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Appendix B.32

NR Band n13



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Effective (Isotropic) Radiated Power Output Data for SA

Test Result

Band	SCS	Bandwidth	Modulation	Channel	RB Config	Power (dBm)	ERP (dBm)	LIMIT (dBm)	Verdict
N13	15	5	DFT-PI2BPSK	L	Inner_1RB_Left	23.34	22.73	34.77	PASS
N13	15	5	DFT-PI2BPSK	L	Inner_1RB_Right	23.4	22.79	34.77	PASS
N13	15	5	DFT-PI2BPSK	L	Outer_Full	23.35	22.74	34.77	PASS
N13	15	5	DFT-QPSK	L	Inner_1RB_Left	23.33	22.72	34.77	PASS
N13	15	5	DFT-QPSK	L	Inner_1RB_Right	23.38	22.77	34.77	PASS
N13	15	5	DFT-QPSK	L	Outer_Full	23.36	22.75	34.77	PASS
N13	15	5	DFT-16QAM	L	Inner_1RB_Left	23.33	22.72	34.77	PASS
N13	15	5	DFT-16QAM	L	Inner_1RB_Right	23.34	22.73	34.77	PASS
N13	15	5	DFT-16QAM	L	Outer_Full	22.42	21.81	34.77	PASS
N13	15	5	DFT-64QAM	L	Inner_1RB_Left	21.85	21.24	34.77	PASS
N13	15	5	DFT-64QAM	L	Inner_1RB_Right	21.93	21.32	34.77	PASS
N13	15	5	DFT-64QAM	L	Outer_Full	21.88	21.27	34.77	PASS
N13	15	5	DFT-256QAM	L	Inner_1RB_Left	20	19.39	34.77	PASS
N13	15	5	DFT-256QAM	L	Inner_1RB_Right	19.83	19.22	34.77	PASS
N13	15	5	DFT-256QAM	L	Outer_Full	19.85	19.24	34.77	PASS
N13	15	5	DFT-PI2BPSK	M	Inner_1RB_Left	23.4	22.79	34.77	PASS
N13	15	5	DFT-PI2BPSK	M	Inner_1RB_Right	23.22	22.61	34.77	PASS
N13	15	5	DFT-PI2BPSK	M	Outer_Full	23.39	22.78	34.77	PASS
N13	15	5	DFT-QPSK	M	Inner_1RB_Left	23.35	22.74	34.77	PASS
N13	15	5	DFT-QPSK	M	Inner_1RB_Right	23.14	22.53	34.77	PASS
N13	15	5	DFT-QPSK	M	Outer_Full	23.37	22.76	34.77	PASS
N13	15	5	DFT-16QAM	M	Inner_1RB_Left	23.47	22.86	34.77	PASS
N13	15	5	DFT-16QAM	M	Inner_1RB_Right	23.28	22.67	34.77	PASS
N13	15	5	DFT-16QAM	M	Outer_Full	22.38	21.77	34.77	PASS
N13	15	5	DFT-64QAM	M	Inner_1RB_Left	22.02	21.41	34.77	PASS
N13	15	5	DFT-64QAM	M	Inner_1RB_Right	21.77	21.16	34.77	PASS



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N13	15	5	DFT-64QAM	M	Outer_Full	21.84	21.23	34.77	PASS
N13	15	5	DFT-256QAM	M	Inner_1RB_Left	19.82	19.21	34.77	PASS
N13	15	5	DFT-256QAM	M	Inner_1RB_Right	19.73	19.12	34.77	PASS
N13	15	5	DFT-256QAM	M	Outer_Full	19.83	19.22	34.77	PASS
N13	15	5	DFT-PI2BPSK	H	Inner_1RB_Left	23.33	22.72	34.77	PASS
N13	15	5	DFT-PI2BPSK	H	Inner_1RB_Right	23.18	22.57	34.77	PASS
N13	15	5	DFT-PI2BPSK	H	Outer_Full	23.19	22.58	34.77	PASS
N13	15	5	DFT-QPSK	H	Inner_1RB_Left	23.26	22.65	34.77	PASS
N13	15	5	DFT-QPSK	H	Inner_1RB_Right	23.12	22.51	34.77	PASS
N13	15	5	DFT-QPSK	H	Outer_Full	23.19	22.58	34.77	PASS
N13	15	5	DFT-16QAM	H	Inner_1RB_Left	23.68	23.07	34.77	PASS
N13	15	5	DFT-16QAM	H	Inner_1RB_Right	23.5	22.89	34.77	PASS
N13	15	5	DFT-16QAM	H	Outer_Full	22.18	21.57	34.77	PASS
N13	15	5	DFT-64QAM	H	Inner_1RB_Left	21.62	21.01	34.77	PASS
N13	15	5	DFT-64QAM	H	Inner_1RB_Right	21.44	20.83	34.77	PASS
N13	15	5	DFT-64QAM	H	Outer_Full	21.79	21.18	34.77	PASS
N13	15	5	DFT-256QAM	H	Inner_1RB_Left	19.5	18.89	34.77	PASS
N13	15	5	DFT-256QAM	H	Inner_1RB_Right	19.33	18.72	34.77	PASS
N13	15	5	DFT-256QAM	H	Outer_Full	19.51	18.9	34.77	PASS
N13	15	10	DFT-PI2BPSK	M	Inner_1RB_Left	23.29	22.68	34.77	PASS
N13	15	10	DFT-PI2BPSK	M	Inner_1RB_Right	23.14	22.53	34.77	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	23.38	22.77	34.77	PASS
N13	15	10	DFT-QPSK	M	Inner_1RB_Left	23.27	22.66	34.77	PASS
N13	15	10	DFT-QPSK	M	Inner_1RB_Right	23.16	22.55	34.77	PASS
N13	15	10	DFT-QPSK	M	Outer_Full	23.34	22.73	34.77	PASS
N13	15	10	DFT-16QAM	M	Inner_1RB_Left	23.67	23.06	34.77	PASS
N13	15	10	DFT-16QAM	M	Inner_1RB_Right	23.56	22.95	34.77	PASS
N13	15	10	DFT-16QAM	M	Outer_Full	22.16	21.55	34.77	PASS
N13	15	10	DFT-64QAM	M	Inner_1RB_Left	21.63	21.02	34.77	PASS
N13	15	10	DFT-64QAM	M	Inner_1RB_Right	21.49	20.88	34.77	PASS
N13	15	10	DFT-64QAM	M	Outer_Full	21.9	21.29	34.77	PASS
N13	15	10	DFT-256QAM	M	Inner_1RB_Left	19.5	18.89	34.77	PASS



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N13	15	10	DFT-256QAM	M	Inner_1RB_Right	19.39	18.78	34.77	PASS
N13	15	10	DFT-256QAM	M	Outer_Full	19.7	19.09	34.77	PASS



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Peak-to-Average Ratio for SA

Peak-to-Average Ratio(PAPR)

Test Result

Band	SCS	Bandwidth	Modulation	Channel	RB Config	DutyCycle	Factor	Result	Limit	Verdict
N13	15	10	DFT-256QAM	M	Outer_Full	100%	0.00	8.42	≤13	PASS
N13	15	10	CP-256QAM	M	Outer_Full	100%	0.00	9.35	≤13	PASS



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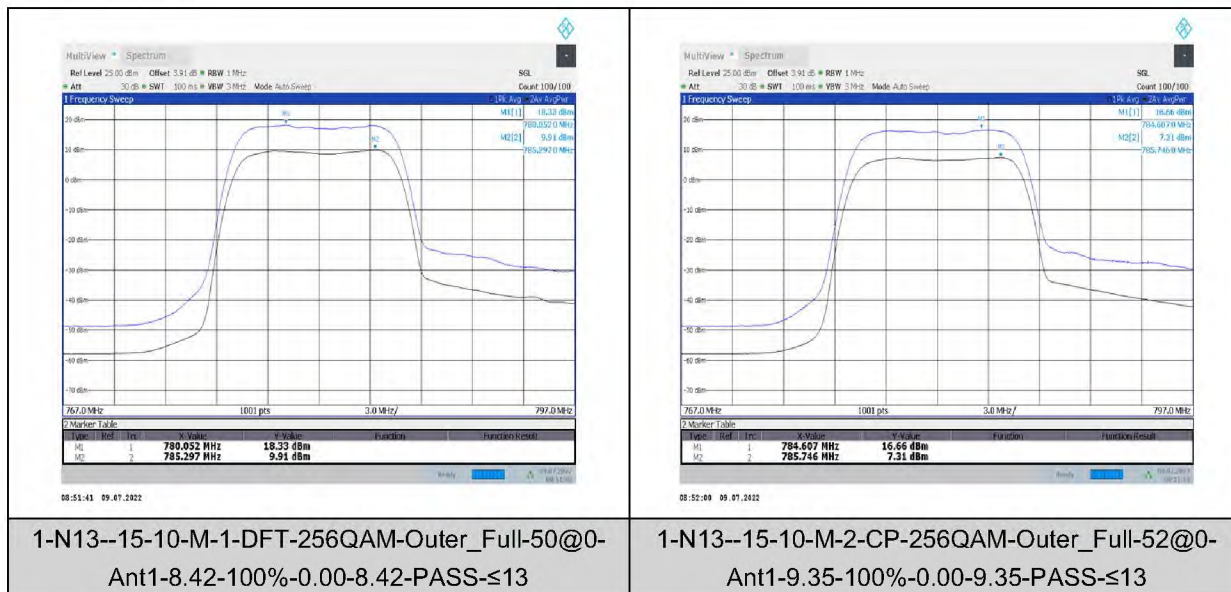
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Test Graphs



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Modulation characteristics for SA

Test Result

Band	SCS	Bandwidth	Modulation	Channel	RB Config	Result	Verdict
N13	15	10	DFT-P12BPSK	M	Outer_Full	see graph	PASS
N13	15	10	DFT-QPSK	M	Outer_Full	see graph	PASS
N13	15	10	DFT-16QAM	M	Outer_Full	see graph	PASS
N13	15	10	DFT-64QAM	M	Outer_Full	see graph	PASS
N13	15	10	DFT-256QAM	M	Outer_Full	see graph	PASS
N13	15	10	CP-QPSK	M	Outer_Full	see graph	PASS
N13	15	10	CP-16QAM	M	Outer_Full	see graph	PASS
N13	15	10	CP-64QAM	M	Outer_Full	see graph	PASS
N13	15	10	CP-256QAM	M	Outer_Full	see graph	PASS



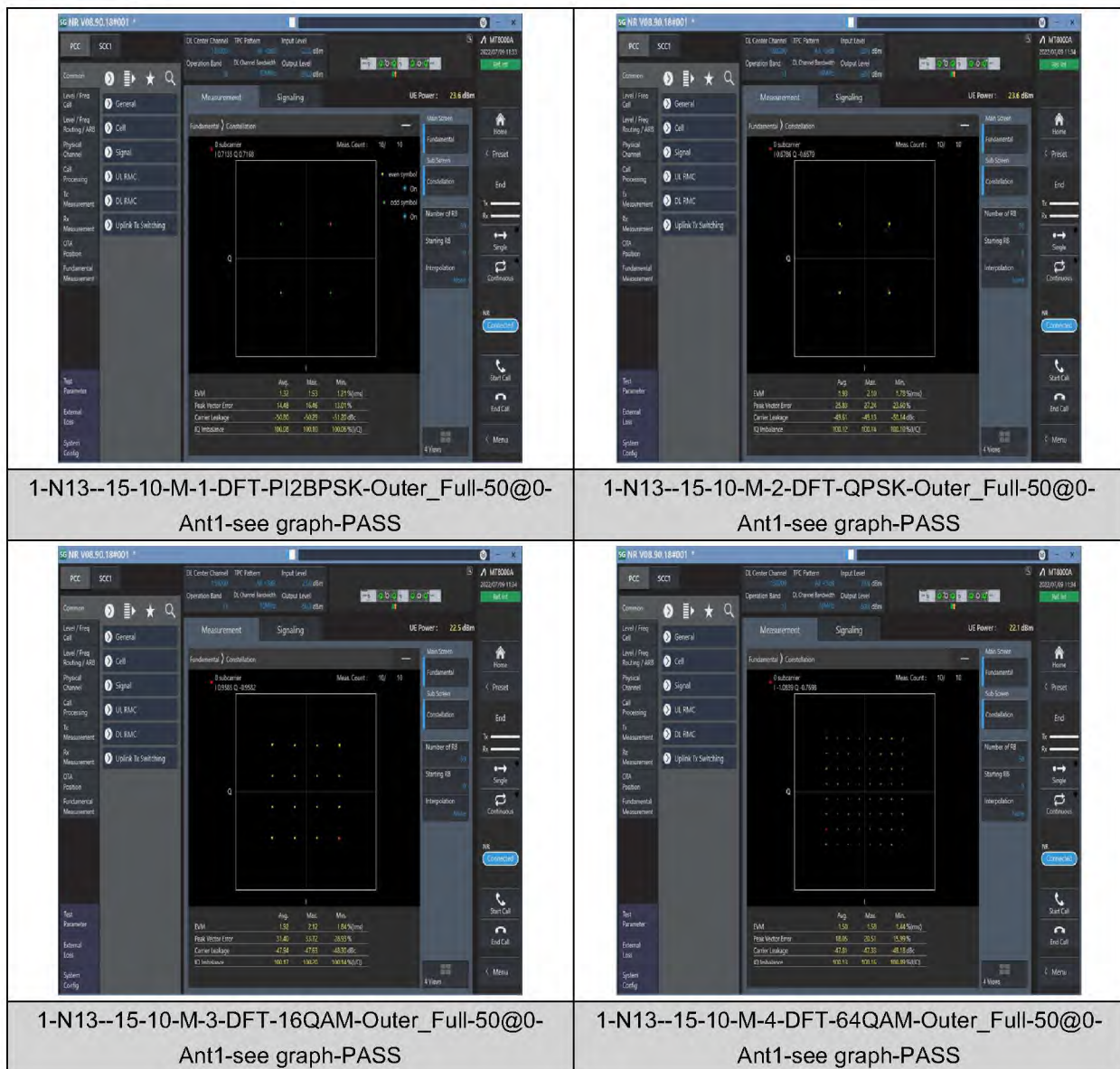
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Test Graphs



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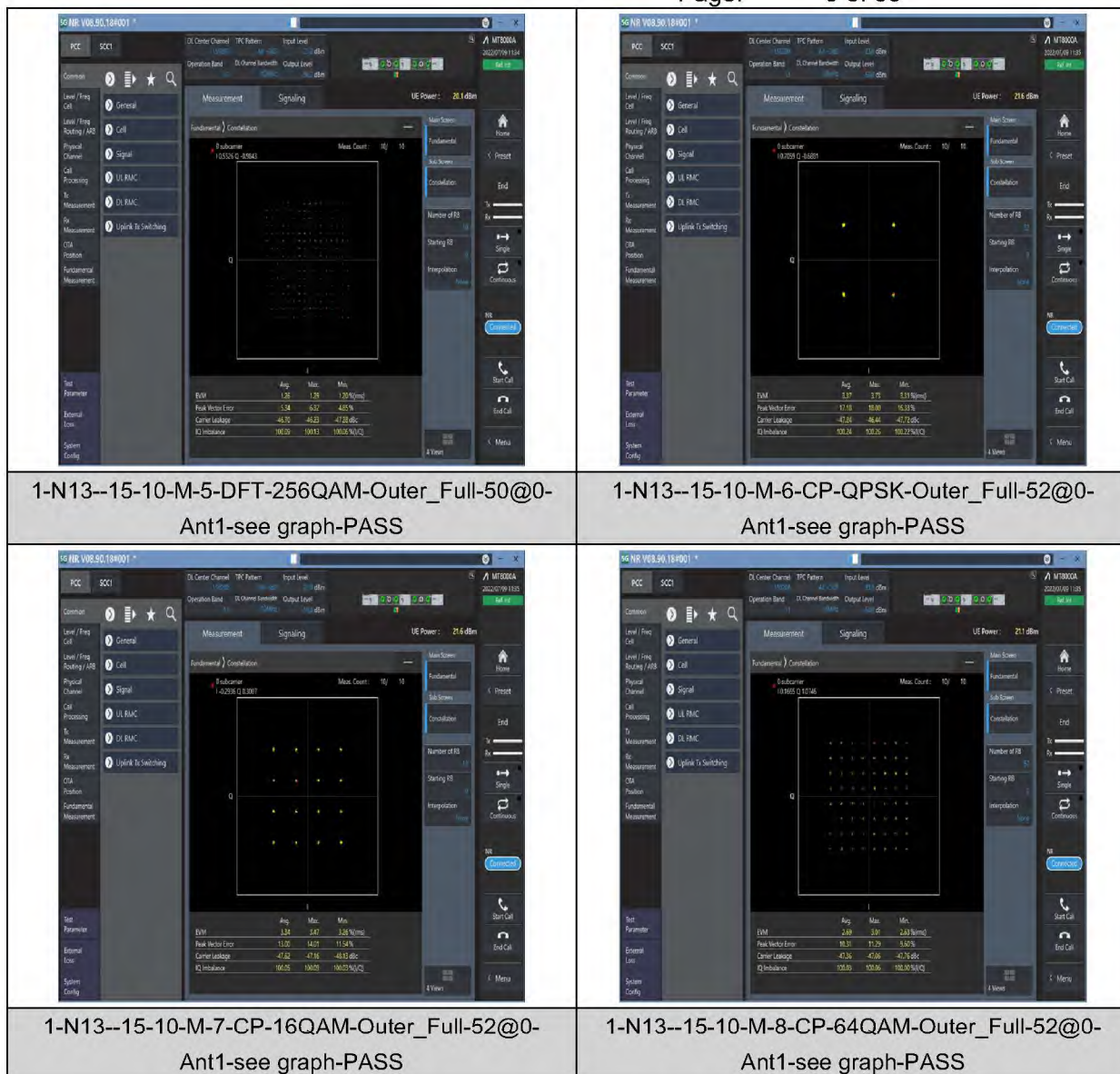
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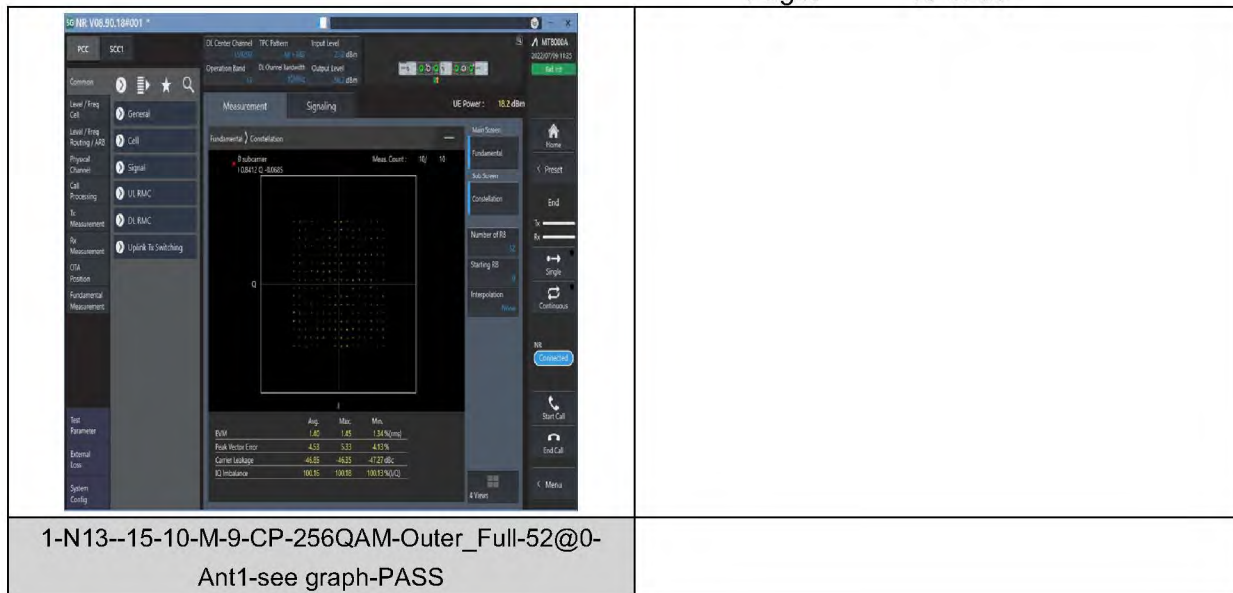




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26dB Bandwidth and Occupied Bandwidth for SA

Test Result

Band	SCS	Bandwidth	Modulation	Channel	RB Config	Result (99%)	Result (26dB)	Verdict
N13	15	5	DFT-QPSK	L	Outer_Full	4.467	5.020	PASS
N13	15	5	DFT-PI2BPSK	L	Outer_Full	4.453	4.980	PASS
N13	15	5	DFT-16QAM	L	Outer_Full	4.459	4.960	PASS
N13	15	5	DFT-64QAM	L	Outer_Full	4.458	5.010	PASS
N13	15	5	DFT-256QAM	L	Outer_Full	4.464	4.890	PASS
N13	15	5	CP-QPSK	L	Outer_Full	4.452	4.880	PASS
N13	15	5	CP-16QAM	L	Outer_Full	4.473	5.080	PASS
N13	15	5	CP-64QAM	L	Outer_Full	4.468	4.990	PASS
N13	15	5	CP-256QAM	L	Outer_Full	4.450	4.960	PASS
N13	15	5	DFT-QPSK	M	Outer_Full	4.490	5.070	PASS
N13	15	5	DFT-PI2BPSK	M	Outer_Full	4.481	4.990	PASS
N13	15	5	DFT-16QAM	M	Outer_Full	4.475	4.960	PASS
N13	15	5	DFT-64QAM	M	Outer_Full	4.470	5.060	PASS
N13	15	5	DFT-256QAM	M	Outer_Full	4.485	5.010	PASS
N13	15	5	CP-QPSK	M	Outer_Full	4.48	5.110	PASS
N13	15	5	CP-16QAM	M	Outer_Full	4.474	5.040	PASS
N13	15	5	CP-64QAM	M	Outer_Full	4.468	4.880	PASS
N13	15	5	CP-256QAM	M	Outer_Full	4.501	5.100	PASS
N13	15	5	DFT-QPSK	H	Outer_Full	4.479	4.950	PASS
N13	15	5	DFT-PI2BPSK	H	Outer_Full	4.479	5.000	PASS
N13	15	5	DFT-16QAM	H	Outer_Full	4.467	4.960	PASS
N13	15	5	DFT-64QAM	H	Outer_Full	4.471	5.040	PASS
N13	15	5	DFT-256QAM	H	Outer_Full	4.473	5.050	PASS
N13	15	5	CP-QPSK	H	Outer_Full	4.457	4.990	PASS
N13	15	5	CP-16QAM	H	Outer_Full	4.457	4.930	PASS
N13	15	5	CP-64QAM	H	Outer_Full	4.471	5.050	PASS
N13	15	5	CP-256QAM	H	Outer_Full	4.469	5.000	PASS
N13	15	10	DFT-QPSK	M	Outer_Full	8.939	9.680	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	8.916	9.660	PASS
N13	15	10	DFT-16QAM	M	Outer_Full	8.932	9.600	PASS
N13	15	10	DFT-64QAM	M	Outer_Full	8.932	9.540	PASS
N13	15	10	DFT-256QAM	M	Outer_Full	8.916	9.460	PASS



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N13	15	10	CP-QPSK	M	Outer_Full	9.271	9.960	PASS
N13	15	10	CP-16QAM	M	Outer_Full	9.260	9.940	PASS
N13	15	10	CP-64QAM	M	Outer_Full	9.279	9.920	PASS
N13	15	10	CP-256QAM	M	Outer_Full	9.267	10.140	PASS



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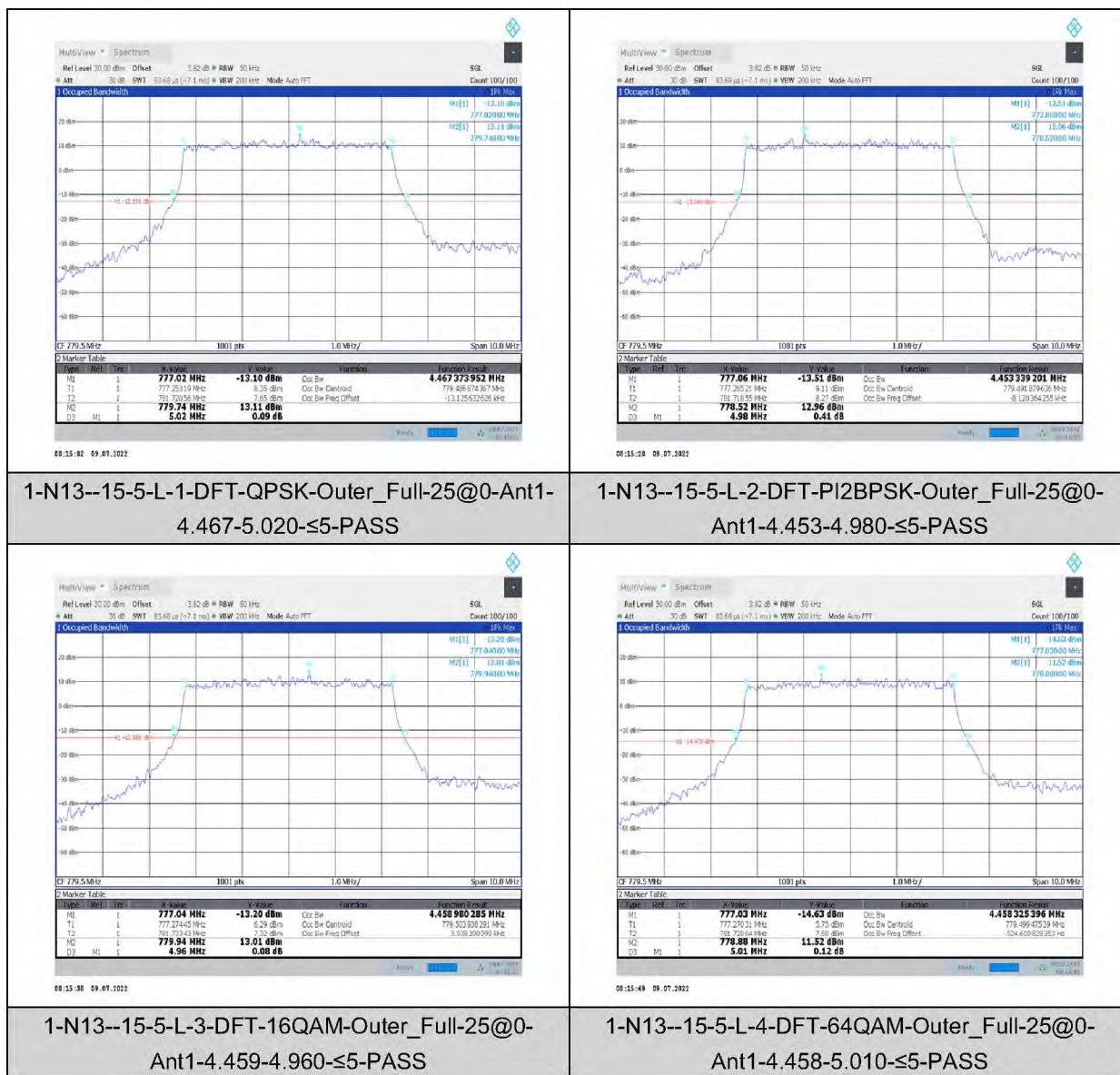
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Test Graphs



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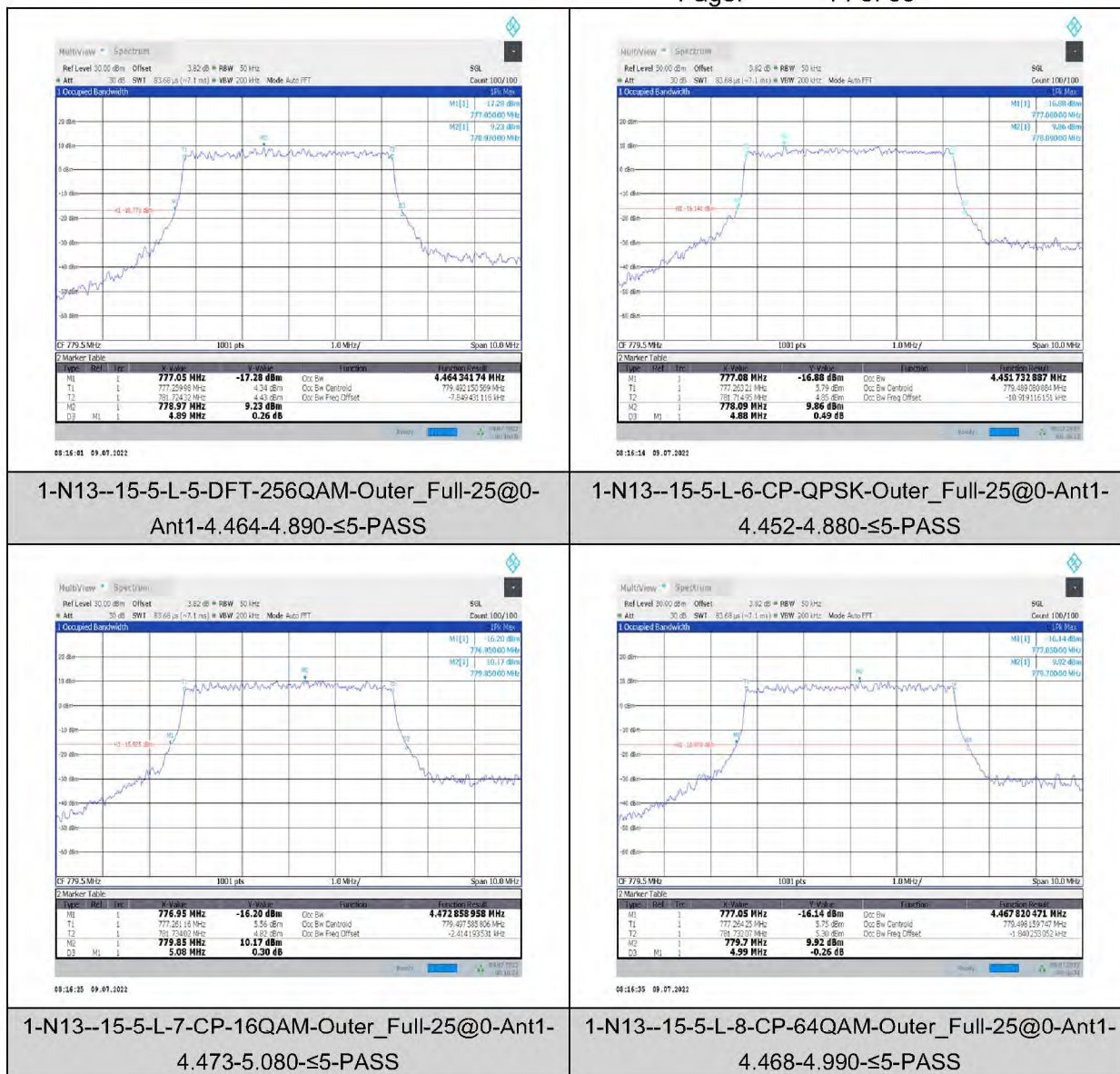
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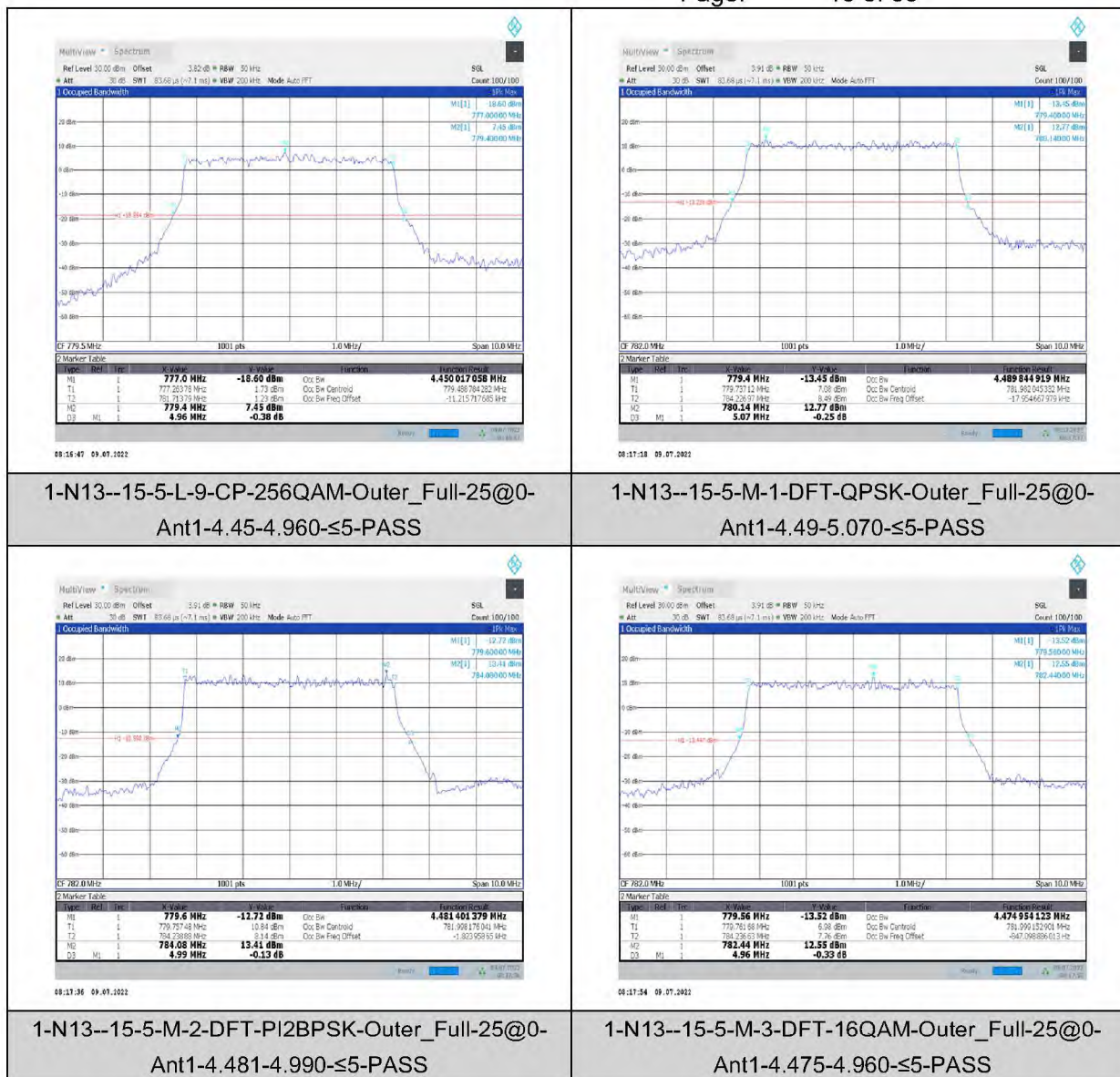
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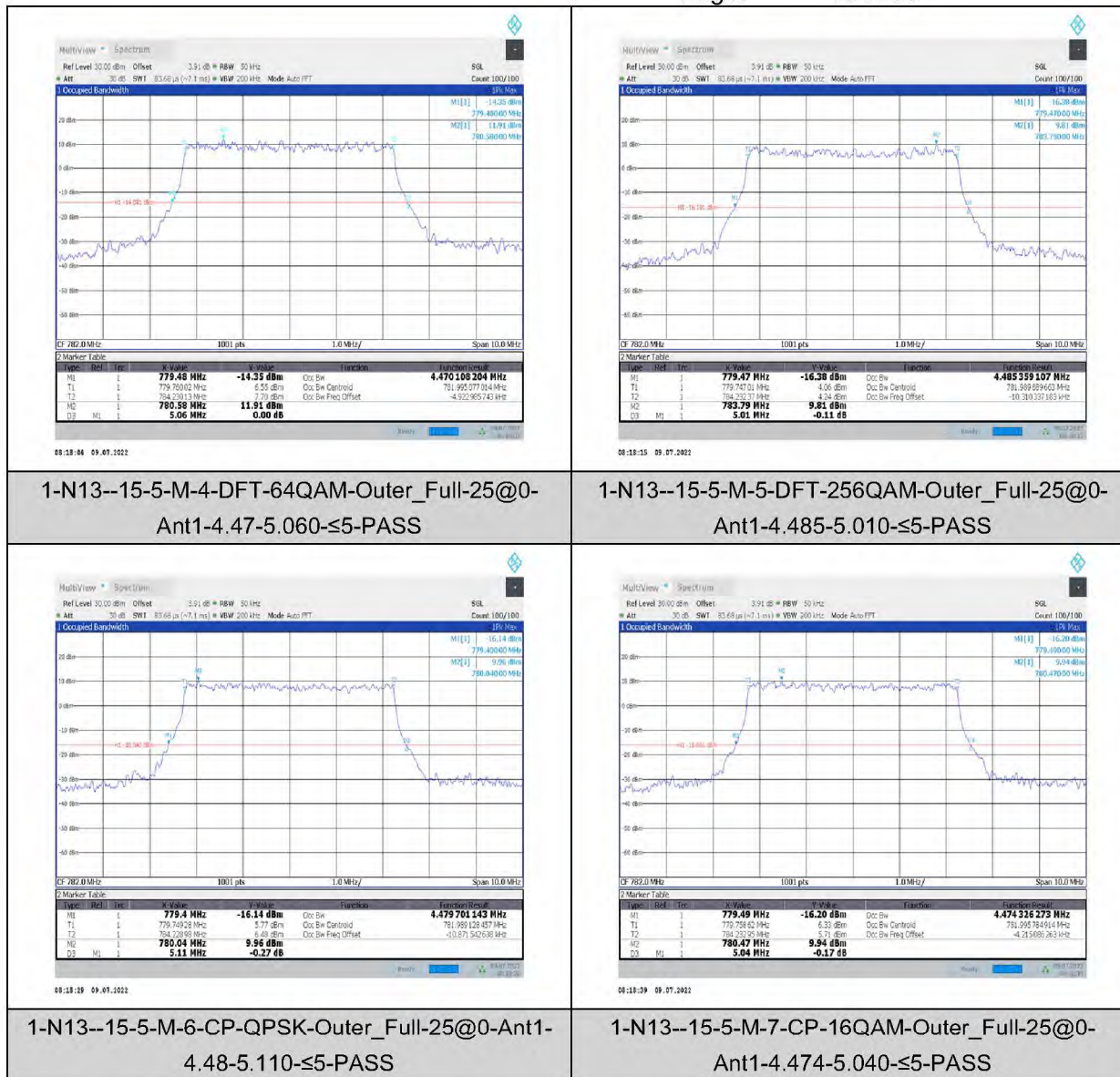
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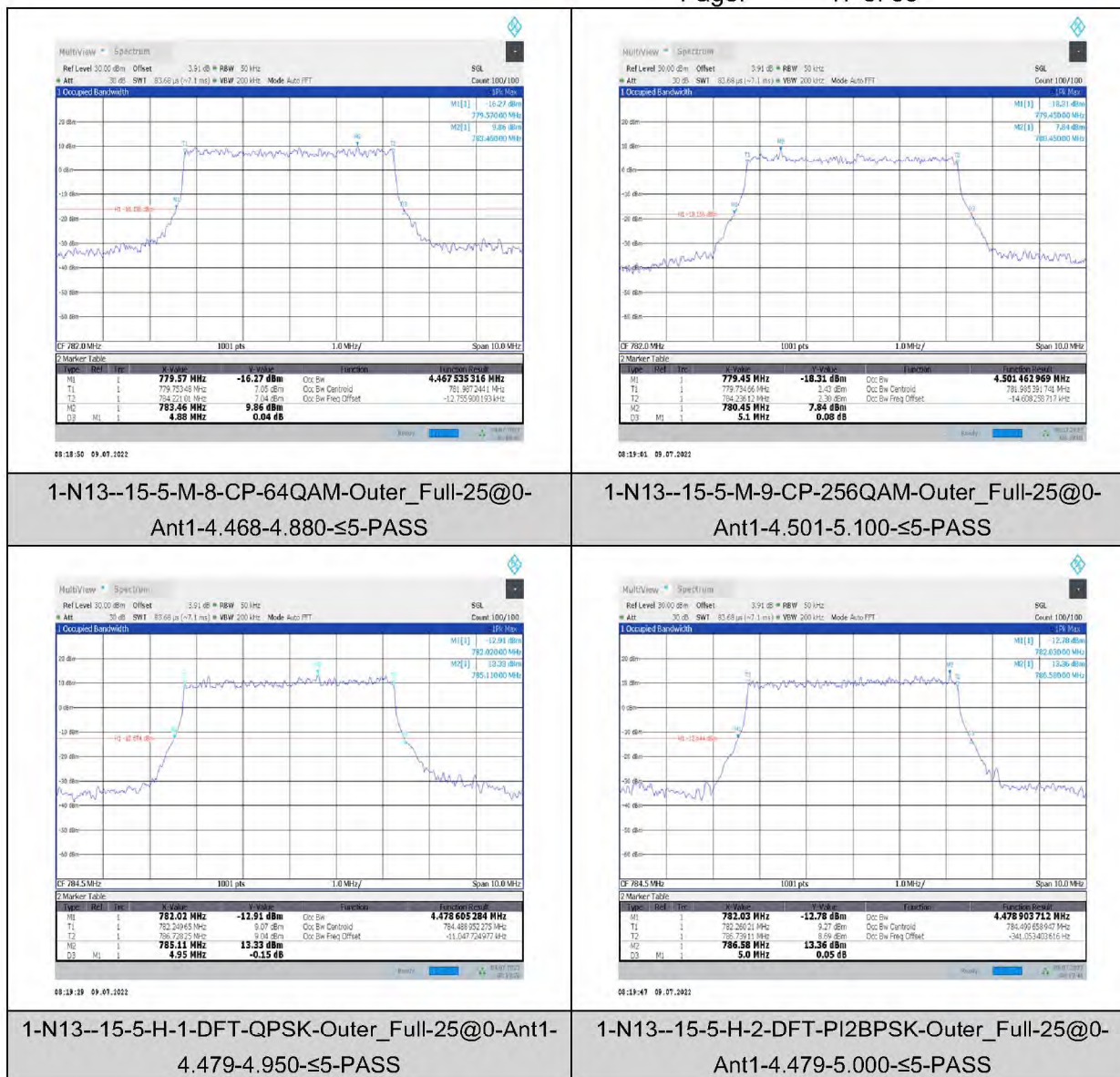
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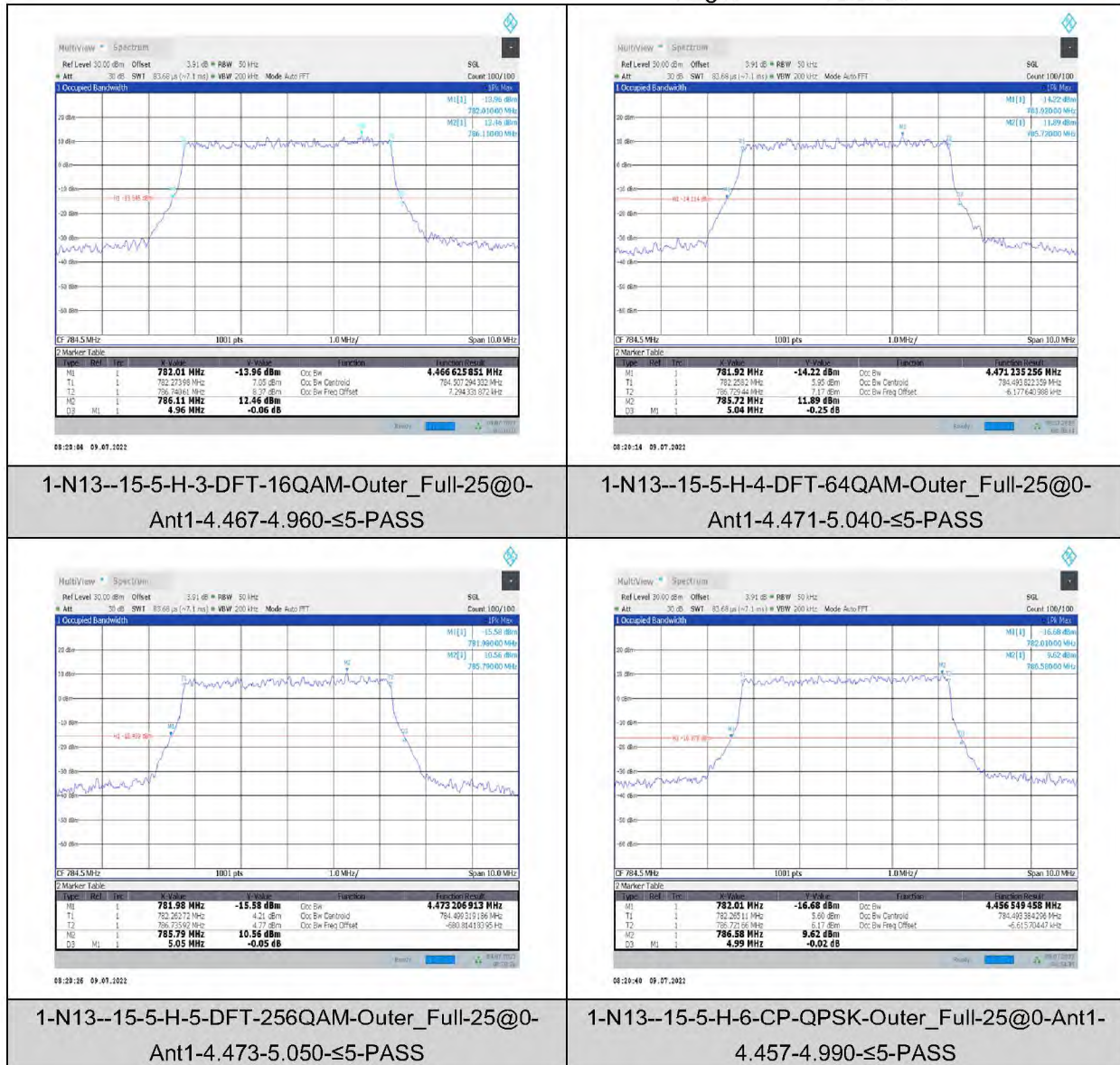
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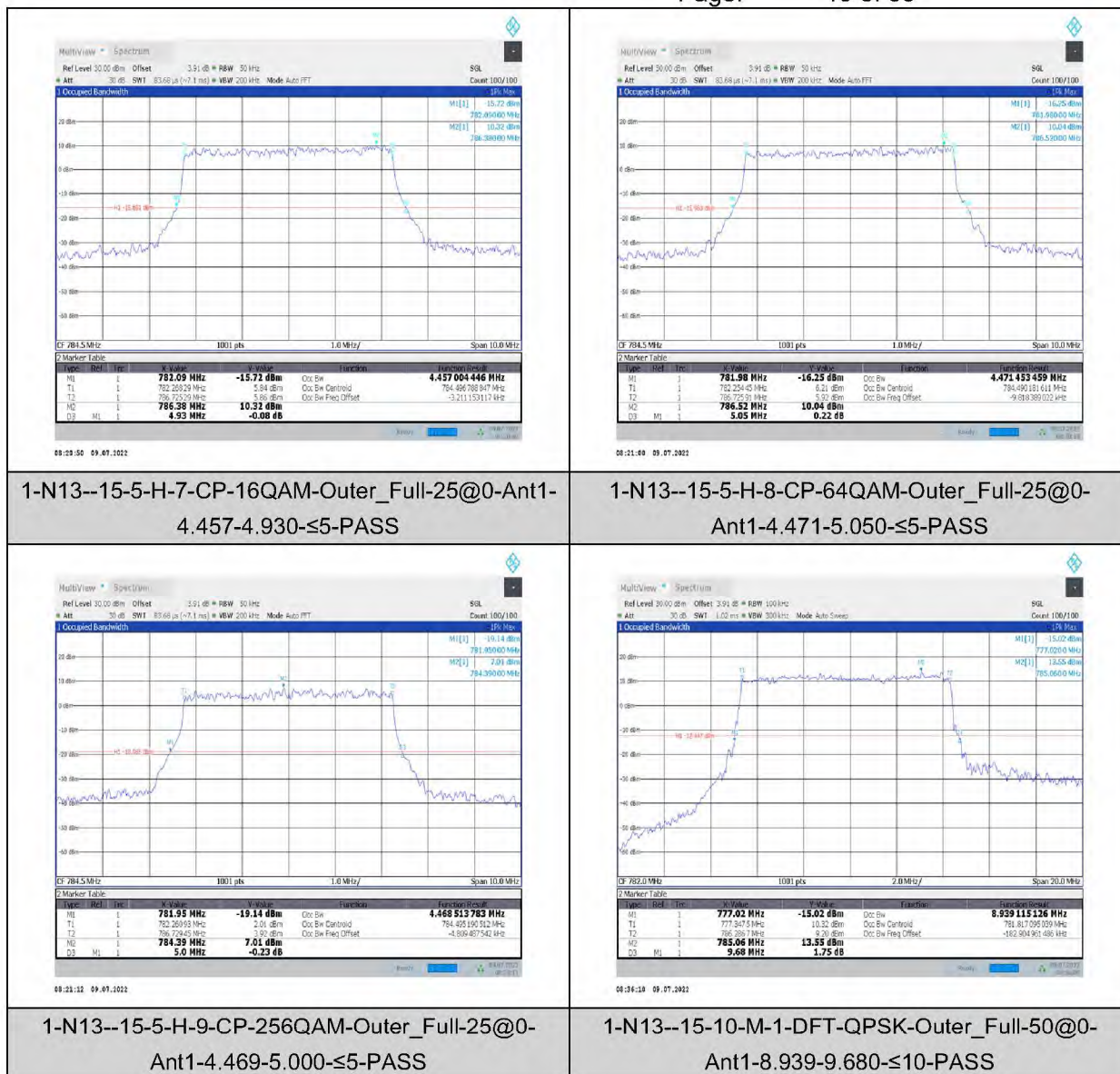
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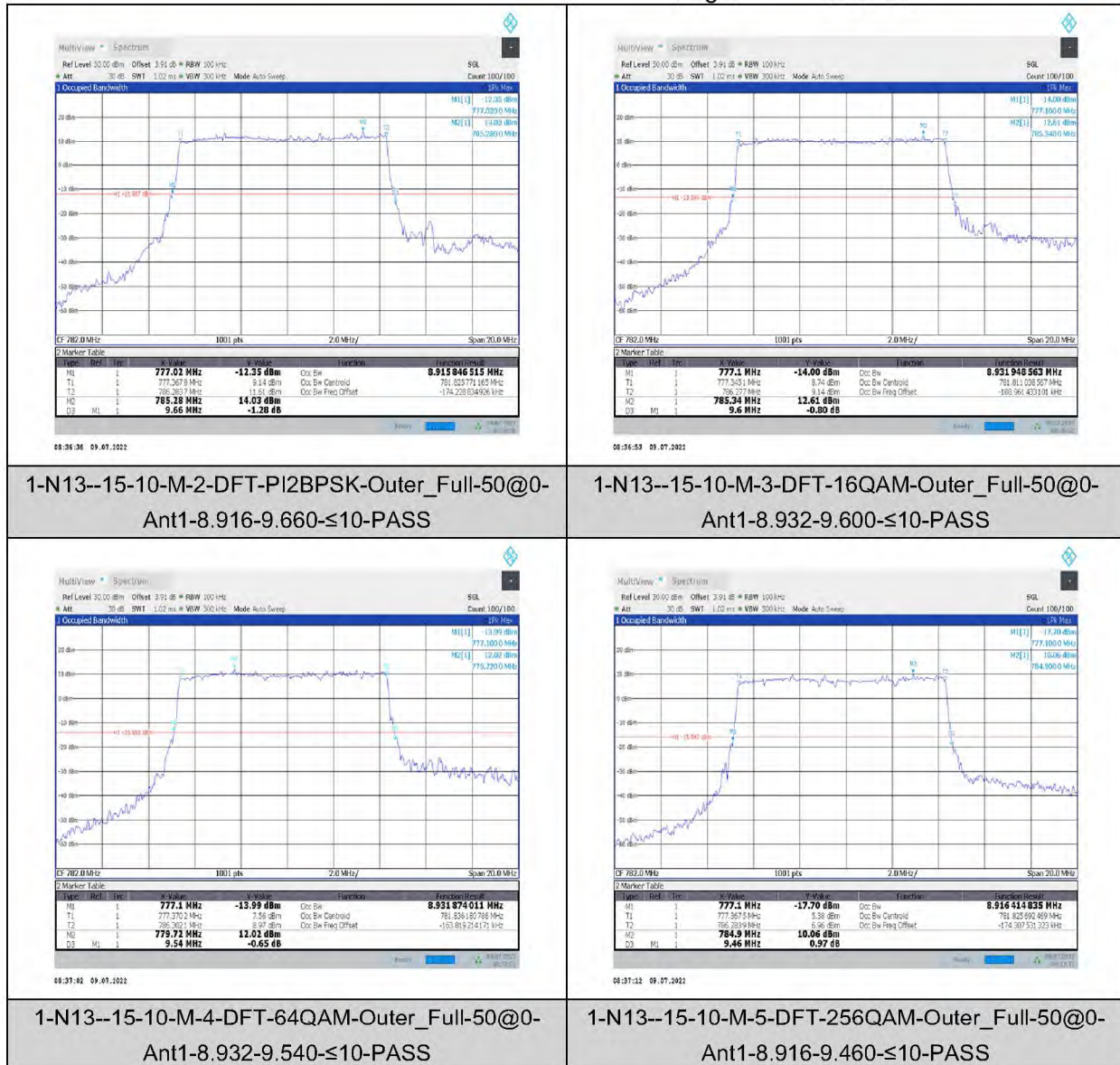
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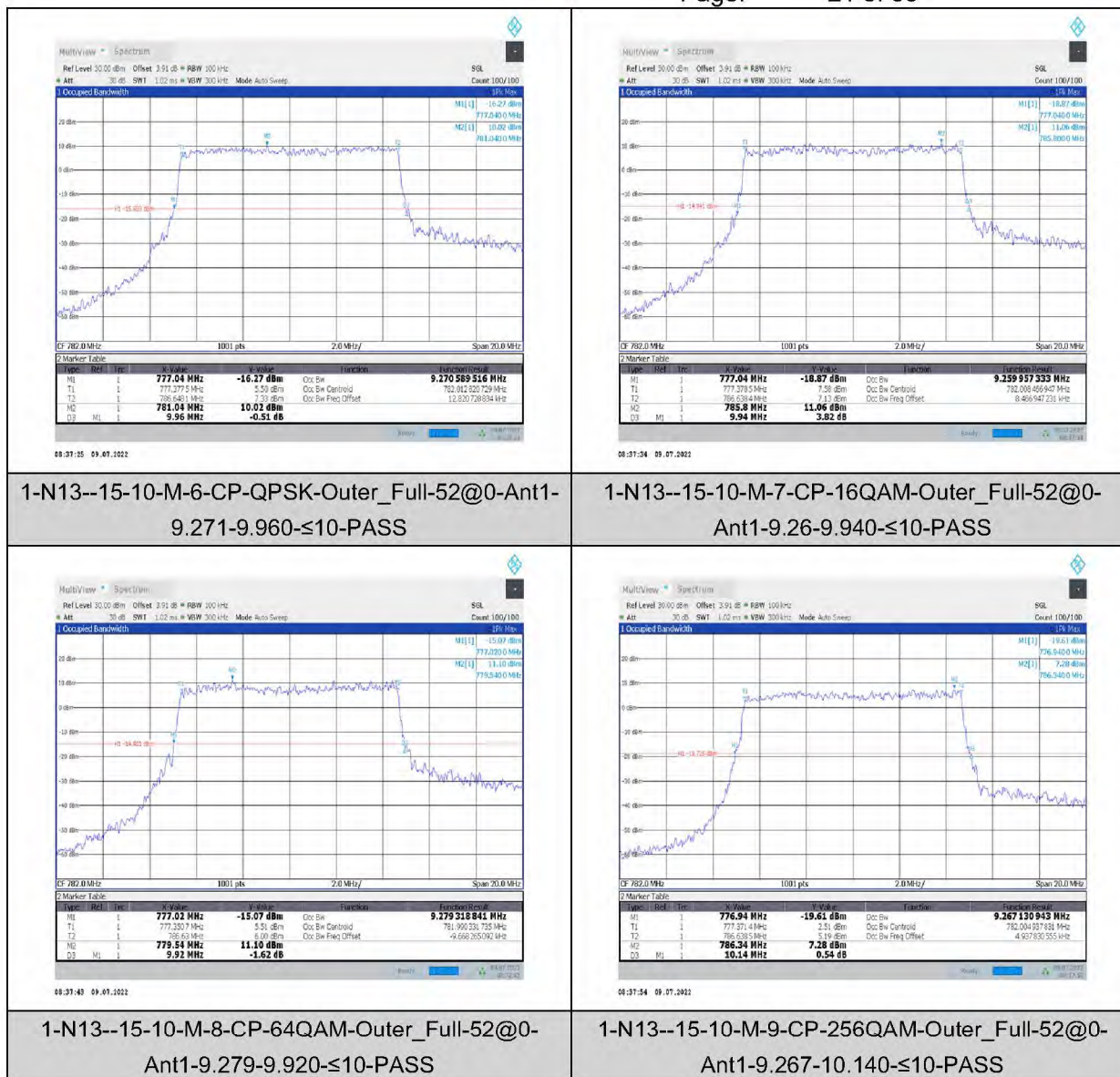
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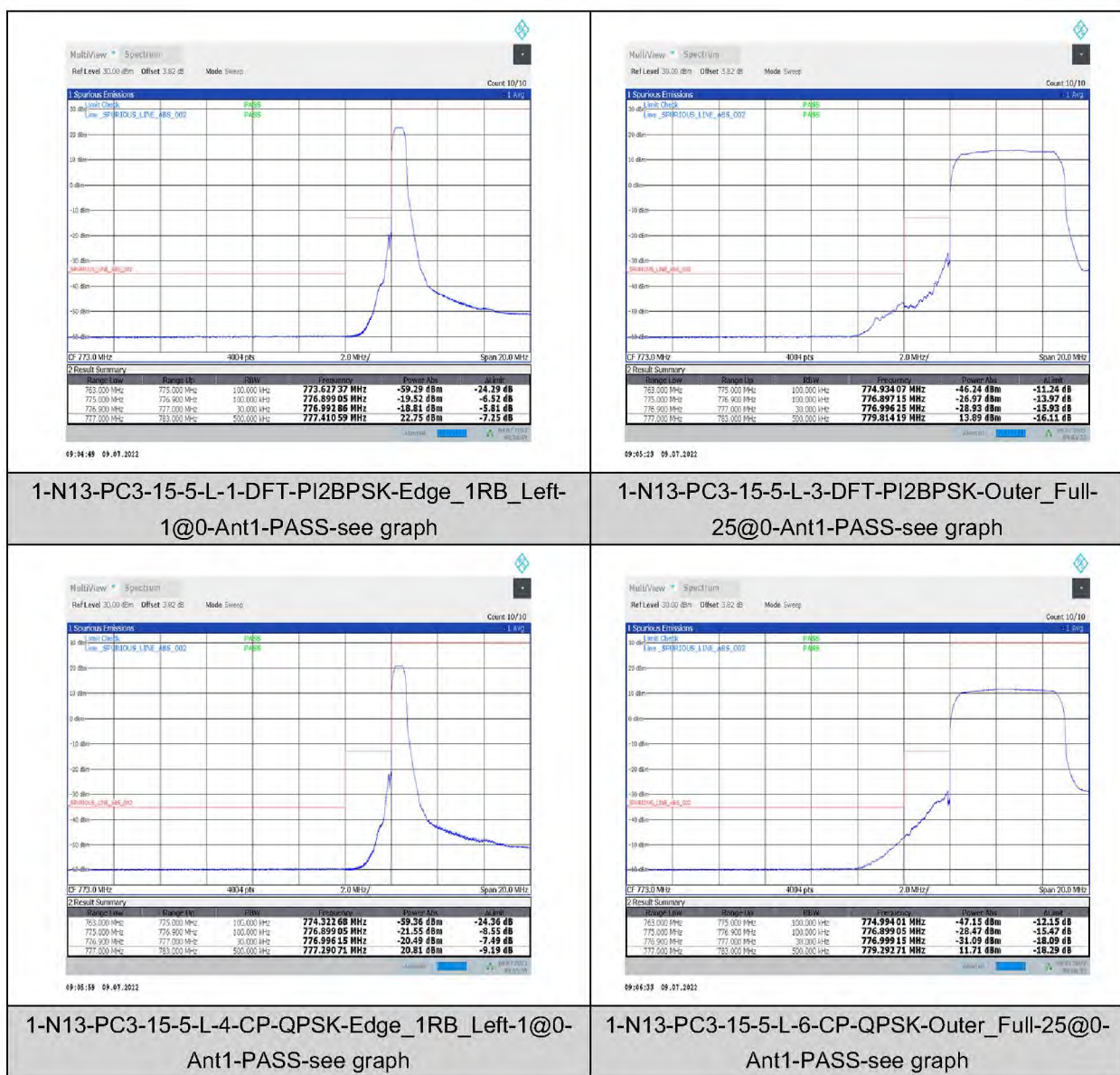
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Band Edge for SA

Test Graphs



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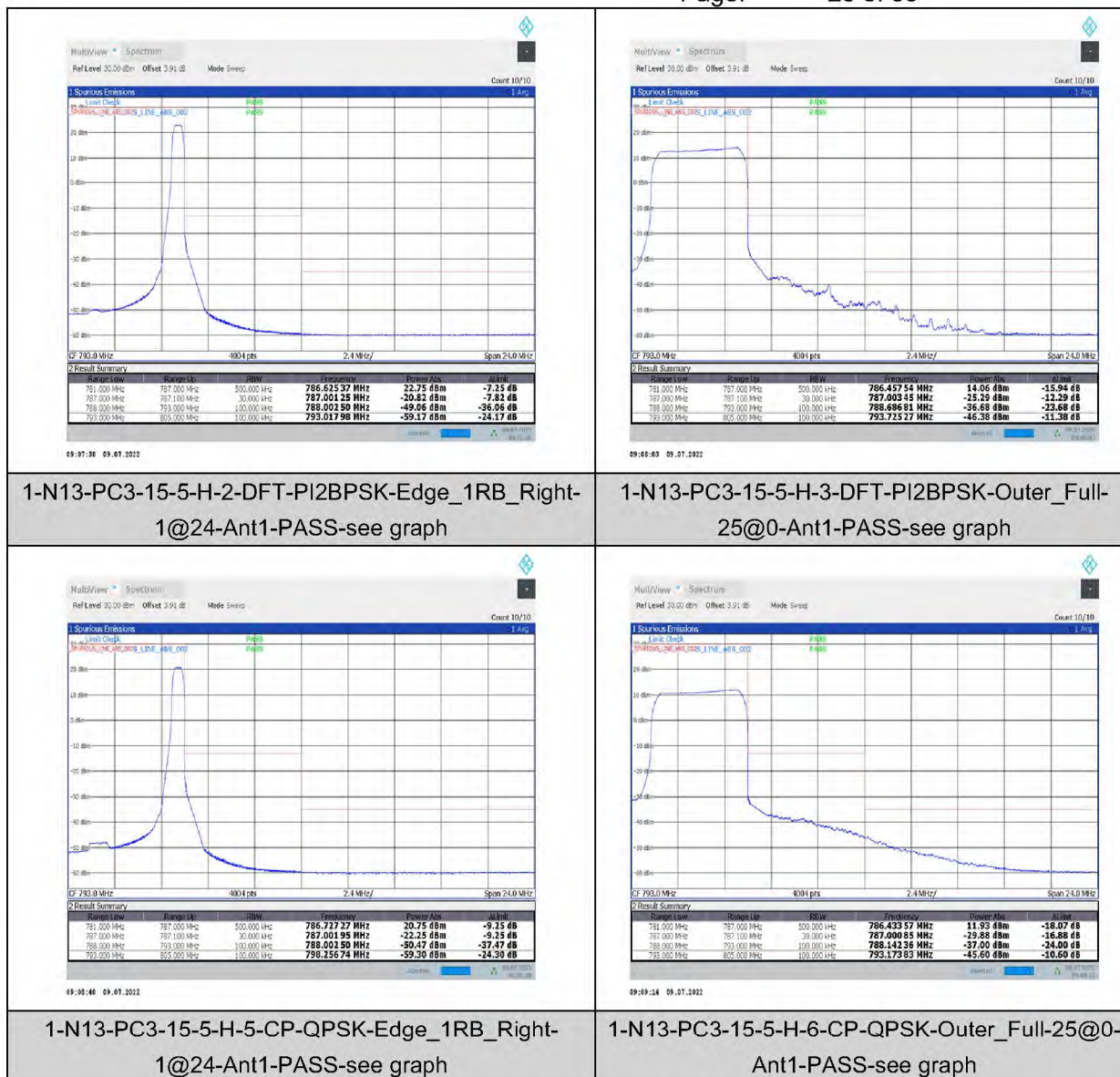
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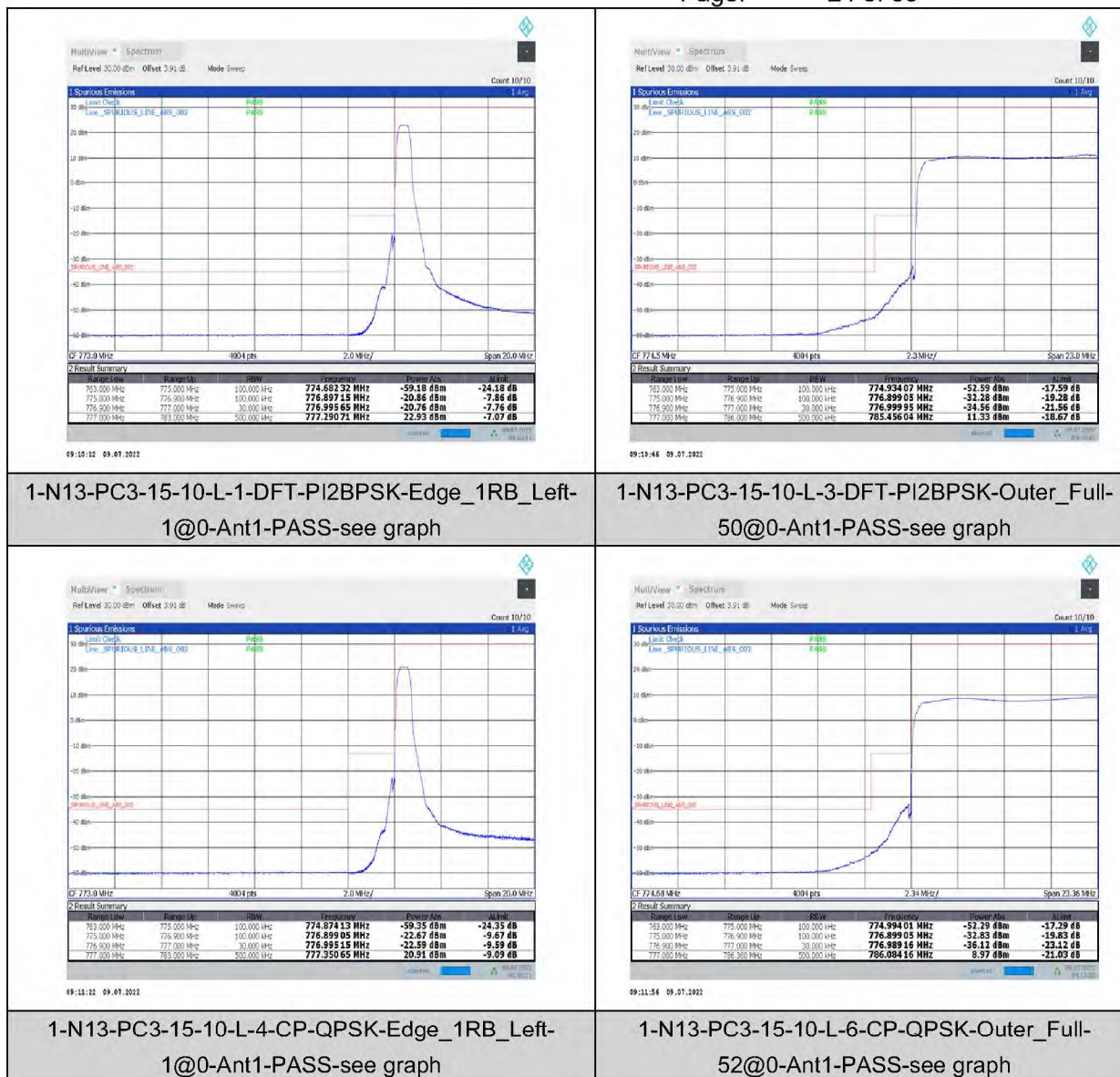
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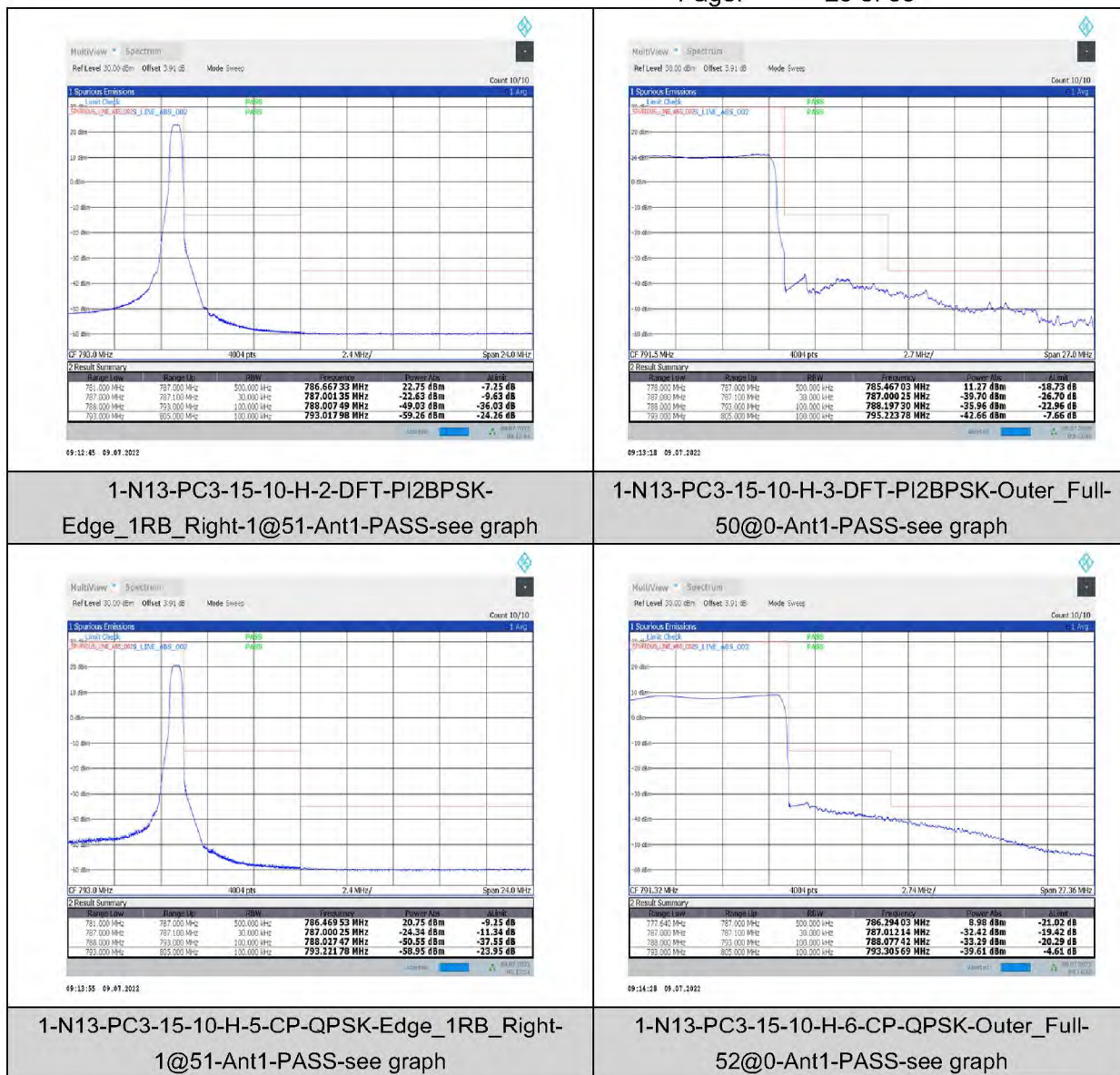
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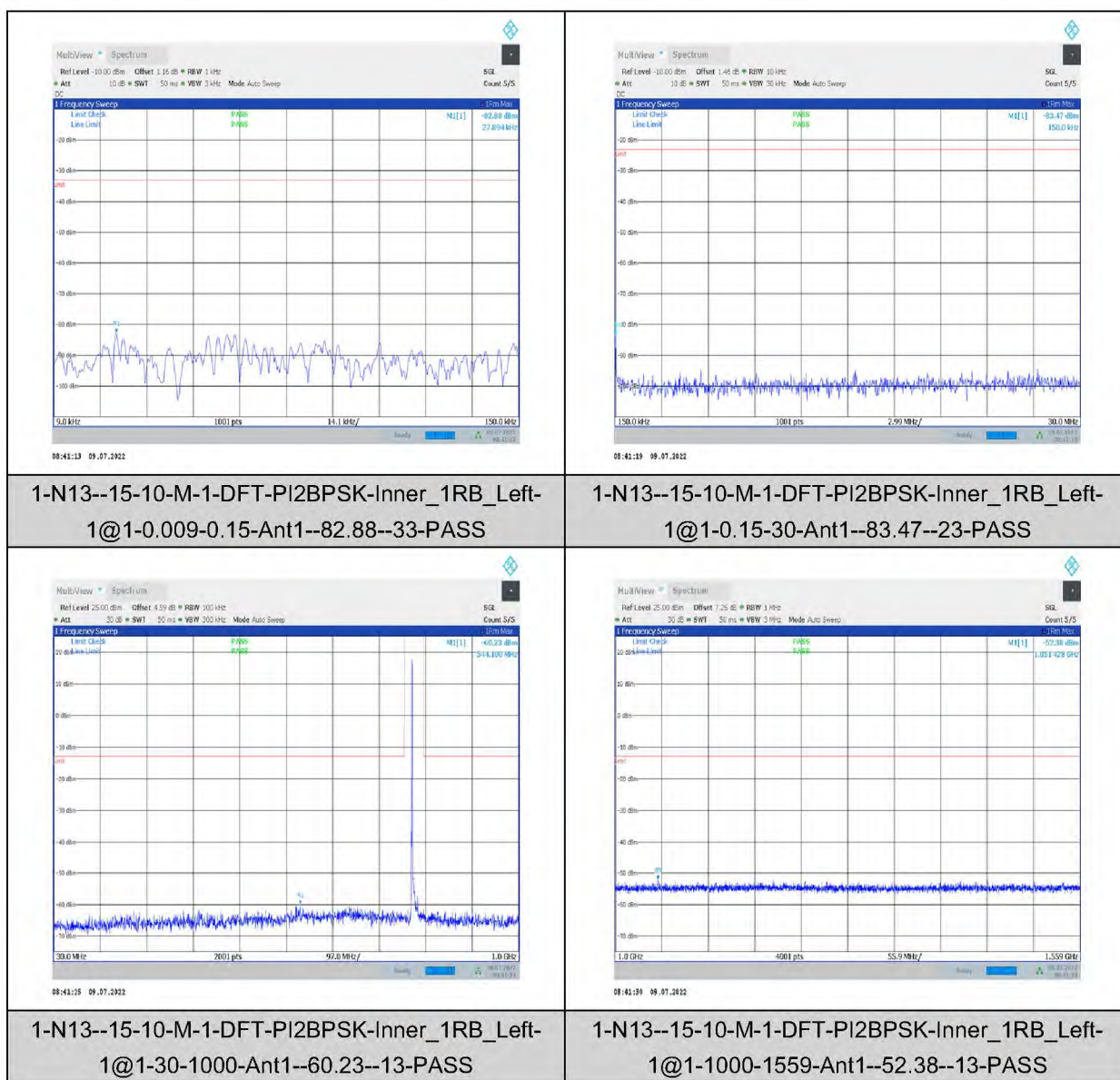
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Conducted Spurious Emission for SA

Test Graphs



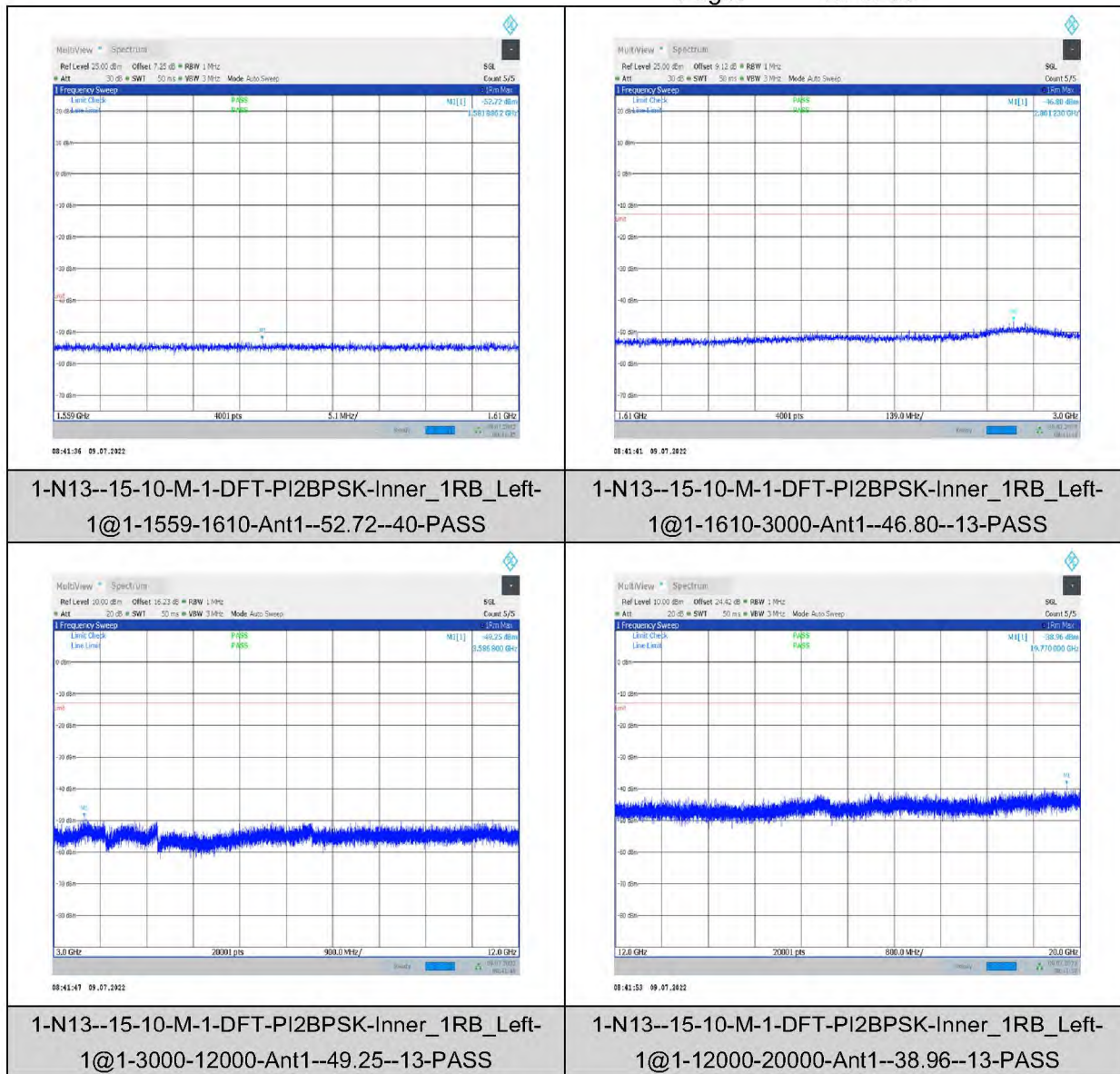
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Field Strength of Spurious Radiation

Test Band = SA Band 13 BW 10M_ TM1

Test Channel = Mid Channel

Final Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1555.18	58.56	-118.21	-59.65	-13.00	46.65	263	87	Horizontal
2	2332	61.27	-115.31	-54.04	-13.00	41.04	251	54	Horizontal
3	3110.36	52.89	-112.21	-59.32	-13.00	46.32	174	357	Horizontal
4	3887.95	51.98	-110.47	-58.49	-13.00	45.49	186	34	Horizontal
5	4665.54	50.46	-108.04	-57.58	-13.00	44.58	264	15	Horizontal
6	5443.13	52.32	-106.49	-54.17	-13.00	41.17	144	34	Horizontal

Final Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1555.18	53.45	-118.21	-64.76	-13.00	51.76	263	360	Vertical
2	2332.77	52.06	-115.31	-63.25	-13.00	50.25	251	360	Vertical
3	3110.36	52.15	-112.21	-60.06	-13.00	47.06	174	3	Vertical
4	3887.95	50.78	-110.47	-59.69	-13.00	46.69	186	179	Vertical
5	4665.54	49.93	-108.04	-58.11	-13.00	45.11	254	83	Vertical
6	5443.13	53.36	-106.49	-53.13	-13.00	40.13	188	328	Vertical



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Test Band = SA Band 13 BW 5M_ TM1

Test Channel = Low Channel

Final Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1554.68	53.55	-118.21	-64.66	-13.00	51.66	253	267	Horizontal
2	2332.02	52.70	-115.31	-62.61	-13.00	49.61	241	151	Horizontal
3	3109.36	51.65	-112.22	-60.57	-13.00	47.57	176	224	Horizontal
4	3886.7	50.65	-110.47	-59.82	-13.00	46.82	284	277	Horizontal
5	4664.04	50.73	-108.04	-57.31	-13.00	44.31	163	224	Horizontal
6	5441.38	53.08	-106.49	-53.41	-13.00	40.41	244	236	Horizontal

Final Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1554.68	53.93	-118.21	-64.28	-13.00	51.28	263	360	Vertical
2	2332.02	53.00	-115.31	-62.31	-13.00	49.31	251	338	Vertical
3	3109.36	51.99	-112.22	-60.23	-13.00	47.23	174	11	Vertical
4	3886.7	51.66	-110.47	-58.81	-13.00	45.81	262	105	Vertical
5	4664.04	50.75	-108.04	-57.29	-13.00	44.29	241	316	Vertical
6	5441.38	53.13	-106.49	-53.36	-13.00	40.36	188	355	Vertical



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Test Band = SA Band 13 BW 5M_ TM1

Test Channel = Mid Channel

Final Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1559.68	69.52	-118.21	-48.69	-40.00	8.69	263	205	Horizontal
2	2339.52	83.13	-115.29	-32.16	-13.00	19.16	251	357	Horizontal
3	3119.36	52.22	-112.19	-59.97	-13.00	46.97	144	277	Horizontal
4	3899.2	50.68	-110.43	-59.75	-13.00	46.75	265	119	Horizontal
5	4679.04	50.51	-107.99	-57.48	-13.00	44.48	244	76	Horizontal
6	5458.88	52.21	-106.48	-54.27	-13.00	41.27	178	309	Horizontal

Final Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1559.68	55.47	-118.21	-62.74	-40.00	22.74	263	242	Vertical
2	2339.52	59.36	-115.29	-55.93	-13.00	42.93	251	276	Vertical
3	3119.36	52.09	-112.19	-60.10	-13.00	47.10	174	360	Vertical
4	3899.2	50.82	-110.43	-59.61	-13.00	46.61	186	352	Vertical
5	4679.04	50.65	-107.99	-57.34	-13.00	44.34	264	211	Vertical
6	5458.88	51.47	-106.48	-55.01	-13.00	42.01	188	190	Vertical



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Test Band = SA Band 13 BW 5M_ TM1
Test Channel = High Channel

Final Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1564	67.40	-118.21	-50.81	-40.00	10.81	263	96	Horizontal
2	2347.02	95.97	-115.27	-19.30	-13.00	6.30	251	2	Horizontal
3	3129.36	51.72	-112.17	-60.45	-13.00	47.45	174	64	Horizontal
4	3911.7	51.03	-110.40	-59.37	-13.00	46.37	162	266	Horizontal
5	4694.04	51.24	-107.94	-56.70	-13.00	43.70	241	43	Horizontal
6	5476.38	51.28	-106.46	-55.18	-13.00	42.18	188	138	Horizontal

Final Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1564	69.14	-118.21	-49.07	-40.00	9.07	152	32	Vertical
2	2346	89.10	-115.28	-26.18	-13.00	13.18	263	180	Vertical
3	3129.36	52.19	-112.17	-59.98	-13.00	46.98	241	137	Vertical
4	3911.7	50.74	-110.40	-59.66	-13.00	46.66	176	137	Vertical
5	4694.04	51.00	-107.94	-56.94	-13.00	43.94	264	11	Vertical
6	5476.38	51.94	-106.46	-54.52	-13.00	41.52	188	327	Vertical





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Frequency Stability for SA

Test Result

Frequency Error VS. Voltage

Voltage										
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Voltage	Temperature	Deviation(Hz)	Deviation (ppm)	Verdict
N13	15	10	DFT-PI2BPSK	M	Outer_Full	VH	NT	2.700000	0.003453	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	VN	NT	1.000000	0.001279	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	VL	NT	2.900000	0.003708	PASS
N13	15	10	CP-QPSK	M	Outer_Full	VH	NT	0.300000	0.000384	PASS
N13	15	10	CP-QPSK	M	Outer_Full	VN	NT	1.900000	0.002430	PASS
N13	15	10	CP-QPSK	M	Outer_Full	VL	NT	2.900000	0.003708	PASS



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Frequency Error VS. Temperature

Voltage										
Band	SCS	Bandwidth	Modulation	Channel	RB Config	Voltage	Temperature	Deviation(Hz)	Deviation (ppm)	Verdict
N13	15	10	DFT-PI2BPSK	M	Outer_Full	NV	-30	1.000000	0.001279	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	NV	-20	1.100000	0.001407	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	NV	-10	4.000000	0.005115	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	NV	0	2.300000	0.002941	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	NV	10	1.300000	0.001662	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	NV	20	3.100000	0.003964	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	NV	30	0.200000	0.000256	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	NV	40	-0.600000	-0.000767	PASS
N13	15	10	DFT-PI2BPSK	M	Outer_Full	NV	50	2.400000	0.003069	PASS
N13	15	10	CP-QPSK	M	Outer_Full	NV	-30	3.200000	0.004092	PASS
N13	15	10	CP-QPSK	M	Outer_Full	NV	-20	2.200000	0.002813	PASS
N13	15	10	CP-QPSK	M	Outer_Full	NV	-10	5.900000	0.007545	PASS
N13	15	10	CP-QPSK	M	Outer_Full	NV	0	4.300000	0.005499	PASS
N13	15	10	CP-QPSK	M	Outer_Full	NV	10	4.200000	0.005371	PASS
N13	15	10	CP-QPSK	M	Outer_Full	NV	20	4.500000	0.005754	PASS
N13	15	10	CP-QPSK	M	Outer_Full	NV	30	3.800000	0.004859	PASS
N13	15	10	CP-QPSK	M	Outer_Full	NV	40	0.100000	0.000128	PASS
N13	15	10	CP-QPSK	M	Outer_Full	NV	50	1.200000	0.001535	PASS

The End





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