

Appendix-B LTE NB-IoT Band 5

Effective (Isotropic) Radiated Power Output Data for NB1

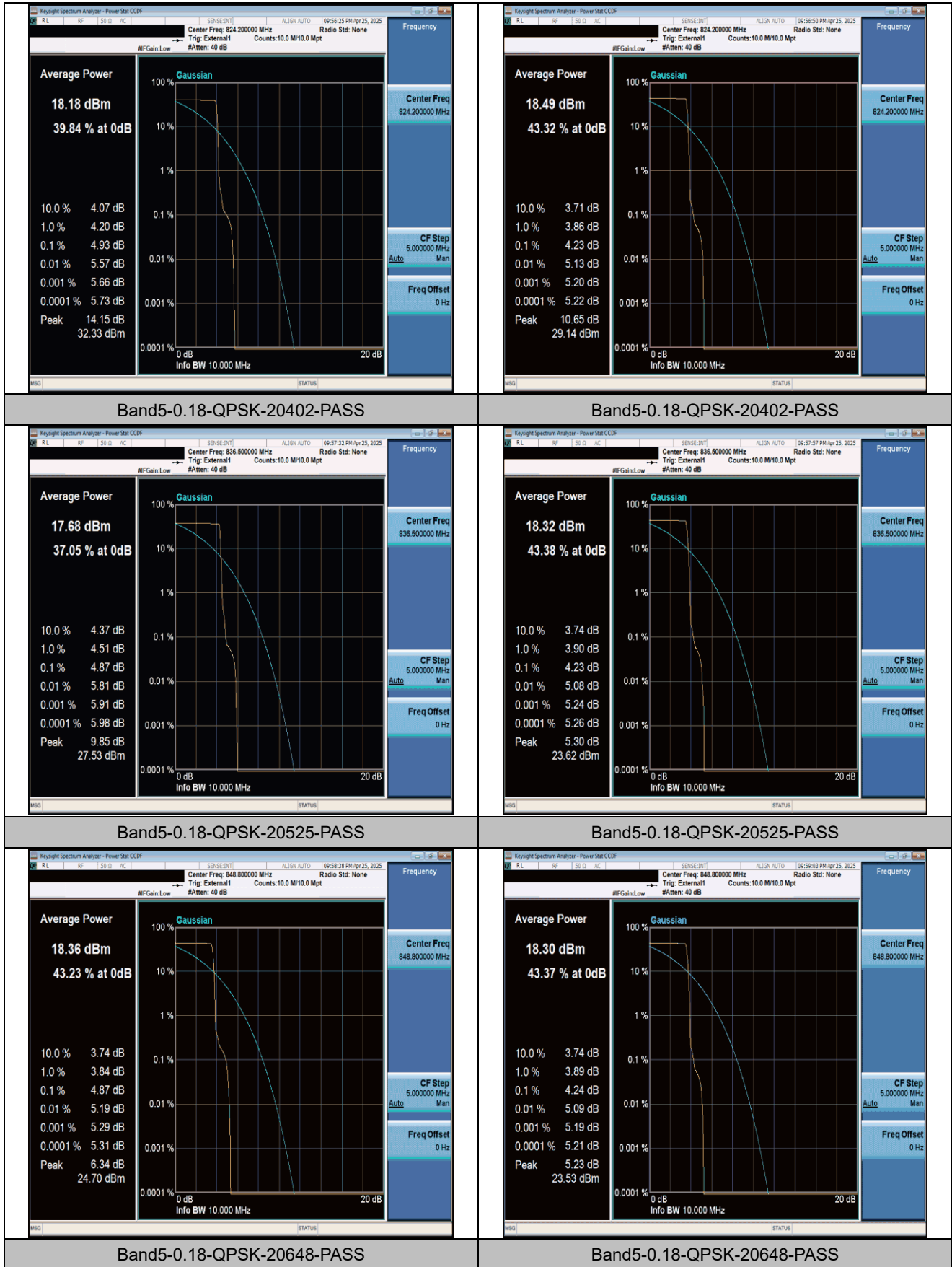
Test Result

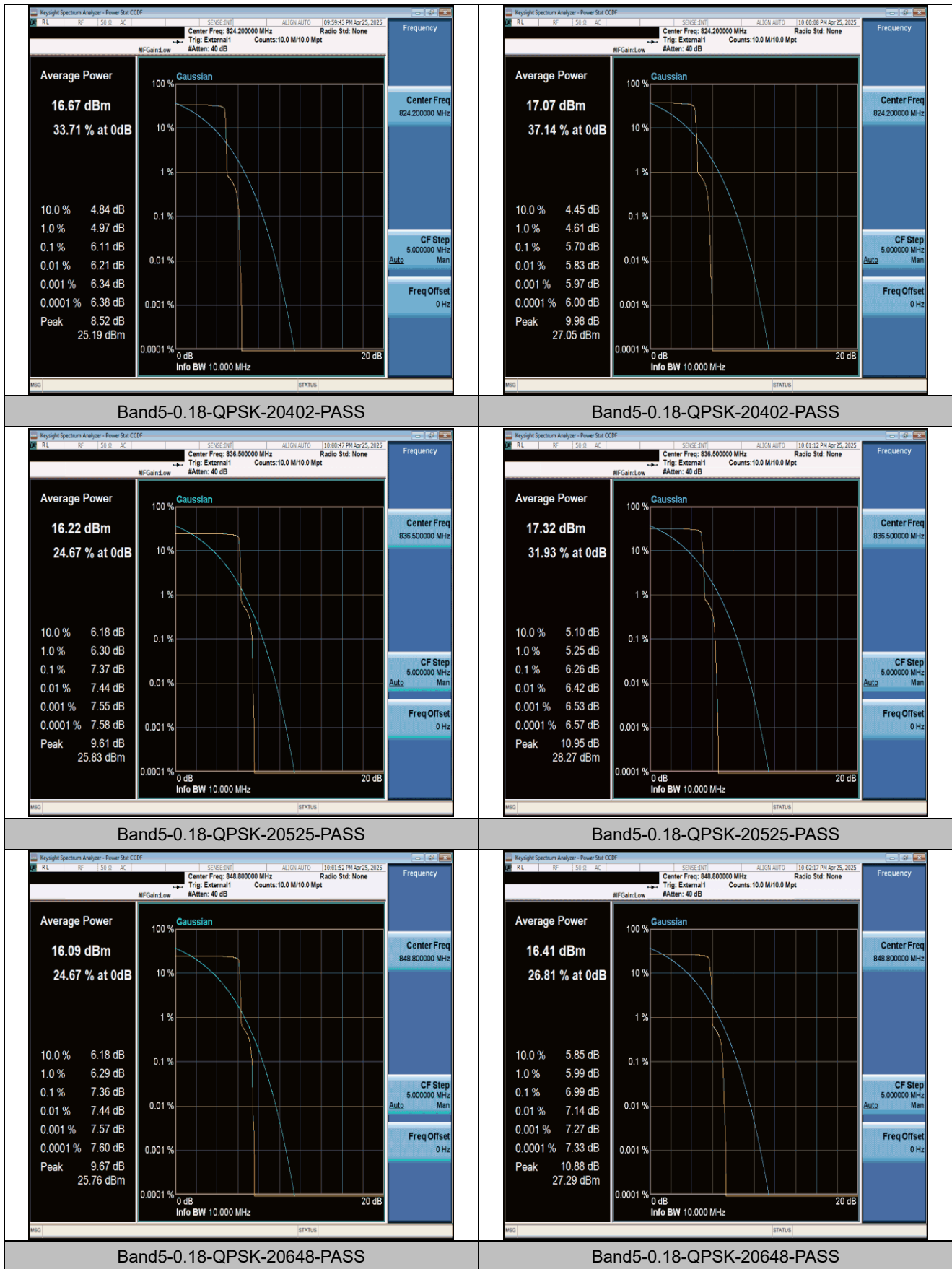
Band	OpMode	SCS	BW	Modulation	Channel	Tones	Power (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20402	1@0	21.38	21.76	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20402	1@0	21.41	21.79	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20402	1@47	21.37	21.75	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20402	1@47	21.39	21.77	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20525	1@0	21.11	21.49	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	21.19	21.57	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20525	1@47	21.09	21.47	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@47	21.16	21.54	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20648	1@0	20.82	21.2	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@0	20.86	21.24	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20648	1@47	20.82	21.2	38.45	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@47	20.78	21.16	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20402	1@0	20.52	20.9	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@0	20.53	20.91	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20402	1@11	20.47	20.85	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@11	20.48	20.86	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20525	1@0	21.39	21.77	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@0	21.42	21.8	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20525	1@11	21.32	21.7	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@11	21.34	21.72	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20648	1@0	21.13	21.51	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@0	21.16	21.54	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20648	1@11	21.06	21.44	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@11	21.07	21.45	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	3@3	21.56	21.94	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	3@3	21.30	21.68	38.45	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	3@3	21.04	21.42	38.45	PASS

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	4.93	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20402	1@47	4.23	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	4.87	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@47	4.23	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@0	4.87	<=13	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@47	4.24	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@0	6.11	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@11	5.7	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@0	7.37	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@11	6.26	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@0	7.36	<=13	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@11	6.99	<=13	PASS

Test Graphs



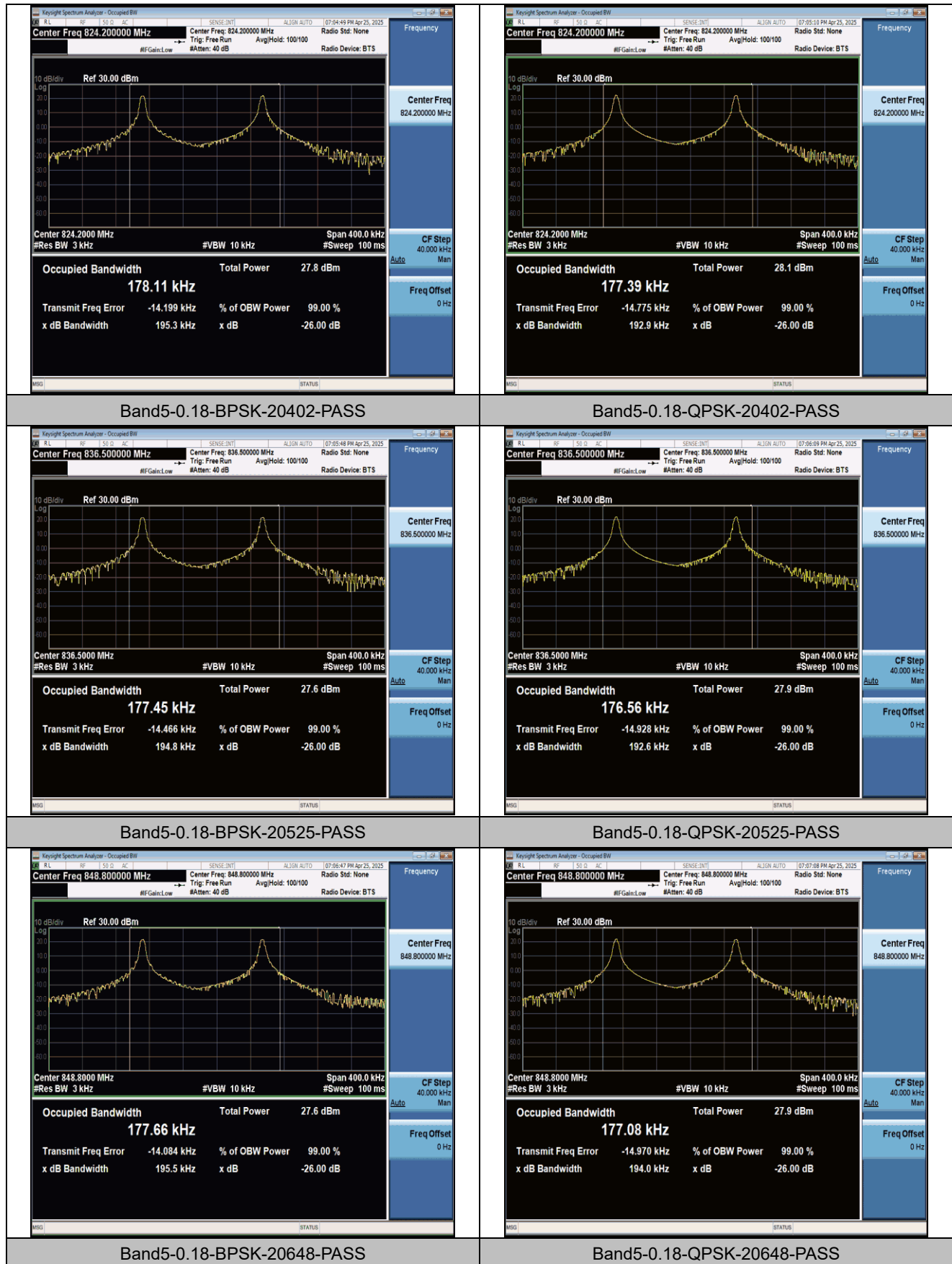


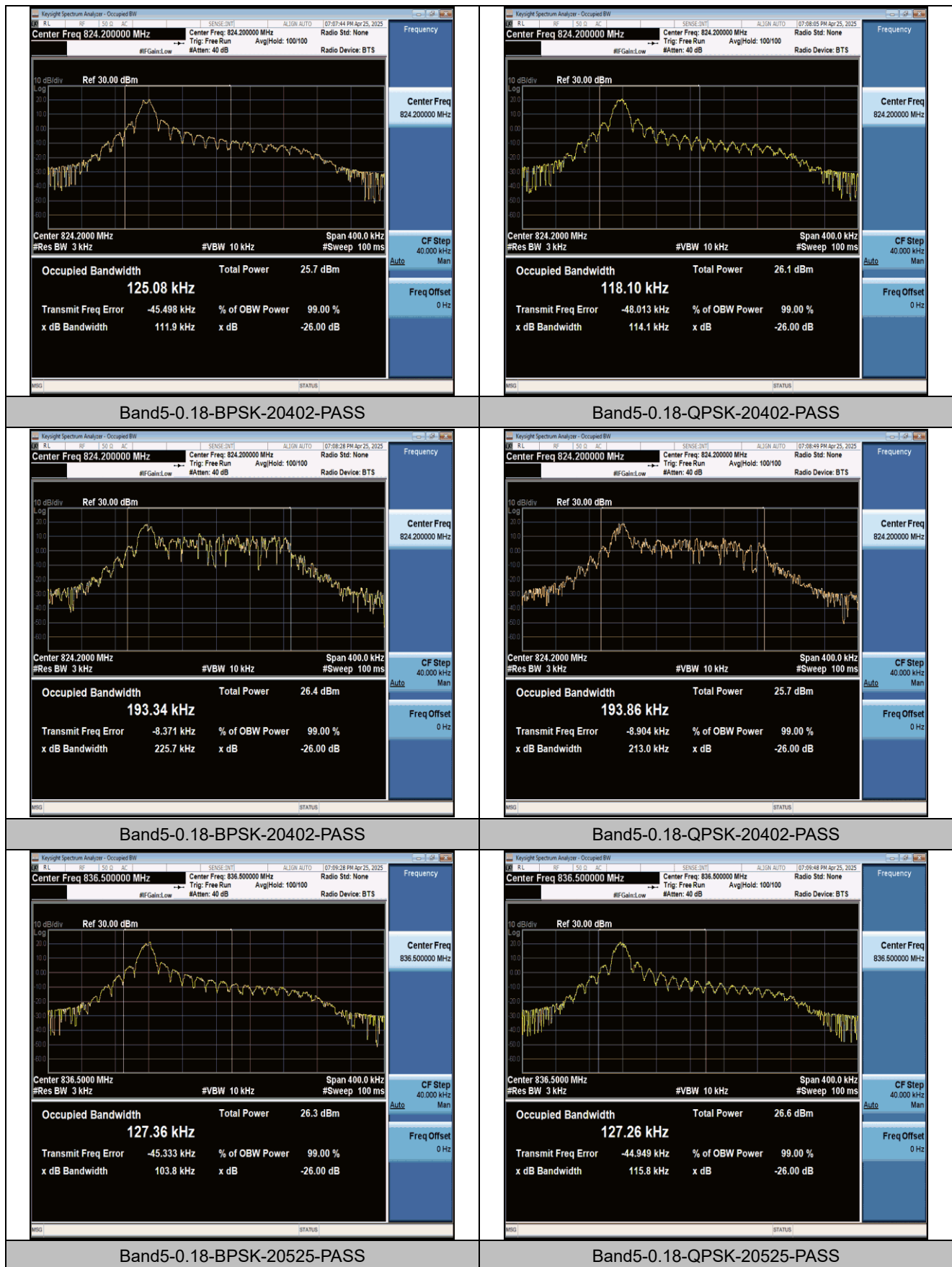
Emission Bandwidth for NB1

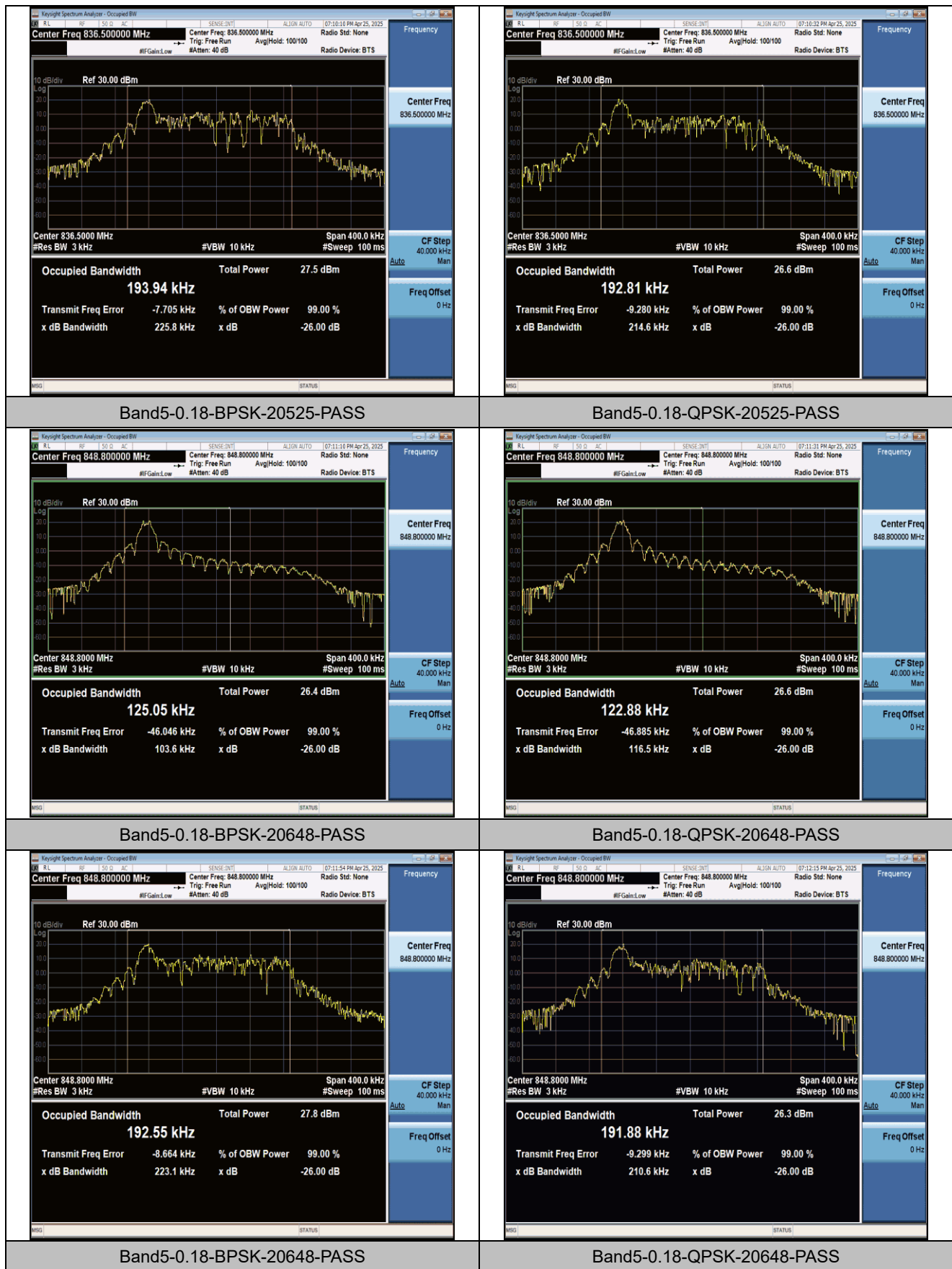
Test Result

Band	OpMode	SCS	BW	Modulation	Channel	Tones	OBW(MHz)	EBW(MHz)	Verdict
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20402	1@0	0.17811	0.1953	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20402	1@0	0.17739	0.1929	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20525	1@0	0.17745	0.1948	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	0.17656	0.1926	PASS
Band5	Stand-Alone	3.75kHz	0.18	BPSK	20648	1@0	0.17766	0.1955	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20648	1@0	0.17708	0.1940	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20402	1@0	0.12508	0.1119	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	1@0	0.11810	0.1141	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20402	12@0	0.19334	0.2257	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20402	12@0	0.19386	0.2130	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20525	1@0	0.12736	0.1038	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	1@0	0.12726	0.1158	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20525	12@0	0.19394	0.2258	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	0.19281	0.2146	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20648	1@0	0.12505	0.1036	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	1@0	0.12288	0.1165	PASS
Band5	Stand-Alone	15kHz	0.18	BPSK	20648	12@0	0.19255	0.2231	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20648	12@0	0.19188	0.2106	PASS

Test Graphs

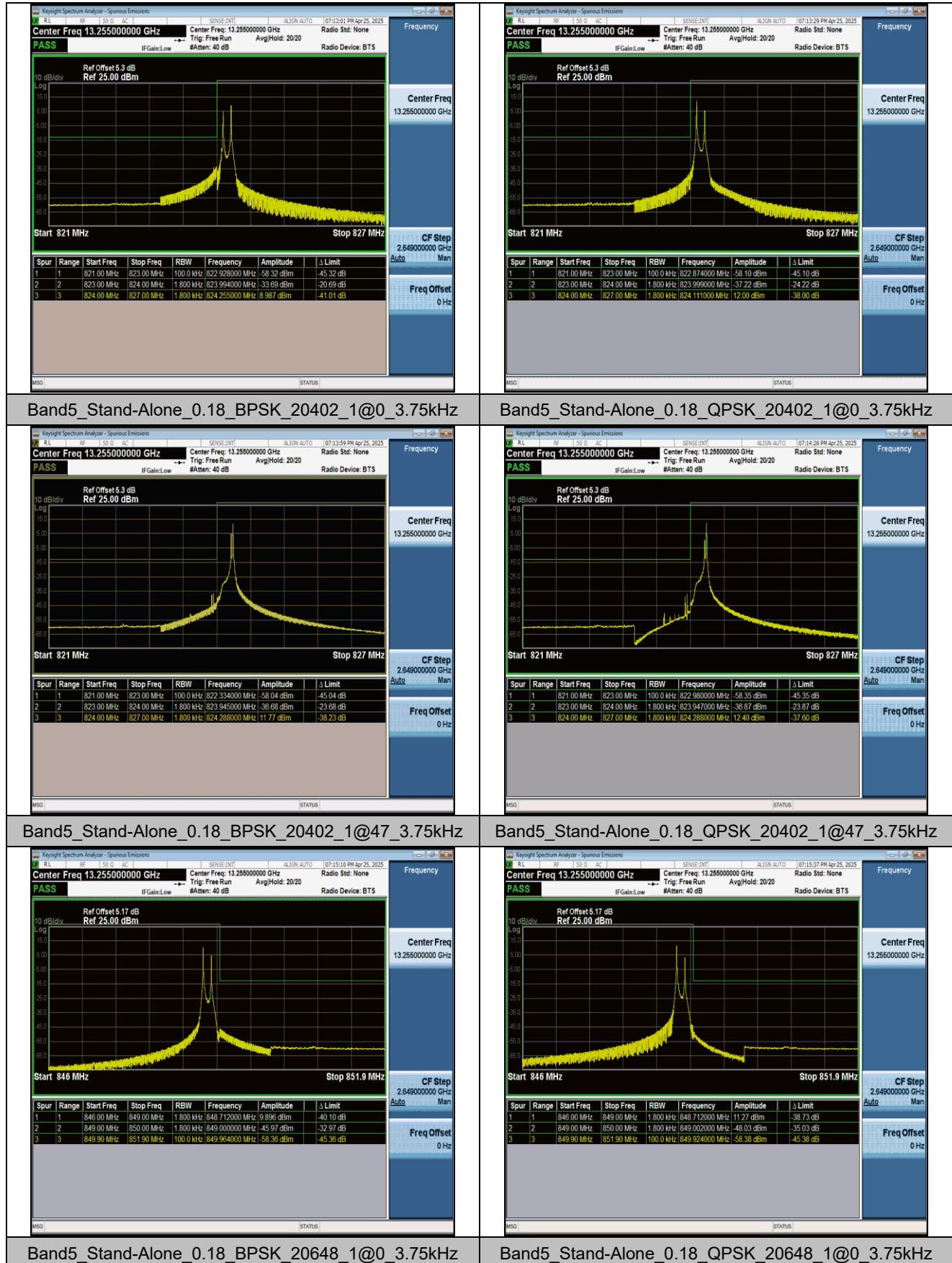


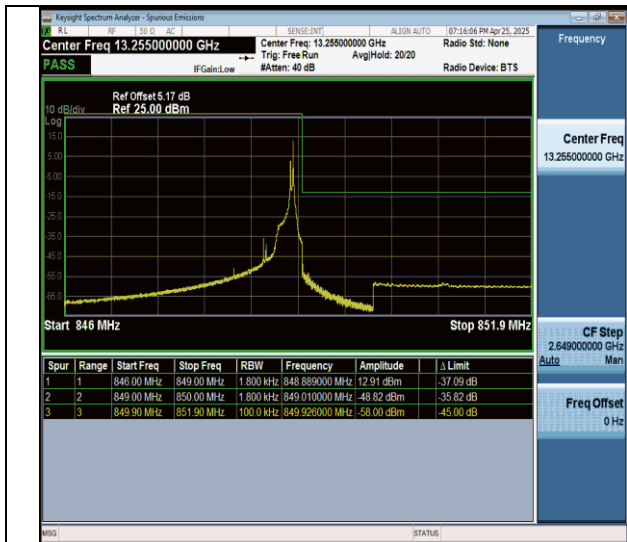




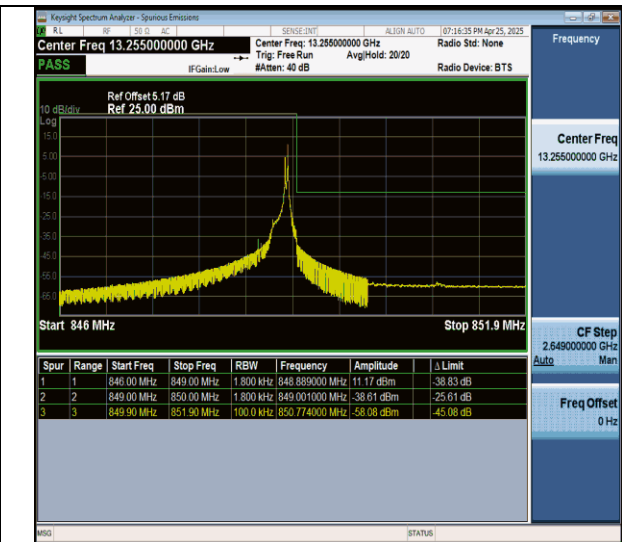
Band Edge for NB1

Test Graphs

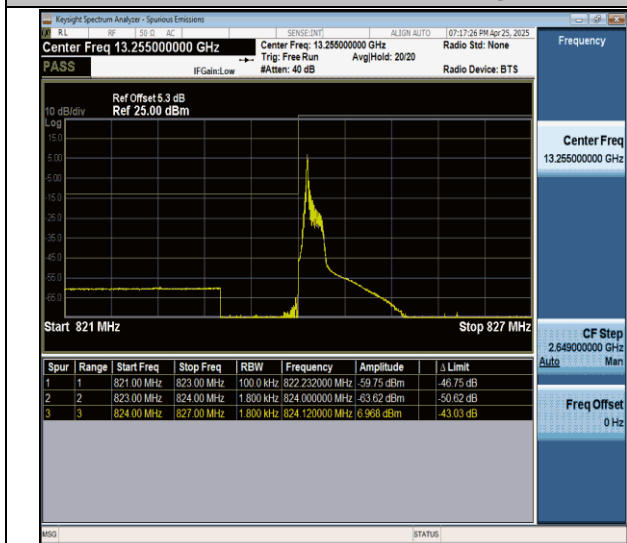




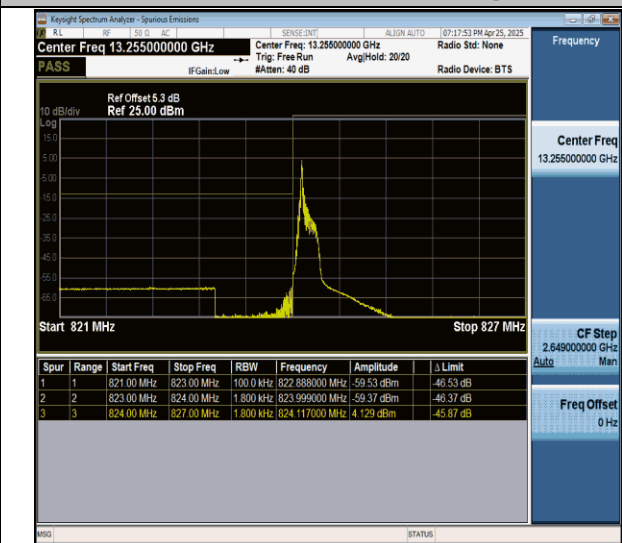
Band5_Stand-Alone_0.18_BPSK_20648_1@47_3.75kHz



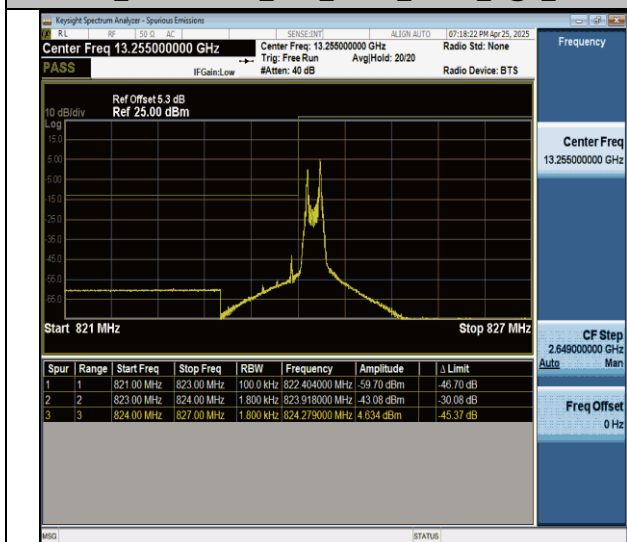
Band5_Stand-Alone_0.18_QPSK_20648_1@47_3.75kHz



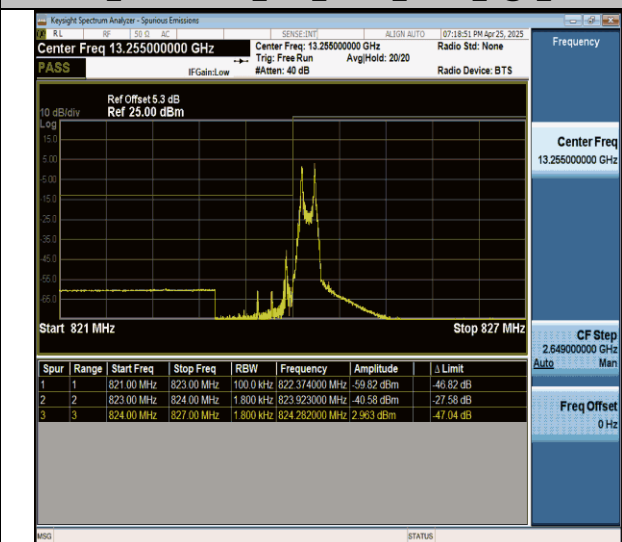
Band5_Stand-Alone_0.18_BPSK_20402_1@0_15kHz



Band5_Stand-Alone_0.18_QPSK_20402_1@0_15kHz



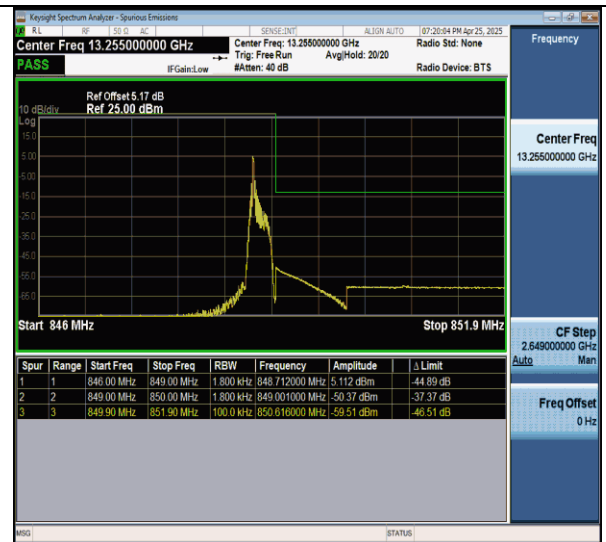
Band5_Stand-Alone_0.18_BPSK_20402_1@11_15kHz



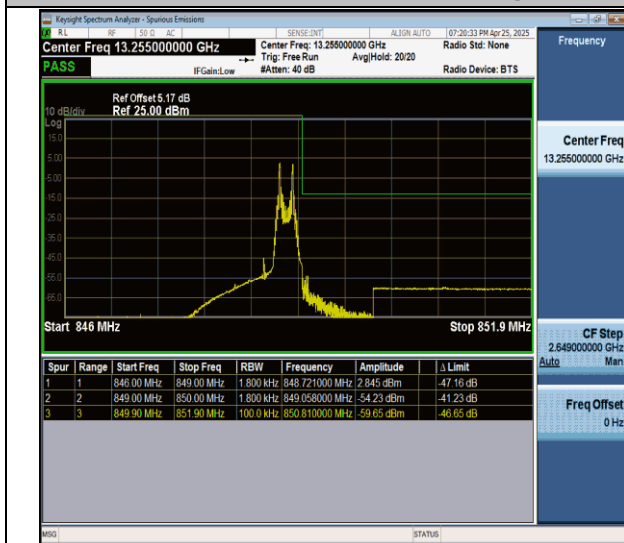
Band5_Stand-Alone_0.18_QPSK_20402_1@11_15kHz



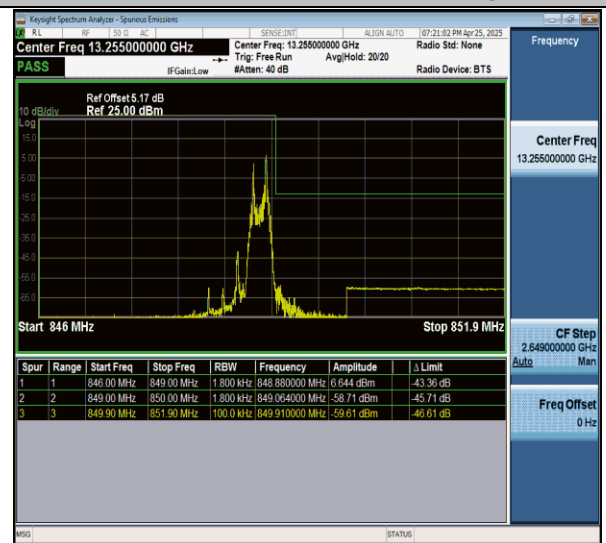
Band5_Stand-Alone_0.18_BPSK_20648_1@0_15kHz



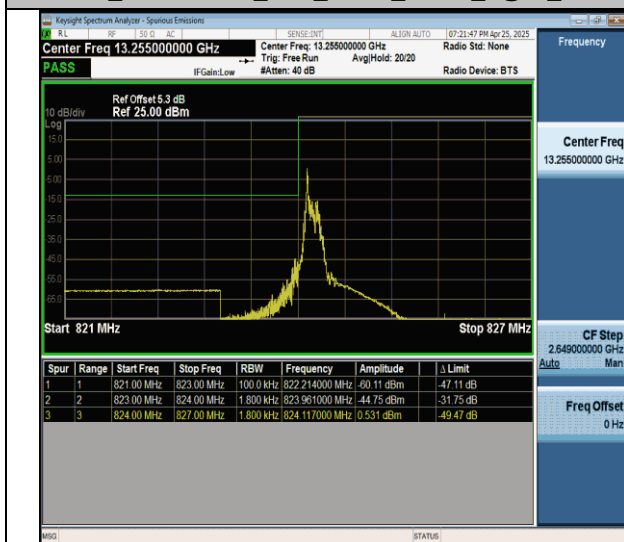
Band5_Stand-Alone_0.18_QPSK_20648_1@0_15kHz



Band5_Stand-Alone_0.18_BPSK_20648_1@11_15kHz



Band5_Stand-Alone_0.18_QPSK_20648_1@11_15kHz



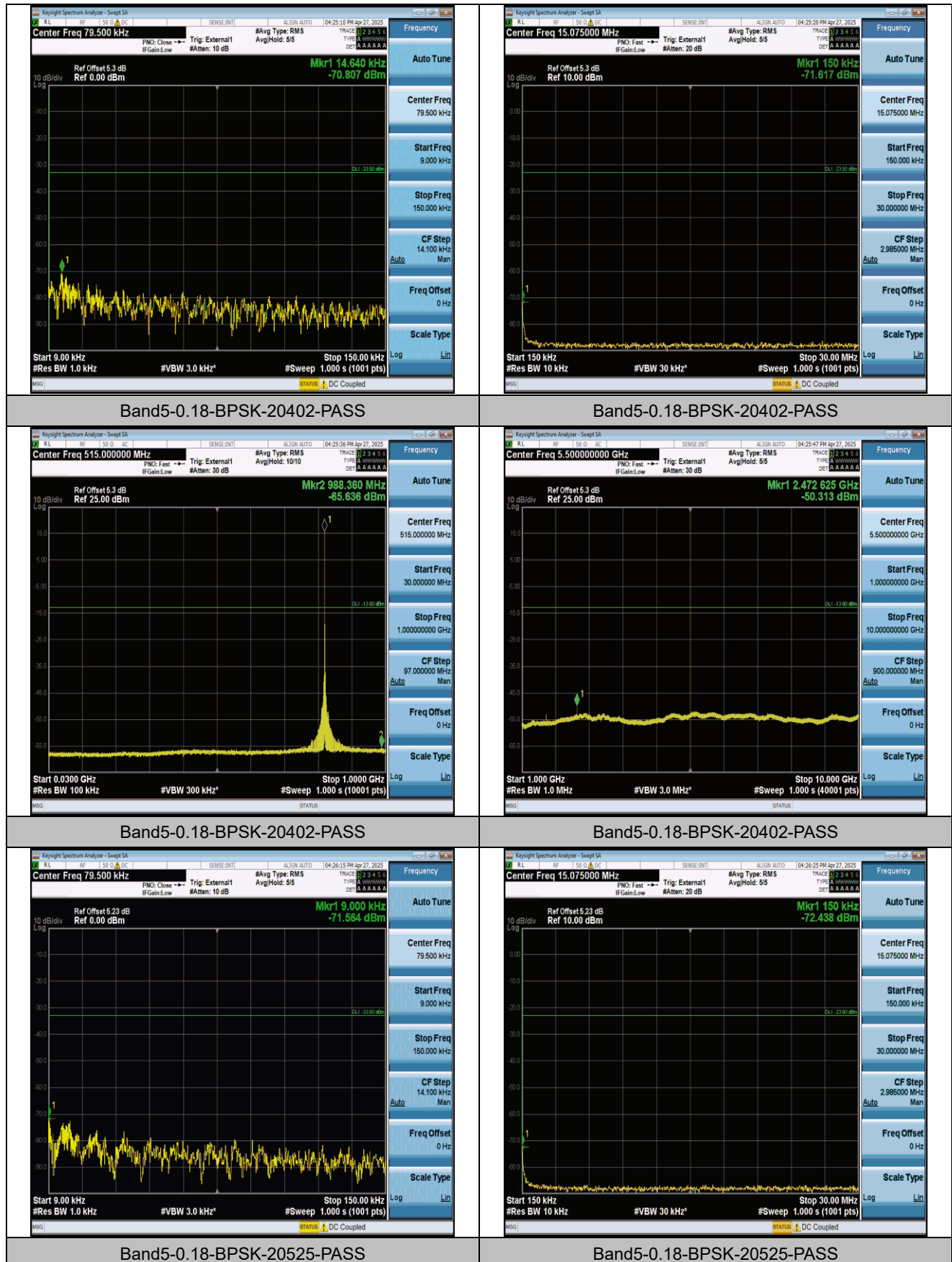
Band5_Stand-Alone_0.18_QPSK_20402_12@0_15kHz

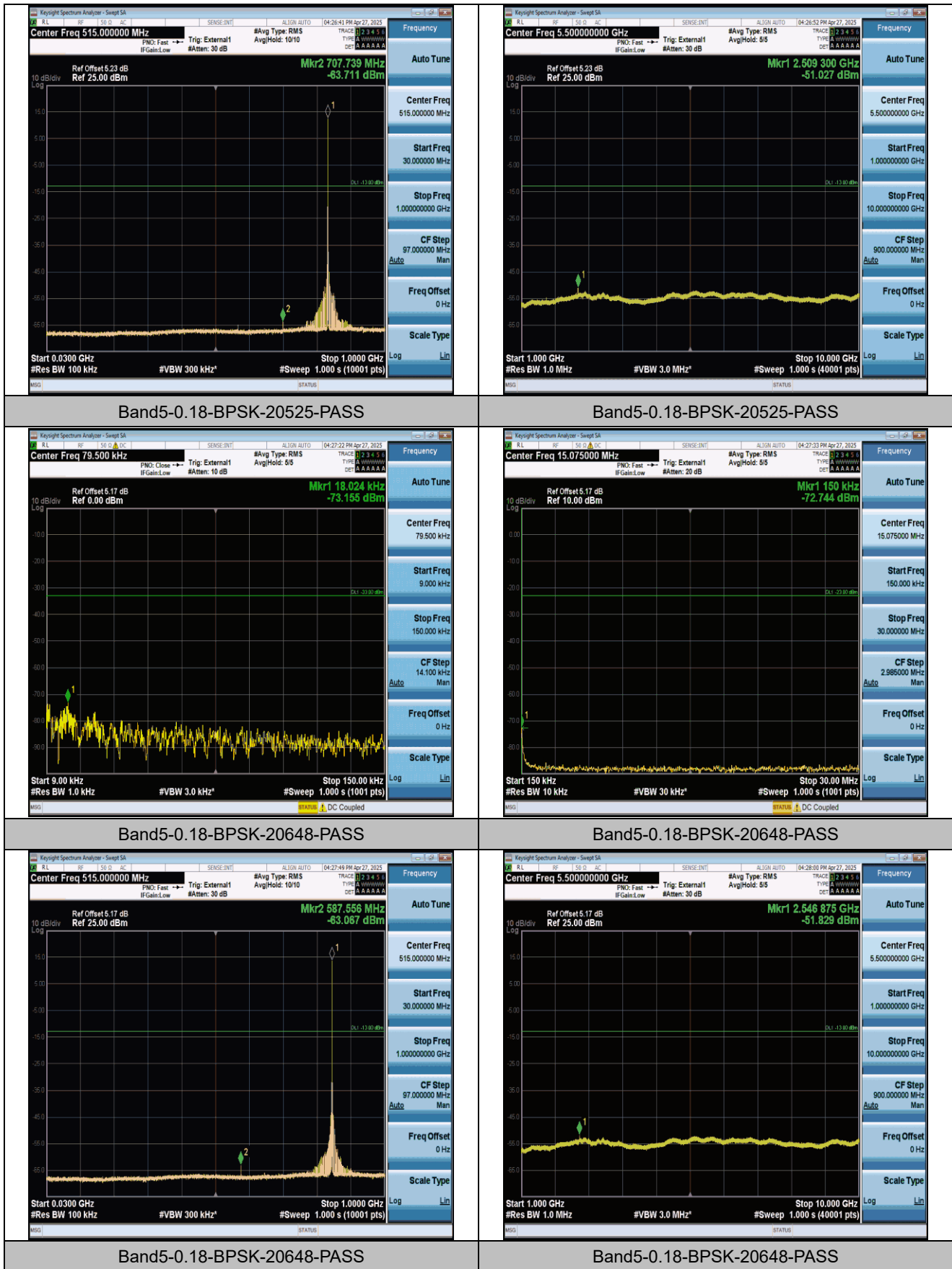


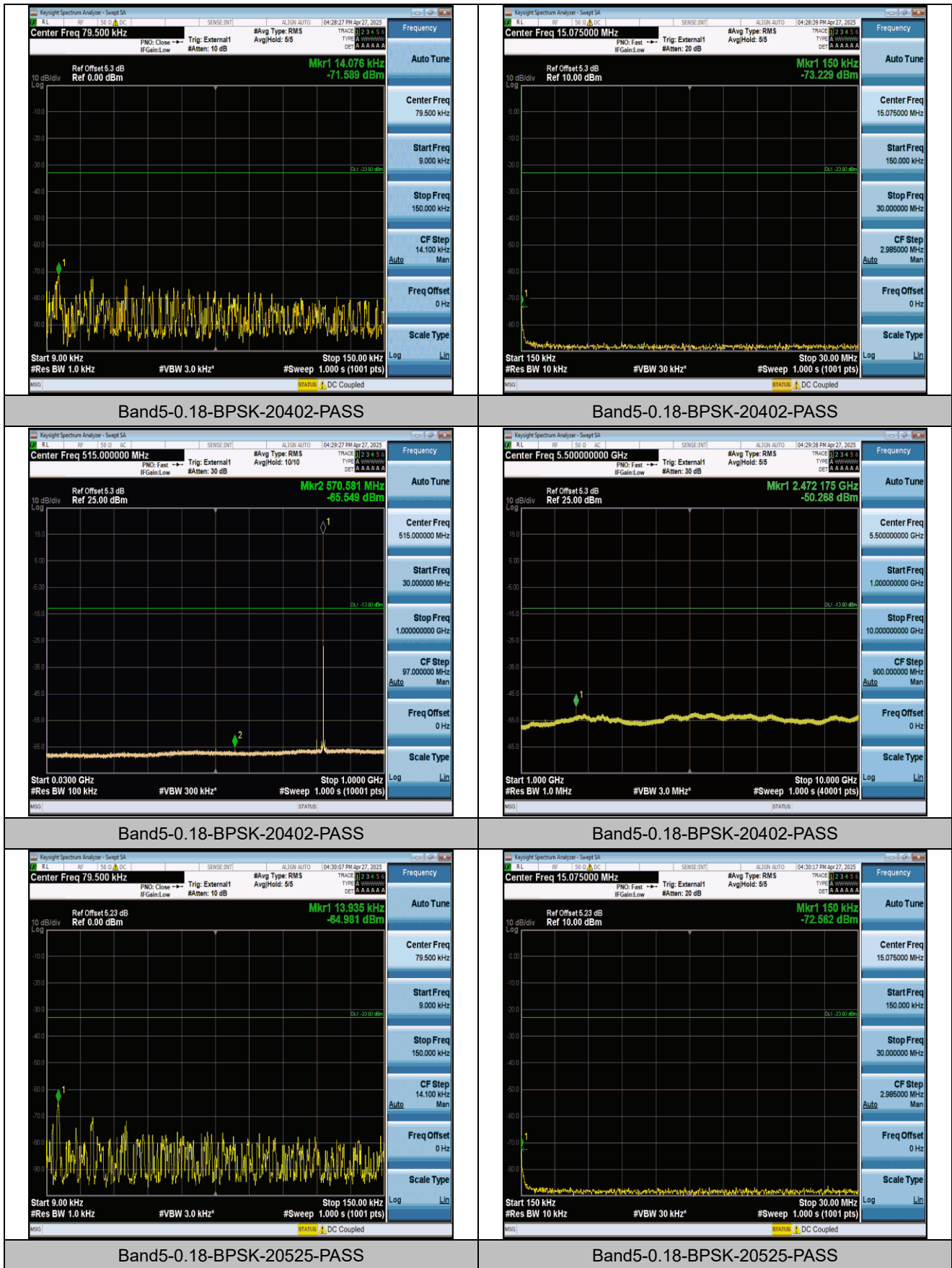
Band5_Stand-Alone_0.18_QPSK_20648_12@0_15kHz

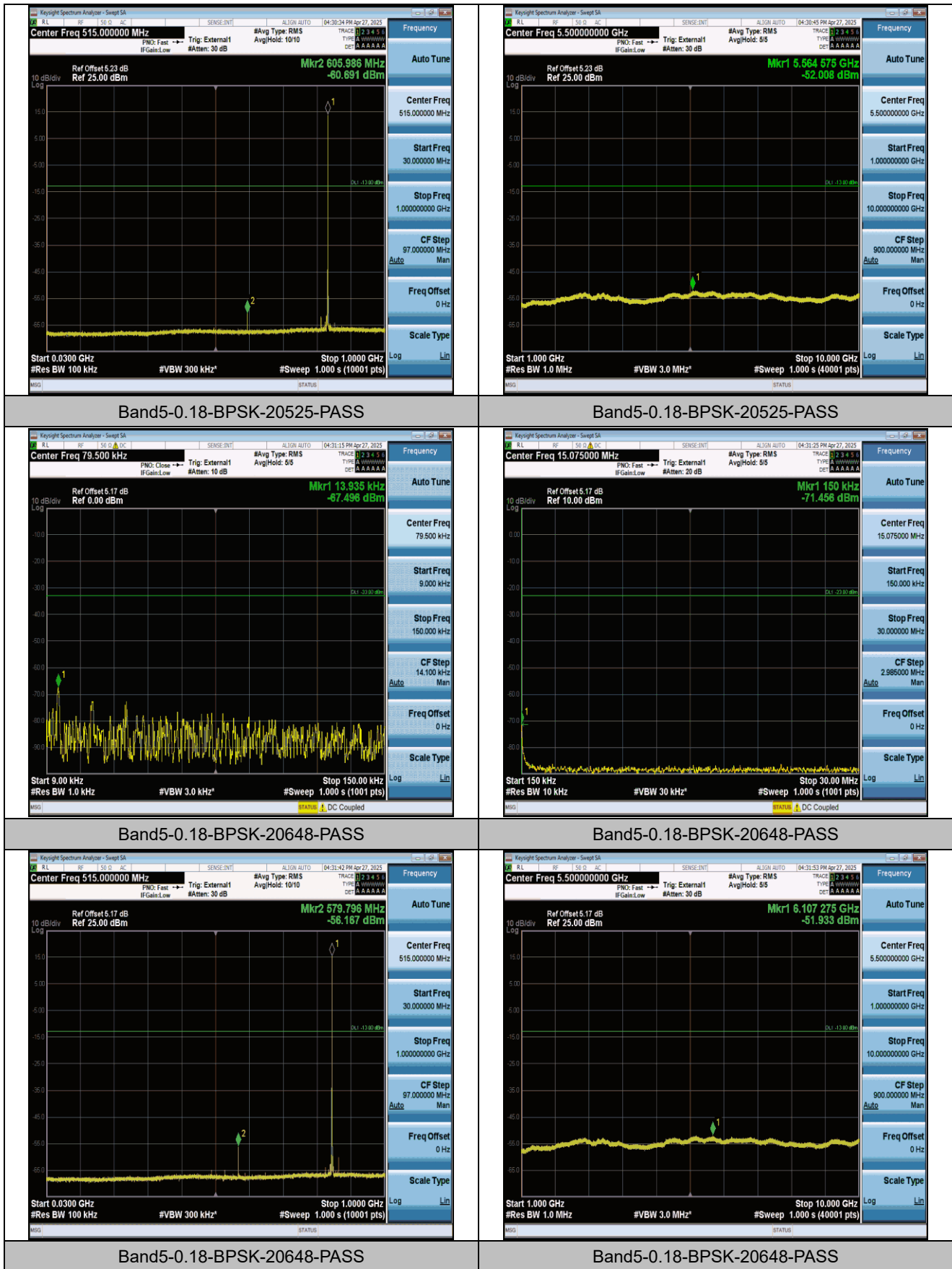
Conducted Spurious Emission for NB1

Test Graphs









Frequency Stability for NB1

Test Result

Voltage												
Band	OpMode	SCS	Bandwidth	Modulation	Channel	Tones	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	VN	NT	-3.10	-0.003706	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	VL	NT	-5.70	-0.006814	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	VH	NT	-4.30	-0.005140	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	VN	NT	-3.40	-0.004065	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	VL	NT	-3.10	-0.003706	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	VH	NT	-3.20	-0.003825	±2.5	PASS

Temperature												
Band	OpMode	Bandwidth	Modulation	Channel	Tones	SCS	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	-30	-3.50	-0.004184	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	-20	-2.00	-0.002391	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	-10	-2.20	-0.002630	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	0	-2.20	-0.002630	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	10	-3.20	-0.003825	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	20	-4.10	-0.004901	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	30	-2.10	-0.002510	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	40	-2.90	-0.003467	±2.5	PASS
Band5	Stand-Alone	3.75kHz	0.18	QPSK	20525	1@0	NV	50	-3.20	-0.003825	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	-30	-4.80	-0.005738	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	-20	-3.60	-0.004304	±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	-4.10	-0.004901	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	10	-3.50	-0.004184	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	20	-4.30	-0.005140	±2.5	PASS
Band5	Stand-Alone	15kHz	0.18	QPSK	20525	12@0	NV	30	-3.10	-0.003706	±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	-4.00	-0.004782	±2.5	PASS

~The End~