

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	Verdict
Band4	Stand-Alone	3.75kHz	0.18	BPSK	19952	1@0	22.12	24.12	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	19952	1@0	22.1	24.1	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	19952	1@47	22.13	24.13	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	19952	1@47	22.11	24.11	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20175	1@0	21.88	23.88	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	21.92	23.92	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20175	1@47	21.9	23.9	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@47	21.88	23.88	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20398	1@0	22.07	24.07	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20398	1@0	22.01	24.01	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20398	1@47	21.98	23.98	30.00	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20398	1@47	21.89	23.89	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	19952	1@0	22.2	24.2	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	1@0	22.2	24.2	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	19952	1@11	22.12	24.12	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	1@11	22.13	24.13	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20175	1@0	21.93	23.93	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	21.91	23.91	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20175	1@11	21.81	23.81	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@11	21.83	23.83	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20398	1@0	21.22	23.22	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	1@0	21.22	23.22	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20398	1@11	21.12	23.12	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	1@11	21.12	23.12	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	3@3	21.52	23.52	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	3@3	21.13	23.13	30.00	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	3@3	21.39	23.39	30.00	PASS

Peak-to-Average Ratio(CCDF) for NB

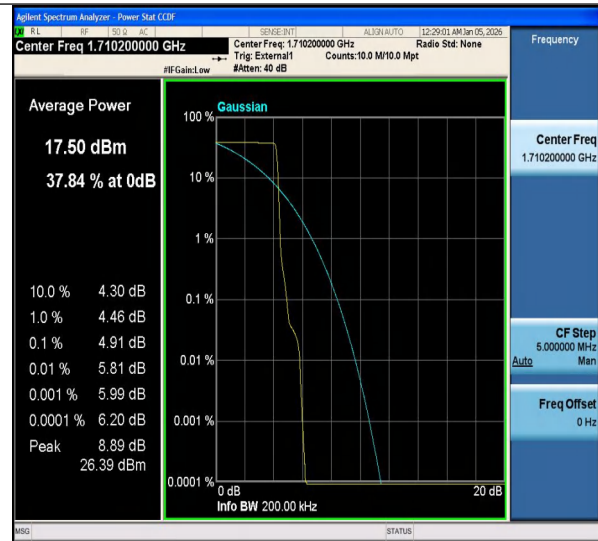
Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	Result (dBm)	Limit (dBm)	Verdict
Band4	Stand-Alone	3.75kHz	0.18	QPSK	19952	1@0	5.19	<=13	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	19952	1@47	4.91	<=13	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	5.16	<=13	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@47	4.95	<=13	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20398	1@0	5.17	<=13	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20398	1@47	4.98	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	1@0	6.66	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	1@11	6.95	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	6.62	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@11	6.98	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	1@0	6.67	<=13	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	1@11	6.91	<=13	PASS

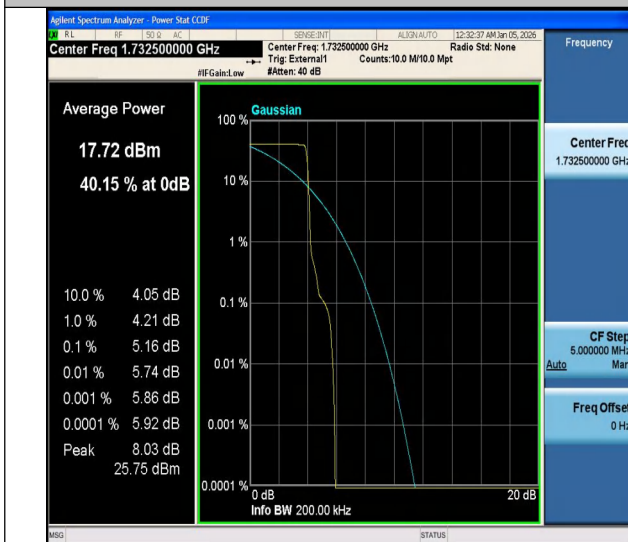
Test Graphs



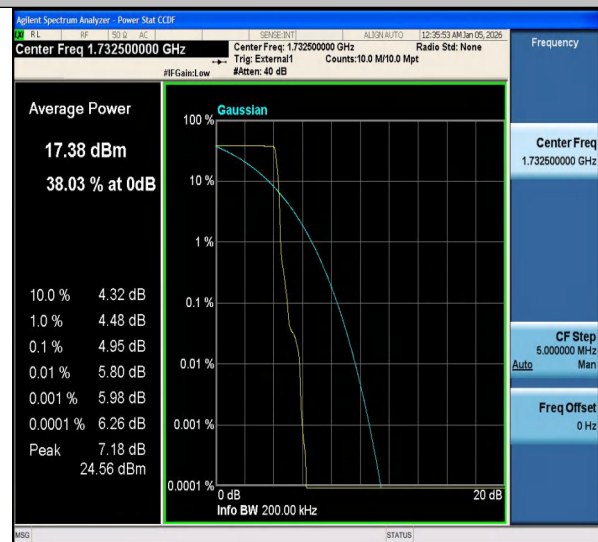
Band4-0.18-QPSK-19952-PASS



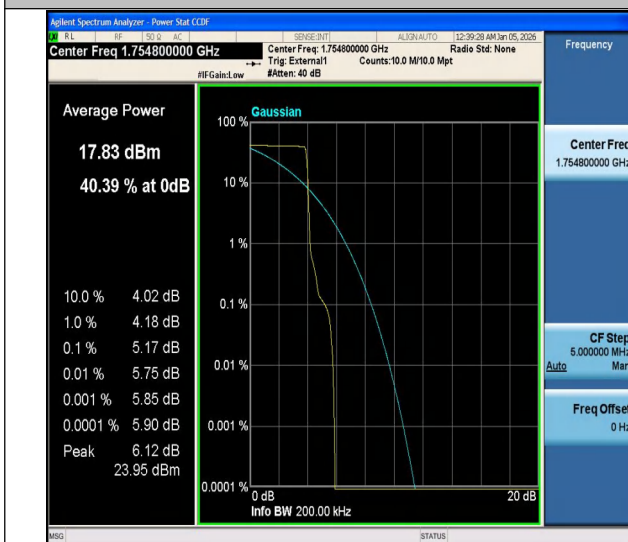
Band4-0.18-QPSK-19952-PASS



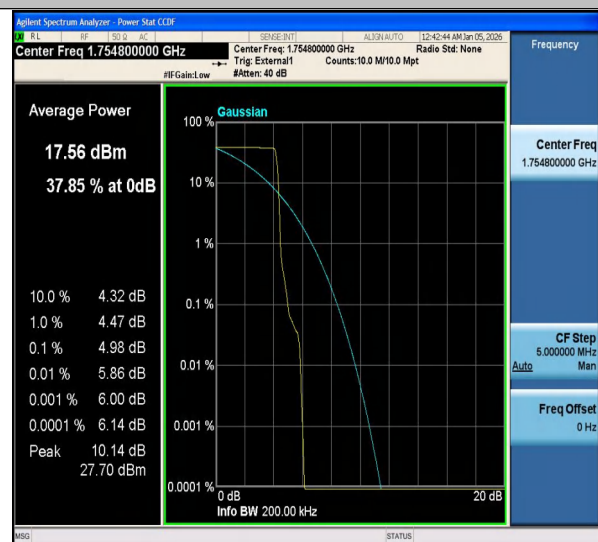
Band4-0.18-QPSK-19952-PASS



Band4-0.18-QPSK-19952-PASS



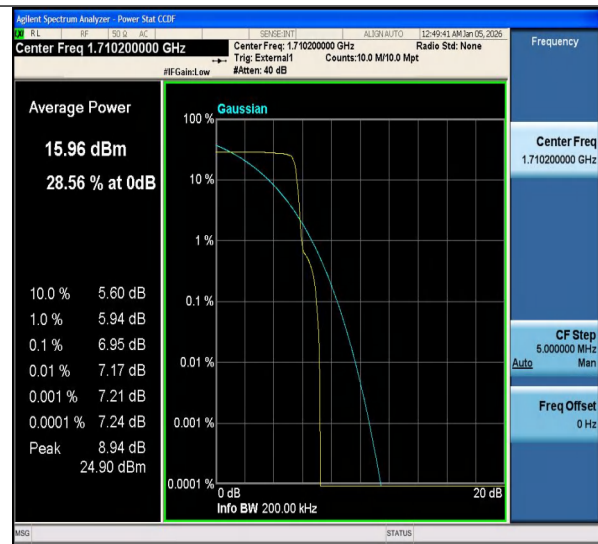
Band4-0.18-QPSK-19952-PASS



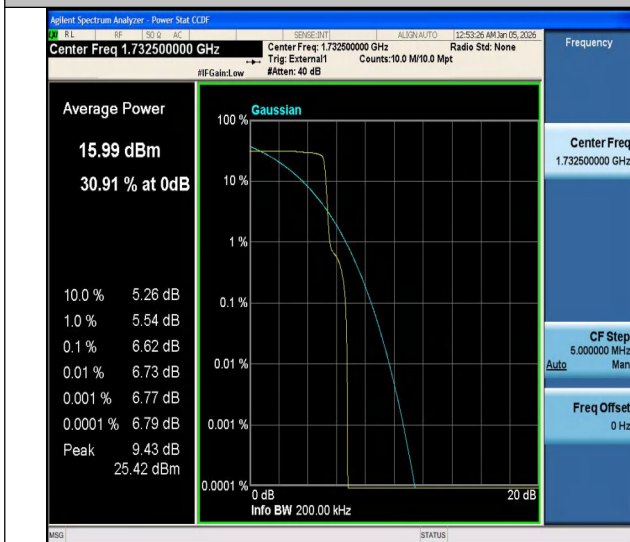
Band4-0.18-QPSK-19952-PASS



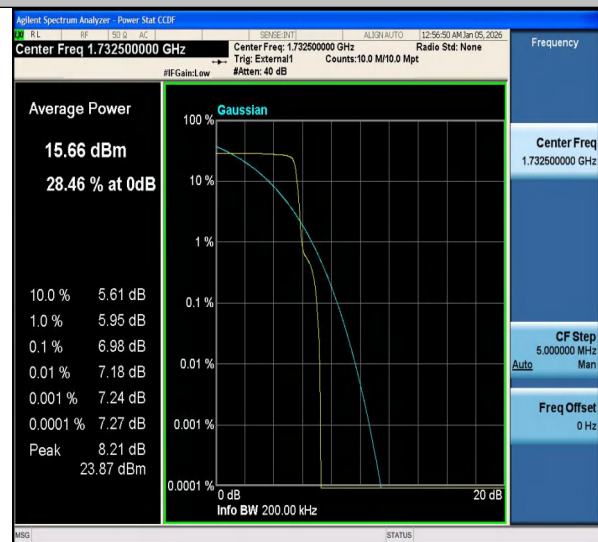
Band4-0.18-QPSK-19952-PASS



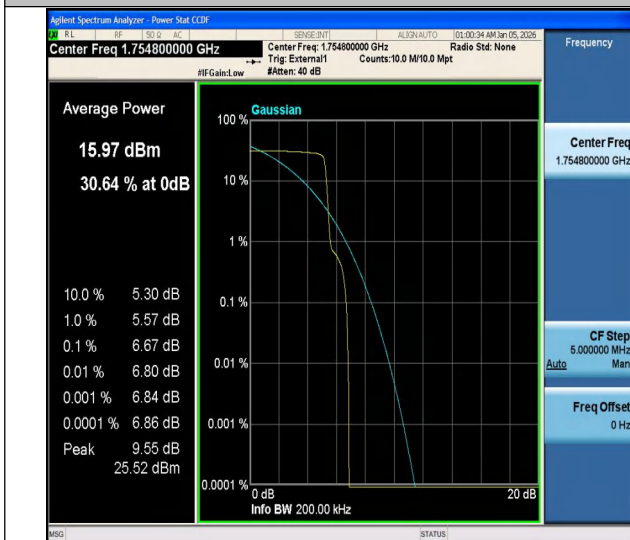
Band4-0.18-QPSK-19952-PASS



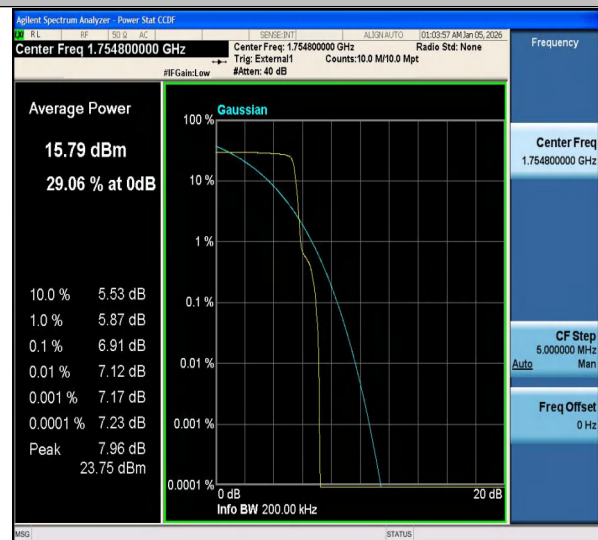
Band4-0.18-QPSK-20175-PASS



Band4-0.18-QPSK-20175-PASS



Band4-0.18-QPSK-20398-PASS



Band4-0.18-QPSK-20398-PASS

Emission Bandwidth for NB

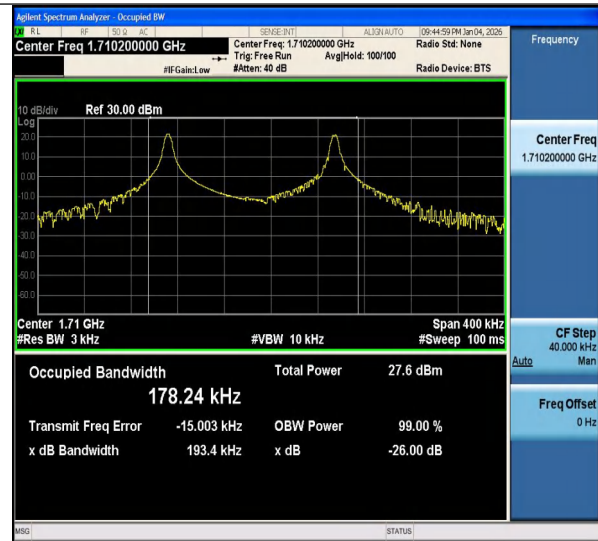
Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
Band4	Stand-Alone	3.75kHz	0.18	BPSK	19952	1@0	0.17853	0.1954	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	19952	1@0	0.17824	0.1934	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20175	1@0	0.17721	0.1962	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	0.17744	0.1934	PASS
Band4	Stand-Alone	3.75kHz	0.18	BPSK	20398	1@0	0.17678	0.1950	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20398	1@0	0.17825	0.1915	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	19952	1@0	0.11813	0.1044	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	19952	12@0	0.19417	0.2251	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	12@0	0.19257	0.2145	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20175	1@0	0.12449	0.1147	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	0.12336	0.1137	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20175	12@0	0.19415	0.2263	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	12@0	0.19282	0.2126	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20398	1@0	0.12008	0.1038	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	1@0	0.12307	0.1133	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20398	12@0	0.19278	0.2131	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	19952	1@0	0.12814	0.1273	PASS
Band4	Stand-Alone	15kHz	0.18	BPSK	20398	12@0	0.19461	0.2244	PASS

Test Graphs



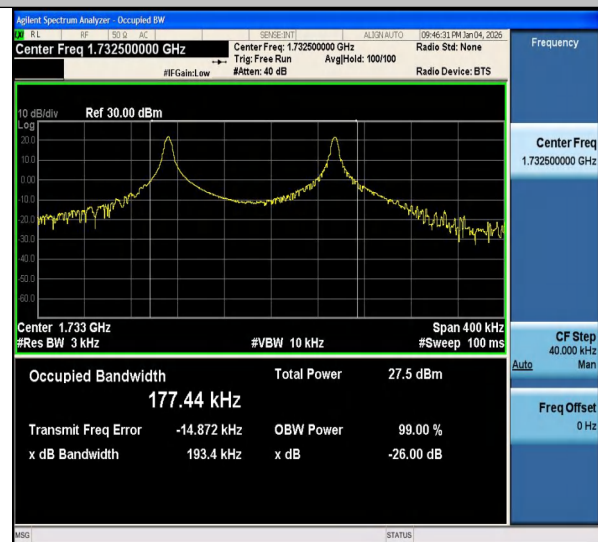
Band4-0.18-BPSK-19952-PASS



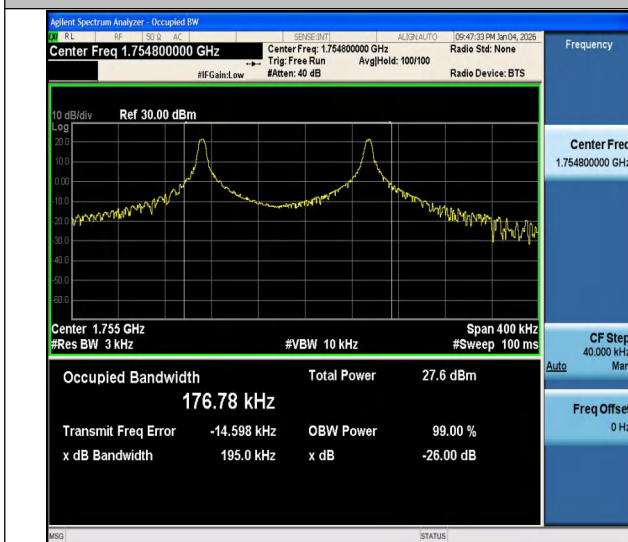
Band4-0.18-QPSK-19952-PASS



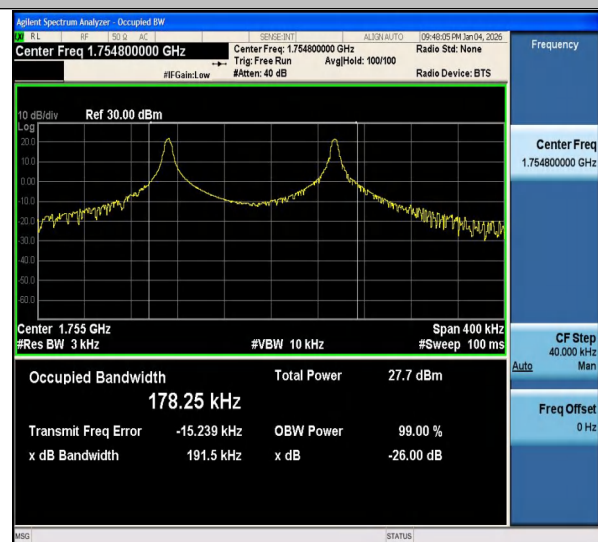
Band4-0.18-BPSK-20175-PASS



Band4-0.18-QPSK-20175-PASS



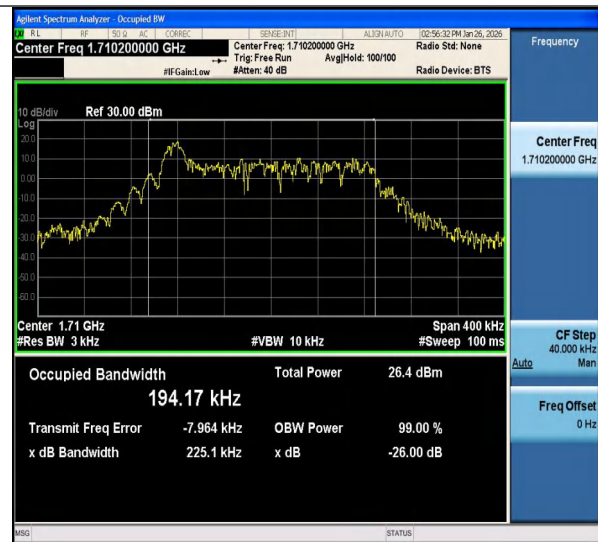
Band4-0.18-BPSK-20398-PASS



Band4-0.18-QPSK-20398-PASS



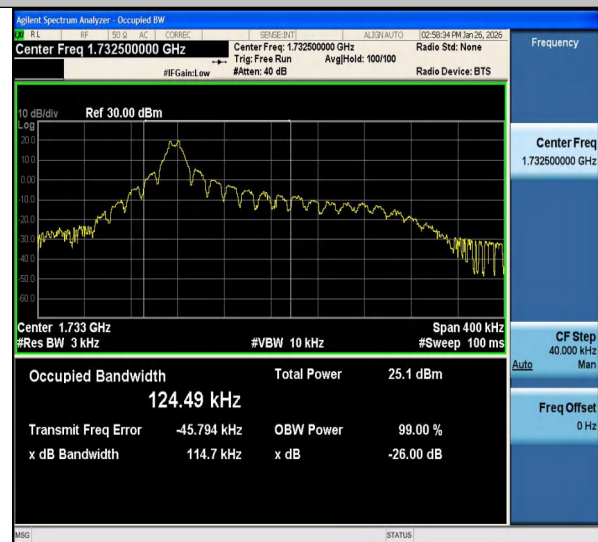
Band4-0.18-BPSK-19952-PASS



Band4-0.18-BPSK-19952-PASS



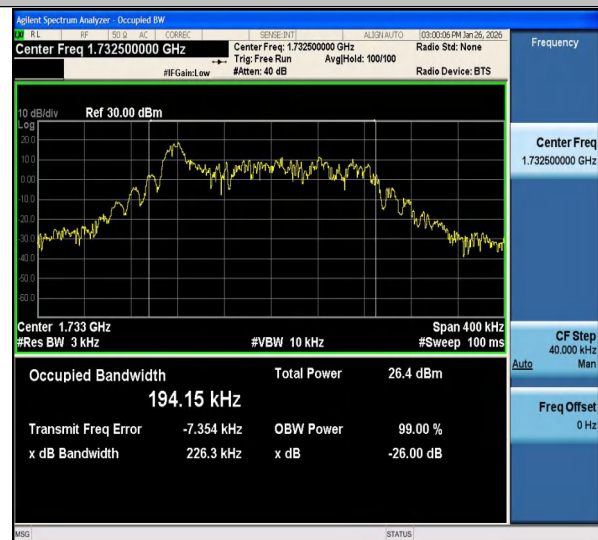
Band4-0.18-BPSK-19952-PASS



Band4-0.18-BPSK-19952-PASS



Band4-0.18-QPSK-19952-PASS



Band4-0.18-QPSK-19952-PASS



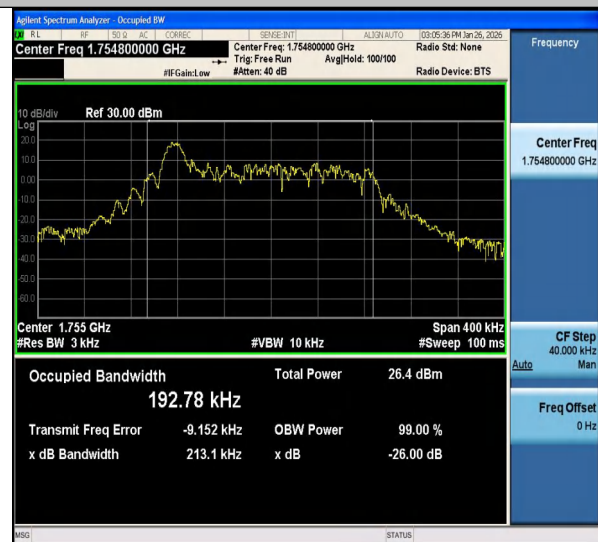
Band4-0.18-QPSK-20175-PASS



Band4-0.18-BPSK-20398-PASS



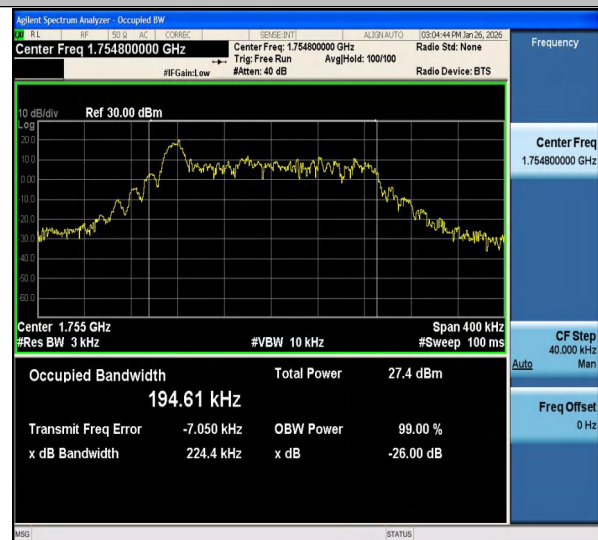
Band4-0.18-QPSK-20398-PASS



Band4-0.18-QPSK-20398-PASS



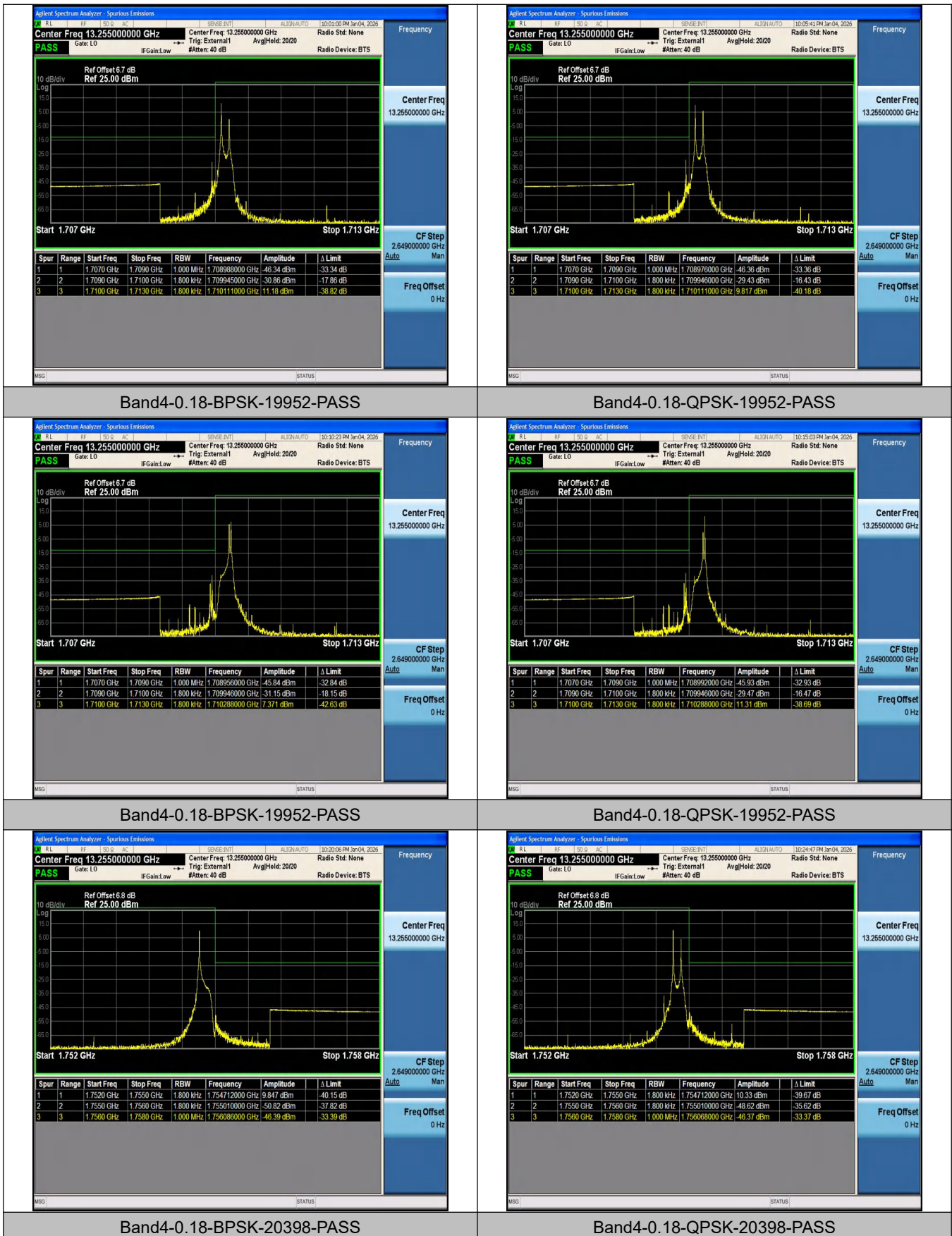
Band4-0.18-QPSK-19952-PASS

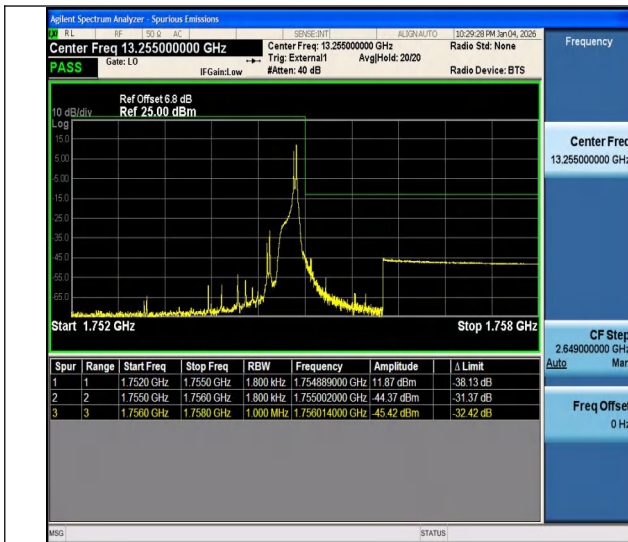


Band4-0.18-BPSK-20398-PASS

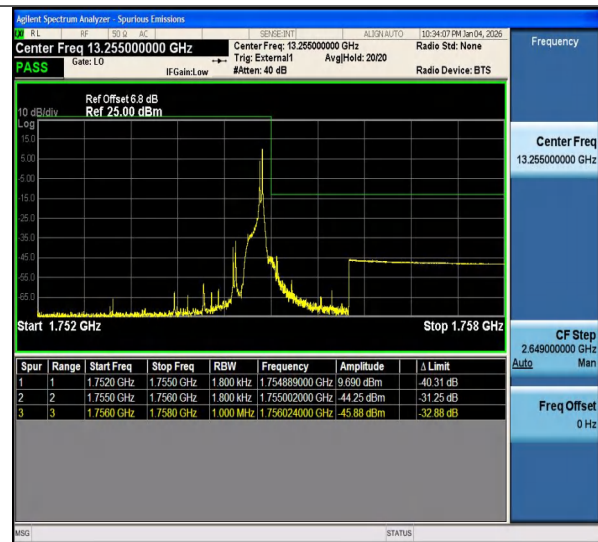
Band Edge for NB

Test Graphs

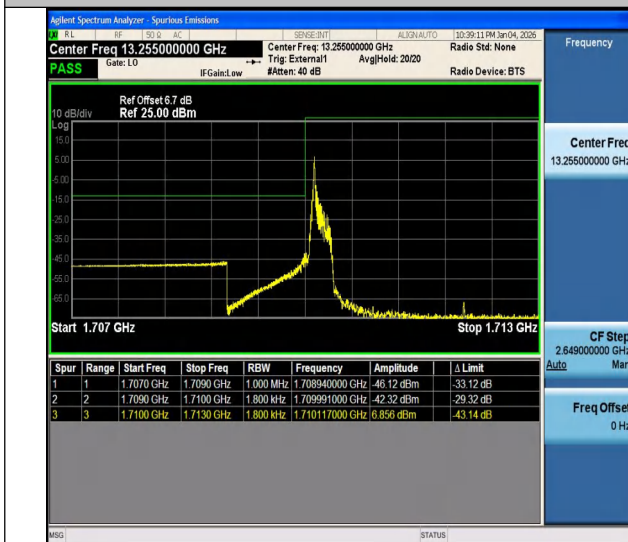




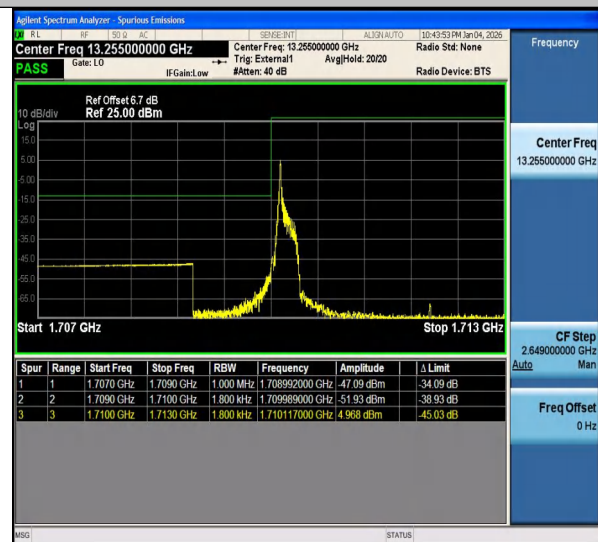
Band4-0.18-BPSK-20398-PASS



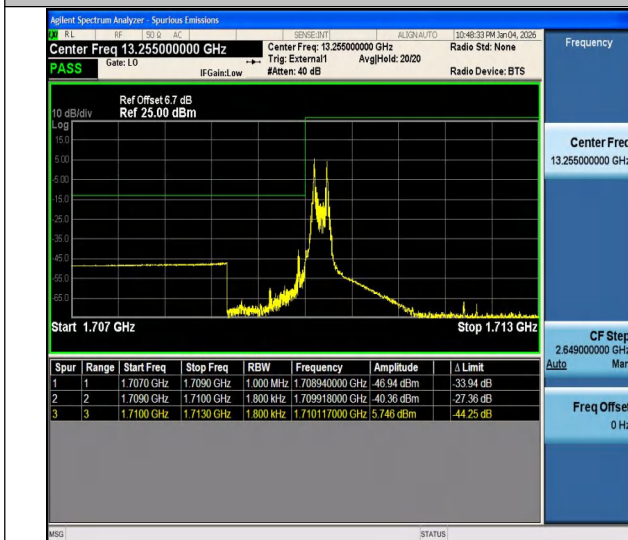
Band4-0.18-QPSK-20398-PASS



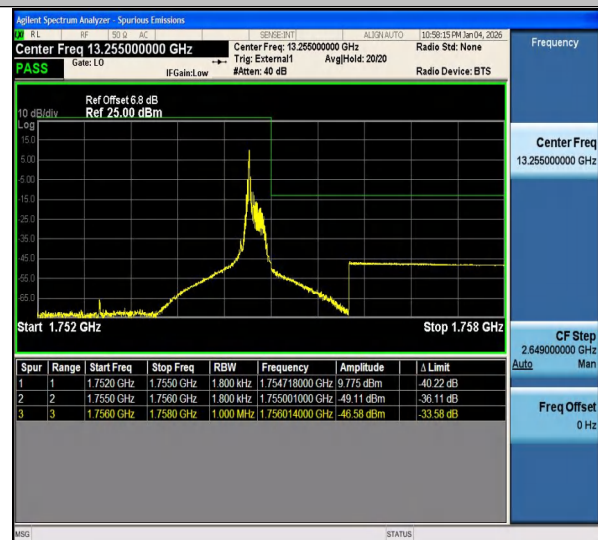
Band4-0.18-BPSK-19952-PASS



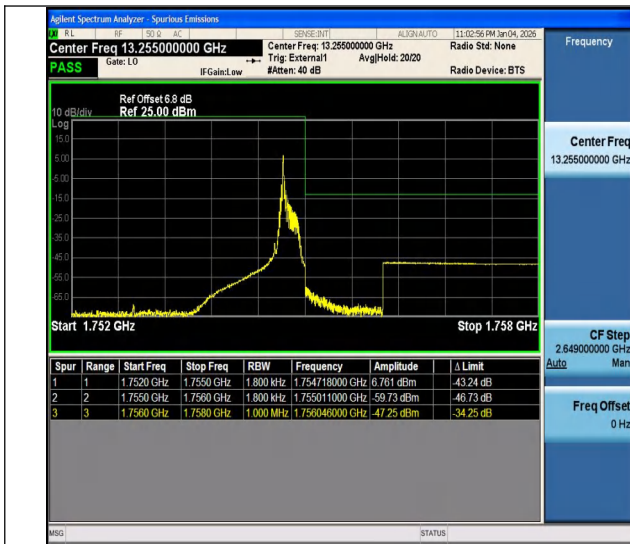
Band4-0.18-QPSK-19952-PASS



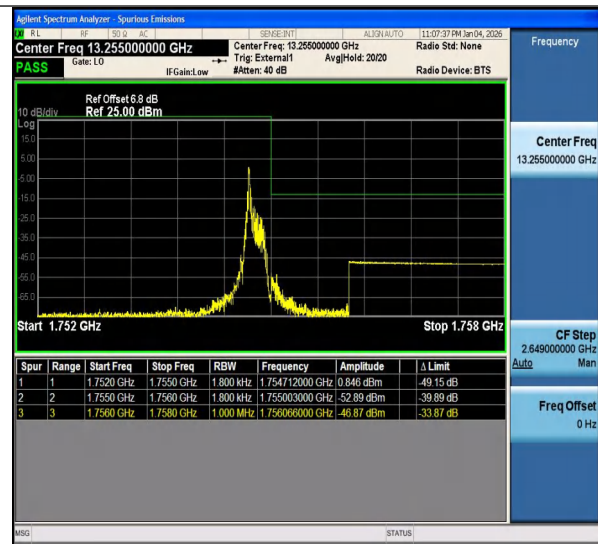
Band4-0.18-BPSK-19952-PASS



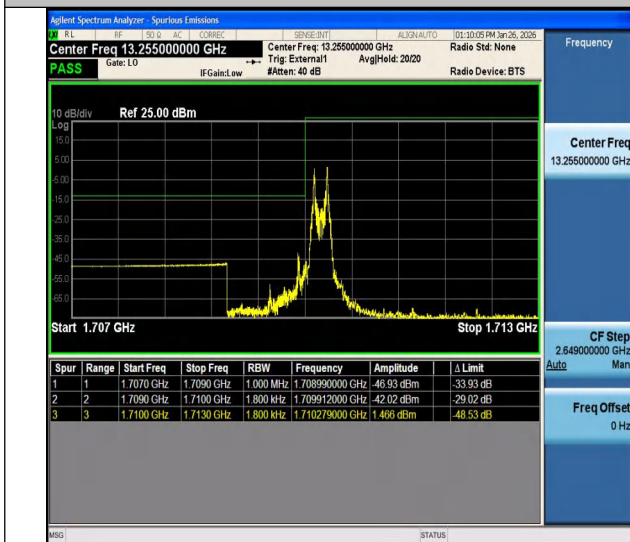
Band4-0.18-BPSK-20398-PASS



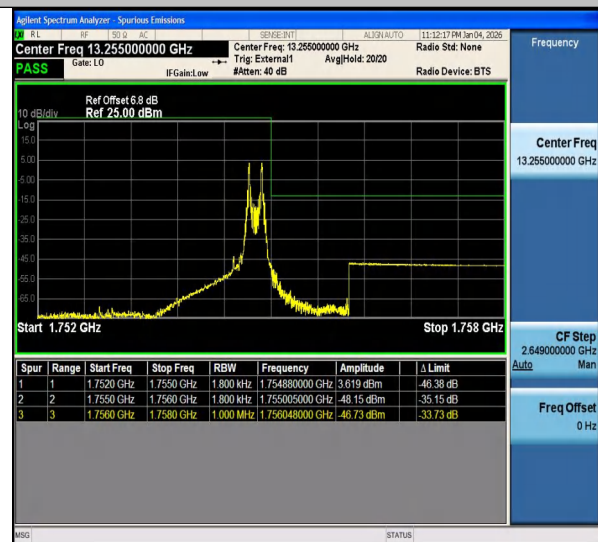
Band4-0.18-QPSK-20398-PASS



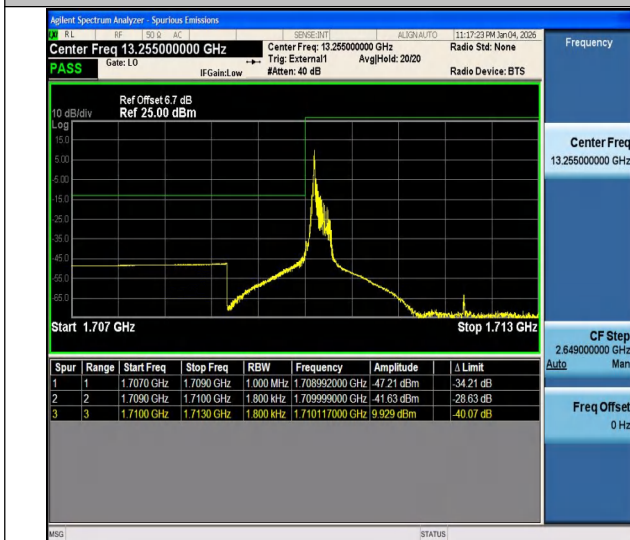
Band4-0.18-BPSK-20398-PASS



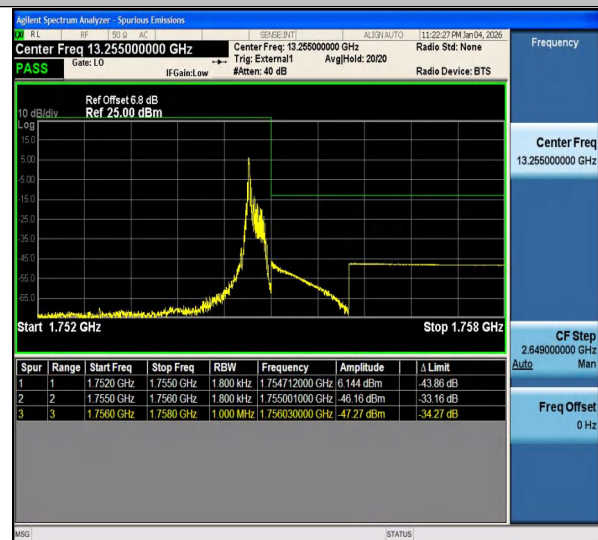
Band4-0.18-QPSK-19952-PASS



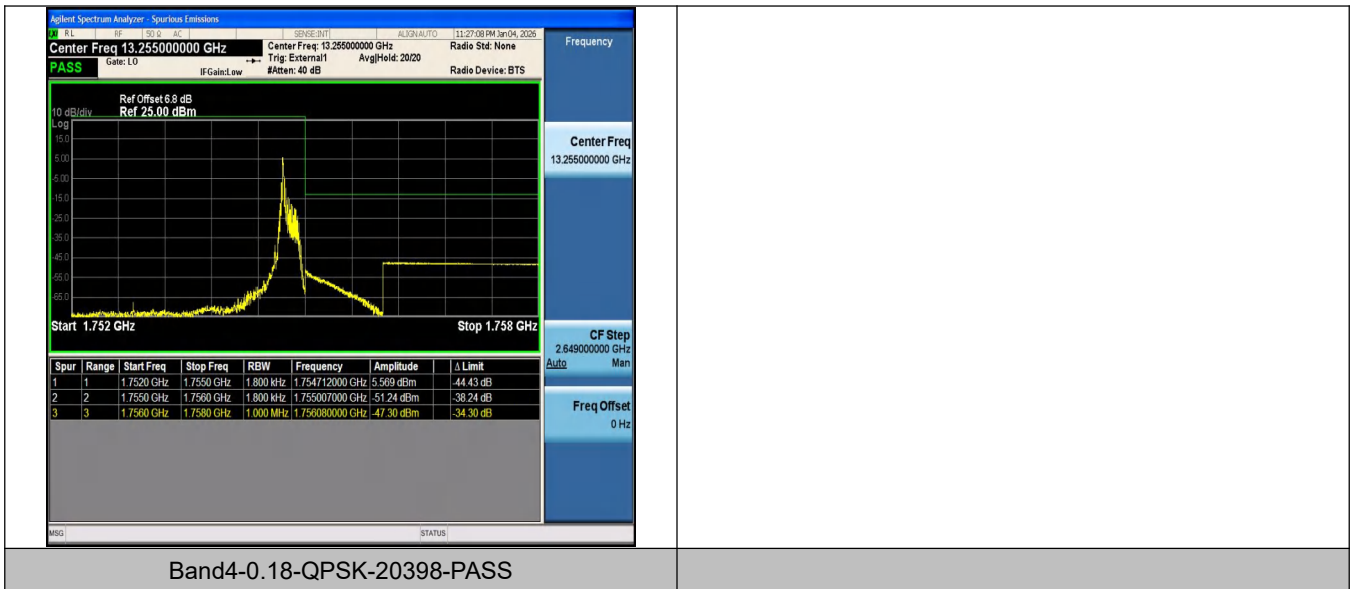
Band4-0.18-BPSK-20398-PASS



Band4-0.18-QPSK-19952-PASS



Band4-0.18-BPSK-20398-PASS



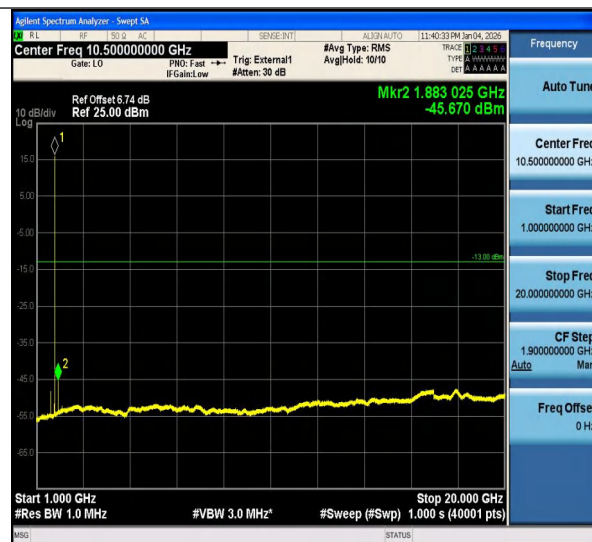
Conducted Spurious Emission for NB

Test Graphs





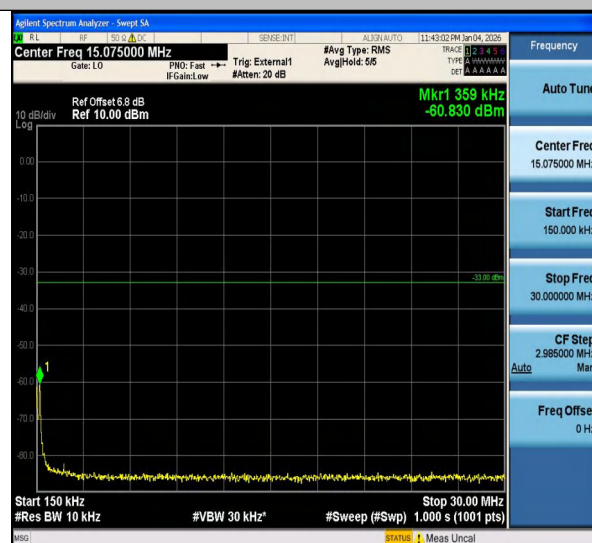
Band4-0.18-BPSK-20175-30-1000-PASS



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



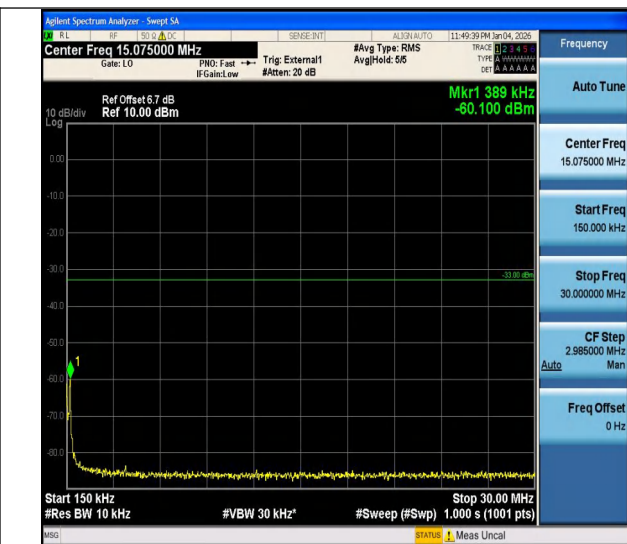
Band4-0.18-BPSK-20398-30-1000-PASS



Band4-0.18-BPSK-20398-1000-20000-PASS



Band4-0.18-BPSK-19952-0.009-0.15-PASS



Band4-0.18-BPSK-19952-0.15-30-PASS



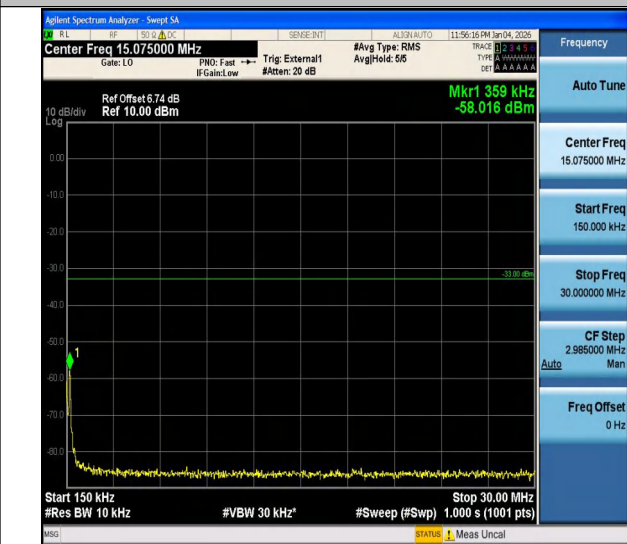
Band4-0.18-BPSK-19952-30-1000-PASS



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



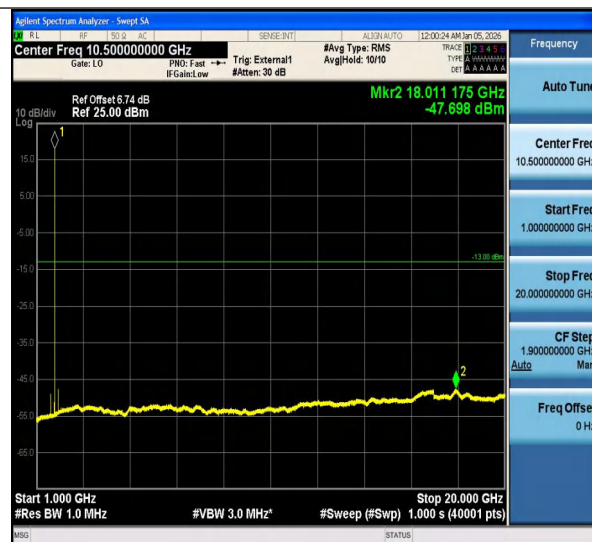
Band4-0.18-BPSK-20175-0.009-0.15-PASS



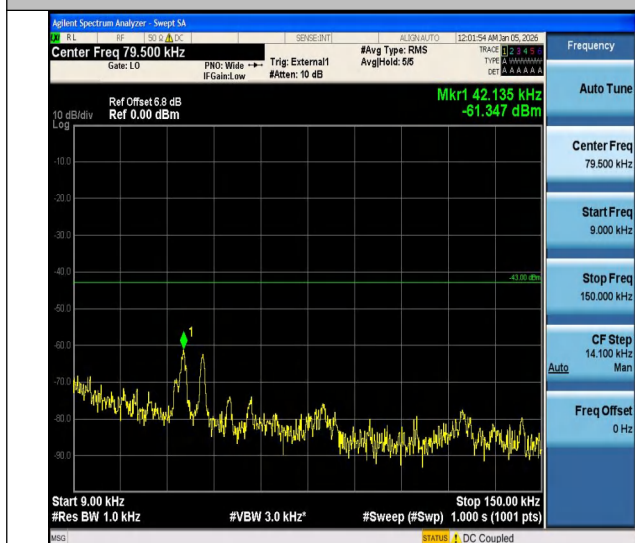
Band4-0.18-BPSK-20175-0.15-30-PASS



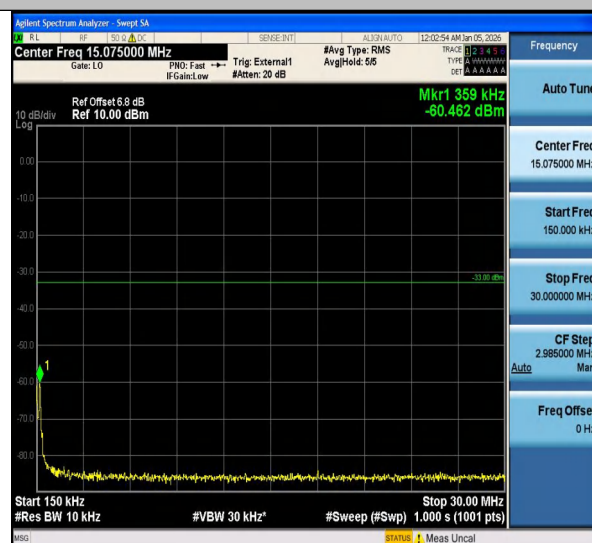
Band4-0.18-BPSK-20175-30-1000-PASS



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



Band4-0.18-BPSK-20398-30-1000-PASS



Band4-0.18-BPSK-20398-1000-20000-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	3.75kHz	0.18	QPSK	20175	1@0	VN	NT	-15.90	-0.009177	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	VL	NT	-14.70	-0.008485	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	VH	NT	-12.90	-0.007446	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	VN	NT	-8.50	-0.004906	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	VL	NT	-8.40	-0.004848	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	VH	NT	-12.70	-0.007330	PASS

Temperature											
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	NV	-20	-12.60	-0.007273	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	NV	-10	-16.30	-0.009408	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	NV	0	-12.10	-0.006984	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	NV	10	-16.90	-0.009755	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	NV	20	-11.10	-0.006407	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	NV	30	-10.60	-0.006118	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	NV	40	-9.70	-0.005599	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	NV	50	-11.60	-0.006696	PASS
Band4	Stand-Alone	3.75kHz	0.18	QPSK	20175	1@0	NV	-30	-11.80	-0.006811	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	NV	-30	-8.90	-0.005137	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	NV	-20	-11.70	-0.006753	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	NV	-10	-8.40	-0.004848	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	NV	0	-11.70	-0.006753	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	NV	10	-10.60	-0.006118	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	NV	20	-4.70	-0.002713	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	NV	30	-7.10	-0.004098	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	NV	40	-7.90	-0.004560	PASS
Band4	Stand-Alone	15kHz	0.18	QPSK	20175	1@0	NV	50	-10.60	-0.006118	PASS

~The End~