

Xtreme-II

VPA for Scalable Performance

Xtreme-II

- ✓ **Extreme versatility**
 - Integrates emulation acceleration and simulation
- ✓ **High capacity**
 - Supports designs up to 100M ASIC gates
 - Provides memory of up to 2.5GB
- ✓ **High performance**
 - Runs at speeds of up to 1M cycles per second
- ✓ **Ease of use**
 - Preserves native simulation debugging environment
- ✓ **Integrated debugging**
 - Offers hot-swapping in real time from emulation to simulation

Verification Bottleneck

Until now, verification tools have not kept pace with the incredible rate at which design sizes are growing, creating a rapidly widening verification gap.

Traditional software simulation works well for architectural verification, but slows down significantly at RTL and gate level. Traditional hardware emulation achieves high performance, but takes you outside of your native simulation environment with steep learning curves, lengthy setup times, and difficult debugging methods.

To close the verification gap, Axis Xtreme-II provides emulation performance and simulation flexibility in a single system with a unified design database.

Platform Verification

Xtreme-II offers Platform Verification, a unified verification environment designed to enable a platform-based design flow.

Platform-based SoC designers quickly create new, or modify existing, architectures much earlier in the design flow. Designers can leverage IPs from various marketplaces or reuse models created from previous projects.

Platform Verification enables early access to HW/SW system integration and demonstrates system performance before actual silicon is available.

Xtreme-II

Enabled by Axis' patented ReConfigurable Computing (RCC) technology, Xtreme-II offers the best solution for simulation, acceleration, and emulation in one unified system. By leveraging the latest FPGA technologies, Xtreme-II delivers fast runtime performance and the highest capacity, while preserving the native RTL simulation debugging environment.



Xtreme-II from Verisity.

In-Circuit Emulation

Xtreme-II can connect directly to a target system and is controlled through a Sun workstation via one set of PCI extender cables for compactness and high-speed communication.

The ability to simultaneously emulate physical hardware with software models, while using a software simulation environment for debugging, provides the most flexible system integration.

Behavioral Emulation & Procedural Callbacks

Xtreme-II extends emulation with behavioral processors and embedded procedural callbacks.

For the first time, a practical method for emulating non-synthesizable behavioral objects is made possible. Xtreme-II's unique behavioral emulation capability maintains the performance level of emulation without giving up the flexibility of a software simulation environment.

Xtreme-II automates event-driven callbacks during acceleration or emulation. By using embedded callback options, you can use common simulation tasks or customized software utilities to process functions that are better handled by the workstation.

Xtreme-II

Verisity — Meet your SpeX

Contact Information

Verisity Design, Inc.
331 East Evelyn Avenue
Mountain View, CA 94041
PH: (650) 934-6800
FX: (650) 934-6801

www.verisity.com

For More Information

Please see us on the web at www.verisity.com or contact your local sales representative for more information on SpeXsim and the complete SpeX Family of Verification solutions from Verisity.

One-Step Compilation and Mapping

Design descriptions can be separated into three components: behavioral, RTL, and gates. The Xtreme-II compiler automatically maps sections that can be emulated with the RCC engine and builds a native-compiled simulation image for sections that remain.

The patented Hierarchy Extracted mapping technique automatically maps the design on-to arrays of FPGAs for optimized gate usage and high-performance simulation.

Debug in Software, Emulate or Accelerate in RCC

Xtreme-II's ability to hot-swap states between Xsim and the RCC engine, in real time, makes it unique among hardware verification systems.

During simulation, you can swap the state of the RCC engine into Xsim to debug the design and continue in software simulation. When your circuit is fully debugged, and the problem isolated, the simulation state value can be swapped back into the RCC engine for maximum simulation performance.

Complete History with no Re-simulation

Xtreme-II's VCD-on-Demand (VoD) feature provides access to all node history values from any point in simulation without re-simulating from time zero. This capability signifi-

cantly increases design debugging productivity. Waveforms can be generated in either IEEE-standard VCD (Value-Change-Dump) or FSDB (Fast Signal Database) format.

Simplified Library and Memory Conversion

To maximize density and performance of the RCC processors, design library and memory cells are converted into RCC elements. For library cells, a library compiler will automatically generate appropriate mapping, along with library verification test vectors.

For embedded design memory blocks, you can configure Xtreme-II's large internal cache memory and on-board memory to the specific memory type. For complete system verification, large external memories can be integrated using the default extended memory board or workstation memory communicating via the fast PCI bus.

All-Encompassing System

To stay one step ahead of your competition, you need the fastest, most efficient, and most adaptable verification system available today. With solutions for simulation, acceleration, and emulation in a single verification system, Xtreme-II has been designed with you in mind—to significantly increase your verification productivity and confidence in your designs.

Xtreme-II	
Architecture	- ReConfigurable Computing (RCC) engine
Supported operating systems and HW Platforms	- Sun Solaris, Sun Ultra, Sun Blade, Red Hat Linux
Mixed HDL Logic Simulators	- Single kernel, event-look ahead, native code compiled
Software Interfaces	- XMI-API, PLI
Gates and I/O Capacities	- Up to 100M ASIC gates, Up to 1940 I/Os
Programmable Trigger Generators	- Up to 1K probes per trigger to 48 trigger generators
Runtime Performance	- Up to 1M cycles/sec
Memory	- Up to 178Mbits on board, up to 4GB workstation
Debugging	- Mixed-HDL, Graphical User Interface

