

Appendix-A LTE Cat M1 Band 2

Effective (Isotropic) Radiated Power Output Data for M1

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Power (dBm)	EIRP (dBm)	Limit (dBm)	Verdict
Band2	1.4MHz	QPSK	18607	1	0	Low	21.44	23.03	33	PASS
Band2	1.4MHz	QPSK	18607	1	5	Low	21.26	22.85	33	PASS
Band2	1.4MHz	QPSK	18607	6	0	Low	19.26	20.85	33	PASS
Band2	1.4MHz	QPSK	18900	1	0	Low	21.33	22.92	33	PASS
Band2	1.4MHz	QPSK	18900	1	5	Low	21.08	22.67	33	PASS
Band2	1.4MHz	QPSK	18900	6	0	Low	19.18	20.77	33	PASS
Band2	1.4MHz	QPSK	19193	1	0	High	21.68	23.27	33	PASS
Band2	1.4MHz	QPSK	19193	1	5	High	21.63	23.22	33	PASS
Band2	1.4MHz	QPSK	19193	6	0	High	19.70	21.29	33	PASS
Band2	3MHz	QPSK	18615	1	0	Low	21.52	23.11	33	PASS
Band2	3MHz	QPSK	18615	1	5	Low	21.22	22.81	33	PASS
Band2	3MHz	QPSK	18615	6	0	Low	19.76	21.35	33	PASS
Band2	3MHz	QPSK	18900	1	0	Low	21.61	23.2	33	PASS
Band2	3MHz	QPSK	18900	1	5	Low	21.42	23.01	33	PASS
Band2	3MHz	QPSK	18900	6	0	Low	19.66	21.25	33	PASS
Band2	3MHz	QPSK	19185	1	0	High	21.36	22.95	33	PASS
Band2	3MHz	QPSK	19185	1	5	High	20.99	22.58	33	PASS
Band2	3MHz	QPSK	19185	6	0	High	19.69	21.28	33	PASS
Band2	5MHz	QPSK	18625	1	0	Low	21.54	23.13	33	PASS
Band2	5MHz	QPSK	18625	1	5	Low	21.35	22.94	33	PASS
Band2	5MHz	QPSK	18625	6	0	Low	20.63	22.22	33	PASS
Band2	5MHz	QPSK	18900	1	0	Low	21.28	22.87	33	PASS
Band2	5MHz	QPSK	18900	1	5	Low	21.01	22.6	33	PASS
Band2	5MHz	QPSK	18900	6	0	Low	20.21	21.8	33	PASS
Band2	5MHz	QPSK	19175	1	0	High	21.46	23.05	33	PASS
Band2	5MHz	QPSK	19175	1	5	High	21.21	22.8	33	PASS
Band2	5MHz	QPSK	19175	6	0	High	20.40	21.99	33	PASS
Band2	10MHz	QPSK	18650	1	0	Low	21.65	23.24	33	PASS
Band2	10MHz	QPSK	18650	1	5	Low	21.45	23.04	33	PASS
Band2	10MHz	QPSK	18650	6	0	Low	20.51	22.1	33	PASS
Band2	10MHz	QPSK	18900	1	0	Low	21.22	22.81	33	PASS
Band2	10MHz	QPSK	18900	1	5	Low	21.13	22.72	33	PASS
Band2	10MHz	QPSK	18900	6	0	Low	20.26	21.85	33	PASS
Band2	10MHz	QPSK	19150	1	0	High	21.49	23.08	33	PASS
Band2	10MHz	QPSK	19150	1	5	High	21.25	22.84	33	PASS
Band2	10MHz	QPSK	19150	6	0	High	20.41	22	33	PASS
Band2	15MHz	QPSK	18675	1	0	Low	21.61	23.2	33	PASS

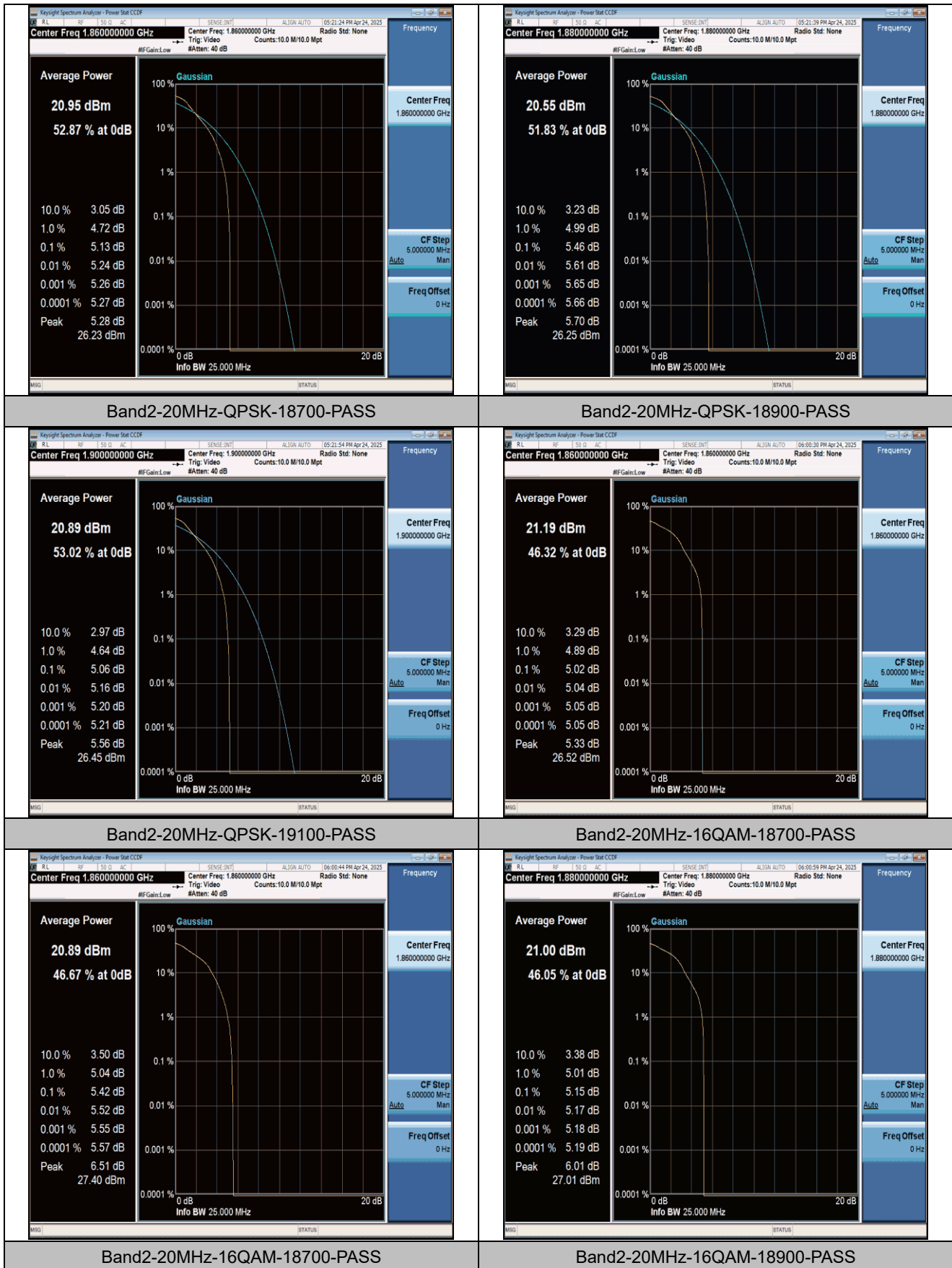
Band2	15MHz	QPSK	18675	1	5	Low	21.41	23	33	PASS
Band2	15MHz	QPSK	18675	6	0	Low	20.59	22.18	33	PASS
Band2	15MHz	QPSK	18900	1	0	Low	21.17	22.76	33	PASS
Band2	15MHz	QPSK	18900	1	5	Low	21.09	22.68	33	PASS
Band2	15MHz	QPSK	18900	6	0	Low	20.21	21.8	33	PASS
Band2	15MHz	QPSK	19125	1	0	High	21.31	22.9	33	PASS
Band2	15MHz	QPSK	19125	1	5	High	21.17	22.76	33	PASS
Band2	15MHz	QPSK	19125	6	0	High	21.41	23	33	PASS
Band2	20MHz	QPSK	18700	1	0	Low	21.57	23.16	33	PASS
Band2	20MHz	QPSK	18700	1	5	Low	21.33	22.92	33	PASS
Band2	20MHz	QPSK	18700	6	0	Low	21.58	23.17	33	PASS
Band2	20MHz	QPSK	18900	1	0	Low	21.29	22.88	33	PASS
Band2	20MHz	QPSK	18900	1	5	Low	21.18	22.77	33	PASS
Band2	20MHz	QPSK	18900	6	0	Low	21.39	22.98	33	PASS
Band2	20MHz	QPSK	19100	1	0	High	21.37	22.96	33	PASS
Band2	20MHz	QPSK	19100	1	5	High	21.26	22.85	33	PASS
Band2	20MHz	QPSK	19100	6	0	High	21.49	23.08	33	PASS
Band2	1.4MHz	16QAM	18607	1	0	Low	20.48	22.07	33	PASS
Band2	1.4MHz	16QAM	18607	1	5	Low	20.57	22.16	33	PASS
Band2	1.4MHz	16QAM	18607	5	0	Low	19.77	21.36	33	PASS
Band2	1.4MHz	16QAM	18900	1	0	Low	20.20	21.79	33	PASS
Band2	1.4MHz	16QAM	18900	1	5	Low	20.16	21.75	33	PASS
Band2	1.4MHz	16QAM	18900	5	0	Low	19.44	21.03	33	PASS
Band2	1.4MHz	16QAM	19193	1	0	High	20.48	22.07	33	PASS
Band2	1.4MHz	16QAM	19193	1	5	High	20.48	22.07	33	PASS
Band2	1.4MHz	16QAM	19193	5	0	High	19.60	21.19	33	PASS
Band2	3MHz	16QAM	18615	1	0	Low	20.71	22.3	33	PASS
Band2	3MHz	16QAM	18615	1	5	Low	20.59	22.18	33	PASS
Band2	3MHz	16QAM	18615	5	0	Low	19.73	21.32	33	PASS
Band2	3MHz	16QAM	18900	1	0	Low	20.18	21.77	33	PASS
Band2	3MHz	16QAM	18900	1	5	Low	20.20	21.79	33	PASS
Band2	3MHz	16QAM	18900	5	0	Low	19.50	21.09	33	PASS
Band2	3MHz	16QAM	19185	1	0	High	20.40	21.99	33	PASS
Band2	3MHz	16QAM	19185	1	5	High	20.40	21.99	33	PASS
Band2	3MHz	16QAM	19185	5	0	High	19.62	21.21	33	PASS
Band2	5MHz	16QAM	18625	1	0	Low	21.58	23.17	33	PASS
Band2	5MHz	16QAM	18625	1	5	Low	21.28	22.87	33	PASS
Band2	5MHz	16QAM	18625	5	0	Low	20.42	22.01	33	PASS
Band2	5MHz	16QAM	18900	1	0	Low	21.39	22.98	33	PASS
Band2	5MHz	16QAM	18900	1	5	Low	21.06	22.65	33	PASS
Band2	5MHz	16QAM	18900	5	0	Low	20.14	21.73	33	PASS
Band2	5MHz	16QAM	19175	1	0	High	21.69	23.28	33	PASS
Band2	5MHz	16QAM	19175	1	5	High	21.36	22.95	33	PASS
Band2	5MHz	16QAM	19175	5	0	High	20.25	21.84	33	PASS
Band2	10MHz	16QAM	18650	1	0	Low	21.57	23.16	33	PASS

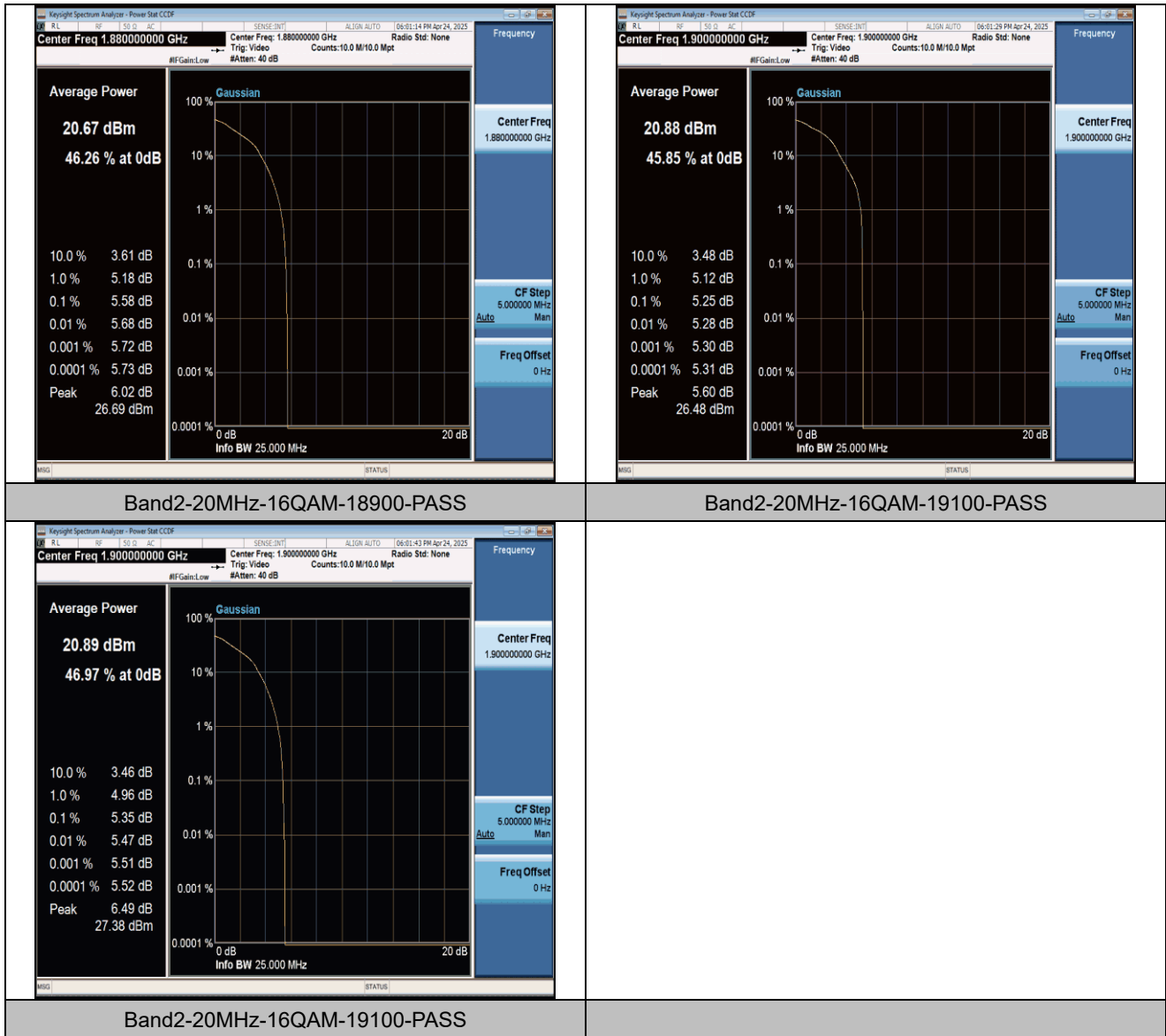
Band2	10MHz	16QAM	18650	1	5	Low	21.33	22.92	33	PASS
Band2	10MHz	16QAM	18650	5	0	Low	21.35	22.94	33	PASS
Band2	10MHz	16QAM	18900	1	0	Low	21.41	23	33	PASS
Band2	10MHz	16QAM	18900	1	5	Low	21.00	22.59	33	PASS
Band2	10MHz	16QAM	18900	5	0	Low	21.06	22.65	33	PASS
Band2	10MHz	16QAM	19150	1	0	High	21.69	23.28	33	PASS
Band2	10MHz	16QAM	19150	1	5	High	21.34	22.93	33	PASS
Band2	10MHz	16QAM	19150	5	0	High	21.38	22.97	33	PASS
Band2	15MHz	16QAM	18675	1	0	Low	21.40	22.99	33	PASS
Band2	15MHz	16QAM	18675	1	5	Low	21.19	22.78	33	PASS
Band2	15MHz	16QAM	18675	5	0	Low	21.32	22.91	33	PASS
Band2	15MHz	16QAM	18900	1	0	Low	21.30	22.89	33	PASS
Band2	15MHz	16QAM	18900	1	5	Low	21.09	22.68	33	PASS
Band2	15MHz	16QAM	18900	5	0	Low	21.13	22.72	33	PASS
Band2	15MHz	16QAM	19125	1	0	High	21.65	23.24	33	PASS
Band2	15MHz	16QAM	19125	1	5	High	21.26	22.85	33	PASS
Band2	15MHz	16QAM	19125	5	0	High	21.32	22.91	33	PASS
Band2	20MHz	16QAM	18700	1	0	Low	21.45	23.04	33	PASS
Band2	20MHz	16QAM	18700	1	5	Low	21.21	22.8	33	PASS
Band2	20MHz	16QAM	18700	5	0	Low	21.25	22.84	33	PASS
Band2	20MHz	16QAM	18900	1	0	Low	21.37	22.96	33	PASS
Band2	20MHz	16QAM	18900	1	5	Low	21.12	22.71	33	PASS
Band2	20MHz	16QAM	18900	5	0	Low	21.18	22.77	33	PASS
Band2	20MHz	16QAM	19100	1	0	High	21.65	23.24	33	PASS
Band2	20MHz	16QAM	19100	1	5	High	21.33	22.92	33	PASS
Band2	20MHz	16QAM	19100	5	0	High	21.38	22.97	33	PASS

Peak-to-Average Ratio(CCDF) for M1**Test Result**

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band2	20MHz	QPSK	18700	6	0	Low	5.13	<=13	PASS
Band2	20MHz	QPSK	18900	6	0	Low	5.46	<=13	PASS
Band2	20MHz	QPSK	19100	6	0	High	5.06	<=13	PASS
Band2	20MHz	16QAM	18700	1	0	Low	5.02	<=13	PASS
Band2	20MHz	16QAM	18700	5	0	Low	5.42	<=13	PASS
Band2	20MHz	16QAM	18900	1	0	Low	5.15	<=13	PASS
Band2	20MHz	16QAM	18900	5	0	Low	5.58	<=13	PASS
Band2	20MHz	16QAM	19100	1	0	High	5.25	<=13	PASS
Band2	20MHz	16QAM	19100	5	0	High	5.35	<=13	PASS

Test Graphs

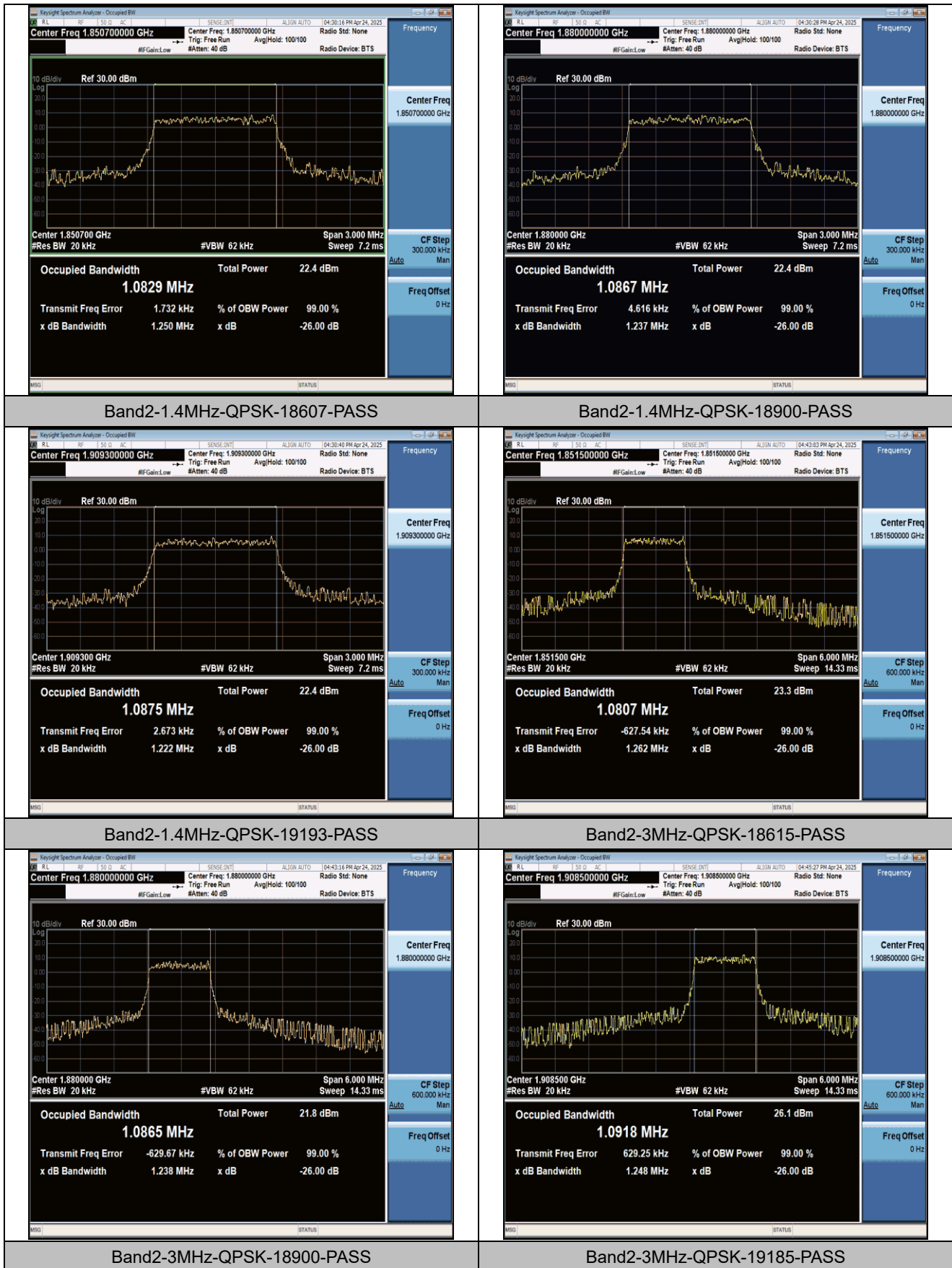


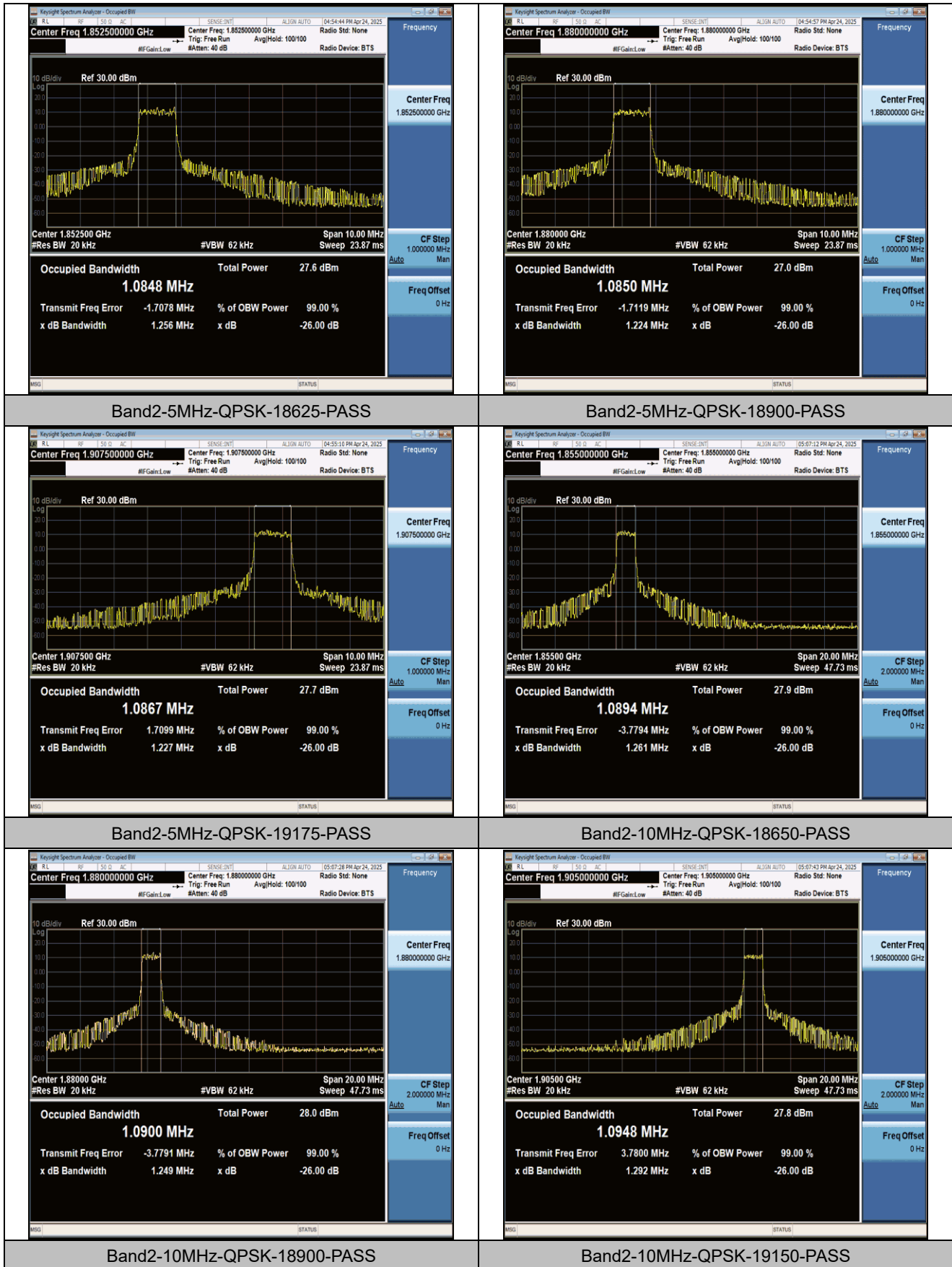


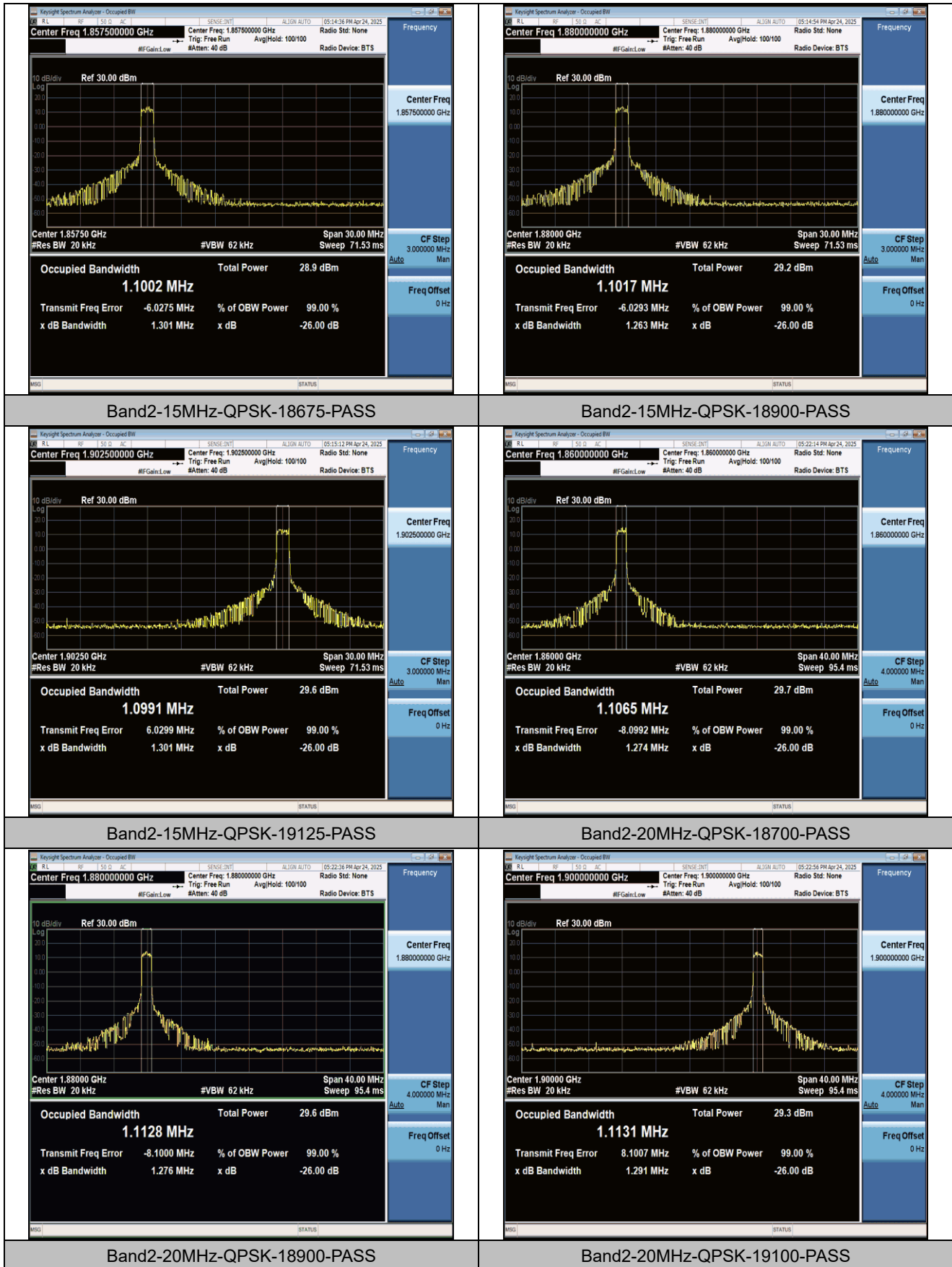
26dB Bandwidth and Occupied Bandwidth for M1**Test Result**

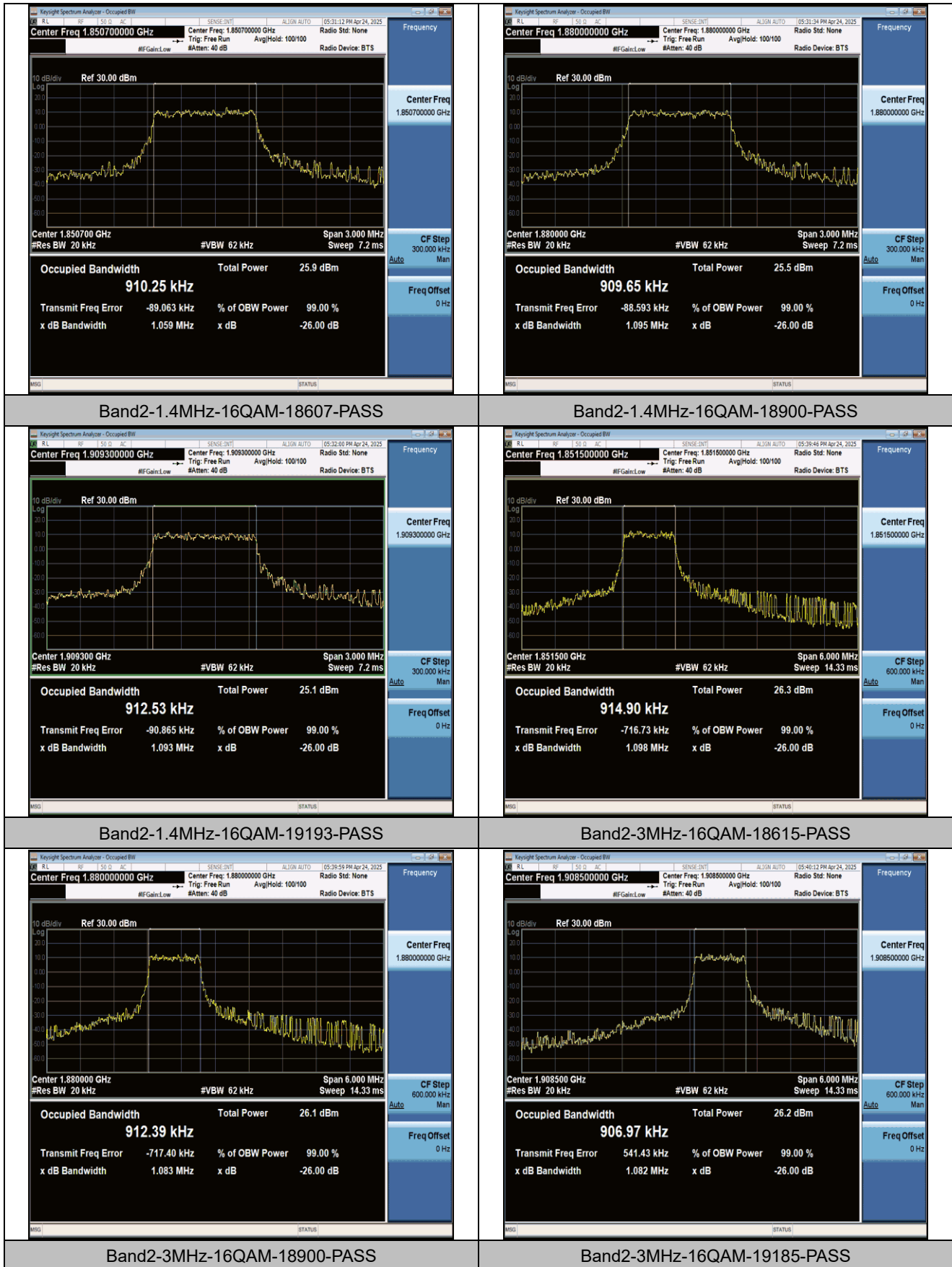
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band2	1.4MHz	QPSK	18607	6	0	Low	1.0829	1.250	PASS
Band2	1.4MHz	QPSK	18900	6	0	Low	1.0867	1.237	PASS
Band2	1.4MHz	QPSK	19193	6	0	High	1.0875	1.222	PASS
Band2	3MHz	QPSK	18615	6	0	Low	1.0807	1.262	PASS
Band2	3MHz	QPSK	18900	6	0	Low	1.0865	1.238	PASS
Band2	3MHz	QPSK	19185	6	0	High	1.0918	1.248	PASS
Band2	5MHz	QPSK	18625	6	0	Low	1.0848	1.256	PASS
Band2	5MHz	QPSK	18900	6	0	Low	1.0850	1.224	PASS
Band2	5MHz	QPSK	19175	6	0	High	1.0867	1.227	PASS
Band2	10MHz	QPSK	18650	6	0	Low	1.0894	1.261	PASS
Band2	10MHz	QPSK	18900	6	0	Low	1.0900	1.249	PASS
Band2	10MHz	QPSK	19150	6	0	High	1.0948	1.292	PASS
Band2	15MHz	QPSK	18675	6	0	Low	1.1002	1.301	PASS
Band2	15MHz	QPSK	18900	6	0	Low	1.1017	1.263	PASS
Band2	15MHz	QPSK	19125	6	0	High	1.0991	1.301	PASS
Band2	20MHz	QPSK	18700	6	0	Low	1.1065	1.274	PASS
Band2	20MHz	QPSK	18900	6	0	Low	1.1128	1.276	PASS
Band2	20MHz	QPSK	19100	6	0	High	1.1131	1.291	PASS
Band2	1.4MHz	16QAM	18607	5	0	Low	0.91025	1.059	PASS
Band2	1.4MHz	16QAM	18900	5	0	Low	0.90965	1.095	PASS
Band2	1.4MHz	16QAM	19193	5	0	High	0.91253	1.093	PASS
Band2	3MHz	16QAM	18615	5	0	Low	0.91490	1.098	PASS
Band2	3MHz	16QAM	18900	5	0	Low	0.91239	1.083	PASS
Band2	3MHz	16QAM	19185	5	0	High	0.90697	1.082	PASS
Band2	5MHz	16QAM	18625	5	0	Low	0.92199	1.116	PASS
Band2	5MHz	16QAM	18900	5	0	Low	0.91778	1.082	PASS
Band2	5MHz	16QAM	19175	5	0	High	0.91803	1.079	PASS
Band2	10MHz	16QAM	18650	5	0	Low	0.91657	1.111	PASS
Band2	10MHz	16QAM	18900	5	0	Low	0.93638	1.143	PASS
Band2	10MHz	16QAM	19150	5	0	High	0.93060	1.102	PASS
Band2	15MHz	16QAM	18675	5	0	Low	0.94399	1.147	PASS
Band2	15MHz	16QAM	18900	5	0	Low	0.94063	1.125	PASS
Band2	15MHz	16QAM	19125	5	0	High	0.92923	1.114	PASS
Band2	20MHz	16QAM	18700	5	0	Low	0.94970	1.155	PASS
Band2	20MHz	16QAM	18900	5	0	Low	0.95043	1.154	PASS
Band2	20MHz	16QAM	19100	5	0	High	0.94829	1.149	PASS

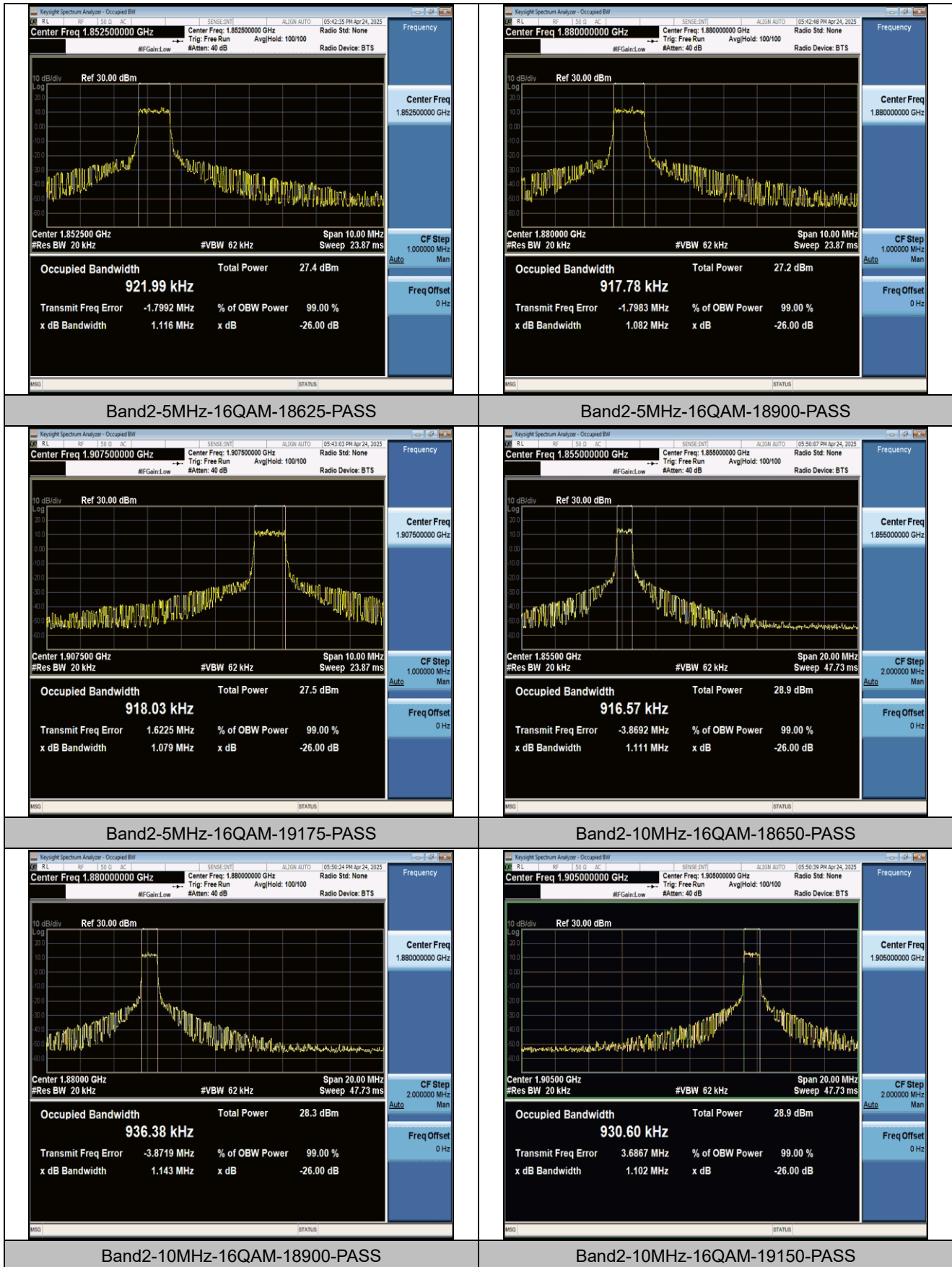
Test Graphs

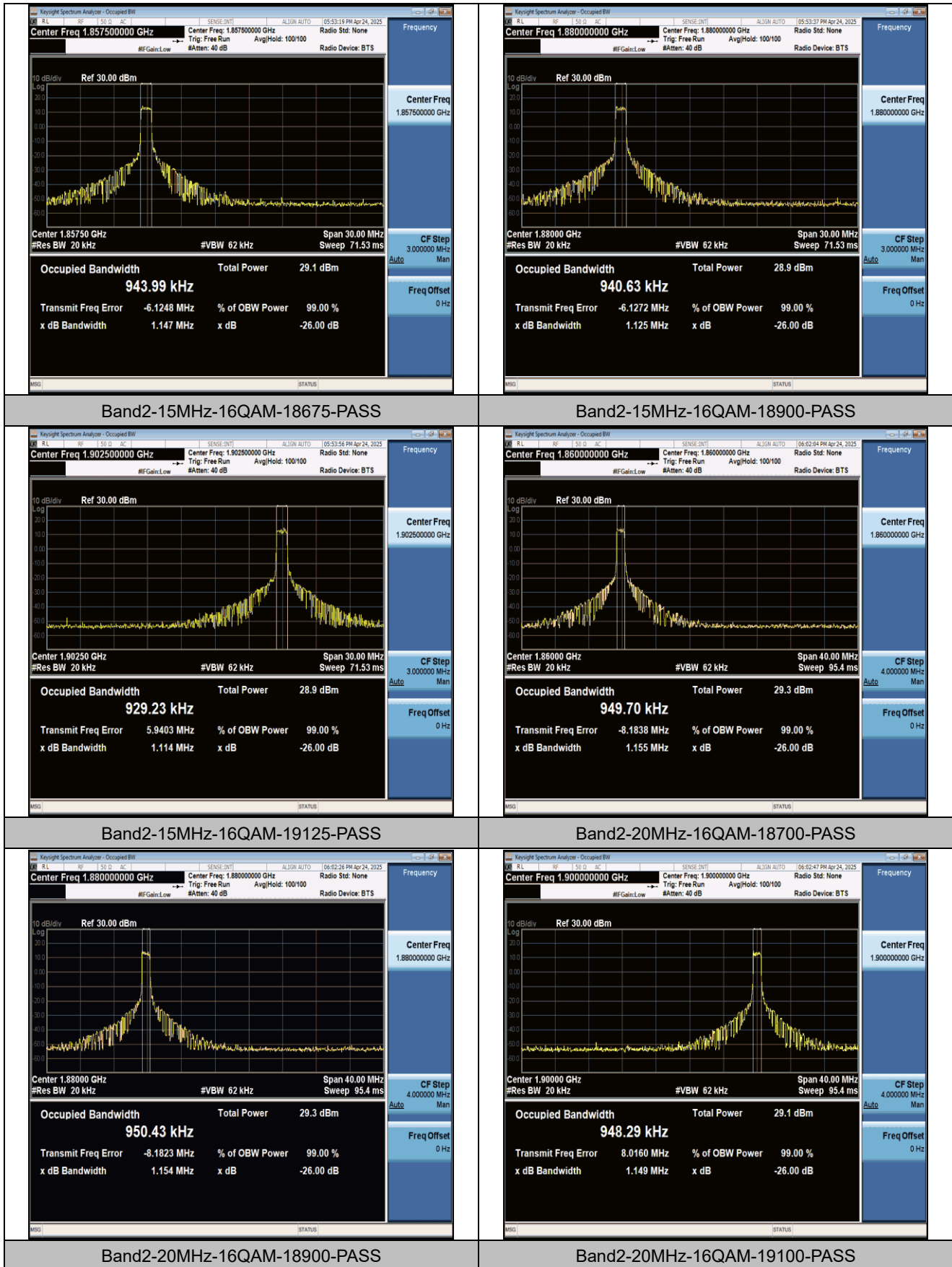






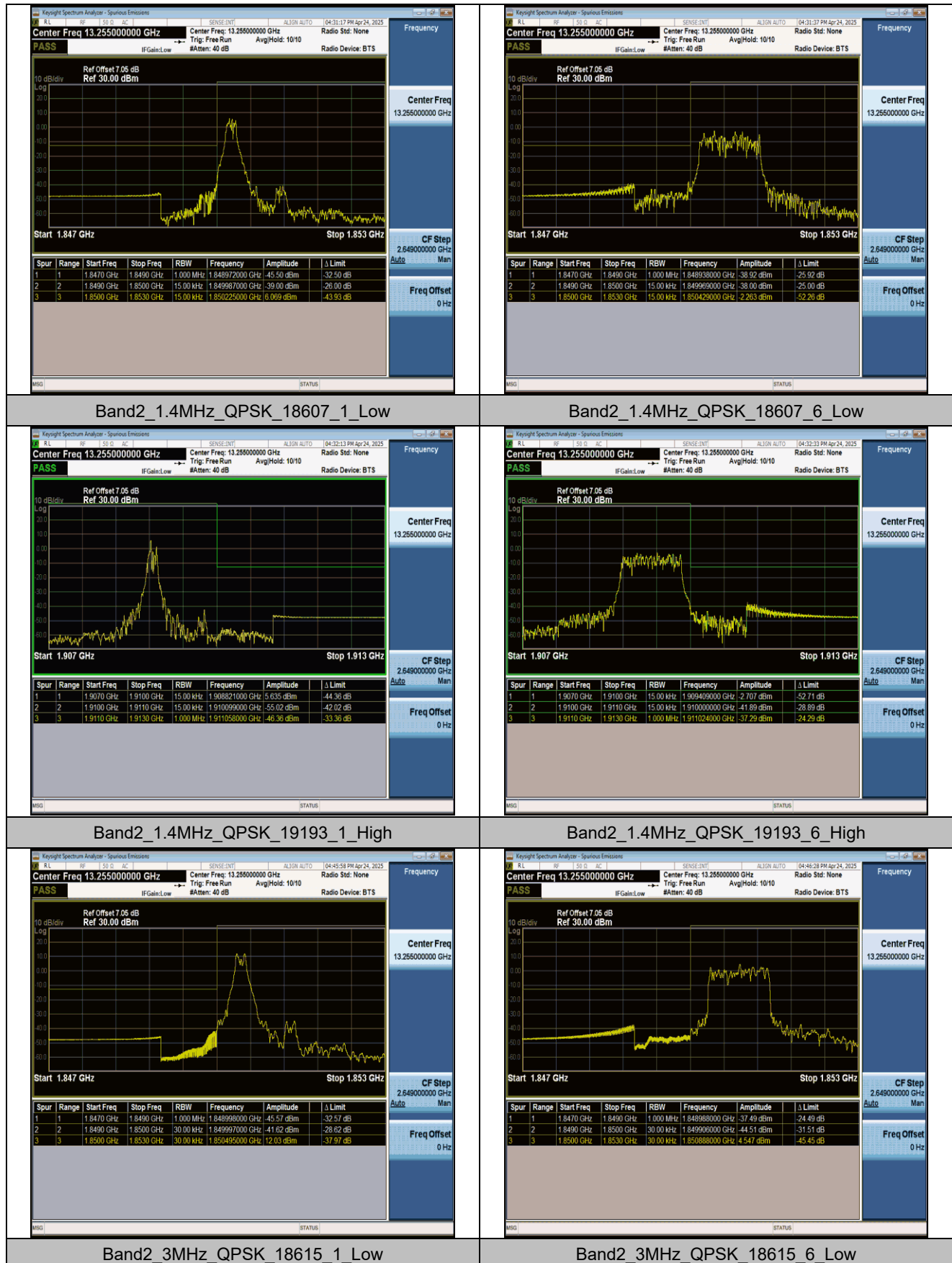






Band Edge for M1

Test Graphs

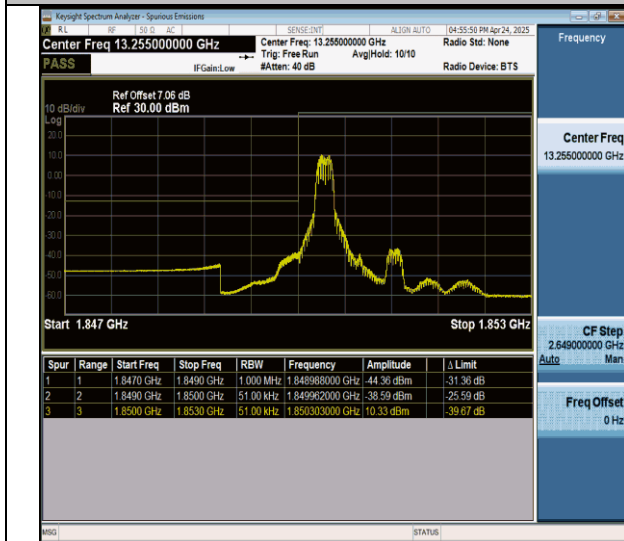




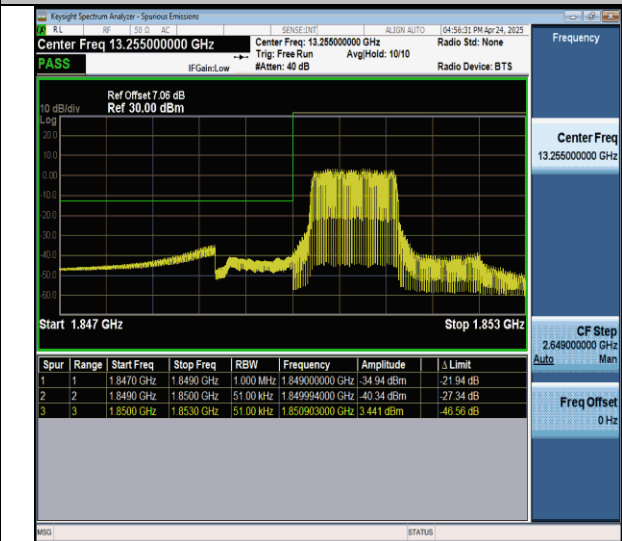
Band2_3MHz_QPSK_19185_1_High



Band2_3MHz_QPSK_19185_6_High



Band2_5MHz_QPSK_18625_1_Low



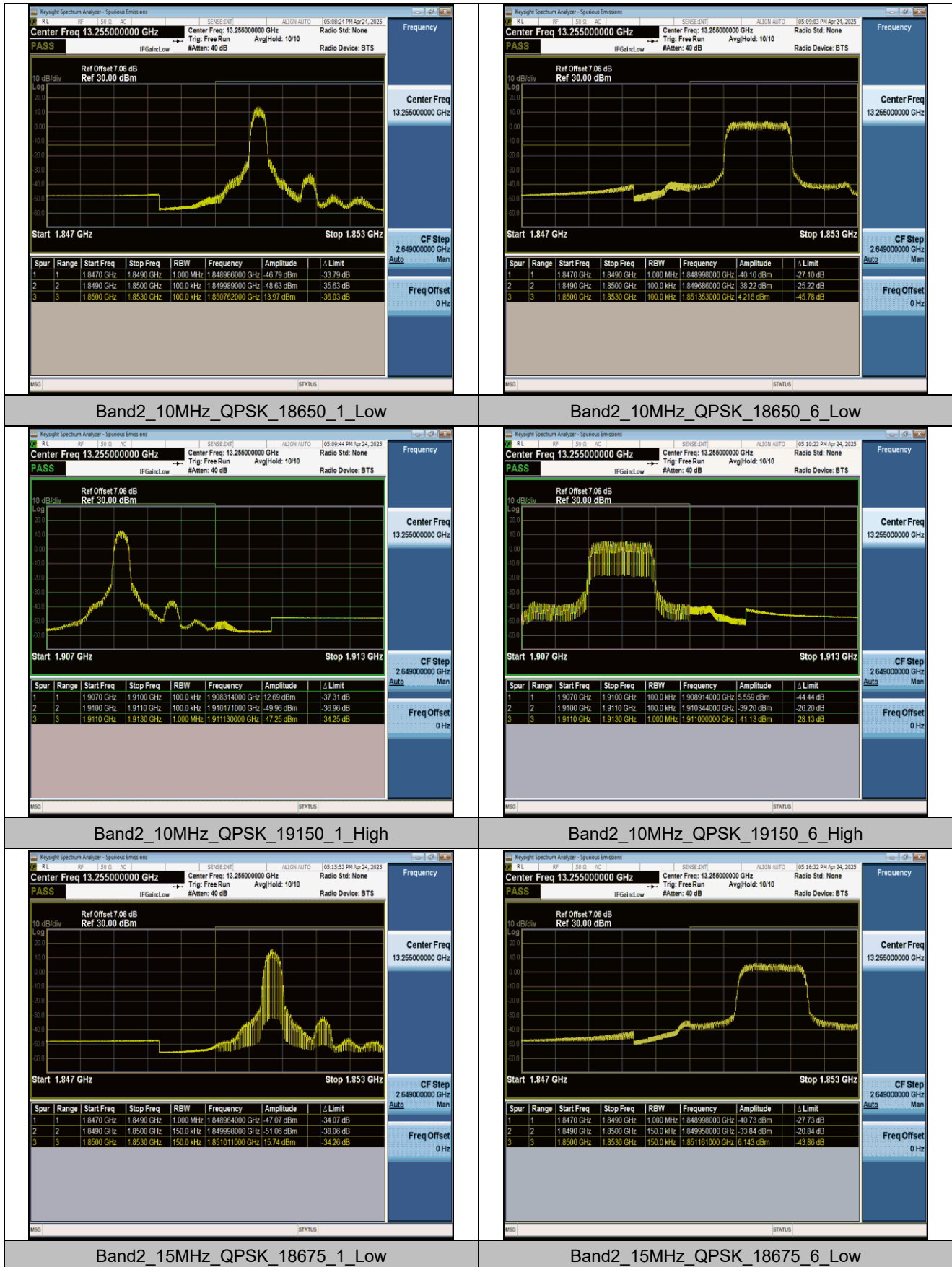
Band2_5MHz_QPSK_18625_6_Low



Band2_5MHz_QPSK_19175_1_High



Band2_5MHz_QPSK_19175_6_High

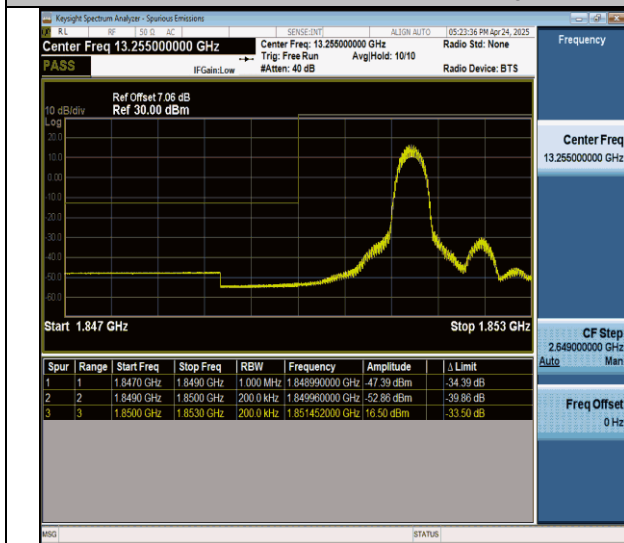




Band2_15MHz_QPSK_19125_1_High



Band2_15MHz_QPSK_19125_6_High



Band2_20MHz_QPSK_18700_1_Low



Band2_20MHz_QPSK_18700_6_Low



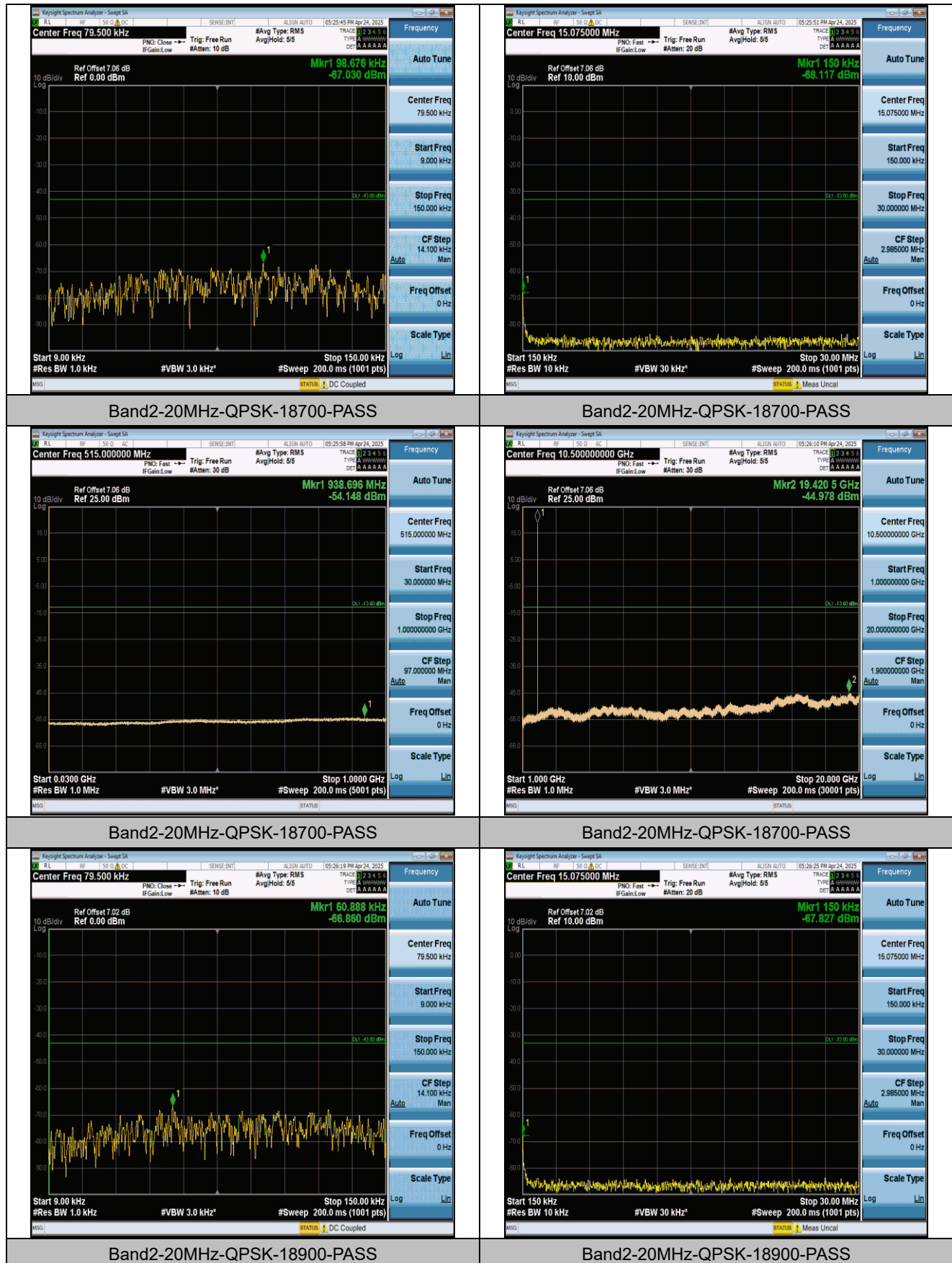
Band2_20MHz_QPSK_19100_1_High

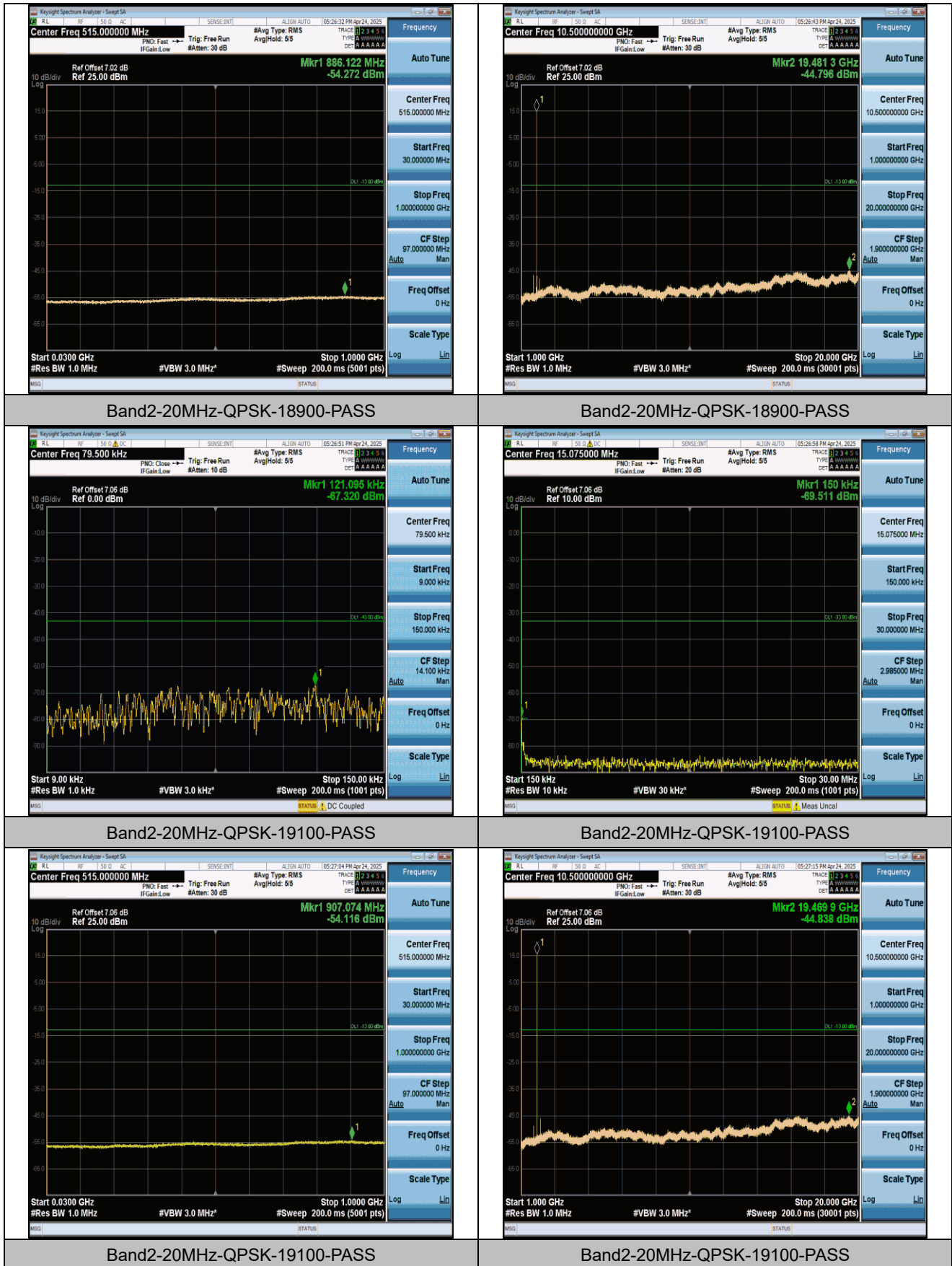


Band2_20MHz_QPSK_19100_6_High

Conducted Spurious Emission for M1

Test Graphs





Frequency Stability for M1

Test Result

Voltage											
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band2	20MHz	QPSK	18900	6	0	Low	VN	NT	2.50	0.001330	PASS
Band2	20MHz	QPSK	18900	6	0	Low	VL	NT	3.30	0.001755	PASS
Band2	20MHz	QPSK	18900	6	0	Low	VH	NT	8.00	0.004255	PASS

Temperature											
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band2	20MHz	QPSK	18900	6	0	Low	NV	-30	1.30	0.000691	PASS
Band2	20MHz	QPSK	18900	6	0	Low	NV	-20	3.40	0.001809	PASS
Band2	20MHz	QPSK	18900	6	0	Low	NV	-10	6.10	0.003245	PASS
Band2	20MHz	QPSK	18900	6	0	Low	NV	0	3.80	0.002021	PASS
Band2	20MHz	QPSK	18900	6	0	Low	NV	10	6.70	0.003564	PASS
Band2	20MHz	QPSK	18900	6	0	Low	NV	20	4.90	0.002606	PASS
Band2	20MHz	QPSK	18900	6	0	Low	NV	30	3.30	0.001755	PASS
Band2	20MHz	QPSK	18900	6	0	Low	NV	40	6.50	0.003457	PASS
Band2	20MHz	QPSK	18900	6	0	Low	NV	50	7.10	0.003777	PASS

~The End~