

Appendix for LTE Band 12

Product Name: 5G Window CPE

Model No: TITAN 5100

Appendix A: Average Power Output Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band12	1.4MHz	QPSK	23017	1RB#0	21.88	PASS
Band12	1.4MHz	16QAM	23017	1RB#0	20.94	PASS
Band12	1.4MHz	QPSK	23017	1RB#2	21.83	PASS
Band12	1.4MHz	16QAM	23017	1RB#2	20.72	PASS
Band12	1.4MHz	QPSK	23017	1RB#5	21.83	PASS
Band12	1.4MHz	16QAM	23017	1RB#5	20.87	PASS
Band12	1.4MHz	QPSK	23017	3RB#0	21.87	PASS
Band12	1.4MHz	16QAM	23017	3RB#0	20.86	PASS
Band12	1.4MHz	QPSK	23017	3RB#1	21.93	PASS
Band12	1.4MHz	16QAM	23017	3RB#1	21.01	PASS
Band12	1.4MHz	QPSK	23017	3RB#3	21.89	PASS
Band12	1.4MHz	16QAM	23017	3RB#3	20.84	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	20.91	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	20.00	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	21.97	PASS
Band12	1.4MHz	16QAM	23095	1RB#0	20.72	PASS
Band12	1.4MHz	QPSK	23095	1RB#2	22.04	PASS
Band12	1.4MHz	16QAM	23095	1RB#2	21.00	PASS
Band12	1.4MHz	QPSK	23095	1RB#5	22.00	PASS
Band12	1.4MHz	16QAM	23095	1RB#5	20.86	PASS
Band12	1.4MHz	QPSK	23095	3RB#0	21.95	PASS
Band12	1.4MHz	16QAM	23095	3RB#0	20.99	PASS
Band12	1.4MHz	QPSK	23095	3RB#1	21.92	PASS
Band12	1.4MHz	16QAM	23095	3RB#1	20.95	PASS
Band12	1.4MHz	QPSK	23095	3RB#3	21.98	PASS
Band12	1.4MHz	16QAM	23095	3RB#3	20.85	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	20.90	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	19.90	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	21.98	PASS
Band12	1.4MHz	16QAM	23173	1RB#0	20.93	PASS
Band12	1.4MHz	QPSK	23173	1RB#2	21.90	PASS
Band12	1.4MHz	16QAM	23173	1RB#2	21.01	PASS
Band12	1.4MHz	QPSK	23173	1RB#5	21.91	PASS
Band12	1.4MHz	16QAM	23173	1RB#5	20.88	PASS
Band12	1.4MHz	QPSK	23173	3RB#0	21.95	PASS

Band12	1.4MHz	16QAM	23173	3RB#0	20.98	PASS
Band12	1.4MHz	QPSK	23173	3RB#1	21.87	PASS
Band12	1.4MHz	16QAM	23173	3RB#1	20.96	PASS
Band12	1.4MHz	QPSK	23173	3RB#3	21.95	PASS
Band12	1.4MHz	16QAM	23173	3RB#3	20.91	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	20.95	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	19.90	PASS
Band12	3MHz	QPSK	23025	1RB#0	21.83	PASS
Band12	3MHz	16QAM	23025	1RB#0	20.99	PASS
Band12	3MHz	QPSK	23025	1RB#8	22.00	PASS
Band12	3MHz	16QAM	23025	1RB#8	20.99	PASS
Band12	3MHz	QPSK	23025	1RB#14	21.90	PASS
Band12	3MHz	16QAM	23025	1RB#14	20.88	PASS
Band12	3MHz	QPSK	23025	8RB#0	20.96	PASS
Band12	3MHz	16QAM	23025	8RB#0	19.93	PASS
Band12	3MHz	QPSK	23025	8RB#4	20.99	PASS
Band12	3MHz	16QAM	23025	8RB#4	19.93	PASS
Band12	3MHz	QPSK	23025	8RB#7	20.98	PASS
Band12	3MHz	16QAM	23025	8RB#7	19.96	PASS
Band12	3MHz	QPSK	23025	15RB#0	20.92	PASS
Band12	3MHz	16QAM	23025	15RB#0	19.98	PASS
Band12	3MHz	QPSK	23095	1RB#0	21.89	PASS
Band12	3MHz	16QAM	23095	1RB#0	20.82	PASS
Band12	3MHz	QPSK	23095	1RB#8	22.02	PASS
Band12	3MHz	16QAM	23095	1RB#8	21.02	PASS
Band12	3MHz	QPSK	23095	1RB#14	21.92	PASS
Band12	3MHz	16QAM	23095	1RB#14	20.98	PASS
Band12	3MHz	QPSK	23095	8RB#0	20.96	PASS
Band12	3MHz	16QAM	23095	8RB#0	19.87	PASS
Band12	3MHz	QPSK	23095	8RB#4	20.94	PASS
Band12	3MHz	16QAM	23095	8RB#4	19.90	PASS
Band12	3MHz	QPSK	23095	8RB#7	21.00	PASS
Band12	3MHz	16QAM	23095	8RB#7	19.96	PASS
Band12	3MHz	QPSK	23095	15RB#0	20.93	PASS
Band12	3MHz	16QAM	23095	15RB#0	19.94	PASS
Band12	3MHz	QPSK	23165	1RB#0	21.96	PASS
Band12	3MHz	16QAM	23165	1RB#0	20.93	PASS
Band12	3MHz	QPSK	23165	1RB#8	22.01	PASS
Band12	3MHz	16QAM	23165	1RB#8	20.96	PASS
Band12	3MHz	QPSK	23165	1RB#14	21.98	PASS
Band12	3MHz	16QAM	23165	1RB#14	20.84	PASS
Band12	3MHz	QPSK	23165	8RB#0	20.90	PASS

Band12	3MHz	16QAM	23165	8RB#0	19.90	PASS
Band12	3MHz	QPSK	23165	8RB#4	20.93	PASS
Band12	3MHz	16QAM	23165	8RB#4	19.94	PASS
Band12	3MHz	QPSK	23165	8RB#7	21.00	PASS
Band12	3MHz	16QAM	23165	8RB#7	20.02	PASS
Band12	3MHz	QPSK	23165	15RB#0	20.89	PASS
Band12	3MHz	16QAM	23165	15RB#0	19.94	PASS
Band12	5MHz	QPSK	23035	1RB#0	21.92	PASS
Band12	5MHz	16QAM	23035	1RB#0	20.98	PASS
Band12	5MHz	QPSK	23035	1RB#12	22.01	PASS
Band12	5MHz	16QAM	23035	1RB#12	20.95	PASS
Band12	5MHz	QPSK	23035	1RB#24	21.86	PASS
Band12	5MHz	16QAM	23035	1RB#24	20.99	PASS
Band12	5MHz	QPSK	23035	12RB#0	20.90	PASS
Band12	5MHz	16QAM	23035	12RB#0	19.88	PASS
Band12	5MHz	QPSK	23035	12RB#6	20.87	PASS
Band12	5MHz	16QAM	23035	12RB#6	19.82	PASS
Band12	5MHz	QPSK	23035	12RB#13	20.99	PASS
Band12	5MHz	16QAM	23035	12RB#13	19.94	PASS
Band12	5MHz	QPSK	23035	25RB#0	20.96	PASS
Band12	5MHz	16QAM	23035	25RB#0	20.00	PASS
Band12	5MHz	QPSK	23095	1RB#0	21.97	PASS
Band12	5MHz	16QAM	23095	1RB#0	20.93	PASS
Band12	5MHz	QPSK	23095	1RB#12	22.00	PASS
Band12	5MHz	16QAM	23095	1RB#12	20.91	PASS
Band12	5MHz	QPSK	23095	1RB#24	22.02	PASS
Band12	5MHz	16QAM	23095	1RB#24	20.85	PASS
Band12	5MHz	QPSK	23095	12RB#0	20.92	PASS
Band12	5MHz	16QAM	23095	12RB#0	20.01	PASS
Band12	5MHz	QPSK	23095	12RB#6	20.94	PASS
Band12	5MHz	16QAM	23095	12RB#6	19.99	PASS
Band12	5MHz	QPSK	23095	12RB#13	21.00	PASS
Band12	5MHz	16QAM	23095	12RB#13	20.01	PASS
Band12	5MHz	QPSK	23095	25RB#0	20.95	PASS
Band12	5MHz	16QAM	23095	25RB#0	19.92	PASS
Band12	5MHz	QPSK	23155	1RB#0	21.94	PASS
Band12	5MHz	16QAM	23155	1RB#0	20.86	PASS
Band12	5MHz	QPSK	23155	1RB#12	22.02	PASS
Band12	5MHz	16QAM	23155	1RB#12	21.24	PASS
Band12	5MHz	QPSK	23155	1RB#24	21.96	PASS
Band12	5MHz	16QAM	23155	1RB#24	20.88	PASS
Band12	5MHz	QPSK	23155	12RB#0	20.95	PASS

Band12	5MHz	16QAM	23155	12RB#0	19.90	PASS
Band12	5MHz	QPSK	23155	12RB#6	20.95	PASS
Band12	5MHz	16QAM	23155	12RB#6	20.00	PASS
Band12	5MHz	QPSK	23155	12RB#13	21.00	PASS
Band12	5MHz	16QAM	23155	12RB#13	20.12	PASS
Band12	5MHz	QPSK	23155	25RB#0	20.95	PASS
Band12	5MHz	16QAM	23155	25RB#0	19.90	PASS
Band12	10MHz	QPSK	23060	1RB#0	21.95	PASS
Band12	10MHz	16QAM	23060	1RB#0	21.07	PASS
Band12	10MHz	QPSK	23060	1RB#24	21.98	PASS
Band12	10MHz	16QAM	23060	1RB#24	20.97	PASS
Band12	10MHz	QPSK	23060	1RB#49	21.87	PASS
Band12	10MHz	16QAM	23060	1RB#49	20.94	PASS
Band12	10MHz	QPSK	23060	25RB#0	20.91	PASS
Band12	10MHz	16QAM	23060	25RB#0	19.95	PASS
Band12	10MHz	QPSK	23060	25RB#12	20.89	PASS
Band12	10MHz	16QAM	23060	25RB#12	19.99	PASS
Band12	10MHz	QPSK	23060	25RB#25	21.04	PASS
Band12	10MHz	16QAM	23060	25RB#25	19.98	PASS
Band12	10MHz	QPSK	23060	50RB#0	21.04	PASS
Band12	10MHz	16QAM	23060	50RB#0	20.02	PASS
Band12	10MHz	QPSK	23095	1RB#0	21.96	PASS
Band12	10MHz	16QAM	23095	1RB#0	20.98	PASS
Band12	10MHz	QPSK	23095	1RB#24	21.98	PASS
Band12	10MHz	16QAM	23095	1RB#24	21.00	PASS
Band12	10MHz	QPSK	23095	1RB#49	21.91	PASS
Band12	10MHz	16QAM	23095	1RB#49	20.96	PASS
Band12	10MHz	QPSK	23095	25RB#0	20.95	PASS
Band12	10MHz	16QAM	23095	25RB#0	20.00	PASS
Band12	10MHz	QPSK	23095	25RB#12	20.94	PASS
Band12	10MHz	16QAM	23095	25RB#12	19.99	PASS
Band12	10MHz	QPSK	23095	25RB#25	21.04	PASS
Band12	10MHz	16QAM	23095	25RB#25	20.03	PASS
Band12	10MHz	QPSK	23095	50RB#0	21.01	PASS
Band12	10MHz	16QAM	23095	50RB#0	19.99	PASS
Band12	10MHz	QPSK	23130	1RB#0	22.00	PASS
Band12	10MHz	16QAM	23130	1RB#0	20.95	PASS
Band12	10MHz	QPSK	23130	1RB#24	22.02	PASS
Band12	10MHz	16QAM	23130	1RB#24	21.09	PASS
Band12	10MHz	QPSK	23130	1RB#49	21.94	PASS
Band12	10MHz	16QAM	23130	1RB#49	20.92	PASS
Band12	10MHz	QPSK	23130	25RB#0	20.95	PASS

Band12	10MHz	16QAM	23130	25RB#0	20.02	PASS
Band12	10MHz	QPSK	23130	25RB#12	20.97	PASS
Band12	10MHz	16QAM	23130	25RB#12	19.95	PASS
Band12	10MHz	QPSK	23130	25RB#25	21.02	PASS
Band12	10MHz	16QAM	23130	25RB#25	19.99	PASS
Band12	10MHz	QPSK	23130	50RB#0	20.93	PASS
Band12	10MHz	16QAM	23130	50RB#0	20.04	PASS

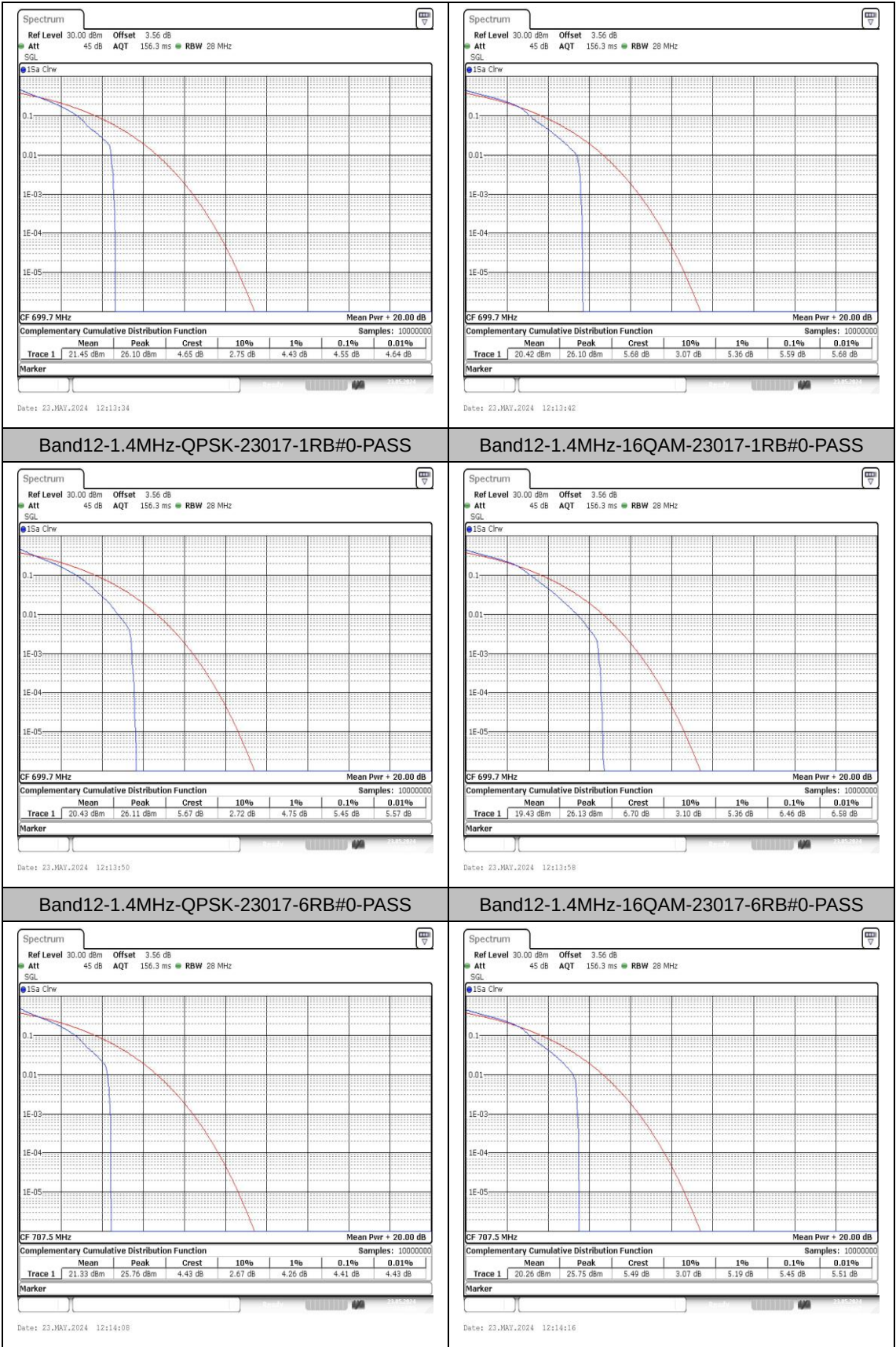
Appendix B: Peak-to-Average Ratio(CCDF)

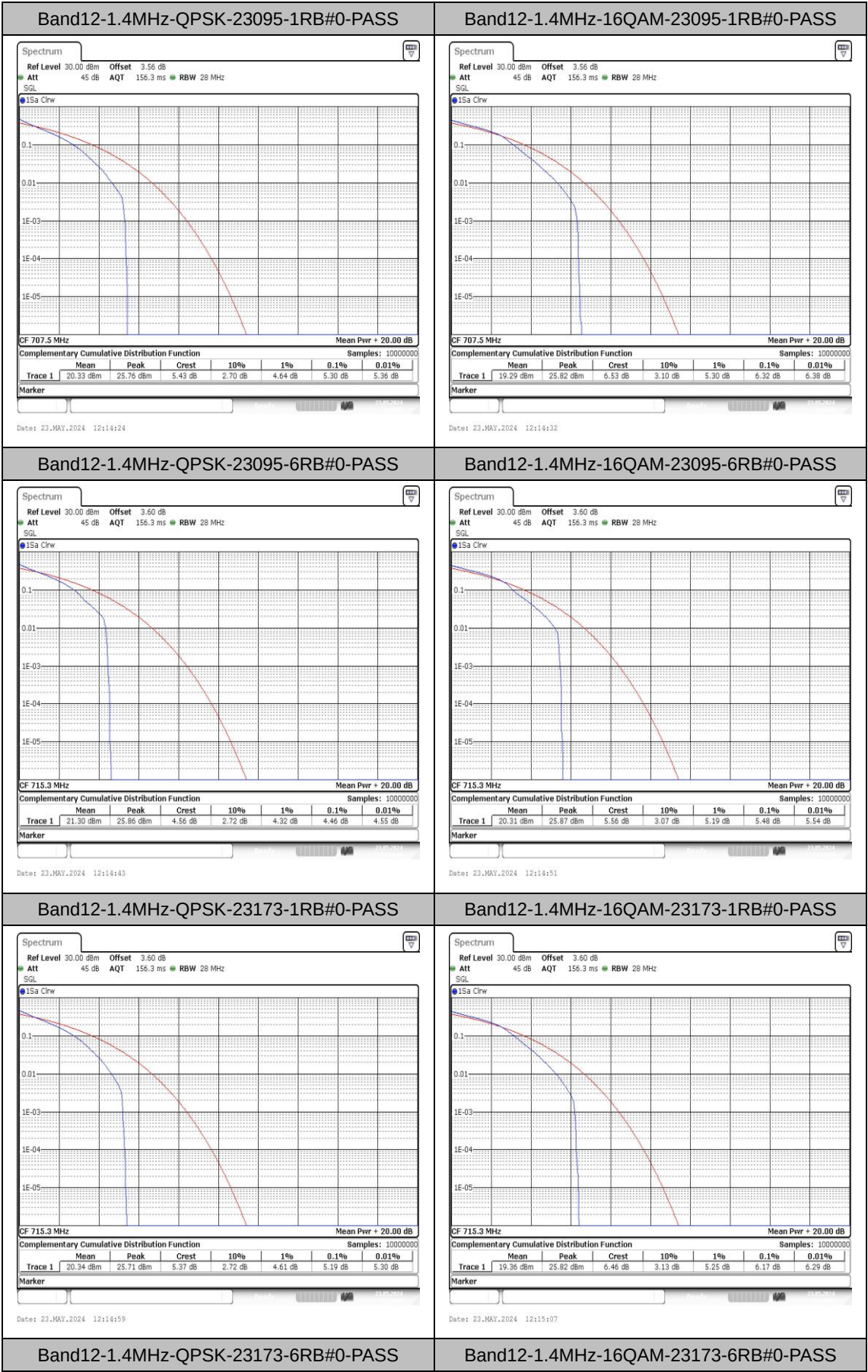
Test Result

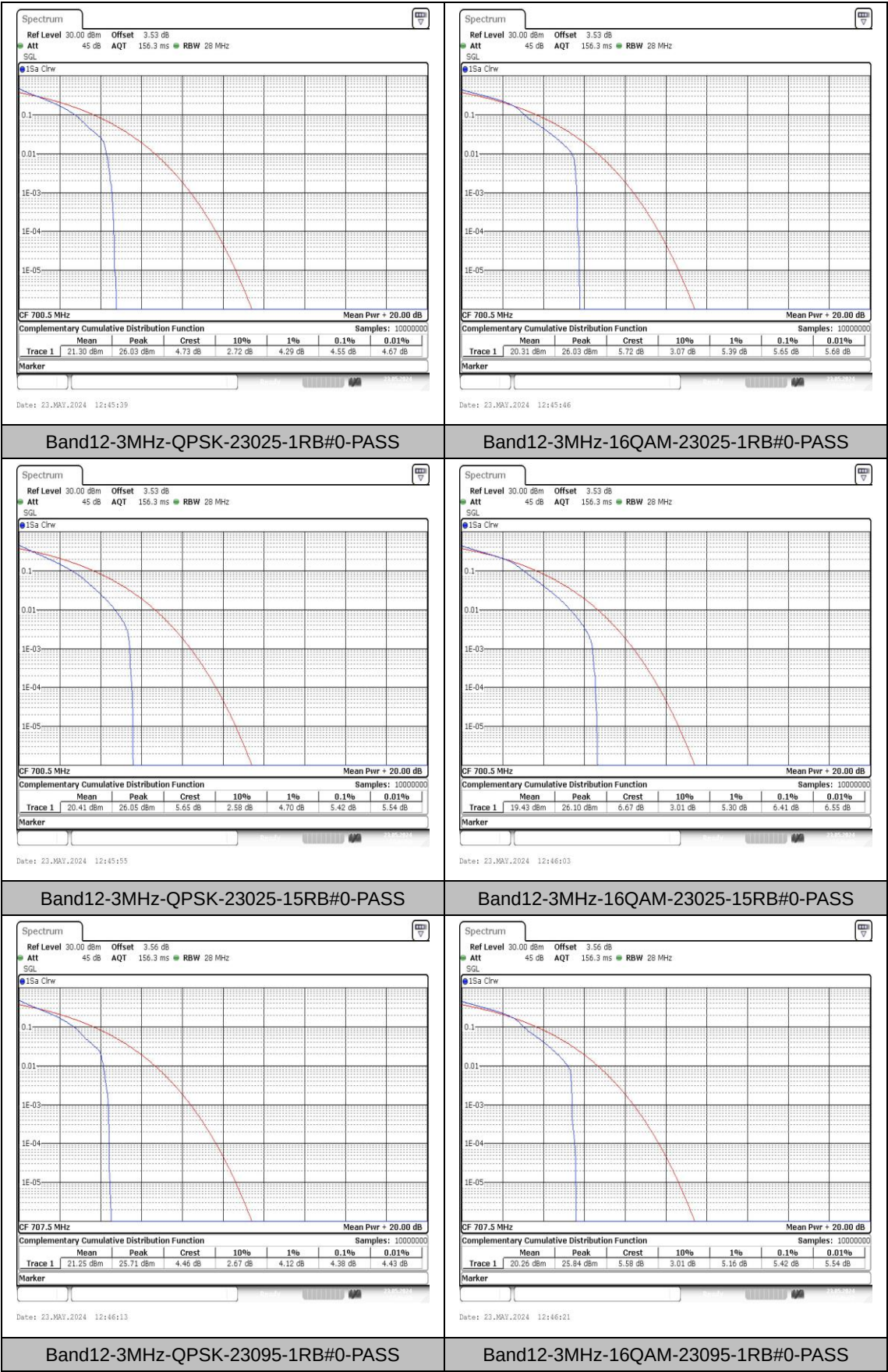
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band12	1.4MHz	QPSK	23017	1RB#0	4.55	13	PASS
Band12	1.4MHz	16QAM	23017	1RB#0	5.59	13	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	5.45	13	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	6.46	13	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	4.41	13	PASS
Band12	1.4MHz	16QAM	23095	1RB#0	5.45	13	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	5.30	13	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	6.32	13	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	4.46	13	PASS
Band12	1.4MHz	16QAM	23173	1RB#0	5.48	13	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	5.19	13	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	6.17	13	PASS
Band12	3MHz	QPSK	23025	1RB#0	4.55	13	PASS
Band12	3MHz	16QAM	23025	1RB#0	5.65	13	PASS
Band12	3MHz	QPSK	23025	15RB#0	5.42	13	PASS
Band12	3MHz	16QAM	23025	15RB#0	6.41	13	PASS
Band12	3MHz	QPSK	23095	1RB#0	4.38	13	PASS
Band12	3MHz	16QAM	23095	1RB#0	5.42	13	PASS
Band12	3MHz	QPSK	23095	15RB#0	5.30	13	PASS
Band12	3MHz	16QAM	23095	15RB#0	6.26	13	PASS
Band12	3MHz	QPSK	23165	1RB#0	4.64	13	PASS
Band12	3MHz	16QAM	23165	1RB#0	5.71	13	PASS
Band12	3MHz	QPSK	23165	15RB#0	5.45	13	PASS
Band12	3MHz	16QAM	23165	15RB#0	6.43	13	PASS
Band12	5MHz	QPSK	23035	1RB#0	4.55	13	PASS
Band12	5MHz	16QAM	23035	1RB#0	5.59	13	PASS
Band12	5MHz	QPSK	23035	25RB#0	5.42	13	PASS
Band12	5MHz	16QAM	23035	25RB#0	6.38	13	PASS
Band12	5MHz	QPSK	23095	1RB#0	4.38	13	PASS
Band12	5MHz	16QAM	23095	1RB#0	5.33	13	PASS
Band12	5MHz	QPSK	23095	25RB#0	5.33	13	PASS
Band12	5MHz	16QAM	23095	25RB#0	6.29	13	PASS
Band12	5MHz	QPSK	23155	1RB#0	4.70	13	PASS
Band12	5MHz	16QAM	23155	1RB#0	5.74	13	PASS
Band12	5MHz	QPSK	23155	25RB#0	5.62	13	PASS

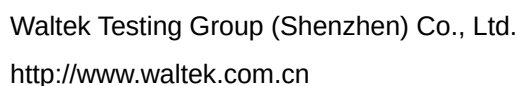
Band12	5MHz	16QAM	23155	25RB#0	6.55	13	PASS
Band12	10MHz	QPSK	23060	1RB#0	4.55	13	PASS
Band12	10MHz	16QAM	23060	1RB#0	5.57	13	PASS
Band12	10MHz	QPSK	23060	50RB#0	5.33	13	PASS
Band12	10MHz	16QAM	23060	50RB#0	6.23	13	PASS
Band12	10MHz	QPSK	23095	1RB#0	4.41	13	PASS
Band12	10MHz	16QAM	23095	1RB#0	5.42	13	PASS
Band12	10MHz	QPSK	23095	50RB#0	5.33	13	PASS
Band12	10MHz	16QAM	23095	50RB#0	6.29	13	PASS
Band12	10MHz	QPSK	23130	1RB#0	4.38	13	PASS
Band12	10MHz	16QAM	23130	1RB#0	5.39	13	PASS
Band12	10MHz	QPSK	23130	50RB#0	5.62	13	PASS
Band12	10MHz	16QAM	23130	50RB#0	6.52	13	PASS

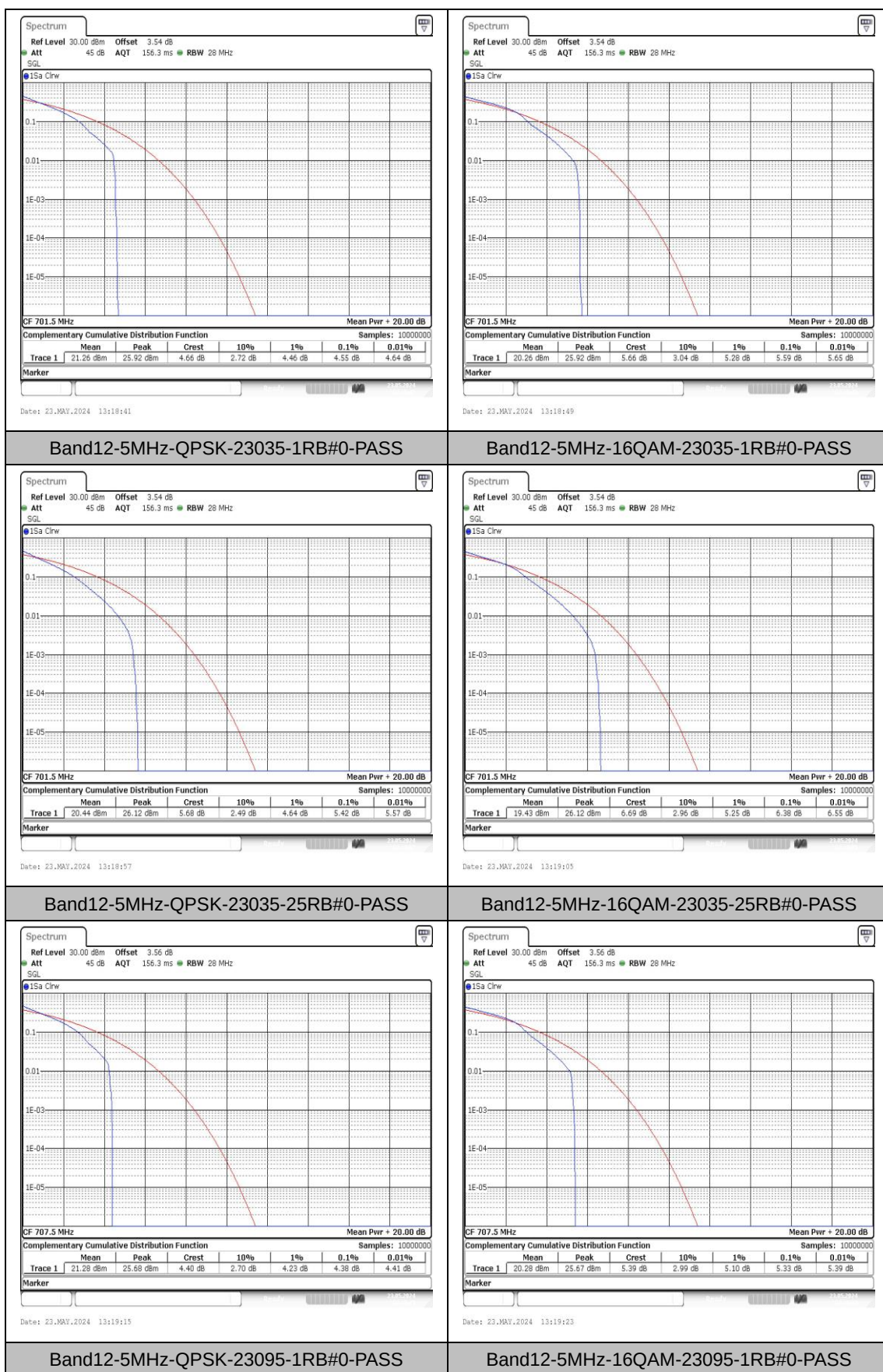
Test Graphs

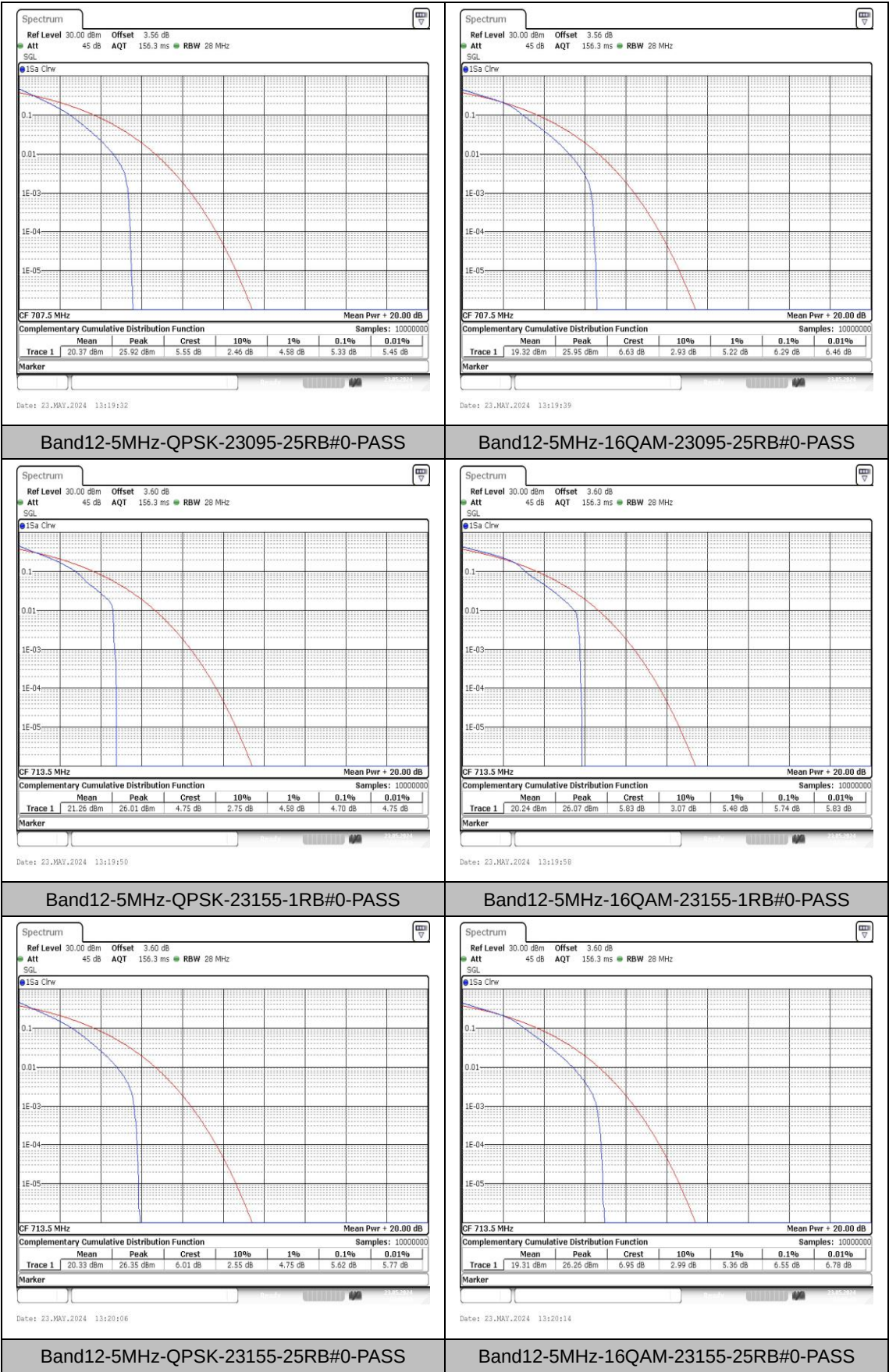


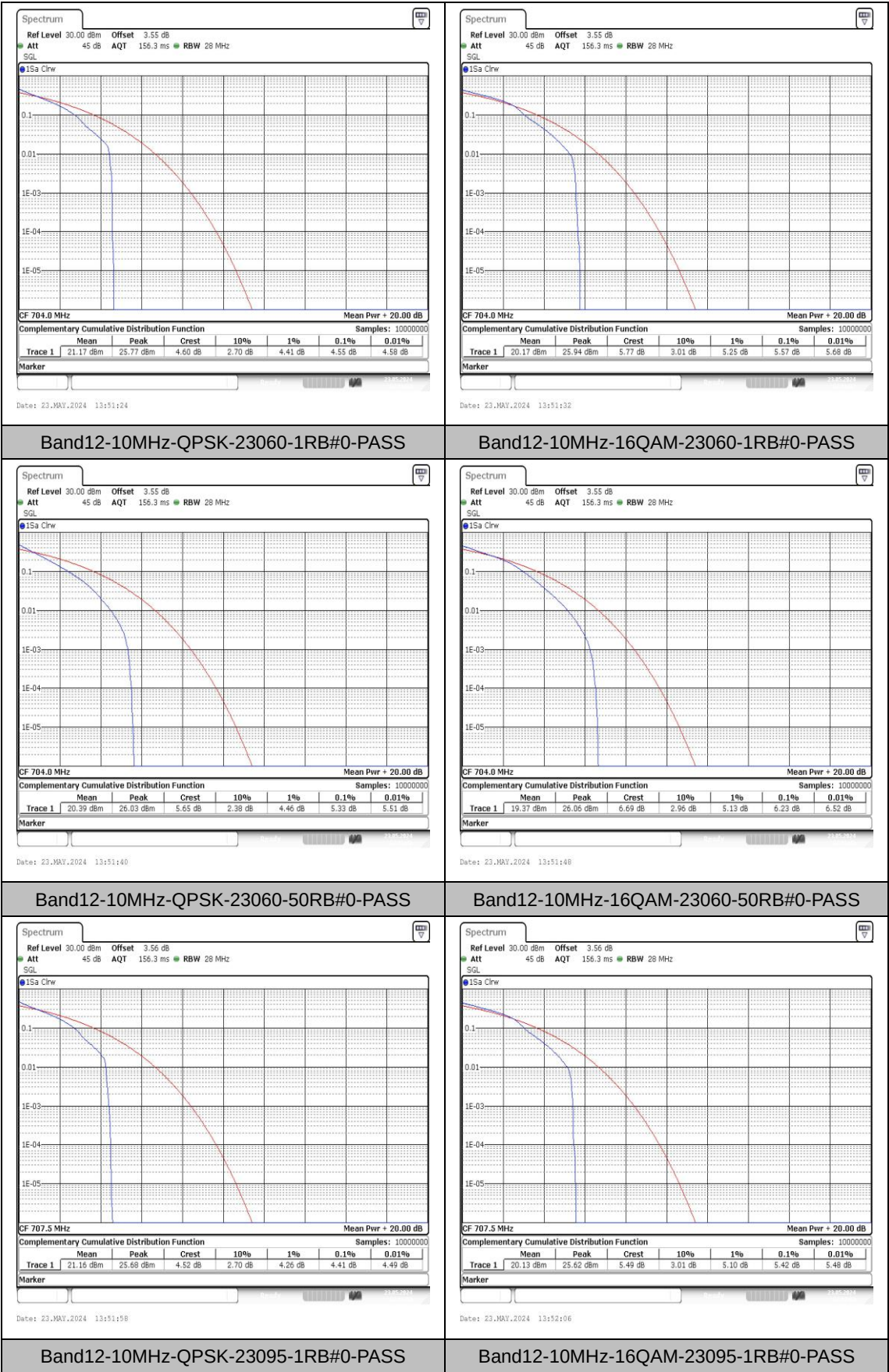


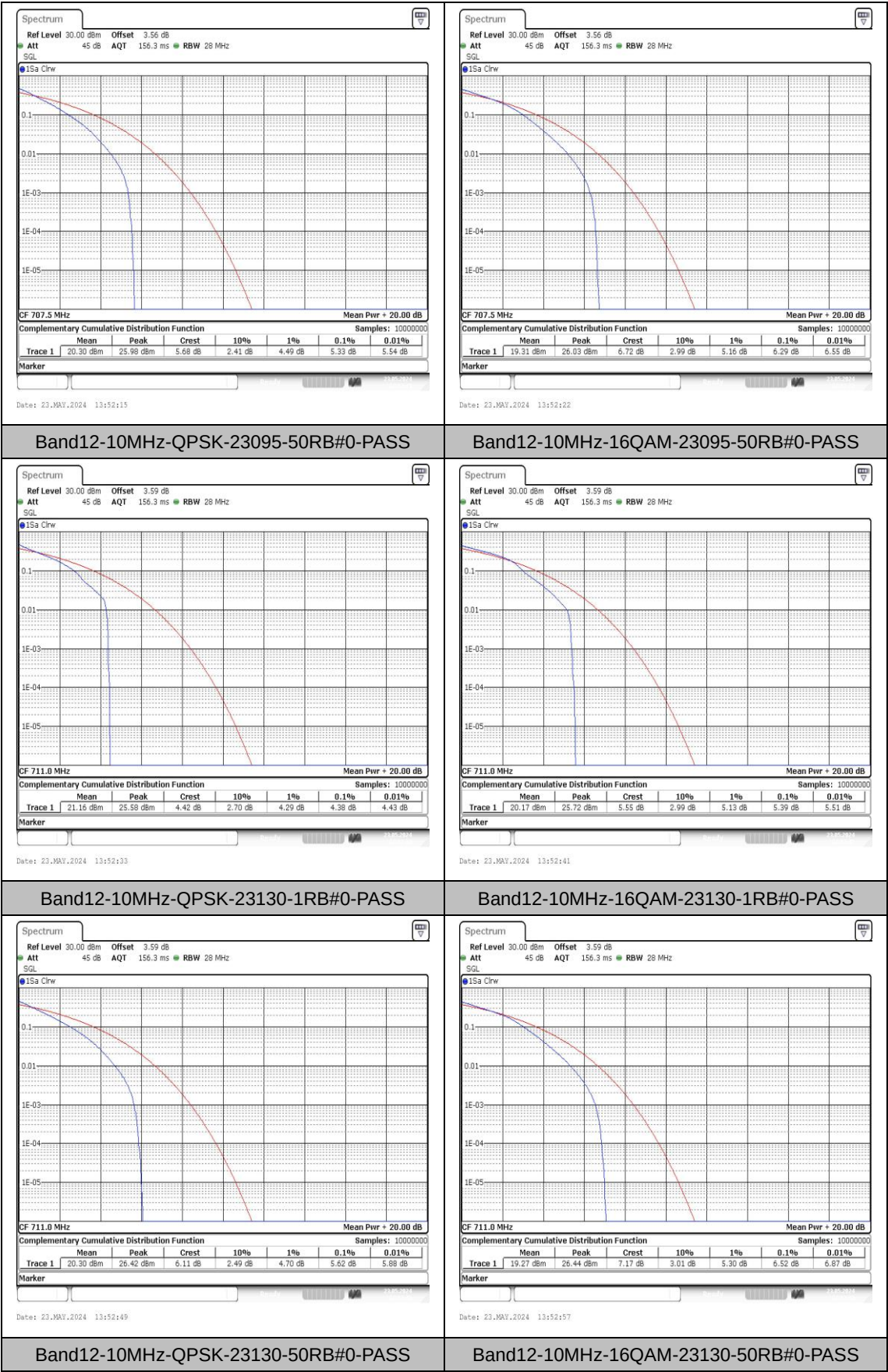










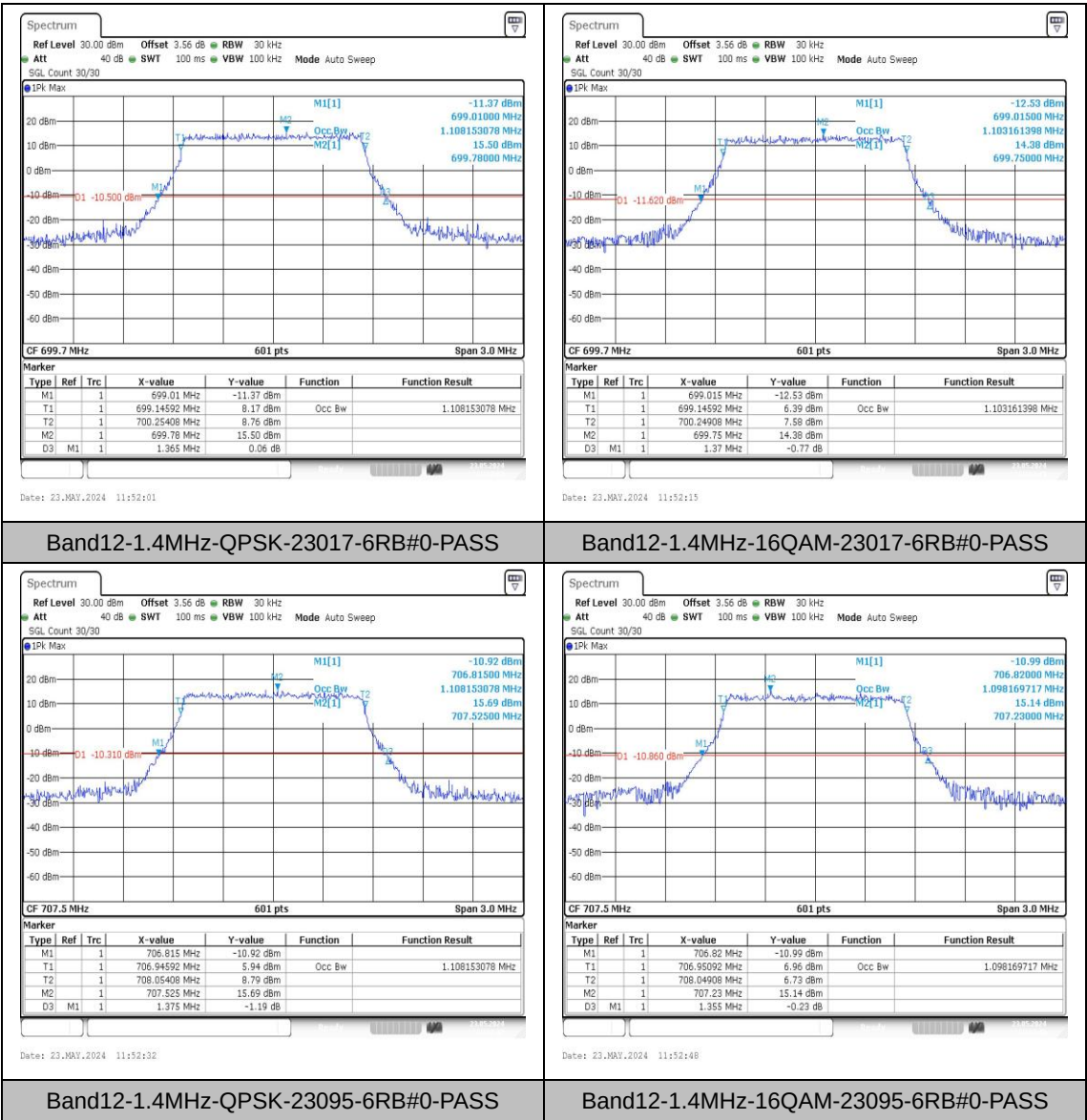


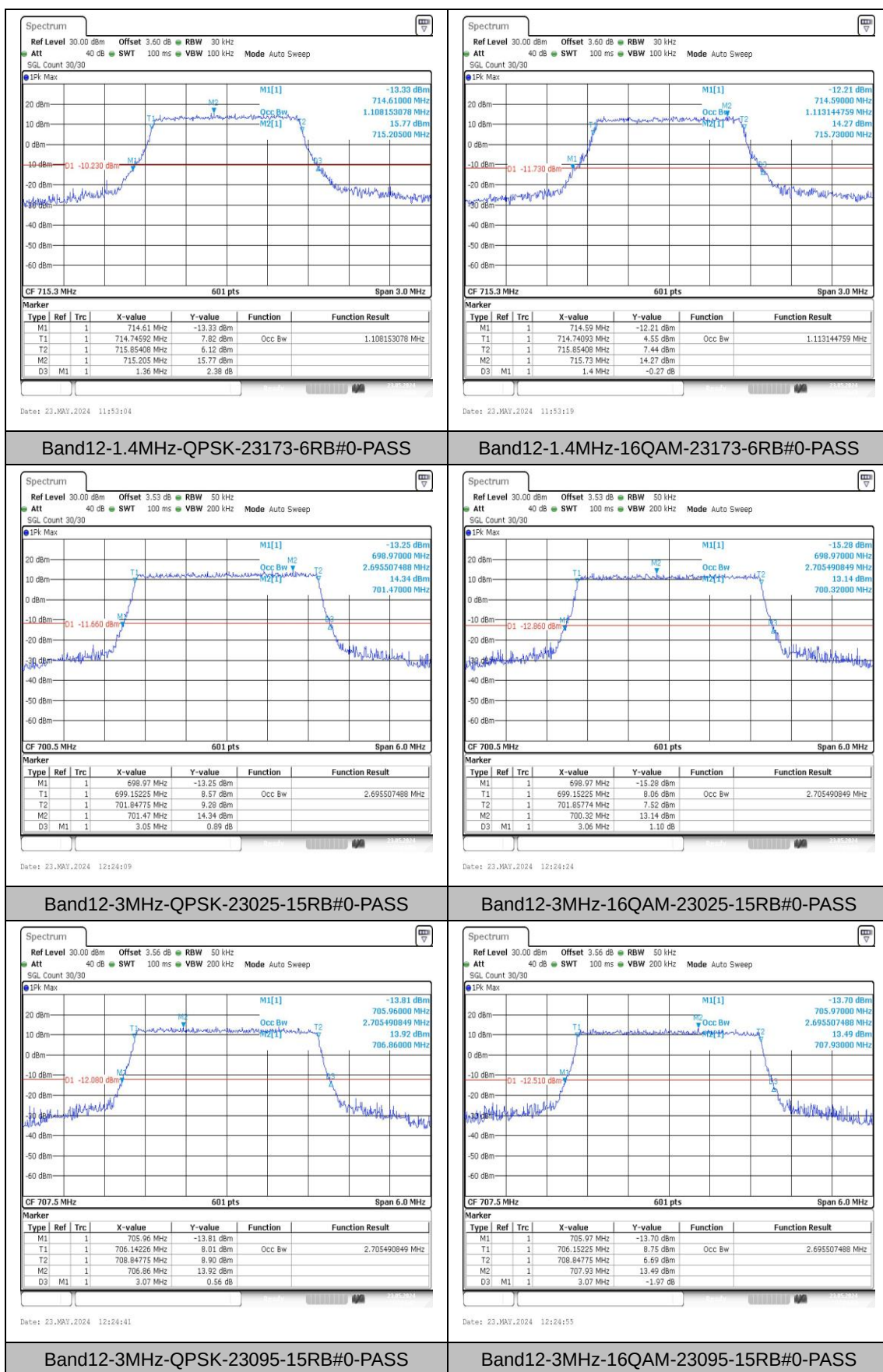
Appendix C: 26dB Bandwidth and Occupied Bandwidth

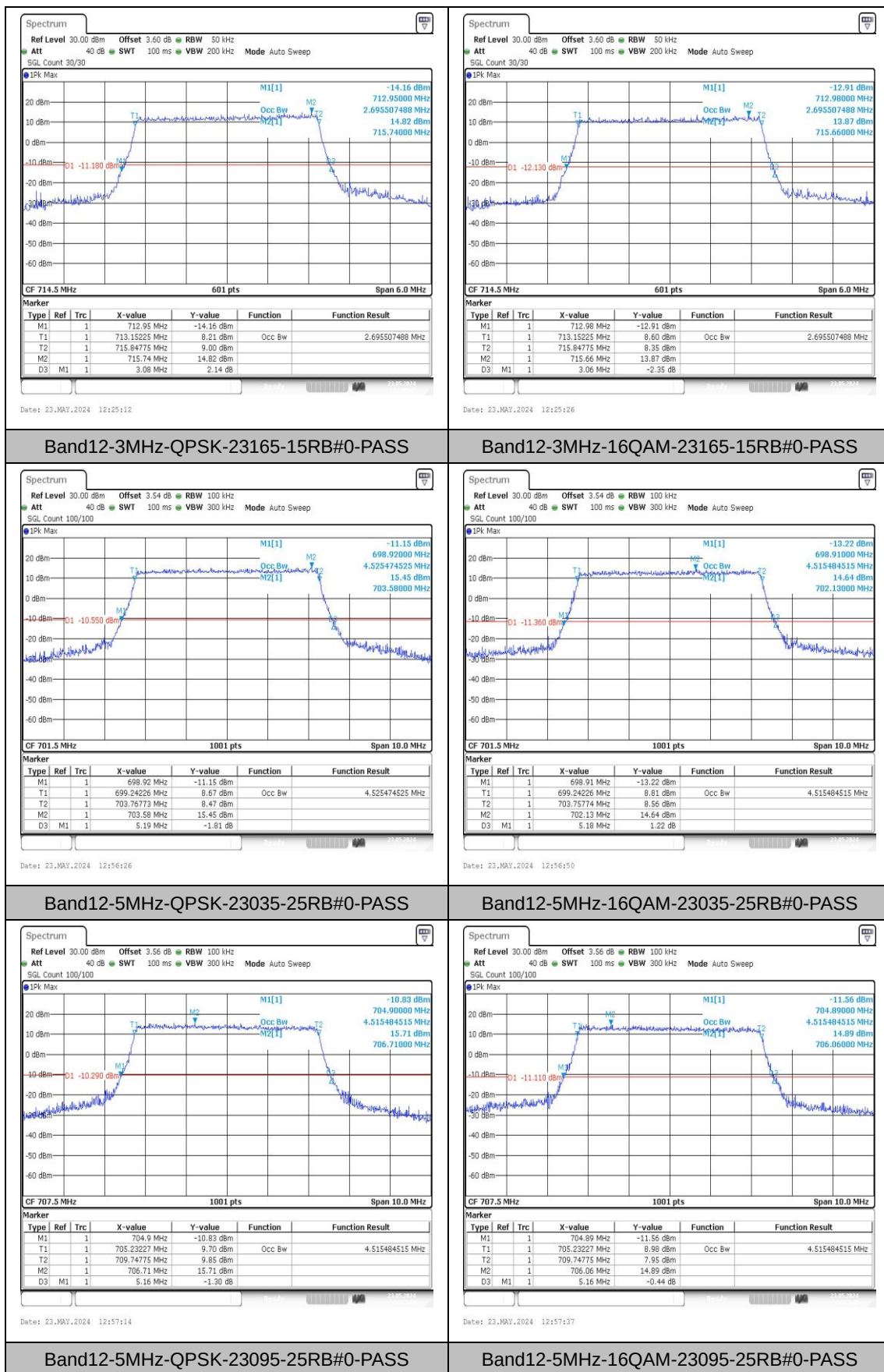
Test Result

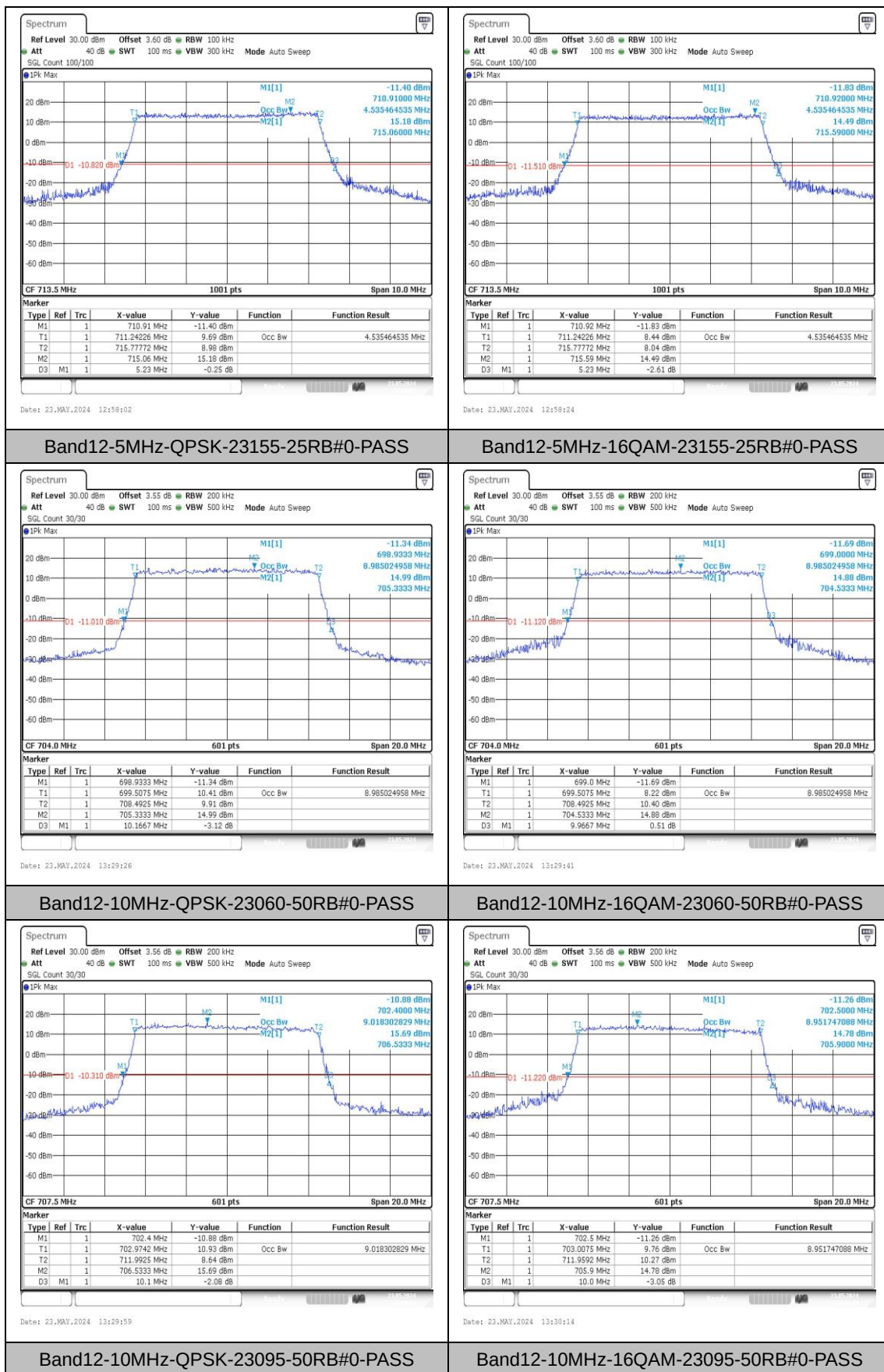
Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	1.108	1.37	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	1.103	1.37	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	1.108	1.38	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	1.098	1.35	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	1.108	1.36	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	1.113	1.40	PASS
Band12	3MHz	QPSK	23025	15RB#0	2.696	3.05	PASS
Band12	3MHz	16QAM	23025	15RB#0	2.705	3.06	PASS
Band12	3MHz	QPSK	23095	15RB#0	2.705	3.07	PASS
Band12	3MHz	16QAM	23095	15RB#0	2.696	3.07	PASS
Band12	3MHz	QPSK	23165	15RB#0	2.696	3.08	PASS
Band12	3MHz	16QAM	23165	15RB#0	2.696	3.06	PASS
Band12	5MHz	QPSK	23035	25RB#0	4.525	5.19	PASS
Band12	5MHz	16QAM	23035	25RB#0	4.515	5.18	PASS
Band12	5MHz	QPSK	23095	25RB#0	4.515	5.16	PASS
Band12	5MHz	16QAM	23095	25RB#0	4.515	5.16	PASS
Band12	5MHz	QPSK	23155	25RB#0	4.535	5.23	PASS
Band12	5MHz	16QAM	23155	25RB#0	4.535	5.23	PASS
Band12	10MHz	QPSK	23060	50RB#0	8.985	10.17	PASS
Band12	10MHz	16QAM	23060	50RB#0	8.985	9.97	PASS
Band12	10MHz	QPSK	23095	50RB#0	9.018	10.10	PASS
Band12	10MHz	16QAM	23095	50RB#0	8.952	10.00	PASS
Band12	10MHz	QPSK	23130	50RB#0	9.018	10.20	PASS
Band12	10MHz	16QAM	23130	50RB#0	9.018	10.10	PASS

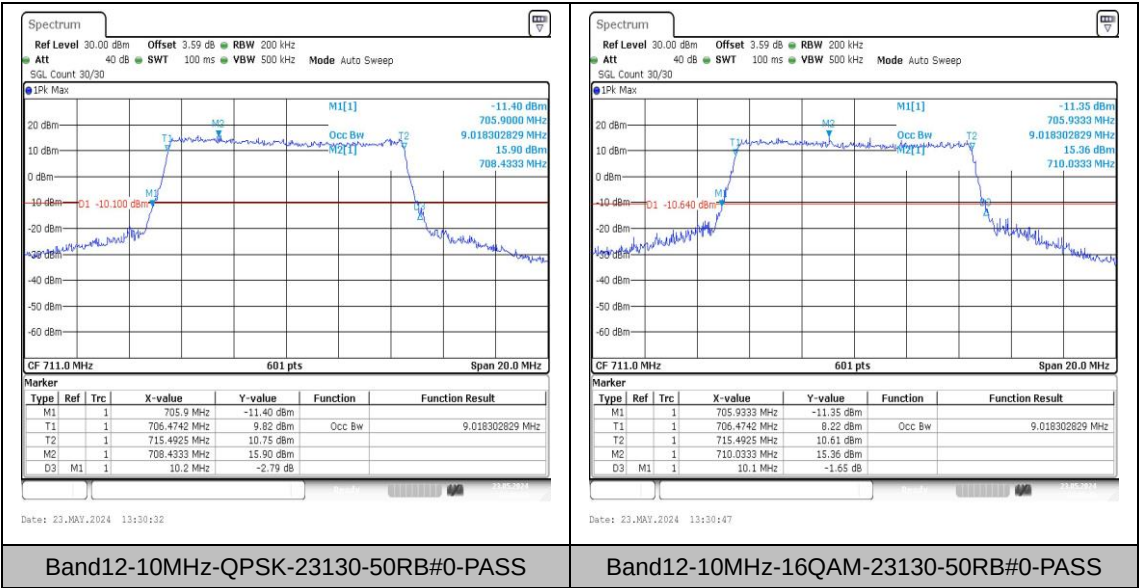
Test Graphs











Appendix D: Band Edge

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band12	1.4MHz	QPSK	23017	1RB#0	-19.47	PASS
Band12	1.4MHz	16QAM	23017	1RB#0	-20.76	PASS
Band12	1.4MHz	QPSK	23017	1RB#5	-46.83	PASS
Band12	1.4MHz	16QAM	23017	1RB#5	-47.69	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	-24.44	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	-25.05	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	-45.81	PASS
Band12	1.4MHz	16QAM	23173	1RB#0	-46.49	PASS
Band12	1.4MHz	QPSK	23173	1RB#5	-18.59	PASS
Band12	1.4MHz	16QAM	23173	1RB#5	-20.48	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	-24.03	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	-25.76	PASS
Band12	3MHz	QPSK	23025	1RB#0	-23.10	PASS
Band12	3MHz	16QAM	23025	1RB#0	-24.72	PASS
Band12	3MHz	QPSK	23025	1RB#14	-50.34	PASS
Band12	3MHz	16QAM	23025	1RB#14	-52.71	PASS
Band12	3MHz	QPSK	23025	15RB#0	-26.89	PASS
Band12	3MHz	16QAM	23025	15RB#0	-27.57	PASS
Band12	3MHz	QPSK	23165	1RB#0	-48.91	PASS
Band12	3MHz	16QAM	23165	1RB#0	-51.70	PASS
Band12	3MHz	QPSK	23165	1RB#14	-23.32	PASS
Band12	3MHz	16QAM	23165	1RB#14	-24.26	PASS
Band12	3MHz	QPSK	23165	15RB#0	-26.23	PASS
Band12	3MHz	16QAM	23165	15RB#0	-27.68	PASS
Band12	5MHz	QPSK	23035	1RB#0	-25.58	PASS
Band12	5MHz	16QAM	23035	1RB#0	-26.18	PASS
Band12	5MHz	QPSK	23035	1RB#24	-55.48	PASS
Band12	5MHz	16QAM	23035	1RB#24	-55.81	PASS
Band12	5MHz	QPSK	23035	25RB#0	-29.68	PASS
Band12	5MHz	16QAM	23035	25RB#0	-30.38	PASS
Band12	5MHz	QPSK	23155	1RB#0	-54.91	PASS
Band12	5MHz	16QAM	23155	1RB#0	-54.27	PASS
Band12	5MHz	QPSK	23155	1RB#24	-25.40	PASS
Band12	5MHz	16QAM	23155	1RB#24	-26.94	PASS
Band12	5MHz	QPSK	23155	25RB#0	-26.98	PASS
Band12	5MHz	16QAM	23155	25RB#0	-28.78	PASS

Band12	10MHz	QPSK	23060	1RB#0	-38.20	PASS
Band12	10MHz	16QAM	23060	1RB#0	-38.77	PASS
Band12	10MHz	QPSK	23060	1RB#49	-56.68	PASS
Band12	10MHz	16QAM	23060	1RB#49	-56.59	PASS
Band12	10MHz	QPSK	23060	50RB#0	-36.24	PASS
Band12	10MHz	16QAM	23060	50RB#0	-37.11	PASS
Band12	10MHz	QPSK	23130	1RB#0	-56.51	PASS
Band12	10MHz	16QAM	23130	1RB#0	-56.54	PASS
Band12	10MHz	QPSK	23130	1RB#49	-38.61	PASS
Band12	10MHz	16QAM	23130	1RB#49	-38.53	PASS
Band12	10MHz	QPSK	23130	50RB#0	-34.65	PASS
Band12	10MHz	16QAM	23130	50RB#0	-35.84	PASS

Test Graphs

