

Synopsys and Samsung Foundry Deepen Collaboration to Accelerate Multi-Die System Design for Advanced Samsung Processes

Synopsys IP and Certified EDA Design Reference Flow Speed Heterogeneous Integration on SF5/4/3 Nodes

- Certified multi-die system design reference flow and secure die-to-die IP speed design and silicon success for Samsung Foundry SF 5/4/3 processes and I-Cube and X-Cube technologies.
- Synopsys 3DIC Compiler, the unified die package exploration, co-design and analysis platform has been qualified for Samsung Foundry's process flow for multi-die integration.
- Comprehensive and scalable [Synopsys Multi-Die System Solution](#) enables fast heterogeneous integration from early design exploration to silicon lifecycle management.

SUNNYVALE, Calif., June 28, 2023 /PRNewswire/ -- [Synopsys, Inc.](#) (Nasdaq: [SNPS](#)) and Samsung Foundry are deepening their collaboration to help chipmakers accelerate the design of 2.5D and 3D multi-die systems on Samsung's most advanced process technologies. The collaboration addresses key requirements of multi-die systems for intense computing applications including high-performance computing, AI, automotive and mobile. By providing an unmatched combination of certified EDA reference flows including [Synopsys 3DIC Compiler](#) and [UCle IP](#) for die-to-die connectivity, mutual customers can accelerate the development of multi-die systems on Samsung Foundry's 5nm, 4nm and 3nm processes and using I-Cube and X-Cube technologies.

"Semiconductor designers are dealing with new levels of complexity as they develop high-performance systems for data-intensive applications on the most advanced geometries," said Sanjay Bali, vice president of Strategy and Product Management for the EDA Group at Synopsys. "The strong collaboration between Synopsys and Samsung on the development of UCle IP and certified EDA flows addresses emerging requirements for multi-die systems utilizing Samsung's advanced process nodes and multi-die integration flow."

By integrating multiple dies on different nodes into a single package, using die-to-die interconnects such as UCle and advanced fan-out wafer-level packaging, designers can meet their stringent performance and time-to-market requirements for compute-intensive designs. In addition, the Synopsys Multi-Die Solution supports Samsung Foundries' I-Cube and X-Cube technologies, a comprehensive family of 2.5 and 3D silicon stacking and advanced packaging technologies. The flexibility of multi-die systems provides an efficient way to deliver task-optimized applications such as self-driving vehicles and high-performance computing.

"Compute-intensive workloads for our data-driven world require customers to meet ambitious power, performance and area targets for even the most demanding process technologies," said Sangyun Kim, vice president of Foundry Design Technology Team at Samsung Electronics. "Together, Synopsys and Samsung Foundry are optimizing multi-die designs, from early to full system implementation and signoff analysis to IP readiness. Our close collaboration results in advanced productivity solutions that reduce turnaround time and costs for our mutual customers."

Synopsys 3DIC Compiler supports Samsung's new 3D CODE standard and is part of the broader [Synopsys Digital Design Family](#) and, combined with [Synopsys Fusion Compiler](#)™ and AI-driven design enabled by [Synopsys.ai](#)™ suite of technologies, enables unified system-on-chip (SoC) to multi-die system co-optimization. Ansys® Redhawk-SC Electrothermal™ multi-physics technology is tightly integrated with Synopsys 3DIC Compiler to address the power and thermal signoff for multi-die systems.

To streamline development while lowering integration risk, Synopsys is collaborating with Samsung to develop IP for multi-die systems, including UCle IP, on Samsung Foundry's most advanced process technologies.

Availability

Synopsys digital design technology are available now for Samsung Foundry's advanced process technologies. Synopsys UCle IP on Samsung SF5/4/3 is in development.

- Learn more about Synopsys 3DIC Compiler at: <https://www.synopsys.com/implementation-and-signoff/3dic-design.html>
- Learn more about Synopsys Die-to-Die IP at: <https://www.synopsys.com/designware-ip/interface-ip/die-to-die.html>
- Learn more about Synopsys Multi-Die System Solution at: <https://www.synopsys.com/multi-die-system.html>

Additional Resources

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 an S&P 500 company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and offers the industry's broadest portfolio of application security testing tools and services. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing more secure, high-quality code, Synopsys has the solutions needed to deliver innovative products. Learn more at www.synopsys.com.

Editorial Contacts:

Jim Brady
Synopsys, Inc.
(408) 482-4719
Jimbrady@synopsys.com

Kelli Wheeler
Synopsys, Inc.
(518) 248-0780
Kelliw@synopsys.com

SOURCE Synopsys, Inc.
