

Appendix-B LTE NB-IoT Band 13

Effective (Isotropic) Radiated Power Output Data for NB

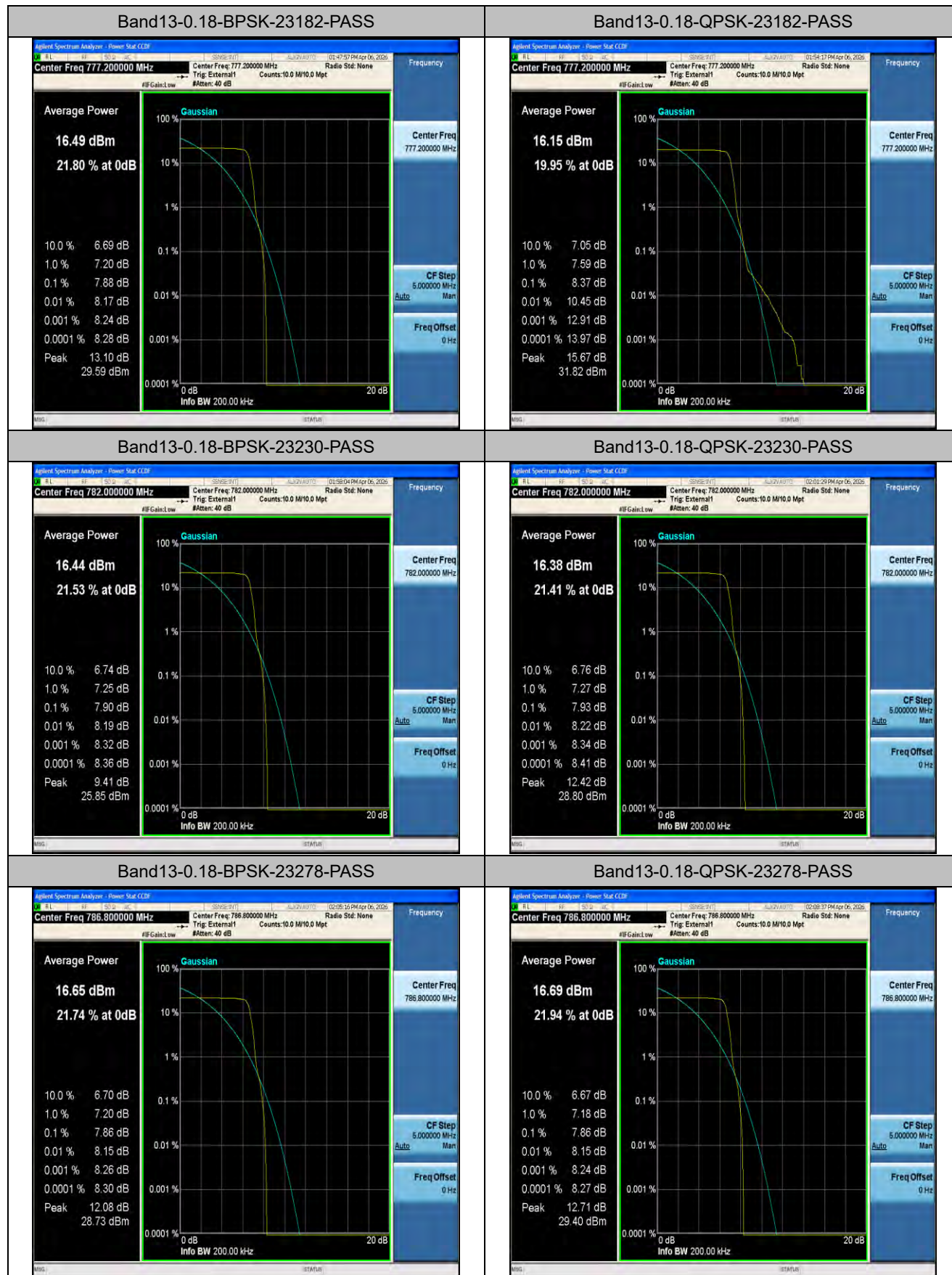
Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23182	1@0	21.79	25.75	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23182	1@0	21.8	25.76	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23182	1@47	21.87	25.83	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23182	1@47	21.8	25.76	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23230	1@0	21.65	25.61	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	21.58	25.54	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23230	1@47	21.57	25.53	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@47	21.65	25.61	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23278	1@0	21.75	25.71	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23278	1@0	21.74	25.7	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23278	1@47	21.78	25.74	44.77	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23278	1@47	21.68	25.64	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23182	1@0	22.38	26.34	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	1@0	22.35	26.31	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23182	1@11	22.36	26.32	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	1@11	22.31	26.27	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23230	1@0	22.18	26.14	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	22.2	26.16	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23230	1@11	22.16	26.12	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@11	22.22	26.18	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23278	1@0	22.44	26.4	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	1@0	22.36	26.32	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23278	1@11	22.37	26.33	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	1@11	22.37	26.33	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	3@3	23.18	27.14	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	3@3	22.99	26.95	44.77	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	3@3	23.26	27.22	44.77	PASS

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

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dB)	Limit (dB)	Verdict
Band13	Stand-Alone	15kHz	0.18	BPSK	23182	12@0	7.88	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	12@0	8.37	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23230	12@0	7.9	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	7.93	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23278	12@0	7.86	<=13	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	12@0	7.86	<=13	PASS

Test Graphs

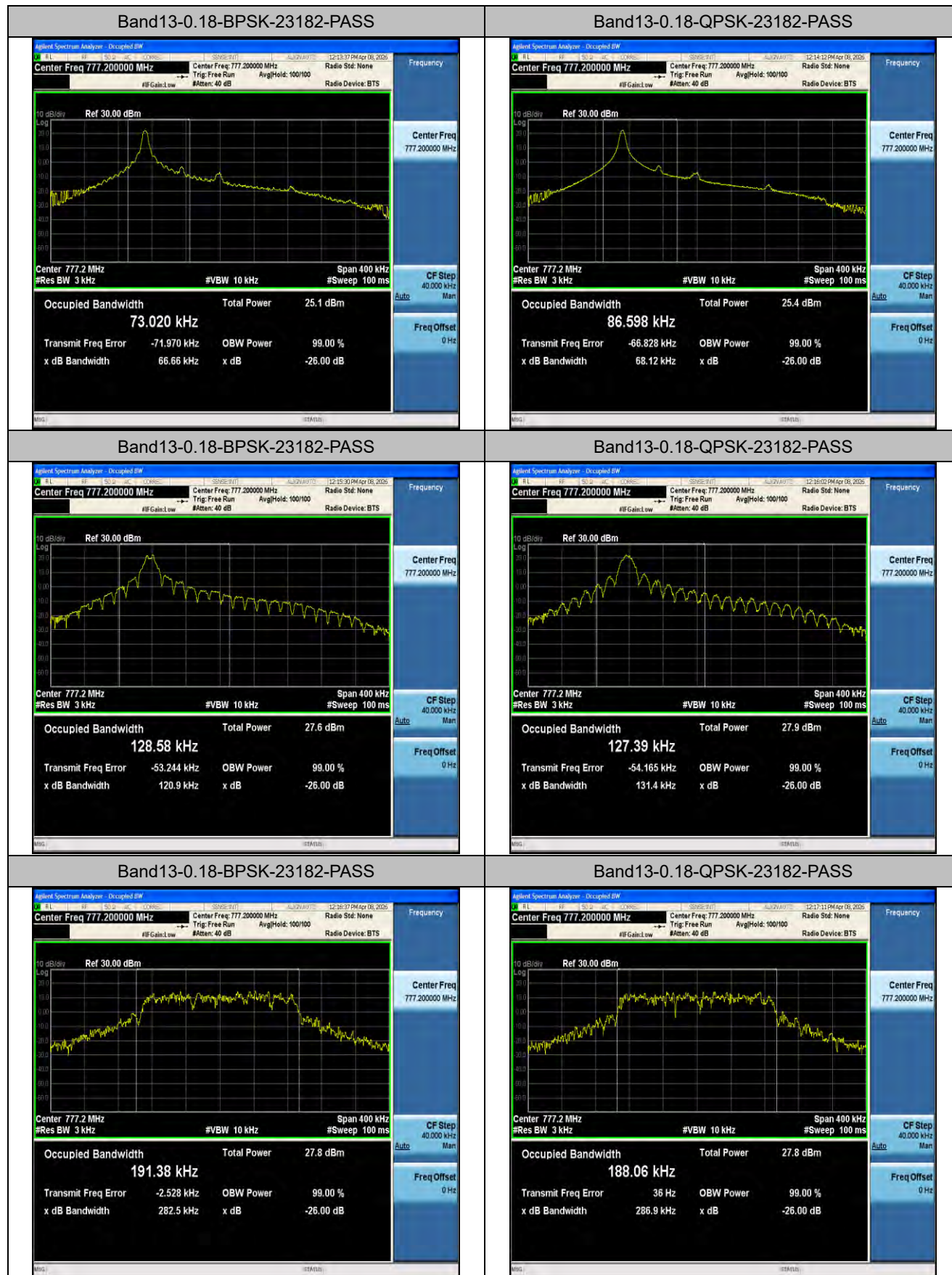


Emission Bandwidth for NB

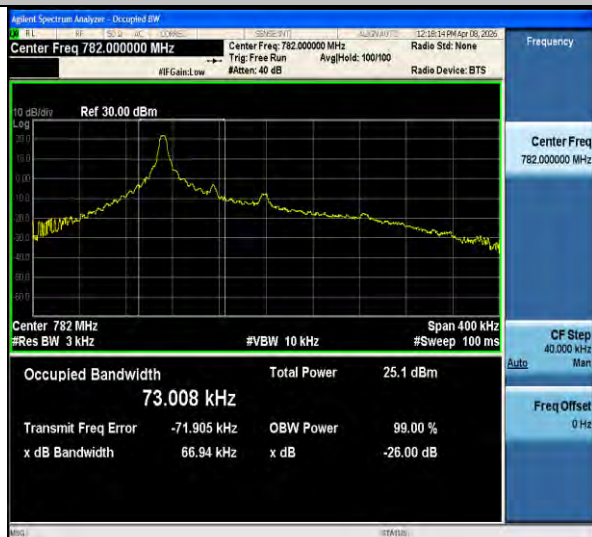
Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23182	1@0	0.07302	0.0667	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23182	1@0	0.08660	0.0681	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23182	1@0	0.12858	0.1209	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	1@0	0.12739	0.1314	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23182	12@0	0.19138	0.2825	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23182	12@0	0.18806	0.2869	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23230	1@0	0.07301	0.0669	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23230	1@0	0.08478	0.0676	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23230	1@0	0.12932	0.1209	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	1@0	0.12543	0.1308	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23230	12@0	0.19271	0.2649	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	0.19363	0.2895	PASS
Band13	Stand-Alone	3.75kHz	0.18	BPSK	23278	1@0	0.07409	0.0672	PASS
Band13	Stand-Alone	3.75kHz	0.18	QPSK	23278	1@0	0.08615	0.0679	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23278	1@0	0.12977	0.1269	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	1@0	0.12885	0.1411	PASS
Band13	Stand-Alone	15kHz	0.18	BPSK	23278	12@0	0.19087	0.2889	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23278	12@0	0.19683	0.2798	PASS

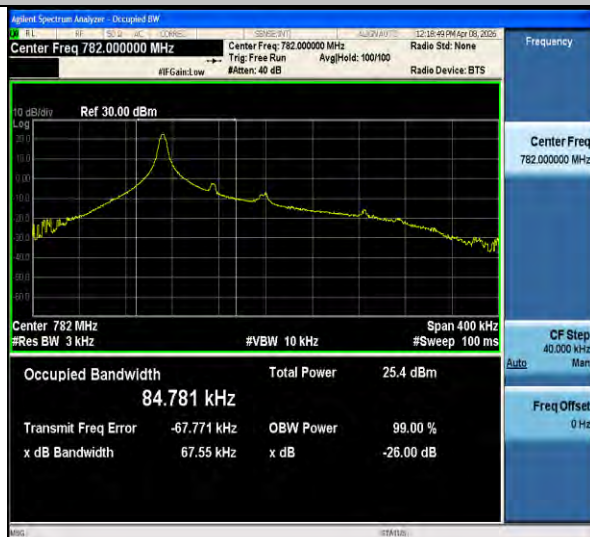
Test Graphs



Band13-0.18-BPSK-23230-PASS



Band13-0.18-QPSK-23230-PASS



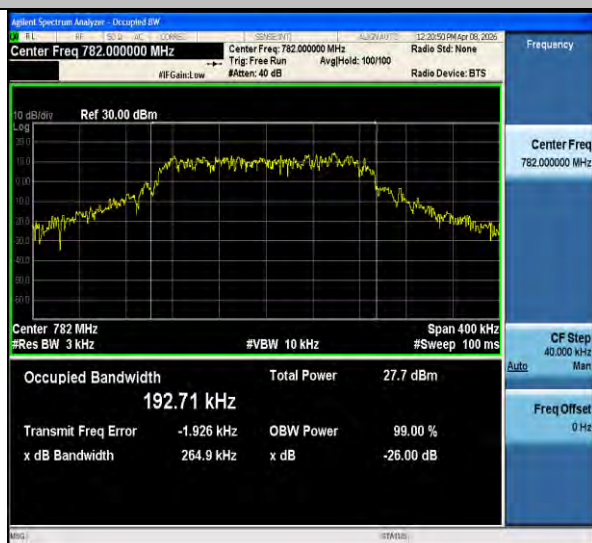
Band13-0.18-BPSK-23230-PASS



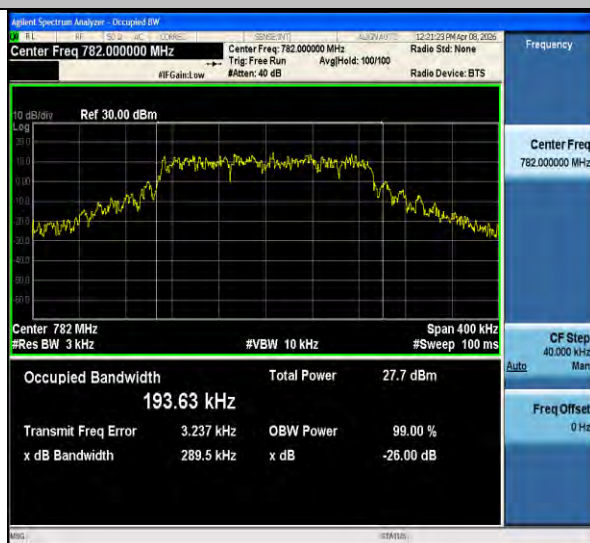
Band13-0.18-QPSK-23230-PASS



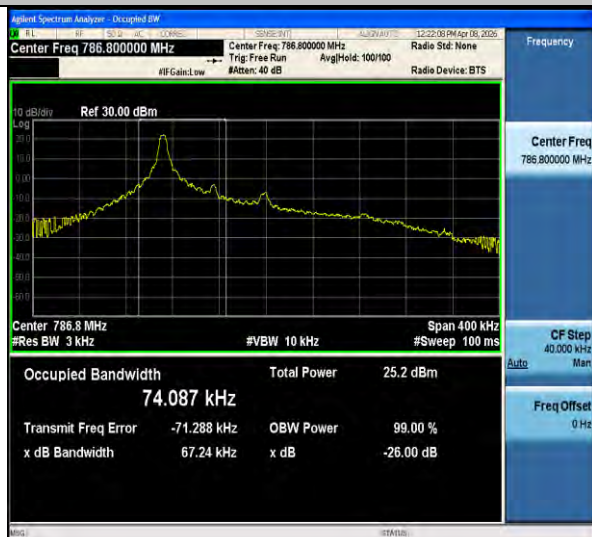
Band13-0.18-BPSK-23230-PASS



Band13-0.18-QPSK-23230-PASS



Band13-0.18-BPSK-23278-PASS



Band13-0.18-QPSK-23278-PASS



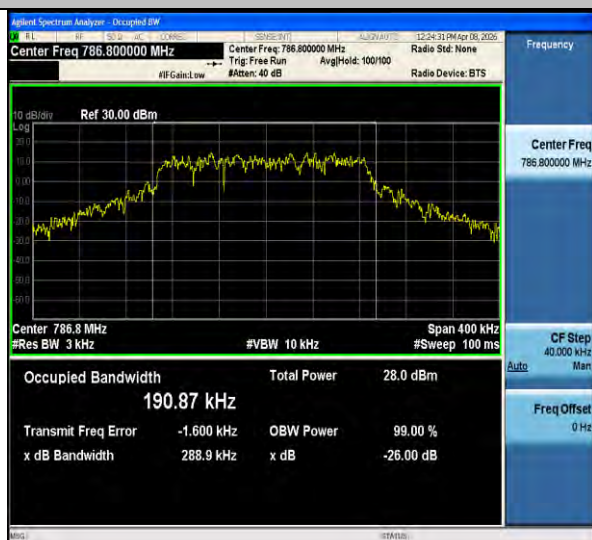
Band13-0.18-BPSK-23278-PASS



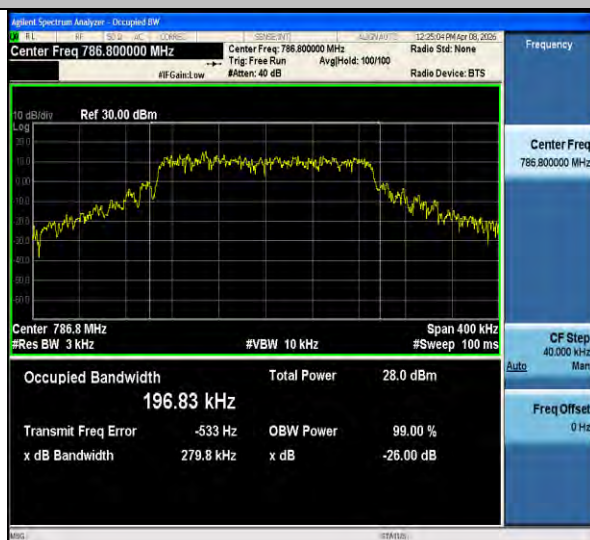
Band13-0.18-QPSK-23278-PASS



Band13-0.18-BPSK-23278-PASS

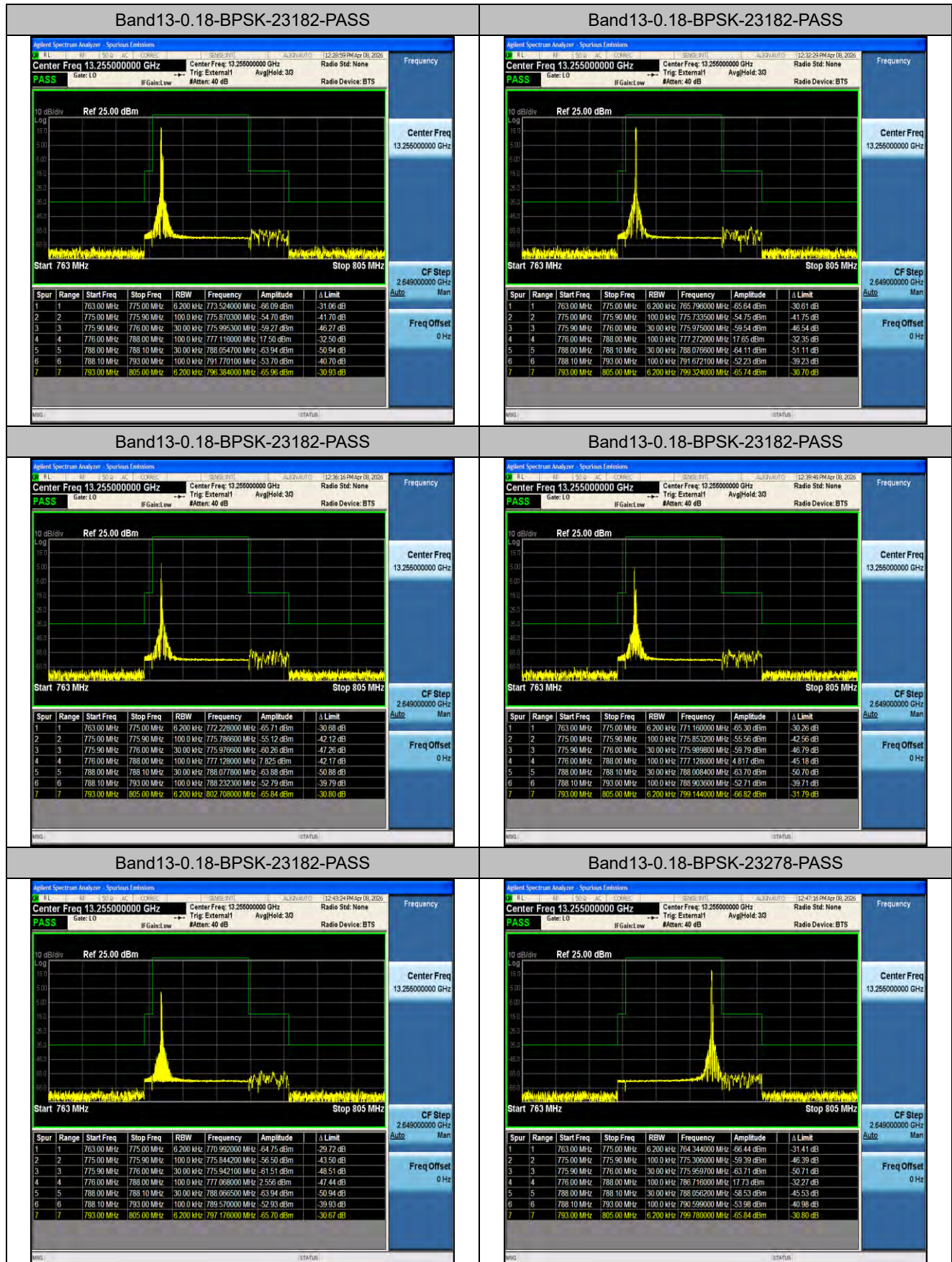


Band13-0.18-QPSK-23278-PASS

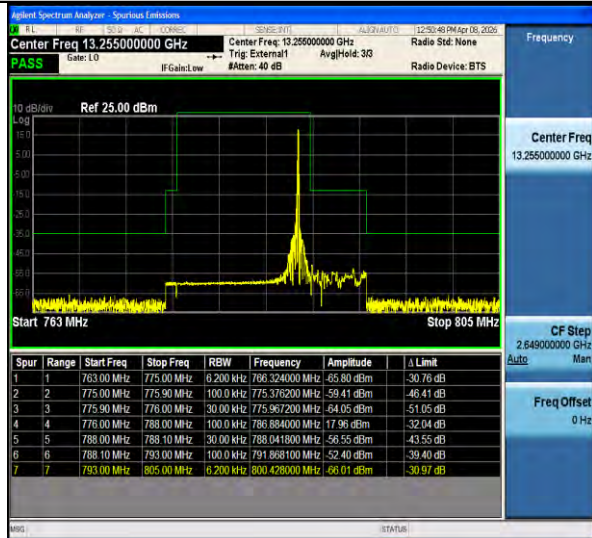


Band Edge for NB

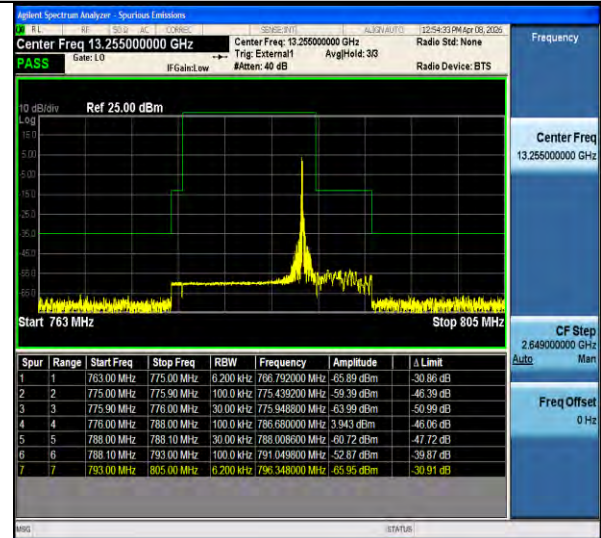
Test Graphs



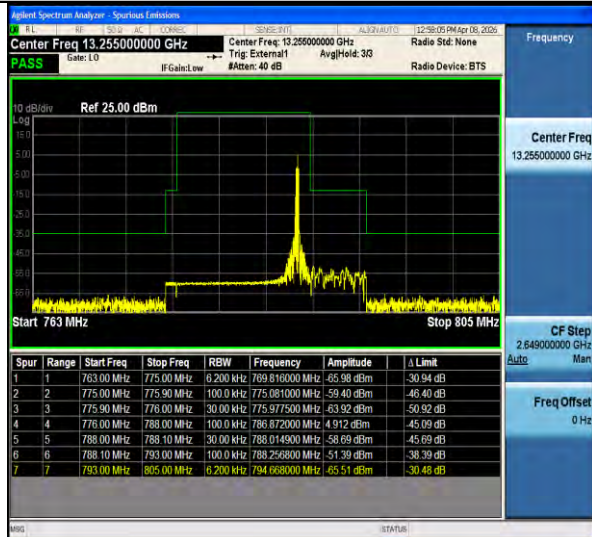
Band13-0.18-BPSK-23278-PASS



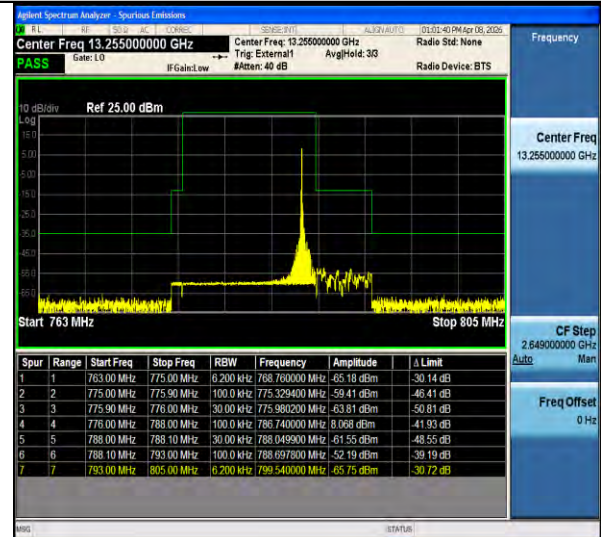
Band13-0.18-BPSK-23278-PASS



Band13-0.18-BPSK-23278-PASS

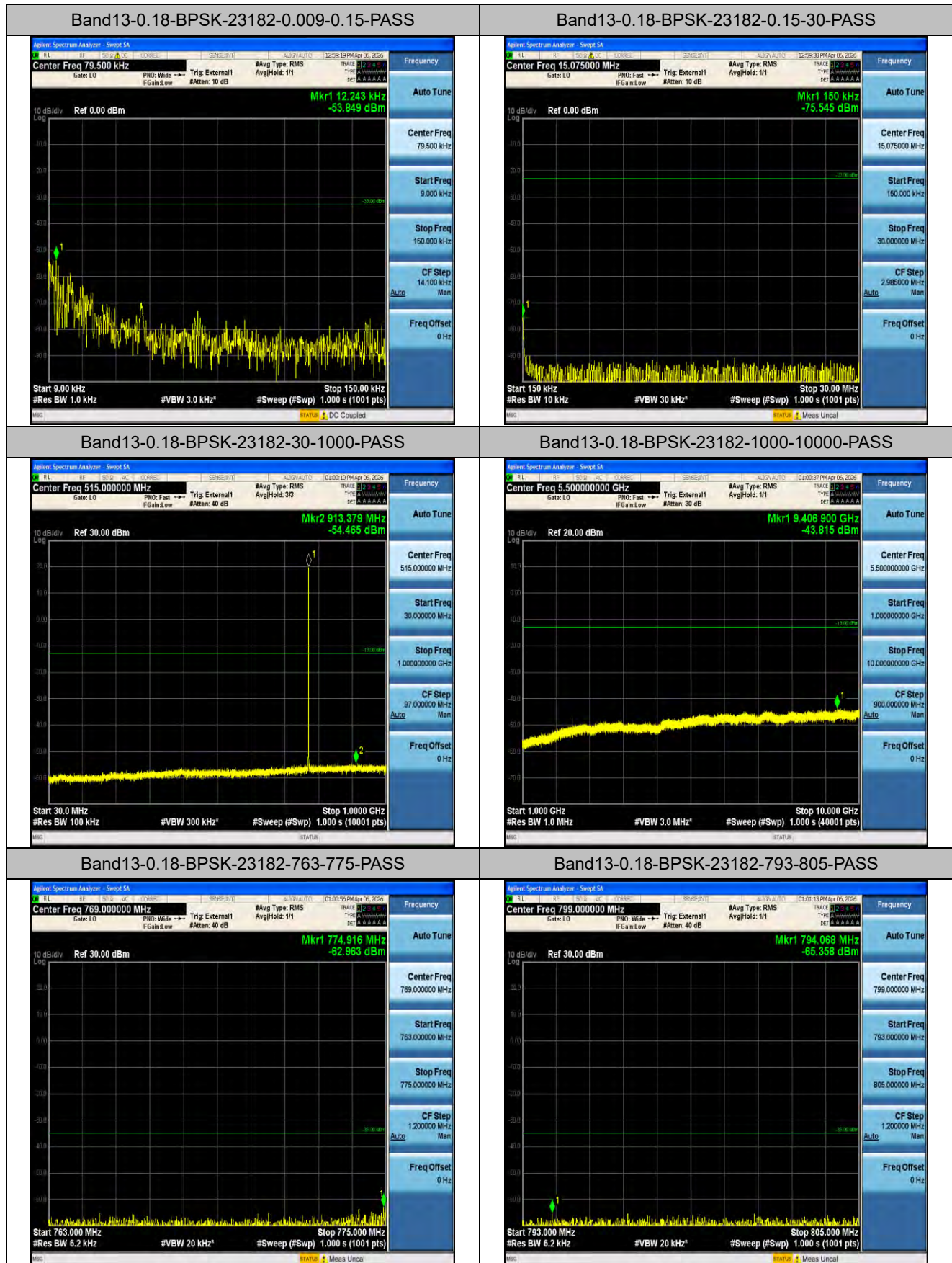


Band13-0.18-BPSK-23278-PASS

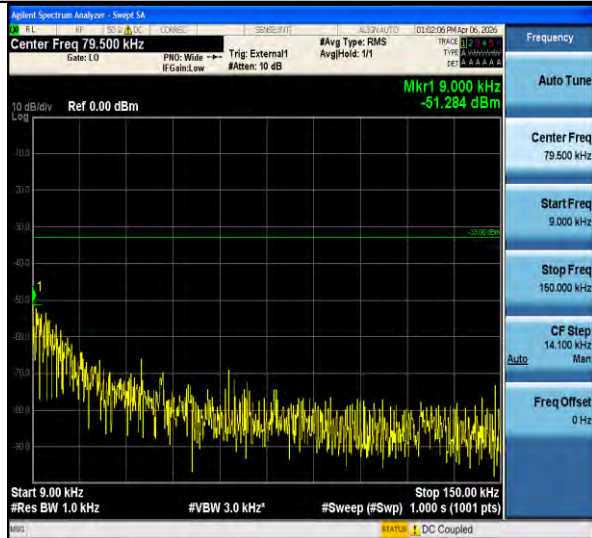


Conducted Spurious Emission for NB

Test Graphs



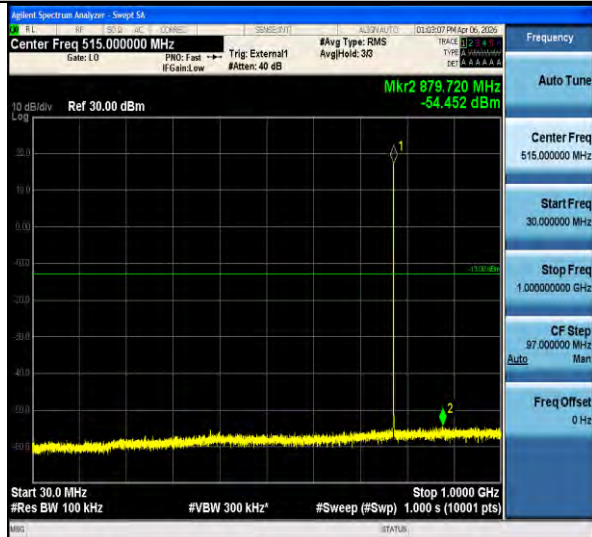
Band13-0.18-BPSK-23182-0.009-0.15-PASS



Band13-0.18-BPSK-23182-0.15-30-PASS



Band13-0.18-BPSK-23182-30-1000-PASS



Band13-0.18-BPSK-23182-1000-10000-PASS



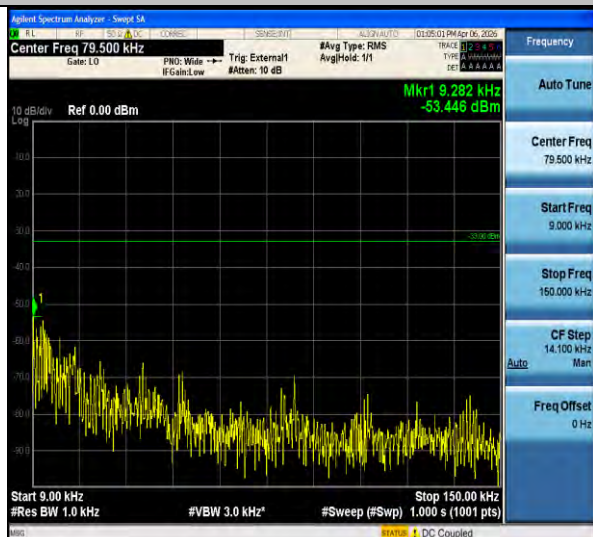
Band13-0.18-BPSK-23182-763-775-PASS



Band13-0.18-BPSK-23182-793-805-PASS



Band13-0.18-BPSK-23230-0.009-0.15-PASS



Band13-0.18-BPSK-23230-0.15-30-PASS



Band13-0.18-BPSK-23230-30-1000-PASS



Band13-0.18-BPSK-23230-1000-10000-PASS

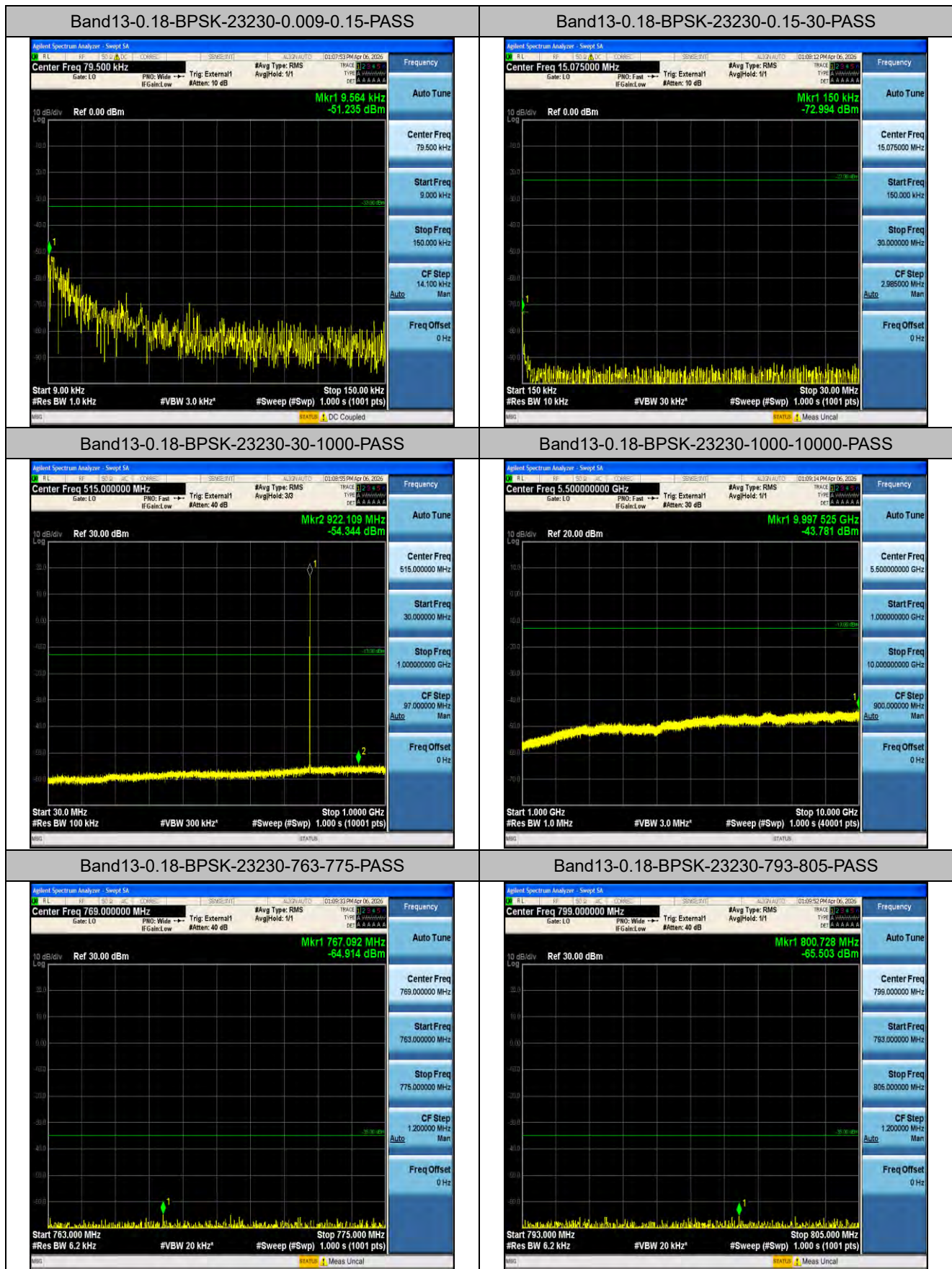


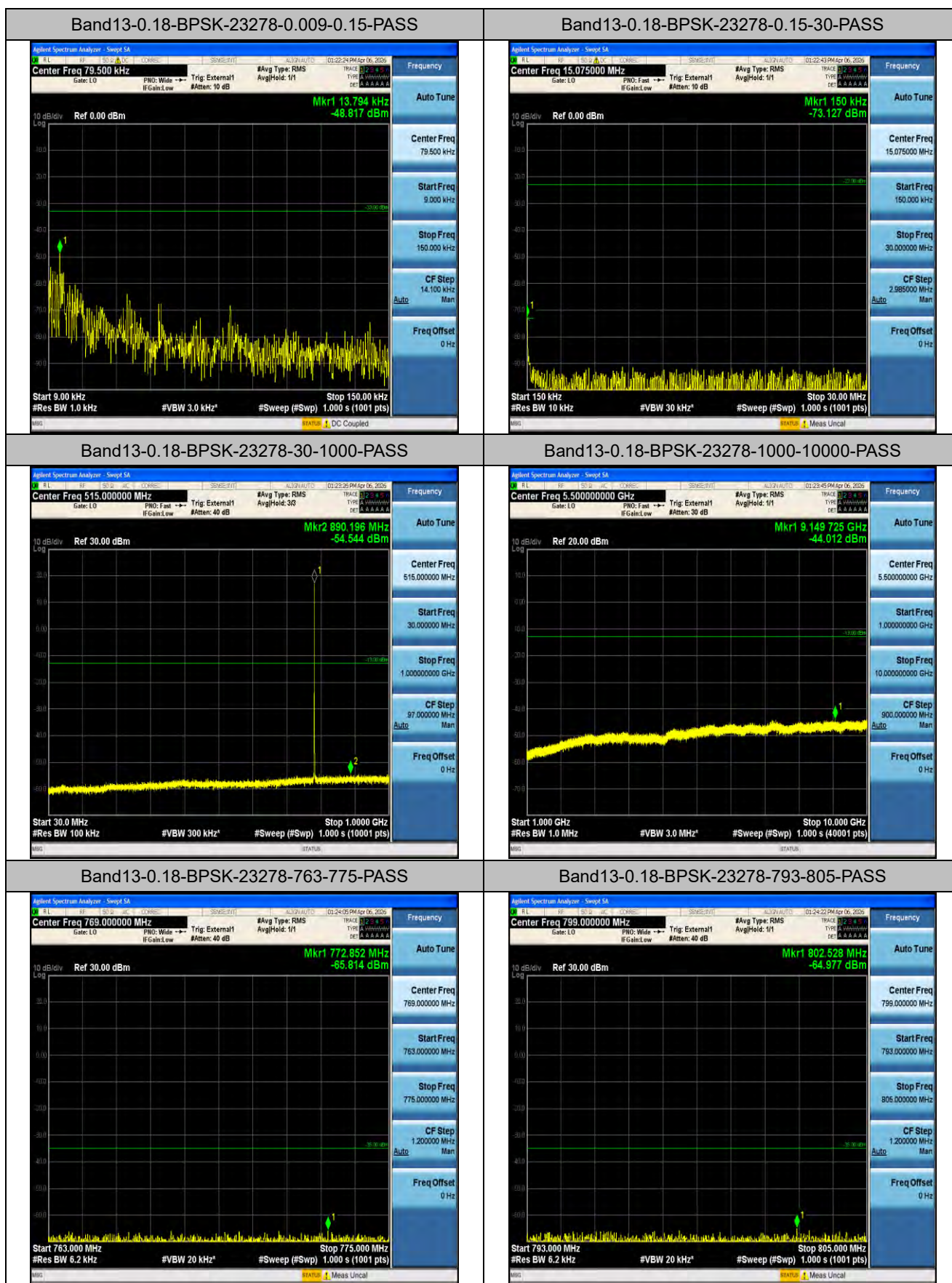
Band13-0.18-BPSK-23230-763-775-PASS

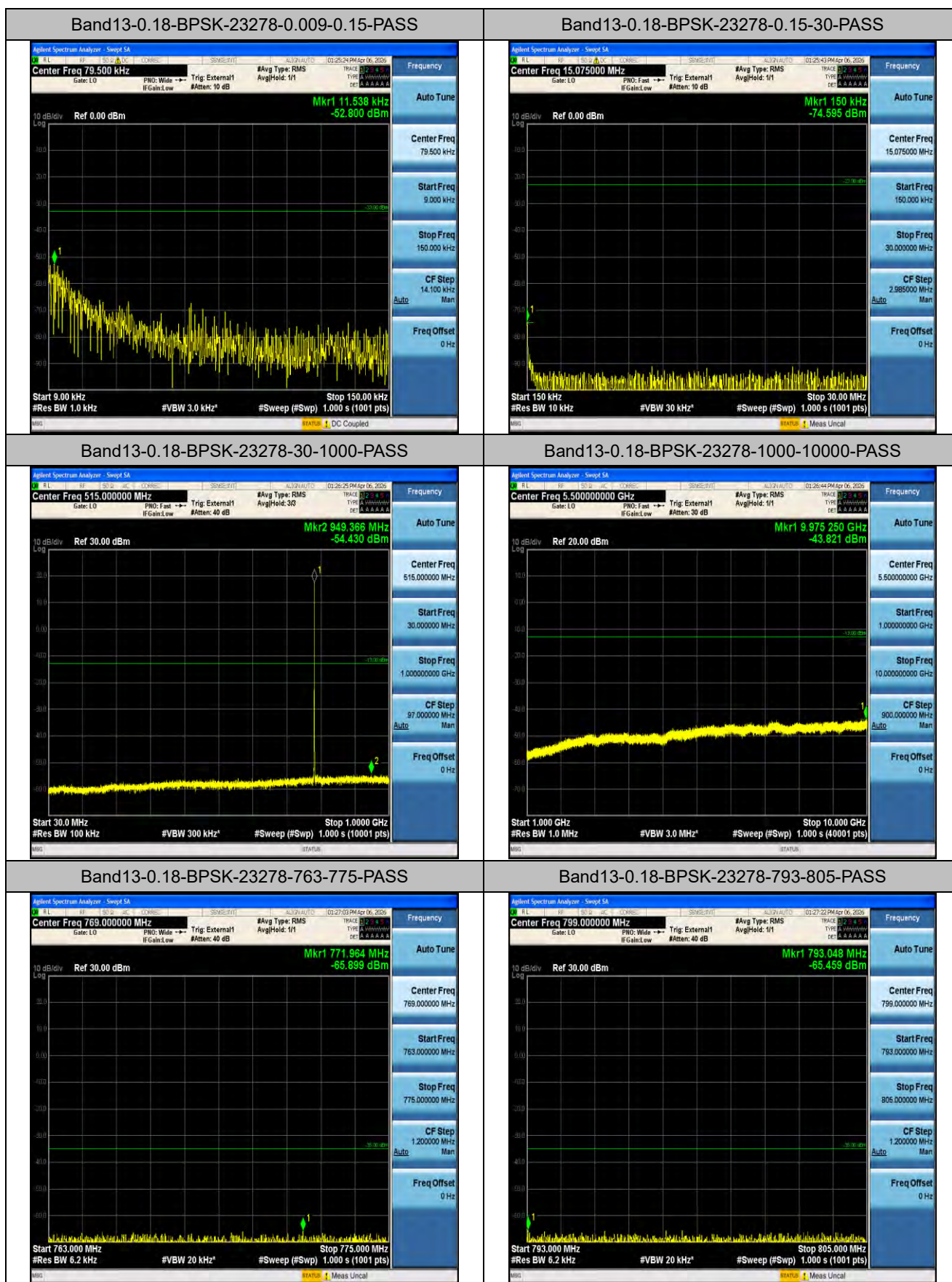


Band13-0.18-BPSK-23230-793-805-PASS









Frequency Stability for NB

Test Result

Voltage											
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	VN	NT	-4.80	-0.006138	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	VL	NT	-6.10	-0.007801	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	VH	NT	-5.60	-0.007161	PASS

Temperature											
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	NV	-30	-5.30	-0.006777	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	NV	-20	-5.30	-0.006777	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	NV	-10	-4.30	-0.005499	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	NV	0	-4.50	-0.005754	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	NV	10	-5.40	-0.006905	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	NV	20	-6.40	-0.008184	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	NV	30	-5.00	-0.006394	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	NV	40	-5.50	-0.007033	PASS
Band13	Stand-Alone	15kHz	0.18	QPSK	23230	12@0	NV	50	-5.10	-0.006522	PASS

~The End~