Synopsys TetraMAX ATPG Solution Boosts Structural Test Quality at STMicroelectronics

New Timing-Aware Pattern Generation Now Integrated with PrimeTime STA Solution

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MOUNTAIN VIEW, Calif., Feb. 14 /PRNewswire-FirstCall/ -- Synopsys, Inc. (NASDAQ: SNPS), a world leader in software and IP for semiconductor design and manufacturing, today announced that STMicroelectronics has adopted Synopsys' TetraMAX® small delay defect (SDD) automatic test pattern generation (ATPG) and failure diagnostics solution to provide higher-quality manufacturing tests for its system-on-chip (SoC) products. Higher test quality enables defective parts to be identified earlier in the test process, lowering the cost of production testing. After extensive validation on manufactured designs, STMicroelectronics determined that the new TetraMAX SDD ATPG capability

-- which directly accesses precise timing information generated by Synopsys' PrimeTime® static timing analysis solution -- improved the quality of product testing by identifying unique defect classes compared with standard at-speed pattern generation.

"Silicon testing on several STMicroelectronics products has proven that Synopsys' TetraMAX small delay defect patterns consistently screen more failures than the other types of tests we use today in production," said Philippe Magarshack, group vice president, and Central CAD & Design Solutions general manager, at STMicroelectronics. "The step increase in test quality due to SDD tests will significantly boost our DPPM reduction program, and therefore STMicroelectronics will start deployment of Synopsys' SDD ATPG by design teams in March 2008."

Small delay defects associated with nanometer processes can adversely affect timing-sensitive paths in a design, leading to circuit failures under certain conditions. Standard transition-delay ATPG lacks sufficient timing resolution to create tests that reliably detect these small added delays. The TetraMAX solution now processes precise timing information from the PrimeTime suite to generate small delay defect patterns and identify subtle defects that were previously undetectable. The new feature is consistent with existing design-for-test (DFT) methodologies and does not require design changes.

"A key advantage of Synopsys' approach to timing-aware ATPG is that it leverages the PrimeTime tool," said Roberto Mattiuzzo, Digital Test Solutions manager, Central CAD and Design Solutions, Front-End Technology Manufacturing at STMicroelectronics. "PrimeTime is widely used at STMicroelectronics for static timing analysis and sign-off because of its accurate analysis of complex timing effects. TetraMAX's ability to import pin slacks generated by PrimeTime to target small delay defects with very high precision is critical to improving test quality over standard transition delay ATPG."

"For years, Synopsys customers have relied on TetraMAX ATPG as a means to easily and inexpensively achieve high-quality digital testing," said Antun Domic, senior vice president and general manager, Synopsys Implementation Group. "Seldom does a new ATPG technology emerge that affords customers a significant step increase in quality with no impact to the design flow. The new TetraMAX small delay defect ATPG capability represents just such an evolutionary improvement in quality, combined with advanced automation."

About Synopsys

Synopsys, Inc. (NASDAQ: SNPS) is a world leader in electronic design automation (EDA) software for semiconductor design. The company delivers technology-leading system and semiconductor design and verification platforms, IC manufacturing and yield optimization solutions, semiconductor intellectual property and design services to the global electronics market. These solutions enable the development and production of complex integrated circuits and electronic systems. Through its comprehensive solutions, Synopsys addresses the key challenges designers and manufacturers face today, including power management, accelerated time to yield and system-to-silicon verification. Synopsys is headquartered in Mountain View, California, and has more than 60 offices located throughout North America, Europe, Japan and Asia. Visit Synopsys online at http://www.synopsys.com/.

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