

DIGITAL INDUSTRIES SOFTWARE

# Solido Simulation Suite

Integrated suite of AI-accelerated simulators for intelligent IC design and verification

## Features and benefits

### SPICE simulation technologies

- **Analog FastSPICE (AFS):** Industry standard SPICE simulation for nm AMS, RF and custom digital designs
- **Eldo:** Industry standard SPICE simulation for HV, RF and safety critical designs
- **Solido™ SPICE:** *\*NEW\** Accelerated SPICE simulation for next-generation AMS, RF, memory, and 3D IC designs
- **Solido™ LibSPICE:** *\*NEW\** Accelerated SPICE simulation for batch verification of library IP designs

Semiconductor chip design is undergoing a rapid evolution, driven by the relentless demand for faster, more efficient, and highly integrated electronic systems. However, this progress comes with its own set of challenges, particularly in the realm of simulation and verification. Siemens' Solido™ Simulation Suite (Solido Sim) emerges as a cutting-edge solution, offering a unified platform to address the complex needs of analog, mixed-signal, custom-digital, memory and SoC verification in today's semiconductor landscape.

Solido Simulation Suite is an integrated suite of AI-accelerated SPICE, Fast SPICE and mixed-signal simulators designed to help customers dramatically accelerate critical design and verification tasks for their next-generation analog, mixed-signal and custom IC designs. Built on the foundation of Siemens' industry-proven, foundry-certified Analog FastSPICE (AFS) platform, Solido Sim incorporates three innovative new simulators: **Solido SPICE**, **Solido FastSPICE**, and **Solido LibSPICE**, as well as Siemens' market-proven **AFS**, **Eldo** and **Symphony** solutions.

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**Features and benefits** *continued***Fast SPICE simulation technology**

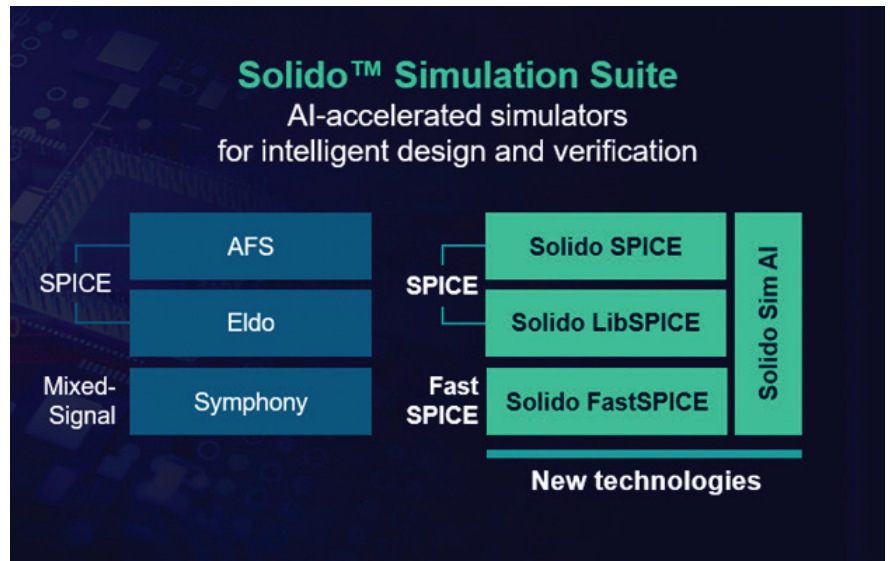
- **Solido™ FastSPICE:** \*NEW\* Accelerated FastSPICE simulation for SoC and memory designs

**Mixed-signal simulation technology**

- **Symphony:** Industry's fastest mixed-signal simulation for complex IC designs

**AI technology**

- **Solido™ Sim AI:** \*NEW\* In-simulator AI accelerator for Solido SPICE, Solido LibSPICE and Solido FastSPICE



Solido Sim is engineered to help IC design teams meet increasingly stringent specifications, verification coverage metrics and time-to-market requirements. It delivers comprehensive application coverage with best-in-class circuit and SoC verification capabilities. Solido Simulation Suite is integrated natively within Siemens AI-powered Solido Design Environment offering customers superior performance with optimal accuracy, improved productivity, and scalability across cloud infrastructure. Further, Solido Sim works closely with Siemens' industry leading IC sign-off flows, Calibre® Design solutions and, Tessent™ Silicon Lifecycle Solutions as well as Siemens' Electronic Board Systems solutions, providing full-flow verification solutions for PERC, EM / IR, 3D thermal, analog test and SIPI across IC applications.

**Solido SPICE** is the next-generation, feature-rich, high-capacity and SPICE-accurate simulation technology, providing a 2-30X speedup for analog, mixed-signal, RF, memory, custom digital, and Library IP applications, with foundry certified accuracy. With newer convergence, cache efficient algorithms and high multi-core scalability, Solido SPICE provides a significant performance boost for large pre- or post-layout designs. RF IC developers can directly benefit from Solido SPICE's new RF verification capabilities, while 2.5D, 3D and memory interface developers can now experience an efficient capability for full-channel, high-speed link verification with equalization, drastically reducing interface assumptions and accelerating verification.

**Solido FastSPICE** is Siemens' cutting-edge fast SPICE simulation technology, providing an order-of-magnitude speedup for SoC, memory and analog functional verification. It provides a dynamic use model for SPICE-to-fast SPICE scaling, providing a scalable interface to achieve speed goals with predictable accuracy. Solido FastSPICE includes multi-resolution technology for differentiated performance and SPICE-accurate waveforms during critical path analysis for memory and analog characterization.

**Solido LibSPICE** is Siemens' purpose-built batch solver technology for small designs, providing optimized runtimes for Library IP applications. Solido LibSPICE is uniquely integrated into Siemens' popular Solido Design Environment and Solido Characterization Suite offerings for performance acceleration, enabling a full-flow solution for seamless and robust verification of standard cells and memory bit-cells.

Powering all 3 of these new solvers is **Solido Sim AI** – the latest version of Siemens' groundbreaking, AI-accelerated simulation technology. With Solido Sim AI, circuit simulation is advanced to the next level with algorithms

that are self-verifying and tuned to SPICE accuracy, providing orders-of-magnitude improved acceleration. All of this is accomplished by using existing foundry-certified device models without alteration.

Solido Simulation Suite offers streamlined installation, invocation executable, and unified integration with industry simulation environments, reflecting a user-friendly approach that prioritizes simplicity and practicality. The installation process is efficient, requiring just one download to access the entire suite of Solido Simulation products, instead of multiple product installations. The suite seamlessly integrates into popular simulation environments, enhancing compatibility and ease of use. Its command line interface (CLI) streamlines operations by offering a unified platform for executing various simulation engines, effortlessly toggling between the simulators with straightforward switches. This cohesive framework ensures ease of use across simulation tasks. Further, with *solidosim -h* command, users now have an easy way to access help on all commands, analyses, options, etc.

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