

APPENDIX D 5G NR N78(3700-3800MHZ) RF TEST DATA

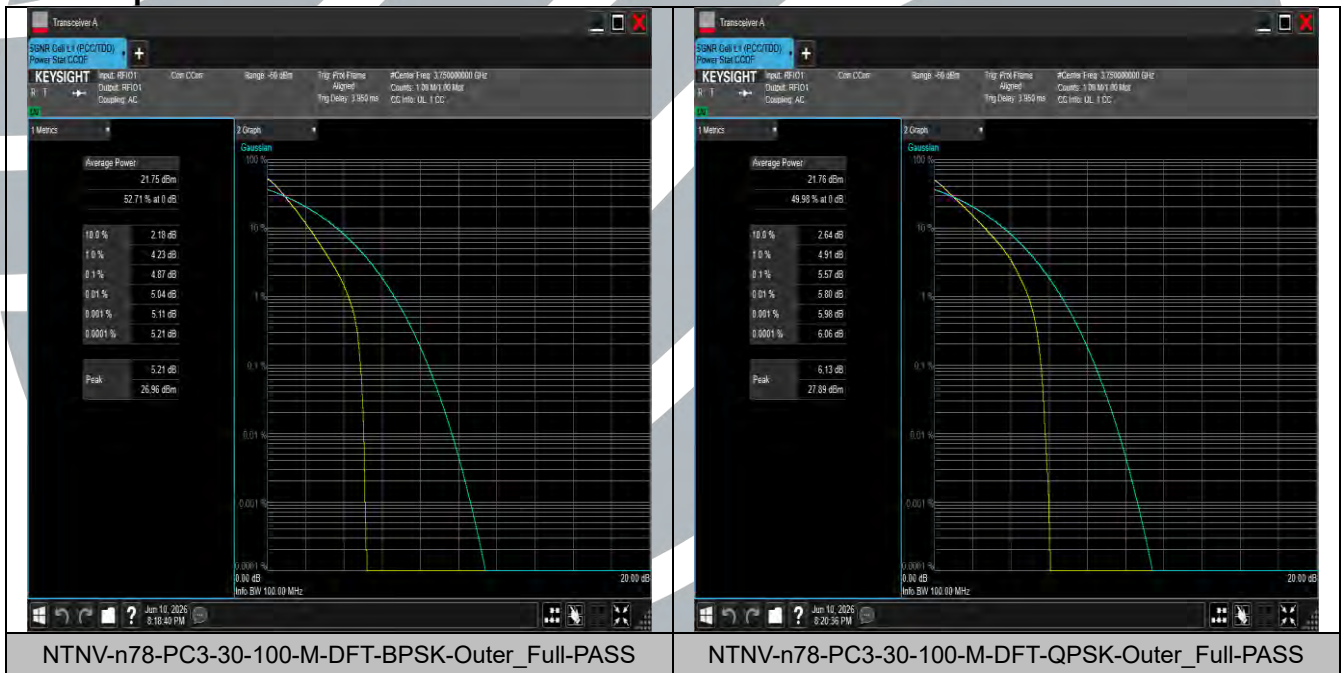
D.1 PEAK-TO-AVERAGE RATIO FOR SA

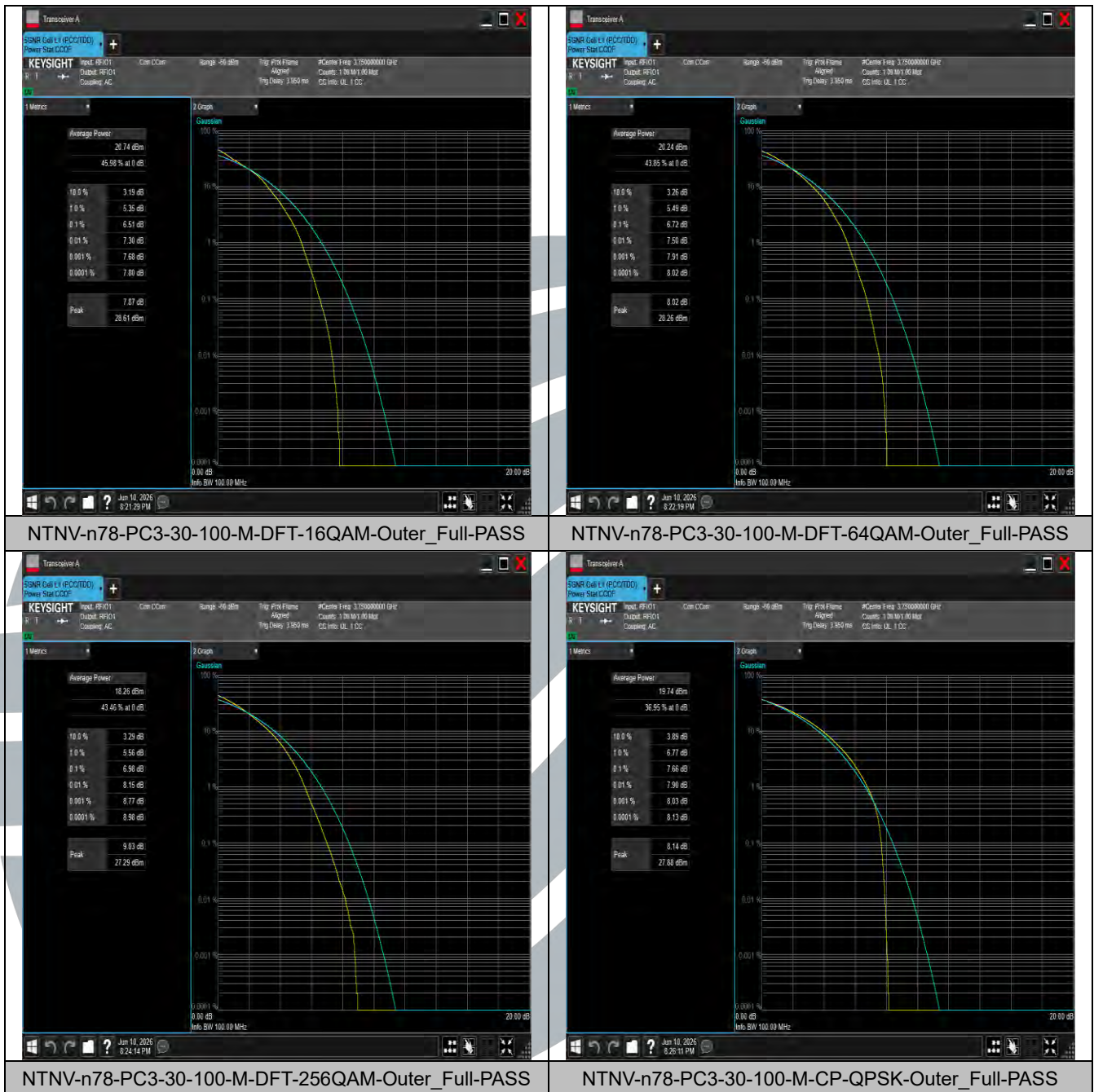
➤ Peak-to-Average Ratio(CCDF)

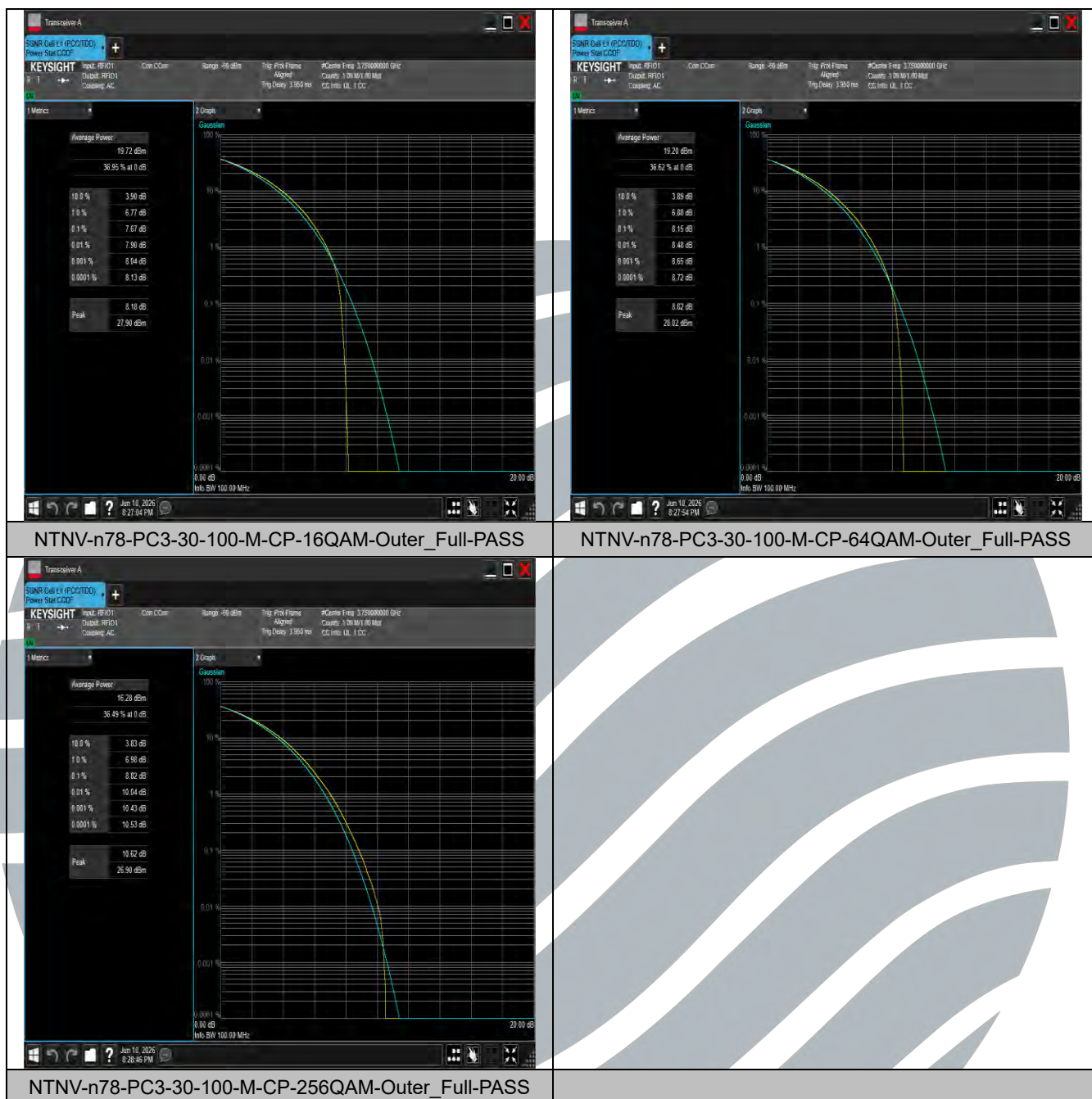
Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	Result (dB)	Limit	Verdict
n78	30	100	DFT-BPSK	M	Outer_Full	4.87	≤13dB	PASS
n78	30	100	DFT-QPSK	M	Outer_Full	5.57	≤13dB	PASS
n78	30	100	DFT-16QAM	M	Outer_Full	6.51	≤13dB	PASS
n78	30	100	DFT-64QAM	M	Outer_Full	6.72	≤13dB	PASS
n78	30	100	DFT-256QAM	M	Outer_Full	6.98	≤13dB	PASS
n78	30	100	CP-QPSK	M	Outer_Full	7.66	≤13dB	PASS
n78	30	100	CP-16QAM	M	Outer_Full	7.67	≤13dB	PASS
n78	30	100	CP-64QAM	M	Outer_Full	8.15	≤13dB	PASS
n78	30	100	CP-256QAM	M	Outer_Full	8.82	≤13dB	PASS

Test Graphs







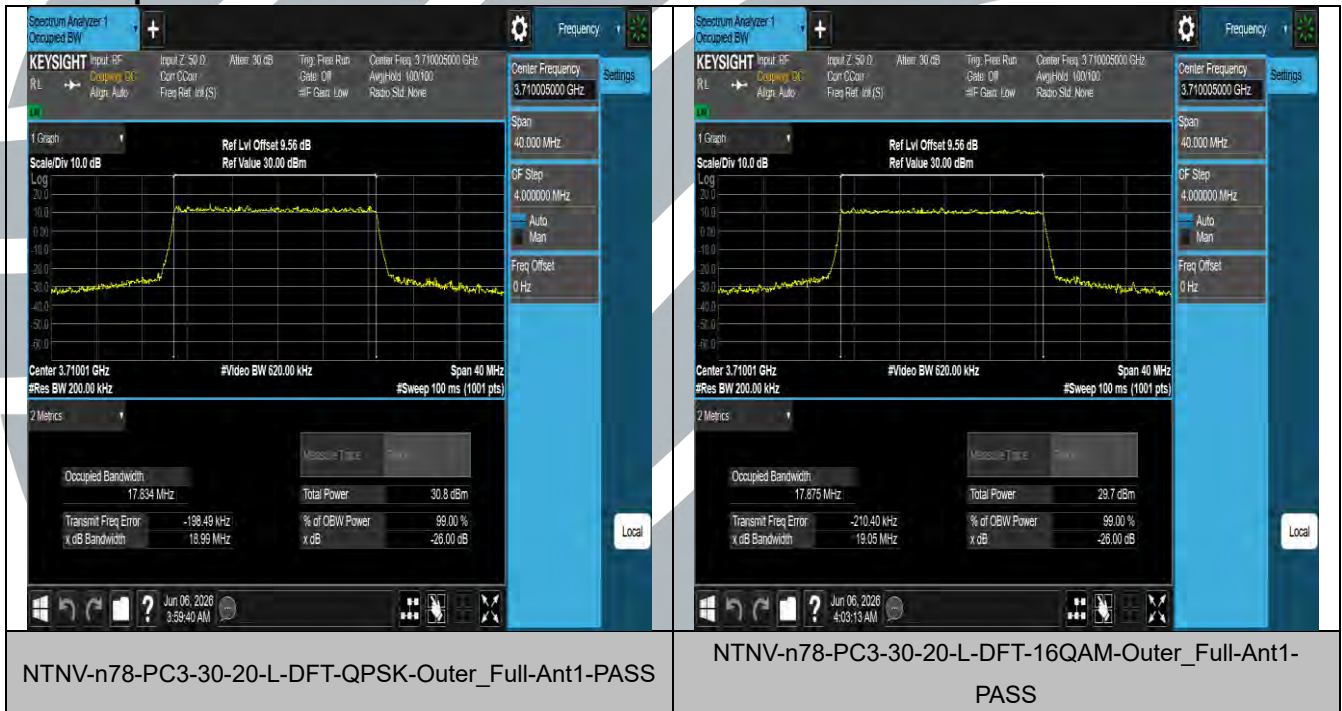
D.2 26DB BANDWIDTH AND OCCUPIED BANDWIDTH FOR SA

Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	99% BW Result (MHz)	26dB BW Result (MHz)	Verdict
n78	30	20	DFT-QPSK	L	Outer_Full	17.834	18.99	PASS
n78	30	20	DFT-16QAM	L	Outer_Full	17.875	19.05	PASS
n78	30	20	DFT-QPSK	M	Outer_Full	17.817	19.03	PASS
n78	30	20	DFT-16QAM	M	Outer_Full	17.871	19.07	PASS
n78	30	20	DFT-QPSK	H	Outer_Full	17.826	18.95	PASS
n78	30	20	DFT-16QAM	H	Outer_Full	17.921	19.00	PASS
n78	30	30	DFT-QPSK	L	Outer_Full	26.821	28.31	PASS
n78	30	30	DFT-16QAM	L	Outer_Full	26.819	28.35	PASS
n78	30	30	DFT-QPSK	M	Outer_Full	26.796	28.25	PASS
n78	30	30	DFT-16QAM	M	Outer_Full	26.852	28.36	PASS
n78	30	30	DFT-QPSK	H	Outer_Full	26.792	28.29	PASS
n78	30	30	DFT-16QAM	H	Outer_Full	26.835	28.26	PASS
n78	30	40	DFT-QPSK	L	Outer_Full	35.716	37.51	PASS
n78	30	40	DFT-16QAM	L	Outer_Full	35.731	37.45	PASS
n78	30	40	DFT-QPSK	M	Outer_Full	35.709	37.52	PASS
n78	30	40	DFT-16QAM	M	Outer_Full	35.748	37.43	PASS
n78	30	40	DFT-QPSK	H	Outer_Full	35.694	37.39	PASS
n78	30	40	DFT-16QAM	H	Outer_Full	35.730	37.42	PASS
n78	30	50	DFT-QPSK	L	Outer_Full	45.750	47.67	PASS
n78	30	50	DFT-16QAM	L	Outer_Full	45.772	47.73	PASS
n78	30	50	DFT-QPSK	M	Outer_Full	45.758	47.69	PASS
n78	30	50	DFT-16QAM	M	Outer_Full	45.805	47.83	PASS
n78	30	50	DFT-QPSK	H	Outer_Full	45.711	47.72	PASS
n78	30	50	DFT-16QAM	H	Outer_Full	45.794	47.78	PASS
n78	30	60	DFT-QPSK	L	Outer_Full	57.764	60.16	PASS
n78	30	60	DFT-16QAM	L	Outer_Full	57.813	60.11	PASS
n78	30	60	DFT-QPSK	M	Outer_Full	57.771	60.28	PASS
n78	30	60	DFT-16QAM	M	Outer_Full	57.906	60.15	PASS
n78	30	60	DFT-QPSK	H	Outer_Full	57.798	60.31	PASS
n78	30	60	DFT-16QAM	H	Outer_Full	57.876	60.24	PASS
n78	30	70	DFT-QPSK	L	Outer_Full	64.203	66.65	PASS
n78	30	70	DFT-16QAM	L	Outer_Full	64.222	66.63	PASS
n78	30	70	DFT-QPSK	M	Outer_Full	64.257	66.72	PASS
n78	30	70	DFT-16QAM	M	Outer_Full	64.167	66.69	PASS
n78	30	70	DFT-QPSK	H	Outer_Full	64.299	66.70	PASS
n78	30	70	DFT-16QAM	H	Outer_Full	64.169	66.70	PASS
n78	30	80	DFT-QPSK	L	Outer_Full	77.060	79.94	PASS

n78	30	80	DFT-16QAM	L	Outer_Full	77.095	80.04	PASS
n78	30	80	DFT-QPSK	M	Outer_Full	77.074	80.03	PASS
n78	30	80	DFT-16QAM	M	Outer_Full	77.098	79.86	PASS
n78	30	80	DFT-QPSK	H	Outer_Full	77.030	79.87	PASS
n78	30	80	DFT-16QAM	H	Outer_Full	77.118	79.83	PASS
n78	30	90	DFT-QPSK	L	Outer_Full	86.570	89.73	PASS
n78	30	90	DFT-16QAM	L	Outer_Full	86.694	89.78	PASS
n78	30	90	DFT-QPSK	M	Outer_Full	86.627	89.81	PASS
n78	30	90	DFT-16QAM	M	Outer_Full	86.743	89.84	PASS
n78	30	90	DFT-QPSK	H	Outer_Full	86.651	89.77	PASS
n78	30	90	DFT-16QAM	H	Outer_Full	86.685	89.78	PASS
n78	30	100	DFT-QPSK	M	Outer_Full	96.292	99.74	PASS
n78	30	100	DFT-16QAM	M	Outer_Full	96.530	99.78	PASS

Test Graphs





NTNV-n78-PC3-30-20-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-20-M-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-20-H-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-20-H-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-30-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-30-L-DFT-16QAM-Outer_Full-Ant1-PASS

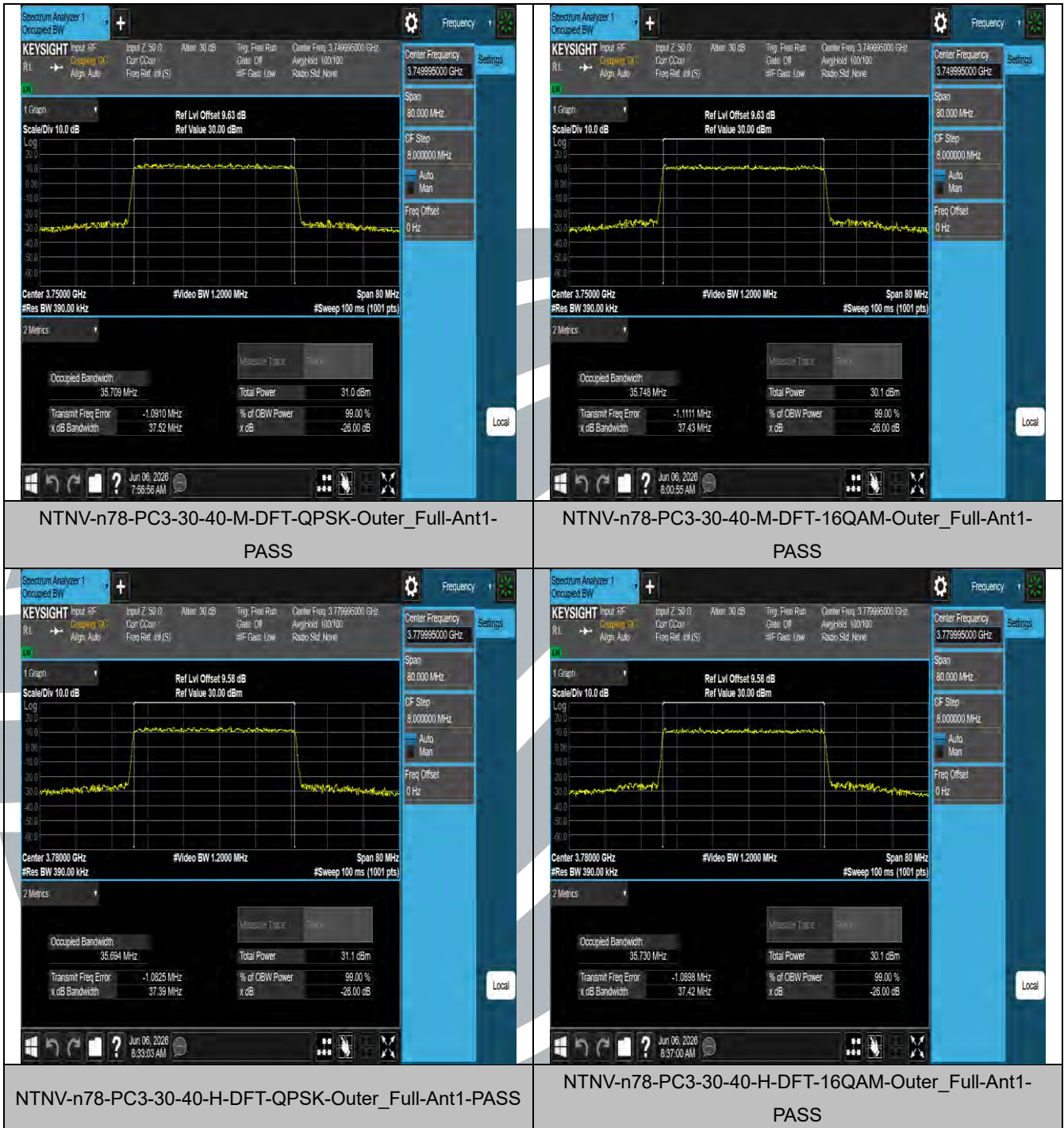


NTNV-n78-PC3-30-30-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-30-M-DFT-16QAM-Outer_Full-Ant1-PASS







NTNV-n78-PC3-30-50-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-50-L-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-50-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-50-M-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-50-H-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-50-H-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-60-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-60-L-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-60-M-DFT-QPSK-Outet_Full-Ant1-PASS



NTNV-n78-PC3-30-60-M-DFT-16QAM-Outet_Full-Ant1-PASS



NTNV-n78-PC3-30-60-H-DFT-QPSK-Outet_Full-Ant1-PASS



NTNV-n78-PC3-30-60-H-DFT-16QAM-Outet_Full-Ant1-PASS



NTNV-n78-PC3-30-70-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-70-L-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-70-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-70-M-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-70-H-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-70-H-DFT-16QAM-Outer_Full-Ant1-PASS



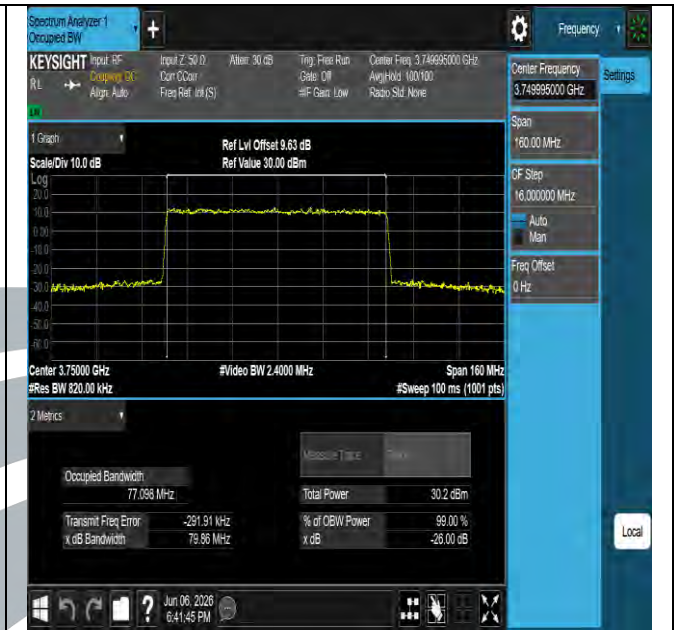
NTNV-n78-PC3-30-80-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-80-L-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-80-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-80-M-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-80-H-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-80-H-DFT-16QAM-Outer_Full-Ant1-PASS



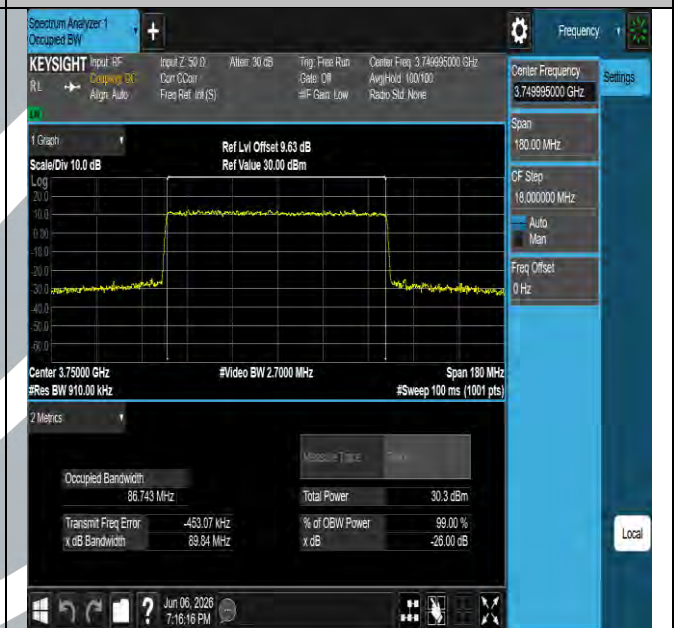
NTNV-n78-PC3-30-90-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-90-L-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-90-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-90-M-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-90-H-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-90-H-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n78-PC3-30-100-M-DFT-QPSK-Outer_Full-Ant1-PASS



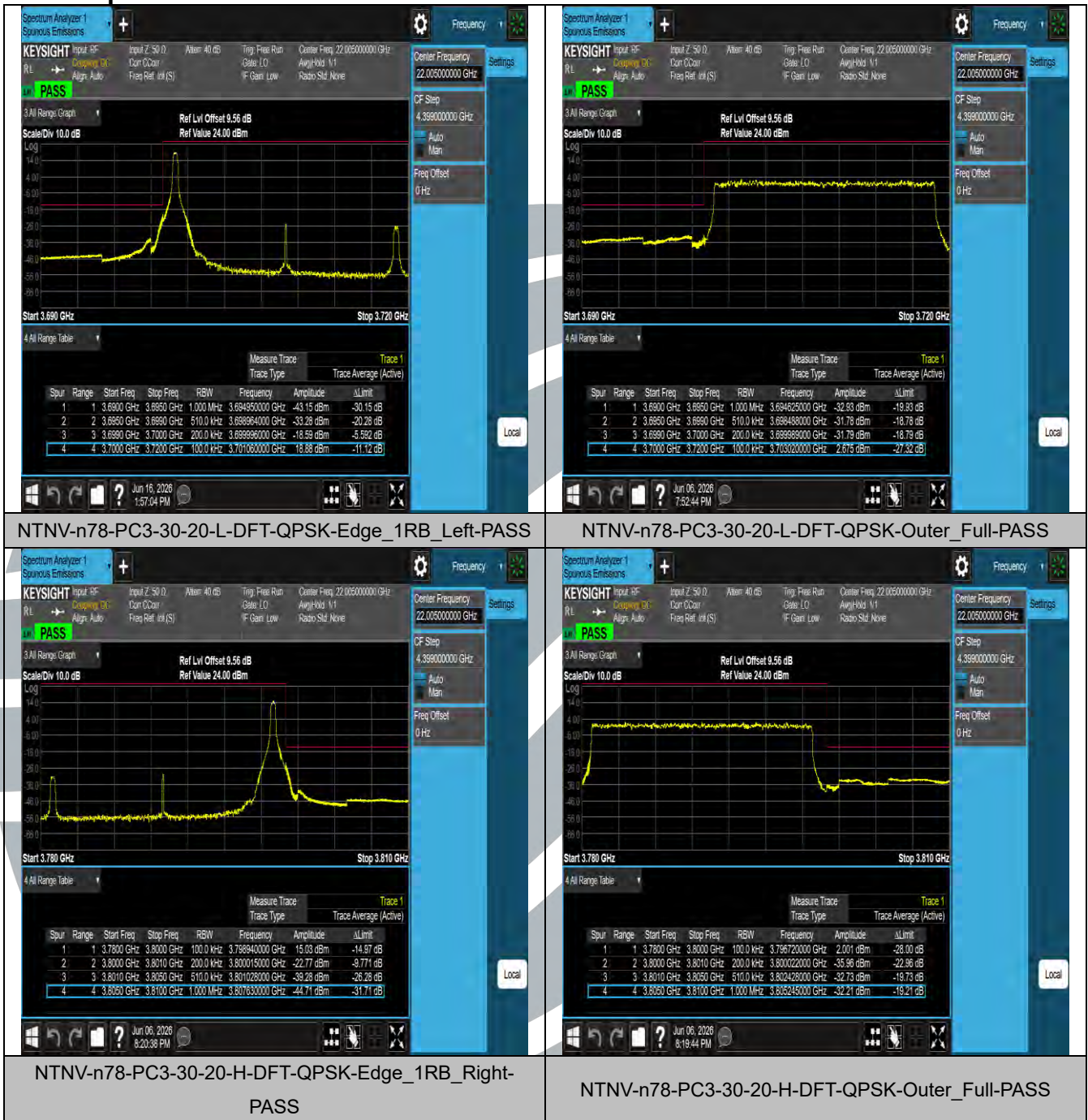
NTNV-n78-PC3-30-100-M-DFT-16QAM-Outer_Full-Ant1-PASS

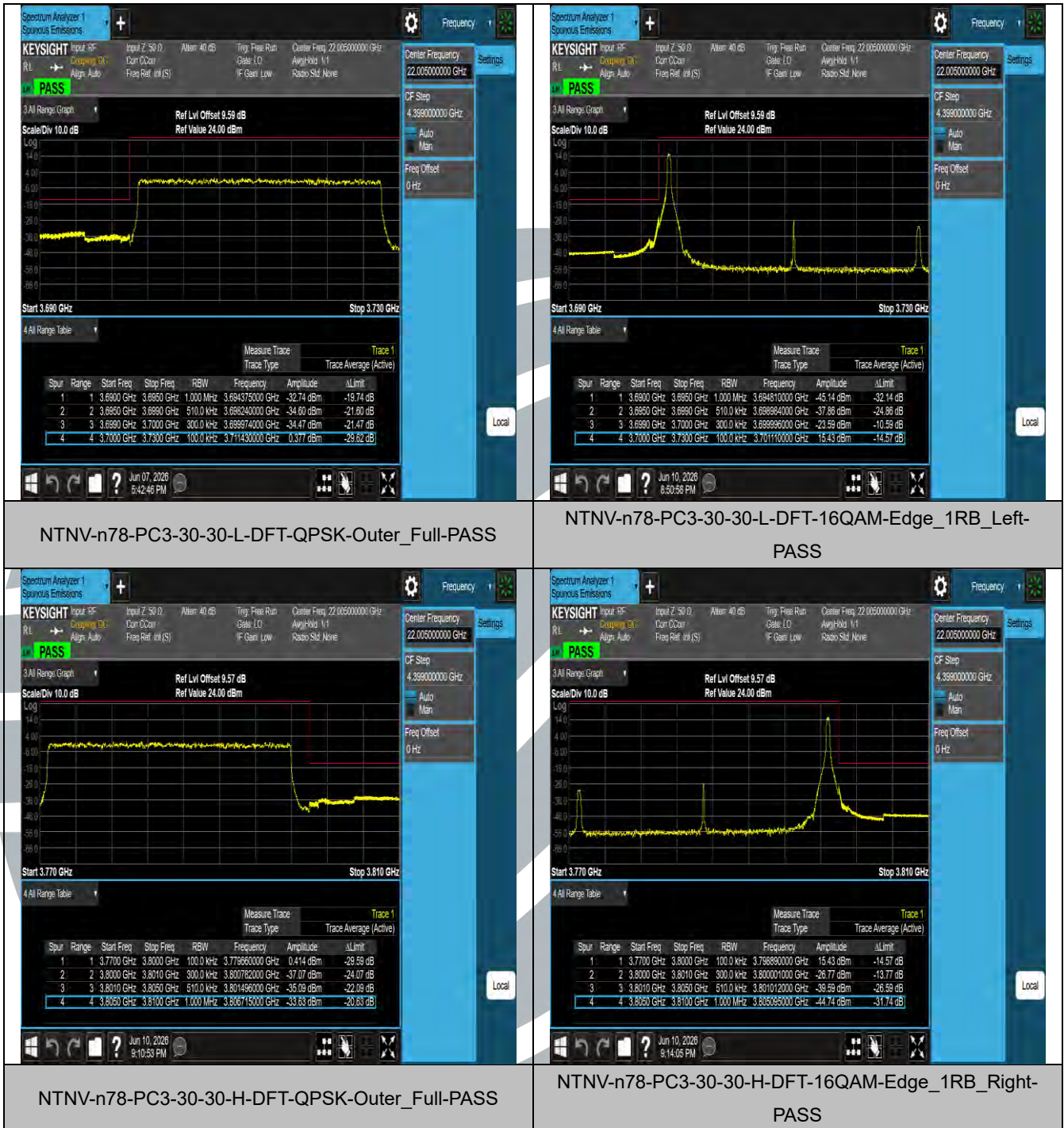
D.3 BAND EDGE FOR SA

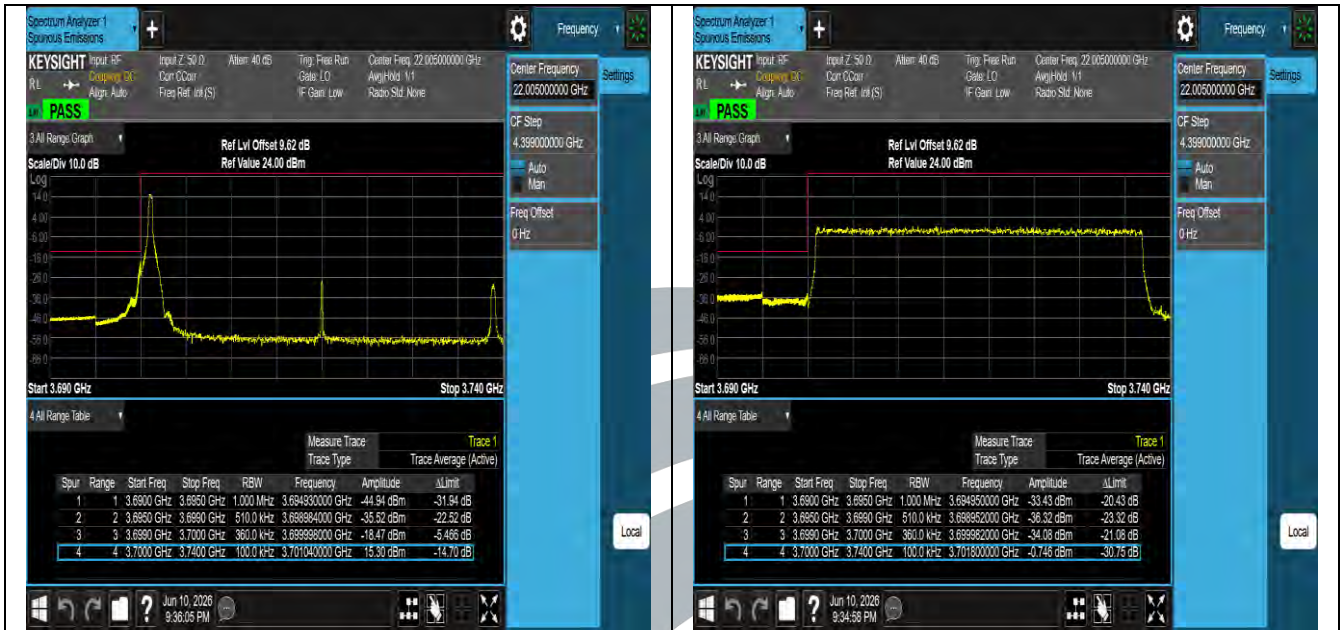
Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Channel	RB Config	Result (dBm)	Verdict
n78	30	20	DFT-QPSK	L	Edge_1RB_Left	-18.59	PASS
n78	30	20	DFT-QPSK	L	Outer_Full	-31.78	PASS
n78	30	20	DFT-QPSK	H	Edge_1RB_Right	-22.77	PASS
n78	30	20	DFT-QPSK	H	Outer_Full	-32.21	PASS
n78	30	30	DFT-QPSK	L	Edge_1RB_Left	-23.25	PASS
n78	30	30	DFT-QPSK	L	Outer_Full	-32.74	PASS
n78	30	30	DFT-QPSK	H	Edge_1RB_Right	-23.58	PASS
n78	30	30	DFT-QPSK	H	Outer_Full	-33.63	PASS
n78	30	40	DFT-QPSK	L	Edge_1RB_Left	-18.47	PASS
n78	30	40	DFT-QPSK	L	Outer_Full	-33.43	PASS
n78	30	40	DFT-QPSK	H	Edge_1RB_Right	-22.03	PASS
n78	30	40	DFT-QPSK	H	Outer_Full	-35.34	PASS
n78	30	50	DFT-QPSK	L	Edge_1RB_Left	-26.82	PASS
n78	30	50	DFT-QPSK	L	Outer_Full	-33.20	PASS
n78	30	50	DFT-QPSK	H	Edge_1RB_Right	-25.43	PASS
n78	30	50	DFT-QPSK	H	Outer_Full	-33.54	PASS
n78	30	60	DFT-QPSK	L	Edge_1RB_Left	-17.92	PASS
n78	30	60	DFT-QPSK	L	Outer_Full	-35.75	PASS
n78	30	60	DFT-QPSK	H	Edge_1RB_Right	-23.12	PASS
n78	30	60	DFT-QPSK	H	Outer_Full	-36.60	PASS
n78	30	70	DFT-QPSK	L	Edge_1RB_Left	-21.93	PASS
n78	30	70	DFT-QPSK	L	Outer_Full	-35.58	PASS
n78	30	70	DFT-QPSK	H	Edge_1RB_Right	-22.47	PASS
n78	30	70	DFT-QPSK	H	Outer_Full	-36.17	PASS
n78	30	80	DFT-QPSK	L	Edge_1RB_Left	-20.75	PASS
n78	30	80	DFT-QPSK	L	Outer_Full	-37.69	PASS
n78	30	80	DFT-QPSK	H	Edge_1RB_Right	-22.13	PASS
n78	30	80	DFT-QPSK	H	Outer_Full	-38.20	PASS
n78	30	90	DFT-QPSK	L	Edge_1RB_Left	-19.44	PASS
n78	30	90	DFT-QPSK	L	Outer_Full	-37.75	PASS
n78	30	90	DFT-QPSK	H	Edge_1RB_Right	-22.34	PASS
n78	30	90	DFT-QPSK	H	Outer_Full	-38.48	PASS
n78	30	100	DFT-QPSK	M	Edge_1RB_Left	-15.06	PASS
n78	30	100	DFT-QPSK	M	Edge_1RB_Right	-16.51	PASS
n78	30	100	DFT-QPSK	M	Outer_Full	-30.80	PASS

Test Graphs







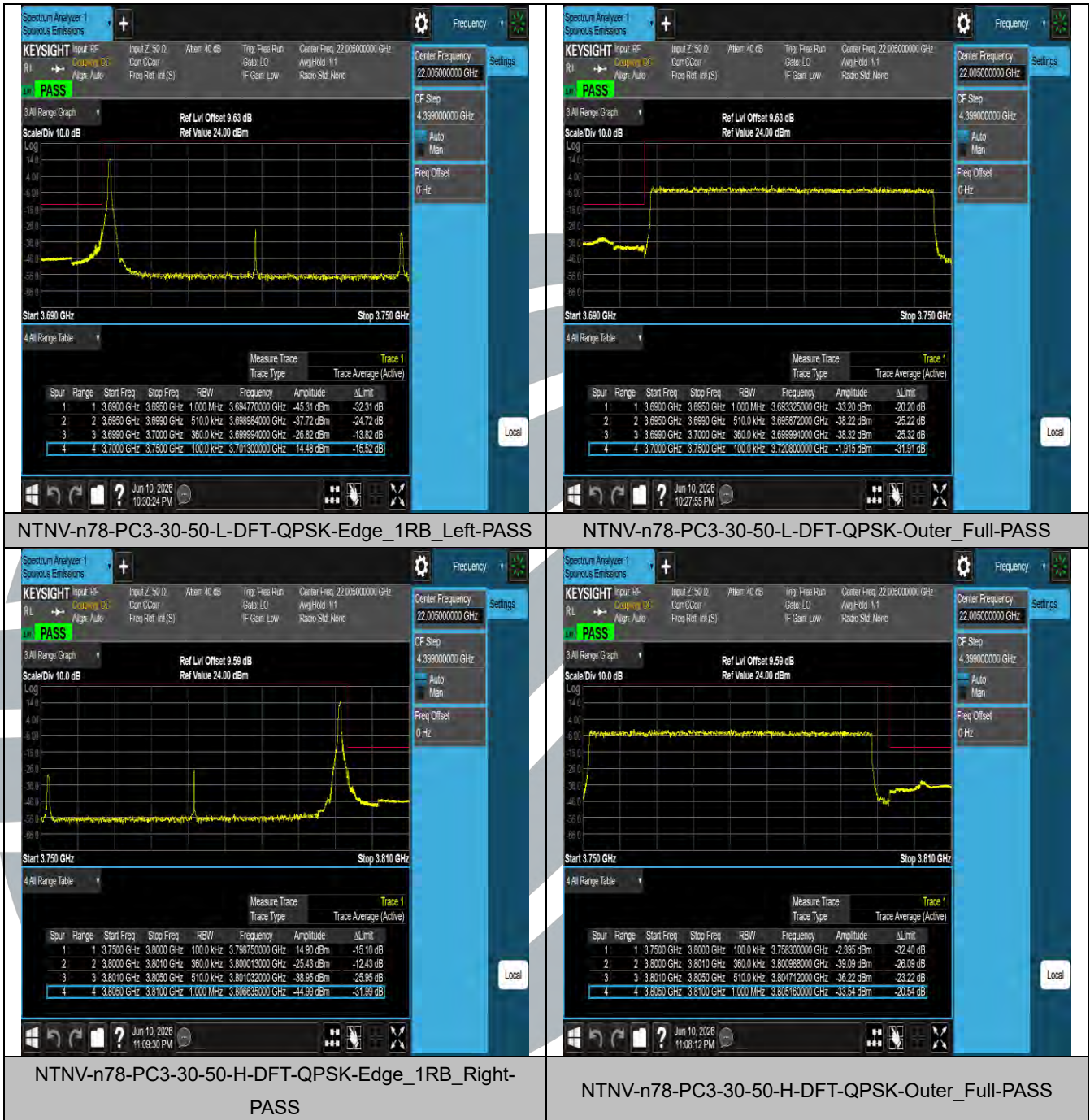
NTNV-n78-PC3-30-40-L-DFT-QPSK-Edge_1RB_Left-PASS

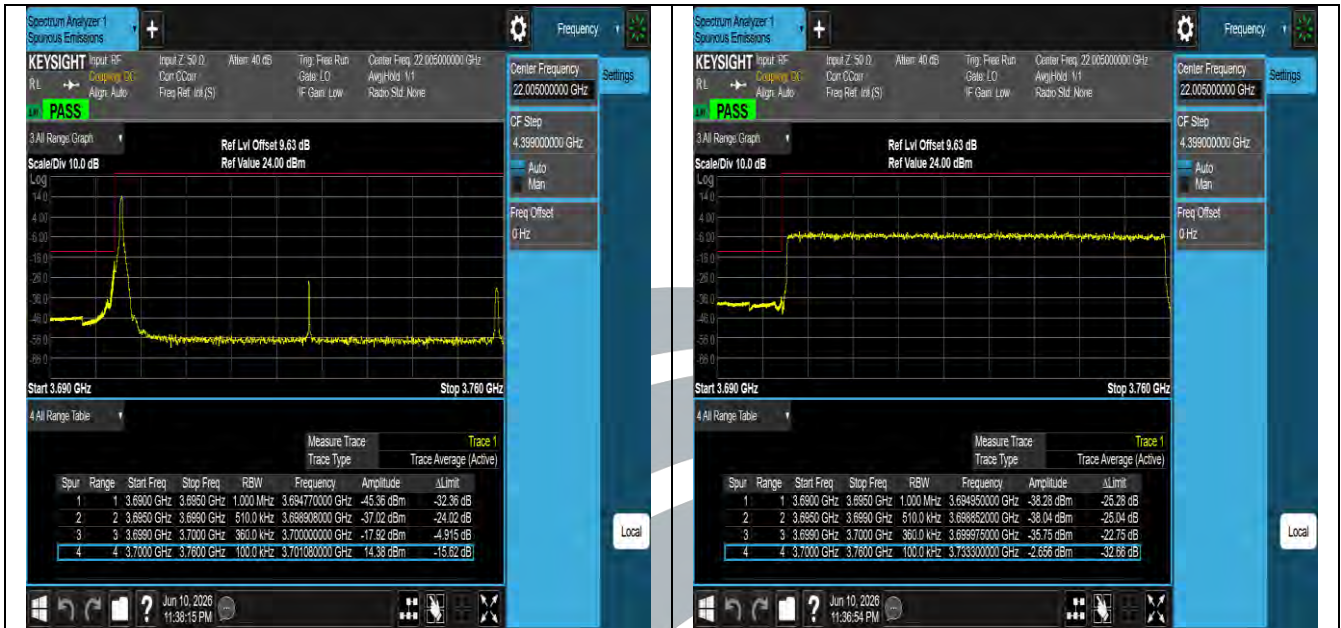
NTNV-n78-PC3-30-40-L-DFT-QPSK-Outer_Full-PASS

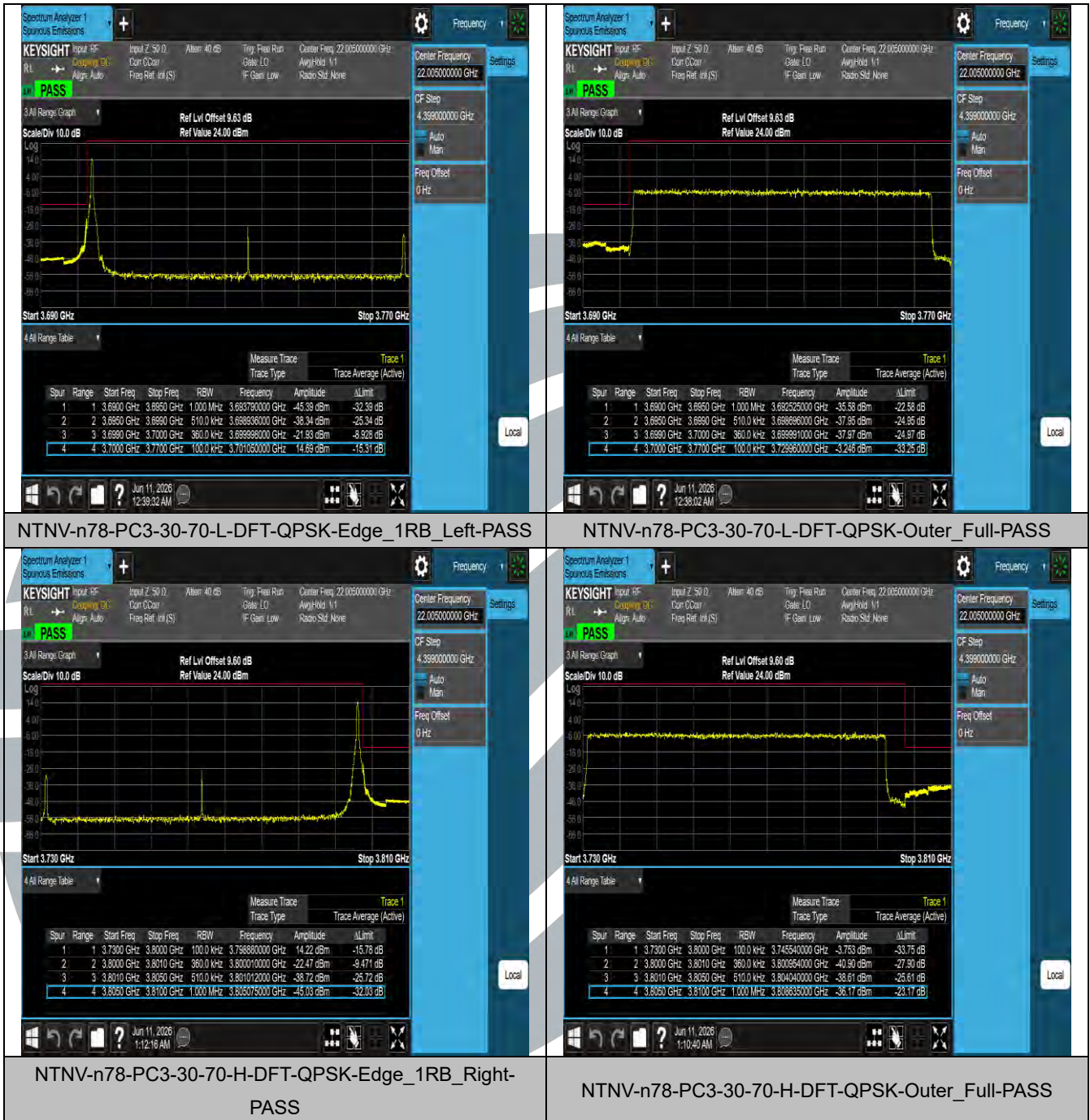


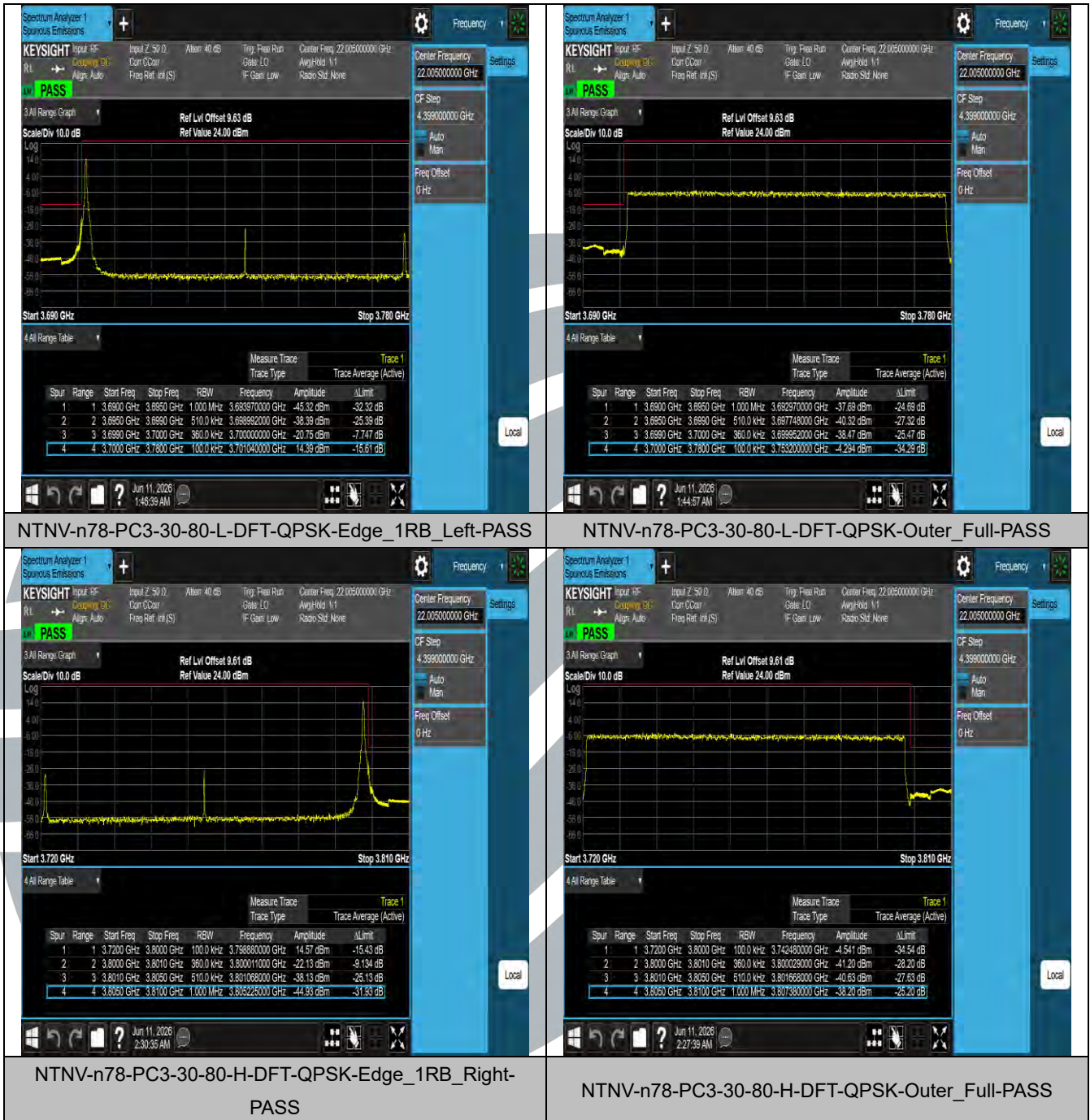
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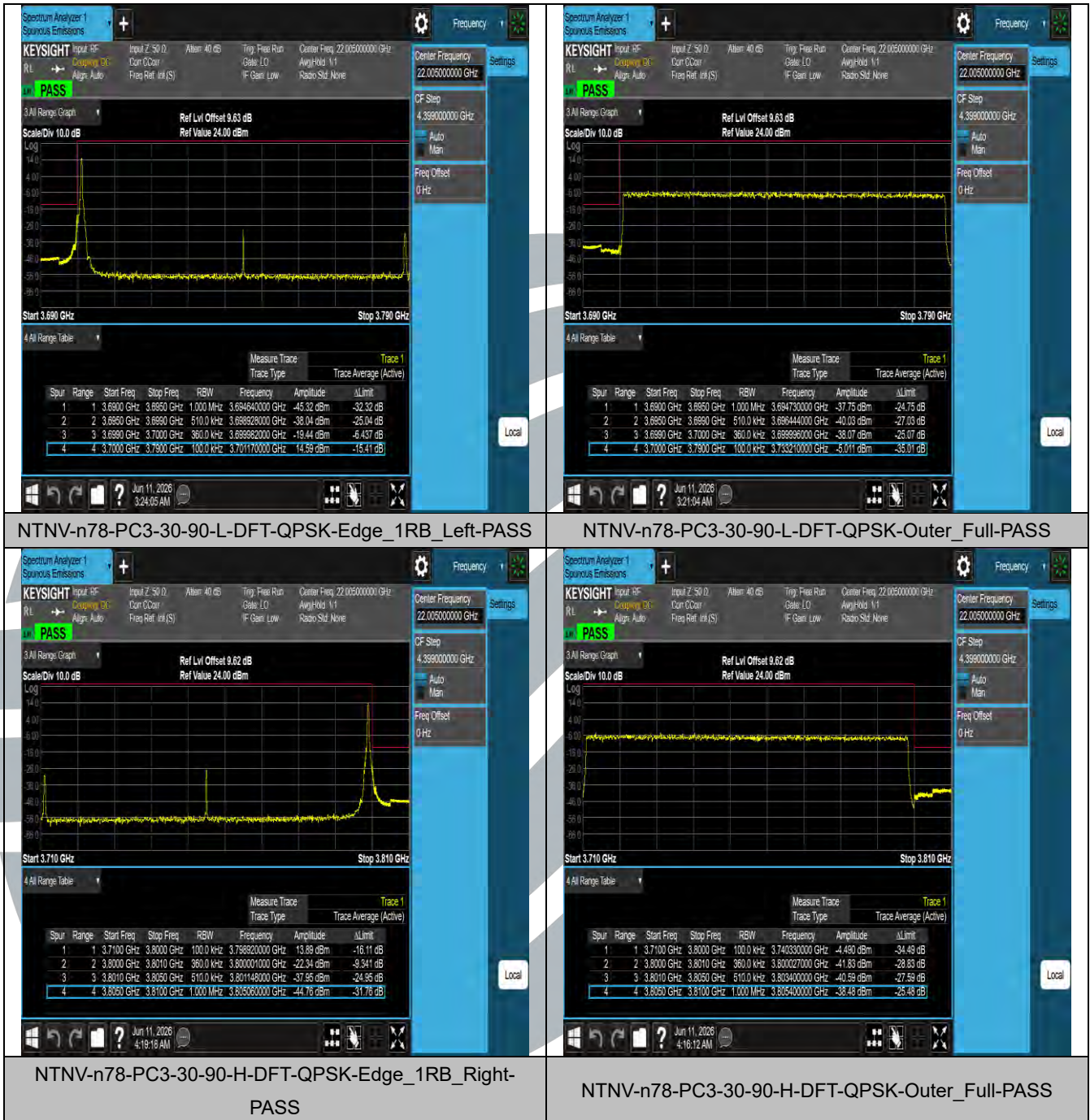
NTNV-n78-PC3-30-40-H-DFT-QPSK-Outer_Full-PASS

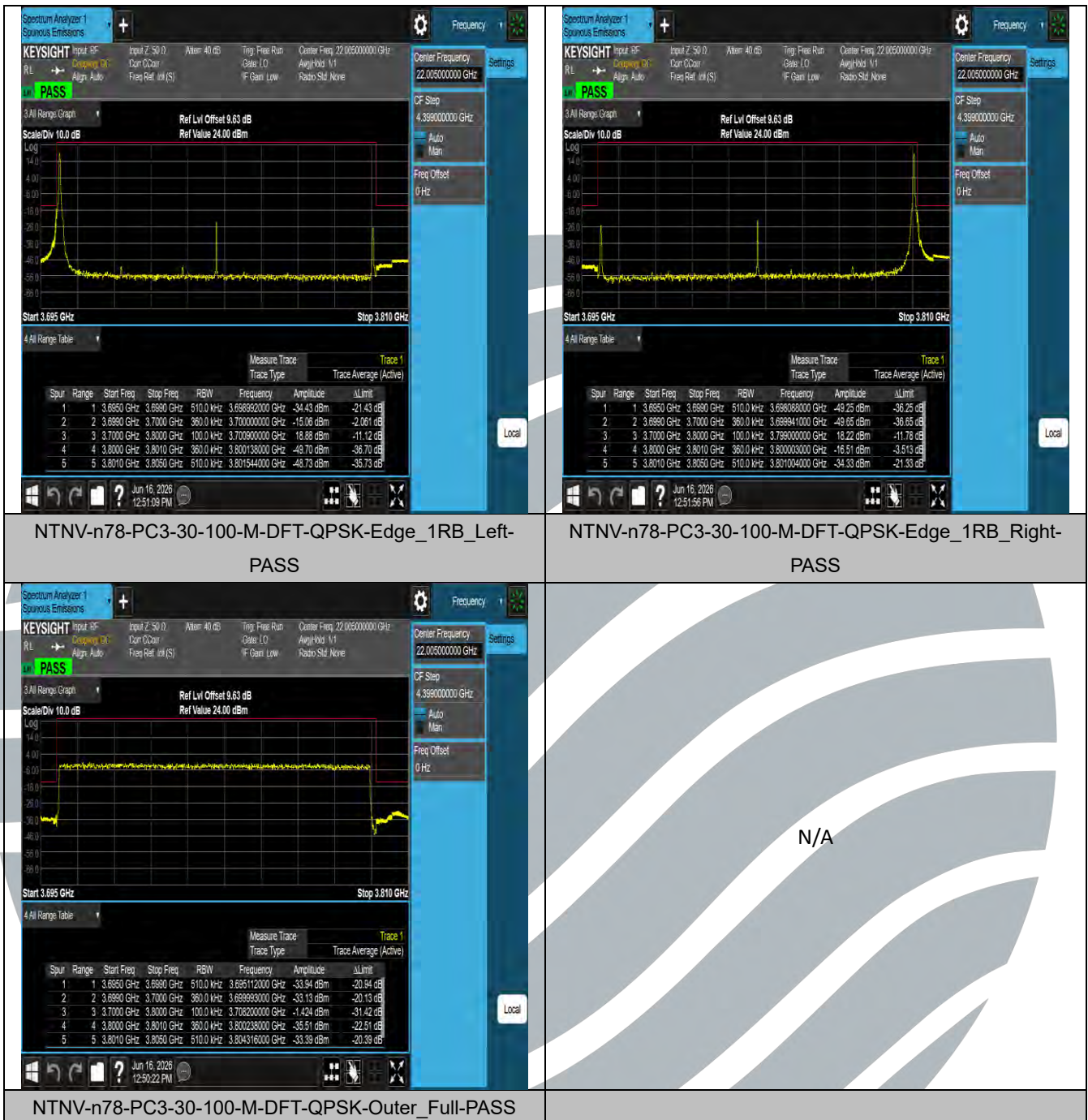










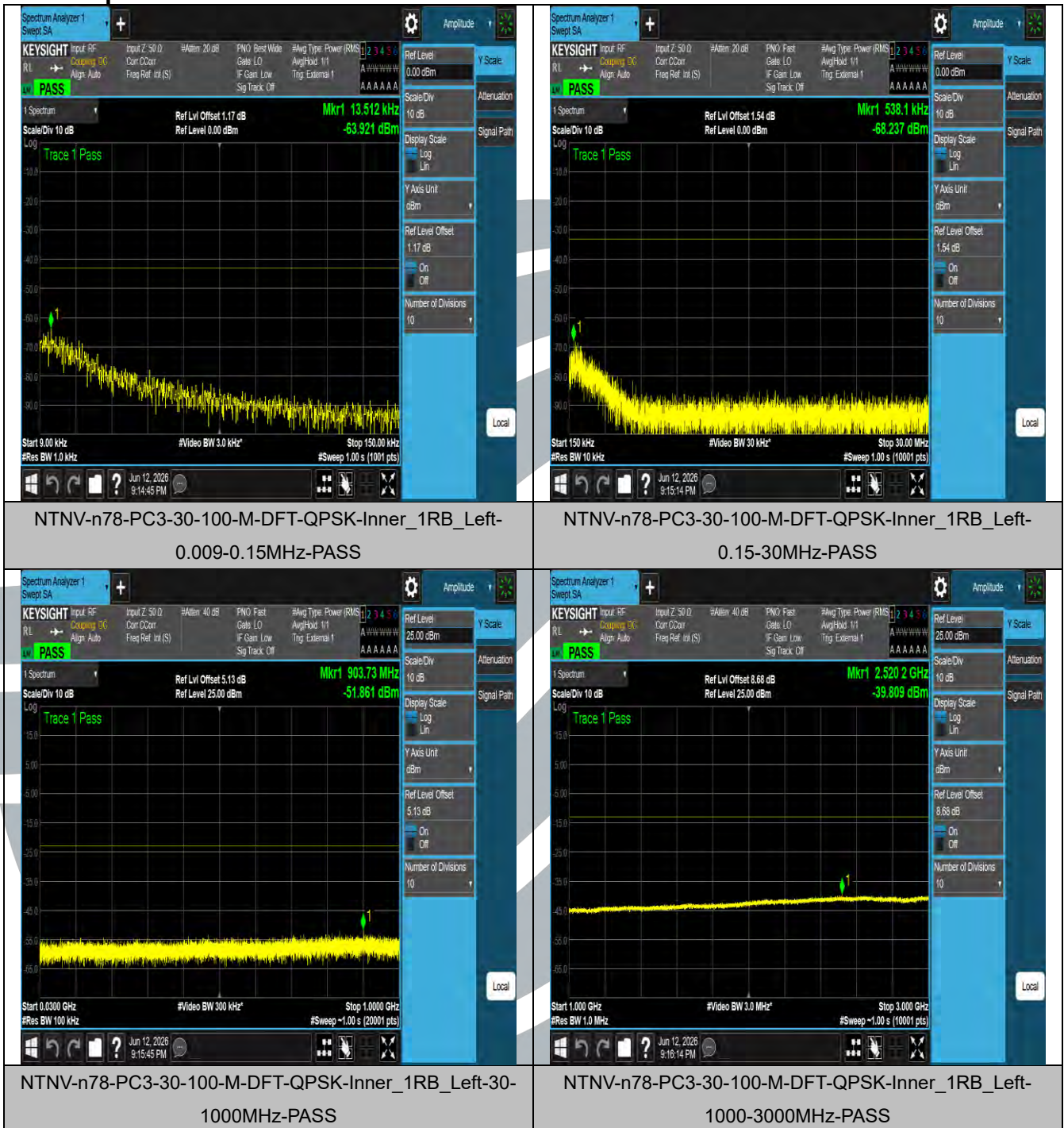


D.4 CONDUCTED SPURIOUS EMISSION FOR SA

Test Result

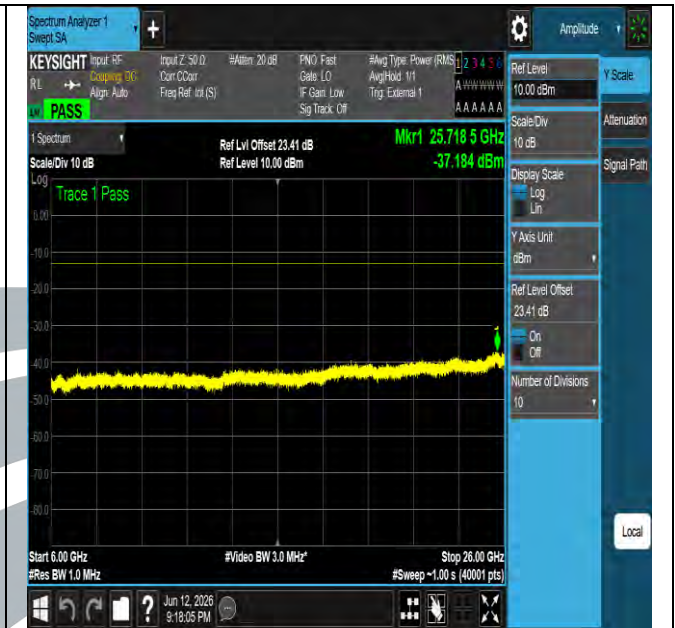
Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	Start Freq (MHz)	Stop Freq (MHz)	Result (dBm)	Limit	Verdict
n78	30	100	DFT-QPSK	M	Inner_1 RB_Left	0.009	0.15	-63.92	$\leq -43\text{dBm}$	PASS
n78	30	100	DFT-QPSK	M	Inner_1 RB_Left	0.15	30	-68.24	$\leq -33\text{dBm}$	PASS
n78	30	100	DFT-QPSK	M	Inner_1 RB_Left	30	1000	-51.86	$\leq -23\text{dBm}$	PASS
n78	30	100	DFT-QPSK	M	Inner_1 RB_Left	1000	3000	-39.81	$\leq -13\text{dBm}$	PASS
n78	30	100	DFT-QPSK	M	Inner_1 RB_Left	3000	6000	-32.84	$\leq -13\text{dBm}$	PASS
n78	30	100	DFT-QPSK	M	Inner_1 RB_Left	6000	26000	-37.18	$\leq -13\text{dBm}$	PASS
n78	30	100	DFT-QPSK	M	Inner_1 RB_Left	26000	40000	-42.28	$\leq -13\text{dBm}$	PASS

Test Graphs

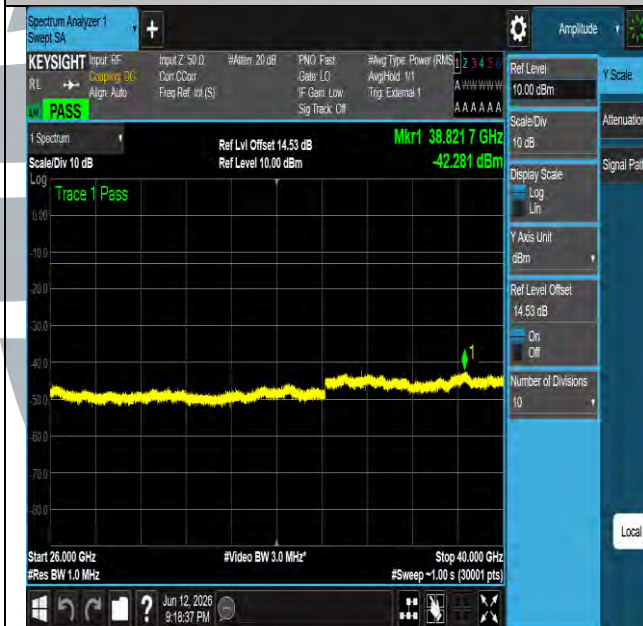




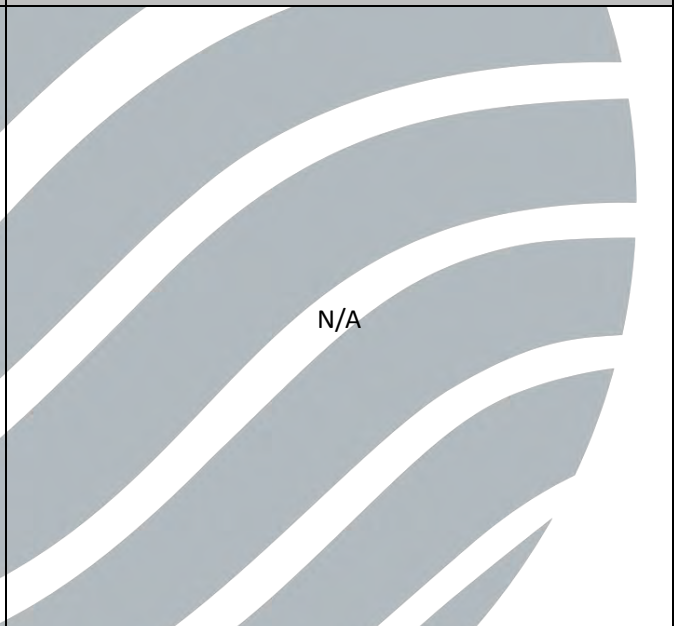
NTNV-n78-PC3-30-100-M-DFT-QPSK-Inner_1RB_Left-
3000-6000MHz-PASS



NTNV-n78-PC3-30-100-M-DFT-QPSK-Inner_1RB_Left-
6000-26000MHz-PASS



NTNV-n78-PC3-30-100-M-DFT-QPSK-Inner_1RB_Left-
26000-40000MHz-PASS



D.5 FREQUENCY STABILITY FOR SA

Test Result

Frequency Error VS. Voltage

Voltage													
Band	SCS (kHz)	BW (MHz)	Modulation	Ch	RB Config	Voltage	Temp.	Result (ppm)	Limit (ppm)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
n78	30	100	CP-QPSK	M	Outer_Full	VL	NT	-0.0006	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	VN	NT	0.000399	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	VH	NT	-0.002205	-2.5~2.5	3700	3800	---	PASS

Frequency Error VS. Temperature

Temperature													
Band	SCS (kHz)	BW (MHz)	Modulation	Ch	RB Config	Voltage	Temp.	Result (ppm)	Limit (ppm)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
n78	30	100	CP-QPSK	M	Outer_Full	NV	-30	-0.002206	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	NV	-20	-0.001093	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	NV	-10	-0.00184	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	NV	0	5.5E-05	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	NV	10	-0.001863	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	NV	20	-0.000286	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	NV	30	-0.001318	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	NV	40	-0.000969	-2.5~2.5	3700	3800	---	PASS
n78	30	100	CP-QPSK	M	Outer_Full	NV	50	-0.001062	-2.5~2.5	3700	3800	---	PASS