Synopsys and Samsung Electronics Collaborate to Achieve First Production Tapeout of Flagship Mobile CPU with Leading Performance on Samsung Foundry's GAA Process

Synopsys.ai Full Stack AI-Driven EDA Suite with CPU-specific Optimizations Delivers Unparalleled PPA with Highest Frequency and 10% Lower Power for Industry's Latest Mobile CPU with Generative AI Capabilities

Highlights:

- Synopsys.ai EDA suite augmented with high-performance CPU PPA optimizations delivers highest performance, power, and area optimization for GAA nodes.
- Collaboration across Synopsys.ai full-stack AI-driven EDA suite on Samsung Foundry's advanced GAA technologies enables ultimate peak performance with lower power.
- Decades-long collaboration provides mutual customers with leading AI-driven EDA suite to realize exceptional quality-of-results and productivity gains on Samsung processes.

SUNNYVALE, Calif., May 2, 2024 /PRNewswire/ -- Synopsys, Inc. (Nasdaq: SNPS) today announced that Samsung Electronics has achieved successful production tapeout for its high-performance mobile SoC design, including flagship CPUs and GPUs, with 300MHz higher performance using Synopsys.ai™ full stack AI-driven EDA suite and a broad portfolio of Synopsys IP on Samsung Foundry's latest Gate-All-Around (GAA) process technologies. This significant achievement underscores the close collaboration between Synopsys and Samsung to deliver exceptional performance, power and area (PPA) for mutual customers, enabling a new generation of chips with generative artificial intelligence (AI) capabilities on Samsung Foundry advanced process nodes.

"Our longstanding collaboration has delivered leading-edge SoC designs. This is a remarkable milestone to successfully achieve the highest performance, power and area on the most advanced mobile CPU cores and SoC designs in collaboration with Synopsys," said Kijoon Hong, vice president of SLSI at Samsung Electronics. "Not only have we demonstrated that AI-driven solutions can help us achieve PPA targets for even the most advanced GAA process technologies, but through our partnership we have established an ultra-high-productivity design system that is consistently delivering impressive results."

"The relentless demand for ever-better PPA and energy efficiency in high-performance mobile chips is driving the need for high-performance core-specific EDA optimization across the full stack," said Shankar Krishnamoorthy, General Manager of the EDA Group at Synopsys. "Our extensive set of PPA-boosting capabilities targeted for CPUs and GPUs across the Synopsys AI-driven EDA suite and IP portfolio enables our mutual customers to successfully design chips with the highest quality-of-results for the most advanced Samsung GAA processes."

To achieve the stringent performance and low-power requirements for Samsung's mobile SoC design, Samsung used Synopsys' award-winning Synopsys.ai EDA suite, utilizing Synopsys Fusion Compiler™ RTL-to-GDSII solution for superior PPA paired with Synopsys DSO.ai™ to further optimize design targets and maximize quality of results. High-performance core-specific techniques such as design partitioning optimization, multi-source clock tree synthesis (MSCTS), advanced wire optimization to minimize crosstalk and virtual-flat hierarchical solution in the Synopsys Fusion Compiler solution enabled Samsung to achieve 300MHz higher performance than alternative approaches and achieve 10% lower dynamic power, all while saving Samsung weeks of manual design effort.

About Synopsys
Catalyzing the era of pervasive intelligence, Synopsys, Inc. (Nasdaq: SNPS) delivers trusted and comprehensive silicon to systems design solutions, from electronic design automation to silicon IP and system verification and validation. We partner closely with semiconductor and systems customers across a wide range of industries to maximize their R&D capability and productivity, powering innovation today that ignites the ingenuity of tomorrow. Learn more at www.synopsys.com.

Editorial Contact:
Kelli Wheeler
Synopsys, Inc.
(650) 584-5000
corp-pr@synopsys.com

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