

Appendix-A 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	20.76	21.14	38.45	PASS
Band5	1.4MHz	QPSK	20407	1	5	Low	20.53	20.91	38.45	PASS
Band5	1.4MHz	QPSK	20407	6	0	Low	18.75	19.13	38.45	PASS
Band5	1.4MHz	QPSK	20525	1	0	Low	20.94	21.32	38.45	PASS
Band5	1.4MHz	QPSK	20525	1	5	Low	20.67	21.05	38.45	PASS
Band5	1.4MHz	QPSK	20525	6	0	Low	18.79	19.17	38.45	PASS
Band5	1.4MHz	QPSK	20643	1	0	High	20.58	20.96	38.45	PASS
Band5	1.4MHz	QPSK	20643	1	5	High	20.51	20.89	38.45	PASS
Band5	1.4MHz	QPSK	20643	6	0	High	18.6	18.98	38.45	PASS
Band5	3MHz	QPSK	20415	1	0	Low	20.78	21.16	38.45	PASS
Band5	3MHz	QPSK	20415	1	5	Low	20.48	20.86	38.45	PASS
Band5	3MHz	QPSK	20415	6	0	Low	18.79	19.17	38.45	PASS
Band5	3MHz	QPSK	20525	1	0	Low	20.71	21.09	38.45	PASS
Band5	3MHz	QPSK	20525	1	5	Low	20.82	21.2	38.45	PASS
Band5	3MHz	QPSK	20525	6	0	Low	18.85	19.23	38.45	PASS
Band5	3MHz	QPSK	20635	1	0	High	20.75	21.13	38.45	PASS
Band5	3MHz	QPSK	20635	1	5	High	20.53	20.91	38.45	PASS
Band5	3MHz	QPSK	20635	6	0	High	18.69	19.07	38.45	PASS
Band5	5MHz	QPSK	20425	1	0	Low	20.75	21.13	38.45	PASS
Band5	5MHz	QPSK	20425	1	5	Low	20.66	21.04	38.45	PASS
Band5	5MHz	QPSK	20425	6	0	Low	19.76	20.14	38.45	PASS
Band5	5MHz	QPSK	20525	1	0	Low	20.89	21.27	38.45	PASS
Band5	5MHz	QPSK	20525	1	5	Low	20.69	21.07	38.45	PASS
Band5	5MHz	QPSK	20525	6	0	Low	19.99	20.37	38.45	PASS
Band5	5MHz	QPSK	20625	1	0	High	21.02	21.4	38.45	PASS
Band5	5MHz	QPSK	20625	1	5	High	20.72	21.1	38.45	PASS
Band5	5MHz	QPSK	20625	6	0	High	19.7	20.08	38.45	PASS
Band5	10MHz	QPSK	20450	1	0	Low	20.81	21.19	38.45	PASS
Band5	10MHz	QPSK	20450	1	5	Low	20.62	21	38.45	PASS
Band5	10MHz	QPSK	20450	6	0	Low	19.73	20.11	38.45	PASS
Band5	10MHz	QPSK	20525	1	0	Low	20.95	21.33	38.45	PASS
Band5	10MHz	QPSK	20525	1	5	Low	20.66	21.04	38.45	PASS
Band5	10MHz	QPSK	20525	6	0	Low	19.79	20.17	38.45	PASS
Band5	10MHz	QPSK	20600	1	0	High	20.9	21.28	38.45	PASS
Band5	10MHz	QPSK	20600	1	5	High	20.63	21.01	38.45	PASS
Band5	10MHz	QPSK	20600	6	0	High	19.84	20.22	38.45	PASS
Band5	1.4MHz	16QAM	20407	1	0	Low	19.68	20.06	38.45	PASS

Band5	1.4MHz	16QAM	20407	1	5	Low	19.5	19.88	38.45	PASS
Band5	1.4MHz	16QAM	20407	5	0	Low	18.61	18.99	38.45	PASS
Band5	1.4MHz	16QAM	20525	1	0	Low	19.57	19.95	38.45	PASS
Band5	1.4MHz	16QAM	20525	1	5	Low	19.75	20.13	38.45	PASS
Band5	1.4MHz	16QAM	20525	5	0	Low	18.77	19.15	38.45	PASS
Band5	1.4MHz	16QAM	20643	1	0	High	19.54	19.92	38.45	PASS
Band5	1.4MHz	16QAM	20643	1	5	High	19.39	19.77	38.45	PASS
Band5	1.4MHz	16QAM	20643	5	0	High	18.36	18.74	38.45	PASS
Band5	3MHz	16QAM	20415	1	0	Low	19.67	20.05	38.45	PASS
Band5	3MHz	16QAM	20415	1	5	Low	19.43	19.81	38.45	PASS
Band5	3MHz	16QAM	20415	5	0	Low	18.69	19.07	38.45	PASS
Band5	3MHz	16QAM	20525	1	0	Low	19.64	20.02	38.45	PASS
Band5	3MHz	16QAM	20525	1	5	Low	19.64	20.02	38.45	PASS
Band5	3MHz	16QAM	20525	5	0	Low	18.82	19.2	38.45	PASS
Band5	3MHz	16QAM	20635	1	0	High	19.65	20.03	38.45	PASS
Band5	3MHz	16QAM	20635	1	5	High	19.47	19.85	38.45	PASS
Band5	3MHz	16QAM	20635	5	0	High	18.65	19.03	38.45	PASS
Band5	5MHz	16QAM	20425	1	0	Low	20.96	21.34	38.45	PASS
Band5	5MHz	16QAM	20425	1	5	Low	20.75	21.13	38.45	PASS
Band5	5MHz	16QAM	20425	5	0	Low	19.65	20.03	38.45	PASS
Band5	5MHz	16QAM	20525	1	0	Low	20.76	21.14	38.45	PASS
Band5	5MHz	16QAM	20525	1	5	Low	20.83	21.21	38.45	PASS
Band5	5MHz	16QAM	20525	5	0	Low	19.84	20.22	38.45	PASS
Band5	5MHz	16QAM	20625	1	0	High	20.93	21.31	38.45	PASS
Band5	5MHz	16QAM	20625	1	5	High	20.64	21.02	38.45	PASS
Band5	5MHz	16QAM	20625	5	0	High	19.61	19.99	38.45	PASS
Band5	10MHz	16QAM	20450	1	0	Low	20.91	21.29	38.45	PASS
Band5	10MHz	16QAM	20450	1	5	Low	20.73	21.11	38.45	PASS
Band5	10MHz	16QAM	20450	5	0	Low	20.69	21.07	38.45	PASS
Band5	10MHz	16QAM	20525	1	0	Low	20.86	21.24	38.45	PASS
Band5	10MHz	16QAM	20525	1	5	Low	20.74	21.12	38.45	PASS
Band5	10MHz	16QAM	20525	5	0	Low	20.67	21.05	38.45	PASS
Band5	10MHz	16QAM	20600	1	0	High	20.78	21.16	38.45	PASS
Band5	10MHz	16QAM	20600	1	5	High	20.79	21.17	38.45	PASS
Band5	10MHz	16QAM	20600	5	0	High	20.73	21.11	38.45	PASS

Peak-to-Average Ratio(CCDF) for M1

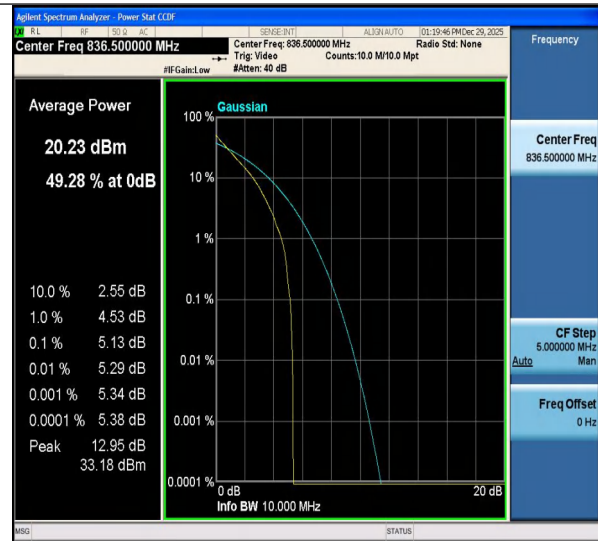
Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band5	10MHz	QPSK	20450	6	0	Low	5.15	<=13	PASS
Band5	10MHz	QPSK	20525	6	0	Low	5.13	<=13	PASS
Band5	10MHz	QPSK	20600	6	0	High	5.01	<=13	PASS
Band5	10MHz	16QAM	20450	5	0	Low	5.34	<=13	PASS
Band5	10MHz	16QAM	20525	5	0	Low	5.22	<=13	PASS
Band5	10MHz	16QAM	20600	5	0	High	5.05	<=13	PASS

Test Graphs



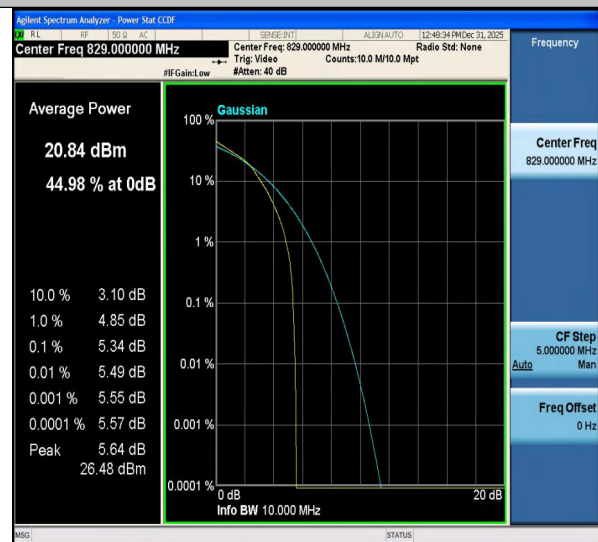
Band5-10MHz-QPSK-20450-6#0-PASS



Band5-10MHz-QPSK-20525-6#0-PASS



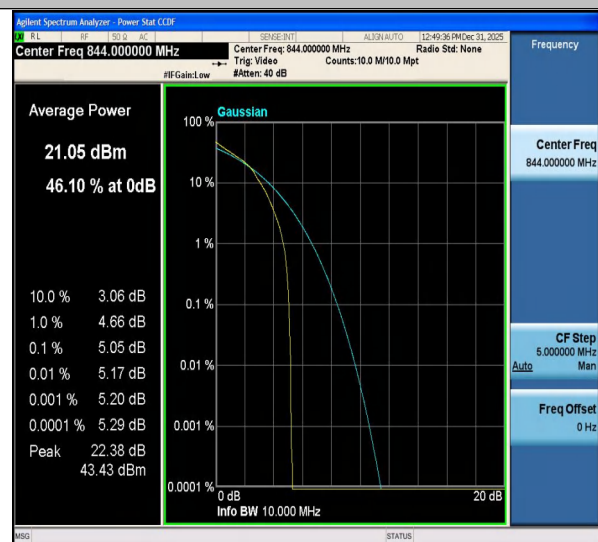
Band5-10MHz-QPSK-20600-6#0-PASS



Band5-10MHz-16QAM-20450-5#0-PASS



Band5-10MHz-16QAM-20525-5#0-PASS

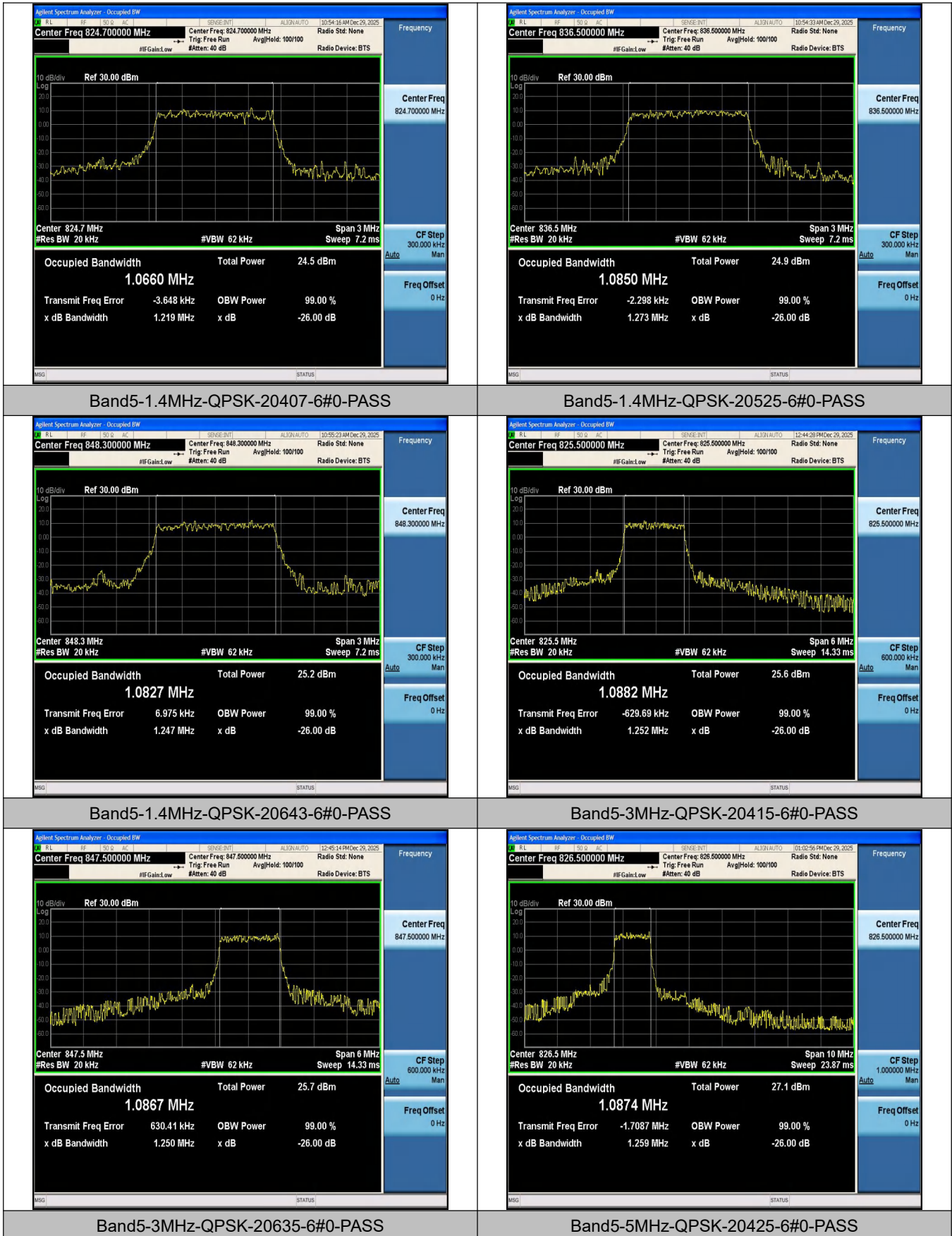


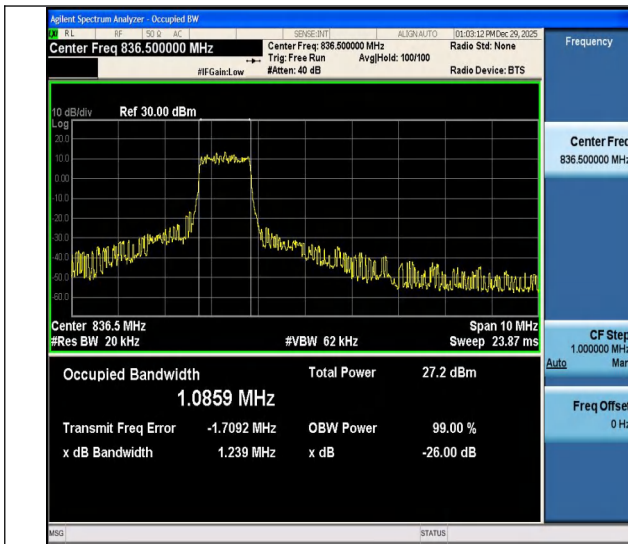
Band5-10MHz-16QAM-20600-5#0-PASS

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

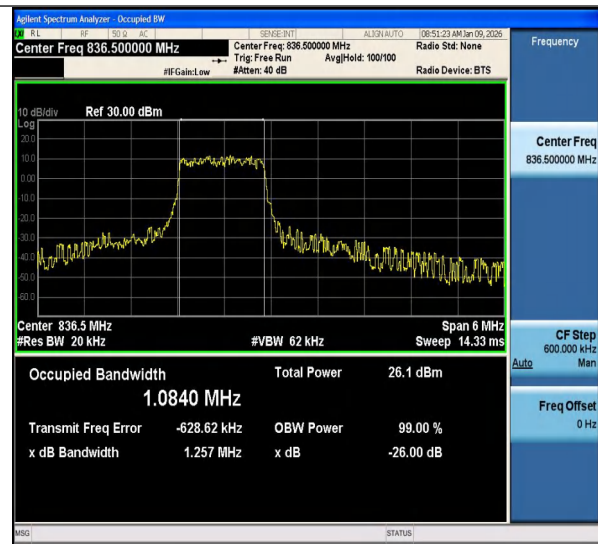
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band5	1.4MHz	QPSK	20407	6	0	Low	1.0660	1.219	PASS
Band5	1.4MHz	QPSK	20525	6	0	Low	1.0850	1.273	PASS
Band5	1.4MHz	QPSK	20643	6	0	High	1.0827	1.247	PASS
Band5	3MHz	QPSK	20415	6	0	Low	1.0882	1.252	PASS
Band5	3MHz	QPSK	20635	6	0	High	1.0867	1.250	PASS
Band5	5MHz	QPSK	20425	6	0	Low	1.0874	1.259	PASS
Band5	5MHz	QPSK	20525	6	0	Low	1.0859	1.239	PASS
Band5	3MHz	QPSK	20525	6	0	Low	1.0840	1.257	PASS
Band5	5MHz	QPSK	20625	6	0	High	1.0858	1.264	PASS
Band5	10MHz	QPSK	20450	6	0	Low	1.0892	1.244	PASS
Band5	10MHz	QPSK	20525	6	0	Low	1.0962	1.323	PASS
Band5	10MHz	QPSK	20600	6	0	High	1.0924	1.293	PASS
Band5	1.4MHz	16QAM	20407	5	0	Low	0.91499	1.086	PASS
Band5	1.4MHz	16QAM	20525	5	0	Low	0.90951	1.057	PASS
Band5	1.4MHz	16QAM	20643	5	0	High	0.90867	1.085	PASS
Band5	3MHz	16QAM	20415	5	0	Low	0.91743	1.086	PASS
Band5	3MHz	16QAM	20525	5	0	Low	0.91411	1.075	PASS
Band5	3MHz	16QAM	20635	5	0	High	0.91853	1.077	PASS
Band5	5MHz	16QAM	20425	5	0	Low	0.91056	1.098	PASS
Band5	5MHz	16QAM	20525	5	0	Low	0.91622	1.079	PASS
Band5	5MHz	16QAM	20625	5	0	High	0.91895	1.104	PASS
Band5	10MHz	16QAM	20450	5	0	Low	0.93072	1.121	PASS
Band5	10MHz	16QAM	20525	5	0	Low	0.91820	1.103	PASS
Band5	10MHz	16QAM	20600	5	0	High	0.92932	1.116	PASS

Test Graphs





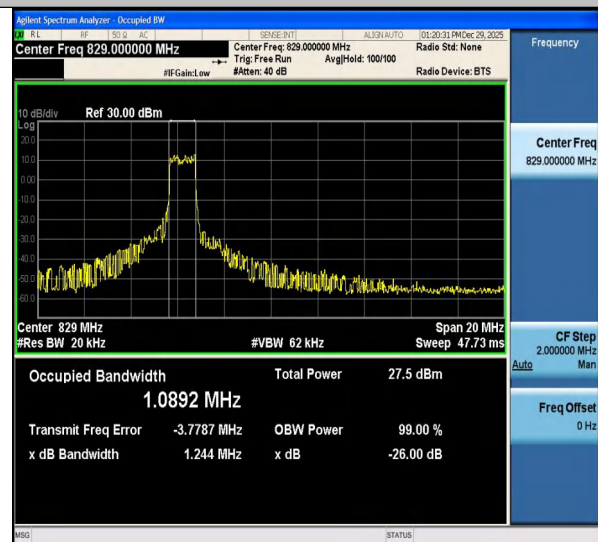
Band5-5MHz-QPSK-20525-6#0-PASS



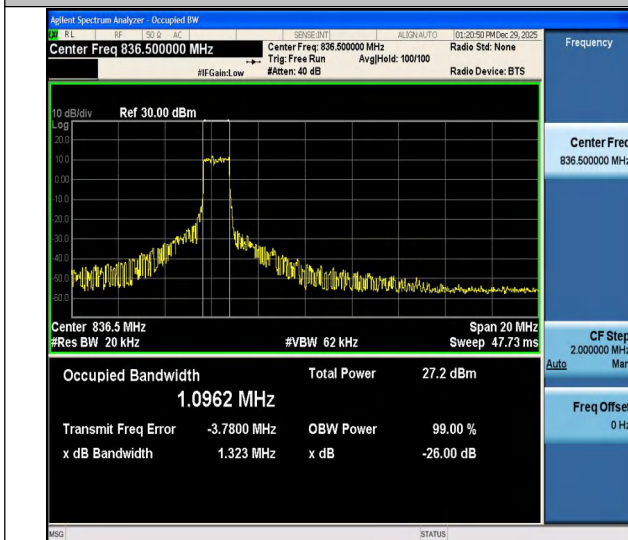
Band5-3MHz-QPSK-20525-6#0-PASS



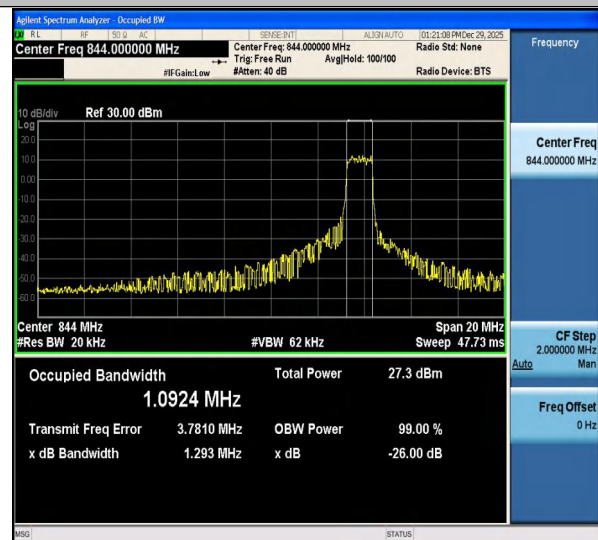
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Band5-10MHz-QPSK-20450-6#0-PASS



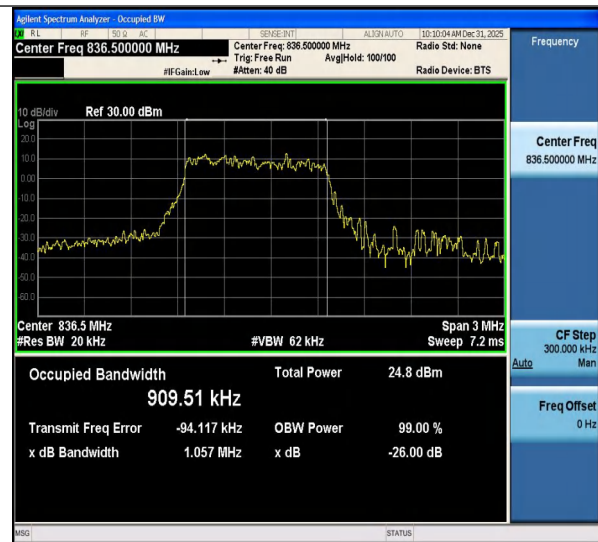
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Band5-10MHz-QPSK-20600-6#0-PASS



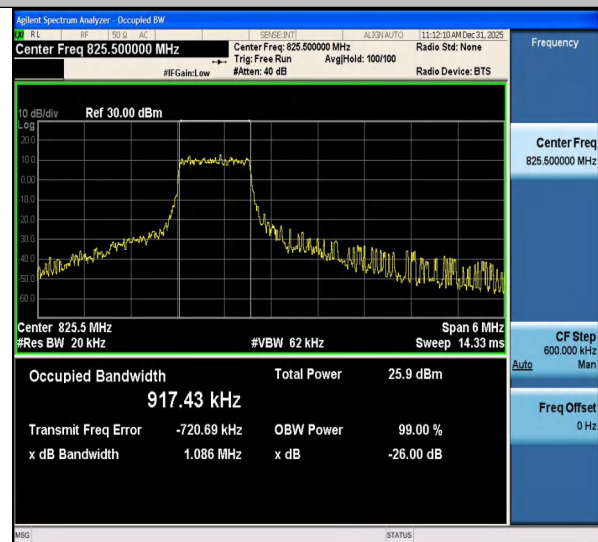
Band5-1.4MHz-16QAM-20407-5#0-PASS



Band5-1.4MHz-16QAM-20525-5#0-PASS



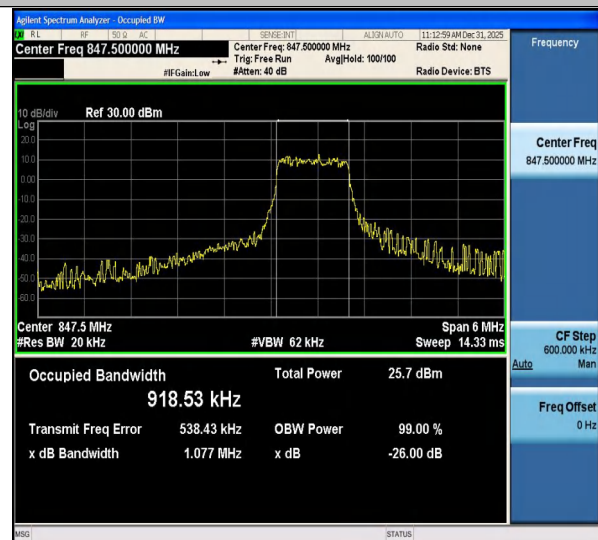
Band5-1.4MHz-16QAM-20643-5#0-PASS



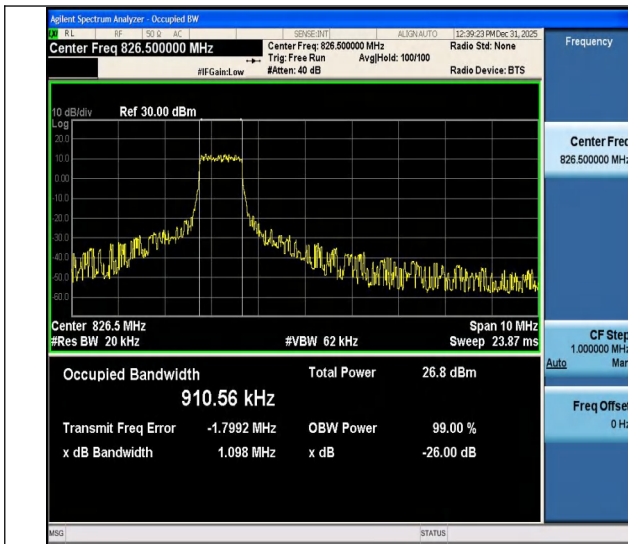
Band5-3MHz-16QAM-20415-5#0-PASS



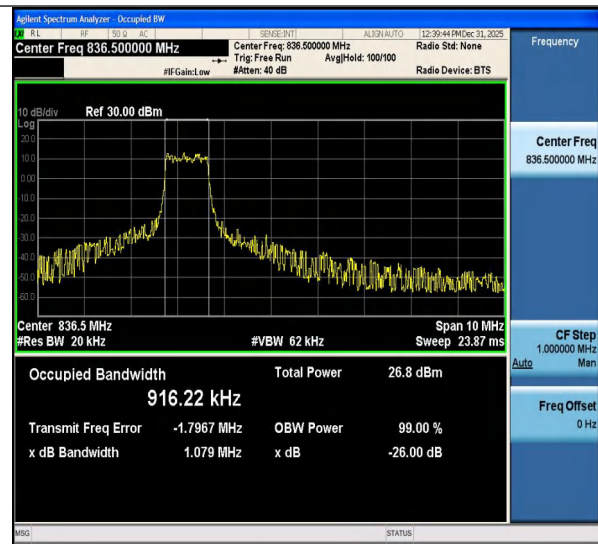
Band5-3MHz-16QAM-20525-5#0-PASS



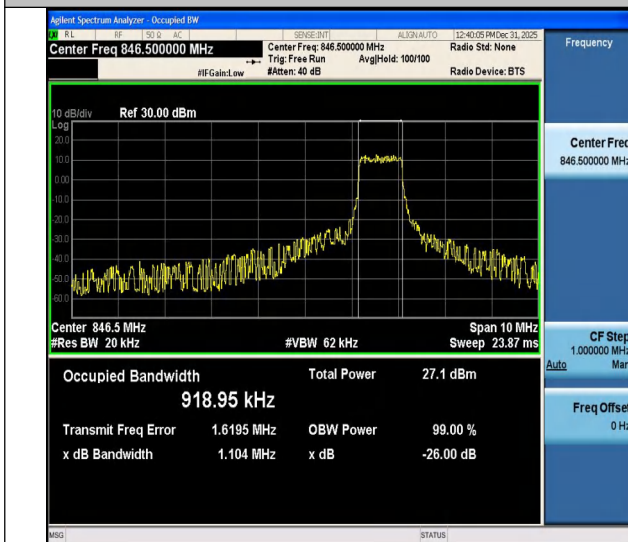
Band5-3MHz-16QAM-20635-5#0-PASS



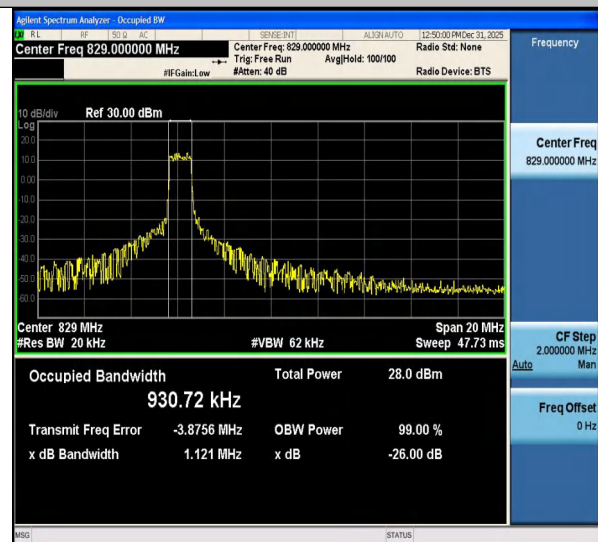
Band5-5MHz-16QAM-20425-5#0-PASS



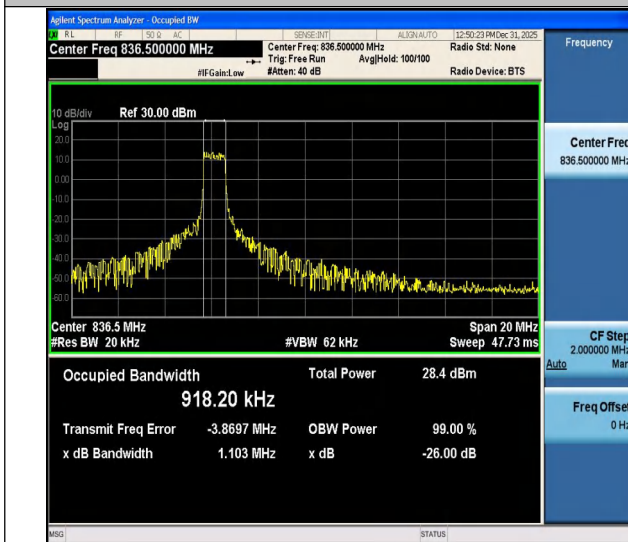
Band5-5MHz-16QAM-20525-5#0-PASS



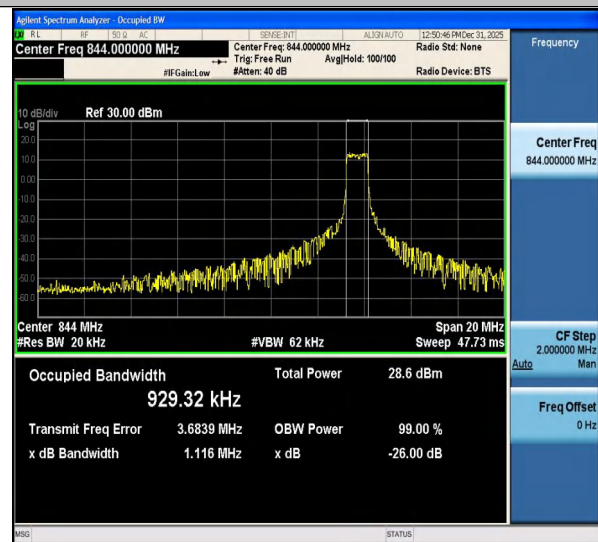
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Band5-10MHz-16QAM-20450-5#0-PASS



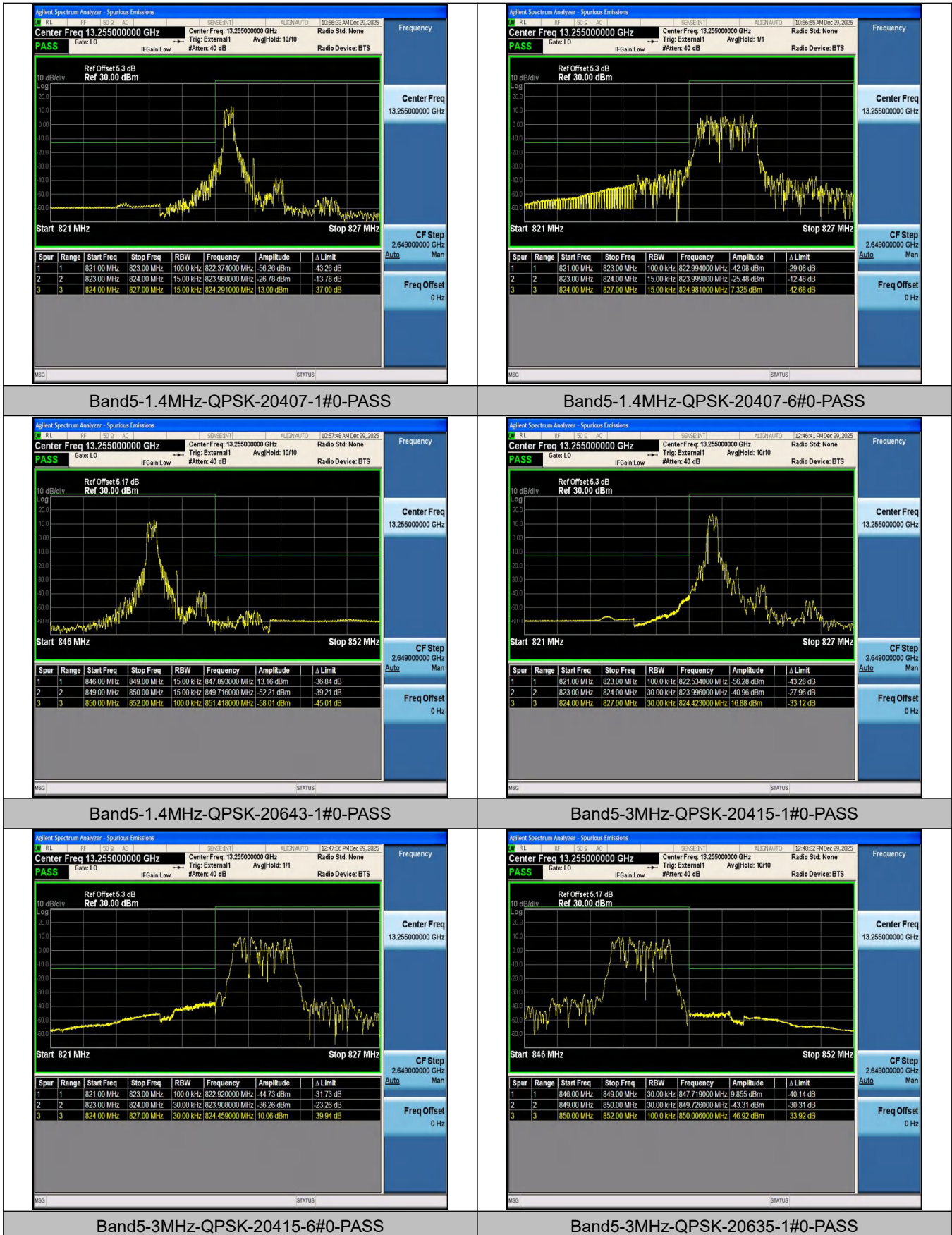
Band5-10MHz-16QAM-20525-5#0-PASS



Band5-10MHz-16QAM-20600-5#0-PASS

Band Edge for M1

Test Graphs





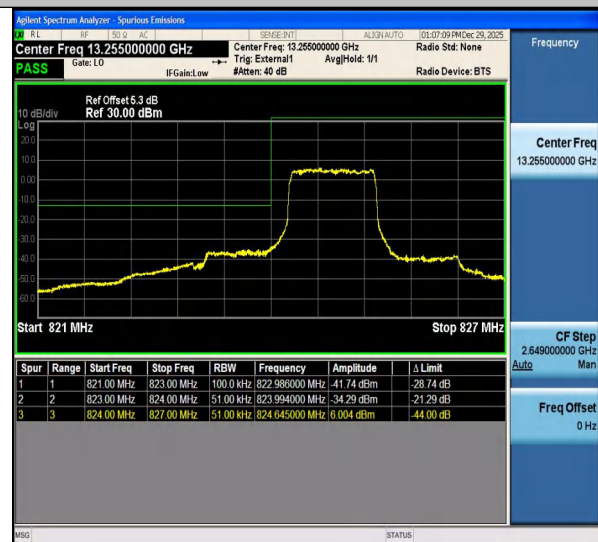
Band5-1.4MHz-QPSK-20643-6#0-PASS



Band5-3MHz-QPSK-20635-6#0-PASS



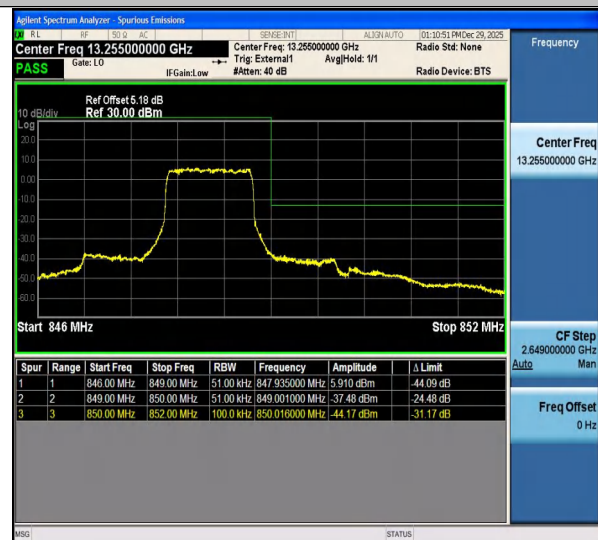
Band5-5MHz-QPSK-20425-1#0-PASS



Band5-5MHz-QPSK-20425-6#0-PASS



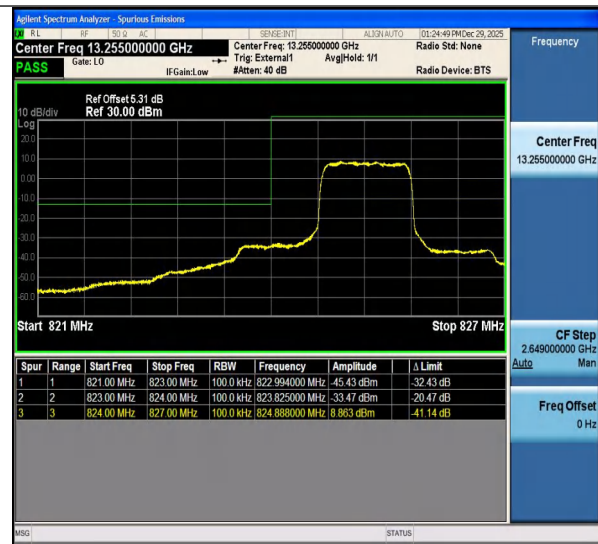
Band5-5MHz-QPSK-20625-1#0-PASS



Band5-5MHz-QPSK-20625-6#0-PASS



Band5-10MHz-QPSK-20450-1#0-PASS



Band5-10MHz-QPSK-20450-6#0-PASS



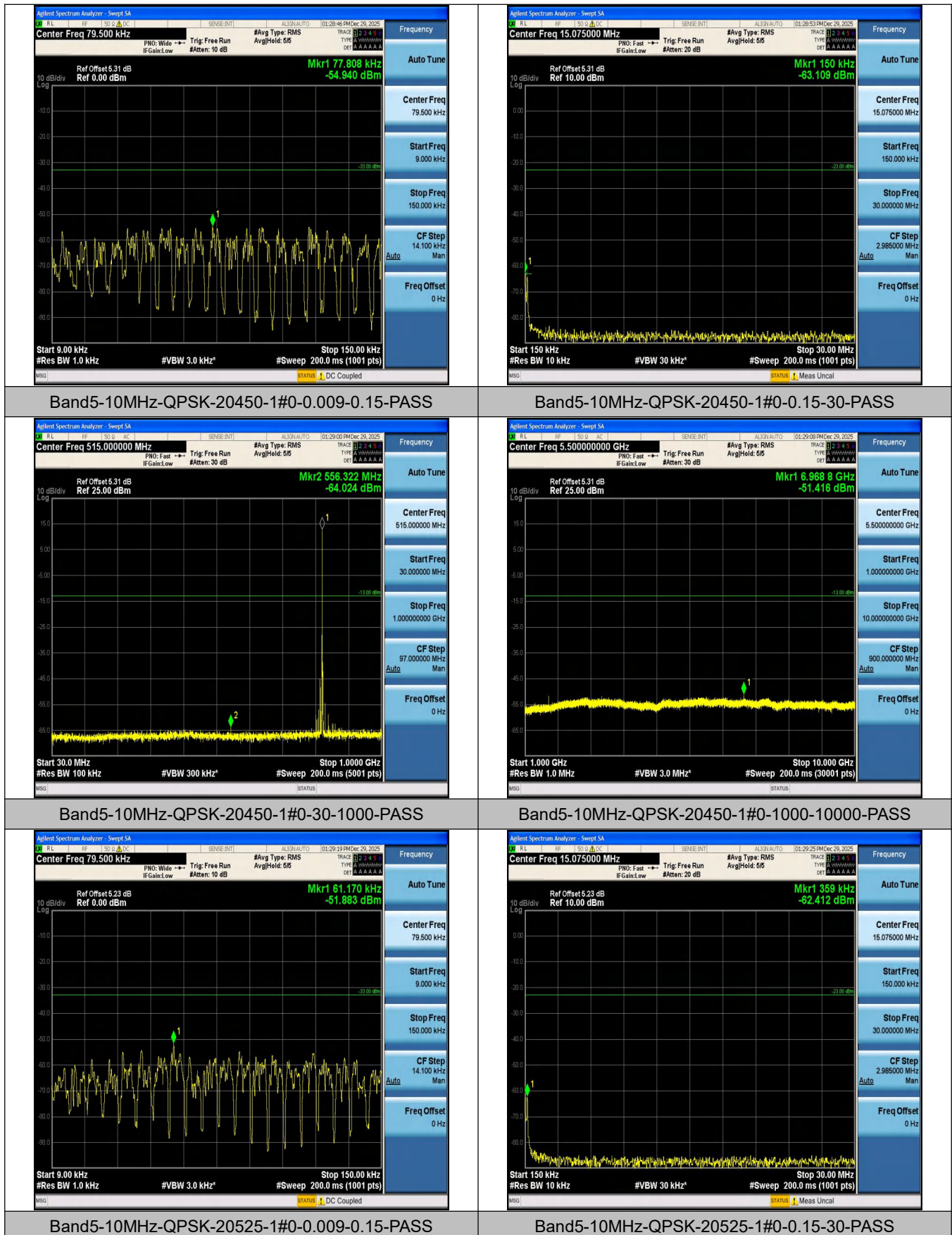
Band5-10MHz-QPSK-20600-1#0-PASS

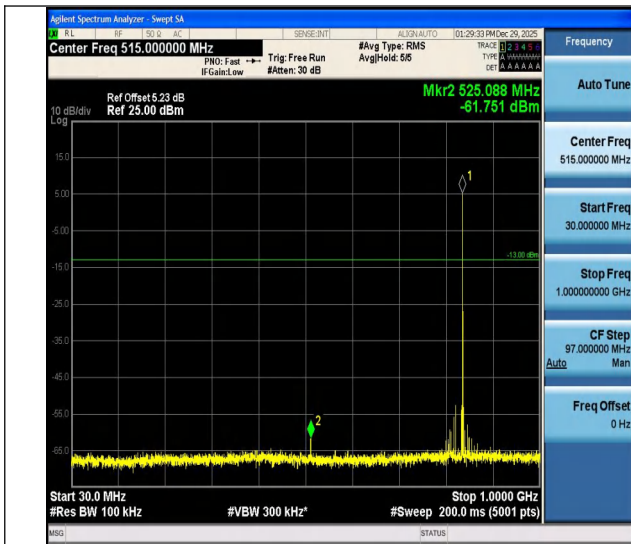


Band5-10MHz-QPSK-20600-6#0-PASS

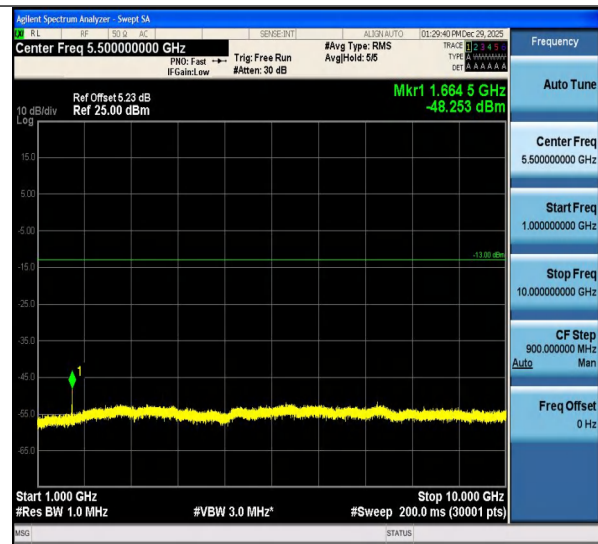
Conducted Spurious Emission for M1

Test Graphs

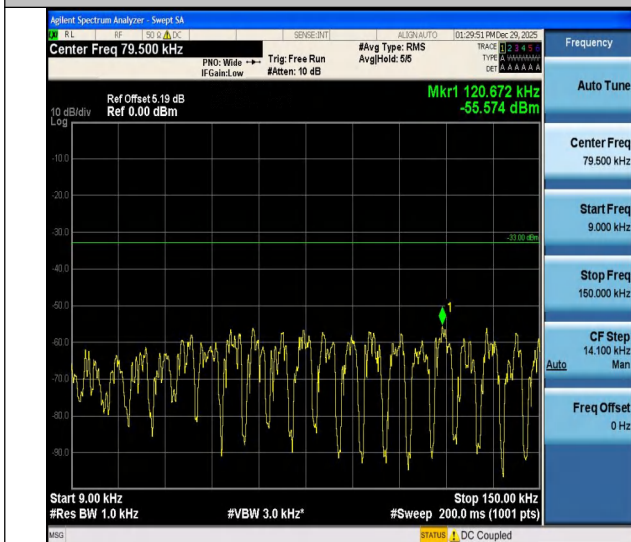




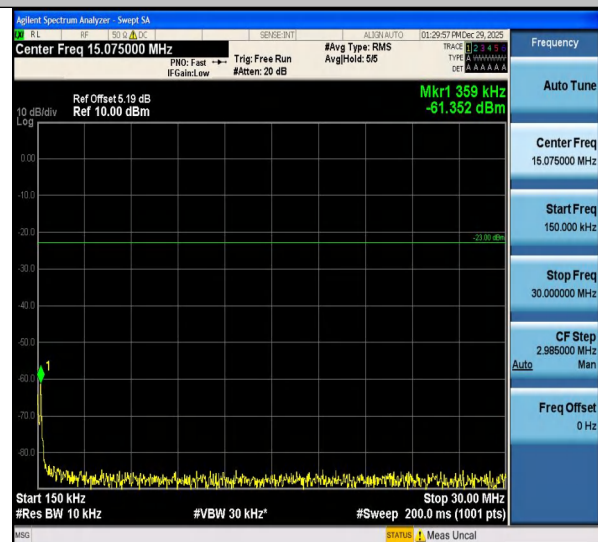
Band5-10MHz-QPSK-20525-1#0-30-1000-PASS



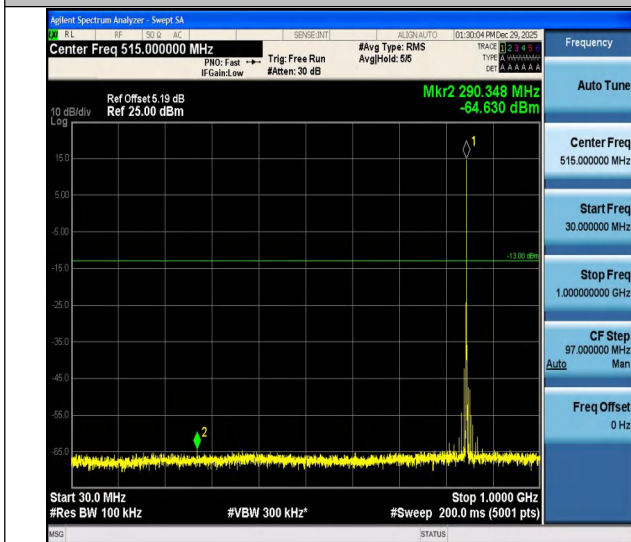
Band5-10MHz-QPSK-20525-1#0-1000-10000-PASS



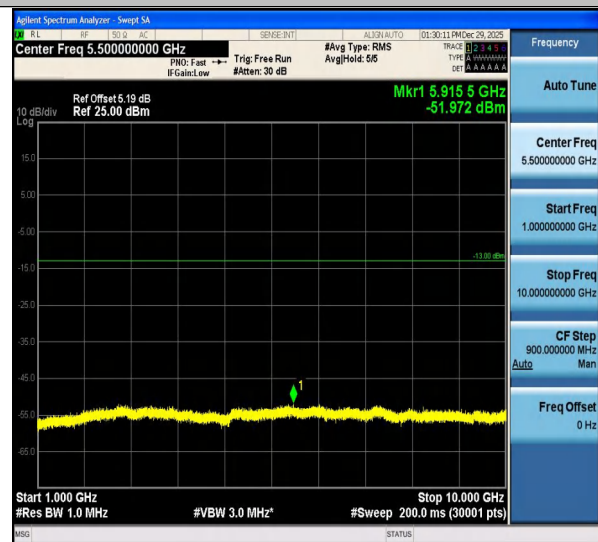
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Band5-10MHz-QPSK-20600-1#0-0.15-30-PASS



Band5-10MHz-QPSK-20600-1#0-30-1000-PASS



Band5-10MHz-QPSK-20600-1#0-1000-10000-PASS

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	-5.30	-0.006336	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	VL	NT	-5.70	-0.006814	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	VH	NT	-5.50	-0.006575	±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	-3.20	-0.003825	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	-20	-2.50	-0.002989	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	-10	-5.70	-0.006814	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	0	-4.60	-0.005499	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	10	-5.20	-0.006216	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	20	-7.40	-0.008846	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	30	-4.50	-0.005380	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	40	-6.30	-0.007531	±2.5	PASS
Band5	10MHz	QPSK	20525	6	0	Low	NV	50	-7.40	-0.008846	±2.5	PASS

~The End~