Ansys and Synopsys Accelerate RFIC Semiconductor Design with New Reference Flow for Samsung Technology

Reference flow for Samsung 14LPU technology integrates leading electromagnetic simulation with modern implementation environment for higher predictive accuracy and productivity

• New Ansys and Synopsys reference flow for RFIC design developed for Samsung Foundry 14LPU process
• Collaboration delivers predictive accuracy of Ansys' golden signoff electromagnetic (EM) analysis with Synopsys' leading Custom Design Flow, providing unmatched quality of results for mutual customers

PITTSBURGH, PA and SUNNYVALE, Calif., June 28, 2023 – Recognizing the increasing challenges faced by designers of 5G/6G systems-on-chip (SoCs) and autonomous driving systems, Ansys (NASDAQ: ANSS) and Synopsys, Inc. (NASDAQ: SNPS) announced the availability of a new reference flow for radio-frequency integrated circuit (RFIC) design developed with Samsung Foundry for its 14LPU process technology. The reference flow helps ensure that mutual customers can optimize RFIC designs with Ansys' golden signoff accuracy electromagnetic analysis together with Synopsys' comprehensive analog/RF and mixed-signal design and verification solution.

Next-generation wireless communications and sensor systems must meet a range of requirements, including higher bandwidth, lower latency, better coverage, and support for the proliferation of connected devices. High-frequency designs experience electromagnetic (EM) coupling between design elements which requires very high-accuracy modeling engines to correctly predict. The EM modeling must be closely aligned with the layout development platform to ensure fast data sharing, easy debugging, high productivity, and clear visualization of results.

Key components of the reference flow include the Synopsys Custom Design Family, featuring the Synopsys PrimeSim™ continuum of circuit simulation solutions, and electromagnetic signoff analysis provided by Ansys RaptorX™ Electromagnetic Modeling Family, Ansys Exalto™ Electromagnetic Extraction and Signoff, and Ansys VeloceRF Inductor and Transformer Design Tools.

"High-frequency and radio applications are spreading to many more industrial and consumer applications, from smartphones to 5G/6G, autonomous vehicles, wearables, and IoT," said Sangyun Kim, vice president of Foundry Design Technology Team at Samsung Electronics. "As more of our customers take on RF and electromagnetic design, our 14LPU Reference Flow collaboration with Ansys and Synopsys provides a smooth and well-thought-out path for faster and more reliable design completion that takes full advantage of the speed and performance characteristics of our 4th generation 14nm process technology."

"Synopsys and Ansys have harnessed decades of expertise and development to reduce risk and accelerate success for our mutual customers," said Shankar Krishnamoorthy, general manager of Synopsys EDA Group. "Our latest collaboration with Ansys on Synopsys' new RF design reference flow supporting Samsung's advanced 14nm process node provides an open and optimized flow that delivers exceptional quality-of-results for advanced 5G/6G wireless systems."

"Our customers are facing novel multiphysics challenges to optimize power, area, reliability, and performance as frequencies climb into the RF range," said John Lee, vice president and general manager of the electronics, semiconductor, and optics business unit at Ansys. "We have been able to work closely with Synopsys to make our industry-leading electromagnetic modeling technology easily available in a complete custom design flow created for the needs of Samsung's customers."

Learn more by visiting these pages:

- Ansys Multiphysics Signoff: https://www.ansys.com/products/semiconductors
- Ansys On-Silicon Electromagnetic Modeling: https://www.ansys.com/products/semiconductors/ansys-raptorh
- Synopsys Custom Design Family: https://www.synopsys.com/implementation-and-signoff/custom-design-platform.html
- Synopsys RF Design Solution: https://www.synopsys.com/rf-design.html

About Ansys

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.

Take a leap of certainty … with Ansys.

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.

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