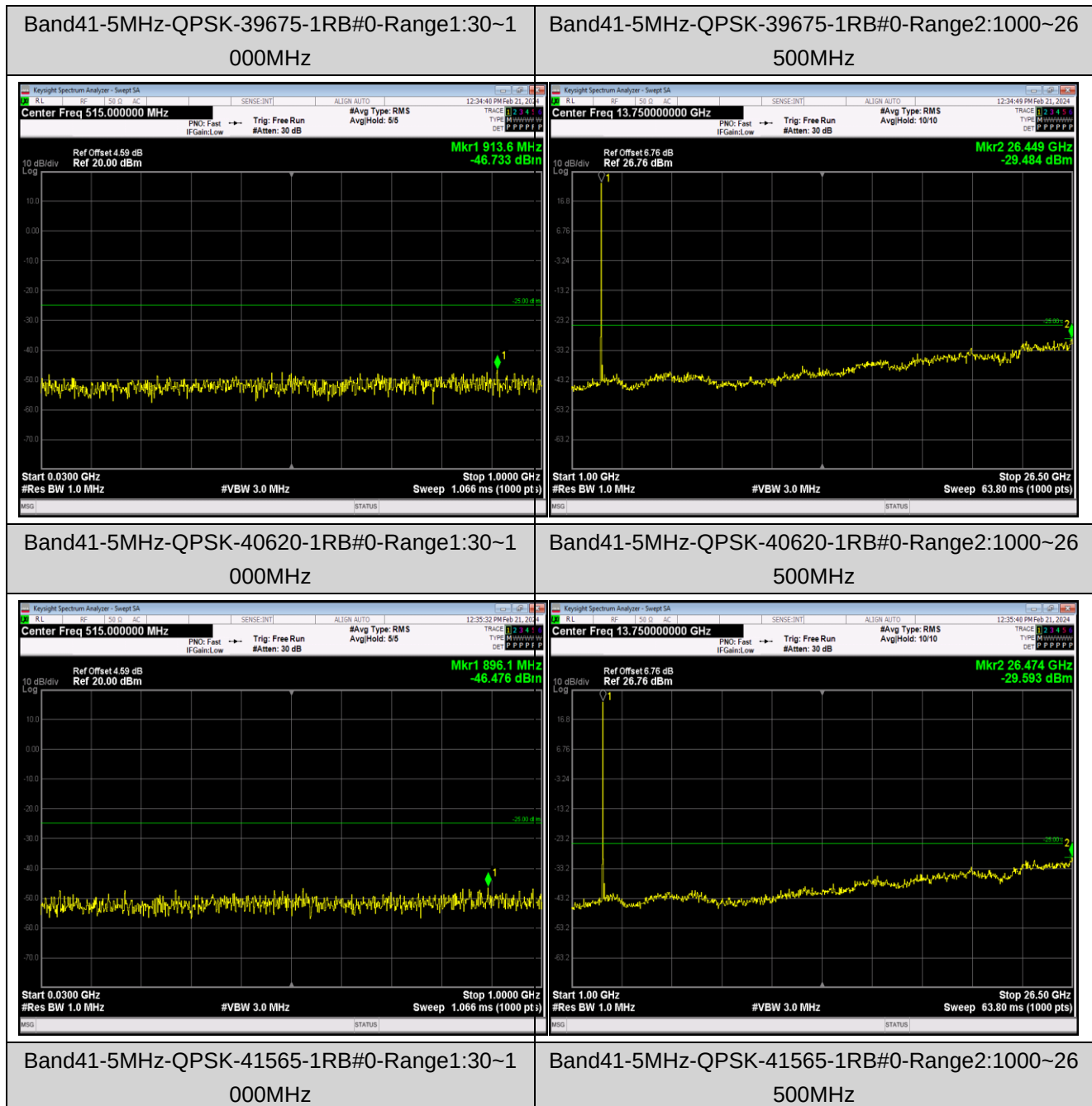
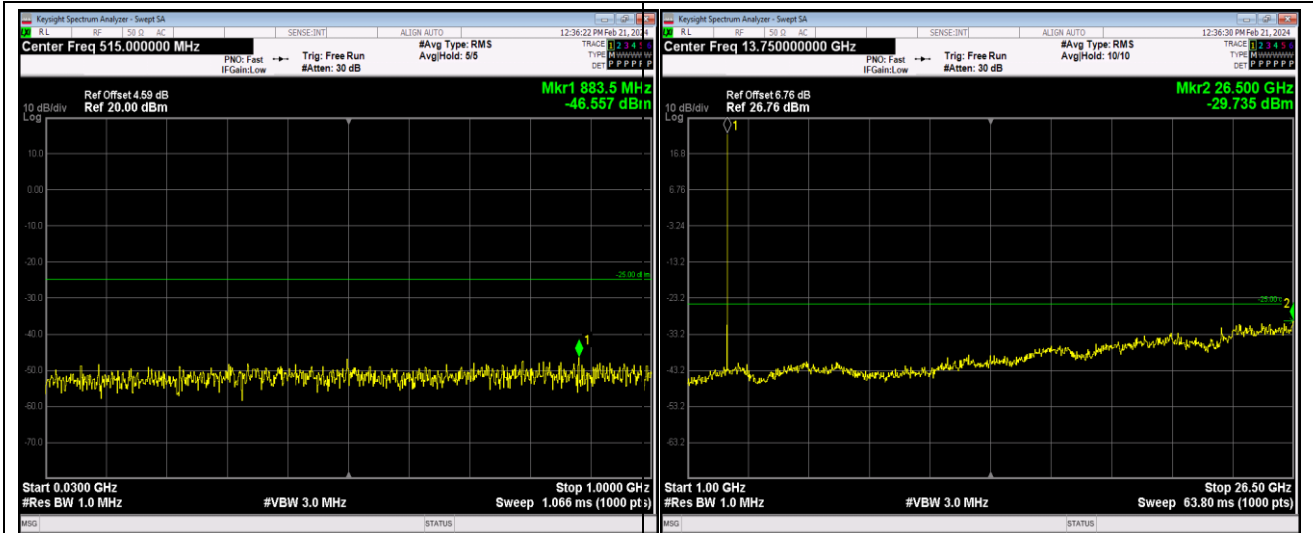
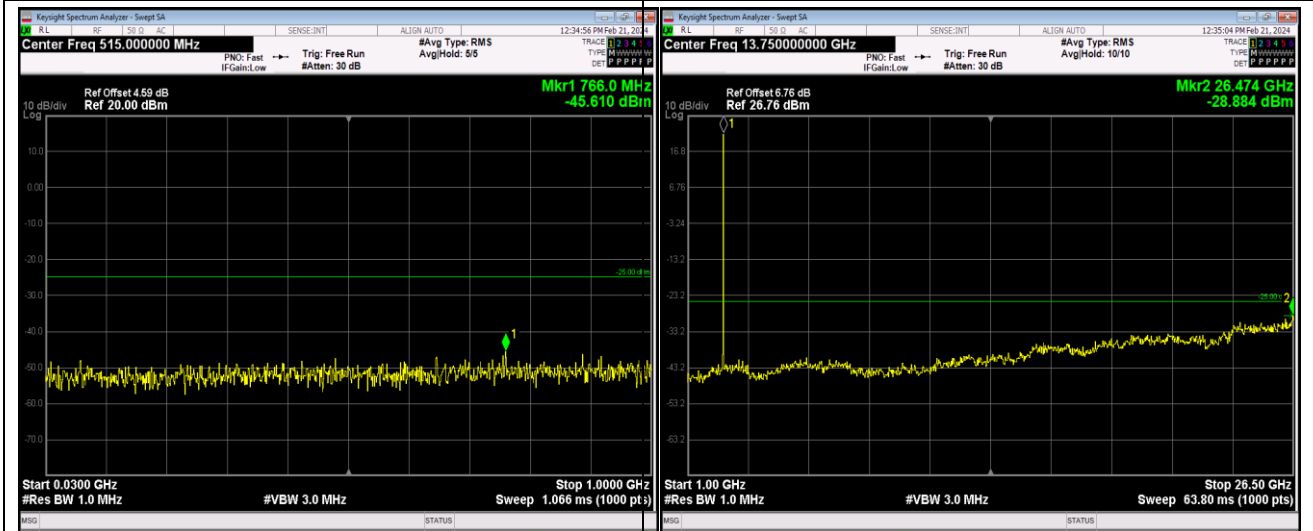






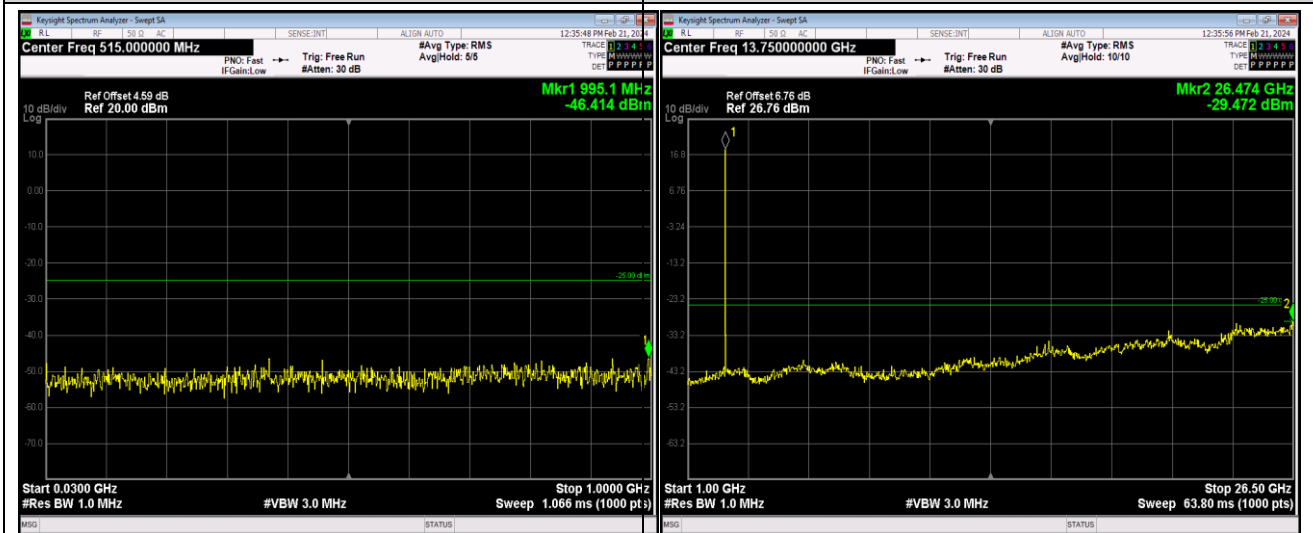
Band41-5MHz-16QAM-39675-1RB#0-Range1:30~1000MHz

Band41-5MHz-16QAM-39675-1RB#0-Range2:1000~26500MHz



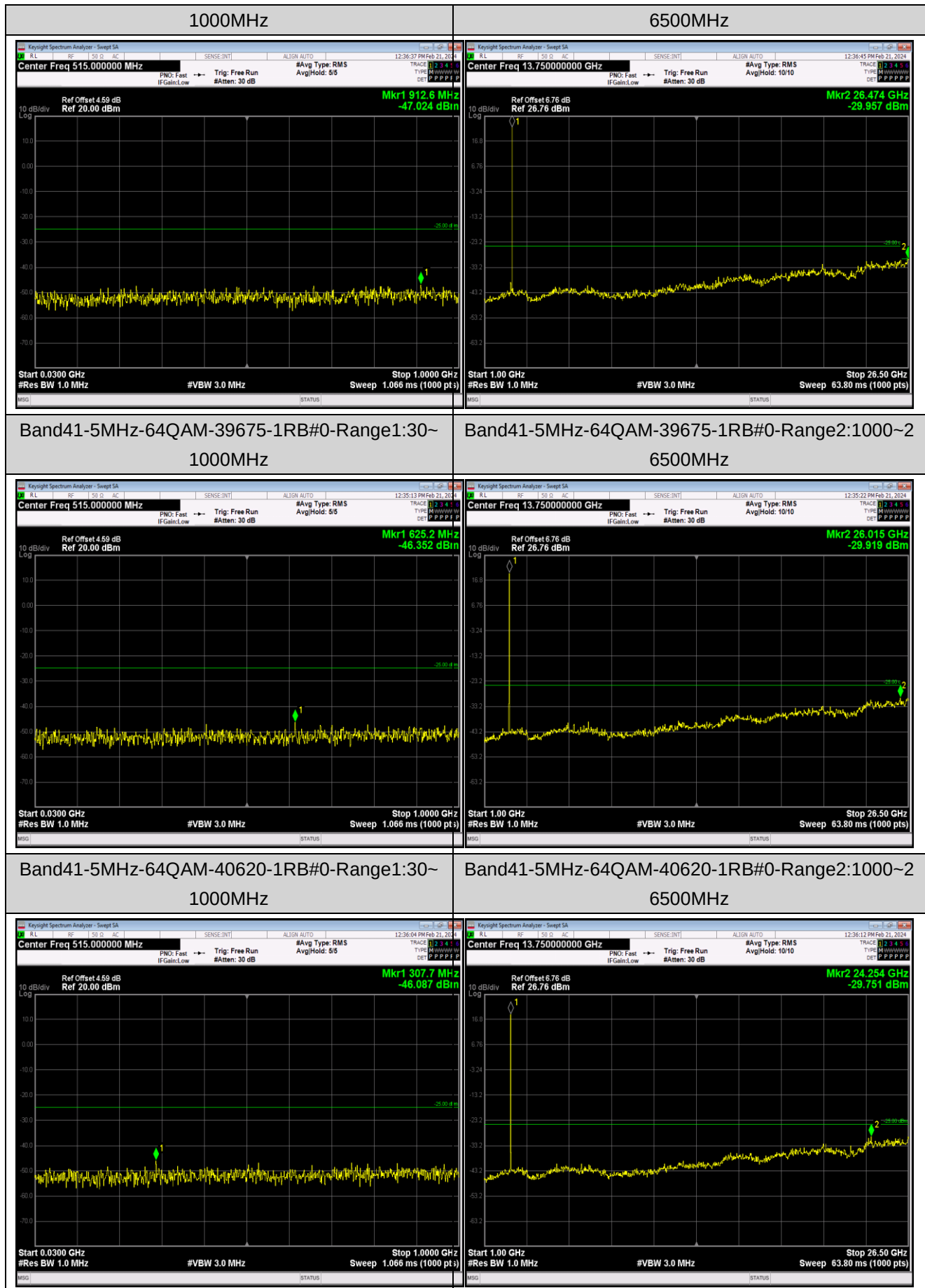
Band41-5MHz-16QAM-40620-1RB#0-Range1:30~1000MHz

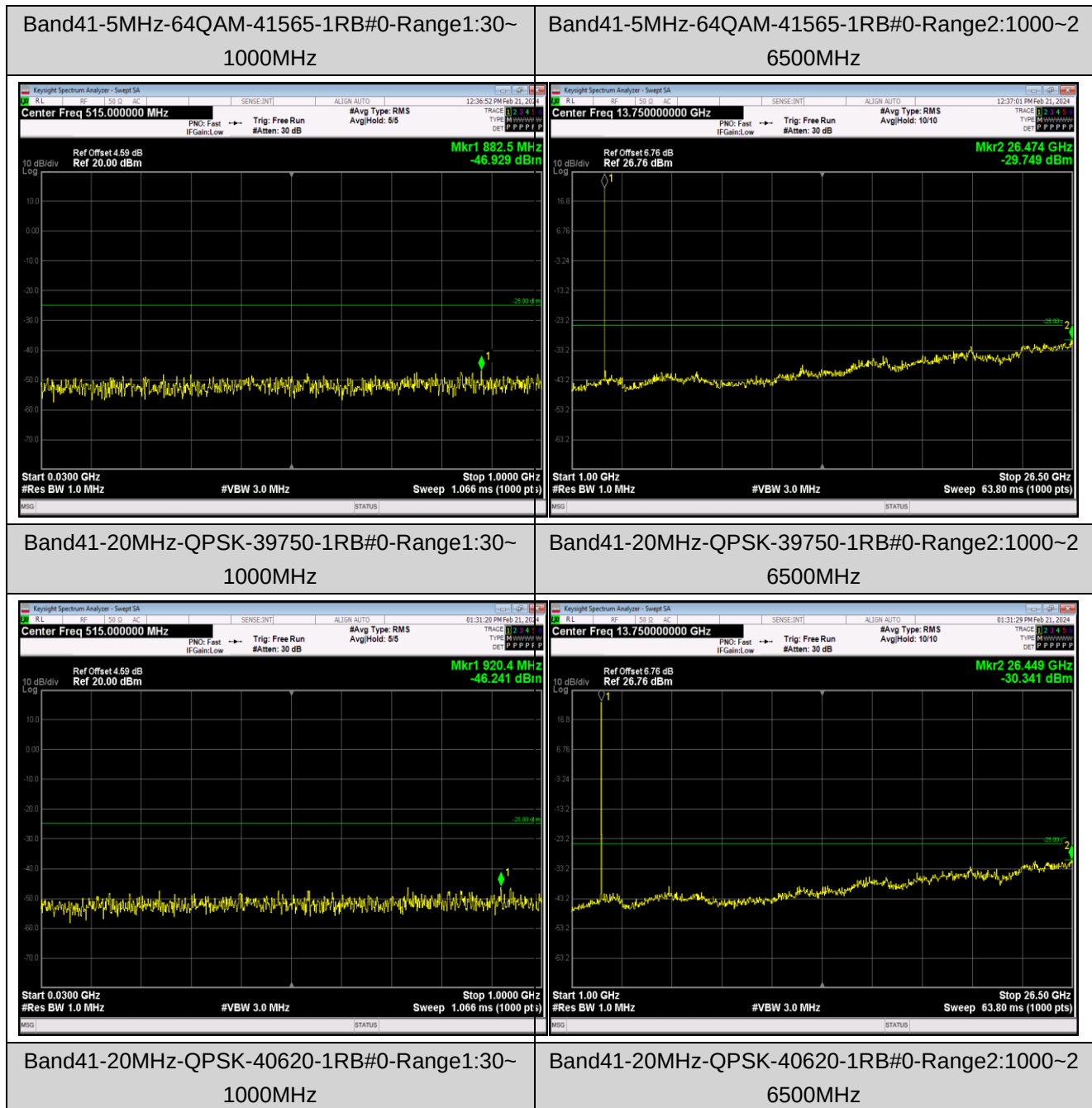
Band41-5MHz-16QAM-40620-1RB#0-Range2:1000~26500MHz

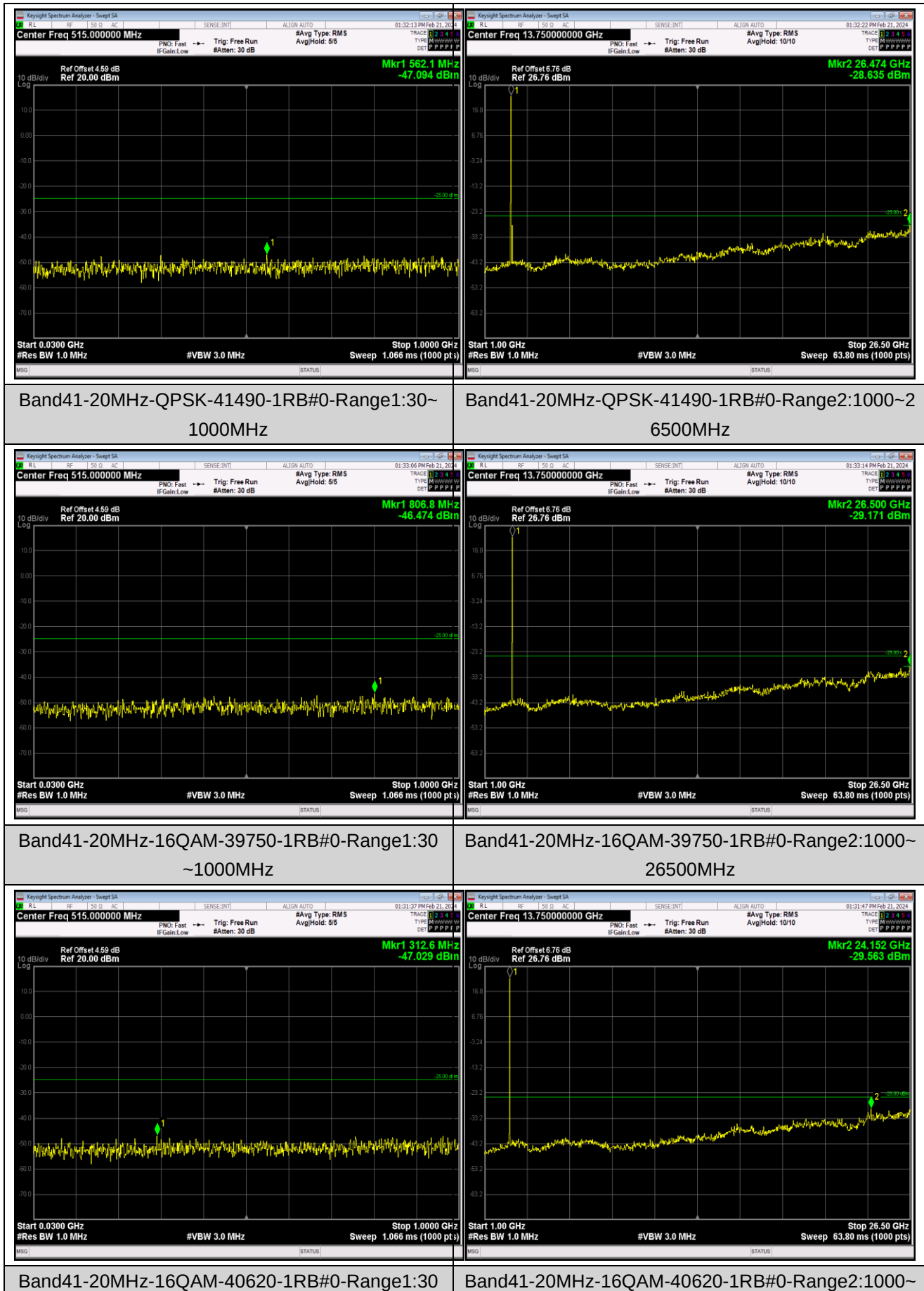


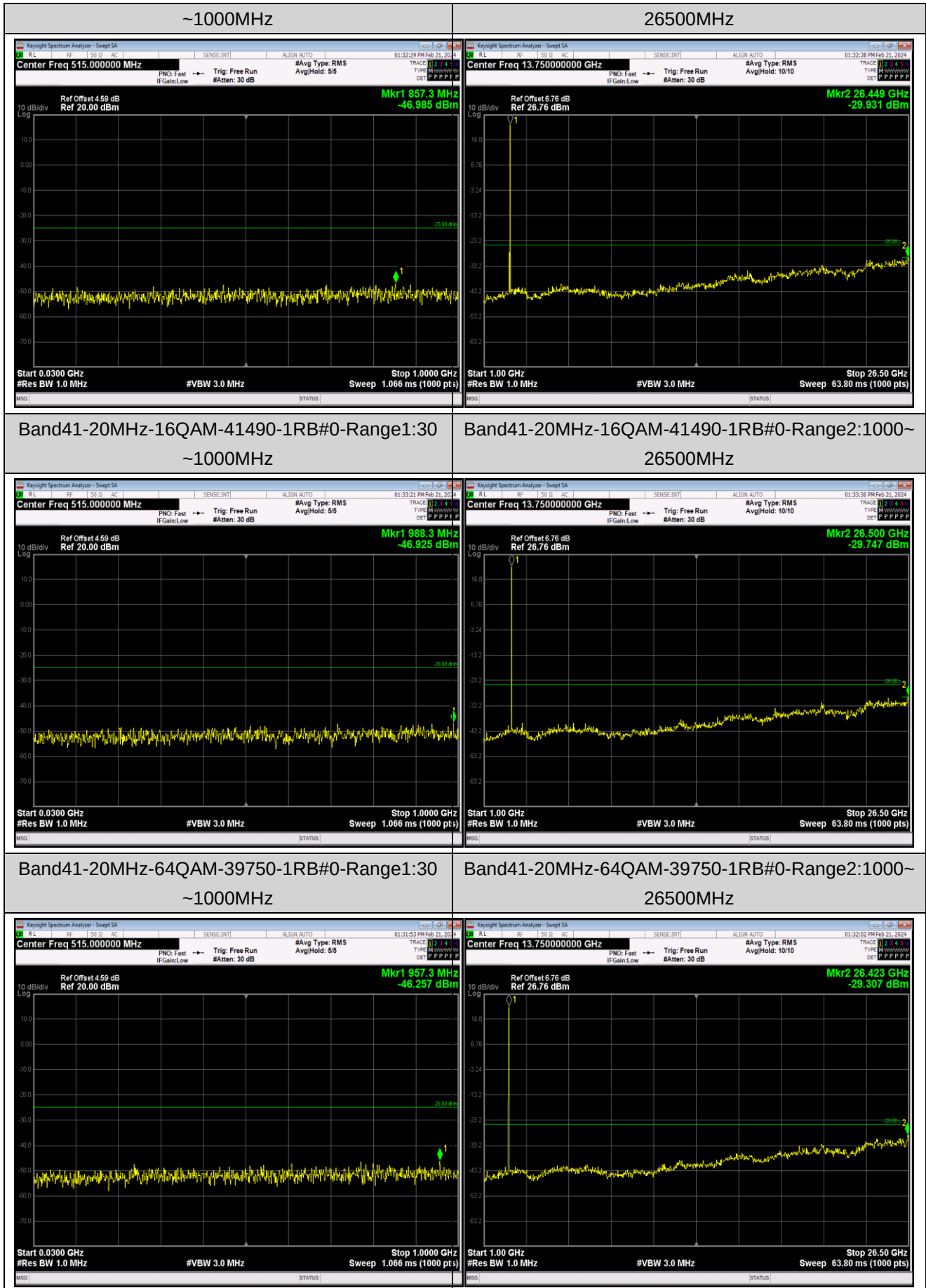
Band41-5MHz-16QAM-41565-1RB#0-Range1:30~1000MHz

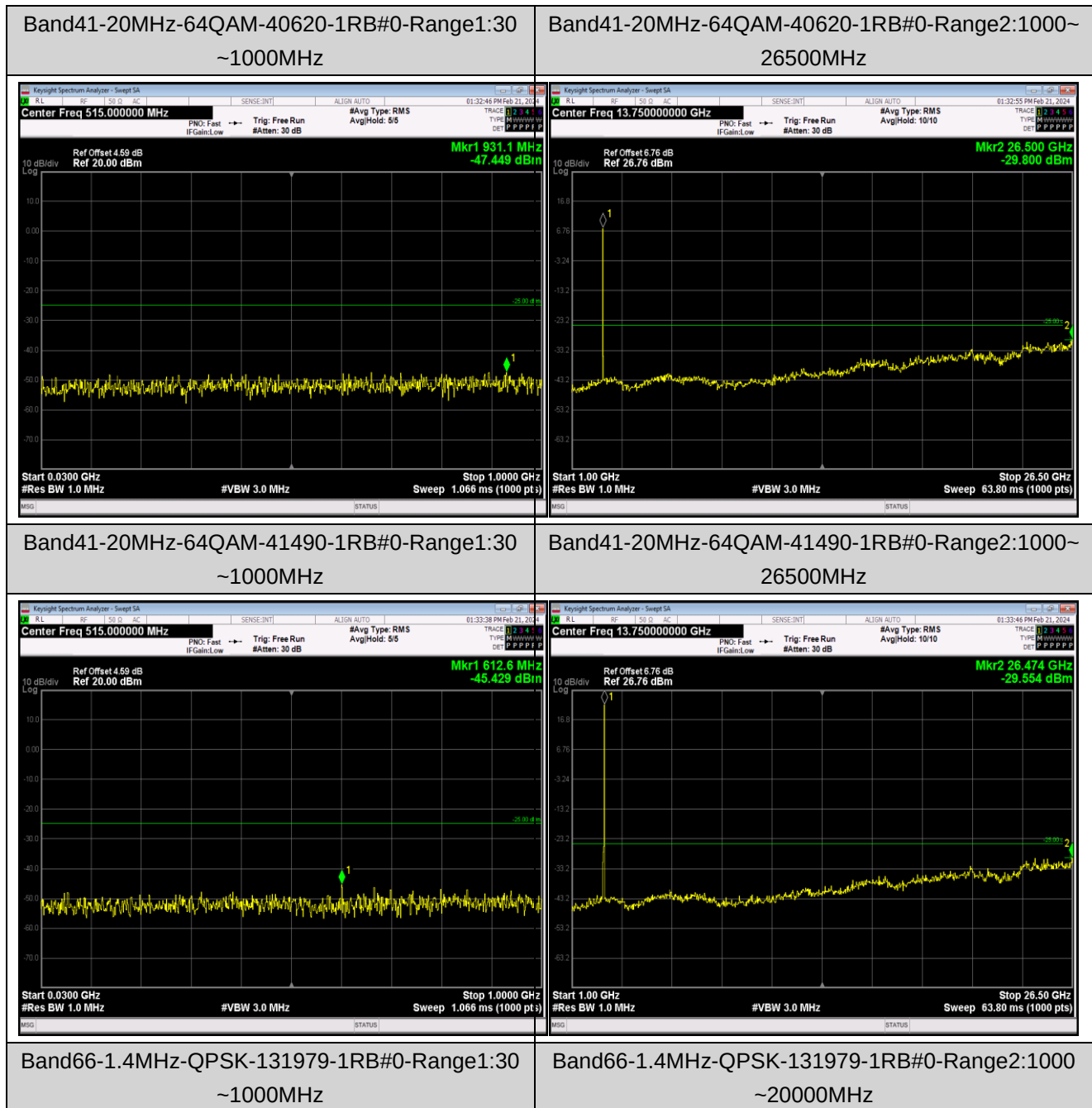
Band41-5MHz-16QAM-41565-1RB#0-Range2:1000~26500MHz

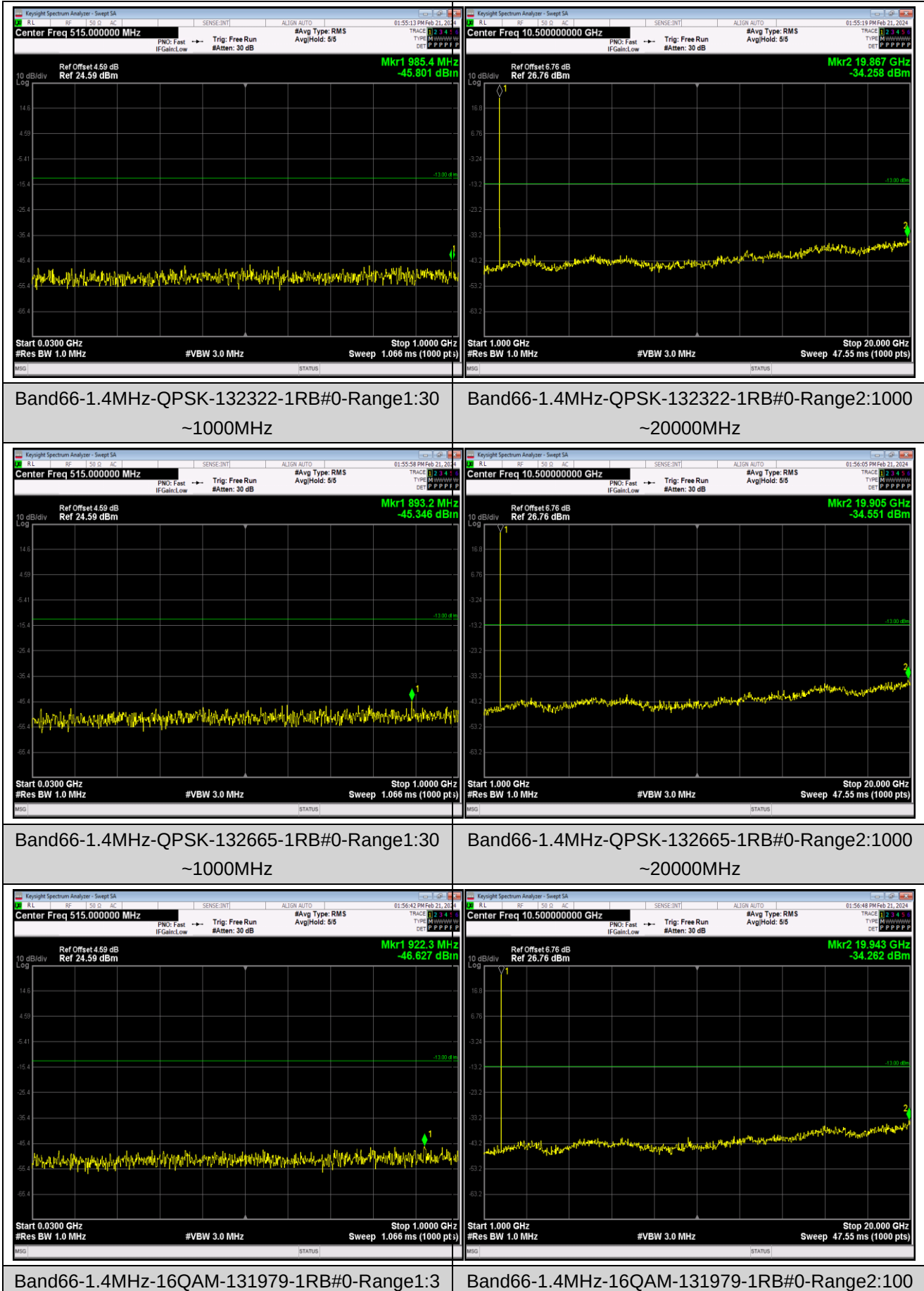


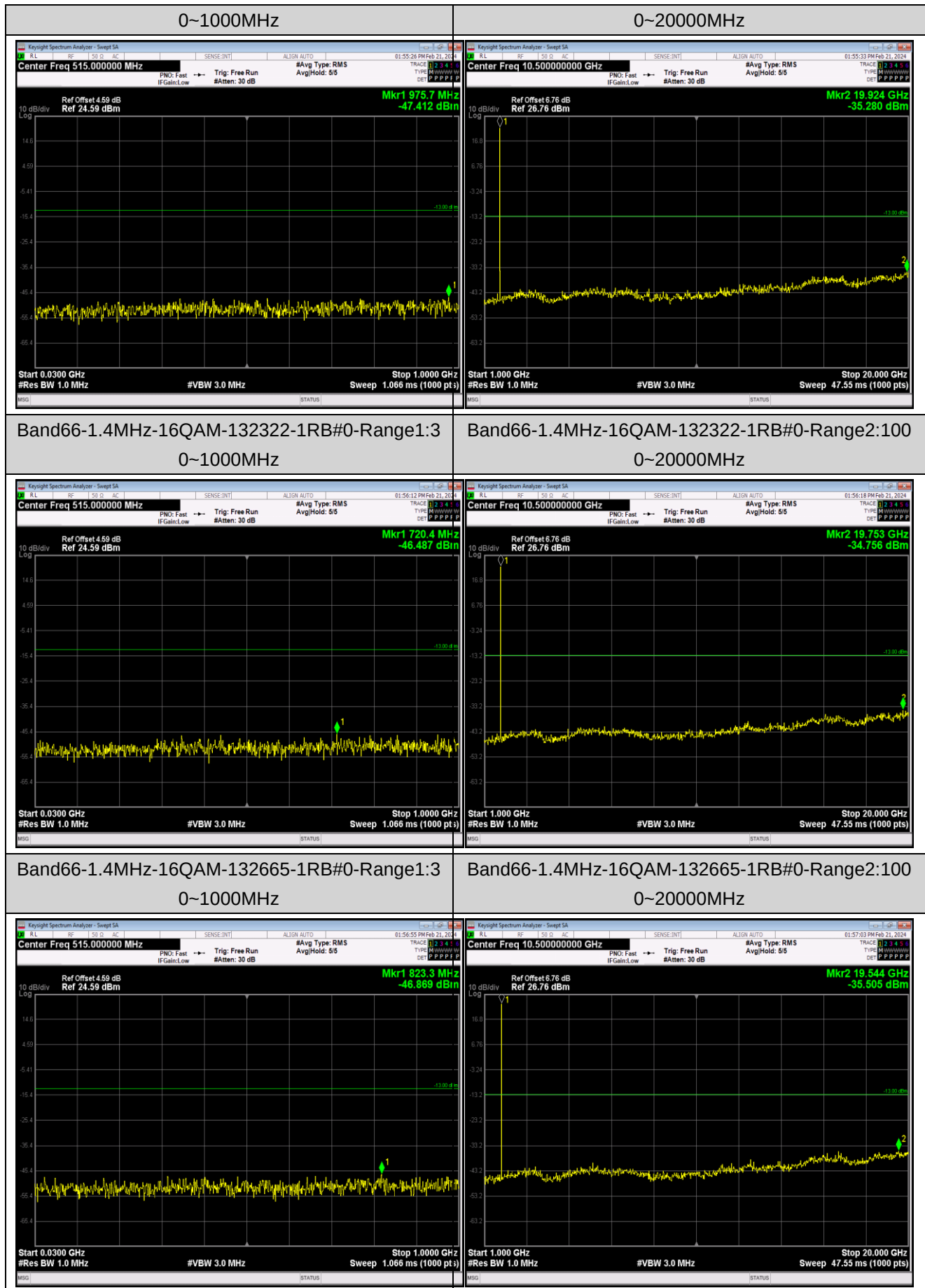


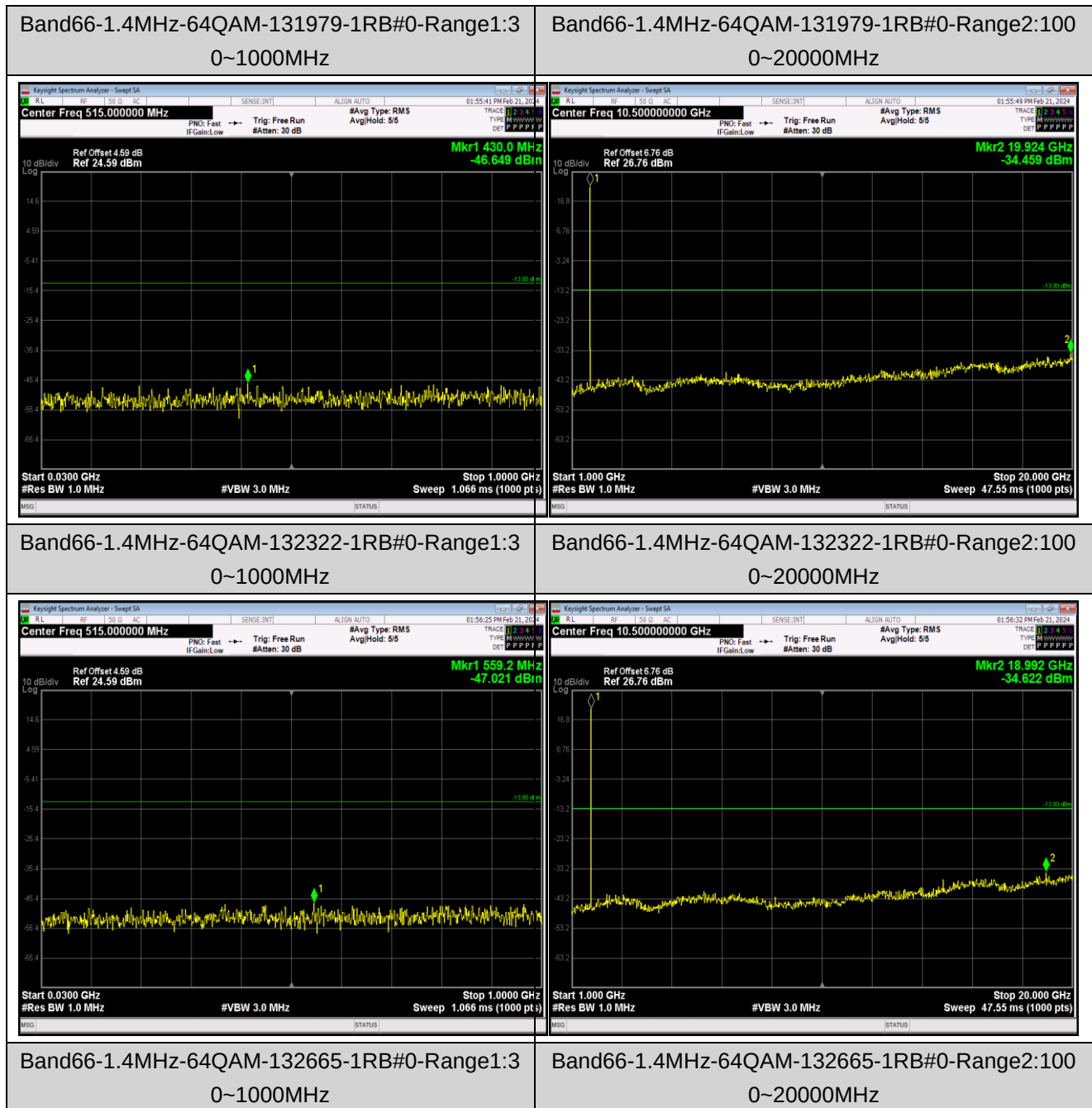


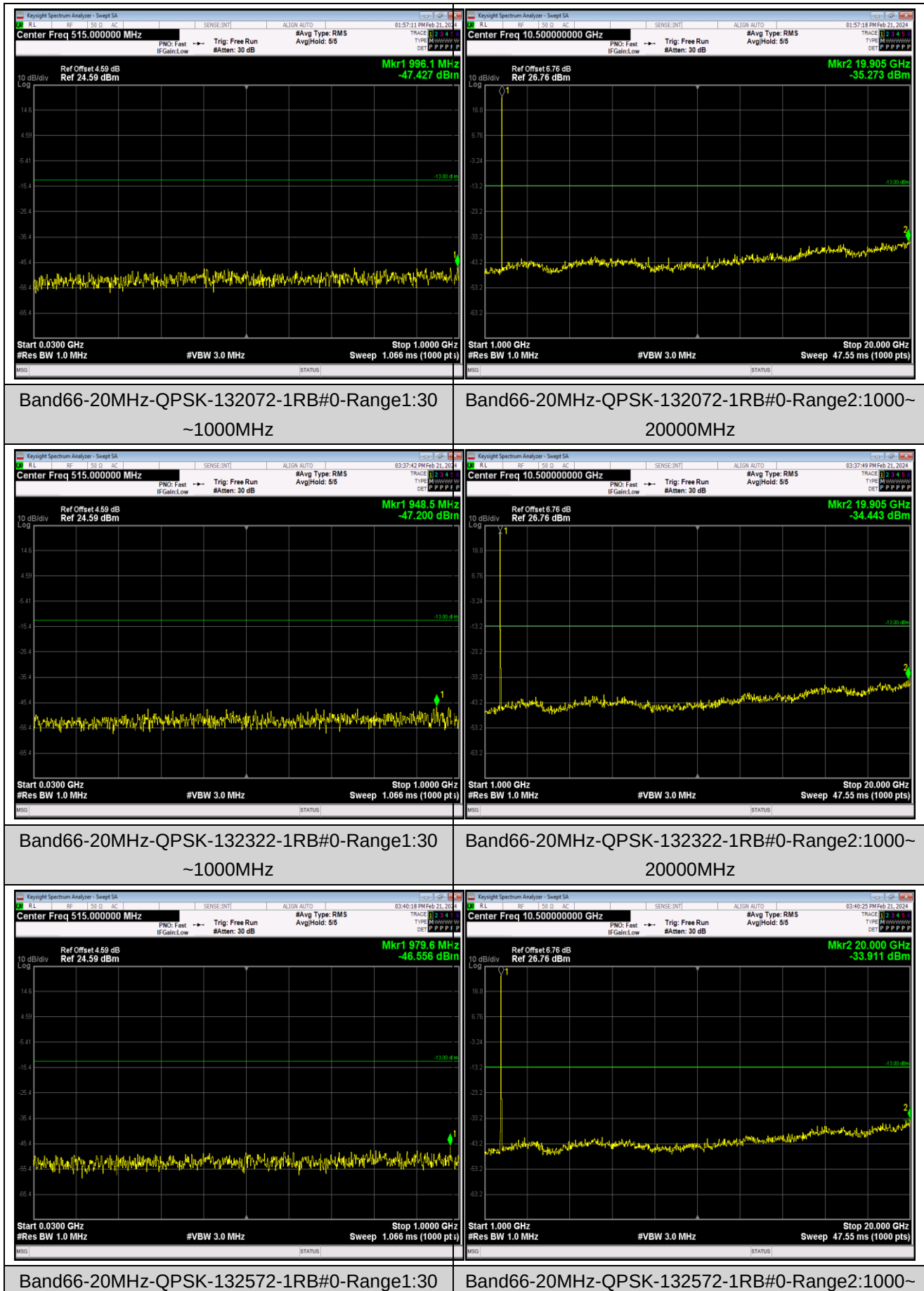


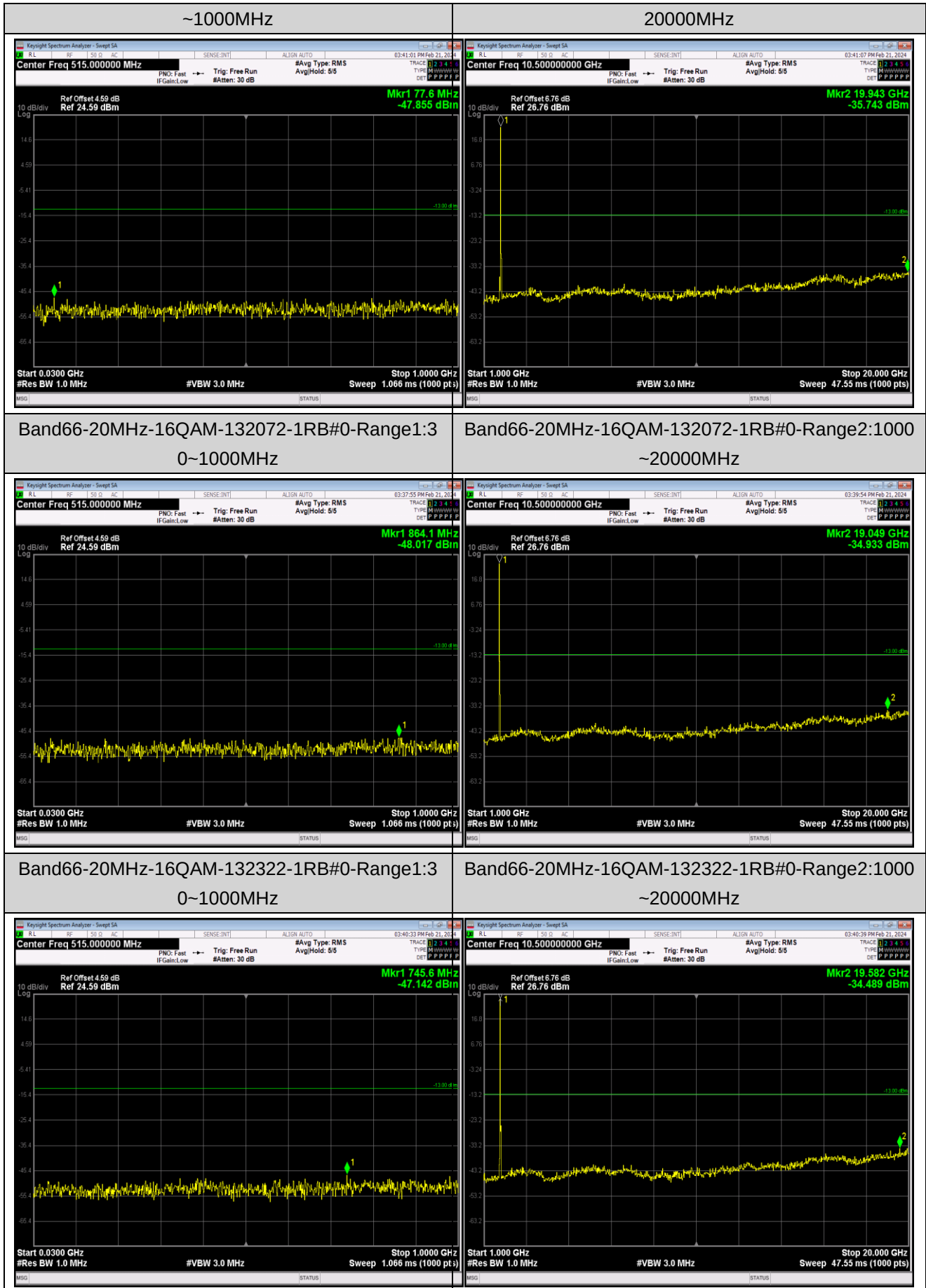


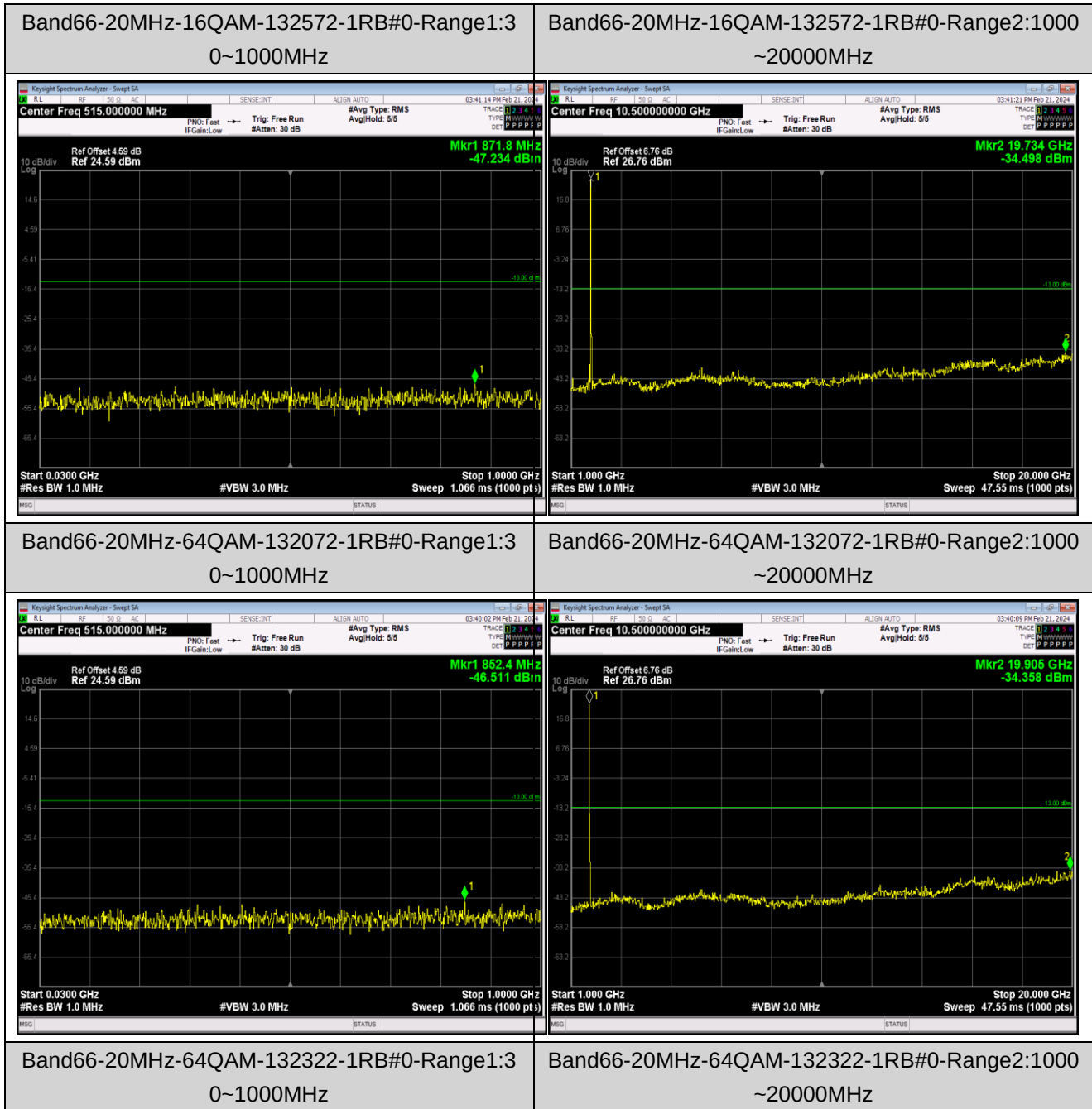


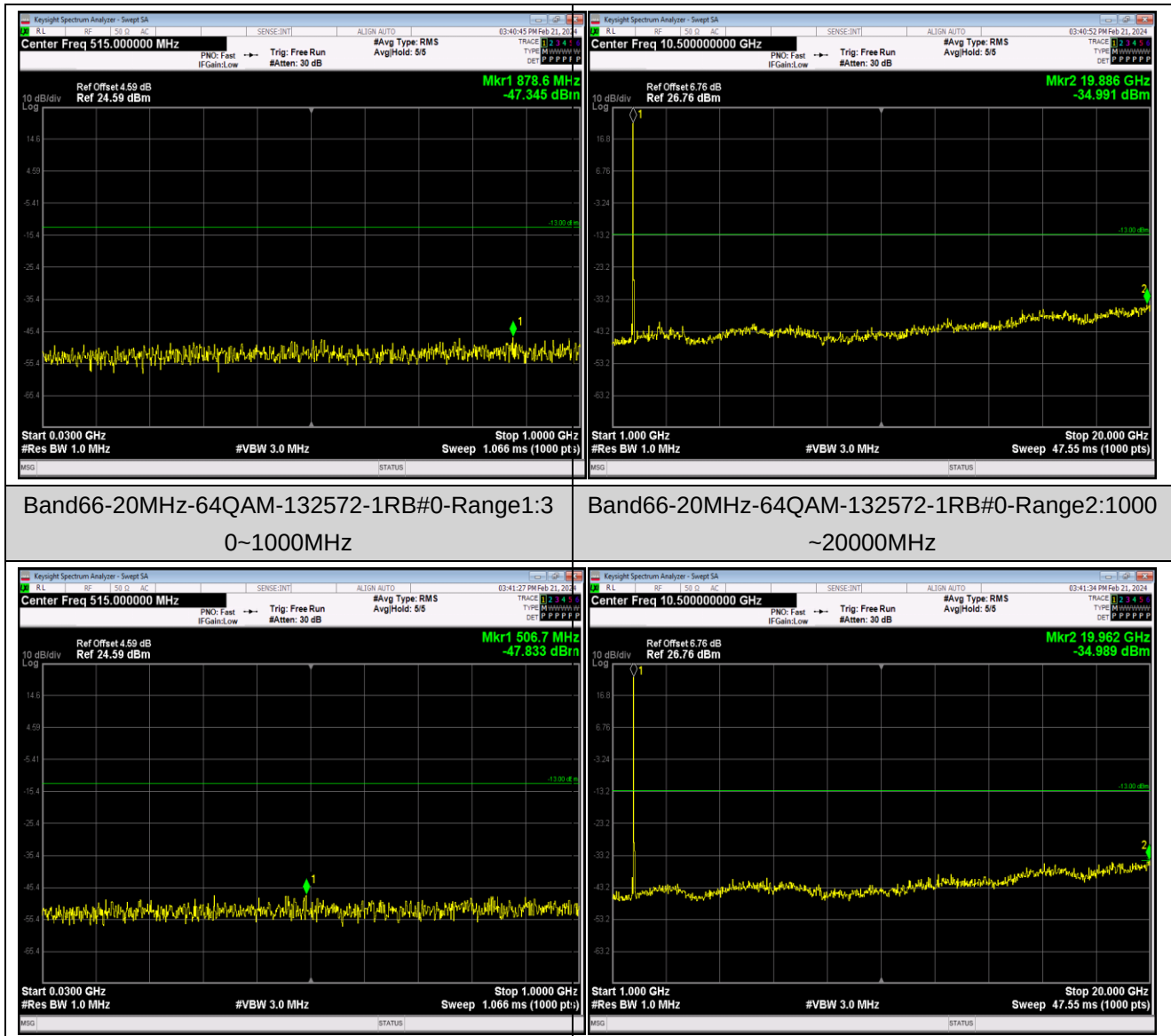












Band66-20MHz-64QAM-132572-1RB#0-Range1:3
0~1000MHz

Band66-20MHz-64QAM-132572-1RB#0-Range2:1000
~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					
3.87	-30	-4.16	-0.002213	Within authorized band for Band 2	Pass
	-20	-9.04	-0.004809		
	-10	-9.13	-0.004856		
	0	6.27	0.003335		
	10	-7.05	-0.003750		
	20	3.53	0.001878		
	30	-12.96	-0.006894		
	40	-10.51	-0.005590		
	50	-5.29	-0.002814		
16QAM					
3.87	-30	-8.54	-0.004543	Within authorized band for Band 2	Pass
	-20	5.18	0.002755		
	-10	9.13	0.004856		
	0	5.88	0.003128		
	10	-7.27	-0.003867		
	20	-10.57	-0.005622		
	30	-11.24	-0.005979		
	40	-9.28	-0.004936		
	50	6.85	0.003644		
64QAM					
3.87	-30	-6.84	-0.003638	Within authorized band for Band 2	Pass
	-20	9.93	0.005282		
	-10	8.60	0.004574		
	0	4.53	0.002410		
	10	9.88	0.005255		
	20	-21.96	-0.011681		
	30	9.34	0.004968		
	40	-6.52	-0.003468		
	50	-3.83	-0.002037		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-12.52	-0.006660	Within authorized band for Band 2	Pass
	3.87	7.08	0.003766		
	4.45	-8.31	-0.004420		
16QAM					
25	3.45	3.66	0.001947	Within authorized band for Band 2	Pass
	3.87	-4.16	-0.002213		
	4.45	7.54	0.004011		
64QAM					
25	3.45	-5.91	-0.003144	Within authorized band for Band 2	Pass
	3.87	-6.82	-0.003628		
	4.45	-11.77	-0.006261		
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					
3.87	-30	-5.41	-0.006467	±2.5	Pass
	-20	1.62	0.001937		
	-10	-1.93	-0.002307		
	0	2.12	0.002534		
	10	1.77	0.002116		
	20	-1.79	-0.002140		
	30	1.34	0.001602		
	40	-1.83	-0.002188		
	50	-2.85	-0.003407		
16QAM					
3.87	-30	-6.29	-0.007519	±2.5	Pass
	-20	-3.58	-0.004280		
	-10	-3.81	-0.004555		
	0	-4.43	-0.005296		
	10	-4.09	-0.004889		
	20	-1.49	-0.001781		
	30	-4.86	-0.005810		
	40	-4.76	-0.005690		
	50	-2.63	-0.003144		
64QAM					
3.87	-30	-4.25	-0.005081	±2.5	Pass
	-20	-3.75	-0.004483		
	-10	-2.56	-0.003060		
	0	-0.97	-0.001160		
	10	-5.45	-0.006515		
	20	-1.47	-0.001757		
	30	-5.39	-0.006444		
	40	-4.31	-0.005152		
	50	-2.33	-0.002785		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-2.45	-0.002929	±2.5	Pass
	3.87	-4.22	-0.005045		
	4.45	-1.63	-0.001949		
16QAM					
25	3.45	-2.73	-0.003264	±2.5	Pass
	3.87	-2.47	-0.002953		
	4.45	-4.39	-0.005248		
64QAM					
25	3.45	-2.57	-0.003072	±2.5	Pass
	3.87	1.67	0.001996		
	4.45	-5.79	-0.006922		
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					
3.87	-30	4.51	0.001779	Within authorized band for Band 7	Pass
	-20	-7.32	-0.002888		
	-10	-7.94	-0.003132		
	0	-8.51	-0.003357		
	10	-7.65	-0.003018		
	20	-6.71	-0.002647		
	30	-9.14	-0.003606		
	40	5.68	0.002241		
	50	-2.29	-0.000903		
16QAM					
3.87	-30	6.47	0.002552	Within authorized band for Band 7	Pass
	-20	-5.39	-0.002126		
	-10	7.02	0.002769		
	0	-6.21	-0.002450		
	10	-8.34	-0.003290		
	20	-10.34	-0.004079		
	30	7.14	0.002817		
	40	5.36	0.002114		
	50	6.11	0.002410		
64QAM					
3.87	-30	-7.78	-0.003069	Within authorized band for Band 7	Pass
	-20	-9.04	-0.003566		
	-10	5.51	0.002174		
	0	-4.94	-0.001949		
	10	-6.65	-0.002623		
	20	5.97	0.002355		
	30	-7.70	-0.003037		
	40	-8.90	-0.003511		
	50	-8.44	-0.003329		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-2.92	-0.001152	Within authorized band for Band 7	Pass
	3.87	4.21	0.001661		
	4.45	3.68	0.001452		
16QAM					
25	3.45	5.84	0.002304	Within authorized band for Band 7	Pass
	3.87	6.15	0.002426		
	4.45	4.28	0.001688		
64QAM					
25	3.45	-4.02	-0.001586	Within authorized band for Band 7	Pass
	3.87	6.22	0.002454		
	4.45	-8.81	-0.003475		
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					
3.87	-30	-3.40	-0.004806	Within authorized band for Band 12	Pass
	-20	-3.81	-0.005385		
	-10	1.99	0.002813		
	0	-1.56	-0.002205		
	10	-3.39	-0.004792		
	20	3.29	0.004650		
	30	1.20	0.001696		
	40	1.13	0.001597		
	50	-2.39	-0.003378		
16QAM					
3.87	-30	-2.25	-0.003180	Within authorized band for Band 12	Pass
	-20	2.19	0.003095		
	-10	1.86	0.002629		
	0	2.75	0.003887		
	10	1.67	0.002360		
	20	-3.30	-0.004664		
	30	-6.98	-0.009866		
	40	-1.86	-0.002629		
	50	-5.15	-0.007279		
64QAM					
3.87	-30	1.67	0.002360	Within authorized band for Band 12	Pass
	-20	0.96	0.001357		
	-10	2.47	0.003491		
	0	3.89	0.005498		
	10	-3.00	-0.004240		
	20	-2.65	-0.003746		
	30	-0.93	-0.001314		
	40	-1.72	-0.002431		
	50	3.96	0.005597		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	2.93	0.004141	Within authorized band for Band 12	Pass
	3.87	-2.32	-0.003279		
	4.45	-2.16	-0.003053		
16QAM					
25	3.45	-3.09	-0.004367	Within authorized band for Band 12	Pass
	3.87	-1.83	-0.002587		
	4.45	3.52	0.004975		
64QAM					
25	3.45	-3.33	-0.004707	Within authorized band for Band 12	Pass
	3.87	-3.89	-0.005498		
	4.45	-2.00	-0.002827		
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					
3.87	-30	6.09	0.002349	Within authorized band for Band 41	Pass
	-20	7.28	0.002808		
	-10	3.93	0.001516		
	0	7.75	0.002989		
	10	8.01	0.003089		
	20	1.77	0.000683		
	30	-9.08	-0.003502		
	40	5.42	0.002090		
	50	6.18	0.002383		
16QAM					
3.87	-30	8.30	0.003201	Within authorized band for Band 41	Pass
	-20	2.86	0.001103		
	-10	-6.05	-0.002333		
	0	-4.91	-0.001894		
	10	4.12	0.001589		
	20	-4.69	-0.001809		
	30	2.53	0.000976		
	40	-3.49	-0.001346		
	50	7.77	0.002997		
64QAM					
3.87	-30	7.22	0.002784	Within authorized band for Band 41	Pass
	-20	-5.65	-0.002179		
	-10	-4.42	-0.001705		
	0	5.29	0.002040		
	10	-10.26	-0.003957		
	20	5.71	0.002202		
	30	9.27	0.003575		
	40	4.59	0.001770		
	50	5.71	0.002202		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-3.23	-0.001246	Within authorized band for Band 41	Pass
	3.87	-8.97	-0.003459		
	4.45	-5.55	-0.002140		
16QAM					
25	3.45	6.09	0.002349	Within authorized band for Band41	Pass
	3.87	-2.69	-0.001037		
	4.45	10.81	0.004169		
64QAM					
25	3.45	6.78	0.002615	Within authorized band for Band41	Pass
	3.87	7.38	0.002846		
	4.45	-7.07	-0.002727		
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					
3.87	-30	-5.75	-0.003295	Within authorized band for Band 66	Pass
	-20	7.87	0.004510		
	-10	10.43	0.005977		
	0	3.71	0.002126		
	10	6.29	0.003605		
	20	7.87	0.004510		
	30	9.46	0.005421		
	40	7.71	0.004418		
	50	6.25	0.003582		
16QAM					
3.87	-30	8.08	0.004630	Within authorized band for Band 66	Pass
	-20	5.54	0.003175		
	-10	6.81	0.003903		
	0	3.50	0.002006		
	10	5.56	0.003186		
	20	-3.38	-0.001937		
	30	2.33	0.001335		
	40	-4.05	-0.002321		
	50	-6.57	-0.003765		
64QAM					
3.87	-30	5.92	0.003393	Within authorized band for Band 66	Pass
	-20	4.22	0.002418		
	-10	4.33	0.002481		
	0	-8.18	-0.004688		
	10	-5.56	-0.003186		
	20	5.08	0.002911		
	30	-4.43	-0.002539		
	40	6.18	0.003542		
	50	2.29	0.001312		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	3.22	0.001845	Within authorized band for Band 66	Pass
	3.87	-4.56	-0.002613		
	4.45	4.13	0.002367		
16QAM					
25	3.45	4.78	0.002739	Within authorized band for Band 66	Pass
	3.87	3.48	0.001994		
	4.45	8.68	0.004974		
64QAM					
25	3.45	-4.05	-0.002321	Within authorized band for Band 66	Pass
	3.87	6.28	0.003599		
	4.45	6.37	0.003650		
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 66 (10MHz) Middle channel=42590 Frequency=3500.0MHz					
Temperature					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.87	-30	6.84	0.001954	Within authorized band for Band 66	Pass
	-20	8.25	0.002357		
	-10	12.59	0.003597		
	0	-3.63	-0.001037		
	10	9.06	0.002589		
	20	11.13	0.003180		
	30	-7.15	-0.002043		
	40	14.89	0.004254		
	50	14.93	0.004266		
16QAM					
3.87	-30	8.08	0.004630	Within authorized band for Band 66	Pass
	-20	5.54	0.003175		
	-10	6.81	0.003903		
	0	3.50	0.002006		
	10	5.56	0.003186		
	20	-3.38	-0.001937		
	30	2.33	0.001335		
	40	-4.05	-0.002321		
	50	-6.57	-0.003765		
64QAM					
3.87	-30	14.66	0.004189	Within authorized band for Band 66	Pass
	-20	-8.67	-0.002477		
	-10	12.15	0.003471		
	0	-17.72	-0.005063		
	10	8.34	0.002383		
	20	-9.53	-0.002723		
	30	-6.51	-0.001860		
	40	-5.46	-0.001560		
	50	-7.55	-0.002157		

Voltage					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	3.45	-7.48	-0.002137	Within authorized band for Band 66	Pass
	3.87	-17.95	-0.005129		
	4.45	-13.49	-0.003854		
16QAM					
25	3.45	-6.57	-0.001877	Within authorized band for Band 66	Pass
	3.87	-13.39	-0.003826		
	4.45	4.38	0.001251		
64QAM					
25	3.45	18.87	0.005391	Within authorized band for Band 66	Pass
	3.87	-18.44	-0.005269		
	4.45	-11.12	-0.003177		
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
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
Band41	20MHz	QPSK	40620	100RB#0	PASS
Band41	20MHz	16QAM	40620	100RB#0	PASS
Band41	20MHz	64QAM	40620	100RB#0	PASS
Band66	20MHz	QPSK	132322	100RB#0	PASS
Band66	20MHz	16QAM	132322	100RB#0	PASS
Band66	20MHz	64QAM	132322	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

Remark: All bandwidth and all modulation had been tested, but only the worst case data displayed in this report.

Test Graphs

