

Enhanced Nanosecond Power Electronics eHS 128 Solver— What's new?

UNRIVALED PERFORMANCE & HIGH FIDELITY.
SEE WHERE WE ARE HEADING.

Our clients identified the need and made the requests. And we followed through. Through listening to the market's needs, we've evolved:

- **An easier workflow, and a more intuitive modeling experience:**
 - Use a web-based graphical editor integrated with a powerful real-time database.
- **A power electronics solver that supports microgrid integration:**
 - Simulate a circuit with 1,200 nodes in less than 3 us with 3 FPGAs... a world record.
 - Simulate transformers with saturation characteristics. *
 - Simulate transmission lines. *
- **A bold new step in sampling that enables faster PWM integration in power electronics solving:**
 - Simulate power electronic converters with PWM frequency up to 200 kHz using patent-pending time-stamping solver with 5 ns accuracy.

* for Beta users only

OPAL-RT's new Schematic Editor is a streamlined user interface designed to provide you with the ability to work with your preferred modeling package—or ours. For use with the simplest to the most complex models, our Schematic Editor is tightly-integrated in eHS on our workhorse platform, RT-LAB.

Both user-friendly and powerful, OPAL-RT's new Schematic Editor:



Creates professional power electronic circuits

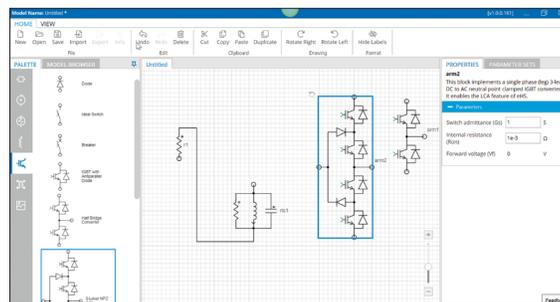


Integrates seamlessly with power electronics solving



Manages analog and digital I/O assignment through the interface

OPAL-RT's Schematic Editor enables users to bring power electronics models to full real-time simulation using its full-featured block set.



OPAL-RT has now successfully applied eHS' core strengths to a challenging context—the microgrid

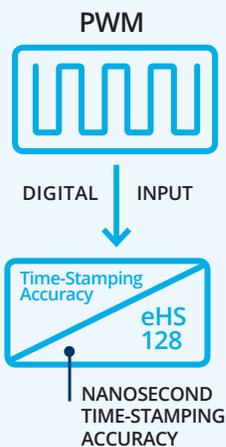
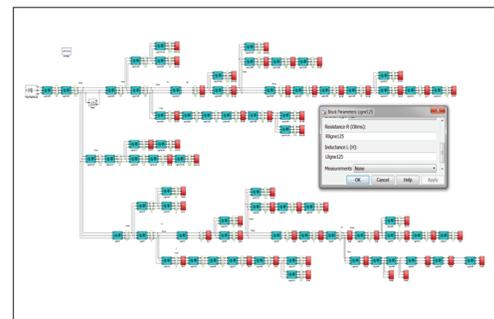
In today's power grid, alternative power sources such as wind, solar, and stored power are rapidly becoming viable substitutes for more traditional energy production methods.

These innovations have created the real possibility of operating on a fully autonomous islanded grid, as well as increasing the popularity of microgrids, small-scale power grids capable of operating independently from the main grid.

eHS now expands its capabilities through simulation of a complex microgrid—with more than **400 distributed nodes—entirely on one FPGA.**

The number of distributed nodes is now extensible, through daisy-chaining machines and thus increasing power to the nth degree.

Coupling multiple real-time simulators through the **low latency FPGA increases the size** of the distribution network to over 1,200 nodes simulated in a time step of 3 μ s.



Time Stamp Compensation

KEEPING AHEAD IN POWER ELECTRONICS

OPAL-RT's time-stamping power electronics converter simulation (TSB), used by companies such as Toyota and Mitsubishi for 15 years, captures the exact time of changes in gate-firing signals with an accuracy of 5 ns.

This time-stamping information is transferred to our power electronics solver, without loss of accuracy, running at a higher time-step of 200 ns to 1 μ s.

This superior solver simulates power converters with PWM frequencies up to 200 kHz, as well as allows natural rectification and open-gate cases to test controller performance under both normal and faulty conditions.

THE MARKET EVOLVES AND WE EVOLVE ALONG WITH IT—FOR OVER 15 YEARS NOW. OPAL-RT DELIVERS THE INDUSTRY'S MOST POWERFUL AND INTUITIVE **FPGA-BASED REAL-TIME SOLUTIONS.**

ABOUT OPAL-RT TECHNOLOGIES

OPAL-RT is the world leader in the development of PC/FPGA Based Real-Time Digital Simulator, Hardware-In-the-Loop (HIL) testing equipment and Rapid Control Prototyping (RCP) systems to design, test and optimize control and protection systems. used in power grids, power electronics, motor drives, automotive industry, trains, aircraft and various industries, as well as R&D centers and universities.



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