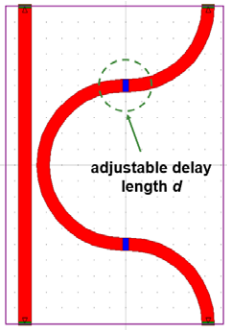
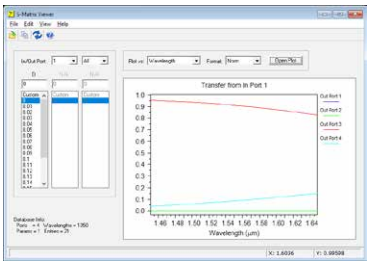
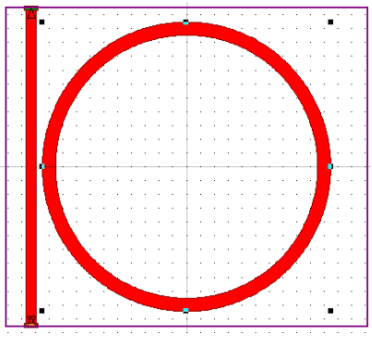
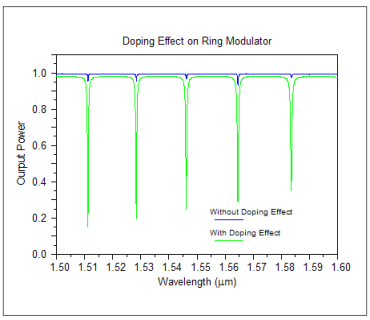
What's New in the RSoft Photonic Component Design Suite









Solutions for the Design of Passive and Active Photonic Devices

The RSoft Photonic Component Design Suite provides complete solutions for the design of photonic devices and components used in optical communications, optoelectronics and semiconductor manufacturing. Highly accurate algorithms, including FDTD and beam propagation methods, reduce product time-to-market and development costs. Version 2018.03 expands support for the design of silicon photonic components such as waveguides, grating fiber couplers, and silicon lasers.

Enhanced S-Matrix/PDK Generation Utility

The S-Matrix/PDK Generation Utility creates the S-Matrix of a photonic component using the RSoft FullWAVE™, BeamPROP™, and ModePROP™ tools and exports it to OptSim Circuit to verify its performance in a PIC system. The final design can then be easily exported to mask layout tools to create an optical process design kit (PDK), augment an existing PDK, or generate IP. The interface allows designers to efficiently create PICs from basic building elements and accurately test PIC performance prior to fabrication. Version 2018.03 adds:

- Support for parameterization of S-matrices, allowing multiple variants of a component to be studied within a circuit in OptSim Circuit or foundry-independent layout in Synopsys PhoeniX OptoDesigner tools
- Automatic icons and improved port placement for custom PDK models

Enhanced Support for Silicon Photonics Applications

- Improved incomplete ionization and free-carrier dependent index/absorption of Incorporating doping in the silicon material model in the FullWAVE, BeamPROP, ModePROP, and FemSIM™ passive tools
- Direct calculation of carrier dependent index from carrier densities in the Synopsys Sentaurus™ TCAD interface for consistent material modeling in all contexts

Enhanced Algorithms

- BeamPROP supports new 3D wide-angle BPM algorithms, further extending BeamPROP's capabilities to simulate structures in silicon or other high-index contrast materials
- Improvements have been made in the FullWAVE modeling of dispersive materials, including automatic optimized fitting of materials and an approximately 30% speed improvement in the FDTD algorithm

For more information, please contact Synopsys' Optical Solutions Group at (626) 795-9101, visit synopsys.com/optical-solutions/rsoft.html, or send an e-mail to rsoft_sales@synopsys.com.

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