

Synopsys Releases New Versions of RSoft Photonic Component and Optical Communication Design Tools

Latest Releases Accelerate Design of Complex, State-of-the-Art Photonic Components and Systems

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Highlights:

- DSP library supports transceiver design and bit-error-rate estimation for data centers and other short-distance applications
- New interface with Luceda Photonic's IPKISS design framework enhances the photonic integrated circuit design flow from system-level simulation to fabrication
- Updated IMEC component library expands support for silicon photonic design and simulation
- Flexible license policy for cluster computing enables faster, high-accuracy photonic component design simulations

Synopsys, Inc. (Nasdaq: SNPS) today announced the latest releases of the RSoft™ product portfolio, the company's industry-leading family of software tools for photonic component and optical communication system design. Version 2015.12 of the Synopsys RSoft Photonic System Design Suite includes new features to accelerate the design and fabrication of state-of-the-art silicon photonics, photonic integrated circuits and optical transceivers in data center applications. In addition, version 2015.06-2 of the RSoft Photonic Component Design Suite enables faster simulations of complex photonic component designs with new, flexible cluster licensing policies that take full advantage of multicore CPU architectures.

"The enhancements in the latest releases of the RSoft product family support the complete photonic product development process, from initial design concepts to manufacturing," said George Bayz, vice president and general manager of Synopsys' Optical Solutions Group. "We have improved overall design flows with faster simulations, new design frameworks, component libraries and example models."

RSoft Photonic System Design Suite

The RSoft Photonic System Design Suite includes the following new features:

- The OptSim™ Digital Signal Processing (DSP) library now supports transceiver design and bit-error-rate estimation based on m-PAM, an important multi-level modulation format for data centers and other short-distance applications.
- The ModeSYS™ tool now includes a model that combines multiple CW signals at the same wavelength into a single spatial field profile, enabling more efficient multimode co-simulation with Synopsys' CODE V® software and the RSoft BeamPROP™ tool.
- ModeSYS also supports user-specified launch conditions for large-core, step-index multimode fibers as either intensity or encircled angular flux (EAF), leading to more accurate results.
- In addition, ModeSYS includes new plots that enable users to visualize the distribution of power changes at different positions within a multimode fiber, eliminating the need to run multiple simulations for each point of interest.
- The OptSim Circuit tool includes a new interface with Luceda Photonic's IPKISS design framework for photonic integrated circuits. By adding the capability to export netlists that IPKISS can use to automatically synthesize a mask layout, OptSim Circuit further enhances the photonic integrated circuit design flow from system-level simulation to fabrication.
- OptSim Circuit also expands support for state-of-the-art silicon photonic design and simulation by adding the latest version of the IMEC foundry process design kit (PDK), version 1.4.

"Once the functionality of a photonic integrated circuit is captured in OptSim Circuit, the next step to fabrication is translating the schematic into a physical representation via masks," said Dr. Erwin De Baetselier, CEO and co-founder of Luceda Photonics. "The interface between OptSim Circuit and IPKISS provides users with a complete design flow from functional design to physical representation. Combined, these tools represent an ideal platform to leverage process design kit (PDK) libraries such as IMEC iSiPP25G and connect circuit and layout representations with error-resilient translation steps."

RSoft Photonic Component Design Suite

The RSoft Photonic Component Design Suite version 2015.06-2 implements a new policy for cluster licensing, enabling more flexible use of multicore CPU architectures. The new licensing policy allows the RSoft simulation tools to fully utilize the computing power of a single machine for node-locked licenses and up to two machines for a network license. To use more than two machines for simulations, users can purchase additional, simulation-only licenses. Many of the RSoft photonic design tools leverage all available computing power to reduce the time of a single simulation, or to perform distributed simulations on

different parameter sets. This allows, for example, RSoft FullWAVE™ simulation users to access all of their machines' computing power for many single FDTD simulations of photonic structures, or for one or more clustered simulations. The RSoft photonic design tools can also speed up the calculation of bi-directional scattering distribution function (BSDF) files with RSoft DiffractMOD™ or FullWAVE tools for high-accuracy optical surface modeling. As in previous RSoft releases, the number of concurrent jobs is unlimited, and therefore users can run multiple, simultaneous simulations.

Availability & Resources

Updates to Synopsys' RSoft product portfolio are available now. Customers with a current maintenance agreement can download the software from the Synopsys website using their SolvNet® account.

About Synopsys' RSoft Products

Synopsys' RSoft products are leading solutions in photonic design software and serve several industries including optical communication, optoelectronics and semiconductor manufacturing. RSoft products provide a full range of design, optimization and planning tools for optical communications, as well as solutions for optoelectronics components and subsystems. For more information, visit <https://optics.synopsys.com/rssoft>.

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 the world's 16th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also a leader in software quality and security testing with its Coverity® solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest quality and security, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

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