

Appendix-A LTE Cat M1 Band 71

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
Band71	5MHz	QPSK	133147	1	0	Low	22.04	26.09	34.77	PASS
Band71	5MHz	16QAM	133147	1	0	Low	22.3	26.35	34.77	PASS
Band71	5MHz	QPSK	133147	1	5	Low	22.09	26.14	34.77	PASS
Band71	5MHz	16QAM	133147	1	5	Low	22.42	26.47	34.77	PASS
Band71	5MHz	QPSK	133147	6	0	Low	20.88	24.93	34.77	PASS
Band71	5MHz	16QAM	133147	6	0	Low	21.96	26.01	34.77	PASS
Band71	5MHz	QPSK	133297	1	0	Low	22.11	26.16	34.77	PASS
Band71	5MHz	16QAM	133297	1	0	Low	22.42	26.47	34.77	PASS
Band71	5MHz	QPSK	133297	1	5	Low	22.23	26.28	34.77	PASS
Band71	5MHz	16QAM	133297	1	5	Low	22.45	26.5	34.77	PASS
Band71	5MHz	QPSK	133297	6	0	Low	20.95	25	34.77	PASS
Band71	5MHz	16QAM	133297	6	0	Low	22.06	26.11	34.77	PASS
Band71	5MHz	QPSK	133447	1	0	High	22.13	26.18	34.77	PASS
Band71	5MHz	16QAM	133447	1	0	High	22.35	26.4	34.77	PASS
Band71	5MHz	QPSK	133447	1	5	High	22.18	26.23	34.77	PASS
Band71	5MHz	16QAM	133447	1	5	High	22.51	26.56	34.77	PASS
Band71	5MHz	QPSK	133447	6	0	High	21	25.05	34.77	PASS
Band71	5MHz	16QAM	133447	6	0	High	22.02	26.07	34.77	PASS
Band71	10MHz	QPSK	133172	1	0	Low	21.68	25.73	34.77	PASS
Band71	10MHz	16QAM	133172	1	0	Low	21.88	25.93	34.77	PASS
Band71	10MHz	QPSK	133172	1	5	Low	21.7	25.75	34.77	PASS
Band71	10MHz	16QAM	133172	1	5	Low	21.93	25.98	34.77	PASS
Band71	10MHz	QPSK	133172	6	0	Low	20.59	24.64	34.77	PASS
Band71	10MHz	16QAM	133172	6	0	Low	21.59	25.64	34.77	PASS
Band71	10MHz	QPSK	133297	1	0	Low	21.92	25.97	34.77	PASS
Band71	10MHz	16QAM	133297	1	0	Low	22.21	26.26	34.77	PASS
Band71	10MHz	QPSK	133297	1	5	Low	22	26.05	34.77	PASS
Band71	10MHz	16QAM	133297	1	5	Low	22.24	26.29	34.77	PASS
Band71	10MHz	QPSK	133297	6	0	Low	20.8	24.85	34.77	PASS
Band71	10MHz	16QAM	133297	6	0	Low	22.12	26.17	34.77	PASS
Band71	10MHz	QPSK	133422	1	0	High	22.14	26.19	34.77	PASS
Band71	10MHz	16QAM	133422	1	0	High	22.48	26.53	34.77	PASS
Band71	10MHz	QPSK	133422	1	5	High	22.28	26.33	34.77	PASS
Band71	10MHz	16QAM	133422	1	5	High	22.59	26.64	34.77	PASS
Band71	10MHz	QPSK	133422	6	0	High	21.08	25.13	34.77	PASS
Band71	10MHz	16QAM	133422	6	0	High	21.98	26.03	34.77	PASS

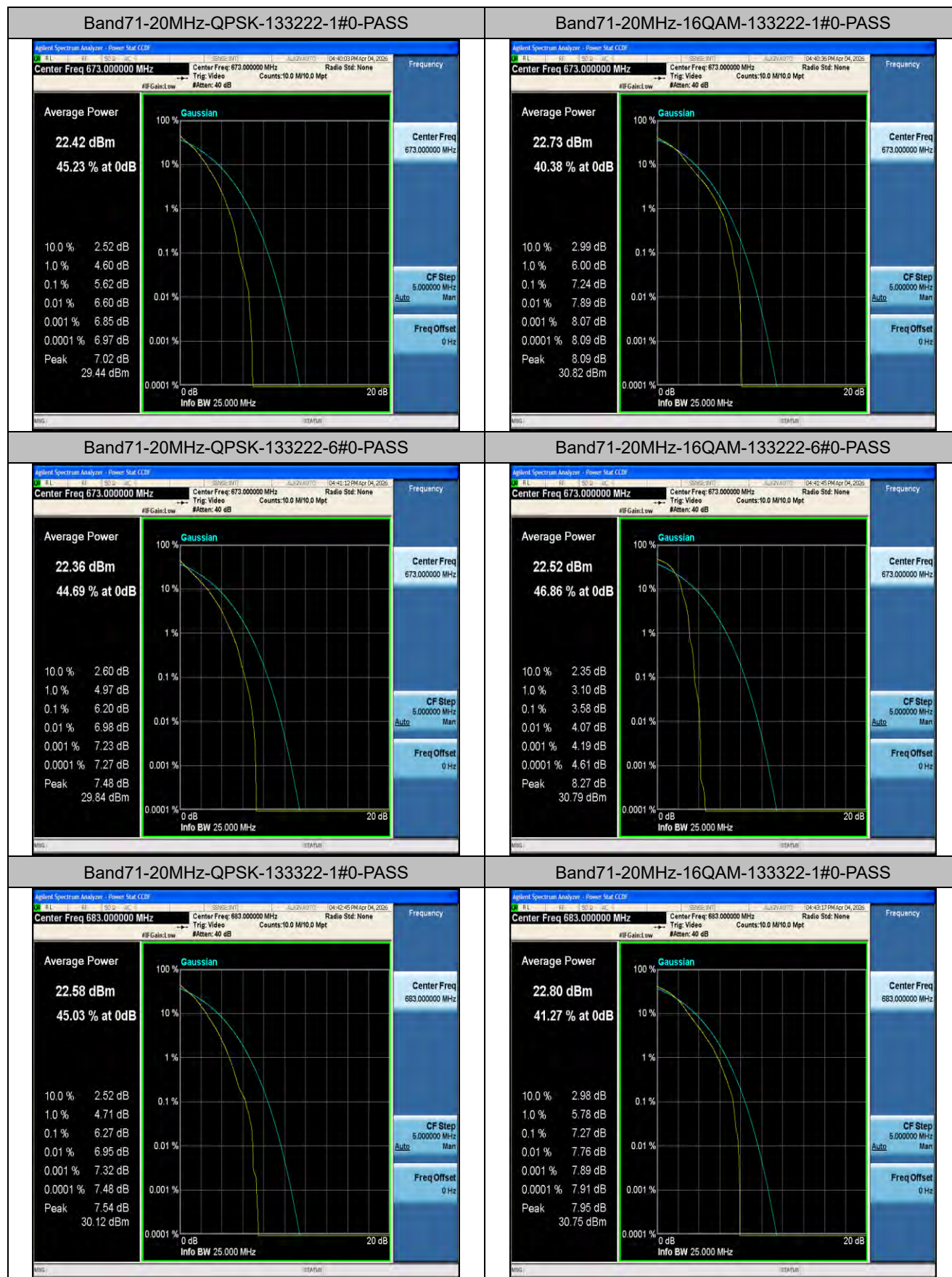
Band71	15MHz	QPSK	133197	1	0	Low	21.59	25.64	34.77	PASS
Band71	15MHz	16QAM	133197	1	0	Low	21.88	25.93	34.77	PASS
Band71	15MHz	QPSK	133197	1	5	Low	21.67	25.72	34.77	PASS
Band71	15MHz	16QAM	133197	1	5	Low	21.98	26.03	34.77	PASS
Band71	15MHz	QPSK	133197	6	0	Low	21.57	25.62	34.77	PASS
Band71	15MHz	16QAM	133197	6	0	Low	21.84	25.89	34.77	PASS
Band71	15MHz	QPSK	133297	1	0	Low	21.75	25.8	34.77	PASS
Band71	15MHz	16QAM	133297	1	0	Low	22	26.05	34.77	PASS
Band71	15MHz	QPSK	133297	1	5	Low	21.84	25.89	34.77	PASS
Band71	15MHz	16QAM	133297	1	5	Low	22.1	26.15	34.77	PASS
Band71	15MHz	QPSK	133297	6	0	Low	21.73	25.78	34.77	PASS
Band71	15MHz	16QAM	133297	6	0	Low	22.14	26.19	34.77	PASS
Band71	15MHz	QPSK	133397	1	0	High	22.31	26.36	34.77	PASS
Band71	15MHz	16QAM	133397	1	0	High	22.64	26.69	34.77	PASS
Band71	15MHz	QPSK	133397	1	5	High	22.42	26.47	34.77	PASS
Band71	15MHz	16QAM	133397	1	5	High	22.66	26.71	34.77	PASS
Band71	15MHz	QPSK	133397	6	0	High	22.27	26.32	34.77	PASS
Band71	15MHz	16QAM	133397	6	0	High	22.14	26.19	34.77	PASS
Band71	20MHz	QPSK	133222	1	0	Low	21.58	25.63	34.77	PASS
Band71	20MHz	16QAM	133222	1	0	Low	21.89	25.94	34.77	PASS
Band71	20MHz	QPSK	133222	1	5	Low	21.66	25.71	34.77	PASS
Band71	20MHz	16QAM	133222	1	5	Low	21.88	25.93	34.77	PASS
Band71	20MHz	QPSK	133222	6	0	Low	21.5	25.55	34.77	PASS
Band71	20MHz	16QAM	133222	6	0	Low	22.19	26.24	34.77	PASS
Band71	20MHz	QPSK	133322	1	0	Low	21.69	25.74	34.77	PASS
Band71	20MHz	16QAM	133322	1	0	Low	21.94	25.99	34.77	PASS
Band71	20MHz	QPSK	133322	1	5	Low	21.77	25.82	34.77	PASS
Band71	20MHz	16QAM	133322	1	5	Low	22.1	26.15	34.77	PASS
Band71	20MHz	QPSK	133322	6	0	Low	21.63	25.68	34.77	PASS
Band71	20MHz	16QAM	133322	6	0	Low	21.84	25.89	34.77	PASS
Band71	20MHz	QPSK	133372	1	0	High	21.96	26.01	34.77	PASS
Band71	20MHz	16QAM	133372	1	0	High	22.26	26.31	34.77	PASS
Band71	20MHz	QPSK	133372	1	5	High	22.04	26.09	34.77	PASS
Band71	20MHz	16QAM	133372	1	5	High	22.25	26.3	34.77	PASS
Band71	20MHz	QPSK	133372	6	0	High	21.91	25.96	34.77	PASS
Band71	20MHz	16QAM	133372	6	0	High	21.72	25.77	34.77	PASS

Peak-to-Average Ratio(CCDF) for M1

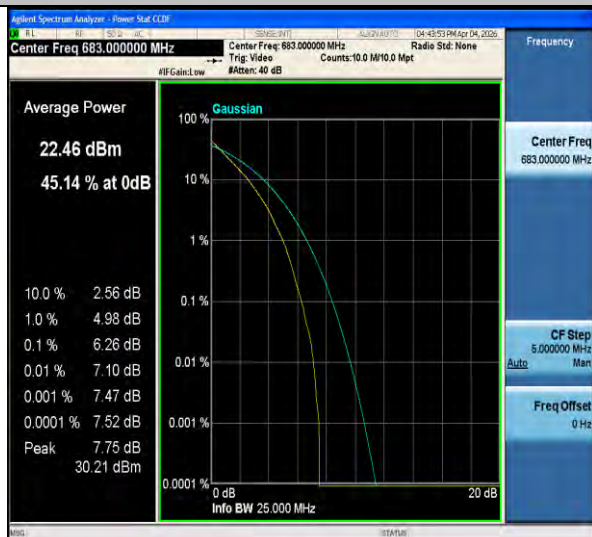
Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NBIndex	Result(dB)	Limit(dB)	Verdict
Band71	20MHz	QPSK	133222	1	0	Low	5.62	<=13	PASS
Band71	20MHz	16QAM	133222	1	0	Low	7.24	<=13	PASS
Band71	20MHz	QPSK	133222	6	0	Low	6.20	<=13	PASS
Band71	20MHz	16QAM	133222	6	0	Low	3.58	<=13	PASS
Band71	20MHz	QPSK	133322	1	0	Low	6.27	<=13	PASS
Band71	20MHz	16QAM	133322	1	0	Low	7.27	<=13	PASS
Band71	20MHz	QPSK	133322	6	0	Low	6.26	<=13	PASS
Band71	20MHz	16QAM	133322	6	0	Low	3.63	<=13	PASS
Band71	20MHz	QPSK	133372	1	0	High	6.34	<=13	PASS
Band71	20MHz	16QAM	133372	1	0	High	7.53	<=13	PASS
Band71	20MHz	QPSK	133372	6	0	High	6.40	<=13	PASS
Band71	20MHz	16QAM	133372	6	0	High	3.53	<=13	PASS

Test Graphs



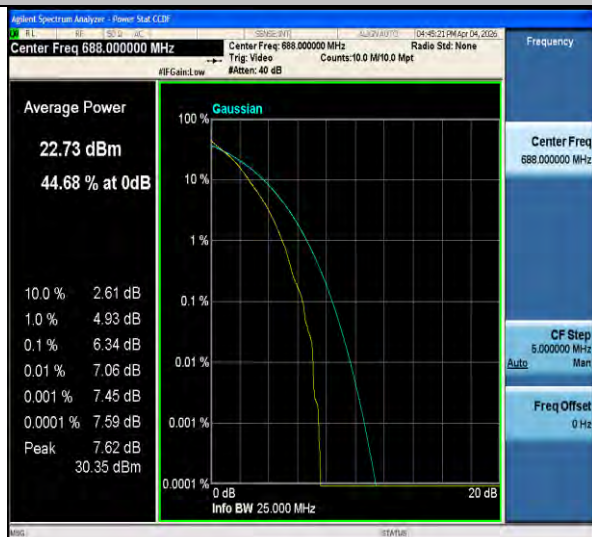
Band71-20MHz-QPSK-133322-6#0-PASS



Band71-20MHz-16QAM-133322-6#0-PASS



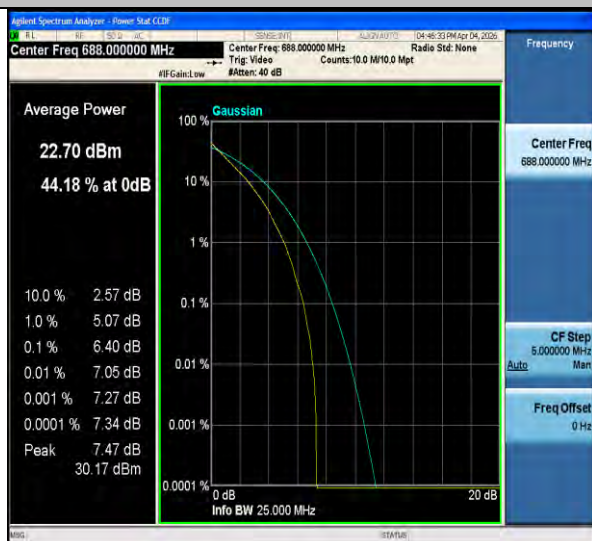
Band71-20MHz-QPSK-133372-1#0-PASS



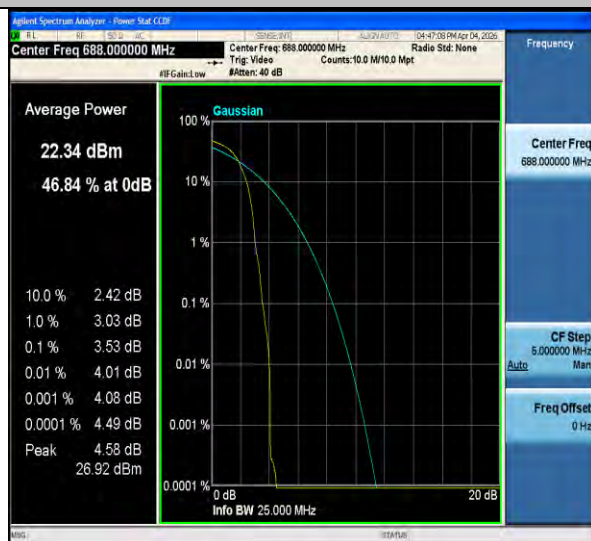
Band71-20MHz-16QAM-133372-1#0-PASS



Band71-20MHz-QPSK-133372-6#0-PASS



Band71-20MHz-16QAM-133372-6#0-PASS

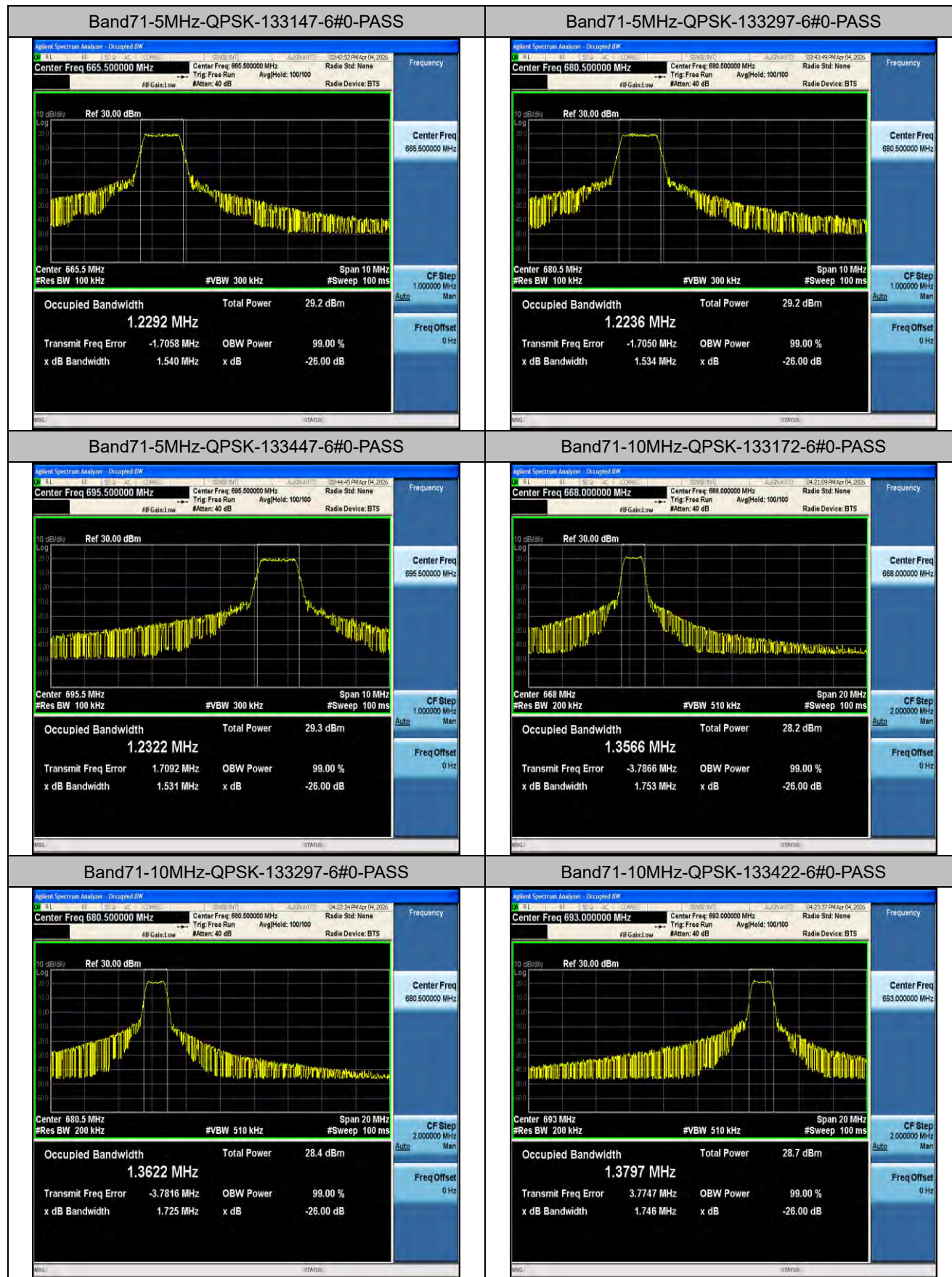


26dB Bandwidth and Occupied Bandwidth for M1

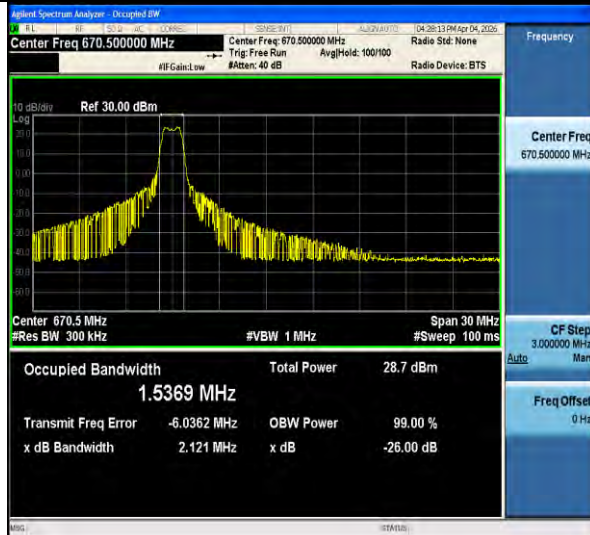
Test Result

Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band71	5MHz	QPSK	133147	6	0	Low	1.2292	1.540	PASS
Band71	5MHz	QPSK	133297	6	0	Low	1.2236	1.534	PASS
Band71	5MHz	QPSK	133447	6	0	High	1.2322	1.531	PASS
Band71	10MHz	QPSK	133172	6	0	Low	1.3566	1.753	PASS
Band71	10MHz	QPSK	133297	6	0	Low	1.3622	1.725	PASS
Band71	10MHz	QPSK	133422	6	0	High	1.3797	1.746	PASS
Band71	15MHz	QPSK	133197	6	0	Low	1.5369	2.121	PASS
Band71	15MHz	QPSK	133297	6	0	Low	1.5380	2.199	PASS
Band71	15MHz	QPSK	133397	6	0	High	1.5292	2.170	PASS
Band71	20MHz	QPSK	133222	6	0	Low	1.9171	2.664	PASS
Band71	20MHz	QPSK	133322	6	0	Low	1.9337	2.550	PASS
Band71	20MHz	QPSK	133372	6	0	High	1.9201	2.797	PASS
Band71	5MHz	16QAM	133147	5	0	Low	1.1235	1.494	PASS
Band71	5MHz	16QAM	133297	5	0	Low	1.1394	1.504	PASS
Band71	5MHz	16QAM	133447	5	0	High	1.1466	1.496	PASS
Band71	10MHz	16QAM	133172	5	0	Low	1.2580	1.644	PASS
Band71	10MHz	16QAM	133297	5	0	Low	1.2810	1.680	PASS
Band71	10MHz	16QAM	133422	5	0	High	1.2873	1.660	PASS
Band71	15MHz	16QAM	133197	5	0	Low	1.4286	1.970	PASS
Band71	15MHz	16QAM	133297	5	0	Low	1.4399	1.962	PASS
Band71	15MHz	16QAM	133397	5	0	High	1.4189	1.861	PASS
Band71	20MHz	16QAM	133222	5	0	Low	1.8217	3.202	PASS
Band71	20MHz	16QAM	133322	5	0	Low	1.8231	3.092	PASS
Band71	20MHz	16QAM	133372	5	0	High	1.8093	3.125	PASS

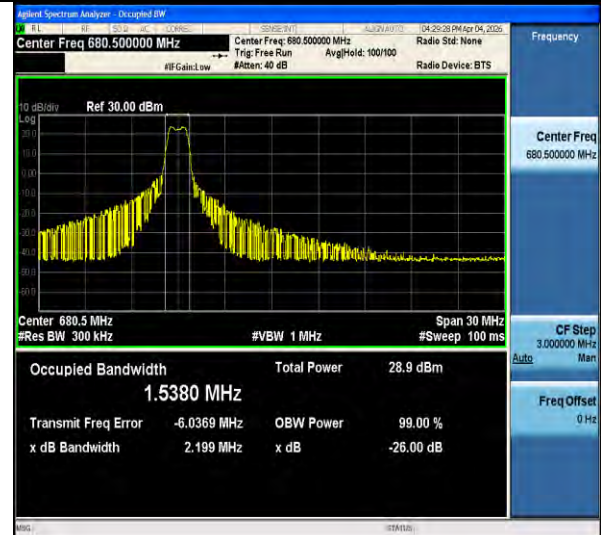
Test Graphs



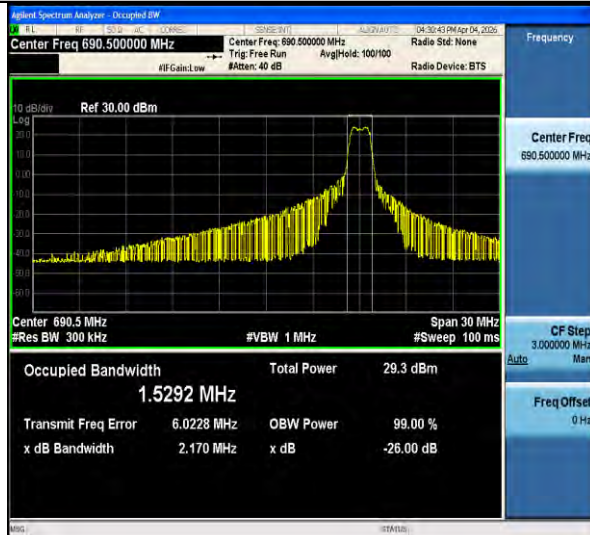
Band71-15MHz-QPSK-133197-6#0-PASS



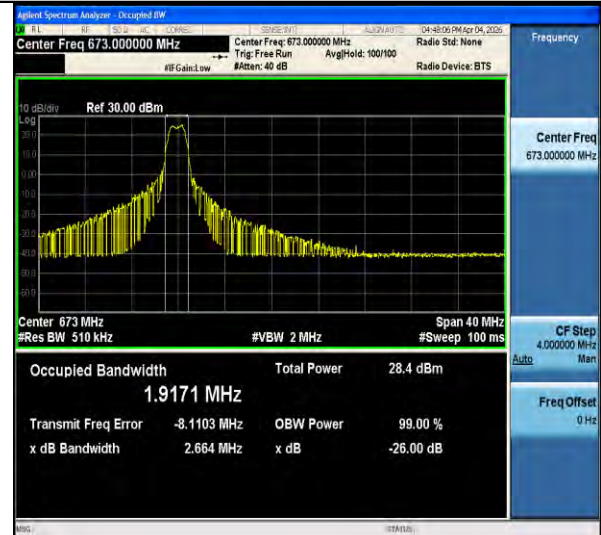
Band71-15MHz-QPSK-133297-6#0-PASS



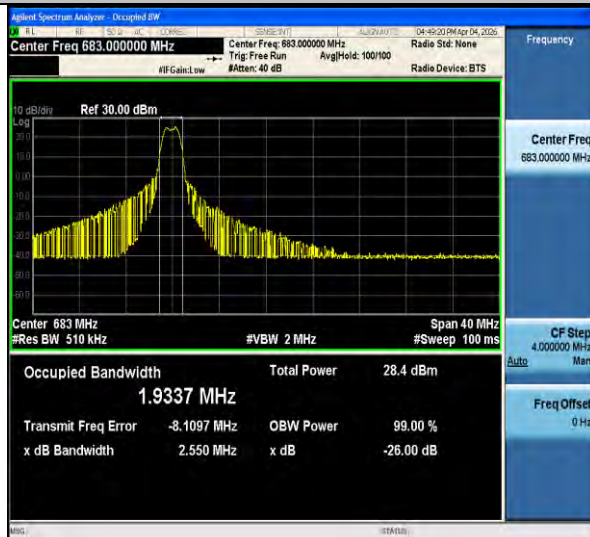
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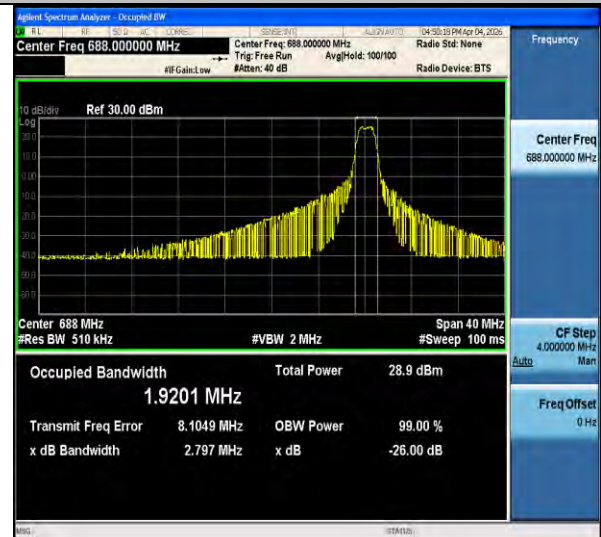
Band71-20MHz-QPSK-133222-6#0-PASS



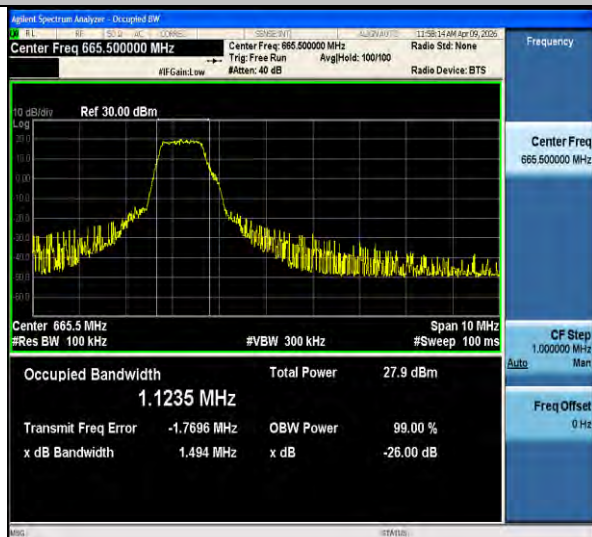
Band71-20MHz-QPSK-133322-6#0-PASS



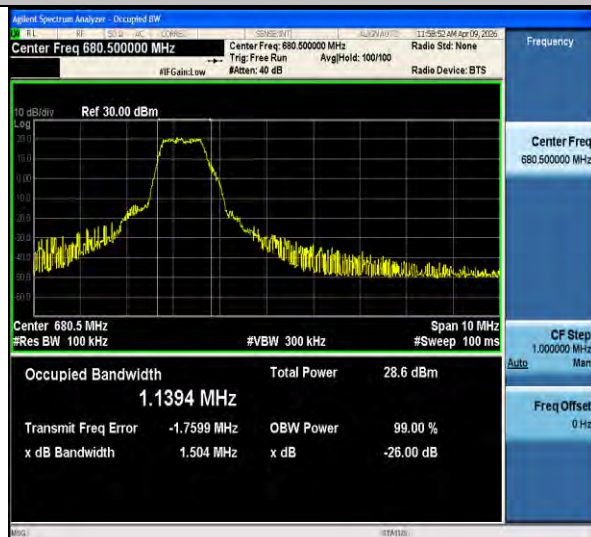
Band71-20MHz-QPSK-133372-6#0-PASS



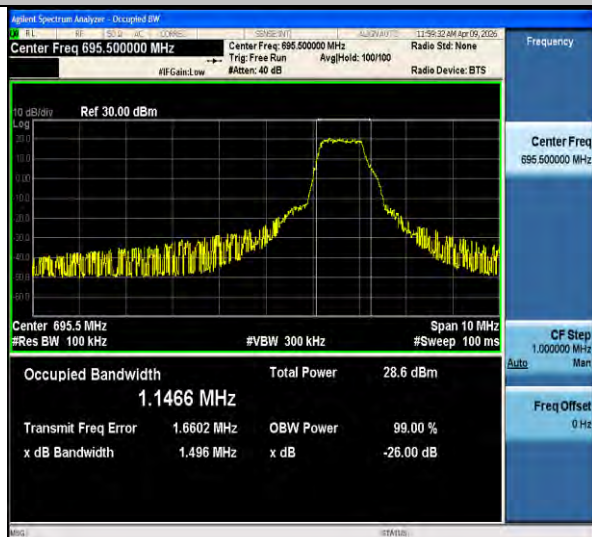
Band71-5MHz-16QAM-133147-5#0-PASS



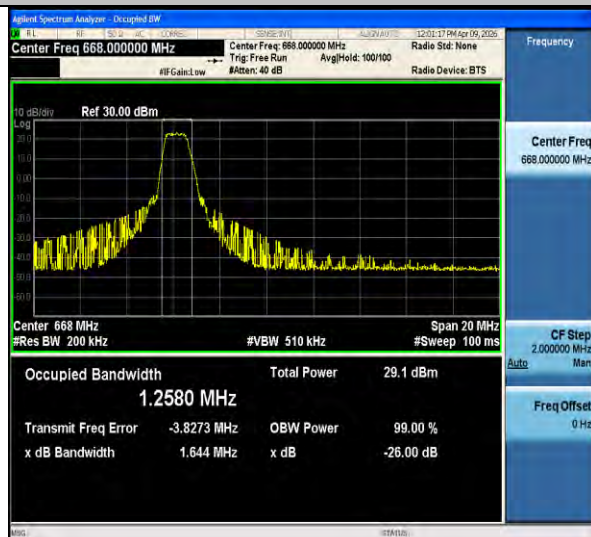
Band71-5MHz-16QAM-133297-5#0-PASS



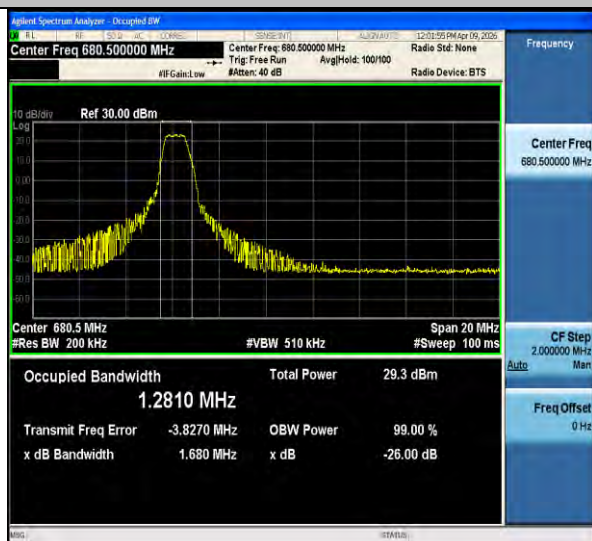
Band71-5MHz-16QAM-133447-5#0-PASS



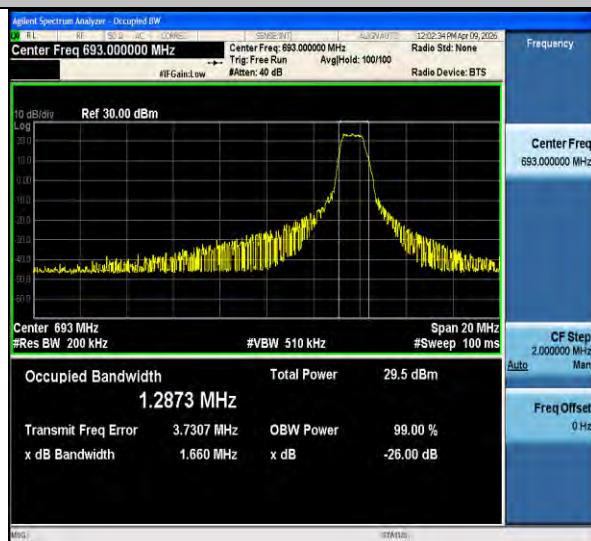
Band71-10MHz-16QAM-133172-5#0-PASS



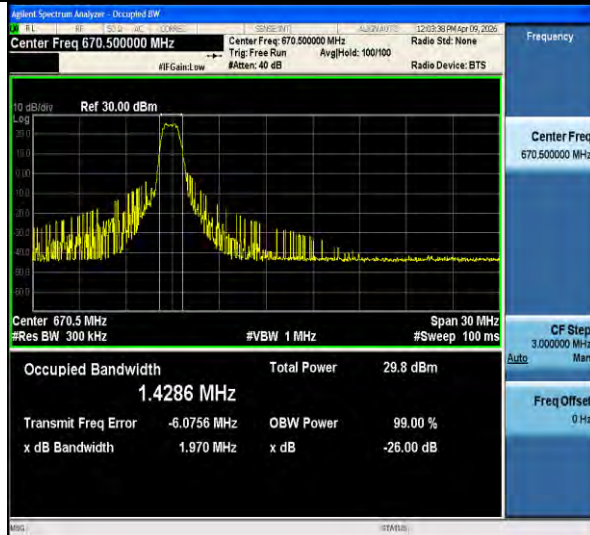
Band71-10MHz-16QAM-133297-5#0-PASS



Band71-10MHz-16QAM-133422-5#0-PASS



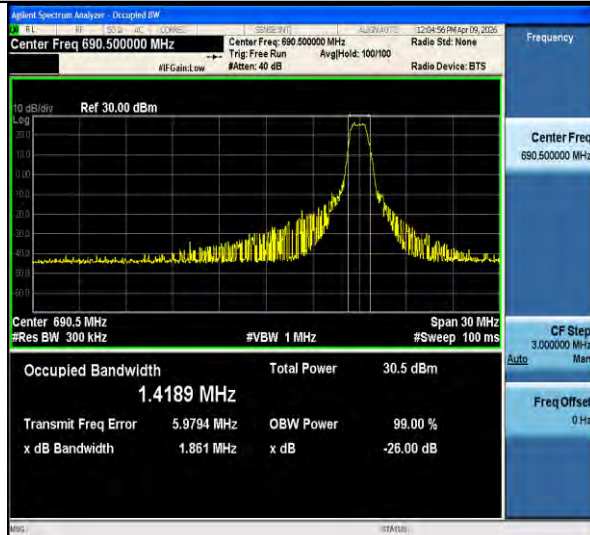
Band71-15MHz-16QAM-133197-5#0-PASS



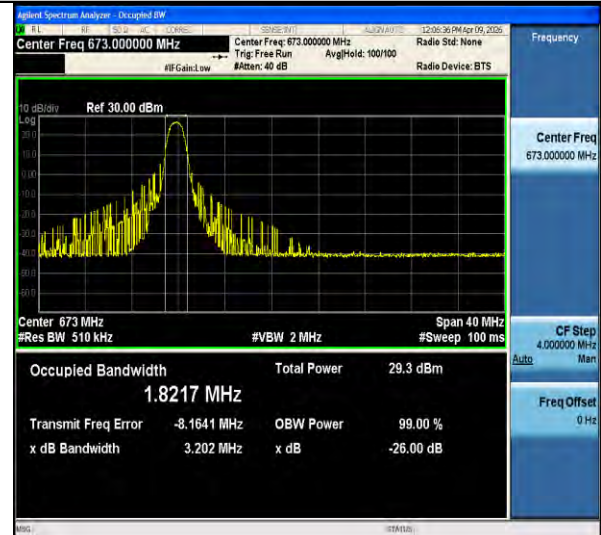
Band71-15MHz-16QAM-133297-5#0-PASS



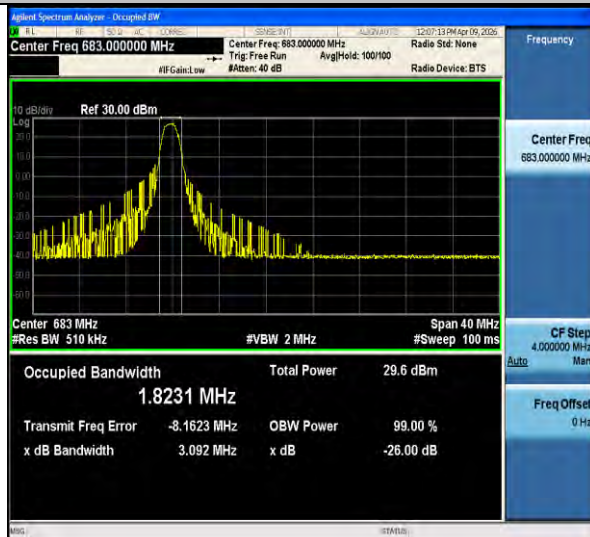
Band71-15MHz-16QAM-133397-5#0-PASS



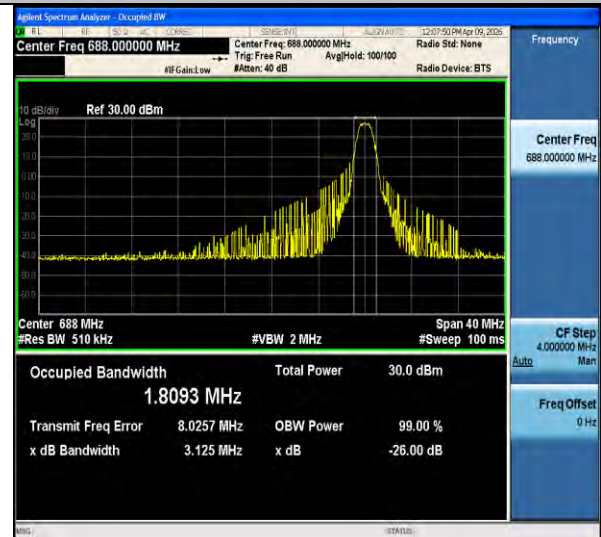
Band71-20MHz-16QAM-133222-5#0-PASS



Band71-20MHz-16QAM-133322-5#0-PASS

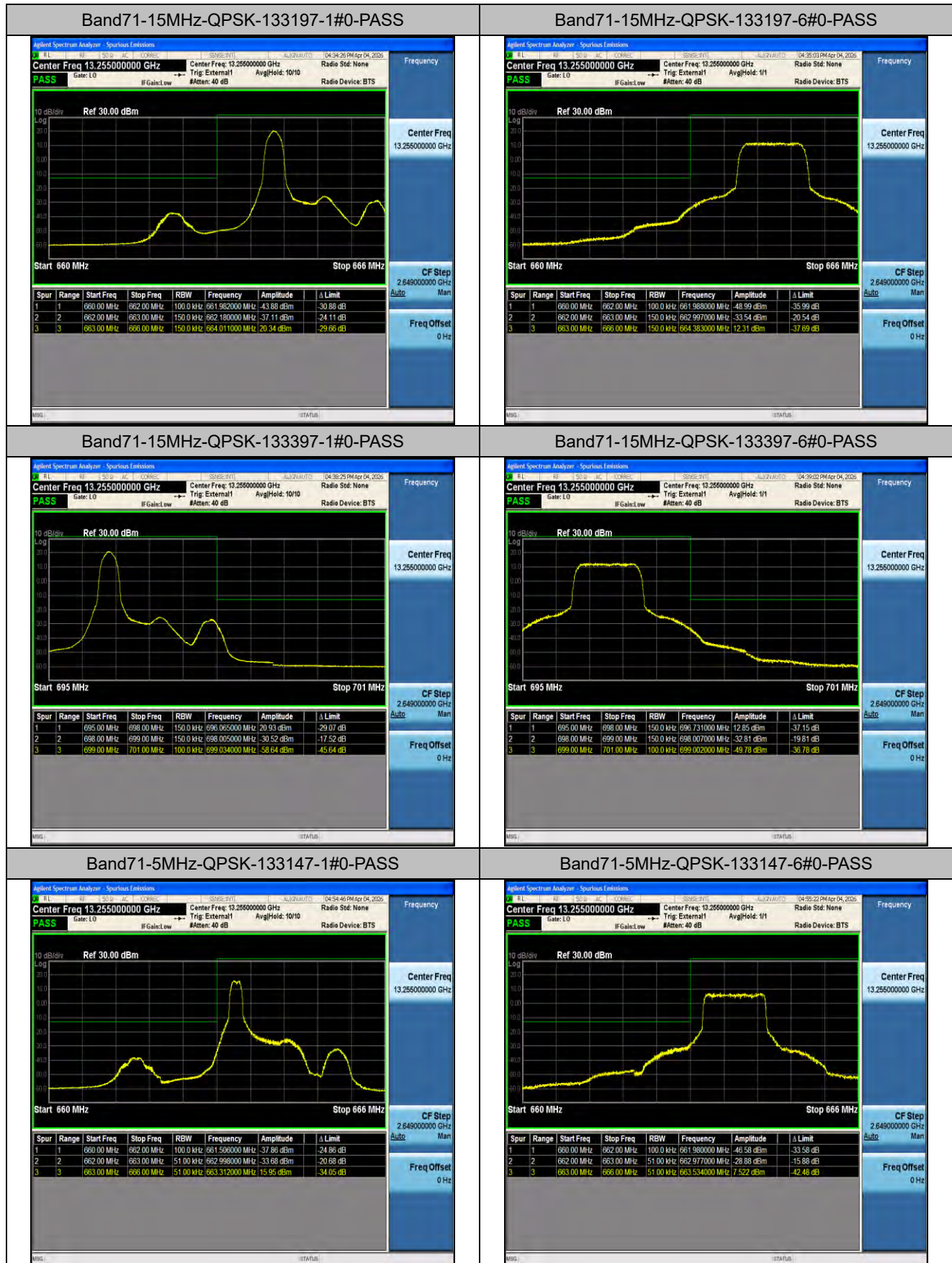


Band71-20MHz-16QAM-133372-5#0-PASS



Band Edge for M1

Test Graphs



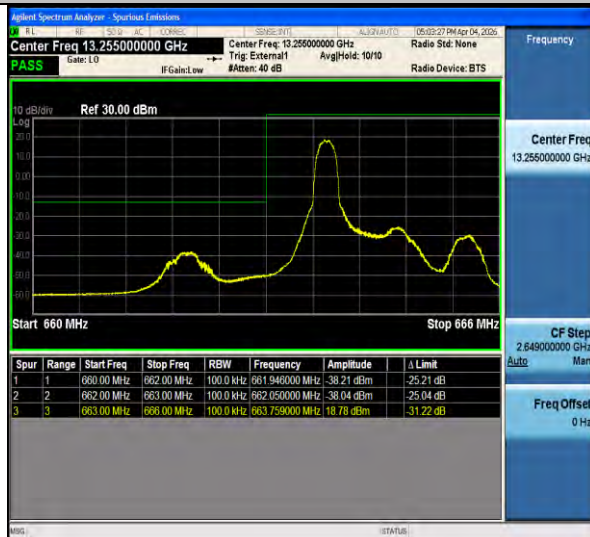
Band71-5MHz-QPSK-133447-1#0-PASS



Band71-5MHz-QPSK-133447-6#0-PASS



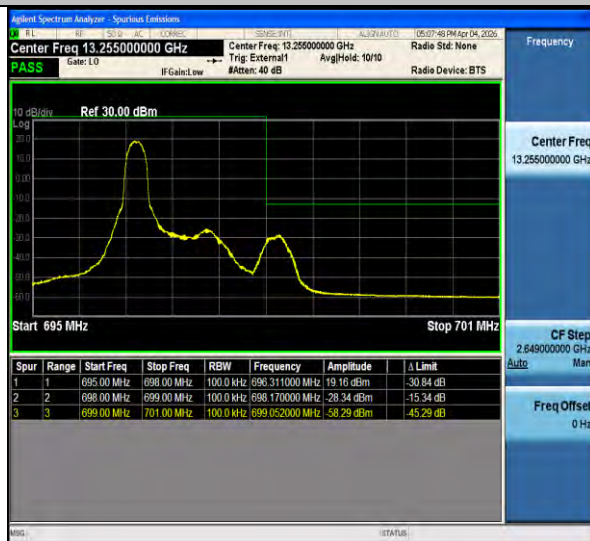
Band71-10MHz-QPSK-133172-1#0-PASS



Band71-10MHz-QPSK-133172-6#0-PASS

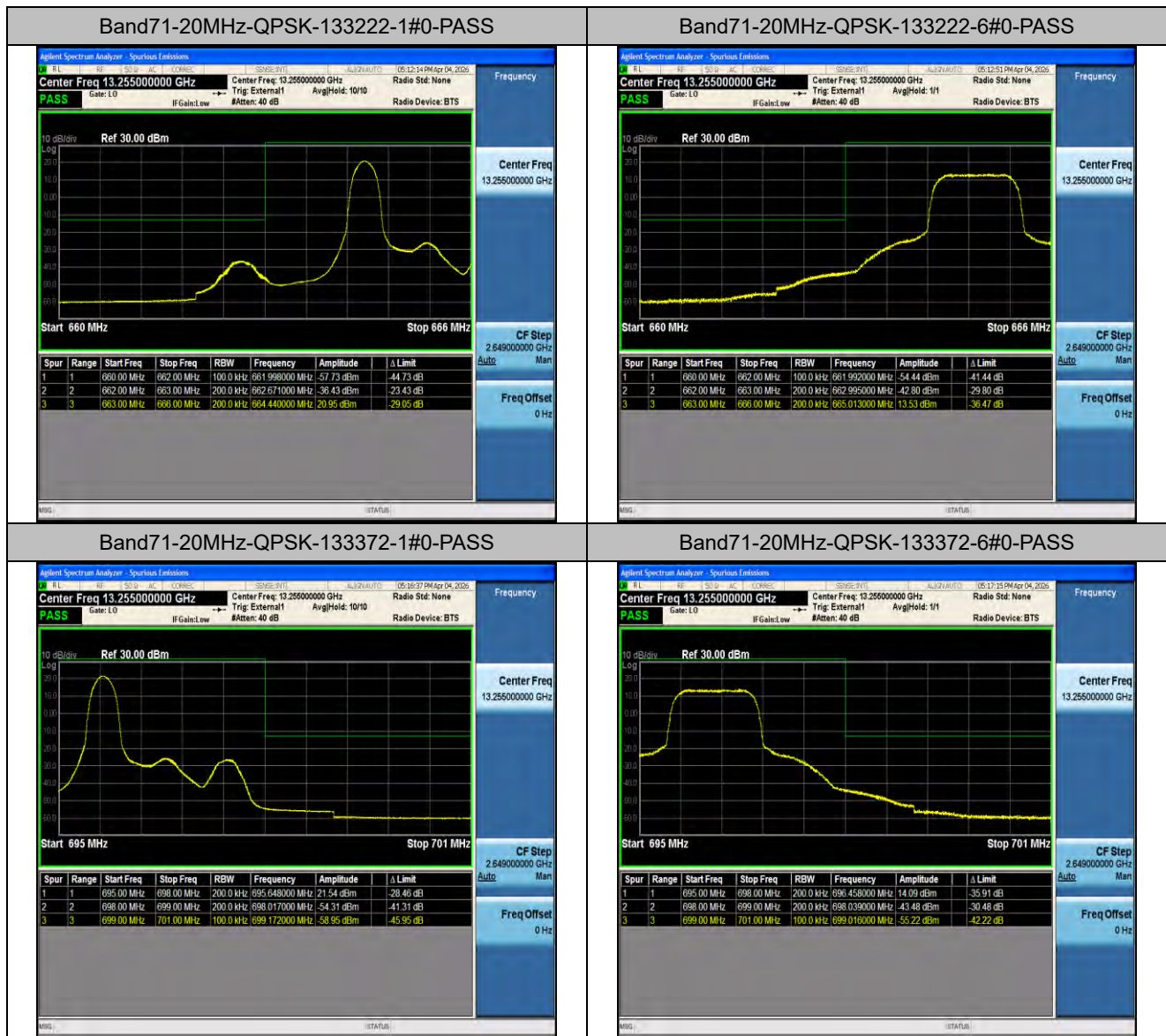


Band71-10MHz-QPSK-133422-1#0-PASS



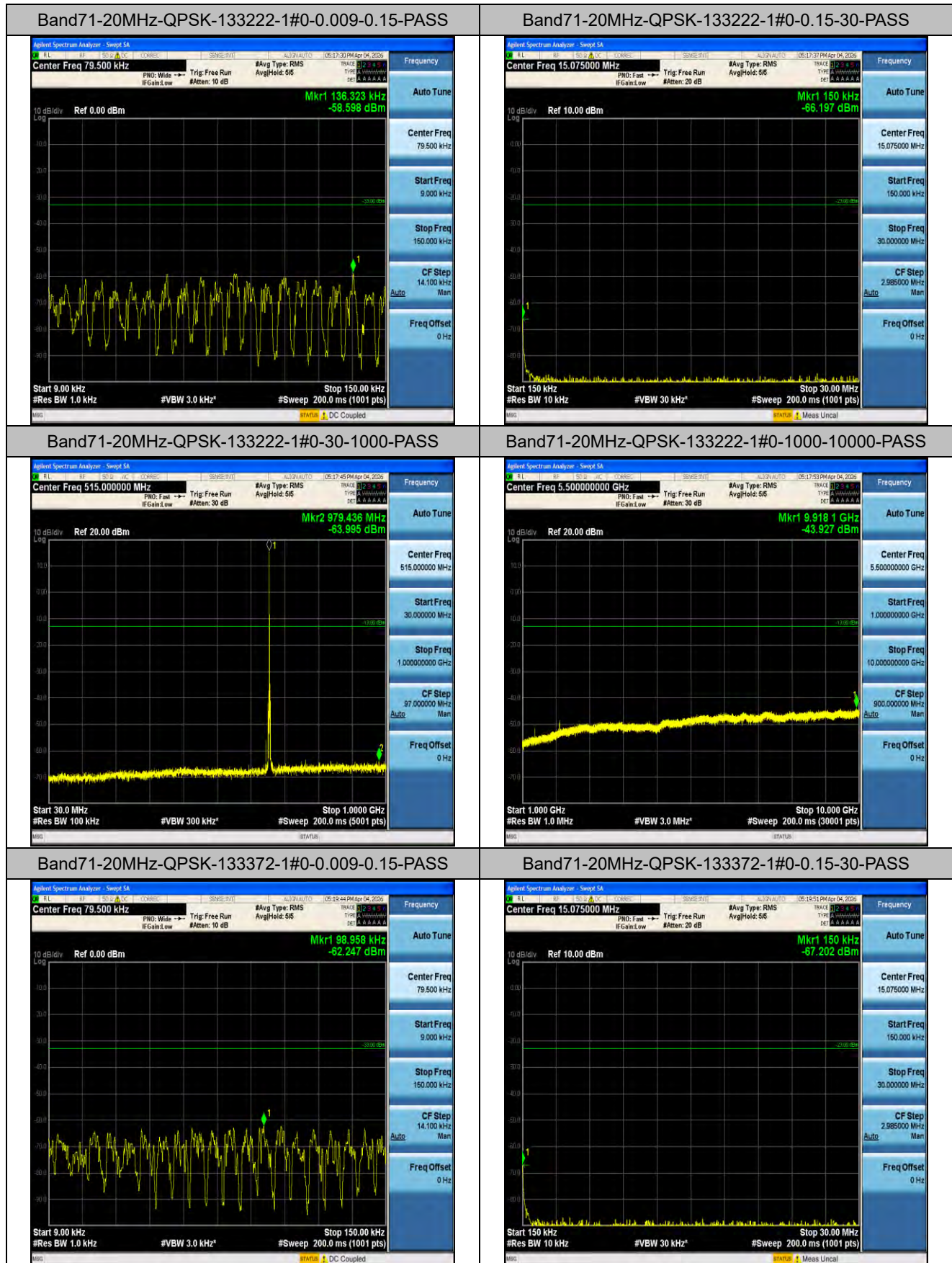
Band71-10MHz-QPSK-133422-6#0-PASS



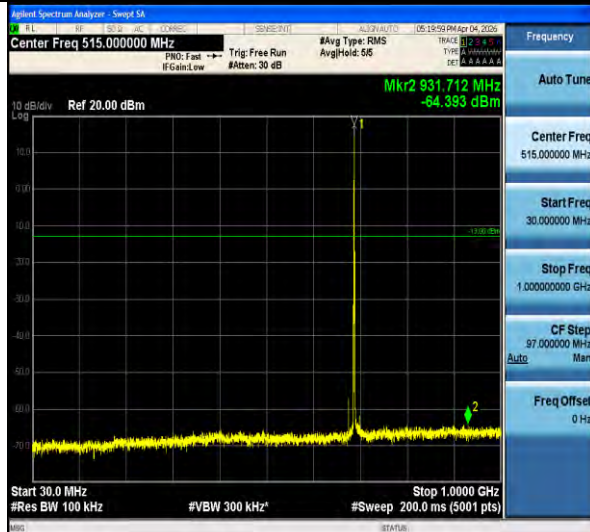


Conducted Spurious Emission for M1

Test Graphs



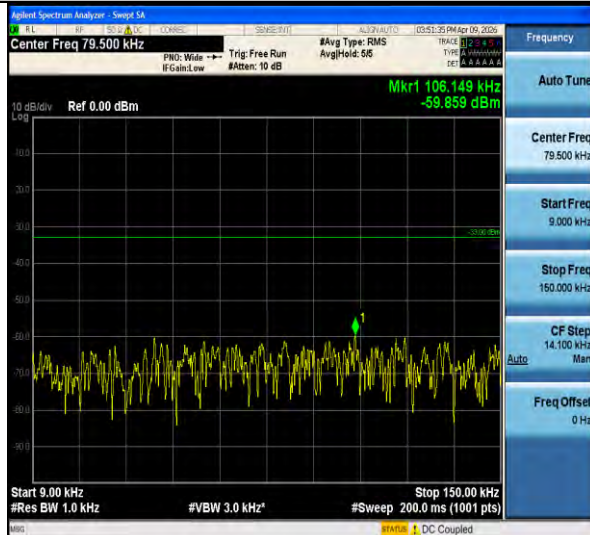
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Band71-20MHz-QPSK-133372-1#0-1000-10000-PASS



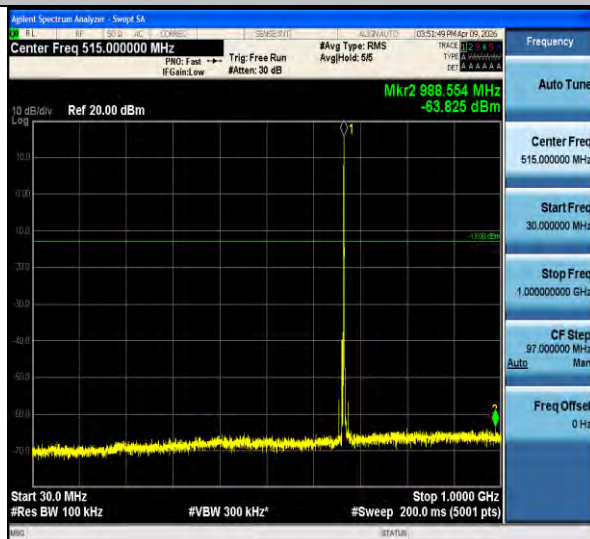
Band71-20MHz-QPSK-133322-1#0-0.009-0.15-PASS



Band71-20MHz-QPSK-133322-1#0-0.15-30-PASS



Band71-20MHz-QPSK-133322-1#0-30-1000-PASS



Band71-20MHz-QPSK-133322-1#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
Band71	20MHz	QPSK	133322	6	0	Low	VN	NT	-5.70	-0.008346	PASS
Band71	20MHz	QPSK	133322	6	0	Low	VL	NT	-7.10	-0.010395	PASS
Band71	20MHz	QPSK	133322	6	0	Low	VH	NT	-7.30	-0.010688	PASS

Temperature											
Band	Bandwidth	Modulation	Channel	RB Size	RB Start	NB Index	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band71	20MHz	QPSK	133322	6	0	Low	NV	-30	-7.20	-0.010542	PASS
Band71	20MHz	QPSK	133322	6	0	Low	NV	-20	-7.90	-0.011567	PASS
Band71	20MHz	QPSK	133322	6	0	Low	NV	-10	-7.60	-0.011127	PASS
Band71	20MHz	QPSK	133322	6	0	Low	NV	0	-6.70	-0.009810	PASS
Band71	20MHz	QPSK	133322	6	0	Low	NV	10	-7.60	-0.011127	PASS
Band71	20MHz	QPSK	133322	6	0	Low	NV	20	-6.40	-0.009370	PASS
Band71	20MHz	QPSK	133322	6	0	Low	NV	30	-6.30	-0.009224	PASS
Band71	20MHz	QPSK	133322	6	0	Low	NV	40	-7.00	-0.010249	PASS
Band71	20MHz	QPSK	133322	6	0	Low	NV	50	-6.30	-0.009224	PASS

~The End~