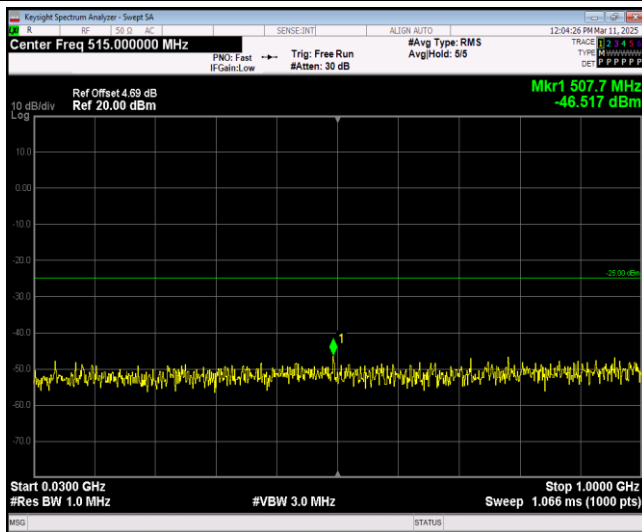


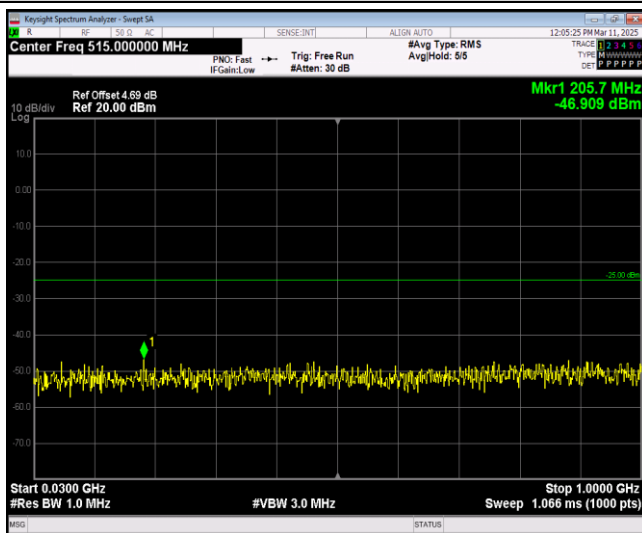
Band41-20MHz-QPSK-40140-1RB#0-Range1:30~1000MHz



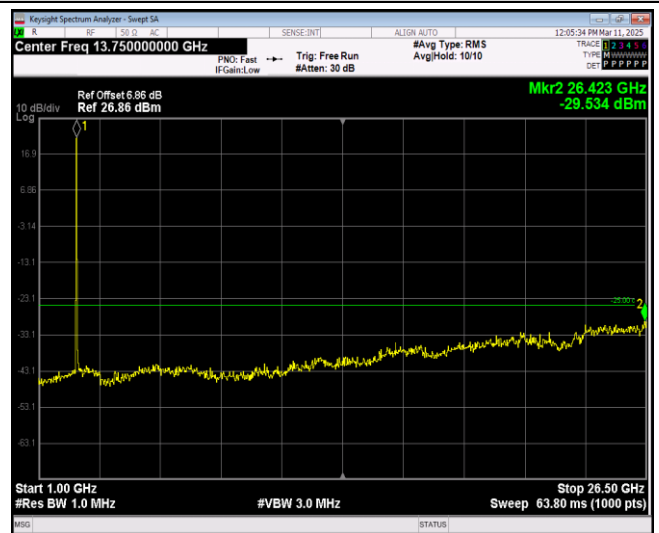
Band41-20MHz-QPSK-40140-1RB#0-Range2:1000~26500MHz



Band41-20MHz-QPSK-40640-1RB#0-Range1:30~1000MHz



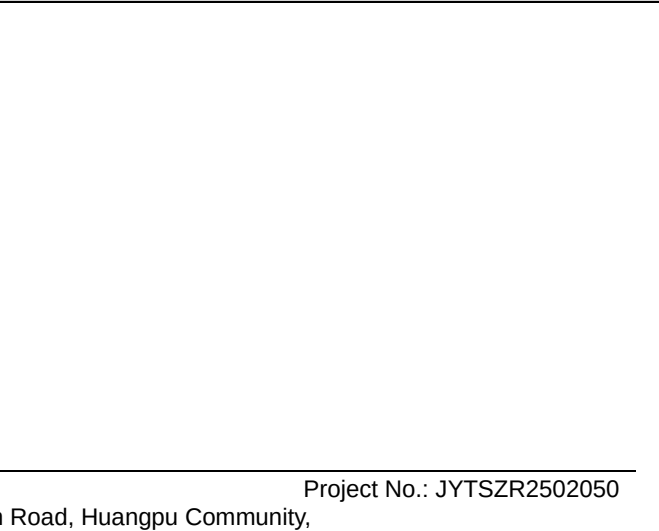
Band41-20MHz-QPSK-40640-1RB#0-Range2:1000~26500MHz

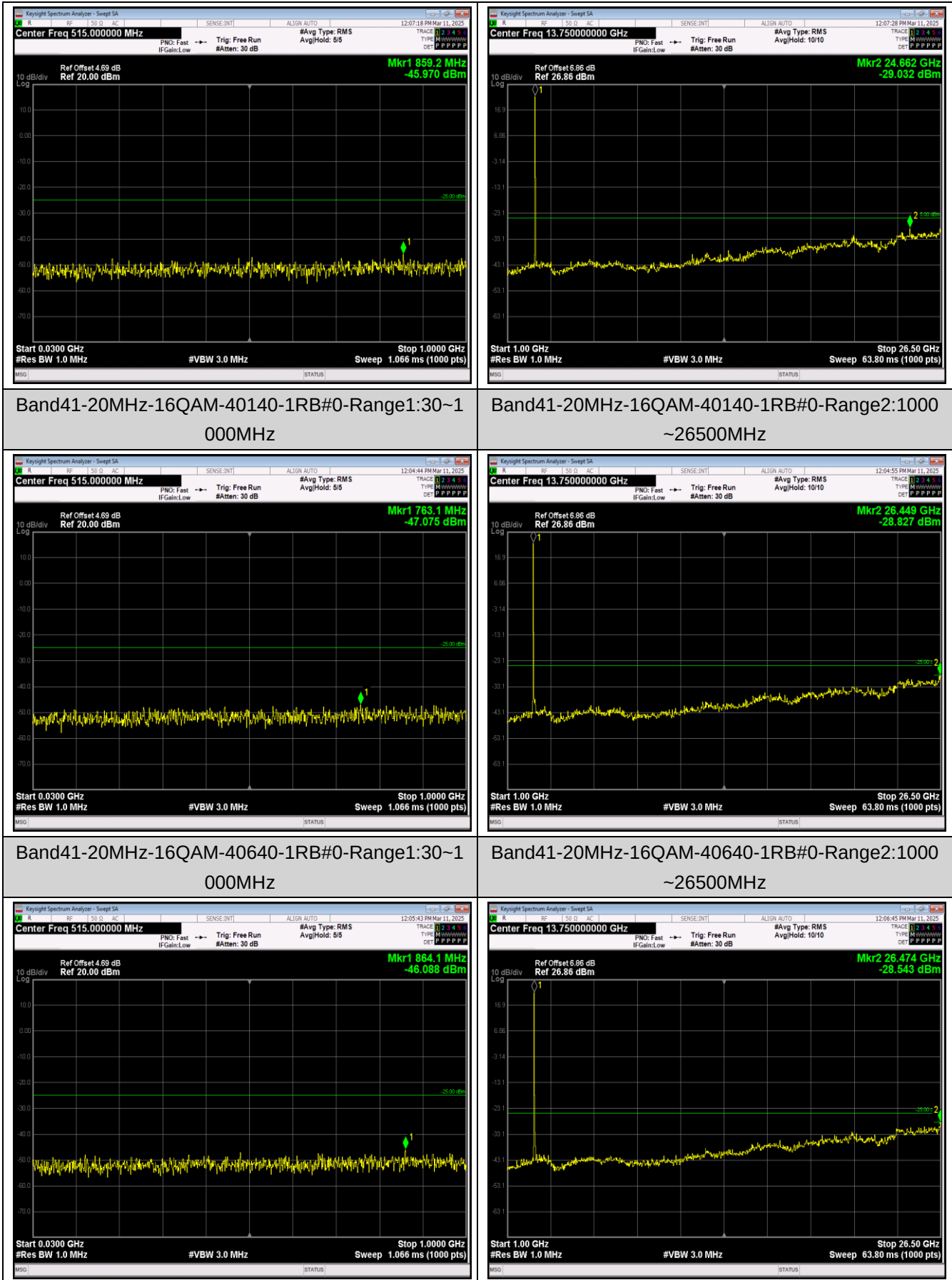


Band41-20MHz-QPSK-41140-1RB#0-Range1:30~1000MHz

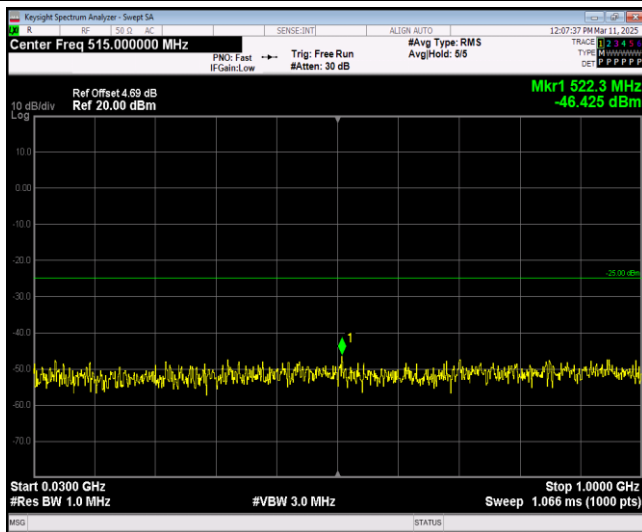


Band41-20MHz-QPSK-41140-1RB#0-Range2:1000~26500MHz





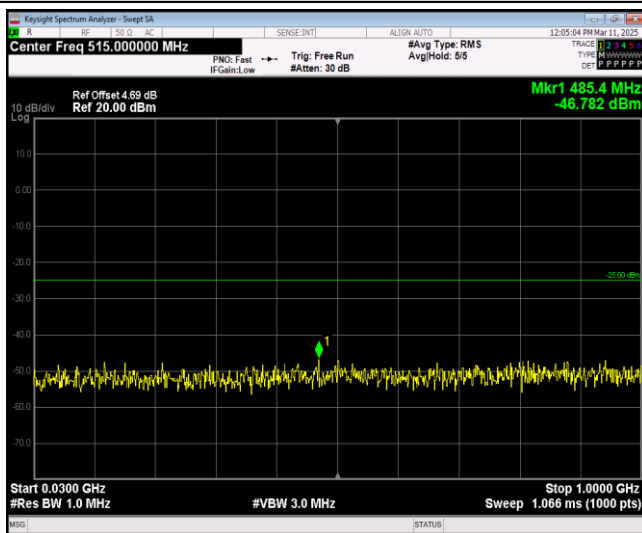
Band41-20MHz-16QAM-41140-1RB#0-Range1:30~1
000MHz



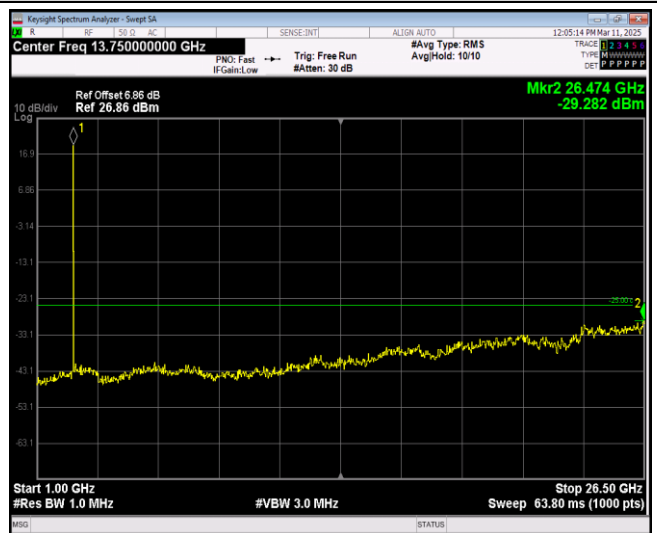
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~26500MHz



Band41-20MHz-64QAM-40140-1RB#0-Range1:30~1
000MHz



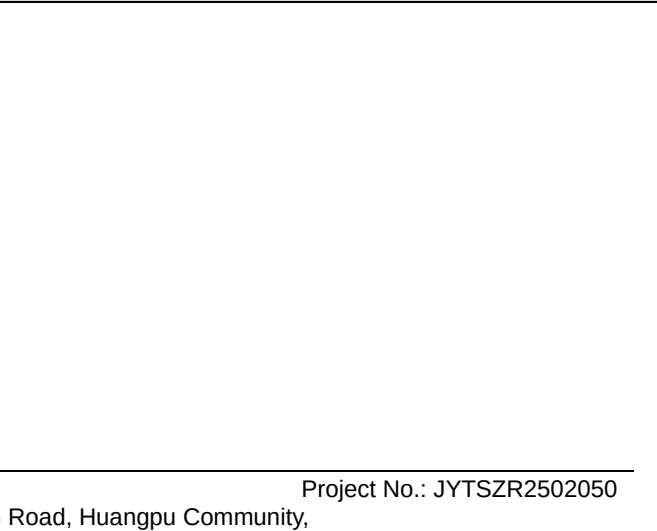
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~26500MHz

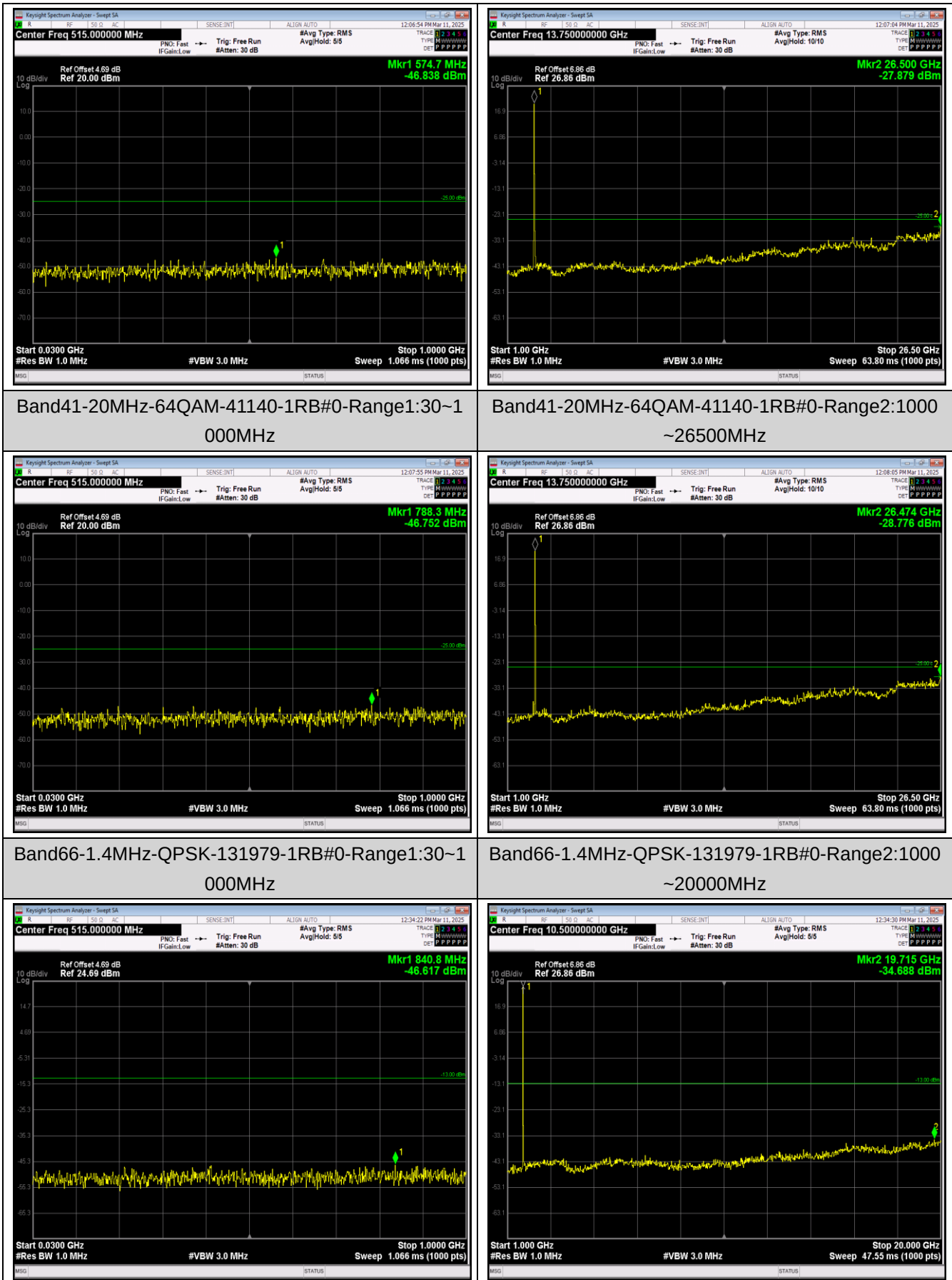


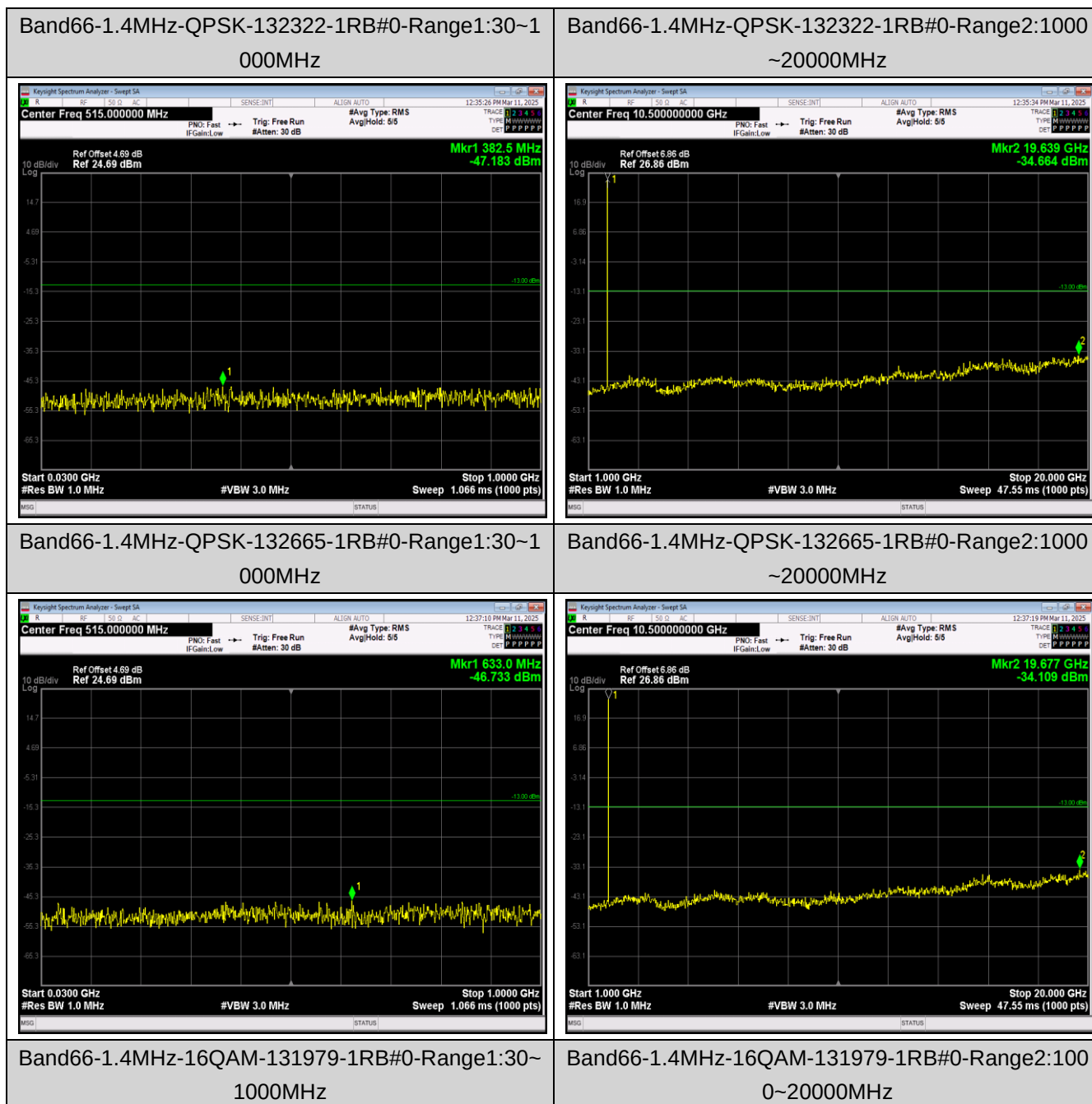
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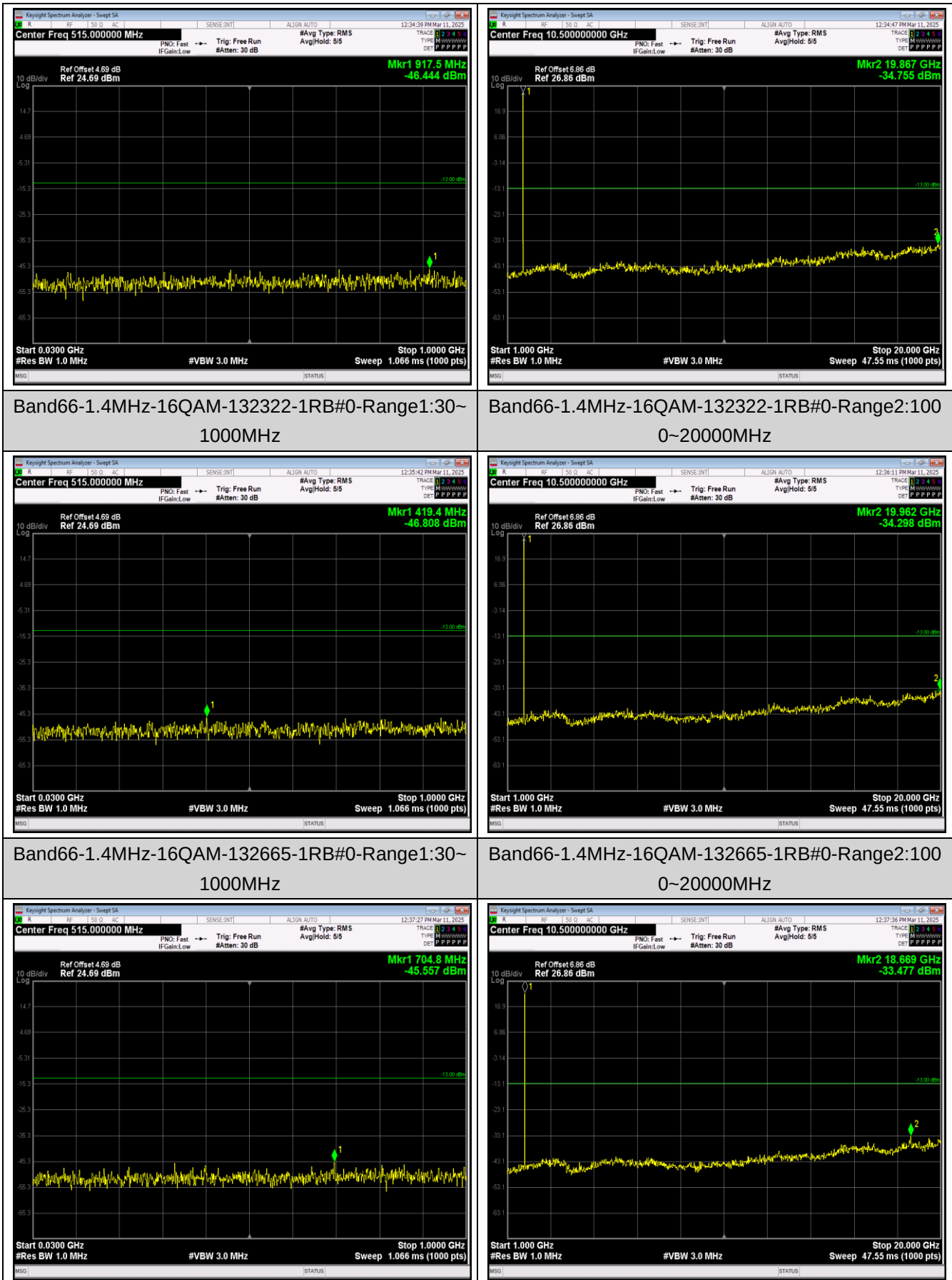


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~26500MHz

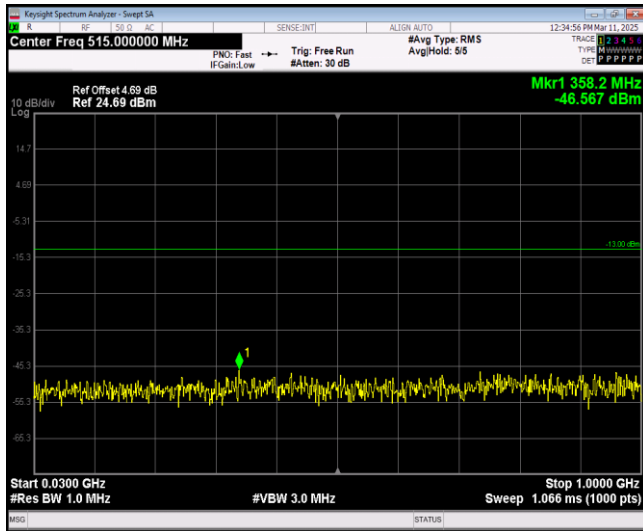








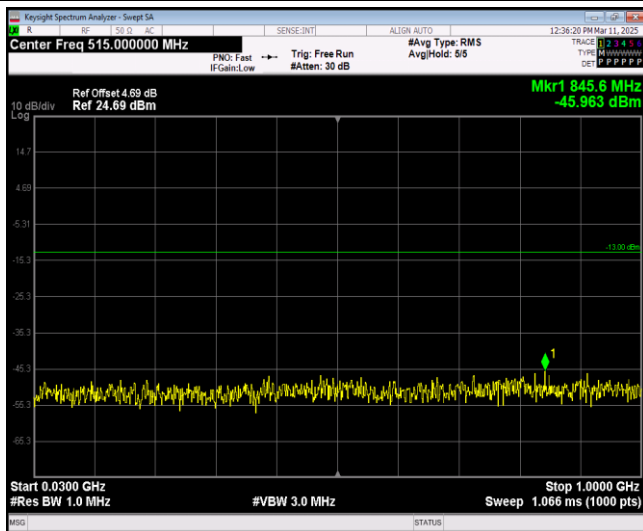
Band66-1.4MHz-64QAM-131979-1RB#0-Range1:30~1000MHz



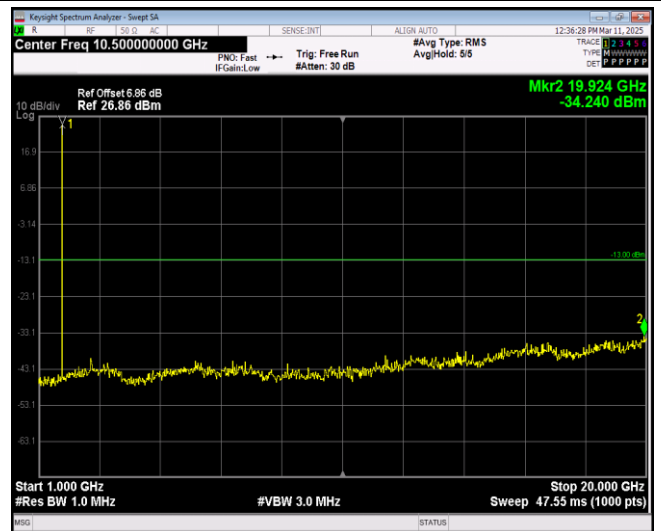
Band66-1.4MHz-64QAM-131979-1RB#0-Range2:1000~20000MHz



Band66-1.4MHz-64QAM-132322-1RB#0-Range1:30~1000MHz



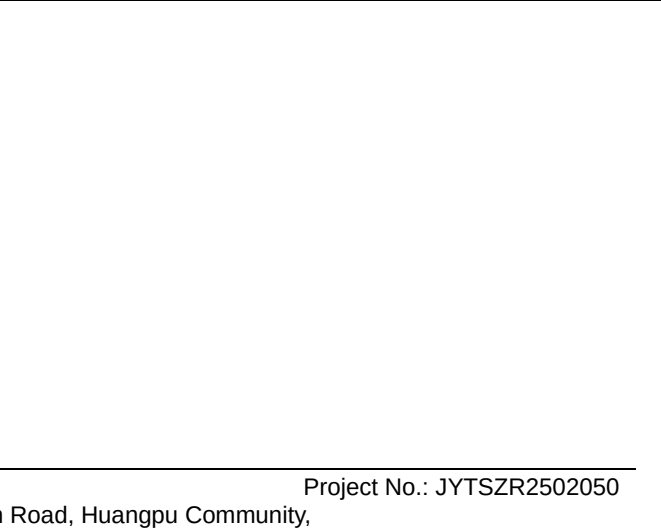
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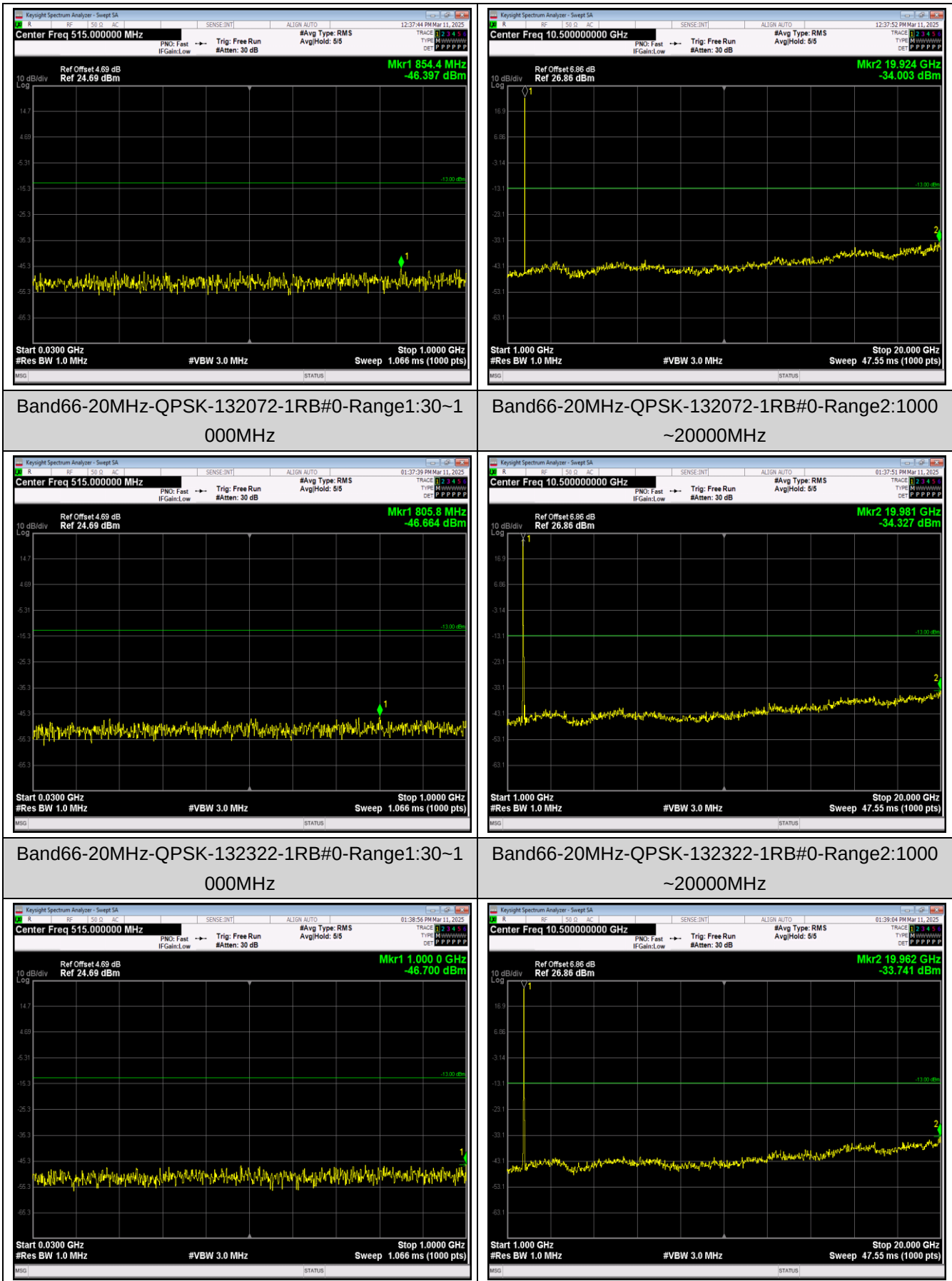


Band66-1.4MHz-64QAM-132665-1RB#0-Range1:30~1000MHz

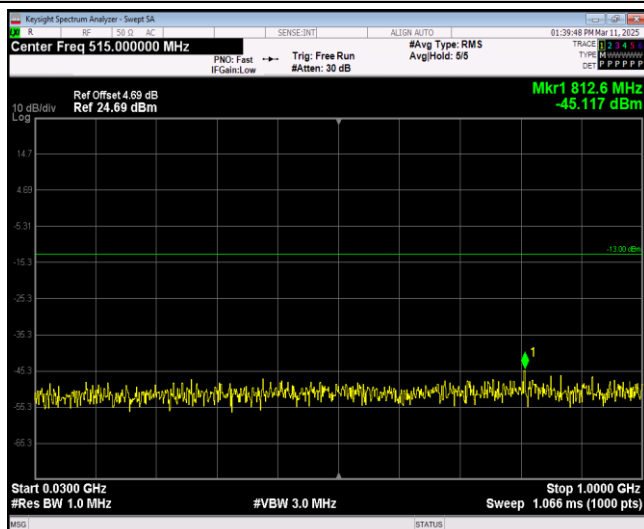


Band66-1.4MHz-64QAM-132665-1RB#0-Range2:1000~20000MHz





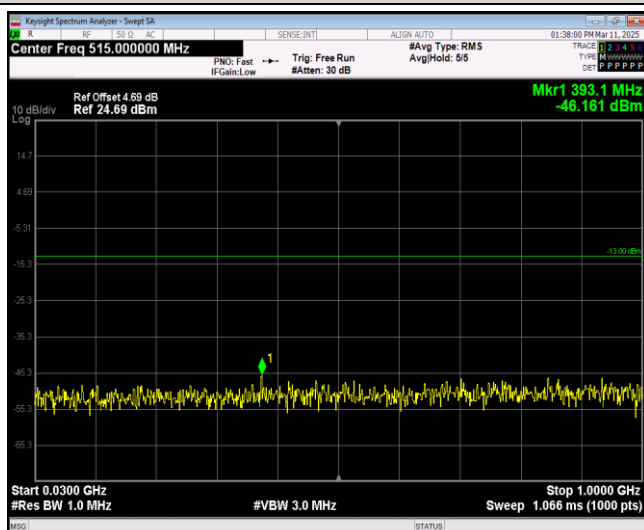
Band66-20MHz-QPSK-132572-1RB#0-Range1:30~1
000MHz



Band66-20MHz-QPSK-132572-1RB#0-Range2:1000
~20000MHz



Band66-20MHz-16QAM-132072-1RB#0-Range1:30~
1000MHz



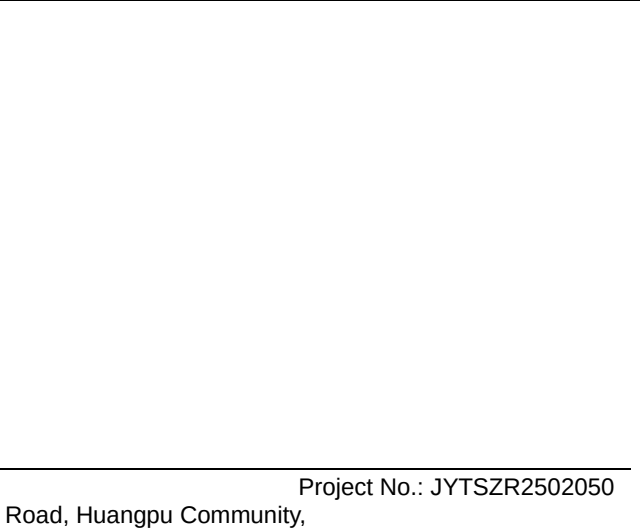
Band66-20MHz-16QAM-132072-1RB#0-Range2:100
0~20000MHz

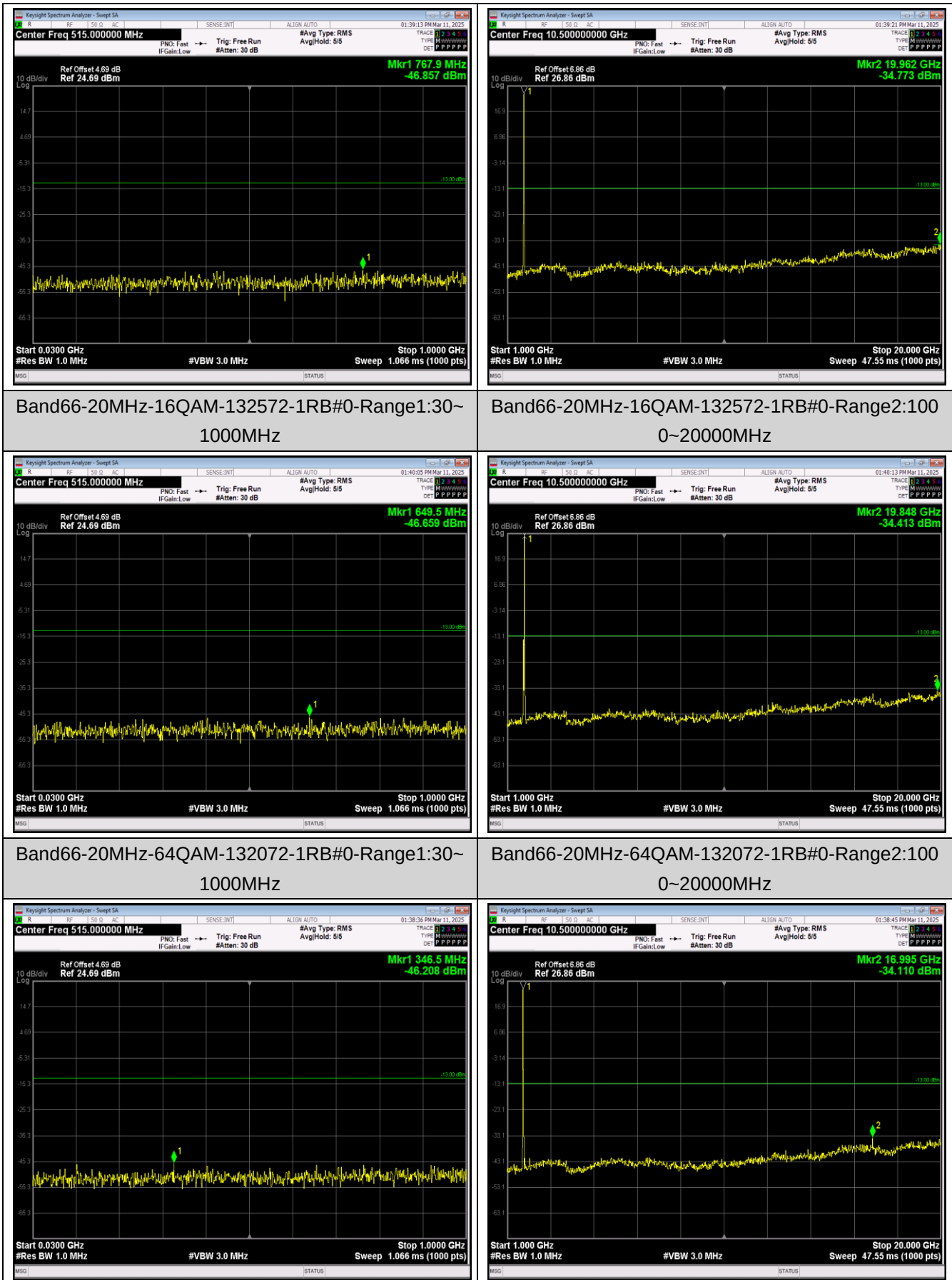


Band66-20MHz-16QAM-132322-1RB#0-Range1:30~
1000MHz

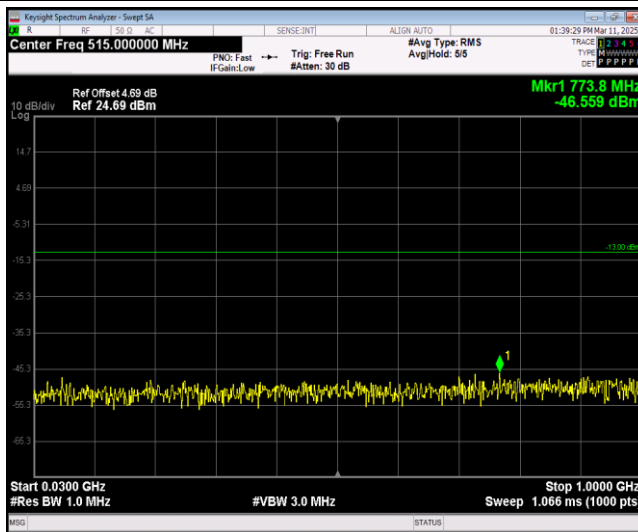


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0~20000MHz

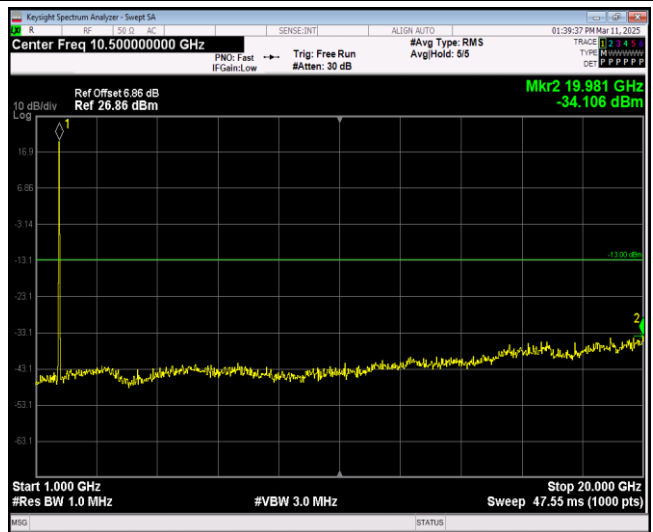




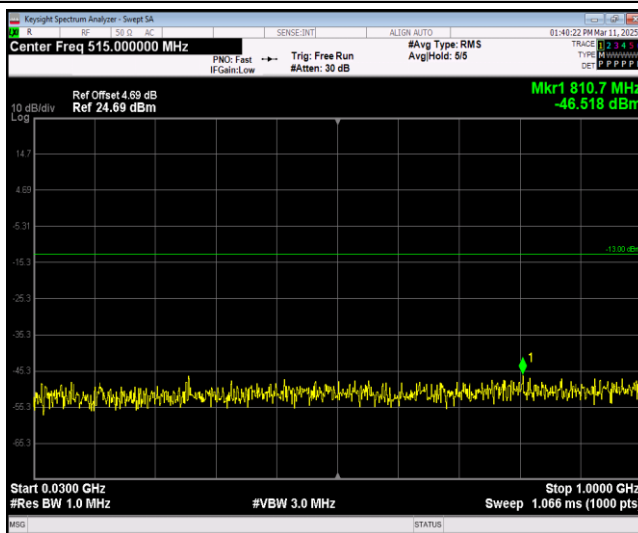
Band66-20MHz-64QAM-132322-1RB#0-Range1:30~
1000MHz



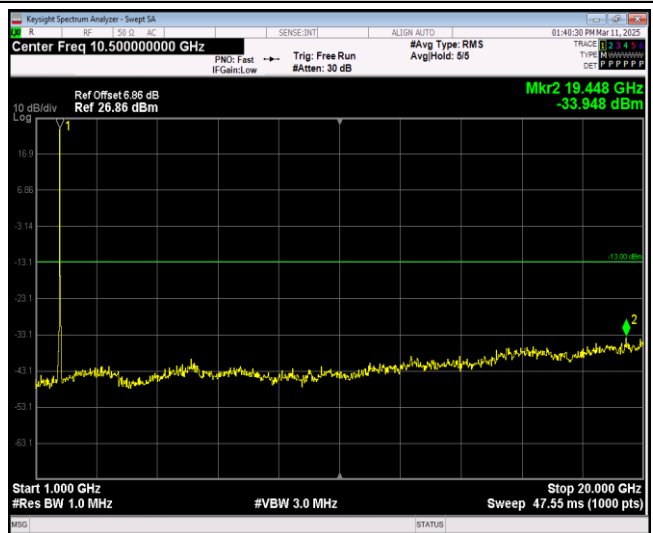
Band66-20MHz-64QAM-132322-1RB#0-Range2:100
0~20000MHz



Band66-20MHz-64QAM-132572-1RB#0-Range1:30~
1000MHz



Band66-20MHz-64QAM-132572-1RB#0-Range2:100
0~20000MHz



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	-27.41	-0.014580	Within authorized band for Band 2	Pass
	-20	-55.43	-0.029484		
	-10	-43.19	-0.022973		
	0	15.08	0.008021		
	10	-27.52	-0.014638		
	20	-54.60	-0.029043		
	30	-50.90	-0.027074		
	40	-26.36	-0.014021		
	50	-30.53	-0.016239		
16QAM					
3.85	-30	11.93	0.006346	Within authorized band for Band 2	Pass
	-20	15.13	0.008048		
	-10	51.70	0.027500		
	0	32.23	0.017144		
	10	33.17	0.017644		
	20	52.20	0.027766		
	30	16.91	0.008995		
	40	23.63	0.012569		
	50	17.95	0.009548		
64QAM					
3.85	-30	46.76	0.024872	Within authorized band for Band 2	Pass
	-20	17.61	0.009367		
	-10	44.59	0.023718		
	0	-16.74	-0.008904		
	10	13.38	0.007117		
	20	26.78	0.014245		
	30	15.44	0.008213		
	40	14.51	0.007718		
	50	18.17	0.009665		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-23.88	-0.012702	Within authorized band for Band 2	Pass
	3.85	-13.18	-0.007011		
	4.40	8.97	0.004771		
16QAM					
25	3.45	-35.61	-0.018941	Within authorized band for Band 2	Pass
	3.85	-38.28	-0.020362		
	4.40	-16.99	-0.009037		
64QAM					
25	3.45	35.82	0.019053	Within authorized band for Band 2	Pass
	3.85	24.73	0.013154		
	4.40	34.82	0.018521		
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	-19.71	-0.011377	Within authorized band for Band 4	Pass
	-20	-28.27	-0.016317		
	-10	9.11	0.005258		
	0	-13.65	-0.007879		
	10	-25.15	-0.014517		
	20	-19.83	-0.011446		
	30	-26.91	-0.015532		
	40	-25.33	-0.014620		
	50	-29.11	-0.016802		
16QAM					
3.85	-30	35.43	0.020450	Within authorized band for Band 4	Pass
	-20	26.35	0.015209		
	-10	42.37	0.024456		
	0	5.87	0.003388		
	10	19.44	0.011221		
	20	27.11	0.015648		
	30	20.81	0.012012		
	40	35.33	0.020392		
	50	23.46	0.013541		
64QAM					
3.85	-30	21.64	0.012491	Within authorized band for Band 4	Pass
	-20	24.78	0.014303		
	-10	33.99	0.019619		
	0	46.76	0.026990		
	10	16.74	0.009662		
	20	20.54	0.011856		
	30	33.83	0.019527		
	40	30.07	0.017356		
	50	25.39	0.014655		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	15.85	0.009149	Within authorized band for Band 4	Pass
	3.85	25.63	0.014794		
	4.40	-12.19	-0.007036		
16QAM					
25	3.45	-24.12	-0.013922	Within authorized band for Band 4	Pass
	3.85	-35.92	-0.020733		
	4.40	14.12	0.008150		
64QAM					
25	3.45	-9.24	-0.005333	Within authorized band for Band 4	Pass
	3.85	32.60	0.018817		
	4.40	12.23	0.007059		
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	-11.13	-0.013305	±2.5	Pass
	-20	-11.64	-0.013915		
	-10	-8.20	-0.009803		
	0	-5.69	-0.006802		
	10	4.55	0.005439		
	20	5.05	0.006037		
	30	5.19	0.006204		
	40	8.04	0.009611		
	50	7.00	0.008368		
16QAM					
3.85	-30	40.88	0.048870	±2.5	Pass
	-20	50.78	0.060705		
	-10	11.89	0.014214		
	0	21.10	0.025224		
	10	30.26	0.036175		
	20	35.72	0.042702		
	30	42.16	0.050400		
	40	47.19	0.056414		
	50	9.98	0.011931		
64QAM					
3.85	-30	25.35	0.030305	±2.5	Pass
	-20	27.19	0.032504		
	-10	28.38	0.033927		
	0	31.36	0.037490		
	10	31.87	0.038099		
	20	34.36	0.041076		
	30	36.19	0.043264		
	40	33.75	0.040347		
	50	35.28	0.042176		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-18.20	-0.021757	±2.5	Pass
	3.85	-11.01	-0.013162		
	4.40	-14.91	-0.017824		
16QAM					
25	3.45	15.68	0.018745	±2.5	Pass
	3.85	7.10	0.008488		
	4.40	28.97	0.034632		
64QAM					
25	3.45	21.70	0.025941	±2.5	Pass
	3.85	18.60	0.022236		
	4.40	24.79	0.029635		
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	-58.25	-0.022978	Within authorized band for Band 7	Pass
	-20	-68.96	-0.027203		
	-10	-22.60	-0.008915		
	0	-47.12	-0.018588		
	10	-49.41	-0.019491		
	20	-62.00	-0.024458		
	30	-34.73	-0.013700		
	40	-33.50	-0.013215		
	50	-60.00	-0.023669		
16QAM					
3.85	-30	-23.86	-0.009412	Within authorized band for Band 7	Pass
	-20	10.33	0.004075		
	-10	18.07	0.007128		
	0	18.05	0.007120		
	10	28.02	0.011053		
	20	24.50	0.009665		
	30	27.21	0.010734		
	40	31.96	0.012607		
	50	27.34	0.010785		
64QAM					
3.85	-30	30.84	0.012166	Within authorized band for Band 7	Pass
	-20	52.61	0.020753		
	-10	26.51	0.010458		
	0	60.15	0.023728		
	10	36.15	0.014260		
	20	51.43	0.020288		
	30	-16.39	-0.006465		
	40	23.13	0.009124		
	50	29.35	0.011578		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-58.54	-0.023093	Within authorized band for Band 7	Pass
	3.85	26.91	0.010615		
	4.40	-71.25	-0.028107		
16QAM					
25	3.45	-46.82	-0.018469	Within authorized band for Band 7	Pass
	3.85	-49.27	-0.019436		
	4.40	-29.91	-0.011799		
64QAM					
25	3.45	43.82	0.017286	Within authorized band for Band 7	Pass
	3.85	27.01	0.010655		
	4.40	20.76	0.008189		
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 (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-26.02	-0.036777	Within authorized band for Band 12	Pass
	-20	-44.25	-0.062544		
	-10	-12.57	-0.017767		
	0	-28.35	-0.040071		
	10	-38.25	-0.054064		
	20	-50.05	-0.070742		
	30	-18.28	-0.025837		
	40	-22.76	-0.032170		
	50	-32.32	-0.045682		
16QAM					
3.85	-30	-33.66	-0.047576	Within authorized band for Band 12	Pass
	-20	-28.82	-0.040735		
	-10	-22.93	-0.032410		
	0	-21.79	-0.030799		
	10	-22.69	-0.032071		
	20	-20.54	-0.029032		
	30	-20.04	-0.028325		
	40	-19.25	-0.027208		
	50	-17.72	-0.025046		
64QAM					
3.85	-30	-3.79	-0.005357	Within authorized band for Band 12	Pass
	-20	8.14	0.011505		
	-10	10.97	0.015505		
	0	13.39	0.018926		
	10	16.74	0.023661		
	20	19.21	0.027152		
	30	18.77	0.026530		
	40	24.49	0.034615		
	50	26.51	0.037470		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-40.50	-0.057244	Within authorized band for Band 12	Pass
	3.85	-27.78	-0.039265		
	4.40	-6.34	-0.008961		
16QAM					
25	3.45	-41.57	-0.058756	Within authorized band for Band 12	Pass
	3.85	-43.97	-0.062148		
	4.40	-36.94	-0.052212		
64QAM					
25	3.45	-12.89	-0.018219	Within authorized band for Band 12	Pass
	3.85	-19.24	-0.027194		
	4.40	-8.55	-0.012085		
Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.					

LTE Band 17 part:

Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 Frequency=710.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.85	-30	-35.95	-0.050634	Within authorized band for Band 17	Pass
	-20	-46.98	-0.066169		
	-10	-3.78	-0.005324		
	0	-6.42	-0.009042		
	10	-18.31	-0.025789		
	20	-23.65	-0.033310		
	30	-20.33	-0.028634		
	40	-19.80	-0.027887		
	50	-21.73	-0.030606		
16QAM					
3.85	-30	-28.41	-0.040014	Within authorized band for Band 17	Pass
	-20	-29.21	-0.041141		
	-10	-26.72	-0.037634		
	0	-25.16	-0.035437		
	10	-25.84	-0.036394		
	20	-24.96	-0.035155		
	30	-21.44	-0.030197		
	40	-22.49	-0.031676		
	50	-17.41	-0.024521		
64QAM					
3.85	-30	-4.71	-0.006634	Within authorized band for Band 17	Pass
	-20	-6.12	-0.008620		
	-10	7.74	0.010901		
	0	7.94	0.011183		
	10	9.40	0.013239		
	20	13.98	0.019690		
	30	12.16	0.017127		
	40	18.63	0.026239		
	50	19.84	0.027944		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-19.34	-0.027239	Within authorized band for Band 17	Pass
	3.85	-13.83	-0.019479		
	4.40	-27.34	-0.038507		
16QAM					
25	3.45	-30.64	-0.043155	Within authorized band for Band 17	Pass
	3.85	-27.18	-0.038282		
	4.40	-31.76	-0.044732		
64QAM					
25	3.45	-12.45	-0.017535	Within authorized band for Band 17	Pass
	3.85	-18.90	-0.026620		
	4.40	-8.35	-0.011761		
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	-64.32	-0.024786	Within authorized band for Band 38	Pass
	-20	-58.97	-0.022724		
	-10	-63.11	-0.024320		
	0	-25.33	-0.009761		
	10	-9.00	-0.003468		
	20	-43.75	-0.016859		
	30	-25.58	-0.009857		
	40	-52.61	-0.020274		
	50	-33.65	-0.012967		
16QAM					
3.85	-30	-18.85	-0.007264	Within authorized band for Band 38	Pass
	-20	-48.88	-0.018836		
	-10	-48.29	-0.018609		
	0	-22.39	-0.008628		
	10	-16.85	-0.006493		
	20	-10.44	-0.004023		
	30	29.80	0.011484		
	40	41.54	0.016008		
	50	30.30	0.011676		
64QAM					
3.85	-30	12.82	0.004940	Within authorized band for Band 38	Pass
	-20	26.91	0.010370		
	-10	29.40	0.011329		
	0	46.71	0.018000		
	10	35.26	0.013588		
	20	13.98	0.005387		
	30	9.98	0.003846		
	40	19.78	0.007622		
	50	-15.72	-0.006058		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-20.31	-0.007827	Within authorized band for Band 38	Pass
	3.85	35.53	0.013692		
	4.40	-67.25	-0.025915		
16QAM					
25	3.45	32.76	0.012624	Within authorized band for Band 38	Pass
	3.85	14.46	0.005572		
	4.40	-14.12	-0.005441		
64QAM					
25	3.45	-22.59	-0.008705	Within authorized band for Band 38	Pass
	3.85	33.10	0.012755		
	4.40	39.11	0.015071		
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	-55.89	-0.021538	Within authorized band for Band 41	Pass
	-20	-35.18	-0.013557		
	-10	-43.19	-0.016644		
	0	-12.04	-0.004640		
	10	-46.26	-0.017827		
	20	-40.61	-0.015649		
	30	-18.42	-0.007098		
	40	-46.01	-0.017730		
	50	-24.42	-0.009410		
16QAM					
3.85	-30	-20.77	-0.008004	Within authorized band for Band 41	Pass
	-20	-15.71	-0.006054		
	-10	12.65	0.004875		
	0	19.07	0.007349		
	10	36.89	0.014216		
	20	44.59	0.017183		
	30	49.90	0.019229		
	40	-8.47	-0.003264		
	50	18.32	0.007060		
64QAM					
3.85	-30	54.87	0.021145	Within authorized band for Band 41	Pass
	-20	41.83	0.016119		
	-10	9.40	0.003622		
	0	44.55	0.017168		
	10	21.76	0.008385		
	20	29.77	0.011472		
	30	45.53	0.017545		
	40	-13.00	-0.005010		
	50	16.62	0.006405		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	16.28	0.006274	Within authorized band for Band 41	Pass
	3.85	35.71	0.013761		
	4.40	-40.41	-0.015572		
16QAM					
25	3.45	-61.41	-0.023665	Within authorized band for Band41	Pass
	3.85	-44.95	-0.017322		
	4.40	-44.03	-0.016967		
64QAM					
25	3.45	30.44	0.011730	Within authorized band for Band41	Pass
	3.85	11.30	0.004355		
	4.40	23.39	0.009013		
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					
3.85	-30	-57.92	-0.033192	Within authorized band for Band 66	Pass
	-20	-38.38	-0.021994		
	-10	-53.29	-0.030539		
	0	-53.50	-0.030659		
	10	-25.28	-0.014487		
	20	-16.29	-0.009335		
	30	-35.48	-0.020332		
	40	-42.79	-0.024521		
	50	-33.45	-0.019169		
16QAM					
3.85	-30	-20.74	-0.011885	Within authorized band for Band 66	Pass
	-20	-27.32	-0.015656		
	-10	-46.08	-0.026407		
	0	-15.23	-0.008728		
	10	-33.00	-0.018911		
	20	8.61	0.004934		
	30	-25.66	-0.014705		
	40	-42.24	-0.024206		
	50	-35.69	-0.020453		
64QAM					
3.85	-30	-23.23	-0.013312	Within authorized band for Band 66	Pass
	-20	-31.63	-0.018126		
	-10	-42.03	-0.024086		
	0	-49.34	-0.028275		
	10	-52.59	-0.030138		
	20	10.69	0.006126		
	30	-18.25	-0.010458		
	40	-31.14	-0.017845		
	50	-37.45	-0.021461		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-51.97	-0.029782	Within authorized band for Band 66	Pass
	3.85	-57.94	-0.033203		
	4.40	-51.23	-0.029358		
16QAM					
25	3.45	-33.96	-0.019461	Within authorized band for Band 66	Pass
	3.85	-25.85	-0.014814		
	4.40	-27.55	-0.015788		
64QAM					
25	3.45	-32.43	-0.018585	Within authorized band for Band 66	Pass
	3.85	-22.10	-0.012665		
	4.40	-45.02	-0.025799		
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
Band17	10MHz	QPSK	23790	50RB#0	PASS	PASS
Band17	10MHz	16QAM	23790	50RB#0	PASS	PASS
Band17	10MHz	64QAM	23790	50RB#0	PASS	PASS
Band38	20MHz	QPSK	38000	100RB#0	PASS	PASS
Band38	20MHz	16QAM	38000	100RB#0	PASS	PASS
Band38	20MHz	64QAM	38000	100RB#0	PASS	PASS
Band41	20MHz	QPSK	40640	100RB#0	PASS	PASS
Band41	20MHz	16QAM	40640	100RB#0	PASS	PASS
Band41	20MHz	64QAM	40640	100RB#0	PASS	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS	PASS
Band66	20MHz	64QAM	132322	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

