Synopsys DFTMAX LogicBIST Deployed by Renesas for In-System Automotive Test

Enables Mixed-Signal Products for Automotive to Test Themselves During Power-on

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Highlights:

- Provides power-on self-test (POST) required for automotive applications
- Easy to deploy with few modifications to existing DFTMAX compression flows
- Checks for faults within specific time requirements and provides the ability to increase fault coverage with SpyGlass DFT ADV

Synopsys, Inc. (Nasdaq: SNPS) today announced that Renesas Electronics Corporation, a premier supplier of advanced semiconductor solutions, has deployed Synopsys' DFTMAX™ LogicBIST solution on a mixed-signal, large scale integration (LSI) design to meet automotive safety integrity levels required by system integrators. DFTMAX LogicBIST enables the design to check itself upon power-up for faults, or conditions that could cause failures, and report their presence. Furthermore, this self-checking achieves high fault coverage within a short operational time to meet system-level requirements. Renesas designers easily incorporated DFTMAX LogicBIST into their flow with minimal effort, and included Synopsys SpyGlass® DFT ADV technology to increase fault coverage. In collaboration with Synopsys, Renesas certified DFTMAX LogicBIST according to Part 8 of the ISO 26262 functional safety standard, enabling deployment on automotive designs.

"Our mixed-signal automotive designs require a power-on self-test solution that uses minimal silicon area, and provides high fault coverage for the digital logic to ensure functional safety," said Akira Omichi, senior manager of the Automotive Analog Strategy Planning Department, Automotive Analog Business Division, Automotive Solution Business Unit at Renesas Electronics Corporation. "DFTMAX LogicBIST meets these requirements, even for designs with a relatively small amount of digital logic, and is easy to deploy with a user-friendly hardware interface. We plan to deploy it on the digital portion of our mixed-signal, LSI designs moving forward."

In recent years, automobile manufacturers have been advancing and rapidly deploying electronic advanced driver assistance systems (ADAS) to aid drivers and reduce accidents. Since failures in these systems may lead to unacceptable consequences, automakers work with their suppliers to increase integrated circuit (IC) quality, reliability and functional safety. DFTMAX LogicBIST provides a safety mechanism, a key requirement noted in the widely adopted ISO 26262 automotive functional safety standard, to detect and flag faults that could potentially cause failures. Use of DFTMAX LogicBIST, and following best engineering practices, minimizes the risk of failures impacting the functional safety elements of automotive ICs.

"We appreciate our recent, constructive engagement with Renesas. Their deployment of DFTMAX LogicBIST validates its usefulness and effectiveness for automotive designs. In general, DFTMAX LogicBIST enables designers to meet system-level requirements by achieving high fault coverage within a short time," said Amit Sanghani, vice president of test automation in Synopsys' Design Group. "We are committed to help designers meet the unique test requirements for automotive and achieve compliance with the ISO 26262 standard."

About the Synopsys Test Platform

The Synopsys test platform is comprised of DFTMAX Ultra, DFTMAX, TetraMAX® and TetraMAX II technologies for power-aware logic test and physical diagnostics; DFTMAX LogicBIST for in-system self-test; SpyGlass DFT ADV for testability analysis; the DesignWare® STAR Hierarchical System for automated hierarchical testing of analog/mixed-signal IP, digital logic blocks, memory and interface IP on an SoC; the DesignWare STAR Memory System® for embedded test, repair and diagnostics; and Yield Explorer® for design-centric yield analysis. Synopsys' test solution combines Design Compiler® RTL synthesis with embedded test technology to optimize timing, power, area and congestion for test, as well as functional logic, leading to faster time-to-results. The Synopsys test solution delivers tight integration across the Synopsys Design Platform, including Design Compiler synthesis, IC Compiler™ II place and route, and PrimeTime® timing analysis, to enable faster turnaround time while meeting both design and test goals, higher defect coverage, and faster yield ramp.

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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