

APPENDIX S 5G NR N7 RF TEST DATA

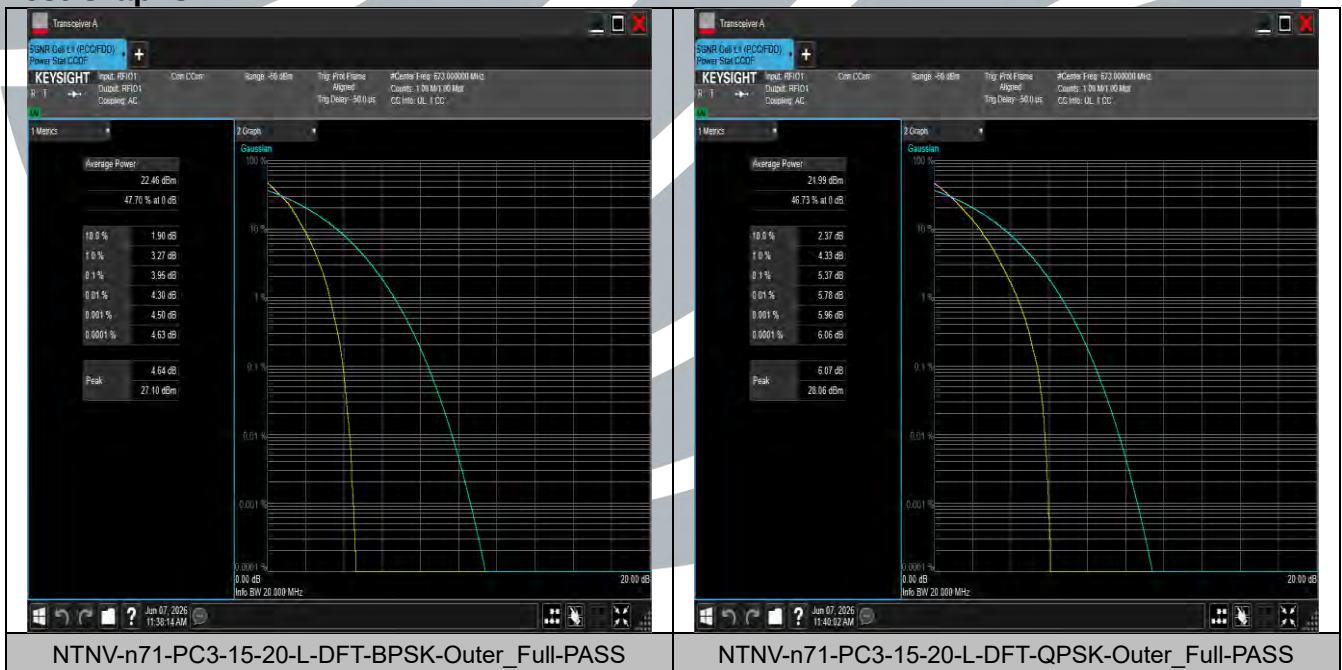
S.1 PEAK-TO-AVERAGE RATIO FOR SA

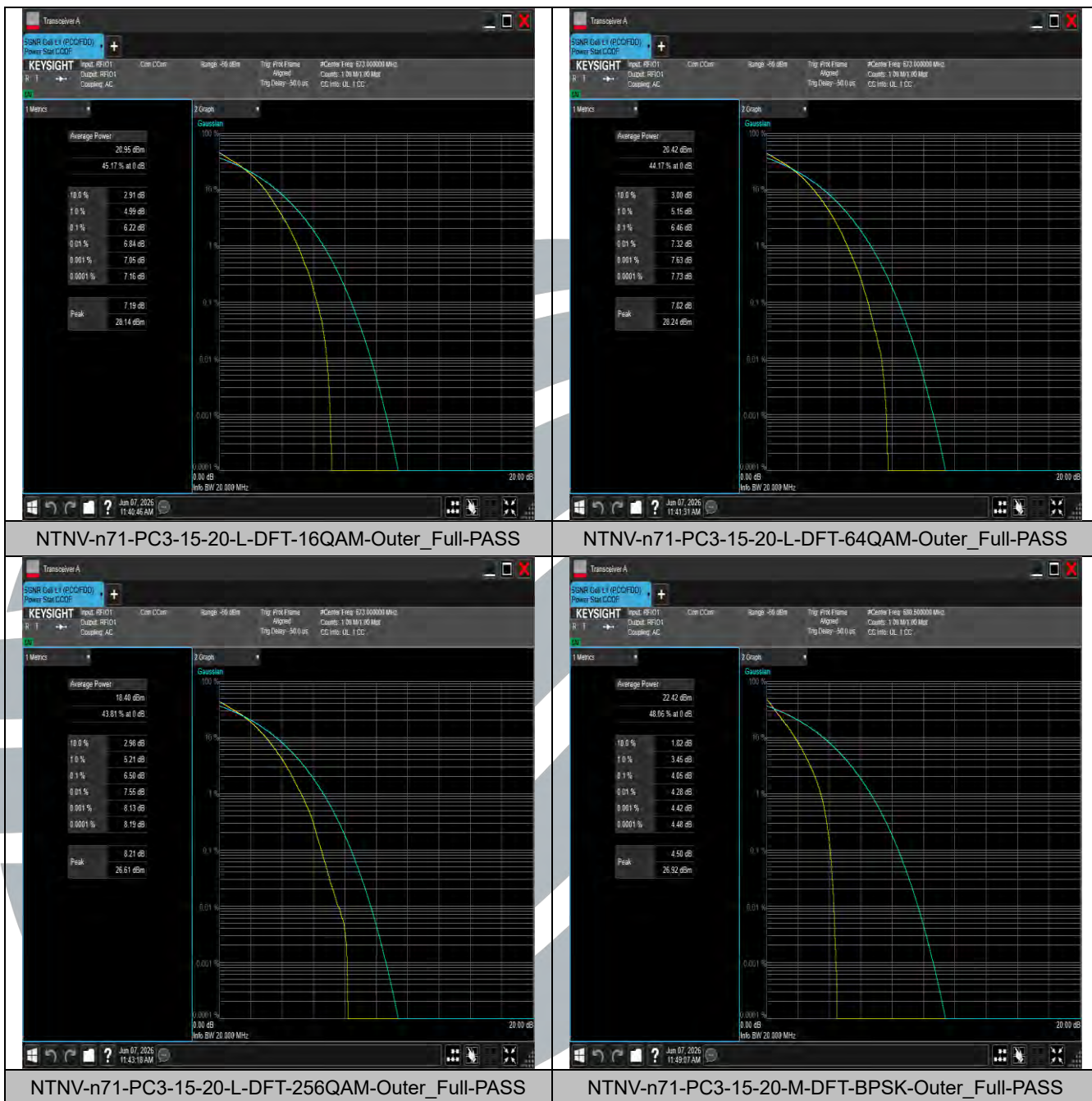
➤ Peak-to-Average Ratio(CCDF)

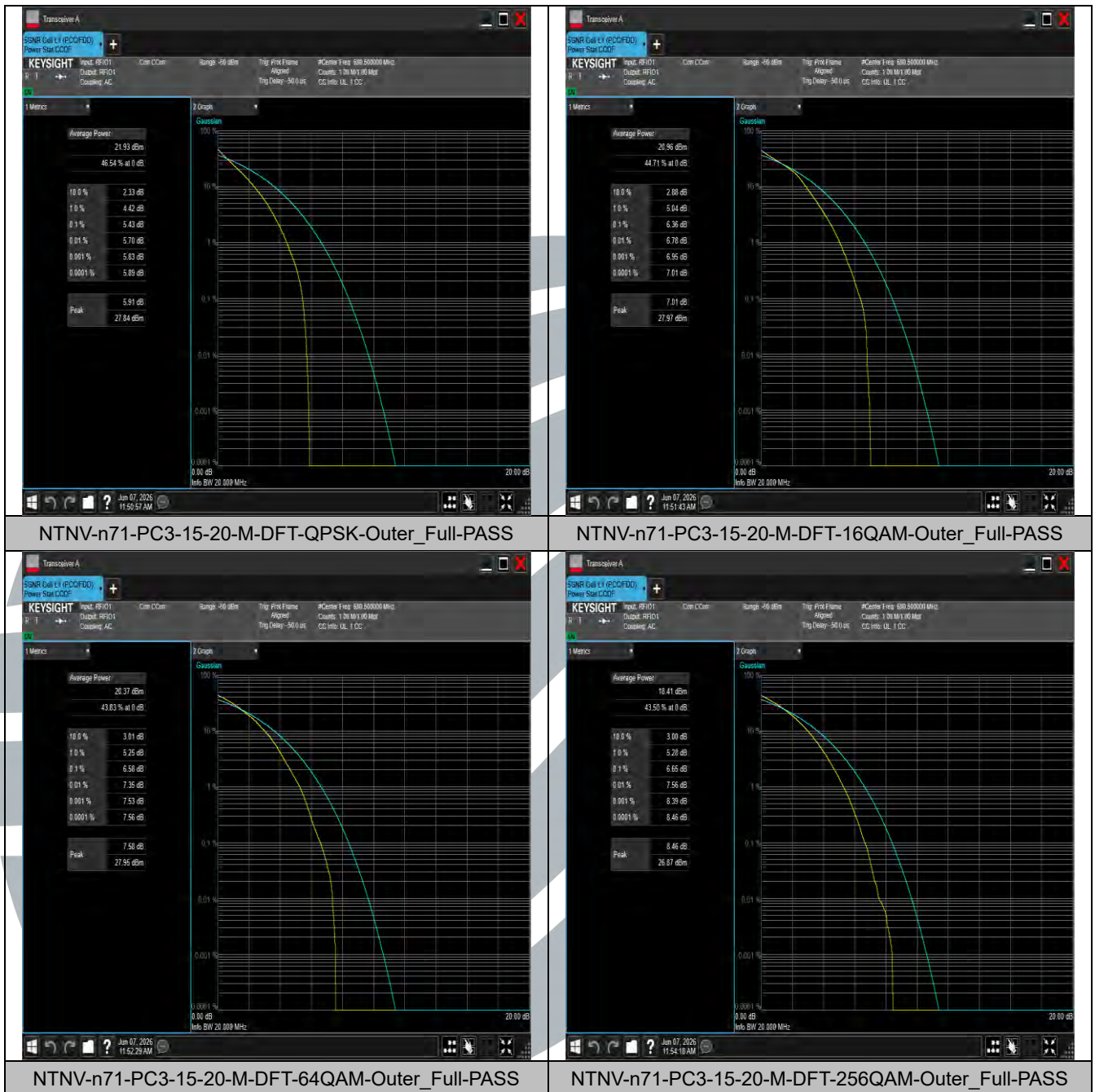
Test Result

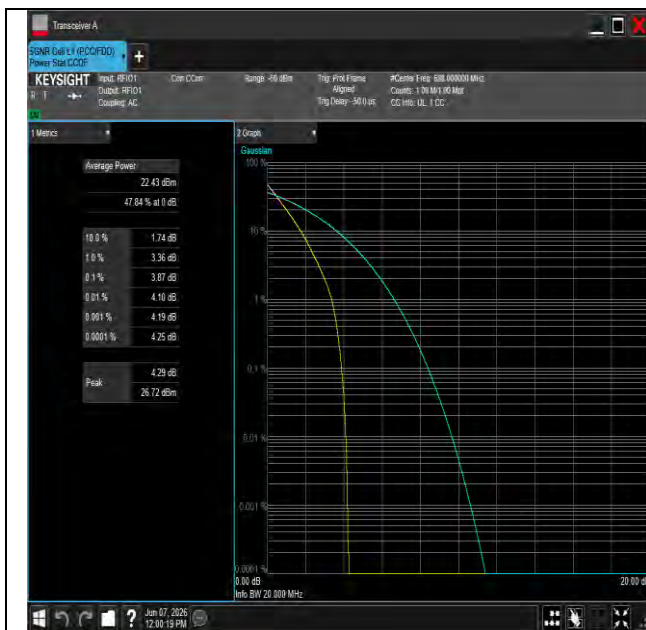
Band	SCS (kHz)	BW (MHz)	Modulation	Channel	RB Config	Result (dBm)	Limit	Verdict
n71	15	20	DFT-BPSK	L	Outer_Full	3.95	≤13dB	PASS
n71	15	20	DFT-QPSK	L	Outer_Full	5.37	≤13dB	PASS
n71	15	20	DFT-16QAM	L	Outer_Full	6.22	≤13dB	PASS
n71	15	20	DFT-64QAM	L	Outer_Full	6.46	≤13dB	PASS
n71	15	20	DFT-256QAM	L	Outer_Full	6.5	≤13dB	PASS
n71	15	20	DFT-BPSK	M	Outer_Full	4.05	≤13dB	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	5.43	≤13dB	PASS
n71	15	20	DFT-16QAM	M	Outer_Full	6.36	≤13dB	PASS
n71	15	20	DFT-64QAM	M	Outer_Full	6.58	≤13dB	PASS
n71	15	20	DFT-256QAM	M	Outer_Full	6.65	≤13dB	PASS
n71	15	20	DFT-BPSK	H	Outer_Full	3.87	≤13dB	PASS
n71	15	20	DFT-QPSK	H	Outer_Full	5.39	≤13dB	PASS
n71	15	20	DFT-16QAM	H	Outer_Full	6.25	≤13dB	PASS
n71	15	20	DFT-64QAM	H	Outer_Full	6.52	≤13dB	PASS
n71	15	20	DFT-256QAM	H	Outer_Full	6.56	≤13dB	PASS

Test Graphs

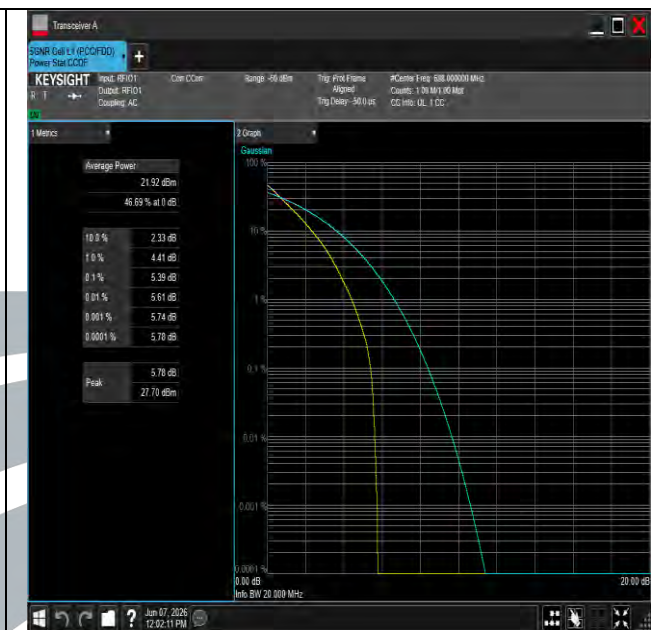




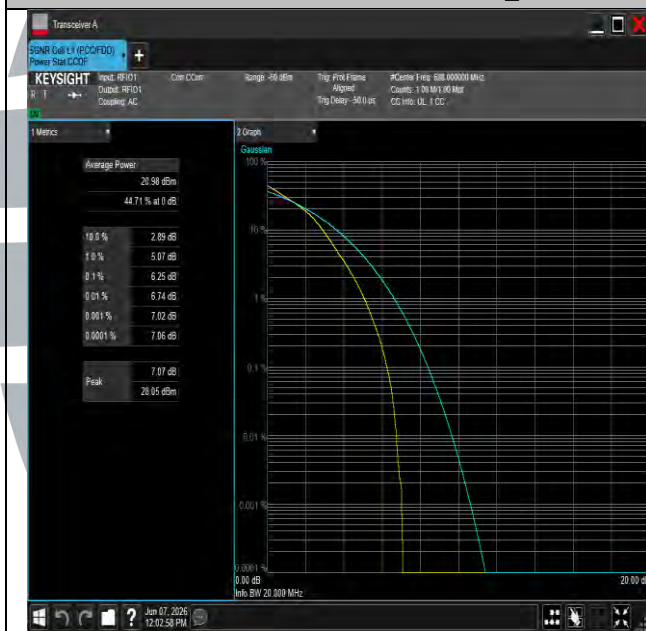




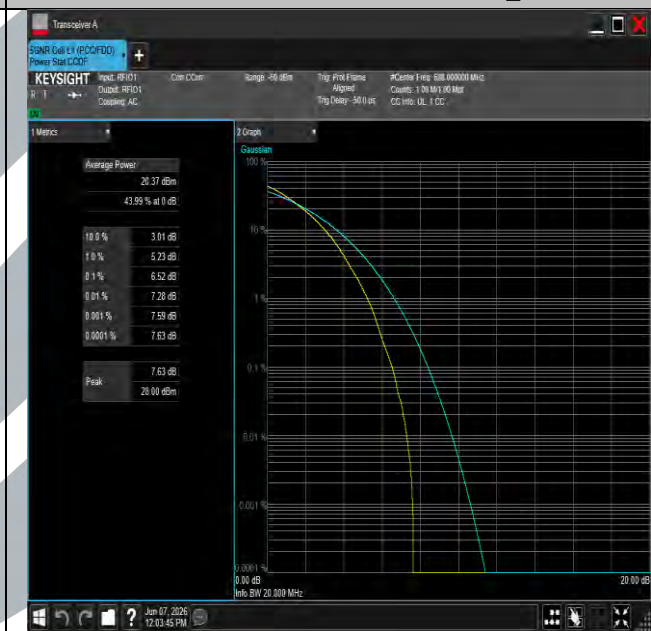
NTNV-n71-PC3-15-20-H-DFT-BPSK-Outer_Full-PASS



NTNV-n71-PC3-15-20-H-DFT-QPSK-Outer_Full-PASS



NTNV-n71-PC3-15-20-H-DFT-16QAM-Outer_Full-PASS



NTNV-n71-PC3-15-20-H-DFT-64QAM-Outer_Full-PASS



NTNV-n71-PC3-15-20-H-DFT-256QAM-Outer_Full-PASS

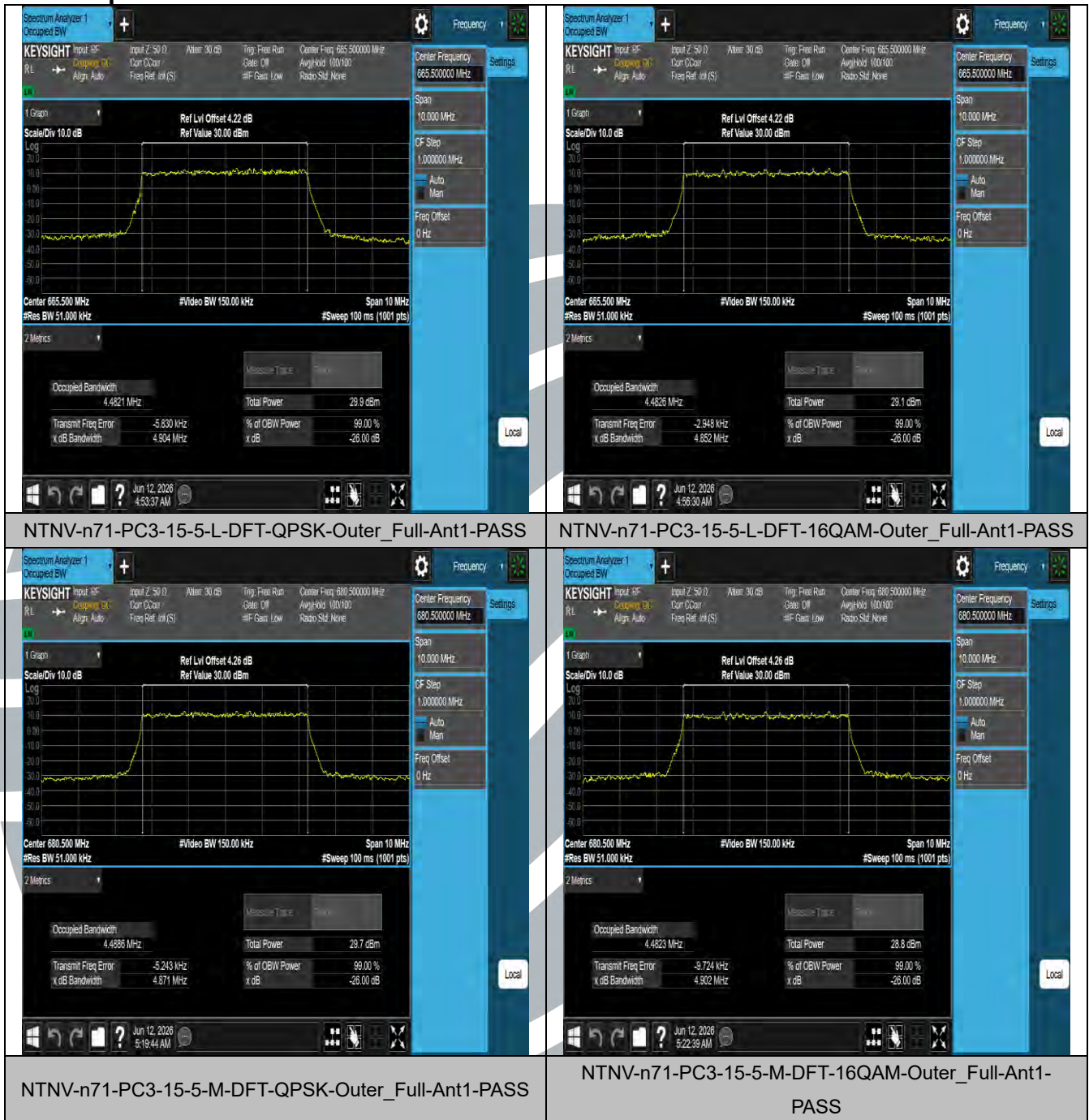
N/A

S.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
n71	15	5	DFT-QPSK	L	Outer_Full	4.4821	4.904	PASS
n71	15	5	DFT-16QAM	L	Outer_Full	4.4826	4.852	PASS
n71	15	5	DFT-QPSK	M	Outer_Full	4.4886	4.871	PASS
n71	15	5	DFT-16QAM	M	Outer_Full	4.4823	4.902	PASS
n71	15	5	DFT-QPSK	H	Outer_Full	4.4752	4.871	PASS
n71	15	5	DFT-16QAM	H	Outer_Full	4.4798	4.909	PASS
n71	15	10	DFT-QPSK	L	Outer_Full	8.9109	9.534	PASS
n71	15	10	DFT-16QAM	L	Outer_Full	8.9383	9.522	PASS
n71	15	10	DFT-QPSK	M	Outer_Full	8.9161	9.516	PASS
n71	15	10	DFT-16QAM	M	Outer_Full	8.9472	9.493	PASS
n71	15	10	DFT-QPSK	H	Outer_Full	8.9093	9.464	PASS
n71	15	10	DFT-16QAM	H	Outer_Full	8.9369	9.478	PASS
n71	15	15	DFT-QPSK	L	Outer_Full	13.395	14.18	PASS
n71	15	15	DFT-16QAM	L	Outer_Full	13.406	14.16	PASS
n71	15	15	DFT-QPSK	M	Outer_Full	13.411	14.14	PASS
n71	15	15	DFT-16QAM	M	Outer_Full	13.417	14.13	PASS
n71	15	15	DFT-QPSK	H	Outer_Full	13.414	14.22	PASS
n71	15	15	DFT-16QAM	H	Outer_Full	13.424	14.17	PASS
n71	15	20	DFT-QPSK	L	Outer_Full	17.780	18.69	PASS
n71	15	20	DFT-16QAM	L	Outer_Full	17.843	18.72	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	17.815	18.68	PASS
n71	15	20	DFT-16QAM	M	Outer_Full	17.847	18.72	PASS
n71	15	20	DFT-QPSK	H	Outer_Full	17.800	18.68	PASS
n71	15	20	DFT-16QAM	H	Outer_Full	17.835	18.65	PASS

Test Graphs





NTNV-n71-PC3-15-5-H-DFT-QPSK-Outer_Full-Ant1-PASS



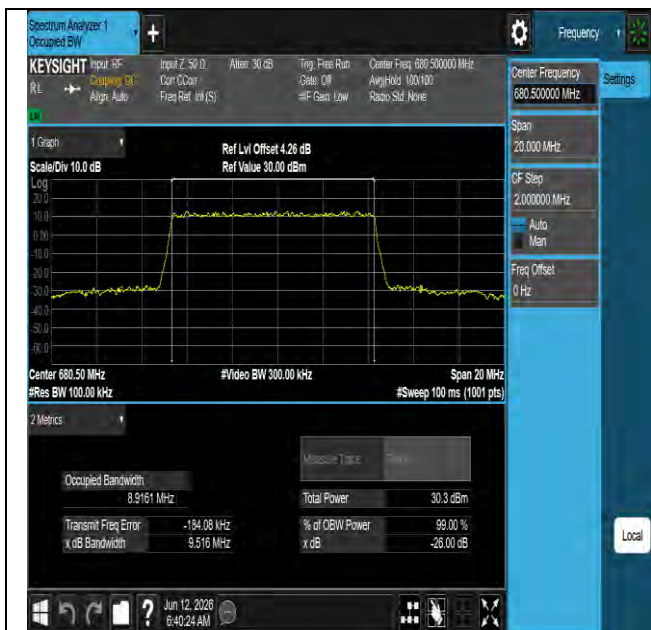
NTNV-n71-PC3-15-5-H-DFT-16QAM-Outer_Full-Ant1-PASS



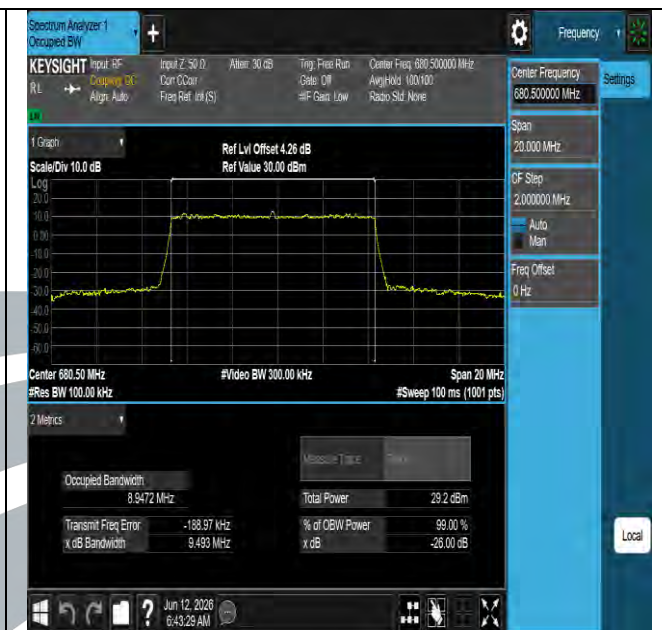
NTNV-n71-PC3-15-10-L-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n71-PC3-15-10-L-DFT-16QAM-Outer_Full-Ant1-PASS



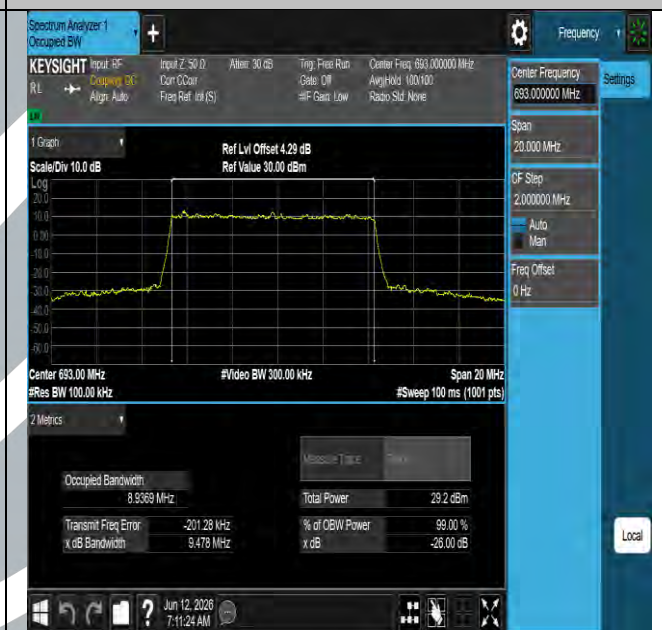
NTNV-n71-PC3-15-10-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n71-PC3-15-10-M-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n71-PC3-15-10-H-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n71-PC3-15-10-H-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n71-PC3-15-15-L-DFT-QPSK-Outer_Full-Ant1-PASS



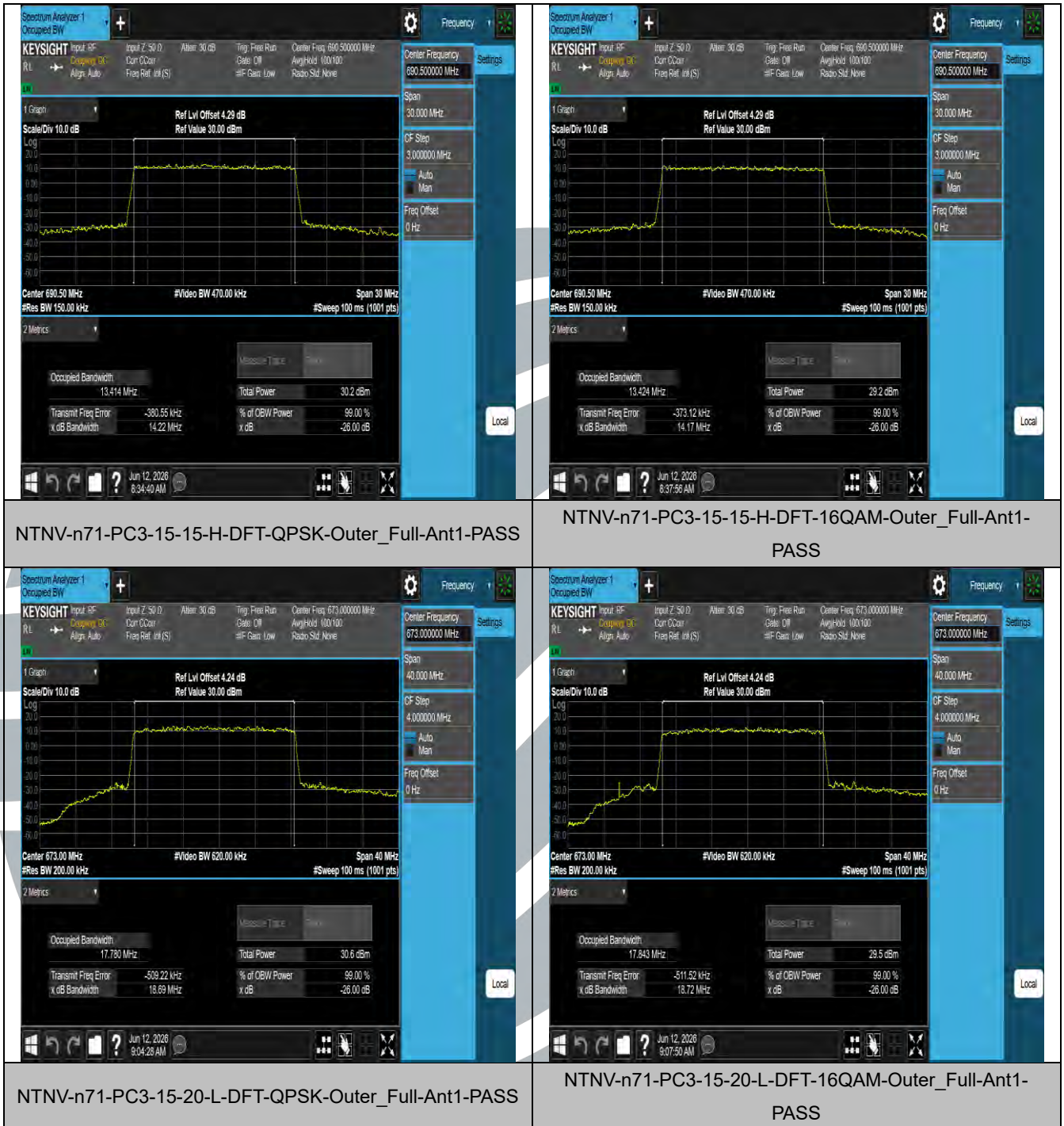
NTNV-n71-PC3-15-15-L-DFT-16QAM-Outer_Full-Ant1-PASS



NTNV-n71-PC3-15-15-M-DFT-QPSK-Outer_Full-Ant1-PASS



NTNV-n71-PC3-15-15-M-DFT-16QAM-Outer_Full-Ant1-PASS





NTNV-n71-PC3-15-20-M-DFT-QPSK-Outter_Full-Ant1-PASS



NTNV-n71-PC3-15-20-M-DFT-16QAM-Outter_Full-Ant1-PASS



NTNV-n71-PC3-15-20-H-DFT-QPSK-Outter_Full-Ant1-PASS



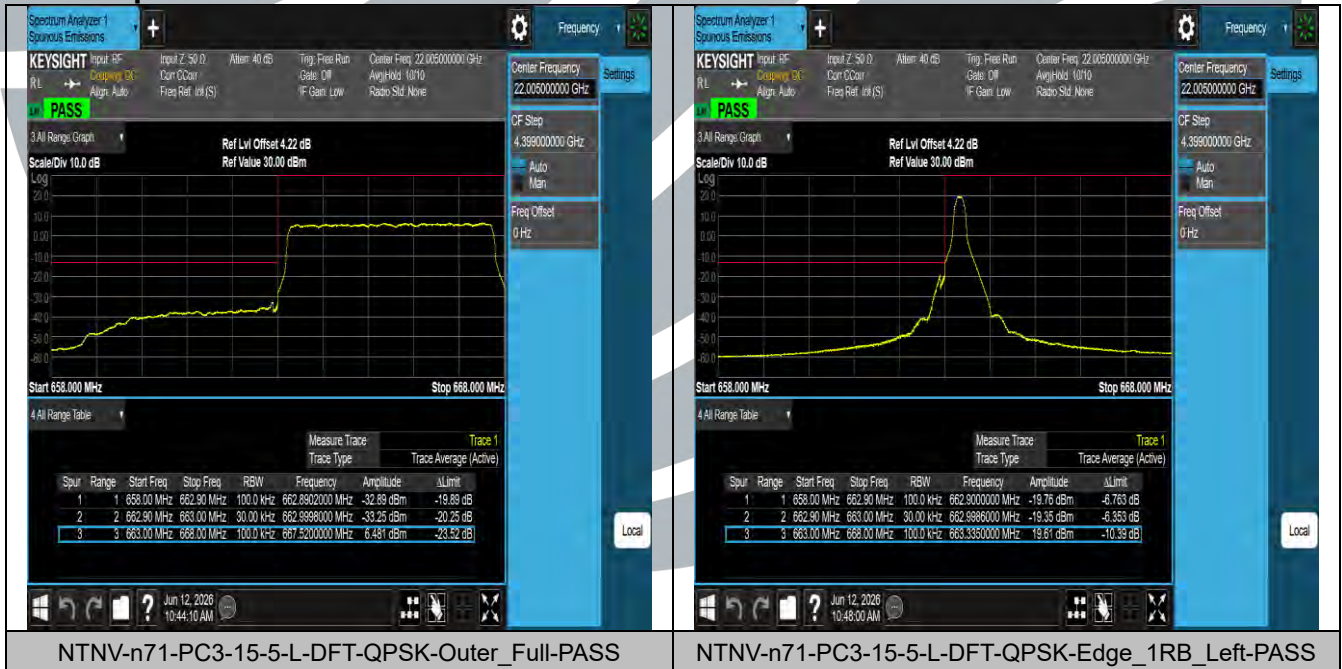
NTNV-n71-PC3-15-20-H-DFT-16QAM-Outter_Full-Ant1-PASS

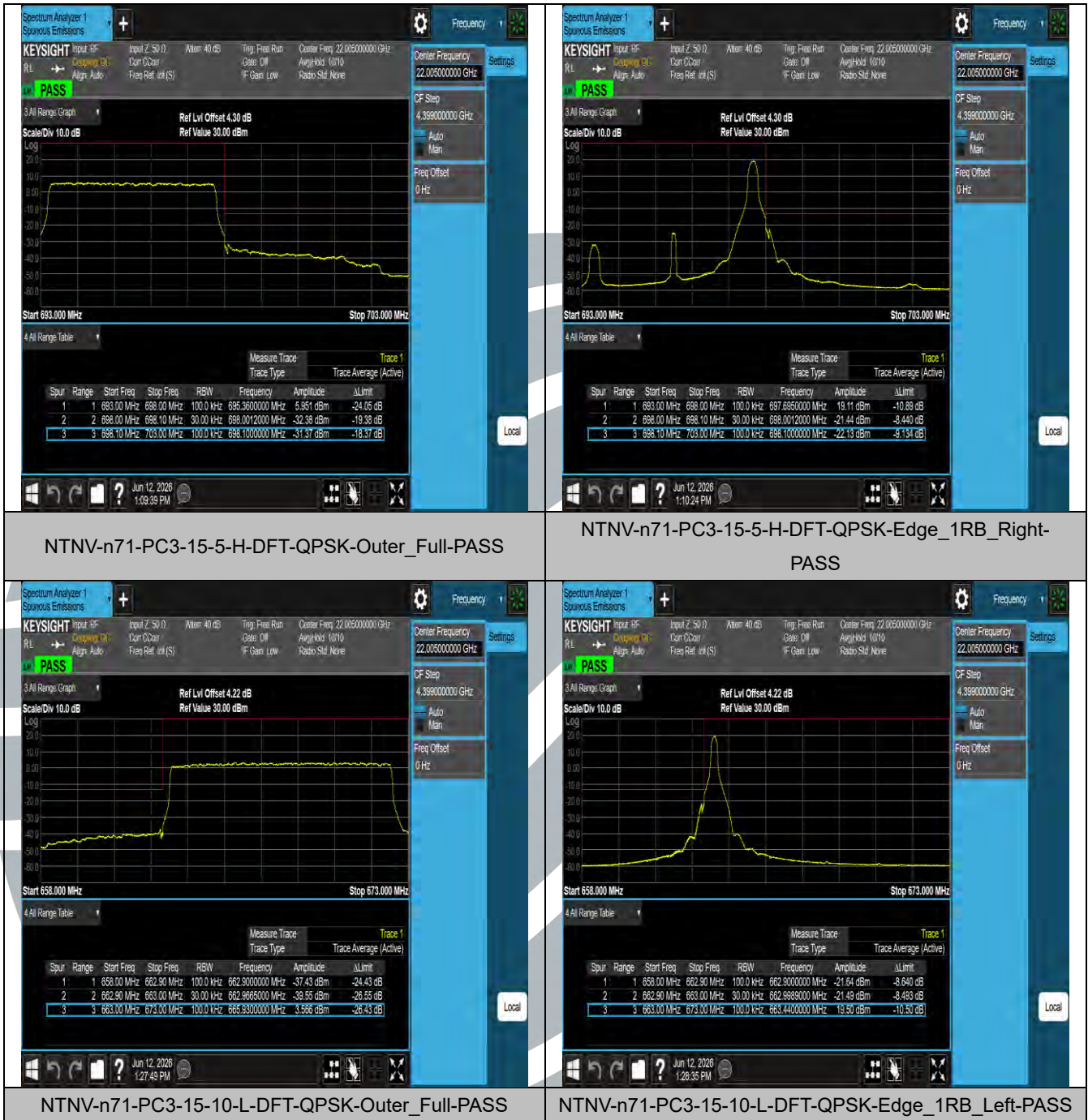
S.3 BAND EDGE FOR SA

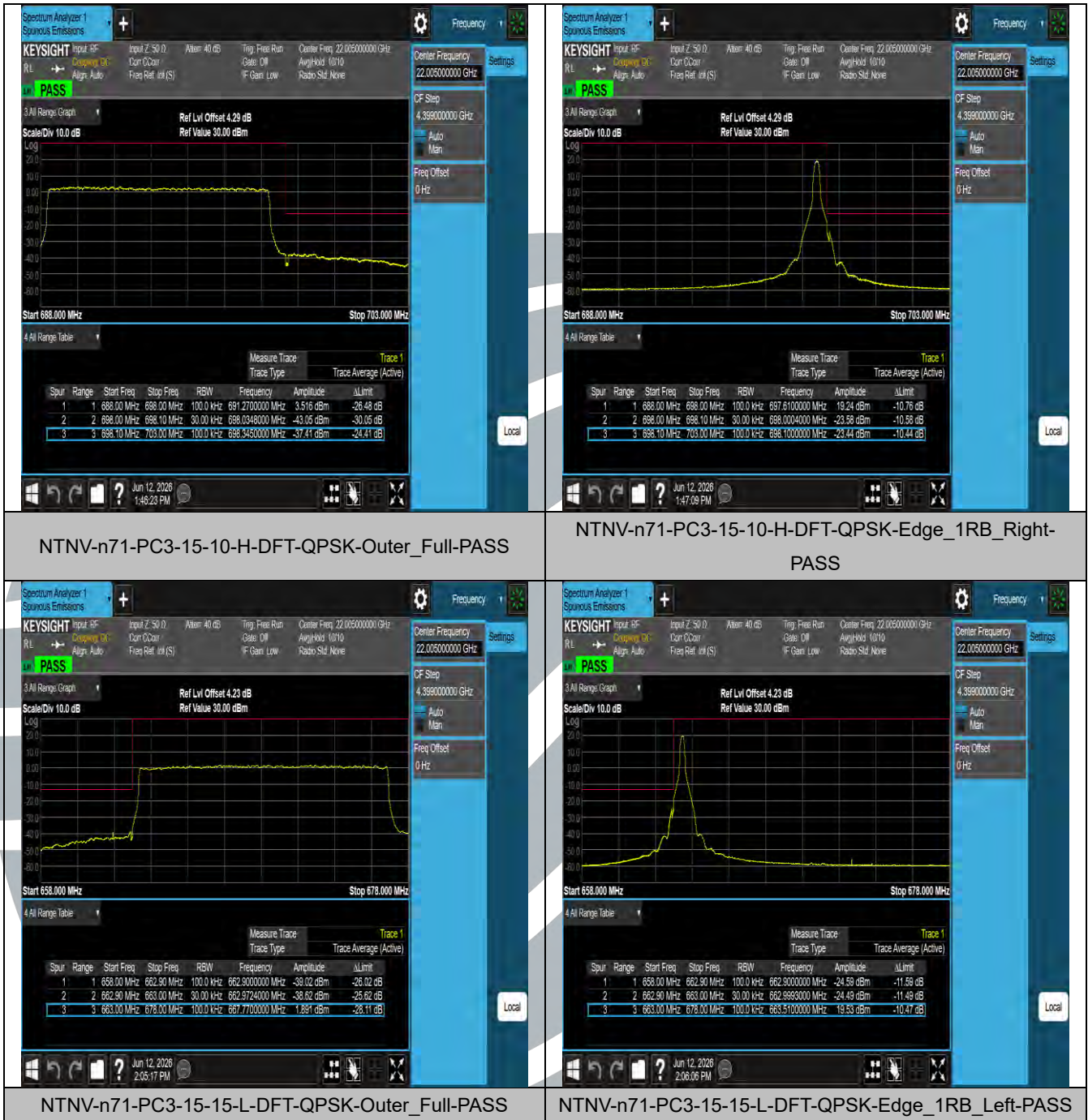
Test Result

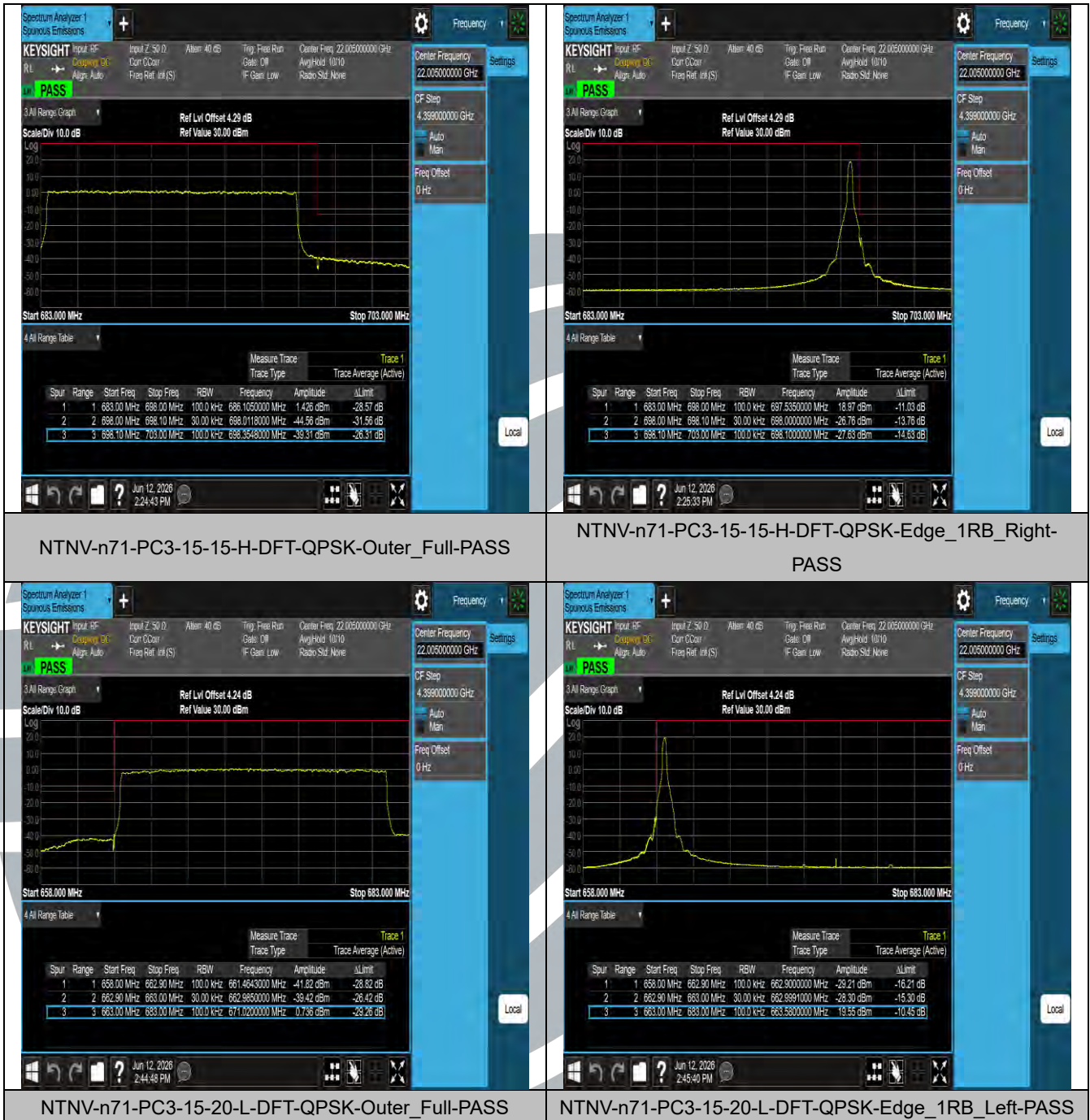
Band	SCS (kHz)	BW (MHz)	Modulation	Channel	RB Config	Result (dBm)	Verdict
n71	15	5	DFT-QPSK	L	Outer_Full	-32.89	PASS
n71	15	5	DFT-QPSK	L	Edge_1RB_Left	-19.35	PASS
n71	15	5	DFT-QPSK	H	Outer_Full	-31.37	PASS
n71	15	5	DFT-QPSK	H	Edge_1RB_Right	-21.44	PASS
n71	15	10	DFT-QPSK	L	Outer_Full	-37.43	PASS
n71	15	10	DFT-QPSK	L	Edge_1RB_Left	-21.49	PASS
n71	15	10	DFT-QPSK	H	Outer_Full	-37.41	PASS
n71	15	10	DFT-QPSK	H	Edge_1RB_Right	-23.44	PASS
n71	15	15	DFT-QPSK	L	Outer_Full	-38.62	PASS
n71	15	15	DFT-QPSK	L	Edge_1RB_Left	-24.49	PASS
n71	15	15	DFT-QPSK	H	Outer_Full	-39.31	PASS
n71	15	15	DFT-QPSK	H	Edge_1RB_Right	-26.76	PASS
n71	15	20	DFT-QPSK	L	Outer_Full	-39.42	PASS
n71	15	20	DFT-QPSK	L	Edge_1RB_Left	-28.30	PASS
n71	15	20	DFT-QPSK	H	Outer_Full	-39.61	PASS
n71	15	20	DFT-QPSK	H	Edge_1RB_Right	-30.46	PASS

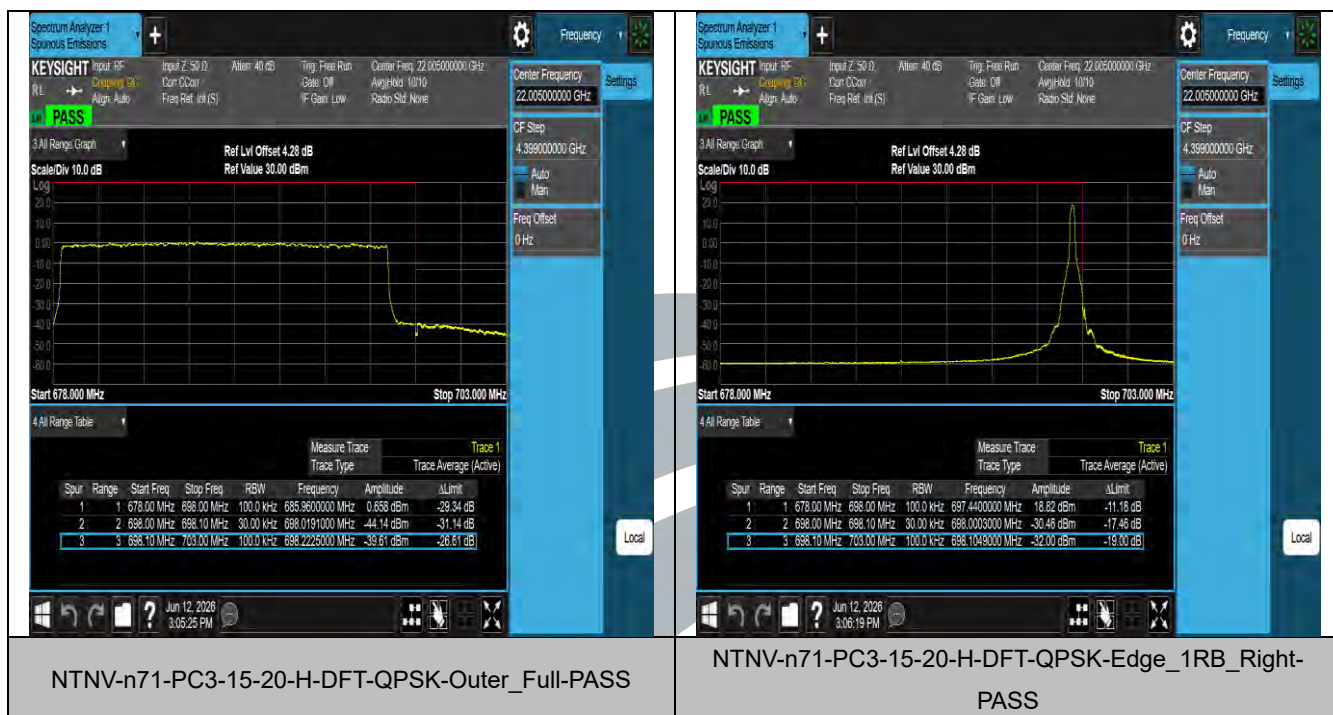
Test Graphs











S.4 CONDUCTED SPURIOUS EMISSION FOR SA

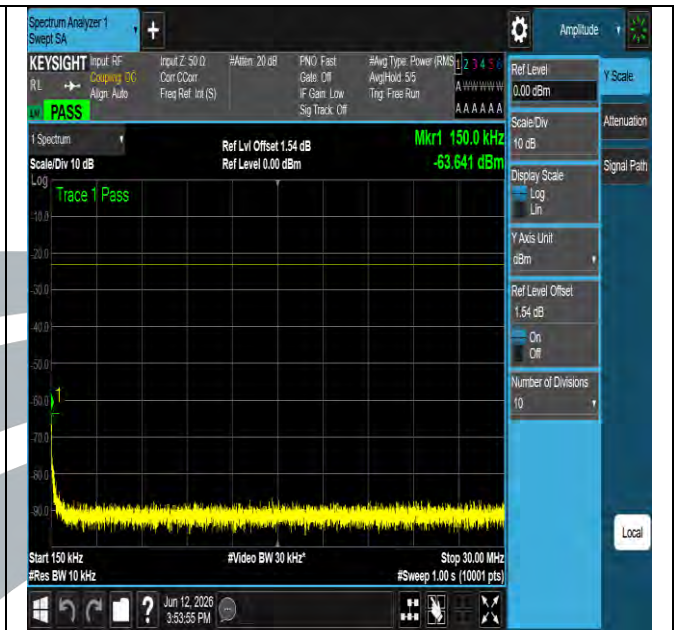
Test Result

Band	SCS (kHz)	BW (MHz)	Modulation	Ch.	RB Config	Start req (MHz)	Stop Freq (MHz)	Result (dBm)	Limit	Verdict
n71	15	20	DFT-QPSK	L	Inner_1RB_Left	0.009	0.15	-64.76	≤-33dBm	PASS
n71	15	20	DFT-QPSK	L	Inner_1RB_Left	0.15	30	-63.64	≤-23dBm	PASS
n71	15	20	DFT-QPSK	L	Inner_1RB_Left	30	1000	-47.75	≤-13dBm	PASS
n71	15	20	DFT-QPSK	L	Inner_1RB_Left	1000	3000	-39.47	≤-13dBm	PASS
n71	15	20	DFT-QPSK	L	Inner_1RB_Left	3000	12000	-45.34	≤-13dBm	PASS
n71	15	20	DFT-QPSK	L	Inner_1RB_Left	12000	20000	-55.31	≤-13dBm	PASS
n71	15	20	DFT-QPSK	M	Inner_1RB_Left	0.009	0.15	-65.77	≤-33dBm	PASS
n71	15	20	DFT-QPSK	M	Inner_1RB_Left	0.15	30	-64.80	≤-23dBm	PASS
n71	15	20	DFT-QPSK	M	Inner_1RB_Left	30	1000	-48.50	≤-13dBm	PASS
n71	15	20	DFT-QPSK	M	Inner_1RB_Left	1000	3000	-39.47	≤-13dBm	PASS
n71	15	20	DFT-QPSK	M	Inner_1RB_Left	3000	12000	-45.11	≤-13dBm	PASS
n71	15	20	DFT-QPSK	M	Inner_1RB_Left	12000	20000	-55.42	≤-13dBm	PASS
n71	15	20	DFT-QPSK	H	Inner_1RB_Left	0.009	0.15	-65.46	≤-33dBm	PASS
n71	15	20	DFT-QPSK	H	Inner_1RB_Left	0.15	30	-66.02	≤-23dBm	PASS
n71	15	20	DFT-QPSK	H	Inner_1RB_Left	30	1000	-47.69	≤-13dBm	PASS
n71	15	20	DFT-QPSK	H	Inner_1RB_Left	1000	3000	-39.44	≤-13dBm	PASS
n71	15	20	DFT-QPSK	H	Inner_1RB_Left	3000	12000	-45.26	≤-13dBm	PASS
n71	15	20	DFT-QPSK	H	Inner_1RB_Left	12000	20000	-55.47	≤-13dBm	PASS

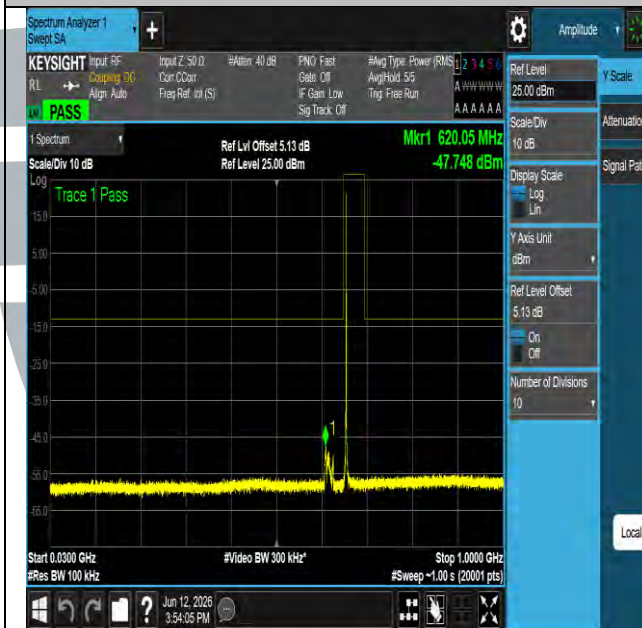
Test Graphs



NTNV-n71-PC3-15-20-L-DFT-QPSK-Inner_1RB_Left-0.009-0.15MHz-PASS



NTNV-n71-PC3-15-20-L-DFT-QPSK-Inner_1RB_Left-0.15-30MHz-PASS



NTNV-n71-PC3-15-20-L-DFT-QPSK-Inner_1RB_Left-30-1000MHz-PASS



NTNV-n71-PC3-15-20-L-DFT-QPSK-Inner_1RB_Left-1000-3000MHz-PASS



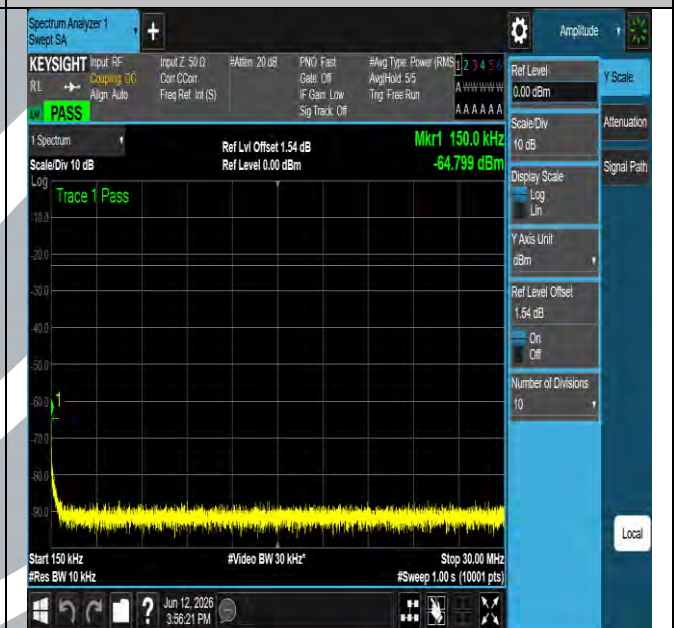
NTNV-n71-PC3-15-20-L-DFT-QPSK-Inner_1RB_Left-3000-12000MHz-PASS



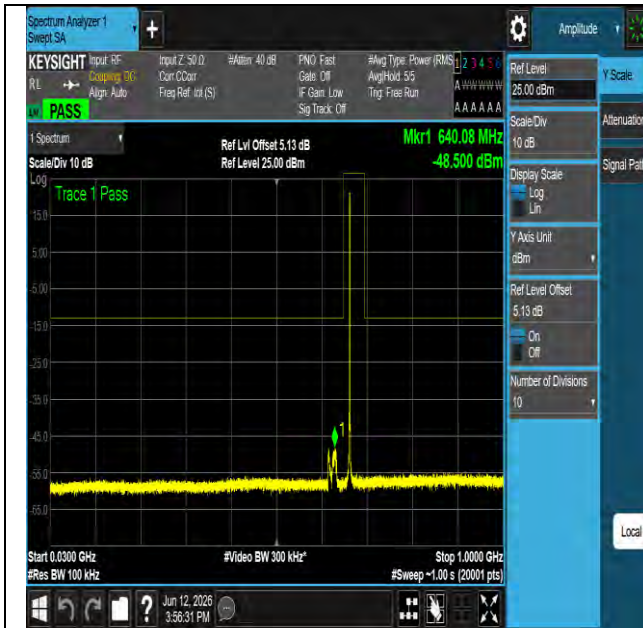
NTNV-n71-PC3-15-20-L-DFT-QPSK-Inner_1RB_Left-12000-20000MHz-PASS



NTNV-n71-PC3-15-20-M-DFT-QPSK-Inner_1RB_Left-0.009-0.15MHz-PASS



NTNV-n71-PC3-15-20-M-DFT-QPSK-Inner_1RB_Left-0.15-30MHz-PASS



NTNV-n71-PC3-15-20-M-DFT-QPSK-Inner_1RB_Left-30-1000MHz-PASS



NTNV-n71-PC3-15-20-M-DFT-QPSK-Inner_1RB_Left-1000-3000MHz-PASS



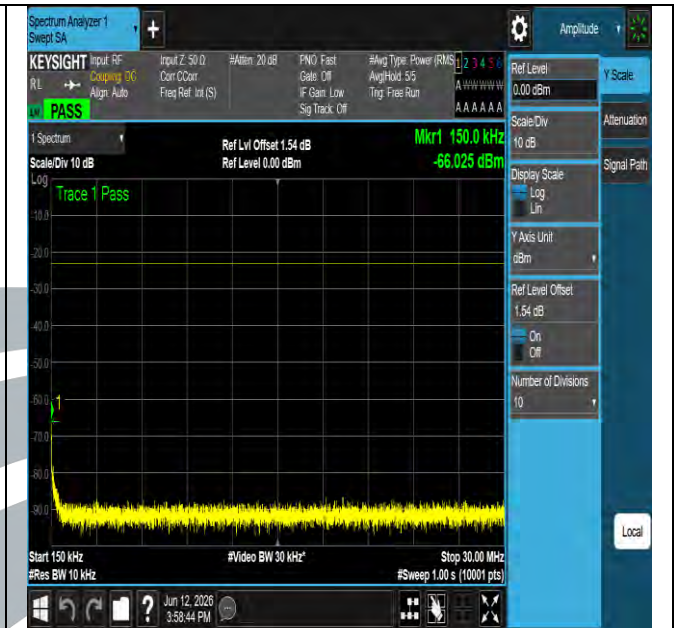
NTNV-n71-PC3-15-20-M-DFT-QPSK-Inner_1RB_Left-3000-12000MHz-PASS



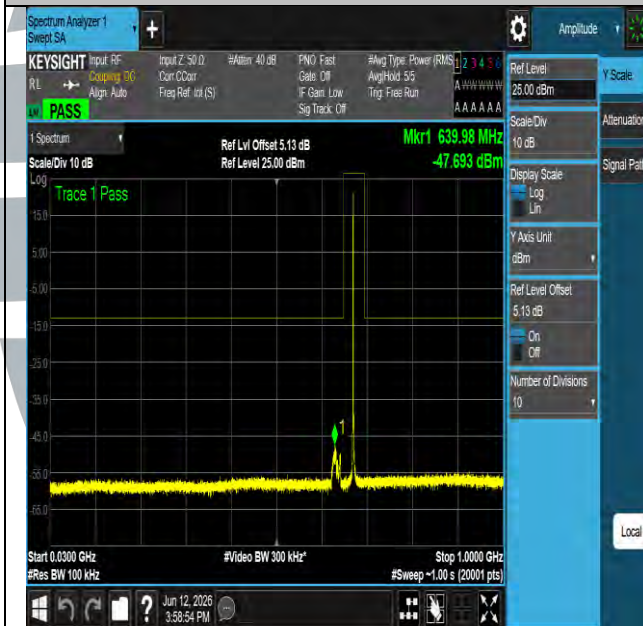
NTNV-n71-PC3-15-20-M-DFT-QPSK-Inner_1RB_Left-12000-20000MHz-PASS



NTNV-n71-PC3-15-20-H-DFT-QPSK-Inner_1RB_Left-
0.009-0.15MHz-PASS



NTNV-n71-PC3-15-20-H-DFT-QPSK-Inner_1RB_Left-0.15-
30MHz-PASS



NTNV-n71-PC3-15-20-H-DFT-QPSK-Inner_1RB_Left-30-
1000MHz-PASS



NTNV-n71-PC3-15-20-H-DFT-QPSK-Inner_1RB_Left-1000-
3000MHz-PASS



NTNV-n71-PC3-15-20-H-DFT-QPSK-Inner_1RB_Left-3000-12000MHz-PASS



NTNV-n71-PC3-15-20-H-DFT-QPSK-Inner_1RB_Left-12000-20000MHz-PASS

S.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
n71	15	20	DFT-QPSK	M	Outer_Full	VL	NT	0.148582	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	VN	NT	-0.007343	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	VH	NT	-0.007921	663-698	663	698	663-698	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
n71	15	20	DFT-QPSK	M	Outer_Full	NV	-30	0.103972	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	NV	-20	-0.0057	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	NV	-10	-0.005423	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	NV	0	0.086736	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	NV	10	-0.005755	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	NV	20	0.051392	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	NV	30	-0.144352	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	NV	40	-0.007937	663-698	663	698	663-698	PASS
n71	15	20	DFT-QPSK	M	Outer_Full	NV	50	-0.005996	663-698	663	698	663-698	PASS