Synopsys Announces Software-driven SoC Power Analysis Solution, Enabling 1000X Faster Time-to-Results

New ZeBu Power Analyzer Enables Emulation-based Power Analysis for Billion-cycle Software Workloads Not Feasible with Traditional Methods

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Highlights:

- ZeBu Power Analyzer extends the ZeBu Server 4 emulation system with novel, multi-threaded power analysis engines supporting RTL and gate-level flows
- Executes billion-cycle activity profiles on ZeBu Server 4 to quickly identify power-critical windows
- Delivers accurate average and cycle power analysis results for multi-million cycle windows within hours compared to months with simulation-based approaches
- Supports emulation efficiency by reusing emulation results when analyzing power for different gate-level implementations
- Integrates with Synopsys PrimePower signoff for comprehensive system-level-to-signoff power analysis

Synopsys, Inc. (Nasdaq: SNPS) today announced its ZeBu® Power Analyzer solution for software-driven system-on-chip (SoC) power analysis delivering results 1,000 times faster than traditional simulation-based methods. ZeBu Power Analyzer adds novel, multi-threaded power analysis engines to the industry-leading, high-performance ZeBu Server 4 emulation platform. It allows SoC design teams to systematically analyze power usage of their designs when executing billion-cycle, complex software applications. ZeBu Power Analyzer greatly reduces the risk of missing critical power issues by enabling use of realistic software workloads rather than synthetic scenarios. ZeBu Power Analyzer integrates with the Synopsys PrimePower power signoff flow, enabling design teams to efficiently and accurately pinpoint and fix power issues.

"MediaTek is a leading provider of highly efficient SoCs that provide an optimal mix of power and performance for mobile devices," said Jerry Wang, Sr. Director, Computing and Artificial Intelligence Technology Group at MediaTek. "As we're designing products for the new 5G era, power and performance requirements have become more stringent and early power analysis for our designs is more critical. ZeBu Power Analyzer's software-driven power analysis lets us optimize critical components, such as GPUs, using realistic software workloads to achieve results that are a few thousand times faster than traditional power analysis flows."

ZeBu Power Analyzer helps design teams to analyze power issues using RTL and gate-level flows in three steps:

1. Creates an activity model that runs in ZeBu during emulation to quickly identify power-critical windows during billion-cycle software workloads, such as an operating system boot or application software execution.
2. Uses a novel, multi-threaded engine combining waveform expansion and efficient estimation technologies with better than 95 percent accuracy to analyze power during critical time windows for early trade-off of different IP implementations.
3. Selects narrow windows of high cycle power for hand-off to back-end designers to perform accurate average and peak power signoff using the industry-standard Synopsys PrimePower flow.

"The need for software-driven power analysis with billion-cycle capacity continues to grow as designers are increasingly challenged with complex software execution on their next-generation SoCs," said Yogesh Goel, vice president of engineering at Synopsys, "The rapid adoption of our high-performance ZeBu Power Analyzer by many of our key ZeBu customers is helping to move power analysis earlier into their design cycles and reduce the risk of missing power-critical scenarios."

Availability

ZeBu Power Analyzer is available now.

Additional Resources

For more information on ZeBu Power Analyzer please visit:

- https://www.synopsys.com/verification/emulation/use-cases-fast-emulation.html

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As the world's 15th largest software company, Synopsys has a long

history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software security and quality solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest security and quality, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

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