

Appendix for LTE Band 12

Product Name: Smart Phone

Model No: Black G4

Appendix A: Average Power Output Data

Test Result

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
1.4MHz	23017	699.7	QPSK	1	0	23.59	23.0±1	/
				1	2	23.75	23.0±1	/
				1	5	23.72	23.0±1	/
				3	0	23.68	23.0±1	/
				3	1	23.77	23.0±1	/
				3	2	23.79	23.0±1	/
				6	0	22.72	23.0±1	1.0
			16QAM	1	0	22.68	22.0±1	1.0
				1	2	22.75	22.0±1	1.0
				1	5	22.84	22.0±1	1.0
				3	0	22.72	22.0±1	1.0
				3	1	22.83	22.0±1	1.0
				3	2	22.79	22.0±1	1.0
				6	0	21.85	22.0±1	1.0
	23095	707.5	QPSK	1	0	23.64	23.0±1	/
				1	2	23.76	23.0±1	/
				1	5	23.63	23.0±1	/
				3	0	23.78	23.0±1	/
				3	1	23.77	23.0±1	/
				3	2	23.69	23.0±1	/
				6	0	22.66	23.0±1	1.0
			16QAM	1	0	22.92	22.5±1	1.0
				1	2	23.09	22.5±1	1.0
				1	5	22.99	22.5±1	1.0
				3	0	22.91	22.5±1	1.0
				3	1	22.88	22.5±1	1.0
				3	2	22.86	22.5±1	1.0
				6	0	21.63	22.5±1	1.0
	23173	715.3	QPSK	1	0	23.5	23.0±1	/
				1	2	23.68	23.0±1	/
				1	5	23.55	23.0±1	/
				3	0	23.66	23.0±1	/
				3	1	23.72	23.0±1	/
				3	2	23.74	23.0±1	/
				6	0	22.65	23.0±1	1.0

			16QAM	1	0	22.6	22.0±1	1.0
				1	2	22.73	22.0±1	1.0
				1	5	22.62	22.0±1	1.0
				3	0	22.85	22.0±1	1.0
				3	1	22.9	22.0±1	1.0
				3	2	22.95	22.0±1	1.0
				6	0	21.84	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
3MHz	23025	700.5	QPSK	1	0	23.68	23.0±1	/
				1	8	23.97	23.0±1	/
				1	14	23.76	23.0±1	/
				8	0	22.67	23.0±1	1.0
				8	4	22.81	23.0±1	1.0
				8	9	22.76	23.0±1	1.0
				15	0	22.74	23.0±1	1.0
			16QAM	1	0	22.54	22.0±1	1.0
				1	8	22.79	22.0±1	1.0
				1	14	22.65	22.0±1	1.0
				8	0	21.87	22.0±1	1.0
				8	4	21.94	22.0±1	1.0
				8	9	21.93	22.0±1	1.0
				15	0	21.8	22.0±1	1.0
	23095	707.5	QPSK	1	0	23.73	23.0±1	/
				1	8	23.95	23.0±1	/
				1	14	23.7	23.0±1	/
				8	0	22.62	23.0±1	1.0
				8	4	22.71	23.0±1	1.0
				8	9	22.67	23.0±1	1.0
				15	0	22.67	23.0±1	1.0
			16QAM	1	0	23.06	22.5±1	1.0
				1	8	23.19	22.5±1	1.0
				1	14	23.05	22.5±1	1.0
				8	0	21.81	22.5±1	1.0
				8	4	21.86	22.5±1	1.0
				8	9	21.79	22.5±1	1.0
				15	0	21.76	22.5±1	1.0
	23165	714.5	QPSK	1	0	23.64	23.0±1	/
				1	8	23.76	23.0±1	/
				1	14	23.62	23.0±1	/

				8	0	22.64	23.0±1	1.0
				8	4	22.67	23.0±1	1.0
				8	9	22.63	23.0±1	1.0
				15	0	22.66	23.0±1	1.0
			16QAM	1	0	22.7	22.0±1	1.0
				1	8	22.83	22.0±1	1.0
				1	14	22.62	22.0±1	1.0
				8	0	21.73	22.0±1	1.0
				8	4	21.77	22.0±1	1.0
				8	9	21.74	22.0±1	1.0
				15	0	21.65	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
5MHz	23035	701.5	QPSK	1	0	23.53	23.0±1	/
				1	49	23.96	23.0±1	/
				1	99	23.64	23.0±1	/
				12	0	22.7	23.0±1	1.0
				12	24	22.79	23.0±1	1.0
				12	49	22.78	23.0±1	1.0
				25	0	22.72	23.0±1	1.0
			16QAM	1	0	22.74	22.5±1	1.0
				1	49	23.1	22.5±1	1.0
				1	99	22.82	22.5±1	1.0
				12	0	21.83	22.5±1	1.0
				12	24	21.91	22.5±1	1.0
				12	49	21.89	22.5±1	1.0
				25	0	21.84	22.5±1	1.0
	23095	707.5	QPSK	1	0	23.61	23.0±1	/
				1	49	23.84	23.0±1	/
				1	99	23.5	23.0±1	/
				12	0	22.68	23.0±1	1.0
				12	24	22.73	23.0±1	1.0
				12	49	22.67	23.0±1	1.0
				25	0	22.66	23.0±1	1.0
			16QAM	1	0	23.1	22.5±1	1.0
				1	49	23.35	22.5±1	1.0
				1	99	23.03	22.5±1	1.0
				12	0	21.89	22.5±1	1.0
				12	24	21.9	22.5±1	1.0
				12	49	21.83	22.5±1	1.0

	23155	713.5	QPSK	25	0	21.82	22.5±1	1.0
				1	0	23.56	23.0±1	/
				1	49	23.86	23.0±1	/
				1	99	23.63	23.0±1	/
				12	0	22.7	23.0±1	1.0
				12	24	22.7	23.0±1	1.0
				12	49	22.6	23.0±1	1.0
			16QAM	25	0	22.64	23.0±1	1.0
				1	0	22.67	22.0±1	1.0
				1	49	22.95	22.0±1	1.0
				1	99	22.68	22.0±1	1.0
				12	0	21.76	22.0±1	1.0
				12	24	21.8	22.0±1	1.0
				12	49	21.7	22.0±1	1.0
				25	0	21.66	22.0±1	1.0

BW(MHz)	Ch	Freq(MHz)	Mode	UL RB Allocation	UL RB Offset	Average Power (dbm)	Tune up limited(dBm)	MPR (dB)
10MHz	23060	704	QPSK	1	0	23.68	23.0±1	/
				1	49	23.98	23.0±1	/
				1	99	23.7	23.0±1	/
				25	0	22.84	23.0±1	1.0
				25	24	22.77	23.0±1	1.0
				25	49	22.75	23.0±1	1.0
				50	0	22.79	23.0±1	1.0
			16QAM	1	0	22.56	22.0±1	1.0
				1	49	22.77	22.0±1	1.0
				1	99	22.56	22.0±1	1.0
				25	0	21.92	22.0±1	1.0
				25	24	21.86	22.0±1	1.0
				25	49	21.82	22.0±1	1.0
				50	0	21.85	22.0±1	1.0
	23095	707.5	QPSK	1	0	23.79	23.0±1	/
				1	49	23.8	23.0±1	/
				1	99	23.65	23.0±1	/
				25	0	22.72	23.0±1	1.0
				25	24	22.7	23.0±1	1.0
				25	49	22.68	23.0±1	1.0
				50	0	22.68	23.0±1	1.0
			16QAM	1	0	23.07	22.5±1	1.0
				1	49	23.14	22.5±1	1.0

				1	99	22.97	22.5±1	1.0
				25	0	21.89	22.5±1	1.0
				25	24	21.8	22.5±1	1.0
				25	49	21.78	22.5±1	1.0
				50	0	21.79	22.5±1	1.0
	23130	711	QPSK	1	0	23.64	23.0±1	/
				1	49	23.69	23.0±1	/
				1	99	23.62	23.0±1	/
				25	0	22.65	23.0±1	1.0
				25	24	22.69	23.0±1	1.0
				25	49	22.57	23.0±1	1.0
				50	0	22.63	23.0±1	1.0
			16QAM	1	0	22.7	22.0±1	1.0
				1	49	22.76	22.0±1	1.0
				1	99	22.67	22.0±1	1.0
				25	0	21.83	22.0±1	1.0
				25	24	21.83	22.0±1	1.0
				25	49	21.74	22.0±1	1.0
				50	0	21.74	22.0±1	1.0

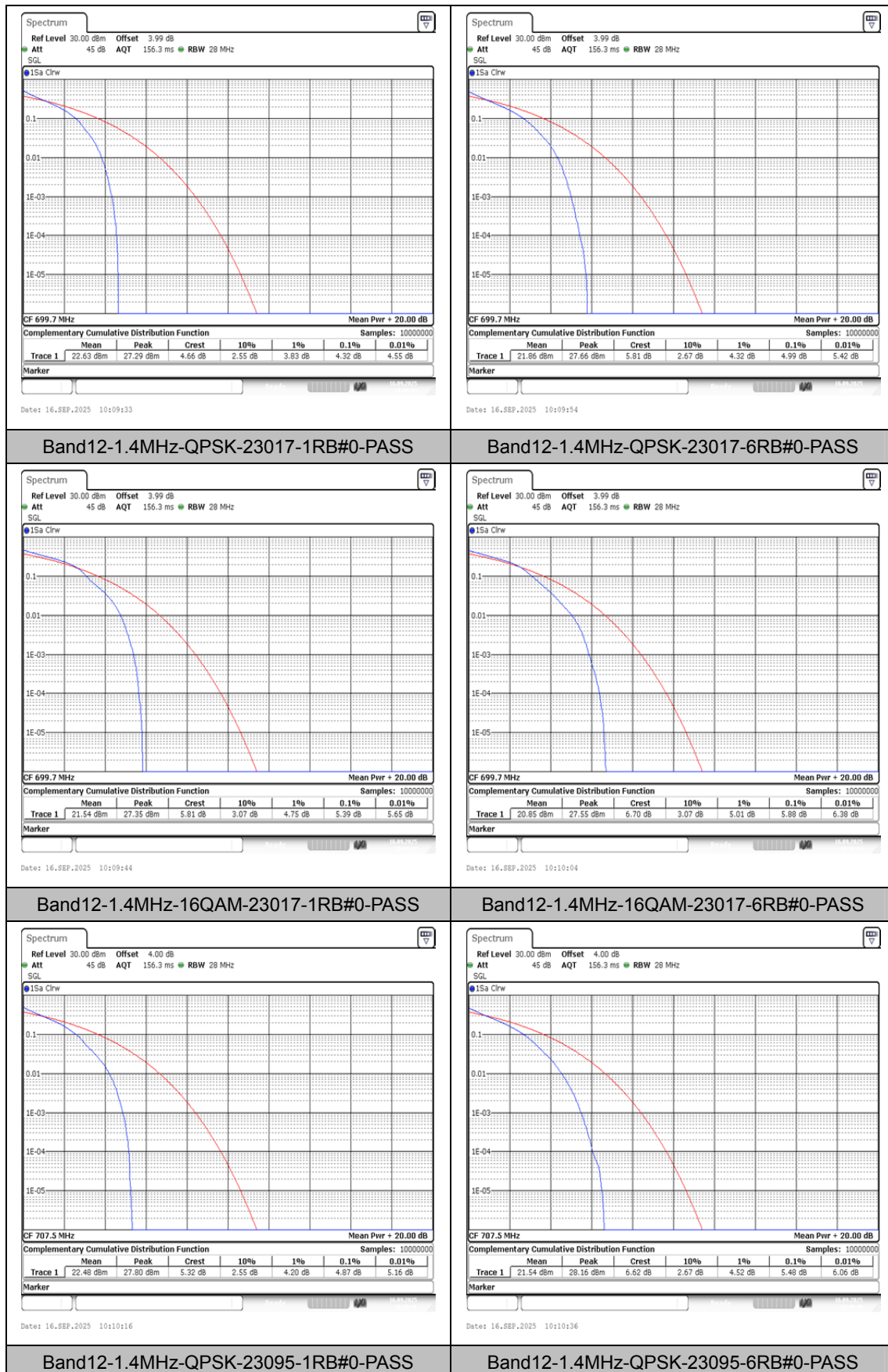
Appendix B: Peak-to-Average Ratio(CCDF)

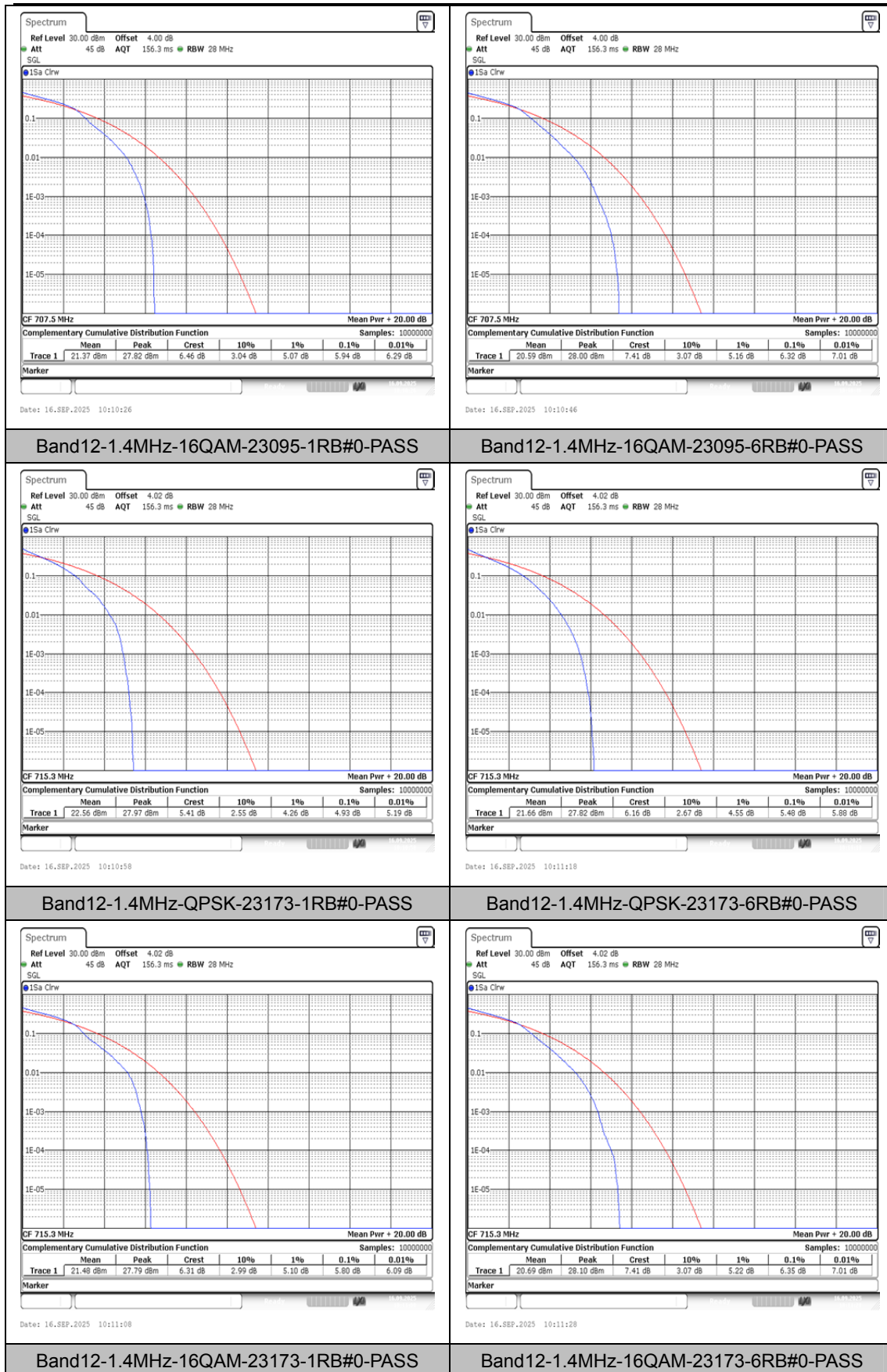
Test Result

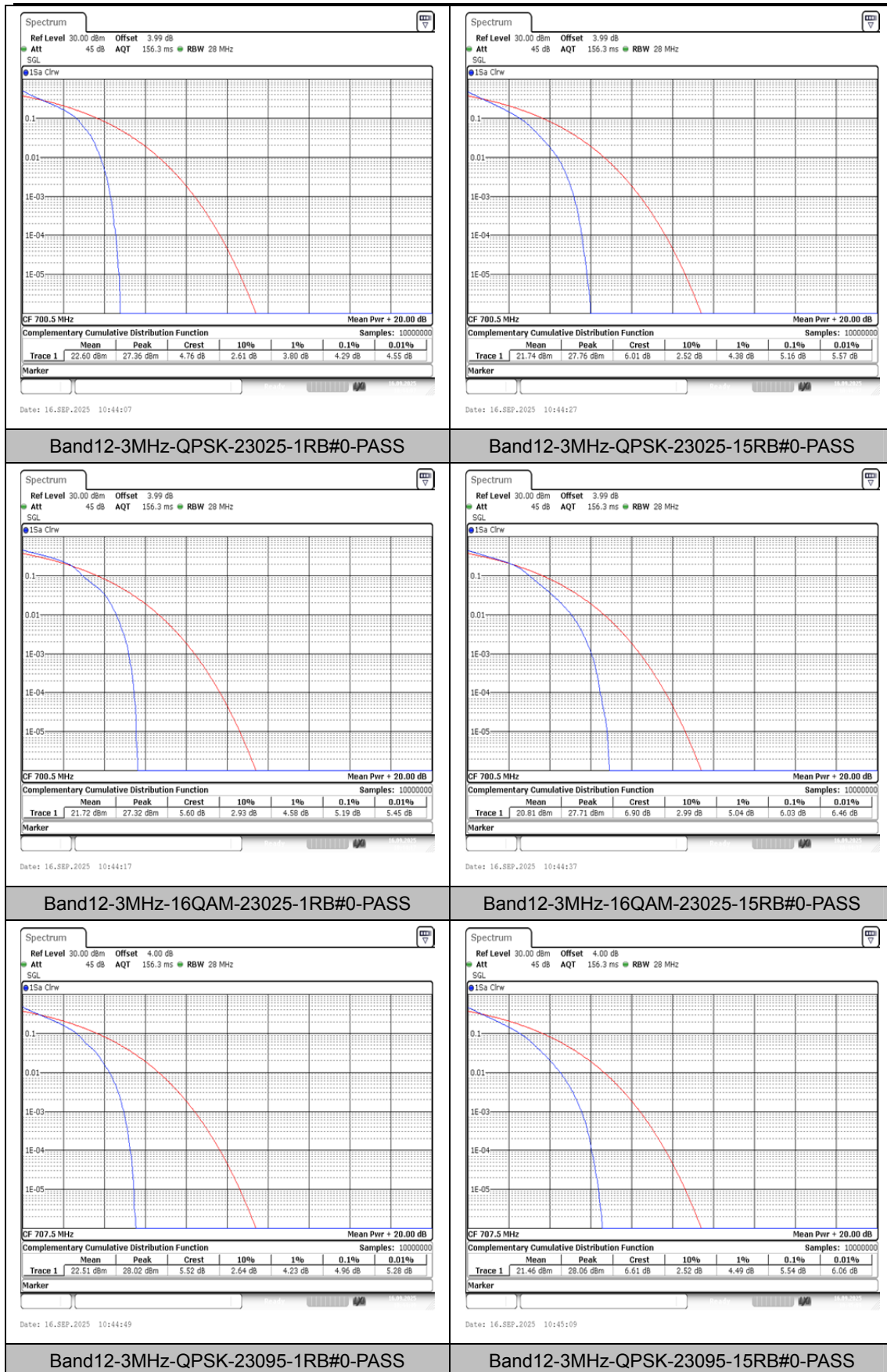
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band12	1.4MHz	QPSK	23017	1RB#0	4.32	13	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	4.99	13	PASS
Band12	1.4MHz	16QAM	23017	1RB#0	5.39	13	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	5.88	13	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	4.87	13	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	5.48	13	PASS
Band12	1.4MHz	16QAM	23095	1RB#0	5.94	13	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	6.32	13	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	4.93	13	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	5.48	13	PASS
Band12	1.4MHz	16QAM	23173	1RB#0	5.80	13	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	6.35	13	PASS
Band12	3MHz	QPSK	23025	1RB#0	4.29	13	PASS
Band12	3MHz	QPSK	23025	15RB#0	5.16	13	PASS
Band12	3MHz	16QAM	23025	1RB#0	5.19	13	PASS
Band12	3MHz	16QAM	23025	15RB#0	6.03	13	PASS
Band12	3MHz	QPSK	23095	1RB#0	4.96	13	PASS
Band12	3MHz	QPSK	23095	15RB#0	5.54	13	PASS
Band12	3MHz	16QAM	23095	1RB#0	5.86	13	PASS
Band12	3MHz	16QAM	23095	15RB#0	6.38	13	PASS
Band12	3MHz	QPSK	23165	1RB#0	4.87	13	PASS
Band12	3MHz	QPSK	23165	15RB#0	5.57	13	PASS
Band12	3MHz	16QAM	23165	1RB#0	5.71	13	PASS
Band12	3MHz	16QAM	23165	15RB#0	6.38	13	PASS
Band12	5MHz	QPSK	23035	1RB#0	4.41	13	PASS
Band12	5MHz	QPSK	23035	25RB#0	5.39	13	PASS
Band12	5MHz	16QAM	23035	1RB#0	5.13	13	PASS
Band12	5MHz	16QAM	23035	25RB#0	6.14	13	PASS
Band12	5MHz	QPSK	23095	1RB#0	5.19	13	PASS
Band12	5MHz	QPSK	23095	25RB#0	5.59	13	PASS
Band12	5MHz	16QAM	23095	1RB#0	5.83	13	PASS
Band12	5MHz	16QAM	23095	25RB#0	6.35	13	PASS
Band12	5MHz	QPSK	23155	1RB#0	4.81	13	PASS
Band12	5MHz	QPSK	23155	25RB#0	5.57	13	PASS
Band12	5MHz	16QAM	23155	1RB#0	5.54	13	PASS
Band12	5MHz	16QAM	23155	25RB#0	6.32	13	PASS

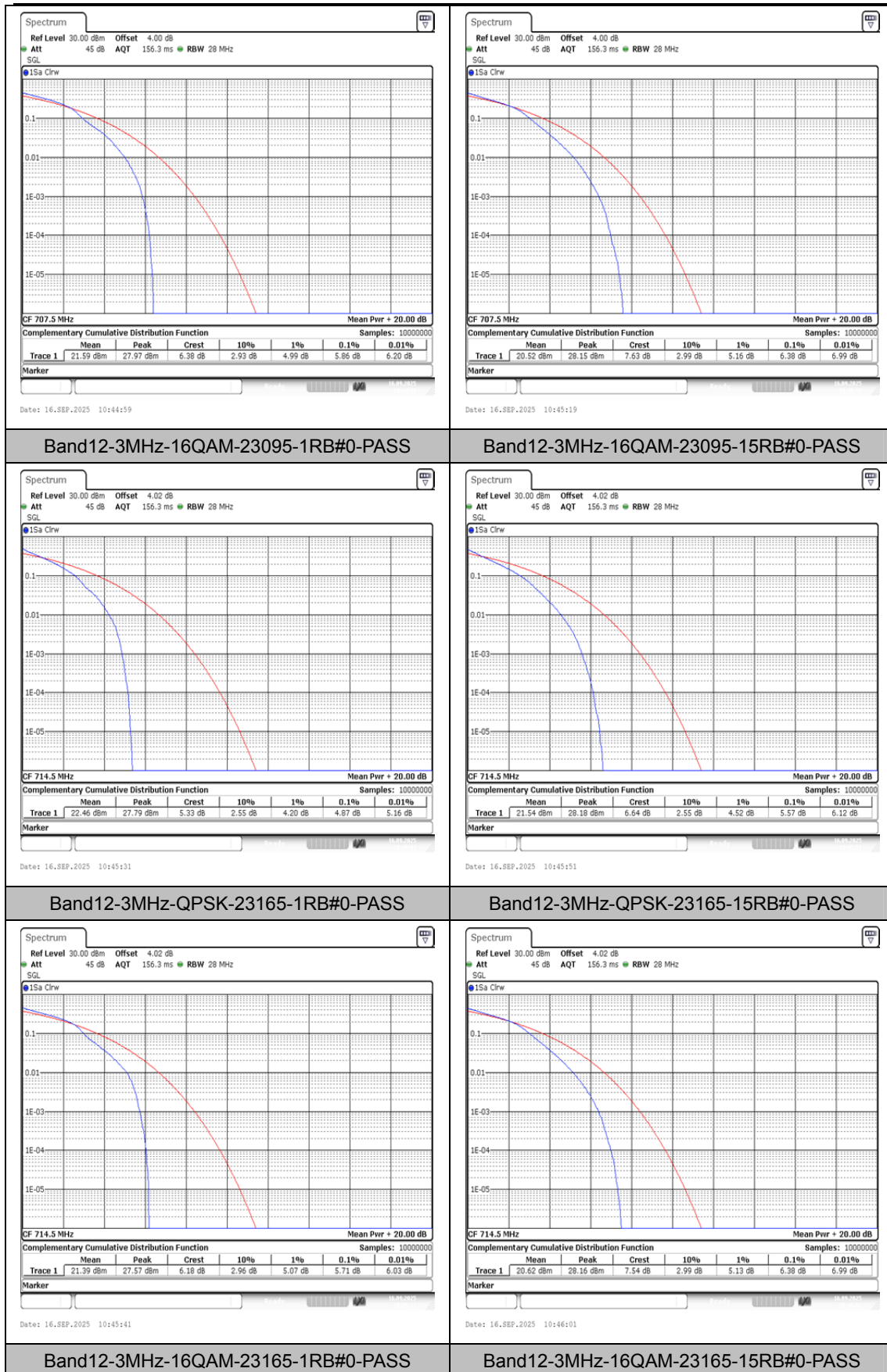
Band12	10MHz	QPSK	23060	1RB#0	4.26	13	PASS
Band12	10MHz	QPSK	23060	50RB#0	5.51	13	PASS
Band12	10MHz	16QAM	23060	1RB#0	5.13	13	PASS
Band12	10MHz	16QAM	23060	50RB#0	6.29	13	PASS
Band12	10MHz	QPSK	23095	1RB#0	4.78	13	PASS
Band12	10MHz	QPSK	23095	50RB#0	5.57	13	PASS
Band12	10MHz	16QAM	23095	1RB#0	5.65	13	PASS
Band12	10MHz	16QAM	23095	50RB#0	6.38	13	PASS
Band12	10MHz	QPSK	23130	1RB#0	4.81	13	PASS
Band12	10MHz	QPSK	23130	50RB#0	5.51	13	PASS
Band12	10MHz	16QAM	23130	1RB#0	6.00	13	PASS
Band12	10MHz	16QAM	23130	50RB#0	6.35	13	PASS

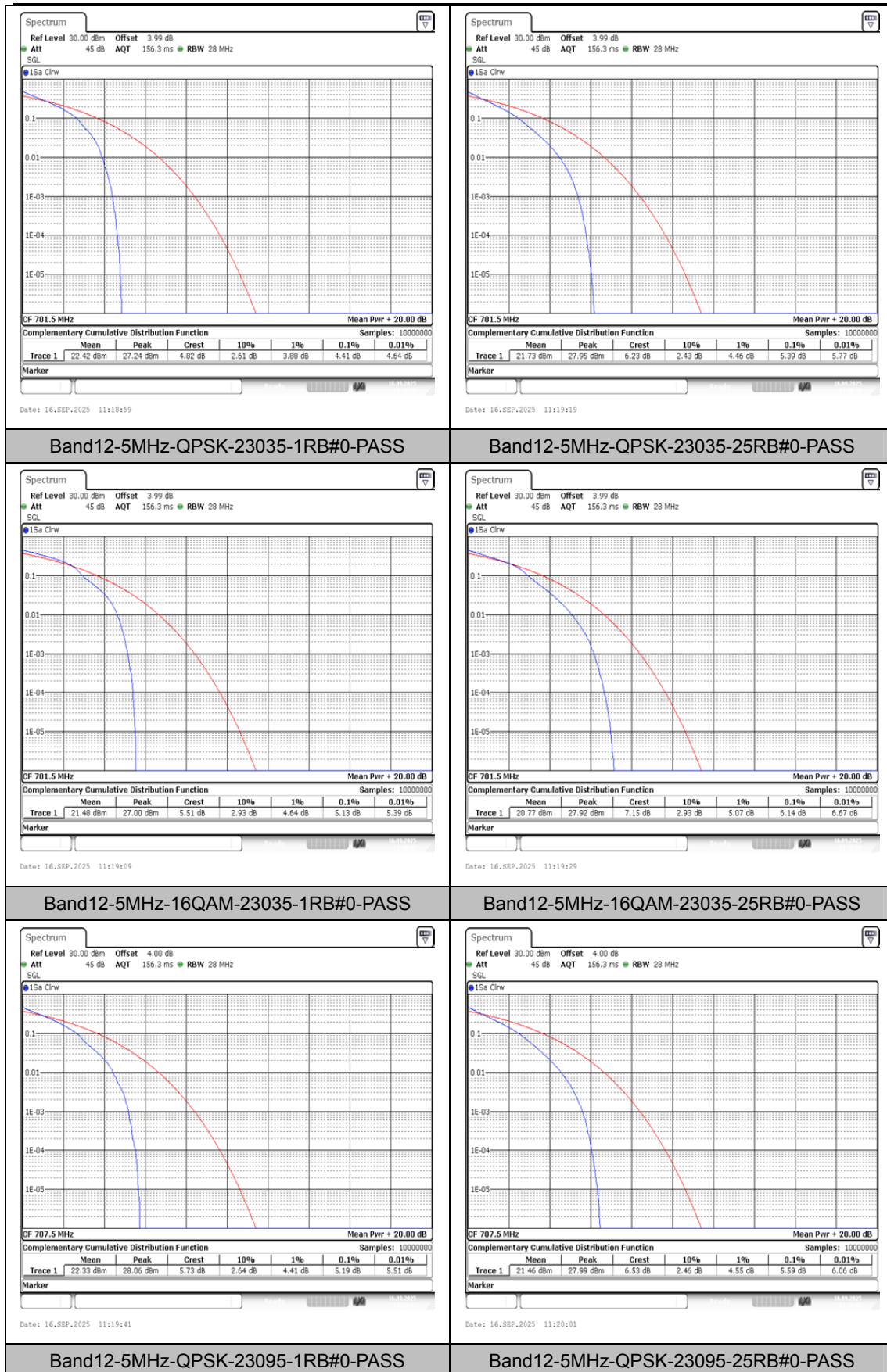
Test Graphs

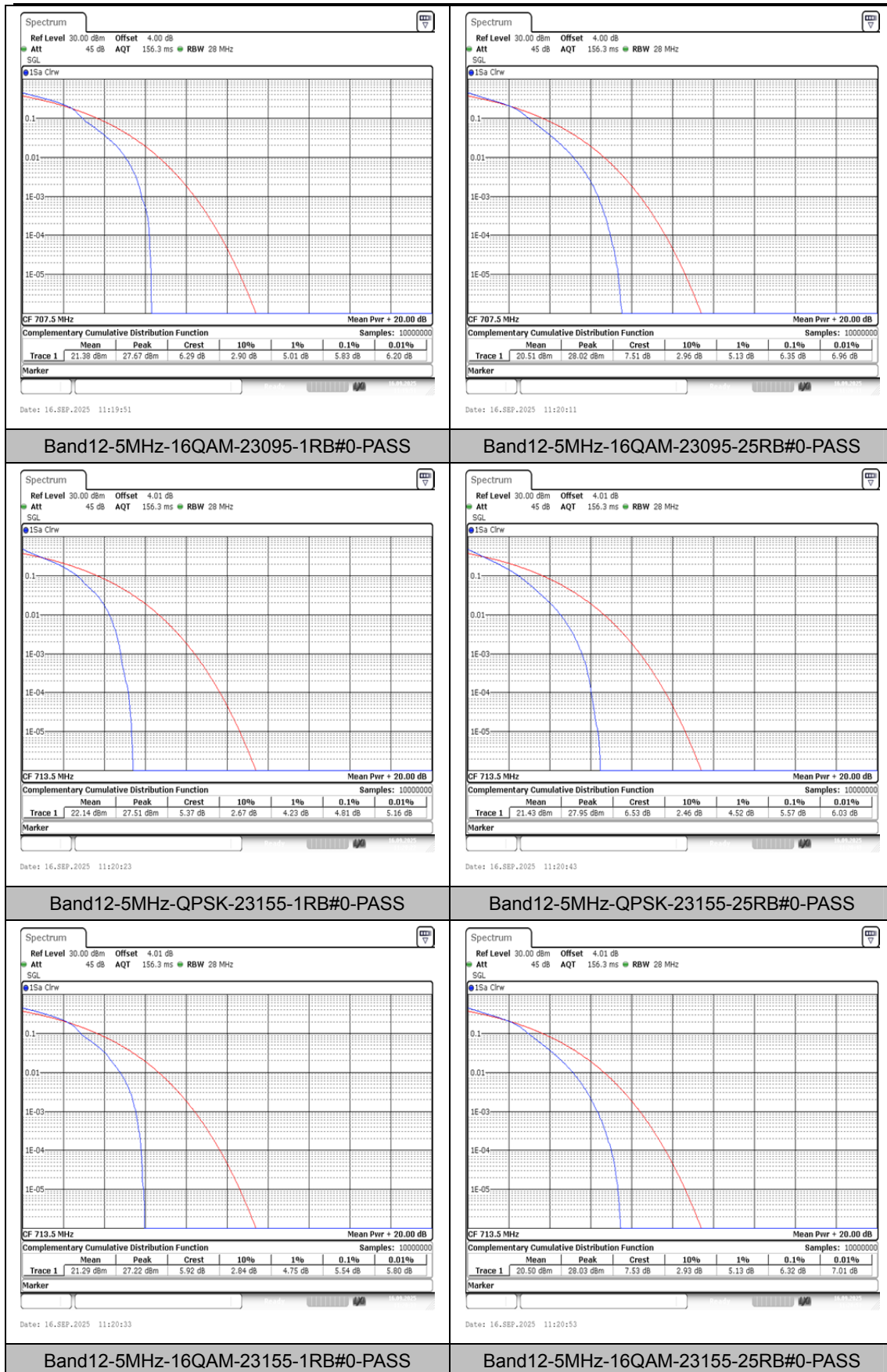


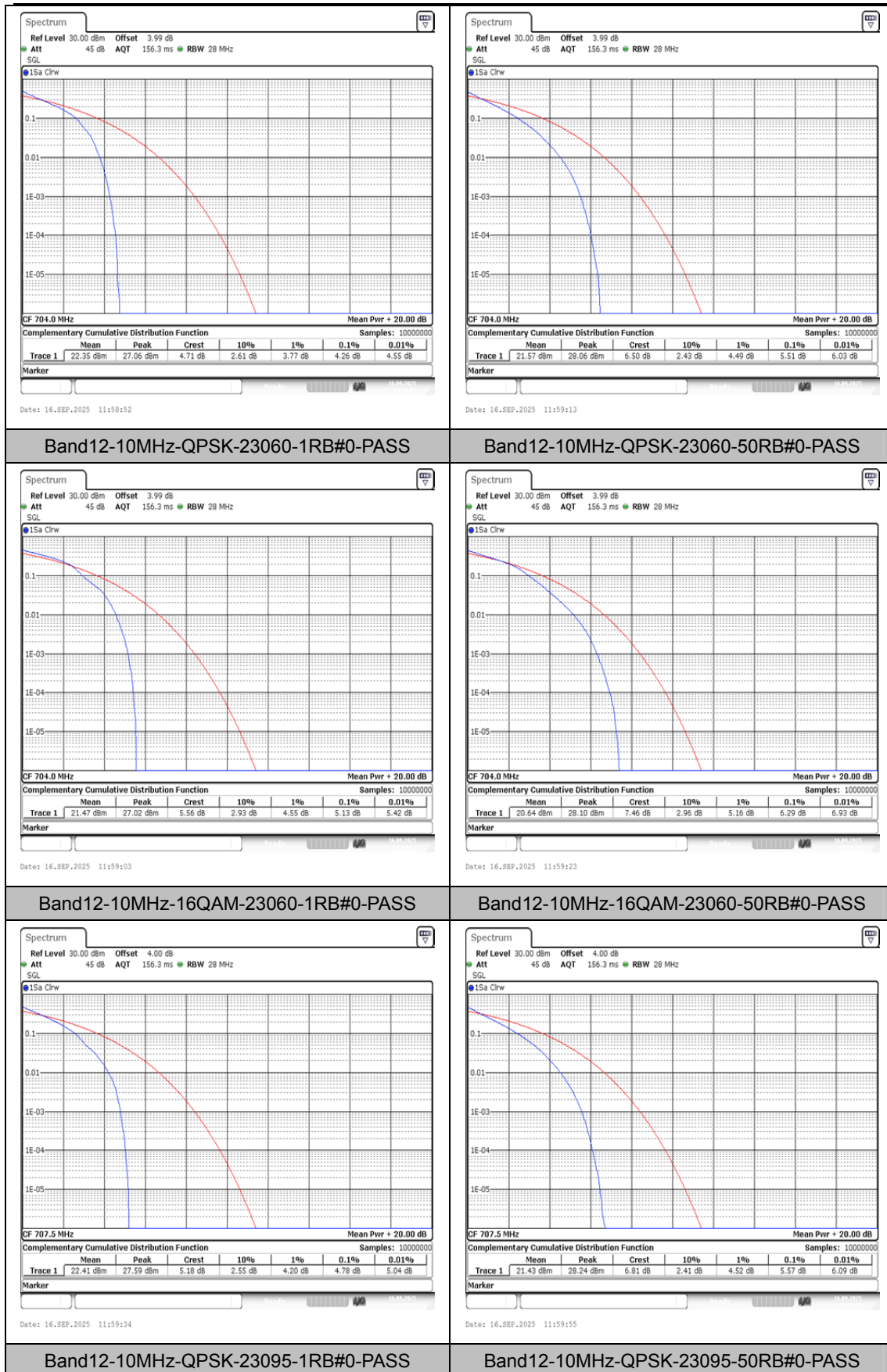


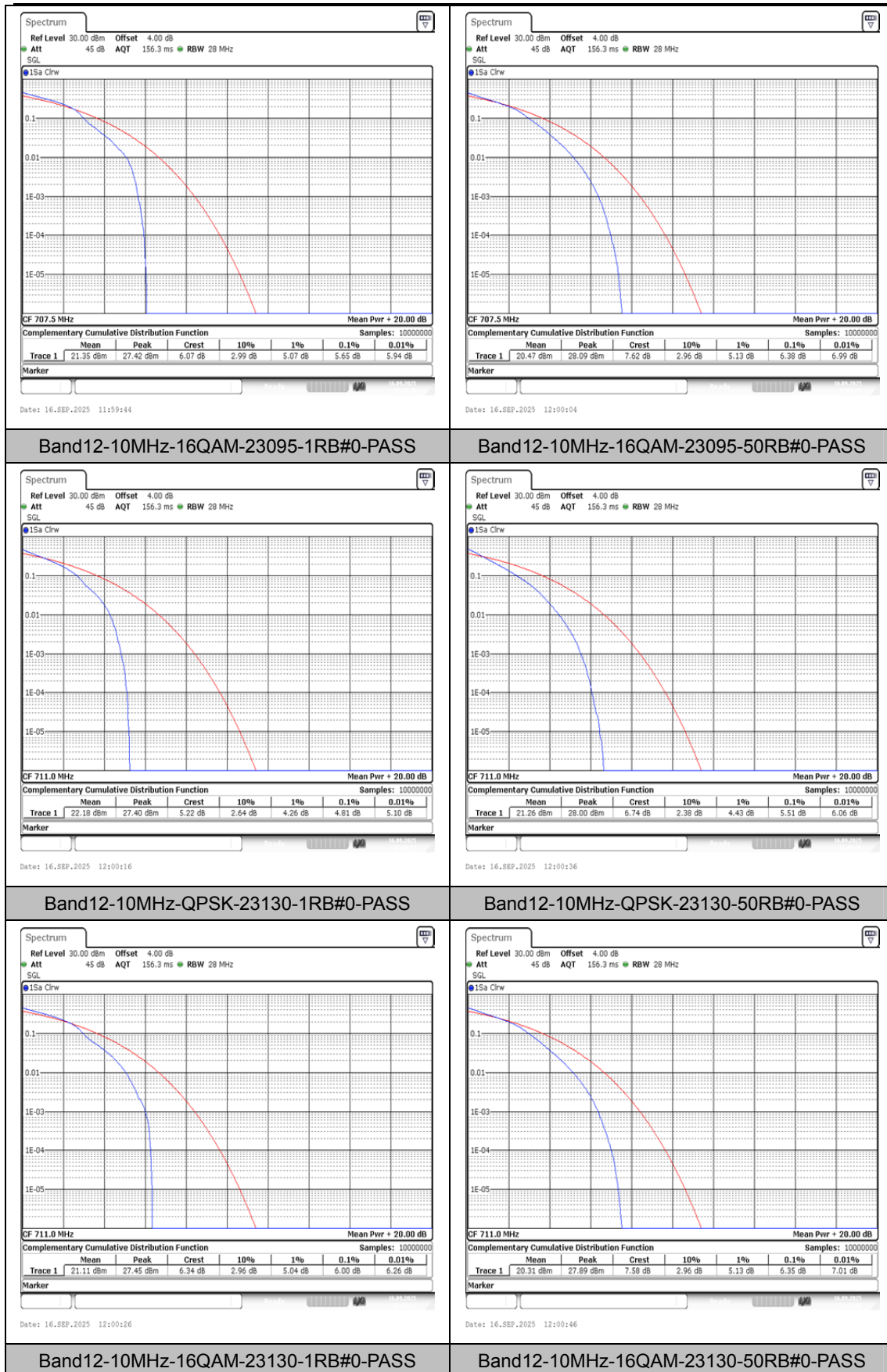












Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	1.093	1.30	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	1.098	1.31	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	1.088	1.30	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	1.093	1.32	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	1.093	1.29	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	1.098	1.29	PASS
Band12	3MHz	QPSK	23025	15RB#0	2.686	2.90	PASS
Band12	3MHz	16QAM	23025	15RB#0	2.676	2.92	PASS
Band12	3MHz	QPSK	23095	15RB#0	2.686	2.94	PASS
Band12	3MHz	16QAM	23095	15RB#0	2.676	2.91	PASS
Band12	3MHz	QPSK	23165	15RB#0	2.686	2.91	PASS
Band12	3MHz	16QAM	23165	15RB#0	2.686	2.92	PASS
Band12	5MHz	QPSK	23035	25RB#0	4.515	5.20	PASS
Band12	5MHz	16QAM	23035	25RB#0	4.515	5.14	PASS
Band12	5MHz	QPSK	23095	25RB#0	4.525	5.23	PASS
Band12	5MHz	16QAM	23095	25RB#0	4.515	5.14	PASS
Band12	5MHz	QPSK	23155	25RB#0	4.515	5.16	PASS
Band12	5MHz	16QAM	23155	25RB#0	4.525	5.23	PASS
Band12	10MHz	QPSK	23060	50RB#0	9.052	10.40	PASS
Band12	10MHz	16QAM	23060	50RB#0	9.018	10.03	PASS
Band12	10MHz	QPSK	23095	50RB#0	9.018	10.20	PASS
Band12	10MHz	16QAM	23095	50RB#0	9.018	10.17	PASS
Band12	10MHz	QPSK	23130	50RB#0	8.985	10.17	PASS
Band12	10MHz	16QAM	23130	50RB#0	8.952	10.03	PASS

Test Graphs

