

# Synopsys' RSoft System Tools Advance Simulation of Optical Communications for Automotive, Ethernet and PIC Applications

RSoft Photonic System Design Suite Version 2017.03 Now Available

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## Highlights:

- Adds discrete multi-tone modulation format for automotive and Ethernet data links
- Includes latest AIM Photonics Process Design Kit for photonic integrated circuit design
- Provides new design features for large-core multimode fiber optic systems

Synopsys, Inc. (Nasdaq: SNPS) today announced the latest release of its [RSoft™ Photonic System Design Suite](#), the company's industry-leading software for the design of optical communication systems and photonic integrated circuits (PICs) at the signal propagation level. Version 2017.03 of the Synopsys RSoft Photonic System Design Suite includes new library elements to advance the design and simulation of short-reach optical communications systems and PICs, as well as new modeling features to optimize the design of large-core multimode fiber optic systems used in automotive data links and Ethernet-based data centers.

## Discrete Multi-Tone Modulation Format for Automotive and Ethernet Links

In the RSoft OptSim™ tool, new discrete multi-tone (DMT) modulation format functions are available in the digital signal processing library to model and simulate DMT-based data links. The DMT format uses light intensity for modulation over multiple subcarriers, which provides higher spectral efficiency. It is particularly useful for optimizing the performance of short-reach applications such as automotive data links, access networks as well as 100G and 400G Ethernet-based data center links.

## Latest AIM Photonics Process Design Kit and PDAFlow Libraries for PIC Design

The RSoft OptSim Circuit tool includes the latest American Institute for Manufacturing Integrated Photonics (AIM Photonics) Process Design Kit (PDK), version 1.0b. The PDK helps PIC designers access leading-edge silicon photonics technology to generate PICs for fabrication through AIM Photonics multi-project wafer facilities. OptSim Circuit users will be able to access the PDK elements, generate schematics and simulate circuit performance prior to exporting net lists for mask generation. In addition, OptSim Circuit includes new and updated libraries for supporting PDAFlow-compatible PDKs for PIC fabrication.

## New Design Features for Large-Core Multimode Fiber Optic Systems

The RSoft ModeSYS™ tool includes new features for the design and analysis of large-core multimode fiber optic systems used in applications ranging from mega data centers to automotive data links:

- Support for large-core fiber power-versus-angle signal domain across select models. The feature extends the large-core multimode fiber's numerically efficient power-versus-angle approach for signal propagation to other models in ModeSYS to model a complete data transmission link.
- A new large-core connector model that is computationally more efficient than conventional spatial field-profile based connector models.

"In large-core multimode fiber optic systems, alignment between components affects the speed and distance that can be supported by a specific link design," said George Bayz, vice president and general manager of Synopsys' Optical Solutions Group. "The new features in ModeSYS allow designers to model fiber component offsets and study performance bounds due to alignment tolerances. Designers of automotive fiber optic data links and backplane Ethernet technologies will find the new ModeSYS features particularly beneficial."

### **Synopsys to Showcase RSoft Products at OFC 2017**

Learn more about the RSoft Photonic System Design Suite version 2017.03 by visiting Synopsys' booth 2519 at the Optical Fiber Communication Conference and Exposition (OFC) 2017 in Los Angeles, Calif., from Tuesday, March 21 through Thursday, March 23. Synopsys RSoft product experts will provide demonstrations and host information sessions throughout the conference. For details, visit <https://www.synopsys.com/optical-solutions/events/ofc-2017.html> .

### **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. Learn more at <http://optics.synopsys.com/rsoft>.

### **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 15th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software security and quality solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest security and quality, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at <http://www.synopsys.com/>.

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