

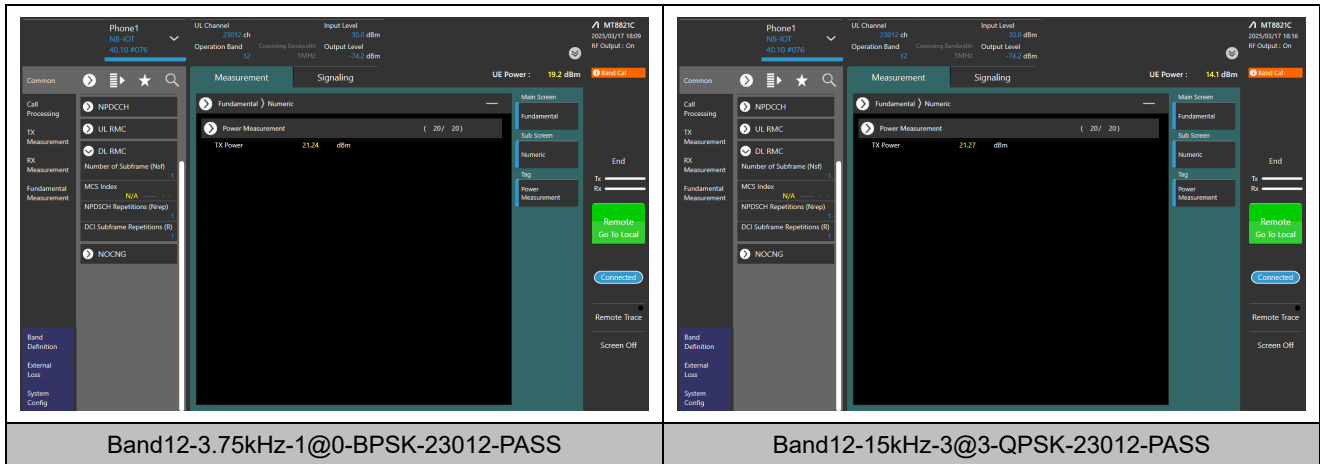
Appendix-C LTE NB-IoT Band 12

Effective (Isotropic) Radiated Power Output Data for NB1

Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	POWER (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band12	Stand-Alone	3.75kHz	0.18	BPSK	23012	1@0	21.24	23.04	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23012	1@0	21.18	22.98	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	BPSK	23012	1@47	21.19	22.99	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23012	1@47	21.17	22.97	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	BPSK	23095	1@0	21.06	22.86	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	21.06	22.86	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	BPSK	23095	1@47	21	22.8	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@47	21.02	22.82	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	BPSK	23178	1@0	21.06	22.86	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23178	1@0	21.07	22.87	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	BPSK	23178	1@47	20.93	22.73	34.77	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23178	1@47	21.02	22.82	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23012	1@0	21.19	22.99	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23012	1@0	21.22	23.02	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23012	1@11	21.16	22.96	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23012	1@11	21.17	22.97	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23095	1@0	21.01	22.81	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	1@0	21.04	22.84	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23095	1@11	20.96	22.76	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	1@11	20.98	22.78	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23178	1@0	21.18	22.98	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23178	1@0	21.22	23.02	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23178	1@11	21.14	22.94	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23178	1@11	21.15	22.95	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23012	3@3	21.27	23.07	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	3@3	21	22.8	34.77	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23178	3@3	21.25	23.05	34.77	PASS

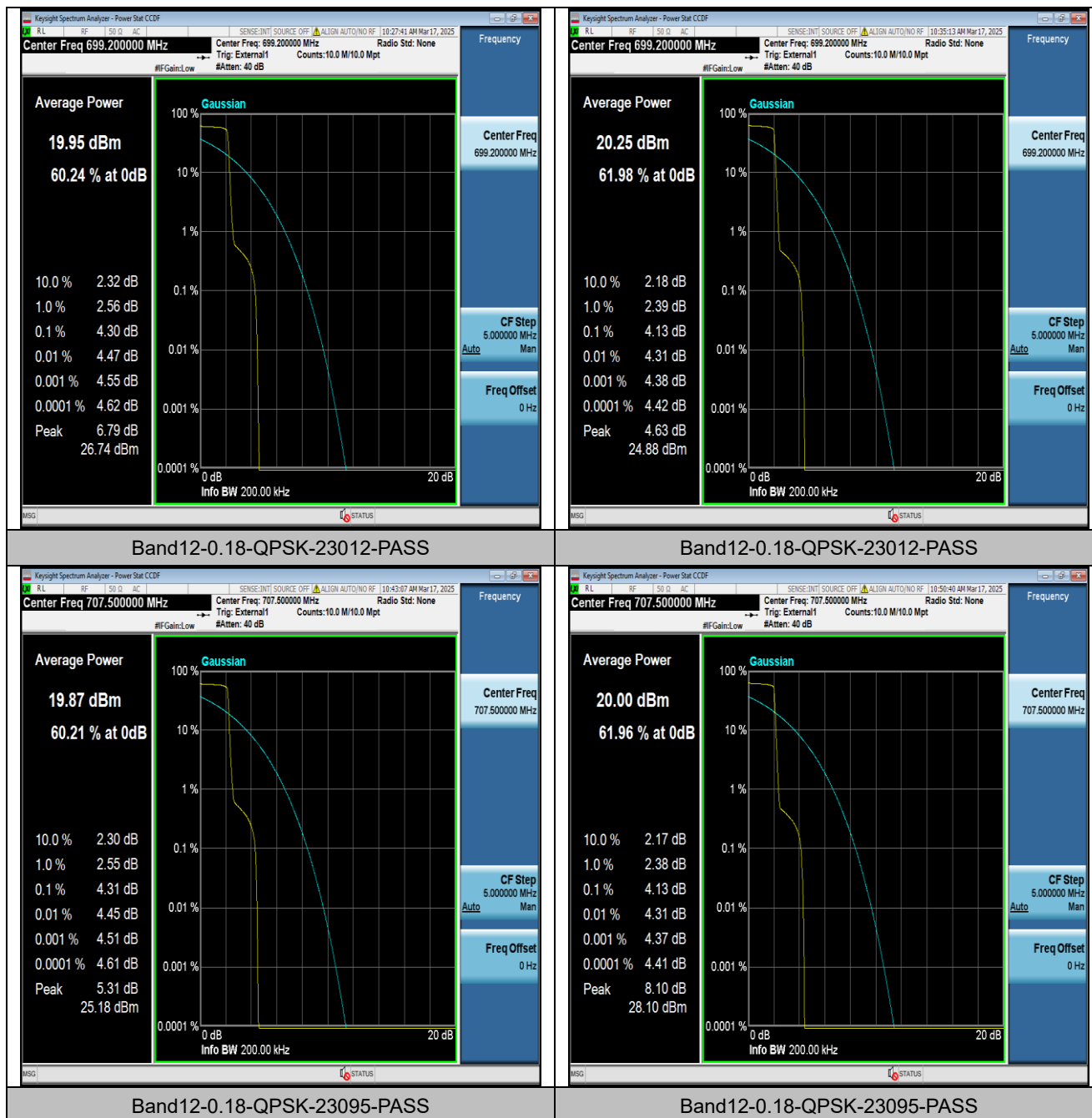
Test Graphs

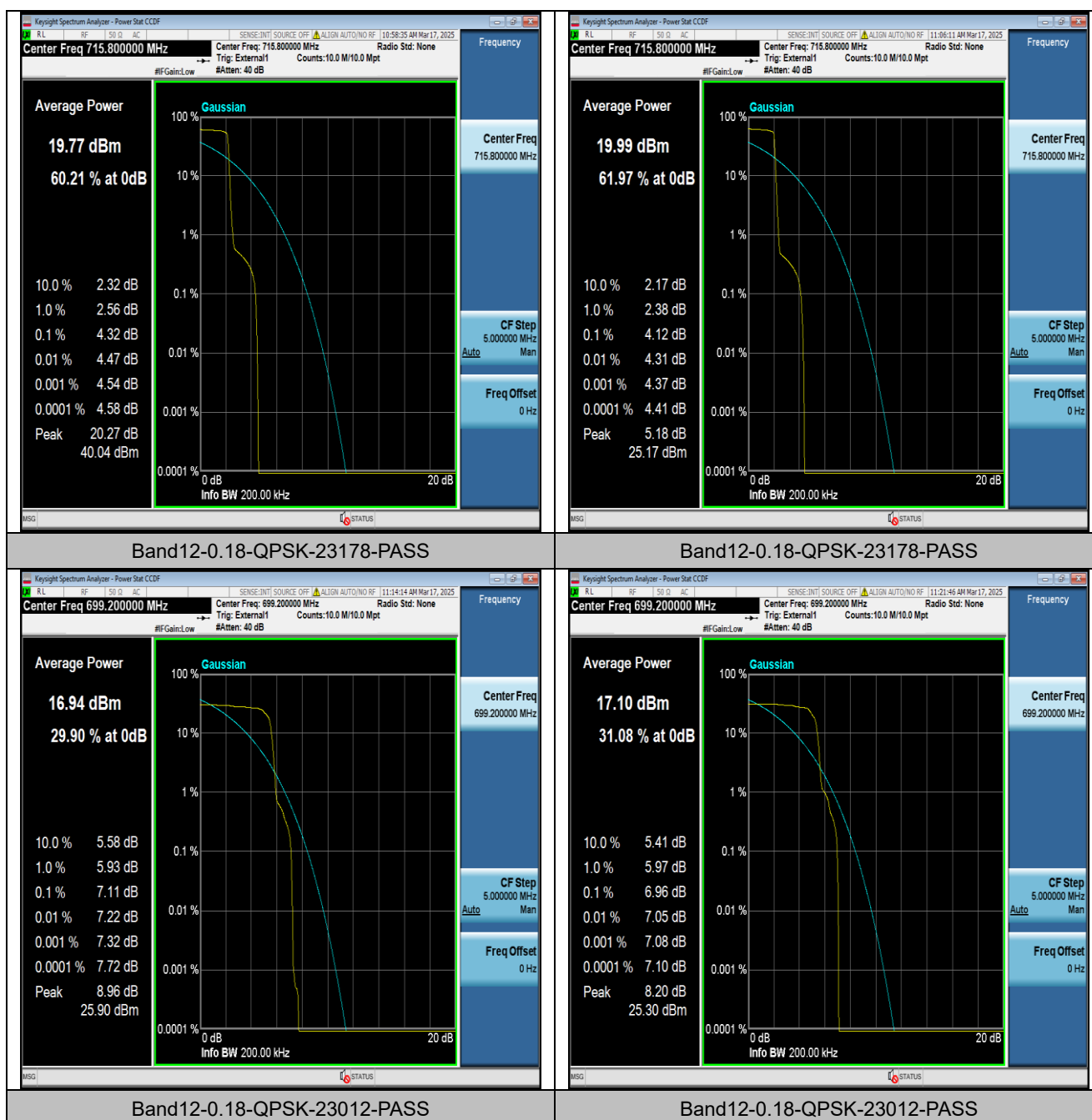


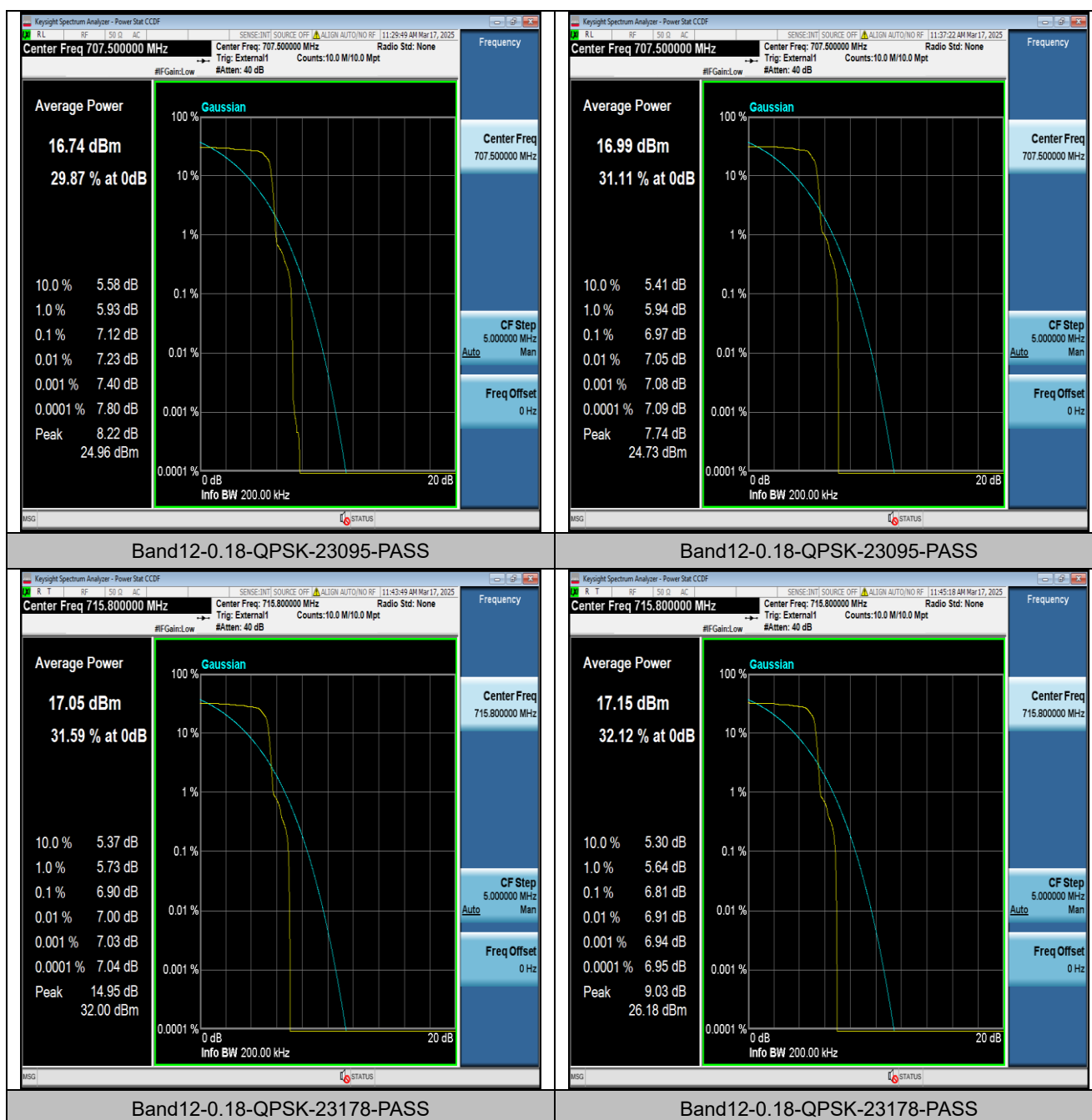
Peak-to-Average Ratio(CCDF) for NB1**Test Result**

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dBm)	Limit (dBm)	Verdict
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23012	1@0	4.3	<=13	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23012	1@47	4.13	<=13	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	4.31	<=13	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@47	4.13	<=13	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23178	1@0	4.32	<=13	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23178	1@47	4.12	<=13	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23012	1@0	7.11	<=13	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23012	1@11	6.96	<=13	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	1@0	7.12	<=13	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	1@11	6.97	<=13	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23178	1@0	6.9	<=13	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23178	1@11	6.81	<=13	PASS

Test Graphs





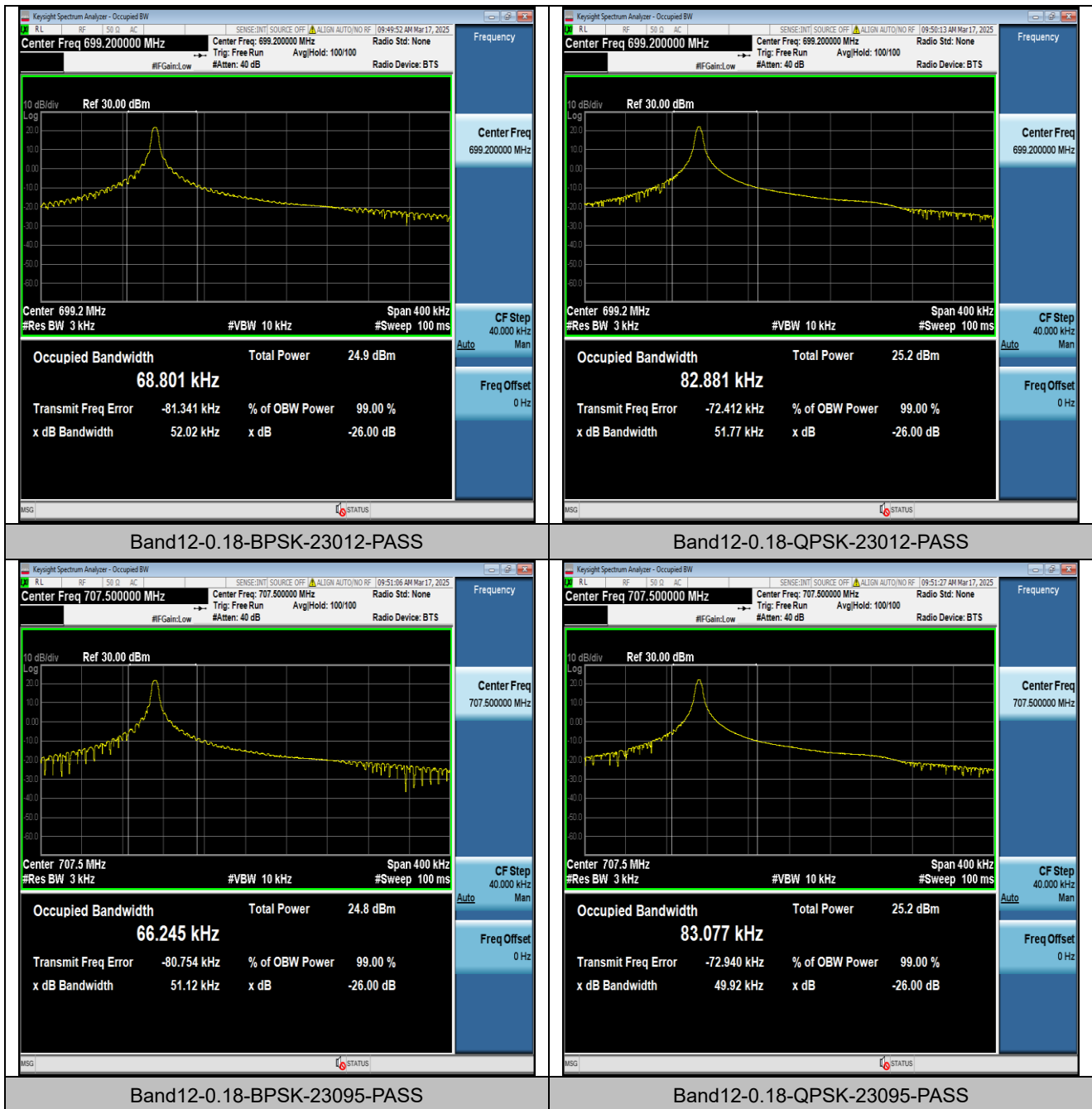


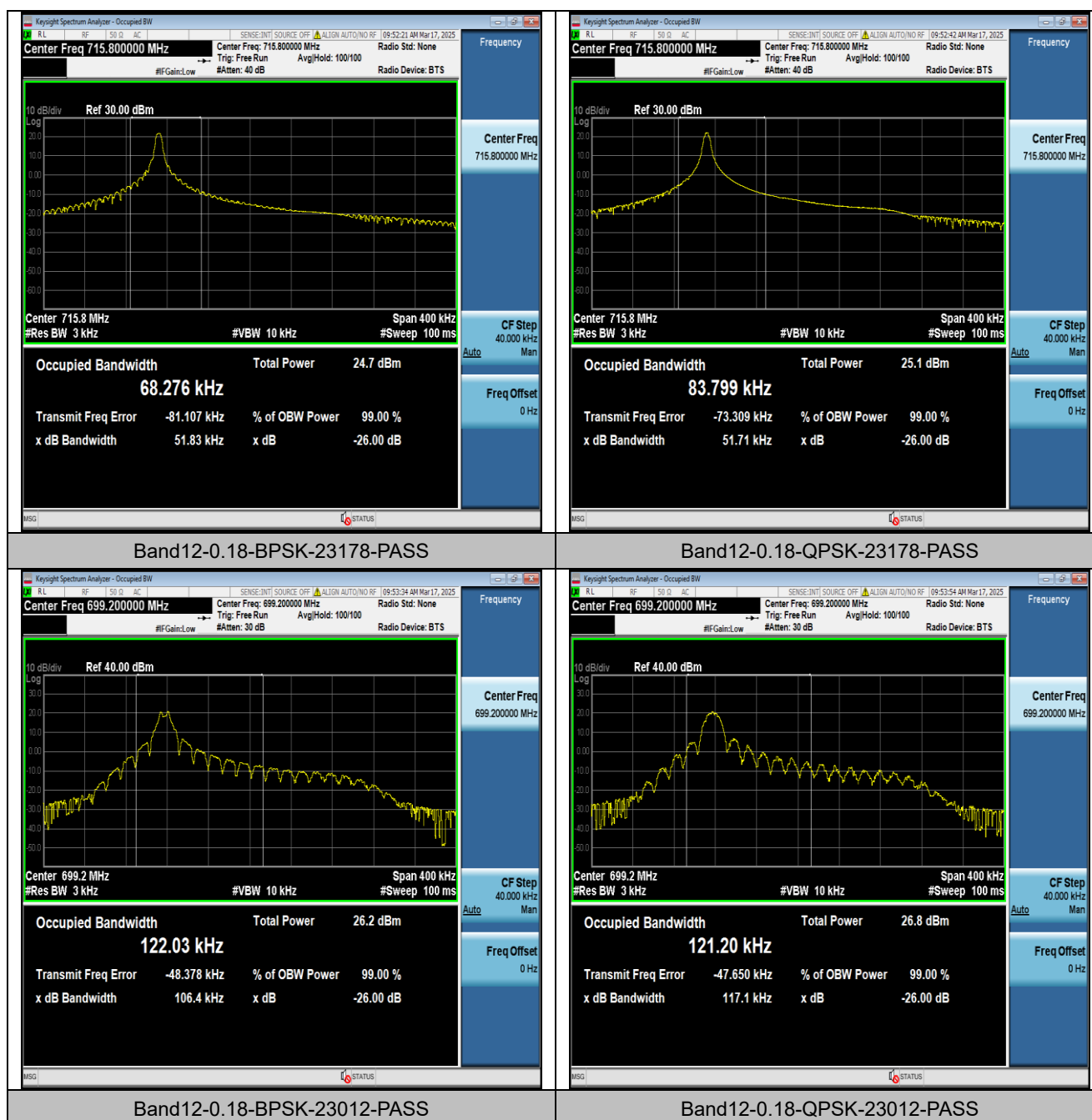
Emission Bandwidth for NB1

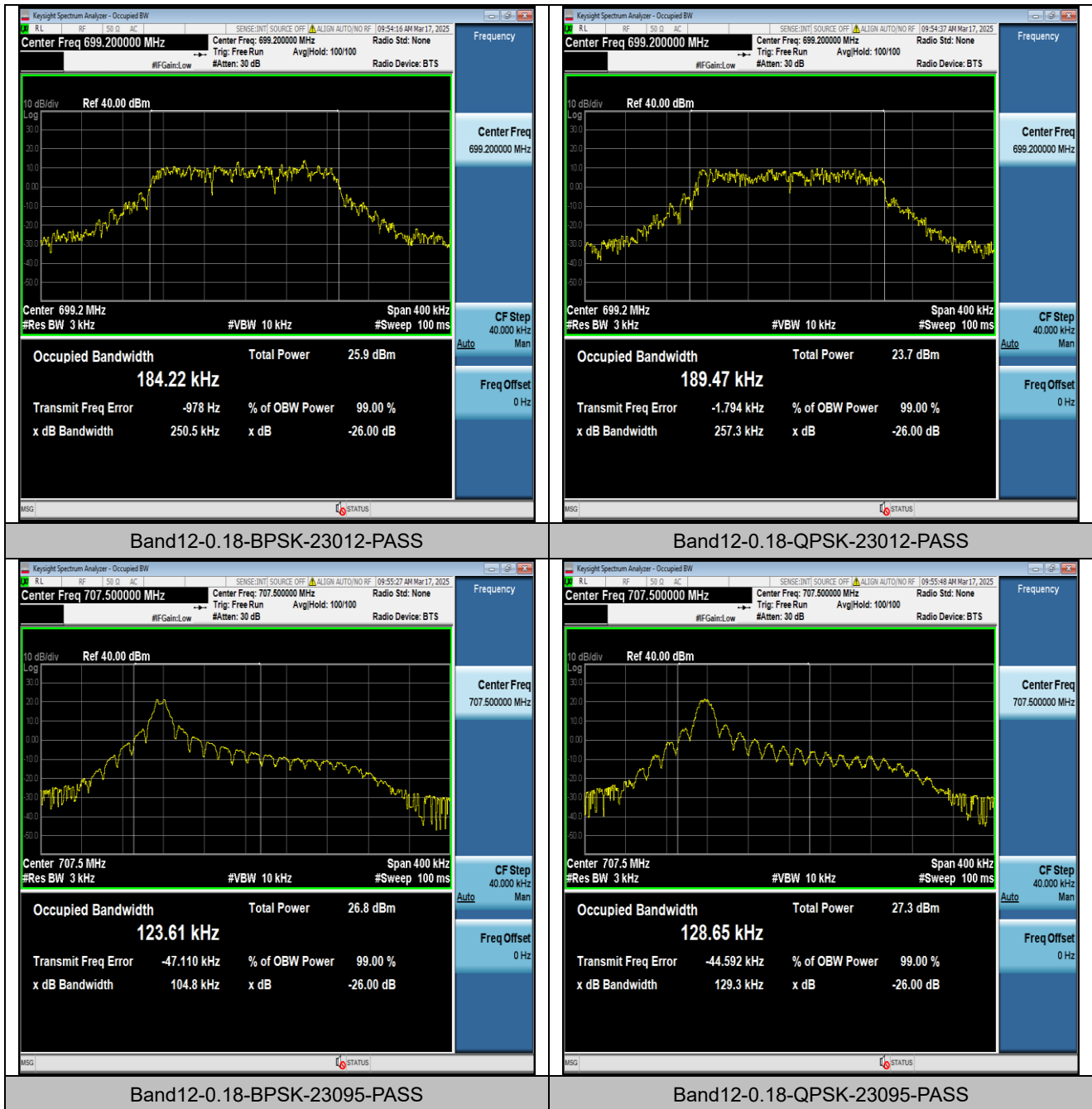
Test Result

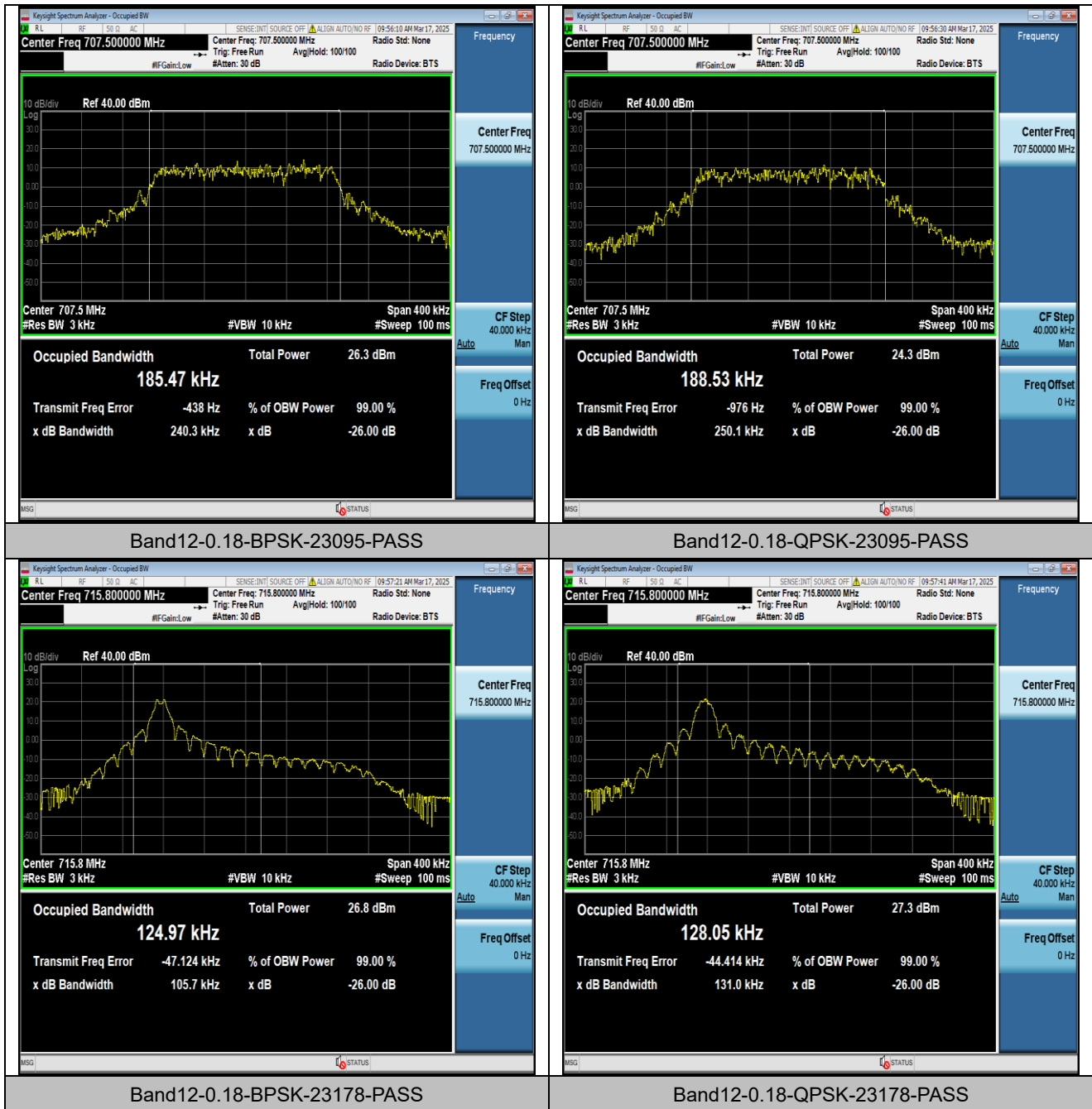
Band	OpMode	SCS	BW	Modulation	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
Band12	Stand-Alone	3.75kHz	0.18	BPSK	23012	1@0	0.06880	0.0520	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23012	1@0	0.08288	0.0518	PASS
Band12	Stand-Alone	3.75kHz	0.18	BPSK	23095	1@0	0.06625	0.0511	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	0.08308	0.0499	PASS
Band12	Stand-Alone	3.75kHz	0.18	BPSK	23178	1@0	0.06828	0.0518	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23178	1@0	0.08380	0.0517	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23012	1@0	0.12203	0.1064	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23012	1@0	0.12120	0.1171	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23012	12@0	0.18422	0.2505	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23012	12@0	0.18947	0.2573	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23095	1@0	0.12361	0.1048	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	1@0	0.12865	0.1293	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23095	12@0	0.18547	0.2403	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	0.18853	0.2501	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23178	1@0	0.12497	0.1057	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23178	1@0	0.12805	0.1310	PASS
Band12	Stand-Alone	15kHz	0.18	BPSK	23178	12@0	0.18653	0.2587	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23178	12@0	0.18719	0.2499	PASS

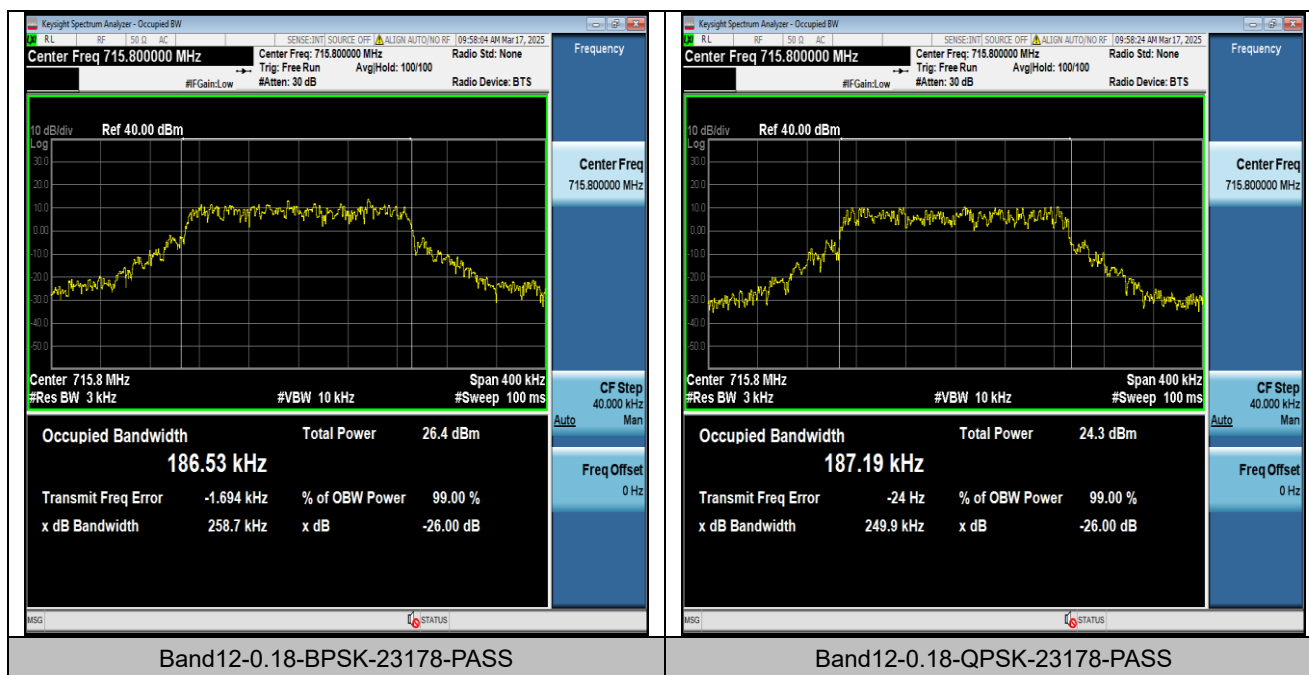
Test Graphs





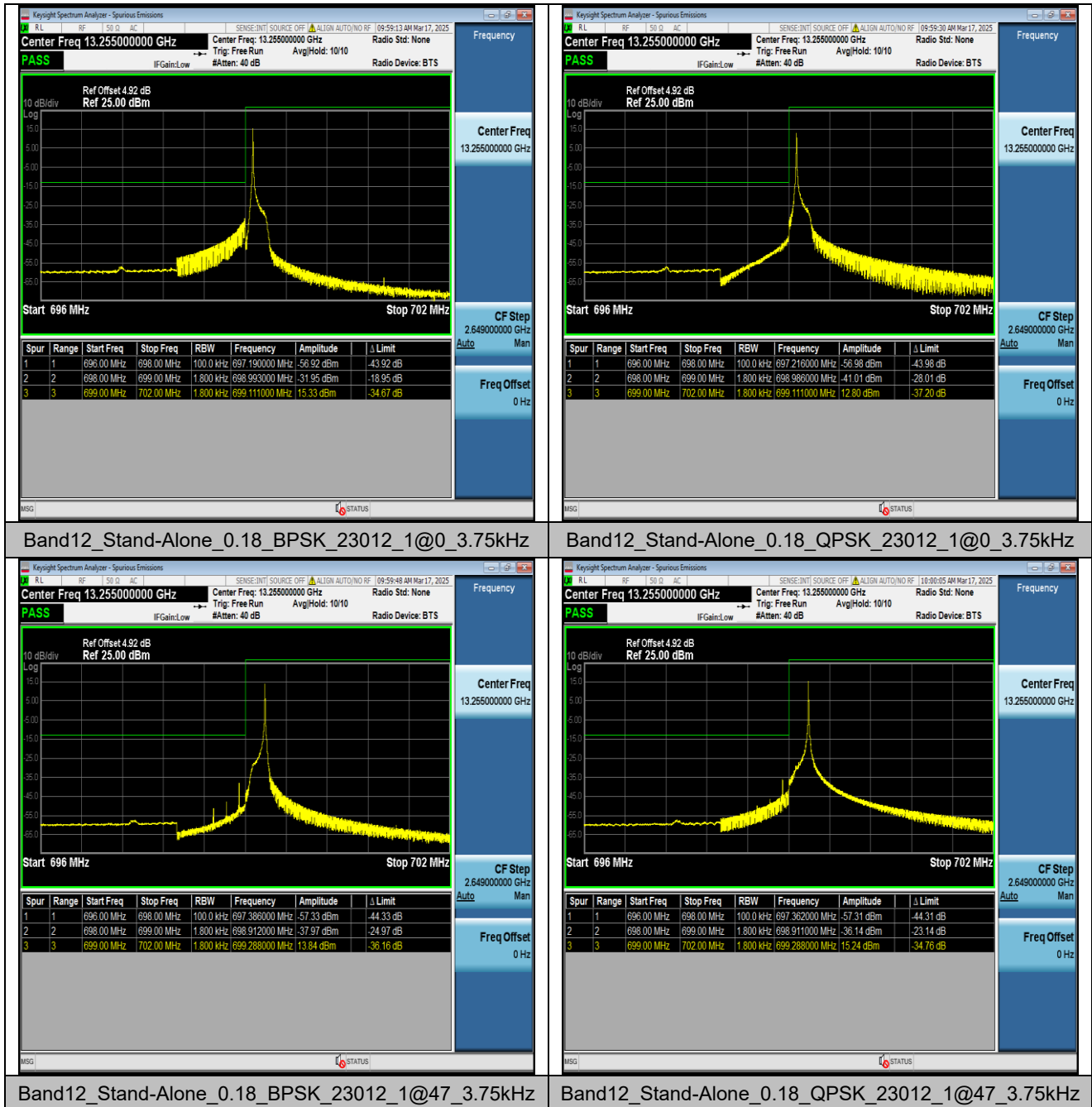


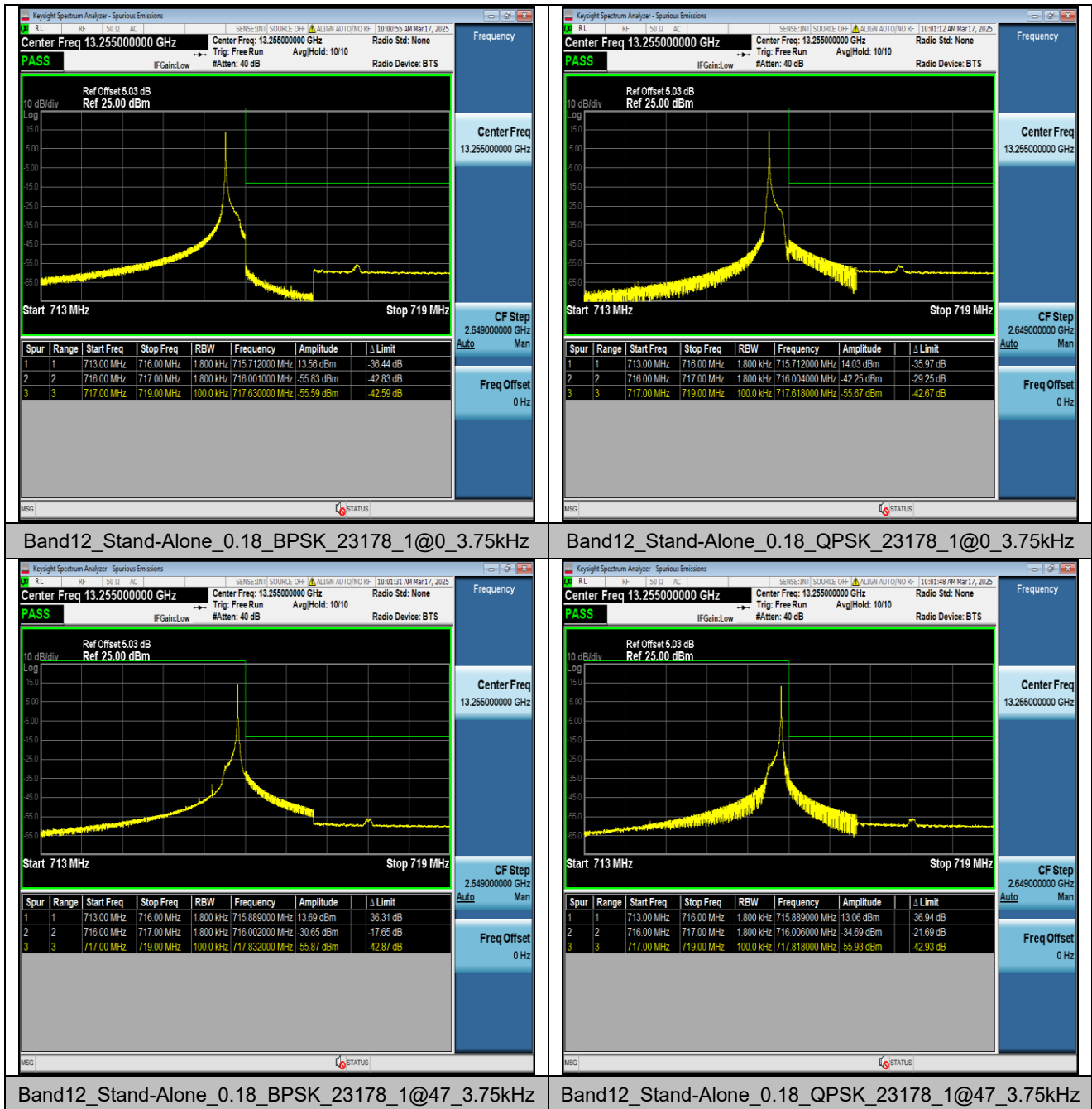


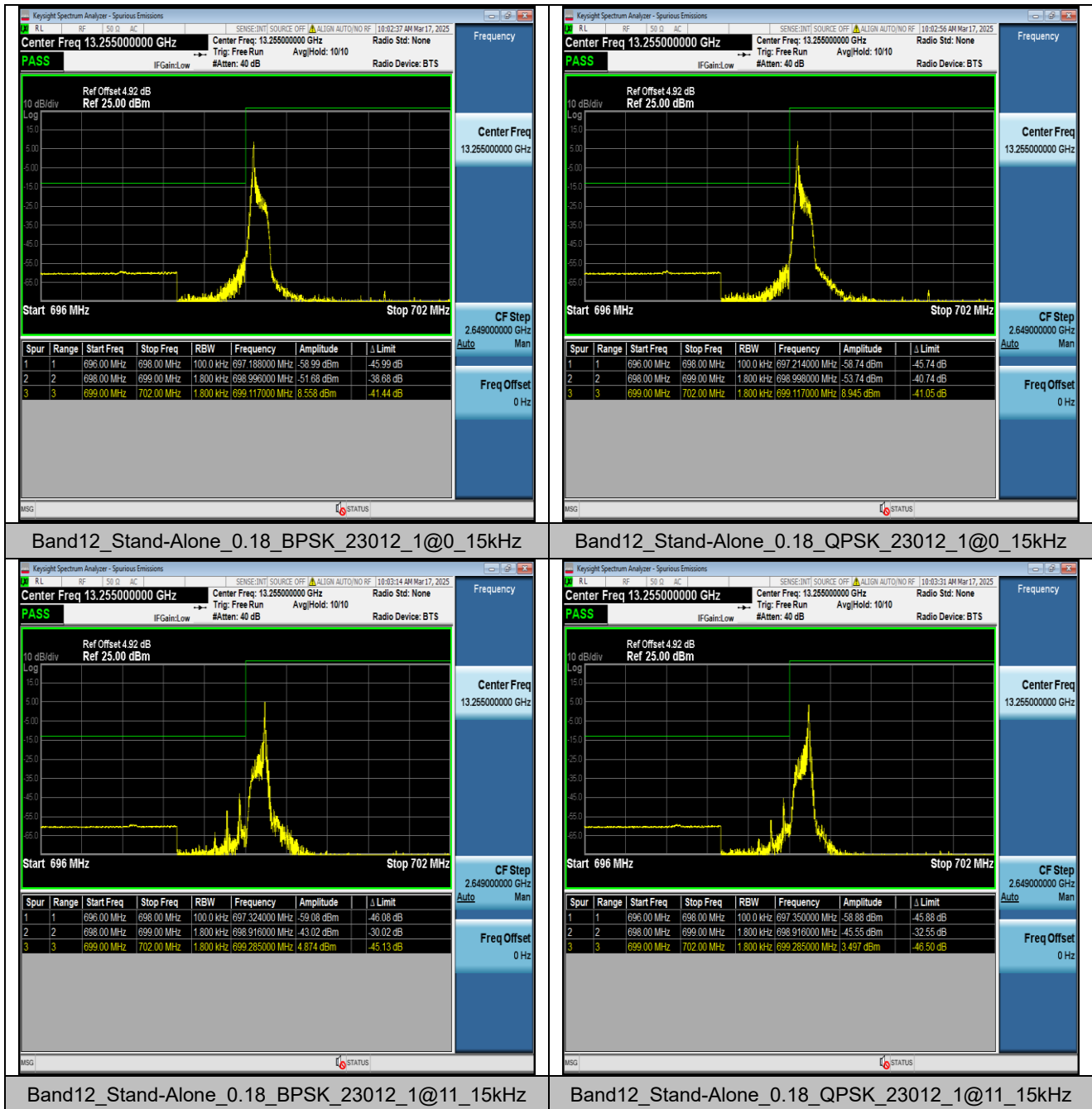


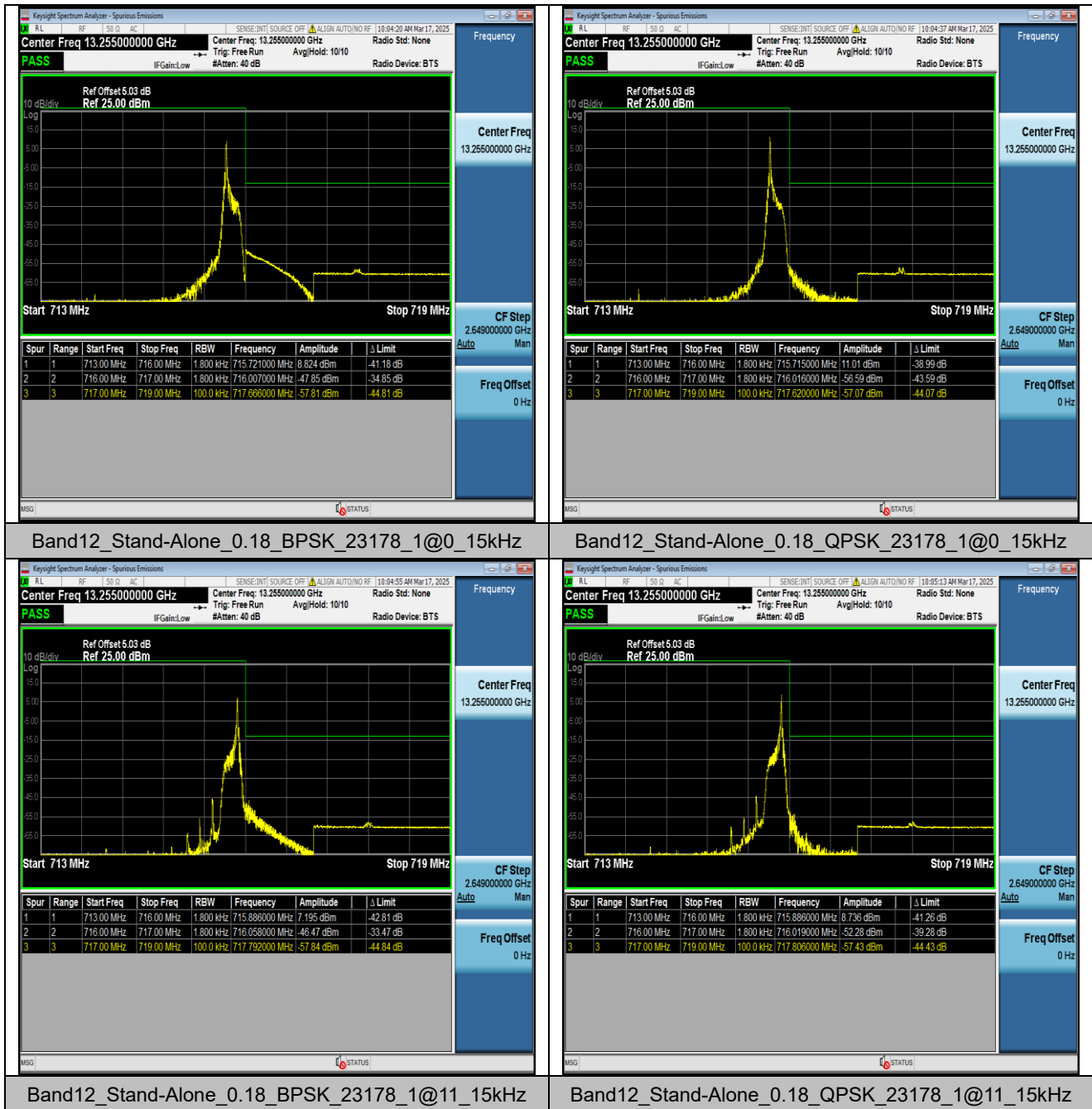
Band Edge for NB1

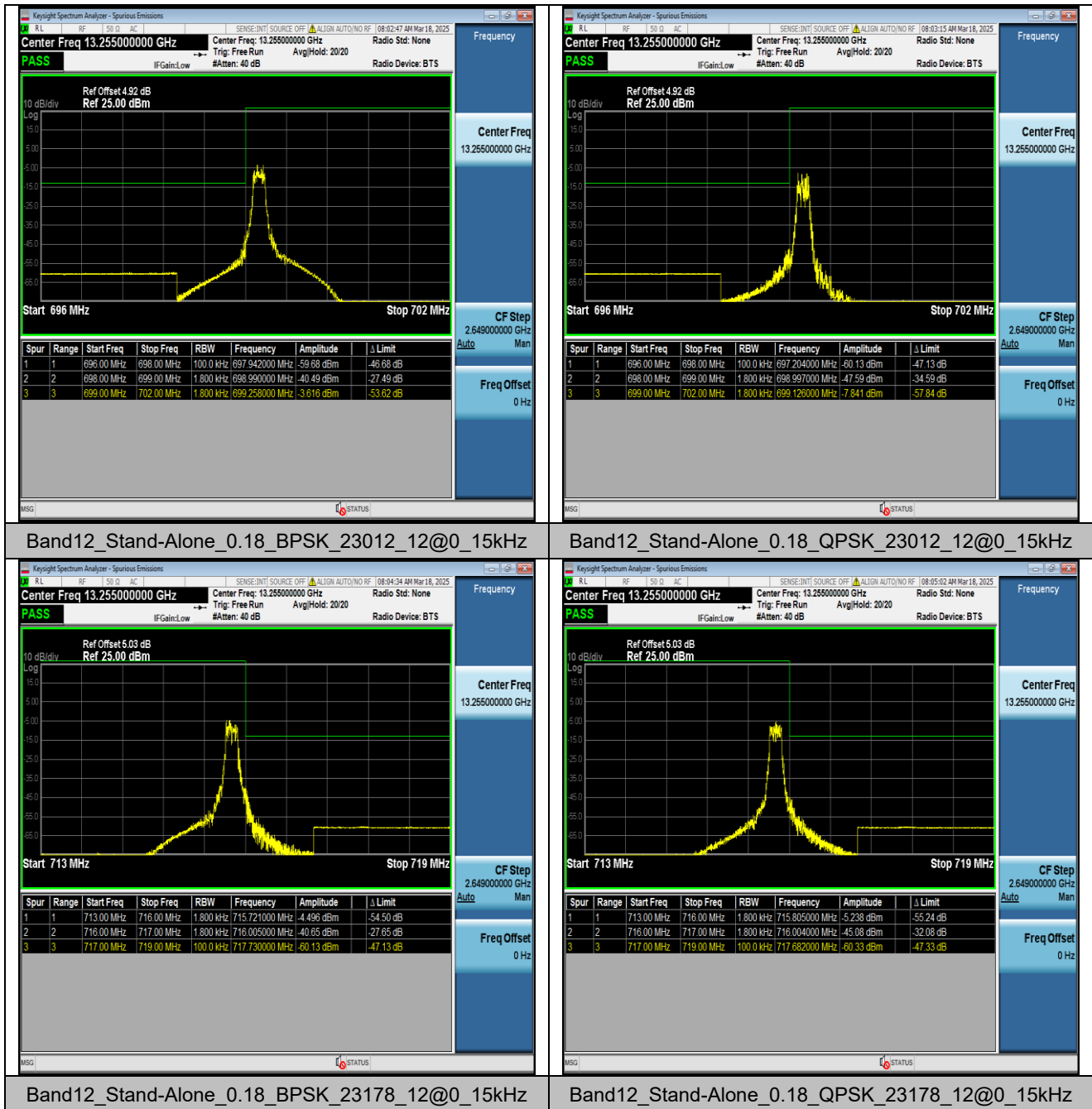
Test Graphs





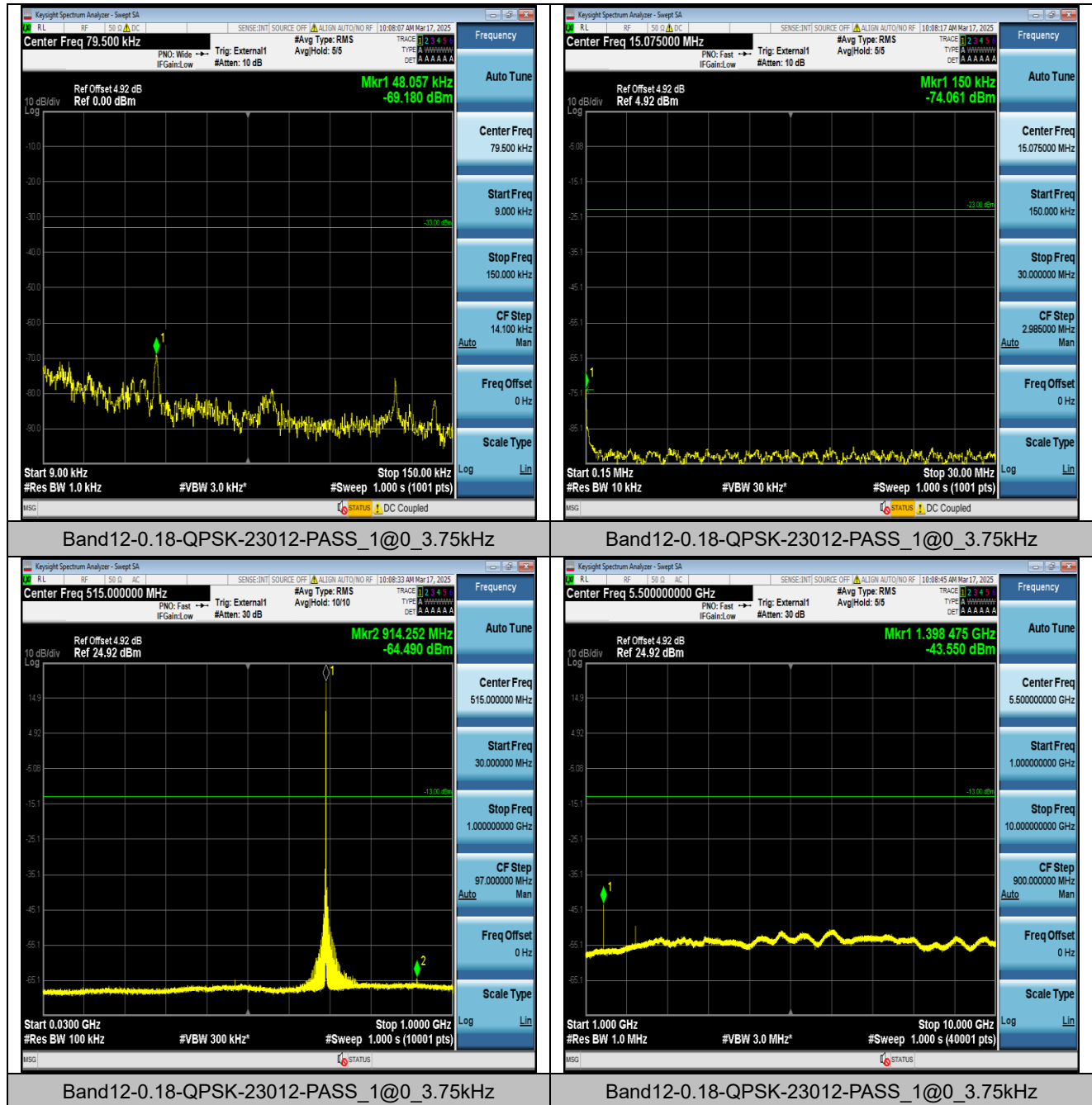


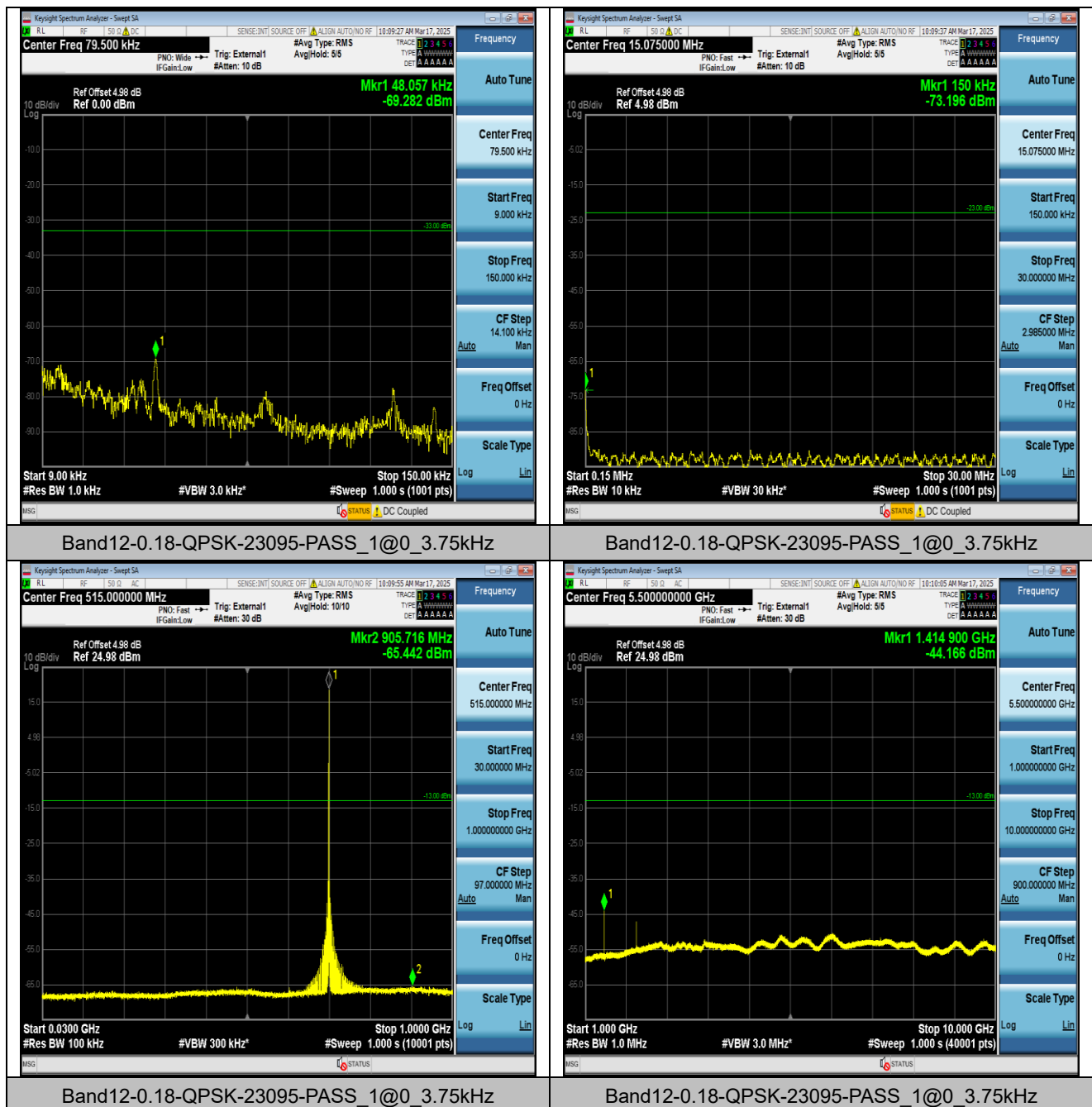


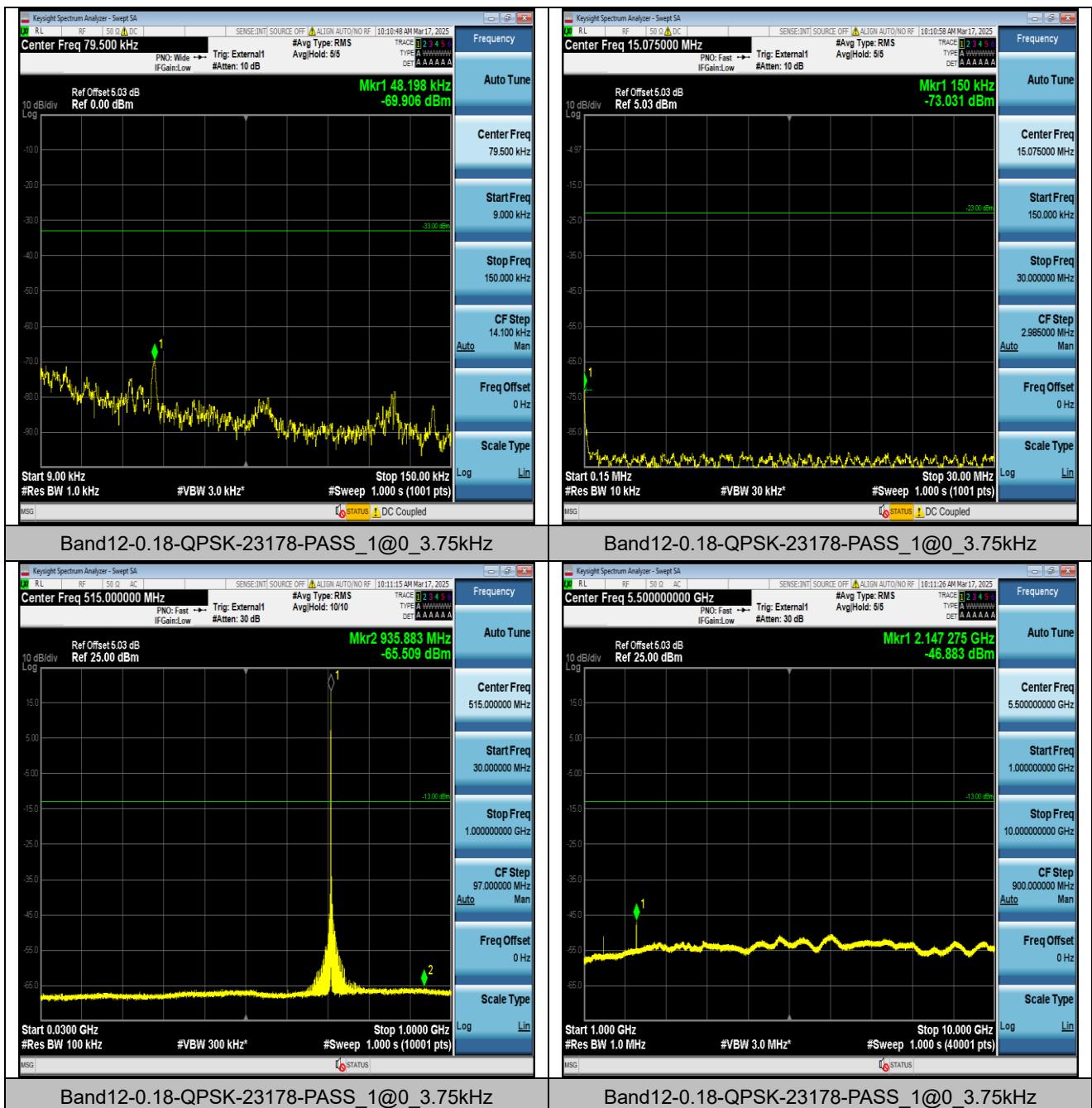


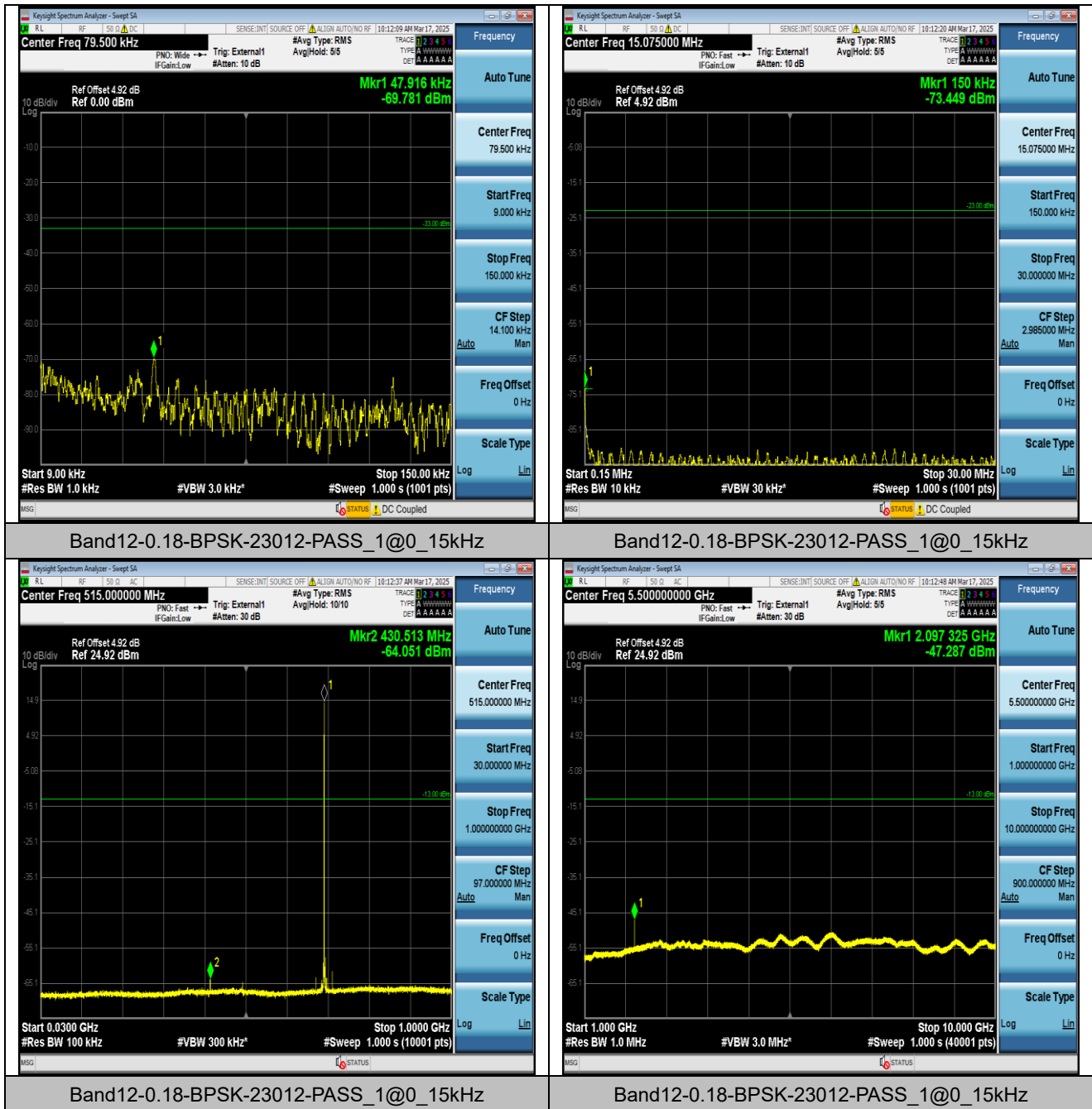
Conducted Spurious Emission for NB1

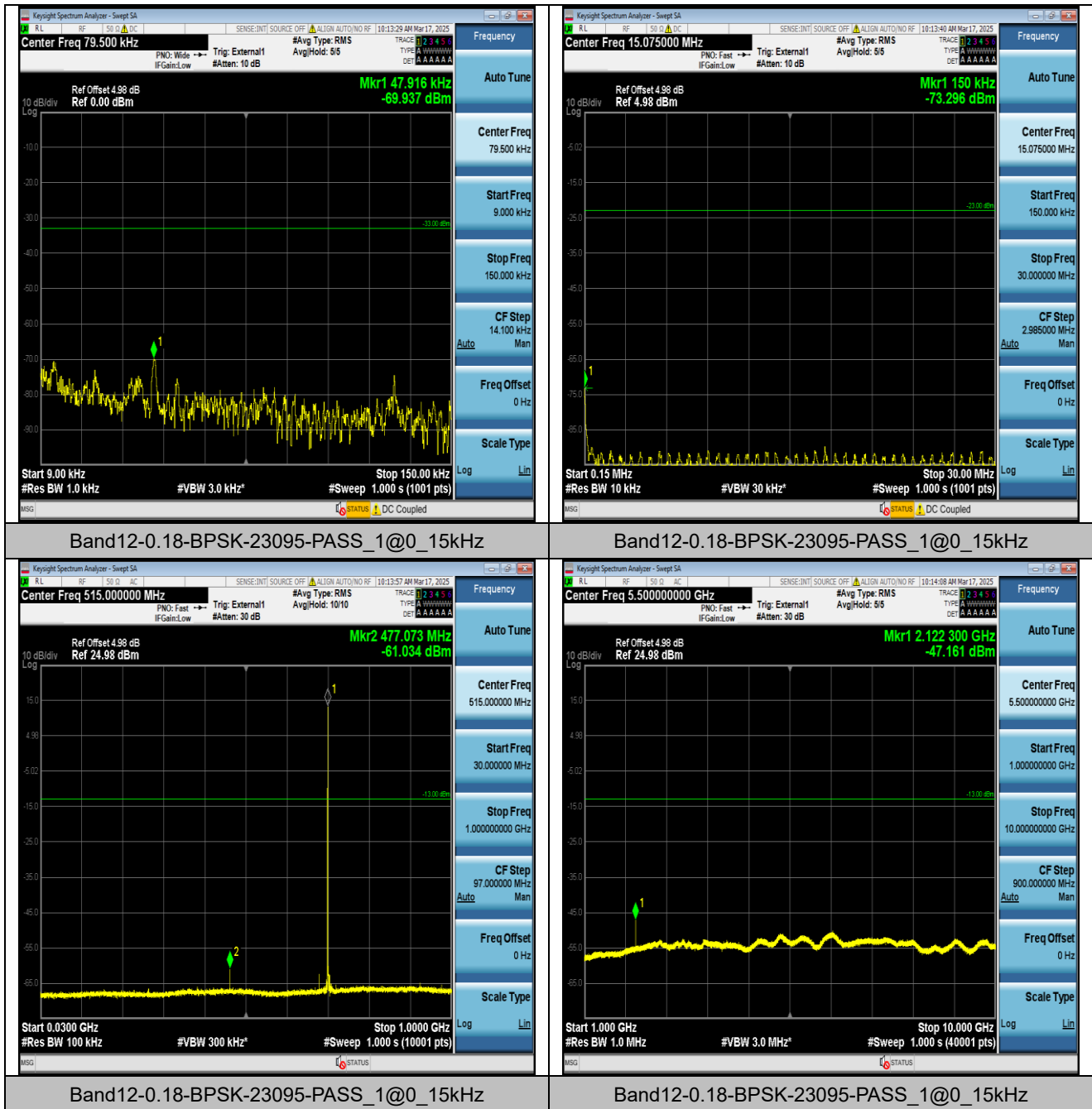
Test Graphs

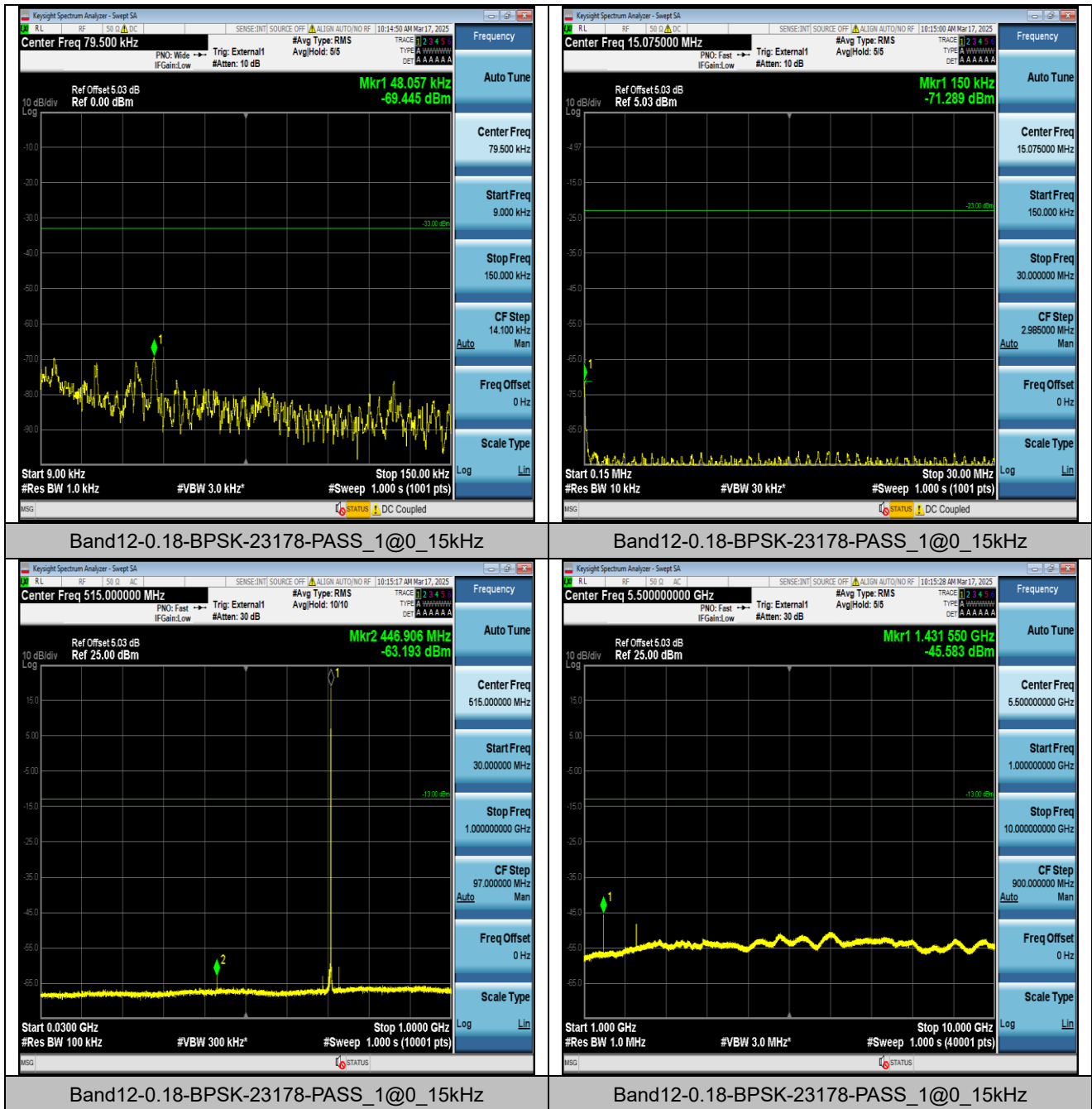












Frequency Stability for NB1

Test Result

Voltage											
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	VN	NT	-0.10	-0.000141	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	VL	NT	0.50	0.000707	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	VH	NT	0.00	0.000000	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	VN	NT	1.90	0.002686	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	VL	NT	1.80	0.002544	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	VH	NT	1.60	0.002261	PASS

Temperature											
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	NV	-30	-0.80	-0.001131	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	NV	-20	0.40	0.000565	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	NV	-10	-0.30	-0.000424	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	NV	0	0.20	0.000283	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	NV	10	2.00	0.002827	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	NV	20	1.40	0.001979	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	NV	30	1.40	0.001979	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	NV	40	-1.10	-0.001555	PASS
Band12	Stand-Alone	3.75kHz	0.18	QPSK	23095	1@0	NV	50	0.00	0.000000	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	NV	-30	1.00	0.001413	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	NV	-20	1.30	0.001837	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	NV	-10	2.20	0.003110	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	NV	0	1.20	0.001696	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	NV	10	2.10	0.002968	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	NV	20	1.00	0.001413	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	NV	30	1.00	0.001413	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	NV	40	1.60	0.002261	PASS
Band12	Stand-Alone	15kHz	0.18	QPSK	23095	12@0	NV	50	1.10	0.001555	PASS

~The End~