

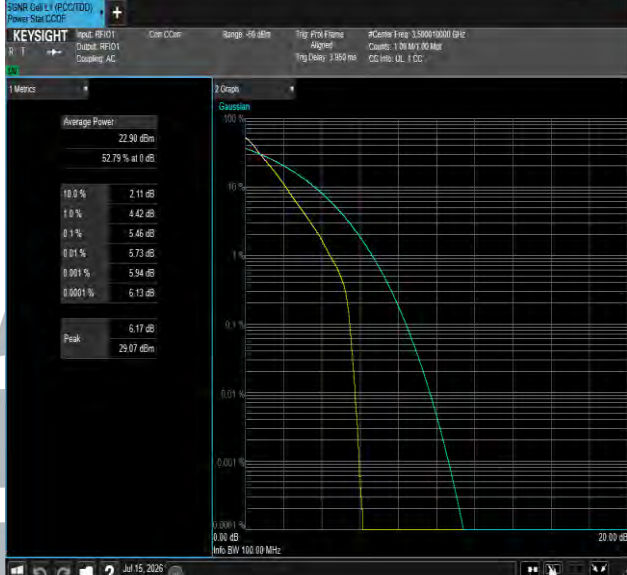
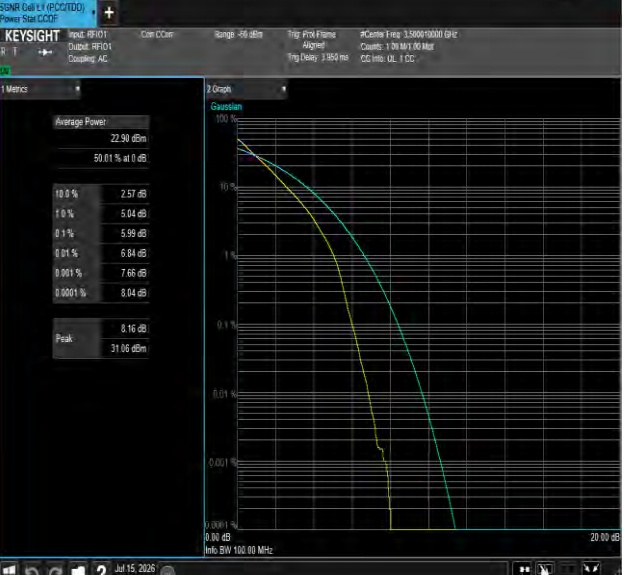
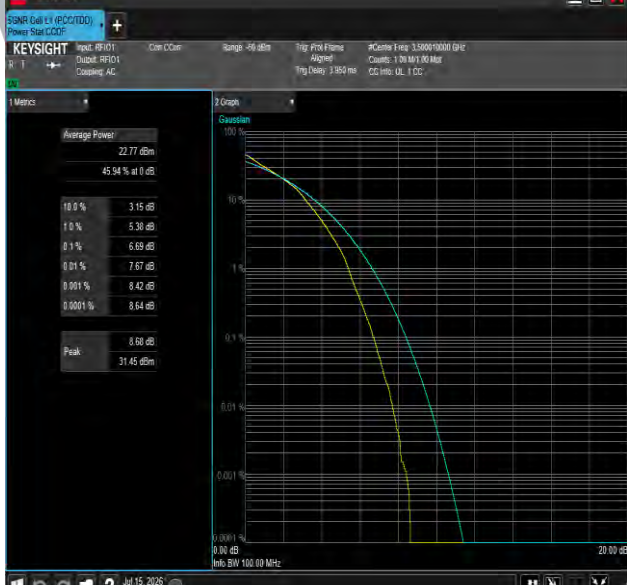
APPENDIX A NR_SA N77(3450-3550MHZ) RF TEST DATA

A.1 PEAK-TO-AVERAGE RATIO FOR SA

Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	Result (dB)	Limit	Verdict
n77(3450-3550)	30	100	DFT-BPSK	M	Outer_Full	5.46	≤13dB	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Outer_Full	5.99	≤13dB	PASS
n77(3450-3550)	30	100	DFT-16QAM	M	Outer_Full	6.69	≤13dB	PASS

Test Graphs

	
NTNV-n77(3450-3550)-PC3-30-100-M-DFT-BPSK-Outer_Full -PASS	NTNV-n77(3450-3550)-PC3-30-100-M-DFT-QPSK-Outer_Fu II-PASS
	
NTNV-n77(3450-3550)-PC3-30-100-M-DFT-16QAM-Outer_F ull-PASS	

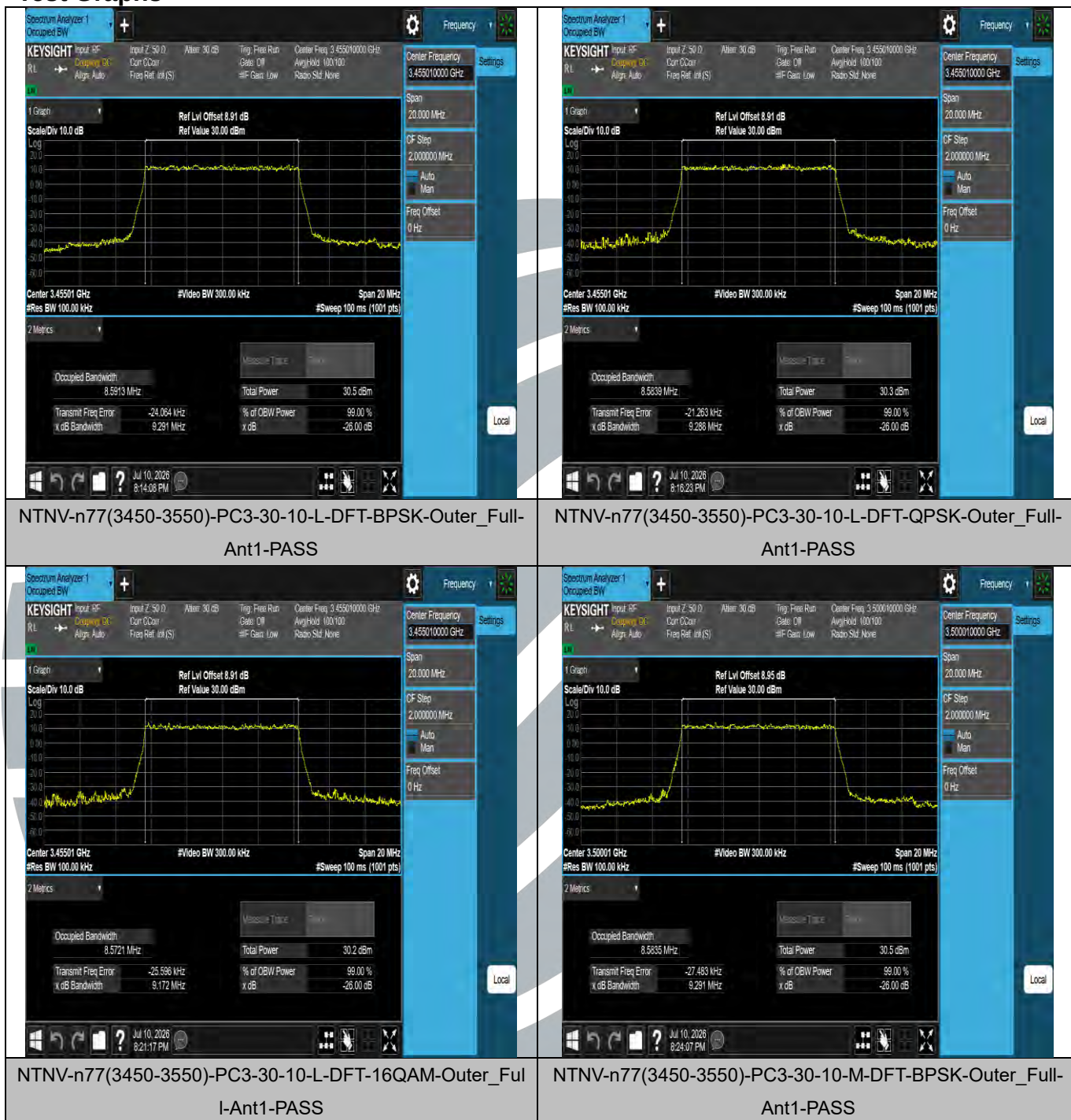
A.2 26DB BANDWIDTH AND OCCUPIED BANDWIDTH FOR SA

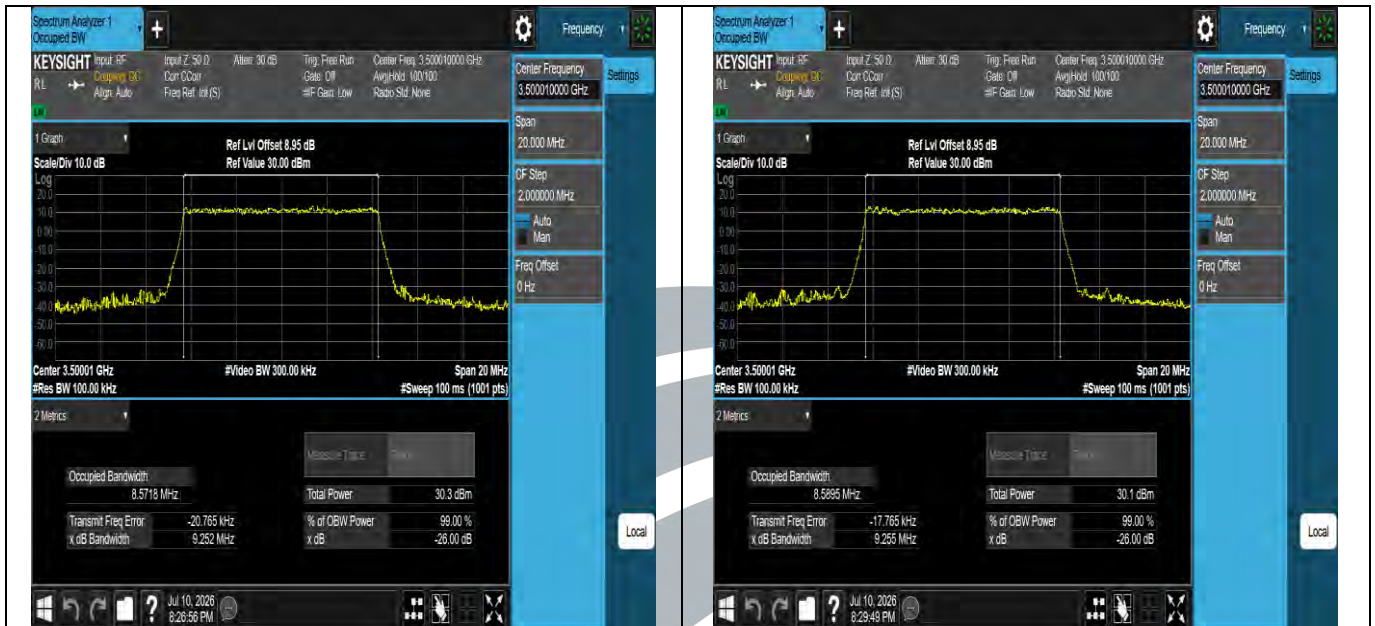
Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	99% BW Result (MHz)	26dB BW Result (MHz)	Verdict
n77(3450-3550)	30	10	DFT-BPSK	L	Outer Full	8.5913	9.291	PASS
n77(3450-3550)	30	10	DFT-QPSK	L	Outer Full	8.5839	9.288	PASS
n77(3450-3550)	30	10	DFT-16QAM	L	Outer Full	8.5721	9.172	PASS
n77(3450-3550)	30	10	DFT-BPSK	M	Outer Full	8.5835	9.291	PASS
n77(3450-3550)	30	10	DFT-QPSK	M	Outer Full	8.5718	9.252	PASS
n77(3450-3550)	30	10	DFT-16QAM	M	Outer Full	8.5895	9.255	PASS
n77(3450-3550)	30	10	DFT-BPSK	H	Outer Full	8.6008	9.340	PASS
n77(3450-3550)	30	10	DFT-QPSK	H	Outer Full	8.5847	9.293	PASS
n77(3450-3550)	30	10	DFT-16QAM	H	Outer Full	8.5768	9.193	PASS
n77(3450-3550)	30	15	DFT-BPSK	L	Outer Full	12.888	13.67	PASS
n77(3450-3550)	30	15	DFT-QPSK	L	Outer Full	12.873	13.68	PASS
n77(3450-3550)	30	15	DFT-16QAM	L	Outer Full	12.861	13.68	PASS
n77(3450-3550)	30	15	DFT-BPSK	M	Outer Full	12.873	13.71	PASS
n77(3450-3550)	30	15	DFT-QPSK	M	Outer Full	12.866	13.65	PASS
n77(3450-3550)	30	15	DFT-16QAM	M	Outer Full	12.840	13.76	PASS
n77(3450-3550)	30	15	DFT-BPSK	H	Outer Full	12.883	13.70	PASS
n77(3450-3550)	30	15	DFT-QPSK	H	Outer Full	12.876	13.73	PASS
n77(3450-3550)	30	15	DFT-16QAM	H	Outer Full	12.853	13.65	PASS
n77(3450-3550)	30	20	DFT-BPSK	L	Outer Full	17.883	18.80	PASS
n77(3450-3550)	30	20	DFT-QPSK	L	Outer Full	17.883	18.69	PASS
n77(3450-3550)	30	20	DFT-16QAM	L	Outer Full	17.832	18.77	PASS
n77(3450-3550)	30	20	DFT-BPSK	M	Outer Full	17.884	18.91	PASS
n77(3450-3550)	30	20	DFT-QPSK	M	Outer Full	17.844	18.79	PASS
n77(3450-3550)	30	20	DFT-16QAM	M	Outer Full	17.834	18.86	PASS
n77(3450-3550)	30	20	DFT-BPSK	H	Outer Full	17.866	18.80	PASS
n77(3450-3550)	30	20	DFT-QPSK	H	Outer Full	17.860	18.79	PASS
n77(3450-3550)	30	20	DFT-16QAM	H	Outer Full	17.833	18.77	PASS
n77(3450-3550)	30	40	DFT-BPSK	L	Outer Full	35.707	37.36	PASS
n77(3450-3550)	30	40	DFT-QPSK	L	Outer Full	35.753	37.46	PASS
n77(3450-3550)	30	40	DFT-16QAM	L	Outer Full	35.675	37.22	PASS
n77(3450-3550)	30	40	DFT-BPSK	M	Outer Full	35.733	37.28	PASS
n77(3450-3550)	30	40	DFT-QPSK	M	Outer Full	35.751	37.40	PASS
n77(3450-3550)	30	40	DFT-16QAM	M	Outer Full	35.682	37.41	PASS
n77(3450-3550)	30	40	DFT-BPSK	H	Outer Full	35.711	37.26	PASS
n77(3450-3550)	30	40	DFT-QPSK	H	Outer Full	35.753	37.36	PASS
n77(3450-3550)	30	40	DFT-16QAM	H	Outer Full	35.684	37.26	PASS
n77(3450-3550)	30	50	DFT-BPSK	L	Outer Full	45.669	47.54	PASS
n77(3450-3550)	30	50	DFT-QPSK	L	Outer Full	45.626	47.55	PASS
n77(3450-3550)	30	50	DFT-16QAM	L	Outer Full	45.635	47.66	PASS
n77(3450-3550)	30	50	DFT-BPSK	M	Outer Full	45.684	47.58	PASS
n77(3450-3550)	30	50	DFT-QPSK	M	Outer Full	45.629	47.66	PASS
n77(3450-3550)	30	50	DFT-16QAM	M	Outer Full	45.598	47.51	PASS
n77(3450-3550)	30	50	DFT-BPSK	H	Outer Full	45.667	47.51	PASS
n77(3450-3550)	30	50	DFT-QPSK	H	Outer Full	45.598	47.45	PASS
n77(3450-3550)	30	50	DFT-16QAM	H	Outer Full	45.587	47.63	PASS
n77(3450-3550)	30	60	DFT-BPSK	L	Outer Full	57.884	59.95	PASS
n77(3450-3550)	30	60	DFT-QPSK	L	Outer Full	57.914	59.93	PASS
n77(3450-3550)	30	60	DFT-16QAM	L	Outer Full	57.812	59.95	PASS
n77(3450-3550)	30	60	DFT-BPSK	M	Outer Full	57.861	59.92	PASS
n77(3450-3550)	30	60	DFT-QPSK	M	Outer Full	57.864	59.91	PASS
n77(3450-3550)	30	60	DFT-16QAM	M	Outer Full	57.759	59.92	PASS
n77(3450-3550)	30	60	DFT-BPSK	H	Outer Full	57.836	59.89	PASS
n77(3450-3550)	30	60	DFT-QPSK	H	Outer Full	57.814	59.83	PASS
n77(3450-3550)	30	60	DFT-16QAM	H	Outer Full	57.744	59.90	PASS
n77(3450-3550)	30	70	DFT-BPSK	L	Outer Full	64.160	66.47	PASS
n77(3450-3550)	30	70	DFT-QPSK	L	Outer Full	64.237	66.52	PASS

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	99% BW Result (MHz)	26dB BW Result (MHz)	Verdict
n77(3450-3550)	30	70	DFT-16QAM	L	Outer Full	64.255	66.38	PASS
n77(3450-3550)	30	70	DFT-BPSK	M	Outer Full	64.196	66.44	PASS
n77(3450-3550)	30	70	DFT-QPSK	M	Outer Full	64.259	66.56	PASS
n77(3450-3550)	30	70	DFT-16QAM	M	Outer Full	64.240	66.40	PASS
n77(3450-3550)	30	70	DFT-BPSK	H	Outer Full	64.149	66.44	PASS
n77(3450-3550)	30	70	DFT-QPSK	H	Outer Full	64.118	66.56	PASS
n77(3450-3550)	30	70	DFT-16QAM	H	Outer Full	64.207	66.43	PASS
n77(3450-3550)	30	80	DFT-BPSK	L	Outer Full	77.226	79.83	PASS
n77(3450-3550)	30	80	DFT-QPSK	L	Outer Full	77.085	79.74	PASS
n77(3450-3550)	30	80	DFT-16QAM	L	Outer Full	76.851	79.70	PASS
n77(3450-3550)	30	80	DFT-BPSK	M	Outer Full	77.157	79.86	PASS
n77(3450-3550)	30	80	DFT-QPSK	M	Outer Full	77.083	79.81	PASS
n77(3450-3550)	30	80	DFT-16QAM	M	Outer Full	76.872	79.89	PASS
n77(3450-3550)	30	80	DFT-BPSK	H	Outer Full	77.153	79.87	PASS
n77(3450-3550)	30	80	DFT-QPSK	H	Outer Full	77.000	79.73	PASS
n77(3450-3550)	30	80	DFT-16QAM	H	Outer Full	76.866	79.81	PASS
n77(3450-3550)	30	90	DFT-BPSK	L	Outer Full	86.699	89.71	PASS
n77(3450-3550)	30	90	DFT-QPSK	L	Outer Full	86.716	89.77	PASS
n77(3450-3550)	30	90	DFT-16QAM	L	Outer Full	86.491	89.55	PASS
n77(3450-3550)	30	90	DFT-BPSK	M	Outer Full	86.679	89.66	PASS
n77(3450-3550)	30	90	DFT-QPSK	M	Outer Full	86.730	89.79	PASS
n77(3450-3550)	30	90	DFT-16QAM	M	Outer Full	86.478	89.55	PASS
n77(3450-3550)	30	90	DFT-BPSK	H	Outer Full	86.628	89.73	PASS
n77(3450-3550)	30	90	DFT-QPSK	H	Outer Full	86.633	89.77	PASS
n77(3450-3550)	30	90	DFT-16QAM	H	Outer Full	86.448	89.66	PASS
n77(3450-3550)	30	100	DFT-BPSK	M	Outer Full	96.357	99.59	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Outer Full	96.389	99.64	PASS
n77(3450-3550)	30	100	DFT-16QAM	M	Outer Full	96.212	99.65	PASS

Test Graphs





NTNV-n77(3450-3550)-PC3-30-10-M-DFT-QPSK-Outter_Full
-Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-10-M-DFT-16QAM-Outter_Full
-Ant1-PASS



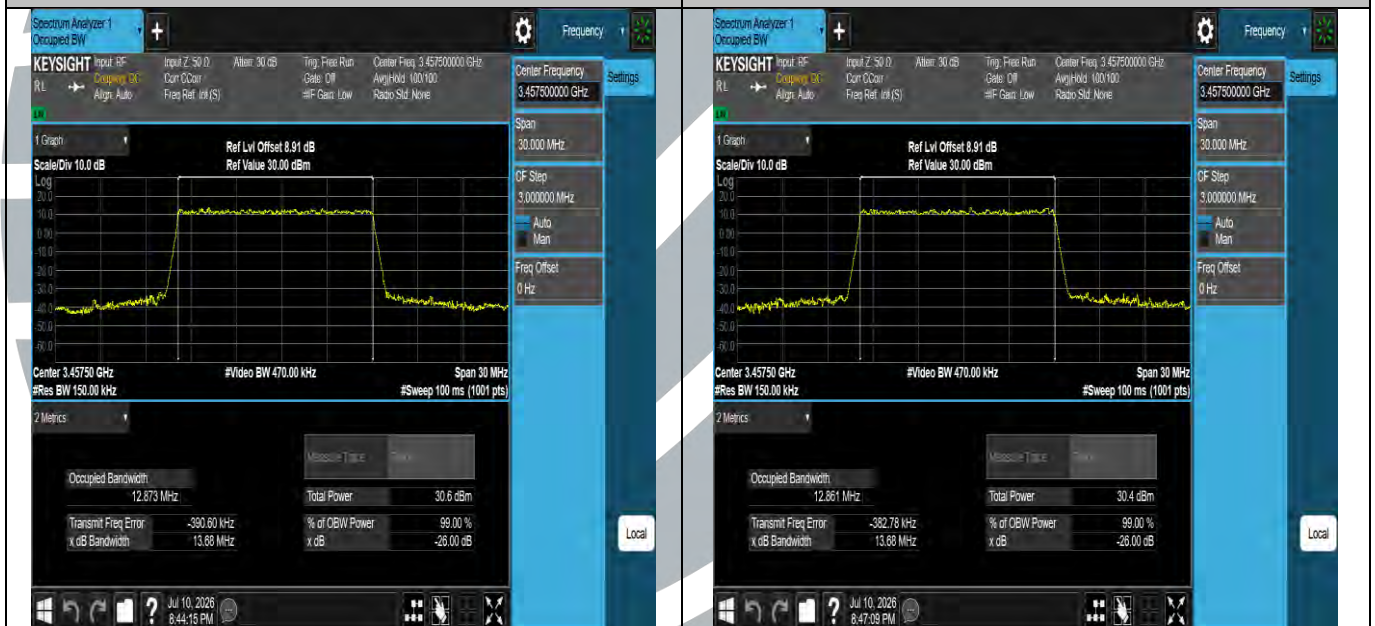
NTNV-n77(3450-3550)-PC3-30-10-H-DFT-BPSK-Outter_Full
Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-10-H-DFT-QPSK-Outter_Full
Ant1-PASS



NTNV-n77(3450-3550)-PC3-30-10-H-DFT-16QAM-Outer_Fu
ll-Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-15-L-DFT-BPSK-Outer_Full-A
nt1-PASS



NTNV-n77(3450-3550)-PC3-30-15-L-DFT-QPSK-Outer_Full-
Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-15-L-DFT-16QAM-Outer_Full
-Ant1-PASS


NTNV-n77(3450-3550)-PC3-30-15-M-DFT-BPSK-Outter_Full
-Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-15-M-DFT-QPSK-Outter_Full-
Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-15-M-DFT-16QAM-Outter_Fu
II-Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-15-H-DFT-BPSK-Outter_Full-
Ant1-PASS



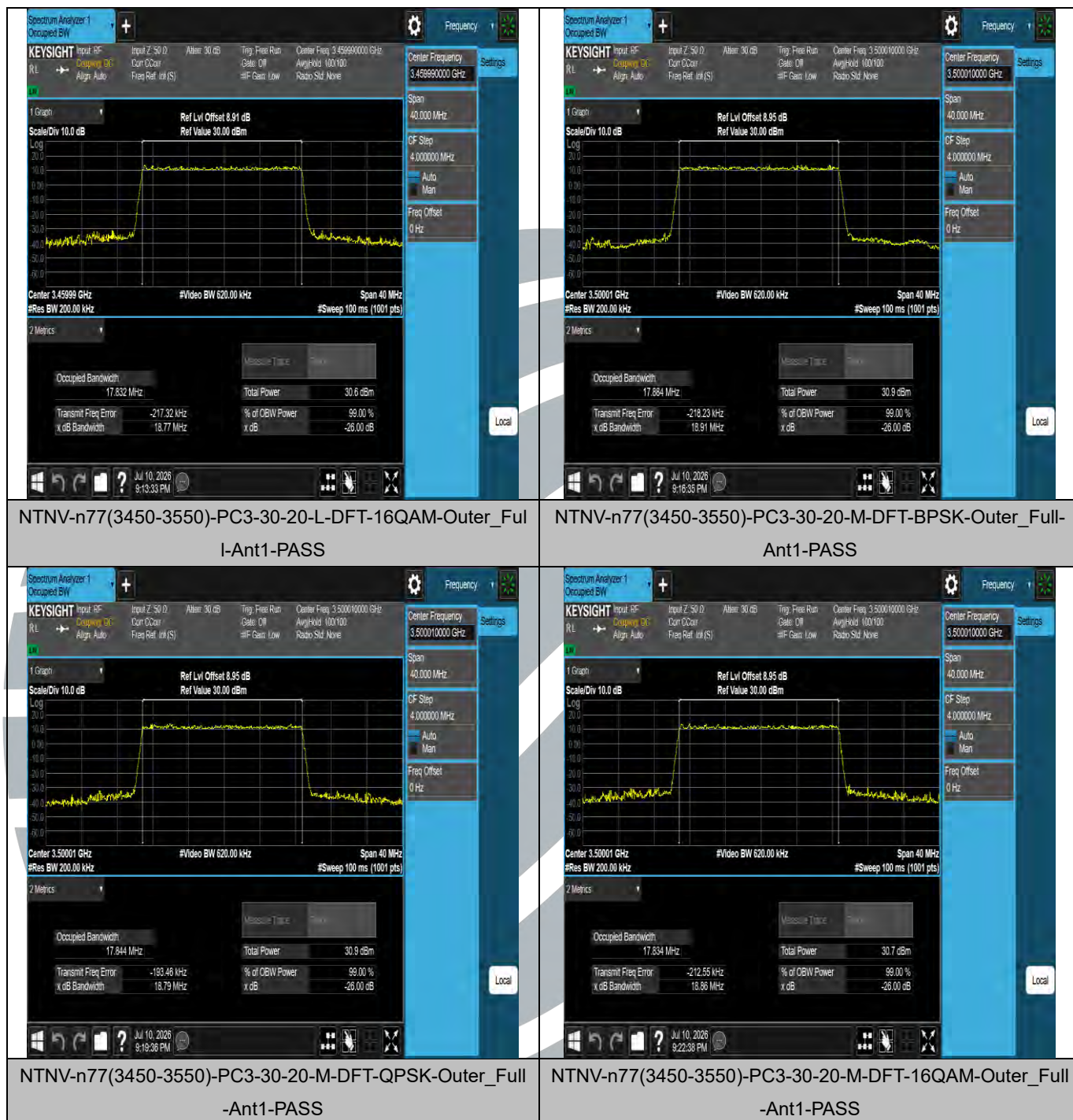
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-Ant1-PASS

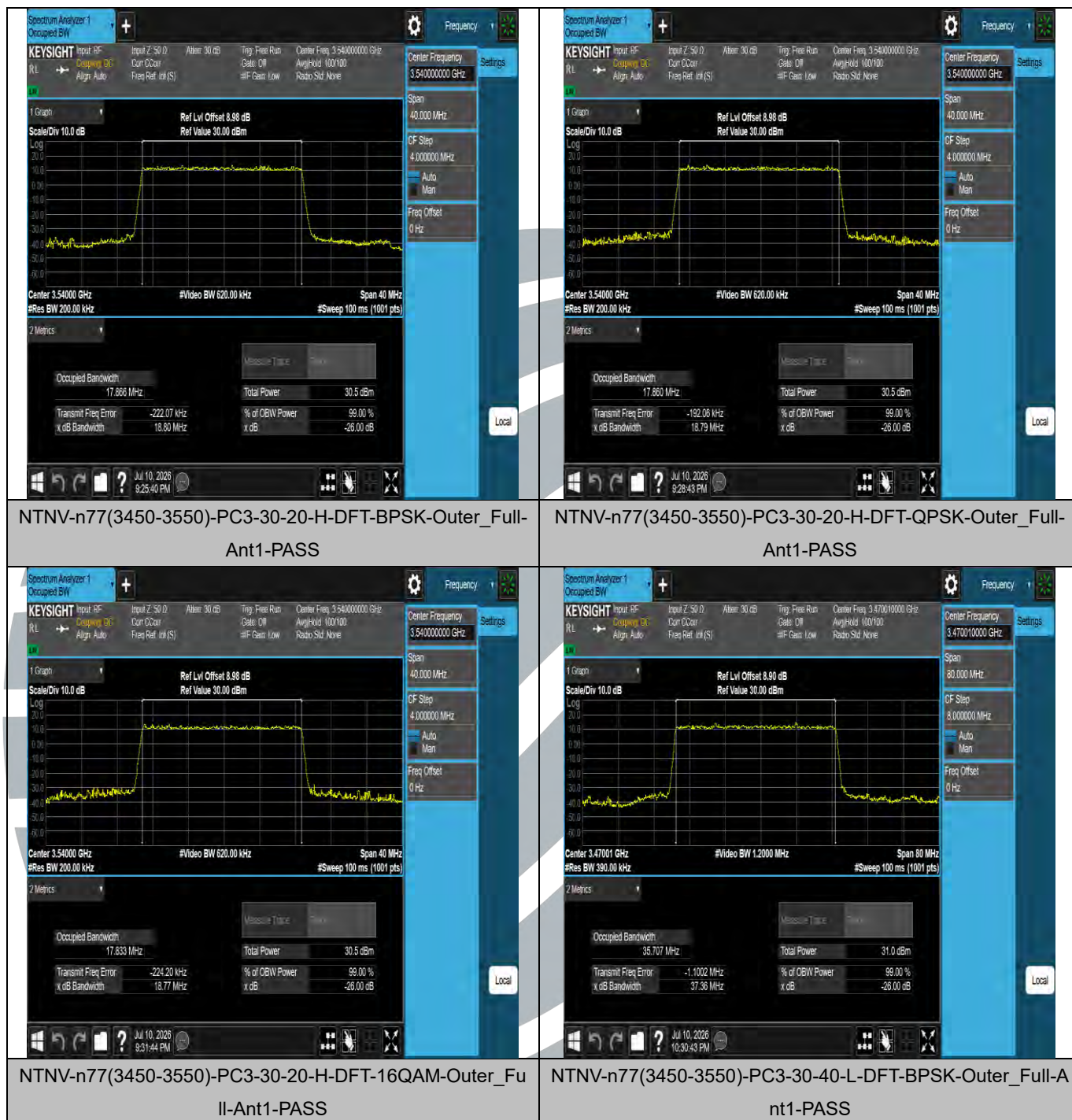
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-Ant1-PASS

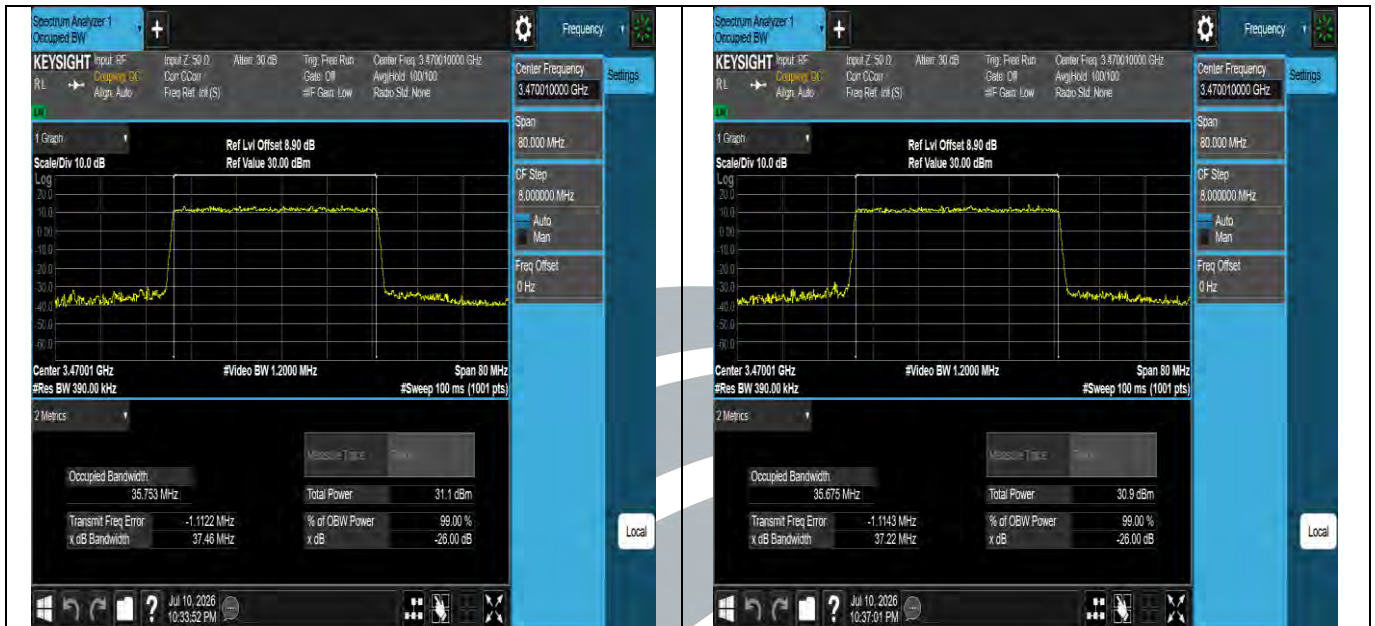


NTNV-n77(3450-3550)-PC3-30-20-L-DFT-BPSK-Outter_Full
Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-20-L-DFT-QPSK-Outter_Full
Ant1-PASS







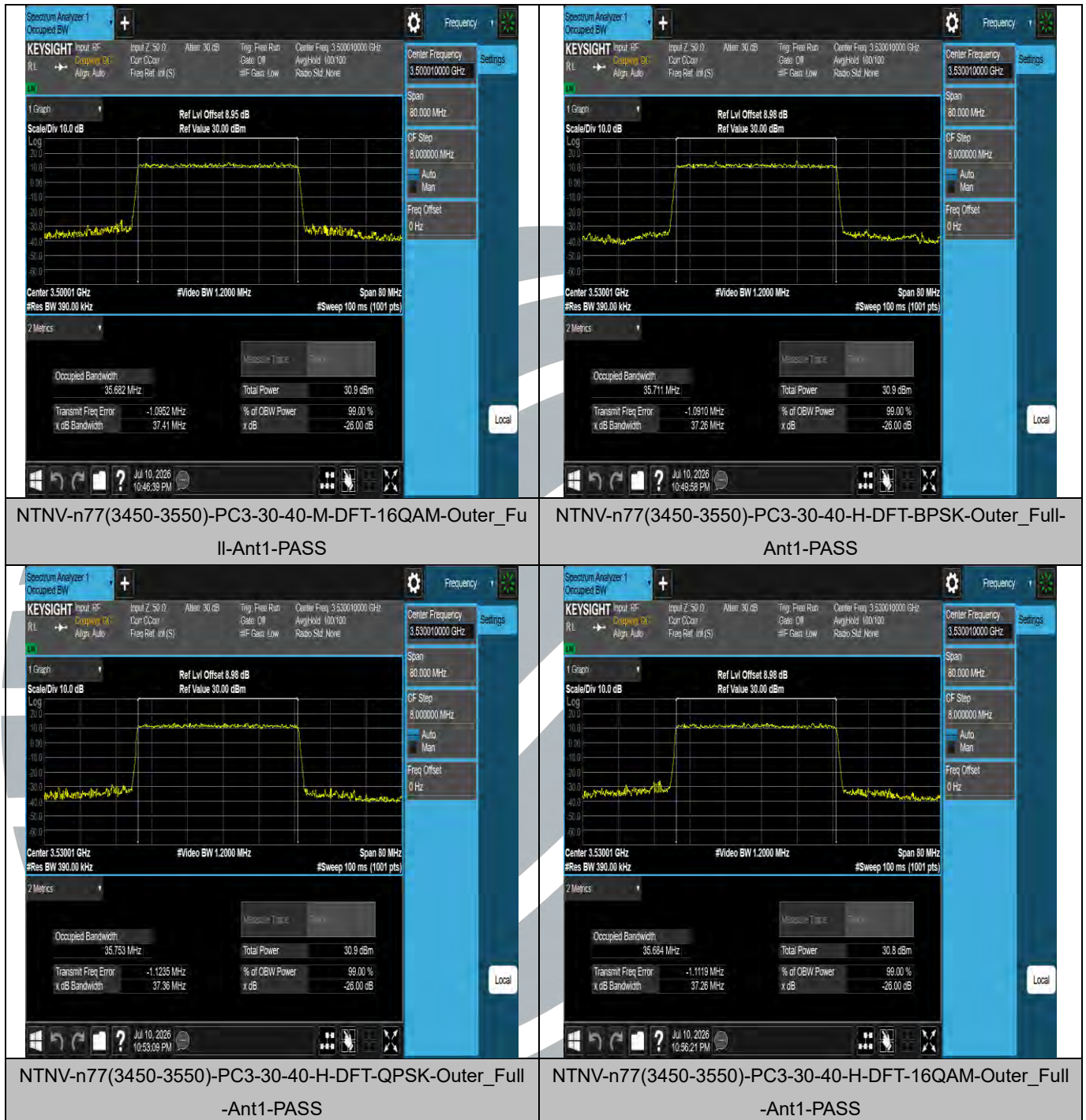
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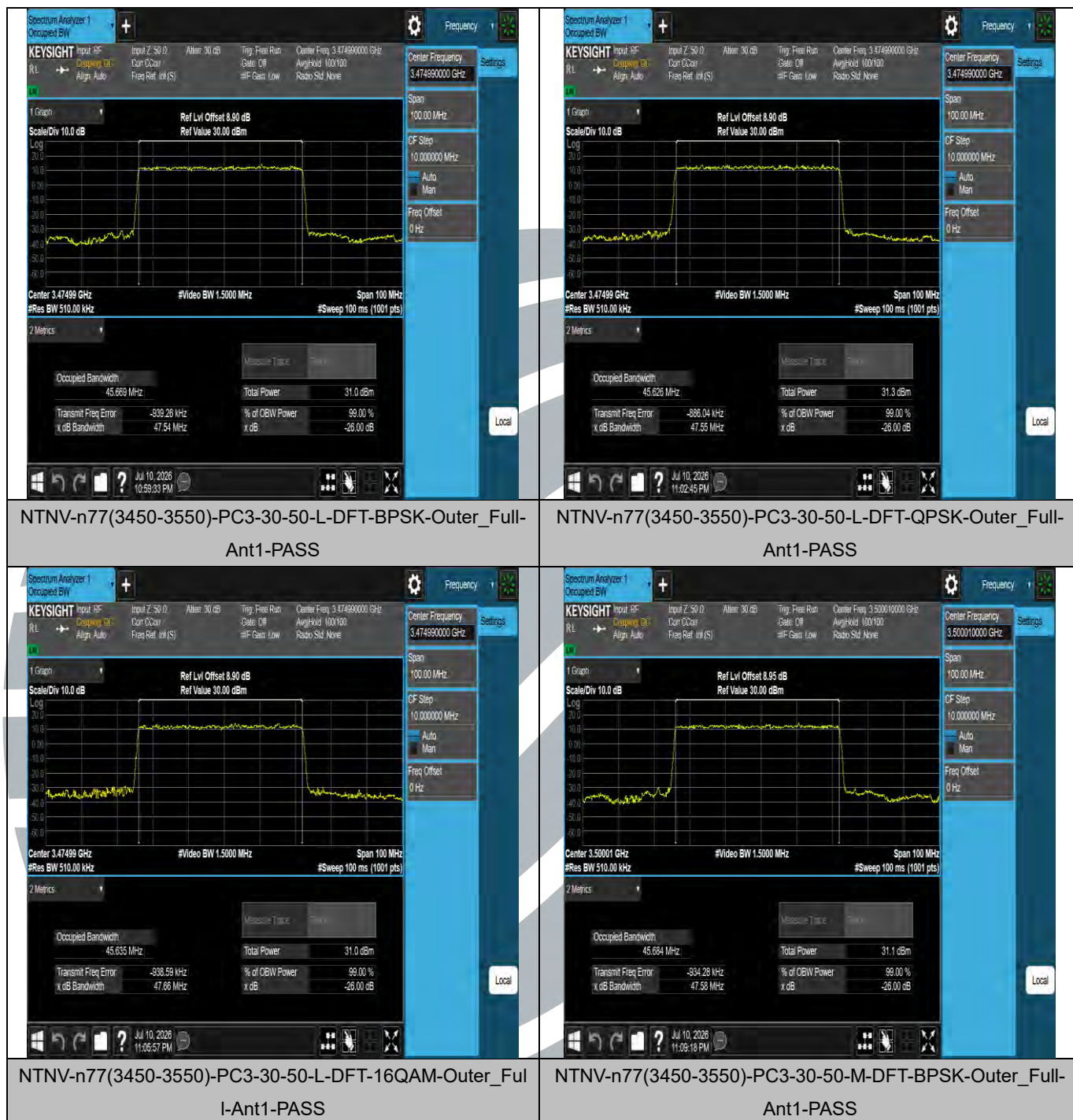
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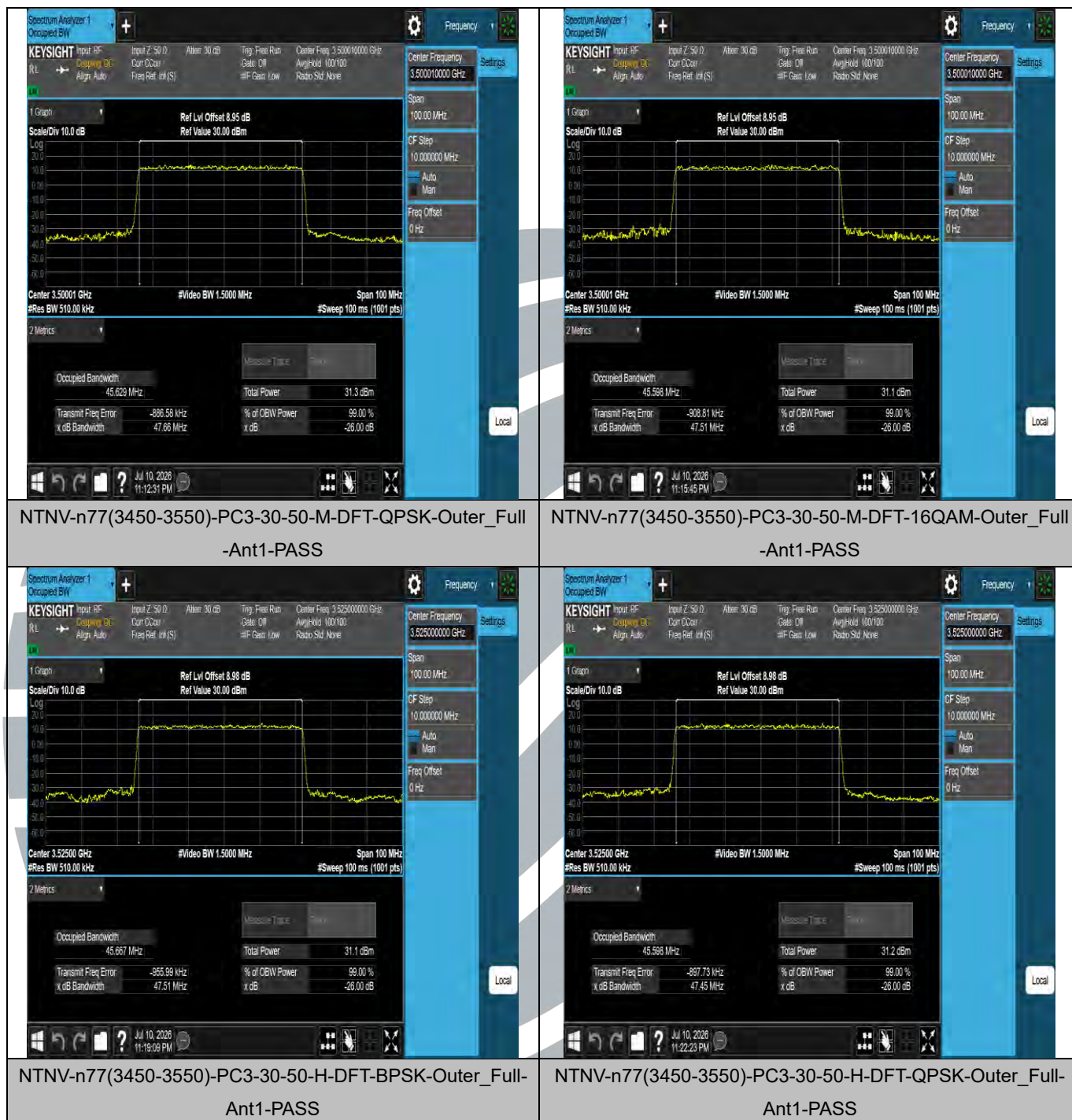


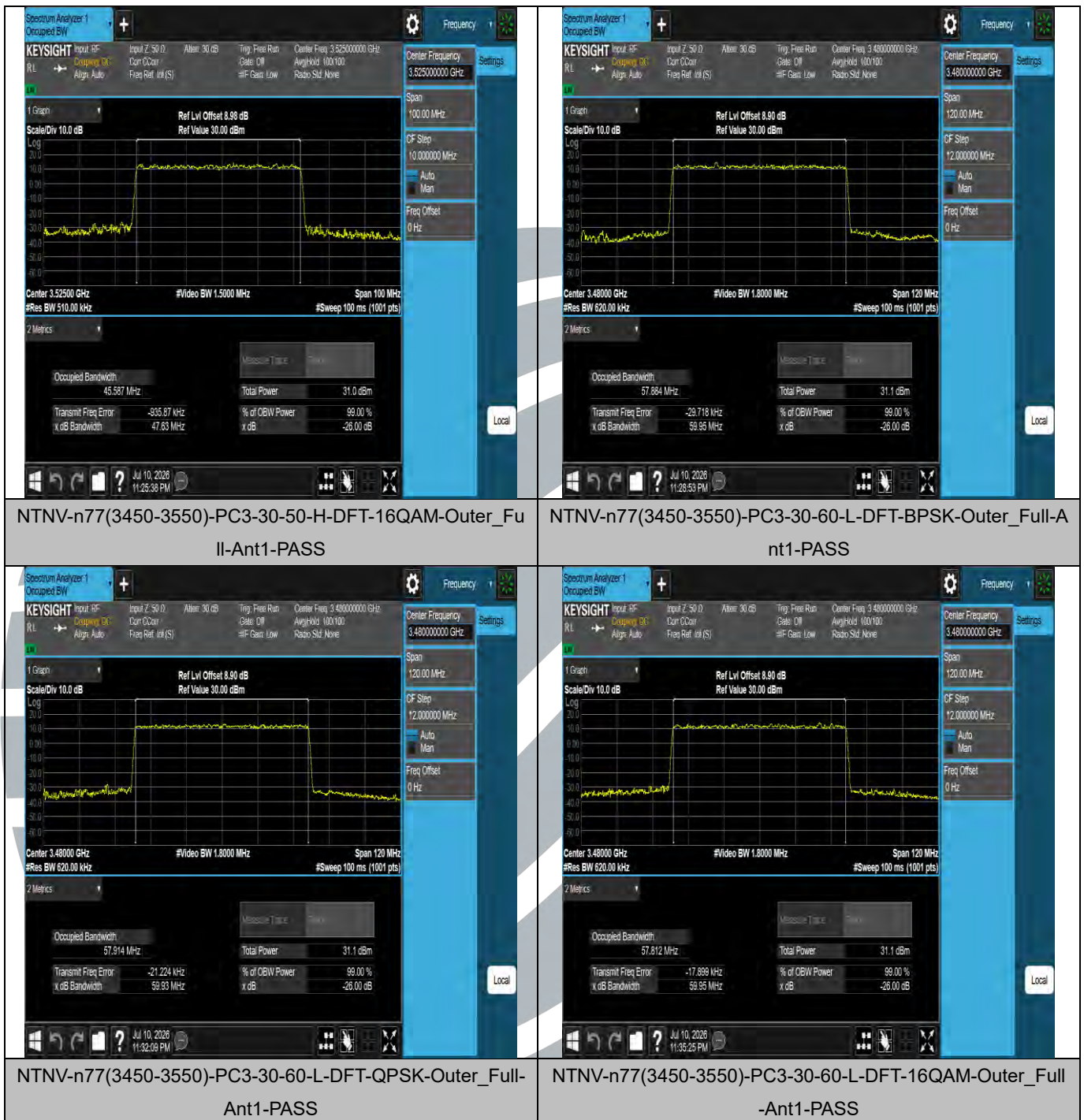
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NTNV-n77(3450-3550)-PC3-30-40-M-DFT-QPSK-Outer_Full-Ant1-PASS











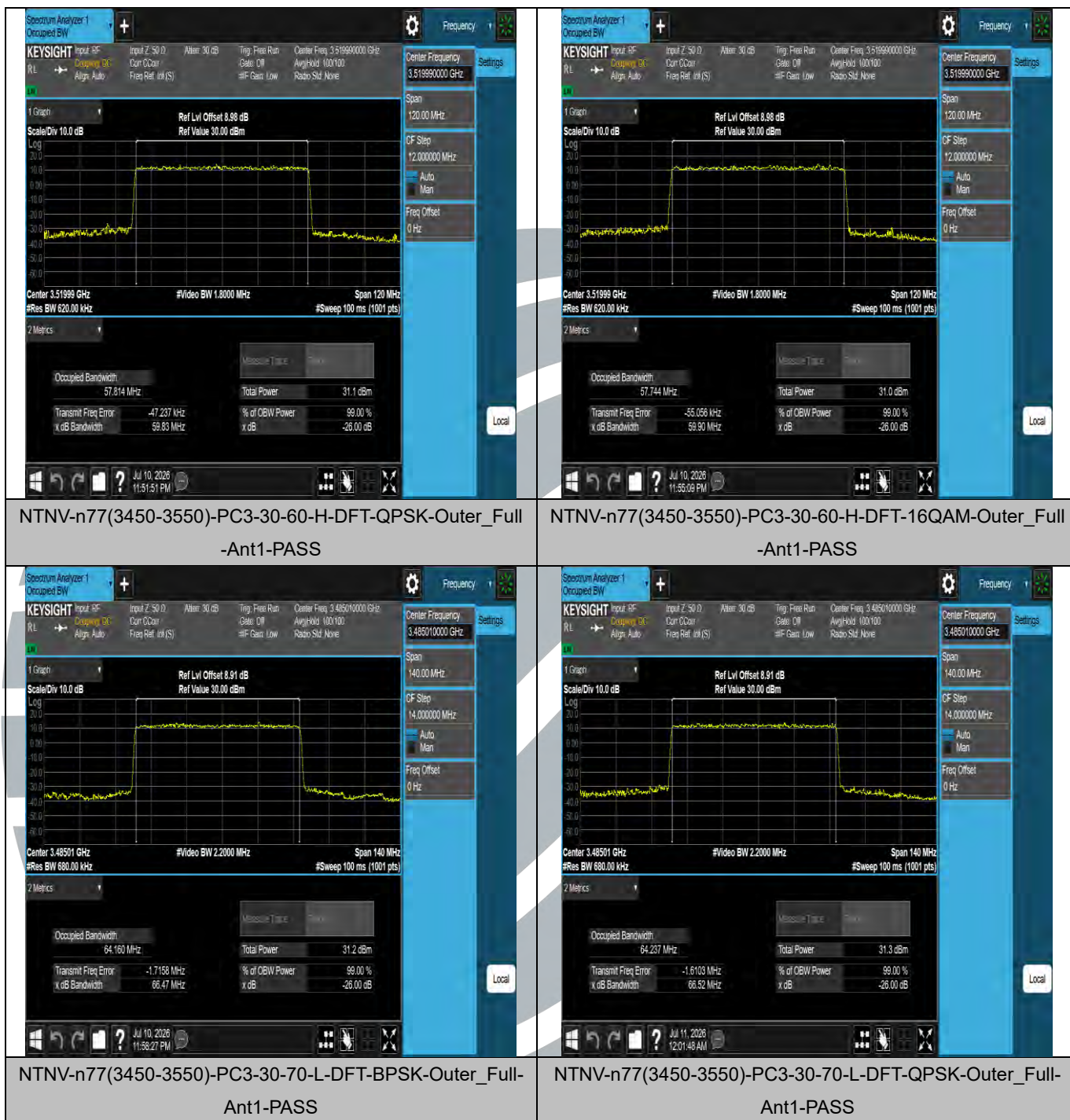
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-Ant1-PASS

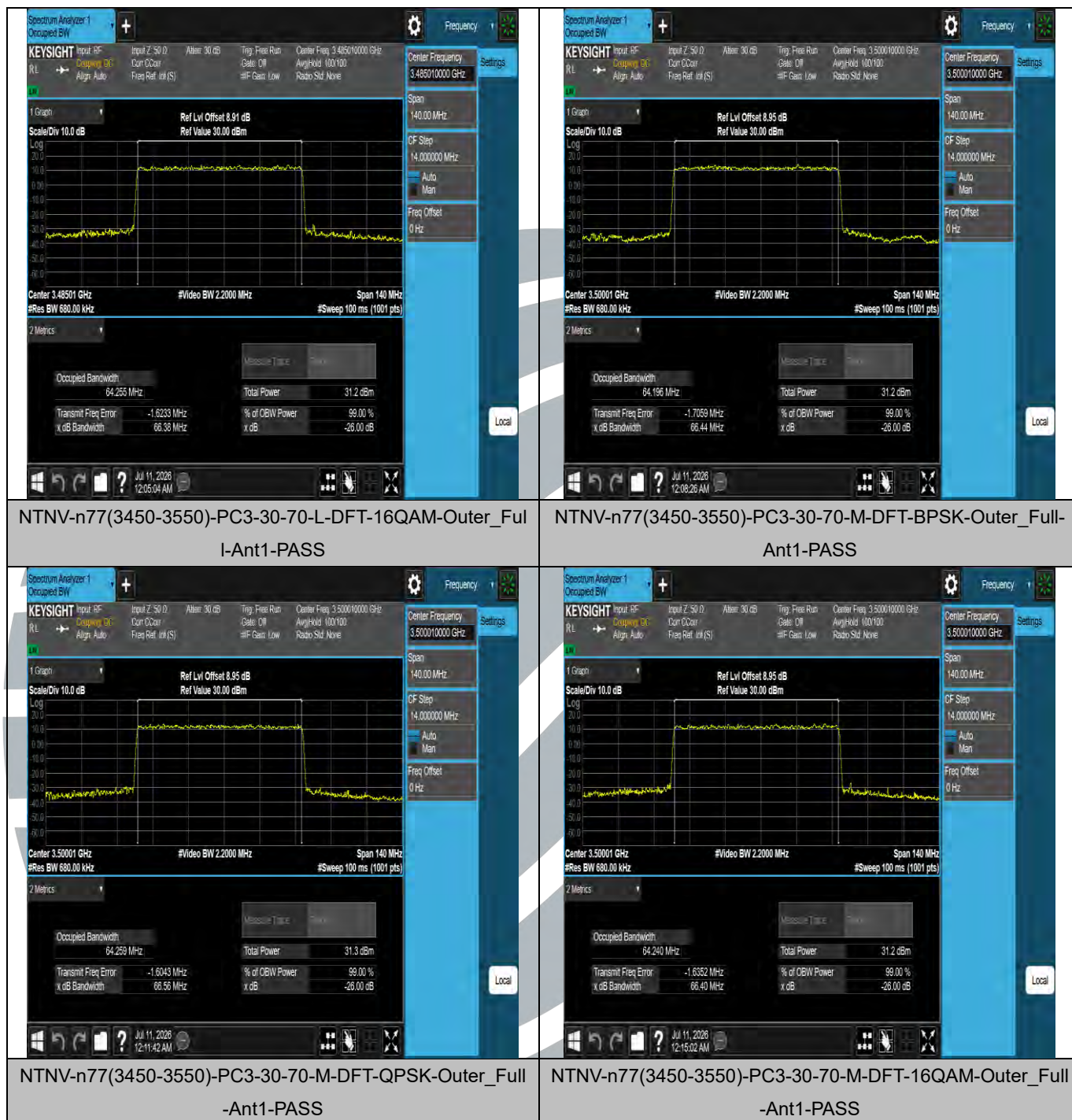
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Ant1-PASS

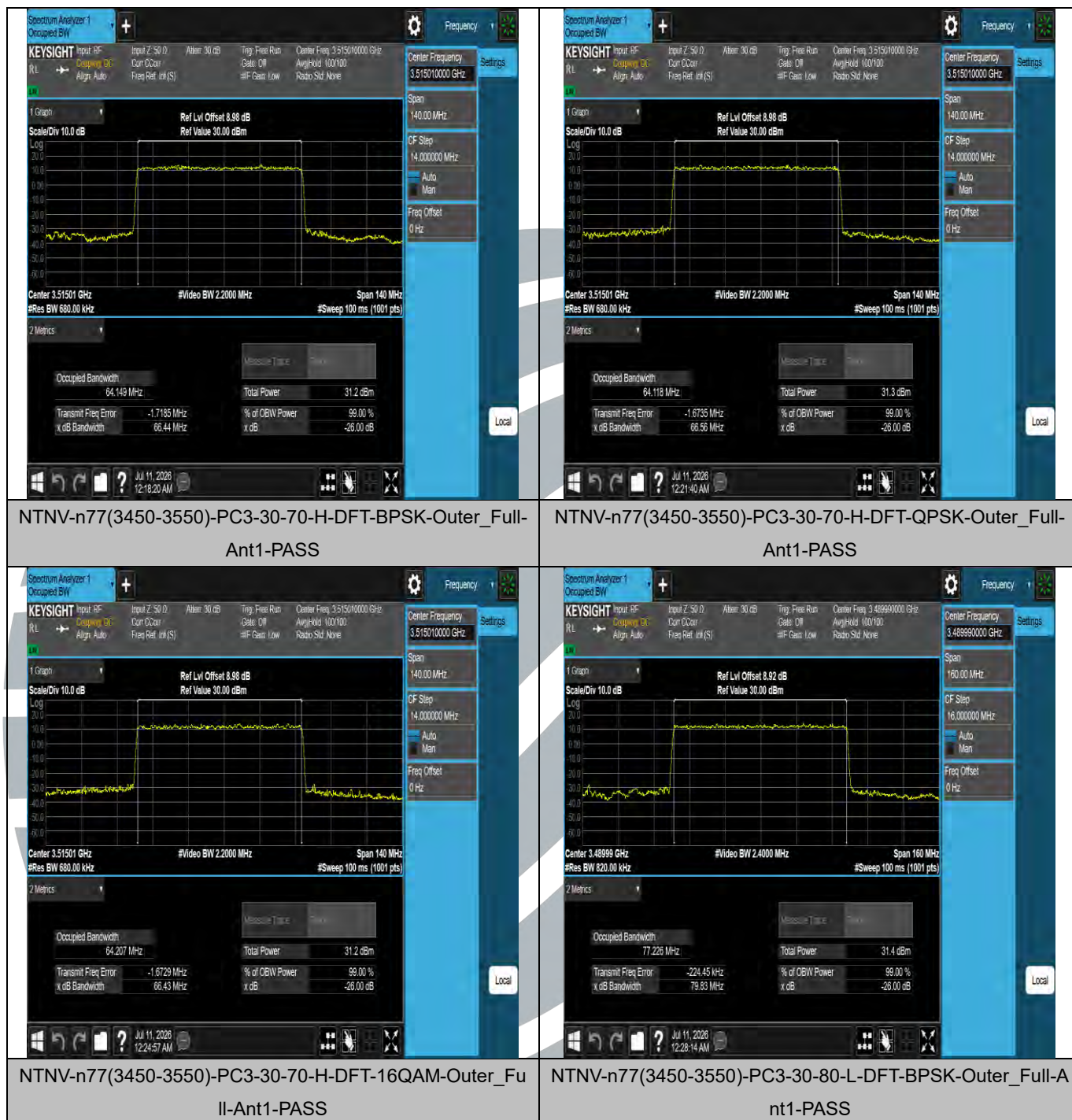


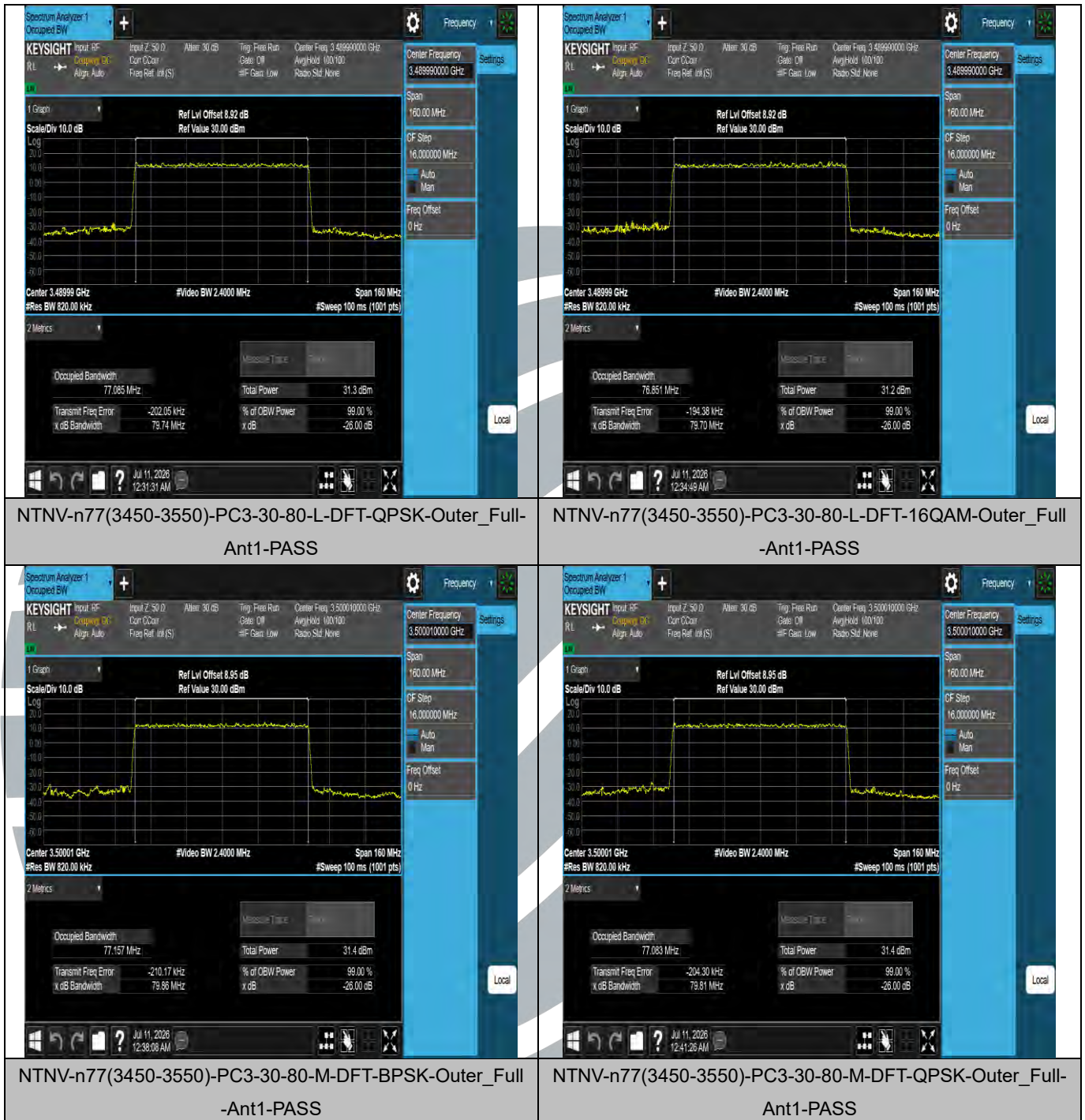
NTNV-n77(3450-3550)-PC3-30-60-M-DFT-16QAM-Outter_Fu
II-Ant1-PASS

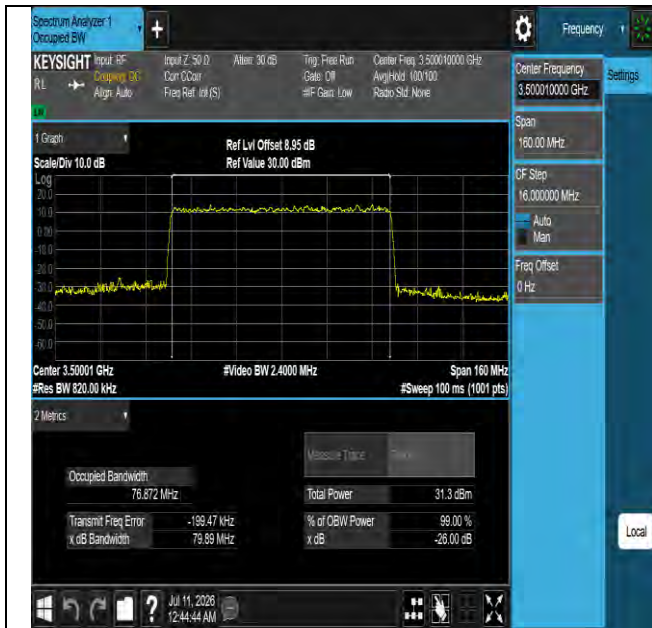
NTNV-n77(3450-3550)-PC3-30-60-M-DFT-BPSK-Outter_Full-
Ant1-PASS










NTNV-n77(3450-3550)-PC3-30-80-M-DFT-16QAM-Outter_Fu
II-Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-80-H-DFT-BPSK-Outter_Full-
Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-80-H-DFT-QPSK-Outter_Full
-Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-80-H-DFT-16QAM-Outter_Full
-Ant1-PASS



NTNV-n77(3450-3550)-PC3-30-90-L-DFT-BPSK-Outer_Full-Ant1-PASS



NTNV-n77(3450-3550)-PC3-30-90-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n77(3450-3550)-PC3-30-90-L-DFT-16QAM-Outer_Ful-I-Ant1-PASS



NTNV-n77(3450-3550)-PC3-30-90-M-DFT-BPSK-Outer_Full-Ant1-PASS



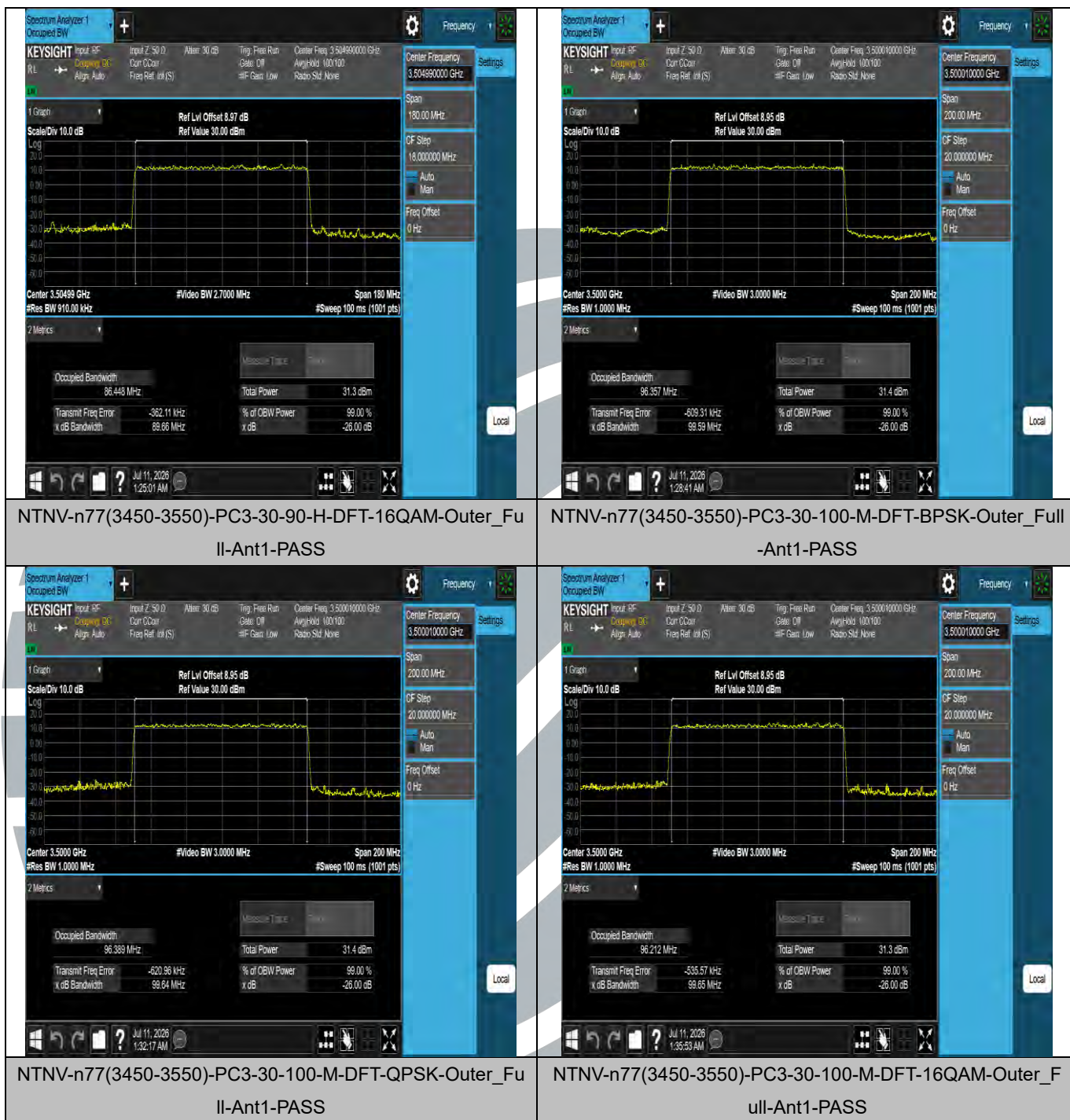
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-Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-90-M-DFT-16QAM-Outer_Full
-Ant1-PASS



NTNV-n77(3450-3550)-PC3-30-90-H-DFT-BPSK-Outer_Full
Ant1-PASS

NTNV-n77(3450-3550)-PC3-30-90-H-DFT-QPSK-Outer_Full
Ant1-PASS

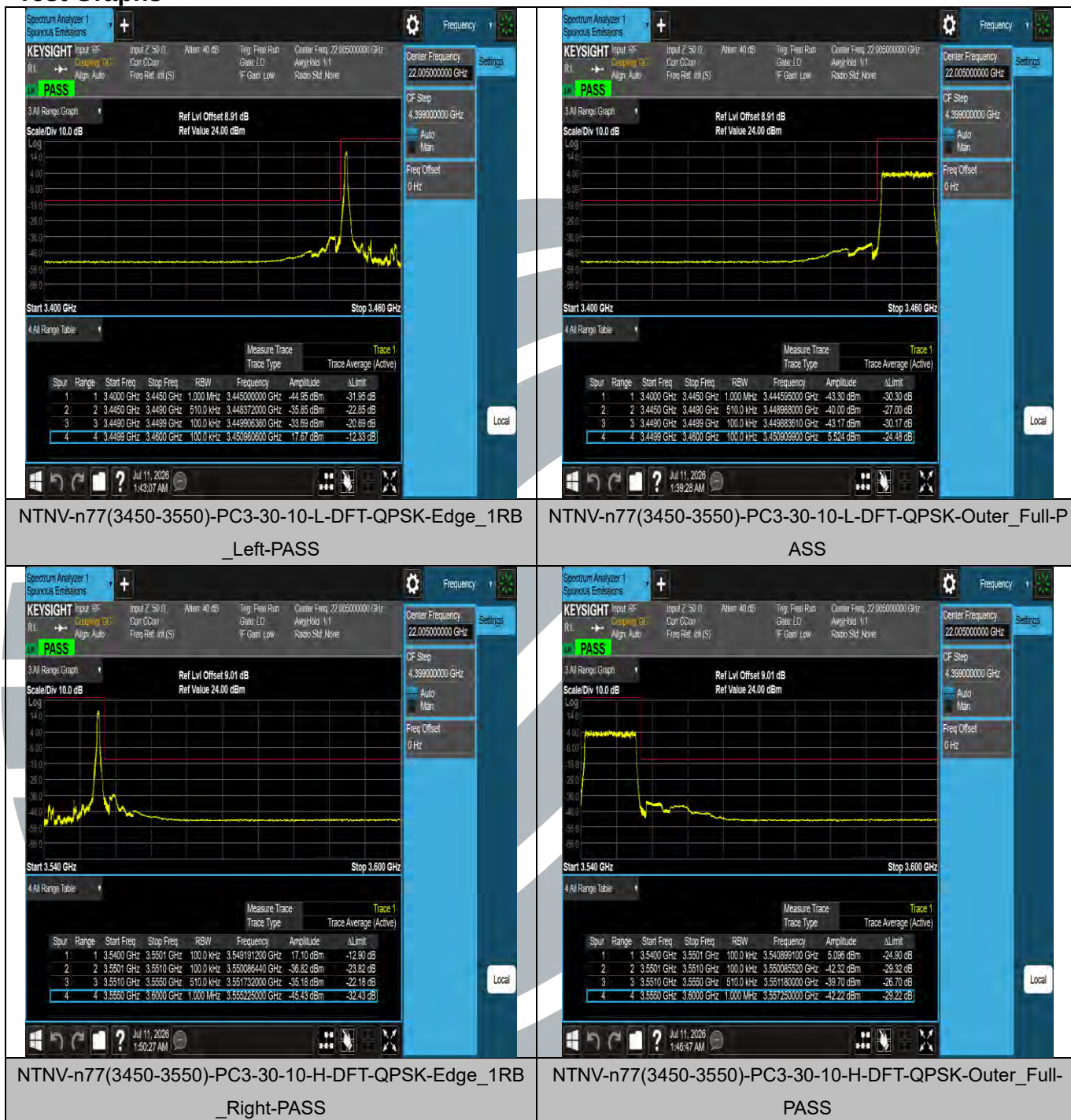


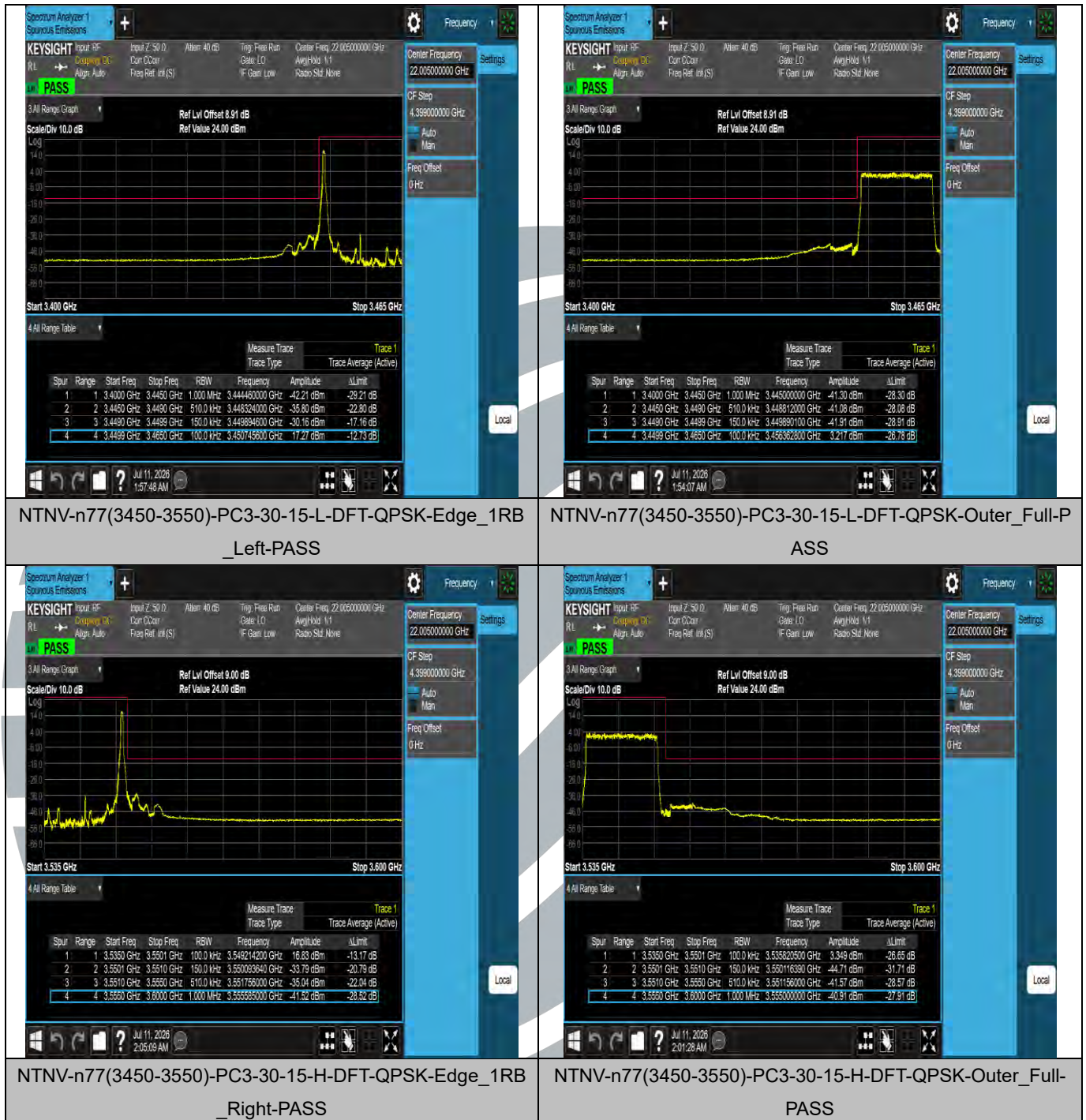
A.3 BAND EDGE FOR SA

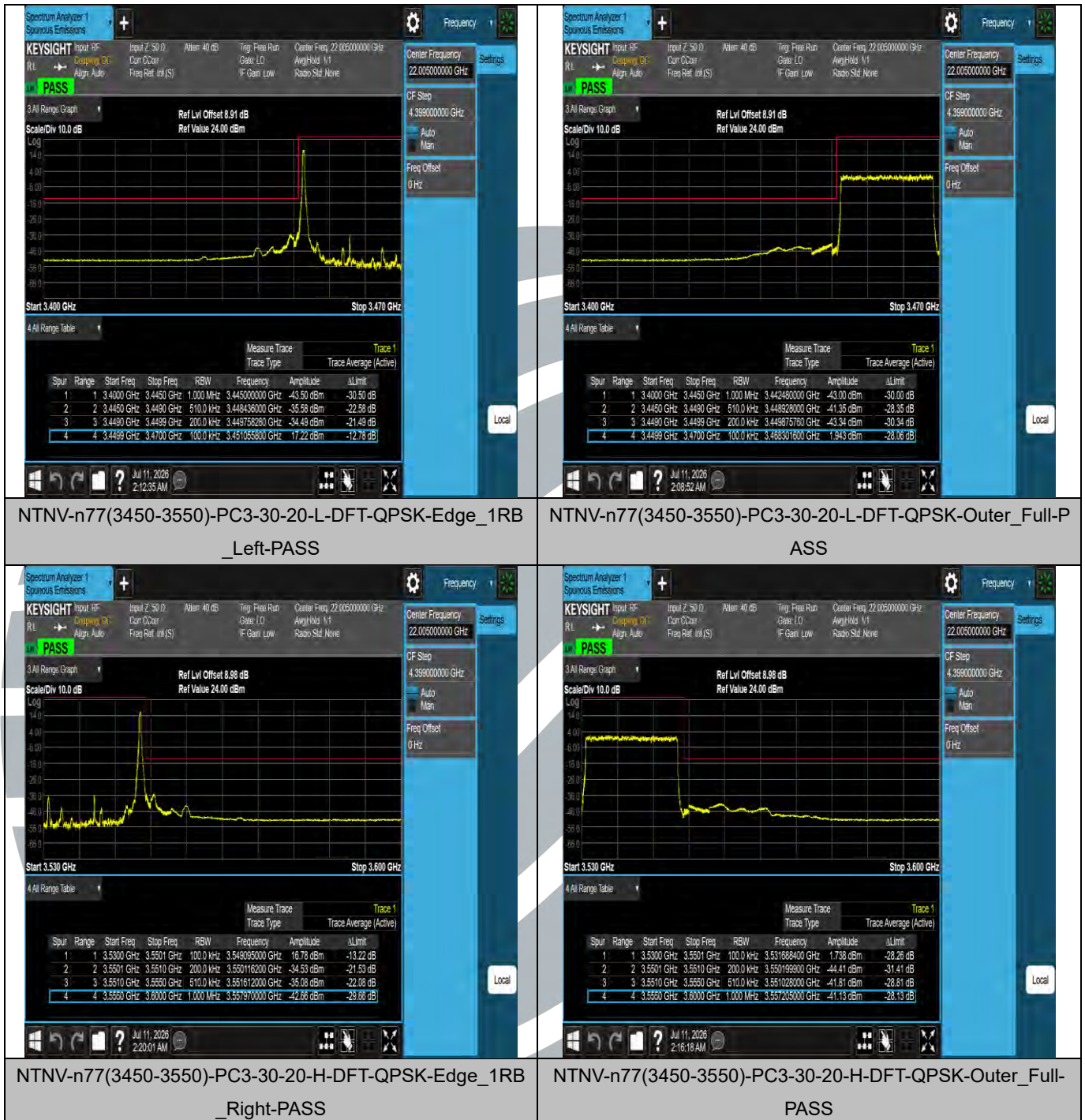
Test Result

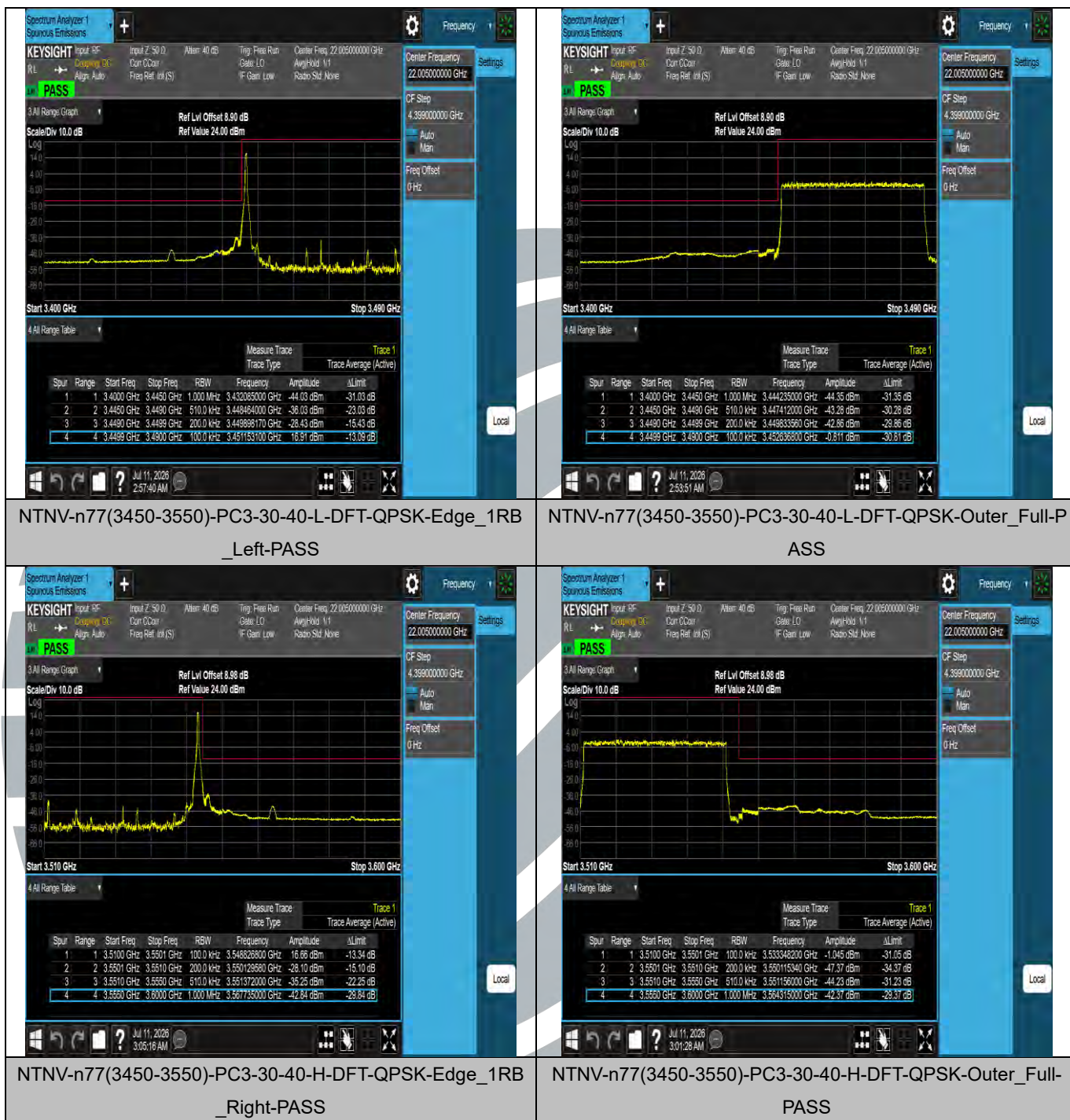
Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	Result (dBm)	Verdict
n77(3450-3550)	30	10	DFT-QPSK	L	Edge 1RB Left	-33.69	PASS
n77(3450-3550)	30	10	DFT-QPSK	L	Outer Full	-40.00	PASS
n77(3450-3550)	30	10	DFT-QPSK	H	Edge 1RB Right	-35.18	PASS
n77(3450-3550)	30	10	DFT-QPSK	H	Outer Full	-39.70	PASS
n77(3450-3550)	30	15	DFT-QPSK	L	Edge 1RB Left	-30.16	PASS
n77(3450-3550)	30	15	DFT-QPSK	L	Outer Full	-41.08	PASS
n77(3450-3550)	30	15	DFT-QPSK	H	Edge 1RB Right	-33.79	PASS
n77(3450-3550)	30	15	DFT-QPSK	H	Outer Full	-40.91	PASS
n77(3450-3550)	30	20	DFT-QPSK	L	Edge 1RB Left	-34.49	PASS
n77(3450-3550)	30	20	DFT-QPSK	L	Outer Full	-41.35	PASS
n77(3450-3550)	30	20	DFT-QPSK	H	Edge 1RB Right	-34.53	PASS
n77(3450-3550)	30	20	DFT-QPSK	H	Outer Full	-41.13	PASS
n77(3450-3550)	30	40	DFT-QPSK	L	Edge 1RB Left	-28.43	PASS
n77(3450-3550)	30	40	DFT-QPSK	L	Outer Full	-42.86	PASS
n77(3450-3550)	30	40	DFT-QPSK	H	Edge 1RB Right	-28.10	PASS
n77(3450-3550)	30	40	DFT-QPSK	H	Outer Full	-42.37	PASS
n77(3450-3550)	30	50	DFT-QPSK	L	Edge 1RB Left	-33.10	PASS
n77(3450-3550)	30	50	DFT-QPSK	L	Outer Full	-41.19	PASS
n77(3450-3550)	30	50	DFT-QPSK	H	Edge 1RB Right	-35.19	PASS
n77(3450-3550)	30	50	DFT-QPSK	H	Outer Full	-41.36	PASS
n77(3450-3550)	30	60	DFT-QPSK	L	Edge 1RB Left	-33.86	PASS
n77(3450-3550)	30	60	DFT-QPSK	L	Outer Full	-43.47	PASS
n77(3450-3550)	30	60	DFT-QPSK	H	Edge 1RB Right	-34.53	PASS
n77(3450-3550)	30	60	DFT-QPSK	H	Outer Full	-43.34	PASS
n77(3450-3550)	30	70	DFT-QPSK	L	Edge 1RB Left	-35.15	PASS
n77(3450-3550)	30	70	DFT-QPSK	L	Outer Full	-42.81	PASS
n77(3450-3550)	30	70	DFT-QPSK	H	Edge 1RB Right	-34.66	PASS
n77(3450-3550)	30	70	DFT-QPSK	H	Outer Full	-42.29	PASS
n77(3450-3550)	30	80	DFT-QPSK	L	Edge 1RB Left	-32.73	PASS
n77(3450-3550)	30	80	DFT-QPSK	L	Outer Full	-38.63	PASS
n77(3450-3550)	30	80	DFT-QPSK	H	Edge 1RB Right	-34.79	PASS
n77(3450-3550)	30	80	DFT-QPSK	H	Outer Full	-42.91	PASS
n77(3450-3550)	30	90	DFT-QPSK	L	Edge 1RB Left	-31.25	PASS
n77(3450-3550)	30	90	DFT-QPSK	L	Outer Full	-41.81	PASS
n77(3450-3550)	30	90	DFT-QPSK	H	Edge 1RB Right	-32.43	PASS
n77(3450-3550)	30	90	DFT-QPSK	H	Outer Full	-42.04	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Edge 1RB Left	-30.06	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Edge 1RB Right	-29.49	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Outer Full	-38.66	PASS

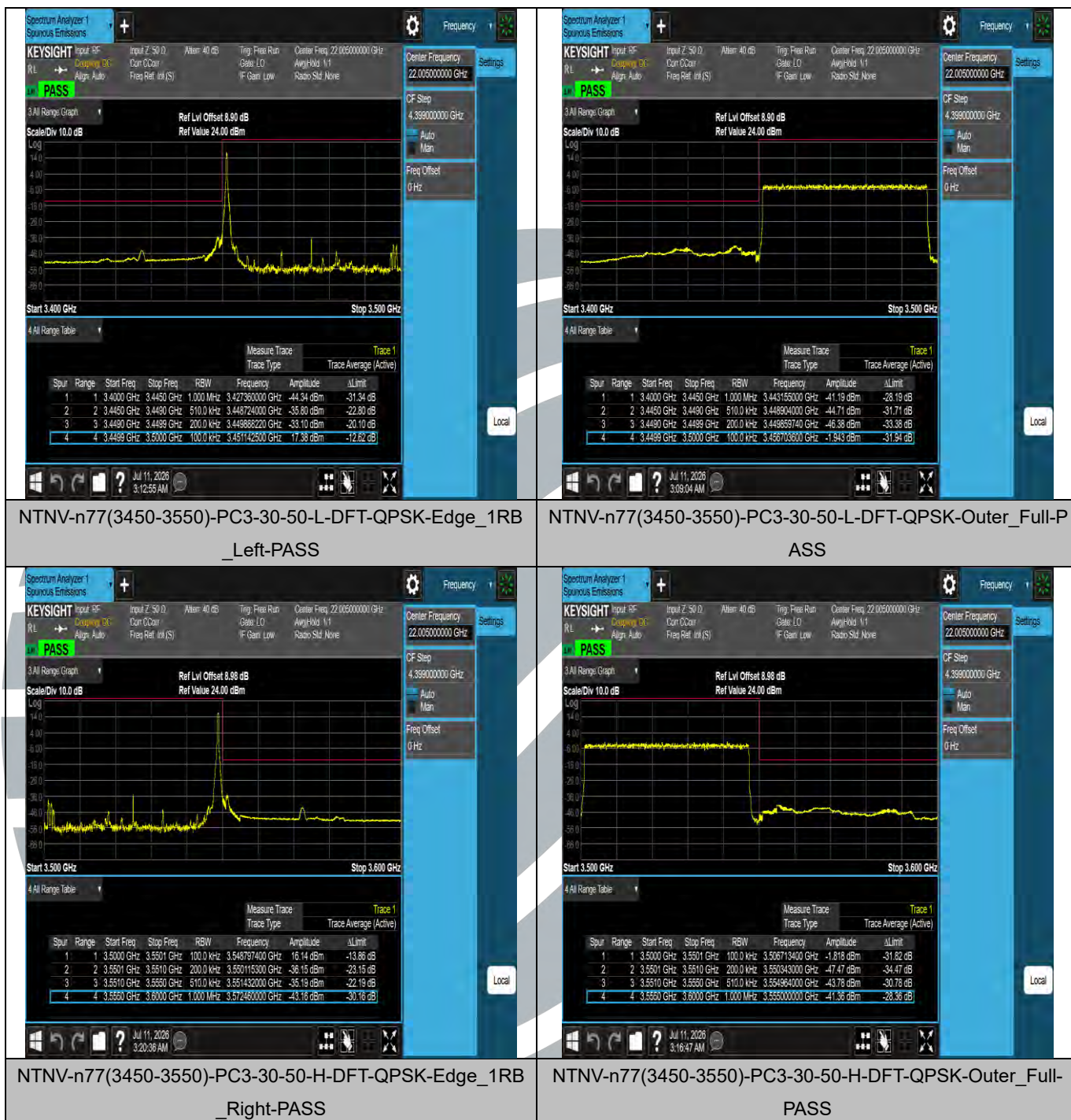
Test Graphs

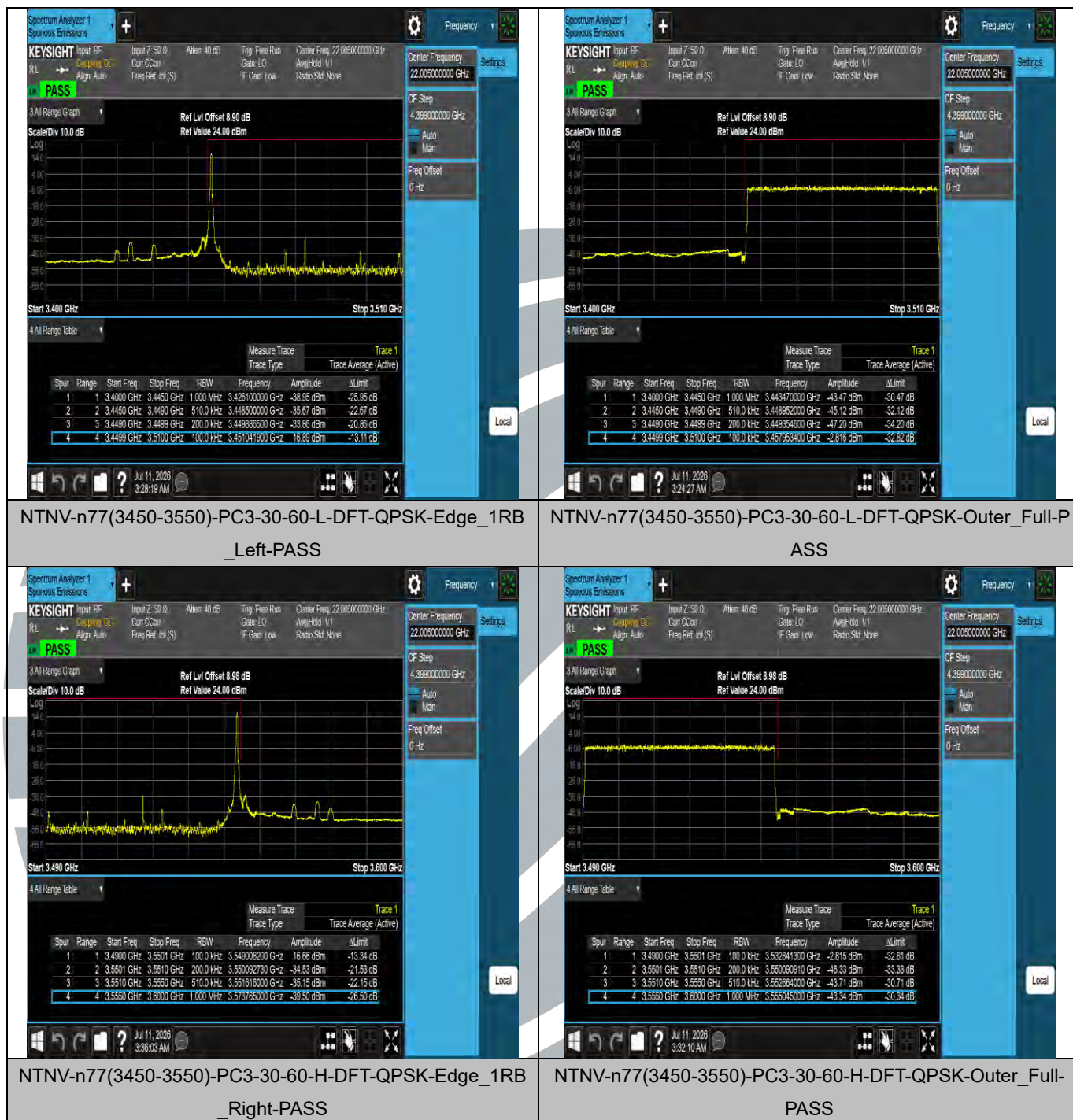


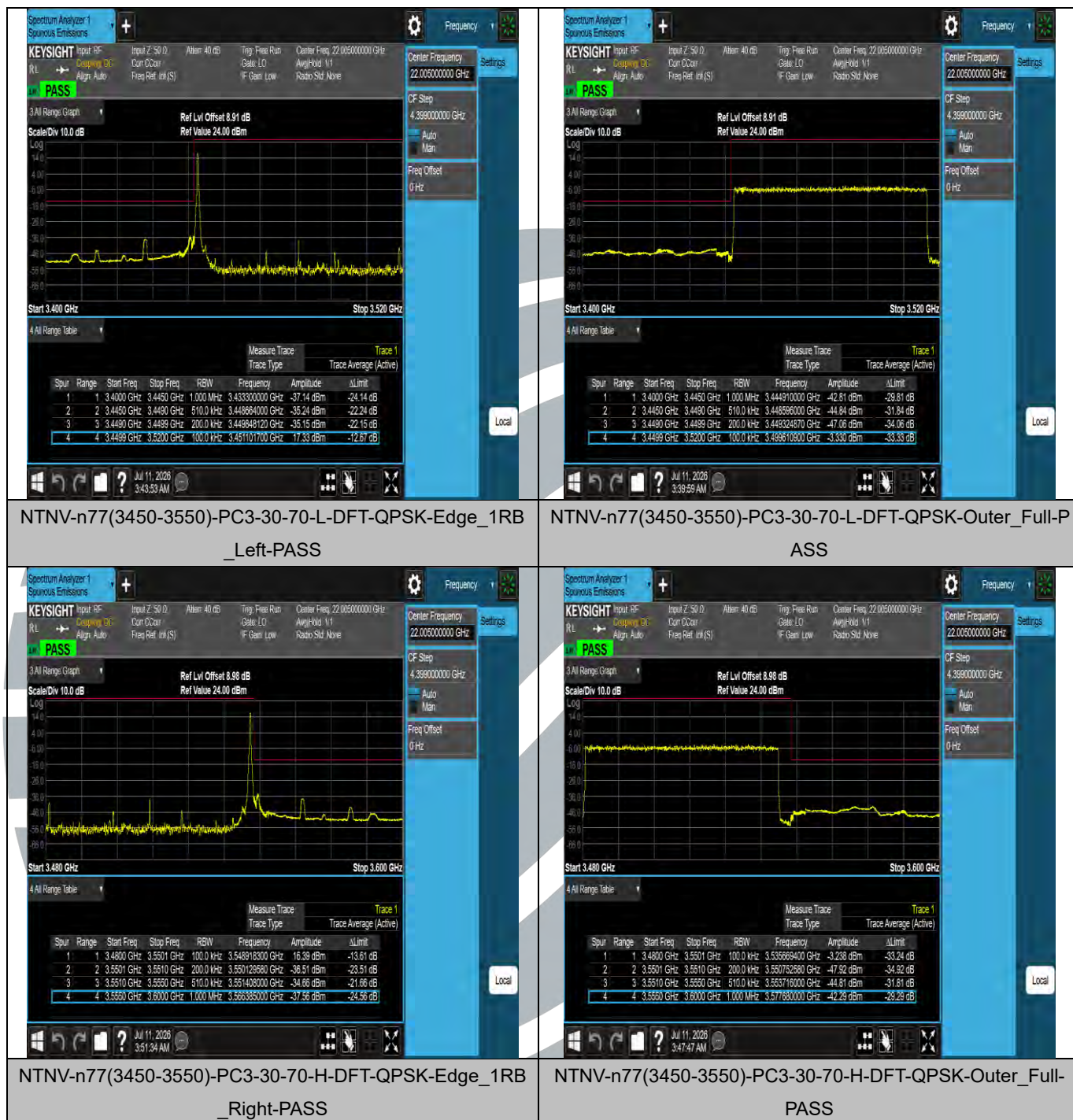


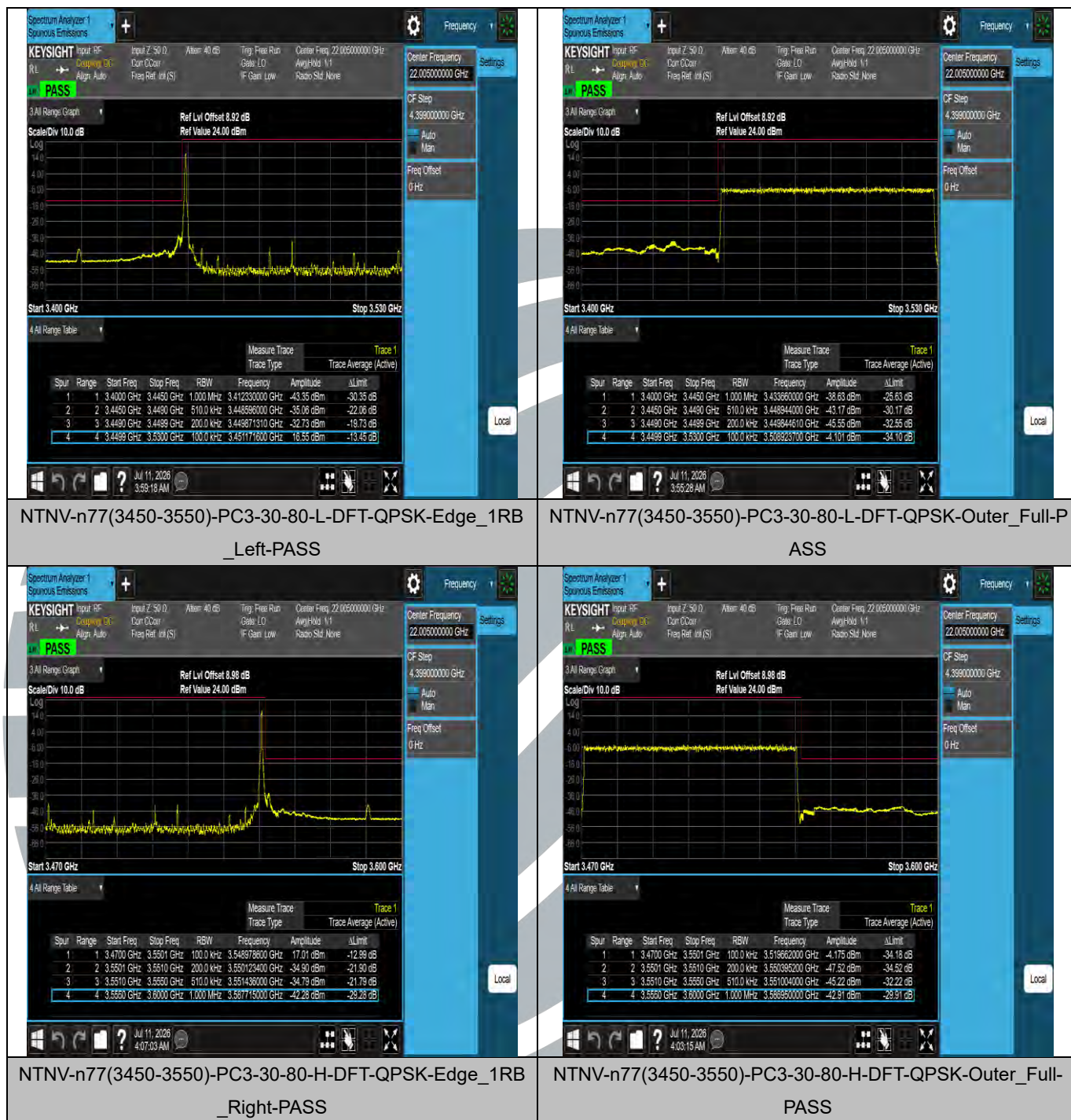


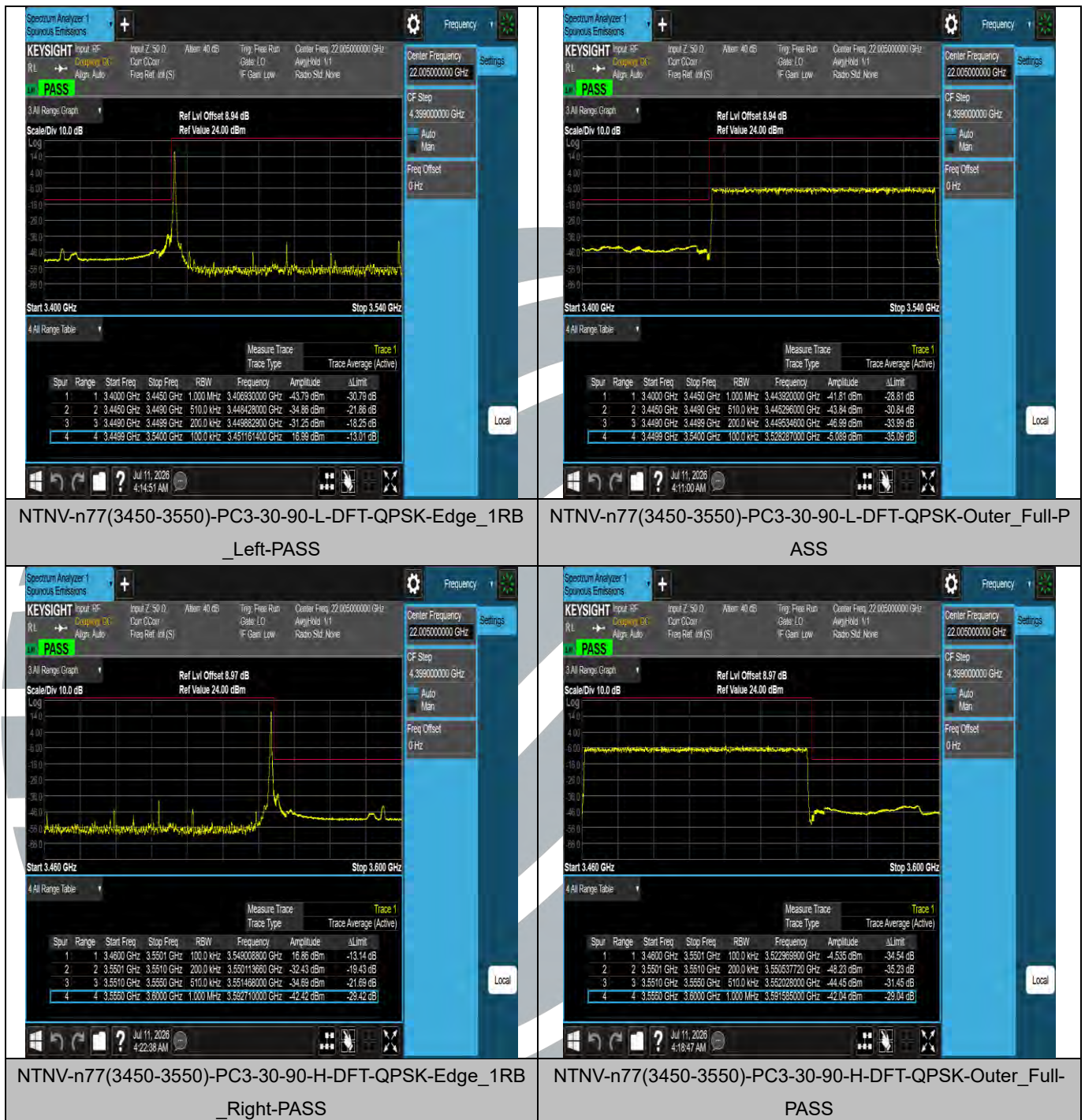


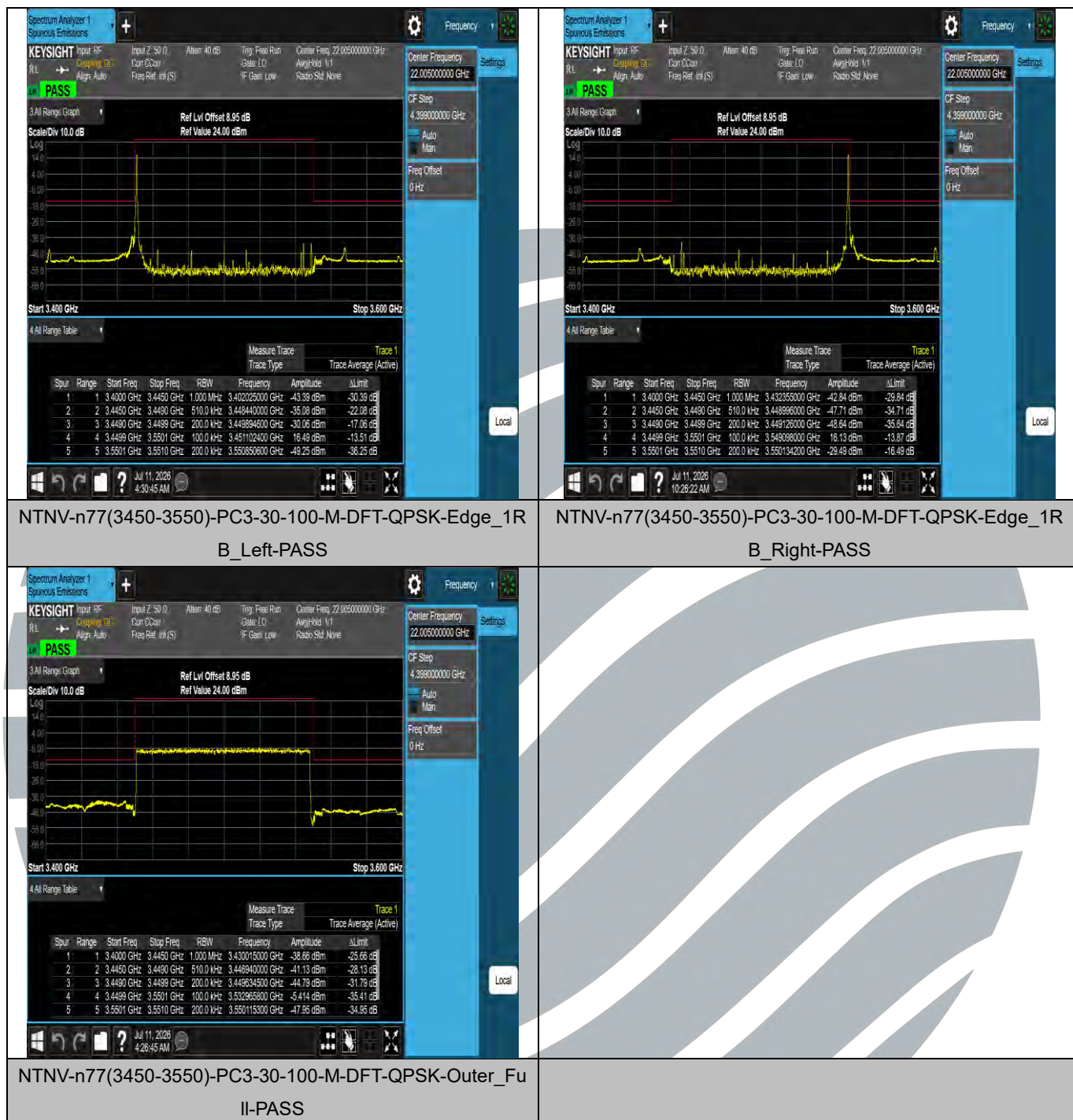










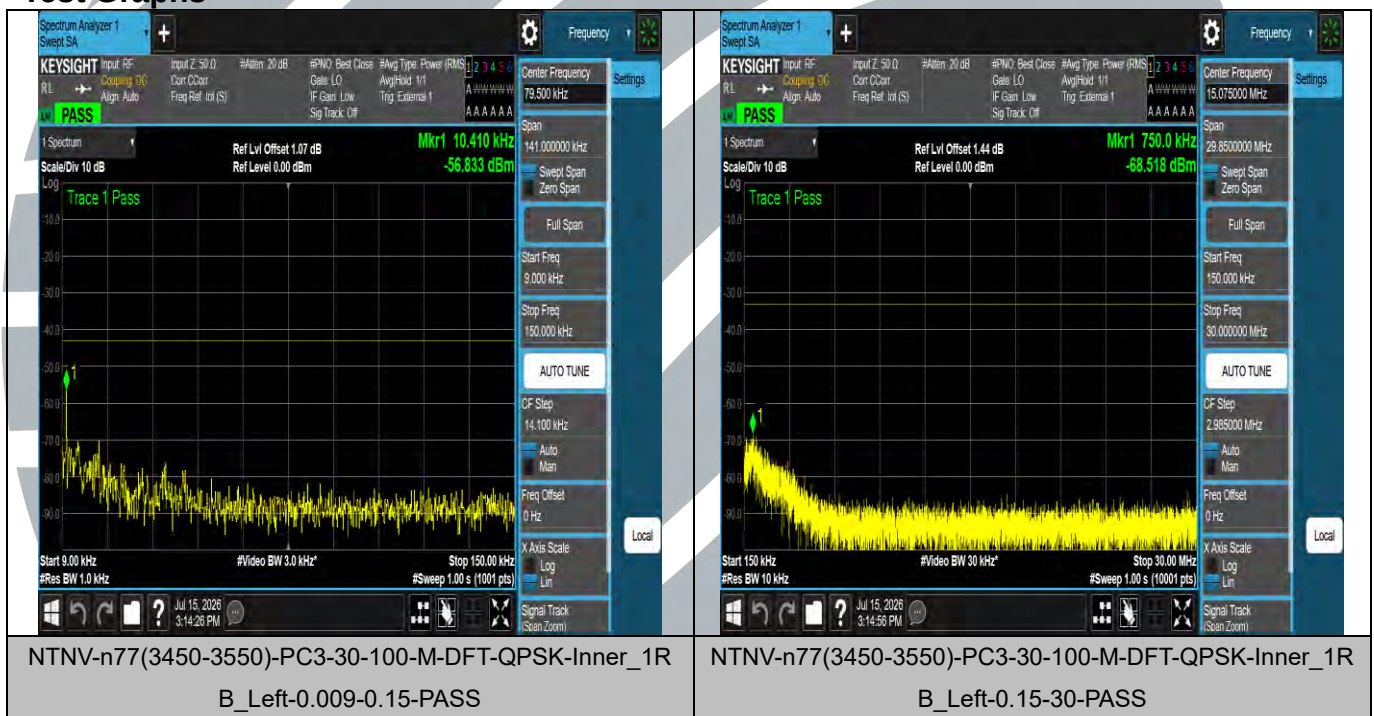


A.4 CONDUCTED SPURIOUS EMISSION FOR SA

Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	Start Freq (MHz)	Stop Freq (MHz)	Result (dBm)	Limit (dBm)	Verdict
n77(3450-3550)	30	100	DFT-QPSK	M	Inner_1RB_Left	0.009	0.15	-56.83	≤-43dBm	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Inner_1RB_Left	0.15	30	-68.52	≤-33dBm	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Inner_1RB_Left	30	1000	-52.80	≤-23dBm	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Inner_1RB_Left	1000	3000	-39.58	≤-13dBm	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Inner_1RB_Left	3000	6000	-33.04	≤-13dBm	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Inner_1RB_Left	6000	20000	-30.28	≤-13dBm	PASS
n77(3450-3550)	30	100	DFT-QPSK	M	Inner_1RB_Left	20000	40000	-42.60	≤-13dBm	PASS

Test Graphs





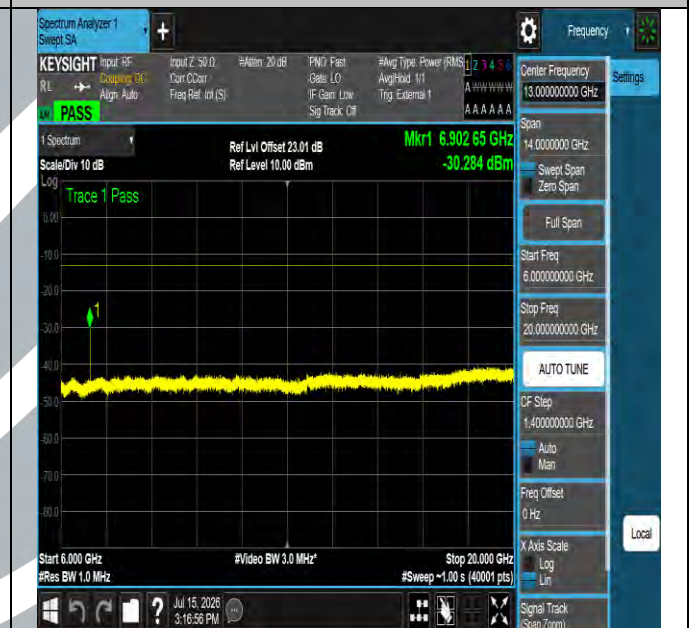
NTNV-n77(3450-3550)-PC3-30-100-M-DFT-QPSK-Inner_1R
B_Left-30-1000-PASS



NTNV-n77(3450-3550)-PC3-30-100-M-DFT-QPSK-Inner_1R
B_Left-1000-3000-PASS



NTNV-n77(3450-3550)-PC3-30-100-M-DFT-QPSK-Inner_1R
B_Left-3000-6000-PASS



NTNV-n77(3450-3550)-PC3-30-100-M-DFT-QPSK-Inner_1R
B_Left-6000-20000-PASS



NTNV-n77(3450-3550)-PC3-30-100-M-DFT-QPSK-Inner_1R
B_Left-20000-40000-PASS

A.5 FREQUENCY STABILITY FOR SA

Test Result

Frequency Error VS. Voltage

Voltage													
Band	SCS	BW (MHz)	Modulation	Ch.	RB Config	Voltage	Temp.	Result (ppm)	Limit (ppm)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
n77	30	100	DFT-QPSK	M	Outer_Full	VL	NT	-0.000991	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	VN	NT	-4.8E-05	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	VH	NT	-0.000452	-2.5~2.5	3450	3550	---	PASS

Frequency Error VS. Temperature

Temperature													
Band	SCS	BW (MHz)	Modulation	Ch.	RB Config	Voltage	Temp.	Result (ppm)	Limit (ppm)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
n77	30	100	DFT-QPSK	M	Outer_Full	NV	-30	-0.000931	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	-20	-0.000839	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	-10	-0.001957	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	0	-0.000395	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	10	-0.001309	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	20	-0.001002	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	30	-0.000282	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	40	-0.001468	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	50	-0.000915	-2.5~2.5	3450	3550	---	PASS