

Appendix for Band 13

Product Name: 5G CPE
Model No: S3

Appendix A: Average Power Output Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	23.01	PASS
Band13	5MHz	16QAM	23205	1RB#0	22.00	PASS
Band13	5MHz	QPSK	23205	1RB#12	23.17	PASS
Band13	5MHz	16QAM	23205	1RB#12	22.11	PASS
Band13	5MHz	QPSK	23205	1RB#24	23.21	PASS
Band13	5MHz	16QAM	23205	1RB#24	22.24	PASS
Band13	5MHz	QPSK	23205	12RB#0	22.13	PASS
Band13	5MHz	16QAM	23205	12RB#0	21.16	PASS
Band13	5MHz	QPSK	23205	12RB#6	22.11	PASS
Band13	5MHz	16QAM	23205	12RB#6	21.12	PASS
Band13	5MHz	QPSK	23205	12RB#13	22.24	PASS
Band13	5MHz	16QAM	23205	12RB#13	21.25	PASS
Band13	5MHz	QPSK	23205	25RB#0	22.19	PASS
Band13	5MHz	16QAM	23205	25RB#0	21.21	PASS
Band13	5MHz	QPSK	23230	1RB#0	23.09	PASS
Band13	5MHz	16QAM	23230	1RB#0	22.12	PASS
Band13	5MHz	QPSK	23230	1RB#12	23.23	PASS
Band13	5MHz	16QAM	23230	1RB#12	22.28	PASS
Band13	5MHz	QPSK	23230	1RB#24	23.24	PASS
Band13	5MHz	16QAM	23230	1RB#24	22.26	PASS
Band13	5MHz	QPSK	23230	12RB#0	22.15	PASS
Band13	5MHz	16QAM	23230	12RB#0	21.15	PASS
Band13	5MHz	QPSK	23230	12RB#6	22.16	PASS
Band13	5MHz	16QAM	23230	12RB#6	21.19	PASS
Band13	5MHz	QPSK	23230	12RB#13	22.27	PASS
Band13	5MHz	16QAM	23230	12RB#13	21.24	PASS
Band13	5MHz	QPSK	23230	25RB#0	22.22	PASS
Band13	5MHz	16QAM	23230	25RB#0	21.23	PASS
Band13	5MHz	QPSK	23255	1RB#0	23.18	PASS
Band13	5MHz	16QAM	23255	1RB#0	22.23	PASS
Band13	5MHz	QPSK	23255	1RB#12	23.31	PASS
Band13	5MHz	16QAM	23255	1RB#12	22.30	PASS
Band13	5MHz	QPSK	23255	1RB#24	23.29	PASS
Band13	5MHz	16QAM	23255	1RB#24	22.29	PASS
Band13	5MHz	QPSK	23255	12RB#0	22.27	PASS

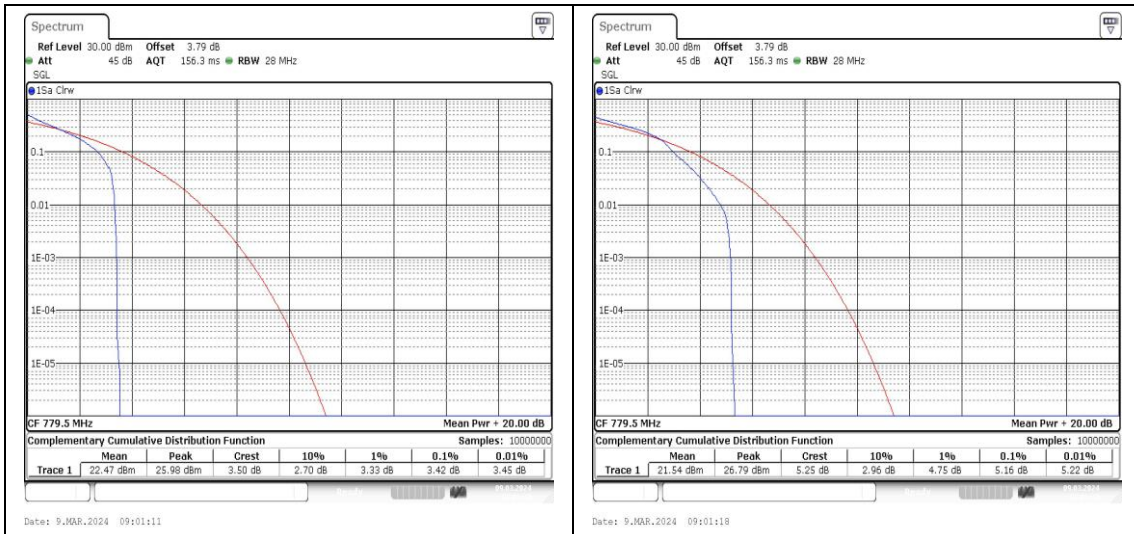
Band13	5MHz	16QAM	23255	12RB#0	21.24	PASS
Band13	5MHz	QPSK	23255	12RB#6	22.28	PASS
Band13	5MHz	16QAM	23255	12RB#6	21.27	PASS
Band13	5MHz	QPSK	23255	12RB#13	22.35	PASS
Band13	5MHz	16QAM	23255	12RB#13	21.33	PASS
Band13	5MHz	QPSK	23255	25RB#0	22.29	PASS
Band13	5MHz	16QAM	23255	25RB#0	21.27	PASS
Band13	10MHz	QPSK	23230	1RB#0	22.92	PASS
Band13	10MHz	16QAM	23230	1RB#0	22.03	PASS
Band13	10MHz	QPSK	23230	1RB#24	23.10	PASS
Band13	10MHz	16QAM	23230	1RB#24	22.17	PASS
Band13	10MHz	QPSK	23230	1RB#49	23.38	PASS
Band13	10MHz	16QAM	23230	1RB#49	22.30	PASS
Band13	10MHz	QPSK	23230	25RB#0	22.14	PASS
Band13	10MHz	16QAM	23230	25RB#0	21.08	PASS
Band13	10MHz	QPSK	23230	25RB#12	22.13	PASS
Band13	10MHz	16QAM	23230	25RB#12	21.06	PASS
Band13	10MHz	QPSK	23230	25RB#25	22.25	PASS
Band13	10MHz	16QAM	23230	25RB#25	21.22	PASS
Band13	10MHz	QPSK	23230	50RB#0	22.21	PASS
Band13	10MHz	16QAM	23230	50RB#0	21.15	PASS

Appendix B: Peak-to-Average Ratio(CCDF)

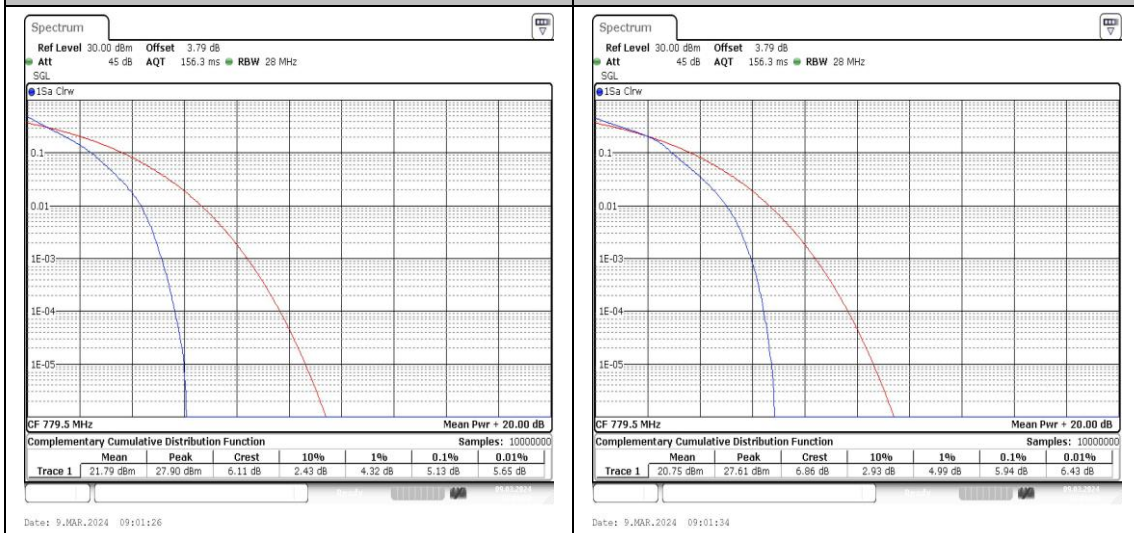
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	3.42	13	PASS
Band13	5MHz	16QAM	23205	1RB#0	5.16	13	PASS
Band13	5MHz	QPSK	23205	25RB#0	5.13	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	5.94	13	PASS
Band13	5MHz	QPSK	23230	1RB#0	3.51	13	PASS
Band13	5MHz	16QAM	23230	1RB#0	5.33	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	5.25	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	6.03	13	PASS
Band13	5MHz	QPSK	23255	1RB#0	3.48	13	PASS
Band13	5MHz	16QAM	23255	1RB#0	5.25	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	5.22	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	6.00	13	PASS
Band13	10MHz	QPSK	23230	1RB#0	3.45	13	PASS
Band13	10MHz	16QAM	23230	1RB#0	5.10	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	5.07	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.94	13	PASS

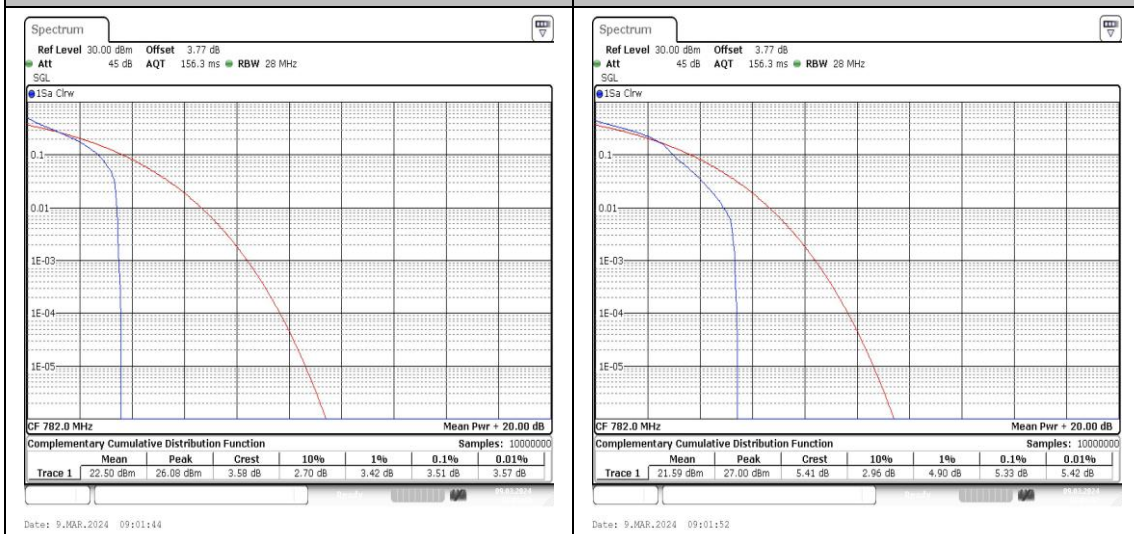
Test Graphs



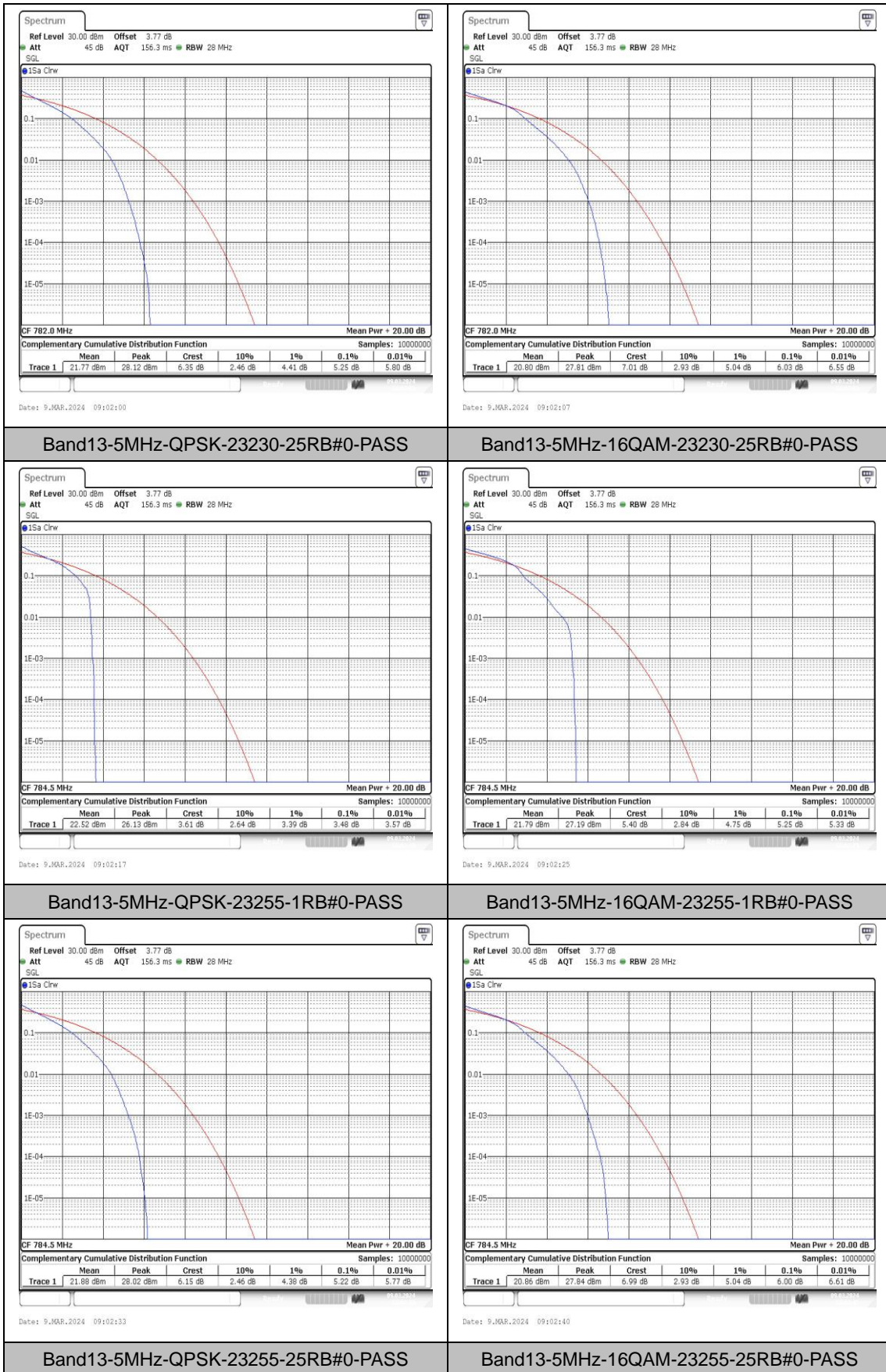
Band13-5MHz-QPSK-23205-1RB#0-PASS **Band13-5MHz-16QAM-23205-1RB#0-PASS**

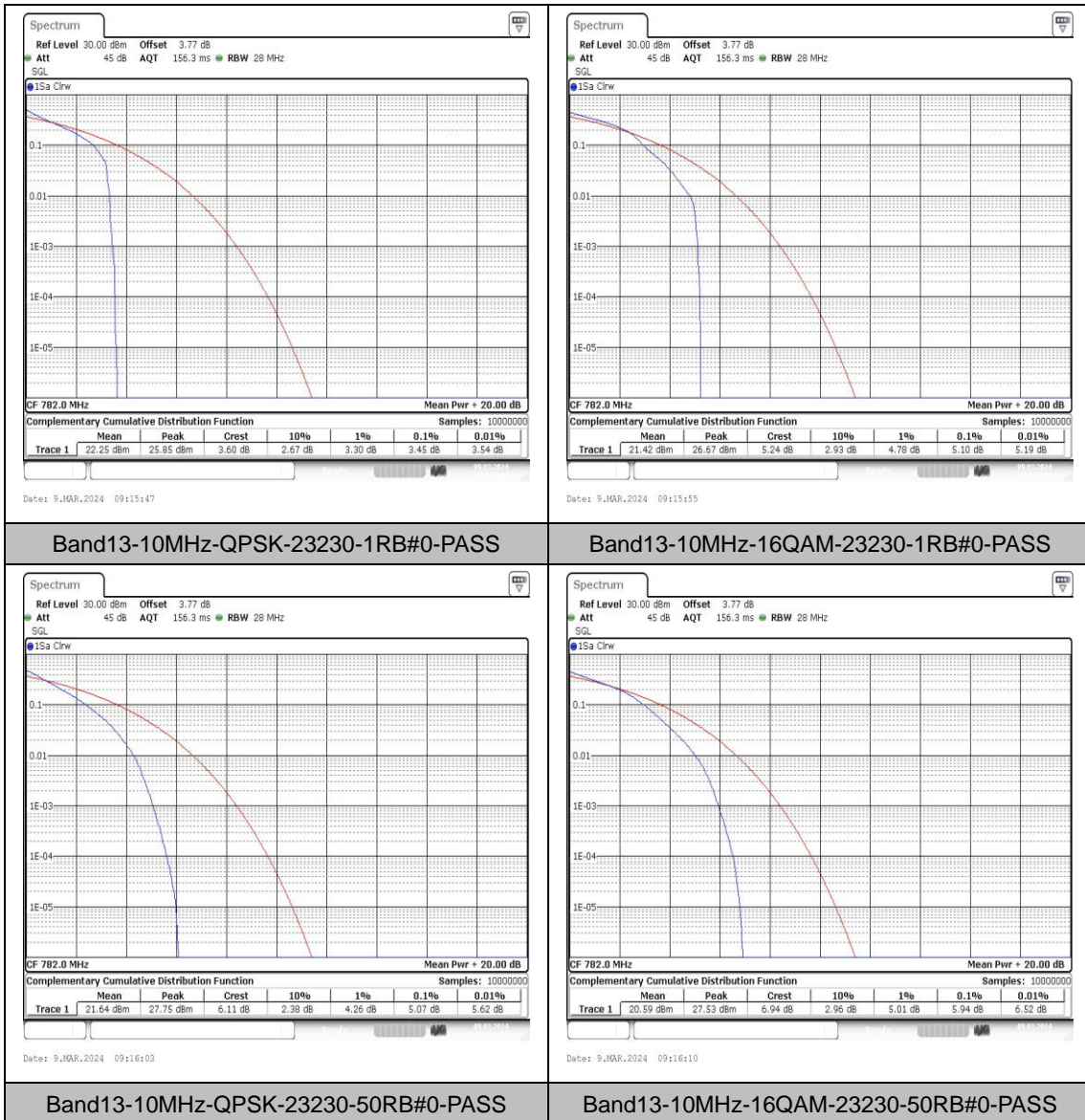


Band13-5MHz-QPSK-23205-25RB#0-PASS **Band13-5MHz-16QAM-23205-25RB#0-PASS**



Band13-5MHz-QPSK-23230-1RB#0-PASS **Band13-5MHz-16QAM-23230-1RB#0-PASS**



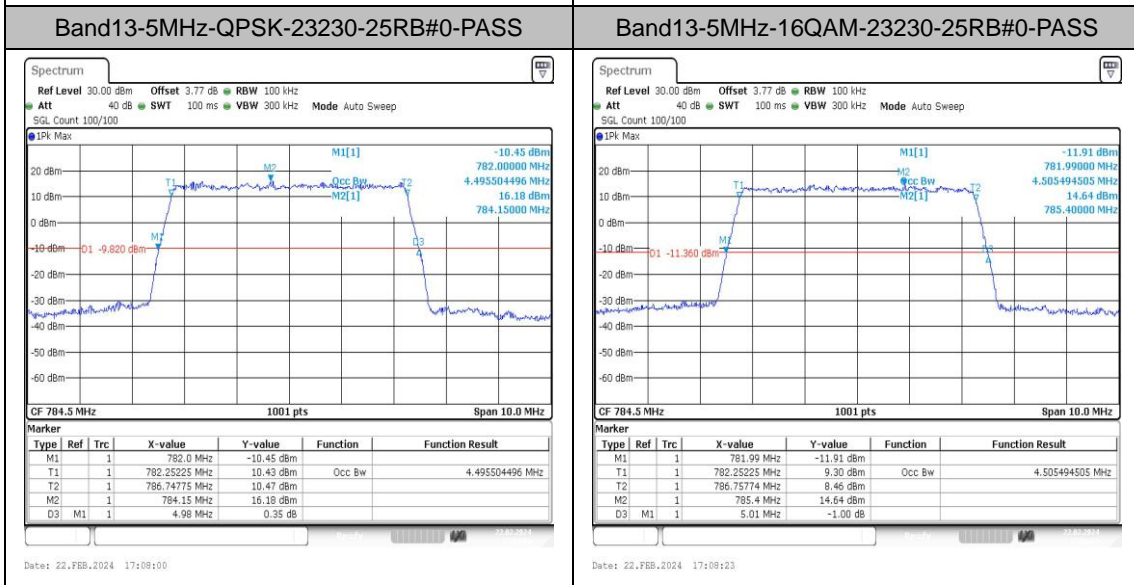
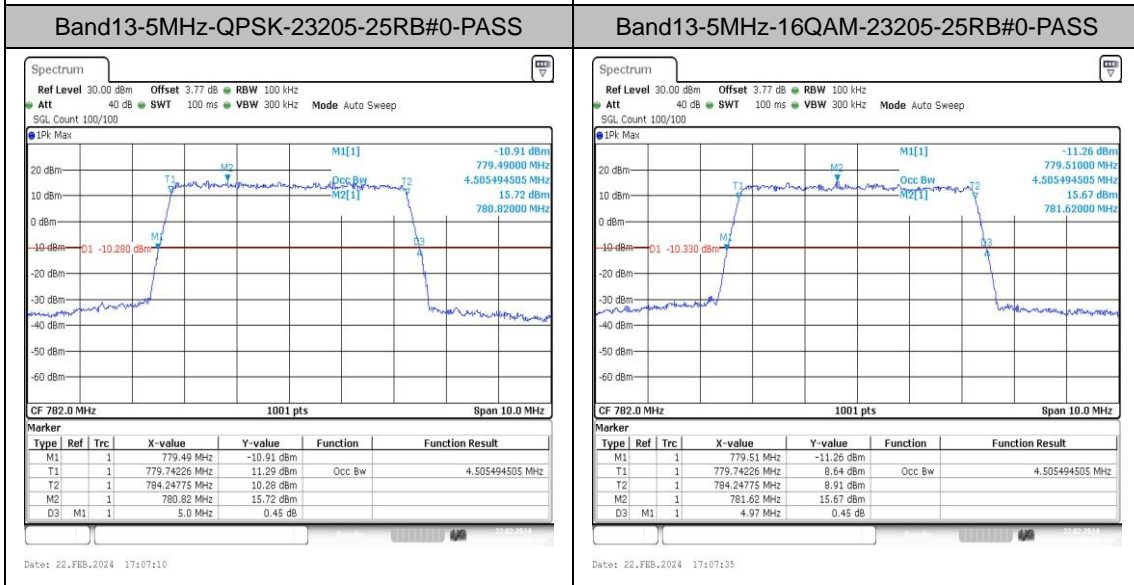
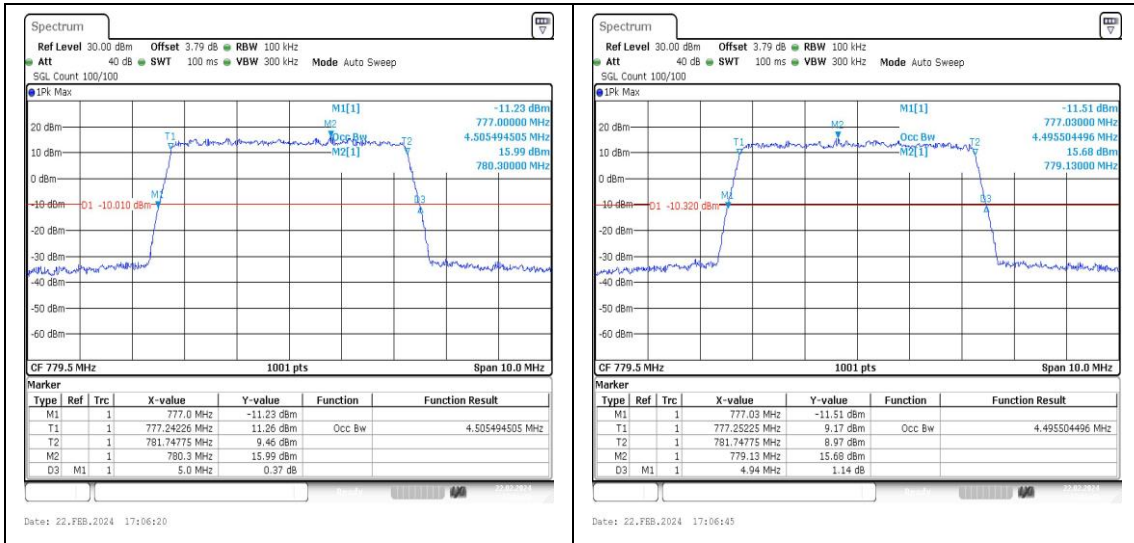


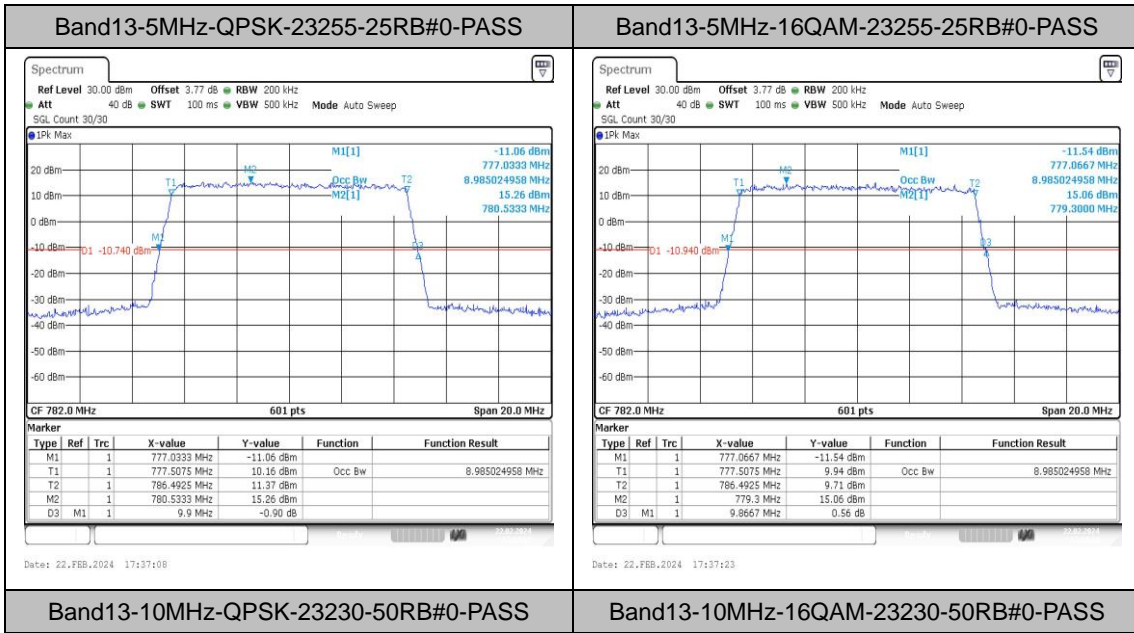
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.505	5.00	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.496	4.94	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.505	5.00	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.505	4.97	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.496	4.98	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.505	5.01	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.985	9.90	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.985	9.87	PASS

Test Graphs



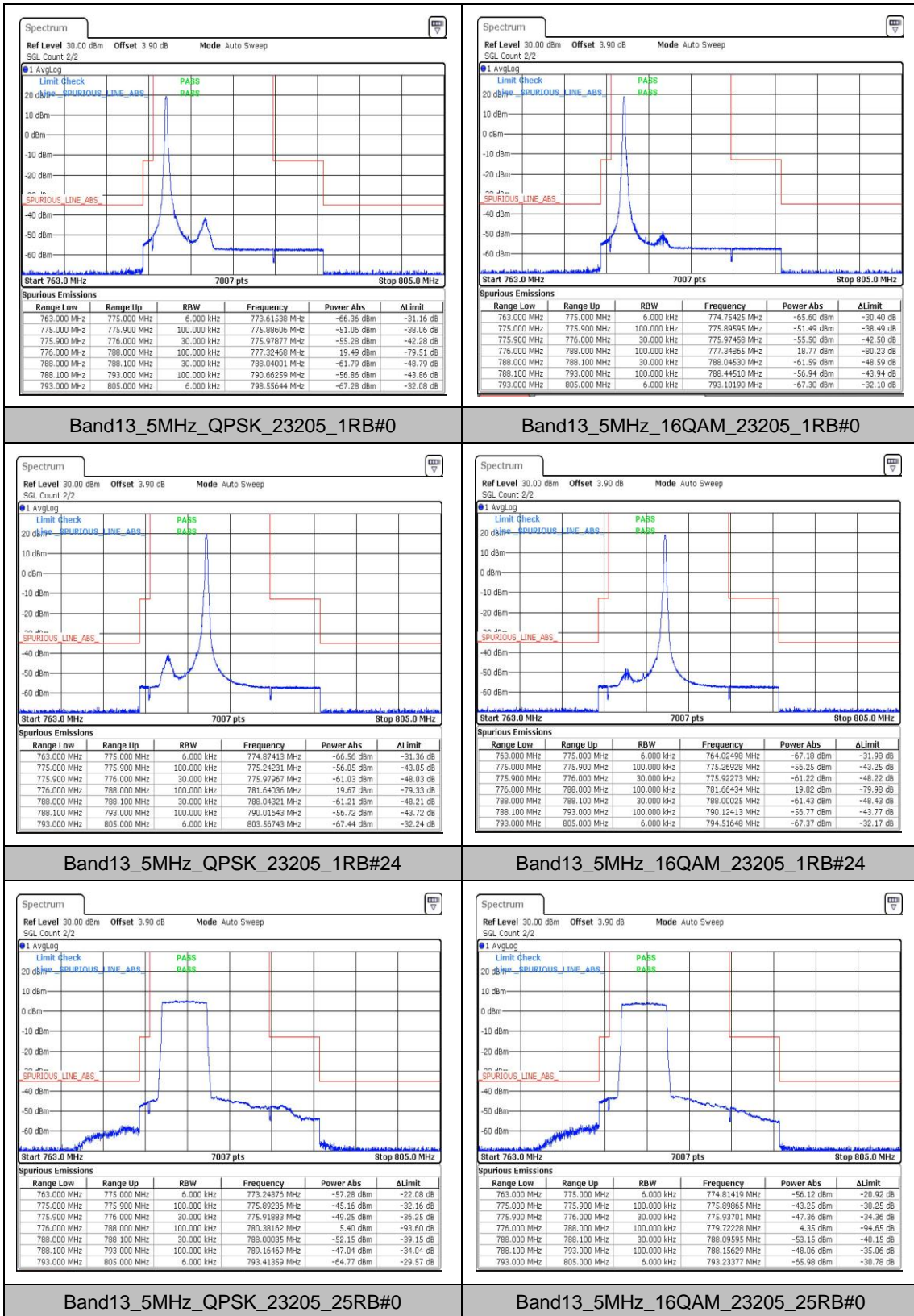


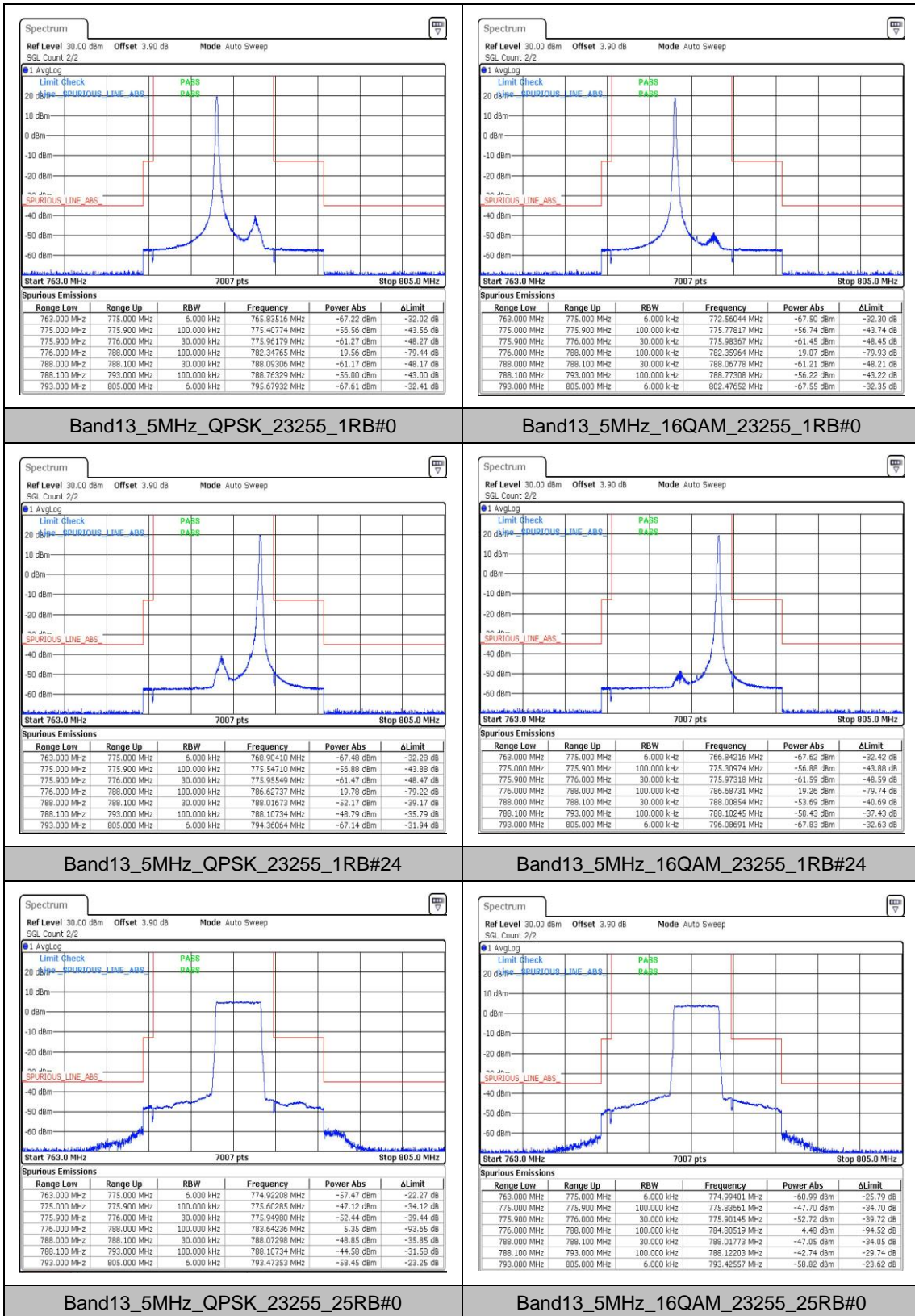
Appendix D: Band Edge

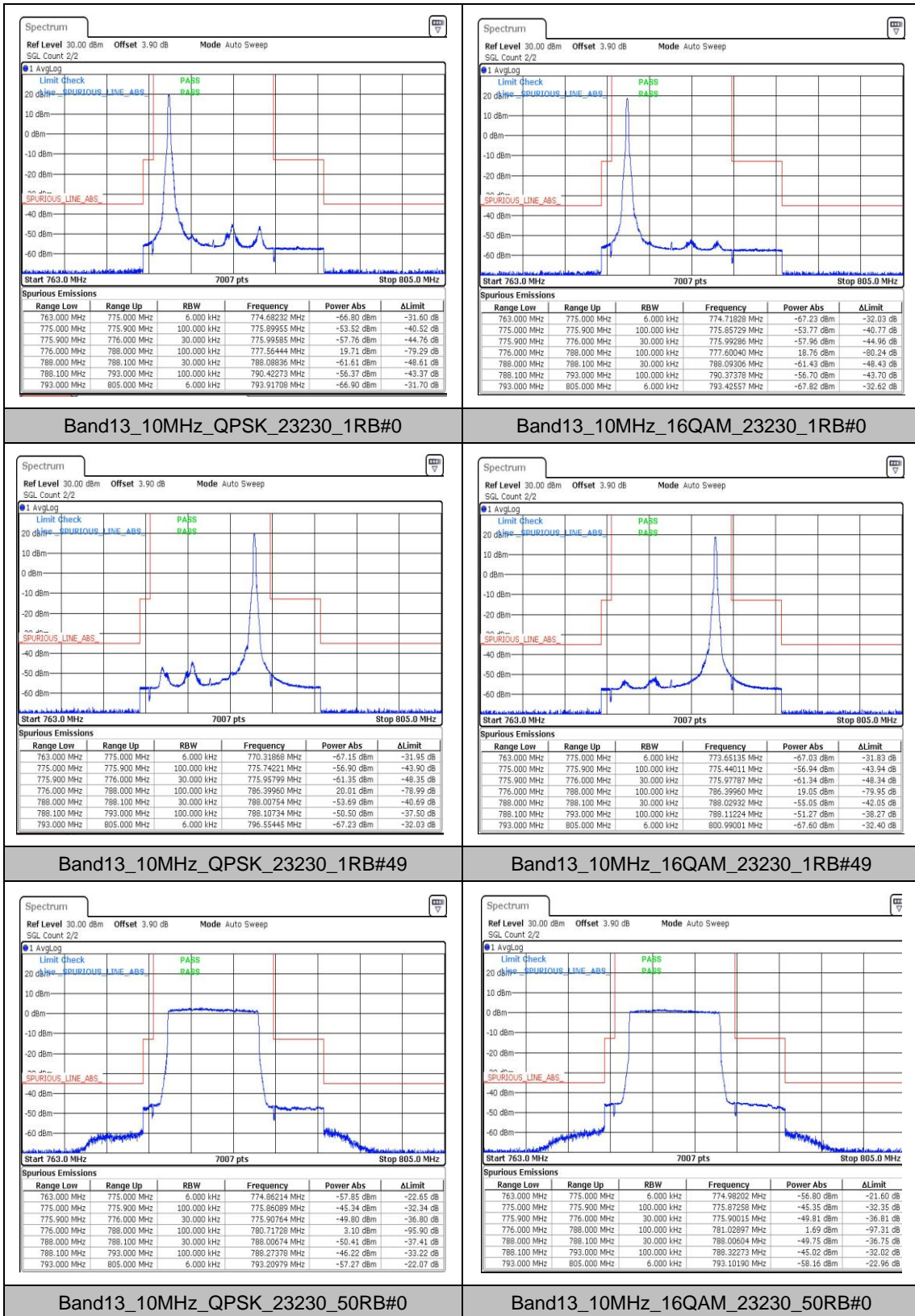
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Verdict
Band13	5MHz	QPSK	23205	1RB#0	PASS
Band13	5MHz	16QAM	23205	1RB#0	PASS
Band13	5MHz	QPSK	23205	1RB#24	PASS
Band13	5MHz	16QAM	23205	1RB#24	PASS
Band13	5MHz	QPSK	23205	25RB#0	PASS
Band13	5MHz	16QAM	23205	25RB#0	PASS
Band13	5MHz	QPSK	23255	1RB#0	PASS
Band13	5MHz	16QAM	23255	1RB#0	PASS
Band13	5MHz	QPSK	23255	1RB#24	PASS
Band13	5MHz	16QAM	23255	1RB#24	PASS
Band13	5MHz	QPSK	23255	25RB#0	PASS
Band13	5MHz	16QAM	23255	25RB#0	PASS
Band13	10MHz	QPSK	23230	1RB#0	PASS
Band13	10MHz	16QAM	23230	1RB#0	PASS
Band13	10MHz	QPSK	23230	1RB#49	PASS
Band13	10MHz	16QAM	23230	1RB#49	PASS
Band13	10MHz	QPSK	23230	50RB#0	PASS
Band13	10MHz	16QAM	23230	50RB#0	PASS

Test Graphs







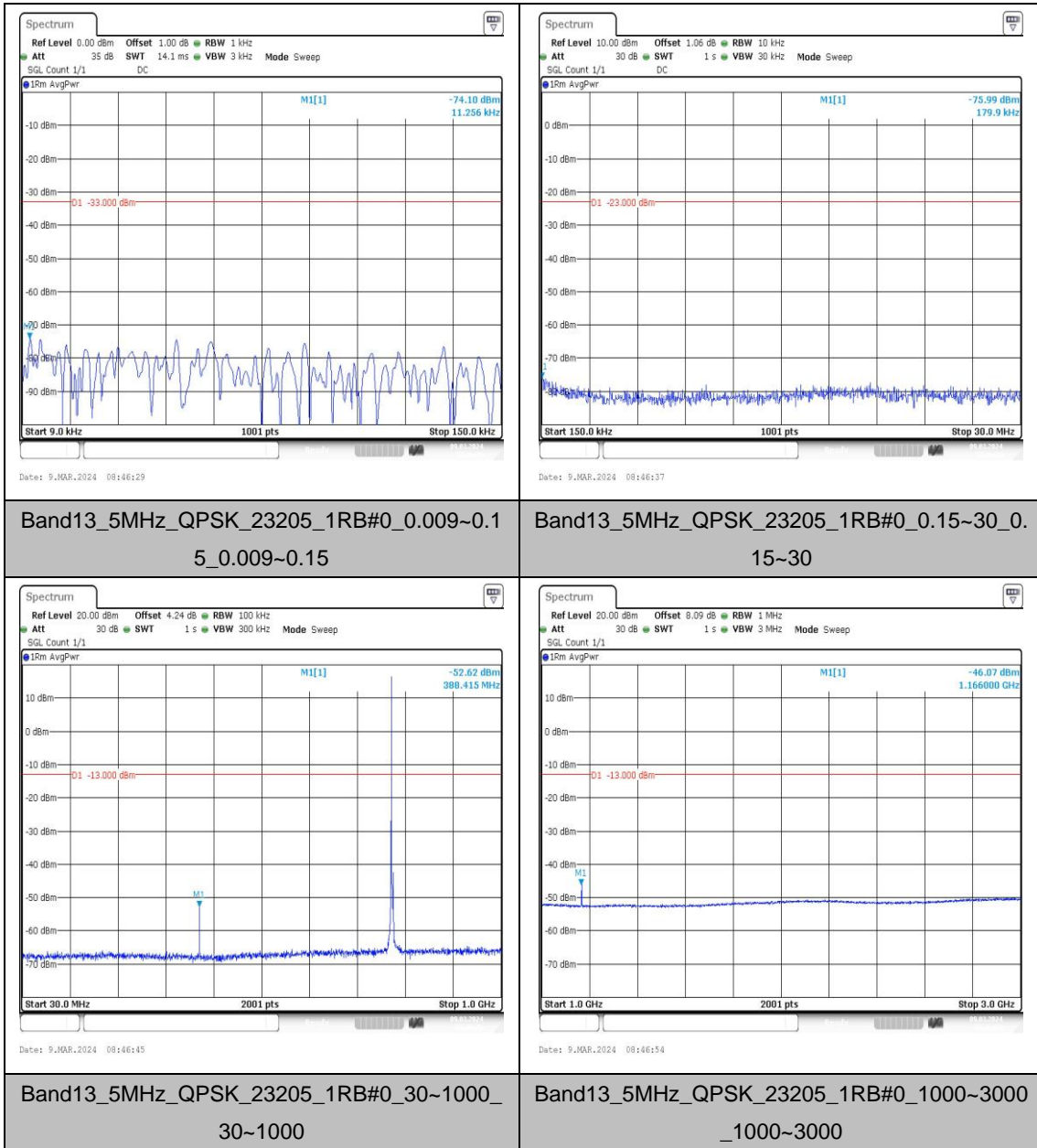
Appendix E: Conducted Spurious Emission

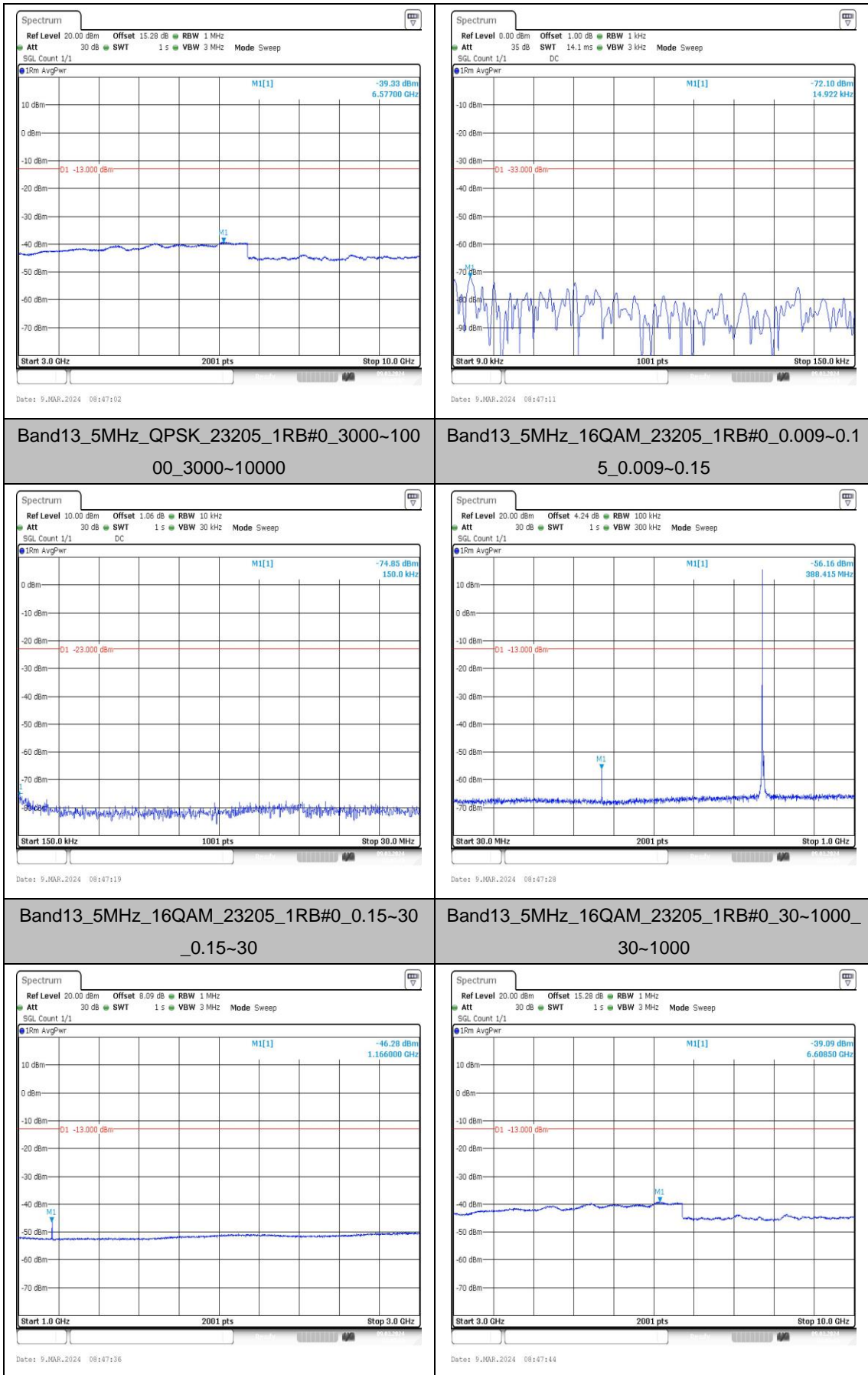
Test Result

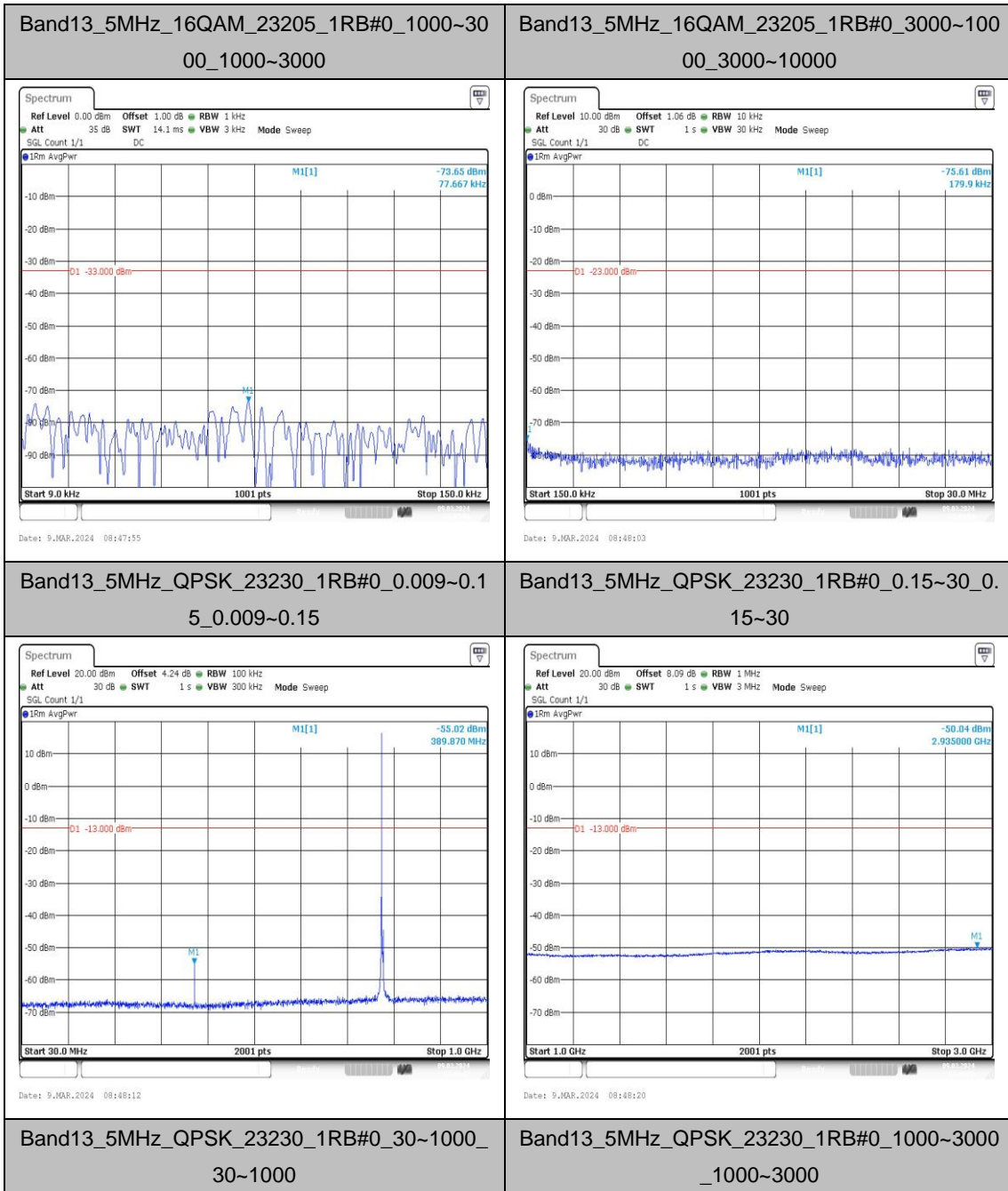
Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Verdict
Band13	5MHz	QPSK	23205	1RB#0	0.009~0.15	PASS
Band13	5MHz	QPSK	23205	1RB#0	0.15~30	PASS
Band13	5MHz	QPSK	23205	1RB#0	30~1000	PASS
Band13	5MHz	QPSK	23205	1RB#0	1000~3000	PASS
Band13	5MHz	QPSK	23205	1RB#0	3000~10000	PASS
Band13	5MHz	16QAM	23205	1RB#0	0.009~0.15	PASS
Band13	5MHz	16QAM	23205	1RB#0	0.15~30	PASS
Band13	5MHz	16QAM	23205	1RB#0	30~1000	PASS
Band13	5MHz	16QAM	23205	1RB#0	1000~3000	PASS
Band13	5MHz	16QAM	23205	1RB#0	3000~10000	PASS
Band13	5MHz	QPSK	23230	1RB#0	0.009~0.15	PASS
Band13	5MHz	QPSK	23230	1RB#0	0.15~30	PASS
Band13	5MHz	QPSK	23230	1RB#0	30~1000	PASS
Band13	5MHz	QPSK	23230	1RB#0	1000~3000	PASS
Band13	5MHz	QPSK	23230	1RB#0	3000~10000	PASS
Band13	5MHz	16QAM	23230	1RB#0	0.009~0.15	PASS
Band13	5MHz	16QAM	23230	1RB#0	0.15~30	PASS
Band13	5MHz	16QAM	23230	1RB#0	30~1000	PASS
Band13	5MHz	16QAM	23230	1RB#0	1000~3000	PASS
Band13	5MHz	16QAM	23230	1RB#0	3000~10000	PASS
Band13	5MHz	QPSK	23255	1RB#0	0.009~0.15	PASS
Band13	5MHz	QPSK	23255	1RB#0	0.15~30	PASS
Band13	5MHz	QPSK	23255	1RB#0	30~1000	PASS
Band13	5MHz	QPSK	23255	1RB#0	1000~3000	PASS
Band13	5MHz	QPSK	23255	1RB#0	3000~10000	PASS
Band13	5MHz	16QAM	23255	1RB#0	0.009~0.15	PASS
Band13	5MHz	16QAM	23255	1RB#0	0.15~30	PASS
Band13	5MHz	16QAM	23255	1RB#0	30~1000	PASS
Band13	5MHz	16QAM	23255	1RB#0	1000~3000	PASS
Band13	5MHz	16QAM	23255	1RB#0	3000~10000	PASS
Band13	10MHz	QPSK	23230	1RB#0	0.009~0.15	PASS
Band13	10MHz	QPSK	23230	1RB#0	0.15~30	PASS
Band13	10MHz	QPSK	23230	1RB#0	30~1000	PASS
Band13	10MHz	QPSK	23230	1RB#0	1000~3000	PASS
Band13	10MHz	QPSK	23230	1RB#0	3000~10000	PASS
Band13	10MHz	16QAM	23230	1RB#0	0.009~0.15	PASS

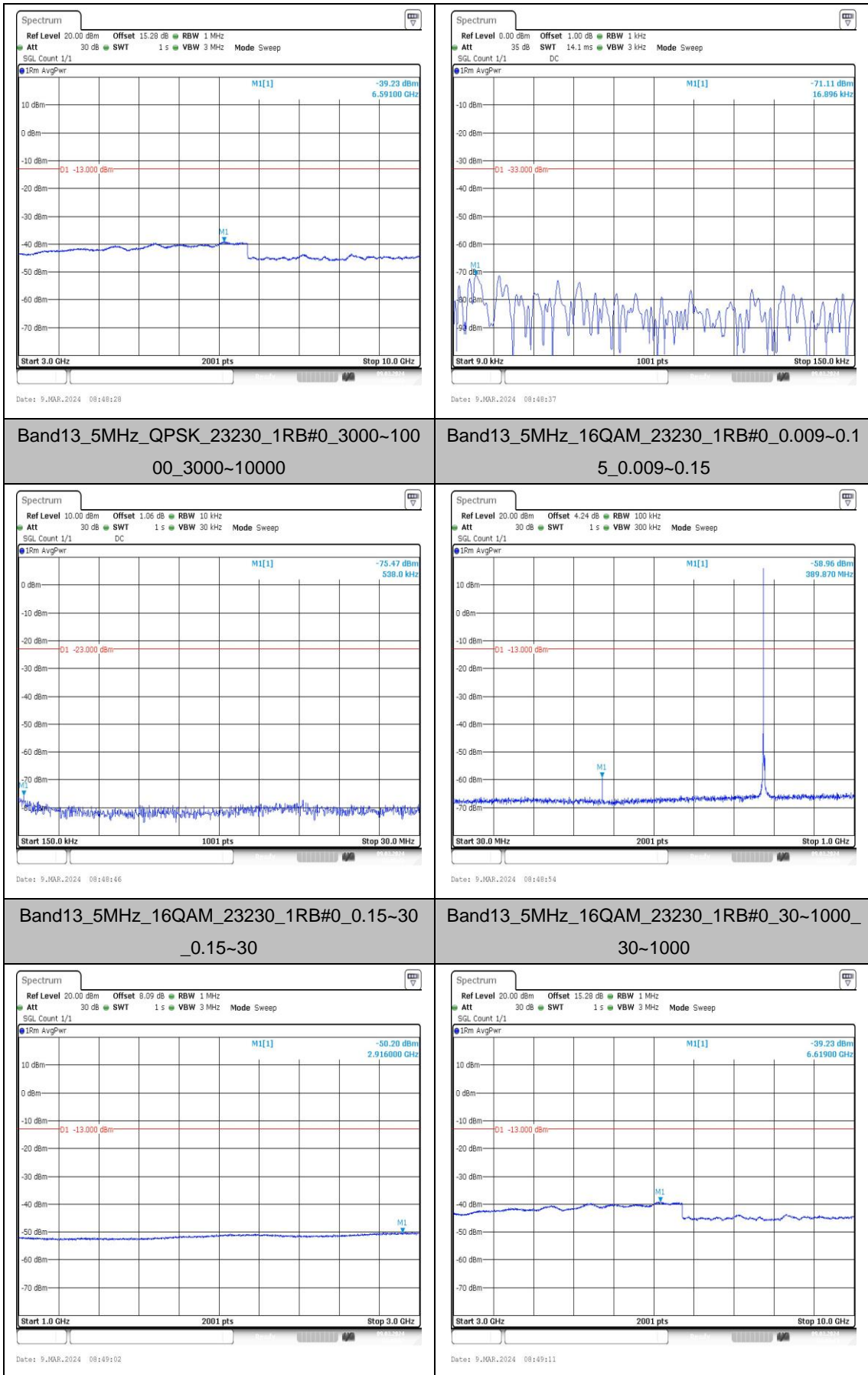
Band13	10MHz	16QAM	23230	1RB#0	0.15~30	PASS
Band13	10MHz	16QAM	23230	1RB#0	30~1000	PASS
Band13	10MHz	16QAM	23230	1RB#0	1000~3000	PASS
Band13	10MHz	16QAM	23230	1RB#0	3000~10000	PASS

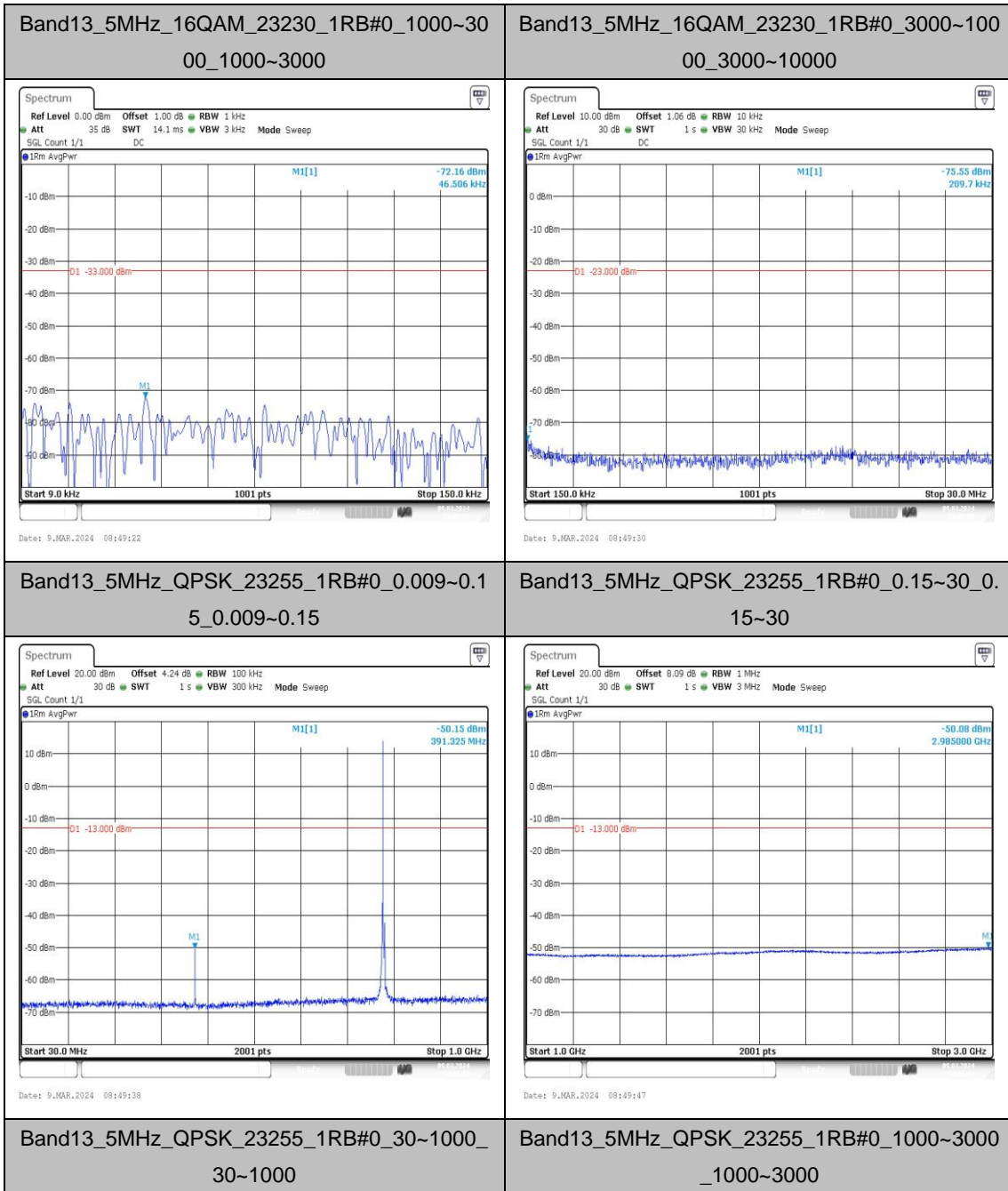
Test Graphs

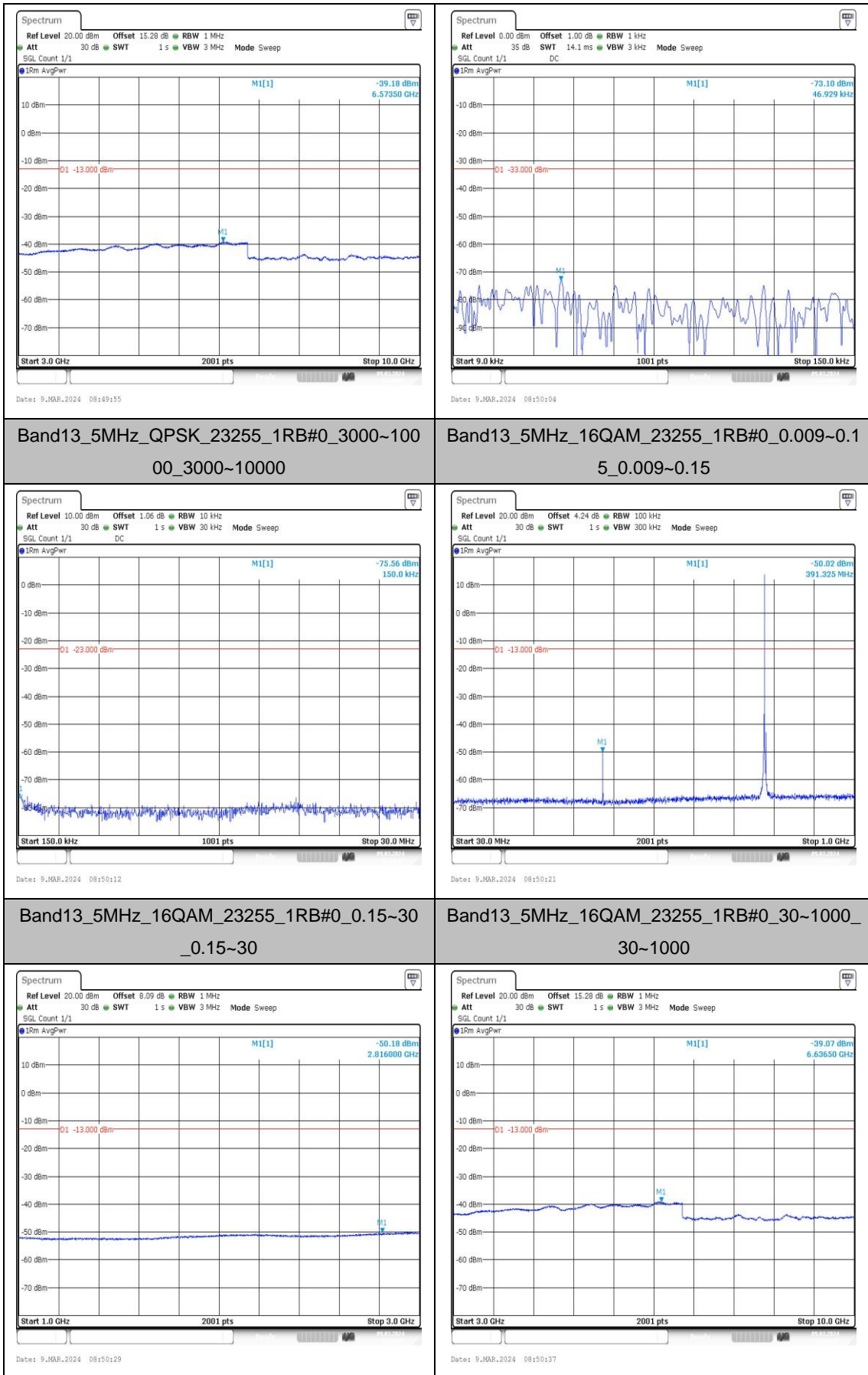


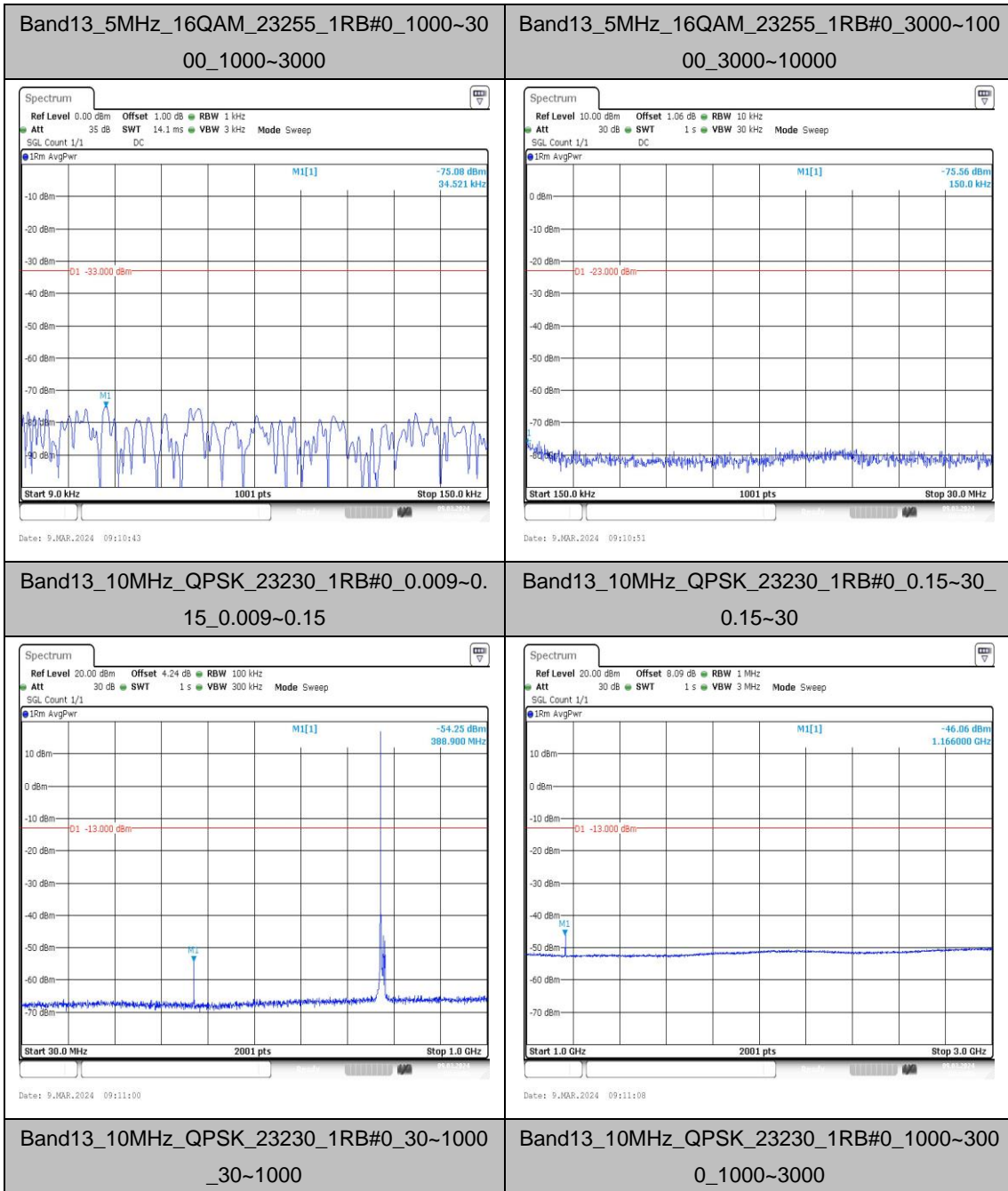


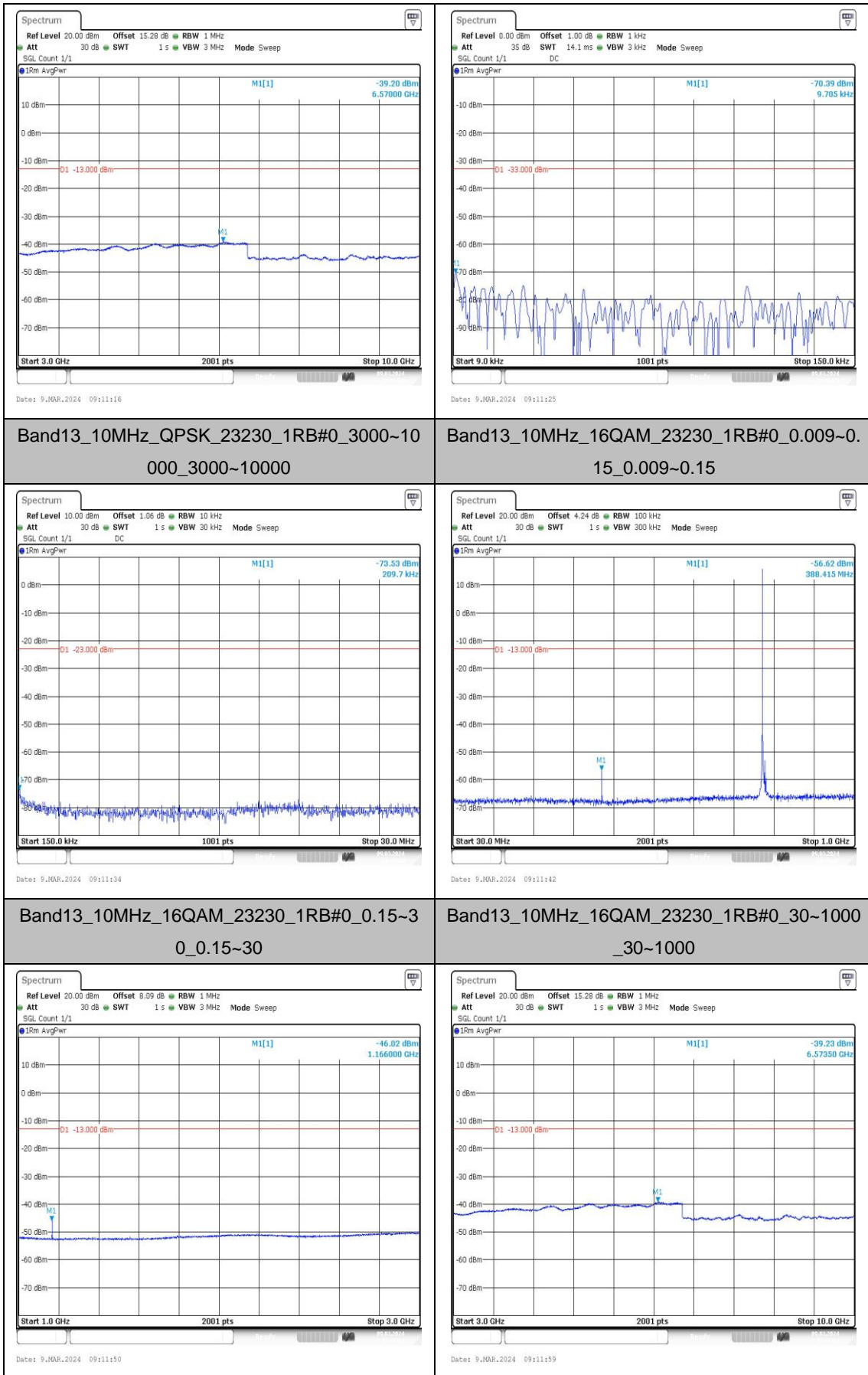












Band13_10MHz_16QAM_23230_1RB#0_1000~3000_1000~3000	Band13_10MHz_16QAM_23230_1RB#0_3000~10000_3000~10000
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Appendix F: Frequency Stability

Test Result

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	VN	NT	3.86	0.004952	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	VL	NT	-2.99	-0.003836	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	VH	NT	5.55	0.007120	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	VN	NT	-2.70	-0.003464	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	VL	NT	3.36	0.004310	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	VH	NT	-6.38	-0.008185	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	VN	NT	1.56	0.001995	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	VL	NT	7.40	0.009463	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	VH	NT	-2.20	-0.002813	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	VN	NT	-2.03	-0.002596	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	VL	NT	2.57	0.003286	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	VH	NT	-5.78	-0.007391	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	VN	NT	-5.68	-0.007240	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	VL	NT	-1.40	-0.001785	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	VH	NT	6.02	0.007674	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	VN	NT	-4.08	-0.005201	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	VL	NT	-2.80	-0.003569	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	VH	NT	1.65	0.002103	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	VN	NT	2.75	0.003517	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	VL	NT	-3.33	-0.004258	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	VH	NT	-7.18	-0.009182	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	VN	NT	-2.22	-0.002839	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	VL	NT	-6.39	-0.008171	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	VH	NT	-8.85	-0.011317	±2.5	PASS

Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	NV	-30	4.78	0.006132	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	-20	2.89	0.003708	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	-10	2.86	0.003669	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	0	3.86	0.004952	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	10	3.35	0.004298	±2.5	PASS

Band13	5MHz	QPSK	23205	25RB#0	NV	20	3.86	0.004952	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	30	-6.57	-0.008428	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	40	-5.05	-0.006479	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	50	-3.60	-0.004618	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	-30	-2.68	-0.003438	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	-20	4.33	0.005555	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	-10	-3.06	-0.003926	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	0	3.09	0.003964	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	10	-3.98	-0.005106	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	20	2.39	0.003066	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	30	-4.16	-0.005337	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	40	3.42	0.004387	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	50	-4.28	-0.005491	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	-30	5.89	0.007532	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	-20	-4.23	-0.005409	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	-10	1.65	0.002110	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	0	3.53	0.004514	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	10	-4.45	-0.005691	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	20	-1.75	-0.002238	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	30	2.35	0.003005	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	40	-6.04	-0.007724	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	50	-3.68	-0.004706	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	-30	-2.02	-0.002583	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	-20	4.15	0.005307	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	-10	-3.40	-0.004348	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	0	3.26	0.004169	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	10	-4.39	-0.005614	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	20	2.35	0.003005	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	30	6.08	0.007775	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	40	-1.80	-0.002302	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	50	-6.32	-0.008082	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	-30	5.76	0.007342	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	-20	-4.09	-0.005214	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	-10	-3.82	-0.004869	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	0	-3.50	-0.004461	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	10	-2.25	-0.002868	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	20	-2.98	-0.003799	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	30	-2.53	-0.003225	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	40	-2.47	-0.003149	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	50	-2.07	-0.002639	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	-30	3.26	0.004156	±2.5	PASS

Band13	5MHz	16QAM	23255	25RB#0	NV	-20	-5.02	-0.006399	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	-10	-2.69	-0.003429	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	0	1.99	0.002537	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	10	-5.69	-0.007253	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	20	-2.92	-0.003722	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	30	3.09	0.003939	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	40	-5.29	-0.006743	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	50	-2.43	-0.003098	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-30	1.47	0.001880	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-20	-4.46	-0.005703	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-10	3.42	0.004373	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	0	-2.23	-0.002852	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	10	-5.01	-0.006407	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	20	2.96	0.003785	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	30	-2.12	-0.002711	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	40	-5.31	-0.006790	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	50	2.22	0.002839	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-30	1.93	0.002468	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-20	1.32	0.001688	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-10	-1.83	-0.002340	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	0	-3.96	-0.005064	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	10	-3.32	-0.004246	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	20	-5.21	-0.006662	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	30	-5.09	-0.006509	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	40	-5.91	-0.007558	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	50	4.75	0.006074	±2.5	PASS