OptiSPICE 5.3 Release Notes

IMPORTANT - PLEASE READ ME

Installation Notes:

- The OptiSPICE 5.3 installer will perform a full installation of OptiSPICE. It is recommended to uninstall all previous versions of OptiSPICE (5.2 and earlier) prior to starting the installation of OptiSPICE 5.3.

  NOTE: If a previous version of OptiSPICE 5 is detected by the installer, a message will appear advising you to un-install the older version

- If the length of the installation directory path is too long, it can cause the installation to fail. To avoid this, it is recommended that you not exceed the length of the default installation path.

- OptiSPICE 5.3 provides users with the option to install OptiSPICE samples during (or any time after) installation. By default the OptiSPICE 5.3 samples folder will be installed in *C:\Users\username\Documents\OptiSPICE 5.3 Samples*.

  NOTE: It is not recommended to install the OptiSPICE 5.3 samples in a location that contains OptiSPICE designs or samples from previous releases.

Minimum hardware and software requirements

OptiSPICE requires the following minimum/recommended system configuration:

- Minimum PC configuration: PC with Pentium 4 processor or equivalent with 2G MB RAM.
- Recommended PC configuration: PC with a clock speed > 2 GHz with 2-4 cores (e.g. Intel i7 3rd/4th Gen, AMD Athlon/Athlon II) and 8MB RAM.
- Operating Systems: Microsoft Windows 7/8.1/10 (**64-bit only!**)
- 400 MB free hard disk space
- 1024 x 768 graphic resolution, minimum 65536 colors
- Internet Explorer 5.5 or higher (to enable VBScript functionality)

Application execution

- When running OptiSPICE under a Restricted User Profile, place all sample files in the Restricted User's folder, or wherever the user has Read/Write access. It may also be necessary to remove the Read-only flag from the file after the copy is made. This has to do with file permissions - OptiSPICE needs to open the file in a read/write mode. Please contact your network administrator if you need assistance with this.

  NOTE: By default the OptiSPICE 5.3 samples folder will be installed in the following location: *C:\Users\username\Documents\OptiSystem 5.3 Samples.* This location should provide you with read and write access.

- **IMPORTANT**: By default the "models" and "libraries" folders will be installed under *Program Files/Optiwave Software/OptiSPICE 5*. You may not have read/write access to these folders. If you need to save any new devices or models (to be accessed from other designs) it is highly recommended to create new folders for your devices and models in a location that provides you with read/write access (for example under *C:\Users\username\Documents*). See the tutorial "Creating Sub-circuits" (in *OptiSPICE Tutorials - Advanced* guide) for instructions on how to setup your own device and model libraries. For further assistance you can also contact Optiwave technical support at support@optiwave.com.

- Some computers provide a power saving feature, Hibernation. If available, this feature is controlled by opening Power Options in Control Panel. Clicking the Hibernate tab, and then selecting the Enable hibernate turns it on. After the computer goes into hibernation, it won't find the Optiwave protection key, and the simulation will stop with a message that the protection key can't be found. Disable the hibernation feature of the computer in order to avoid this problem.

OptiSPICE 5.3 New Features

The following new features have been included with OptiSPICE 5.3

- Optical S-Parameter model **OPTAMPM** has been renamed to **CppSparameter**. It now to supports time delay. The value for the time delay can be either specified by the user or calculated from the provided S-Parameter data. S-Parameter model can be used to accurately simulate passive optical devices characterized by OptiFDTD S-Parameter simulations. Additionally, the convergence and stability of the model has been vastly improved.

- Devices linked to the **OPTAMPM** model have been replaced in the Optical library by **CppSparameter** models. These include 2 port and 4 port devices for modeling imported scattering data from OptiBPM simulations (**OptiBPM - 2 Port** and **OptiBPM - 4 Port**) and multi-port Optical S Parameters devices for modeling imported scattering data from external measurements and simulations (**Optical SParam - 2 Port**, **Optical SParam - 3 Port (Cpl)**, **Optical SParam - 3 Port (Spl)** and **Optical SParam - 4 Port**). Example circuits demonstrating the capabilities of the optical S parameters feature can be found in *OptiSPICE 5.3 samples\Device examples\Optical\Optical S Parameters.*

- A new visualizer called **probe visualizer** has been added to the OptiSPICE library. This new visualizer enables users to see results directly from the schematic as an alternative to using OptiSPICE's waveform viewer.

- Optical signal labels "**forward**" and "**reverse**" have been replaced to improve the post processing of simulation results. Optical signals are now labeled as **input** for signals going into an optical device and **output** for signals coming out of an optical device

- A collection of updates and enhancements have been made to the **simulation engine**. Sparse matrix solver libraries, UMFPACK and MKL have been updated to newer versions for **improved stability**, **convergence** and Windows 10 **compatibility**. Additionally, it is now possible to control the time step of the simulation engine during a parameter sweep and the engine uses an improved initial guess to start DC sweep, transient and operating point simulations.

OptiSPICE 5.3 list of updates

Devices & Models

Device/Model	Library	Changes
CppSparameter model	OPTISPICE 5 /models/ Optical.libx	Optical S parameters (**OPTAMPM**) model has been replaced by **CppSparameter** model in the Optical library. Users can import S parameters data from lab measurements and other simulation platforms (OptiBPM, etc.). It supports input files based on the Touchstone or OptiSystem OptiBPM scattering data file formats and can be used to model any arbitrary device with a user defined number of ports. For further information please see the technical background for the **CppSparameter** Model in the OptiSPICE Model Library.
OptiBPM - 2 Port, OptiBPM - 4 Port, Optical SParam - 2 Port, Optical SParam - 3 Port (Cpl), Optical SParam - 3 Port (Spl), Optical SParam - 4 Port	OPTISPICE 5 / libraries/Optical.clf	Several devices linked to the OPTAMPM model have been replaced by CppSparameter models in the Optical library. These include 2 port and 4 port devices for modeling imported scattering data from OptiBPM simulations (**OptiBPM - 2 Port** and **OptiBPM - 4 Port**) and multi-port Optical S Parameters devices for modeling imported scattering data from external measurements and simulations (**Optical SParam - 2 Port**, **Optical SParam - 3 Port (Cpl)**, **Optical SParam - 3 Port (Spl)** and **Optical SParam - 4 Port**)