

Appendix for LTE Band 30

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
Band30	5MHz	QPSK	27685	1RB#0	21.95	PASS
Band30	5MHz	16QAM	27685	1RB#0	21.04	PASS
Band30	5MHz	QPSK	27685	1RB#12	22.08	PASS
Band30	5MHz	16QAM	27685	1RB#12	20.92	PASS
Band30	5MHz	QPSK	27685	1RB#24	21.85	PASS
Band30	5MHz	16QAM	27685	1RB#24	21.14	PASS
Band30	5MHz	QPSK	27685	12RB#0	20.34	PASS
Band30	5MHz	16QAM	27685	12RB#0	19.48	PASS
Band30	5MHz	QPSK	27685	12RB#6	20.37	PASS
Band30	5MHz	16QAM	27685	12RB#6	19.62	PASS
Band30	5MHz	QPSK	27685	12RB#13	20.51	PASS
Band30	5MHz	16QAM	27685	12RB#13	19.55	PASS
Band30	5MHz	QPSK	27685	25RB#0	19.92	PASS
Band30	5MHz	16QAM	27685	25RB#0	18.98	PASS
Band30	5MHz	QPSK	27710	1RB#0	21.87	PASS
Band30	5MHz	16QAM	27710	1RB#0	20.97	PASS
Band30	5MHz	QPSK	27710	1RB#12	21.97	PASS
Band30	5MHz	16QAM	27710	1RB#12	21.15	PASS
Band30	5MHz	QPSK	27710	1RB#24	21.88	PASS
Band30	5MHz	16QAM	27710	1RB#24	21.34	PASS
Band30	5MHz	QPSK	27710	12RB#0	20.45	PASS
Band30	5MHz	16QAM	27710	12RB#0	19.45	PASS
Band30	5MHz	QPSK	27710	12RB#6	20.46	PASS
Band30	5MHz	16QAM	27710	12RB#6	19.62	PASS
Band30	5MHz	QPSK	27710	12RB#13	20.42	PASS
Band30	5MHz	16QAM	27710	12RB#13	19.68	PASS
Band30	5MHz	QPSK	27710	25RB#0	19.91	PASS
Band30	5MHz	16QAM	27710	25RB#0	18.99	PASS
Band30	5MHz	QPSK	27735	1RB#0	22.11	PASS
Band30	5MHz	16QAM	27735	1RB#0	21.30	PASS
Band30	5MHz	QPSK	27735	1RB#12	21.95	PASS
Band30	5MHz	16QAM	27735	1RB#12	21.22	PASS
Band30	5MHz	QPSK	27735	1RB#24	21.79	PASS
Band30	5MHz	16QAM	27735	1RB#24	21.25	PASS
Band30	5MHz	QPSK	27735	12RB#0	20.50	PASS

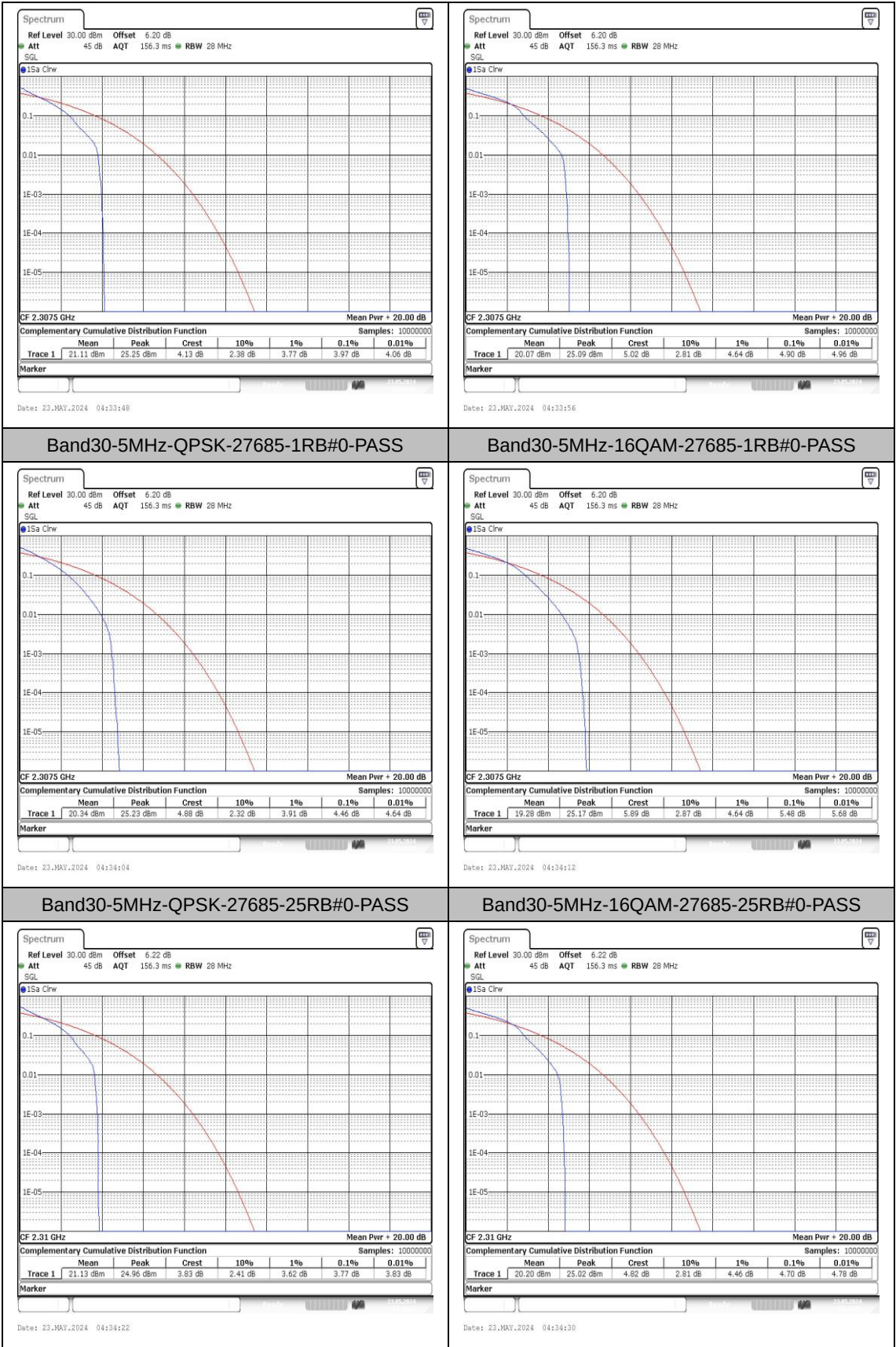
Band30	5MHz	16QAM	27735	12RB#0	19.72	PASS
Band30	5MHz	QPSK	27735	12RB#6	20.50	PASS
Band30	5MHz	16QAM	27735	12RB#6	19.68	PASS
Band30	5MHz	QPSK	27735	12RB#13	20.49	PASS
Band30	5MHz	16QAM	27735	12RB#13	19.66	PASS
Band30	5MHz	QPSK	27735	25RB#0	19.95	PASS
Band30	5MHz	16QAM	27735	25RB#0	19.06	PASS
Band30	10MHz	QPSK	27710	1RB#0	21.83	PASS
Band30	10MHz	16QAM	27710	1RB#0	21.06	PASS
Band30	10MHz	QPSK	27710	1RB#24	21.86	PASS
Band30	10MHz	16QAM	27710	1RB#24	20.95	PASS
Band30	10MHz	QPSK	27710	1RB#49	21.84	PASS
Band30	10MHz	16QAM	27710	1RB#49	21.04	PASS
Band30	10MHz	QPSK	27710	25RB#0	19.93	PASS
Band30	10MHz	16QAM	27710	25RB#0	18.96	PASS
Band30	10MHz	QPSK	27710	25RB#12	19.88	PASS
Band30	10MHz	16QAM	27710	25RB#12	18.97	PASS
Band30	10MHz	QPSK	27710	25RB#25	19.86	PASS
Band30	10MHz	16QAM	27710	25RB#25	19.01	PASS
Band30	10MHz	QPSK	27710	50RB#0	19.46	PASS
Band30	10MHz	16QAM	27710	50RB#0	19.48	PASS

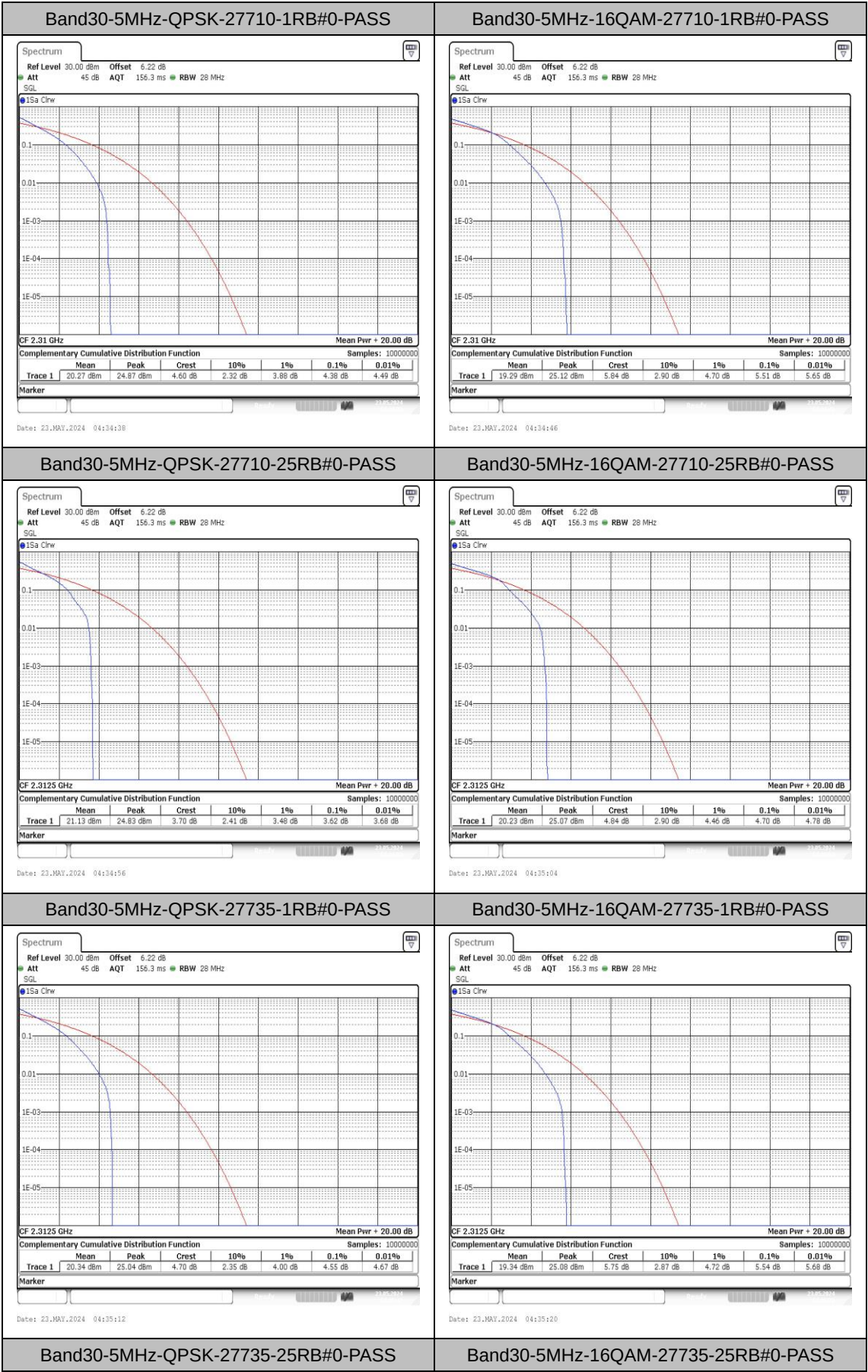
Appendix B: Peak-to-Average Ratio(CCDF)

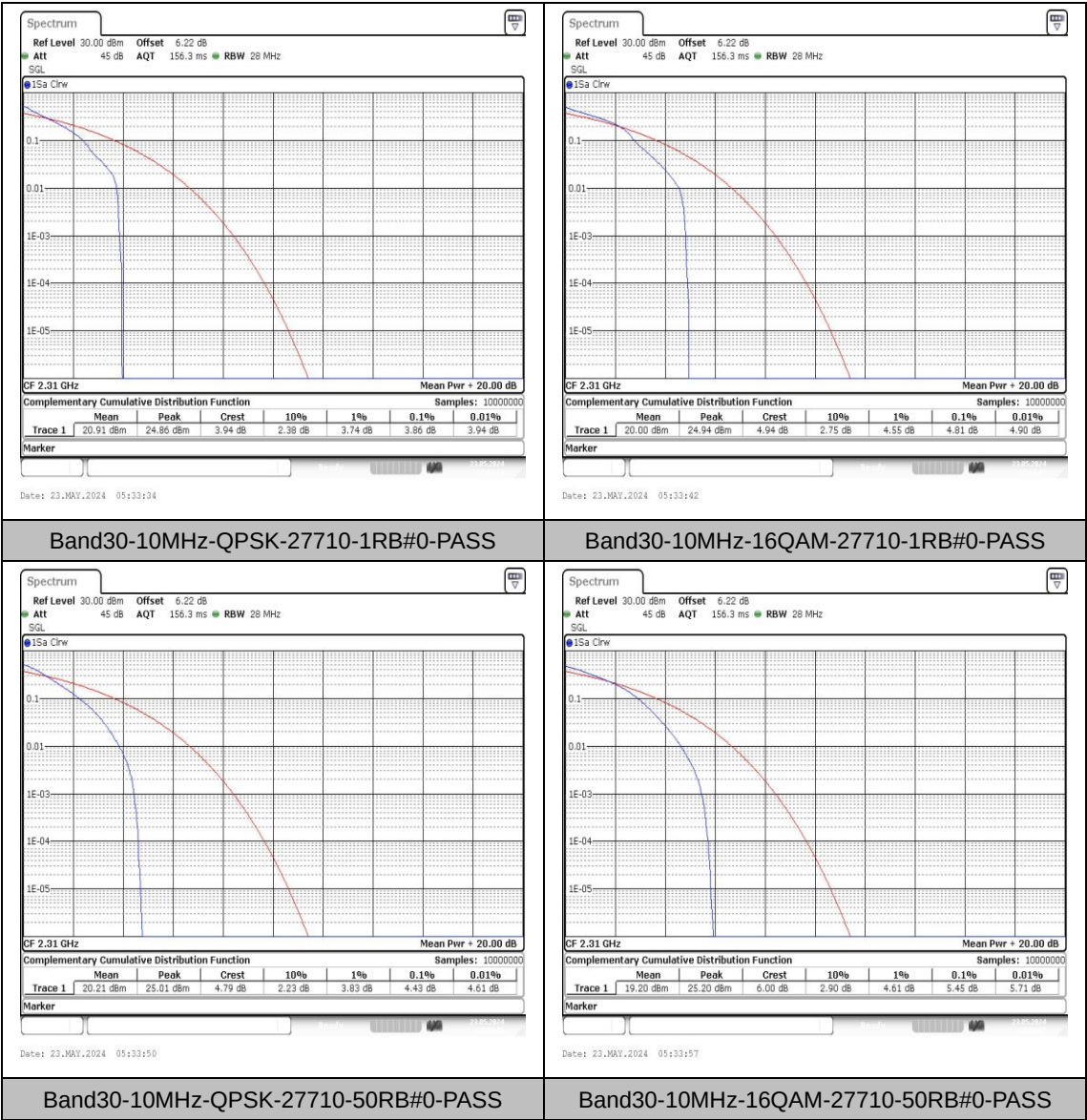
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band30	5MHz	QPSK	27685	1RB#0	3.97	13	PASS
Band30	5MHz	16QAM	27685	1RB#0	4.90	13	PASS
Band30	5MHz	QPSK	27685	25RB#0	4.46	13	PASS
Band30	5MHz	16QAM	27685	25RB#0	5.48	13	PASS
Band30	5MHz	QPSK	27710	1RB#0	3.77	13	PASS
Band30	5MHz	16QAM	27710	1RB#0	4.70	13	PASS
Band30	5MHz	QPSK	27710	25RB#0	4.38	13	PASS
Band30	5MHz	16QAM	27710	25RB#0	5.51	13	PASS
Band30	5MHz	QPSK	27735	1RB#0	3.62	13	PASS
Band30	5MHz	16QAM	27735	1RB#0	4.70	13	PASS
Band30	5MHz	QPSK	27735	25RB#0	4.55	13	PASS
Band30	5MHz	16QAM	27735	25RB#0	5.54	13	PASS
Band30	10MHz	QPSK	27710	1RB#0	3.86	13	PASS
Band30	10MHz	16QAM	27710	1RB#0	4.81	13	PASS
Band30	10MHz	QPSK	27710	50RB#0	4.43	13	PASS
Band30	10MHz	16QAM	27710	50RB#0	5.45	13	PASS

Test Graphs





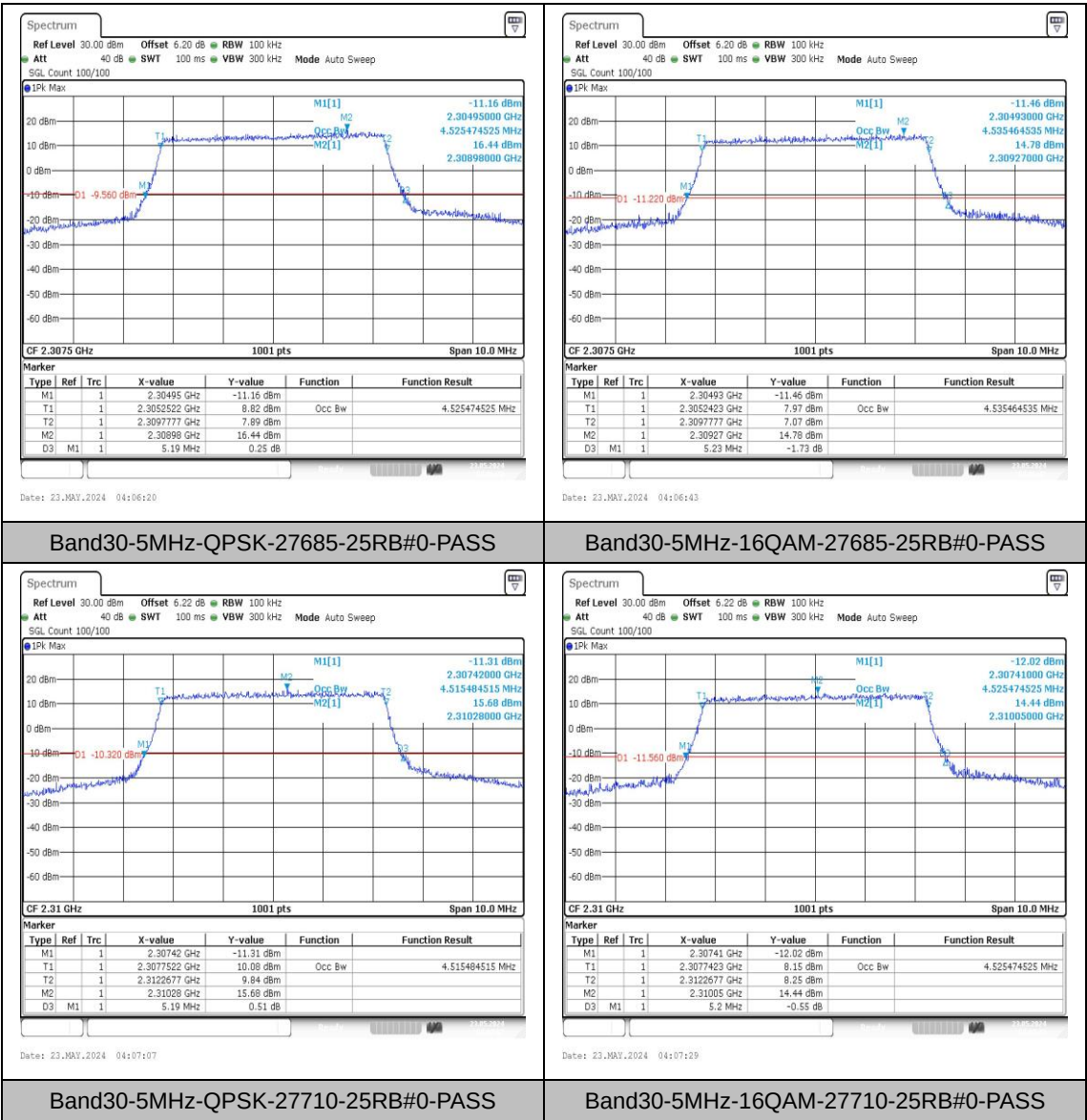


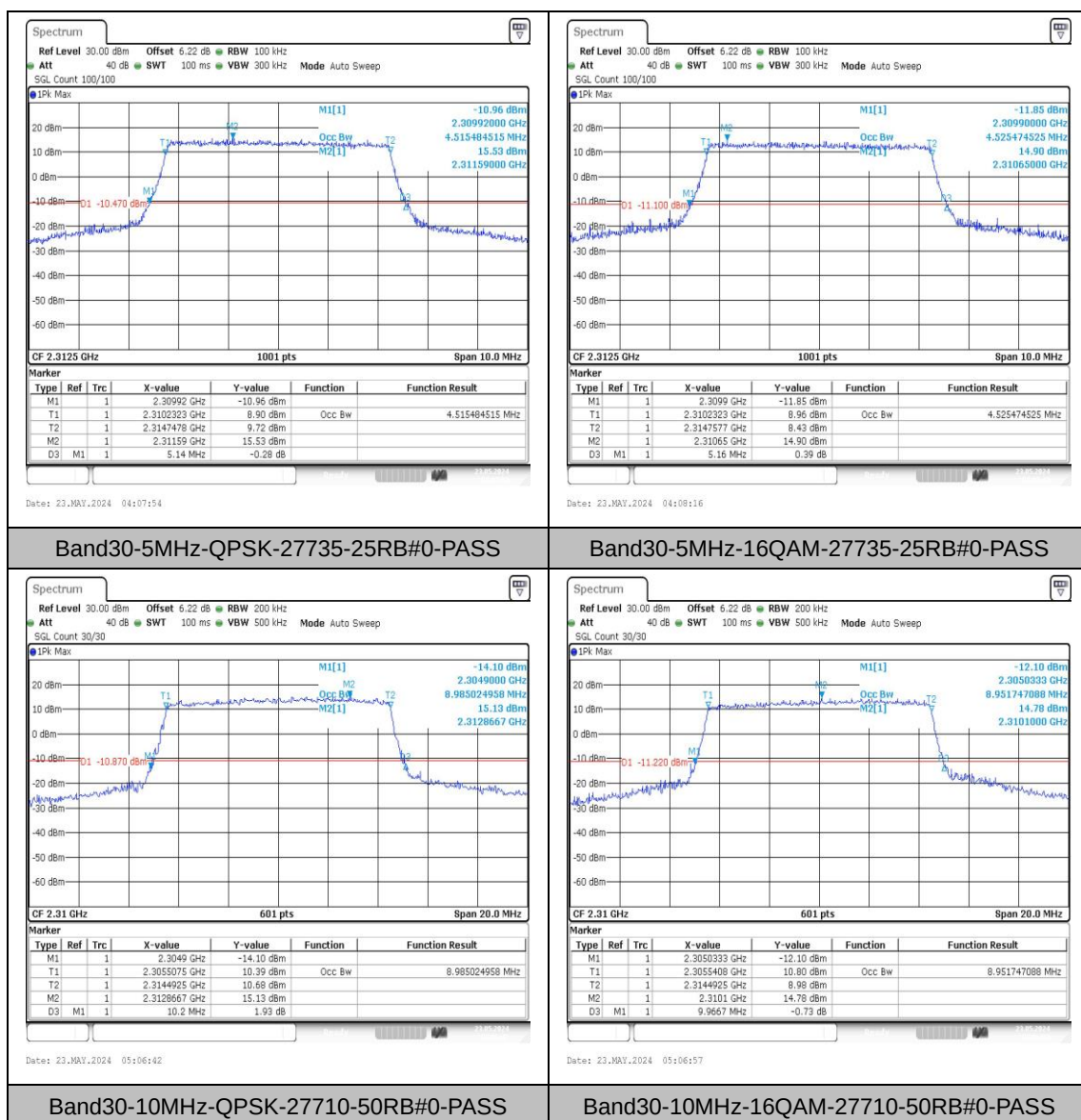
Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band30	5MHz	QPSK	27685	25RB#0	4.525	5.19	PASS
Band30	5MHz	16QAM	27685	25RB#0	4.535	5.23	PASS
Band30	5MHz	QPSK	27710	25RB#0	4.515	5.19	PASS
Band30	5MHz	16QAM	27710	25RB#0	4.525	5.20	PASS
Band30	5MHz	QPSK	27735	25RB#0	4.515	5.14	PASS
Band30	5MHz	16QAM	27735	25RB#0	4.525	5.16	PASS
Band30	10MHz	QPSK	27710	50RB#0	8.985	10.20	PASS
Band30	10MHz	16QAM	27710	50RB#0	8.952	9.97	PASS

Test Graphs



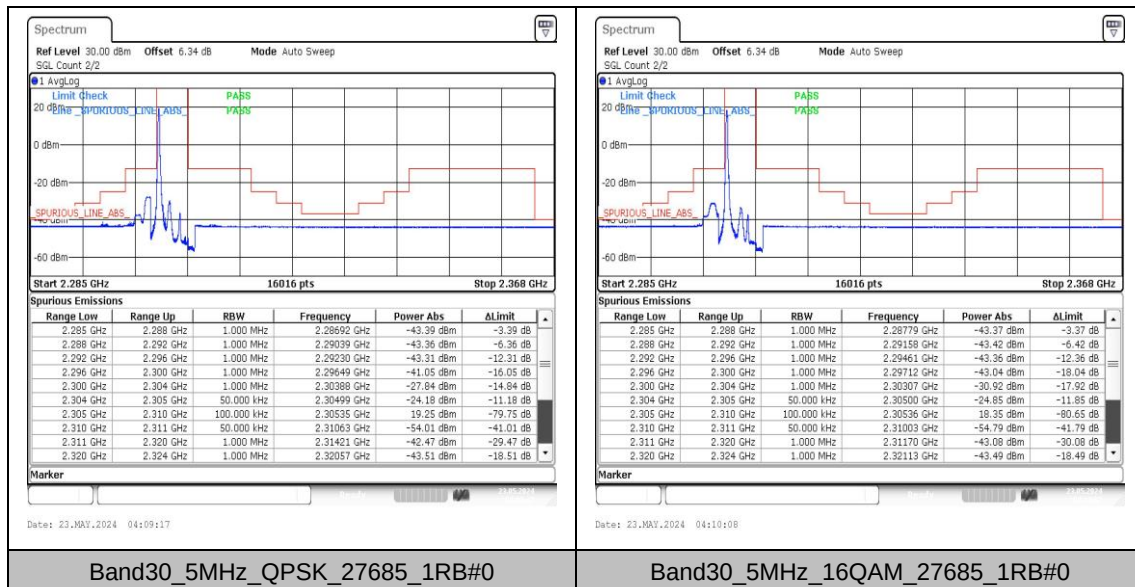


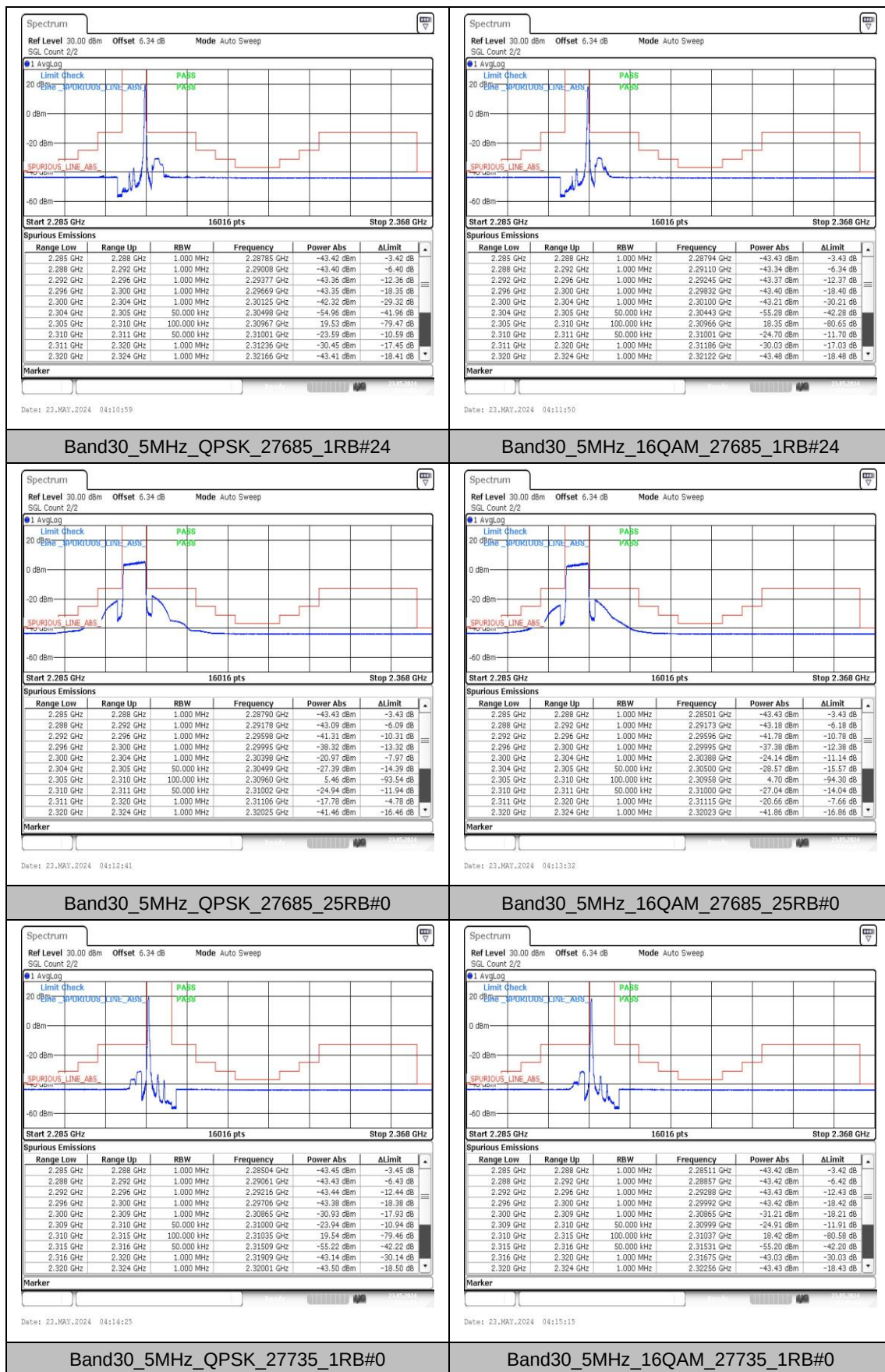
Appendix D: Band Edge

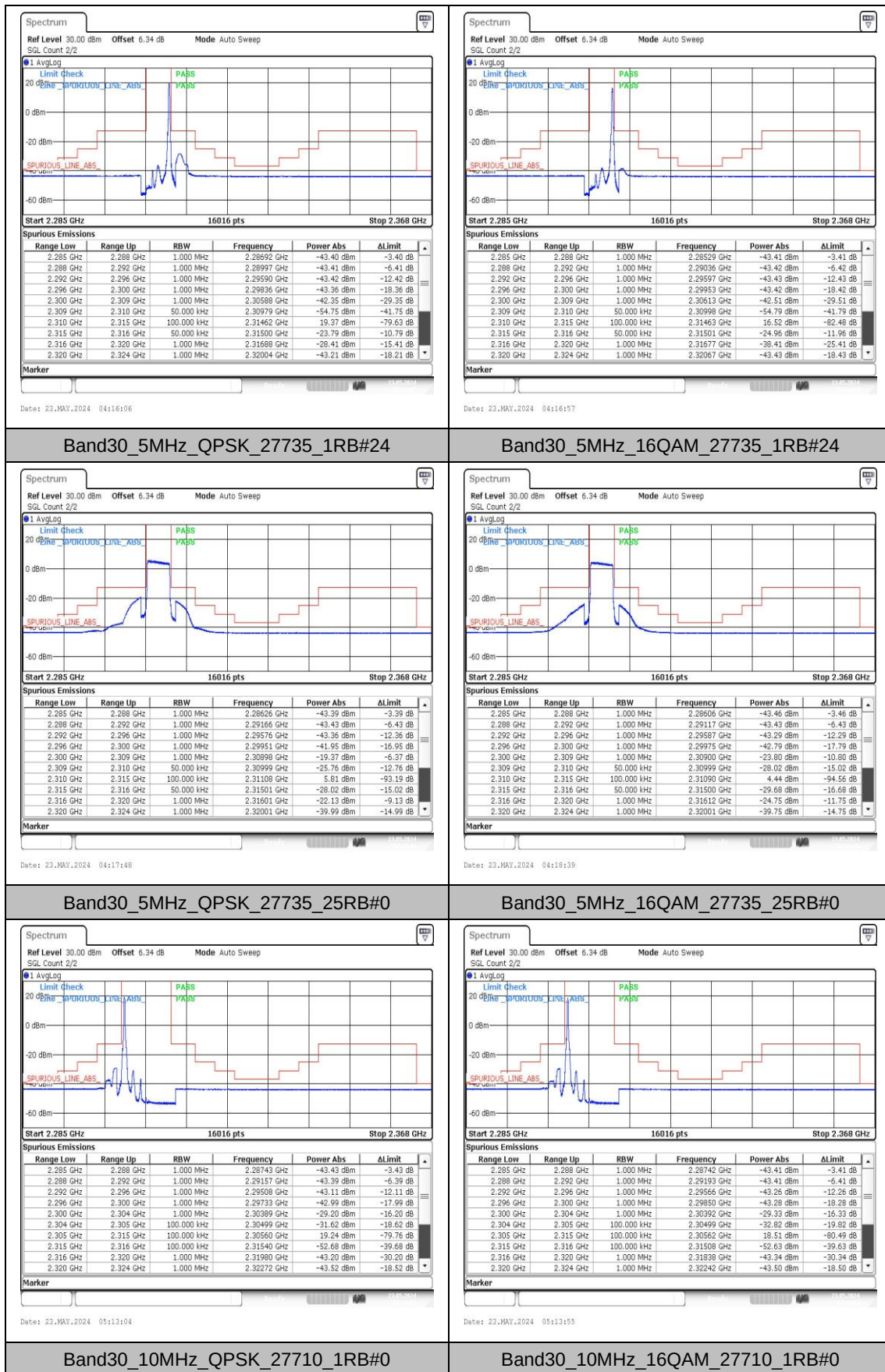
Test Result

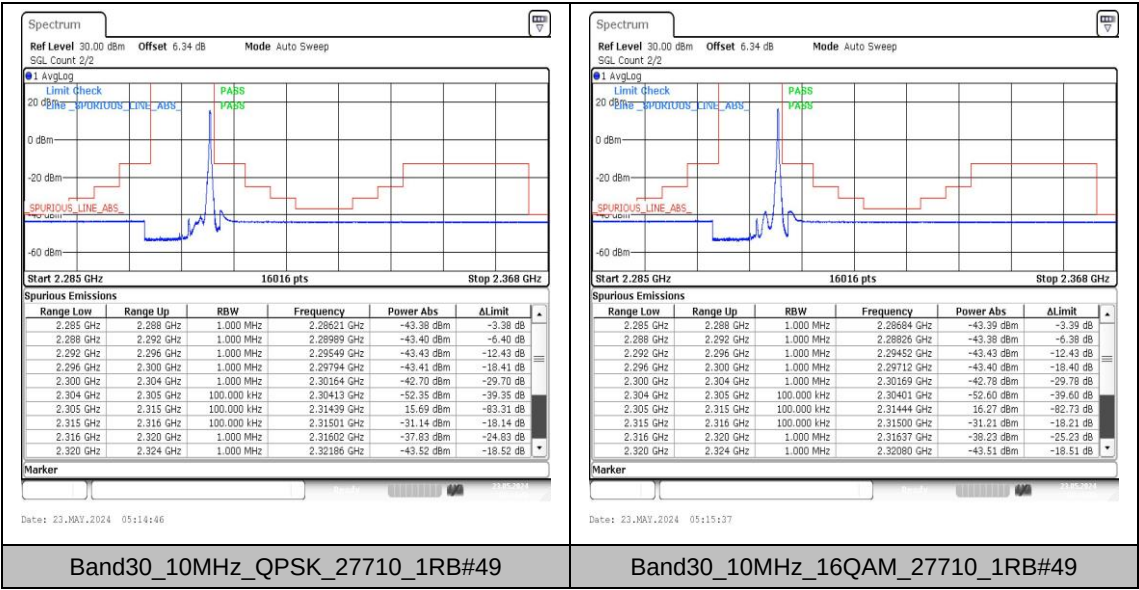
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band30	5MHz	QPSK	27685	1RB#0	-43.39	PASS
Band30	5MHz	16QAM	27685	1RB#0	-43.37	PASS
Band30	5MHz	QPSK	27685	1RB#24	-43.42	PASS
Band30	5MHz	16QAM	27685	1RB#24	-43.43	PASS
Band30	5MHz	QPSK	27685	25RB#0	-43.43	PASS
Band30	5MHz	16QAM	27685	25RB#0	-43.43	PASS
Band30	5MHz	QPSK	27735	1RB#0	-43.45	PASS
Band30	5MHz	16QAM	27735	1RB#0	-43.42	PASS
Band30	5MHz	QPSK	27735	1RB#24	-43.40	PASS
Band30	5MHz	16QAM	27735	1RB#24	-43.41	PASS
Band30	5MHz	QPSK	27735	25RB#0	-43.39	PASS
Band30	5MHz	16QAM	27735	25RB#0	-43.46	PASS
Band30	10MHz	QPSK	27710	1RB#0	-43.43	PASS
Band30	10MHz	16QAM	27710	1RB#0	-43.41	PASS
Band30	10MHz	QPSK	27710	1RB#49	-43.38	PASS
Band30	10MHz	16QAM	27710	1RB#49	-43.39	PASS

Test Graphs









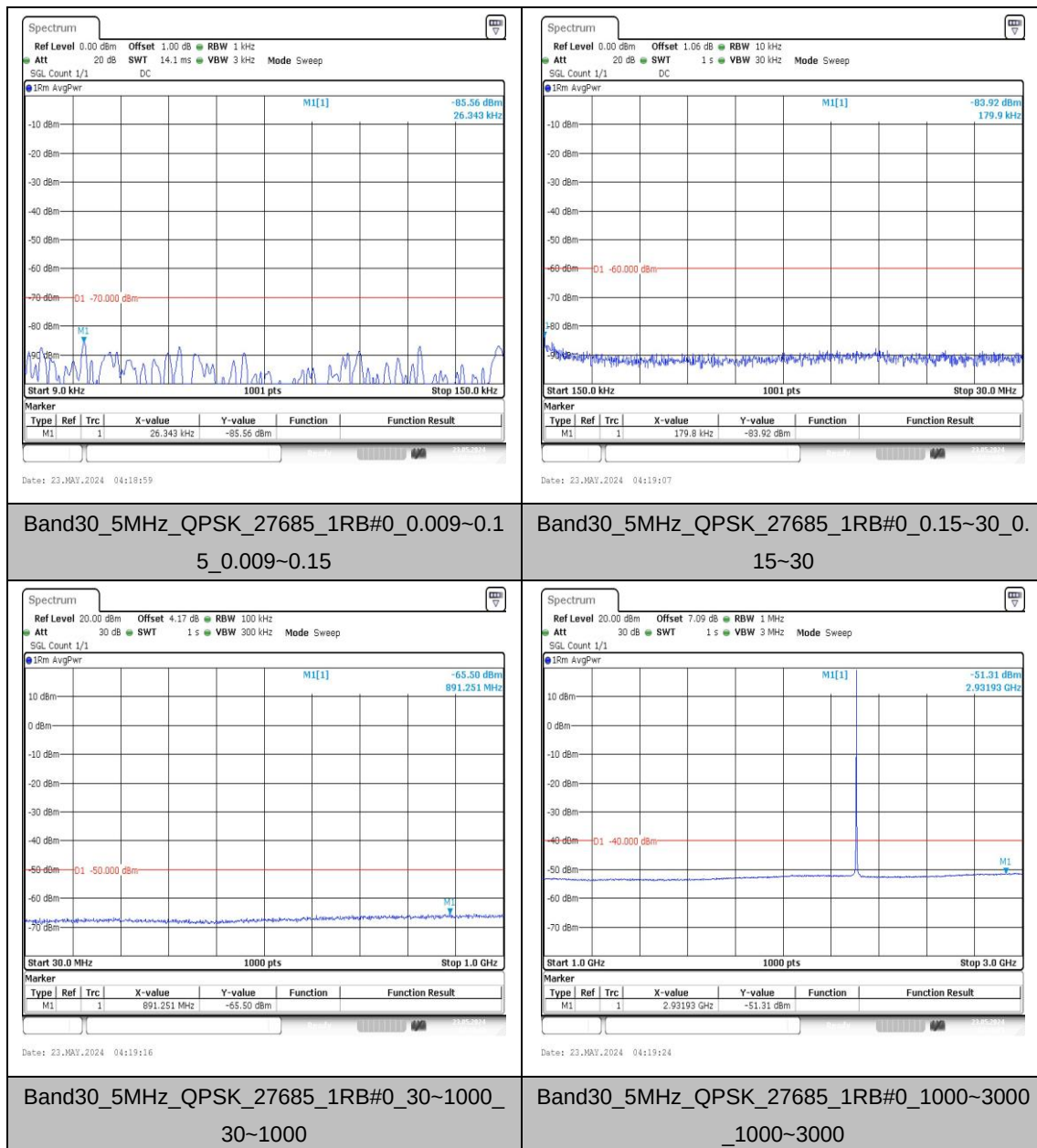
Appendix E: Conducted Spurious Emission

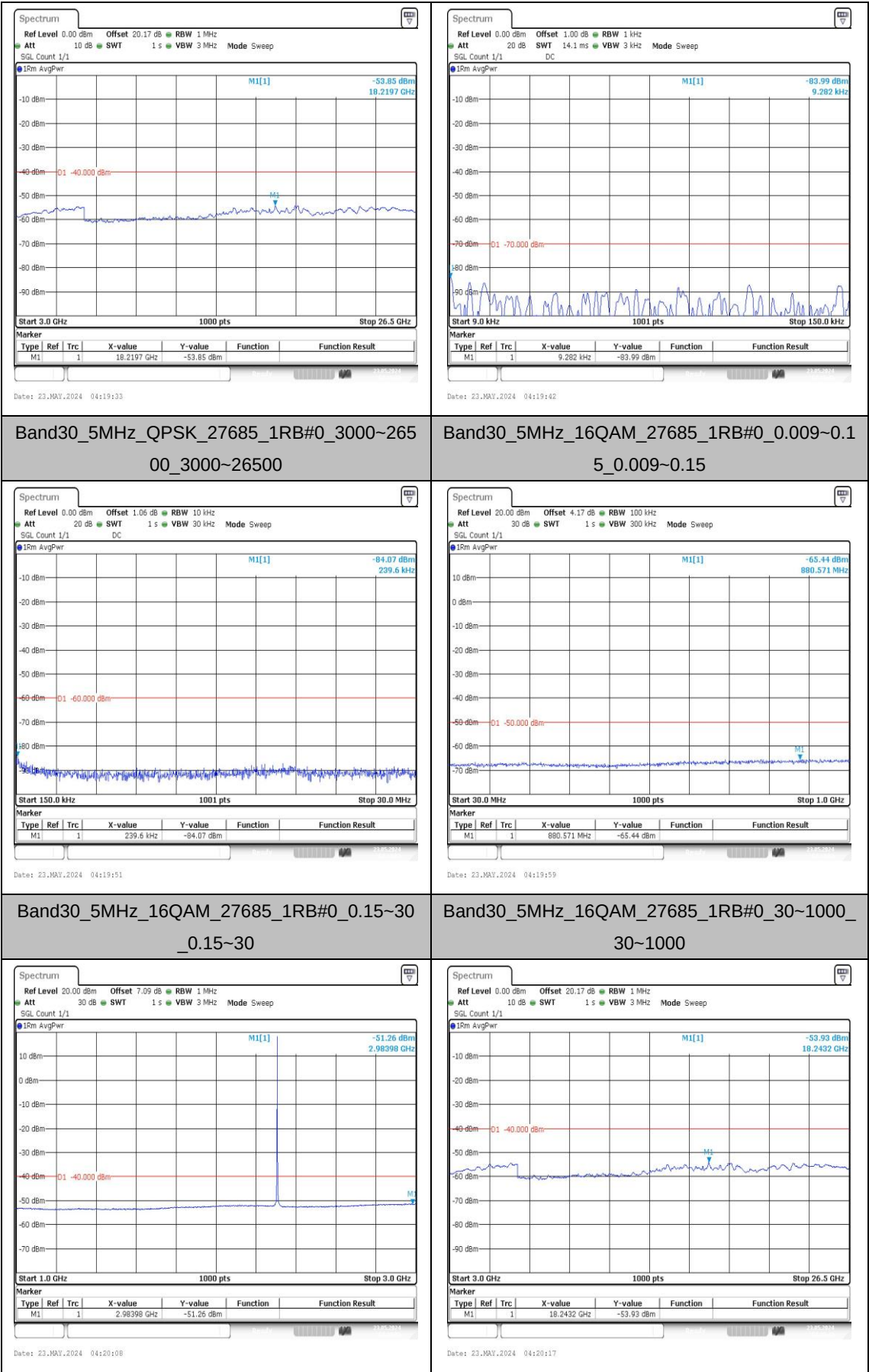
Test Result

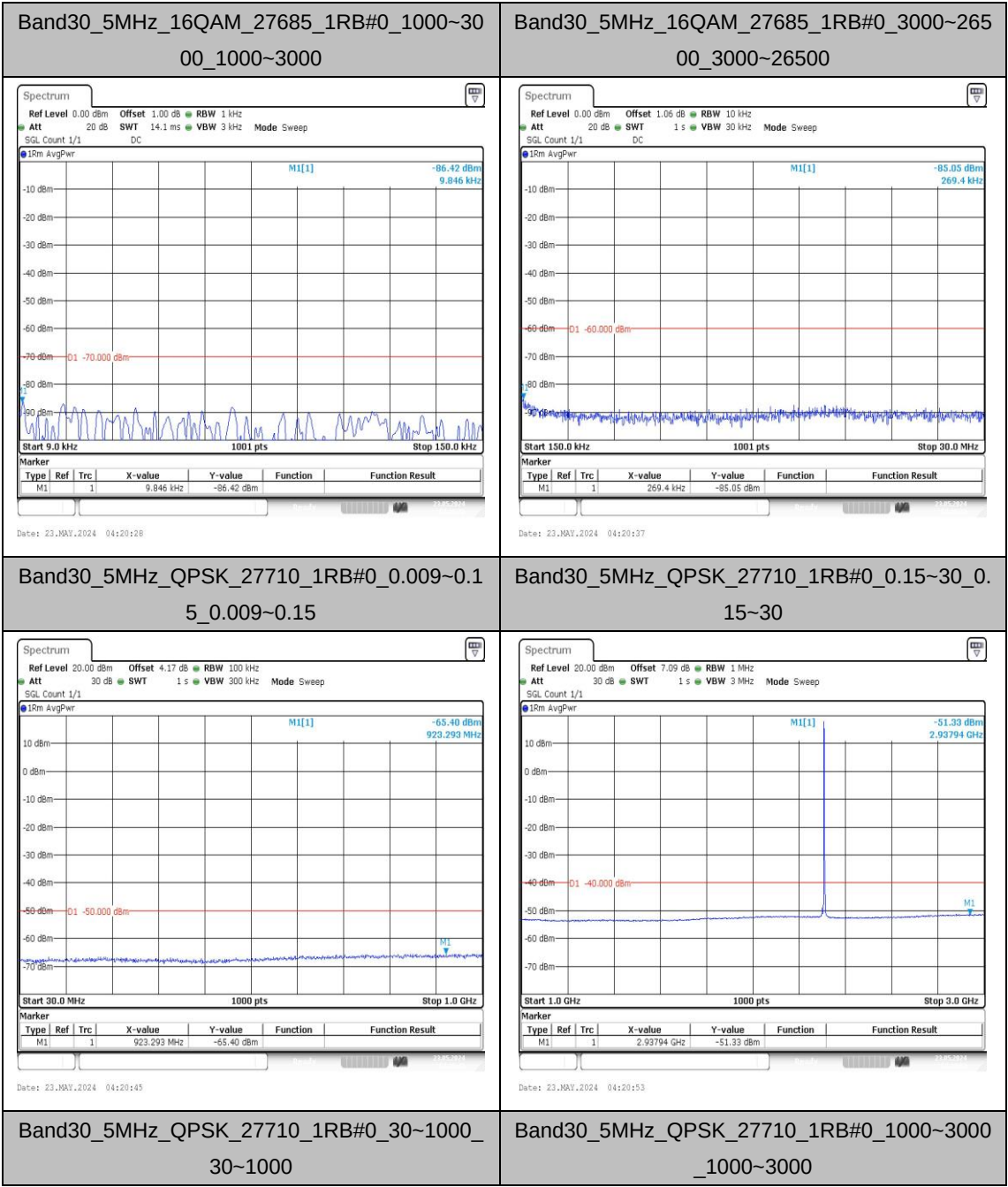
Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band30	5MHz	QPSK	27685	1RB#0	0.009~0.15	-85.56	PASS
Band30	5MHz	QPSK	27685	1RB#0	0.15~30	-83.92	PASS
Band30	5MHz	QPSK	27685	1RB#0	30~1000	-65.50	PASS
Band30	5MHz	QPSK	27685	1RB#0	1000~3000	-51.31	PASS
Band30	5MHz	QPSK	27685	1RB#0	3000~26500	-53.85	PASS
Band30	5MHz	16QAM	27685	1RB#0	0.009~0.15	-83.99	PASS
Band30	5MHz	16QAM	27685	1RB#0	0.15~30	-84.07	PASS
Band30	5MHz	16QAM	27685	1RB#0	30~1000	-65.44	PASS
Band30	5MHz	16QAM	27685	1RB#0	1000~3000	-51.26	PASS
Band30	5MHz	16QAM	27685	1RB#0	3000~26500	-53.93	PASS
Band30	5MHz	QPSK	27710	1RB#0	0.009~0.15	-86.42	PASS
Band30	5MHz	QPSK	27710	1RB#0	0.15~30	-85.05	PASS
Band30	5MHz	QPSK	27710	1RB#0	30~1000	-65.40	PASS
Band30	5MHz	QPSK	27710	1RB#0	1000~3000	-51.33	PASS
Band30	5MHz	QPSK	27710	1RB#0	3000~26500	-53.74	PASS
Band30	5MHz	16QAM	27710	1RB#0	0.009~0.15	-84.61	PASS
Band30	5MHz	16QAM	27710	1RB#0	0.15~30	-85.21	PASS
Band30	5MHz	16QAM	27710	1RB#0	30~1000	-65.49	PASS
Band30	5MHz	16QAM	27710	1RB#0	1000~3000	-51.37	PASS
Band30	5MHz	16QAM	27710	1RB#0	3000~26500	-53.94	PASS
Band30	5MHz	QPSK	27735	1RB#0	0.009~0.15	-84.15	PASS
Band30	5MHz	QPSK	27735	1RB#0	0.15~30	-84.62	PASS
Band30	5MHz	QPSK	27735	1RB#0	30~1000	-65.58	PASS
Band30	5MHz	QPSK	27735	1RB#0	1000~3000	-51.29	PASS
Band30	5MHz	QPSK	27735	1RB#0	3000~26500	-53.93	PASS
Band30	5MHz	16QAM	27735	1RB#0	0.009~0.15	-85.92	PASS
Band30	5MHz	16QAM	27735	1RB#0	0.15~30	-85.16	PASS
Band30	5MHz	16QAM	27735	1RB#0	30~1000	-65.09	PASS
Band30	5MHz	16QAM	27735	1RB#0	1000~3000	-51.29	PASS
Band30	5MHz	16QAM	27735	1RB#0	3000~26500	-53.85	PASS
Band30	10MHz	QPSK	27710	1RB#0	0.009~0.15	-86.08	PASS
Band30	10MHz	QPSK	27710	1RB#0	0.15~30	-84.85	PASS
Band30	10MHz	QPSK	27710	1RB#0	30~1000	-65.33	PASS
Band30	10MHz	QPSK	27710	1RB#0	1000~3000	-51.34	PASS
Band30	10MHz	QPSK	27710	1RB#0	3000~26500	-53.96	PASS

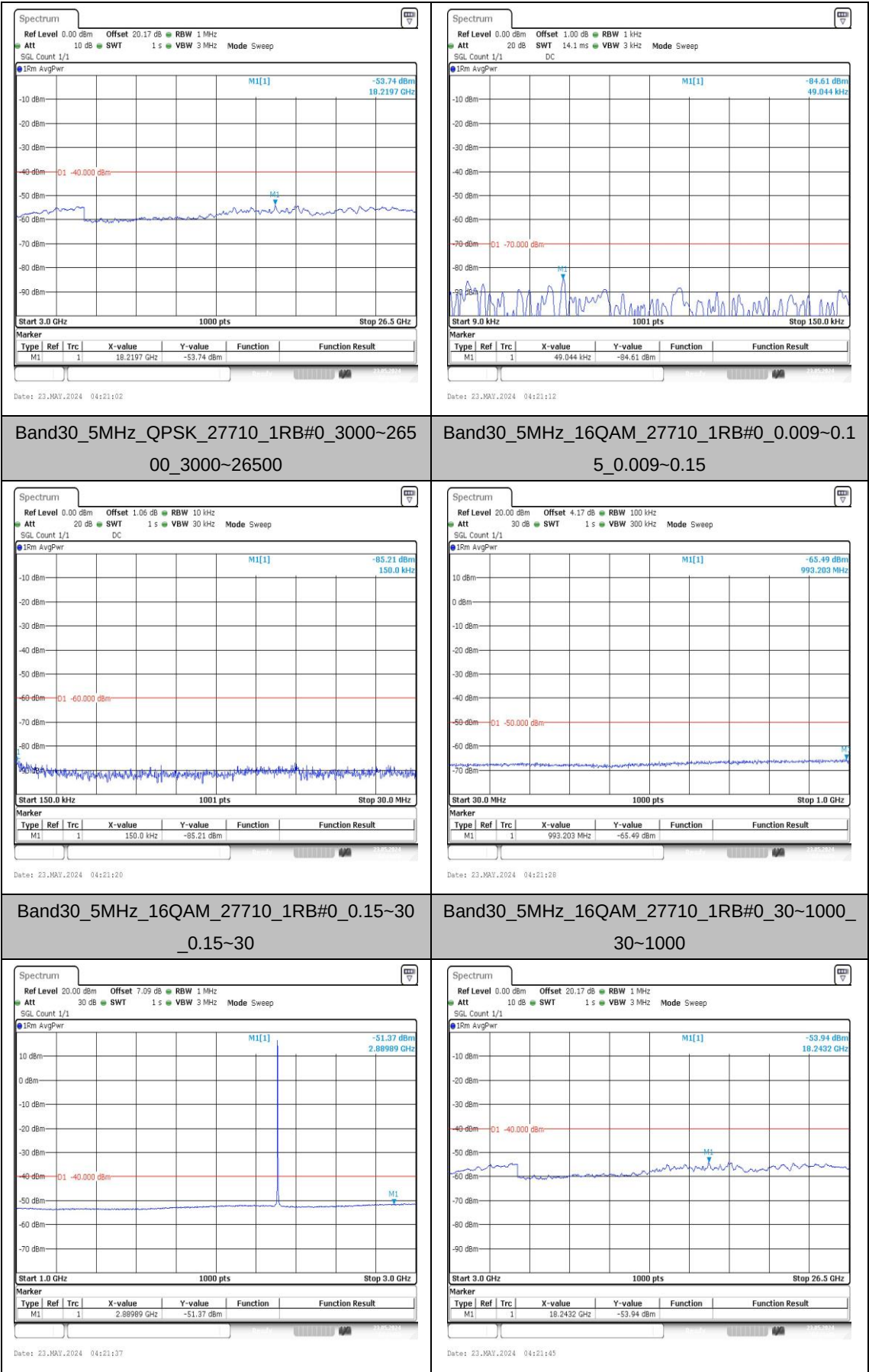
Band30	10MHz	16QAM	27710	1RB#0	0.009~0.15	-84.66	PASS
Band30	10MHz	16QAM	27710	1RB#0	0.15~30	-84.24	PASS
Band30	10MHz	16QAM	27710	1RB#0	30~1000	-65.49	PASS
Band30	10MHz	16QAM	27710	1RB#0	1000~3000	-51.29	PASS
Band30	10MHz	16QAM	27710	1RB#0	3000~26500	-53.72	PASS

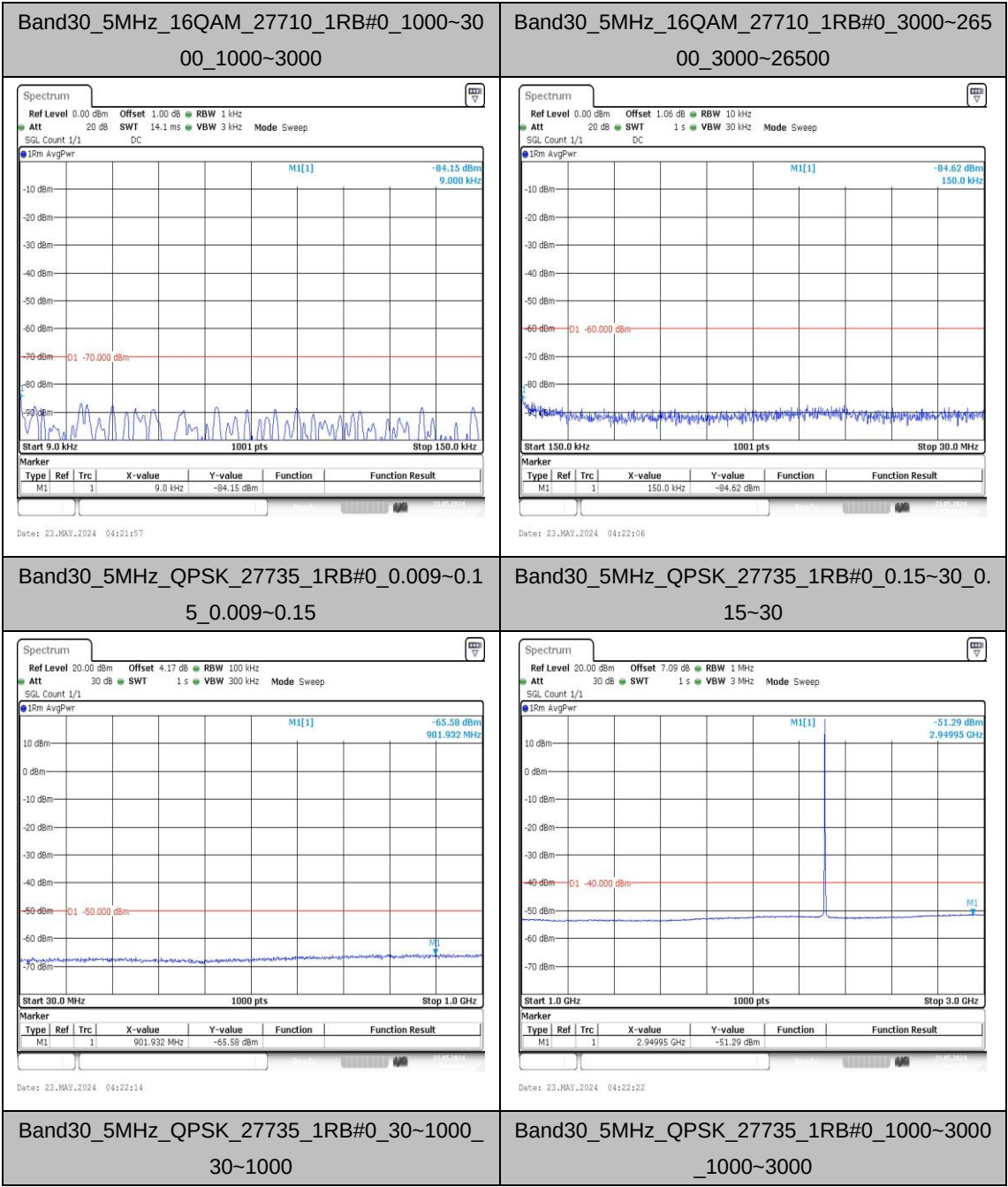
Test Graphs

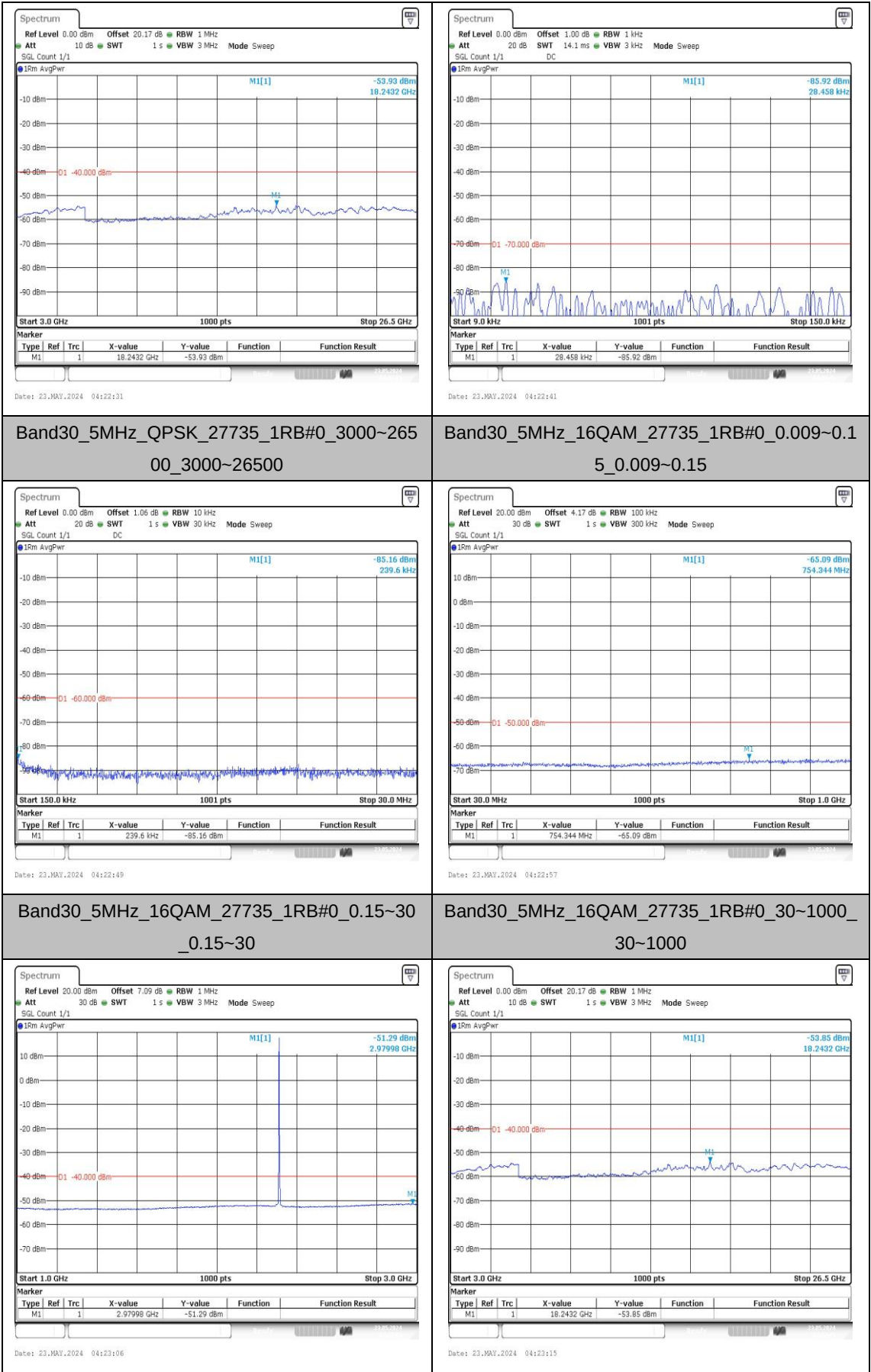


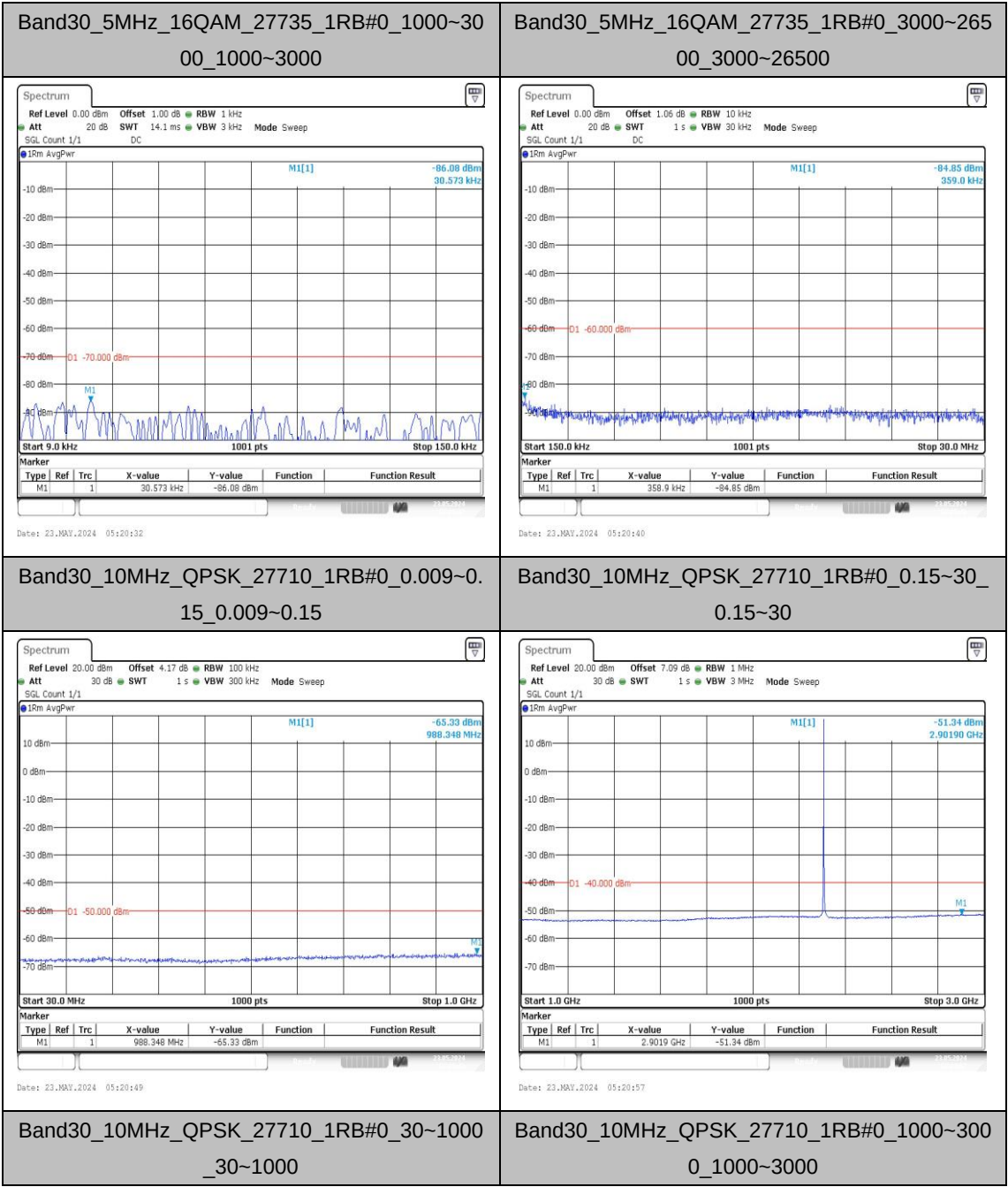


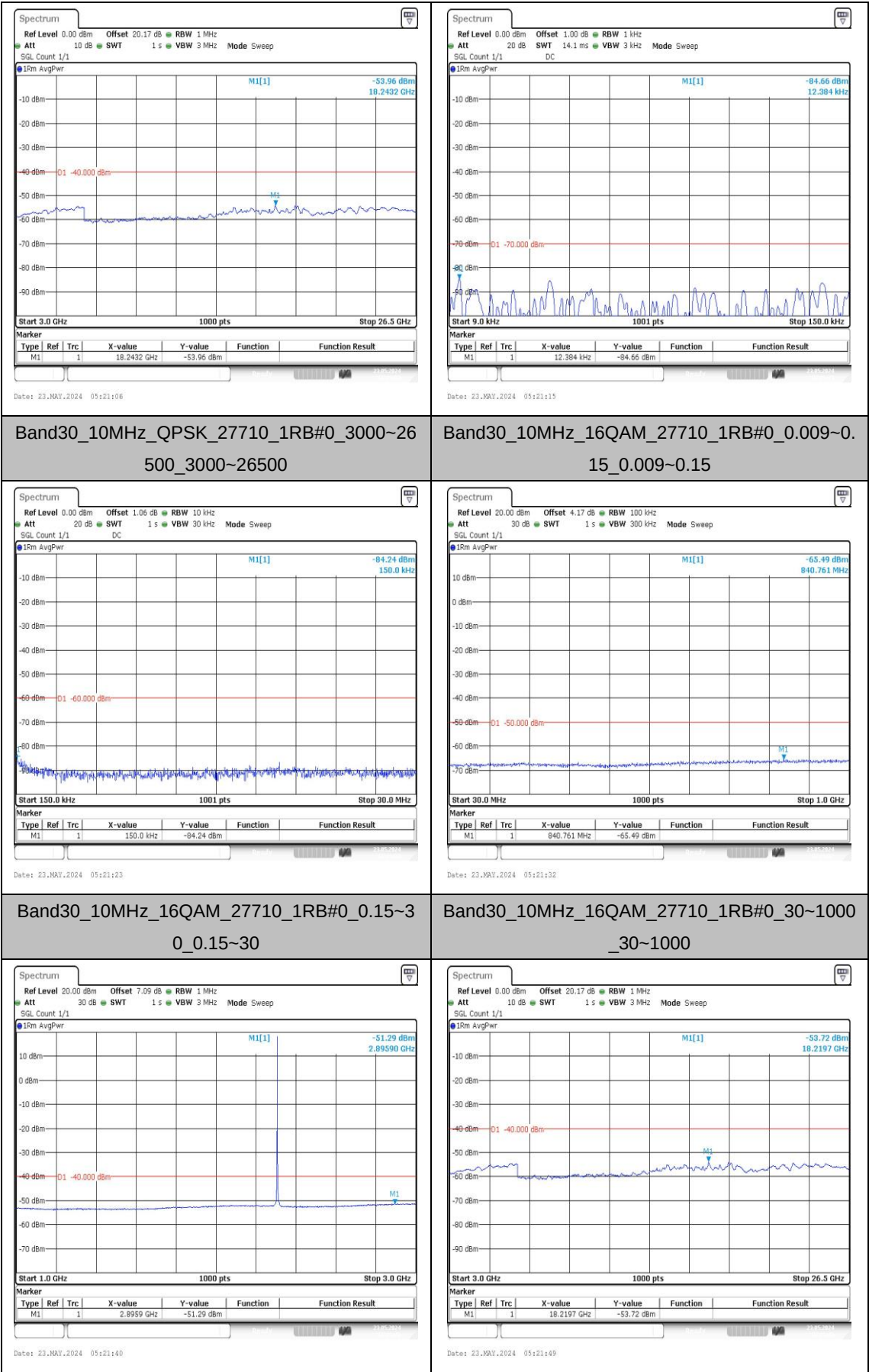












Band30_10MHz_16QAM_27710_1RB#0_1000~3000_1000~3000	Band30_10MHz_16QAM_27710_1RB#0_3000~26500_500_3000~26500
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Appendix F: Frequency Stability

Test Result

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band30	5MHz	QPSK	27685	25RB#0	VN	NT	3.28	0.001421	±2.5	PASS
Band30	5MHz	QPSK	27685	25RB#0	VL	NT	-1.99	-0.000862	±2.5	PASS
Band30	5MHz	QPSK	27685	25RB#0	VH	NT	4.31	0.001868	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	VN	NT	2.57	0.001114	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	VL	NT	3.35	0.001452	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	VH	NT	-3.66	-0.001586	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	VN	NT	6.07	0.002628	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	VL	NT	3.72	0.001610	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	VH	NT	2.82	0.001221	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	VN	NT	4.23	0.001831	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	VL	NT	3.66	0.001584	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	VH	NT	4.52	0.001957	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	VN	NT	3.13	0.001354	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	VL	NT	3.82	0.001652	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	VH	NT	5.26	0.002275	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	VN	NT	-6.94	-0.003001	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	VL	NT	-4.71	-0.002037	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	VH	NT	-2.32	-0.001003	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	VN	NT	-6.81	-0.002948	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	VL	NT	-3.86	-0.001671	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	VH	NT	-3.81	-0.001649	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	VN	NT	-5.72	-0.002476	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	VL	NT	-5.19	-0.002247	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	VH	NT	-6.85	-0.002965	±2.5	PASS

Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band30	5MHz	QPSK	27685	25RB#0	NV	-30	3.55	0.001538	±2.5	PASS
Band30	5MHz	QPSK	27685	25RB#0	NV	-20	3.73	0.001616	±2.5	PASS
Band30	5MHz	QPSK	27685	25RB#0	NV	-10	2.55	0.001105	±2.5	PASS
Band30	5MHz	QPSK	27685	25RB#0	NV	0	3.52	0.001525	±2.5	PASS
Band30	5MHz	QPSK	27685	25RB#0	NV	10	4.91	0.002128	±2.5	PASS

Band30	5MHz	QPSK	27685	25RB#0	NV	20	3.88	0.001681	±2.5	PASS
Band30	5MHz	QPSK	27685	25RB#0	NV	30	-2.17	-0.000940	±2.5	PASS
Band30	5MHz	QPSK	27685	25RB#0	NV	40	3.20	0.001387	±2.5	PASS
Band30	5MHz	QPSK	27685	25RB#0	NV	50	4.56	0.001976	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	NV	-30	4.75	0.002059	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	NV	-20	2.12	0.000919	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	NV	-10	2.30	0.000997	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	NV	0	2.27	0.000984	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	NV	10	2.88	0.001248	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	NV	20	2.92	0.001265	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	NV	30	-3.02	-0.001309	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	NV	40	-2.55	-0.001105	±2.5	PASS
Band30	5MHz	16QAM	27685	25RB#0	NV	50	3.48	0.001508	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	NV	-30	-3.40	-0.001472	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	NV	-20	2.92	0.001264	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	NV	-10	2.56	0.001108	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	NV	0	3.79	0.001641	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	NV	10	4.39	0.001900	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	NV	20	4.53	0.001961	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	NV	30	4.11	0.001779	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	NV	40	3.82	0.001654	±2.5	PASS
Band30	5MHz	QPSK	27710	25RB#0	NV	50	3.39	0.001468	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	NV	-30	3.56	0.001541	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	NV	-20	3.06	0.001325	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	NV	-10	3.52	0.001524	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	NV	0	2.59	0.001121	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	NV	10	4.16	0.001801	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	NV	20	2.29	0.000991	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	NV	30	3.96	0.001714	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	NV	40	2.80	0.001212	±2.5	PASS
Band30	5MHz	16QAM	27710	25RB#0	NV	50	2.59	0.001121	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	NV	-30	-3.23	-0.001397	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	NV	-20	-4.16	-0.001799	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	NV	-10	-3.42	-0.001479	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	NV	0	-2.39	-0.001034	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	NV	10	2.85	0.001232	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	NV	20	4.66	0.002015	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	NV	30	-2.90	-0.001254	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	NV	40	-4.26	-0.001842	±2.5	PASS
Band30	5MHz	QPSK	27735	25RB#0	NV	50	-4.41	-0.001907	±2.5	PASS

Band30	5MHz	16QAM	27735	25RB#0	NV	-30	-2.99	-0.001293	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	NV	-20	-5.71	-0.002469	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	NV	-10	-3.89	-0.001682	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	NV	0	-3.12	-0.001349	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	NV	10	-4.72	-0.002041	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	NV	20	-2.27	-0.000982	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	NV	30	-2.95	-0.001276	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	NV	40	-2.82	-0.001219	±2.5	PASS
Band30	5MHz	16QAM	27735	25RB#0	NV	50	-3.39	-0.001466	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	NV	-30	-4.68	-0.002026	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	NV	-20	-5.28	-0.002286	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	NV	-10	-3.42	-0.001481	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	NV	0	-4.98	-0.002156	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	NV	10	-4.29	-0.001857	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	NV	20	-5.99	-0.002593	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	NV	30	-4.94	-0.002139	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	NV	40	-4.68	-0.002026	±2.5	PASS
Band30	10MHz	QPSK	27710	50RB#0	NV	50	-3.75	-0.001623	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	NV	-30	-4.16	-0.001801	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	NV	-20	-2.73	-0.001182	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	NV	-10	-4.61	-0.001996	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	NV	0	-2.70	-0.001169	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	NV	10	-5.19	-0.002247	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	NV	20	-4.76	-0.002061	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	NV	30	-4.19	-0.001814	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	NV	40	-5.64	-0.002442	±2.5	PASS
Band30	10MHz	16QAM	27710	50RB#0	NV	50	-5.16	-0.002234	±2.5	PASS