Loongson Achieves First-Pass Silicon Success on High-Performance CPU with Synopsys CustomSim Circuit Simulation Solution

SPICE-level Accuracy and 3x Faster Verification Time Key to Success

MOUNTAIN VIEW, Calif., Dec. 8 /PRNewswire-FirstCall/ -- Synopsys, Inc. (NASDAQ: SNPS), a world leader in software and IP for semiconductor design, verification and manufacturing, today announced that Loongson Technology Co., Ltd. (Loongson) (funded by the Institute of Computing Technologies of the Chinese Academy of Sciences) achieved first-pass silicon success on its 65-nanometer, multicore, high-performance Loongson-3 CPU design using Synopsys' CustomSim™ circuit simulator. The CustomSim solution was successfully deployed for timing and dynamic power simulation of advanced full-custom blocks, PLL, HyperTransport, register file, and content-addressable memory (CAM). The CustomSim solution's SPICE-level precision and higher performance versus other FastSPICE tools enabled Loongson to achieve first-pass silicon success with 3x faster verification turnaround time.

"The gigahertz clock speed and multicore architecture of the Loongson-3 CPU required precise timing and power simulation to verify its aggressive design targets," said Dr. Hu WeiWu, principal scientist and program manager of the Loongson project. "Synopsys' CustomSim circuit simulation technology delivered the highest accuracy and performance compared with the other simulators we evaluated. Using CustomSim, we significantly shortened the verification time for the complex custom blocks and achieved first-pass working silicon with 3x overall reduction in the full custom design cycle."

The CustomSim solution unifies the best-in-class simulation technologies of NanoSim®, HSIM® and XA with added multicore processing capabilities. For full-chip verification, the CustomSim solution is tightly coupled to the VCS® functional verification solution via a Direct Kernel Integration and is also combined with a unified analog/mixed-signal (AMS) verification environment which simplifies usability through a common set of inputs, outputs and device models.

"Advanced processor design companies like Loongson need high performance and accurate simulation to meet competitive performance and power specifications," said Farhad Hayat, senior director of marketing, analog/mixed-signal group at Synopsys. "The robust simulation technologies and advanced analysis features in CustomSim enable our customers to realize tangible verification benefits for a wide range of custom and analog/mixed-signal designs."

About Synopsys

Synopsys, Inc. (NASDAQ: SNPS) is a world leader in electronic design automation (EDA), supplying the global electronics market with the software, intellectual property (IP) and services used in semiconductor design, verification and manufacturing. Synopsys' comprehensive, integrated portfolio of implementation, verification, IP, manufacturing and field-programmable gate array (FPGA) solutions helps address the key challenges designers and manufacturers face today, such as power and yield management, software-to-silicon verification and time-to-results. These technology-leading solutions help give Synopsys customers a competitive edge in bringing the best products to market quickly while reducing costs and schedule risk. Synopsys is headquartered in Mountain View, California, and has more than 65 offices located throughout North America, Europe, Japan, Asia and India. Visit Synopsys online at https://www.synopsys.com.

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