

**Release Notes**  
**RSoft Photonic Component Design Suite**  
**Version 2017.03**

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**Optical Solutions Group**

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**SYNOPSYS®**

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## Changes to All Products

- Improved Sentaurus TCAD interface usability, including support for dispersive materials and dynamic updating of materials and simulation domain.
- Updated Linux USB dongle driver.

## Changes to RSoft CAD

In addition to the changes listed in the All Products section, the following changes apply to the RSoft CAD:

- Added Hierarchy Export option to simplify the creation of a circuit library. With hierarchy export, child files can export or broadcast a list of symbols that will be automatically added to the Local Symbol table in the parent file.
- Added ability to assign a material to a component with a symbol.
- Added links to various OSG website pages (general information, training, support, etc.) from the RSoft CAD help menu.
- Fixed vector plot display issue for complex data.
- Fixed plot display issue on Windows 10 platforms.
- Fixed power scaling issue for 1D/2D in the genapd option of tdrutil.

## Changes to FullWAVE

In addition to the changes listed in the All Products and RSoft CAD sections, the following changes apply to FullWAVE:

- Enabled far-field calculation when far-field refractive index is larger than the near-field refractive index.
- Fixed issue with far-field calculation for a pulsed simulation involving dispersive materials.
- Fixed issue with BSDF generation when very lossy materials are present at the reflection and/or transmission plane.
- Fixed issue when non-PML boundary conditions were present on the right boundary.
- Added option to view monitor Summary File from the View menu in the simulation window.

## Changes to BeamPROP

In addition to the changes listed in the All Products and RSoft CAD sections, the following changes apply to BeamPROP:

- Support for general monitor objects in BeamPROP. This allows broader use of BeamPROP with the Sentaurus TCAD interface for applications such as waveguide

photodetectors. The existing 3D SiGe Photodetector tutorial has been updated to use FullWAVE or BeamPROP to measure the optical generation within the structure.

- Enabled far-field calculation when far-field refractive index is larger than the near-field refractive index.
- Added option to view monitor Summary File from the View menu in the simulation window.

## Changes to DiffractMOD

In addition to the changes listed in the All Products and RSoft CAD sections, the following changes apply to DiffractMOD:

- Added control over Launch Normalization to the Advanced Options dialog box.
- Added option to view monitor Summary File from the View menu in the simulation window.
- Significant behavior change:
  - The default 3D output format has been changed to the RSoft standard format instead of the VTK format.

## Changes to ModePROP

In addition to the changes listed in the All Products and RSoft CAD sections, the following changes apply to ModePROP:

- Added option to view monitor Summary File from the View menu in the simulation window.
- Significant behavior change:
  - The default 3D output format has been changed to the RSoft standard format instead of the VTK format.

## Changes to BandSOLVE

In addition to the changes listed in the All Products and RSoft CAD sections, the following changes apply to BandSOLVE:

- Fixed issue with the Repeat Source feature when using the FDTD (FullWAVE) simulation engine for non-cubic lattices.
- Fixed update issue with the BandSOLVE simulation window when using the FDTD (FullWAVE) simulation engine.

## Changes to BSDF Utilities

In addition to the changes listed in the All Products, RSoft CAD, and DiffractMOD/FullWAVE sections, the following changes apply to the BSDF Utilities:

- Added support for negative Theta angle values for BSDF calculation. Theta can now vary from -180 to 360 with a maximum range of 360 degrees (i.e., -180 to 180, 0 to 360, etc.).
- Improved BSDF scattering calculation, including more accurate handling of polarization when input data is limited.

## **Changes to Multi-Physics Utility**

In addition to the changes listed in the All Products and RSoft CAD sections, the following changes apply to the Multi-Physics Utility:

- The TCAD interface now benefits from BeamPROP's new capability to generate absorption profiles. Previously, absorption could only be generated by FullWAVE or DiffractMOD.
- The existing 3D SiGe Photodetector tutorial has been updated to use FullWAVE or BeamPROP to measure the optical generation within the structure.

## **Changes to MOST**

In addition to the changes listed in the All Products and RSoft CAD sections, the following changes apply to MOST:

- Updated MOST to 64 bit.

## **Changes to LaserMOD**

In addition to the changes listed in the All Products and RSoft CAD sections, the following changes apply to LaserMOD:

- Added new plots for the power out of each facet.
- Alloy/Doping profiles can now read from a file.