

Appendix-A LTE Cat M1 Band 12

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
Band12	1.4MHz	QPSK	23017	1	0	Low	21.26	25.51	34.77	PASS
Band12	1.4MHz	16QAM	23017	1	0	Low	21.33	25.58	34.77	PASS
Band12	1.4MHz	QPSK	23017	1	5	Low	16.33	20.58	34.77	PASS
Band12	1.4MHz	16QAM	23017	1	5	Low	21.28	25.53	34.77	PASS
Band12	1.4MHz	QPSK	23017	6	0	Low	21.28	25.53	34.77	PASS
Band12	1.4MHz	16QAM	23017	6	0	Low	15.51	19.76	34.77	PASS
Band12	1.4MHz	QPSK	23095	1	0	Low	21.46	25.71	34.77	PASS
Band12	1.4MHz	16QAM	23095	1	0	Low	21.48	25.73	34.77	PASS
Band12	1.4MHz	QPSK	23095	1	5	Low	16.55	20.8	34.77	PASS
Band12	1.4MHz	16QAM	23095	1	5	Low	21.4	25.65	34.77	PASS
Band12	1.4MHz	QPSK	23095	6	0	Low	21.39	25.64	34.77	PASS
Band12	1.4MHz	16QAM	23095	6	0	Low	17.25	21.5	34.77	PASS
Band12	1.4MHz	QPSK	23173	1	0	High	21.42	25.67	34.77	PASS
Band12	1.4MHz	16QAM	23173	1	0	High	21.48	25.73	34.77	PASS
Band12	1.4MHz	QPSK	23173	1	5	High	17.2	21.45	34.77	PASS
Band12	1.4MHz	16QAM	23173	1	5	High	21.46	25.71	34.77	PASS
Band12	1.4MHz	QPSK	23173	6	0	High	21.56	25.81	34.77	PASS
Band12	1.4MHz	16QAM	23173	6	0	High	17.39	21.64	34.77	PASS
Band12	3MHz	QPSK	23025	1	0	Low	21.29	25.54	34.77	PASS
Band12	3MHz	16QAM	23025	1	0	Low	21.31	25.56	34.77	PASS
Band12	3MHz	QPSK	23025	1	5	Low	21.59	25.84	34.77	PASS
Band12	3MHz	16QAM	23025	1	5	Low	22.48	26.73	34.77	PASS
Band12	3MHz	QPSK	23025	6	0	Low	22.41	26.66	34.77	PASS
Band12	3MHz	16QAM	23025	6	0	Low	21.91	26.16	34.77	PASS
Band12	3MHz	QPSK	23095	1	0	Low	22.59	26.84	34.77	PASS
Band12	3MHz	16QAM	23095	1	0	Low	22.44	26.69	34.77	PASS
Band12	3MHz	QPSK	23095	1	5	Low	22.14	26.39	34.77	PASS
Band12	3MHz	16QAM	23095	1	5	Low	21.48	25.73	34.77	PASS
Band12	3MHz	QPSK	23095	6	0	Low	21.28	25.53	34.77	PASS
Band12	3MHz	16QAM	23095	6	0	Low	21.59	25.84	34.77	PASS
Band12	3MHz	QPSK	23165	1	0	High	22.47	26.72	34.77	PASS
Band12	3MHz	16QAM	23165	1	0	High	22.54	26.79	34.77	PASS
Band12	3MHz	QPSK	23165	1	5	High	21.85	26.1	34.77	PASS
Band12	3MHz	16QAM	23165	1	5	High	22.59	26.84	34.77	PASS
Band12	3MHz	QPSK	23165	6	0	High	22.52	26.77	34.77	PASS
Band12	3MHz	16QAM	23165	6	0	High	22.12	26.37	34.77	PASS

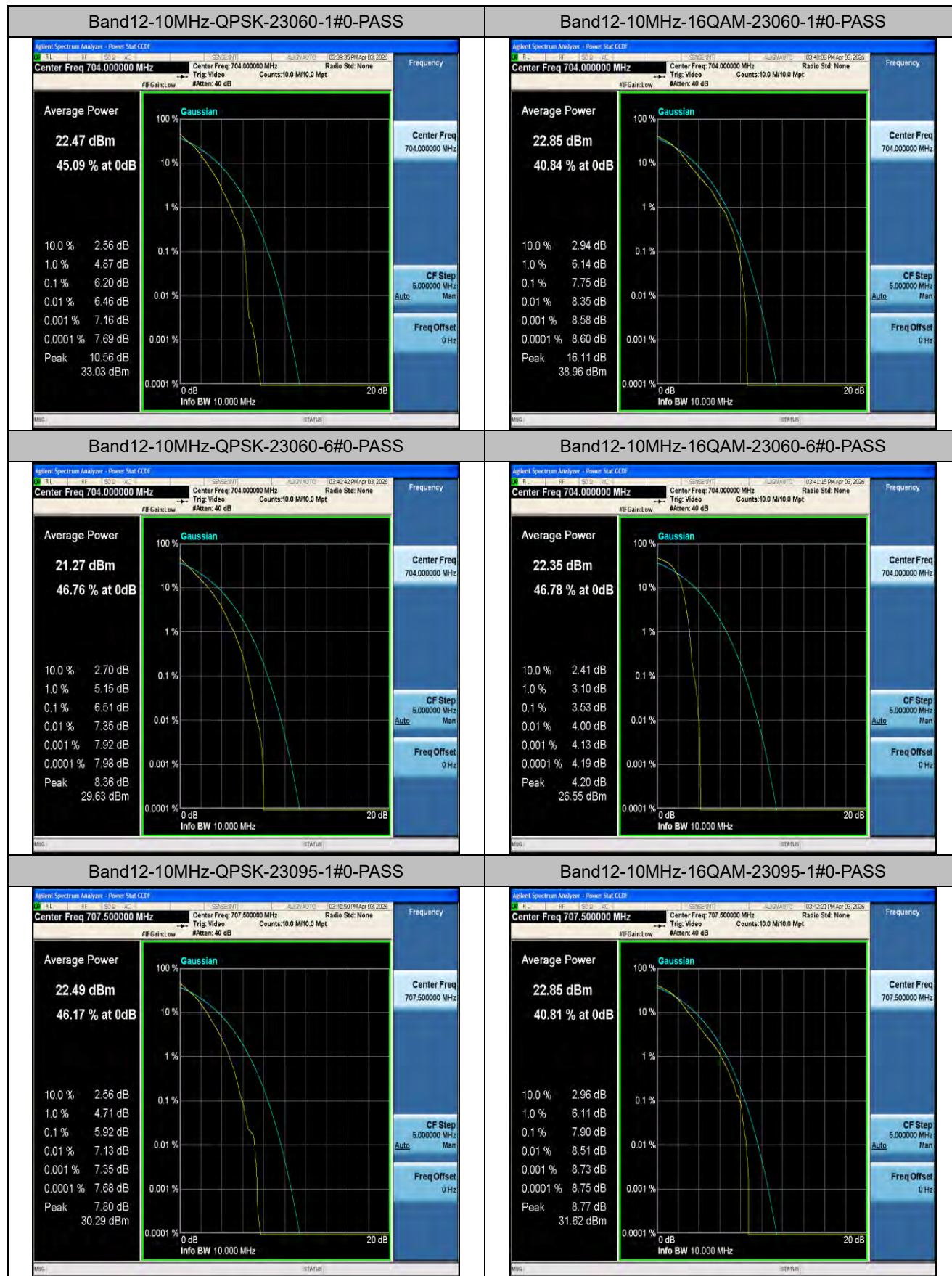
Band12	5MHz	QPSK	23035	1	0	Low	21.26	25.51	34.77	PASS
Band12	5MHz	16QAM	23035	1	0	Low	21.33	25.58	34.77	PASS
Band12	5MHz	QPSK	23035	1	5	Low	16.33	20.58	34.77	PASS
Band12	5MHz	16QAM	23035	1	5	Low	21.28	25.53	34.77	PASS
Band12	5MHz	QPSK	23035	6	0	Low	21.28	25.53	34.77	PASS
Band12	5MHz	16QAM	23035	6	0	Low	15.51	19.76	34.77	PASS
Band12	5MHz	QPSK	23095	1	0	Low	21.46	25.71	34.77	PASS
Band12	5MHz	16QAM	23095	1	0	Low	21.48	25.73	34.77	PASS
Band12	5MHz	QPSK	23095	1	5	Low	16.55	20.8	34.77	PASS
Band12	5MHz	16QAM	23095	1	5	Low	21.4	25.65	34.77	PASS
Band12	5MHz	QPSK	23095	6	0	Low	21.39	25.64	34.77	PASS
Band12	5MHz	16QAM	23095	6	0	Low	17.25	21.5	34.77	PASS
Band12	5MHz	QPSK	23155	1	0	High	21.42	25.67	34.77	PASS
Band12	5MHz	16QAM	23155	1	0	High	21.48	25.73	34.77	PASS
Band12	5MHz	QPSK	23155	1	5	High	17.2	21.45	34.77	PASS
Band12	5MHz	16QAM	23155	1	5	High	21.46	25.71	34.77	PASS
Band12	5MHz	QPSK	23155	6	0	High	21.56	25.81	34.77	PASS
Band12	5MHz	16QAM	23155	6	0	High	17.39	21.64	34.77	PASS
Band12	10MHz	QPSK	23060	1	0	Low	21.29	25.54	34.77	PASS
Band12	10MHz	16QAM	23060	1	0	Low	21.31	25.56	34.77	PASS
Band12	10MHz	QPSK	23060	1	5	Low	21.59	25.84	34.77	PASS
Band12	10MHz	16QAM	23060	1	5	Low	22.48	26.73	34.77	PASS
Band12	10MHz	QPSK	23060	6	0	Low	22.41	26.66	34.77	PASS
Band12	10MHz	16QAM	23060	6	0	Low	21.91	26.16	34.77	PASS
Band12	10MHz	QPSK	23095	1	0	Low	22.59	26.84	34.77	PASS
Band12	10MHz	16QAM	23095	1	0	Low	22.44	26.69	34.77	PASS
Band12	10MHz	QPSK	23095	1	5	Low	22.14	26.39	34.77	PASS
Band12	10MHz	16QAM	23095	1	5	Low	21.48	25.73	34.77	PASS
Band12	10MHz	QPSK	23095	6	0	Low	21.28	25.53	34.77	PASS
Band12	10MHz	16QAM	23095	6	0	Low	21.59	25.84	34.77	PASS
Band12	10MHz	QPSK	23130	1	0	High	22.47	26.72	34.77	PASS
Band12	10MHz	16QAM	23130	1	0	High	22.54	26.79	34.77	PASS
Band12	10MHz	QPSK	23130	1	5	High	21.85	26.1	34.77	PASS
Band12	10MHz	16QAM	23130	1	5	High	22.59	26.84	34.77	PASS
Band12	10MHz	QPSK	23130	6	0	High	22.52	26.77	34.77	PASS
Band12	10MHz	16QAM	23130	6	0	High	22.12	26.37	34.77	PASS

Peak-to-Average Ratio(CCDF) for M1

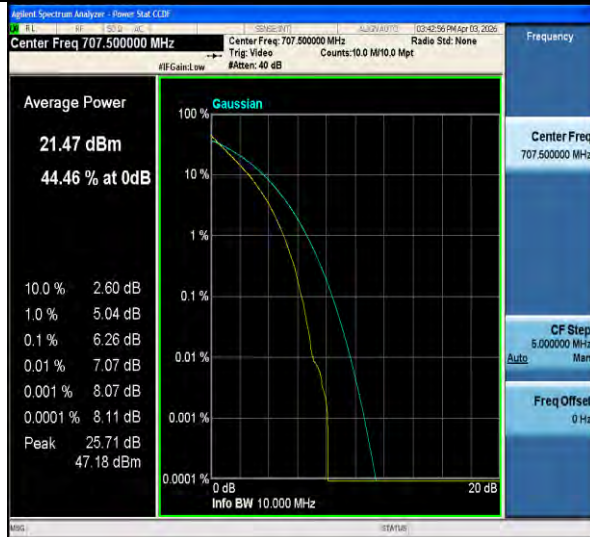
Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band12	10MHz	QPSK	23060	1	0	Low	6.20	<=13	PASS
Band12	10MHz	16QAM	23060	1	0	Low	7.75	<=13	PASS
Band12	10MHz	QPSK	23060	6	0	Low	6.51	<=13	PASS
Band12	10MHz	16QAM	23060	6	0	Low	3.53	<=13	PASS
Band12	10MHz	QPSK	23095	1	0	Low	5.92	<=13	PASS
Band12	10MHz	16QAM	23095	1	0	Low	7.90	<=13	PASS
Band12	10MHz	QPSK	23095	6	0	Low	6.26	<=13	PASS
Band12	10MHz	16QAM	23095	6	0	Low	3.52	<=13	PASS
Band12	10MHz	QPSK	23130	1	0	High	6.22	<=13	PASS
Band12	10MHz	16QAM	23130	1	0	High	7.32	<=13	PASS
Band12	10MHz	QPSK	23130	6	0	High	6.50	<=13	PASS
Band12	10MHz	16QAM	23130	6	0	High	3.51	<=13	PASS

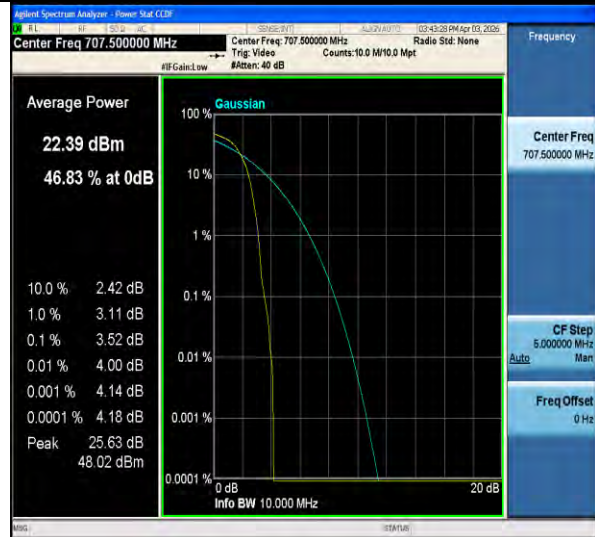
Test Graphs



Band12-10MHz-QPSK-23095-6#0-PASS



Band12-10MHz-16QAM-23095-6#0-PASS



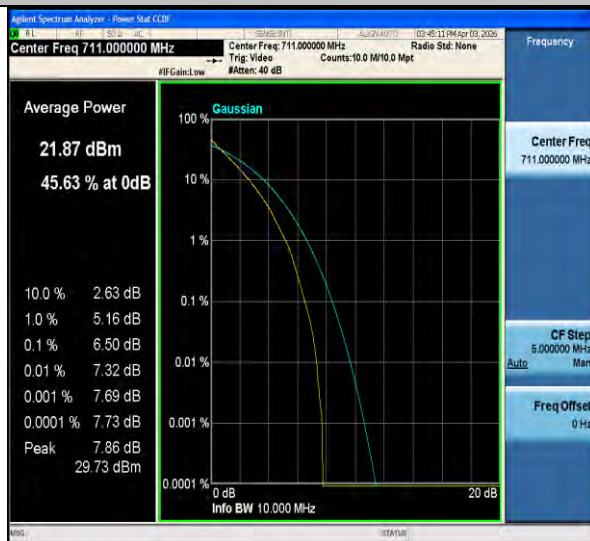
Band12-10MHz-QPSK-23130-1#0-PASS



Band12-10MHz-16QAM-23130-1#0-PASS



Band12-10MHz-QPSK-23130-6#0-PASS



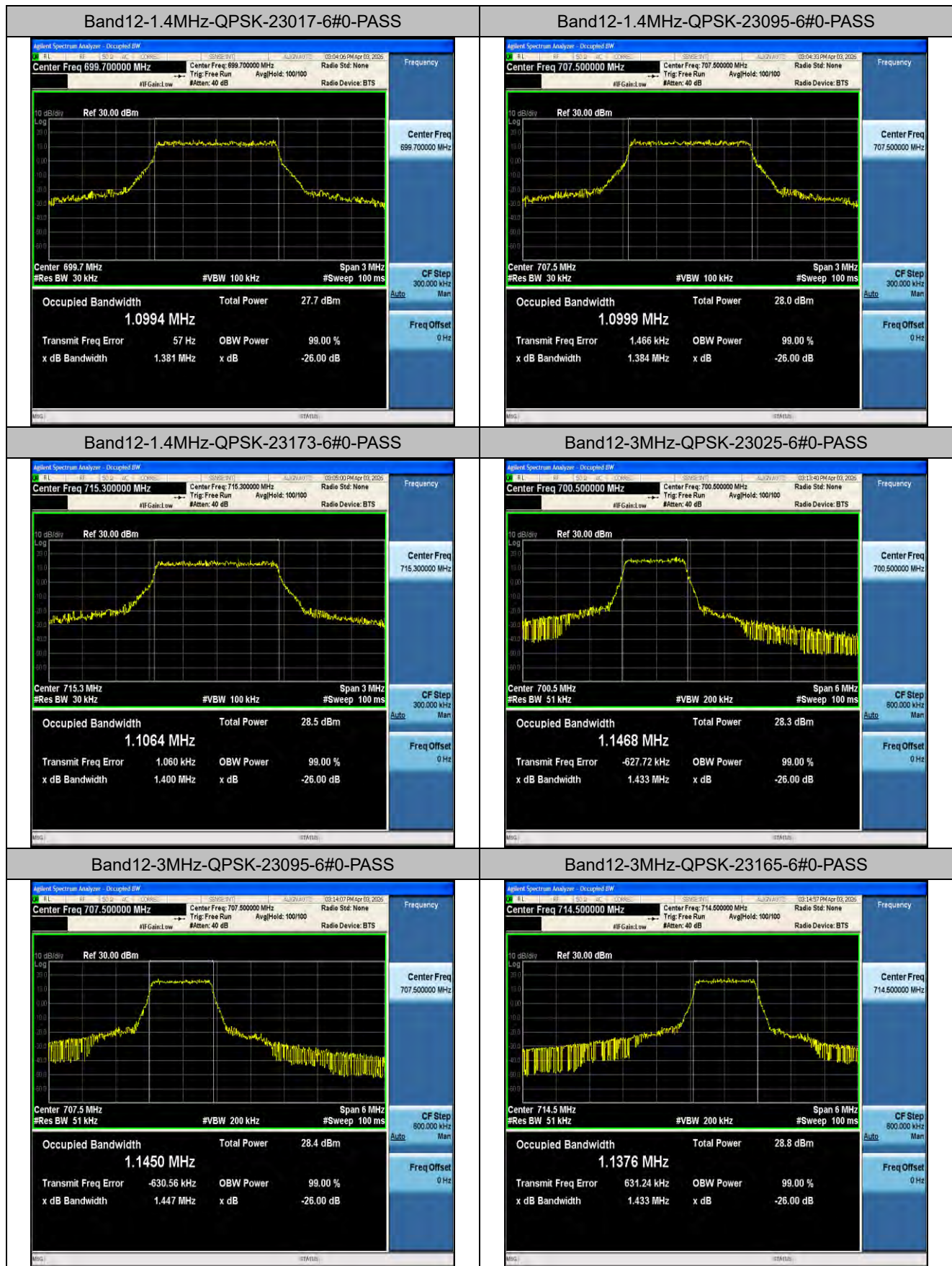
Band12-10MHz-16QAM-23130-6#0-PASS



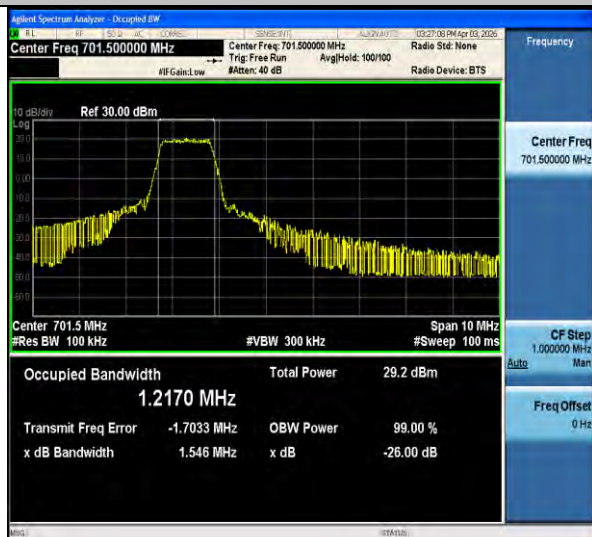
26dB Bandwidth and Occupied Bandwidth for M1**Test Result**

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band12	1.4MHz	QPSK	23017	6	0	Low	1.0994	1.381	PASS
Band12	1.4MHz	QPSK	23095	6	0	Low	1.0999	1.384	PASS
Band12	1.4MHz	QPSK	23173	6	0	High	1.1064	1.400	PASS
Band12	3MHz	QPSK	23025	6	0	Low	1.1468	1.433	PASS
Band12	3MHz	QPSK	23095	6	0	Low	1.1450	1.447	PASS
Band12	3MHz	QPSK	23165	6	0	High	1.1376	1.433	PASS
Band12	5MHz	QPSK	23035	6	0	Low	1.2170	1.546	PASS
Band12	5MHz	QPSK	23095	6	0	Low	4.4928	5.024	PASS
Band12	5MHz	QPSK	23155	6	0	High	1.2233	1.536	PASS
Band12	10MHz	QPSK	23060	6	0	Low	1.3638	1.701	PASS
Band12	10MHz	QPSK	23095	6	0	Low	1.3725	1.828	PASS
Band12	10MHz	QPSK	23130	6	0	High	1.3851	1.763	PASS
Band12	1.4MHz	16QAM	23017	5	0	Low	0.97236	1.372	PASS
Band12	1.4MHz	16QAM	23095	5	0	Low	0.96652	1.356	PASS
Band12	1.4MHz	16QAM	23173	5	0	High	0.97198	1.358	PASS
Band12	3MHz	16QAM	23025	5	0	Low	1.0203	1.417	PASS
Band12	3MHz	16QAM	23095	5	0	Low	1.0150	1.421	PASS
Band12	3MHz	16QAM	23165	5	0	High	1.0282	1.430	PASS
Band12	5MHz	16QAM	23035	5	0	Low	1.1389	1.507	PASS
Band12	5MHz	16QAM	23095	5	0	Low	1.1348	1.553	PASS
Band12	5MHz	16QAM	23155	5	0	High	1.1410	1.703	PASS
Band12	10MHz	16QAM	23060	5	0	Low	1.2740	1.979	PASS
Band12	10MHz	16QAM	23095	5	0	Low	1.3038	1.916	PASS
Band12	10MHz	16QAM	23130	5	0	High	1.3060	1.911	PASS

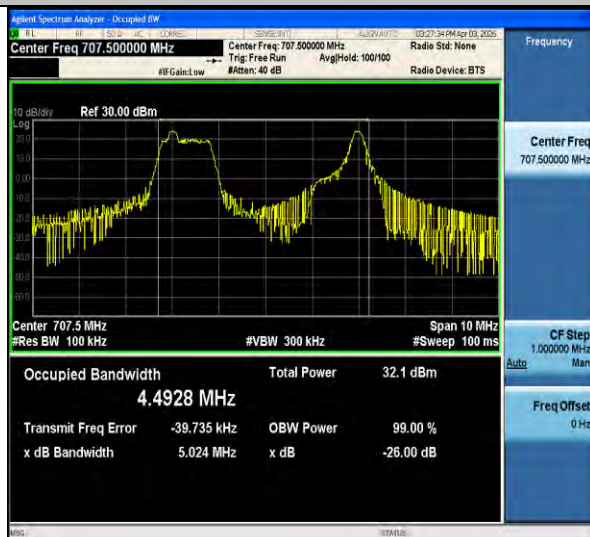
Test Graphs



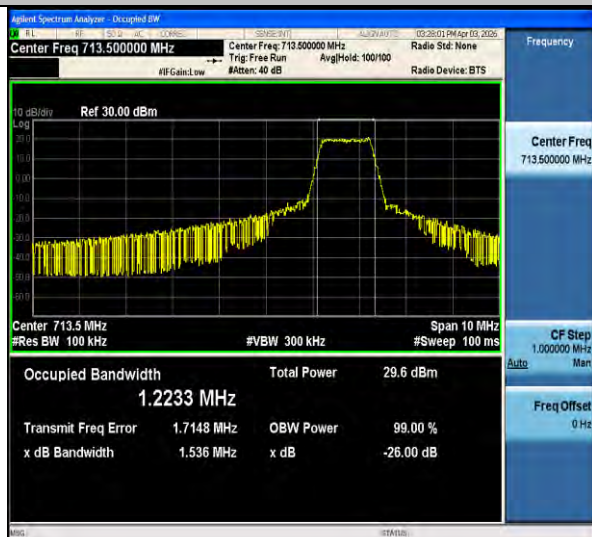
Band12-5MHz-QPSK-23035-6#0-PASS



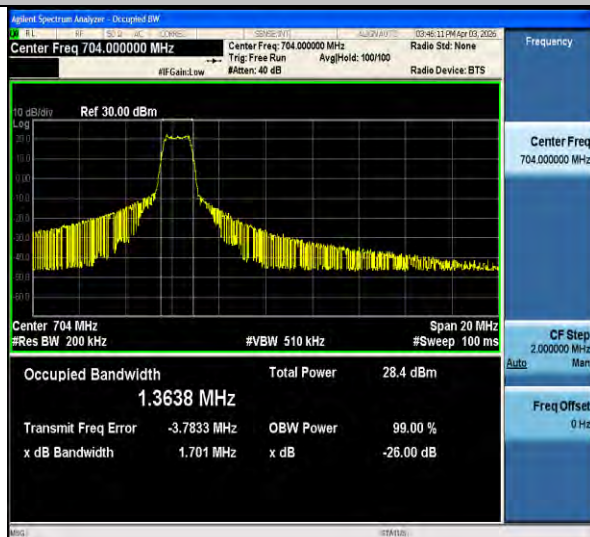
Band12-5MHz-QPSK-23095-6#0-PASS



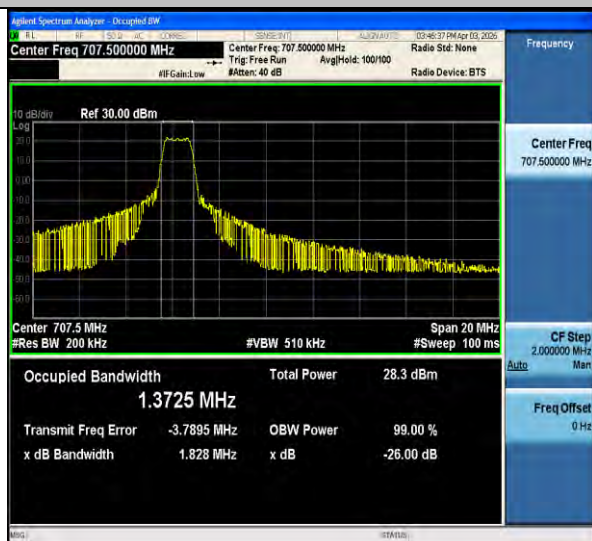
Band12-5MHz-QPSK-23155-6#0-PASS



Band12-10MHz-QPSK-23060-6#0-PASS



Band12-10MHz-QPSK-23095-6#0-PASS



Band12-10MHz-QPSK-23130-6#0-PASS



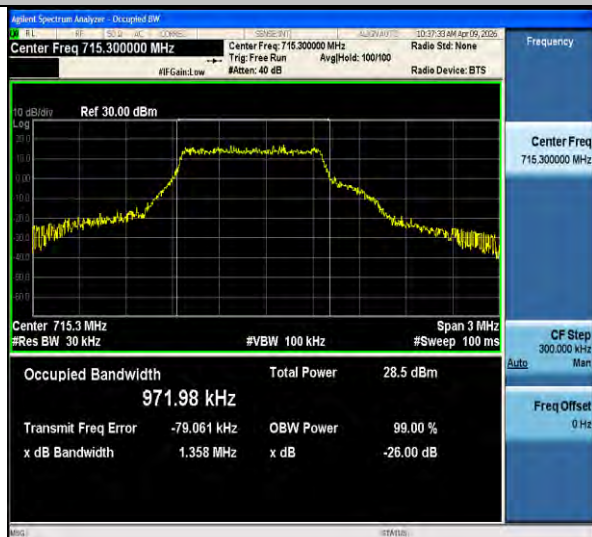
Band12-1.4MHz-16QAM-23017-5#0-PASS



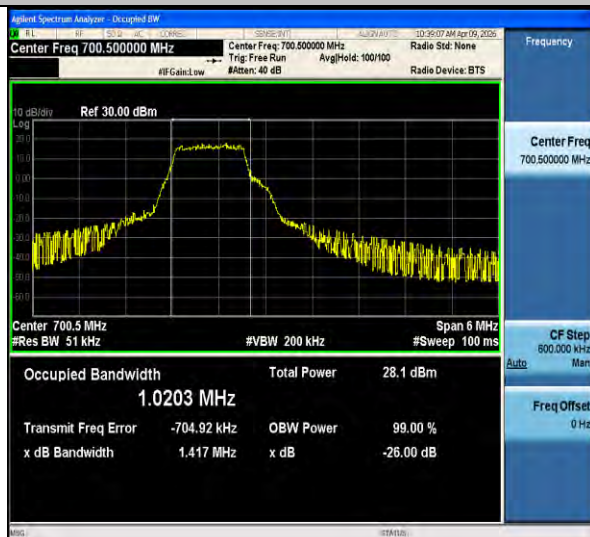
Band12-1.4MHz-16QAM-23095-5#0-PASS



Band12-1.4MHz-16QAM-23173-5#0-PASS



Band12-3MHz-16QAM-23025-5#0-PASS



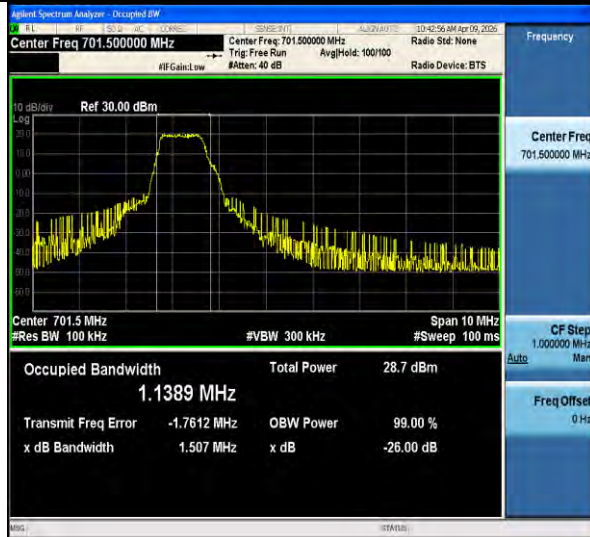
Band12-3MHz-16QAM-23095-5#0-PASS



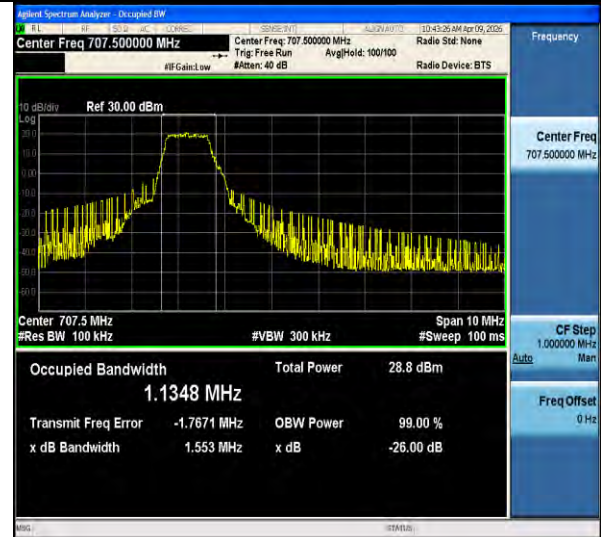
Band12-3MHz-16QAM-23165-5#0-PASS



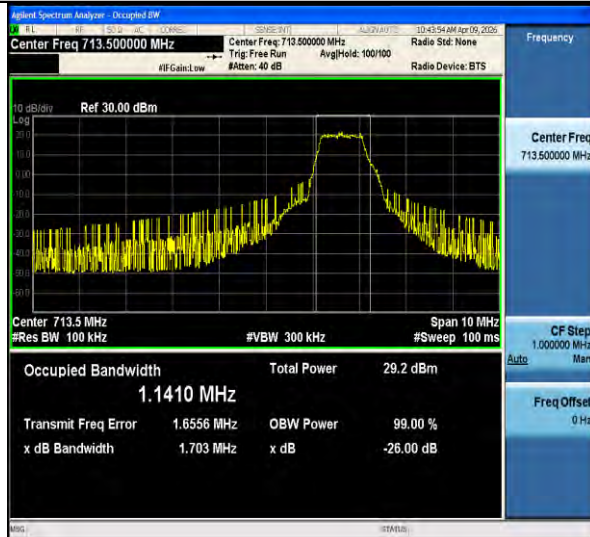
Band12-5MHz-16QAM-23035-5#0-PASS



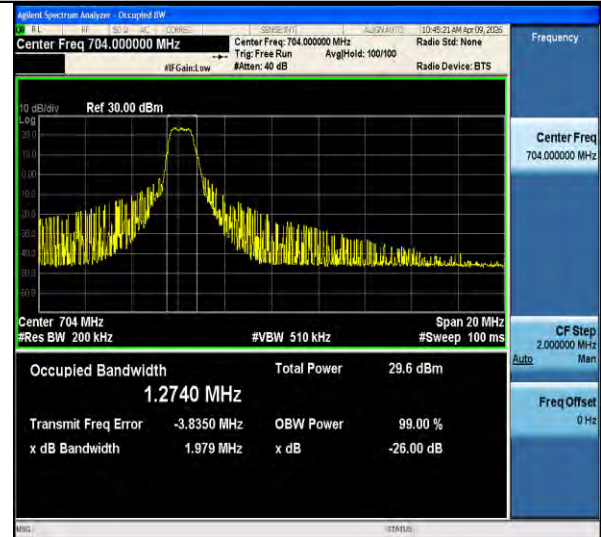
Band12-5MHz-16QAM-23095-5#0-PASS



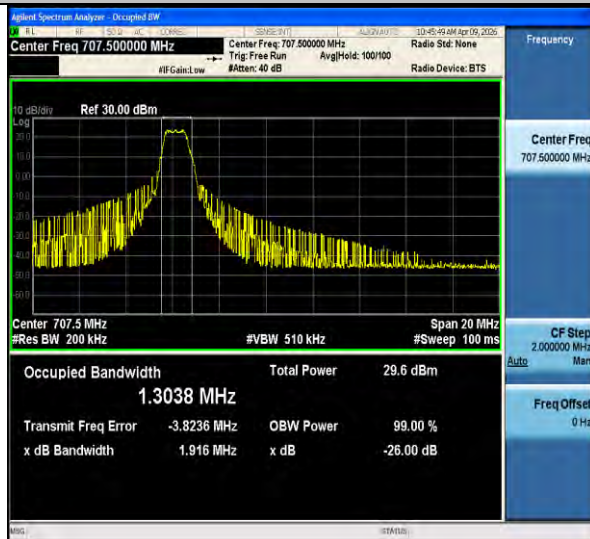
Band12-5MHz-16QAM-23155-5#0-PASS



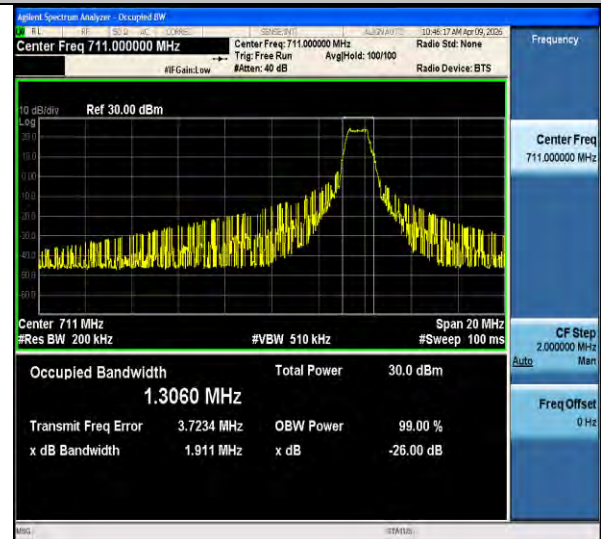
Band12-10MHz-16QAM-23060-5#0-PASS



Band12-10MHz-16QAM-23095-5#0-PASS

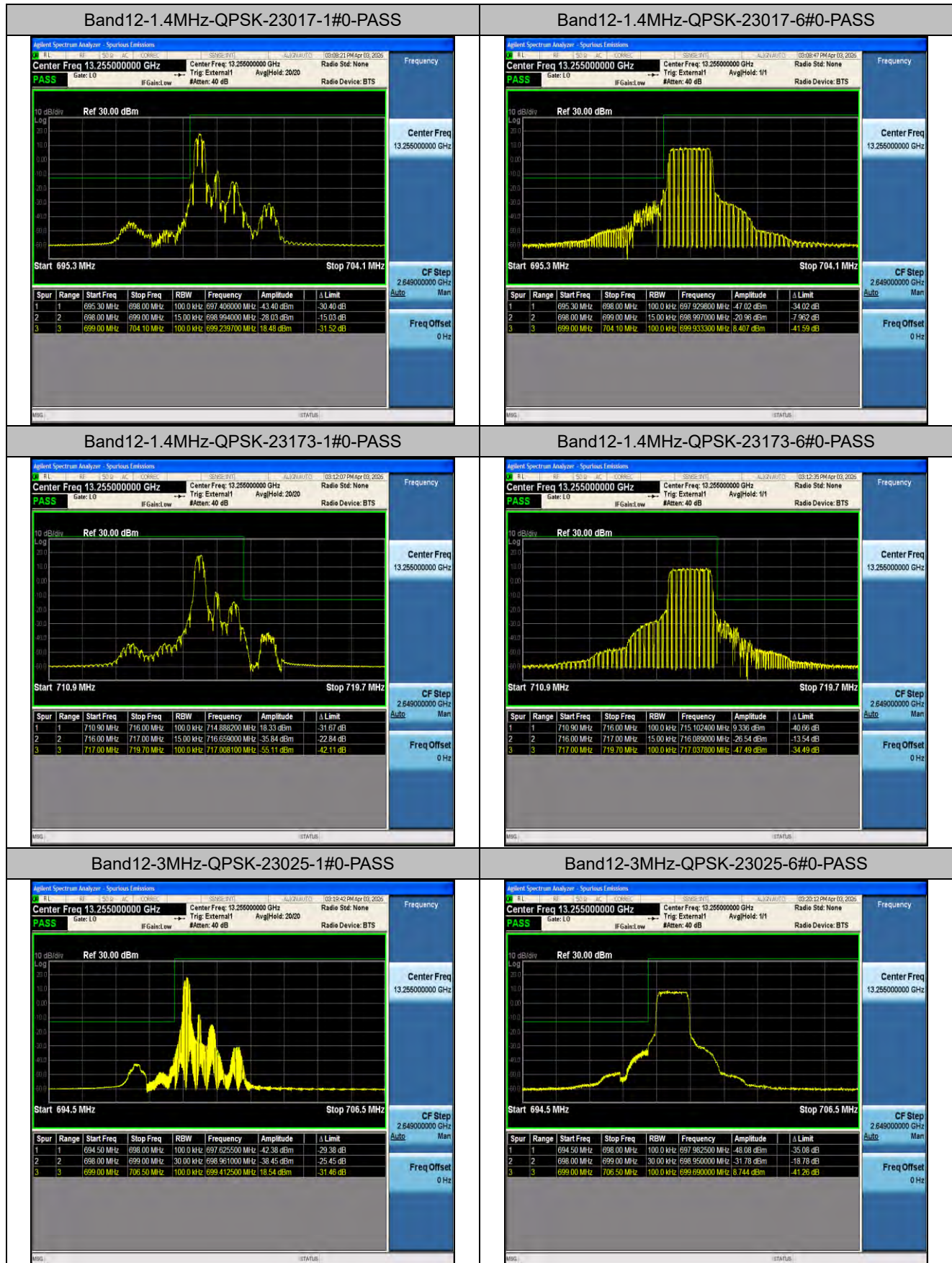


Band12-10MHz-16QAM-23130-5#0-PASS



Band Edge for M1

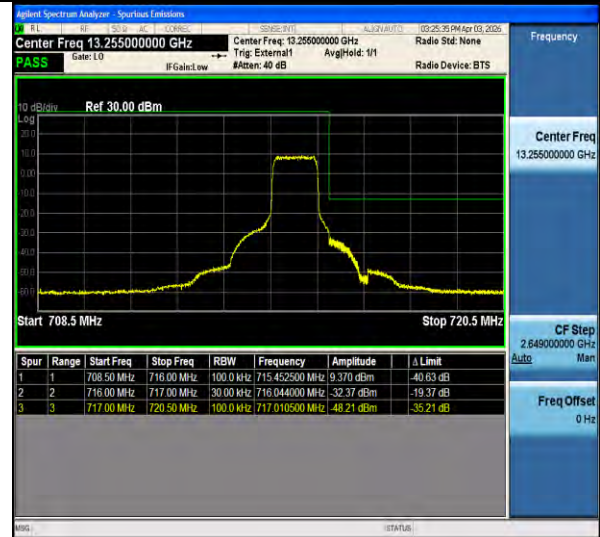
Test Graphs



Band12-3MHz-QPSK-23165-1#0-PASS



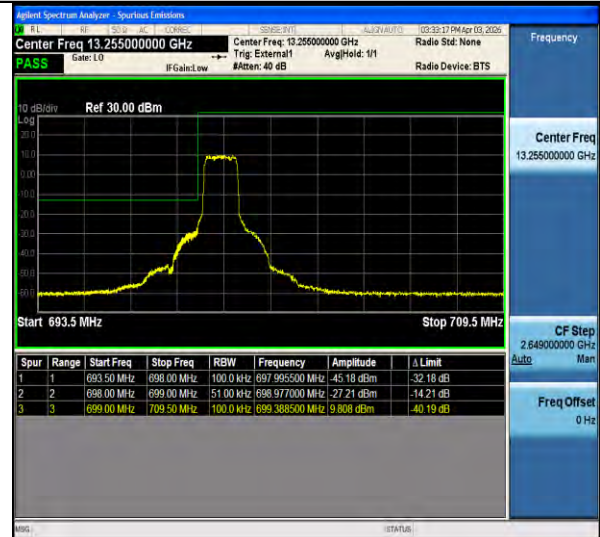
Band12-3MHz-QPSK-23165-6#0-PASS



Band12-5MHz-QPSK-23035-1#0-PASS



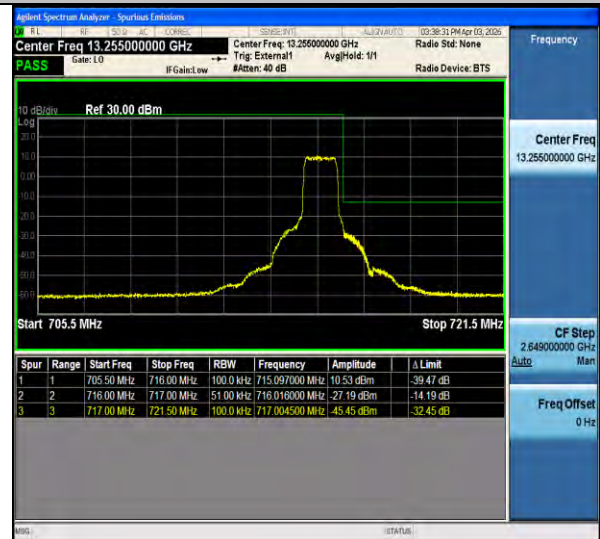
Band12-5MHz-QPSK-23035-6#0-PASS



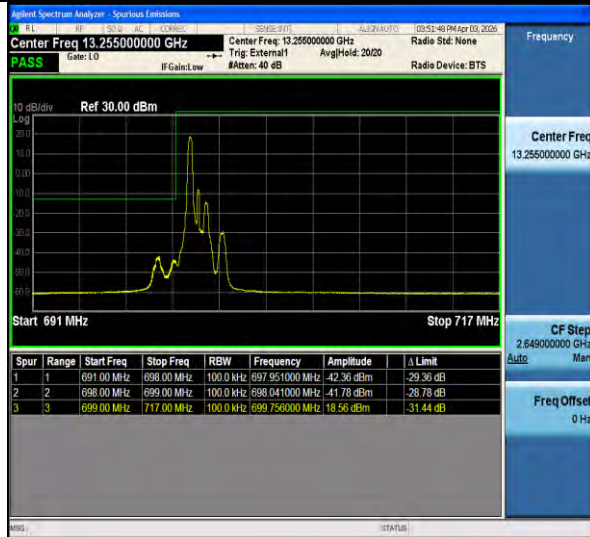
Band12-5MHz-QPSK-23155-1#0-PASS



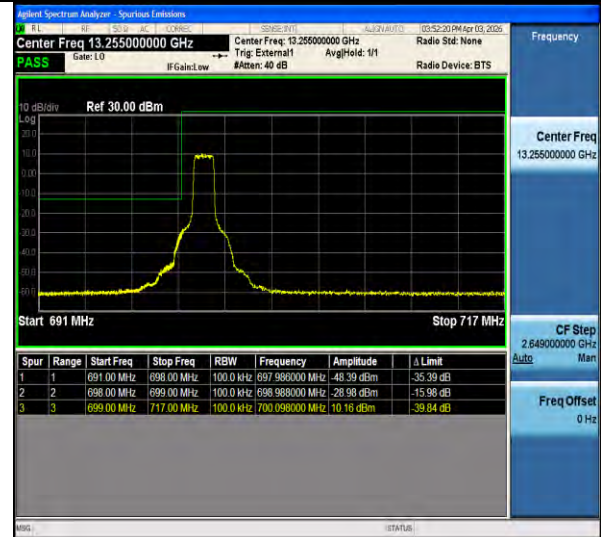
Band12-5MHz-QPSK-23155-6#0-PASS



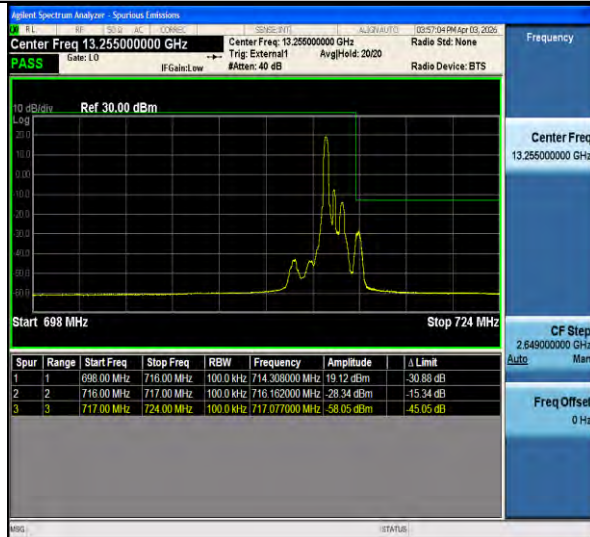
Band12-10MHz-QPSK-23060-1#0-PASS



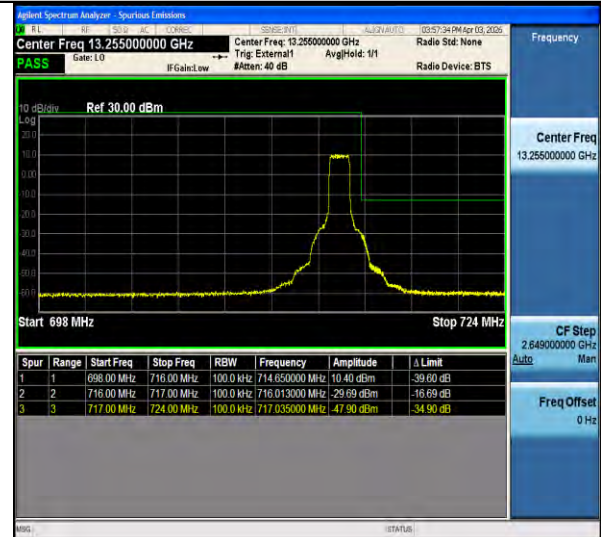
Band12-10MHz-QPSK-23060-6#0-PASS



Band12-10MHz-QPSK-23130-1#0-PASS

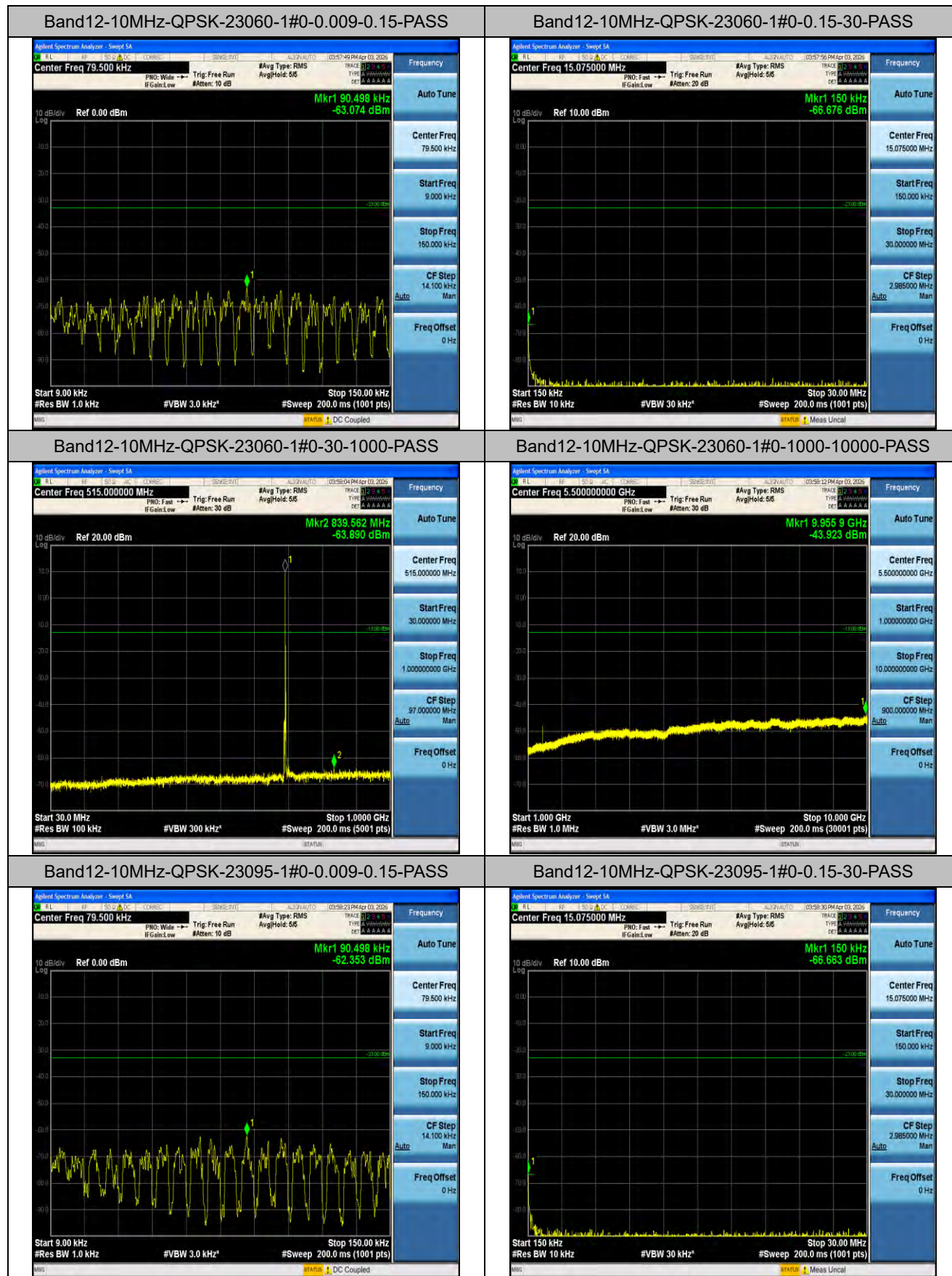


Band12-10MHz-QPSK-23130-6#0-PASS

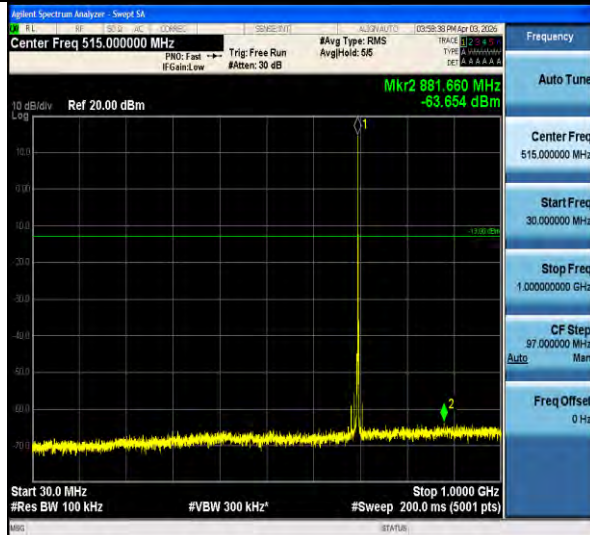


Conducted Spurious Emission for M1

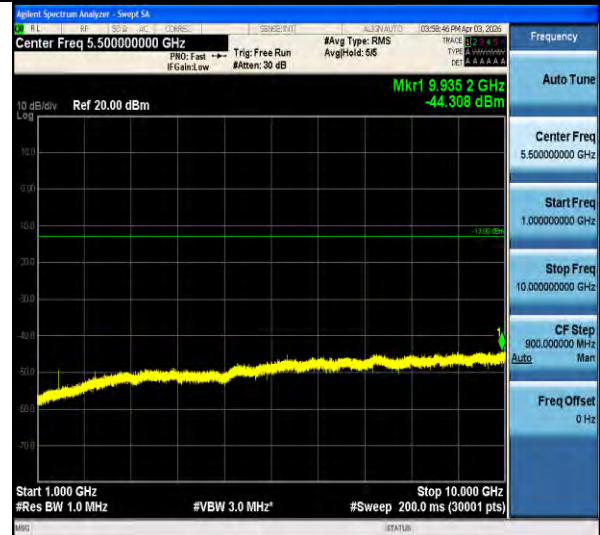
Test Graphs



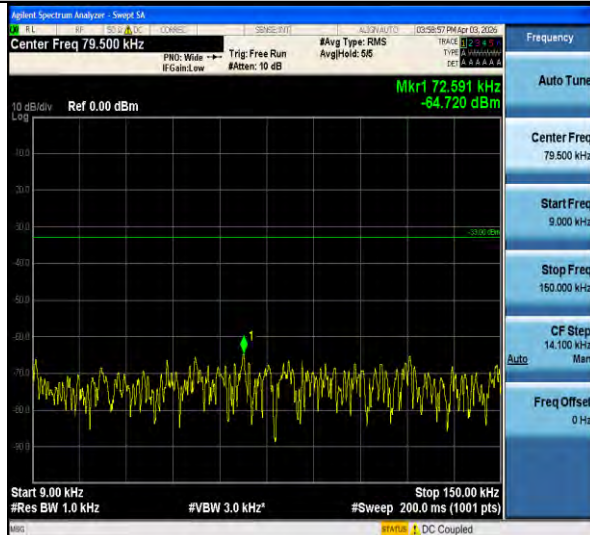
Band12-10MHz-QPSK-23095-1#0-30-1000-PASS



Band12-10MHz-QPSK-23095-1#0-1000-10000-PASS



Band12-10MHz-QPSK-23130-1#0-0.009-0.15-PASS



Band12-10MHz-QPSK-23130-1#0-0.15-30-PASS



Band12-10MHz-QPSK-23130-1#0-30-1000-PASS



Band12-10MHz-QPSK-23130-1#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)	Verdict
Band12	10MHz	QPSK	23095	6	0	Low	VN	NT	-2.00	-0.002827	PASS
Band12	10MHz	QPSK	23095	6	0	Low	VL	NT	-1.50	-0.002120	PASS
Band12	10MHz	QPSK	23095	6	0	Low	VH	NT	-0.30	-0.000424	PASS

Temperature											
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band12	10MHz	QPSK	23095	6	0	Low	NV	-30	-0.80	-0.001131	PASS
Band12	10MHz	QPSK	23095	6	0	Low	NV	-20	-0.90	-0.001272	PASS
Band12	10MHz	QPSK	23095	6	0	Low	NV	-10	-1.30	-0.001837	PASS
Band12	10MHz	QPSK	23095	6	0	Low	NV	0	-0.90	-0.001272	PASS
Band12	10MHz	QPSK	23095	6	0	Low	NV	10	-1.00	-0.001413	PASS
Band12	10MHz	QPSK	23095	6	0	Low	NV	20	-1.70	-0.002403	PASS
Band12	10MHz	QPSK	23095	6	0	Low	NV	30	-1.40	-0.001979	PASS
Band12	10MHz	QPSK	23095	6	0	Low	NV	40	-1.00	-0.001413	PASS
Band12	10MHz	QPSK	23095	6	0	Low	NV	50	-0.90	-0.001272	PASS

~The End~