

Appendix-B LTE NB-IoT Band 13

Effective (Isotropic) Radiated Power Output Data for NB1

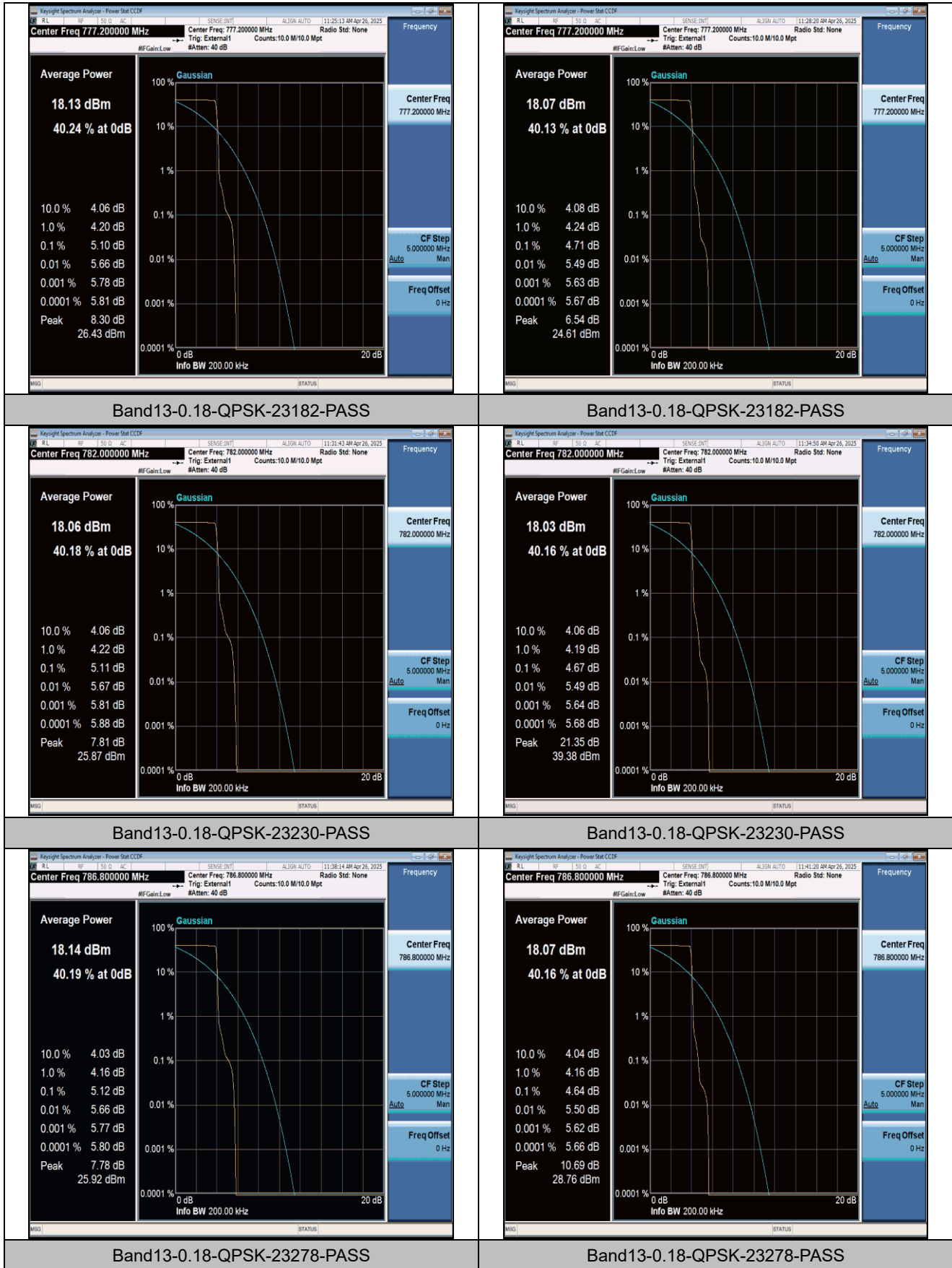
Test Result

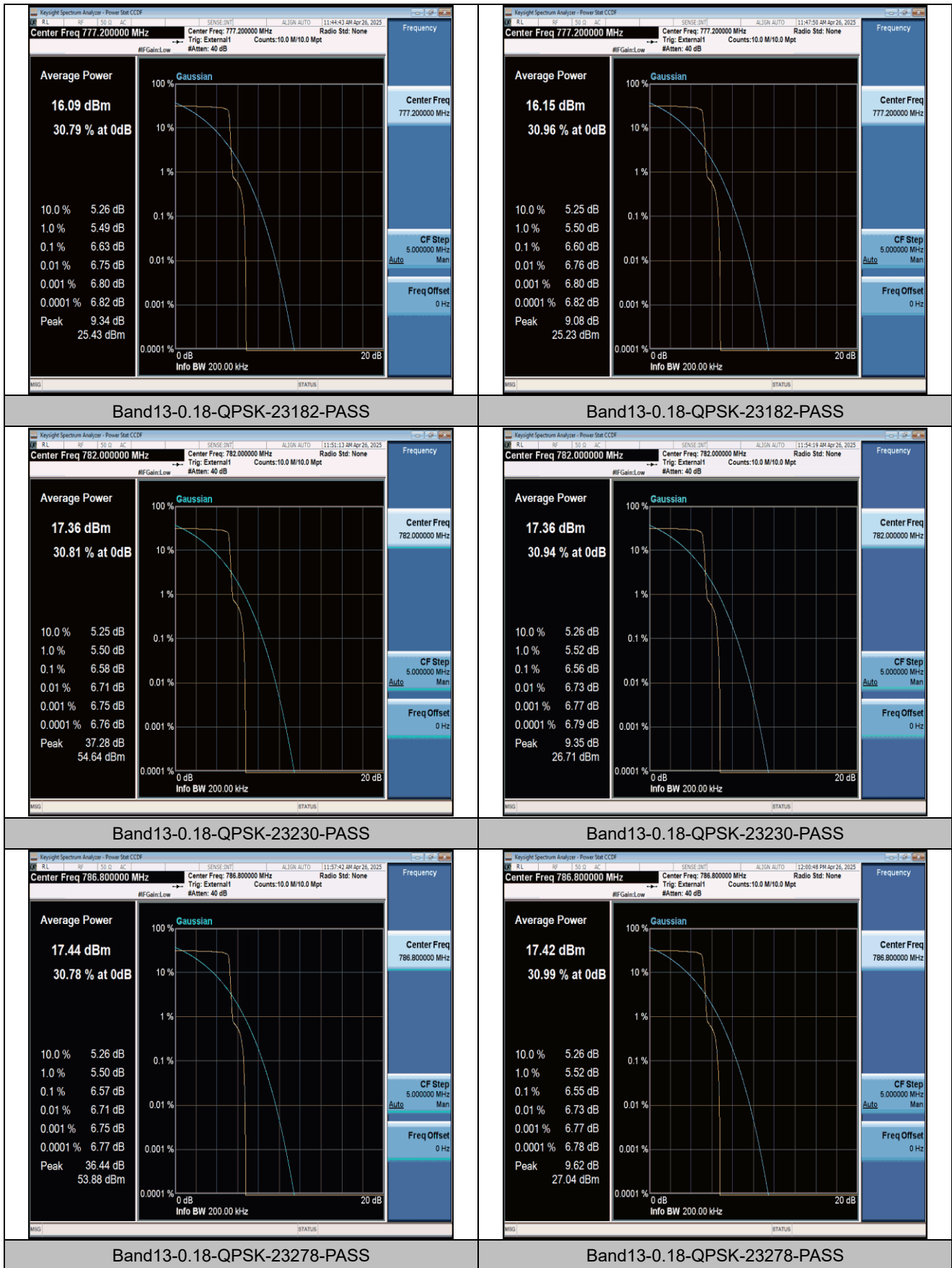
Band	OpMode	SCS	BW	Modulation	Channel	Tones	Power (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23182	1@0	21.12	23.42	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23182	1@0	21.11	23.41	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23182	1@47	21.12	23.42	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23182	1@47	21.12	23.42	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23230	1@0	21.21	23.51	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	21.26	23.56	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23230	1@47	21.17	23.47	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	21.21	23.51	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23278	1@0	21.32	23.62	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23278	1@0	21.37	23.67	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23278	1@47	21.28	23.58	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23278	1@47	21.26	23.56	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23182	1@0	20.04	22.34	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	1@0	20.07	22.37	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23182	1@11	19.98	22.28	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	1@11	20.01	22.31	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23230	1@0	20.38	22.68	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	20.39	22.69	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23230	1@11	20.31	22.61	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	20.31	22.61	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23278	1@0	20.44	22.74	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	1@0	20.44	22.74	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23278	1@11	20.34	22.64	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	1@11	20.37	22.67	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	3@3	20.10	22.4	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	3@3	20.32	22.62	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	3@3	21.53	23.83	44.77	PASS

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

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dBm)	Limit (dBm)	Verdict
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23182	1@0	5.1	<=13	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23182	1@47	4.71	<=13	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	5.11	<=13	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	4.67	<=13	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23278	1@0	5.12	<=13	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23278	1@47	4.64	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	1@0	6.63	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	1@11	6.6	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	6.58	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	6.56	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	1@0	6.57	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	1@11	6.55	<=13	PASS

Test Graphs



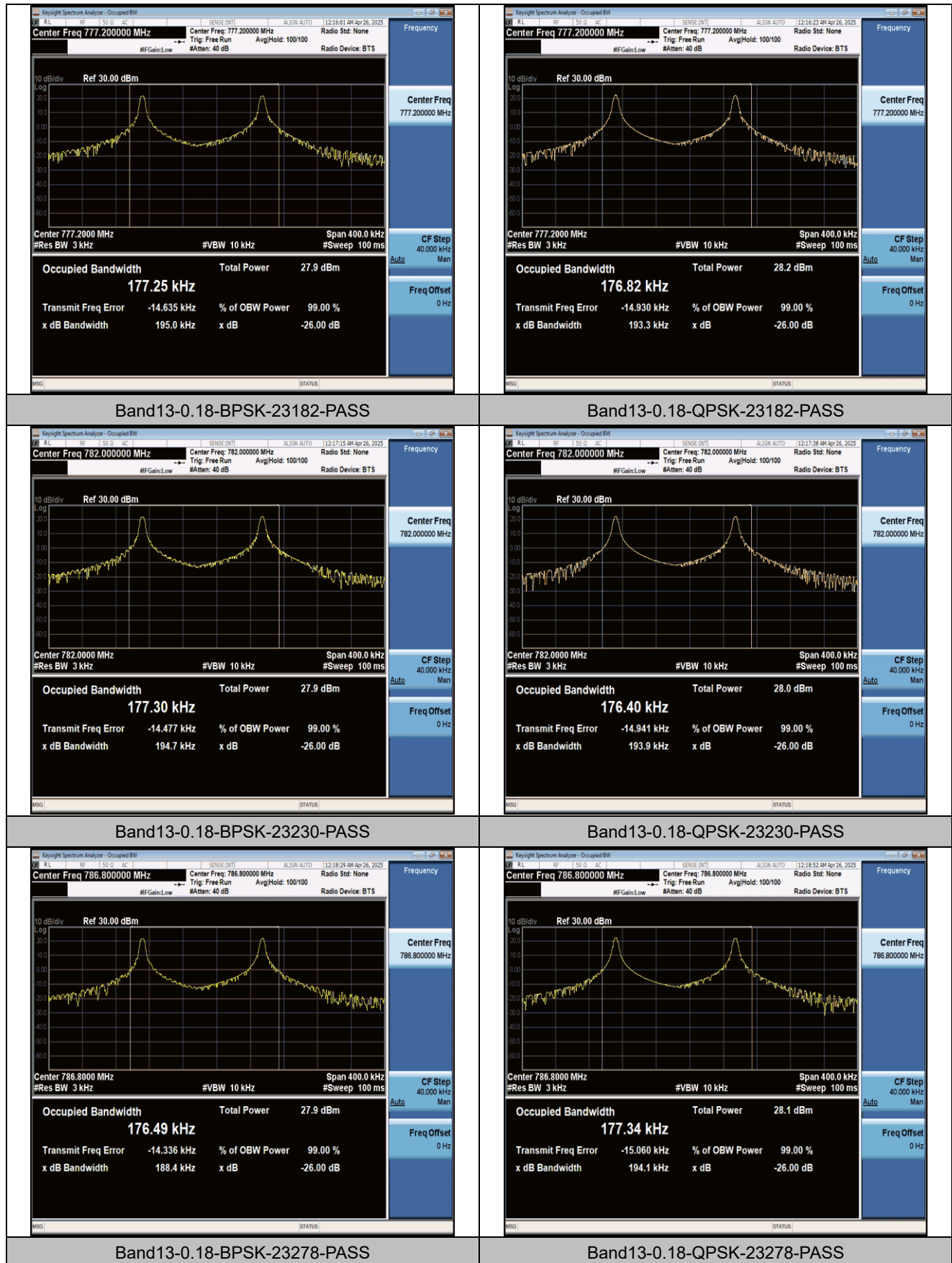


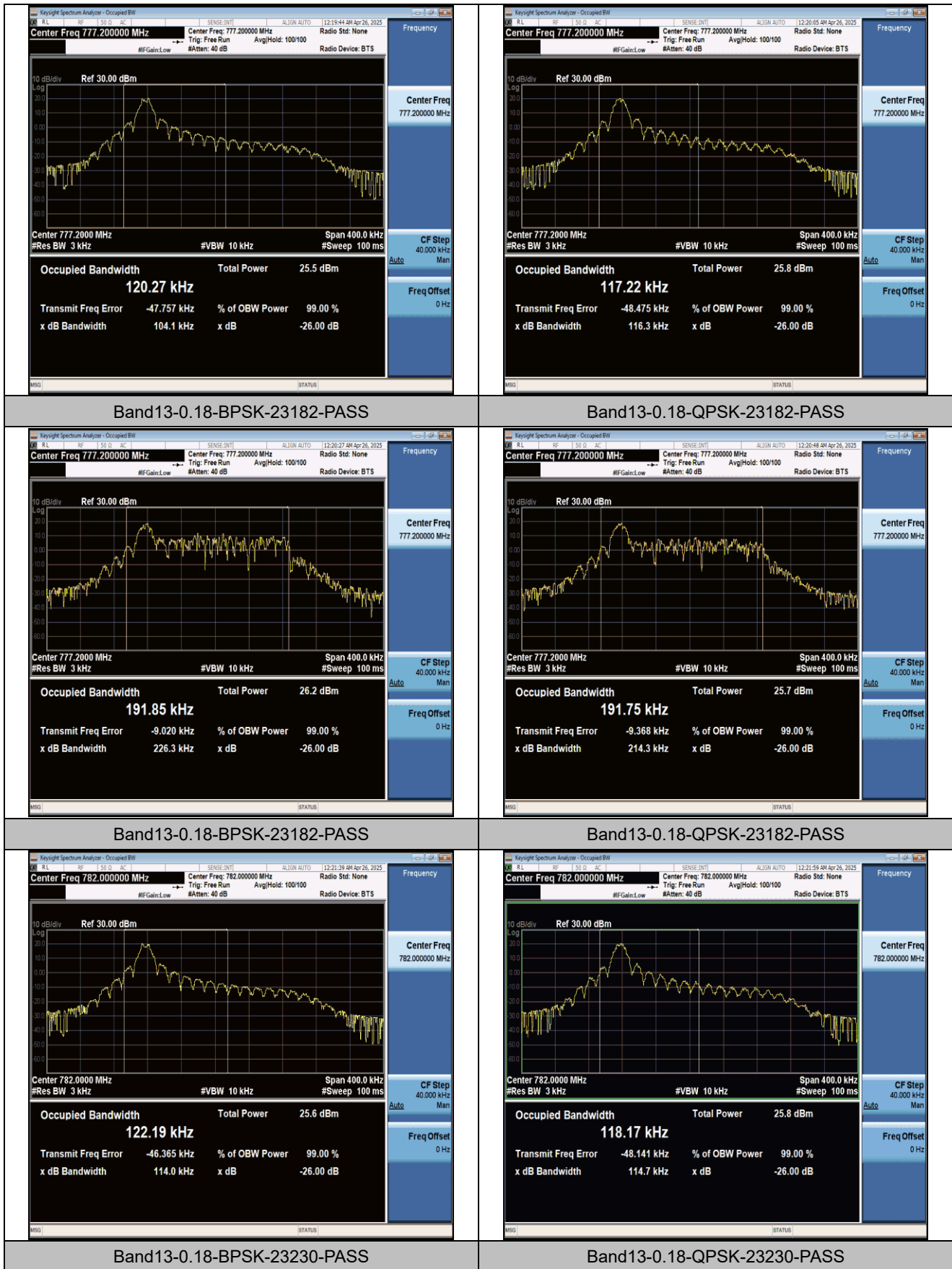
Emission Bandwidth for NB1

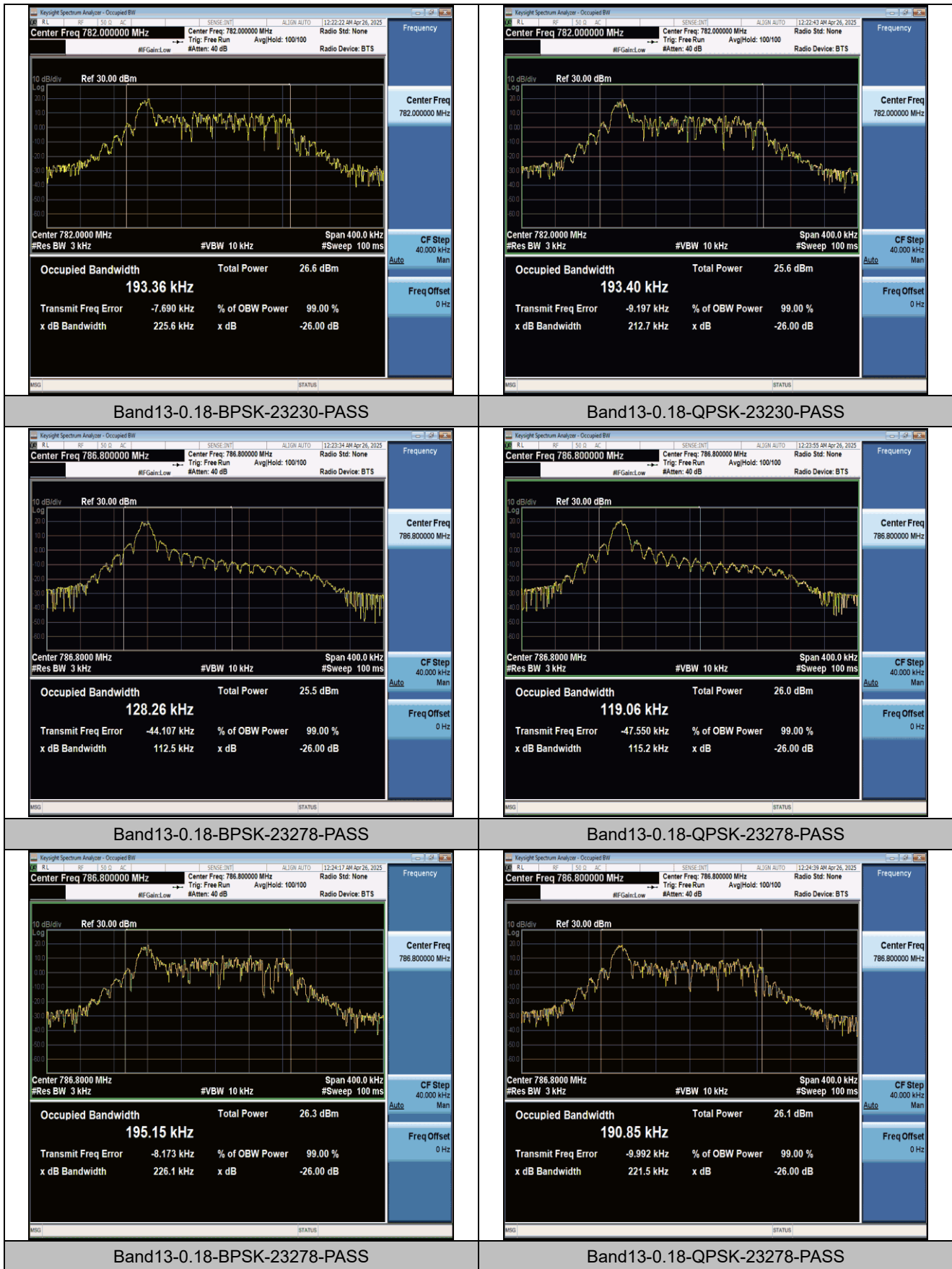
Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23182	1@0	0.17725	0.1950	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23182	1@0	0.17682	0.1933	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23230	1@0	0.17730	0.1947	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	0.17640	0.1939	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23278	1@0	0.17649	0.1884	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23278	1@0	0.17734	0.1941	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23182	1@0	0.12027	0.1041	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	1@0	0.11722	0.1163	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23182	12@0	0.19185	0.2263	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	12@0	0.19175	0.2143	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23230	1@0	0.12219	0.1140	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	0.11817	0.1147	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23230	12@0	0.19336	0.2256	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	0.19340	0.2127	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23278	1@0	0.12826	0.1125	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	1@0	0.11906	0.1152	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23278	12@0	0.19515	0.2261	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	12@0	0.19085	0.2215	PASS

Test Graphs

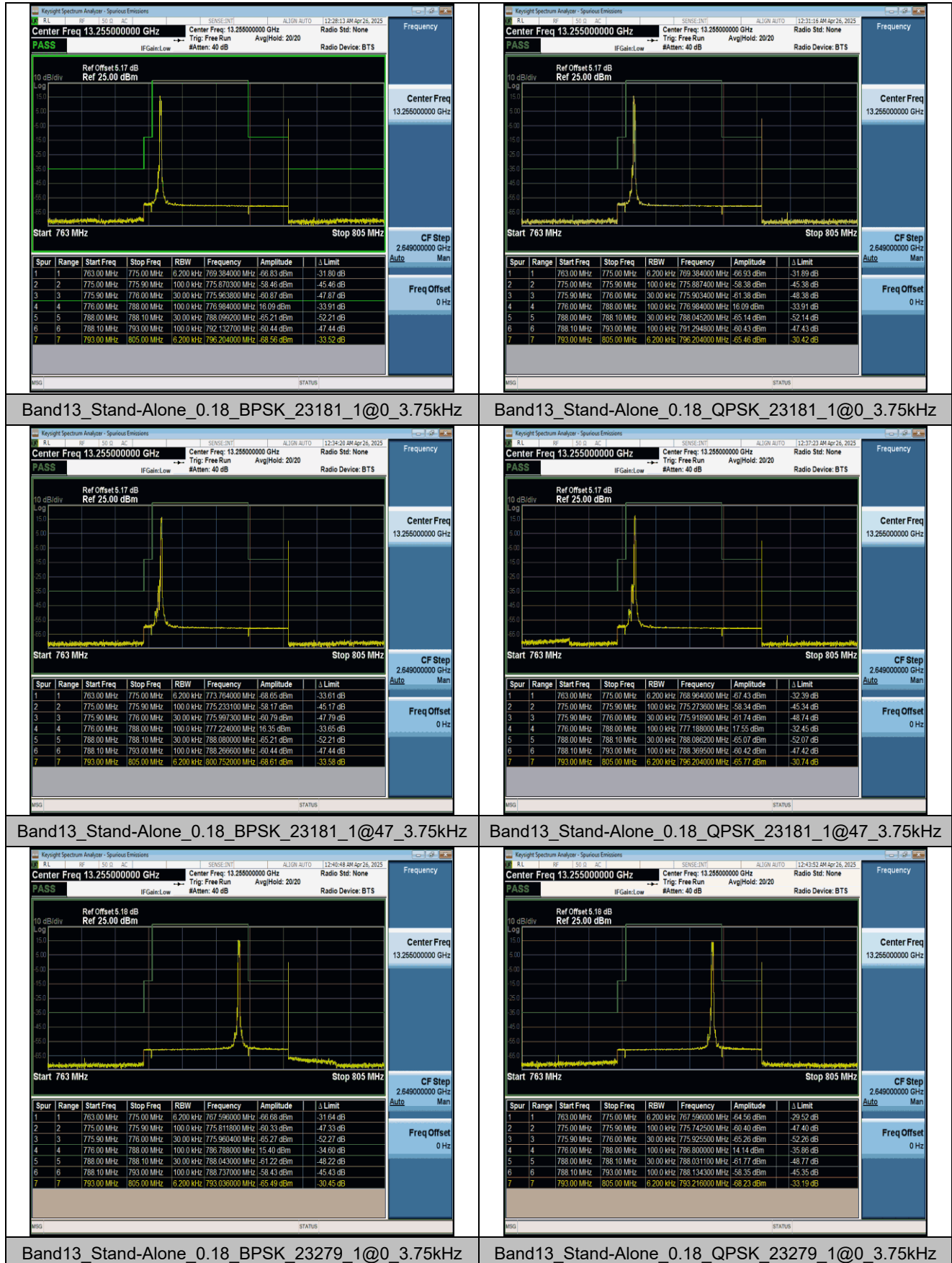


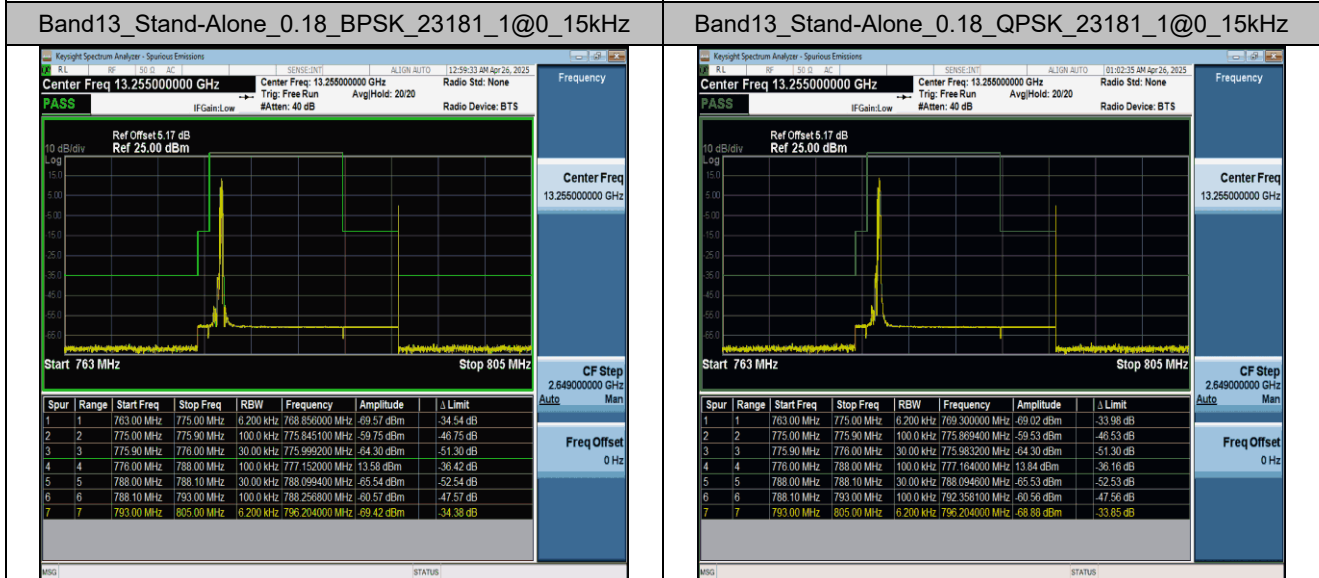
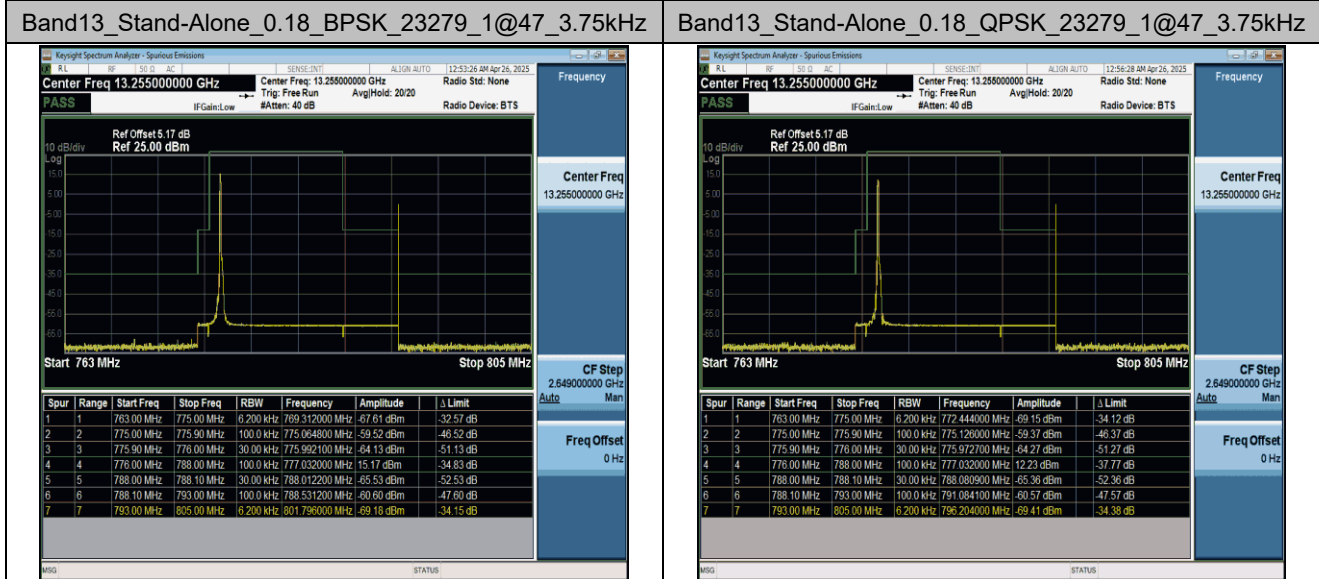




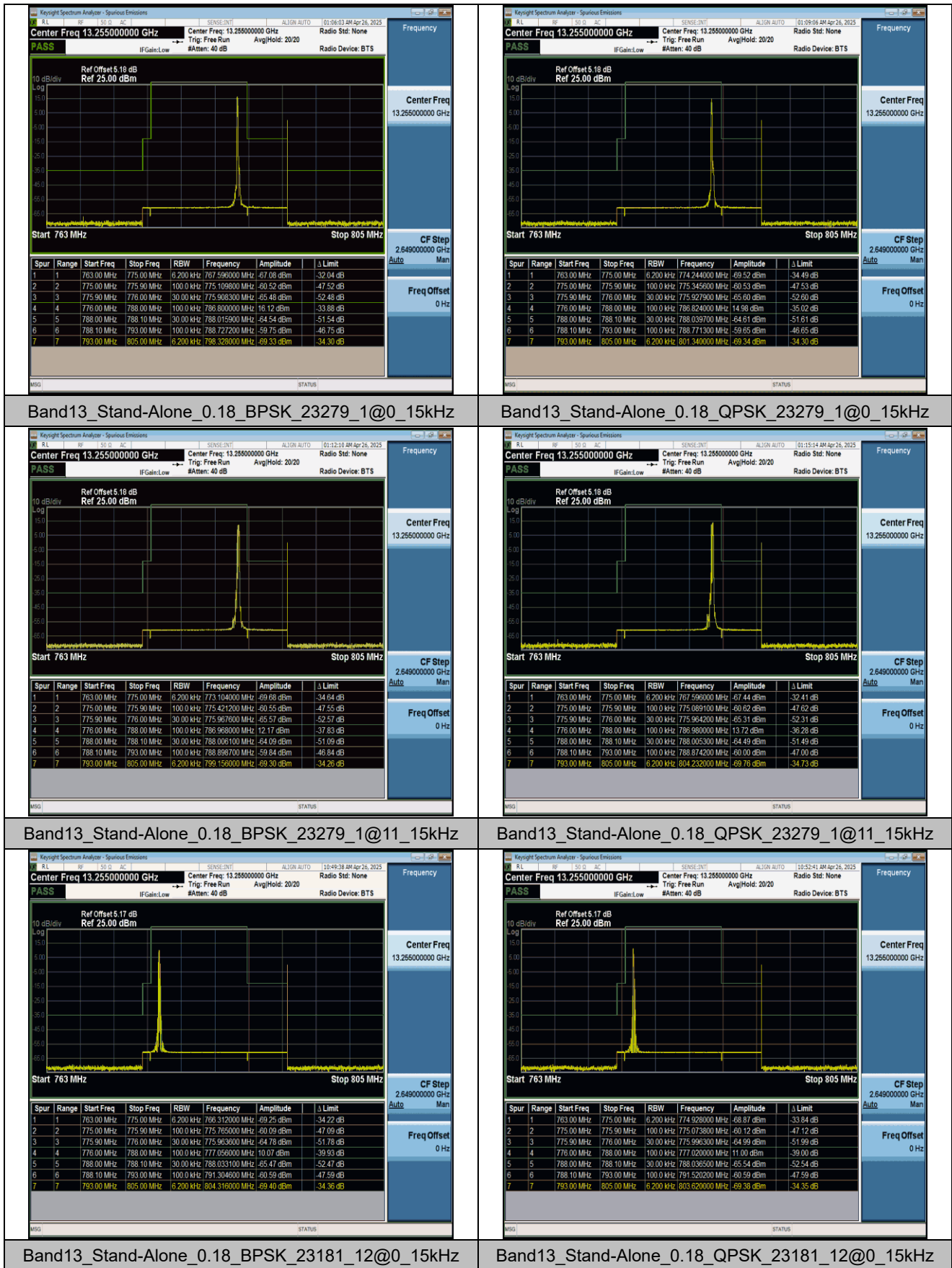
Band Edge for NB1

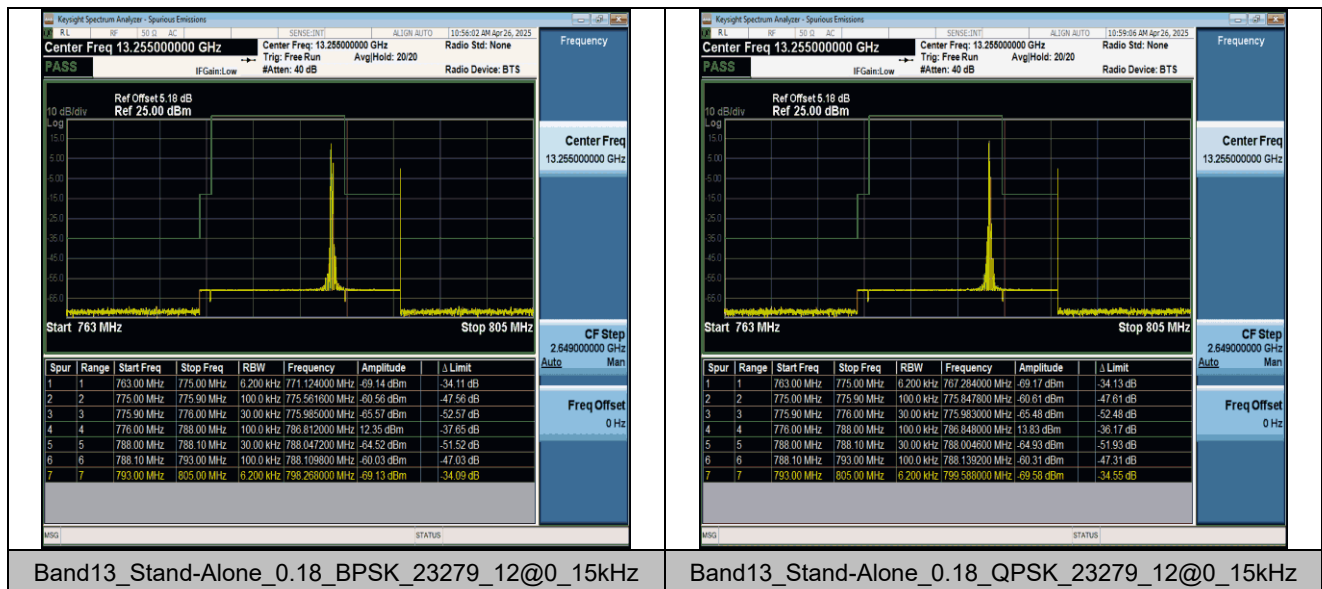
Test Graphs





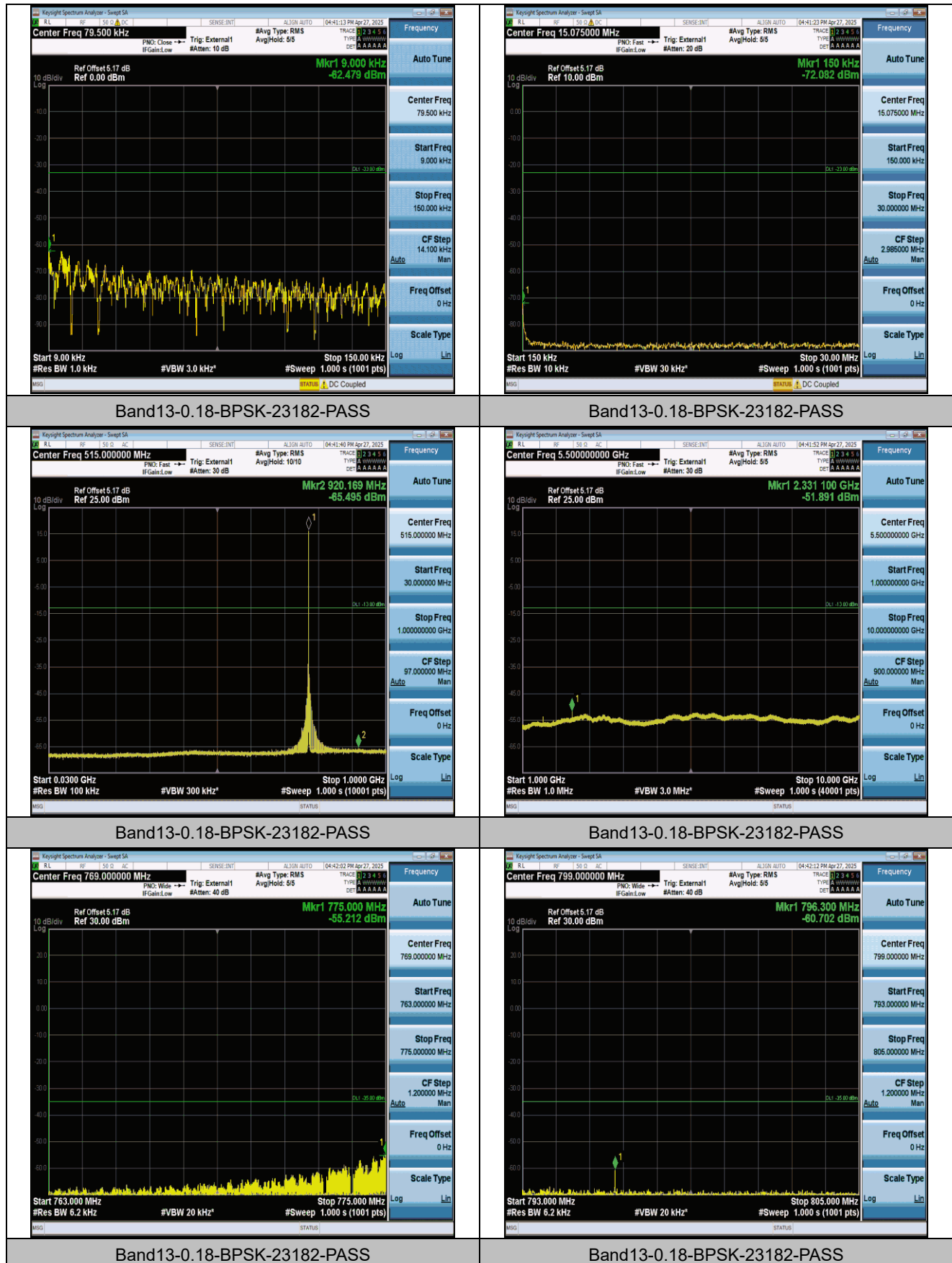
Band13_Stand-Alone_0.18_BPSK_23181_1@11_15kHz Band13_Stand-Alone_0.18_QPSK_23181_1@11_15kHz

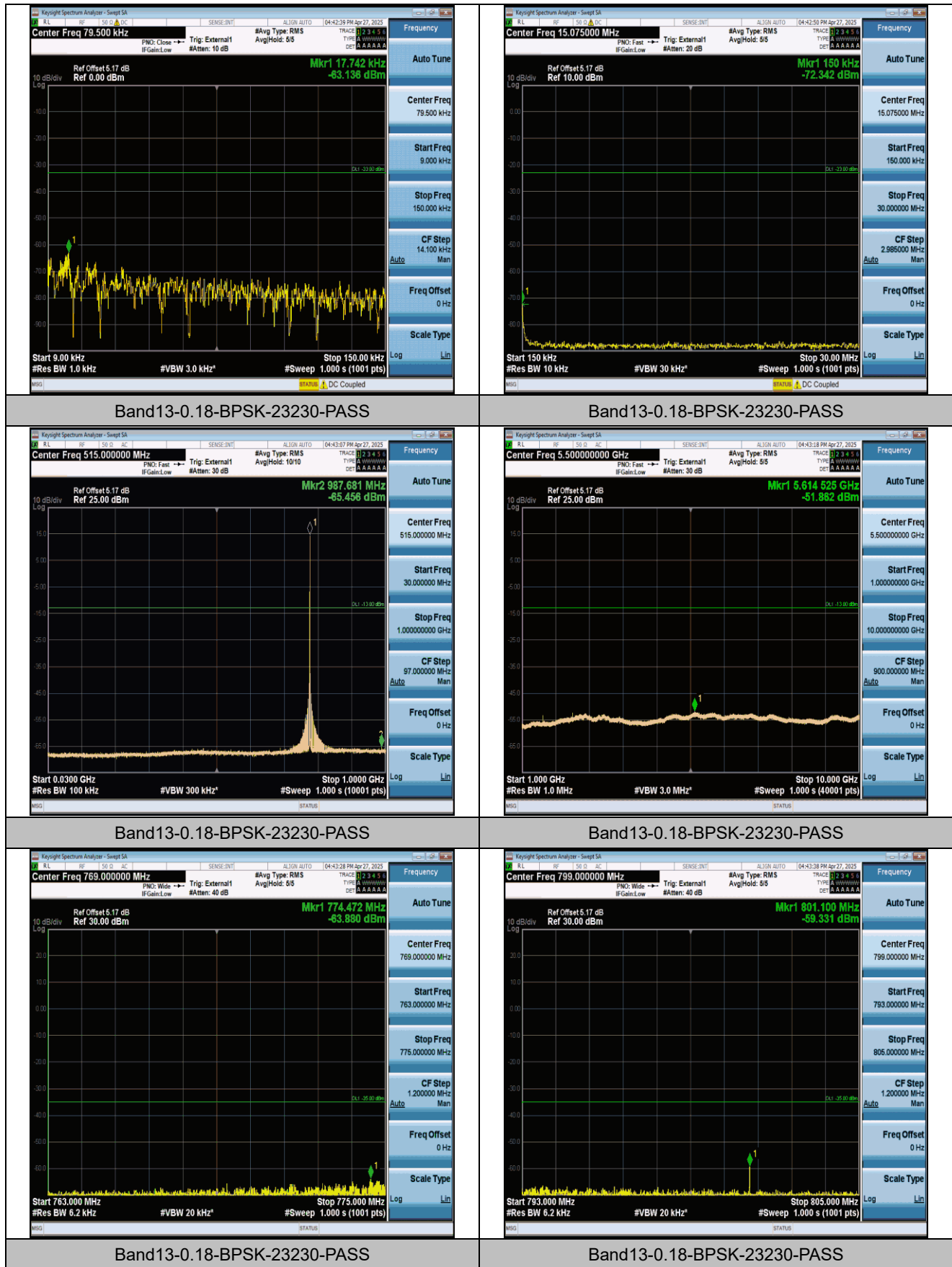


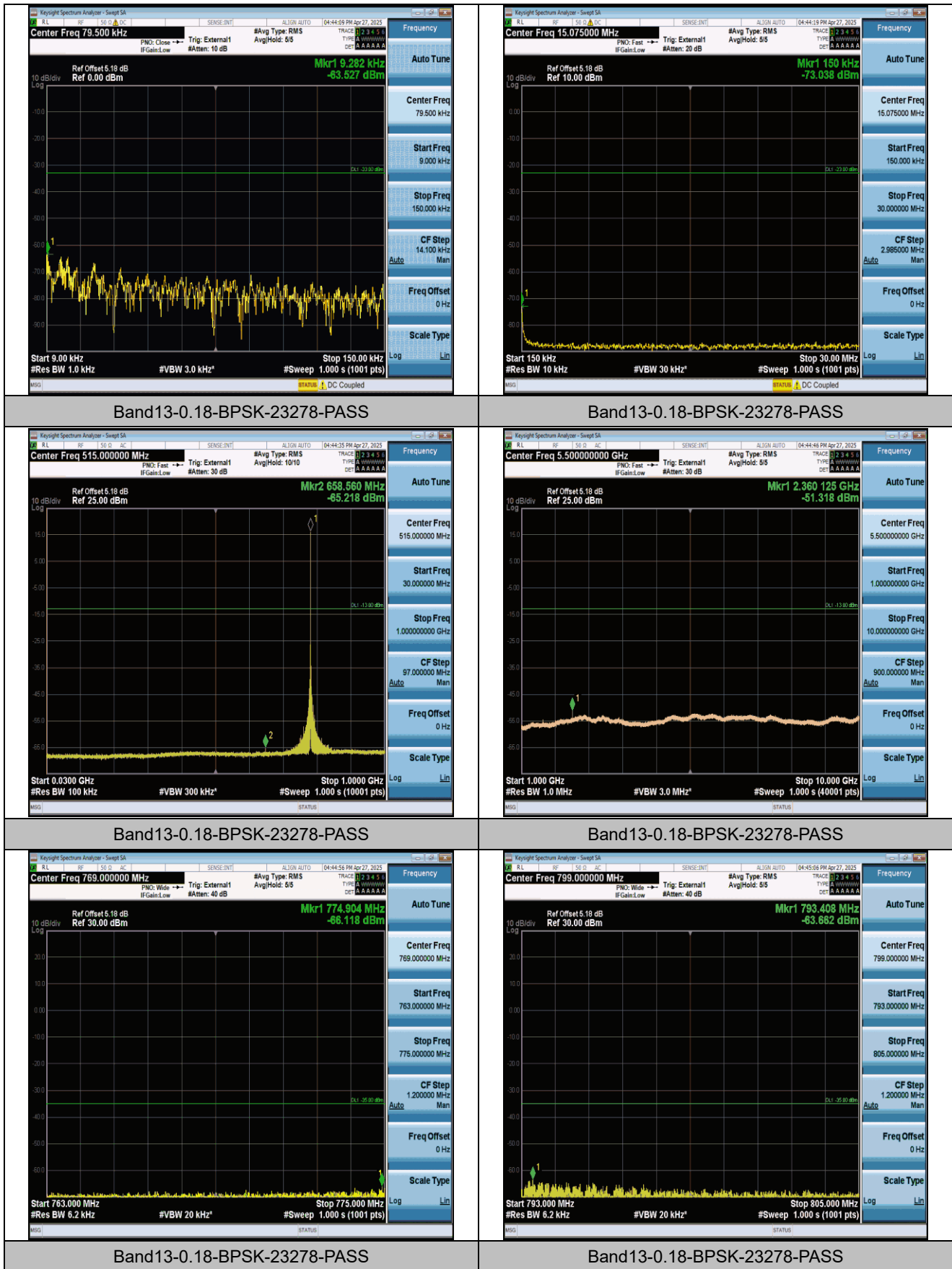


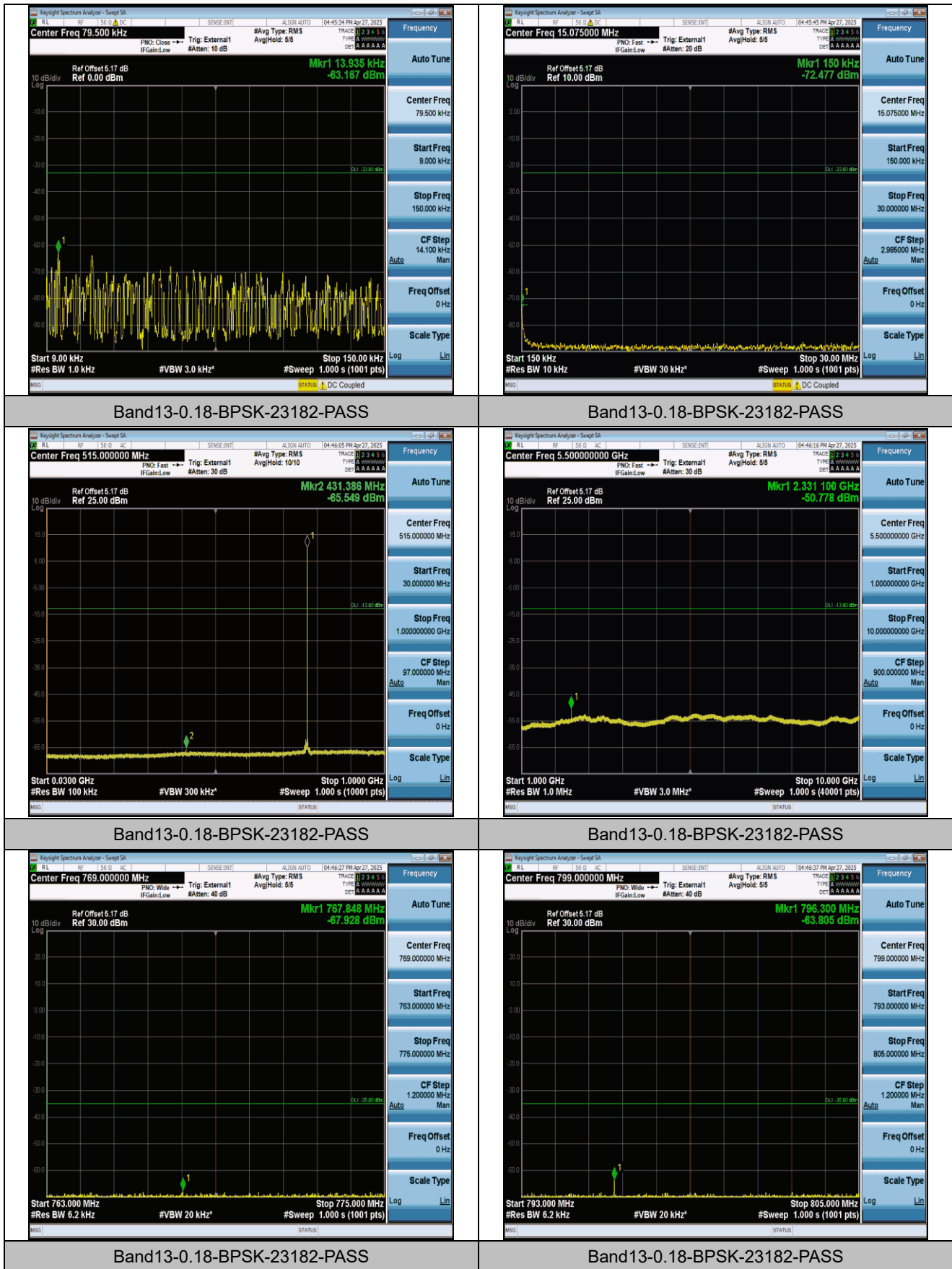
Conducted Spurious Emission for NB1

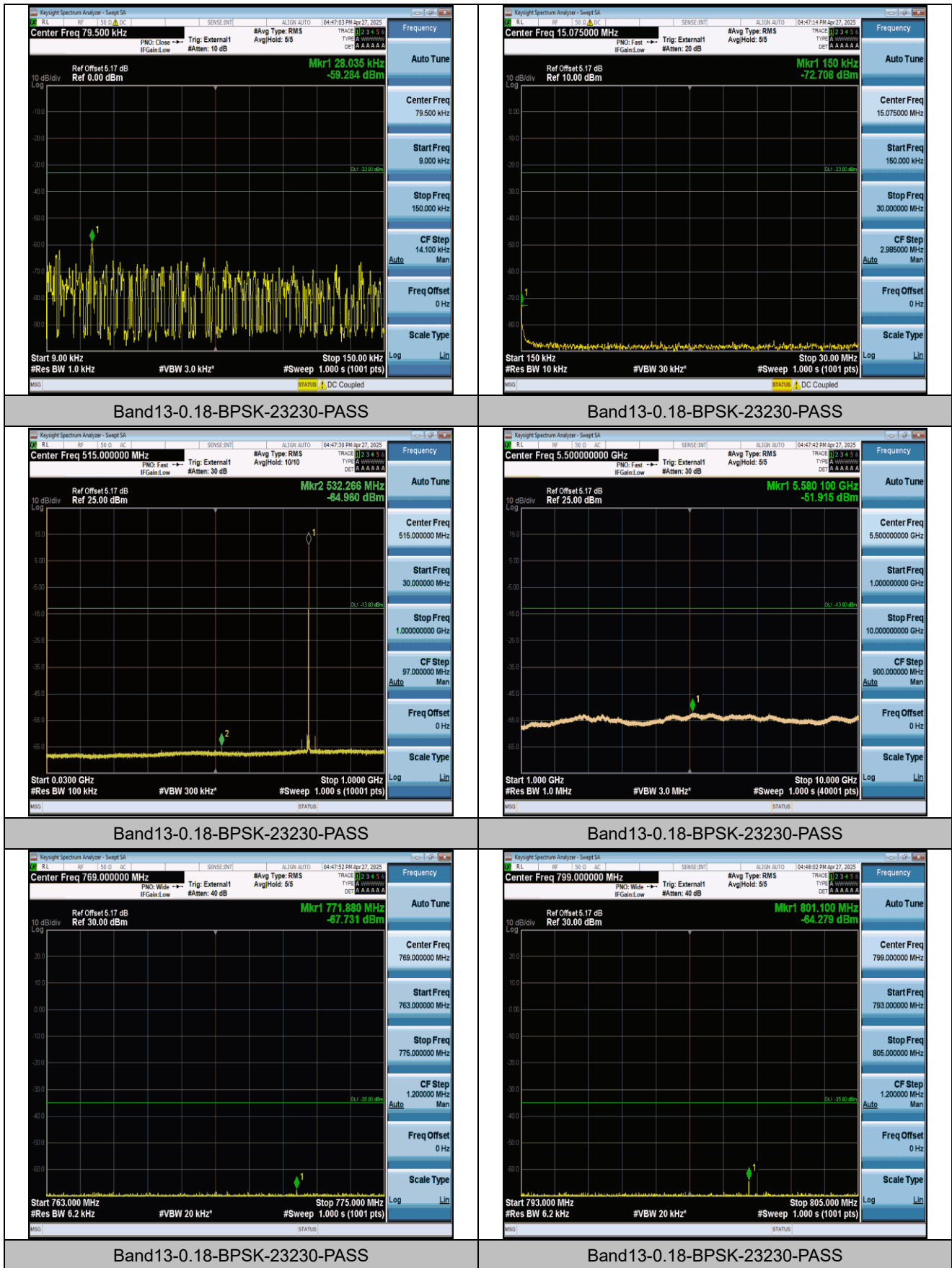
Test Graphs

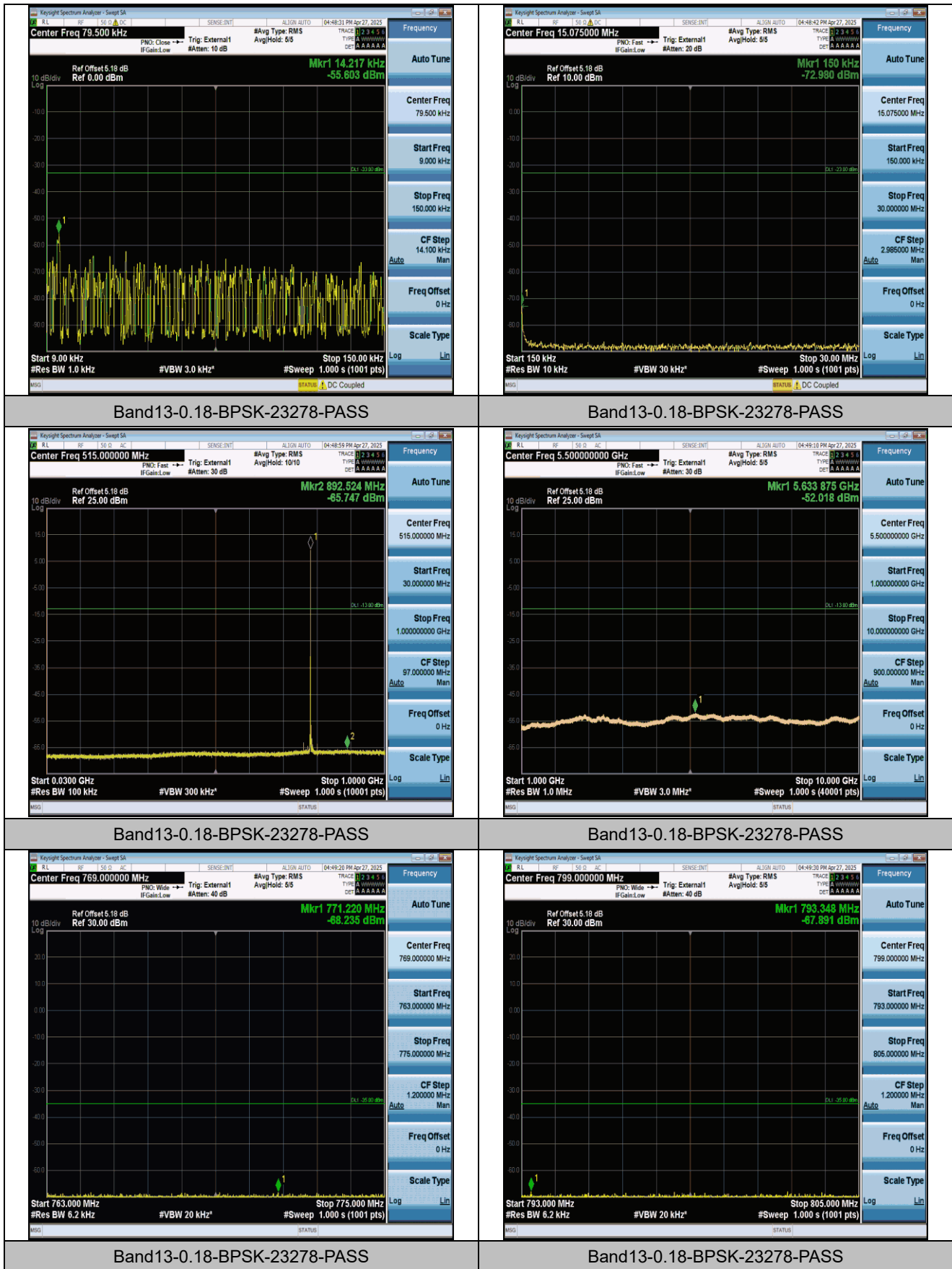












Frequency Stability for NB1

Test Result

Voltage											
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	VN	NT	-5.40	-0.006905	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	VL	NT	-3.50	-0.004476	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	VH	NT	-2.90	-0.003708	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	VN	NT	-3.70	-0.004731	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	VL	NT	-1.50	-0.001918	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	VH	NT	-3.10	-0.003964	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	VN	NT	-3.50	-0.004476	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	VL	NT	-2.30	-0.002941	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	VH	NT	-2.80	-0.003581	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	VN	NT	-1.20	-0.001535	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	VL	NT	-1.40	-0.001790	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	VH	NT	-3.60	-0.004604	PASS

Temperature											
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	NV	-30	-4.90	-0.006266	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	NV	-20	-4.10	-0.005243	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	NV	-10	-4.60	-0.005882	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	NV	0	-2.90	-0.003708	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	NV	10	-1.50	-0.001918	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	NV	20	-3.70	-0.004731	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	NV	30	-4.10	-0.005243	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	NV	40	-2.60	-0.003325	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	NV	50	-2.40	-0.003069	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	NV	-30	-2.80	-0.003581	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	NV	-20	-2.80	-0.003581	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	NV	-10	-4.60	-0.005882	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	NV	0	-4.90	-0.006266	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	NV	10	-4.70	-0.006010	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	NV	20	-3.60	-0.004604	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	NV	30	-2.00	-0.002558	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	NV	40	-2.00	-0.002558	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	NV	50	-3.20	-0.004092	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	NV	-30	-2.00	-0.002558	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	NV	-20	-1.80	-0.002302	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	NV	-10	-3.20	-0.004092	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	NV	0	-2.00	-0.002558	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	NV	10	-2.70	-0.003453	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	NV	20	-3.00	-0.003836	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	NV	30	-3.40	-0.004348	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	NV	40	-2.00	-0.002558	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	NV	50	-3.80	-0.004859	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	NV	-30	-5.00	-0.006394	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	NV	-20	-2.00	-0.002558	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	NV	-10	-1.90	-0.002430	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	NV	0	-4.50	-0.005754	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	NV	10	-1.90	-0.002430	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	NV	20	-2.00	-0.002558	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	NV	30	-2.40	-0.003069	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	NV	40	-3.30	-0.004220	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	NV	50	-3.90	-0.004987	PASS

~The End~