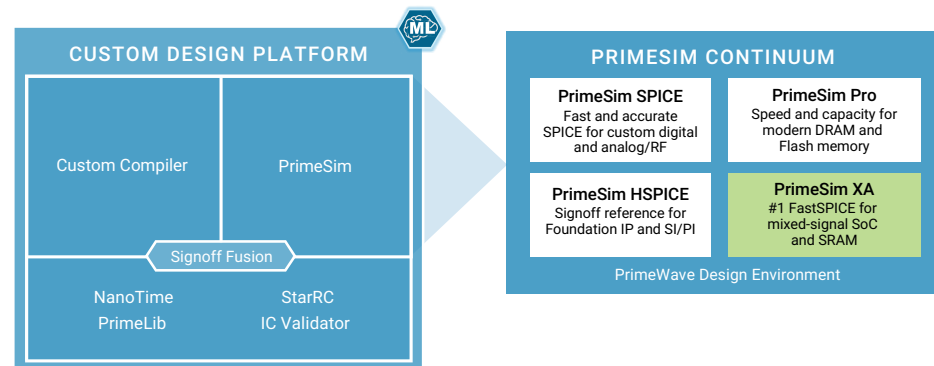


PrimeSim XA

PrimeSim XA delivers performance and capacity for SRAM, Custom Digital and Mixed-signal verification

Overview

PrimeSim XA, an integral part of the PrimeSim Continuum is the leading FastSPICE for SRAM, Custom Digital and mixed-signal verification. PrimeSim XA's breakthrough patented technologies deliver superior performance and capacity while maintaining SPICE accuracy. Advanced simulation intelligence automatically recognizes devices, topologies and hierarchies and employs the most efficient techniques to accurately simulate any design type. PrimeSim XA is fully integrated with PrimeWave, a newly architected design environment and waveform viewer that encapsulates analysis and display requirement that drastically improves productivity. Additionally, PrimeSim XA is a key engine inside the PrimeSim Reliability analysis, a set of comprehensive solutions (Fault simulation, Static Circuit Check, MOS Aging, IR/EM, Variation) that analyzes the full spectrum of a product life cycle, from early-life to end-of-life.



Benefits

- Unique simulation intelligence to simultaneously maximize performance and accuracy for SRAM design, margin and high-volume characterization simulations
- Application specific performance optimization for SRAM, mixed-signal, Flash that provide above and beyond general performance.
- Highly optimized partition engine to reduce evaluation cause based on advanced load models
- Foundry certified. Certified for wide range mature/advanced process nodes (all TSMC FinFET process nodes) for all major foundries.
- True multi-rate engine technology with intelligent partitioning and dynamic multi-level synchronization allows PrimeSim XA to quickly react to changes in circuit behavior, thereby delivering the highest performance simulation time with SPICE accuracy
- Patented memory array simulation to deliver the highest capacity circuit simulation solution

- Expanded RC optimization ensure that accuracy is retained while delivering high capacity performance for detailed parasitics in advanced nodes
- Built on the golden HSPICE device model library, guaranteeing device model correlation between all PrimeSim engines
- Full set of Monte Carlo capabilities including sigma-amplification as well as AVA integration
- Cloud ready, built-in support containers for running the tool in a container as well as Synopsys cloud environment. Support robustness features such as virtual output files to tolerate Network File System glitches, Save/Restore function to allows for simulation to continue from the last saved state for Cloud "Spot/Preemptive Instances"

Comprehensive Mixed-signal Simulation with VCS PrimeSim AMS

PrimeSim XA is tightly integrated into Synopsys' VCS® digital simulator through a direct-kernel integration, DKI architectures enable fast development of rich feature set and continuous innovation. This mixed-signal solution delivers the highest throughput by combining the fastest transistor-level engine and the fastest digital engine. VCS PrimeSim AMS offers a flexible use model that allows for a broad mixture of mixed-signal modeling languages and abstractions levels. The table below summarizes some of the capabilities of this mixed-signal flow.

Mixed-Signal Modeling Languages	SystemVerilog, VHDL, SPICE, Verilog-A, Verilog-AMS
Behavioral Modeling	Verilog-A, Verilog-AMS, Real Number Modeling, SystemVerilog Nettypes
Advanced Mixed-Signal features	AMS testbench, multi-technology simulation, Monte Carlo, Save and Restore, support for digital and analog post layout designs (SPF, SPEF, SDF), Fault Simulation of mixed-signal designs together with PrimeSim Custom Fault
Mixed-Signal solution based on industry standards	SystemVerilog LRM, UPF Low Power standard

VCS PrimeSim AMS is integrated with both PrimeWave Design Environment for design and verification, as well as the Verdi AMS Debug Environment for advanced digital and mixed-signal debug.

ISO-26262 TCL-1 ASIL D Certified

- PrimeSim XA tool can be used in the development of safety-related elements according to ISO 26262, with allocated safety requirements up to a maximum Automotive Safety Integrity Level D (ASIL D), if the tool is used in the context of a tool chain and in compliance of the PrimeSim XA Functional Safety Manual.

For more information about Synopsys products, support services or training, visit us on the web at: [synopsys.com](https://www.synopsys.com), contact your local sales representative or call 650.584.5000.