

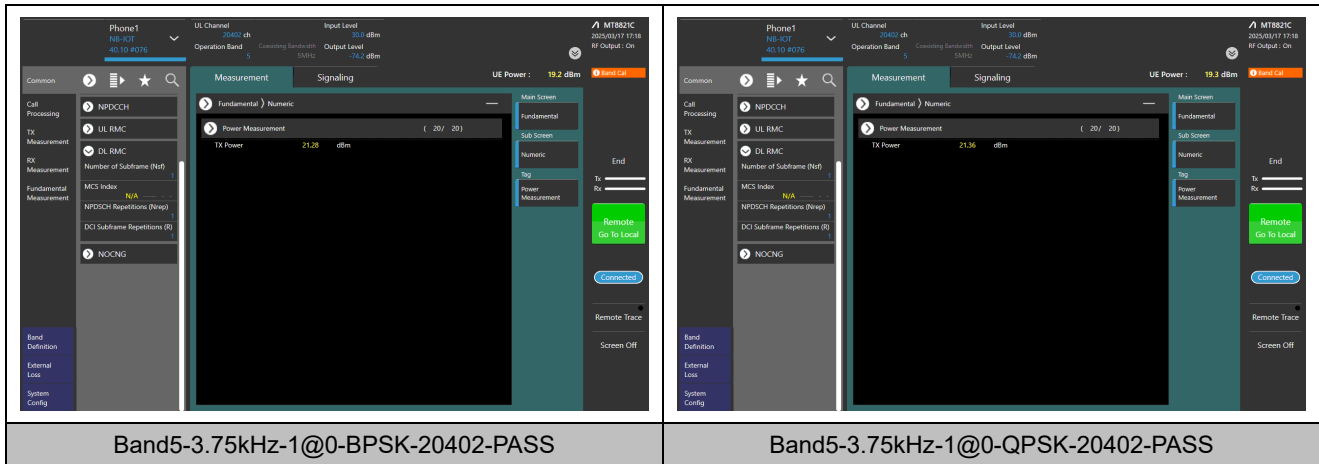
Appendix-C LTE NB-IoT Band 5

Effective (Isotropic) Radiated Power Output Data for NB1

Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	POWER (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20402	1@0	21.28	21.66	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20402	1@0	21.36	21.74	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20402	1@47	21.23	21.61	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20402	1@47	21.31	21.69	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20525	1@0	21.04	21.42	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	21.07	21.45	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20525	1@47	21.01	21.39	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@47	21	21.38	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20648	1@0	20.76	21.14	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@0	20.72	21.1	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20648	1@47	20.64	21.02	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@47	20.64	21.02	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20402	1@0	21.14	21.52	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@0	21.18	21.56	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20402	1@11	21.1	21.48	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@11	21.12	21.5	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20525	1@0	20.92	21.3	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@0	20.97	21.35	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20525	1@11	20.86	21.24	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@11	20.86	21.24	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20648	1@0	20.64	21.02	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@0	20.67	21.05	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20648	1@11	20.57	20.95	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@11	20.56	20.94	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	3@3	21.29	21.67	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	3@3	21.07	21.45	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	3@3	20.79	21.17	38.45	PASS

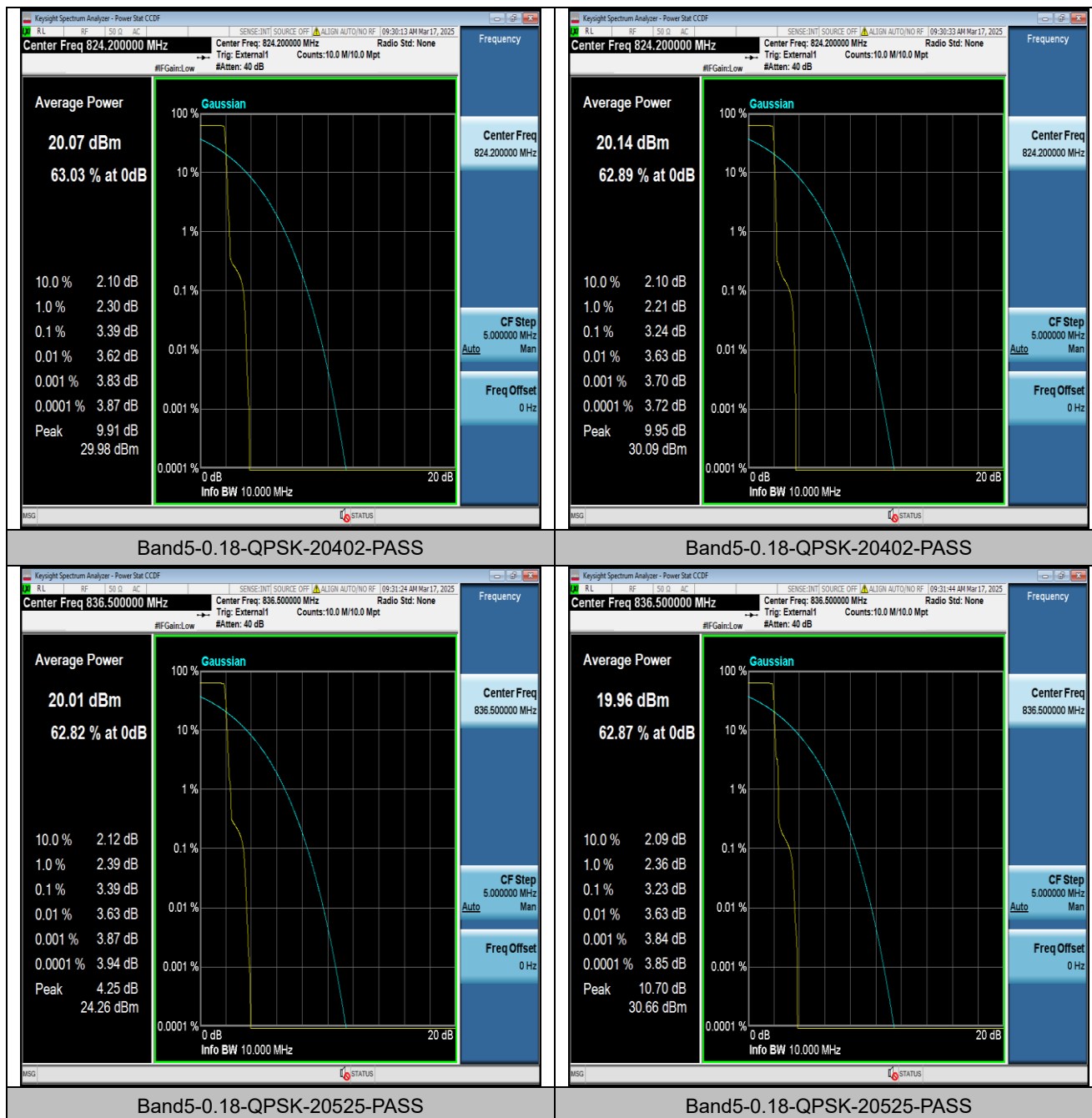
Test Graphs

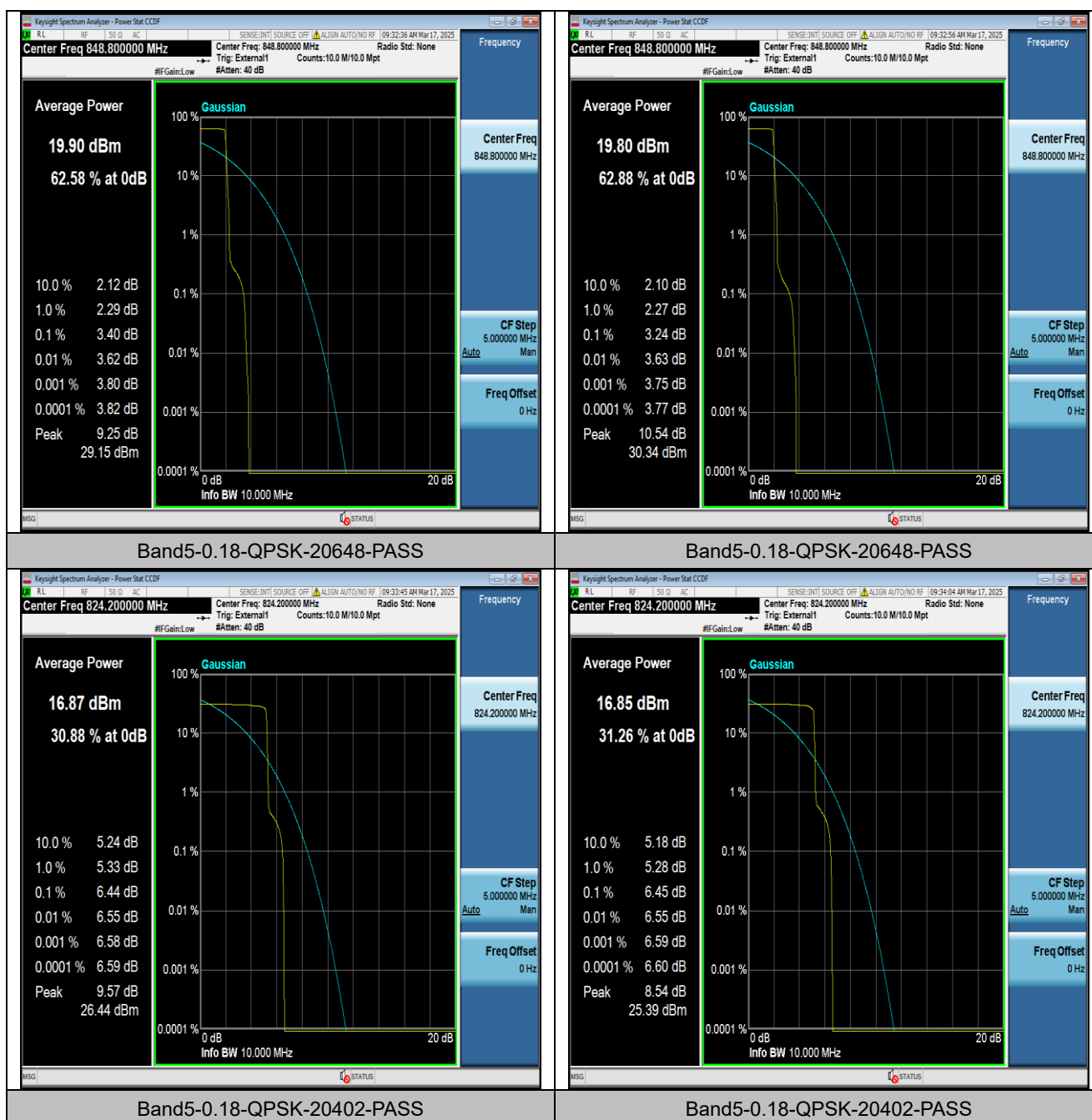


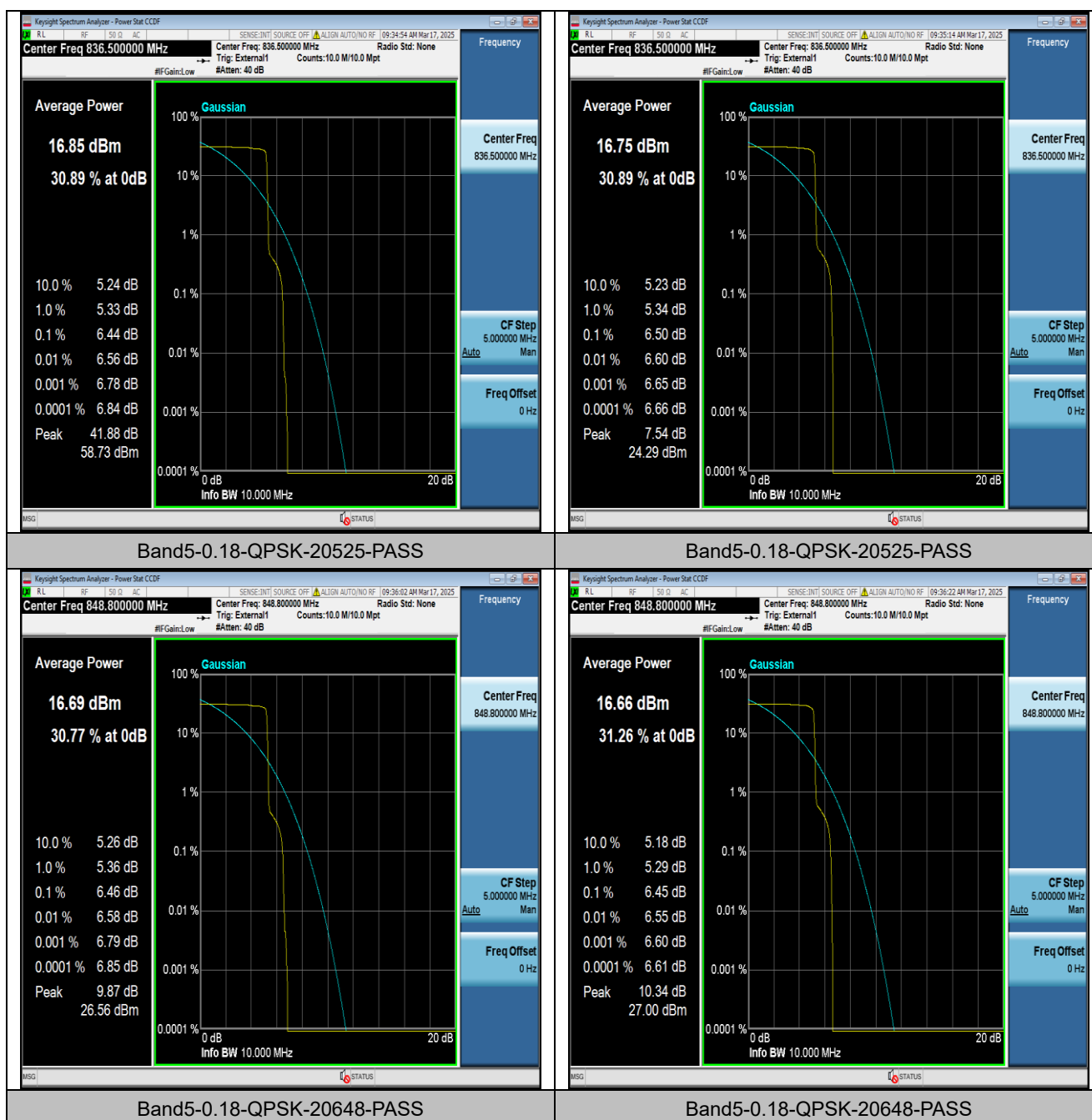
Peak-to-Average Ratio(CCDF) for NB1**Test Result**

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dBm)	Limit (dBm)	Verdict
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20402	1@0	3.39	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20402	1@47	3.24	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	3.39	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@47	3.23	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@0	3.4	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@47	3.24	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@0	6.44	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@11	6.45	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@0	6.44	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@11	6.5	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@0	6.46	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@11	6.45	<=13	PASS

Test Graphs







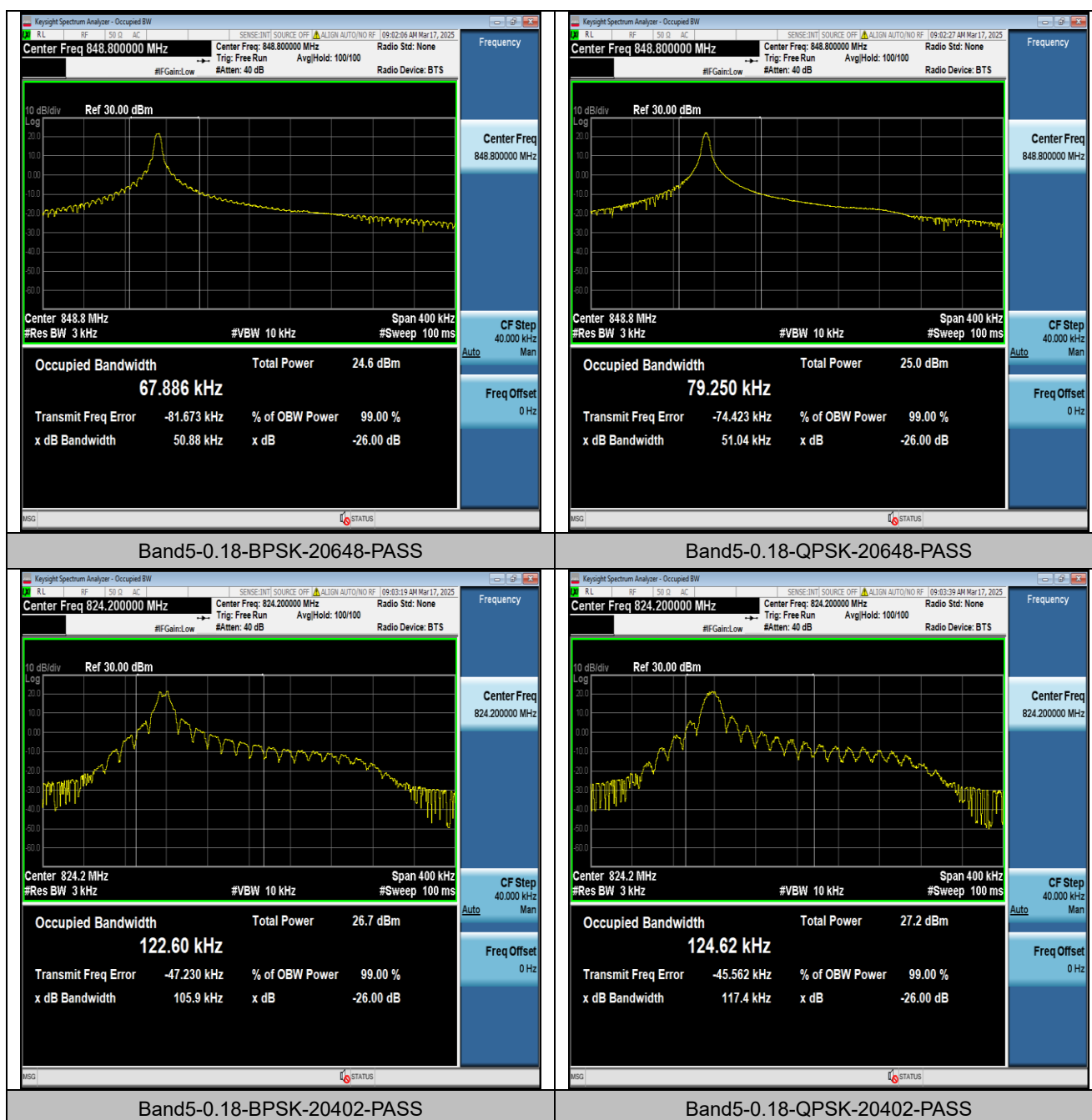
Emission Bandwidth for NB1

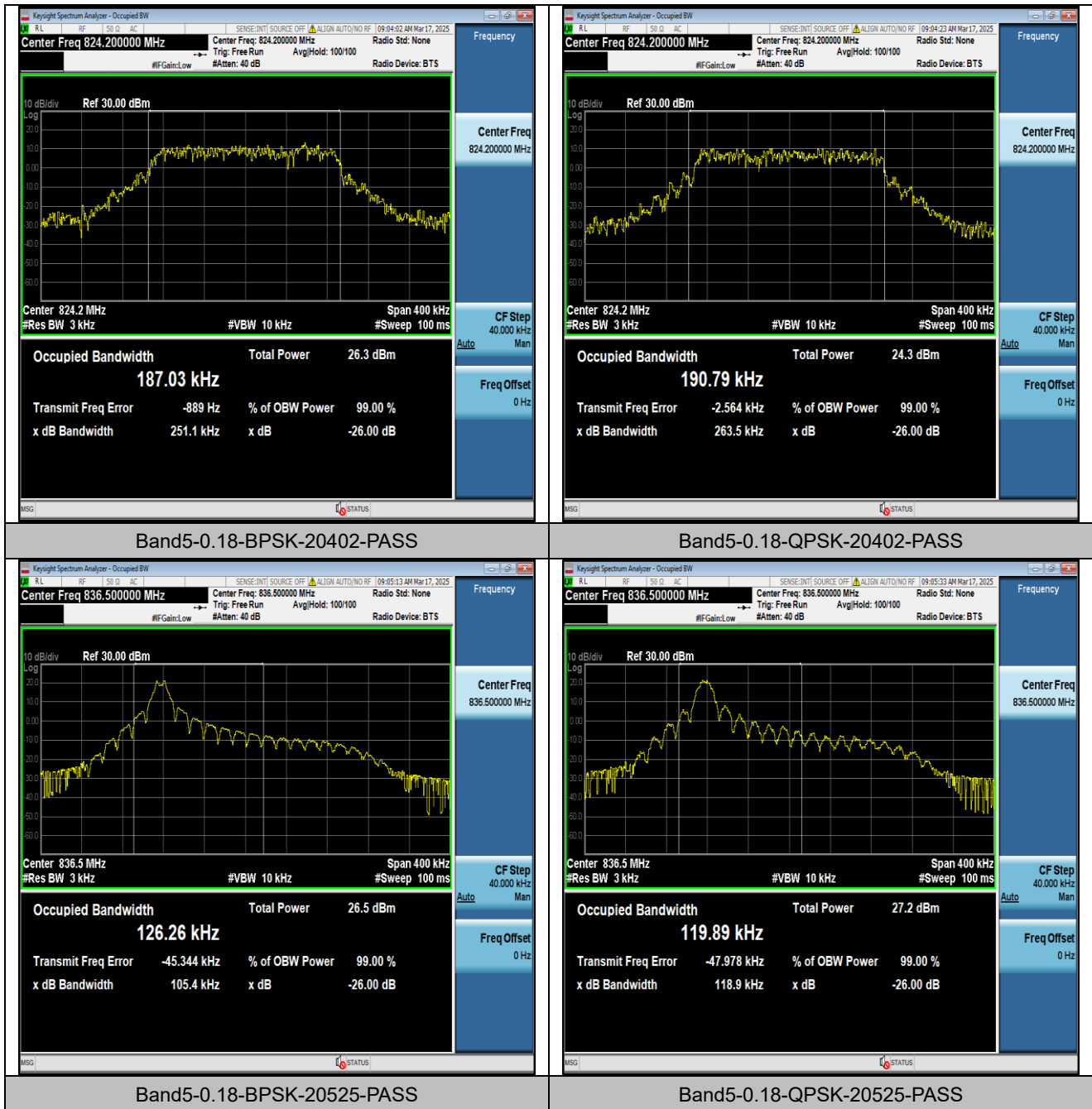
Test Result

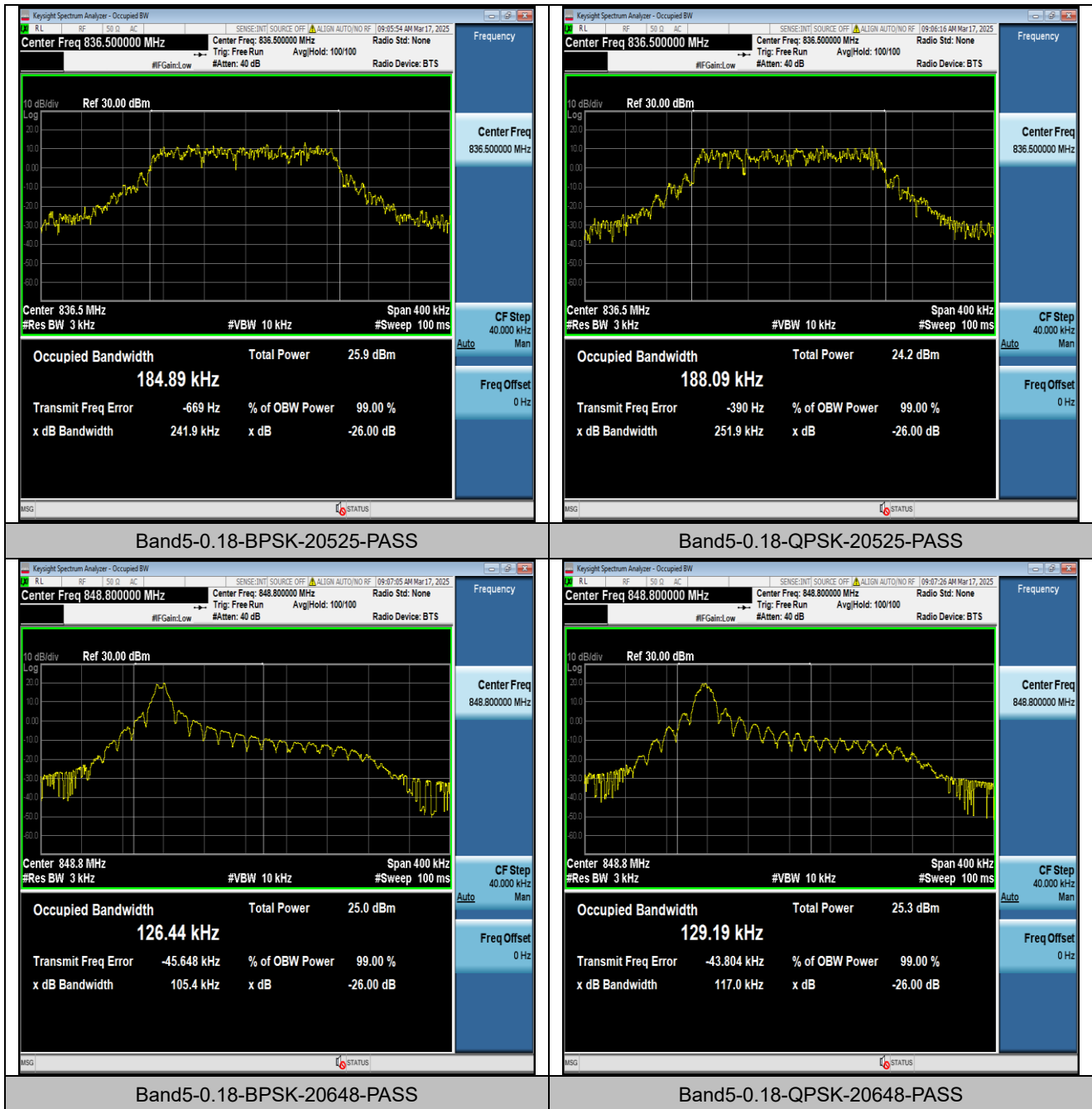
Band	OpMode	SCS	BW	Modulation	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20402	1@0	0.06651	0.0480	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20402	1@0	0.07969	0.0511	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20525	1@0	0.06758	0.0518	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	0.07823	0.0513	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20648	1@0	0.06789	0.0509	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@0	0.07925	0.0510	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20402	1@0	0.12260	0.1059	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@0	0.12462	0.1174	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20402	12@0	0.18703	0.2511	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	12@0	0.19079	0.2635	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20525	1@0	0.12626	0.1054	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@0	0.11989	0.1189	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20525	12@0	0.18489	0.2419	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	0.18809	0.2519	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20648	1@0	0.12644	0.1054	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@0	0.12919	0.1170	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20648	12@0	0.18539	0.2526	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	12@0	0.18886	0.2607	PASS

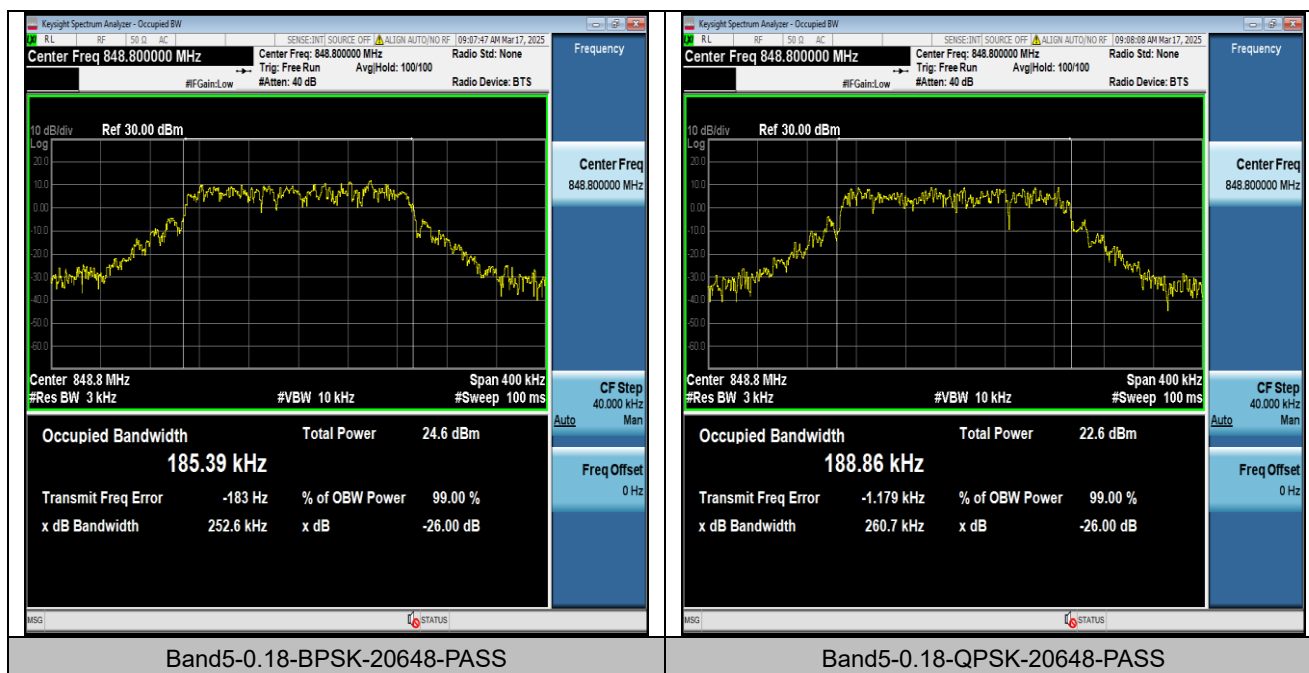
Test Graphs





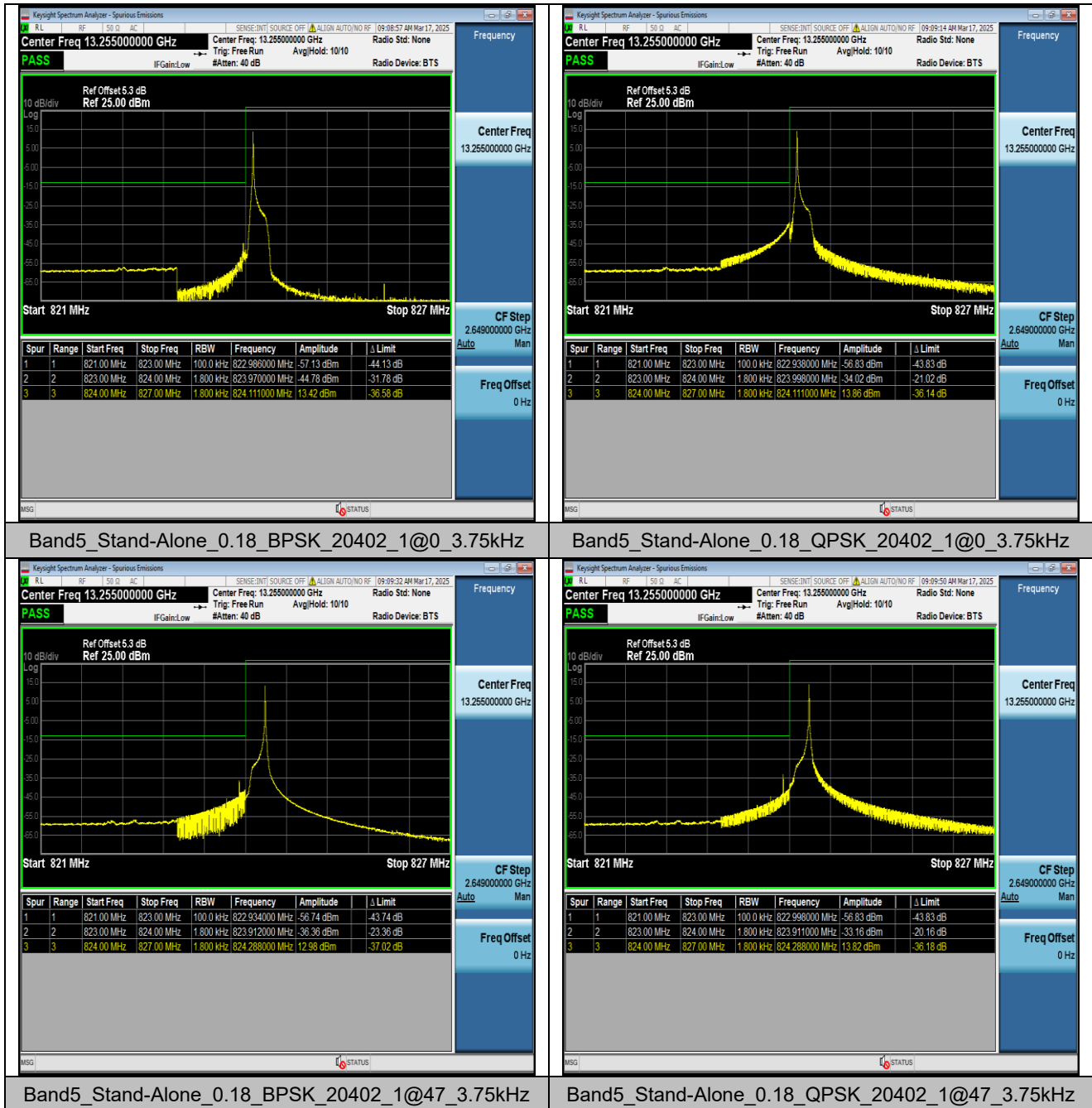


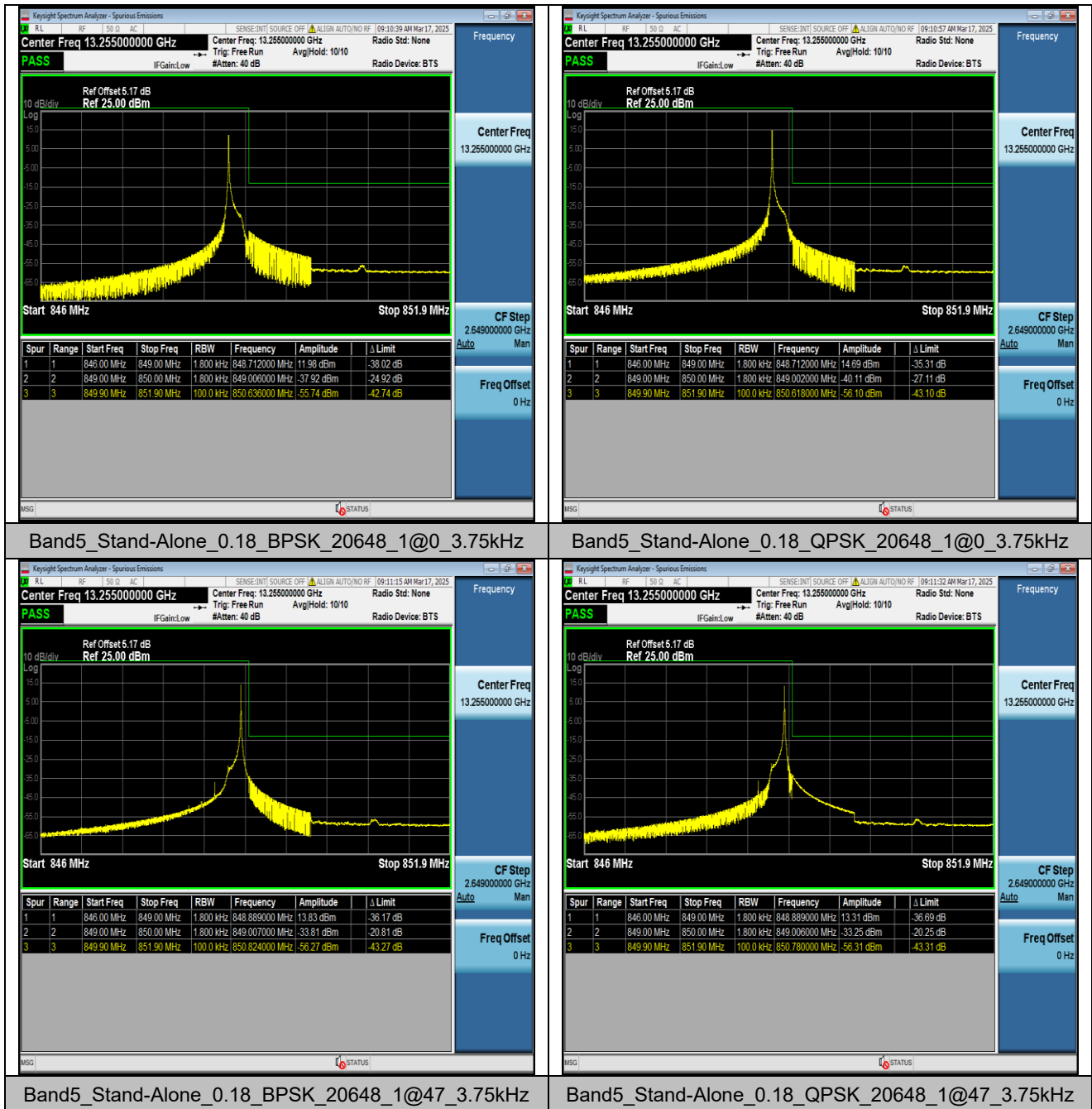


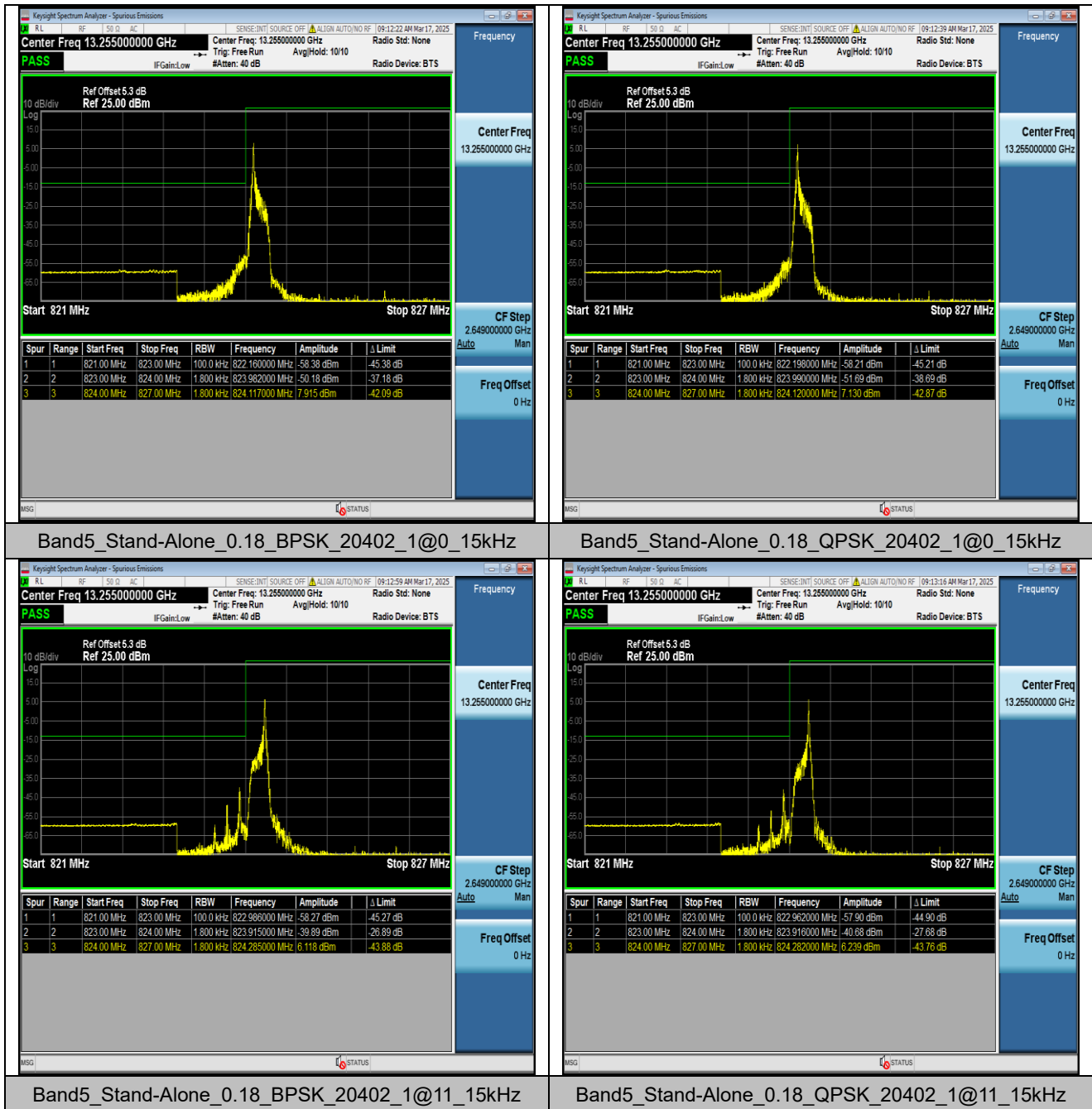


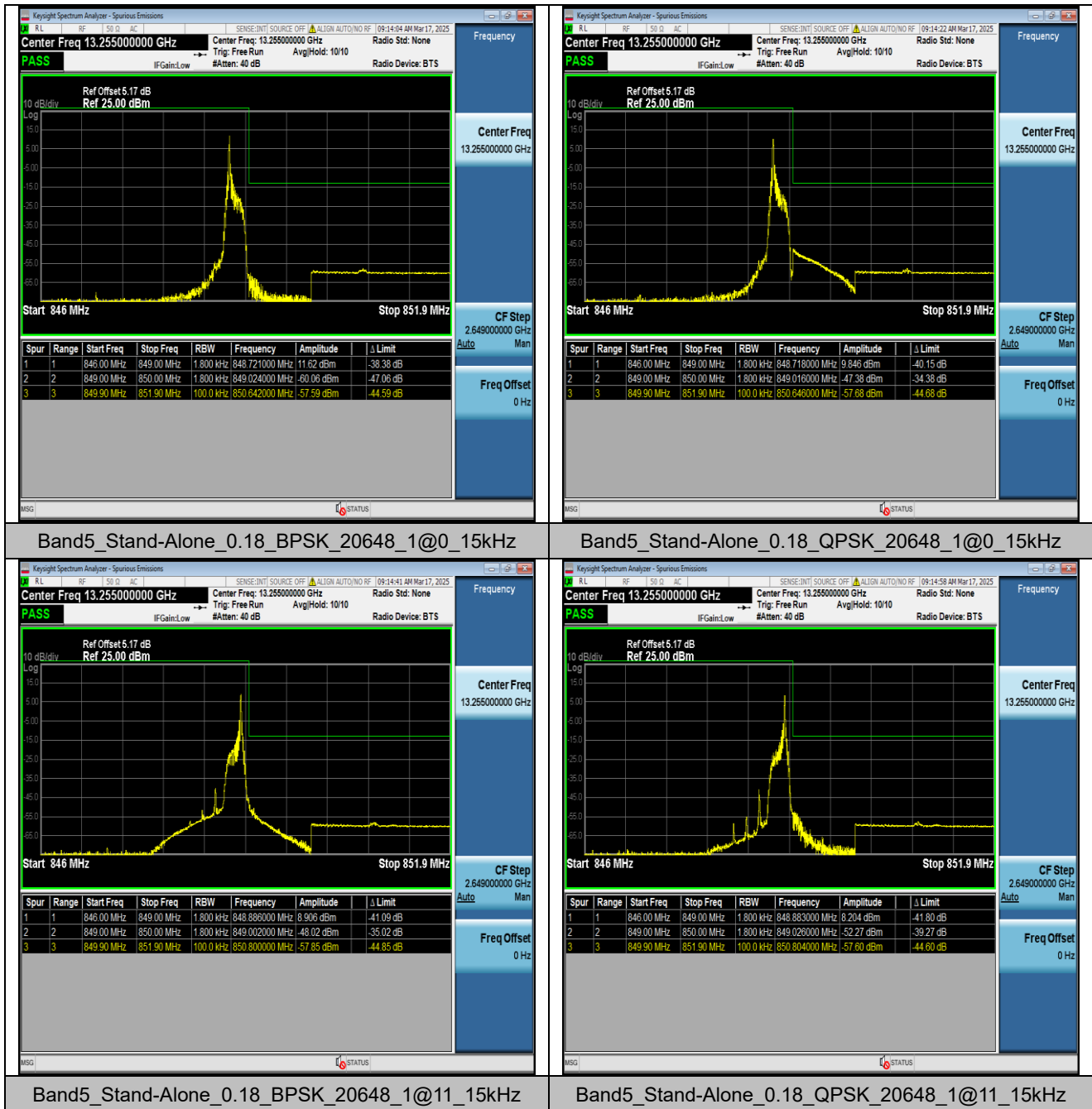
Band Edge for NB1

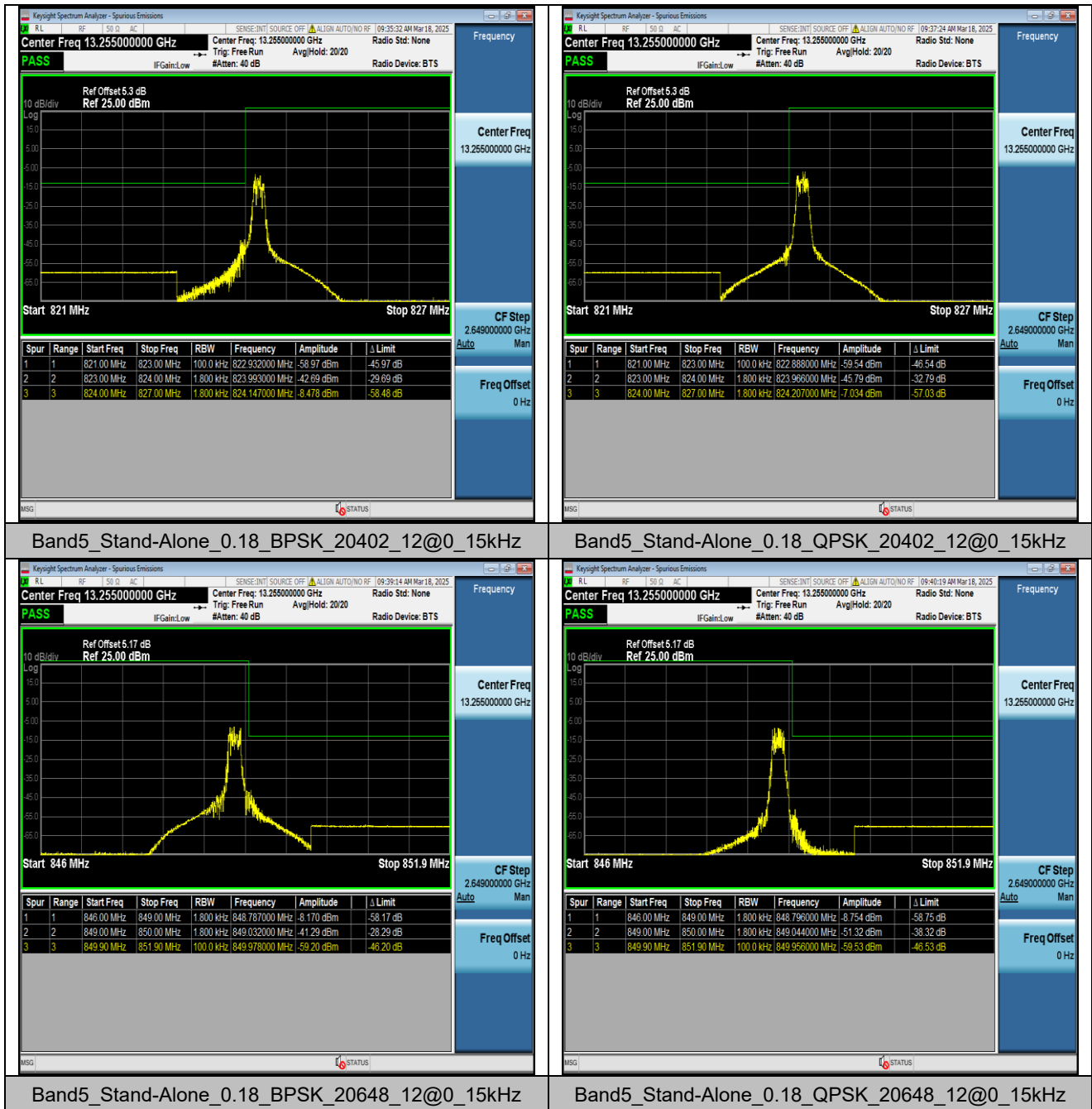
Test Graphs





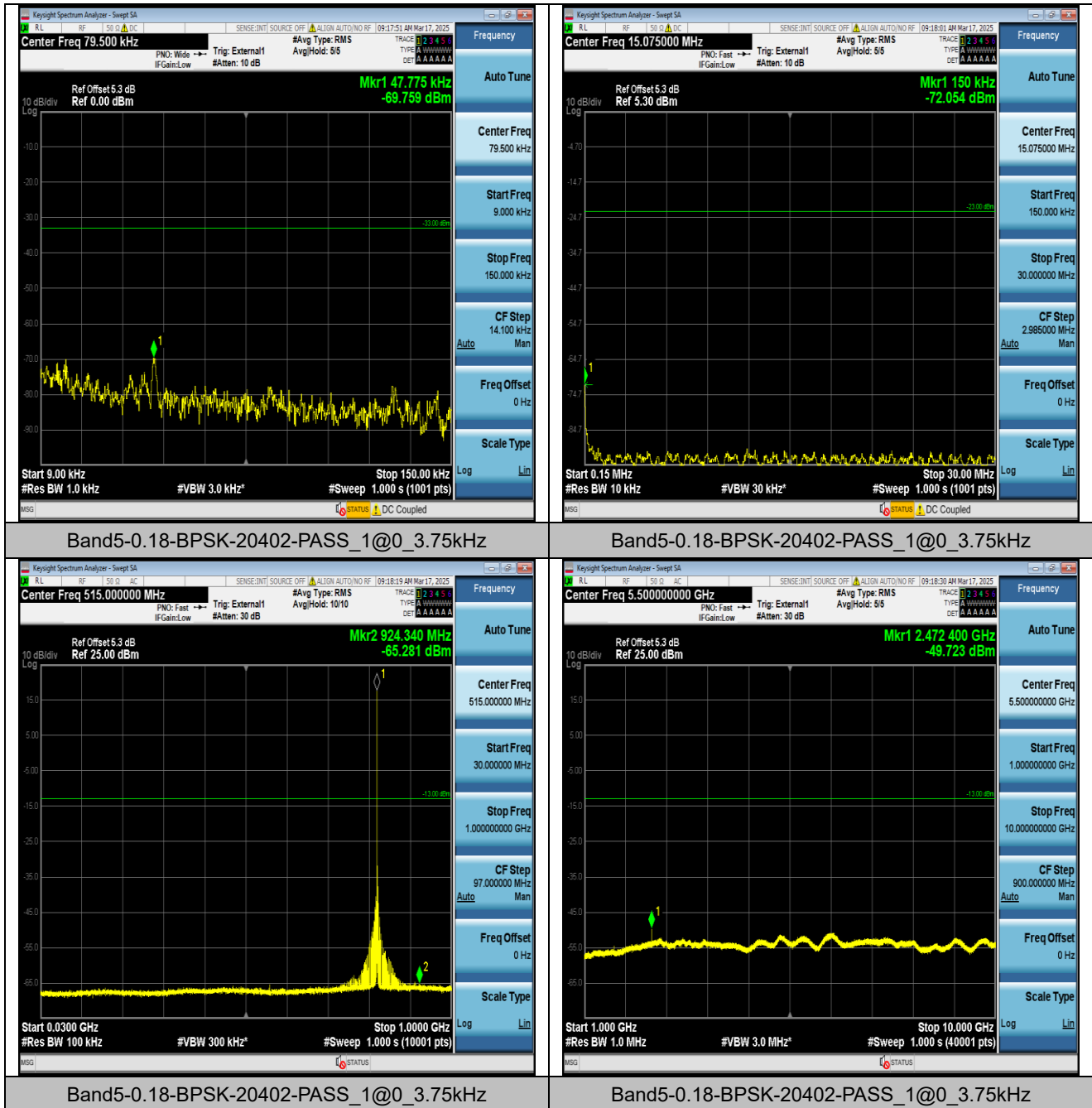


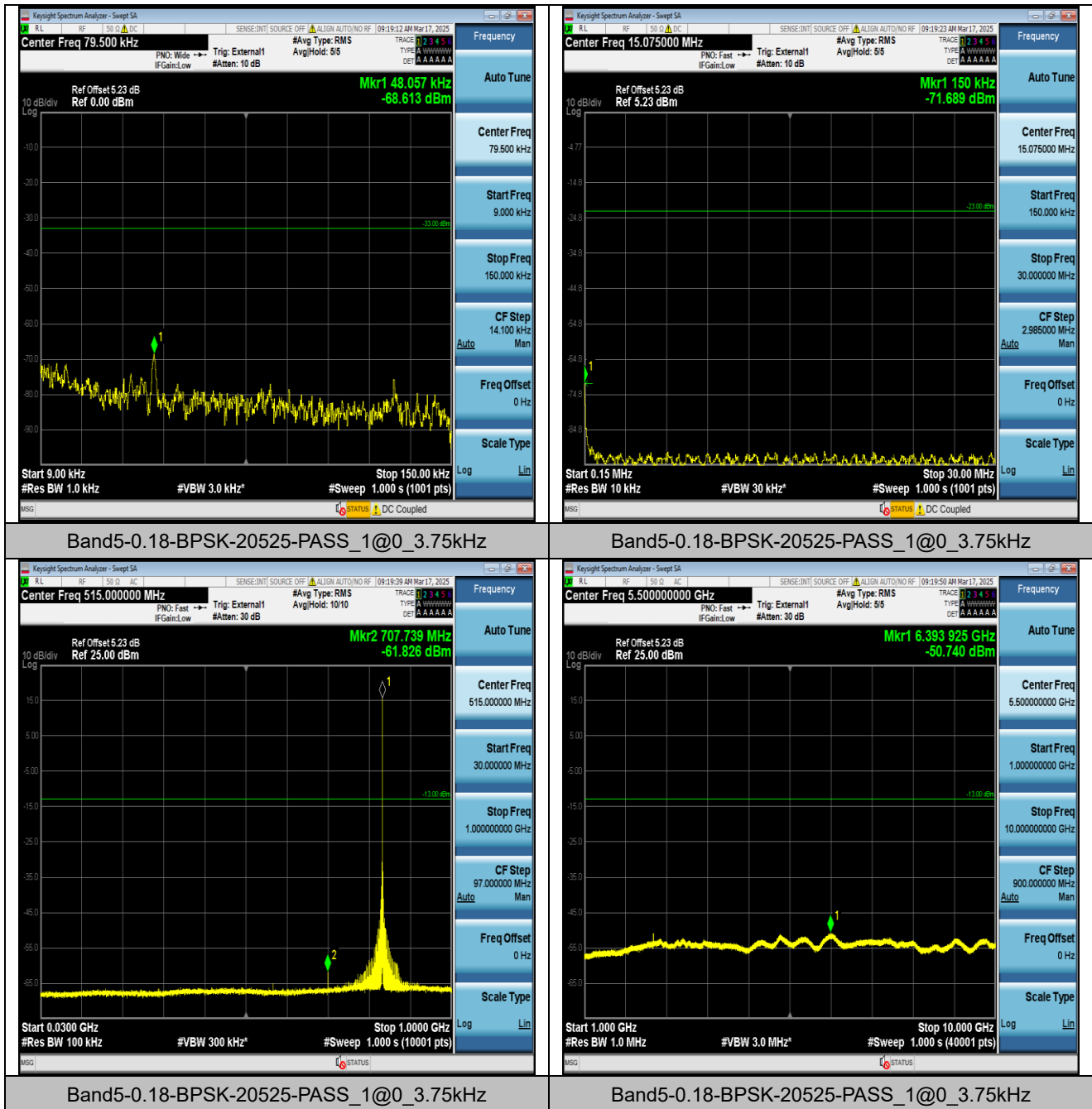


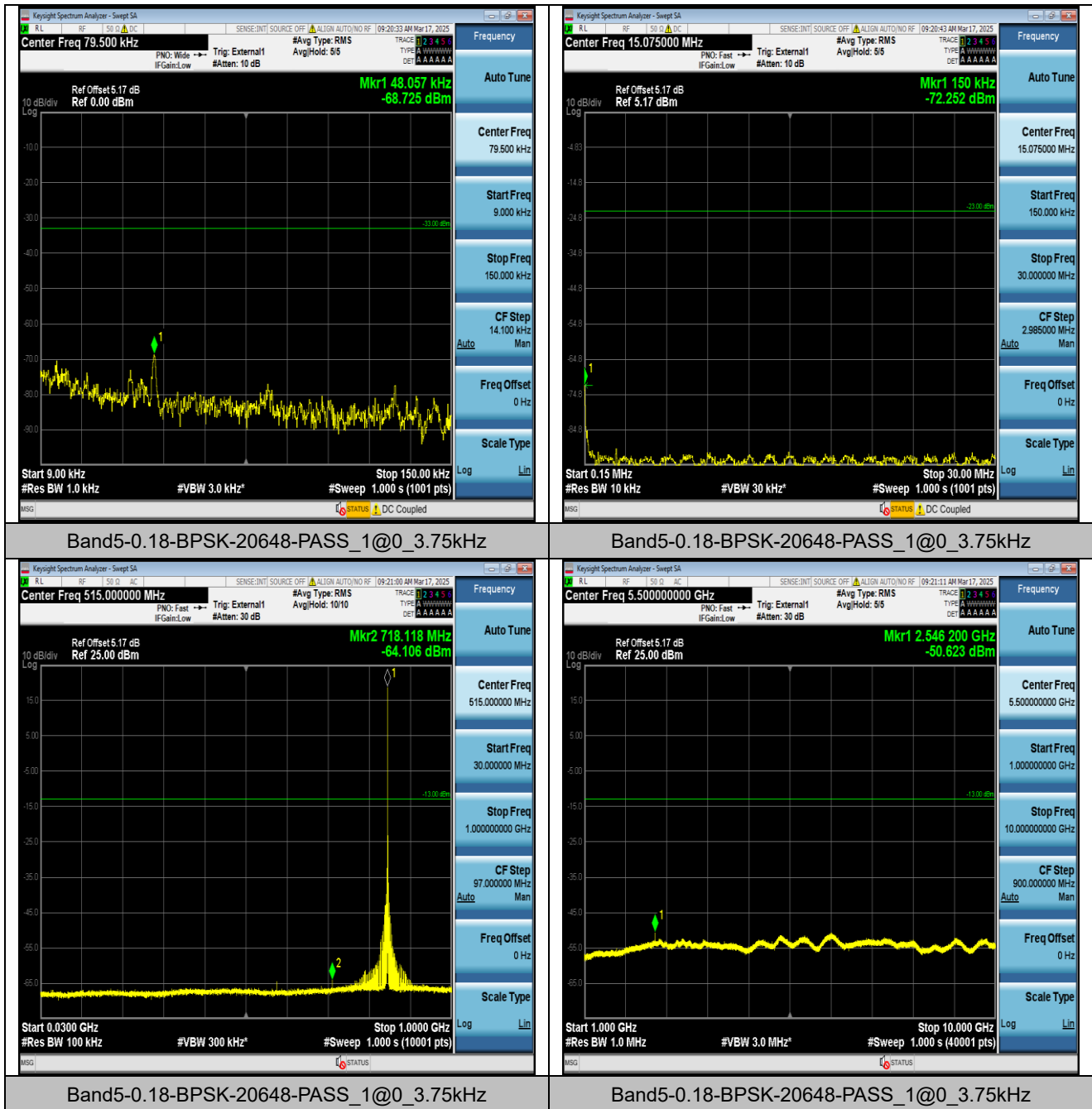


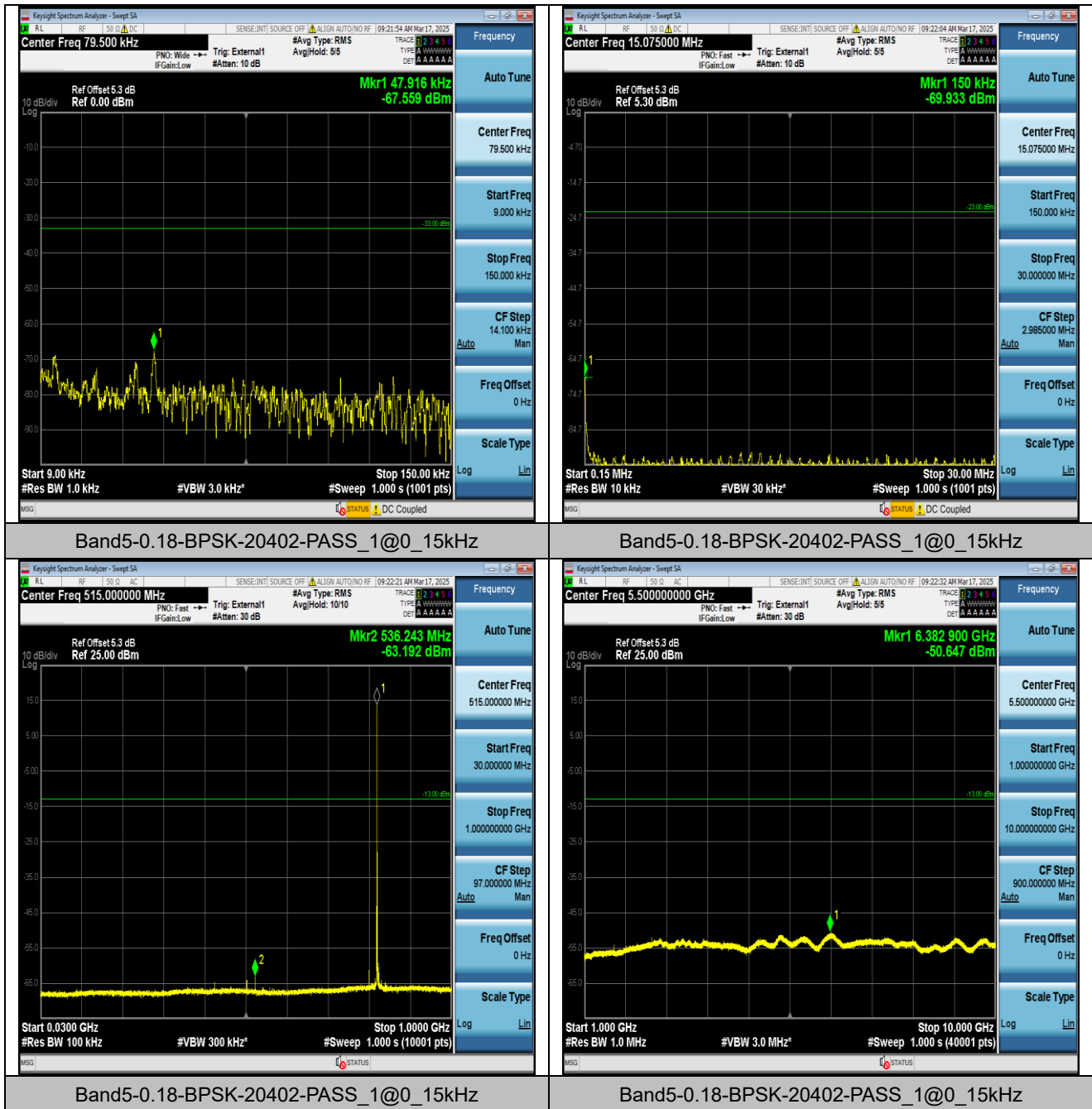
Conducted Spurious Emission for NB1

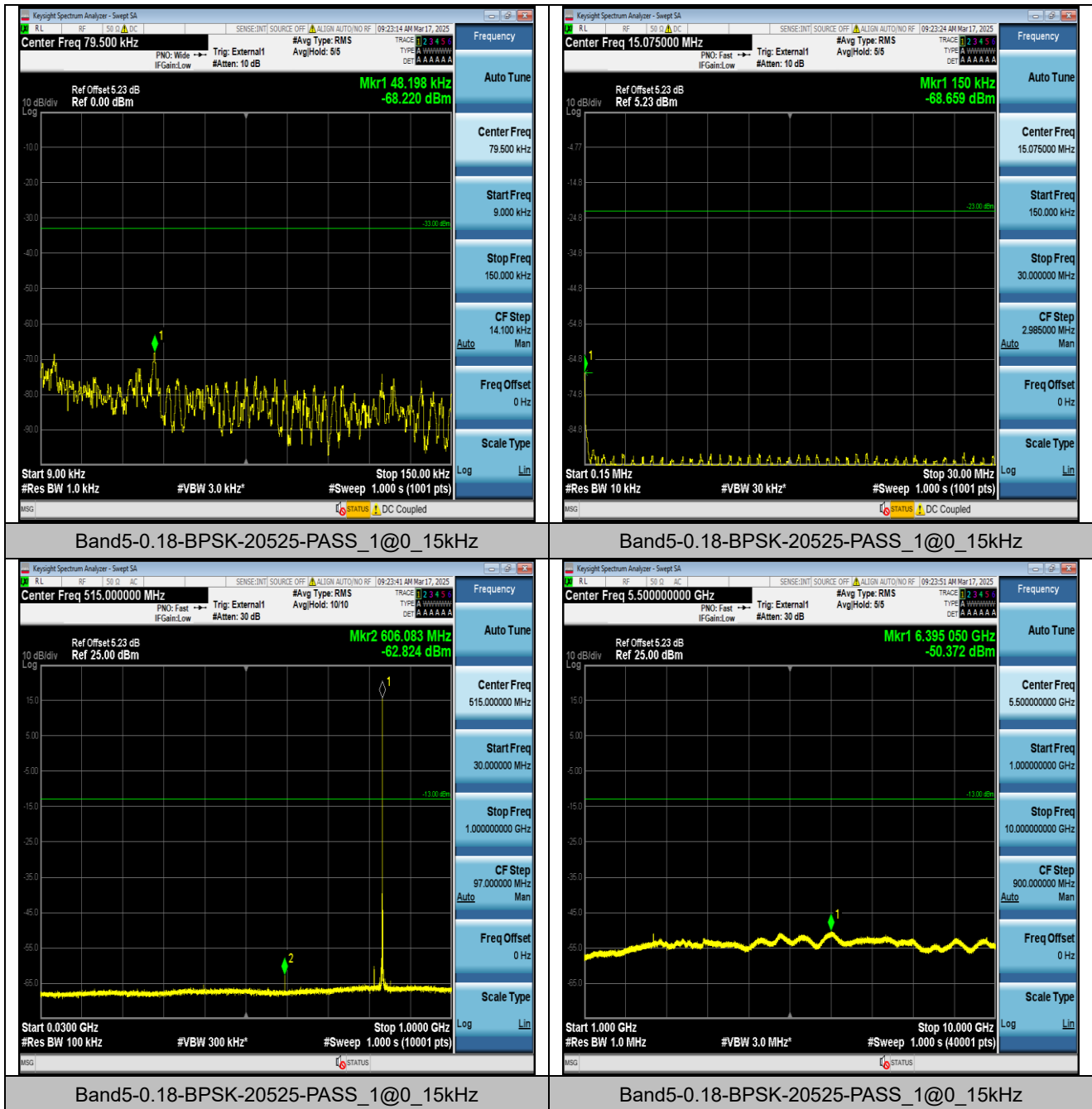
Test Graphs

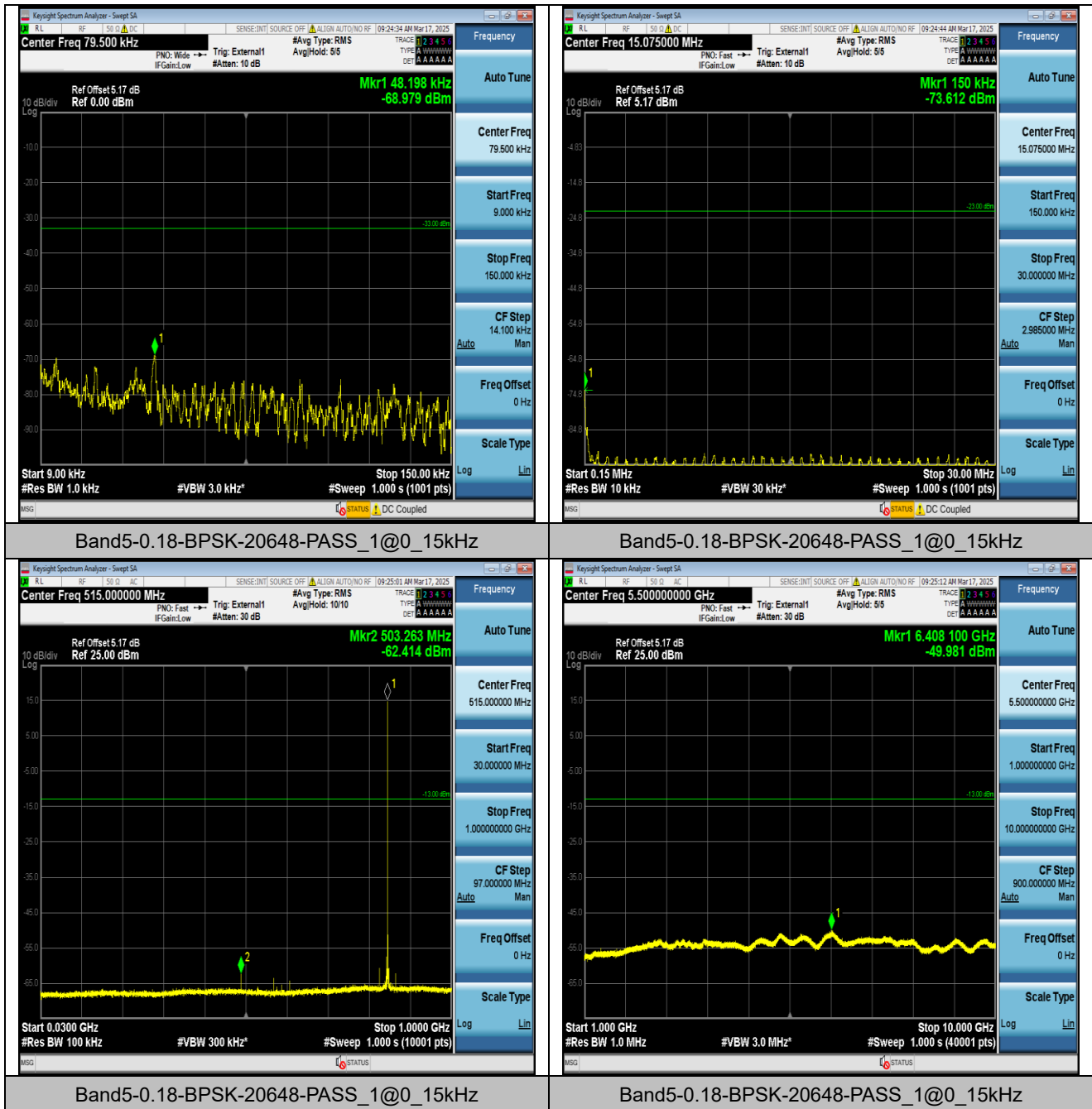












Frequency Stability for NB1

Test Result

Voltage												
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	VN	NT	-5.50	-0.006575	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	VL	NT	-5.40	-0.006455	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	VH	NT	-3.50	-0.004184	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	VN	NT	-5.40	-0.006455	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	VL	NT	-4.40	-0.005260	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	VH	NT	-4.50	-0.005380	±2.5	PASS

Temperature												
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	-30	-2.90	-0.003467	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	-20	-5.00	-0.005977	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	-10	-4.20	-0.005021	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	0	-4.40	-0.005260	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	10	-2.30	-0.002750	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	20	-2.20	-0.002630	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	30	-4.90	-0.005858	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	40	-2.50	-0.002989	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	50	-3.50	-0.004184	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	-30	-4.20	-0.005021	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	-20	-3.90	-0.004662	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	-10	-3.80	-0.004543	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	0	-4.20	-0.005021	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	10	-4.00	-0.004782	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	20	-3.80	-0.004543	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	30	-4.30	-0.005140	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	40	-3.50	-0.004184	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	50	-3.60	-0.004304	±2.5	PASS

~The End~