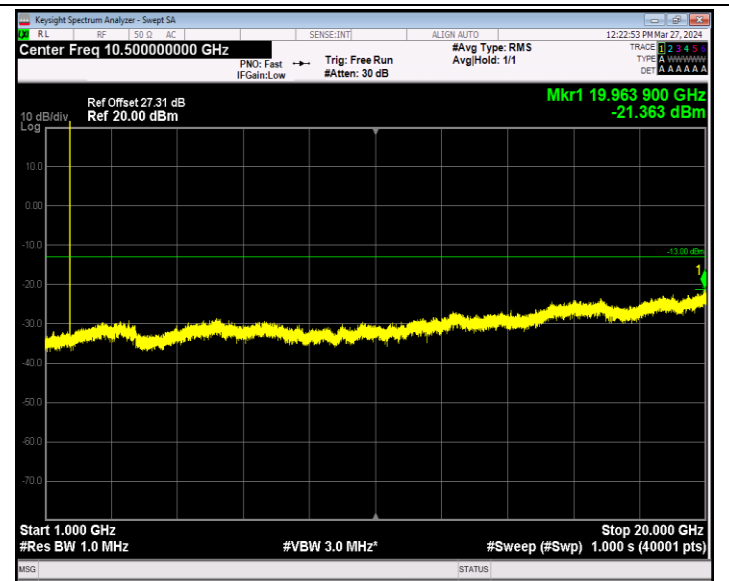
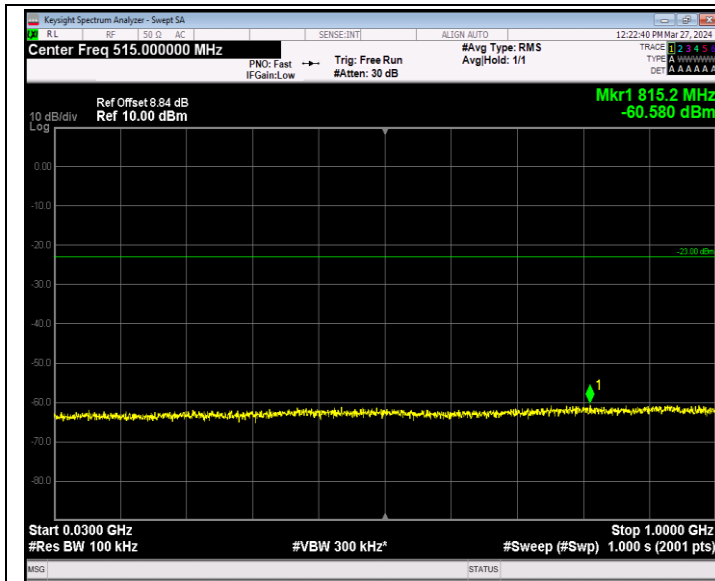
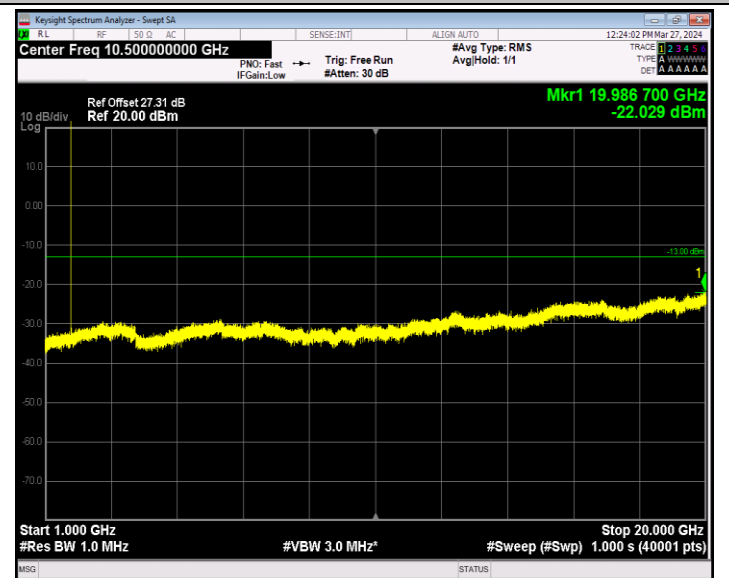
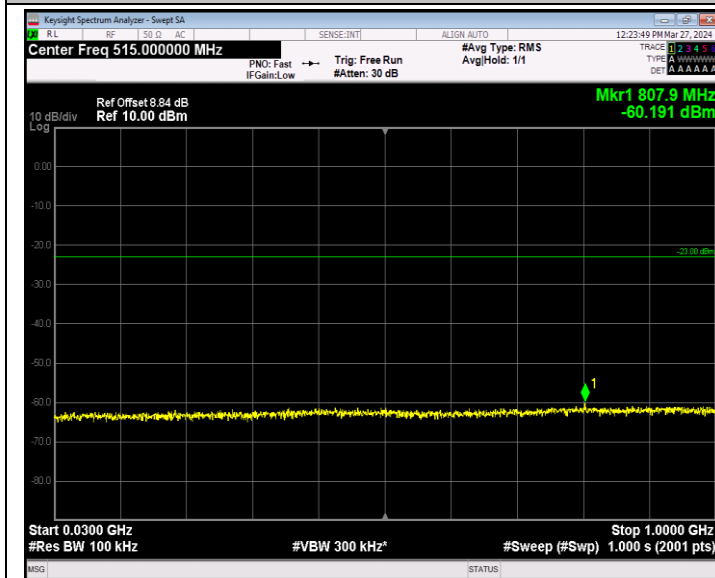




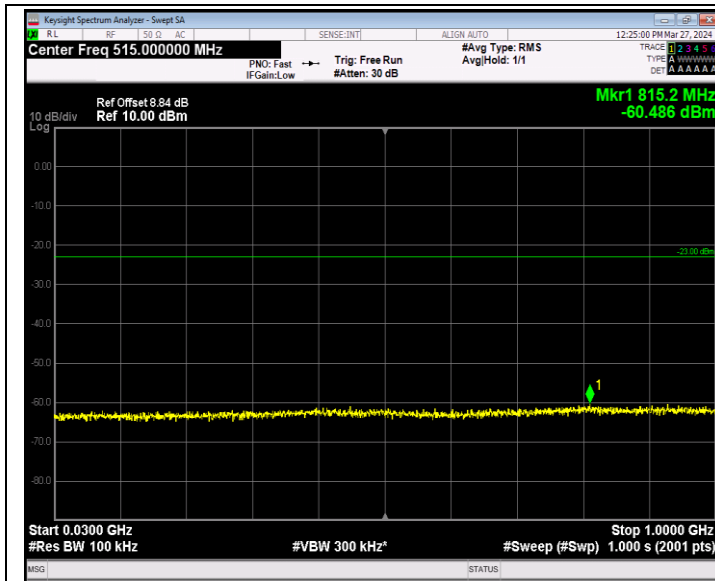
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Band66_1.4MHz_QPSK_131979_1RB#0_1000~20000_1000~20000

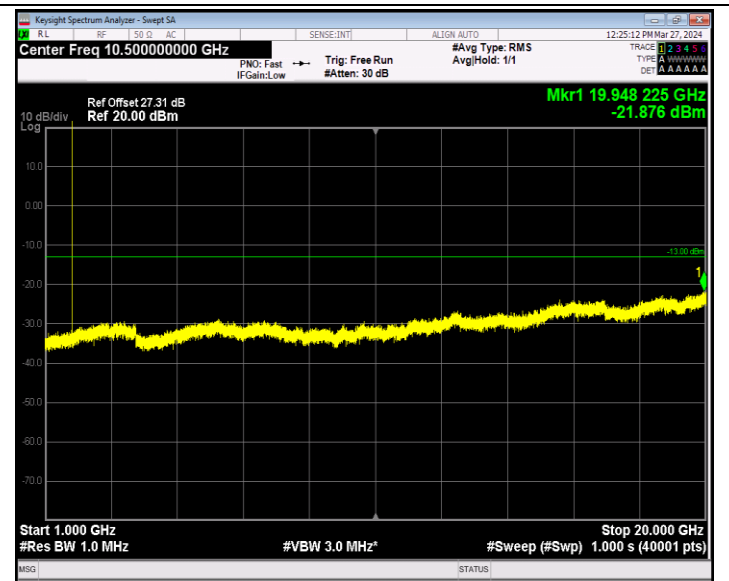


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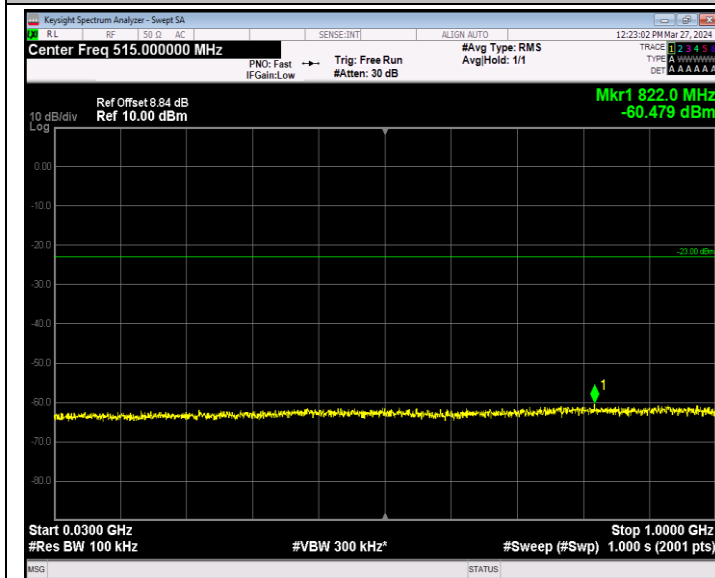
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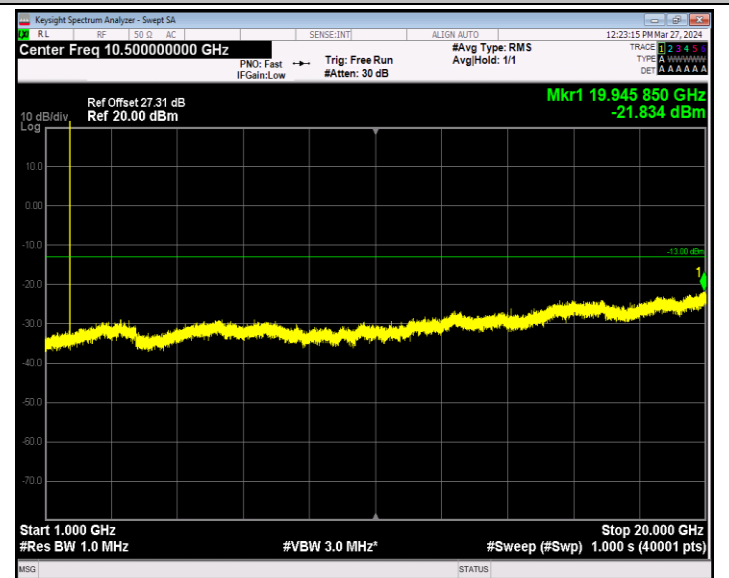
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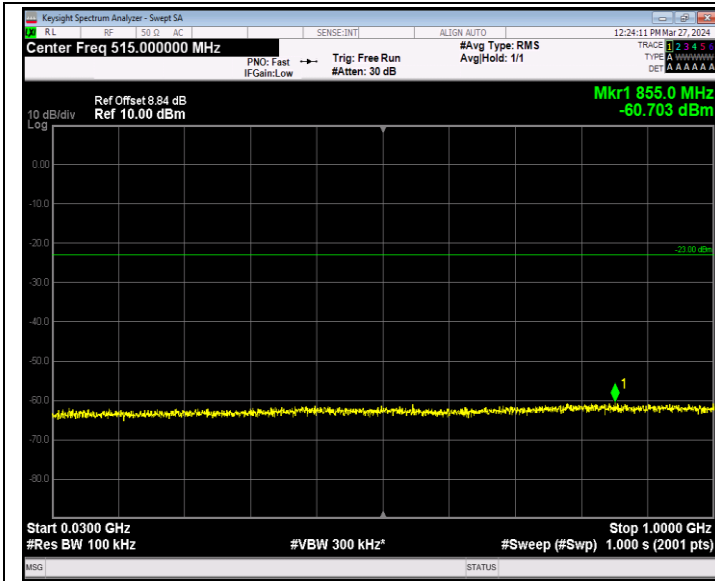
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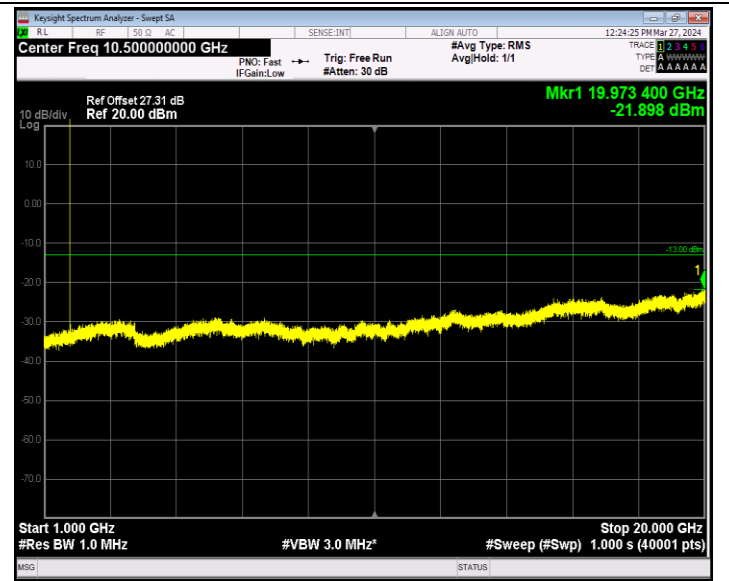
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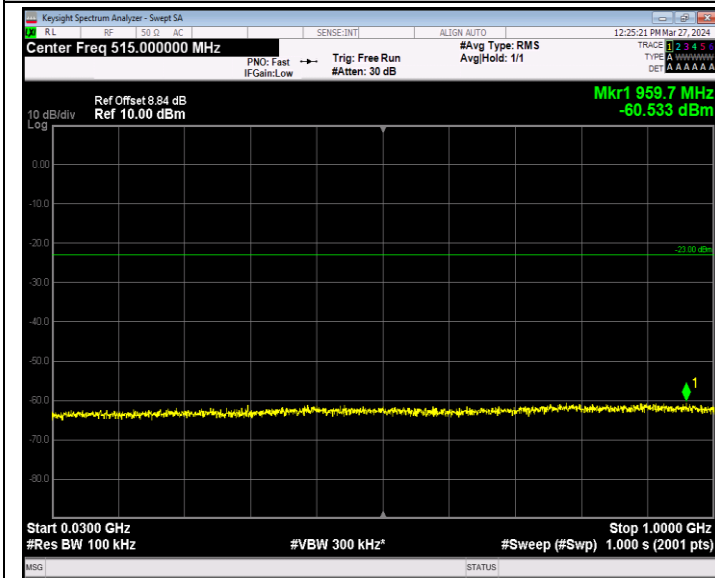
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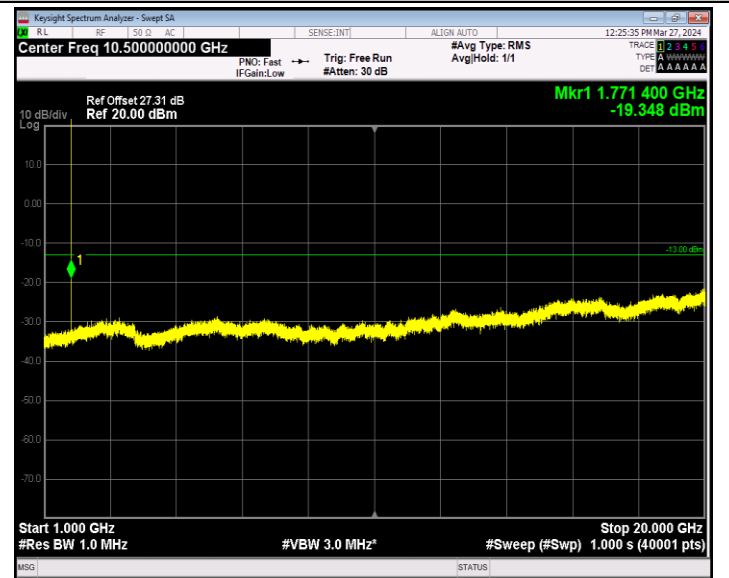
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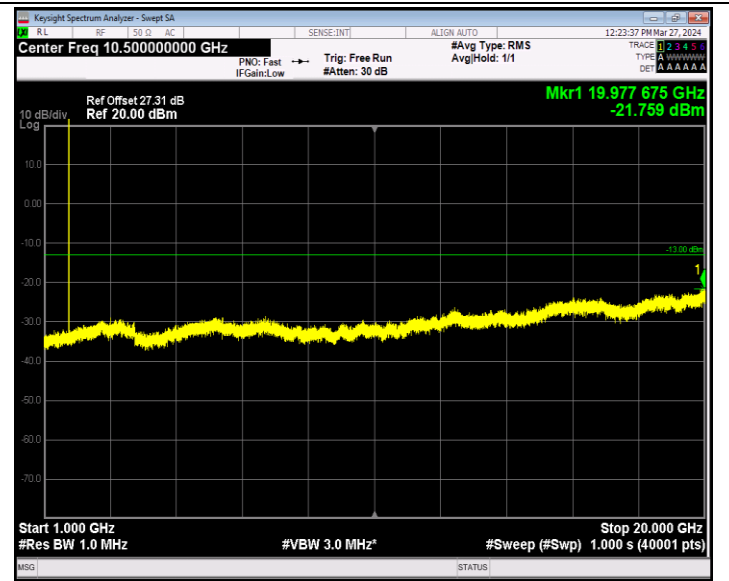
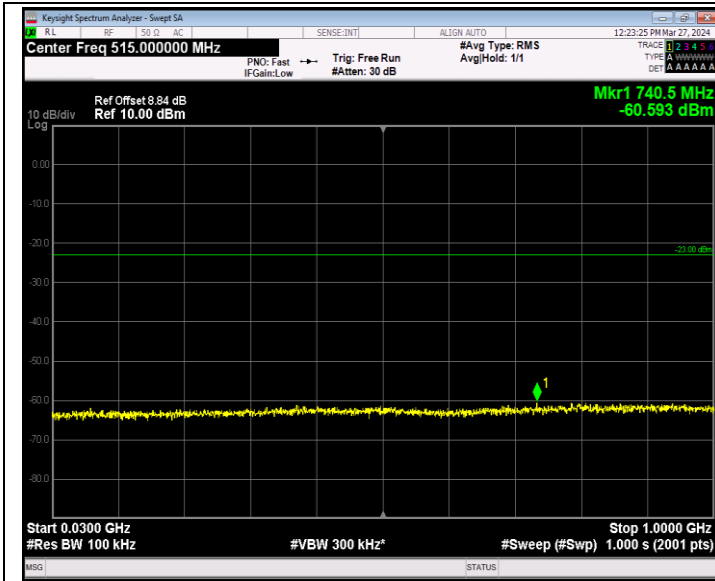
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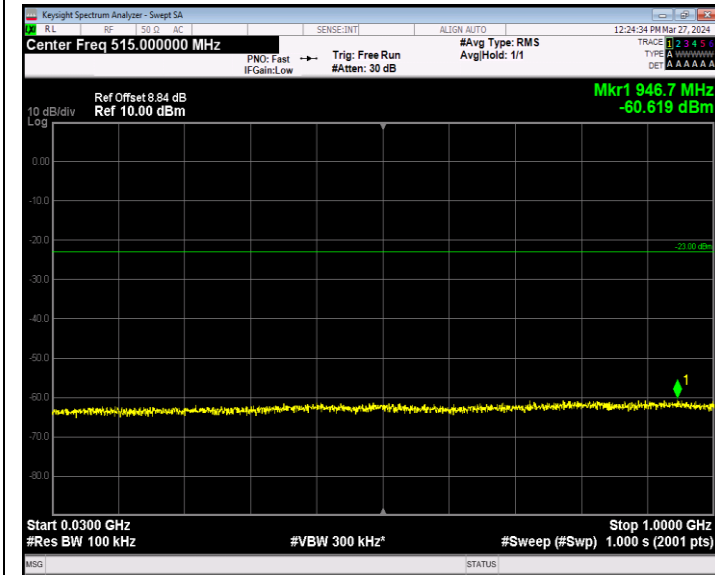


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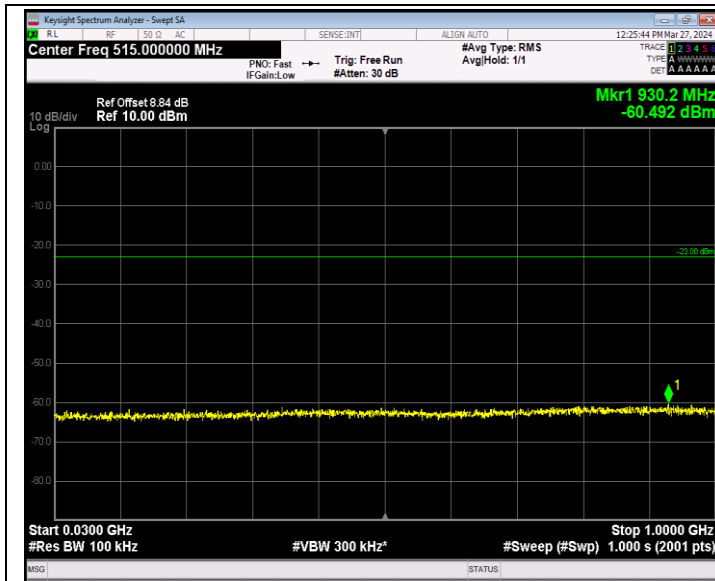
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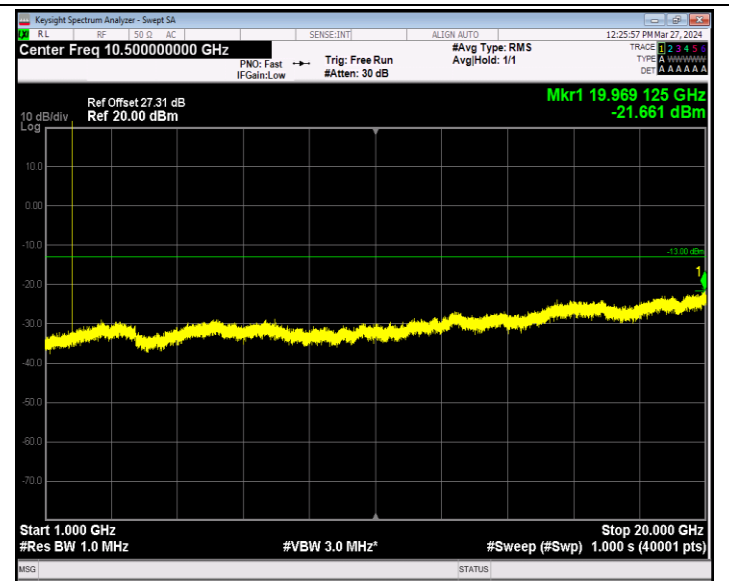


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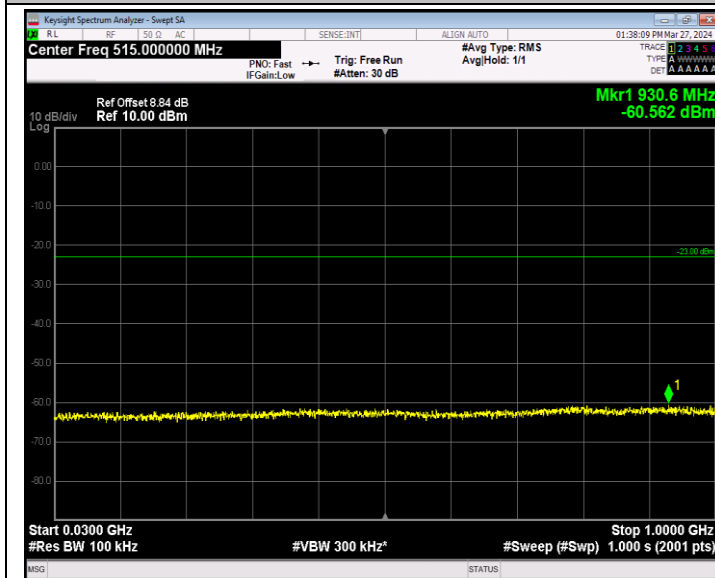
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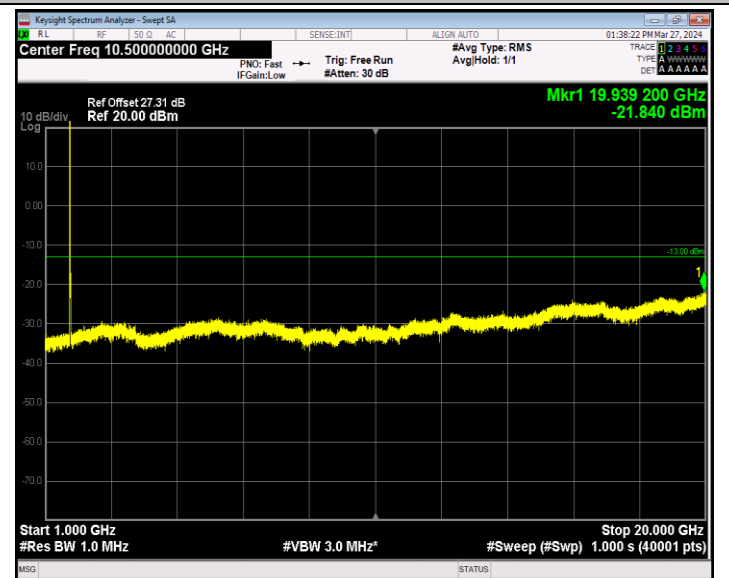
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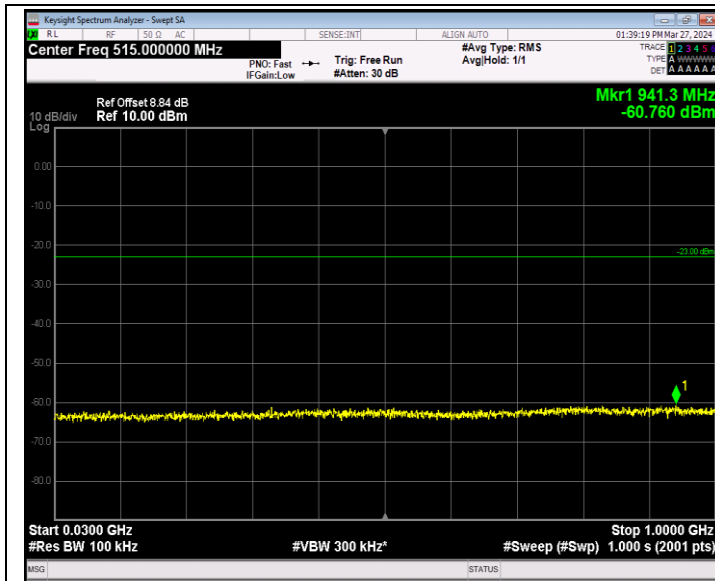
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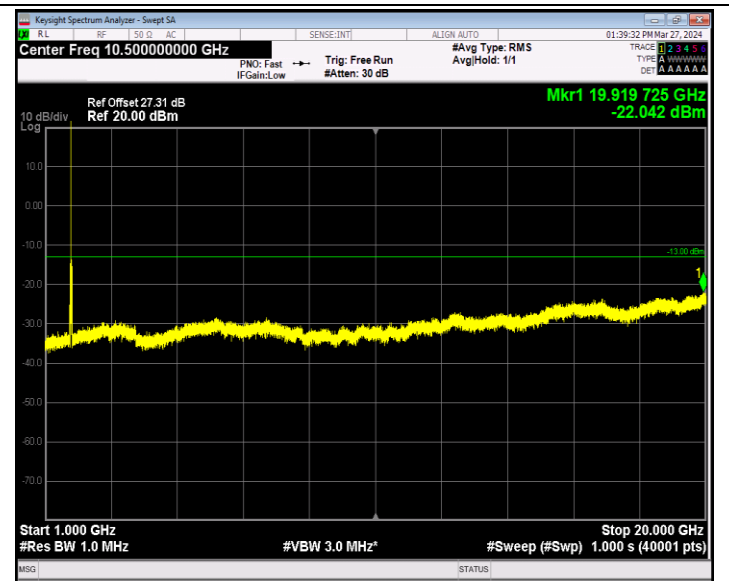
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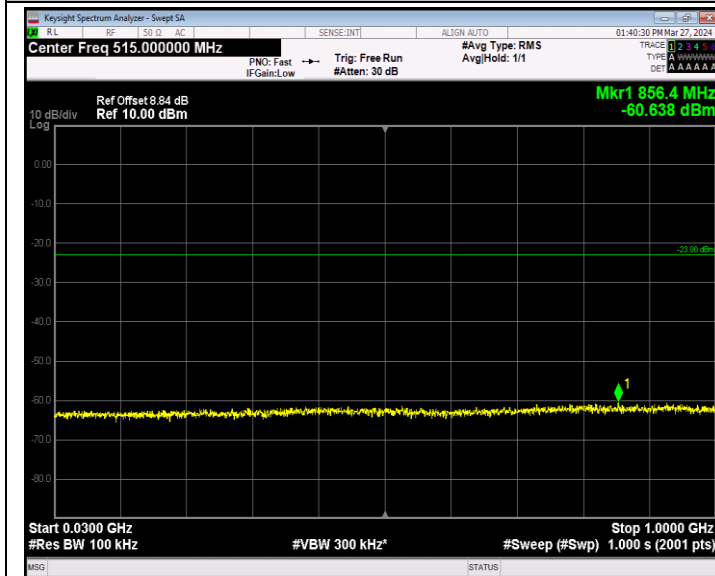
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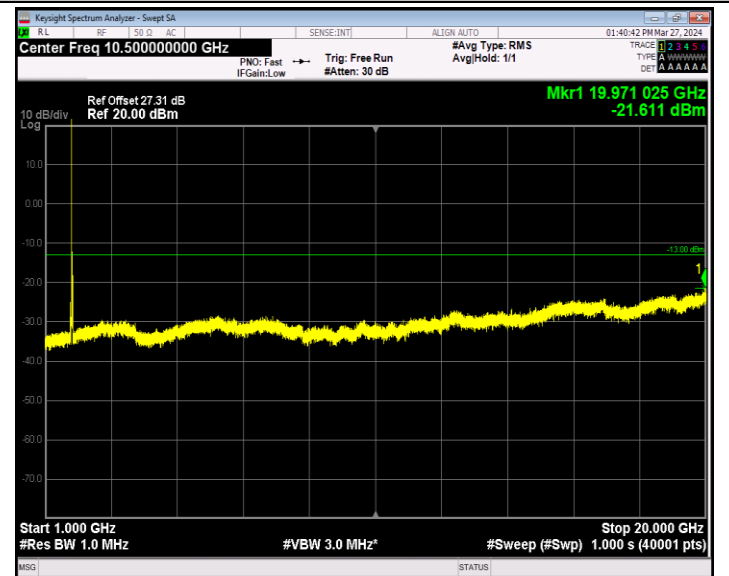
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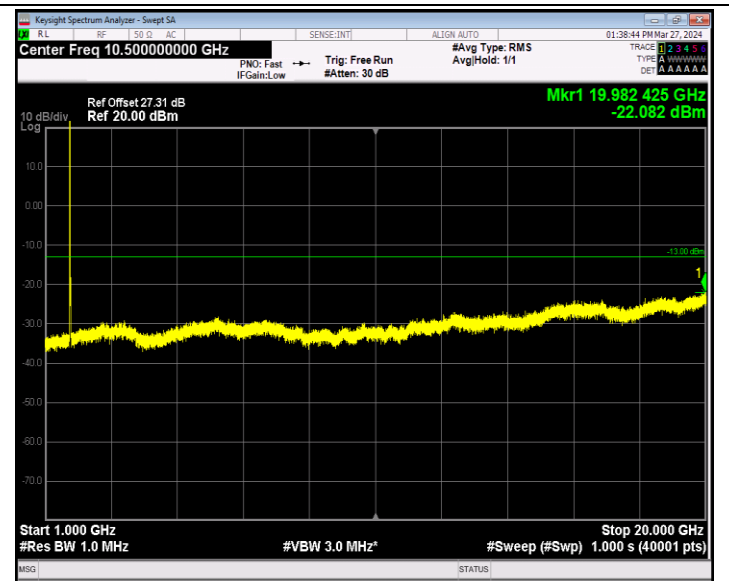
Band66_20MHz_QPSK_132322_1RB#0_1000~20000_1000~2000



Band66_20MHz_QPSK_132572_1RB#0_30~1000_30~1000

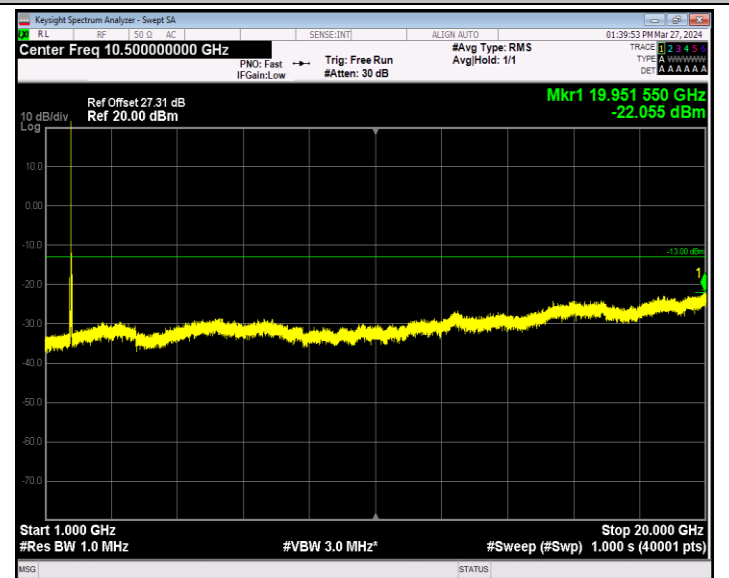
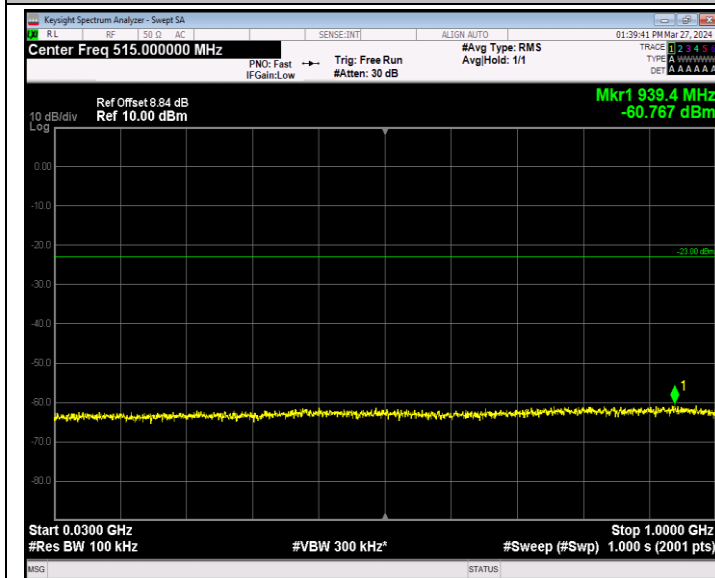


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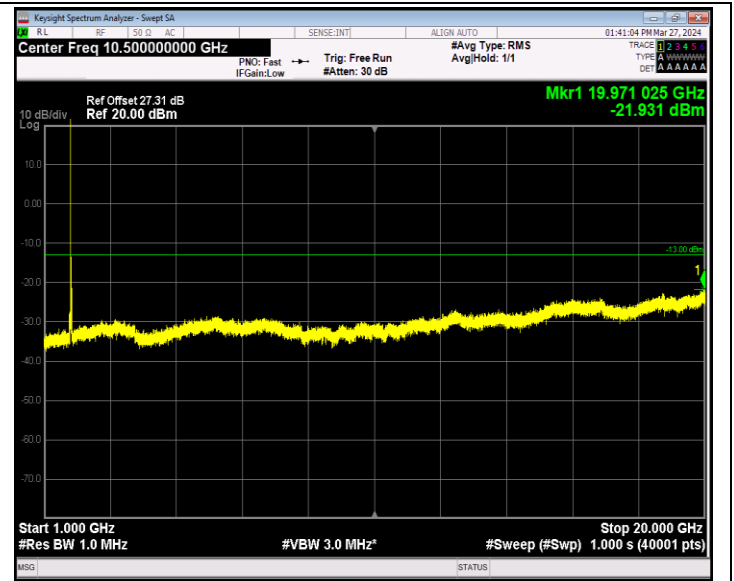
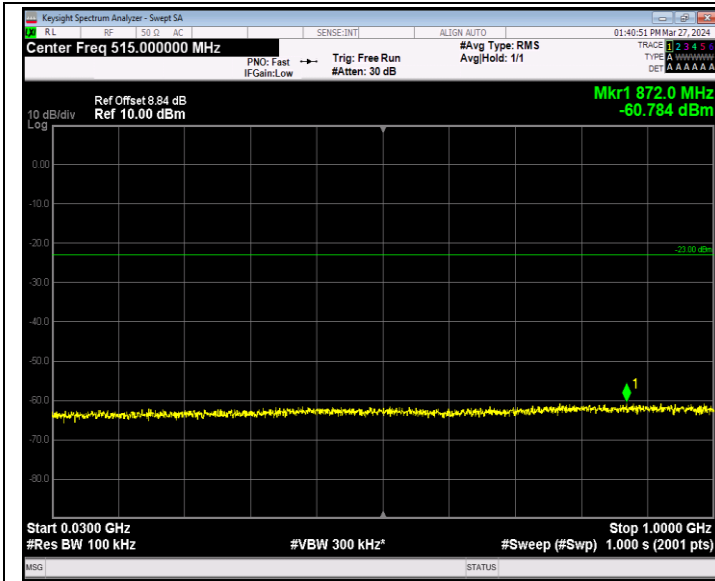
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Band66_20MHz_16QAM_132072_1RB#0_1000~20000_1000~20000



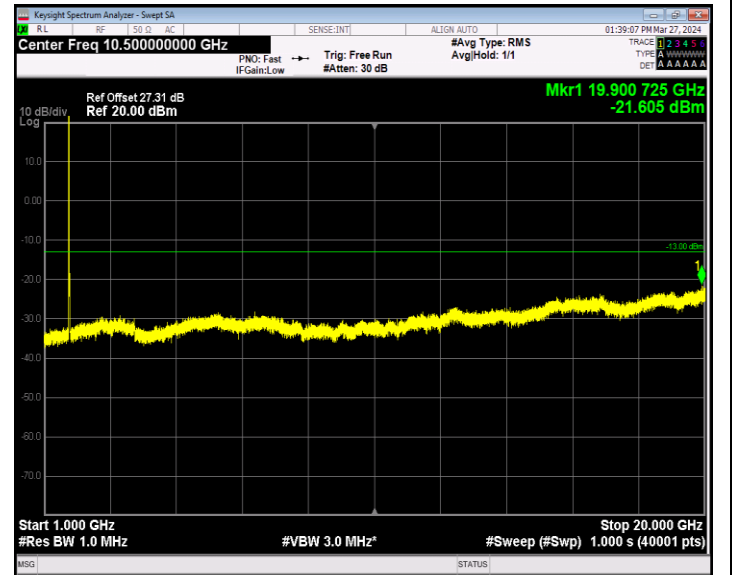
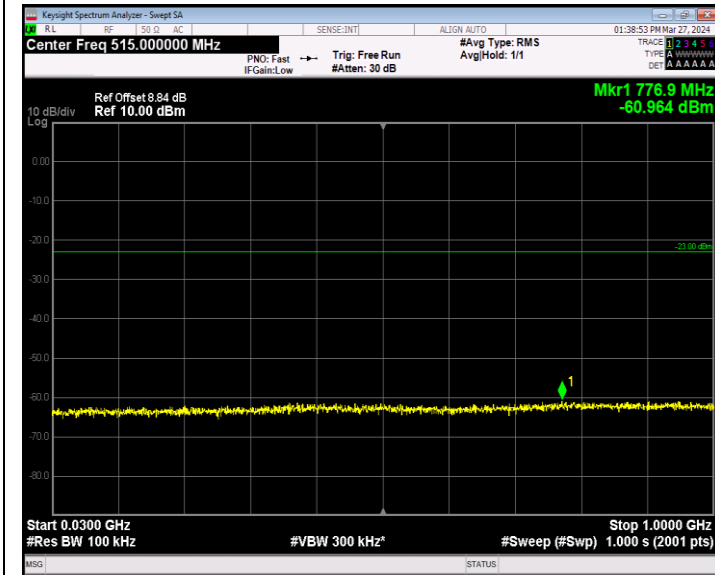
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Band66_20MHz_16QAM_132322_1RB#0_1000~20000_1000~20000



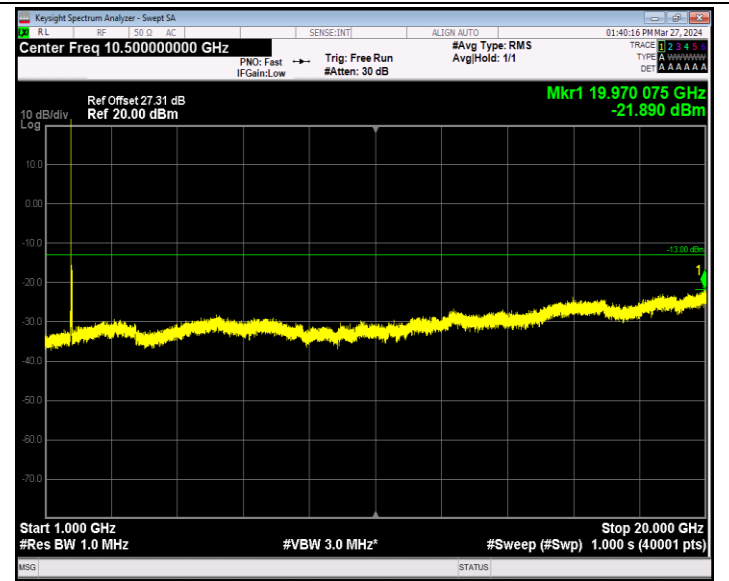
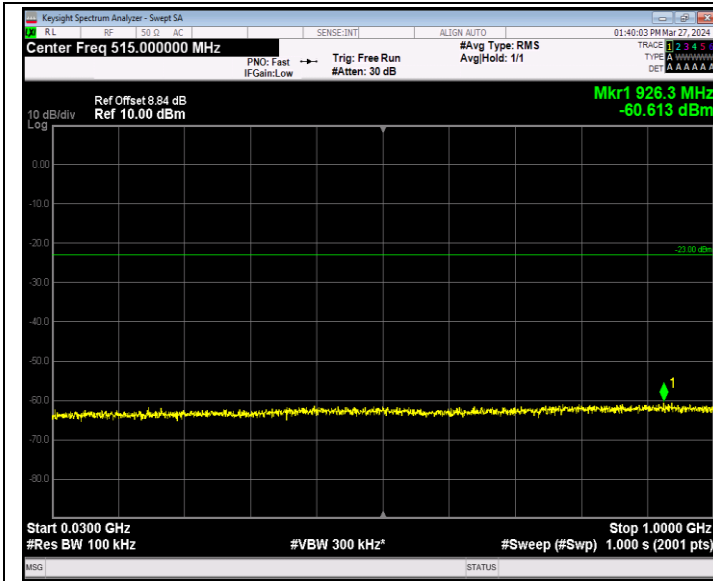
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Band66_20MHz_16QAM_132572_1RB#0_1000~20000_1000~20000



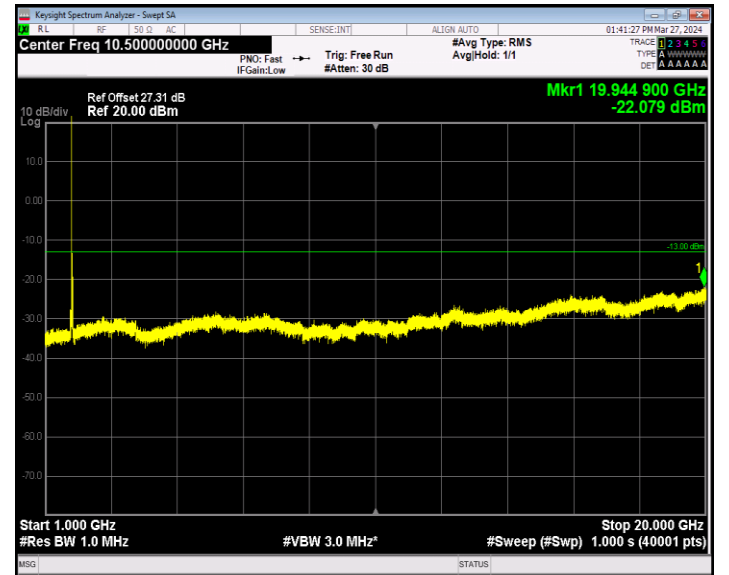
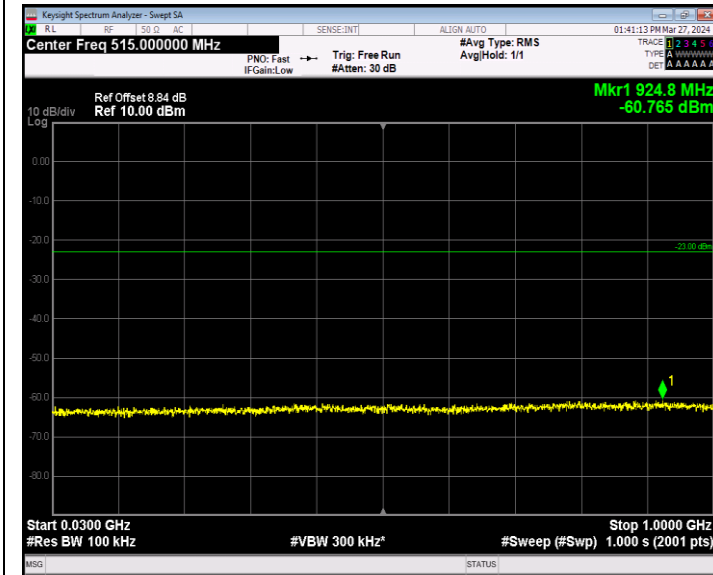
Band66_20MHz_64QAM_132072_1RB#0_30~1000_30~1000

Band66_20MHz_64QAM_132072_1RB#0_1000~20000_1000~20000



Band66_20MHz_64QAM_132322_1RB#0_30~1000_30~1000

Band66_20MHz_64QAM_132322_1RB#0_1000~20000_1000~20000



Band66_20MHz_64QAM_132572_1RB#0_30~1000_30~1000

Band66_20MHz_64QAM_132572_1RB#0_1000~20000_1000~20000

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					
3.91	-30	-2.35	-0.001250	Within authorized band for Band 2	Pass
	-20	14.09	0.007495		
	-10	20.28	0.010787		
	0	5.05	0.002686		
	10	7.10	0.003777		
	20	15.92	0.008468		
	30	14.13	0.007516		
	40	5.19	0.002761		
	50	-5.72	-0.003043		
16QAM					
3.91	-30	11.46	0.006096	Within authorized band for Band 2	Pass
	-20	-7.52	-0.004000		
	-10	12.07	0.006420		
	0	14.19	0.007548		
	10	-3.22	-0.001713		
	20	8.43	0.004484		
	30	4.43	0.002356		
	40	12.06	0.006415		
	50	15.12	0.008043		
64QAM					
3.91	-30	12.42	0.006606	Within authorized band for Band 2	Pass
	-20	11.10	0.005904		
	-10	14.20	0.007553		
	0	11.44	0.006085		
	10	13.83	0.007356		
	20	10.23	0.005441		
	30	8.20	0.004362		
	40	2.85	0.001516		
	50	11.93	0.006346		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	11.16	0.005936	Within authorized band for Band 2	Pass
	3.91	-3.46	-0.001840		
	4.50	14.42	0.007670		
16QAM					
25	3.45	13.79	0.007335	Within authorized band for Band 2	Pass
	3.91	16.94	0.009011		
	4.50	10.23	0.005441		
64QAM					
25	3.45	12.30	0.006543	Within authorized band for Band 2	Pass
	3.91	11.07	0.005888		
	4.50	3.36	0.001787		
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					
3.91	-30	-10.03	-0.011990	±2.5	Pass
	-20	9.03	0.010795		
	-10	-4.71	-0.005631		
	0	-9.17	-0.010962		
	10	3.38	0.004041		
	20	-6.59	-0.007878		
	30	-13.48	-0.016115		
	40	-8.10	-0.009683		
	50	-7.52	-0.008990		
16QAM					
3.91	-30	-8.91	-0.010652	±2.5	Pass
	-20	-5.15	-0.006157		
	-10	-11.60	-0.013867		
	0	-8.21	-0.009815		
	10	-8.20	-0.009803		
	20	8.84	0.010568		
	30	-6.09	-0.007280		
	40	-3.03	-0.003622		
	50	-6.69	-0.007998		
64QAM					
3.91	-30	-4.85	-0.001913	±2.5	Pass
	-20	9.56	0.003771		
	-10	27.38	0.010801		
	0	-6.90	-0.002722		
	10	23.72	0.009357		
	20	-7.72	-0.003045		
	30	24.95	0.009842		
	40	26.26	0.010359		
	50	-12.60	-0.004970		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	1.20	0.001435	±2.5	Pass
	3.91	6.79	0.008117		
	4.50	7.28	0.008703		
16QAM					
25	3.45	-2.96	-0.003539	±2.5	Pass
	3.91	-3.73	-0.004459		
	4.50	-13.80	-0.016497		
64QAM					
25	3.45	-5.16	-0.006169	±2.5	Pass
	3.91	-7.94	-0.009492		
	4.50	-3.18	-0.003802		
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					
3.91	-30	-12.42	-0.014848	Within authorized band for Band 7	Pass
	-20	-9.70	-0.011596		
	-10	-2.93	-0.003503		
	0	-9.33	-0.011154		
	10	-11.34	-0.013556		
	20	-1.16	-0.001387		
	30	-6.37	-0.007615		
	40	-4.81	-0.005750		
	50	6.92	0.008273		
16QAM					
3.91	-30	25.75	0.010158	Within authorized band for Band 7	Pass
	-20	16.94	0.006682		
	-10	16.47	0.006497		
	0	-17.84	-0.007037		
	10	12.90	0.005089		
	20	-5.32	-0.002099		
	30	17.18	0.006777		
	40	24.23	0.009558		
	50	19.77	0.007799		
64QAM					
3.91	-30	20.57	0.008114	Within authorized band for Band 7	Pass
	-20	-4.95	-0.001953		
	-10	23.23	0.009164		
	0	24.00	0.009467		
	10	-3.79	-0.001495		
	20	14.45	0.005700		
	30	8.75	0.003452		
	40	2.76	0.001089		
	50	13.02	0.005136		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	16.62	0.006556	Within authorized band for Band 7	Pass
	3.91	26.52	0.010462		
	4.50	-6.21	-0.002450		
16QAM					
25	3.45	-16.26	-0.006414	Within authorized band for Band 7	Pass
	3.91	16.79	0.006623		
	4.50	22.76	0.008978		
64QAM					
25	3.45	23.10	0.009112	Within authorized band for Band 7	Pass
	3.91	21.10	0.008323		
	4.50	19.88	0.007842		
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					
3.91	-30	1.19	0.001682	Within authorized band for Band 12	Pass
	-20	5.38	0.007604		
	-10	3.78	0.005343		
	0	1.63	0.002304		
	10	-3.76	-0.005314		
	20	-3.69	-0.005216		
	30	-2.22	-0.003138		
	40	2.86	0.004042		
	50	2.83	0.004000		
16QAM					
3.91	-30	-8.74	-0.012353	Within authorized band for Band 12	Pass
	-20	-6.24	-0.008820		
	-10	-2.32	-0.003279		
	0	-4.06	-0.005739		
	10	1.40	0.001979		
	20	-3.08	-0.004353		
	30	-4.43	-0.006261		
	40	-4.53	-0.006403		
	50	3.89	0.005498		
64QAM					
3.91	-30	1.97	0.002784	Within authorized band for Band 12	Pass
	-20	2.46	0.003477		
	-10	2.42	0.003420		
	0	5.62	0.007943		
	10	-2.75	-0.003887		
	20	-4.53	-0.006403		
	30	5.55	0.007845		
	40	7.14	0.010092		
	50	1.24	0.001753		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-3.53	-0.004989	Within authorized band for Band 12	Pass
	3.91	-5.58	-0.007887		
	4.50	3.00	0.004240		
16QAM					
25	3.45	-4.11	-0.005809	Within authorized band for Band 12	Pass
	3.91	-2.73	-0.003859		
	4.50	-2.66	-0.003760		
64QAM					
25	3.45	-4.73	-0.006686	Within authorized band for Band 12	Pass
	3.91	-3.76	-0.005314		
	4.50	-2.36	-0.003336		
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=782.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.91	-30	-6.05	-0.007737	Within authorized band for Band 13	Pass
	-20	4.89	0.006253		
	-10	-6.02	-0.007698		
	0	3.83	0.004898		
	10	-1.43	-0.001829		
	20	5.16	0.006598		
	30	-5.76	-0.007366		
	40	-6.19	-0.007916		
	50	-3.93	-0.005026		
16QAM					
3.91	-30	-4.65	-0.005946	Within authorized band for Band 13	Pass
	-20	-5.16	-0.006598		
	-10	-4.41	-0.005639		
	0	1.92	0.002455		
	10	-5.14	-0.006573		
	20	-1.62	-0.002072		
	30	-3.68	-0.004706		
	40	2.73	0.003491		
	50	5.18	0.006624		
64QAM					
3.91	-30	6.65	0.008504	Within authorized band for Band 13	Pass
	-20	4.68	0.005985		
	-10	-6.38	-0.008159		
	0	3.53	0.004514		
	10	3.86	0.004936		
	20	-3.92	-0.005013		
	30	5.51	0.007046		
	40	1.56	0.001995		
	50	-5.62	-0.007187		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-3.25	-0.004156	Within authorized band for Band 13	Pass
	3.91	2.07	0.002647		
	4.50	-5.34	-0.006829		
16QAM					
25	3.45	-5.46	-0.006982	Within authorized band for Band 13	Pass
	3.91	-5.26	-0.006726		
	4.50	2.75	0.003517		
64QAM					
25	3.45	-5.47	-0.006982	Within authorized band for Band 13	Pass
	3.91	-5.13	-0.006717		
	4.50	3.55	0.004187		
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=40620 Frequency=2593.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.91	-30	-4.13	-0.001593	Within authorized band for Band 41	Pass
	-20	10.39	0.004007		
	-10	4.11	0.001585		
	0	12.46	0.004805		
	10	5.31	0.002048		
	20	3.92	0.001512		
	30	8.74	0.003371		
	40	18.73	0.007223		
	50	12.56	0.004844		
16QAM					
3.91	-30	-4.28	-0.001651	Within authorized band for Band 41	Pass
	-20	9.63	0.003714		
	-10	6.87	0.002649		
	0	7.07	0.002727		
	10	6.37	0.002457		
	20	13.39	0.005164		
	30	6.87	0.002649		
	40	6.87	0.002649		
	50	12.10	0.004666		
64QAM					
3.91	-30	12.59	0.004855	Within authorized band for Band 41	Pass
	-20	2.52	0.000972		
	-10	10.96	0.004227		
	0	7.05	0.002719		
	10	9.94	0.003833		
	20	7.48	0.002885		
	30	10.40	0.004011		
	40	9.31	0.003590		
	50	5.81	0.002241		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	15.59	0.006012	Within authorized band for Band 41	Pass
	3.91	9.37	0.003614		
	4.50	9.27	0.003575		
16QAM					
25	3.45	-7.07	-0.002727	Within authorized band for Band41	Pass
	3.91	10.03	0.003868		
	4.50	8.97	0.003459		
64QAM					
25	3.45	10.37	0.003999	Within authorized band for Band41	Pass
	3.91	11.73	0.004524		
	4.50	9.46	0.003648		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 42 part:

Reference Frequency: LTE Band 41 (10MHz) Middle channel=42590 Frequency=3500.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.91	-30	-14.31	-0.004089	Within authorized band for Band 42	Pass
	-20	14.22	0.004063		
	-10	26.02	0.007434		
	0	3.06	0.000874		
	10	-22.39	-0.006397		
	20	17.74	0.005069		
	30	-7.87	-0.002249		
	40	-24.75	-0.007071		
	50	25.92	0.007406		
16QAM					
3.91	-30	29.45	0.008414	Within authorized band for Band 42	Pass
	-20	18.88	0.005394		
	-10	26.68	0.007623		
	0	-4.66	-0.001331		
	10	22.34	0.006383		
	20	27.84	0.007954		
	30	24.08	0.006880		
	40	-20.56	-0.005874		
	50	14.39	0.004111		
64QAM					
3.91	-30	35.88	0.010251	Within authorized band for Band 42	Pass
	-20	17.01	0.004860		
	-10	24.50	0.007000		
	0	18.65	0.005329		
	10	9.74	0.002783		
	20	12.53	0.003580		
	30	16.29	0.004654		
	40	16.58	0.004737		
	50	13.60	0.003886		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	38.28	0.010937	Within authorized band for Band 42	Pass
	3.91	19.48	0.005566		
	4.50	-6.39	-0.001826		
16QAM					
25	3.45	28.22	0.008063	Within authorized band for Band42	Pass
	3.91	5.92	0.001691		
	4.50	31.66	0.009046		
64QAM					
25	3.45	-7.50	-0.002143	Within authorized band for Band42	Pass
	3.91	11.14	0.003183		
	4.50	21.16	0.006046		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 66 part:

Reference Frequency: LTE Band 66 (10MHz) Middle channel=132322 Frequency=1745.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.91	-30	8.41	0.004819	Within authorized band for Band 66	Pass
	-20	7.51	0.004304		
	-10	19.68	0.011278		
	0	19.00	0.010888		
	10	19.18	0.010991		
	20	15.68	0.008986		
	30	19.08	0.010934		
	40	16.98	0.009731		
	50	10.13	0.005805		
16QAM					
3.91	-30	9.01	0.005163	Within authorized band for Band 66	Pass
	-20	8.33	0.004774		
	-10	11.17	0.006401		
	0	16.99	0.009736		
	10	24.10	0.013811		
	20	18.21	0.010436		
	30	11.04	0.006327		
	40	4.92	0.002819		
	50	22.76	0.013043		
64QAM					
3.91	-30	10.96	0.006281	Within authorized band for Band 66	Pass
	-20	13.78	0.007897		
	-10	17.29	0.009908		
	0	20.34	0.011656		
	10	21.19	0.012143		
	20	18.45	0.010573		
	30	17.98	0.010304		
	40	17.82	0.010212		
	50	21.09	0.012086		

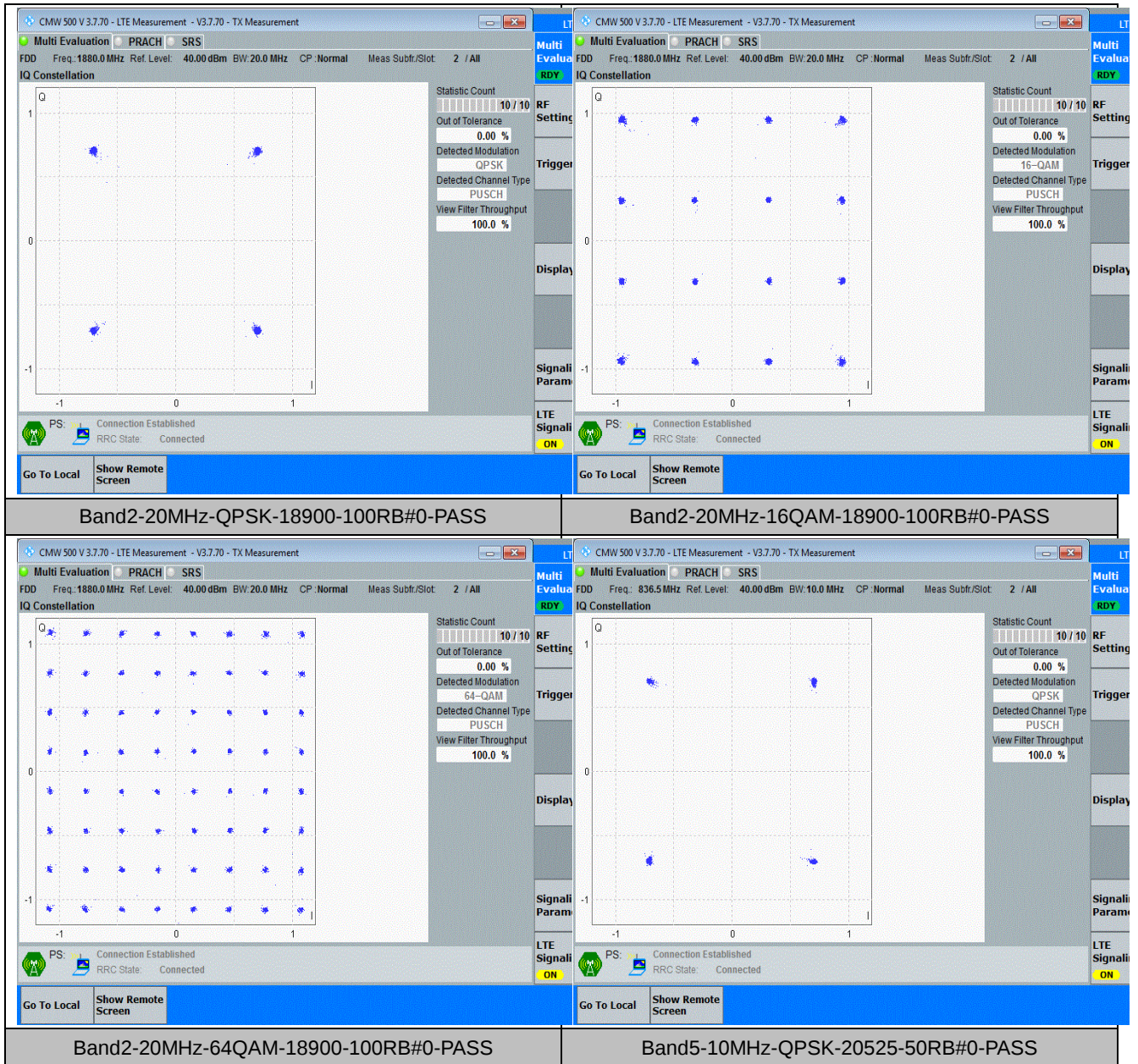
Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	15.69	0.008991	Within authorized band for Band 66	Pass
	3.91	11.52	0.006602		
	4.50	20.18	0.011564		
16QAM					
25	3.45	15.85	0.009083	Within authorized band for Band 66	Pass
	3.91	19.00	0.010888		
	4.50	11.69	0.006699		
64QAM					
25	3.45	6.69	0.003834	Within authorized band for Band 66	Pass
	3.91	12.30	0.007049		
	4.50	16.81	0.009633		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

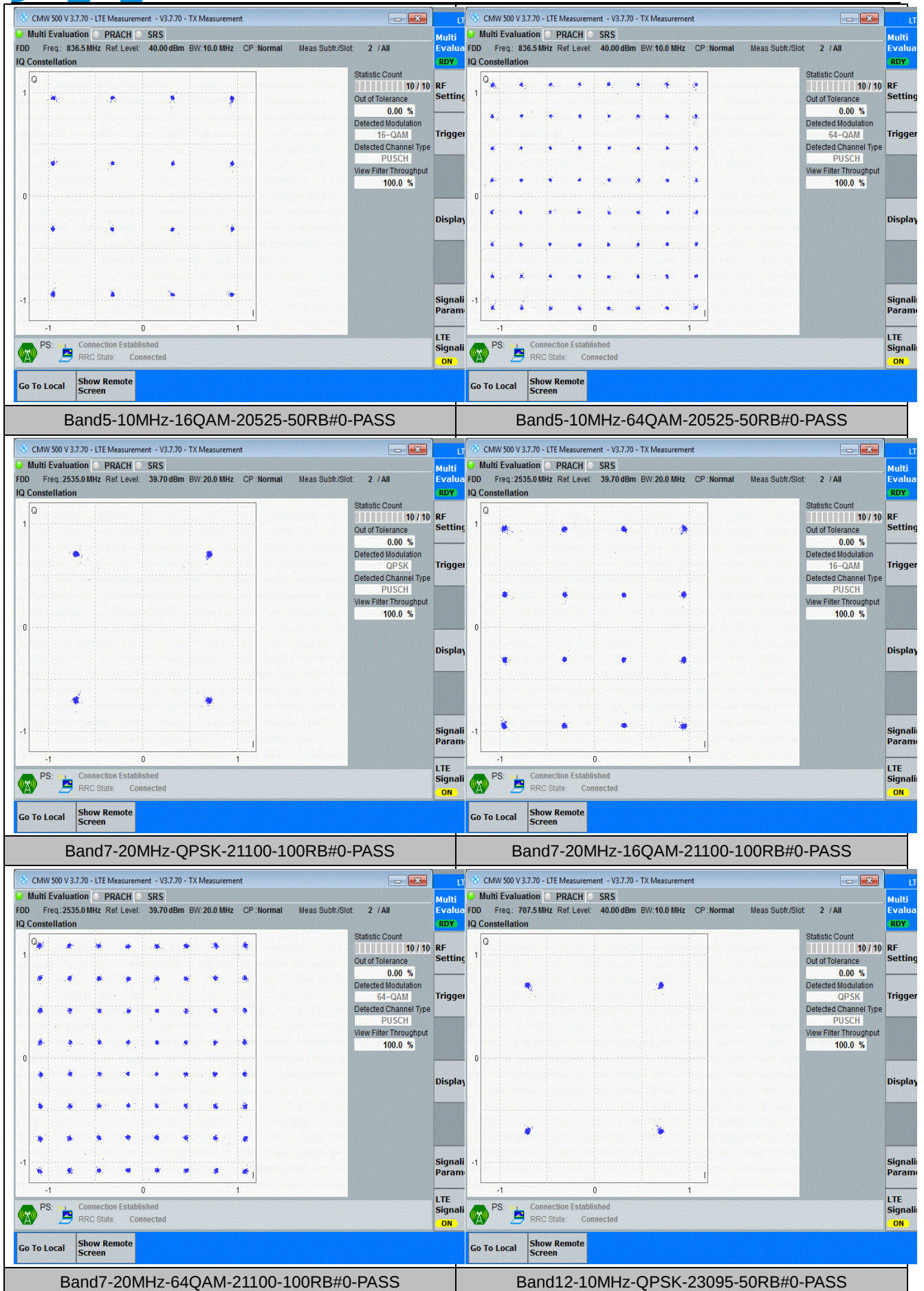
Appendix G: Modulation Characteristics

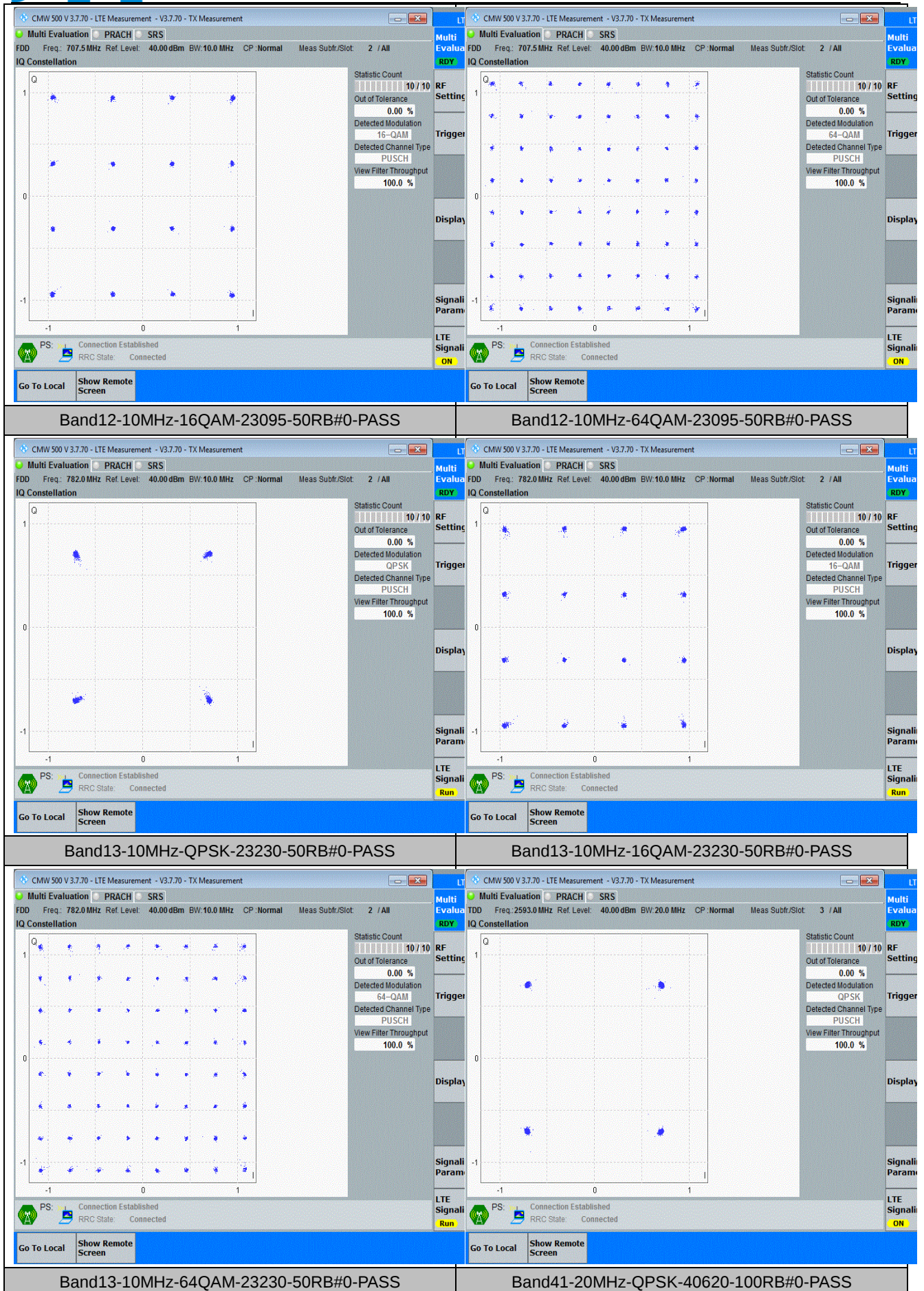
Test Result

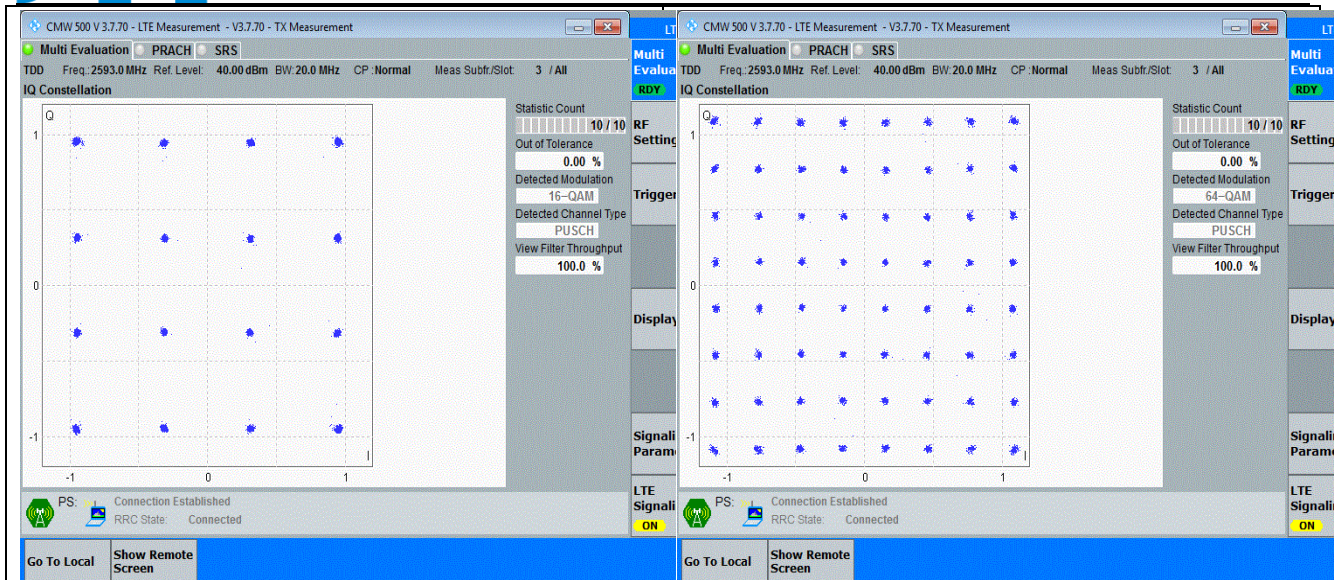
Band	Bandwidth	Modulation	Channel	RB Configuration	Verdict
Band2	20MHz	QPSK	18900	100RB#0	PASS
Band2	20MHz	16QAM	18900	100RB#0	PASS
Band2	20MHz	64QAM	18900	100RB#0	PASS
Band5	10MHz	QPSK	20525	50RB#0	PASS
Band5	10MHz	16QAM	20525	50RB#0	PASS
Band5	10MHz	64QAM	20525	50RB#0	PASS
Band7	20MHz	QPSK	21100	100RB#0	PASS
Band7	20MHz	16QAM	21100	100RB#0	PASS
Band7	20MHz	64QAM	21100	100RB#0	PASS
Band12	10MHz	QPSK	23095	50RB#0	PASS
Band12	10MHz	16QAM	23095	50RB#0	PASS
Band12	10MHz	64QAM	23095	50RB#0	PASS
Band13	10MHz	QPSK	23230	50RB#0	PASS
Band13	10MHz	16QAM	23230	50RB#0	PASS
Band13	10MHz	64QAM	23230	50RB#0	PASS
Band41	20MHz	QPSK	40620	100RB#0	PASS
Band41	20MHz	16QAM	40620	100RB#0	PASS
Band41	20MHz	64QAM	40620	100RB#0	PASS
42(3450-3550)	20MHz	QPSK	42590	100RB#0	PASS
42(3450-3550)	20MHz	16QAM	42590	100RB#0	PASS
42(3450-3550)	20MHz	64QAM	42590	100RB#0	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS
Band66	20MHz	64QAM	132322	100RB#0	PASS

Test Graphs



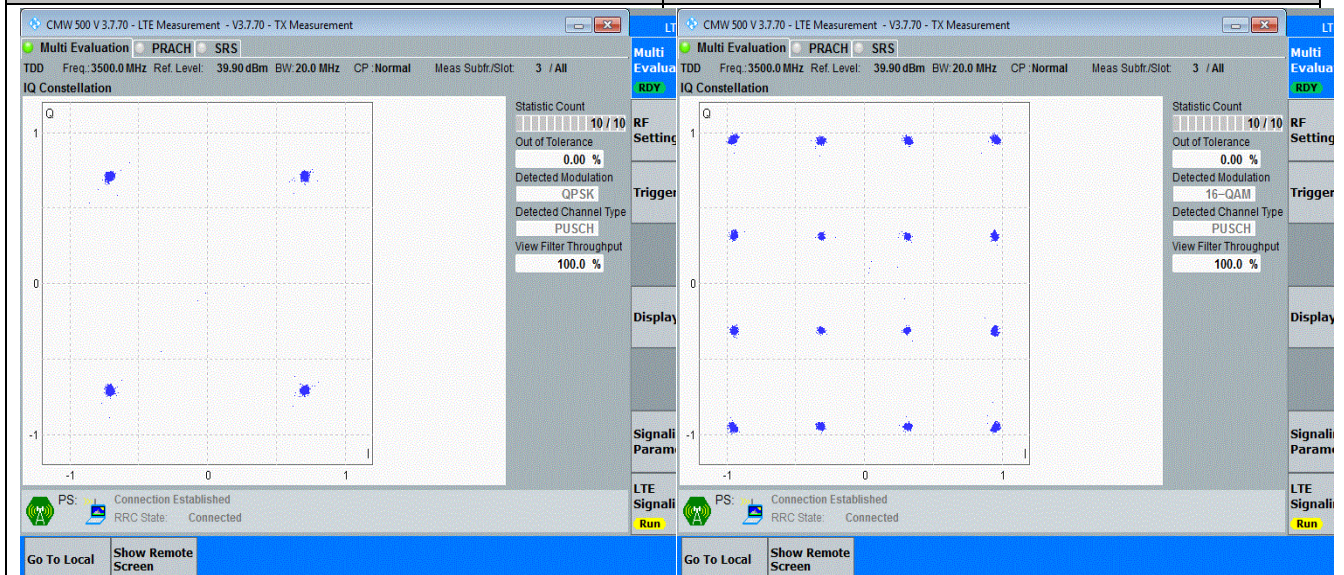






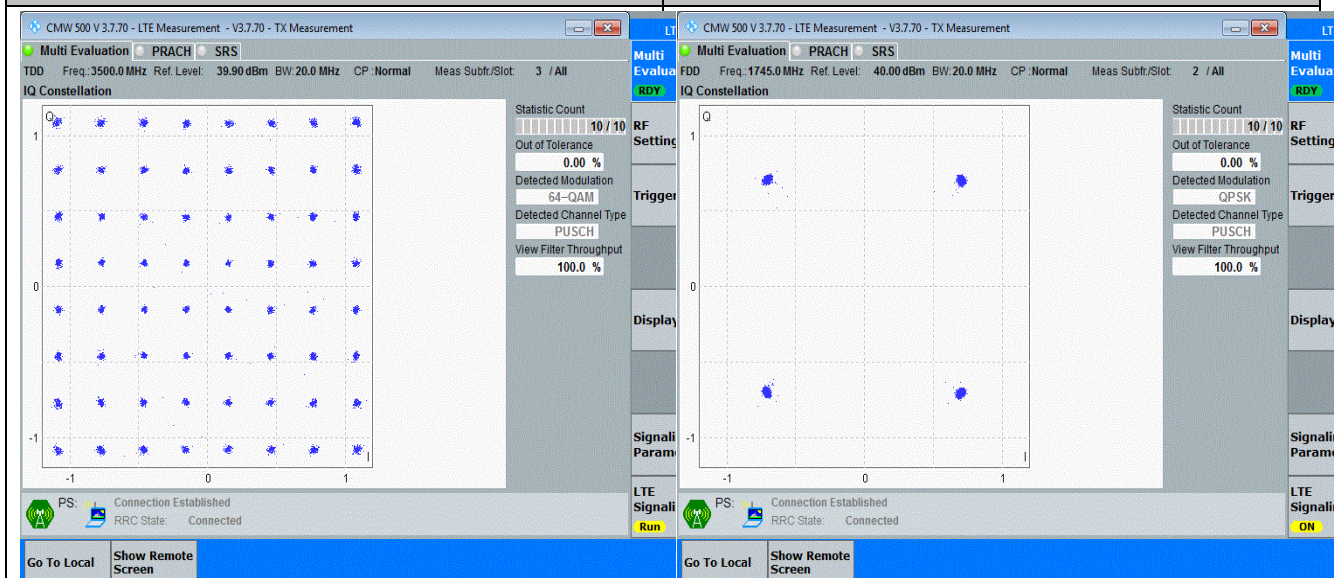
Band41-20MHz-16QAM-40620-100RB#0-PASS

Band41-20MHz-64QAM-40620-100RB#0-PASS



42(3450-3550)-20MHz-QPSK-42590-100RB#0-PASS

42(3450-3550)-20MHz-16QAM-42590-100RB#0-PASS



42(3450-3550)-20MHz-64QAM-42590-100RB#0-PASS

Band66-20MHz-QPSK-132322-100RB#0-PASS

