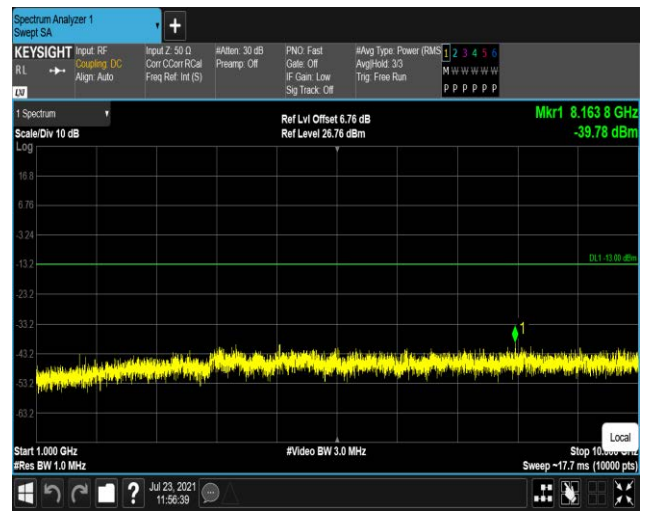


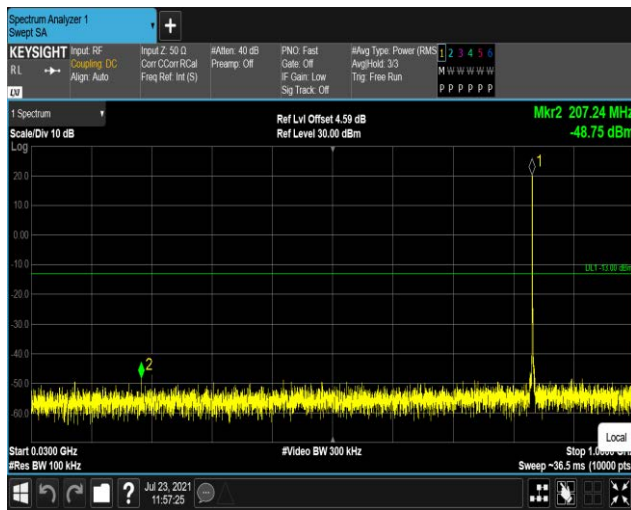
Band5-1.4MHz-QPSK-20407:30~1000MHz



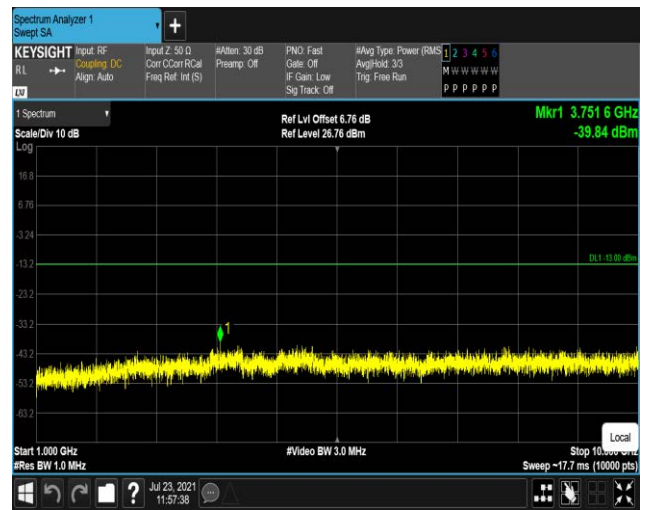
Band5-1.4MHz-QPSK-20407:1000~10000MHz



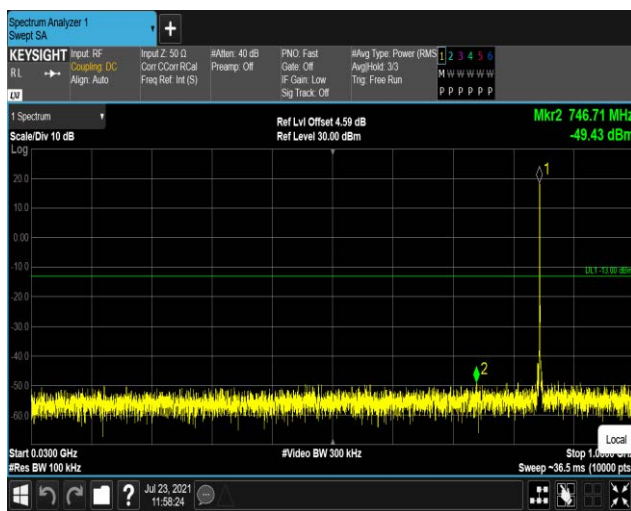
Band5-1.4MHz-QPSK-20525:30~1000MHz



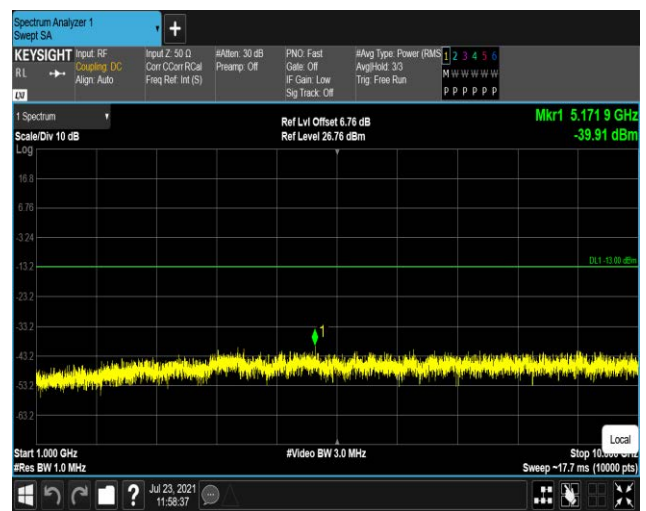
Band5-1.4MHz-QPSK-20525:1000~10000MHz



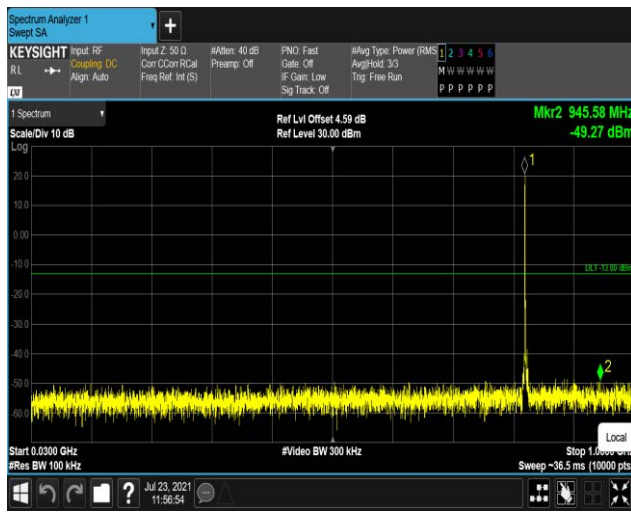
Band5-1.4MHz-QPSK-20643:30~1000MHz



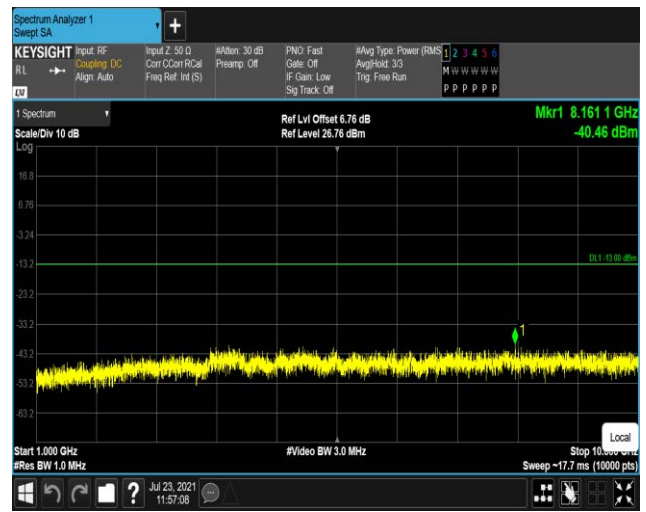
Band5-1.4MHz-QPSK-20643:1000~10000MHz



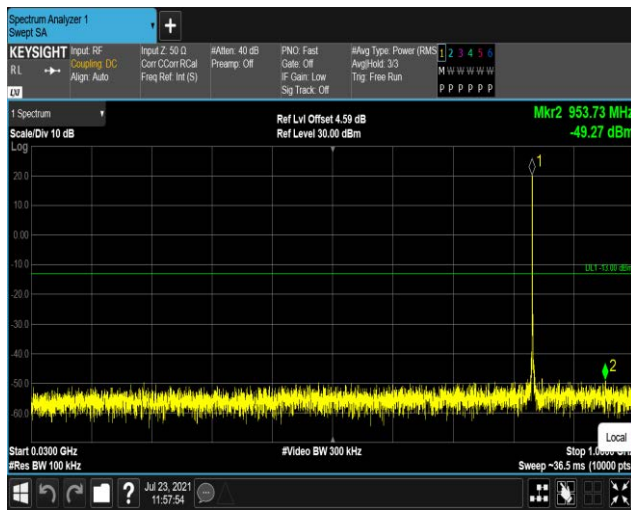
Band5-1.4MHz-16QAM-20407:30~1000MHz



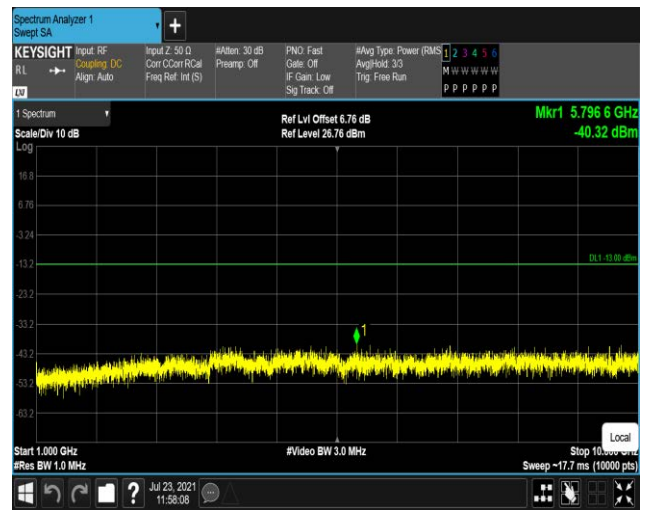
Band5-1.4MHz-16QAM-20407:1000~10000MHz



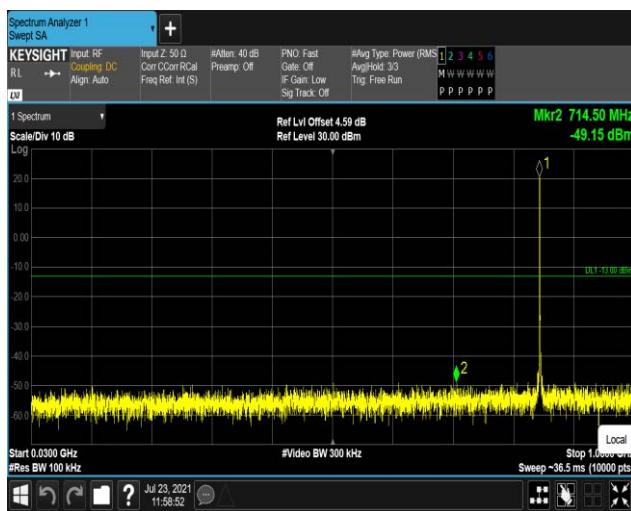
Band5-1.4MHz-16QAM-20525:30~1000MHz



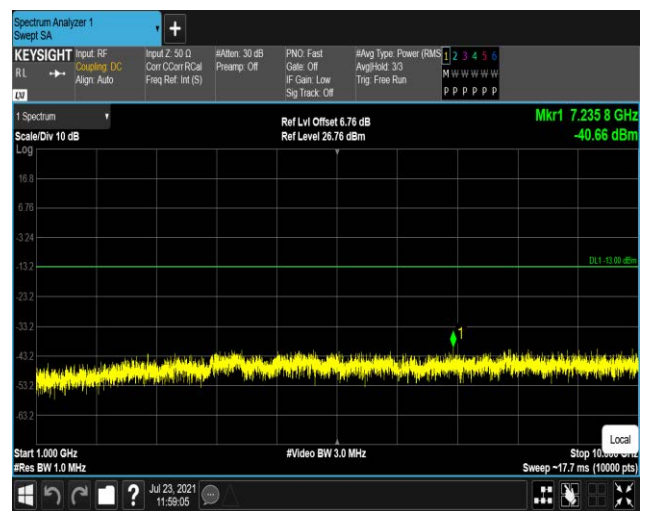
Band5-1.4MHz-16QAM-20525:1000~10000MHz



Band5-1.4MHz-16QAM-20643:30~1000MHz



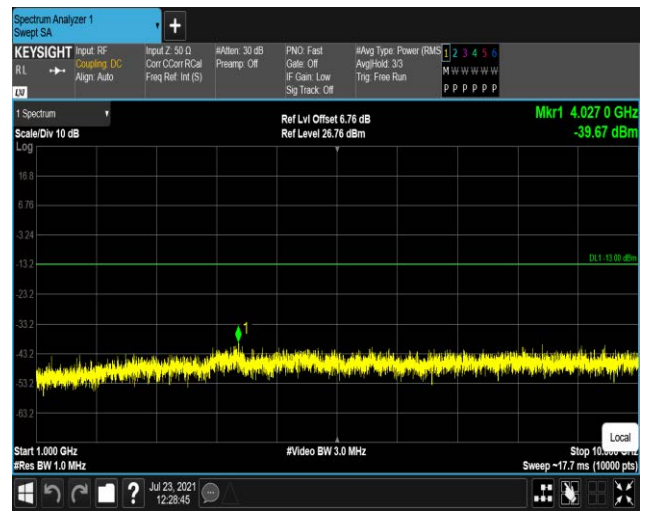
Band5-1.4MHz-16QAM-20643:1000~10000MHz



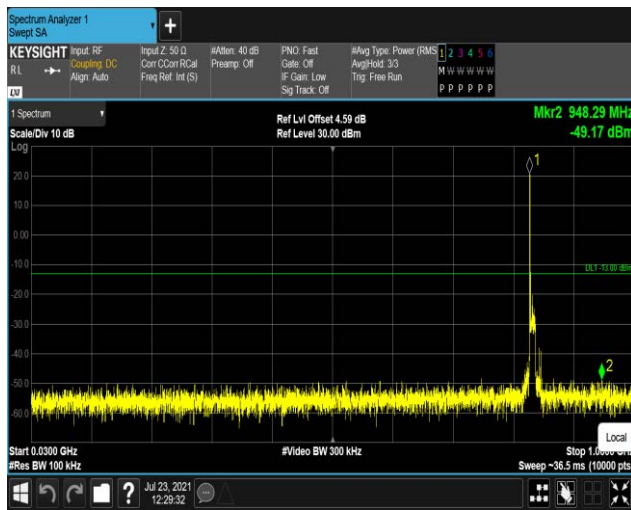
Band5-10MHz-QPSK-20450:30~1000MHz



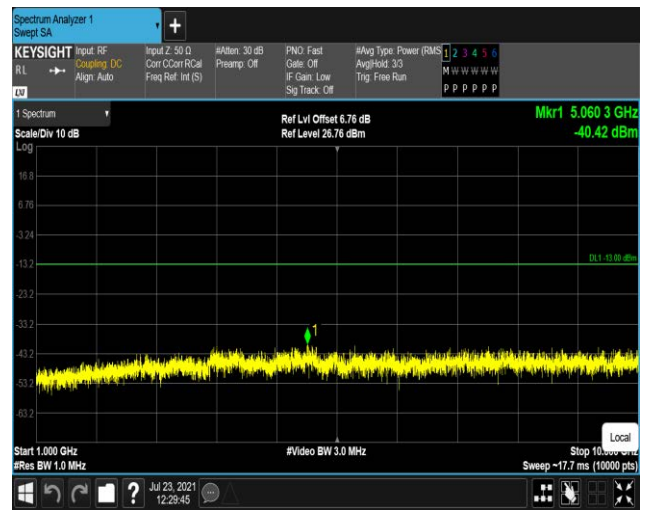
Band5-10MHz-QPSK-20450:1000~10000MHz



Band5-10MHz-QPSK-20525:30~1000MHz



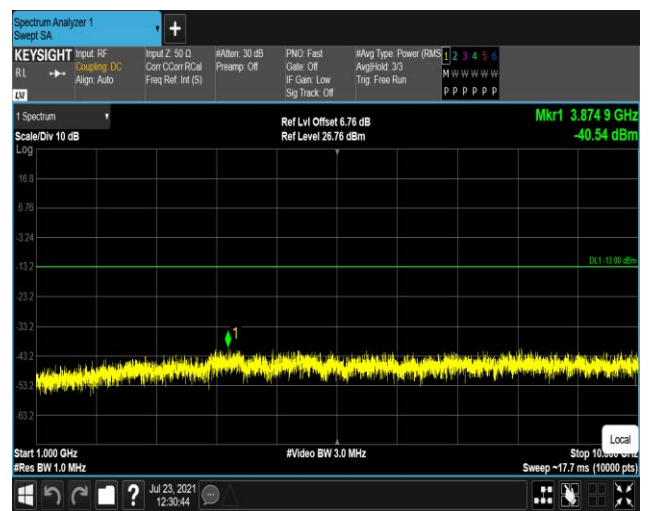
Band5-10MHz-QPSK-20525:1000~10000MHz



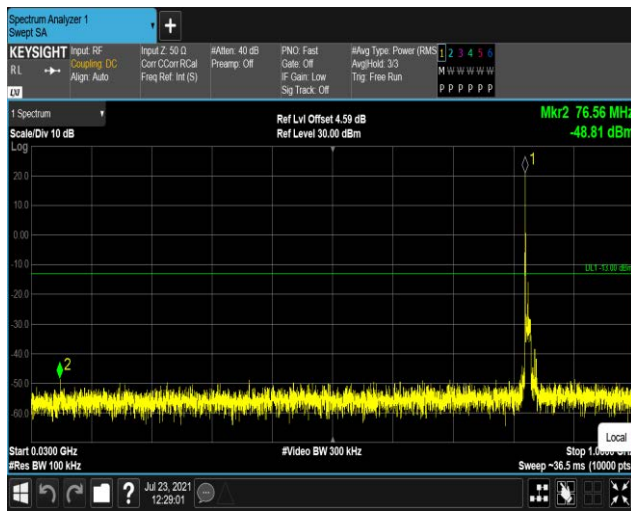
Band5-10MHz-QPSK-20600:30~1000MHz



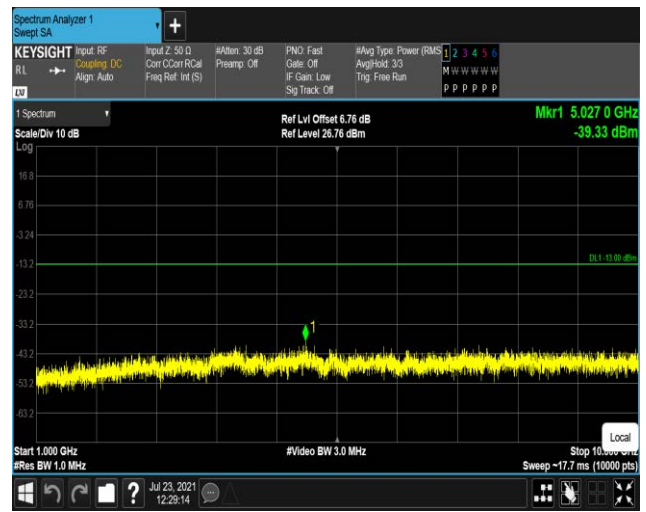
Band5-10MHz-QPSK-20600:1000~10000MHz



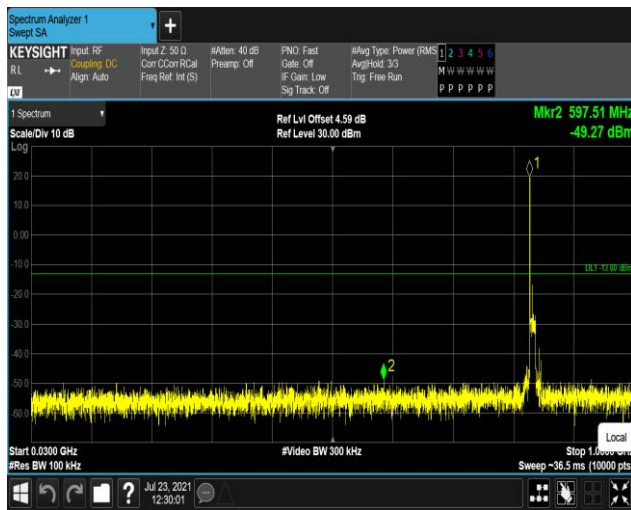
Band5-10MHz-16QAM-20450:30~1000MHz



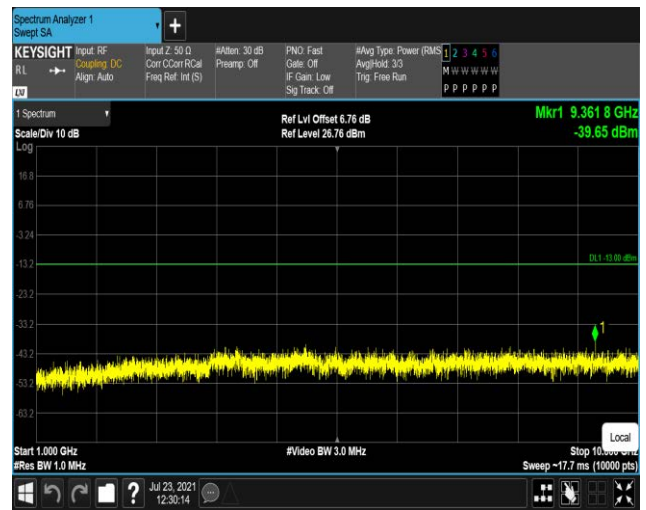
Band5-10MHz-16QAM-20450:1000~10000MHz



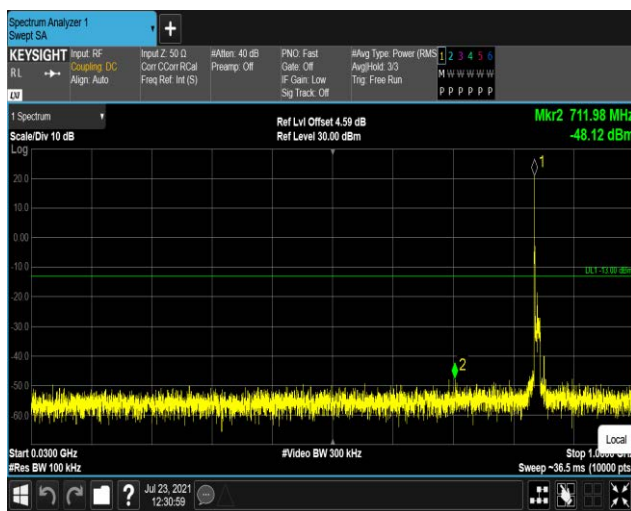
Band5-10MHz-16QAM-20525:30~1000MHz



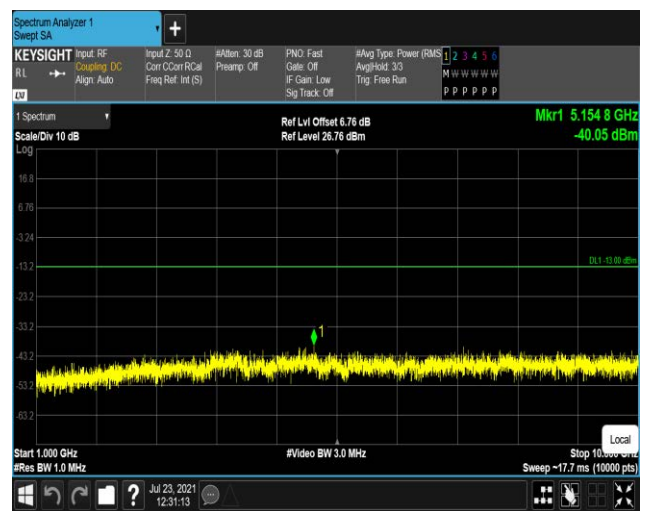
Band5-10MHz-16QAM-20525:1000~10000MHz

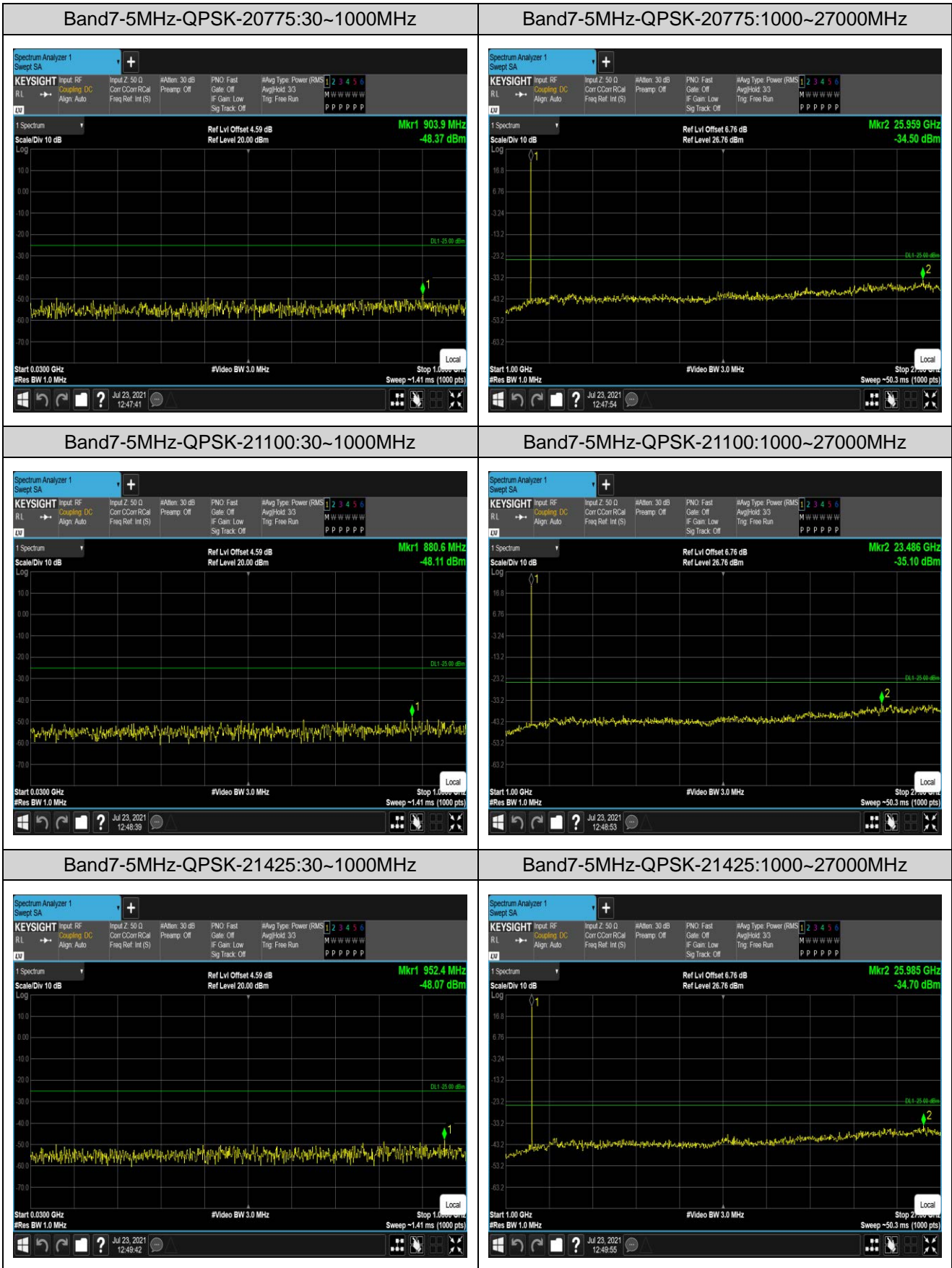


Band5-10MHz-16QAM-20600:30~1000MHz



Band5-10MHz-16QAM-20600:1000~10000MHz

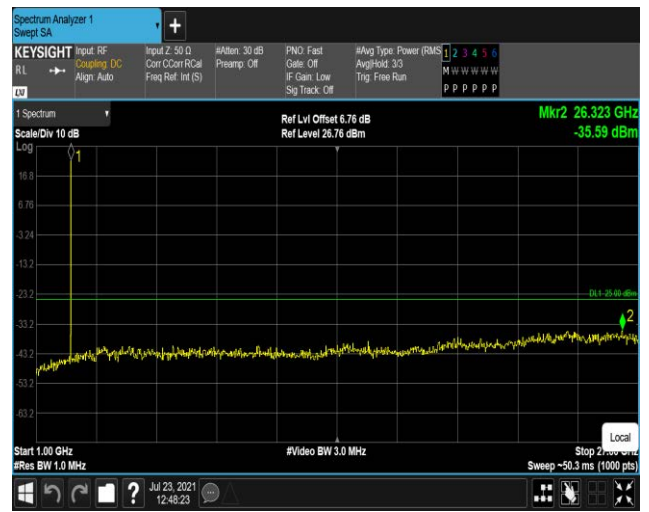




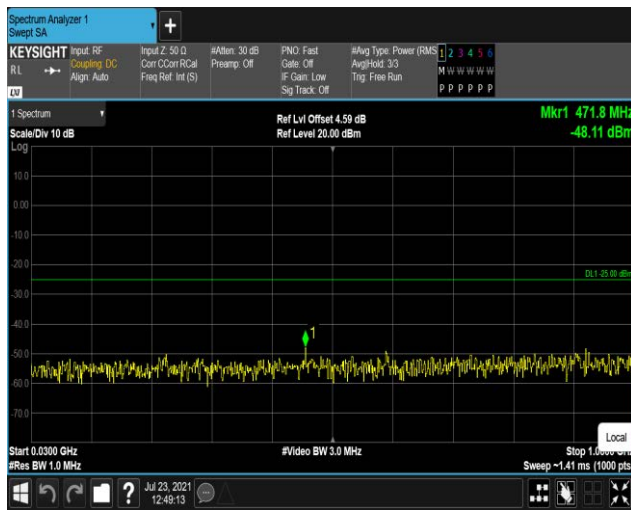
Band7-5MHz-16QAM-20775:30~1000MHz



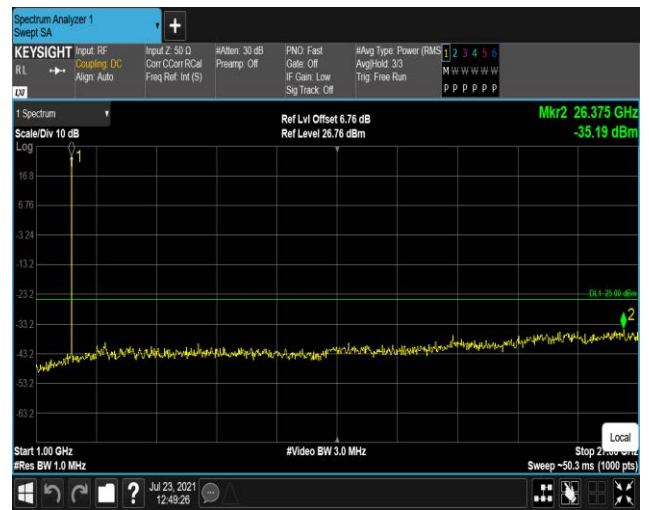
Band7-5MHz-16QAM-20775:1000~27000MHz



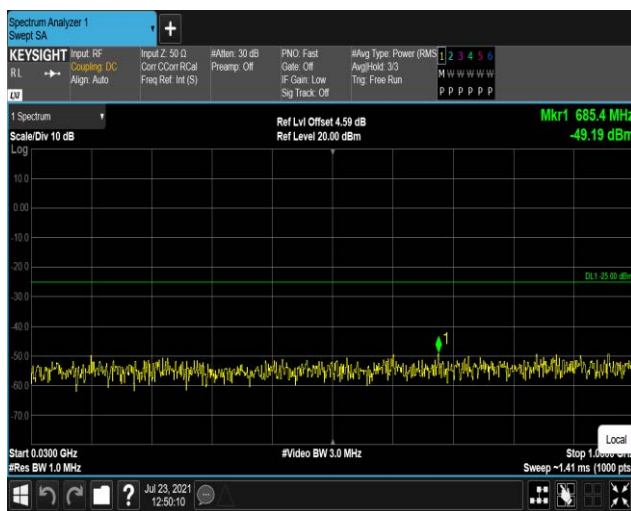
Band7-5MHz-16QAM-21100:30~1000MHz



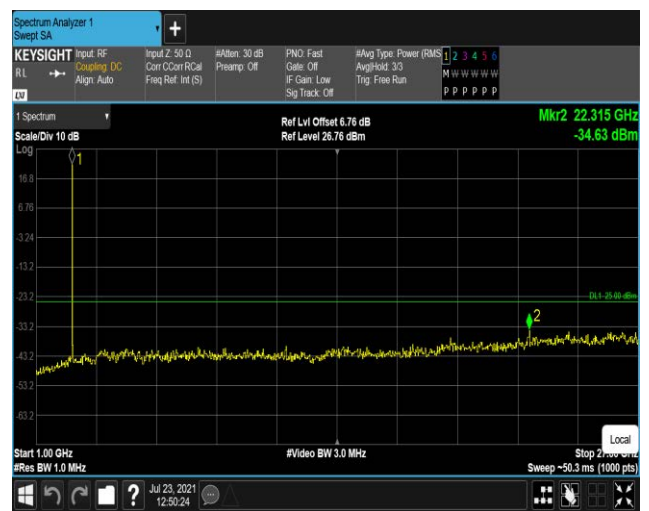
Band7-5MHz-16QAM-21100:1000~27000MHz



Band7-5MHz-16QAM-21425:30~1000MHz



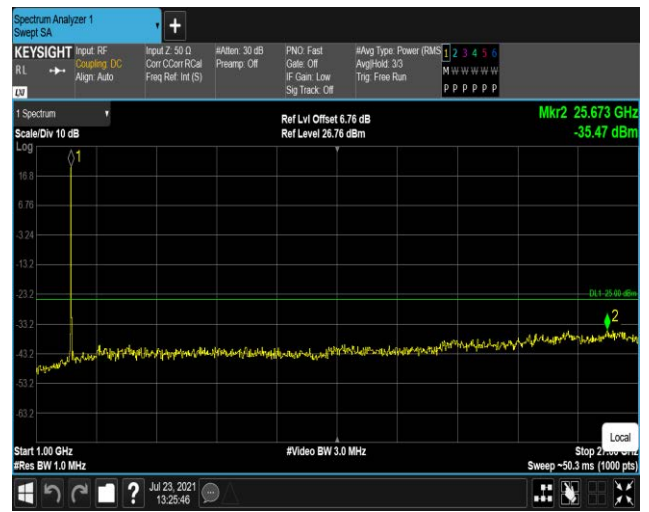
Band7-5MHz-16QAM-21425:1000~27000MHz



Band7-20MHz-QPSK-20850:30~1000MHz



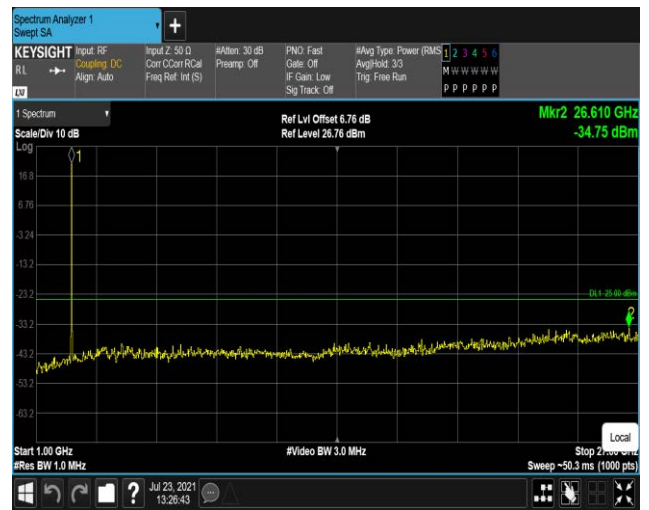
Band7-20MHz-QPSK-20850:1000~27000MHz



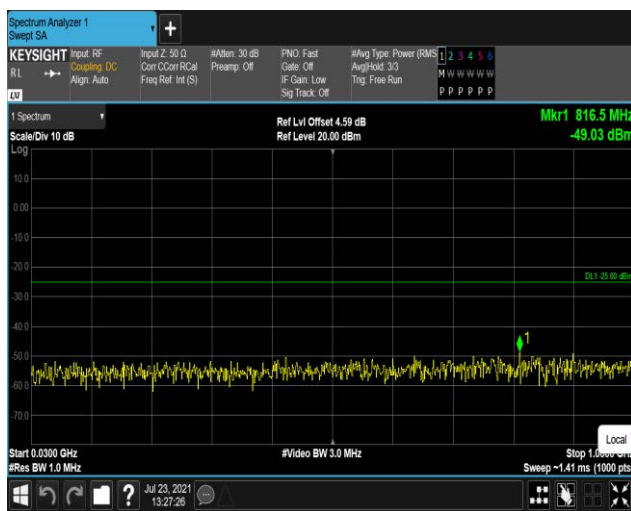
Band7-20MHz-QPSK-21100:30~1000MHz



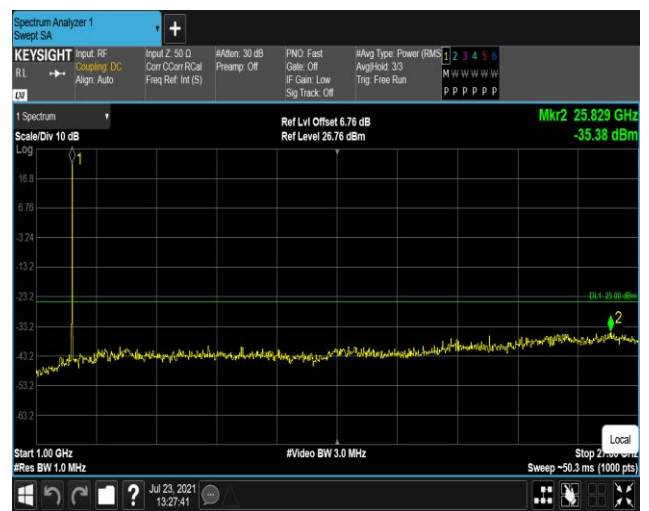
Band7-20MHz-QPSK-21100:1000~27000MHz



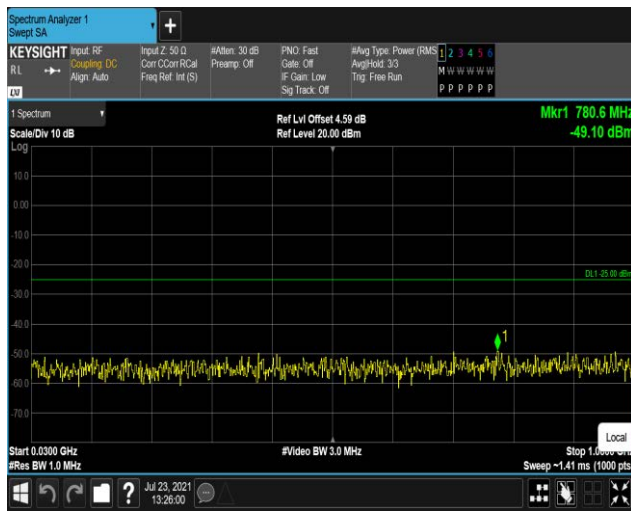
Band7-20MHz-QPSK-21350:30~1000MHz



Band7-20MHz-QPSK-21350:1000~27000MHz



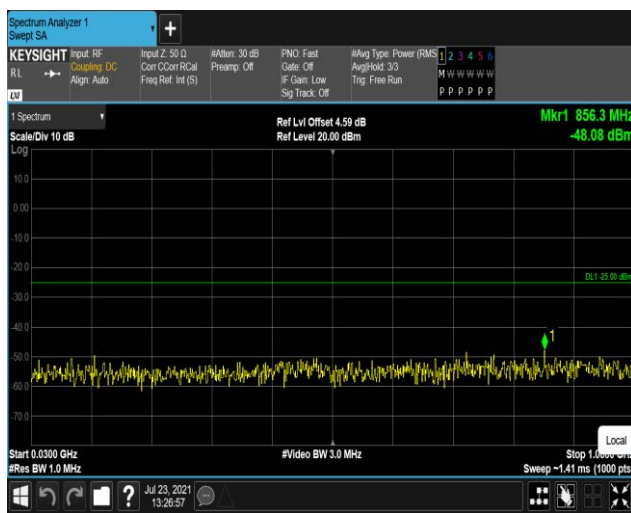
Band7-20MHz-16QAM-20850:30~1000MHz



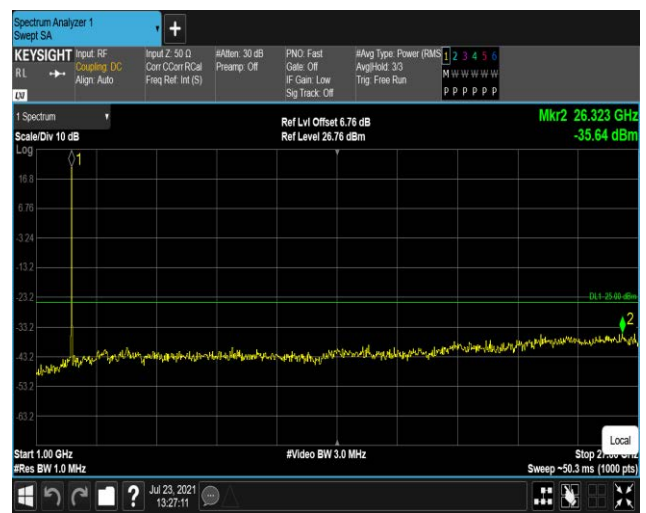
Band7-20MHz-16QAM-20850:1000~27000MHz



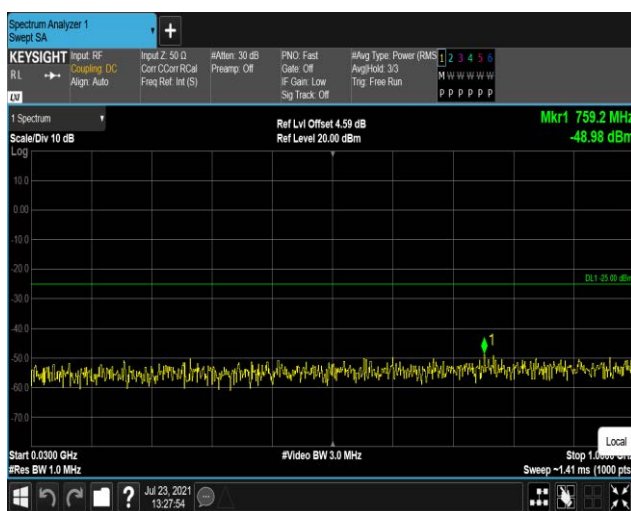
Band7-20MHz-16QAM-21100:30~1000MHz



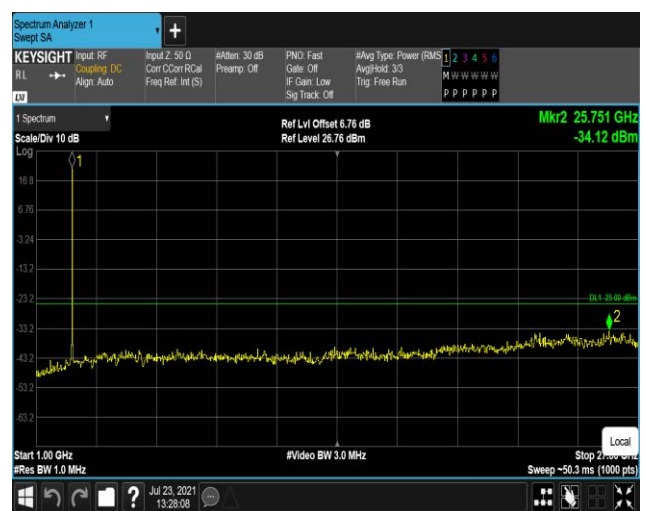
Band7-20MHz-16QAM-21100:1000~27000MHz



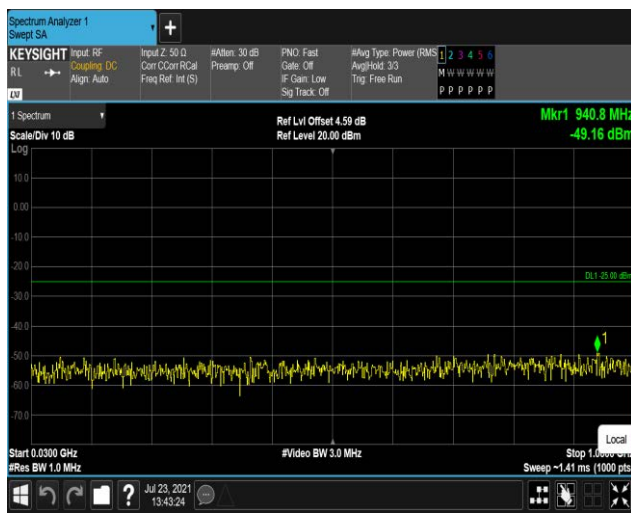
Band7-20MHz-16QAM-21350:30~1000MHz



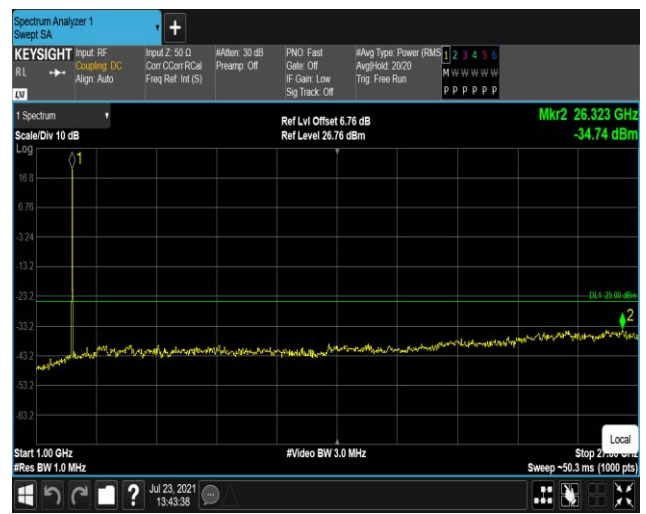
Band7-20MHz-16QAM-21350:1000~27000MHz



Band38-5MHz-QPSK-37775:30~1000MHz



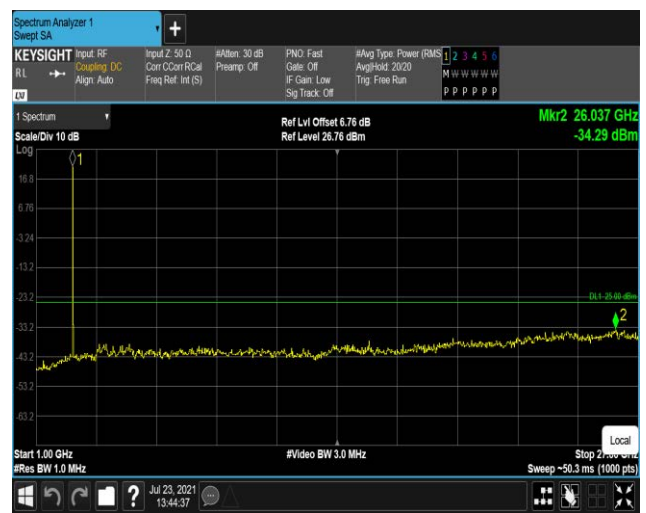
Band38-5MHz-QPSK-37775:1000~27000MHz



Band38-5MHz-QPSK-38000:30~1000MHz



Band38-5MHz-QPSK-38000:1000~27000MHz



Band38-5MHz-QPSK-38225:30~1000MHz



Band38-5MHz-QPSK-38225:1000~27000MHz



Band38-5MHz-16QAM-37775:30~1000MHz



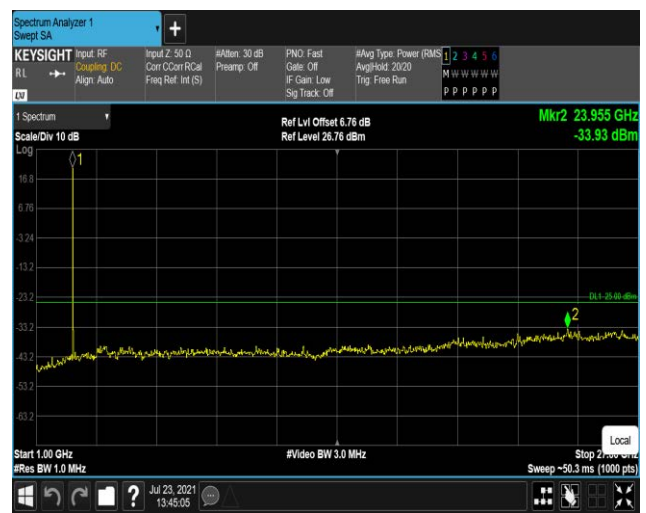
Band38-5MHz-16QAM-37775:1000~27000MHz



Band38-5MHz-16QAM-38000:30~1000MHz



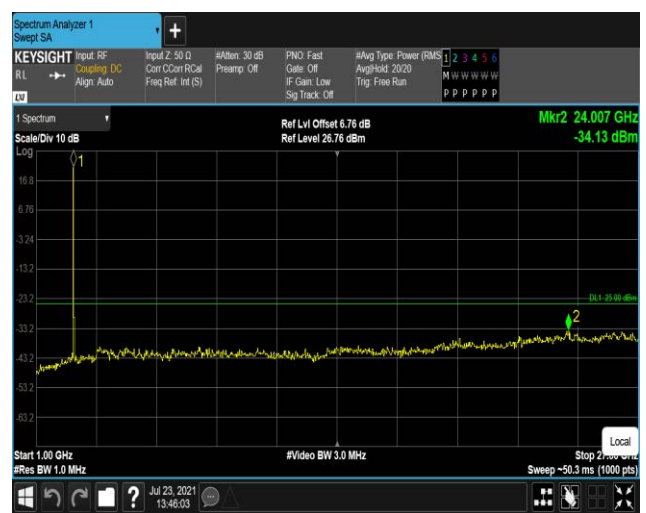
Band38-5MHz-16QAM-38000:1000~27000MHz



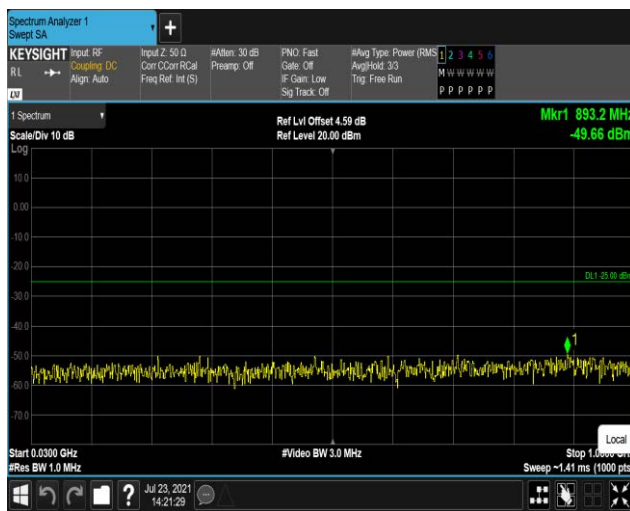
Band38-5MHz-16QAM-38225:30~1000MHz



Band38-5MHz-16QAM-38225:1000~27000MHz



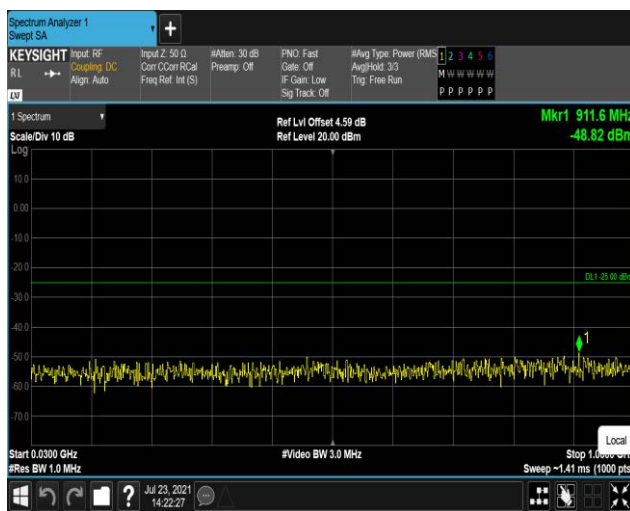
Band38-20MHz-QPSK-37850:30~1000MHz



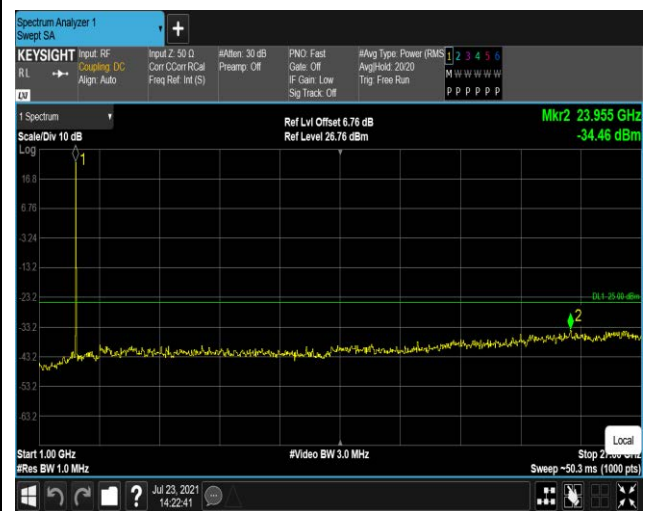
Band38-20MHz-QPSK-37850:1000~27000MHz



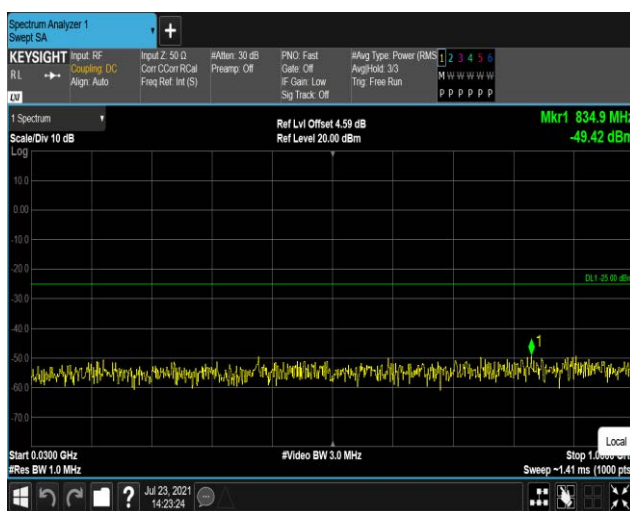
Band38-20MHz-QPSK-38000:30~1000MHz



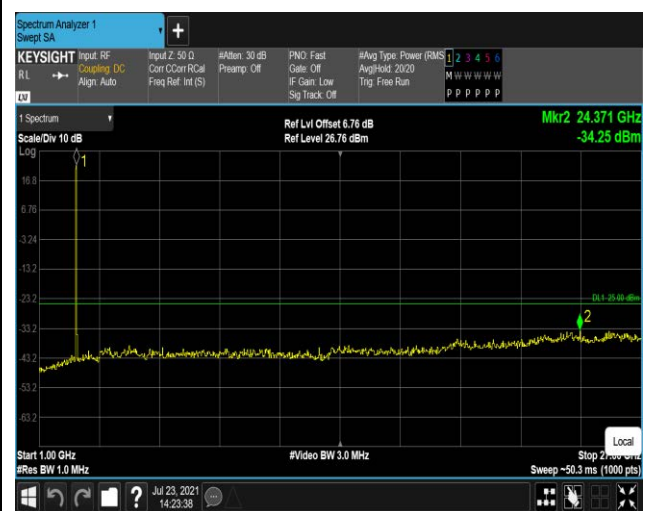
Band38-20MHz-QPSK-38000:1000~27000MHz



Band38-20MHz-QPSK-38150:30~1000MHz



Band38-20MHz-QPSK-38150:1000~27000MHz



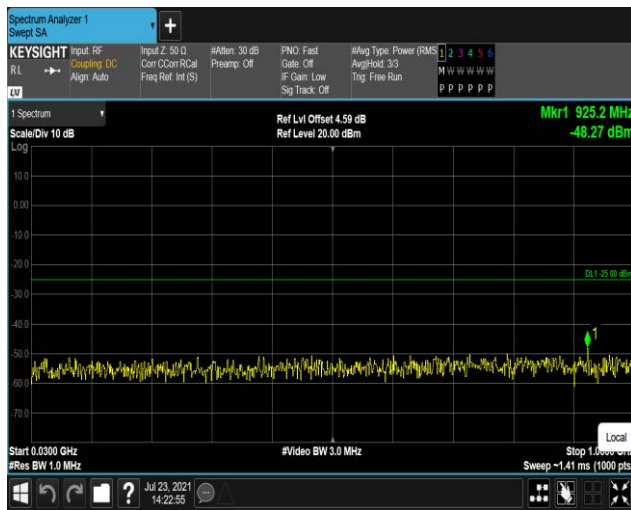
Band38-20MHz-16QAM-37850:30~1000MHz



Band38-20MHz-16QAM-37850:1000~27000MHz



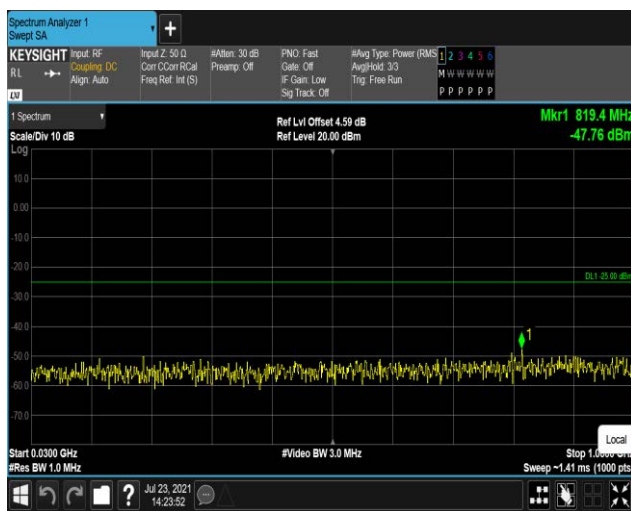
Band38-20MHz-16QAM-38000:30~1000MHz



Band38-20MHz-16QAM-38000:1000~27000MHz



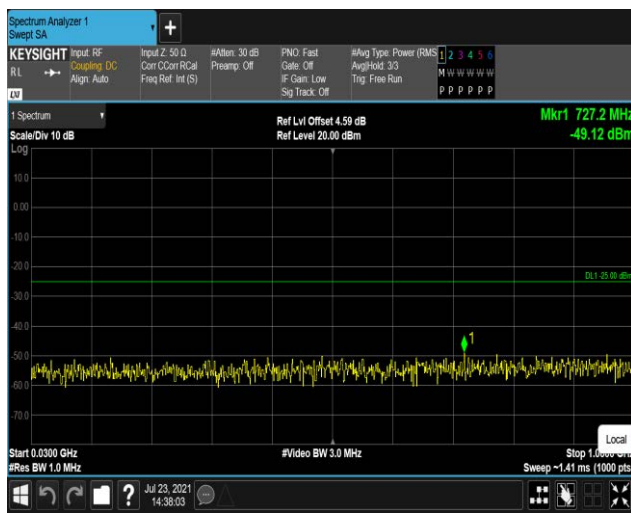
Band38-20MHz-16QAM-38150:30~1000MHz



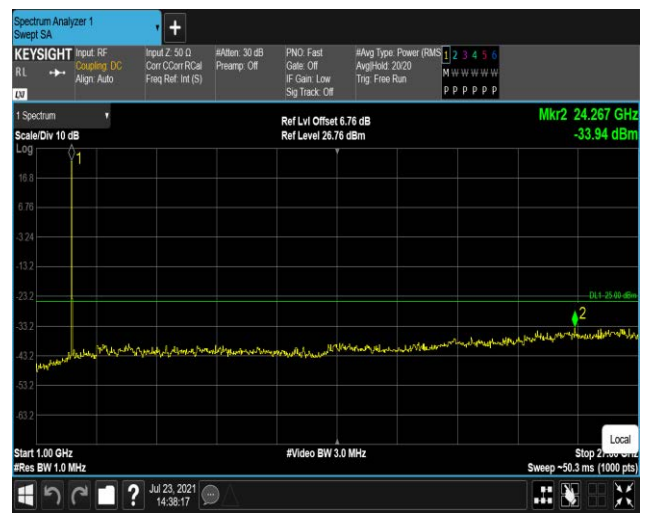
Band38-20MHz-16QAM-38150:1000~27000MHz



Band41-5MHz-QPSK-40065:30~1000MHz



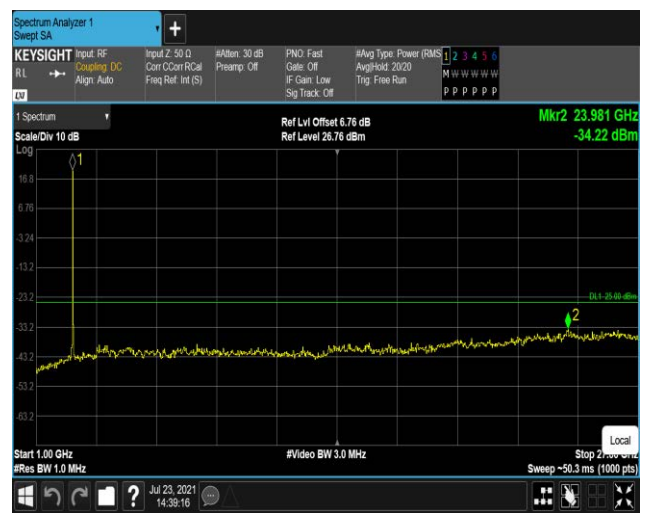
Band41-5MHz-QPSK-40065:1000~27000MHz



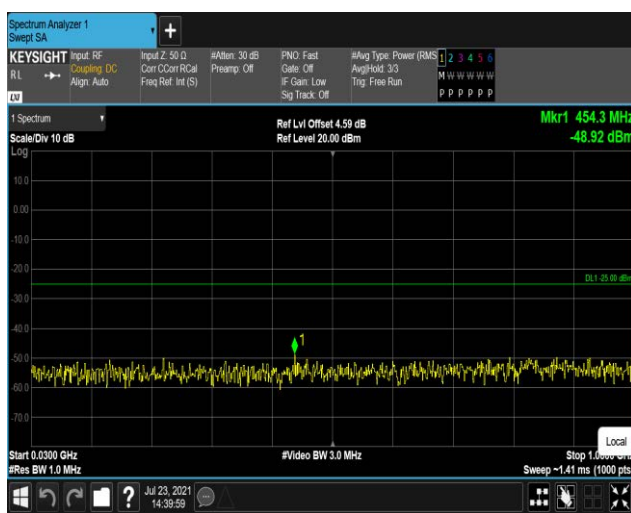
Band41-5MHz-QPSK-40640:30~1000MHz



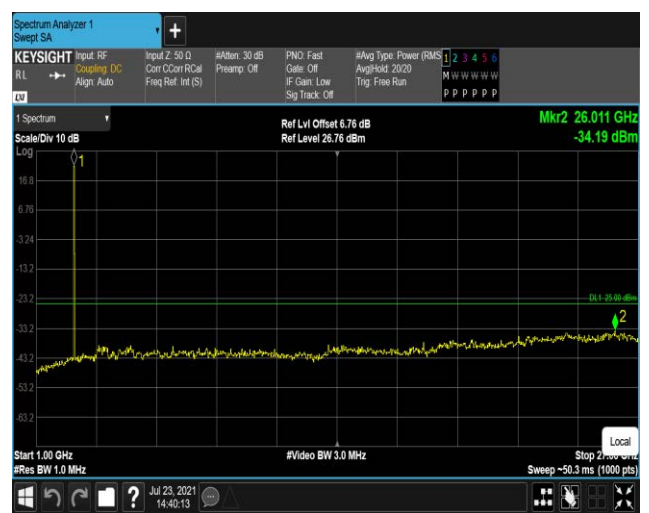
Band41-5MHz-QPSK-40640:1000~27000MHz



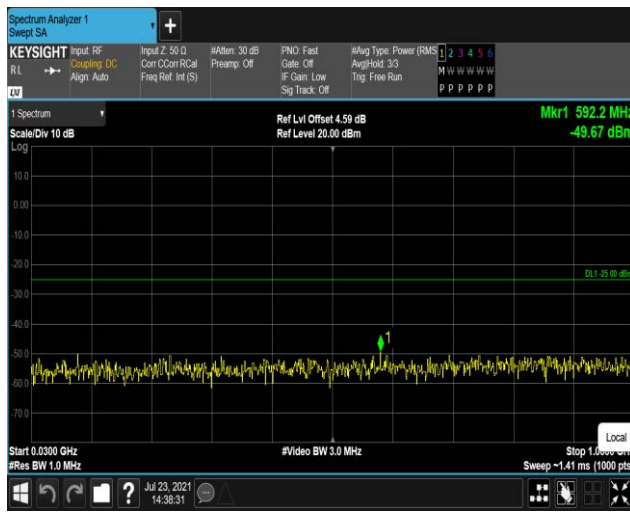
Band41-5MHz-QPSK-41215:30~1000MHz



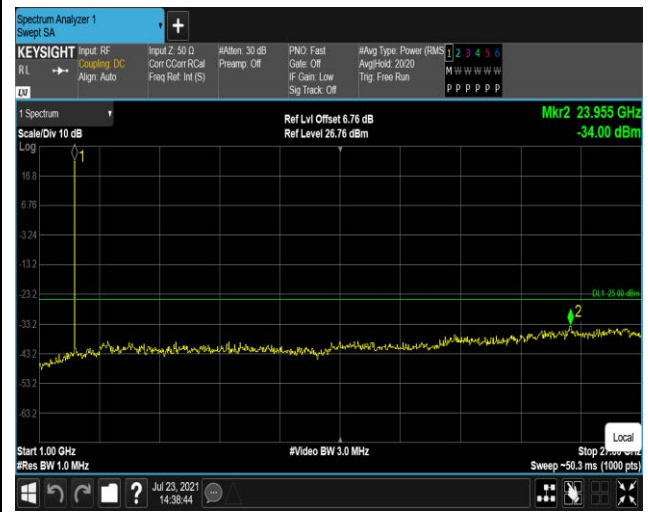
Band41-5MHz-QPSK-41215:1000~27000MHz



Band41-5MHz-16QAM-40065:30~1000MHz



Band41-5MHz-16QAM-40065:1000~27000MHz



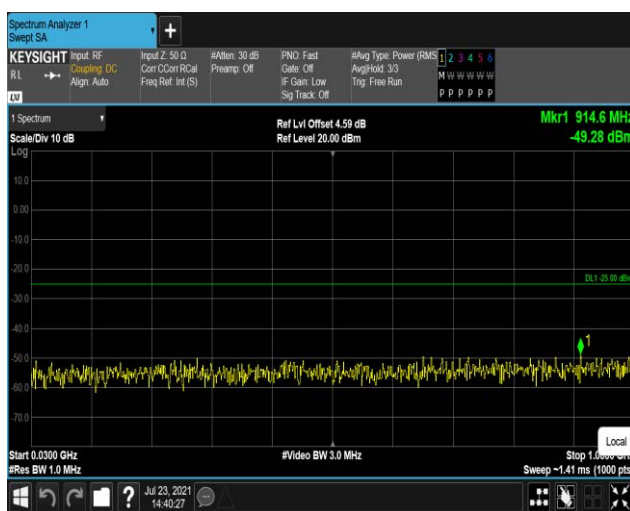
Band41-5MHz-16QAM-40640:30~1000MHz



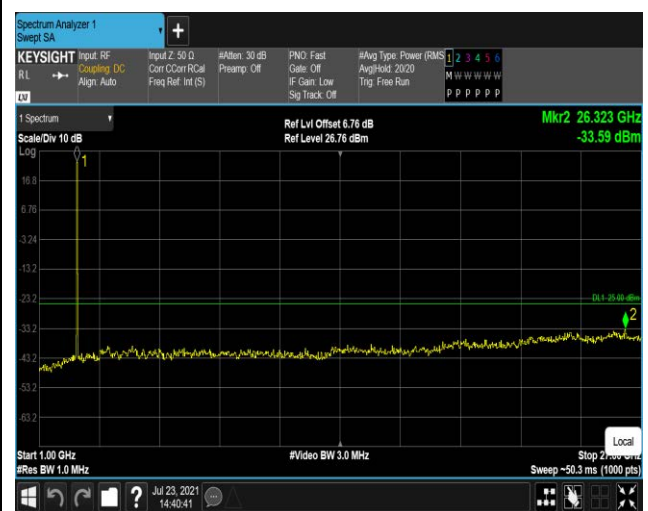
Band41-5MHz-16QAM-40640:1000~27000MHz



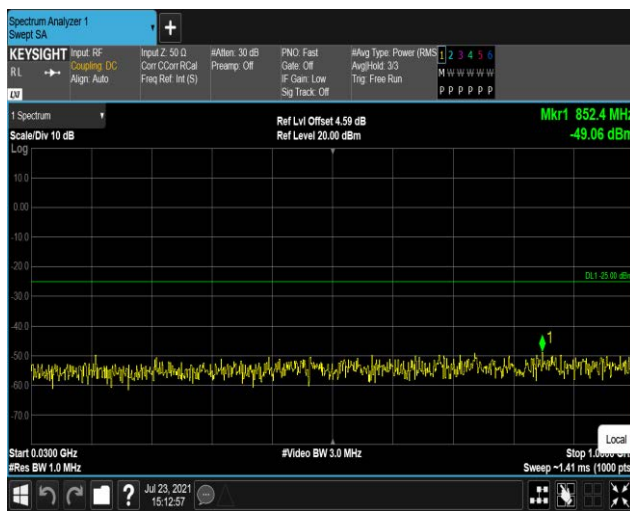
Band41-5MHz-16QAM-41215:30~1000MHz



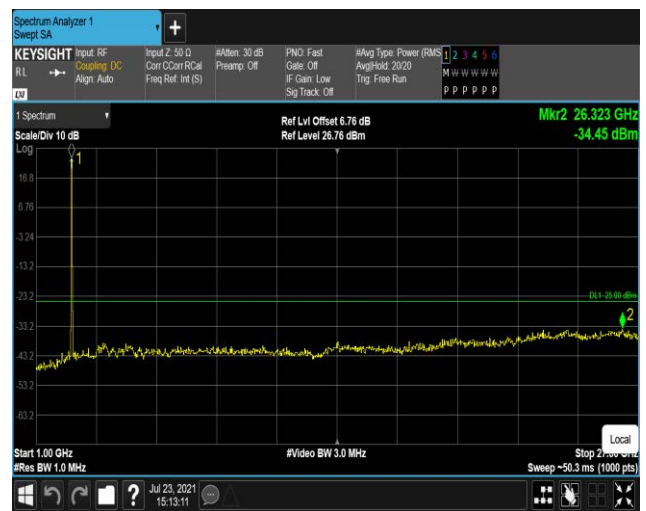
Band41-5MHz-16QAM-41215:1000~27000MHz



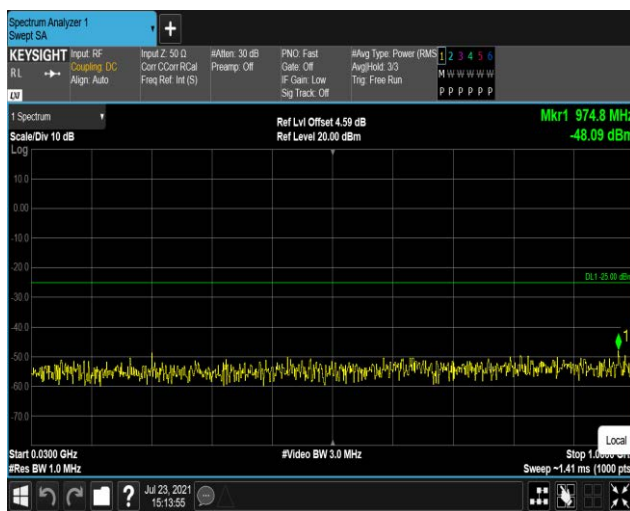
Band41-20MHz-QPSK-40140:30~1000MHz



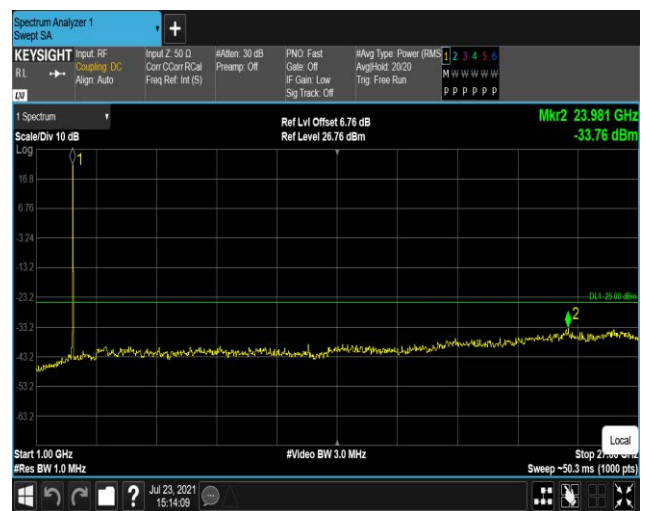
Band41-20MHz-QPSK-40140:1000~27000MHz



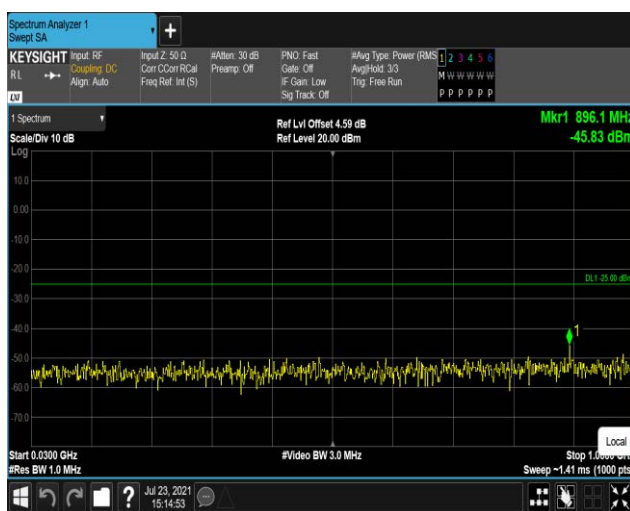
Band41-20MHz-QPSK-40640:30~1000MHz



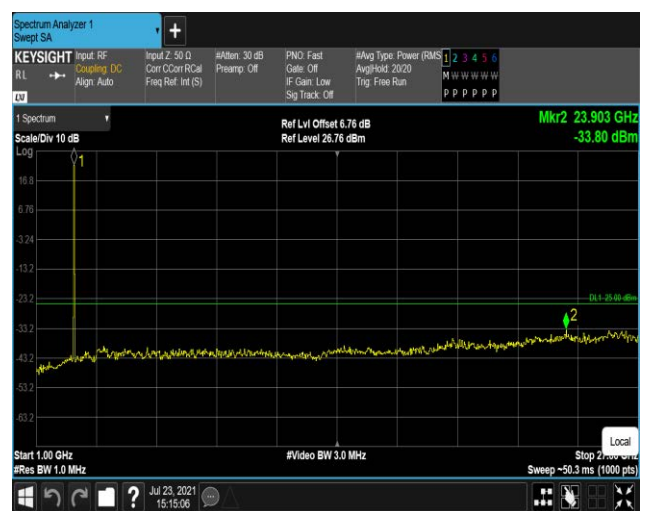
Band41-20MHz-QPSK-40640:1000~27000MHz



Band41-20MHz-QPSK-41140:30~1000MHz



Band41-20MHz-QPSK-41140:1000~27000MHz



Band41-20MHz-16QAM-40140:30~1000MHz



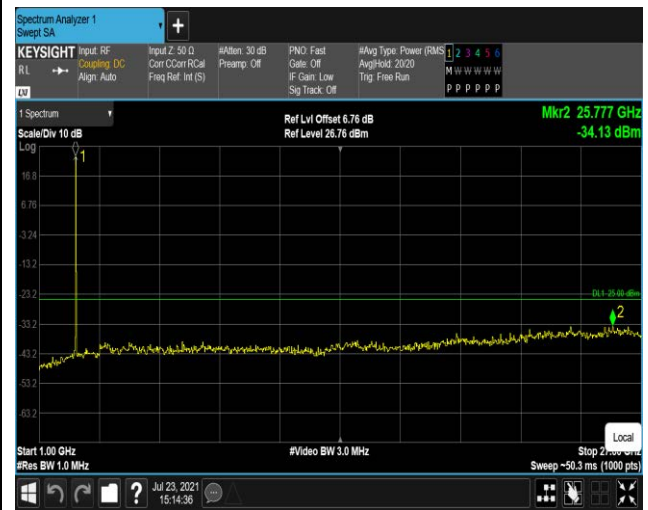
Band41-20MHz-16QAM-40140:1000~27000MHz



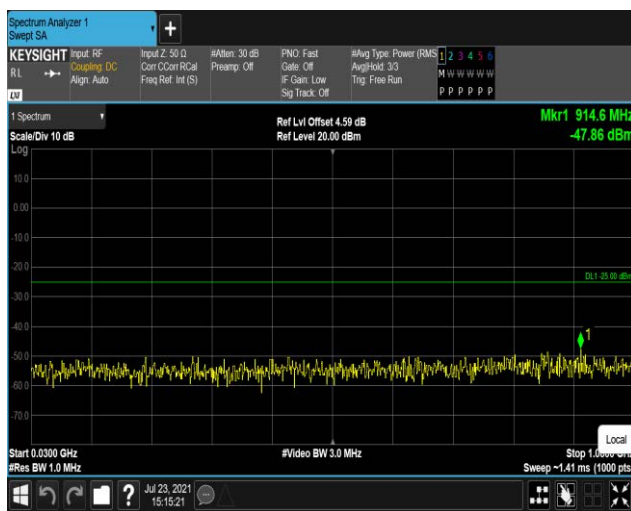
Band41-20MHz-16QAM-40640:30~1000MHz



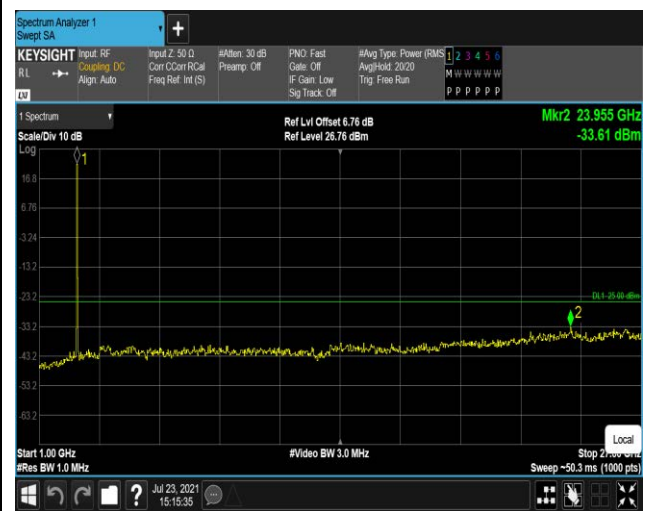
Band41-20MHz-16QAM-40640:1000~27000MHz



Band41-20MHz-16QAM-41140:30~1000MHz



Band41-20MHz-16QAM-41140:1000~27000MHz



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					
3.87	-30	-10.96	-0.005830	Within authorized band for Band 2	Pass
	-20	13.62	0.007245		
	-10	7.71	0.004101		
	0	6.11	0.003250		
	10	-12.53	-0.006665		
	20	-14.22	-0.007564		
	30	-20.71	-0.011016		
	40	-10.99	-0.005846		
	50	-12.45	-0.006622		
16QAM					
3.87	-30	-5.95	-0.003165	Within authorized band for Band 2	Pass
	-20	-11.76	-0.006255		
	-10	-13.16	-0.007000		
	0	7.27	0.003867		
	10	2.85	0.001516		
	20	6.11	0.003250		
	30	3.66	0.001947		
	40	2.50	0.001330		
	50	-1.26	-0.000670		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-10.01	-0.005324	Within authorized band for Band 2	Pass
	3.87	-12.53	-0.006665		
	4.45	-9.51	-0.005059		
16QAM					
25	3.50	-13.52	-0.007191	Within authorized band for Band 2	Pass
	3.87	12.67	0.006739		
	4.45	-11.69	-0.006218		

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					
3.87	-30	-11.37	-0.006563	Within authorized band for Band 4	Pass
	-20	-8.14	-0.004698		
	-10	-7.04	-0.004063		
	0	-8.73	-0.005039		
	10	-13.15	-0.007590		
	20	-2.12	-0.001224		
	30	-5.11	-0.002949		
	40	-10.46	-0.006038		
	50	-10.46	-0.006038		
16QAM					
3.87	-30	10.16	0.005864	Within authorized band for Band 4	Pass
	-20	-10.00	-0.005772		
	-10	8.05	0.004646		
	0	2.75	0.001587		
	10	-8.05	-0.004646		
	20	-4.75	-0.002742		
	30	2.56	0.001478		
	40	8.63	0.004981		
	50	9.96	0.005749		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-10.91	-0.006297	Within authorized band for Band 4	Pass
	3.87	-9.74	-0.005622		
	4.45	-6.69	-0.003861		
16QAM					
25	3.50	8.35	0.004820	Within authorized band for Band 4	Pass
	3.87	-2.68	-0.001547		
	4.45	-10.97	-0.006332		
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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-10.03	-0.011990	±2.5	Pass
	-20	-5.55	-0.006635		
	-10	-6.28	-0.007507		
	0	-3.63	-0.004340		
	10	-5.16	-0.006169		
	20	-5.28	-0.006312		
	30	-7.10	-0.008488		
	40	3.63	0.004340		
	50	3.60	0.004304		
16QAM					
3.87	-30	-5.14	-0.006145	±2.5	Pass
	-20	-5.78	-0.006910		
	-10	-4.31	-0.005152		
	0	-9.24	-0.011046		
	10	-4.01	-0.004794		
	20	1.80	0.002152		
	30	-11.50	-0.013748		
	40	4.31	0.005152		
	50	-7.14	-0.008536		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-8.28	-0.009898	±2.5	Pass
	3.87	-7.52	-0.008990		
	4.45	-1.27	-0.001518		
16QAM					
25	3.50	-4.84	-0.005786	±2.5	Pass
	3.87	-5.66	-0.006766		
	4.45	-6.91	-0.008261		

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					
3.87	-30	-8.80	-0.003471	Within authorized band for Band 7	Pass
	-20	-14.88	-0.005870		
	-10	-22.60	-0.008915		
	0	-21.76	-0.008584		
	10	-8.60	-0.003393		
	20	-13.83	-0.005456		
	30	-6.09	-0.002402		
	40	13.82	0.005452		
	50	-18.10	-0.007140		
16QAM					
3.87	-30	-12.49	-0.004927	Within authorized band for Band 7	Pass
	-20	-14.85	-0.005858		
	-10	-9.43	-0.003720		
	0	-17.24	-0.006801		
	10	-6.84	-0.002698		
	20	9.18	0.003621		
	30	-16.74	-0.006604		
	40	12.60	0.004970		
	50	-6.75	-0.002663		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-20.67	-0.008154	Within authorized band for Band 7	Pass
	3.87	-21.26	-0.008387		
	4.45	-16.05	-0.006331		
16QAM					
25	3.50	-16.62	-0.006556	Within authorized band for Band 7	Pass
	3.87	-13.56	-0.005349		
	4.45	-21.97	-0.008667		

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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-16.37	-0.006308	Within authorized band for Band 38	Pass
	-20	-15.81	-0.006092		
	-10	-13.79	-0.005314		
	0	-14.38	-0.005541		
	10	-20.63	-0.007950		
	20	-6.17	-0.002378		
	30	9.20	0.003545		
	40	-17.64	-0.006798		
	50	-8.94	-0.003445		
16QAM					
3.87	-30	-14.72	-0.005672	Within authorized band for Band 38	Pass
	-20	-20.23	-0.007796		
	-10	-20.03	-0.007719		
	0	-6.02	-0.002320		
	10	-12.46	-0.004802		
	20	-6.52	-0.002513		
	30	-11.72	-0.004516		
	40	-12.73	-0.004906		
	50	-19.20	-0.007399		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-11.07	-0.004266	Within authorized band for Band 38	Pass
	3.87	-11.90	-0.004586		
	4.45	-13.49	-0.005198		
16QAM					
25	3.50	-14.56	-0.005611	Within authorized band for Band 38	Pass
	3.87	-11.42	-0.004401		
	4.45	-11.14	-0.004293		

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 (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	-14.36	-0.005534	Within authorized band for Band 41	Pass
	-20	-11.42	-0.004401		
	-10	-6.27	-0.002416		
	0	8.88	0.003422		
	10	-22.75	-0.008767		
	20	-8.81	-0.003395		
	30	-18.97	-0.007310		
	40	-18.21	-0.007017		
	50	-4.16	-0.001603		
16QAM					
3.87	-30	-11.06	-0.004262	Within authorized band for Band 41	Pass
	-20	-20.23	-0.007796		
	-10	-18.02	-0.006944		
	0	-9.57	-0.003688		
	10	-16.57	-0.006385		
	20	-16.15	-0.006224		
	30	-9.23	-0.003557		
	40	15.19	0.005854		
	50	-11.96	-0.004609		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-13.03	-0.005021	Within authorized band for Band 41	Pass
	3.87	-9.70	-0.003738		
	4.45	-15.96	-0.006150		
16QAM					
25	3.50	-11.13	-0.004289	Within authorized band for Band41	Pass
	3.87	-20.46	-0.007884		
	4.45	-17.60	-0.006782		

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
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS	PASS
Band38	20MHz	QPSK	38000	100RB#0	PASS	PASS
Band38	20MHz	16QAM	38000	100RB#0	PASS	PASS
Band41	20MHz	QPSK	40640	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40640	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



