

Performance Benchmarks

This section of the user documentation lays out some benchmarks for gauging system performance on the newest XG version of the OP5650 and OP5707 (including the new OPAL-RT Linux OS) being introduced in early 2021 versus their previous generation.

Benchmark	Minimum License Required	Single-Phase Nodes	Breakers and Faults (3)	Minimum Time-Step	Performance Increase over Previous Generation	Model Availability
600-Node 20 kV Distribution System	HXG Max (2 cores)	615	20	20 us	161%	In the software, Feeder_20kV_600Node.ecf
110-Bus 500 kV Transmission System	HXG Max (2 cores)	336	3	20 us	126%	In the software, HVAC_500kV_110Bus.ecf
IEEE 39-Bus New England Power System	HXG Max(1 core)	487	1	24 us	129%	In the software, EMTP_IEEE_39Bus.ecf
Two Substations with 100 km Transmission Line	HXG Plus (1 core)	129	81	15 us	97%	Demonstration upon request
GHOST Microgrid	HXG Max (1 core)	695	20	21 us	71%	In the software, GHOST_Microgrid.ecf
Brazil 138 kV and Above Power System	HXG Max (6 cores)	2542	8	45 us	66%	Demonstration upon request
6-Bus Transmission System with I/Os	HXG Basic (1 core)	18	3	5 us	48%	In the software, HVAC_500kV_6Bus.ecf