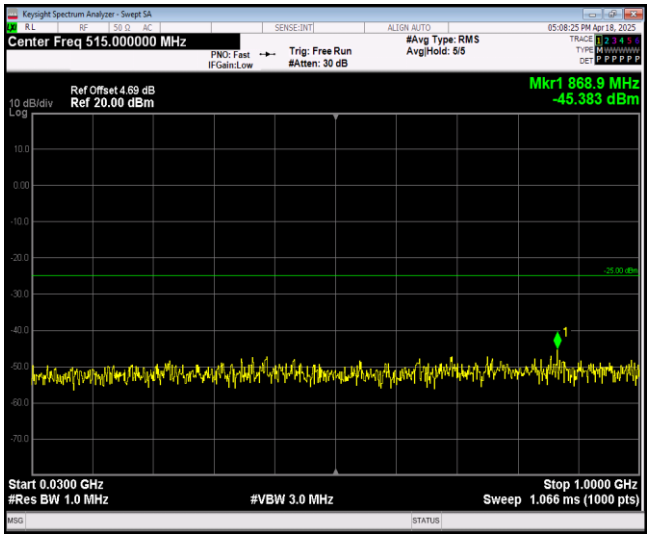


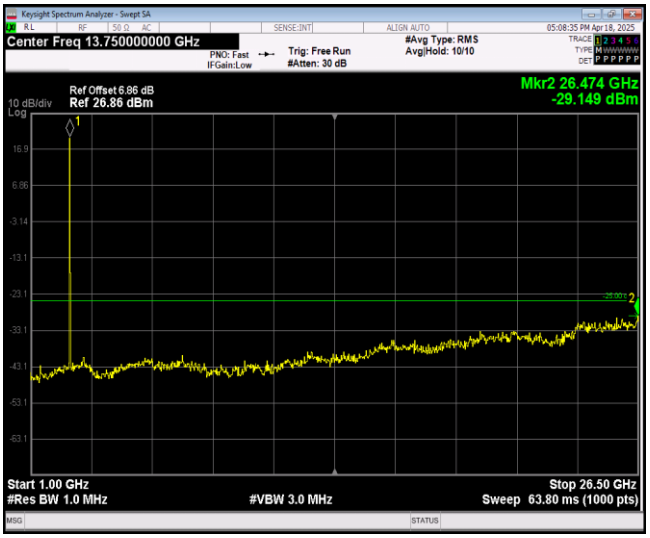
Band41-20MHz-16QAM-41140-1RB#0-Range2:1000~26500MHz





Band41-20MHz-64QAM-40140-1RB#0-Range1:30~1000MHz	Band41-20MHz-64QAM-40140-1RB#0-Range2:1000~26500MHz
	
Band41-20MHz-64QAM-40640-1RB#0-Range1:30~1000MHz	Band41-20MHz-64QAM-40640-1RB#0-Range2:1000~26500MHz
	
Band41-20MHz-64QAM-41140-1RB#0-Range1:30~1000MHz	Band41-20MHz-64QAM-41140-1RB#0-Range2:1000~26500MHz


Keysight Spectrum Analyzer - Swept SA
Center Freq 515.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 5/5
05:08:25 PM Apr 18, 2025
Ref Offset 4.69 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 868.9 MHz
-45.383 dBm
Start 0.0300 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 1.0000 GHz
Sweep 1.066 ms (1000 pts)


Keysight Spectrum Analyzer - Swept SA
Center Freq 13.750000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
05:08:35 PM Apr 18, 2025
Ref Offset 6.86 dB
10 dB/div
Ref 26.86 dBm
Log
Mkr2 26.474 GHz
-29.149 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1000 pts)

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					
3.92	-30	-10.93	-0.005814	Within authorized band for Band 2	Pass
	-20	-7.45	-0.003963		
	-10	-13.75	-0.007314		
	0	3.33	0.001771		
	10	-15.18	-0.008074		
	20	20.37	0.010835		
	30	-16.69	-0.008878		
	40	20.01	0.010644		
	50	-22.93	-0.012197		
16QAM					
3.92	-30	13.66	0.007266	Within authorized band for Band 2	Pass
	-20	-23.26	-0.012372		
	-10	19.28	0.010255		
	0	-13.89	-0.007388		
	10	-5.38	-0.002862		
	20	15.69	0.008346		
	30	15.23	0.008101		
	40	9.93	0.005282		
	50	18.20	0.009681		
64QAM					
3.92	-30	17.31	0.009207	Within authorized band for Band 2	Pass
	-20	-13.30	-0.007074		
	-10	-8.08	-0.004298		
	0	-17.70	-0.009415		
	10	15.23	0.008101		
	20	-14.31	-0.007612		
	30	13.19	0.007016		
	40	-19.96	-0.010617		
	50	-14.98	-0.007968		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	10.91	0.005803	Within authorized band for Band 2	Pass
	3.92	-24.29	-0.012920		
	4.53	18.18	0.009670		
16QAM					
25	3.45	-18.15	-0.009654	Within authorized band for Band 2	Pass
	3.92	-13.76	-0.007319		
	4.53	14.79	0.007867		
64QAM					
25	3.45	-15.13	-0.008048	Within authorized band for Band 2	Pass
	3.92	-17.80	-0.009468		
	4.53	-20.04	-0.010660		
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					
3.92	-30	8.37	0.004831	Within authorized band for Band 4	Pass
	-20	-16.59	-0.009576		
	-10	-12.33	-0.007117		
	0	-6.65	-0.003838		
	10	-18.93	-0.010926		
	20	-13.22	-0.007631		
	30	-23.96	-0.013830		
	40	-9.01	-0.005201		
	50	-6.55	-0.003781		
16QAM					
3.92	-30	14.05	0.008110	Within authorized band for Band 4	Pass
	-20	-12.50	-0.007215		
	-10	12.20	0.007042		
	0	-10.14	-0.005853		
	10	8.63	0.004981		
	20	-3.28	-0.001893		
	30	5.41	0.003123		
	40	-5.08	-0.002932		
	50	-5.45	-0.003146		
64QAM					
3.92	-30	-17.40	-0.010043	Within authorized band for Band 4	Pass
	-20	-12.40	-0.007157		
	-10	5.52	0.003186		
	0	9.61	0.005547		
	10	2.32	0.001339		
	20	-17.09	-0.009864		
	30	-11.90	-0.006869		
	40	-13.29	-0.007671		
	50	-17.74	-0.010240		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-5.87	-0.003388	Within authorized band for Band 4	Pass
	3.92	11.46	0.006615		
	4.53	-2.03	-0.001172		
16QAM					
25	3.45	-6.59	-0.003804	Within authorized band for Band 4	Pass
	3.92	-6.09	-0.003515		
	4.53	-21.04	-0.012144		
64QAM					
25	3.45	-18.90	-0.010909	Within authorized band for Band 4	Pass
	3.92	22.56	0.013022		
	4.53	-11.96	-0.006903		
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					
3.92	-30	-3.33	-0.003981	±2.5	Pass
	-20	-2.23	-0.002666		
	-10	-10.34	-0.012361		
	0	3.58	0.004280		
	10	-8.64	-0.010329		
	20	5.75	0.006874		
	30	-2.35	-0.002809		
	40	3.26	0.003897		
	50	-9.01	-0.010771		
16QAM					
3.92	-30	3.52	0.004208	±2.5	Pass
	-20	-4.48	-0.005356		
	-10	-7.77	-0.009289		
	0	-3.78	-0.004519		
	10	-10.40	-0.012433		
	20	-12.66	-0.015134		
	30	-16.02	-0.019151		
	40	-14.53	-0.017370		
	50	-8.47	-0.010126		
64QAM					
3.92	-30	-8.65	-0.010341	±2.5	Pass
	-20	6.17	0.007376		
	-10	-6.78	-0.008105		
	0	-8.44	-0.010090		
	10	-11.04	-0.013198		
	20	-10.50	-0.012552		
	30	-12.95	-0.015481		
	40	-8.38	-0.010018		
	50	-6.38	-0.007627		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-9.38	-0.011213	±2.5	Pass
	3.92	-13.33	-0.015935		
	4.53	-8.20	-0.009803		
16QAM					
25	3.45	-5.49	-0.006563	±2.5	Pass
	3.92	-5.16	-0.006169		
	4.53	-4.05	-0.004842		
64QAM					
25	3.45	-7.31	-0.008739	±2.5	Pass
	3.92	6.22	0.007436		
	4.53	-6.71	-0.008022		
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					
3.92	-30	20.36	0.008032	Within authorized band for Band 7	Pass
	-20	-11.96	-0.004718		
	-10	2.23	0.000880		
	0	-6.91	-0.002726		
	10	9.93	0.003917		
	20	21.10	0.008323		
	30	5.52	0.002178		
	40	-25.52	-0.010067		
	50	-20.83	-0.008217		
16QAM					
3.92	-30	-14.91	-0.005882	Within authorized band for Band 7	Pass
	-20	29.51	0.011641		
	-10	-8.31	-0.003278		
	0	-20.27	-0.007996		
	10	17.97	0.007089		
	20	-20.26	-0.007992		
	30	22.65	0.008935		
	40	-8.91	-0.003515		
	50	16.65	0.006568		
64QAM					
3.92	-30	13.03	0.005140	Within authorized band for Band 7	Pass
	-20	7.30	0.002880		
	-10	22.63	0.008927		
	0	15.79	0.006229		
	10	-23.10	-0.009112		
	20	-20.89	-0.008241		
	30	20.51	0.008091		
	40	-16.34	-0.006446		
	50	19.48	0.007684		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-4.02	-0.001586	Within authorized band for Band 7	Pass
	3.92	-4.23	-0.001669		
	4.53	10.81	0.004264		
16QAM					
25	3.45	22.37	0.008824	Within authorized band for Band 7	Pass
	3.92	18.75	0.007396		
	4.53	21.16	0.008347		
64QAM					
25	3.45	-16.11	-0.006355	Within authorized band for Band 7	Pass
	3.92	-17.05	-0.006726		
	4.53	-19.08	-0.007527		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 38 part:

Reference Frequency: LTE Band 38(10MHz) Middle channel=38000 Frequency=2595.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.92	-30	-34.90	-0.013449	Within authorized band for Band 38	Pass
	-20	10.01	0.003857		
	-10	17.54	0.006759		
	0	-13.48	-0.005195		
	10	-11.29	-0.004351		
	20	-12.00	-0.004624		
	30	-10.16	-0.003915		
	40	-15.44	-0.005950		
	50	-25.99	-0.010015		
16QAM					
3.92	-30	-5.18	-0.001996	Within authorized band for Band 38	Pass
	-20	13.18	0.005079		
	-10	11.67	0.004497		
	0	-16.51	-0.006362		
	10	-11.86	-0.004570		
	20	-16.14	-0.006220		
	30	-12.22	-0.004709		
	40	-14.62	-0.005634		
	50	-12.07	-0.004651		
64QAM					
3.92	-30	-11.83	-0.004559	Within authorized band for Band 38	Pass
	-20	10.11	0.003896		
	-10	-14.49	-0.005584		
	0	-17.95	-0.006917		
	10	-18.24	-0.007029		
	20	-18.38	-0.007083		
	30	-12.19	-0.004697		
	40	-14.95	-0.005761		
	50	-10.34	-0.003985		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-5.75	-0.002216	Within authorized band for Band 38	Pass
	3.92	6.28	0.002420		
	4.53	-16.14	-0.006220		
16QAM					
25	3.45	-15.15	-0.005838	Within authorized band for Band 38	Pass
	3.92	-12.47	-0.004805		
	4.53	-18.93	-0.007295		
64QAM					
25	3.45	-12.83	-0.004944	Within authorized band for Band 38	Pass
	3.92	-18.44	-0.007106		
	4.53	15.92	0.006135		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 41 part:

Reference Frequency: LTE Band 41 (10MHz) Middle channel=40640 Frequency=2595.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.92	-30	-2.98	-0.001148	Within authorized band for Band 41	Pass
	-20	10.37	0.003996		
	-10	-17.67	-0.006809		
	0	13.59	0.005237		
	10	-12.02	-0.004632		
	20	-14.08	-0.005426		
	30	-12.46	-0.004802		
	40	-16.21	-0.006247		
	50	-10.19	-0.003927		
16QAM					
3.92	-30	11.92	0.004593	Within authorized band for Band 41	Pass
	-20	-12.96	-0.004994		
	-10	-15.36	-0.005919		
	0	-14.76	-0.005688		
	10	-11.19	-0.004312		
	20	11.32	0.004362		
	30	-7.52	-0.002898		
	40	8.61	0.003318		
	50	-19.43	-0.007487		
64QAM					
3.92	-30	-16.67	-0.006424	Within authorized band for Band 41	Pass
	-20	6.67	0.002570		
	-10	-16.62	-0.006405		
	0	-14.18	-0.005464		
	10	-9.56	-0.003684		
	20	-16.01	-0.006170		
	30	12.86	0.004956		
	40	-14.53	-0.005599		
	50	10.76	0.004146		

Voltage					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-13.93	-0.005368	Within authorized band for Band 41	Pass
	3.92	-17.57	-0.006771		
	4.53	-18.11	-0.006979		
16QAM					
25	3.45	4.46	0.001719	Within authorized band for Band41	Pass
	3.92	-15.01	-0.005784		
	4.53	-7.42	-0.002859		
64QAM					
25	3.45	-16.69	-0.006432	Within authorized band for Band41	Pass
	3.92	8.83	0.003403		
	4.53	10.67	0.004112		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					