

APPENDIX A 5G NR N77(3450-3550 MHZ) RF TEST DATA

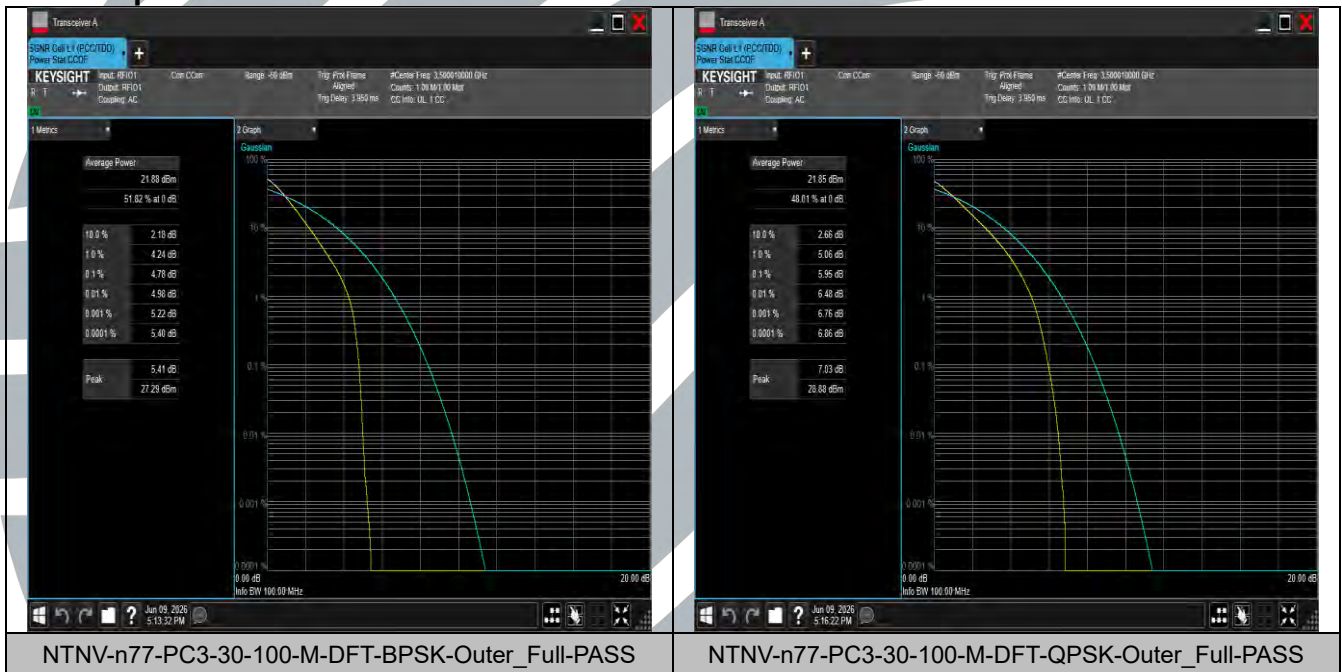
A.1 PEAK-TO-AVERAGE RATIO FOR SA

➤ Peak-to-Average Ratio(CCDF)

Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	Result (dB)	Limit	Verdict
n77	30	100	DFT-BPSK	M	Outer_Full	4.78	≤13dB	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	5.95	≤13dB	PASS
n77	30	100	DFT-16QAM	M	Outer_Full	6.62	≤13dB	PASS
n77	30	100	DFT-64QAM	M	Outer_Full	6.88	≤13dB	PASS
n77	30	100	DFT-256QAM	M	Outer_Full	6.98	≤13dB	PASS

Test Graphs





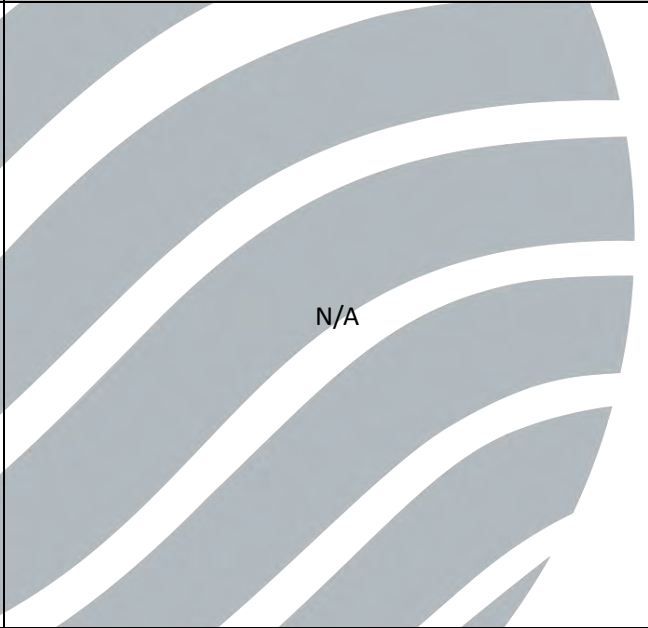
NTNV-n77-PC3-30-100-M-DFT-16QAM-Outer_Full-PASS



NTNV-n77-PC3-30-100-M-DFT-64QAM-Outer_Full-PASS



NTNV-n77-PC3-30-100-M-DFT-256QAM-Outer_Full-PASS

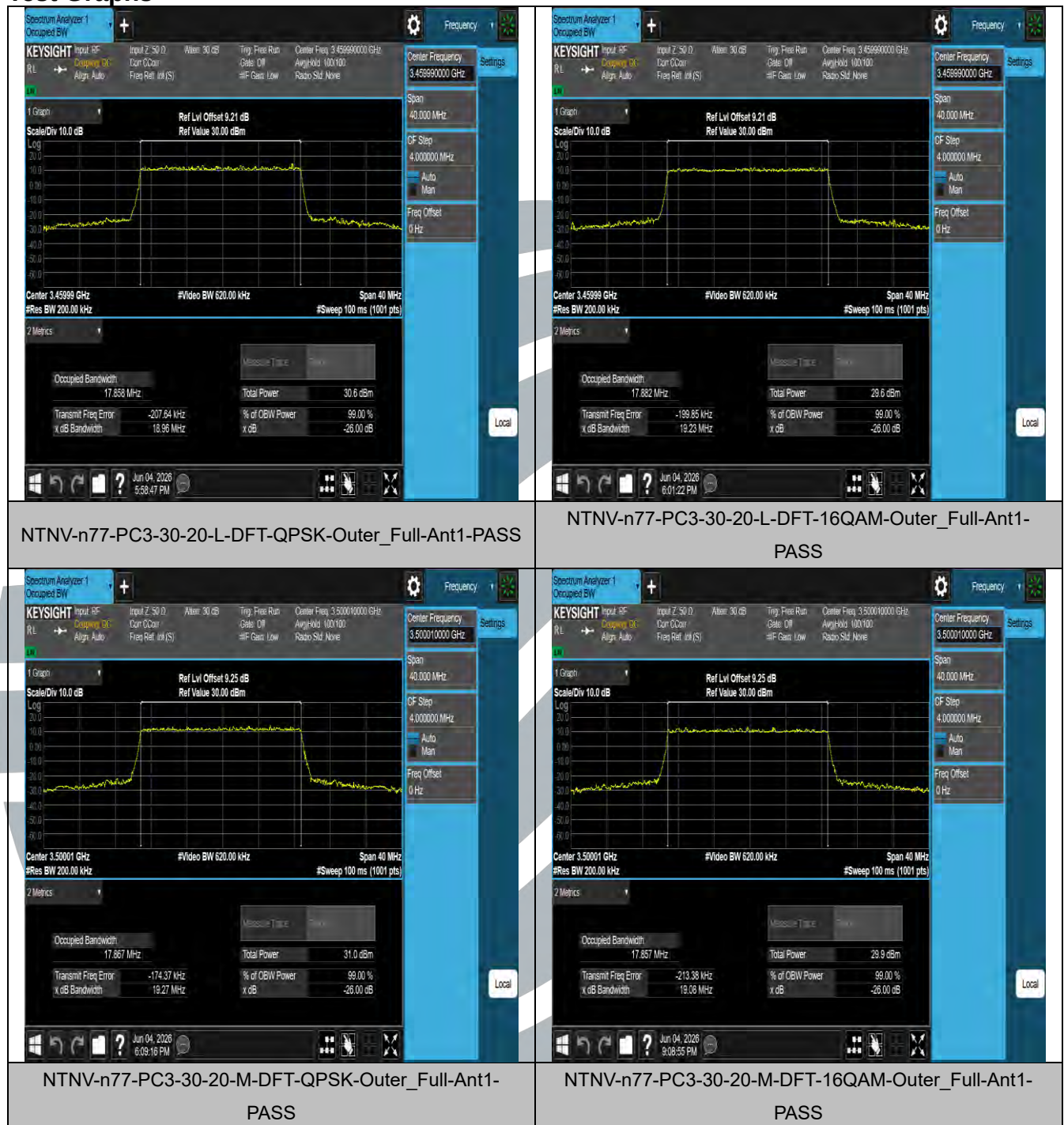


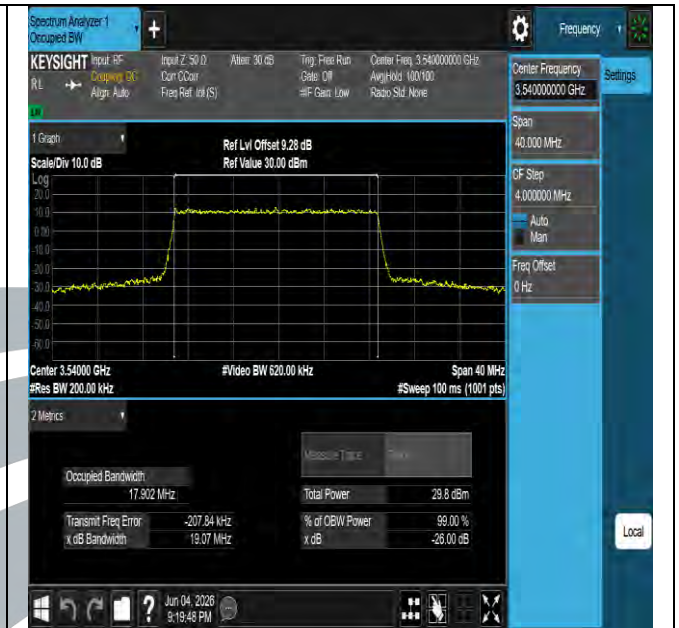
A.2 26DB BANDWIDTH AND OCCUPIED BANDWIDTH FOR SA

Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	99% BW Result (MHz)	26dB BW Result (MHz)	Verdict
n77	30	20	DFT-QPSK	L	Outer_Full	17.858	18.96	PASS
n77	30	20	DFT-16QAM	L	Outer_Full	17.882	19.23	PASS
n77	30	20	DFT-QPSK	M	Outer_Full	17.867	19.27	PASS
n77	30	20	DFT-16QAM	M	Outer_Full	17.857	19.08	PASS
n77	30	20	DFT-QPSK	H	Outer_Full	17.823	19.00	PASS
n77	30	20	DFT-16QAM	H	Outer_Full	17.902	19.07	PASS
n77	30	30	DFT-QPSK	L	Outer_Full	26.827	28.32	PASS
n77	30	30	DFT-16QAM	L	Outer_Full	26.853	28.33	PASS
n77	30	30	DFT-QPSK	M	Outer_Full	26.796	28.33	PASS
n77	30	30	DFT-16QAM	M	Outer_Full	26.739	28.06	PASS
n77	30	30	DFT-QPSK	H	Outer_Full	26.799	28.31	PASS
n77	30	30	DFT-16QAM	H	Outer_Full	26.860	28.35	PASS
n77	30	40	DFT-QPSK	L	Outer_Full	35.710	37.48	PASS
n77	30	40	DFT-16QAM	L	Outer_Full	35.743	37.45	PASS
n77	30	40	DFT-QPSK	M	Outer_Full	35.657	37.42	PASS
n77	30	40	DFT-16QAM	M	Outer_Full	35.627	37.45	PASS
n77	30	40	DFT-QPSK	H	Outer_Full	35.702	37.48	PASS
n77	30	40	DFT-16QAM	H	Outer_Full	35.728	37.49	PASS
n77	30	60	DFT-QPSK	L	Outer_Full	57.741	60.21	PASS
n77	30	60	DFT-16QAM	L	Outer_Full	57.646	60.13	PASS
n77	30	60	DFT-QPSK	M	Outer_Full	57.708	60.10	PASS
n77	30	60	DFT-16QAM	M	Outer_Full	57.784	60.10	PASS
n77	30	60	DFT-QPSK	H	Outer_Full	57.727	60.12	PASS
n77	30	60	DFT-16QAM	H	Outer_Full	57.788	60.08	PASS
n77	30	80	DFT-QPSK	L	Outer_Full	76.902	79.83	PASS
n77	30	80	DFT-16QAM	L	Outer_Full	76.844	79.88	PASS
n77	30	80	DFT-QPSK	M	Outer_Full	76.890	79.95	PASS
n77	30	80	DFT-16QAM	M	Outer_Full	76.980	79.97	PASS
n77	30	80	DFT-QPSK	H	Outer_Full	77.015	79.91	PASS
n77	30	80	DFT-16QAM	H	Outer_Full	77.068	79.83	PASS
n77	30	100	DFT-QPSK	L	Outer_Full	96.301	99.69	PASS
n77	30	100	DFT-16QAM	L	Outer_Full	96.223	99.58	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	96.242	99.74	PASS
n77	30	100	DFT-16QAM	M	Outer_Full	96.205	99.60	PASS
n77	30	100	DFT-QPSK	H	Outer_Full	96.359	99.68	PASS
n77	30	100	DFT-16QAM	H	Outer_Full	96.266	99.57	PASS

Test Graphs







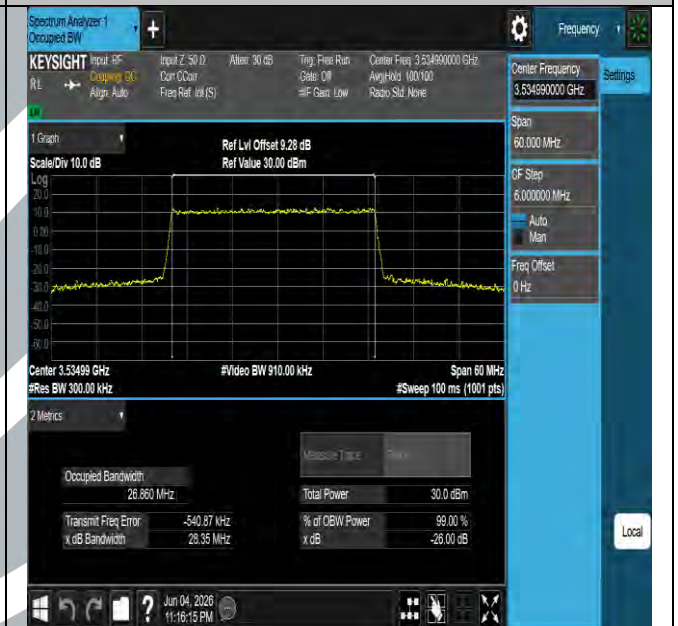
NTNV-n77-PC3-30-30-M-DFT-QPSK-Outet_Full-Ant1-PASS



NTNV-n77-PC3-30-30-M-DFT-16QAM-Outet_Full-Ant1-PASS



NTNV-n77-PC3-30-30-H-DFT-QPSK-Outet_Full-Ant1-PASS



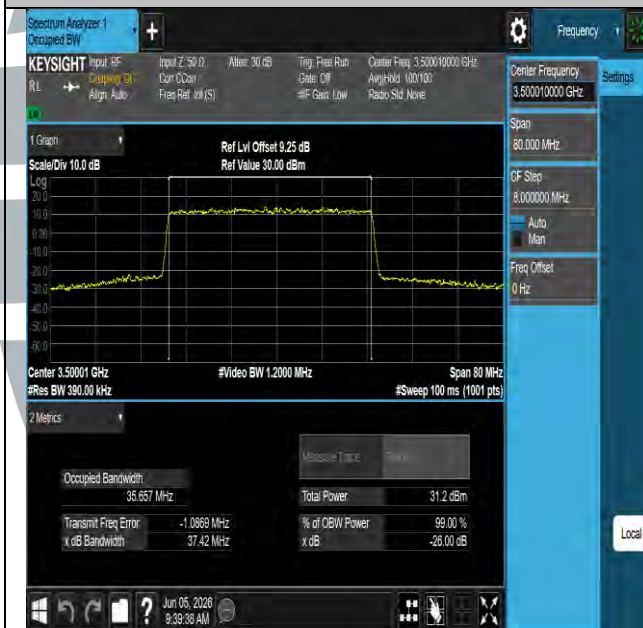
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NTNV-n77-PC3-30-40-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n77-PC3-30-40-L-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n77-PC3-30-40-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n77-PC3-30-40-M-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n77-PC3-30-40-H-DFT-QPSK-Outter_Full-Ant1-PASS



NTNV-n77-PC3-30-40-H-DFT-16QAM-Outter_Full-Ant1-PASS



NTNV-n77-PC3-30-60-L-DFT-QPSK-Outter_Full-Ant1-PASS



NTNV-n77-PC3-30-60-L-DFT-16QAM-Outter_Full-Ant1-PASS



NTNV-n77-PC3-30-60-M-DFT-QPSK-Outet_Full-Ant1-PASS



NTNV-n77-PC3-30-60-M-DFT-16QAM-Outet_Full-Ant1-PASS



NTNV-n77-PC3-30-60-H-DFT-QPSK-Outet_Full-Ant1-PASS



NTNV-n77-PC3-30-60-H-DFT-16QAM-Outet_Full-Ant1-PASS



NTNV-n77-PC3-30-80-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n77-PC3-30-80-L-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n77-PC3-30-80-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n77-PC3-30-80-M-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n77-PC3-30-80-H-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n77-PC3-30-80-H-DFT-16QAM-Outer_Full-Ant1-PASS



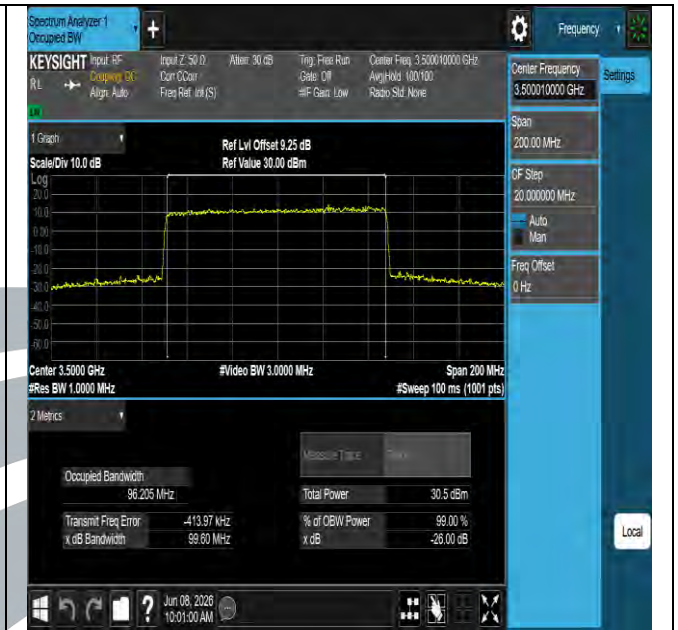
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NTNV-n77-PC3-30-100-L-DFT-16QAM-Outer_Full-Ant1-PASS



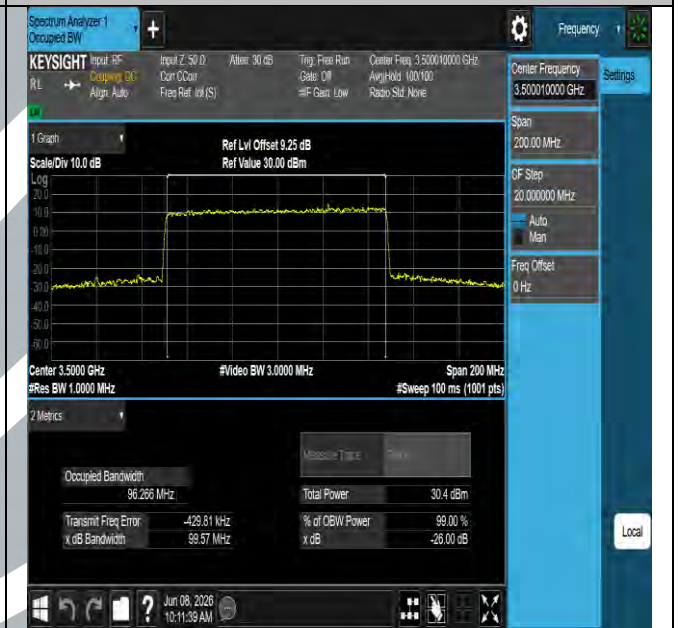
NTNV-n77-PC3-30-100-M-DFT-QPSK-Outer_Full-Ant1-
PASS



NTNV-n77-PC3-30-100-M-DFT-16QAM-Outer_Full-Ant1-
PASS



NTNV-n77-PC3-30-100-H-DFT-QPSK-Outer_Full-Ant1-
PASS



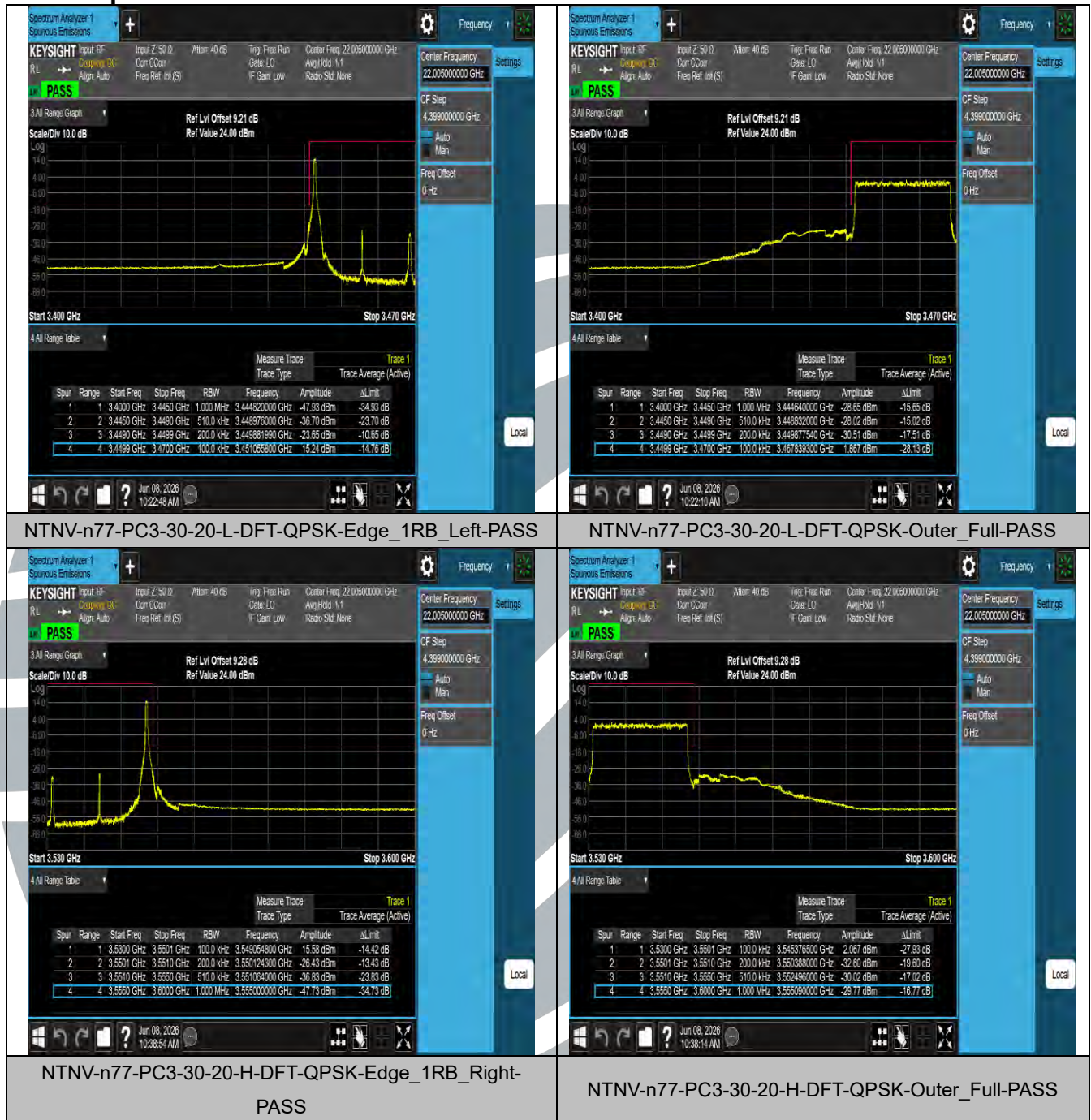
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PASS

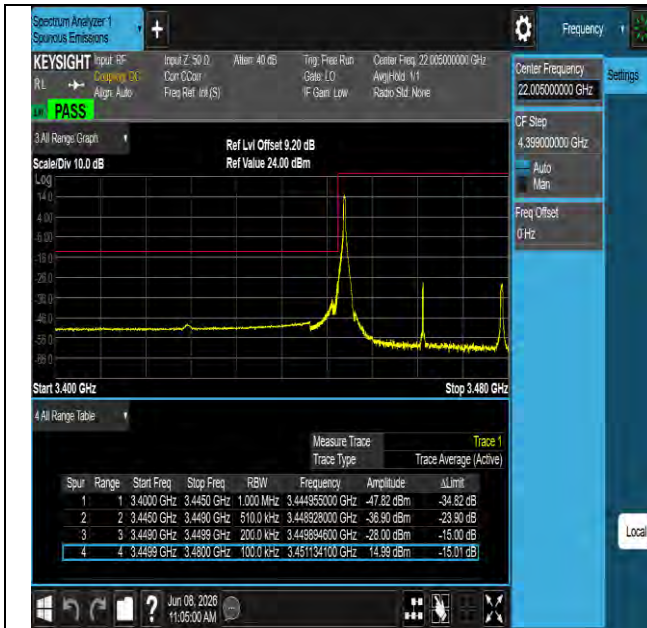
A.3 BAND EDGE FOR SA

Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	Result (dBm)	Verdict
n77	30	20	DFT-QPSK	L	Edge_1RB_Left	-23.65	PASS
n77	30	20	DFT-QPSK	L	Outer_Full	-28.02	PASS
n77	30	20	DFT-QPSK	H	Edge_1RB_Right	-26.43	PASS
n77	30	20	DFT-QPSK	H	Outer_Full	-29.77	PASS
n77	30	30	DFT-QPSK	L	Edge_1RB_Left	-28.00	PASS
n77	30	30	DFT-QPSK	L	Outer_Full	-29.74	PASS
n77	30	30	DFT-QPSK	H	Edge_1RB_Right	-28.88	PASS
n77	30	30	DFT-QPSK	H	Outer_Full	-31.46	PASS
n77	30	40	DFT-QPSK	L	Edge_1RB_Left	-26.10	PASS
n77	30	40	DFT-QPSK	L	Outer_Full	-29.53	PASS
n77	30	40	DFT-QPSK	H	Edge_1RB_Right	-26.47	PASS
n77	30	40	DFT-QPSK	H	Outer_Full	-31.80	PASS
n77	30	60	DFT-QPSK	L	Edge_1RB_Left	-23.97	PASS
n77	30	60	DFT-QPSK	L	Outer_Full	-32.08	PASS
n77	30	60	DFT-QPSK	H	Edge_1RB_Right	-28.02	PASS
n77	30	60	DFT-QPSK	H	Outer_Full	-32.39	PASS
n77	30	80	DFT-QPSK	L	Edge_1RB_Left	-26.55	PASS
n77	30	80	DFT-QPSK	L	Outer_Full	-31.69	PASS
n77	30	80	DFT-QPSK	H	Edge_1RB_Right	-29.43	PASS
n77	30	80	DFT-QPSK	H	Outer_Full	-31.05	PASS
n77	30	100	DFT-QPSK	M	Edge_1RB_Left	-24.36	PASS
n77	30	100	DFT-QPSK	M	Edge_1RB_Right	-28.17	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	-32.67	PASS

Test Graphs

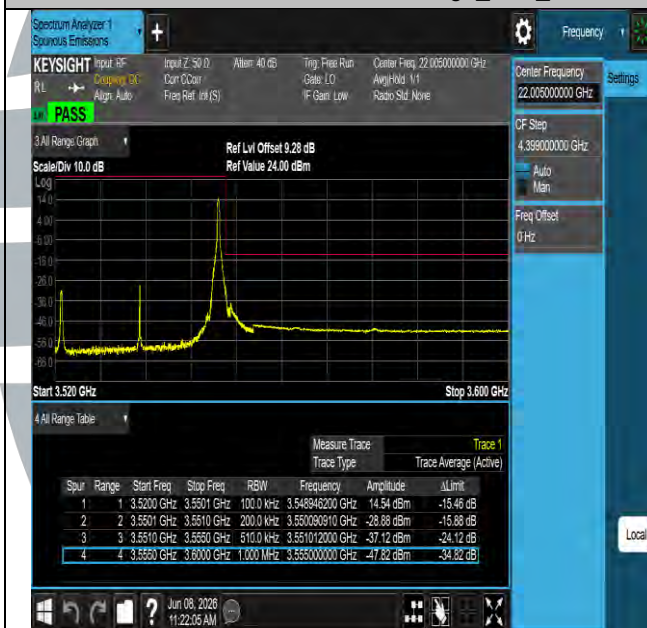




NTNV-n77-PC3-30-30-L-DFT-QPSK-Edge_1RB_Left-PASS



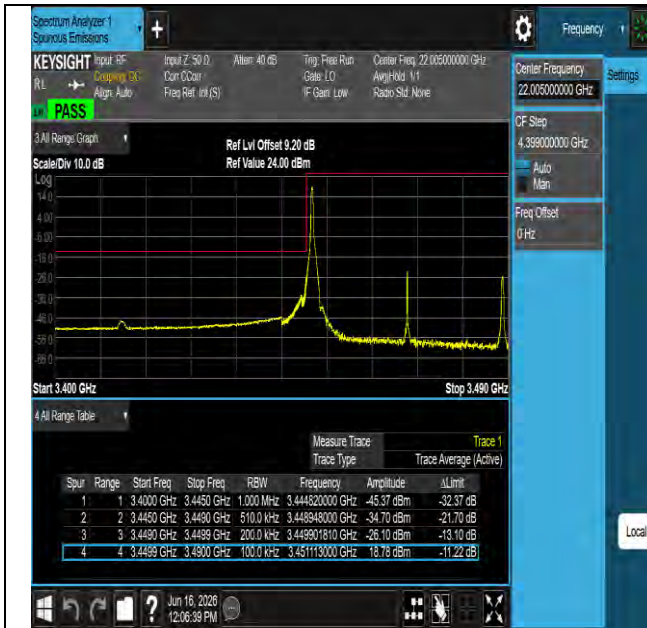
NTNV-n77-PC3-30-30-L-DFT-QPSK-Outer_Full-PASS



NTNV-n77-PC3-30-30-H-DFT-QPSK-Edge_1RB_Right-PASS



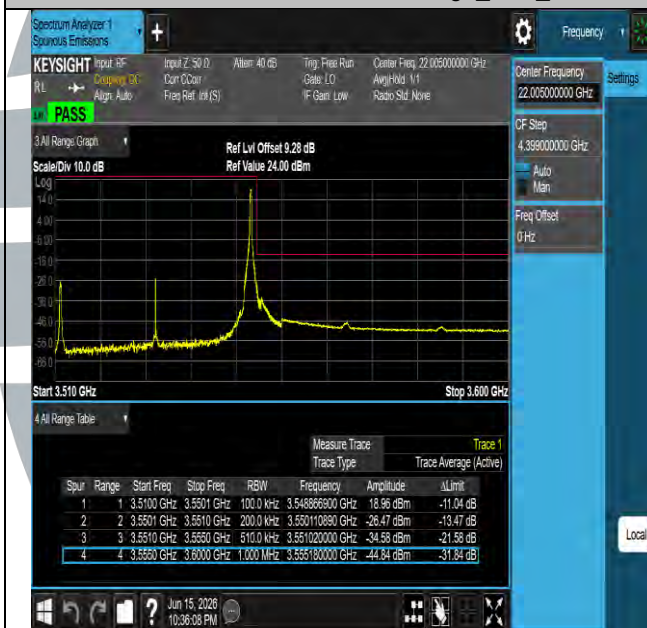
NTNV-n77-PC3-30-30-H-DFT-QPSK-Outer_Full-PASS



NTNV-n77-PC3-30-40-L-DFT-QPSK-Edge_1RB_Left-PASS



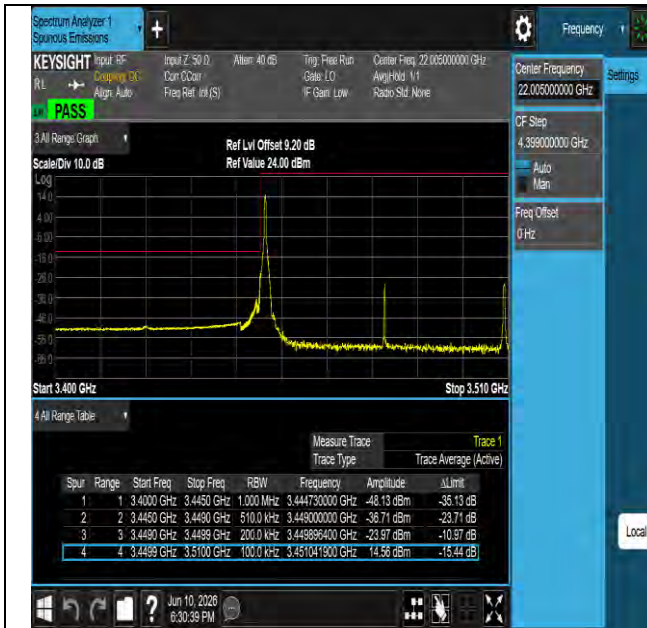
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NTNV-n77-PC3-30-40-H-DFT-QPSK-Edge_1RB_Right-PASS



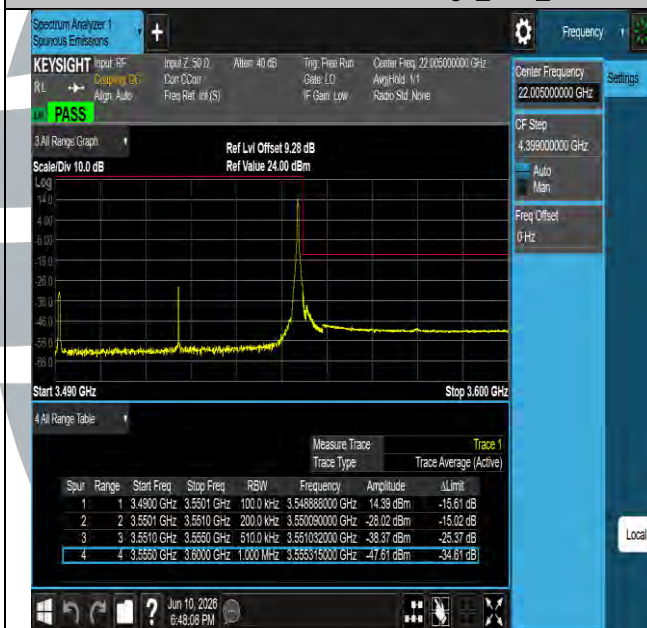
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NTNV-n77-PC3-30-60-L-DFT-QPSK-Edge_1RB_Left-PASS



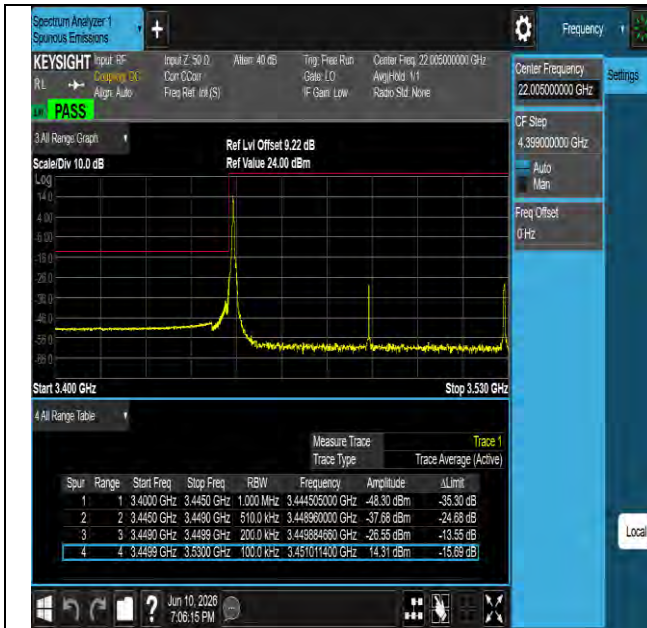
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NTNV-n77-PC3-30-60-H-DFT-QPSK-Edge_1RB_Right-PASS



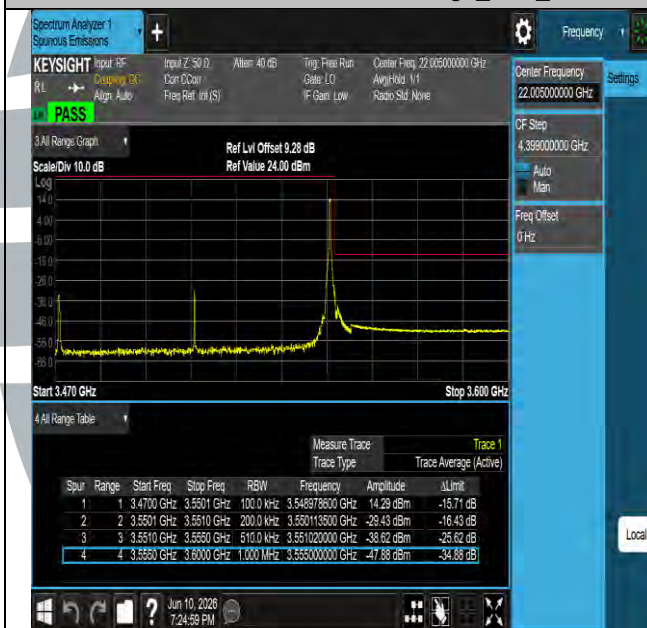
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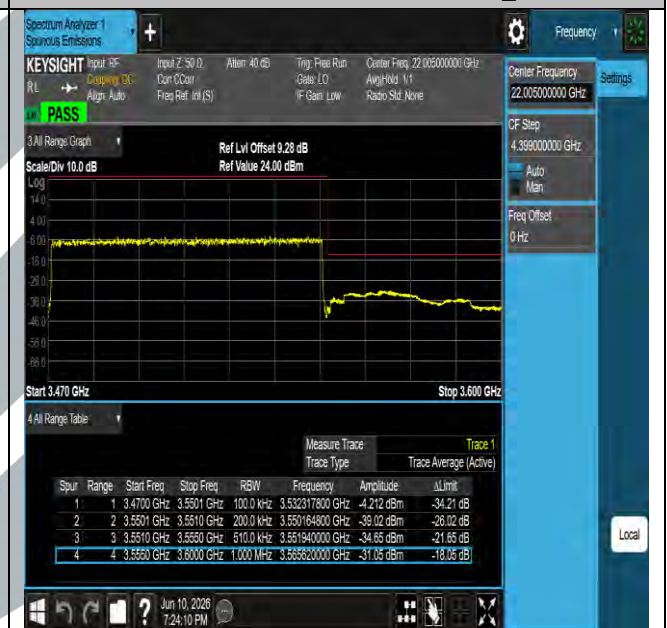
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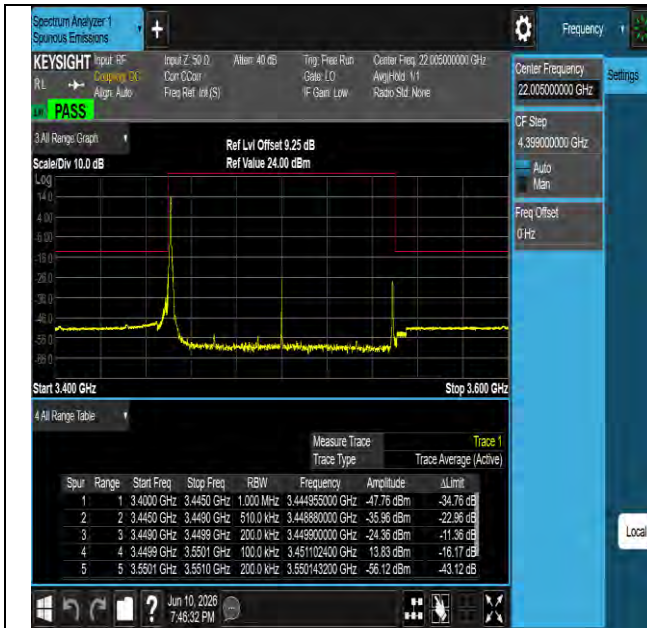
NTNV-n77-PC3-30-80-L-DFT-QPSK-Outer_Full-PASS



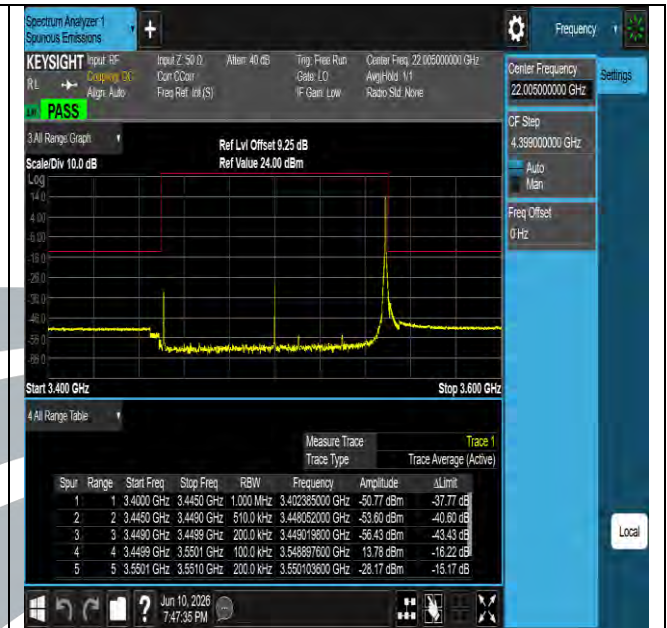
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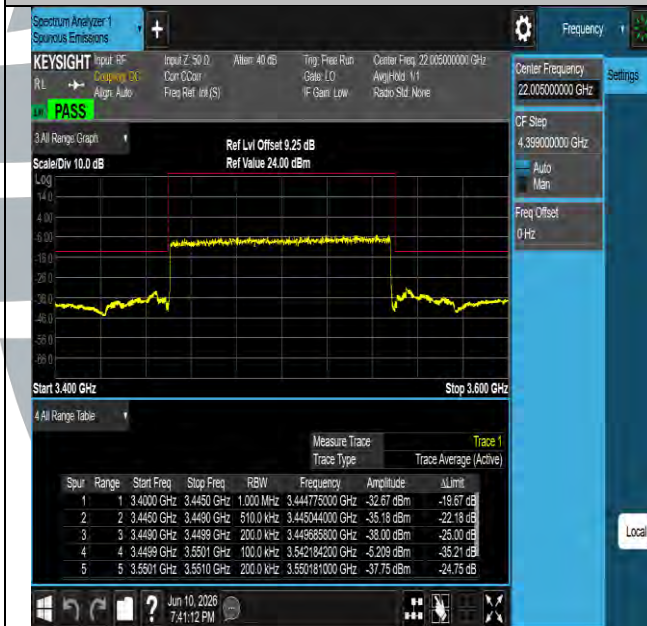
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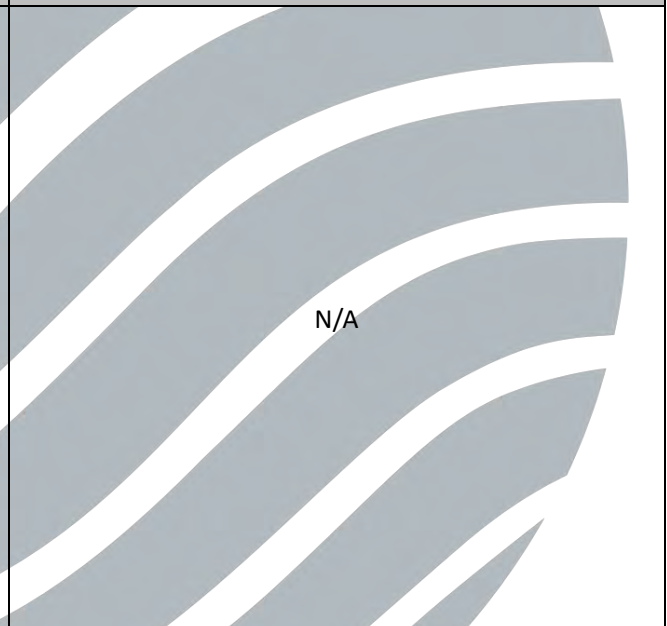
NTNV-n77-PC3-30-100-M-DFT-QPSK-Edge_1RB_Left-PASS



NTNV-n77-PC3-30-100-M-DFT-QPSK-Edge_1RB_Right-PASS



NTNV-n77-PC3-30-100-M-DFT-QPSK-Outer_Full-PASS

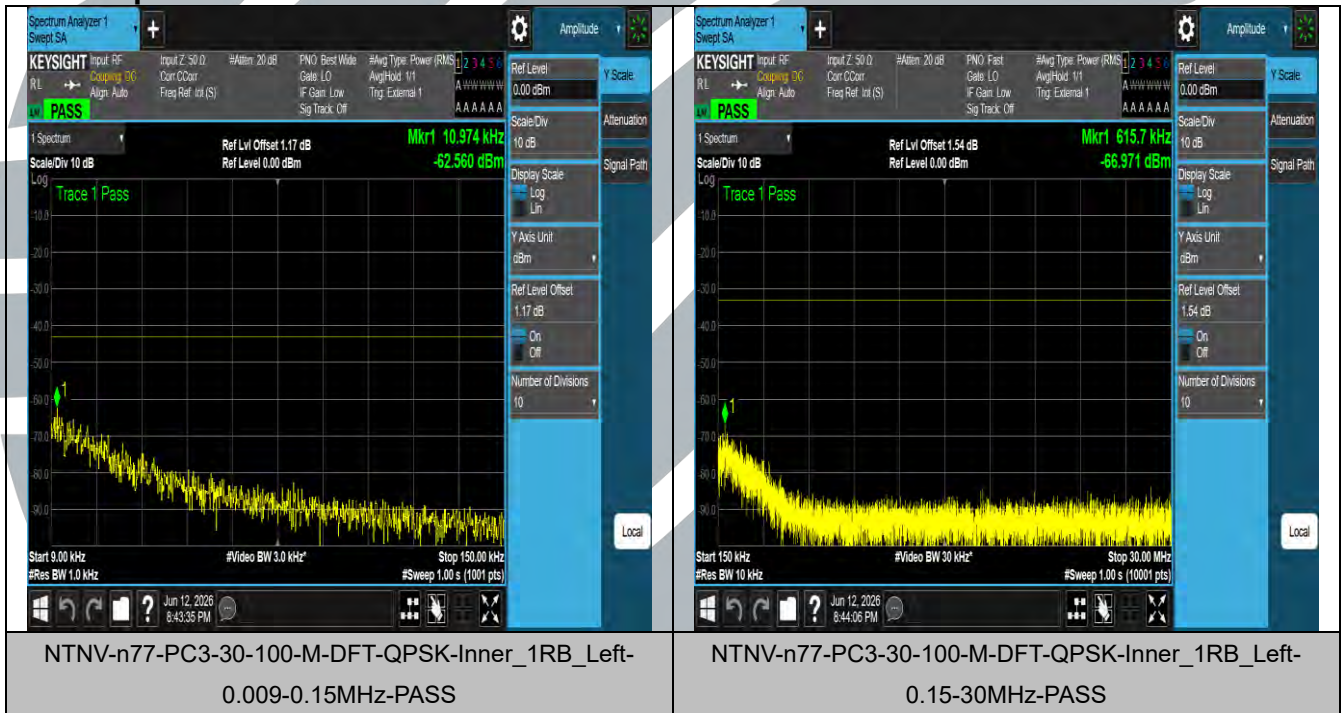


A.4 CONDUCTED SPURIOUS EMISSION FOR SA

Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	Start Freq (MHz)	Stop Freq (MHz)	Result (dBm)	Limit	Verdict
n77	30	100	DFT-QPSK	M	Inner_1RB_Left	0.009	0.15	-62.56	≤-43dBm	PASS
n77	30	100	DFT-QPSK	M	Inner_1RB_Left	0.15	30	-66.97	≤-33dBm	PASS
n77	30	100	DFT-QPSK	M	Inner_1RB_Left	30	1000	-52.35	≤-23dBm	PASS
n77	30	100	DFT-QPSK	M	Inner_1RB_Left	1000	3000	-39.74	≤-13dBm	PASS
n77	30	100	DFT-QPSK	M	Inner_1RB_Left	3000	6000	-32.69	≤-13dBm	PASS
n77	30	100	DFT-QPSK	M	Inner_1RB_Left	6000	20000	-40.04	≤-13dBm	PASS
n77	30	100	DFT-QPSK	M	Inner_1RB_Left	20000	40000	-42.66	≤-13dBm	PASS

Test Graphs





NTNV-n77-PC3-30-100-M-DFT-QPSK-Inner_1RB_Left-30-1000MHz-PASS



NTNV-n77-PC3-30-100-M-DFT-QPSK-Inner_1RB_Left-1000-3000MHz-PASS



NTNV-n77-PC3-30-100-M-DFT-QPSK-Inner_1RB_Left-3000-6000MHz-PASS



NTNV-n77-PC3-30-100-M-DFT-QPSK-Inner_1RB_Left-6000-20000MHz-PASS



NTNV-n77-PC3-30-100-M-DFT-QPSK-Inner_1RB_Left-
20000-40000MHz-PASS

A.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
n77	30	100	DFT-QPSK	M	Outer_Full	VL	NT	-0.001497	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	VN	NT	-0.000122	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	VH	NT	-0.001705	-2.5~2.5	3450	3550	---	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
n77	30	100	DFT-QPSK	M	Outer_Full	NV	-30	0.001133	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	-20	-0.001882	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	-10	-0.002375	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	0	-0.000533	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	10	-0.000198	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	20	0.000859	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	30	-0.00109	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	40	0.000148	-2.5~2.5	3450	3550	---	PASS
n77	30	100	DFT-QPSK	M	Outer_Full	NV	50	-0.000917	-2.5~2.5	3450	3550	---	PASS