Synopsys Unveils TestMAX Family of Products to Address Critical and Evolving Test Challenges

Redefines Expectations for Test, with Innovations in Early-RTL Test Integration, Automotive Functional Safety, and High-Bandwidth Test

MOUNTAIN VIEW, Calif., March 20, 2019 /PRNewswire/ --

Highlights:

- Full RTL DFT flow, combined with Synopsys' Fusion Design Platform™, ensures fastest time-to-market and optimal design power, performance, and area
- Advanced automotive functional safety support includes innovative soft error analysis and X-tolerant logic BIST to meet ISO 26262 standard requirements
- Test through functional high-speed interfaces delivers unprecedented test bandwidth and portability

Synopsys, Inc. (Nasdaq: SNPS) today announced the availability of the Synopsys TestMAX™ family of products with innovative test and diagnosis capabilities for all digital, memory, and analog portions of a semiconductor device. The Synopsys TestMAX family contains unique capabilities for automotive test and functional safety, as well as technologies that unlock new levels of test bandwidth and efficiency by leveraging high-speed interfaces common on many designs. A powerful and highly configurable test automation flow provides seamless integration of all Synopsys TestMAX capabilities. Early validation of complex design-for-test (DFT) logic is supported through full RTL integration while maintaining physical-, timing-, and power-awareness through direct links into the Synopsys Fusion Design Platform™. These new features, combined with comprehensive support for early testability analysis and planning, hierarchical ATPG compression, physically-aware diagnosis, logic built-in self-test (BIST), memory self-test and repair, and analog fault simulation, ensure that the Synopsys TestMAX product family addresses critical test issues while enabling effective test for future demanding applications.

New and rapidly expanding applications, such as artificial intelligence and automotive, are increasing design sizes and complexity. These evolving market segments require unprecedented levels of quality and long-term reliability. The unique Synopsys TestMAX soft-error analysis calculates ISO 26262 metrics to identify and address hotspots early in the design cycle and guide efficient design changes. The need to meet mandated functional safety levels has also created a fundamental shift in both the importance and need for integration of advanced semiconductor test. Devices must typically implement self-test mechanisms that operate at key-on and increasingly during the vehicle's operation. Logic BIST is usually used to check for safety faults in device logic but is unable to tolerate unknown circuit states, such as those arising due to post tape-out timing anomalies. Synopsys TestMAX introduces the industry's first X-tolerant logic BIST solution that operates in the presence of unknown states, and due to its novel re-seeding technology, significantly increases fault coverage in less time than competing logic BIST solutions. Synopsys TestMAX provides the on-chip infrastructure for operating the X-tolerant logic BIST at power-on or periodically during vehicle operation.

"A growing number of our customers' designs are destined for automotive applications," said JY Choi, vice president of the Foundry Design Technology Team at Samsung Electronics. "The Synopsys TestMAX X-tolerant logic BIST solution enables our customers to achieve their aggressive test time and coverage self-test goals with minimal impact to their designs."

Managing manufacturing test times has become increasingly problematic as design sizes continue to grow. Test application bandwidth is generally not scaling due to the limited growth in test pins and related clocking frequencies. Synopsys TestMAX makes available a game-changing solution to this problem by leveraging high-speed functional interfaces like USB and PCI Express that exist on most devices today. Synopsys TestMAX provides the ability to apply all manufacturing tests through one or more of these functional interfaces, resulting in almost unlimited test bandwidth while reducing, if not eliminating, the overhead of dedicated test pins. Since functional interfaces are used, all tests become fully portable and can be used at all stages of the product life-cycle.

"Our customers are facing new test challenges as the effects of multiple technology and market trends are bearing down all at once," said Steve Pateras, senior director of marketing for Test Automation at Synopsys. "The innovations delivered through the Synopsys TestMAX family of products have already provided crucial advantages to many design companies. We are focused on ensuring our solutions continue to evolve to meet all of their future needs."

The Synopsys TestMAX family of products is available today. Please visit www.synopsys.com/testmax for details or contact your Synopsys sales representative.

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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