

OptiSystem 15.1.1 Release Notes

IMPORTANT - PLEASE READ ME

Installation Notes:

- If you have an earlier version of OptiSystem on your computer, OptiSystem 15.1.1 will be automatically installed in a separate directory.
- OptiSystem 15.1.1 includes the option to install OptiSystem samples during (or any time after) installation. The installation location for the samples folder can be defined (by default the samples folder will be installed in "C:\Users\username\Documents\OptiSystem 15.1.1 Samples"). If you have saved any projects to the target installation location it is highly recommended to save this folder to a backup folder).

Minimum hardware and software requirements

OptiSystem requires the following minimum/recommended system configuration:

- Minimum PC configuration: PC with Pentium 4 processor or equivalent with 4G GB 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 8 GB 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 OptiSystem 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 - OptiSystem needs to open the file in a read/write mode. Please contact your network administrator if you need assistance. Also when opening an OptiSystem project it will be necessary to open OptiSystem using the "Run as Administrator" command (right click to see this menu option command)
- There are some MATLAB files (.m) included that are necessary to make the samples work properly. Another important point - the path in the MATLAB search path (Main tab of the MATLAB component) has to be updated with the path to the MATLAB files, otherwise the samples will not work.
- The path to the Scilab/bin folder has to be added to Scilab component (a parameter field has been created for this purpose), otherwise the Scilab component library will not work.
- For the OptiSystem Help feature to function properly, Adobe Acrobat Reader must be installed. To get the latest version please visit the Adobe website at <http://www.adobe.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.

OptiSystem Version 15.1.1 list of updates

Components

Component(s)	Library	Changes/Updates
Lossy Fiber	Optical Fibers Library	The new bidirectional Lossy Fiber Component considers fiber attenuation effect only, which makes it easy and suitable for power budgeting simulation.
Nonlinear Optical Fiber	Optical Fibers Library	The new bidirectional Nonlinear Optical Fiber component allows users to investigate the nonlinear effect in the fiber without the need to setup dispersion parameters. All nonlinear effects such as SPM, XPM, SBS, SRS, FWM, and self-steepening are considered in this component. Relevant examples are created for each nonlinear phenomenon located in the "Fiber analysis and design library".

Other features and improvements

Other features	Changes/Updates
Automatic resizing of project canvas	OptiSystem 15.1.1 enables automatic resizing of the project canvas when a project is loaded from a script version of a project.
Error vector magnitude (EVM) parameter	The new release of OptiSystem allows calculating EVM parameter for each region of mQAM modulated signals.
Flexible Units selection in CoSimulation components	The user can select his choice of units (nm to THz, W to dBm, etc.) for the different parameters defined in the CoSimulation components (MATLAB, C++, Python)
Components' ports location	OptiSystem 15.1.1 allows the user to vary the components' default location of any port. A field is added to the port control window "Location" if checked, it allows the user to control the location of the port.
Units of added Global Parameters	The user can enter different units such as W, mW, dBm, Hz, nm, GHz, THz for the parameters added in the Global Parameters popup window of the project layout. The user can also switch between these units (e.g. if he enters nm for a unit, then he can change to GHz, the values he enters in nm changes to new values in GHz.
Disabling monitors and visualizers	OptiSystem 15.1.1 allows disabling monitors by selecting the relevant field in the calculation popup window . Also, Visualizer(s) can be disabled/enabled before/after the calculation by clicking the right mouse. Visualizers are calculated only if monitors are not disabled. This feature would speed up the calculation especially when a large number of visualizer present in the project.
Display results using Dual port Optical Time Domain Visualizer	The user can place as many curves as he wants on the display of the dual port optical time domain visualizer. However, the user can only show a maximum of three different parameters on any axis.
Add measured filter to the DSP filter tab	Users can add their own measured filter in the different DSP components. The filter parameters are similar to those of the "Measured Optical Filter" component.
Enable/Disable of filter in DSP component	The filter of the DSP components can be enabled/disabled to allow using digital filtering in front of the DSP component for pulse shaping.

New examples	A list of new examples are added to the Fiber analysis and design Library. These examples show the different nonlinear effects (SPM, XPM, SBS, SRS, FWM, and self-steepening) encountered in the optical fiber. As well as an example on Rayleigh backscattering effect is added. These examples use the Nonlinear Optical Fiber component.
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Documentation

Document	Changes
OptiSystem Component Library	<p>The data sheet, parameter(s) and/or technical description sections of the following components have been updated or created:</p> <ul style="list-style-type: none"> • Lossy Fiber (new) • Nonlinear Optical Fiber (new) • Bidirectional Optical Fiber • DSP for QPSK, SDSP for 16-QAM and Universal DSP components • Electrical Complex Conjugate • Optical Complex Conjugate • Empirical Laser Measured • CW Laser Source • CW Laser Array • CW laser Array ES

OptiSystem Version 15.1.1 Improvements & Fixes

Components

- OFDM Demodulator. The component used to flicker during the calculation of every sweep. Also, OptiSystem software may crash when a project that has this component is calculated using “Calculate multi thread all sweep iterations in active layout” choice in the calculation popup window.

Additional release notes/known issues

- The operation of **closing different projects** at the same time by clicking (X) at the top right side of OptiSystem GUI, while a subsystem of one of the projects is opened causes the connections between components in the subsystem to be lost. This issue has been fixed in Release 15.1.1
- The issue of multithread calculation (Calculate multi thread all sweep iterations in active layout) when one of the global parameters is scripted and set to sweep mode in the component property parameters setting causes error results. This issue has been fixed.
- The “Update report content when layout is modified”, is removed from OptiSystem report page “Events” options, while the “Update report content when calculation is done” command is kept.
- The delay setting of the “Delay” component was causing opposite shift for binary signals. When the delay is set to xbits (x is positive), the binary signal moves xbits to the left. This issue has been fixed; now the binary signal moves xbits to the right.
- Fix the release of memory when calculating an OptiSystem project using “multi thread all sweep iterations in active layout” choice, which has multiple Matlab components. Also, add a “Quit” feature to OptiSystem code to close each Matlab

component after finishing its calculation. However, the memory still holds space for this component, which can not be controlled due to restriction by Matlab.

- The laser linewidth can not be set to 0Hz for some laser transmitter components. Thus, the laser linewidth range has been changed to $[100\text{e-}12\text{MHz}, +\text{INF}[$. This change is done for three components (CW Laser, CW Laser Array and CW Laser Array ES). Other laser components that have linewidth parameter are not affected with this change. Old OptiSystem files that are created in older versions, which have these three components with laser linewidth was 0Hz is changed to $100\text{e-}12\text{ MHz}$.
- Fix loading "User Component Library" (xxxxx.clb) issue that occurs in older versions. The issue arises when an OptiSystem component is moved into the "Custom" library of OptiSystem. Then, when OptiSystem is Opened later, an error message pops up, which reads "A name clash occurred between a system parameter and a user parameter in subsystem xxxxx". The subsystem component (xxxxx) is located in the "Subsystems" Library. If the user clicks Ok, another popup message appears for few times until OptiSystem loads. Once OptiSystem loads, it can be used normally except for loading any component located in the "Subsystems" Library. If a component is loaded and the user tries to access its component properties, then OptiSystem crashes. It is possible to resolve this problem in earlier versions by deleting the (xxxxx.clb) file from the location:
C:\Users\xxxxx\AppData\Roaming\Optiwave\OptiSystem 15.1\Component library\

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