

FCC Appendix RF Test Data for LTE Band 13

Company: : Shenzhen Tuqiang IoT Technology Co., Ltd.

EUT : Rechargeable Tracker

Model Number : M501N

FCC ID : 2BTQO-M501N

Report No. : CTA25111402505

Reviewed By : Eric Wang

Appendix A: Conducted Power Output Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	23.98	PASS
Band13	5MHz	QPSK	23205	1RB#12	23.54	PASS
Band13	5MHz	QPSK	23205	1RB#24	23.64	PASS
Band13	5MHz	QPSK	23205	12RB#0	22.84	PASS
Band13	5MHz	QPSK	23205	12RB#6	22.82	PASS
Band13	5MHz	QPSK	23205	12RB#13	22.84	PASS
Band13	5MHz	QPSK	23205	25RB#0	22.86	PASS
Band13	5MHz	QPSK	23230	1RB#0	23.71	PASS
Band13	5MHz	QPSK	23230	1RB#12	24.15	PASS
Band13	5MHz	QPSK	23230	1RB#24	24.21	PASS
Band13	5MHz	QPSK	23230	12RB#0	22.86	PASS
Band13	5MHz	QPSK	23230	12RB#6	22.87	PASS
Band13	5MHz	QPSK	23230	12RB#13	22.92	PASS
Band13	5MHz	QPSK	23230	25RB#0	22.95	PASS
Band13	5MHz	QPSK	23255	1RB#0	24.02	PASS
Band13	5MHz	QPSK	23255	1RB#12	23.95	PASS
Band13	5MHz	QPSK	23255	1RB#24	24.14	PASS
Band13	5MHz	QPSK	23255	12RB#0	23.05	PASS
Band13	5MHz	QPSK	23255	12RB#6	23.06	PASS
Band13	5MHz	QPSK	23255	12RB#13	22.99	PASS
Band13	5MHz	QPSK	23255	25RB#0	23.01	PASS
Band13	5MHz	16QAM	23205	1RB#0	23.36	PASS
Band13	5MHz	16QAM	23205	1RB#12	22.71	PASS
Band13	5MHz	16QAM	23205	1RB#24	22.62	PASS
Band13	5MHz	16QAM	23205	12RB#0	21.83	PASS
Band13	5MHz	16QAM	23205	12RB#6	21.81	PASS
Band13	5MHz	16QAM	23205	12RB#13	21.82	PASS
Band13	5MHz	16QAM	23205	25RB#0	22.06	PASS
Band13	5MHz	16QAM	23230	1RB#0	22.70	PASS
Band13	5MHz	16QAM	23230	1RB#12	22.86	PASS
Band13	5MHz	16QAM	23230	1RB#24	22.86	PASS
Band13	5MHz	16QAM	23230	12RB#0	21.84	PASS
Band13	5MHz	16QAM	23230	12RB#6	21.85	PASS
Band13	5MHz	16QAM	23230	12RB#13	21.98	PASS
Band13	5MHz	16QAM	23230	25RB#0	21.84	PASS
Band13	5MHz	16QAM	23255	1RB#0	23.00	PASS
Band13	5MHz	16QAM	23255	1RB#12	23.52	PASS

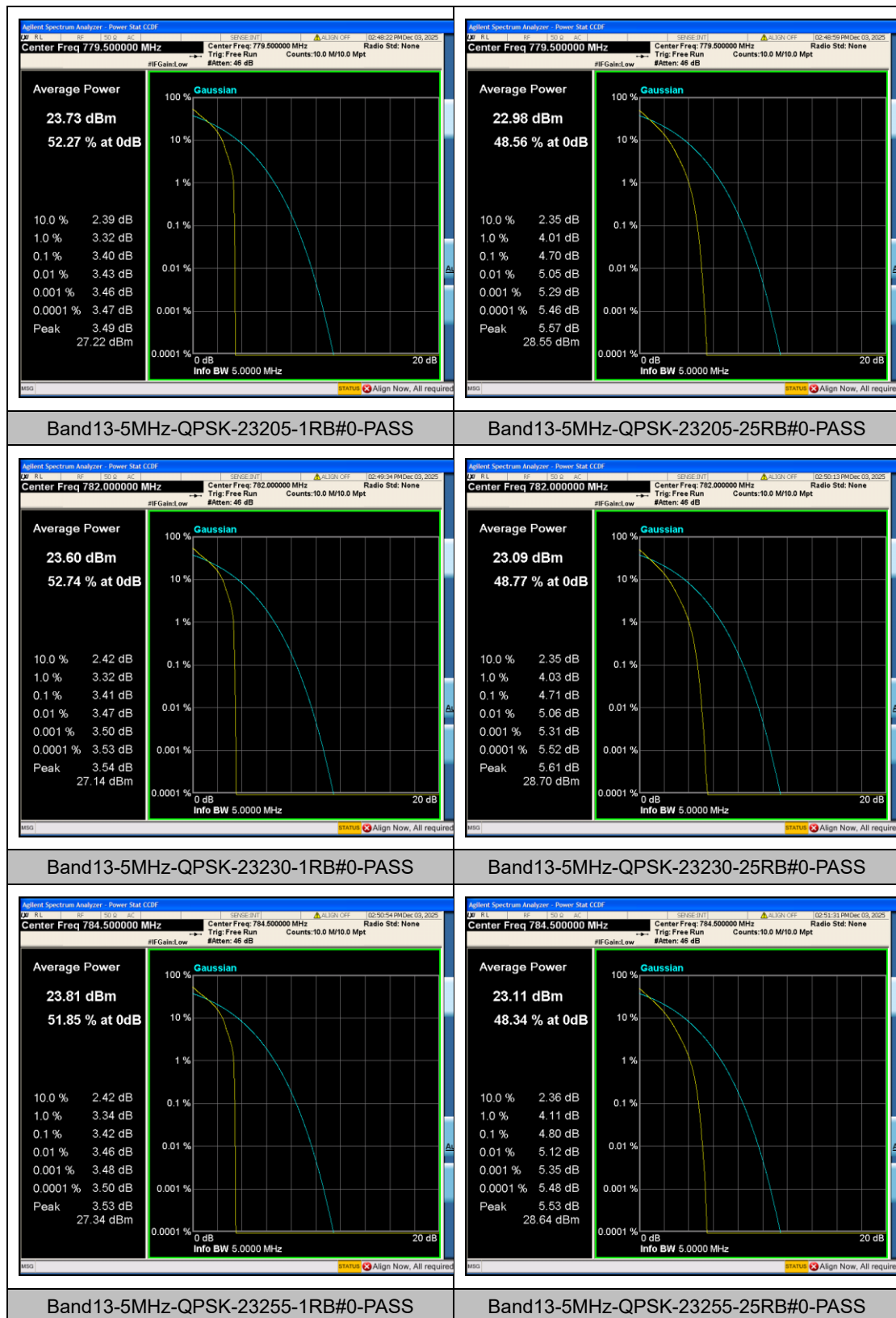
Band13	5MHz	16QAM	23255	1RB#24	23.01	PASS
Band13	5MHz	16QAM	23255	12RB#0	22.15	PASS
Band13	5MHz	16QAM	23255	12RB#6	22.15	PASS
Band13	5MHz	16QAM	23255	12RB#13	22.05	PASS
Band13	5MHz	16QAM	23255	25RB#0	22.18	PASS
Band13	10MHz	QPSK	23230	1RB#0	23.74	PASS
Band13	10MHz	QPSK	23230	1RB#24	24.02	PASS
Band13	10MHz	QPSK	23230	1RB#49	23.74	PASS
Band13	10MHz	QPSK	23230	25RB#0	23.03	PASS
Band13	10MHz	QPSK	23230	25RB#12	22.80	PASS
Band13	10MHz	QPSK	23230	25RB#25	22.98	PASS
Band13	10MHz	QPSK	23230	50RB#0	23.12	PASS
Band13	10MHz	16QAM	23230	1RB#0	22.72	PASS
Band13	10MHz	16QAM	23230	1RB#24	23.33	PASS
Band13	10MHz	16QAM	23230	1RB#49	22.69	PASS
Band13	10MHz	16QAM	23230	25RB#0	21.76	PASS
Band13	10MHz	16QAM	23230	25RB#12	21.78	PASS
Band13	10MHz	16QAM	23230	25RB#25	21.94	PASS

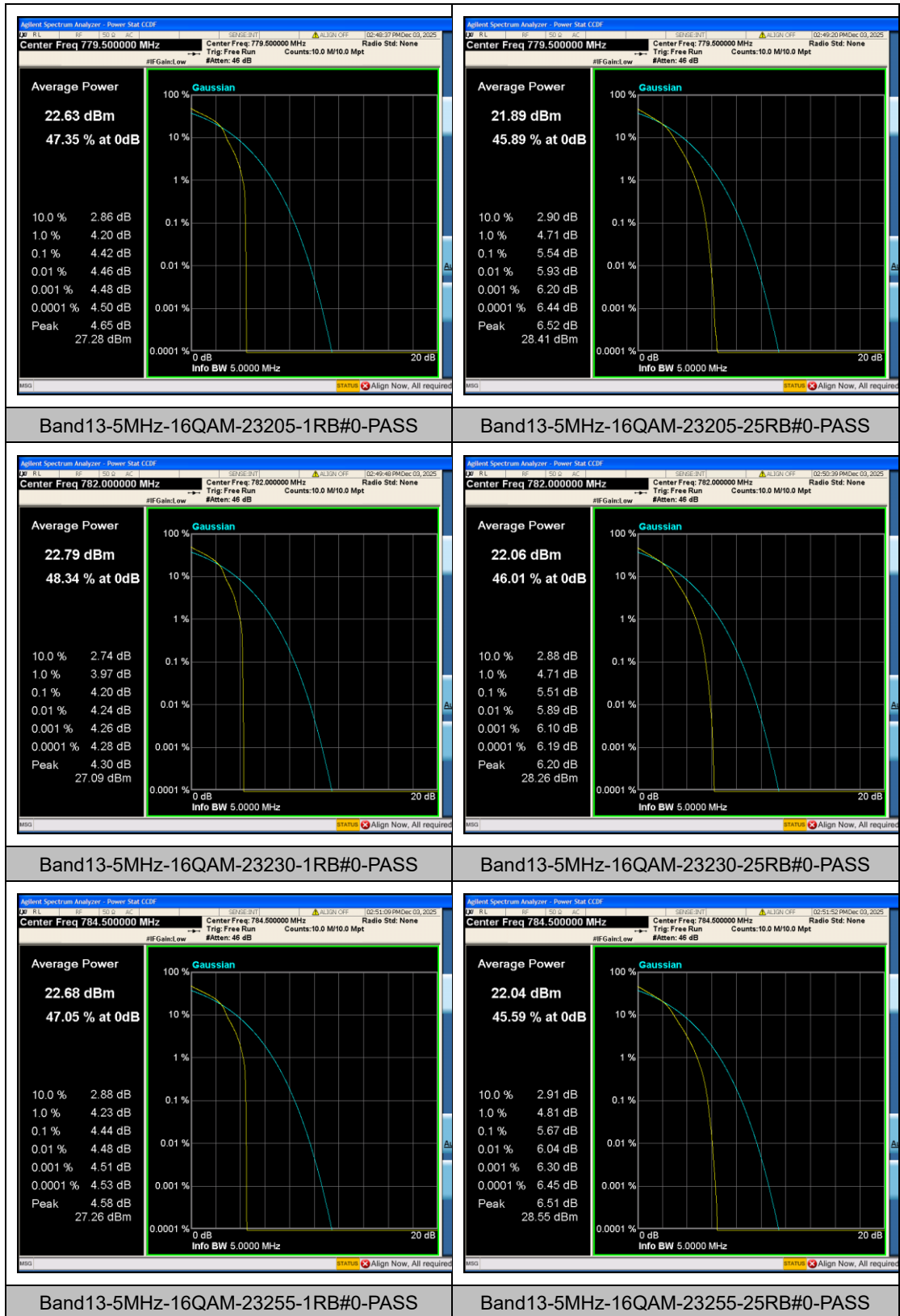
Appendix B: Peak-to-Average Ratio(CCDF)

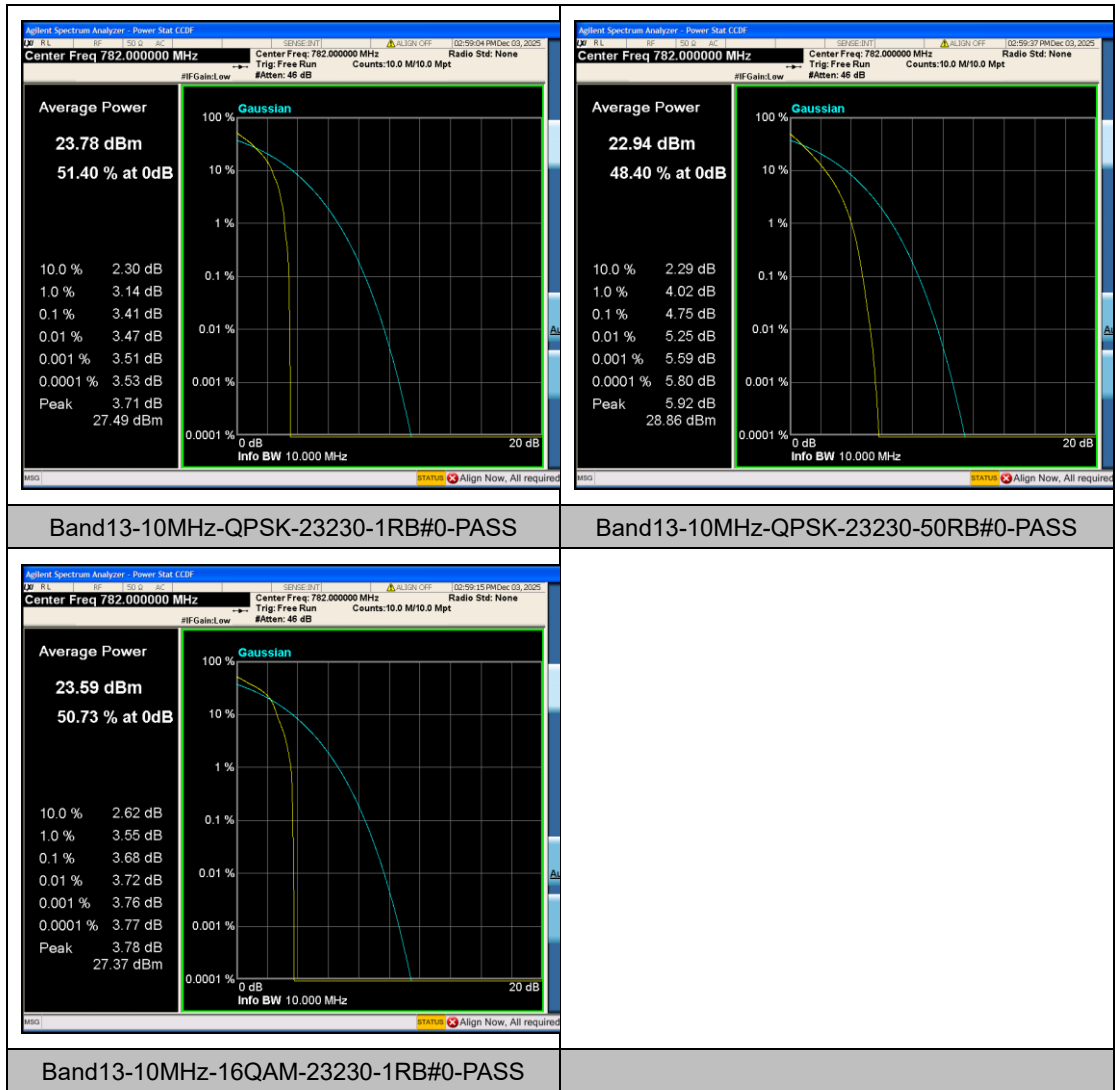
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	3.40	13	PASS
Band13	5MHz	QPSK	23205	25RB#0	4.70	13	PASS
Band13	5MHz	QPSK	23230	1RB#0	3.41	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.71	13	PASS
Band13	5MHz	QPSK	23255	1RB#0	3.42	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.80	13	PASS
Band13	5MHz	16QAM	23205	1RB#0	4.42	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	5.54	13	PASS
Band13	5MHz	16QAM	23230	1RB#0	4.20	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	5.51	13	PASS
Band13	5MHz	16QAM	23255	1RB#0	4.44	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	5.67	13	PASS
Band13	10MHz	QPSK	23230	1RB#0	3.41	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	4.75	13	PASS
Band13	10MHz	16QAM	23230	1RB#0	3.68	13	PASS

Test Graphs





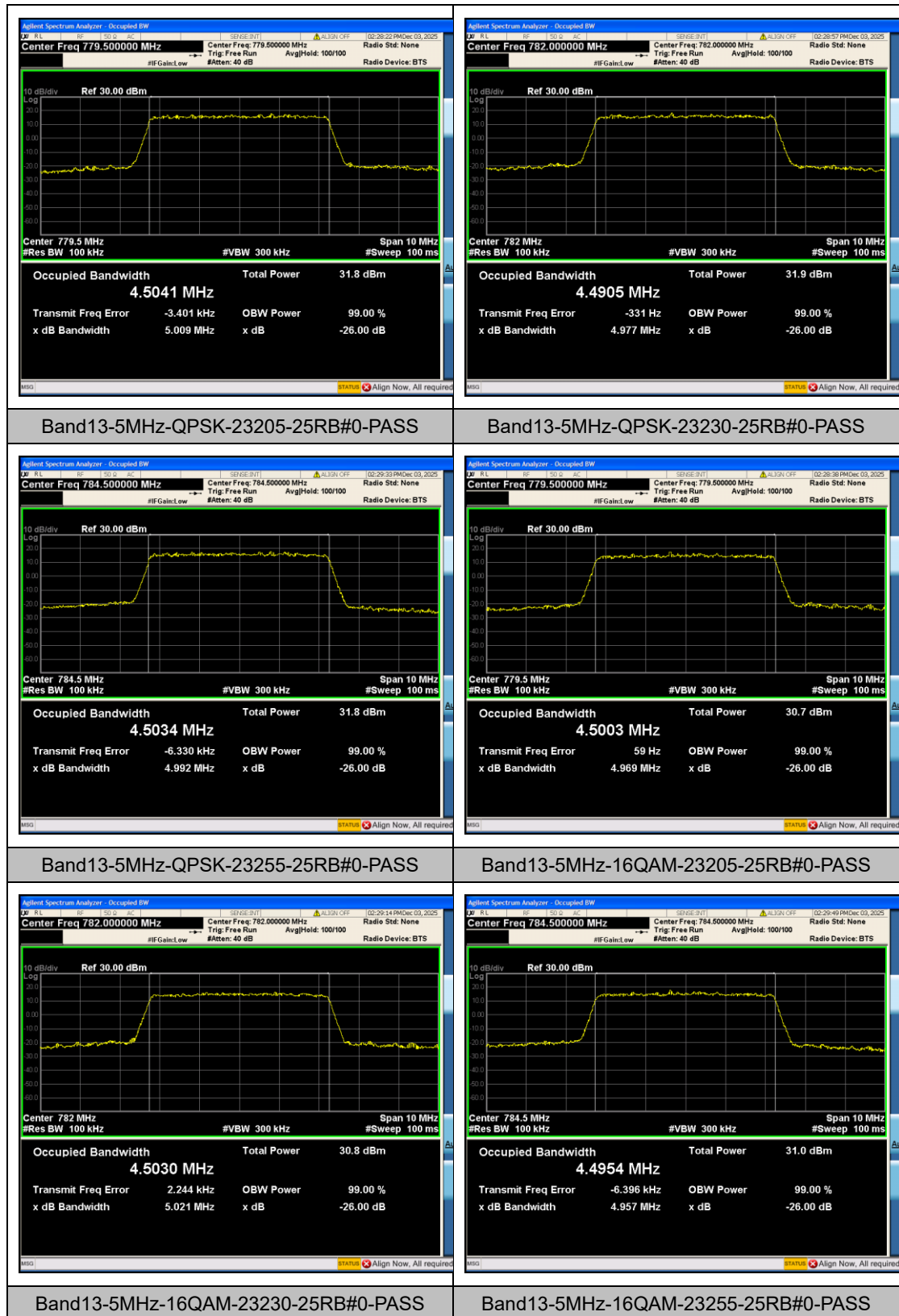


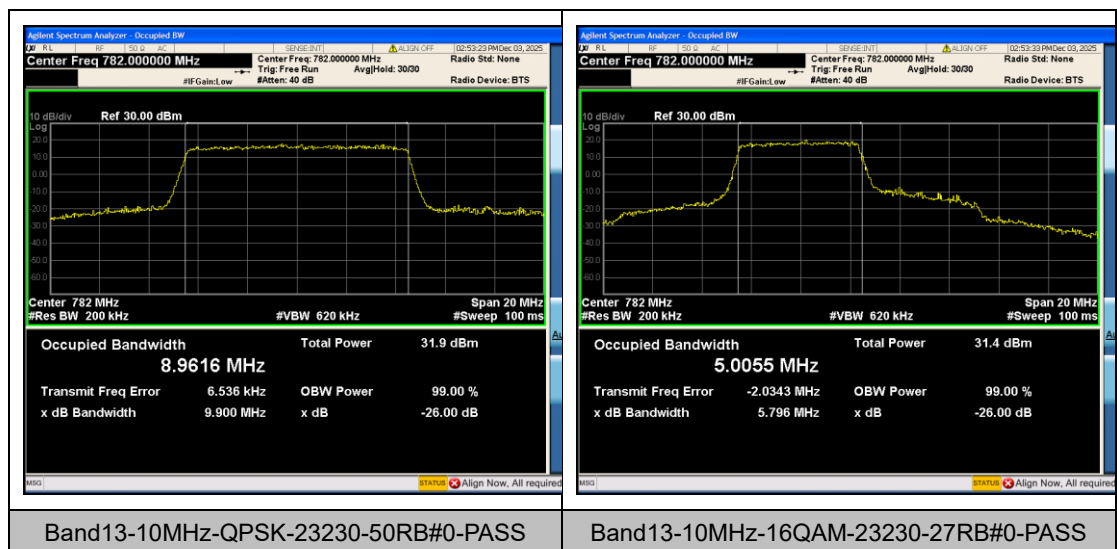
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.5041	5.009	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.4905	4.977	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.5034	4.992	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.5003	4.969	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.5030	5.021	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.4954	4.957	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.9616	9.900	PASS
Band13	10MHz	16QAM	23230	27RB#0	5.0055	5.796	PASS

Test Graphs



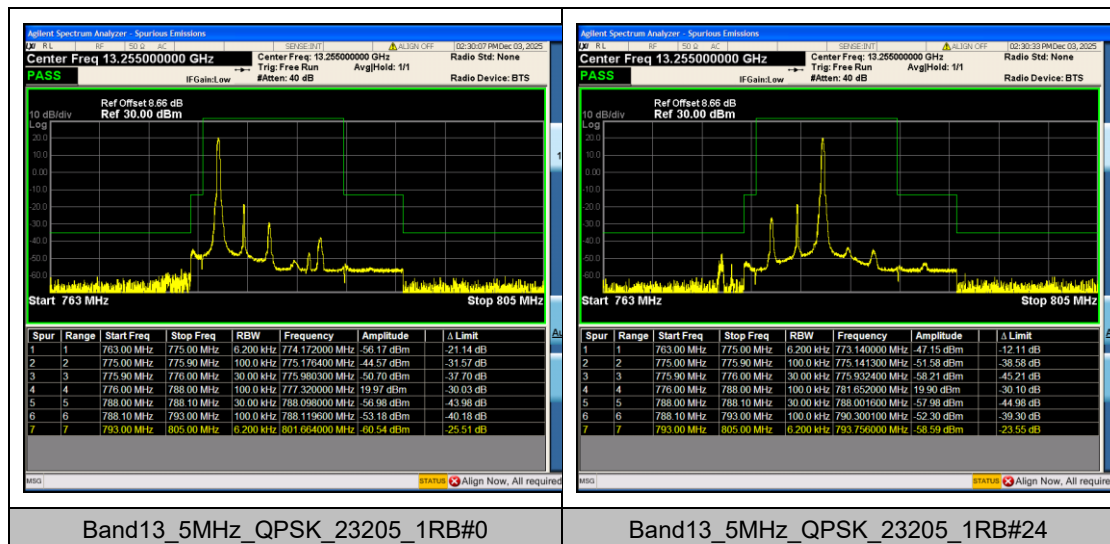


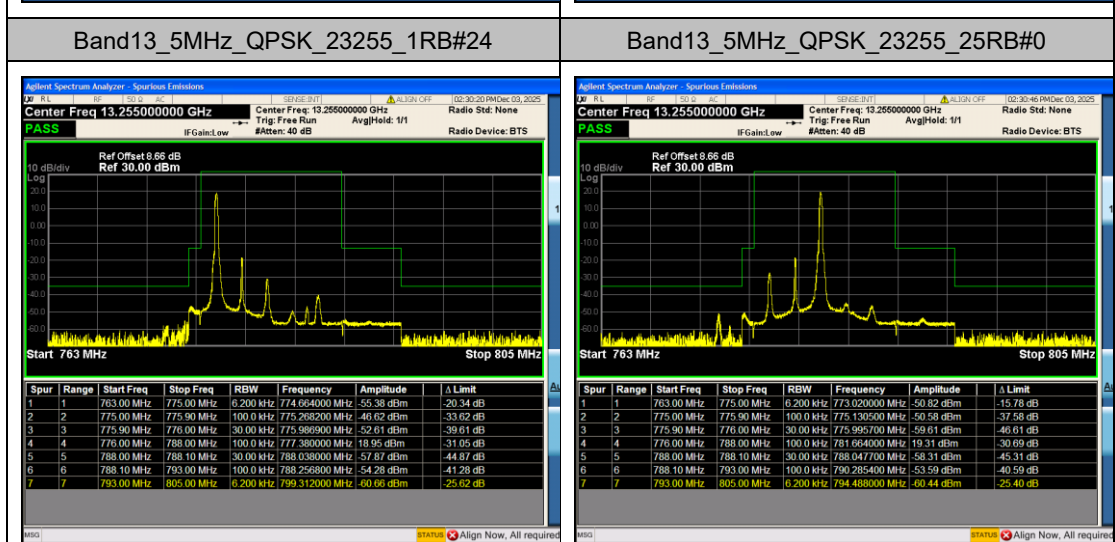
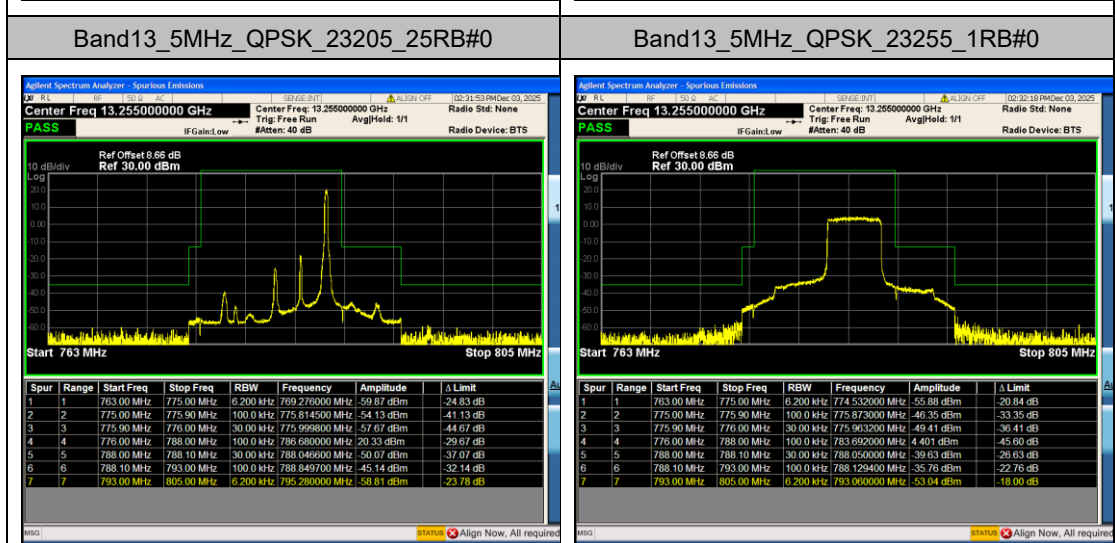
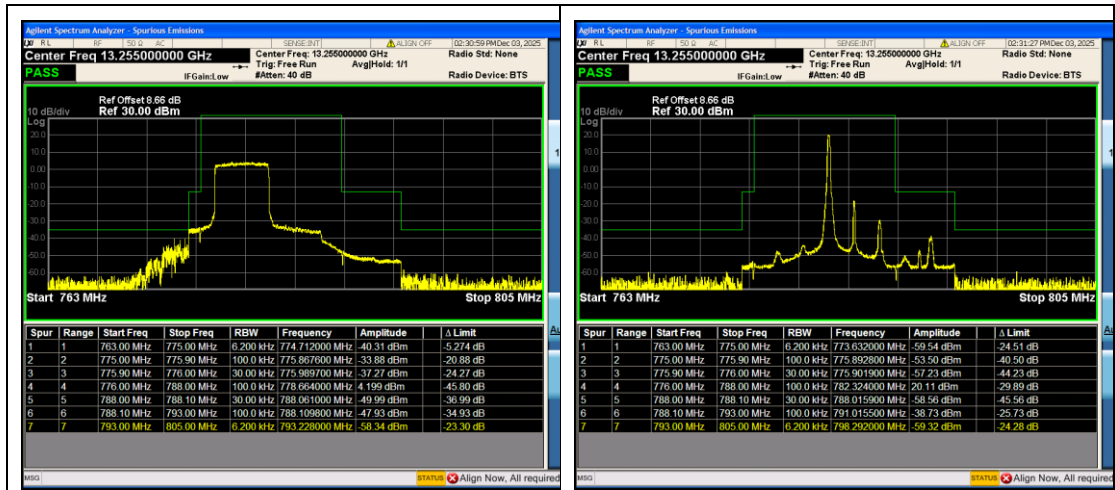
Appendix D: Band Edge

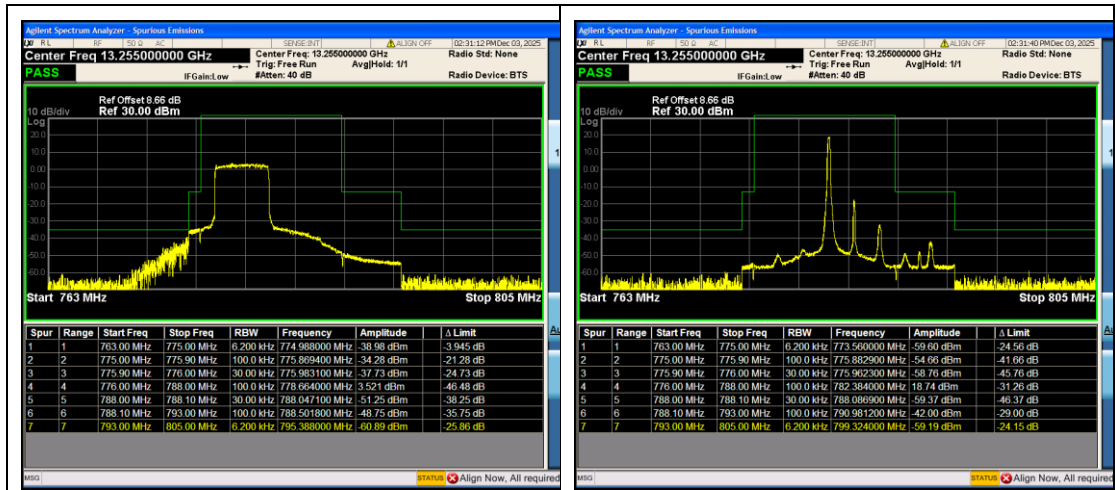
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	-56.17	PASS
Band13	5MHz	QPSK	23205	1RB#24	-47.15	PASS
Band13	5MHz	QPSK	23205	25RB#0	-40.31	PASS
Band13	5MHz	QPSK	23255	1RB#0	-59.32	PASS
Band13	5MHz	QPSK	23255	1RB#24	-58.81	PASS
Band13	5MHz	QPSK	23255	25RB#0	-53.04	PASS
Band13	5MHz	16QAM	23205	1RB#0	-55.38	PASS
Band13	5MHz	16QAM	23205	1RB#24	-50.82	PASS
Band13	5MHz	16QAM	23205	25RB#0	-38.98	PASS
Band13	5MHz	16QAM	23255	1RB#0	-59.19	PASS
Band13	5MHz	16QAM	23255	1RB#24	-60.33	PASS
Band13	5MHz	16QAM	23255	25RB#0	-55.14	PASS
Band13	10MHz	QPSK	23230	1RB#0	-52.72	PASS
Band13	10MHz	QPSK	23230	1RB#49	-52.69	PASS
Band13	10MHz	QPSK	23230	50RB#0	-41.27	PASS
Band13	10MHz	16QAM	23230	1RB#0	-55.53	PASS
Band13	10MHz	16QAM	23230	1RB#49	-52.52	PASS

Test Graphs

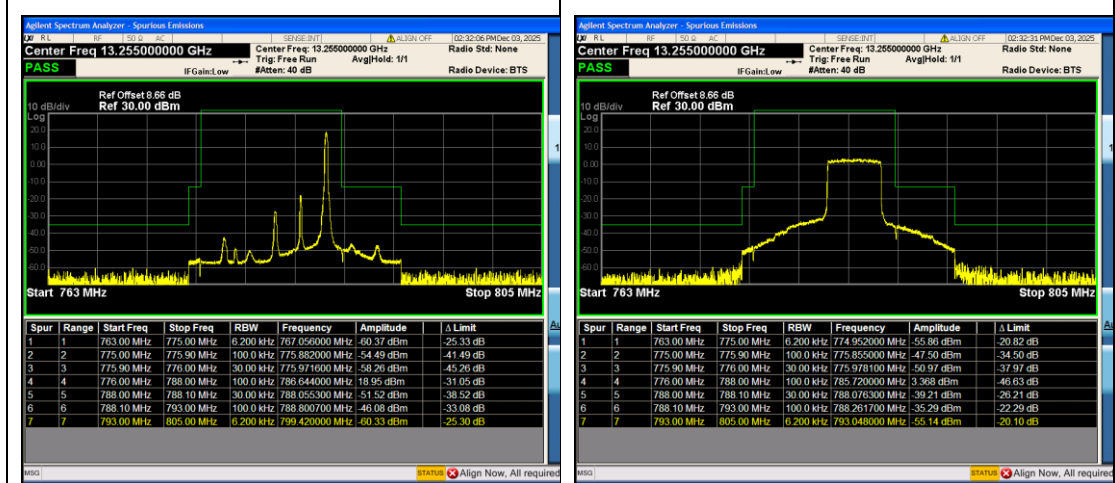






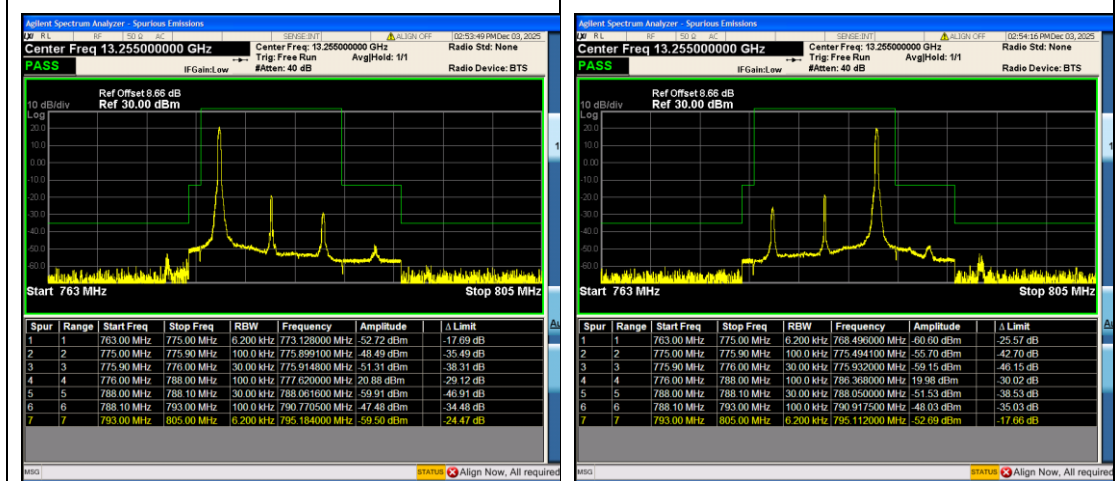
Band13_5MHz_16QAM_23205_25RB#0

Band13_5MHz_16QAM_23255_1RB#0



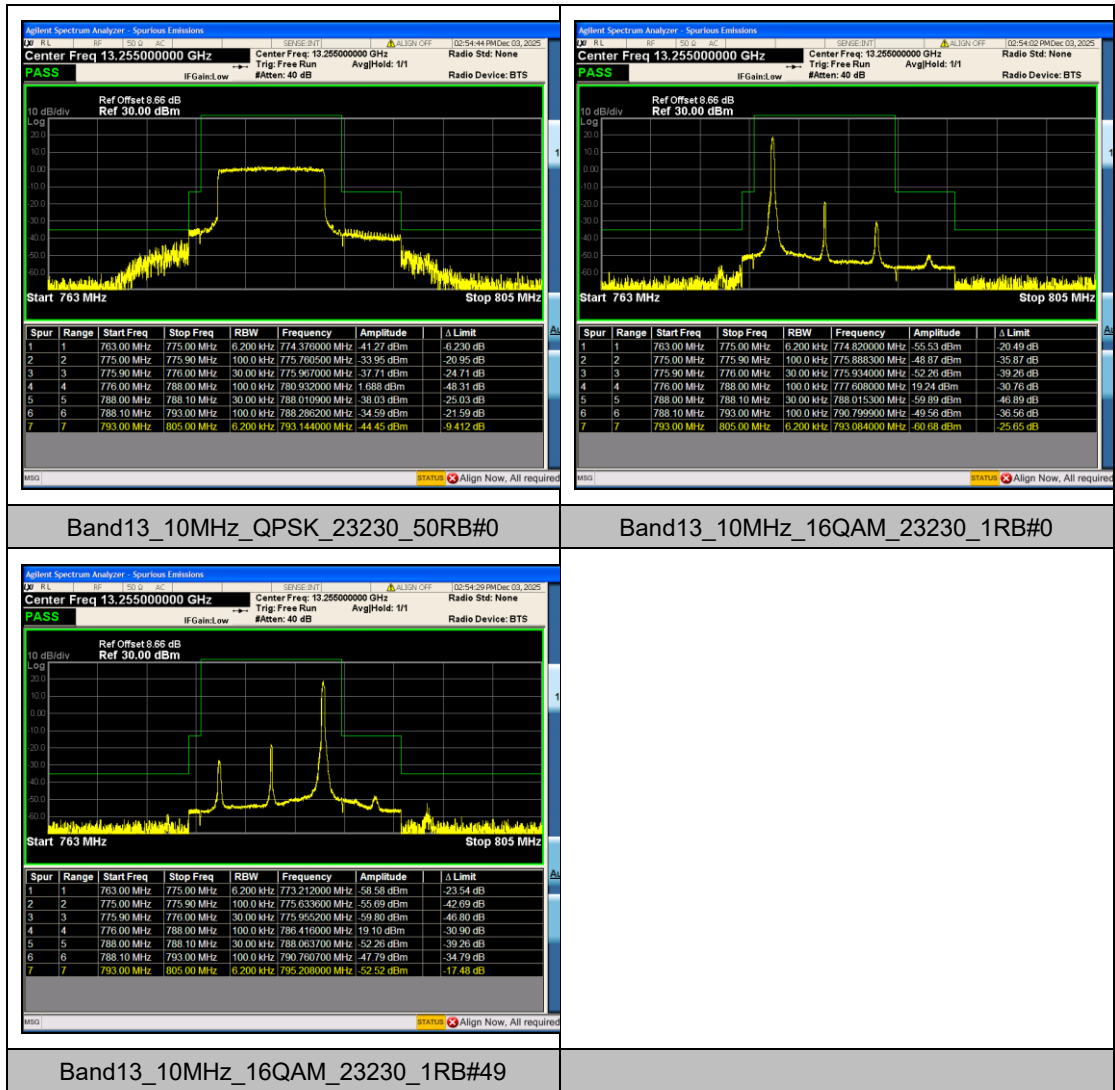
Band13_5MHz_16QAM_23255_1RB#24

Band13_5MHz_16QAM_23255_25RB#0



Band13_10MHz_QPSK_23230_1RB#0

Band13_10MHz_QPSK_23230_1RB#49



Appendix E: Conducted Spurious Emission

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	0.009~0.15	-41.77	PASS
Band13	5MHz	QPSK	23205	1RB#0	0.15~30	-53.08	PASS
Band13	5MHz	QPSK	23205	1RB#0	30~1000	-60.21	PASS
Band13	5MHz	QPSK	23205	1RB#0	1000~3000	-43.69	PASS
Band13	5MHz	QPSK	23205	1RB#0	3000~10000	-43.31	PASS
Band13	5MHz	QPSK	23205	1RB#24	0.009~0.15	-40.16	PASS
Band13	5MHz	QPSK	23205	1RB#24	0.15~30	-52.85	PASS
Band13	5MHz	QPSK	23205	1RB#24	30~1000	-60.35	PASS
Band13	5MHz	QPSK	23205	1RB#24	1000~3000	-44.17	PASS
Band13	5MHz	QPSK	23205	1RB#24	3000~10000	-44.21	PASS
Band13	5MHz	QPSK	23205	25RB#0	0.009~0.15	-40.45	PASS
Band13	5MHz	QPSK	23205	25RB#0	0.15~30	-52.03	PASS
Band13	5MHz	QPSK	23205	25RB#0	30~1000	-53.04	PASS
Band13	5MHz	QPSK	23205	25RB#0	1000~3000	-47.02	PASS
Band13	5MHz	QPSK	23205	25RB#0	3000~10000	-43.79	PASS
Band13	5MHz	QPSK	23230	1RB#0	0.009~0.15	-41.84	PASS
Band13	5MHz	QPSK	23230	1RB#0	0.15~30	-52.87	PASS
Band13	5MHz	QPSK	23230	1RB#0	30~1000	-61.34	PASS
Band13	5MHz	QPSK	23230	1RB#0	1000~3000	-43.46	PASS
Band13	5MHz	QPSK	23230	1RB#0	3000~10000	-44.07	PASS
Band13	5MHz	QPSK	23230	1RB#24	0.009~0.15	-41.74	PASS
Band13	5MHz	QPSK	23230	1RB#24	0.15~30	-54.39	PASS
Band13	5MHz	QPSK	23230	1RB#24	30~1000	-59.51	PASS
Band13	5MHz	QPSK	23230	1RB#24	1000~3000	-42.58	PASS
Band13	5MHz	QPSK	23230	1RB#24	3000~10000	-43.91	PASS
Band13	5MHz	QPSK	23230	25RB#0	0.009~0.15	-40.15	PASS
Band13	5MHz	QPSK	23230	25RB#0	0.15~30	-53.95	PASS
Band13	5MHz	QPSK	23230	25RB#0	30~1000	-53.43	PASS
Band13	5MHz	QPSK	23230	25RB#0	1000~3000	-46.78	PASS
Band13	5MHz	QPSK	23230	25RB#0	3000~10000	-43.98	PASS
Band13	5MHz	QPSK	23255	1RB#0	0.009~0.15	-42.70	PASS
Band13	5MHz	QPSK	23255	1RB#0	0.15~30	-51.80	PASS
Band13	5MHz	QPSK	23255	1RB#0	30~1000	-60.86	PASS
Band13	5MHz	QPSK	23255	1RB#0	1000~3000	-43.06	PASS
Band13	5MHz	QPSK	23255	1RB#0	3000~10000	-44.11	PASS
Band13	5MHz	QPSK	23255	1RB#24	0.009~0.15	-43.27	PASS

Band13	5MHz	QPSK	23255	1RB#24	0.15~30	-51.63	PASS
Band13	5MHz	QPSK	23255	1RB#24	30~1000	-60.37	PASS
Band13	5MHz	QPSK	23255	1RB#24	1000~3000	-42.00	PASS
Band13	5MHz	QPSK	23255	1RB#24	3000~10000	-43.88	PASS
Band13	5MHz	QPSK	23255	25RB#0	0.009~0.15	-37.91	PASS
Band13	5MHz	QPSK	23255	25RB#0	0.15~30	-52.88	PASS
Band13	5MHz	QPSK	23255	25RB#0	30~1000	-56.55	PASS
Band13	5MHz	QPSK	23255	25RB#0	1000~3000	-46.78	PASS
Band13	5MHz	QPSK	23255	25RB#0	3000~10000	-43.96	PASS
Band13	5MHz	16QAM	23205	1RB#0	0.009~0.15	-42.73	PASS
Band13	5MHz	16QAM	23205	1RB#0	0.15~30	-52.71	PASS
Band13	5MHz	16QAM	23205	1RB#0	30~1000	-60.11	PASS
Band13	5MHz	16QAM	23205	1RB#0	1000~3000	-44.29	PASS
Band13	5MHz	16QAM	23205	1RB#0	3000~10000	-44.18	PASS
Band13	5MHz	16QAM	23205	1RB#24	0.009~0.15	-40.05	PASS
Band13	5MHz	16QAM	23205	1RB#24	0.15~30	-53.21	PASS
Band13	5MHz	16QAM	23205	1RB#24	30~1000	-58.61	PASS
Band13	5MHz	16QAM	23205	1RB#24	1000~3000	-44.43	PASS
Band13	5MHz	16QAM	23205	1RB#24	3000~10000	-43.62	PASS
Band13	5MHz	16QAM	23205	25RB#0	0.009~0.15	-40.07	PASS
Band13	5MHz	16QAM	23205	25RB#0	0.15~30	-51.18	PASS
Band13	5MHz	16QAM	23205	25RB#0	30~1000	-53.99	PASS
Band13	5MHz	16QAM	23205	25RB#0	1000~3000	-46.76	PASS
Band13	5MHz	16QAM	23205	25RB#0	3000~10000	-43.64	PASS
Band13	5MHz	16QAM	23230	1RB#0	0.009~0.15	-40.49	PASS
Band13	5MHz	16QAM	23230	1RB#0	0.15~30	-52.55	PASS
Band13	5MHz	16QAM	23230	1RB#0	30~1000	-59.60	PASS
Band13	5MHz	16QAM	23230	1RB#0	1000~3000	-45.39	PASS
Band13	5MHz	16QAM	23230	1RB#0	3000~10000	-43.81	PASS
Band13	5MHz	16QAM	23230	1RB#24	0.009~0.15	-42.96	PASS
Band13	5MHz	16QAM	23230	1RB#24	0.15~30	-52.56	PASS
Band13	5MHz	16QAM	23230	1RB#24	30~1000	-60.09	PASS
Band13	5MHz	16QAM	23230	1RB#24	1000~3000	-43.49	PASS
Band13	5MHz	16QAM	23230	1RB#24	3000~10000	-44.13	PASS
Band13	5MHz	16QAM	23230	25RB#0	0.009~0.15	-43.24	PASS
Band13	5MHz	16QAM	23230	25RB#0	0.15~30	-51.21	PASS
Band13	5MHz	16QAM	23230	25RB#0	30~1000	-55.36	PASS
Band13	5MHz	16QAM	23230	25RB#0	1000~3000	-46.36	PASS
Band13	5MHz	16QAM	23230	25RB#0	3000~10000	-43.63	PASS
Band13	5MHz	16QAM	23255	1RB#0	0.009~0.15	-39.13	PASS
Band13	5MHz	16QAM	23255	1RB#0	0.15~30	-52.92	PASS
Band13	5MHz	16QAM	23255	1RB#0	30~1000	-60.28	PASS
Band13	5MHz	16QAM	23255	1RB#0	1000~3000	-44.55	PASS

Band13	5MHz	16QAM	23255	1RB#0	3000~10000	-44.11	PASS
Band13	5MHz	16QAM	23255	1RB#24	0.009~0.15	-41.15	PASS
Band13	5MHz	16QAM	23255	1RB#24	0.15~30	-53.42	PASS
Band13	5MHz	16QAM	23255	1RB#24	30~1000	-59.66	PASS
Band13	5MHz	16QAM	23255	1RB#24	1000~3000	-43.46	PASS
Band13	5MHz	16QAM	23255	1RB#24	3000~10000	-43.75	PASS
Band13	5MHz	16QAM	23255	25RB#0	0.009~0.15	-41.51	PASS
Band13	5MHz	16QAM	23255	25RB#0	0.15~30	-55.55	PASS
Band13	5MHz	16QAM	23255	25RB#0	30~1000	-57.79	PASS
Band13	5MHz	16QAM	23255	25RB#0	1000~3000	-47.03	PASS
Band13	5MHz	16QAM	23255	25RB#0	3000~10000	-44.07	PASS
Band13	10MHz	QPSK	23230	1RB#0	0.009~0.15	-41.03	PASS
Band13	10MHz	QPSK	23230	1RB#0	0.15~30	-50.80	PASS
Band13	10MHz	QPSK	23230	1RB#0	30~1000	-62.14	PASS
Band13	10MHz	QPSK	23230	1RB#0	1000~3000	-43.61	PASS
Band13	10MHz	QPSK	23230	1RB#0	3000~10000	-43.92	PASS
Band13	10MHz	QPSK	23230	1RB#49	0.009~0.15	-40.03	PASS
Band13	10MHz	QPSK	23230	1RB#49	0.15~30	-50.63	PASS
Band13	10MHz	QPSK	23230	1RB#49	30~1000	-61.87	PASS
Band13	10MHz	QPSK	23230	1RB#49	1000~3000	-42.78	PASS
Band13	10MHz	QPSK	23230	1RB#49	3000~10000	-43.98	PASS
Band13	10MHz	QPSK	23230	50RB#0	0.009~0.15	-39.56	PASS
Band13	10MHz	QPSK	23230	50RB#0	0.15~30	-51.51	PASS
Band13	10MHz	QPSK	23230	50RB#0	30~1000	-62.26	PASS
Band13	10MHz	QPSK	23230	50RB#0	1000~3000	-46.88	PASS
Band13	10MHz	QPSK	23230	50RB#0	3000~10000	-43.59	PASS
Band13	10MHz	16QAM	23230	1RB#0	0.009~0.15	-42.25	PASS
Band13	10MHz	16QAM	23230	1RB#0	0.15~30	-52.16	PASS
Band13	10MHz	16QAM	23230	1RB#0	30~1000	-62.11	PASS
Band13	10MHz	16QAM	23230	1RB#0	1000~3000	-43.51	PASS
Band13	10MHz	16QAM	23230	1RB#0	3000~10000	-43.55	PASS
Band13	10MHz	16QAM	23230	1RB#49	0.009~0.15	-43.91	PASS
Band13	10MHz	16QAM	23230	1RB#49	0.15~30	-53.67	PASS
Band13	10MHz	16QAM	23230	1RB#49	30~1000	-62.12	PASS
Band13	10MHz	16QAM	23230	1RB#49	1000~3000	-43.48	PASS
Band13	10MHz	16QAM	23230	1RB#49	3000~10000	-43.86	PASS

Test Graphs

