

Appendix-B LTE Cat M1 Band 5

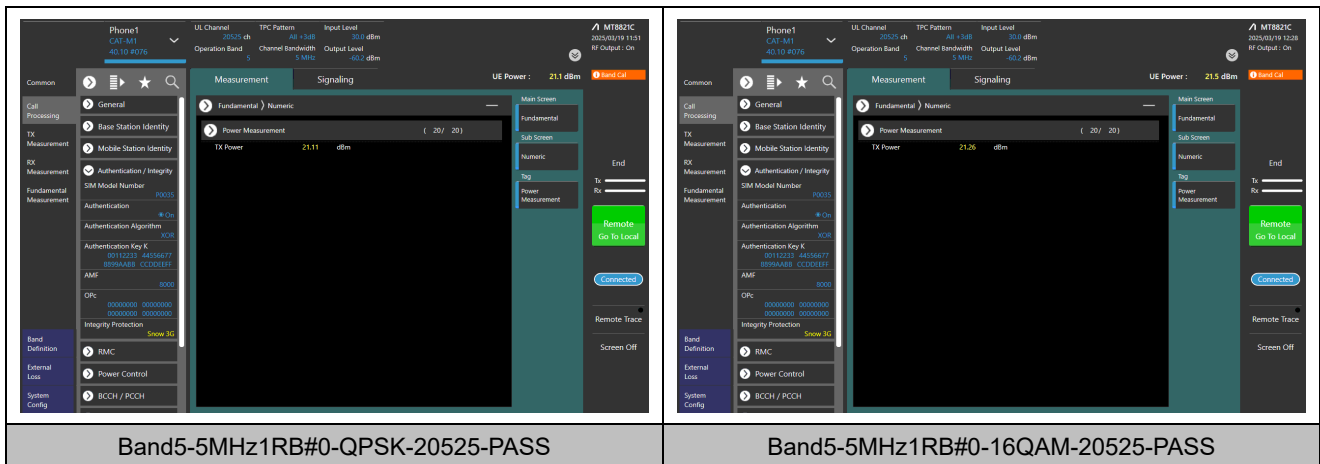
Effective (Isotropic) Radiated Power Output Data for M1

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Power (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band5	1.4MHz	QPSK	20407	1	0	Low	20.93	21.31	38.45	PASS
Band5	1.4MHz	QPSK	20407	1	5	Low	20.87	21.25	38.45	PASS
Band5	1.4MHz	QPSK	20407	6	0	Low	20.04	20.42	38.45	PASS
Band5	1.4MHz	QPSK	20525	1	0	Low	21.01	21.39	38.45	PASS
Band5	1.4MHz	QPSK	20525	1	5	Low	20.83	21.21	38.45	PASS
Band5	1.4MHz	QPSK	20525	6	0	Low	20.04	20.42	38.45	PASS
Band5	1.4MHz	QPSK	20643	1	0	High	20.63	21.01	38.45	PASS
Band5	1.4MHz	QPSK	20643	1	5	High	20.45	20.83	38.45	PASS
Band5	1.4MHz	QPSK	20643	6	0	High	20.05	20.43	38.45	PASS
Band5	3MHz	QPSK	20415	1	0	Low	21.08	21.46	38.45	PASS
Band5	3MHz	QPSK	20415	1	5	Low	20.84	21.22	38.45	PASS
Band5	3MHz	QPSK	20415	6	0	Low	20.06	20.44	38.45	PASS
Band5	3MHz	QPSK	20525	1	0	Low	21.1	21.48	38.45	PASS
Band5	3MHz	QPSK	20525	1	5	Low	20.79	21.17	38.45	PASS
Band5	3MHz	QPSK	20525	6	0	Low	20.07	20.45	38.45	PASS
Band5	3MHz	QPSK	20635	1	0	High	20.76	21.14	38.45	PASS
Band5	3MHz	QPSK	20635	1	5	High	20.5	20.88	38.45	PASS
Band5	3MHz	QPSK	20635	6	0	High	20.33	20.71	38.45	PASS
Band5	5MHz	QPSK	20425	1	0	Low	21.04	21.42	38.45	PASS
Band5	5MHz	QPSK	20425	1	5	Low	20.91	21.29	38.45	PASS
Band5	5MHz	QPSK	20425	6	0	Low	20.14	20.52	38.45	PASS
Band5	5MHz	QPSK	20525	1	0	Low	21.11	21.49	38.45	PASS
Band5	5MHz	QPSK	20525	1	5	Low	20.9	21.28	38.45	PASS
Band5	5MHz	QPSK	20525	6	0	Low	20.11	20.49	38.45	PASS
Band5	5MHz	QPSK	20625	1	0	High	20.77	21.15	38.45	PASS
Band5	5MHz	QPSK	20625	1	5	High	20.67	21.05	38.45	PASS
Band5	5MHz	QPSK	20625	6	0	High	20.77	21.15	38.45	PASS
Band5	10MHz	QPSK	20450	1	0	Low	21.06	21.44	38.45	PASS
Band5	10MHz	QPSK	20450	1	5	Low	20.9	21.28	38.45	PASS
Band5	10MHz	QPSK	20450	6	0	Low	20.13	20.51	38.45	PASS
Band5	10MHz	QPSK	20525	1	0	Low	21.06	21.44	38.45	PASS
Band5	10MHz	QPSK	20525	1	5	Low	20.86	21.24	38.45	PASS
Band5	10MHz	QPSK	20525	6	0	Low	20.09	20.47	38.45	PASS
Band5	10MHz	QPSK	20600	1	0	High	20.86	21.24	38.45	PASS
Band5	10MHz	QPSK	20600	1	5	High	20.55	20.93	38.45	PASS
Band5	10MHz	QPSK	20600	6	0	High	20.75	21.13	38.45	PASS

Band5	1.4MHz	16QAM	20407	1	0	Low	20.93	21.31	38.45	PASS
Band5	1.4MHz	16QAM	20407	1	5	Low	20.79	21.17	38.45	PASS
Band5	1.4MHz	16QAM	20407	5	0	Low	20.15	20.53	38.45	PASS
Band5	1.4MHz	16QAM	20525	1	0	Low	20.93	21.31	38.45	PASS
Band5	1.4MHz	16QAM	20525	1	5	Low	20.83	21.21	38.45	PASS
Band5	1.4MHz	16QAM	20525	5	0	Low	20.15	20.53	38.45	PASS
Band5	1.4MHz	16QAM	20643	1	0	High	20.63	21.01	38.45	PASS
Band5	1.4MHz	16QAM	20643	1	5	High	20.43	20.81	38.45	PASS
Band5	1.4MHz	16QAM	20643	5	0	High	20.35	20.73	38.45	PASS
Band5	3MHz	16QAM	20415	1	0	Low	20.87	21.25	38.45	PASS
Band5	3MHz	16QAM	20415	1	5	Low	20.82	21.2	38.45	PASS
Band5	3MHz	16QAM	20415	5	0	Low	20.11	20.49	38.45	PASS
Band5	3MHz	16QAM	20525	1	0	Low	20.05	20.43	38.45	PASS
Band5	3MHz	16QAM	20525	1	5	Low	20.82	21.2	38.45	PASS
Band5	3MHz	16QAM	20525	5	0	Low	20.15	20.53	38.45	PASS
Band5	3MHz	16QAM	20635	1	0	High	20.72	21.1	38.45	PASS
Band5	3MHz	16QAM	20635	1	5	High	20.47	20.85	38.45	PASS
Band5	3MHz	16QAM	20635	5	0	High	20.32	20.7	38.45	PASS
Band5	5MHz	16QAM	20425	1	0	Low	20.88	21.26	38.45	PASS
Band5	5MHz	16QAM	20425	1	5	Low	20.98	21.36	38.45	PASS
Band5	5MHz	16QAM	20425	5	0	Low	20.94	21.32	38.45	PASS
Band5	5MHz	16QAM	20525	1	0	Low	21.26	21.64	38.45	PASS
Band5	5MHz	16QAM	20525	1	5	Low	21.01	21.39	38.45	PASS
Band5	5MHz	16QAM	20525	5	0	Low	20.03	20.41	38.45	PASS
Band5	5MHz	16QAM	20625	1	0	High	20.95	21.33	38.45	PASS
Band5	5MHz	16QAM	20625	1	5	High	20.62	21	38.45	PASS
Band5	5MHz	16QAM	20625	5	0	High	20.67	21.05	38.45	PASS
Band5	10MHz	16QAM	20450	1	0	Low	21.05	21.43	38.45	PASS
Band5	10MHz	16QAM	20450	1	5	Low	20.96	21.34	38.45	PASS
Band5	10MHz	16QAM	20450	5	0	Low	20.88	21.26	38.45	PASS
Band5	10MHz	16QAM	20525	1	0	Low	21.14	21.52	38.45	PASS
Band5	10MHz	16QAM	20525	1	5	Low	20.84	21.22	38.45	PASS
Band5	10MHz	16QAM	20525	5	0	Low	20.94	21.32	38.45	PASS
Band5	10MHz	16QAM	20600	1	0	High	20.85	21.23	38.45	PASS
Band5	10MHz	16QAM	20600	1	5	High	20.68	21.06	38.45	PASS
Band5	10MHz	16QAM	20600	5	0	High	20.78	21.16	38.45	PASS

Test Graphs

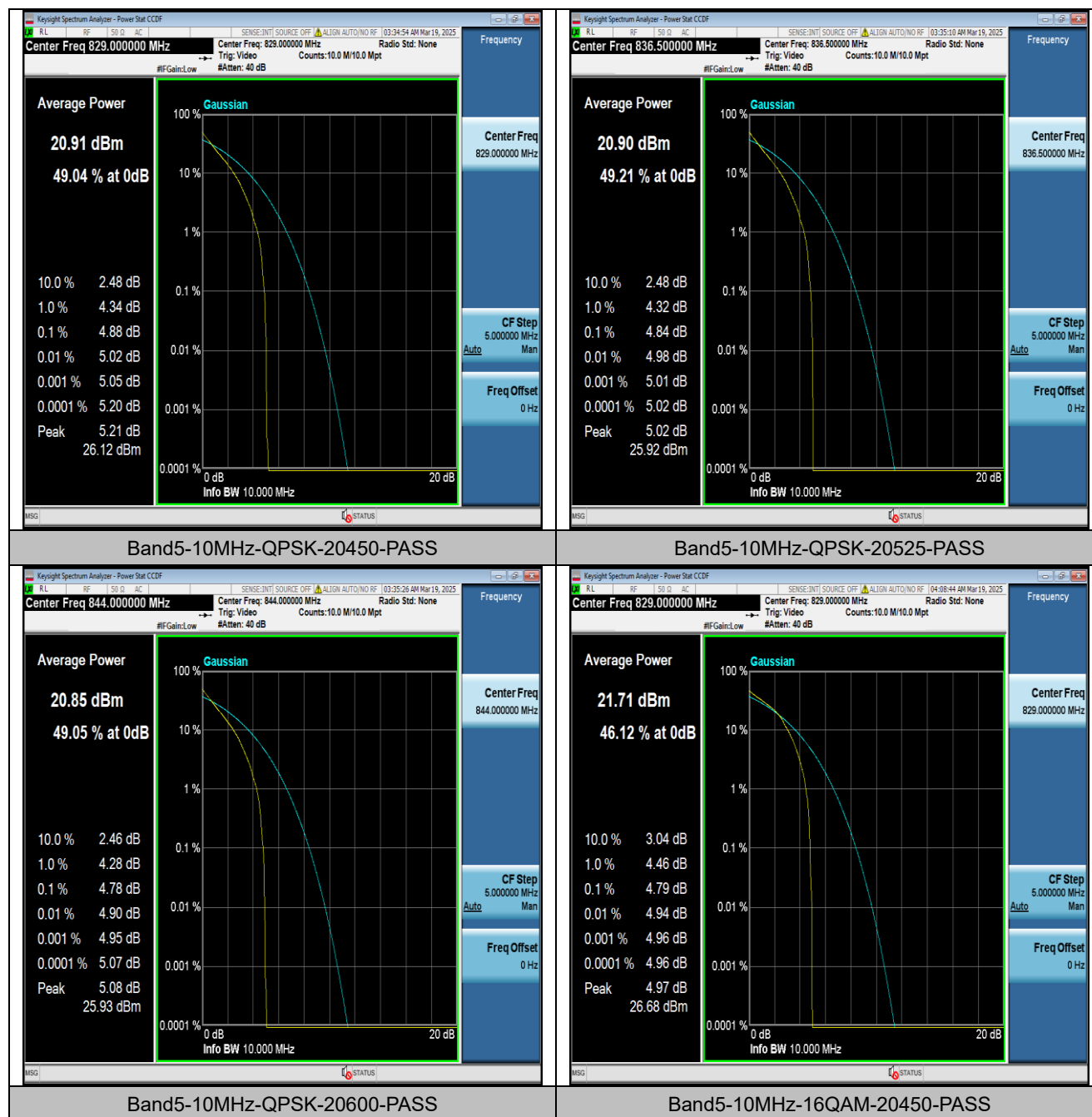


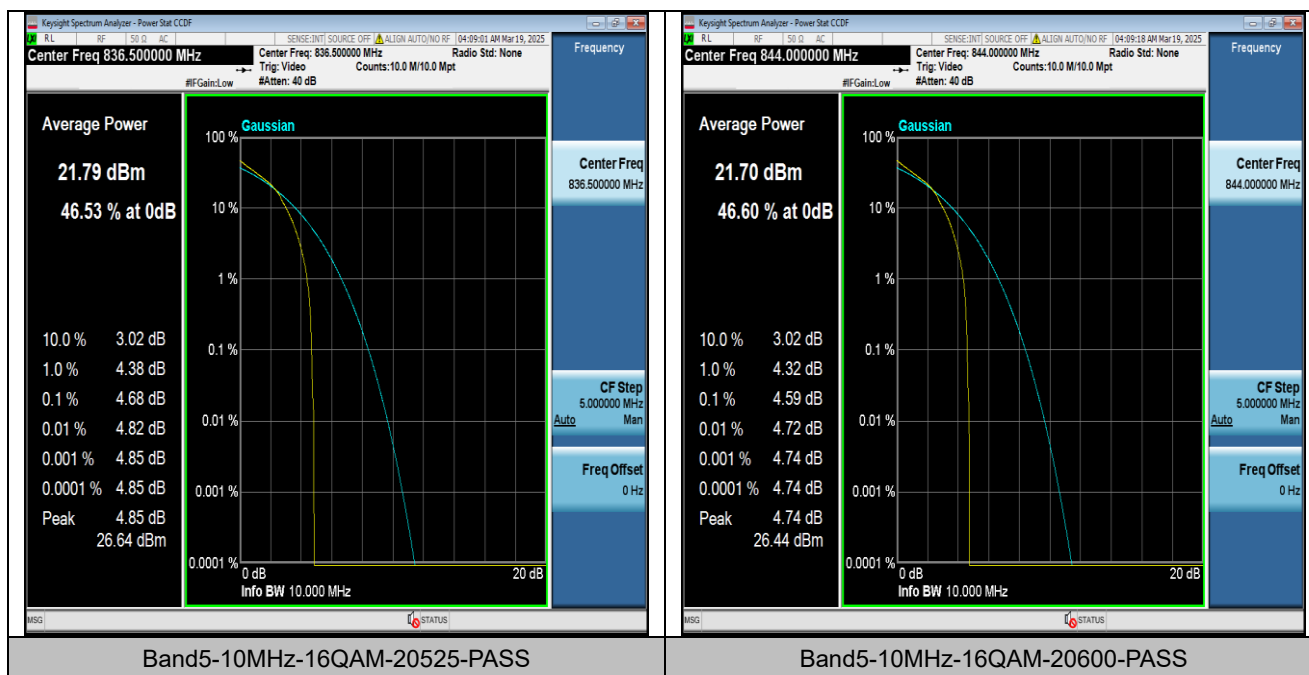
Peak-to-Average Ratio(CCDF) for M1

Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band5	10MHz	QPSK	20450	6	0	Low	4.88	<=13	PASS
Band5	10MHz	QPSK	20525	6	0	Low	4.84	<=13	PASS
Band5	10MHz	QPSK	20600	6	0	High	4.78	<=13	PASS
Band5	10MHz	16QAM	20450	5	0	Low	4.79	<=13	PASS
Band5	10MHz	16QAM	20525	5	0	Low	4.68	<=13	PASS
Band5	10MHz	16QAM	20600	5	0	High	4.59	<=13	PASS

Test Graphs

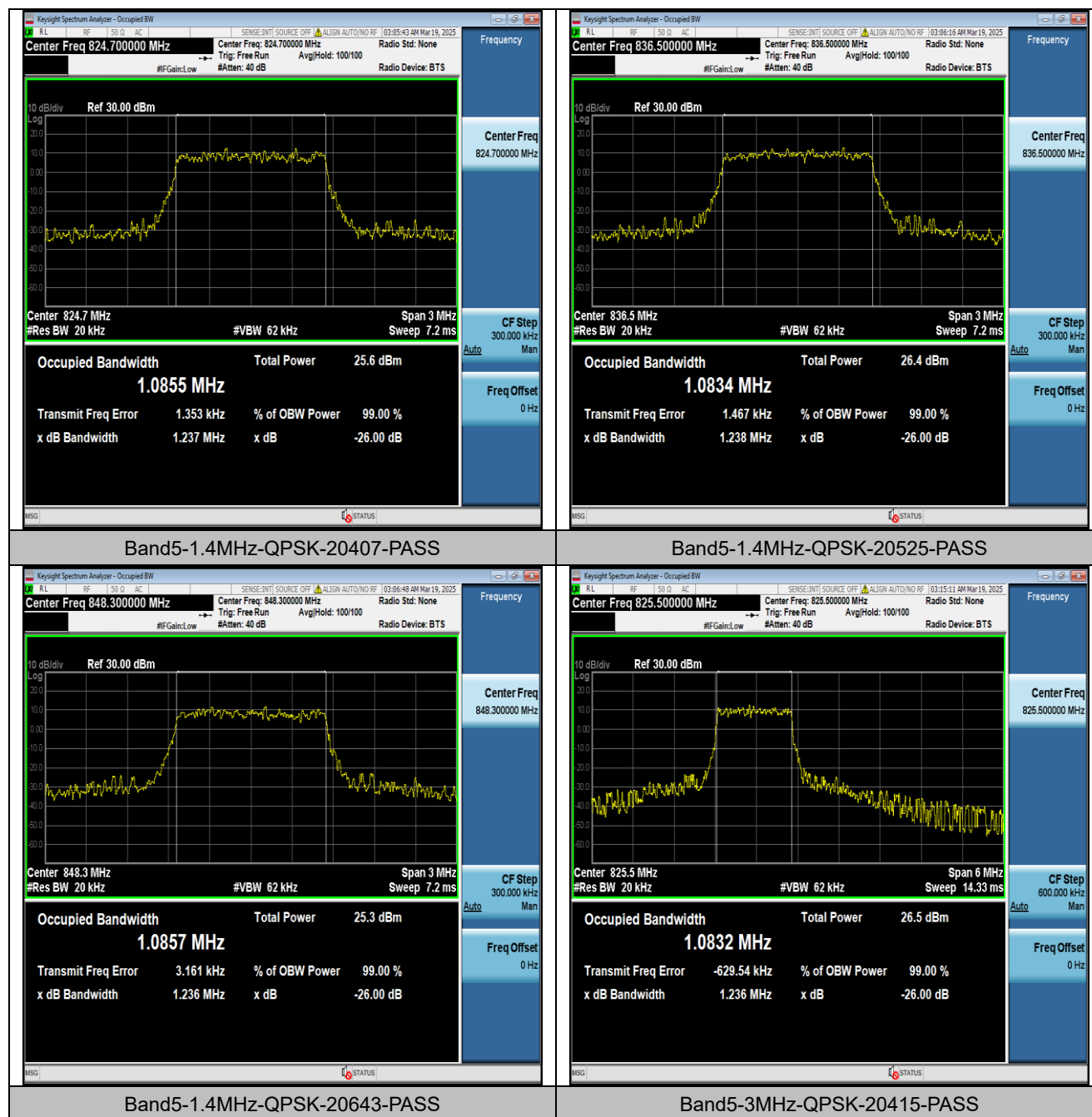


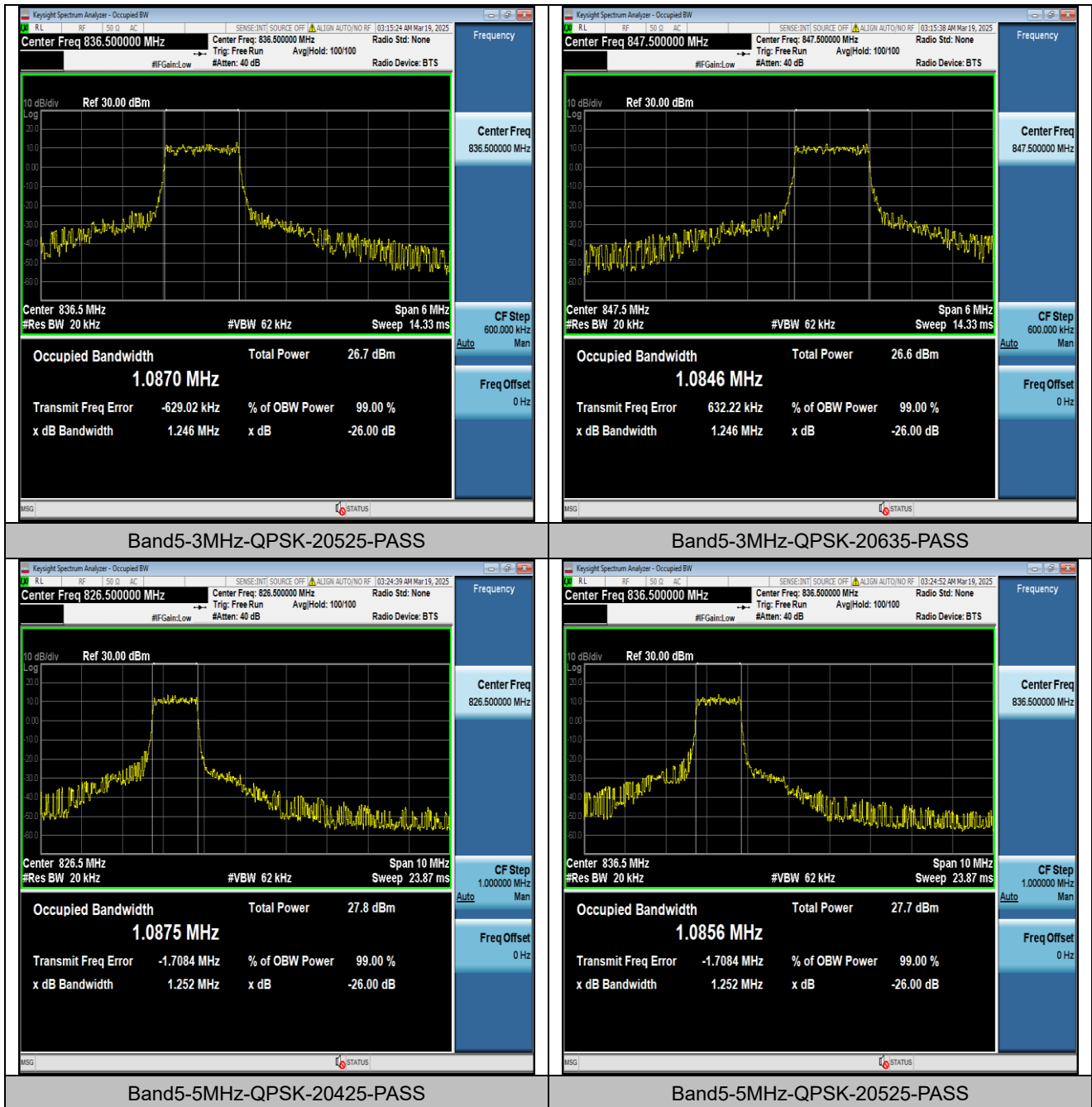


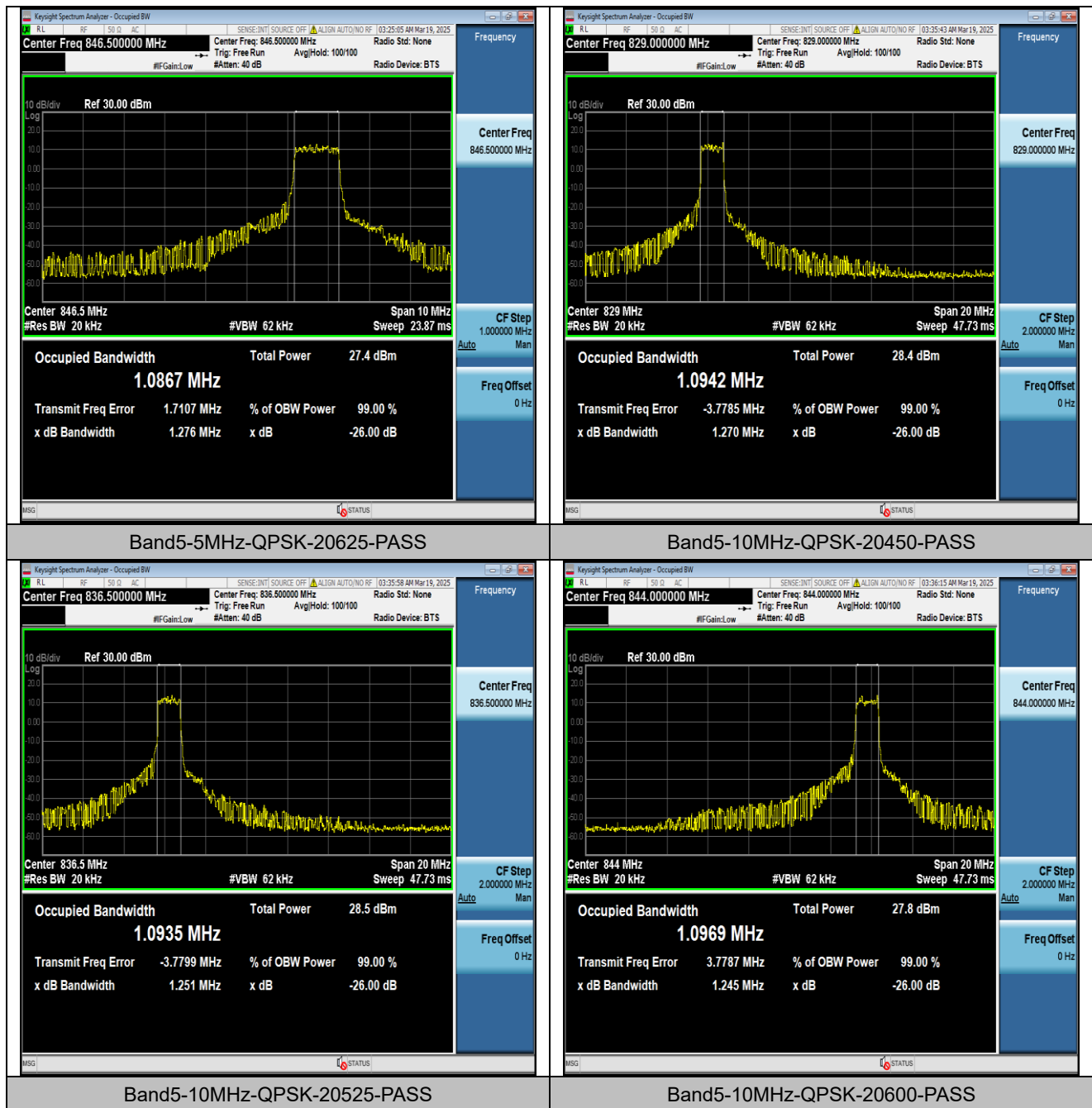
26dB Bandwidth and Occupied Bandwidth for M1**Test Result**

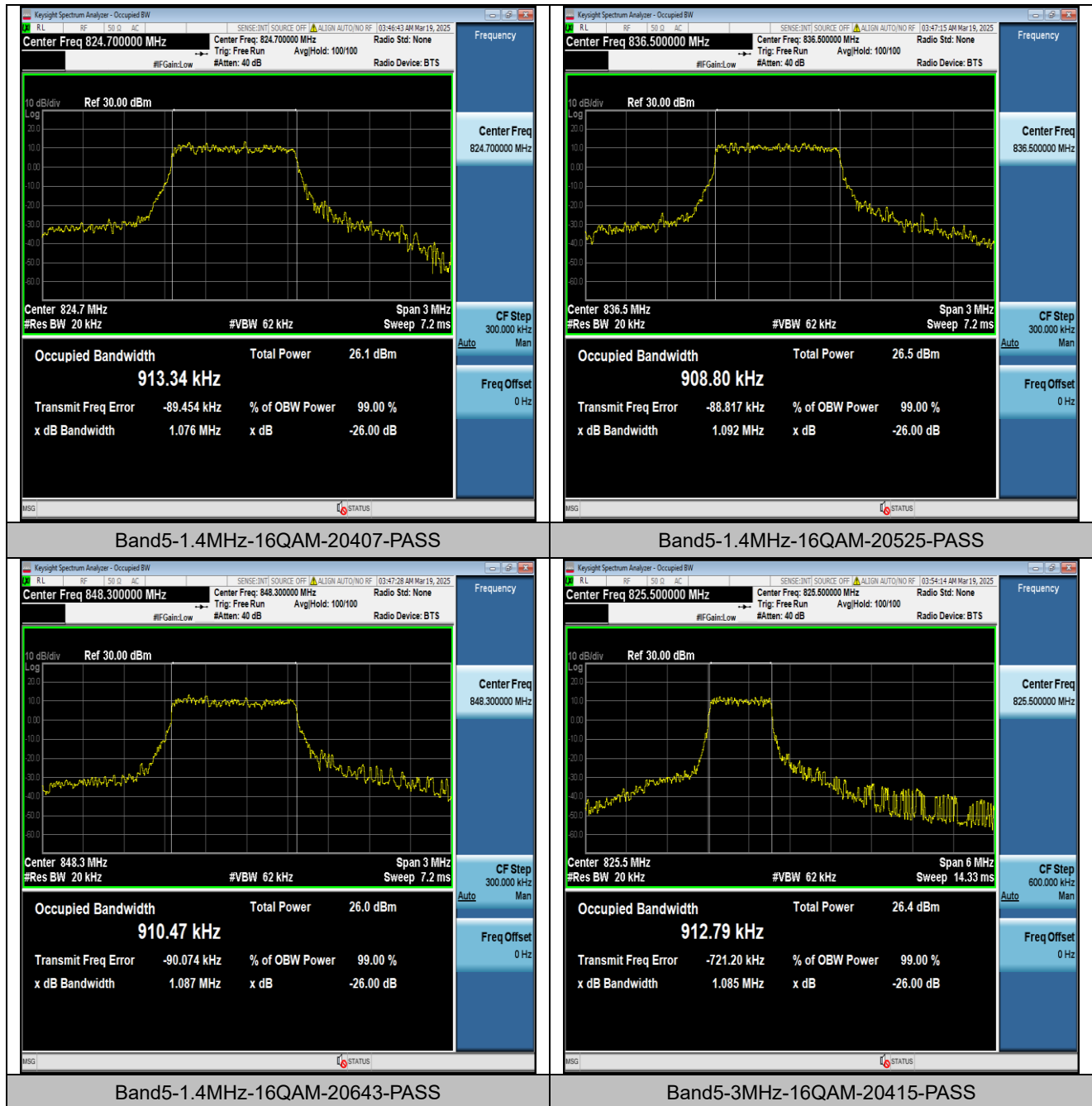
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band5	1.4MHz	QPSK	20407	6	0	Low	1.0855	1.237	PASS
Band5	1.4MHz	QPSK	20525	6	0	Low	1.0834	1.238	PASS
Band5	1.4MHz	QPSK	20643	6	0	High	1.0857	1.236	PASS
Band5	3MHz	QPSK	20415	6	0	Low	1.0832	1.236	PASS
Band5	3MHz	QPSK	20525	6	0	Low	1.0870	1.246	PASS
Band5	3MHz	QPSK	20635	6	0	High	1.0846	1.246	PASS
Band5	5MHz	QPSK	20425	6	0	Low	1.0875	1.252	PASS
Band5	5MHz	QPSK	20525	6	0	Low	1.0856	1.252	PASS
Band5	5MHz	QPSK	20625	6	0	High	1.0867	1.276	PASS
Band5	10MHz	QPSK	20450	6	0	Low	1.0942	1.270	PASS
Band5	10MHz	QPSK	20525	6	0	Low	1.0935	1.251	PASS
Band5	10MHz	QPSK	20600	6	0	High	1.0969	1.245	PASS
Band5	1.4MHz	16QAM	20407	5	0	Low	0.91334	1.076	PASS
Band5	1.4MHz	16QAM	20525	5	0	Low	0.90880	1.092	PASS
Band5	1.4MHz	16QAM	20643	5	0	High	0.91047	1.087	PASS
Band5	3MHz	16QAM	20415	5	0	Low	0.91279	1.085	PASS
Band5	3MHz	16QAM	20525	5	0	Low	0.91292	1.082	PASS
Band5	3MHz	16QAM	20635	5	0	High	0.91652	1.090	PASS
Band5	5MHz	16QAM	20425	5	0	Low	0.91790	1.079	PASS
Band5	5MHz	16QAM	20525	5	0	Low	0.92241	1.084	PASS
Band5	5MHz	16QAM	20625	5	0	High	0.91876	1.096	PASS
Band5	10MHz	16QAM	20450	5	0	Low	0.91963	1.083	PASS
Band5	10MHz	16QAM	20525	5	0	Low	0.93363	1.126	PASS
Band5	10MHz	16QAM	20600	5	0	High	0.92628	1.117	PASS

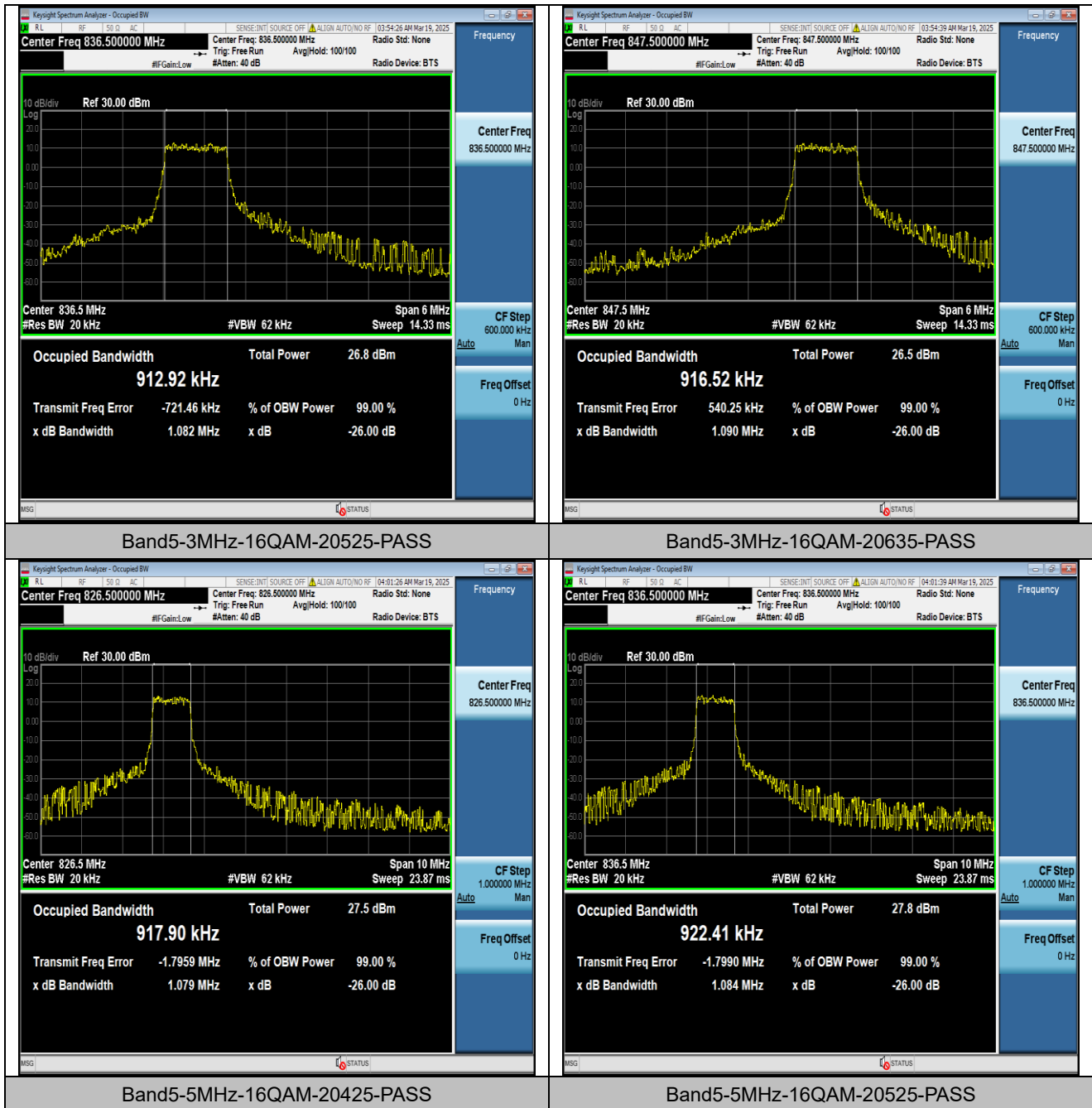
Test Graphs

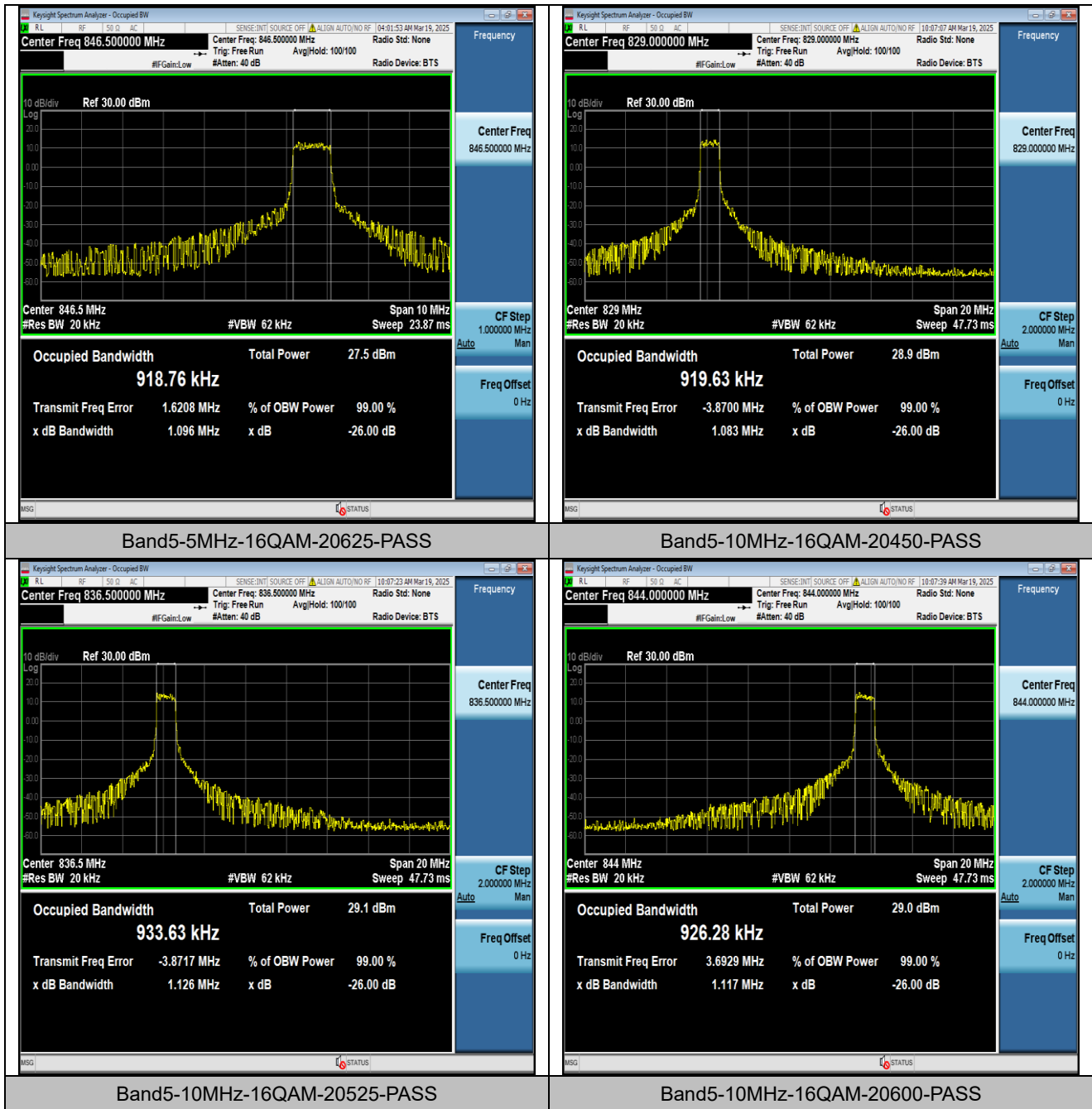






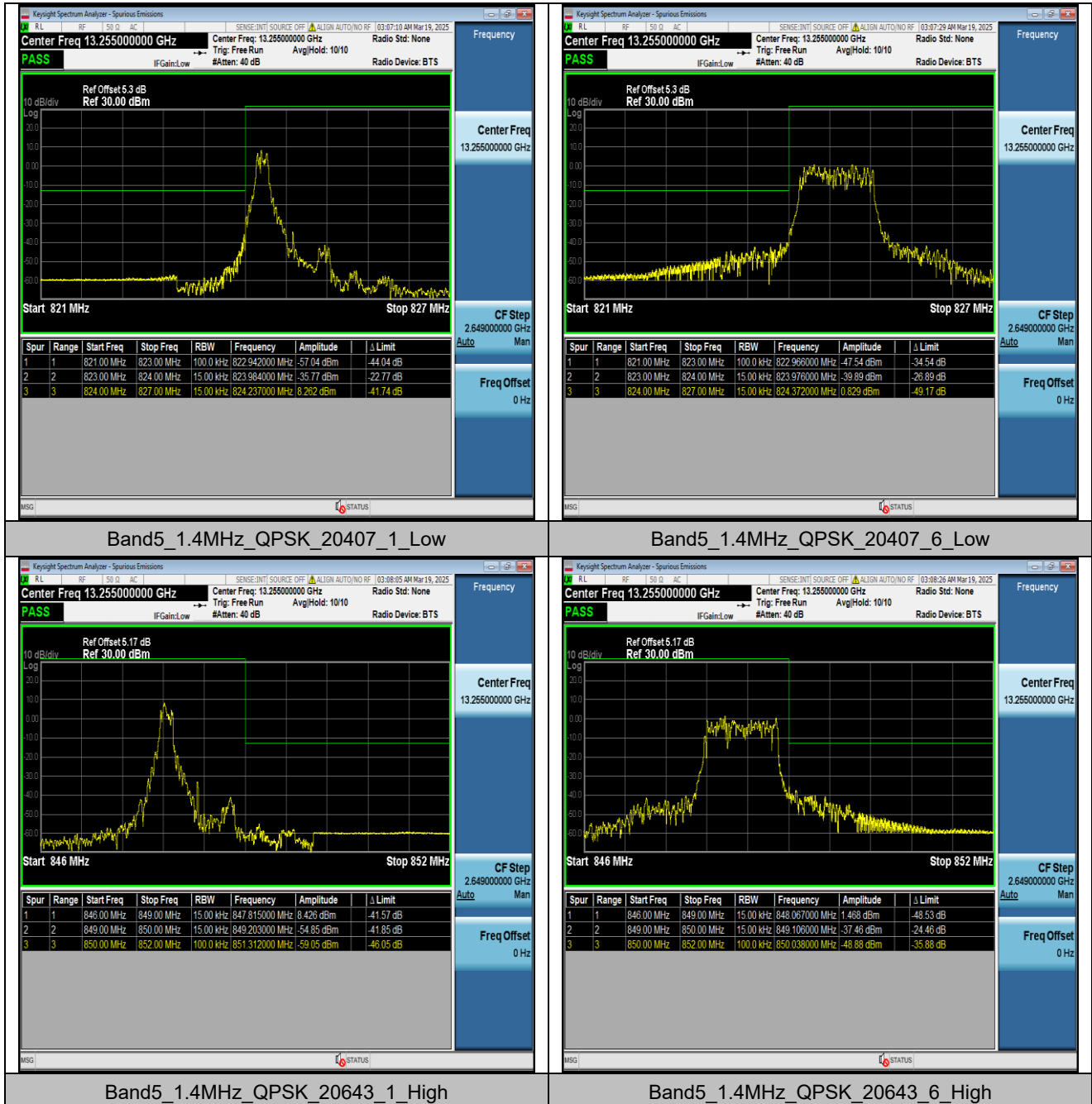


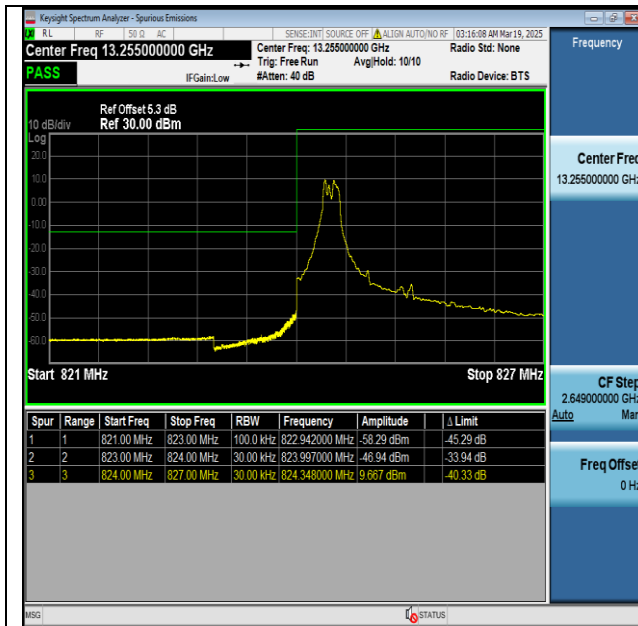




Band Edge for M1

Test Graphs

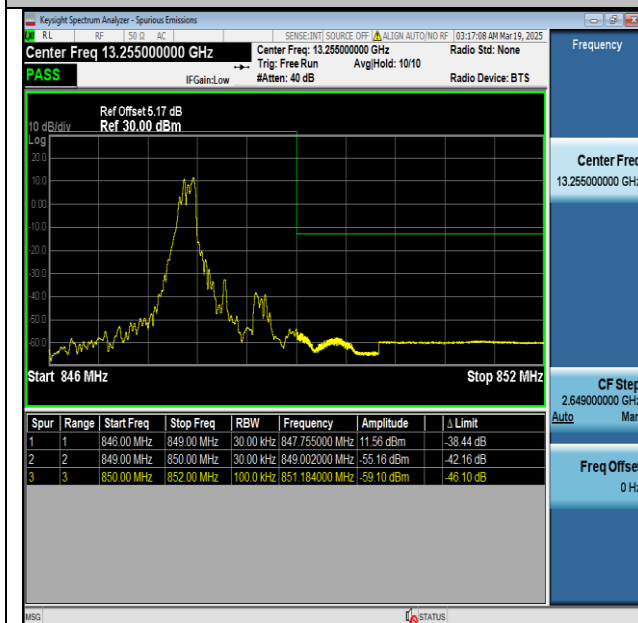




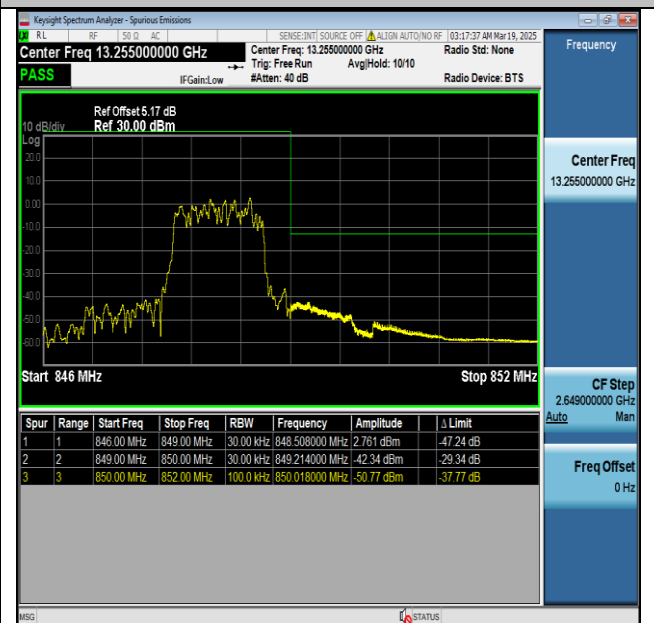
Band5_3MHz_QPSK_20415_1_Low



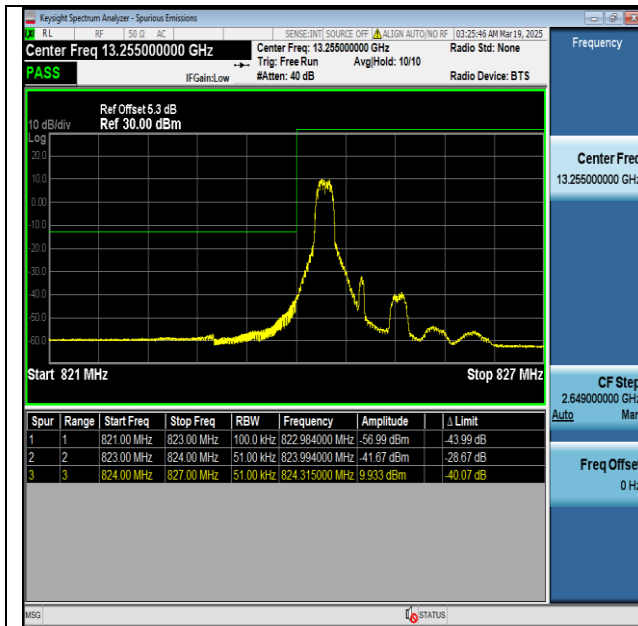
Band5_3MHz_QPSK_20415_6_Low



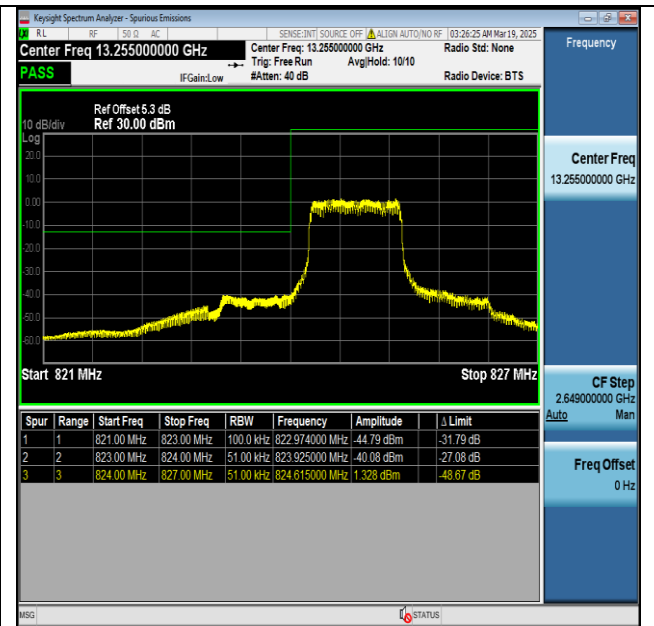
Band5_3MHz_QPSK_20635_1_High



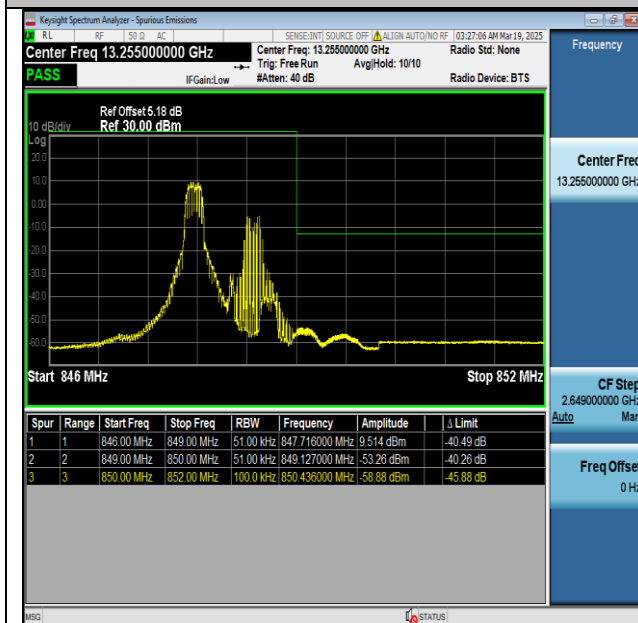
Band5_3MHz_QPSK_20635_6_High



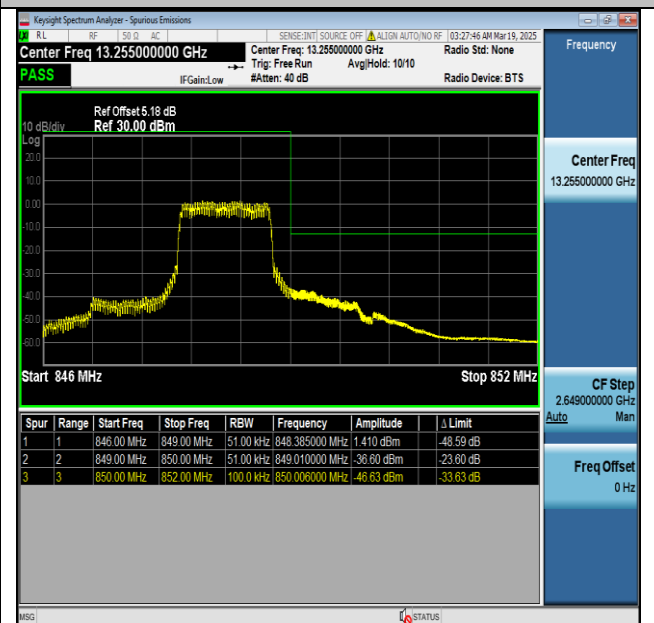
Band5_5MHz_QPSK_20425_1_Low



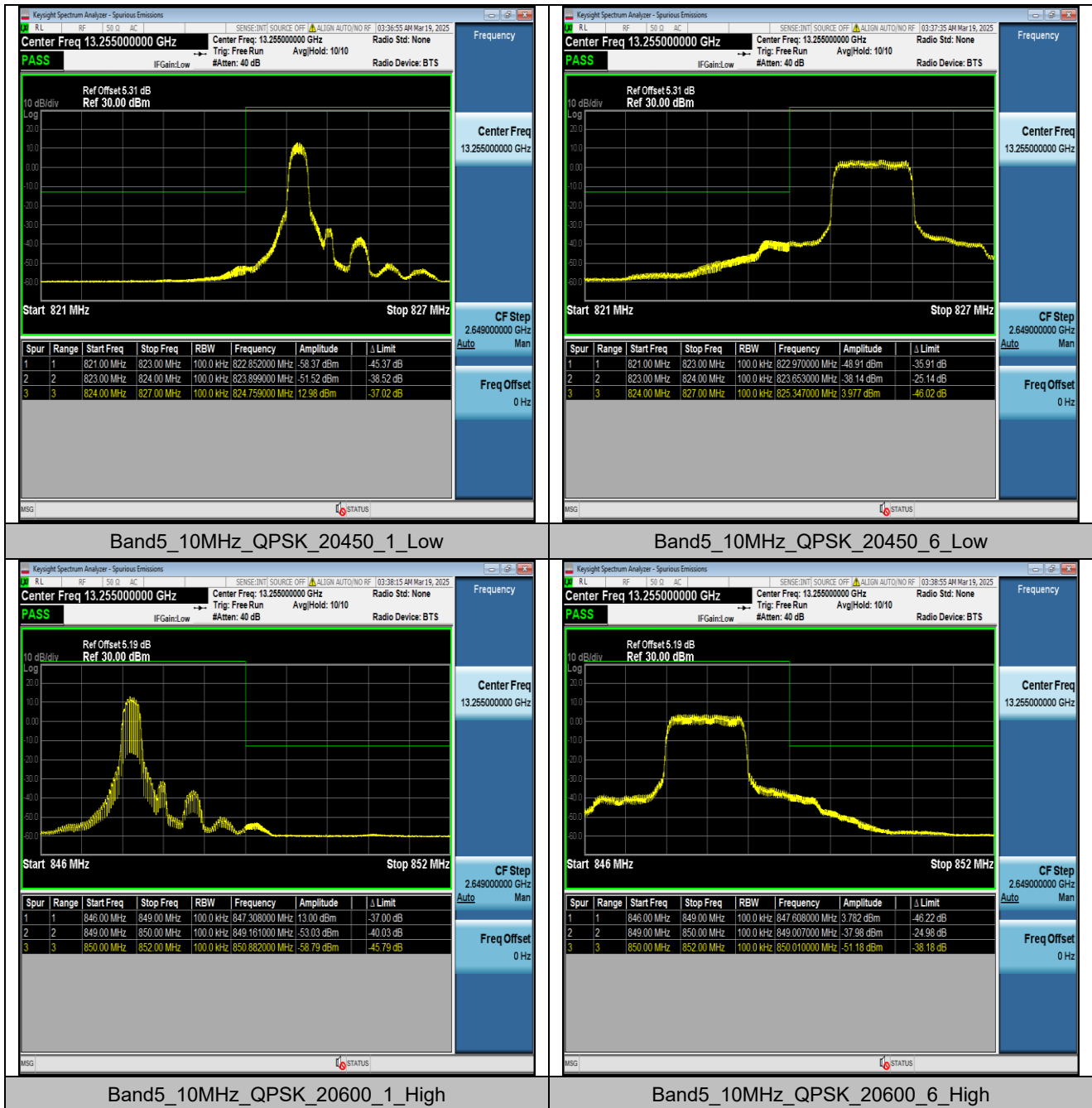
Band5_5MHz_QPSK_20425_6_Low



Band5_5MHz_QPSK_20625_1_High

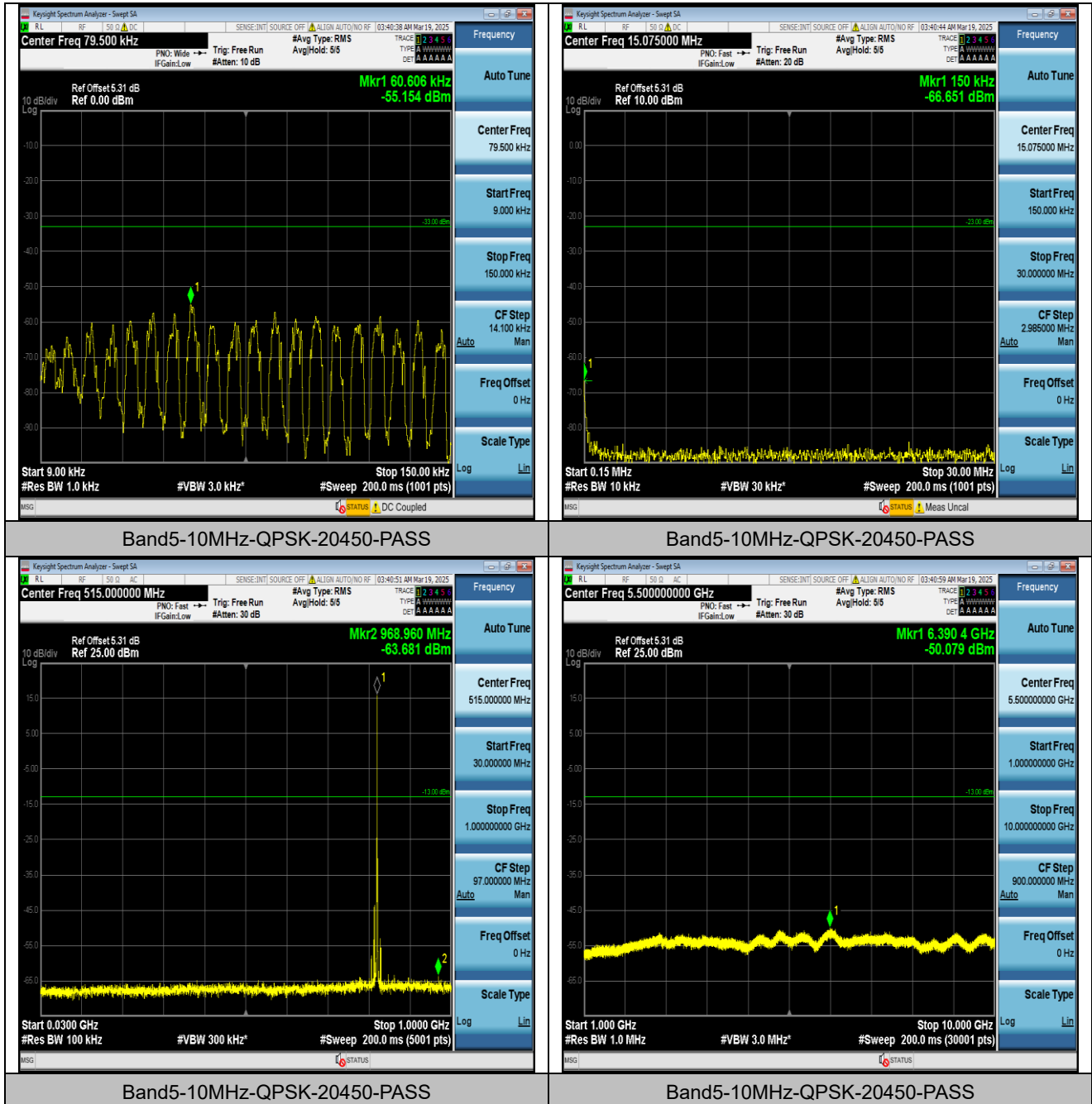


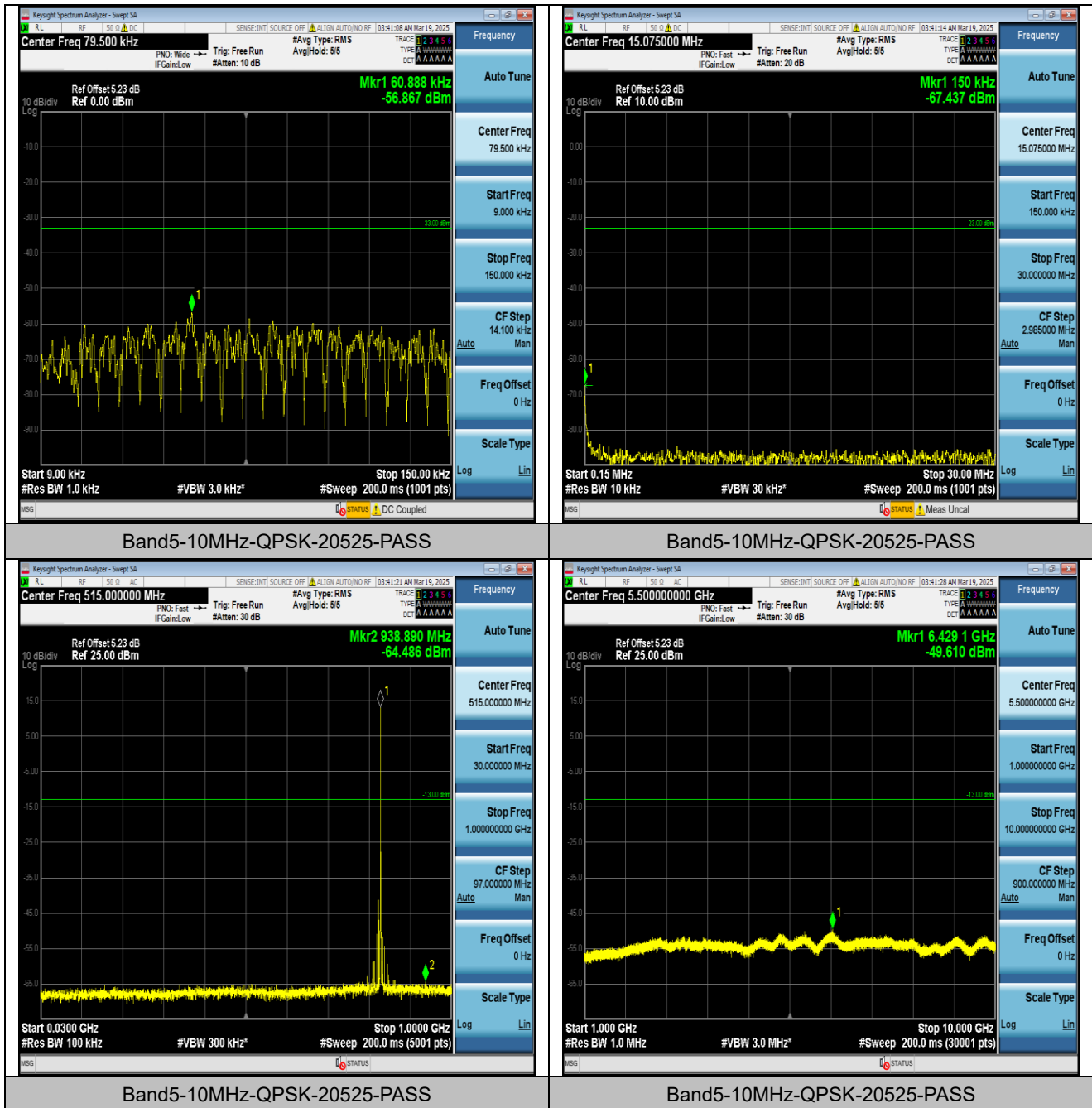
Band5_5MHz_QPSK_20625_6_High

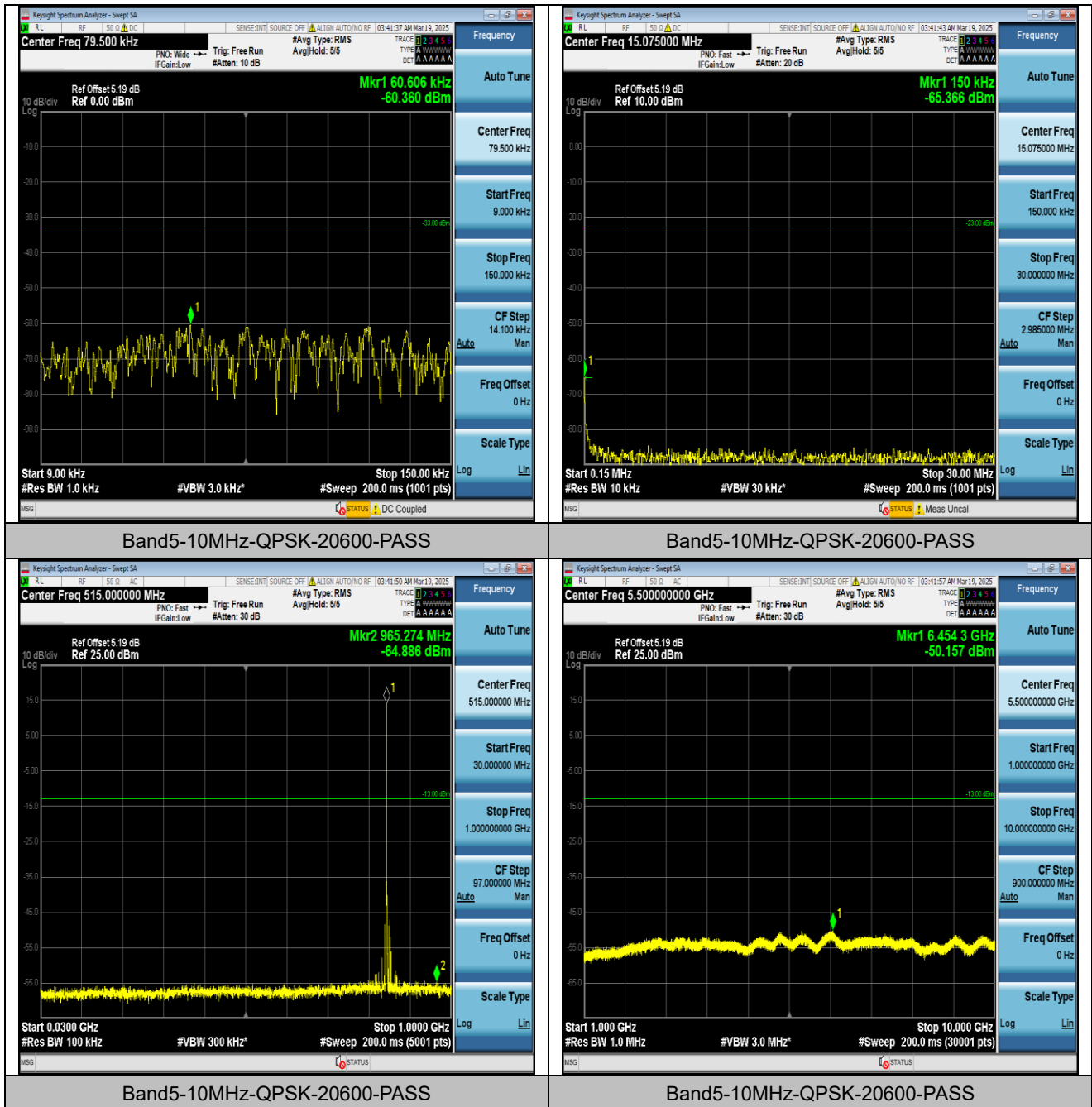


Conducted Spurious Emission for M1

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)	Limit (ppm)	Verdict
Band5	10MHz	QPSK	20525	6	0	Low	VN	NT	-5.80	-0.006934	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	VL	NT	-5.50	-0.006575	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	VH	NT	-7.10	-0.008488	±2.5	PASS

Temperature												
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	10MHz	QPSK	20525	6	0	Low	NV	-30	-3.80	-0.004543	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	-20	-3.50	-0.004184	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	-10	-6.20	-0.007412	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	0	-4.10	-0.004901	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	10	-6.30	-0.007531	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	20	-3.80	-0.004543	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	30	-3.60	-0.004304	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	40	-5.30	-0.006336	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	50	-6.40	-0.007651	±2.5	PASS

~The End~