

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



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



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



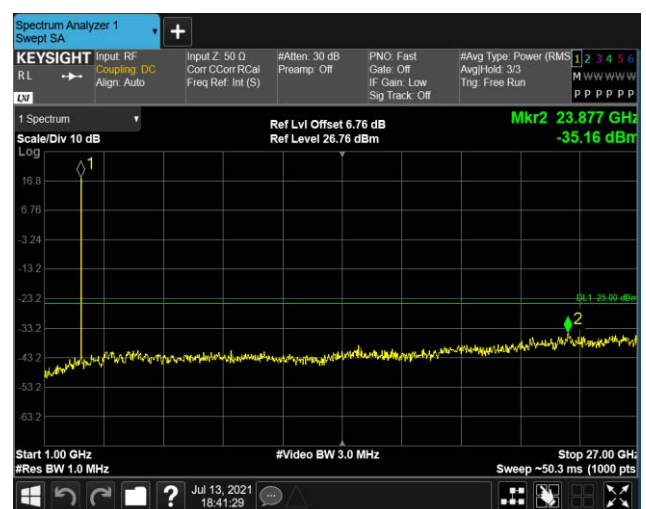
Band38-5MHz-16QAM-38000:1000~27000MHz



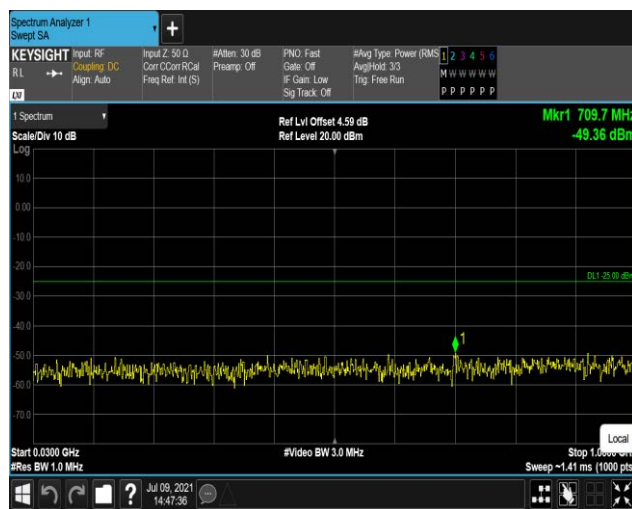
Band38-5MHz-16QAM-38225:30~1000MHz



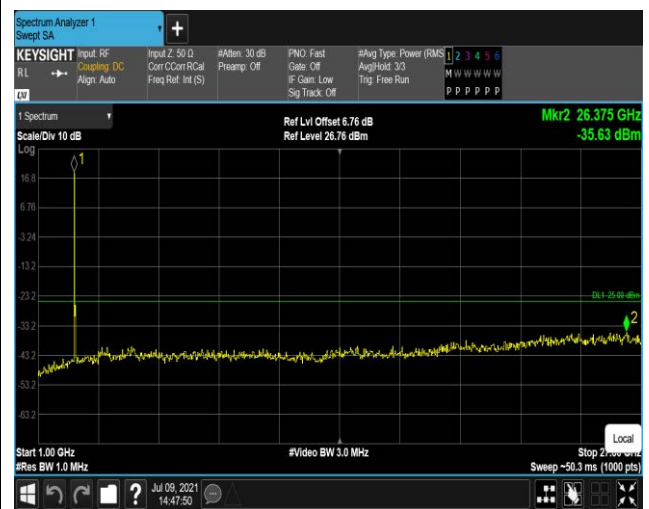
Band38-5MHz-16QAM-38225:1000~27000MHz



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



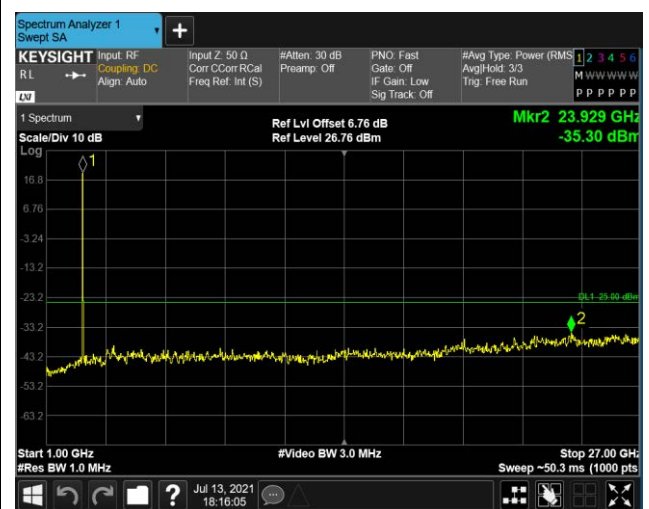
Band38-20MHz-QPSK-37850:1000~27000MHz



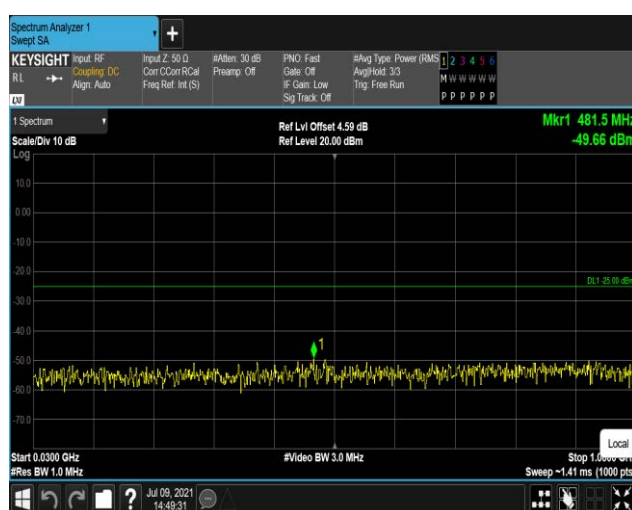
Band38-20MHz-QPSK-38000:30~1000MHz



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



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



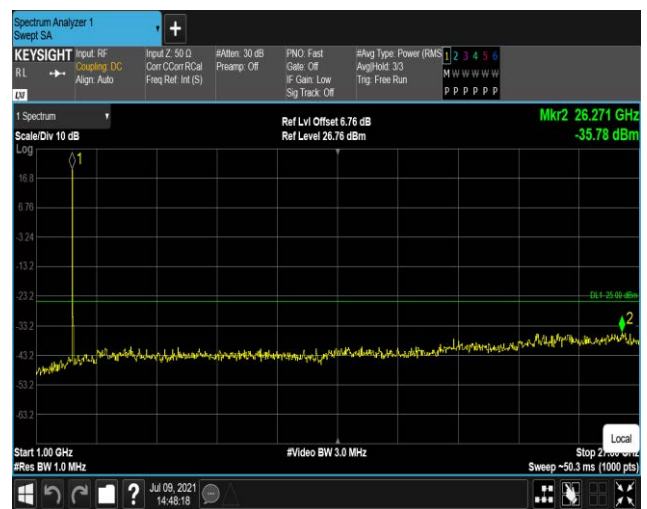
Band38-20MHz-QPSK-38150:1000~27000MHz



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



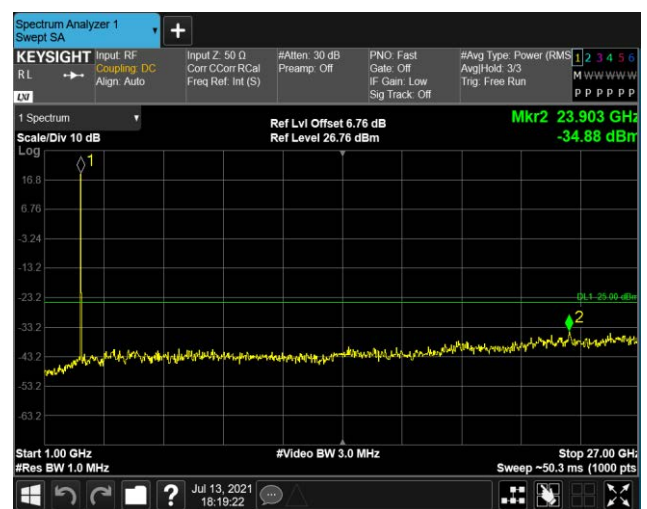
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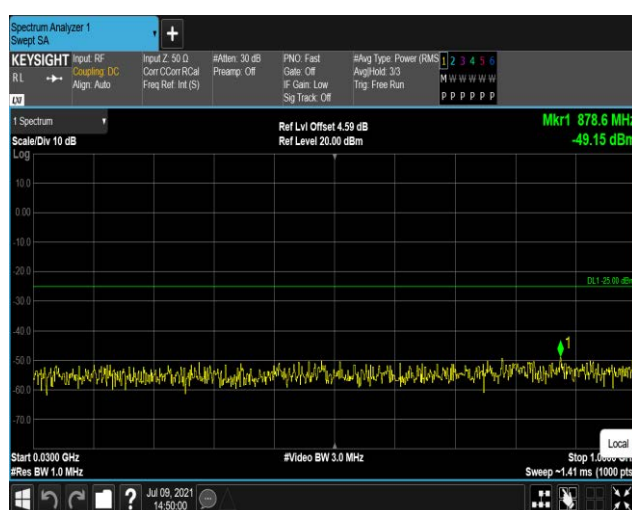
Band38-20MHz-16QAM-38000:30~1000MHz



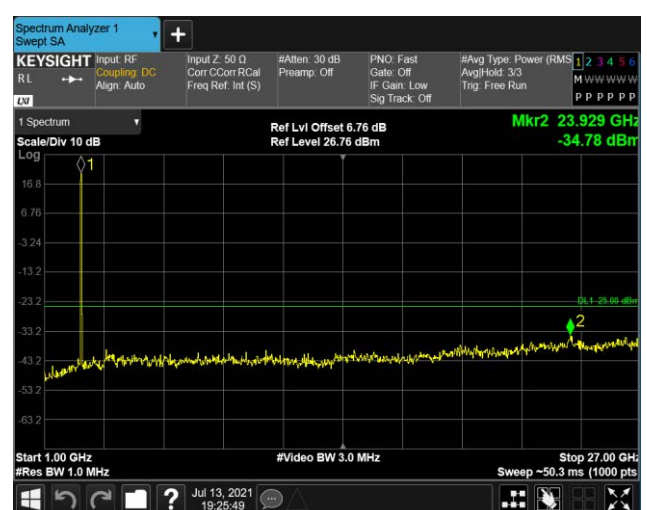
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Band38-20MHz-16QAM-38150:30~1000MHz



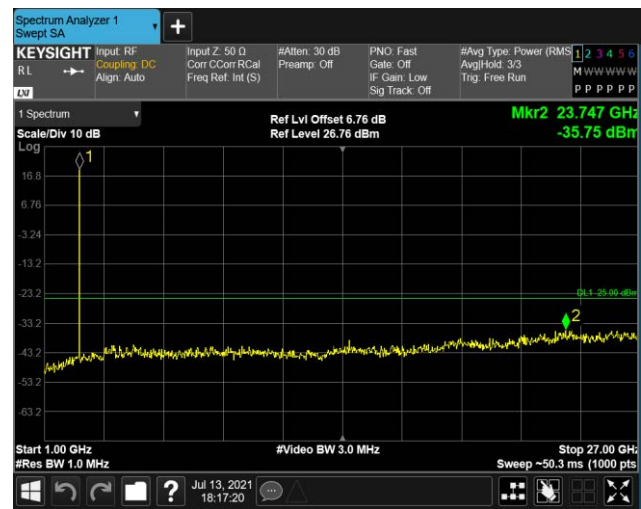
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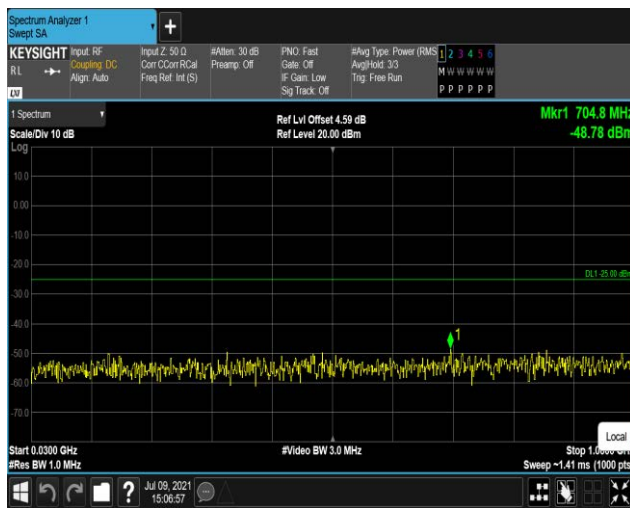
Band41-5MHz-QPSK-40065:30~1000MHz



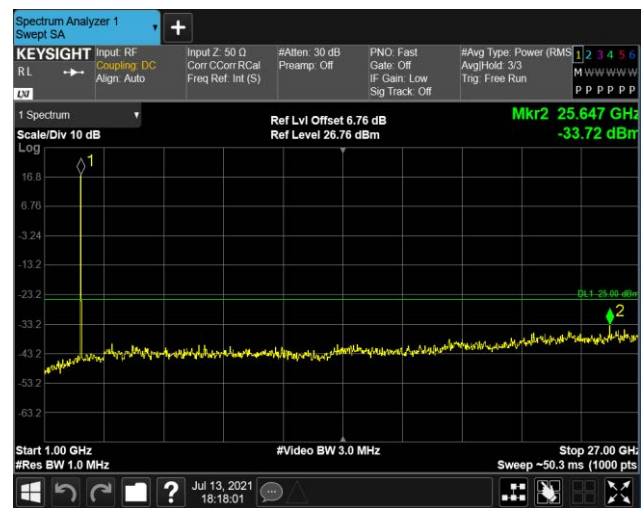
Band41-5MHz-QPSK-40065:1000~27000MHz



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



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



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



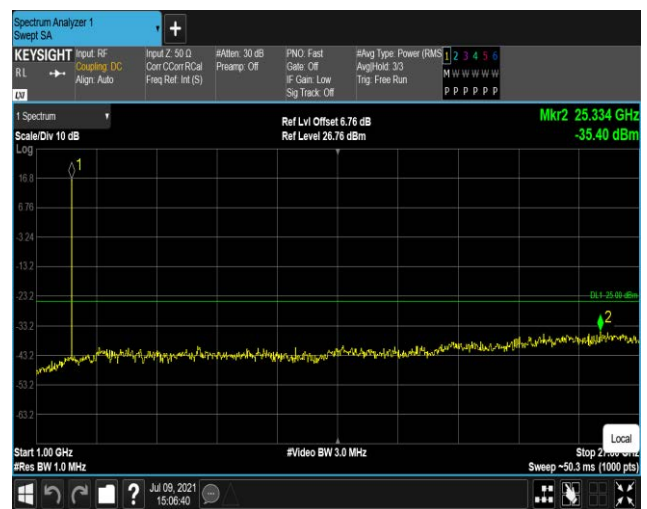
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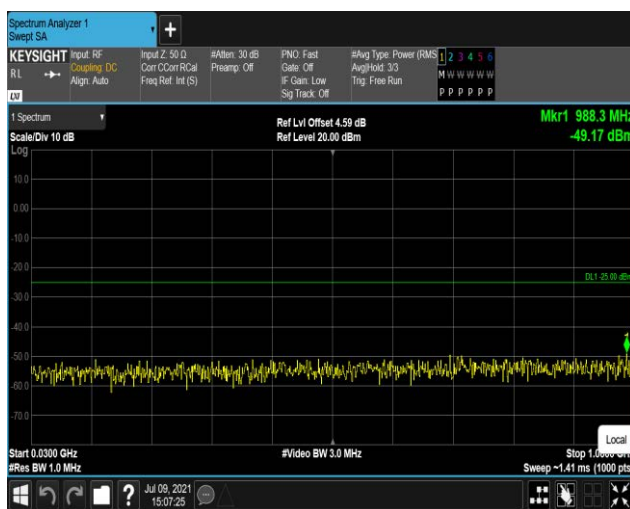
Band41-5MHz-16QAM-40065:30~1000MHz



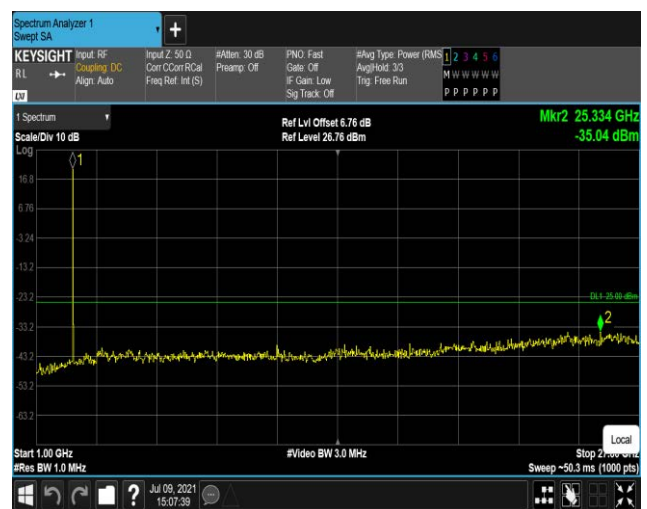
Band41-5MHz-16QAM-40065:1000~27000MHz



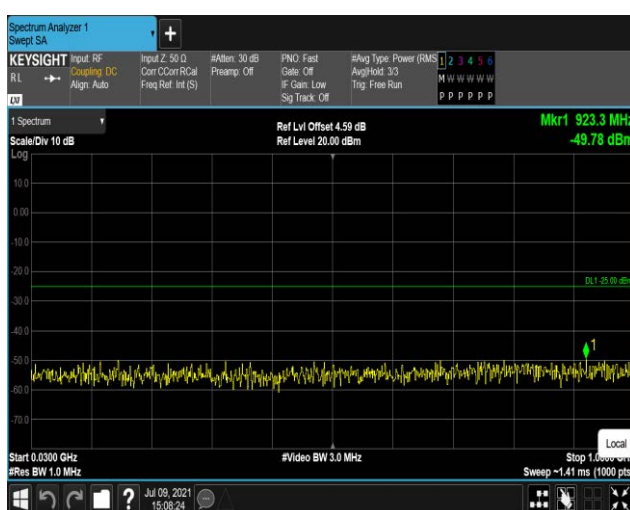
Band41-5MHz-16QAM-40640:30~1000MHz



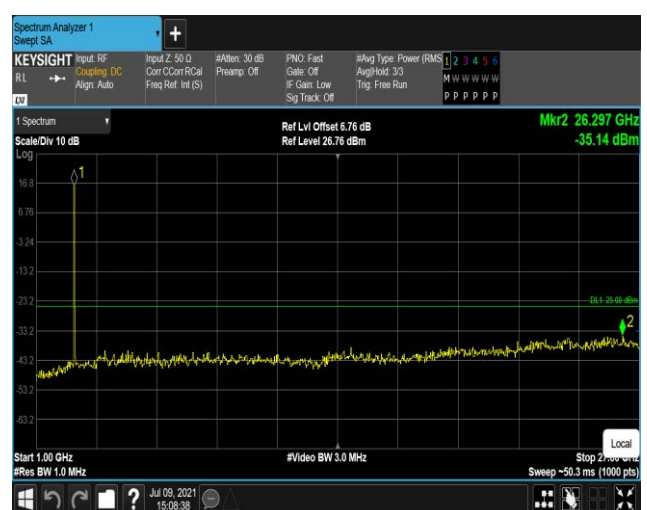
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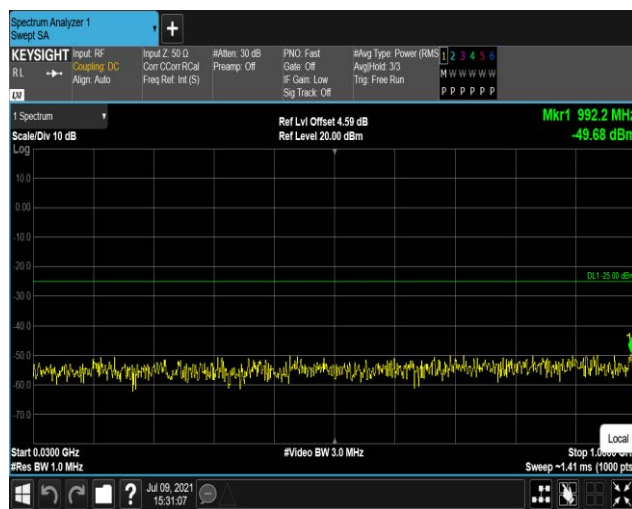
Band41-5MHz-16QAM-41215:30~1000MHz



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



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



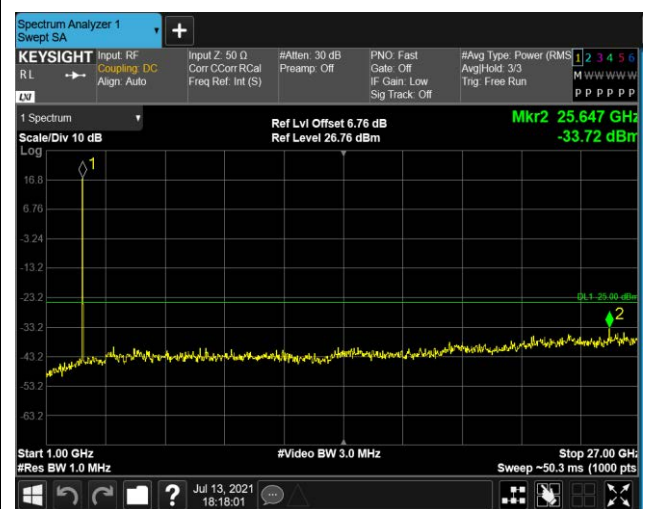
Band41-20MHz-QPSK-40140:1000~27000MHz



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



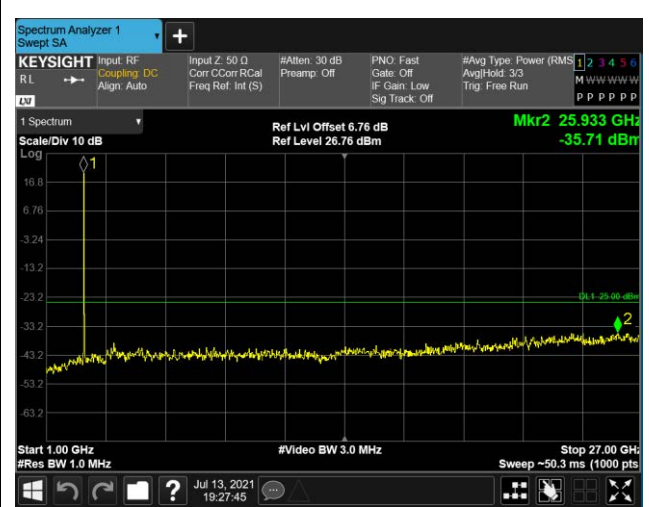
Band41-20MHz-QPSK-40640:1000~27000MHz



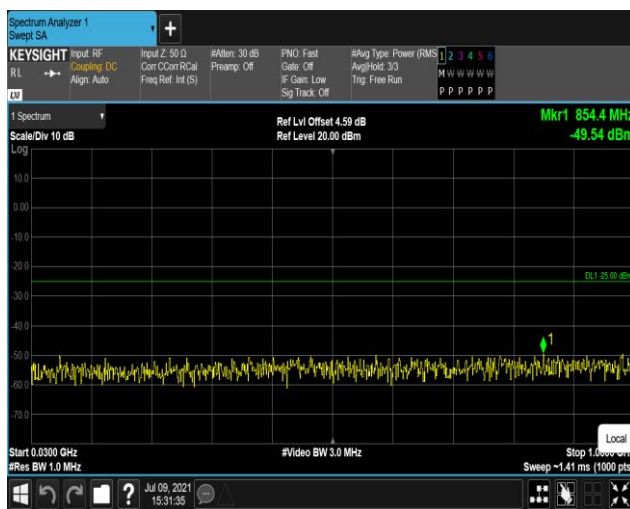
Band41-20MHz-QPSK-41140:30~1000MHz



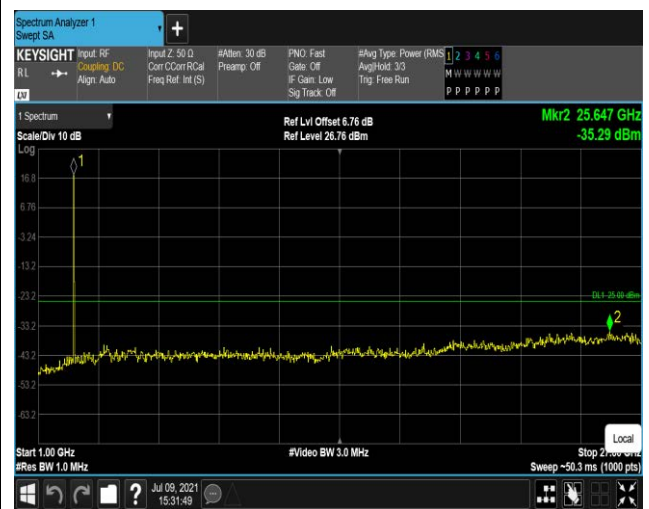
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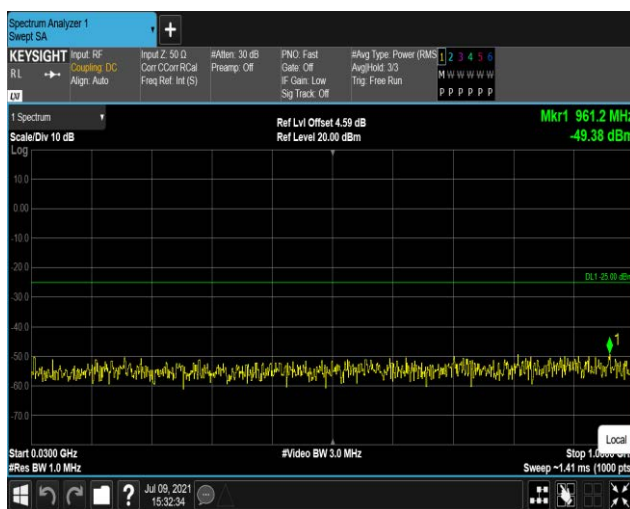
Band41-20MHz-16QAM-40140:30~1000MHz



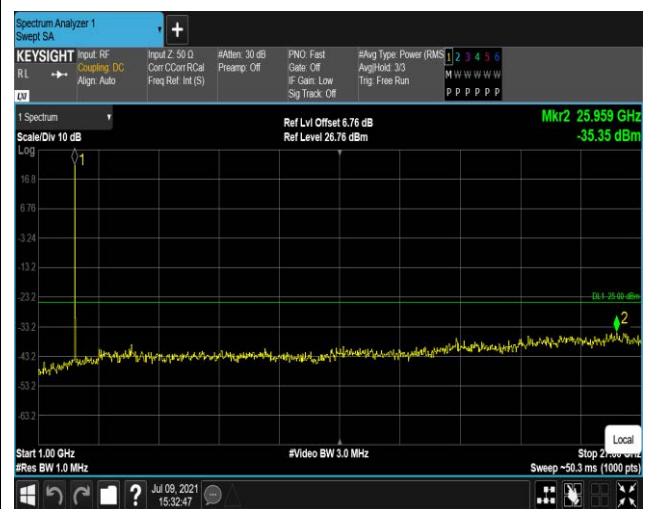
Band41-20MHz-16QAM-40140:1000~27000MHz



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



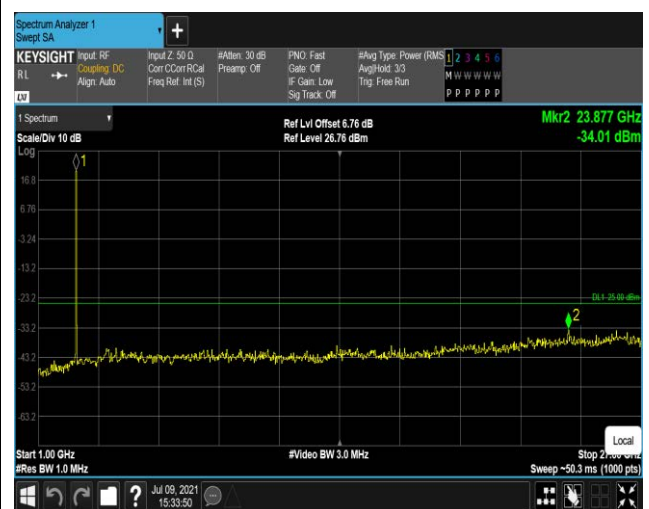
Band41-20MHz-16QAM-40640:1000~27000MHz



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					
3.85	-30	-18.85	-0.010027	Within authorized band for Band 2	Pass
	-20	-22.44	-0.011936		
	-10	-13.18	-0.007011		
	0	-18.85	-0.010027		
	10	-24.89	-0.013239		
	20	-11.46	-0.006096		
	30	-17.78	-0.009457		
	40	-16.29	-0.008665		
	50	11.29	0.006005		
16QAM					
3.85	-30	13.33	0.007090	Within authorized band for Band 2	Pass
	-20	-26.71	-0.014207		
	-10	-5.64	-0.003000		
	0	17.34	0.009223		
	10	-22.10	-0.011755		
	20	-20.59	-0.010952		
	30	6.90	0.003670		
	40	-18.48	-0.009830		
	50	-23.93	-0.012729		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-17.58	-0.009351	Within authorized band for Band 2	Pass
	3.85	-19.91	-0.010590		
	4.40	-13.83	-0.007356		
16QAM					
25	3.50	-19.97	-0.010622	Within authorized band for Band 2	Pass
	3.85	6.04	0.003213		
	4.40	-21.16	-0.011255		
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	-12.30	-0.007100	Within authorized band for Band 4	Pass
	-20	4.92	0.002840		
	-10	-9.47	-0.005466		
	0	-8.10	-0.004675		
	10	-7.47	-0.004312		
	20	-4.84	-0.002794		
	30	-6.68	-0.003856		
	40	-9.38	-0.005414		
	50	1.99	0.001149		
16QAM					
3.85	-30	7.48	0.004317	Within authorized band for Band 4	Pass
	-20	-6.11	-0.003527		
	-10	-2.72	-0.001570		
	0	-16.89	-0.009749		
	10	-15.12	-0.008727		
	20	-9.54	-0.005506		
	30	-15.21	-0.008779		
	40	-12.76	-0.007365		
	50	-15.15	-0.008745		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	3.30	0.001905	Within authorized band for Band 4	Pass
	3.85	-13.42	-0.007746		
	4.40	-5.04	-0.002909		
16QAM					
25	3.50	11.00	0.006349	Within authorized band for Band 4	Pass
	3.85	-10.70	-0.006176		
	4.40	-13.32	-0.007688		
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					
3.85	-30	-9.88	-0.011811	±2.5	Pass
	-20	-9.46	-0.011309		
	-10	-6.74	-0.008057		
	0	-9.50	-0.011357		
	10	-10.49	-0.012540		
	20	-9.58	-0.011452		
	30	-13.50	-0.016139		
	40	-12.92	-0.015445		
	50	-7.22	-0.008631		
16QAM					
3.85	-30	-11.67	-0.013951	±2.5	Pass
	-20	-4.16	-0.004973		
	-10	-15.62	-0.018673		
	0	-8.51	-0.010173		
	10	-6.38	-0.007627		
	20	-12.07	-0.014429		
	30	-9.07	-0.010843		
	40	-5.94	-0.007101		
	50	-7.85	-0.009384		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-9.76	-0.011668	±2.5	Pass
	3.85	-9.80	-0.011715		
	4.40	-3.95	-0.004722		
16QAM					
25	3.50	-10.93	-0.013066	±2.5	Pass
	3.85	-12.25	-0.014644		
	4.40	-11.07	-0.013234		
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					
3.85	-30	9.67	0.003815	Within authorized band for Band 7	Pass
	-20	-11.17	-0.004406		
	-10	-13.10	-0.005168		
	0	-11.14	-0.004394		
	10	15.26	0.006020		
	20	-12.66	-0.004994		
	30	-11.53	-0.004548		
	40	-15.99	-0.006308		
	50	14.06	0.005546		
16QAM					
3.85	-30	-21.21	-0.008367	Within authorized band for Band 7	Pass
	-20	-20.51	-0.008091		
	-10	-16.35	-0.006450		
	0	-12.65	-0.004990		
	10	-19.71	-0.007775		
	20	13.89	0.005479		
	30	-12.29	-0.004848		
	40	10.31	0.004067		
	50	-11.77	-0.004643		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	3.89	0.001535	Within authorized band for Band 7	Pass
	3.85	13.79	0.005440		
	4.40	-17.19	-0.006781		
16QAM					
25	3.50	-15.85	-0.006252	Within authorized band for Band 7	Pass
	3.85	8.51	0.003357		
	4.40	-21.46	-0.008465		
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					
3.85	-30	-16.91	-0.006516	Within authorized band for Band 38	Pass
	-20	-16.94	-0.006528		
	-10	-17.81	-0.006863		
	0	-19.58	-0.007545		
	10	10.79	0.004158		
	20	-19.04	-0.007337		
	30	-19.53	-0.007526		
	40	-14.73	-0.005676		
	50	-20.93	-0.008066		
16QAM					
3.85	-30	-6.21	-0.002393	Within authorized band for Band 38	Pass
	-20	-22.39	-0.008628		
	-10	-15.75	-0.006069		
	0	9.66	0.003723		
	10	-9.74	-0.003753		
	20	-5.98	-0.002304		
	30	-5.22	-0.002012		
	40	-8.35	-0.003218		
	50	-18.20	-0.007013		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-24.59	-0.009476	Within authorized band for Band 38	Pass
	3.85	-17.38	-0.006697		
	4.40	6.22	0.002397		
16QAM					
25	3.50	-8.21	-0.003164	Within authorized band for Band 38	Pass
	3.85	6.88	0.002651		
	4.40	-7.02	-0.002705		
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					
3.85	-30	-15.96	-0.006150	Within authorized band for Band 41	Pass
	-20	-17.70	-0.006821		
	-10	-14.25	-0.005491		
	0	3.60	0.001387		
	10	-24.40	-0.009403		
	20	4.42	0.001703		
	30	-7.18	-0.002767		
	40	-18.77	-0.007233		
	50	-20.14	-0.007761		
16QAM					
3.85	-30	-17.45	-0.006724	Within authorized band for Band 41	Pass
	-20	4.01	0.001545		
	-10	-15.28	-0.005888		
	0	-14.92	-0.005750		
	10	-17.22	-0.006636		
	20	-19.94	-0.007684		
	30	-3.85	-0.001484		
	40	-4.09	-0.001576		
	50	-19.61	-0.007557		
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.50	-20.48	-0.007892	Within authorized band for Band 41	Pass
	3.85	14.42	0.005557		
	4.40	-13.26	-0.005110		
16QAM					
25	3.50	-18.28	-0.007044	Within authorized band for Band41	Pass
	3.85	-14.42	-0.005557		
	4.40	-10.33	-0.003981		
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

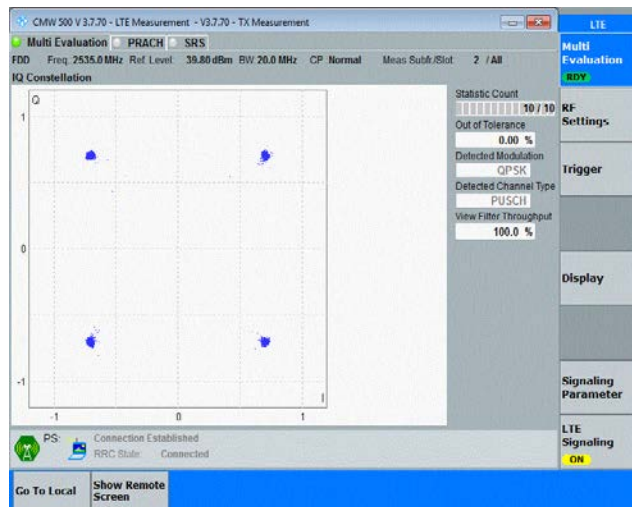
Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS	PASS
Band4	20MHz	QPSK	20175	100RB#0	PASS	PASS
Band4	20MHz	16QAM	20175	100RB#0	PASS	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS	PASS
Band5	10MHz	16QAM	20525	50RB#0	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.

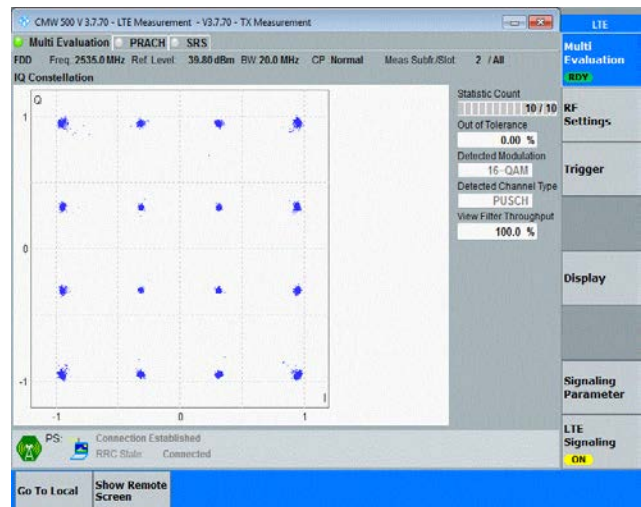
Test Graphs



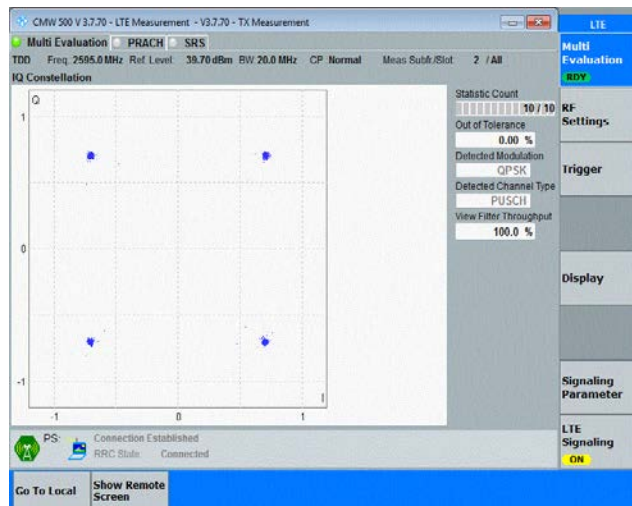
Band7-20MHz-QPSK-21100-100RB#0



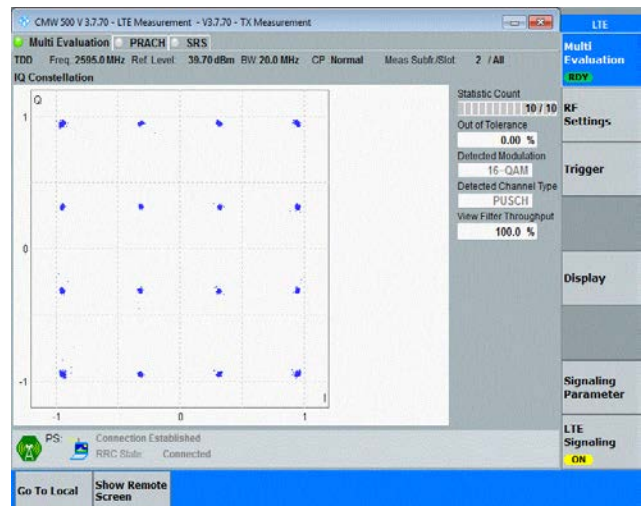
Band7-20MHz-16QAM-21100-100RB#0



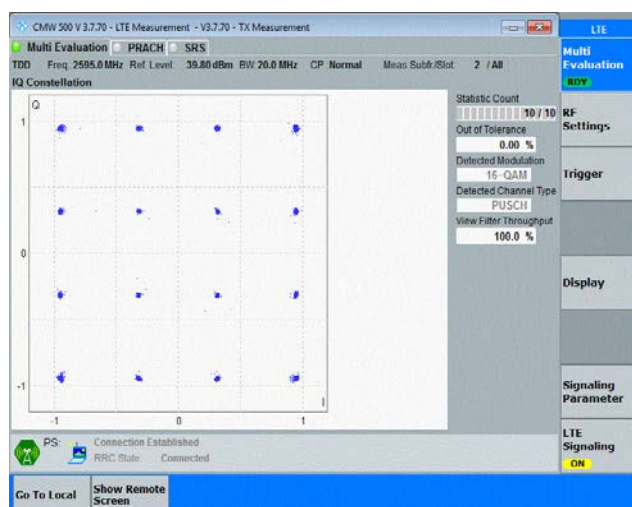
Band38-20MHz-QPSK-38000-100RB#0



Band38-20MHz-16QAM-38000-100RB#0



Band41-20MHz-QPSK-40640-100RB#0



Band41-20MHz-16QAM-40640-100RB#0

