

Appendix-B LTE NB-IoT Band 4

Effective (Isotropic) Radiated Power Output Data for NB

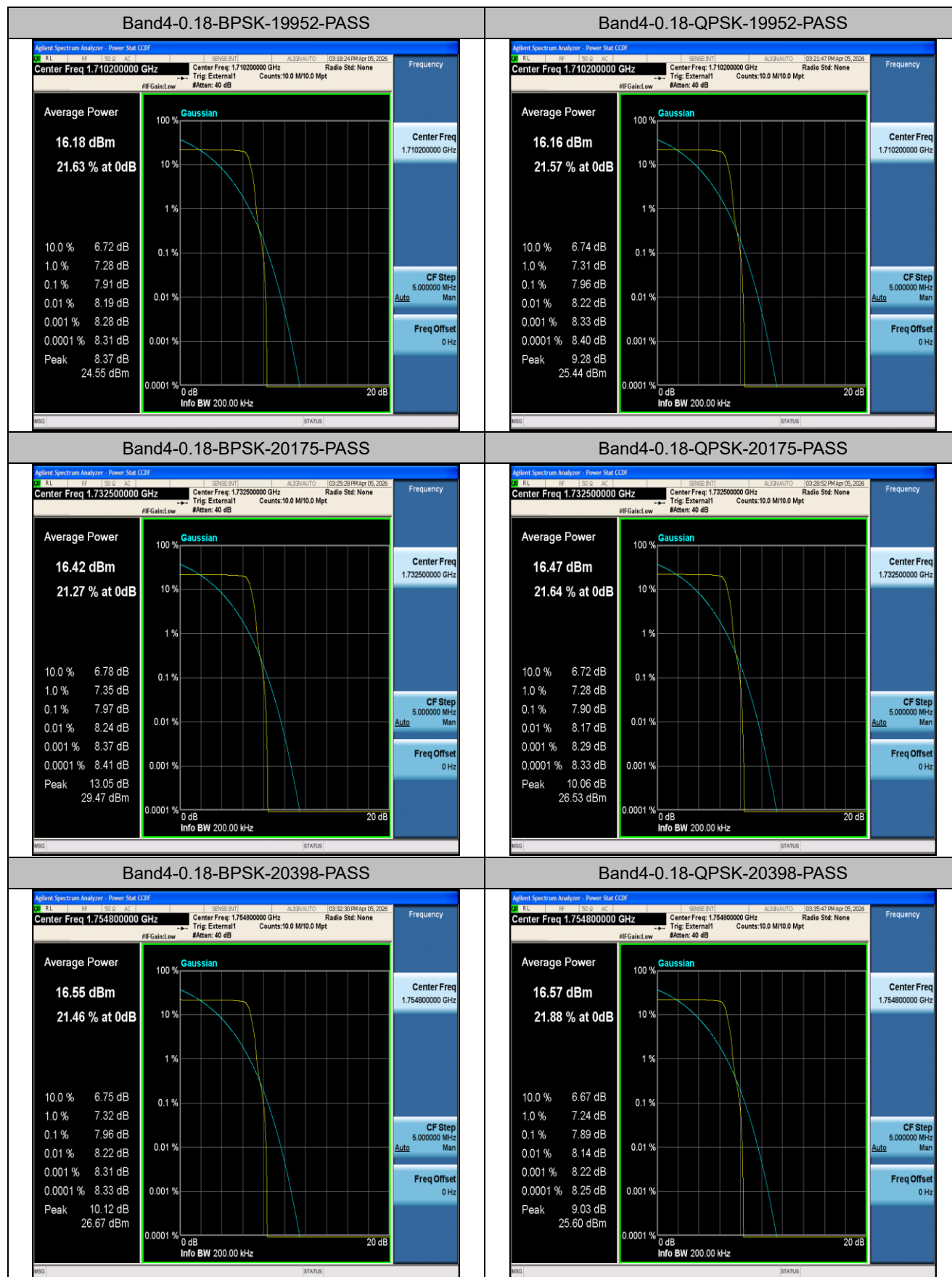
Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dBm)	EIRP (dBm)	Limit (dBm)	Verdict
Band4	Stand-Alone	3.75kHz	0.18	BPSK	19952	1@0	21.86	26.66	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	19952	1@0	21.77	26.57	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	19952	1@47	21.78	26.58	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	19952	1@47	21.82	26.62	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20175	1@0	22.18	26.98	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	22.12	26.92	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20175	1@47	22.07	26.87	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@47	22.1	26.9	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20398	1@0	22.17	26.97	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20398	1@0	22.17	26.97	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20398	1@47	22.15	26.95	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20398	1@47	22.06	26.86	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	19952	1@0	22.25	27.05	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	1@0	22.23	27.03	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	19952	1@11	22.17	26.97	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	1@11	22.21	27.01	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20175	1@0	22.56	27.36	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	22.54	27.34	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20175	1@11	22.55	27.35	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@11	22.58	27.38	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20398	1@0	22.57	27.37	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	1@0	22.59	27.39	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20398	1@11	22.57	27.37	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	1@11	22.58	27.38	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	3@3	22.93	27.73	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	3@3	23.26	28.06	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	3@3	23.21	28.01	30.00	PASS

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

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dB)	Limit (dB)	Verdict
Band4	Stand-Alone	15kHz	0.18	BPSK	19952	12@0	7.91	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	12@0	7.96	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20175	12@0	7.97	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	7.9	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20398	12@0	7.96	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	12@0	7.89	<=13	PASS

Test Graphs

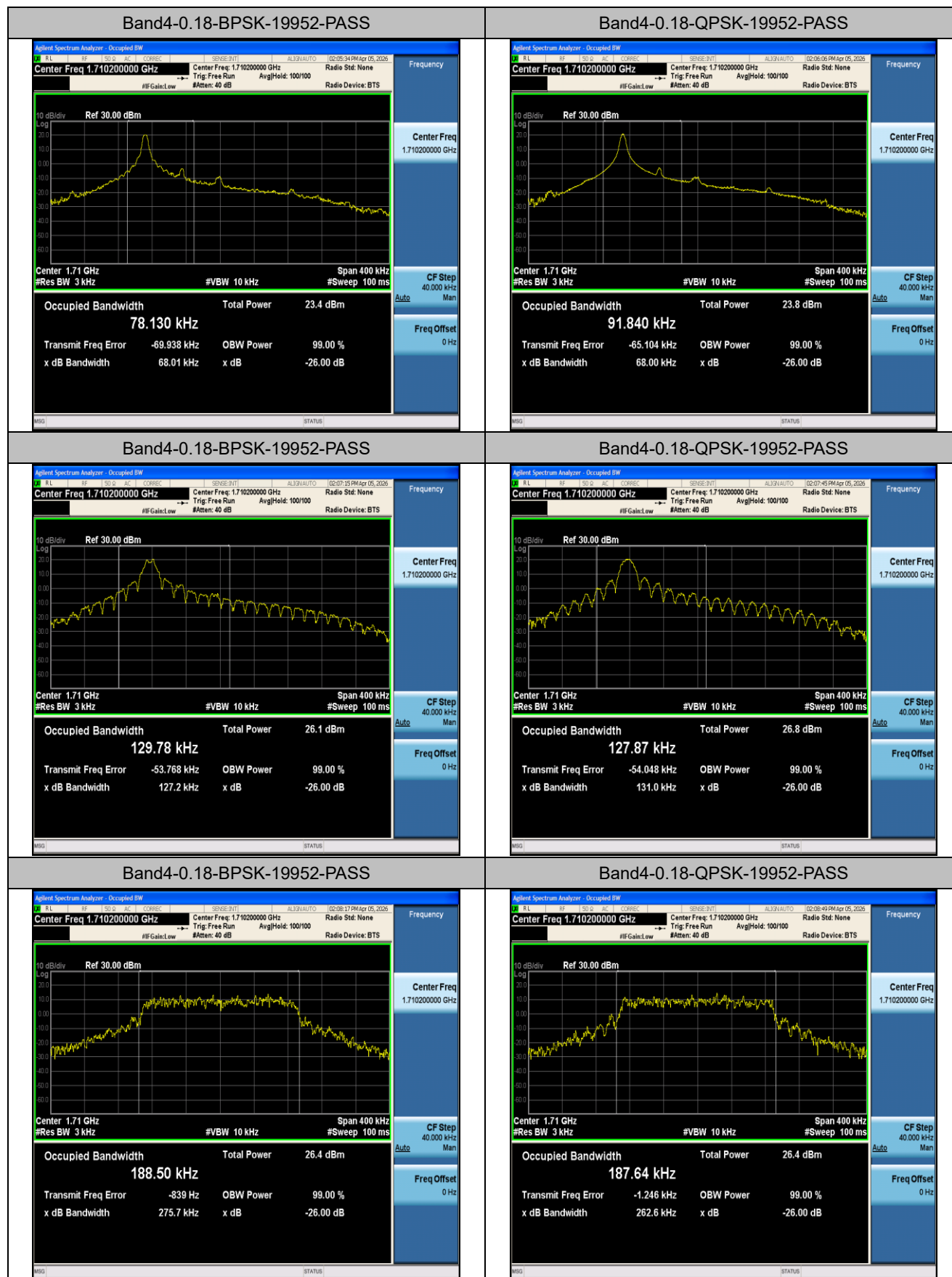


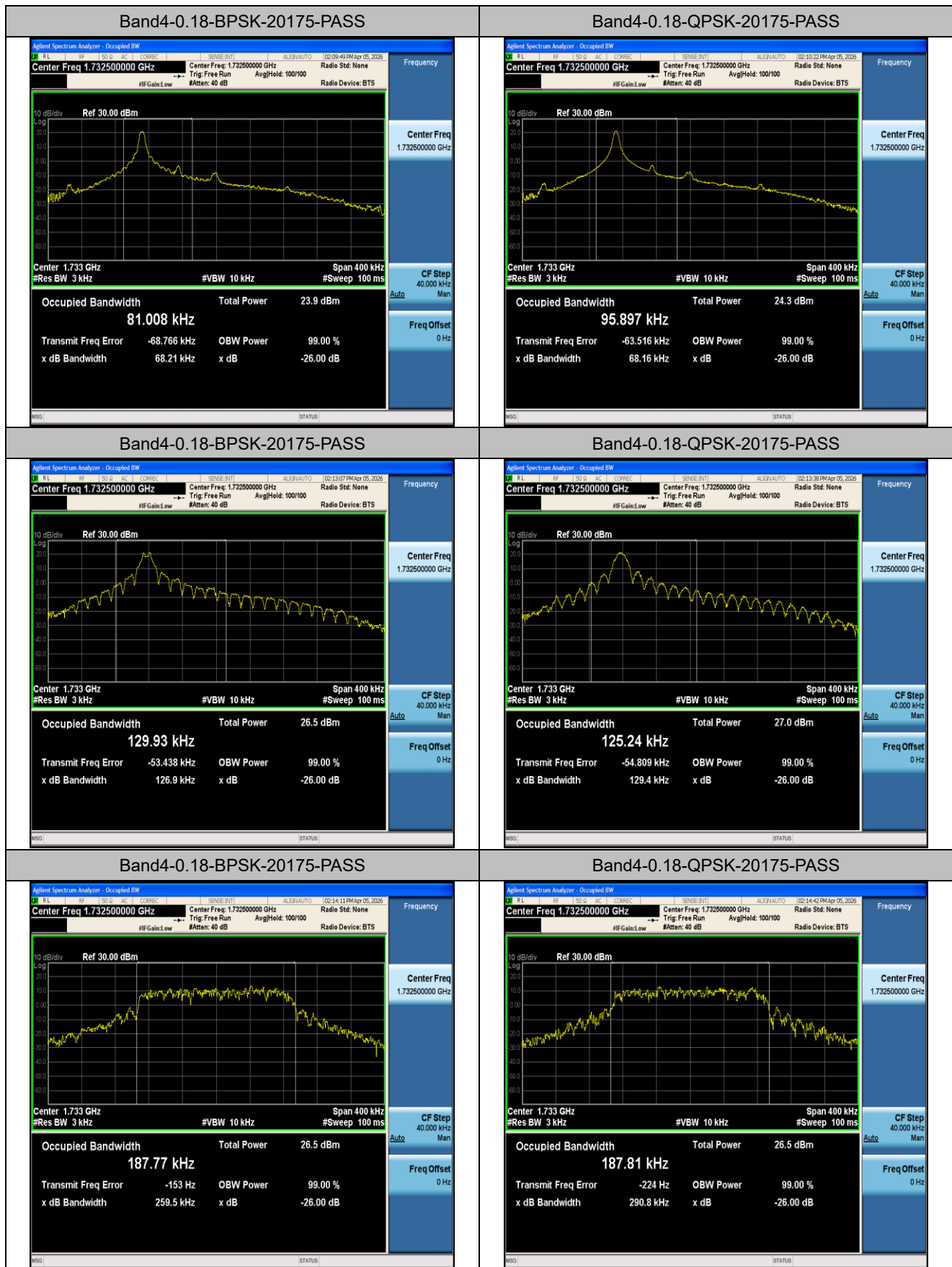
Emission Bandwidth for NB

Test Result

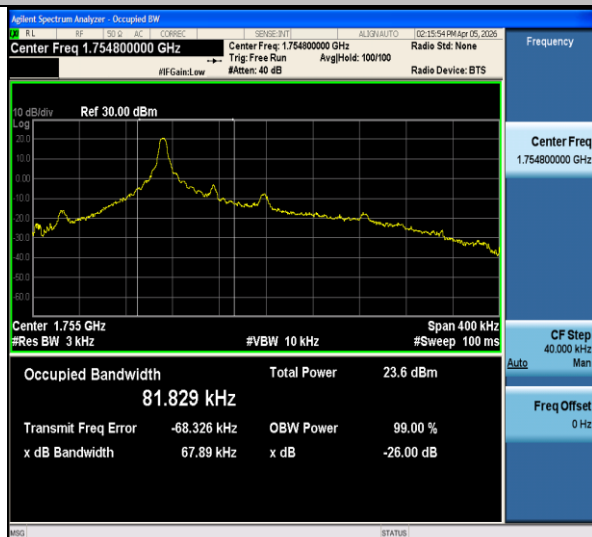
Band	OpMode	SCS	BW	Modulation	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
Band4	Stand-Alone	3.75kHz	0.18	BPSK	19952	1@0	0.07813	0.0680	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	19952	1@0	0.09184	0.0680	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	19952	1@0	0.12978	0.1272	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	1@0	0.12787	0.1310	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	19952	12@0	0.18850	0.2757	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	12@0	0.18764	0.2626	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20175	1@0	0.08101	0.0682	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	0.09590	0.0682	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20175	1@0	0.12993	0.1269	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	0.12524	0.1294	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20175	12@0	0.18777	0.2595	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	0.18781	0.2908	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20398	1@0	0.08183	0.0679	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20398	1@0	0.09728	0.0680	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20398	1@0	0.12982	0.1280	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	1@0	0.12946	0.1436	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20398	12@0	0.19103	0.2690	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	12@0	0.19171	0.2632	PASS

Test Graphs

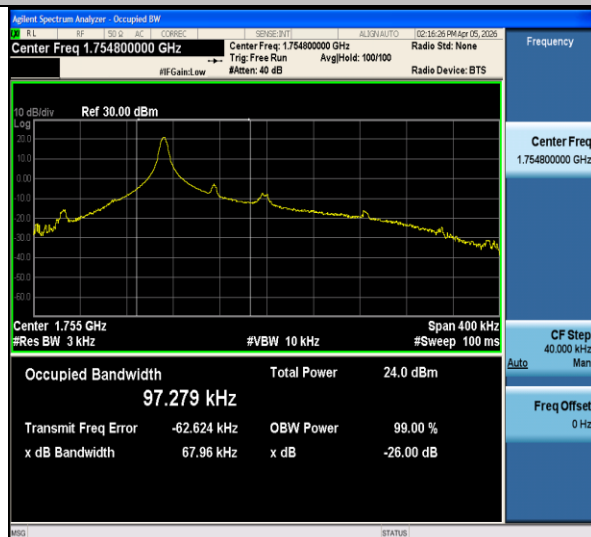




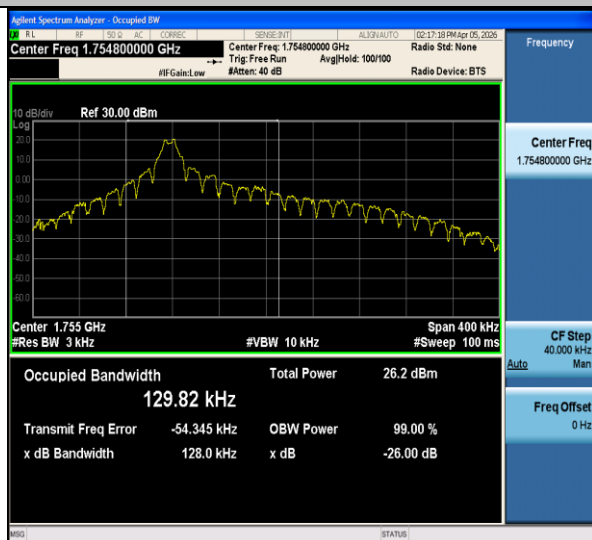
Band4-0.18-BPSK-20398-PASS



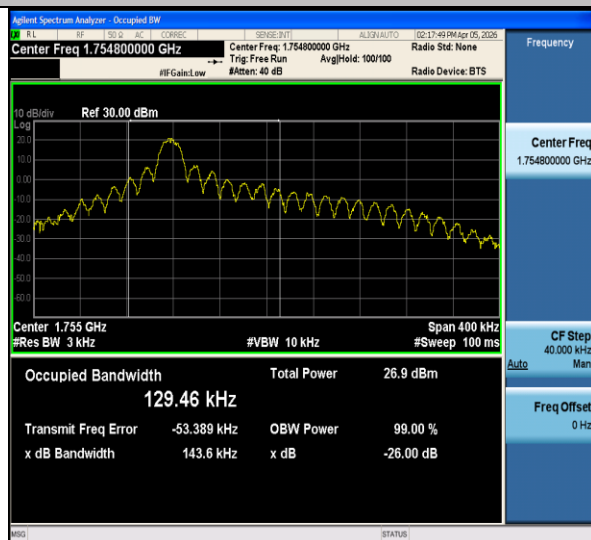
Band4-0.18-QPSK-20398-PASS



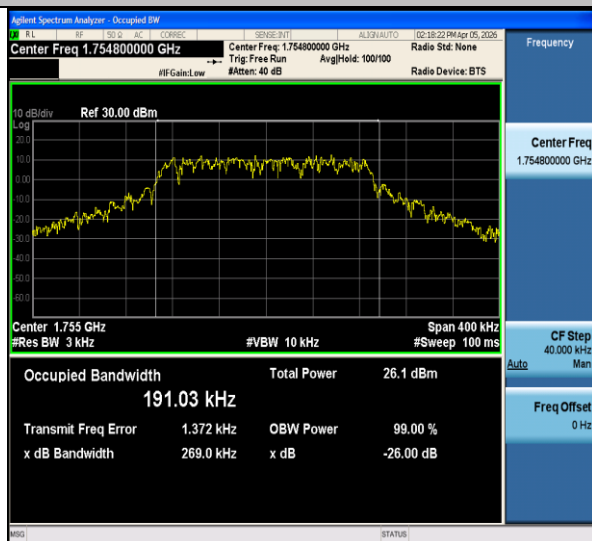
Band4-0.18-BPSK-20398-PASS



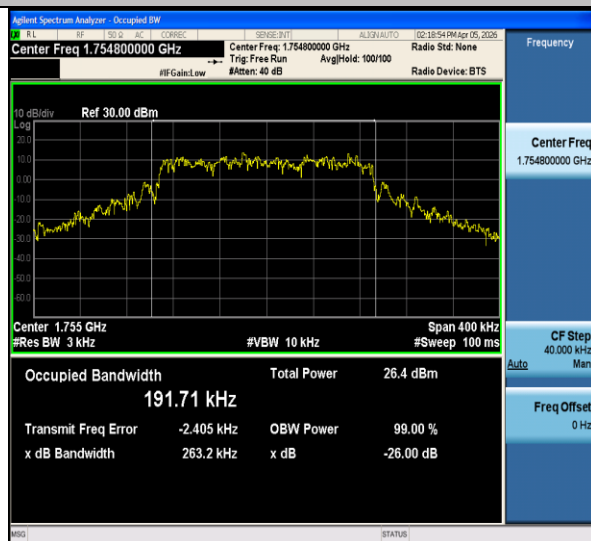
Band4-0.18-QPSK-20398-PASS



Band4-0.18-BPSK-20398-PASS

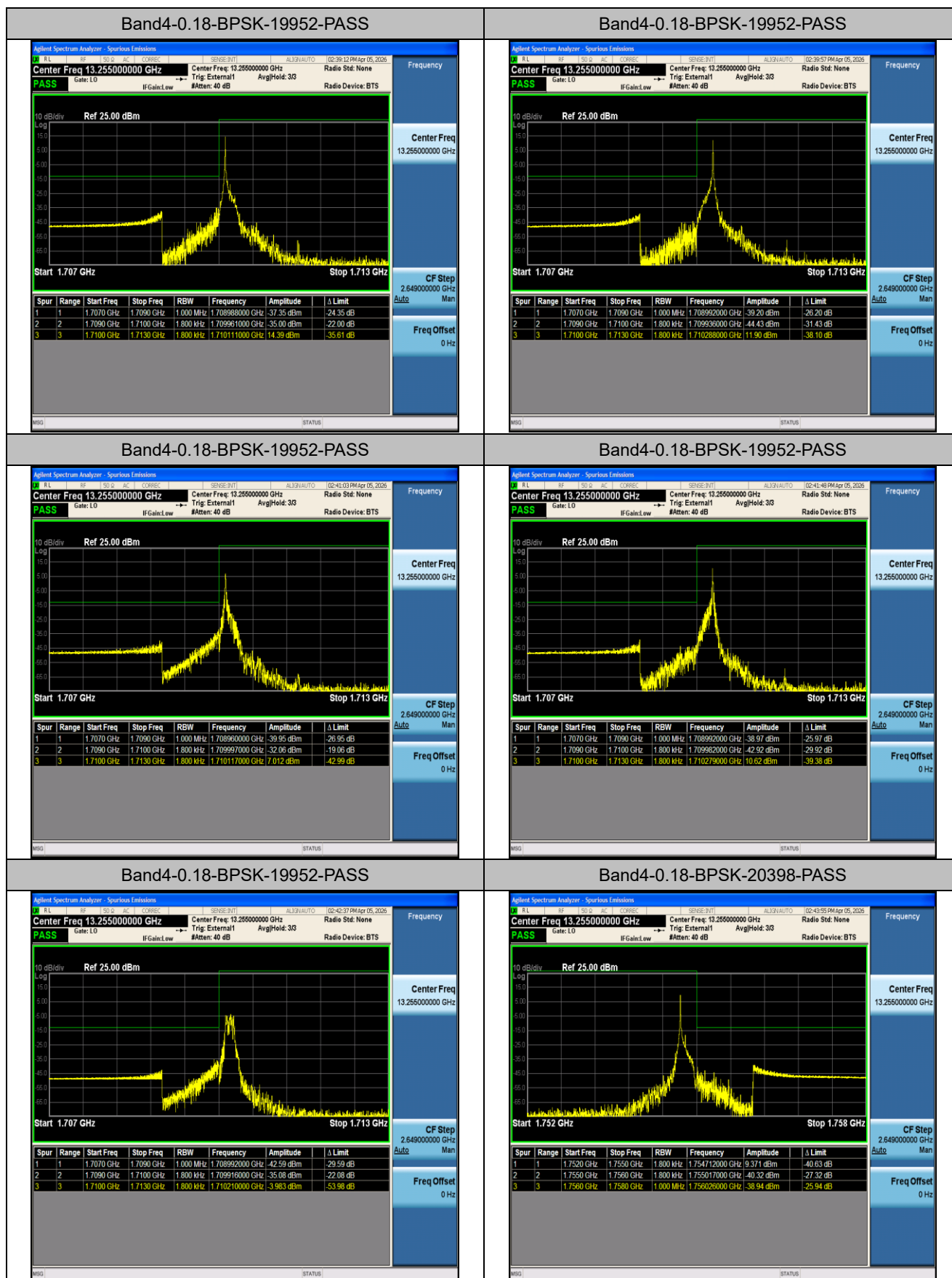


Band4-0.18-QPSK-20398-PASS

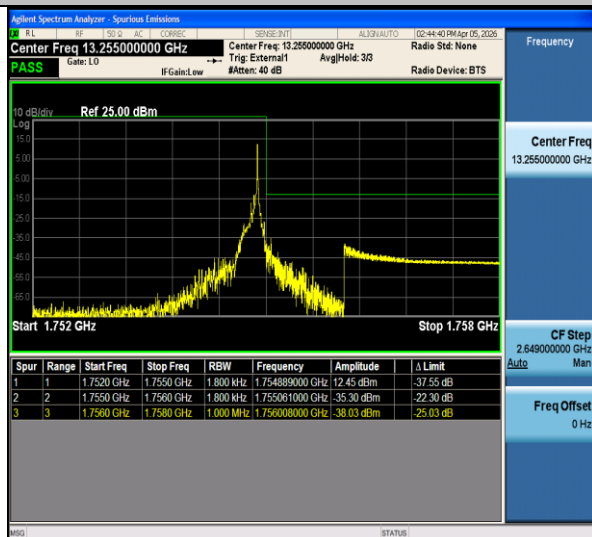


Band Edge for NB

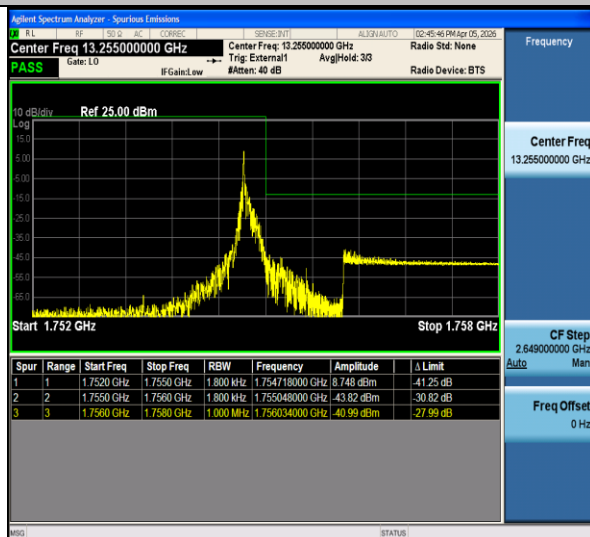
Test Graphs



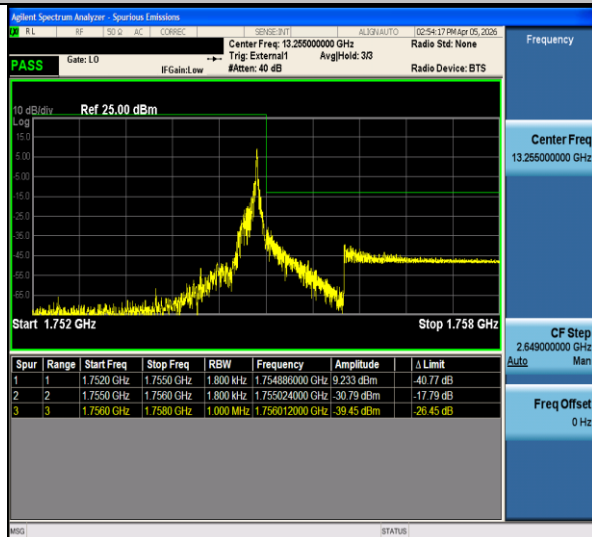
Band4-0.18-BPSK-20398-PASS



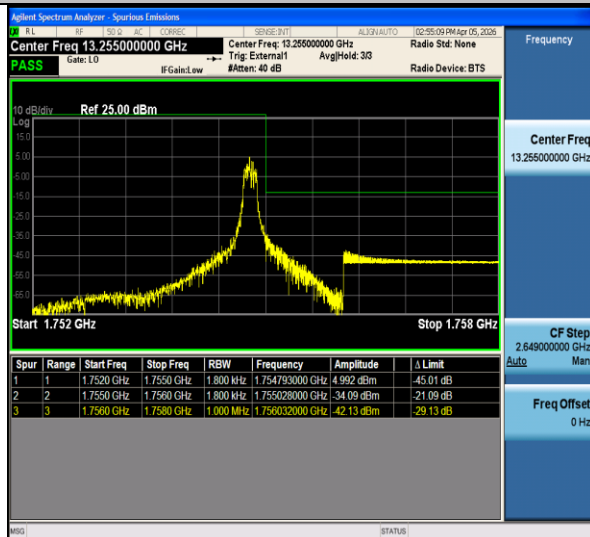
Band4-0.18-BPSK-20398-PASS



Band4-0.18-BPSK-20398-PASS

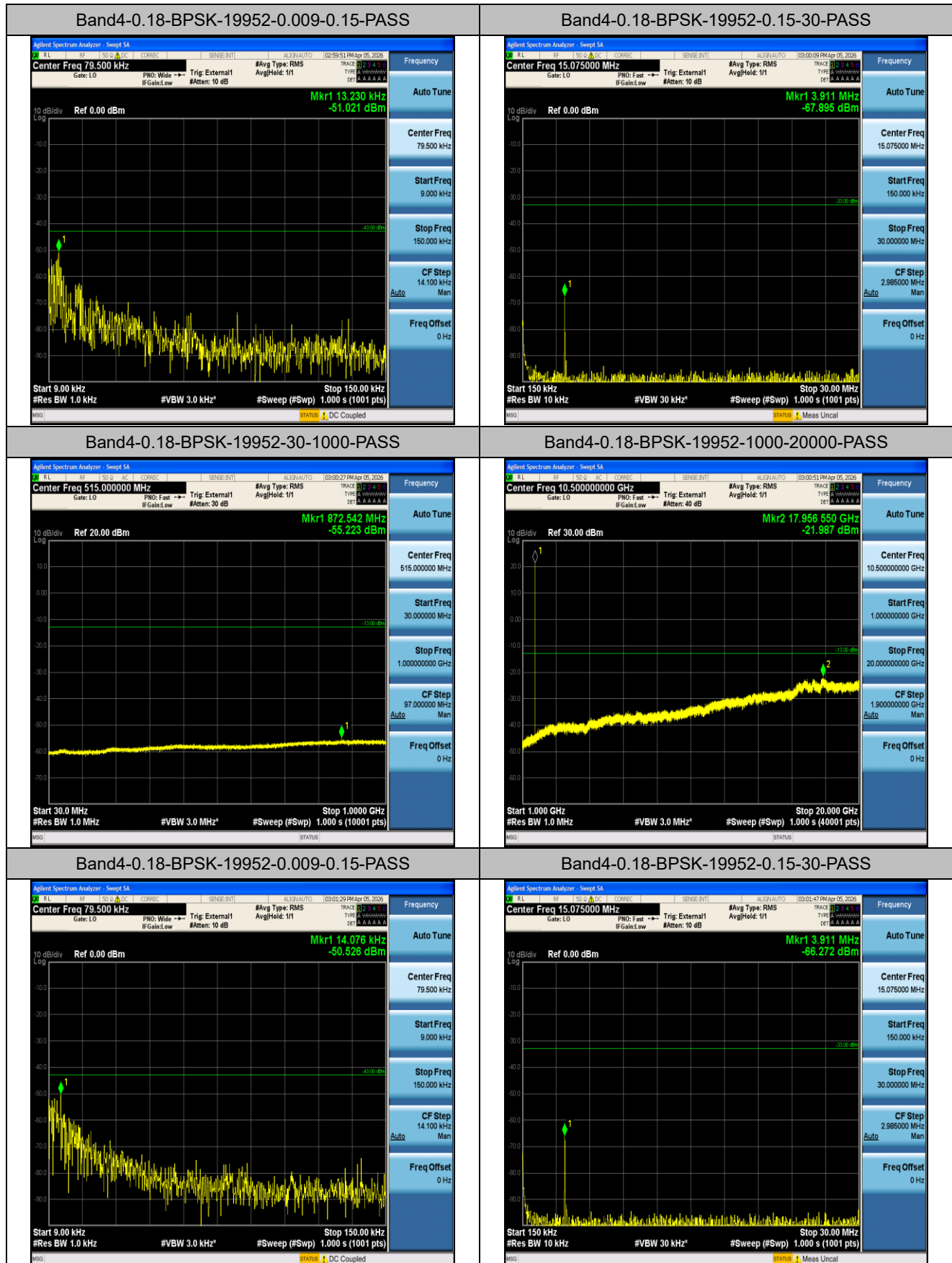


Band4-0.18-BPSK-20398-PASS

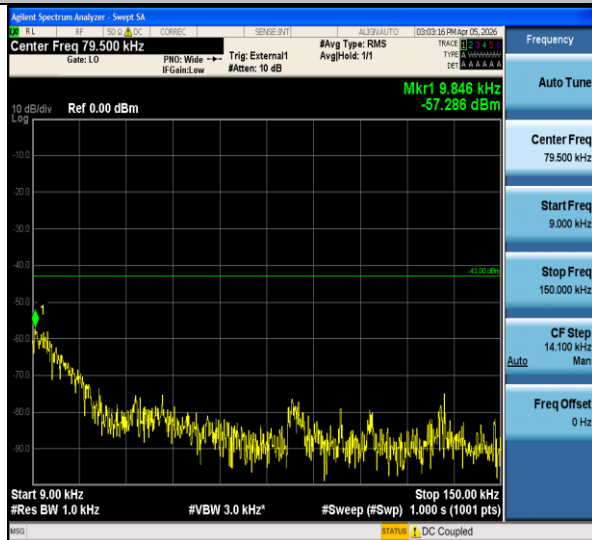


Conducted Spurious Emission for NB

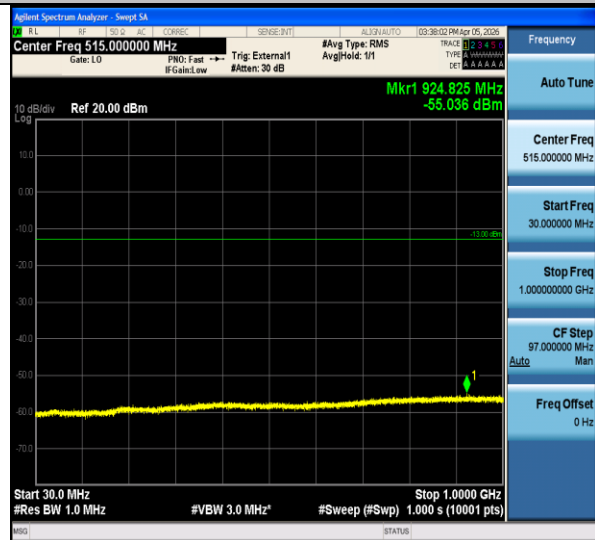
Test Graphs



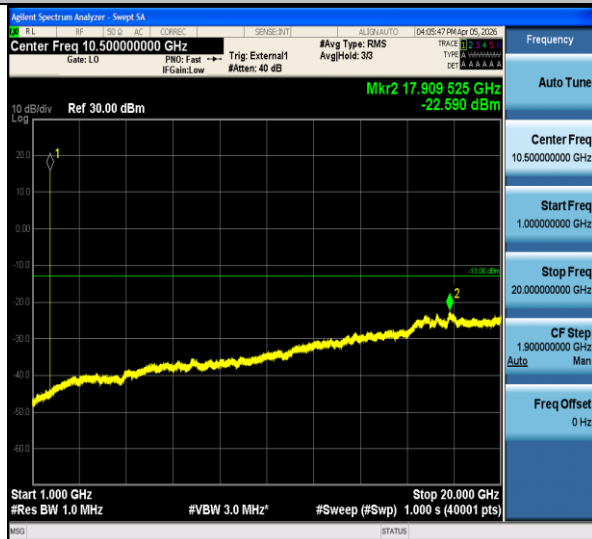
Band4-0.18-BPSK-20175-0.009-0.15-PASS



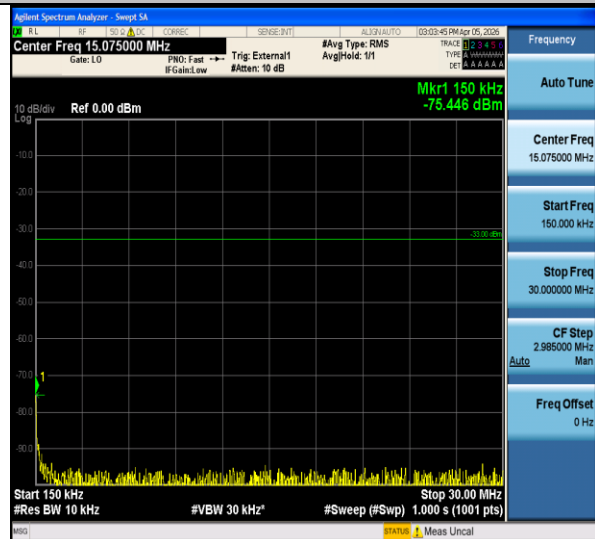
Band4-0.18-BPSK-19952-30-1000-PASS



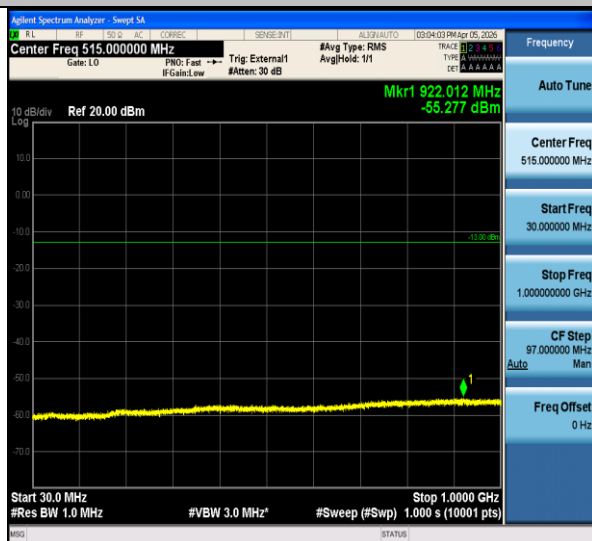
Band4-0.18-BPSK-19952-1000-20000-PASS



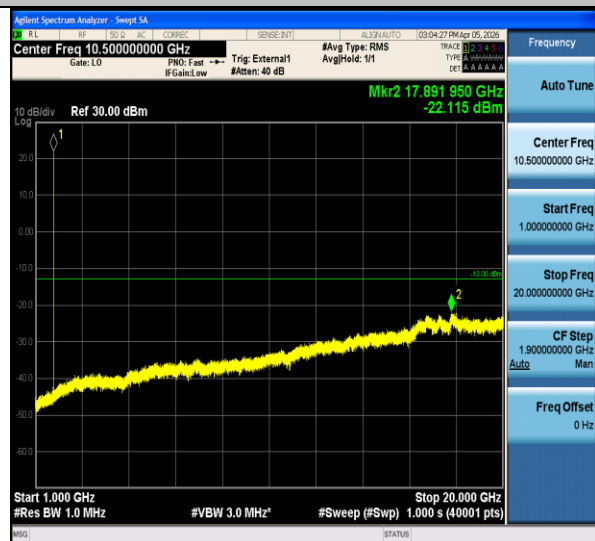
Band4-0.18-BPSK-20175-0.15-30-PASS



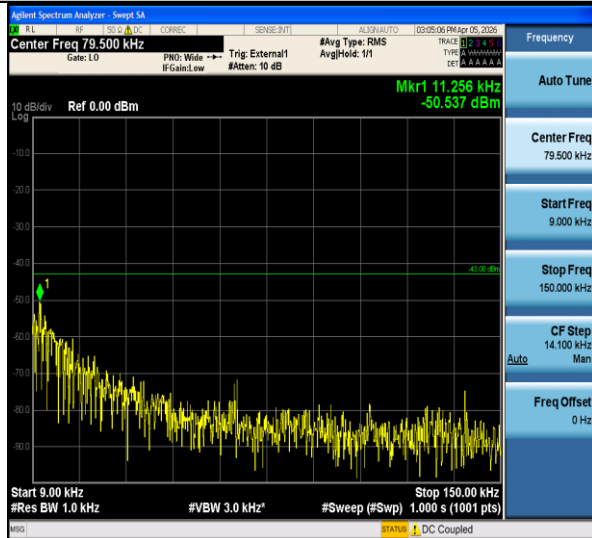
Band4-0.18-BPSK-20175-30-1000-PASS



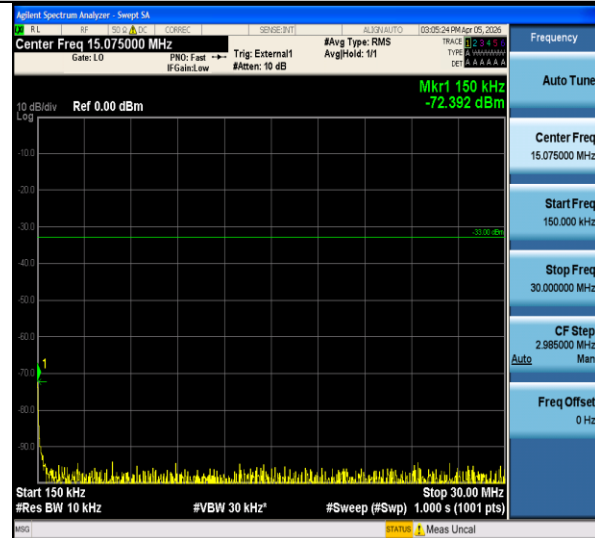
Band4-0.18-BPSK-20175-1000-20000-PASS



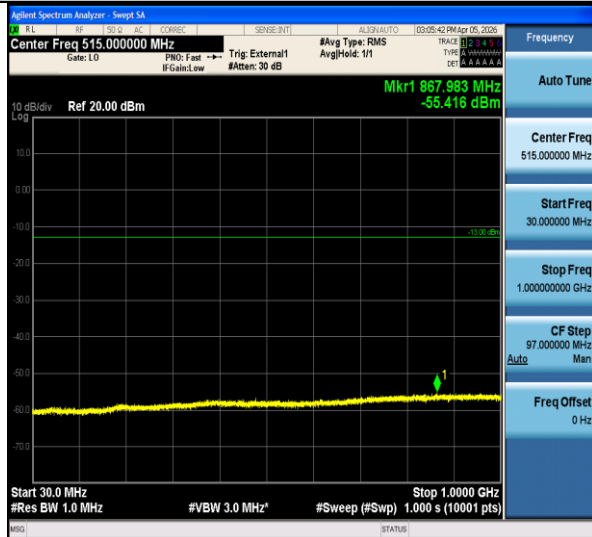
Band4-0.18-BPSK-20175-0.009-0.15-PASS



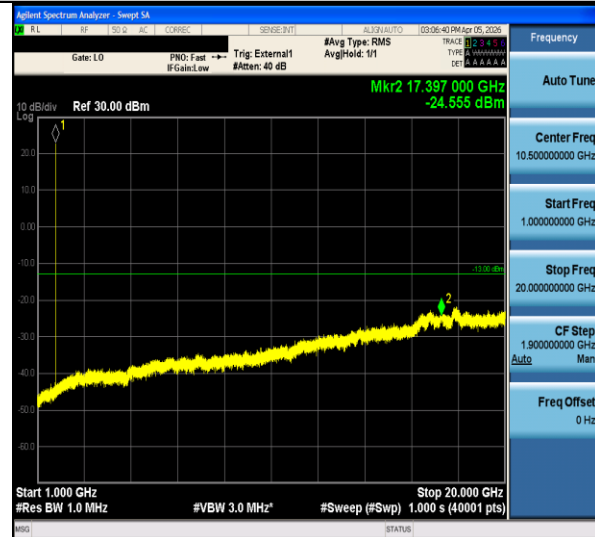
Band4-0.18-BPSK-20175-0.15-30-PASS



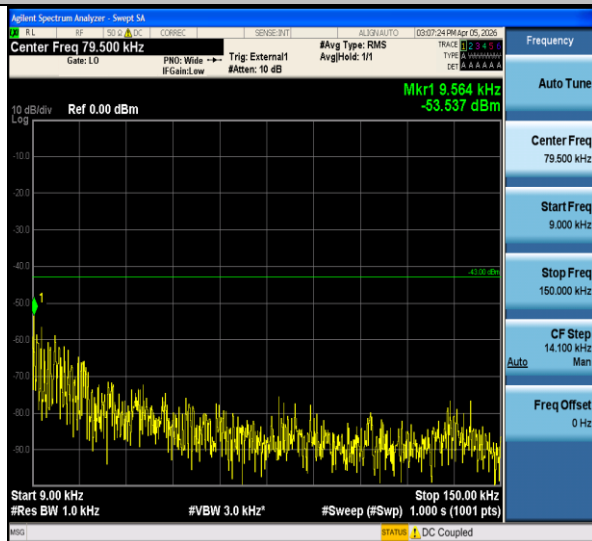
Band4-0.18-BPSK-20175-30-1000-PASS



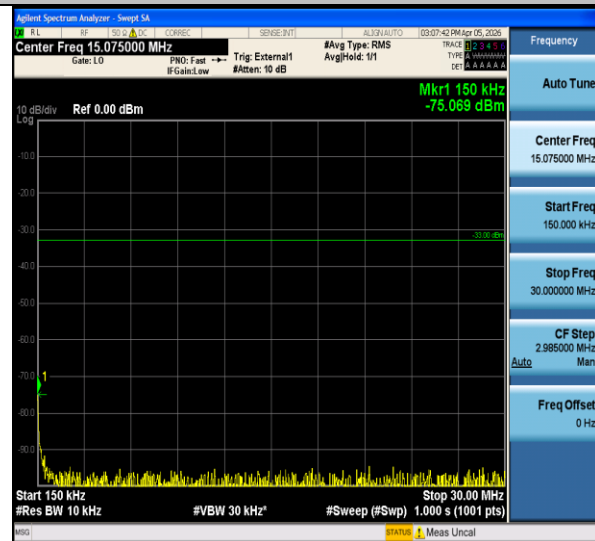
Band4-0.18-BPSK-20175-1000-20000-PASS

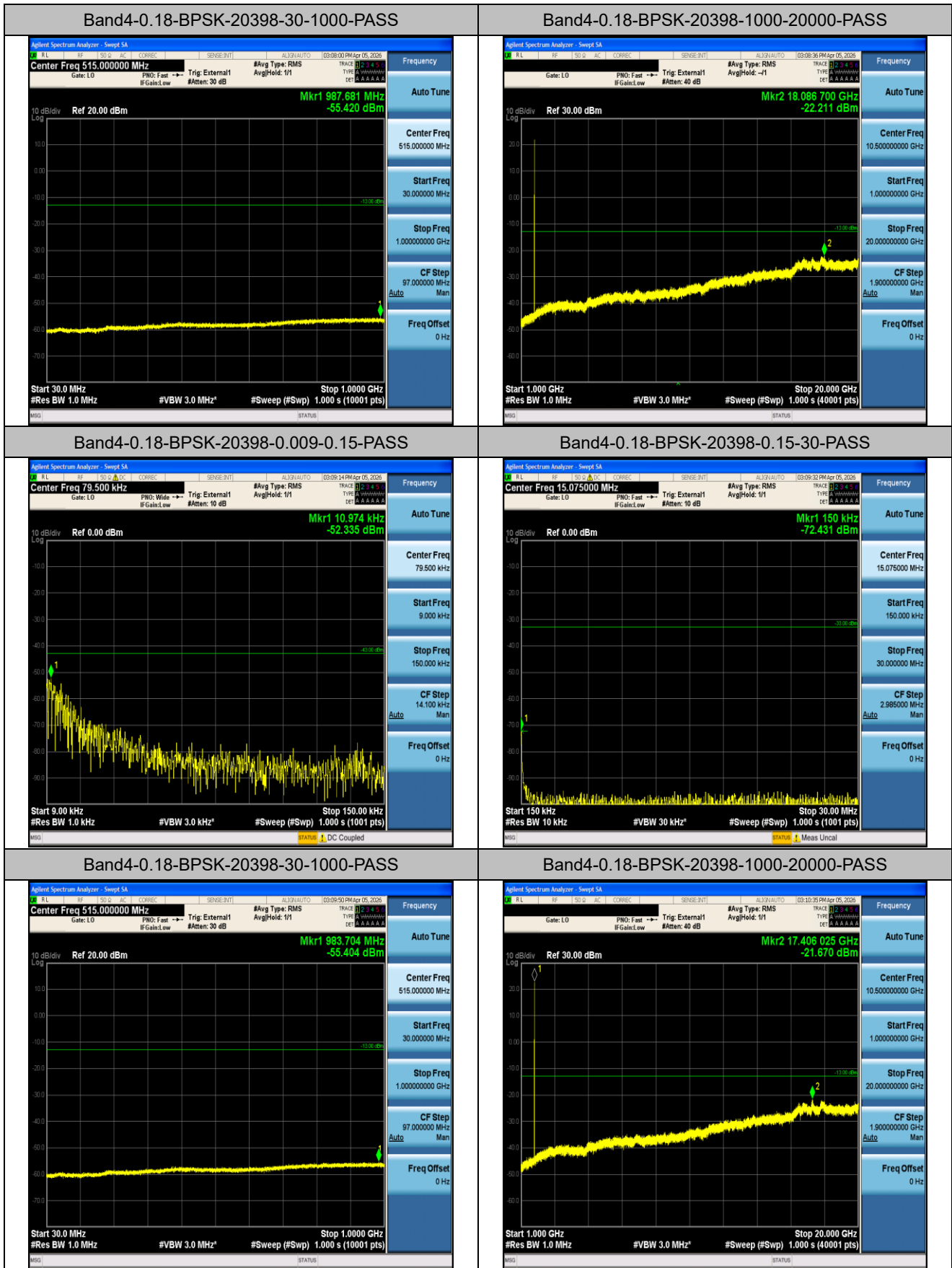


Band4-0.18-BPSK-20398-0.009-0.15-PASS



Band4-0.18-BPSK-20398-0.15-30-PASS





Frequency Stability for NB**Test Result**

Voltage											
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	VN	NT	22.70	0.013102	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	VL	NT	22.80	0.013160	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	VH	NT	24.00	0.013853	PASS

Temperature											
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	NV	-30	25.40	0.014661	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	NV	-20	25.10	0.014488	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	NV	-10	18.50	0.010678	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	NV	0	19.60	0.011313	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	NV	10	22.70	0.013102	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	NV	20	21.80	0.012583	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	NV	30	20.70	0.011948	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	NV	40	20.70	0.011948	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	NV	50	21.50	0.012410	PASS

~The End~