DIGITAL INDUSTRIES SOFTWARE

L-Edit Photonics

Smooth layout-centric design flow from Siemens Digital Industries Software

Benefits

- Supports Siemens PDKs and iPDKs

- Supports interoperability with third-party IP

- Complete, hierarchical physical layout editor

- Standard interface to Calibre physical verification tools

- Supports curved polygons and all-angle geometries

- Fast rendering

- Object snapping (gravity) for quick, accurate layout

Layout-centric design flow

L-Edit Photonics software provides significant productivity improvement with a layout-centric design flow. Meaning, designers can do all of their work directly in the layout editor. When the design is at a point that simulation needs to be run, a netlist can be created directly from L-Edit Photonics.

This layout-centric design flow removes the need to create a schematic, saving significant time in the design process, as the layout is the golden design database. The resulting netlist supports all of Siemens photonic simulation partners. The netlist also supports Siemens transistor level and mixed mode simulators if the design contains both electrical and optical components.

Schematic-driven photonics design flow

For designers that would like to use a traditional custom IC design flow, S-Edit can be used to create the schematic. For larger designs, a schematic-driven layout flow is available within L-Edit IC, which contains all of the same photonics layout capability as L-Edit Photonics.

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Benefits *continued*

• Platform independence with Windows and Linux support

• Ease of use: intuitive and quick learning curve

Photonic-specific benefits

• Supports production-level photonic design

• Layout-centric flow with built-in netlisting

• Waveguide generation and editing:

– Waveguide length editing

– Multiple waveguide types

– Waveguide crossing insertion

• PDKs available from multiple photonic foundries

• Supports multiple photonics simulators
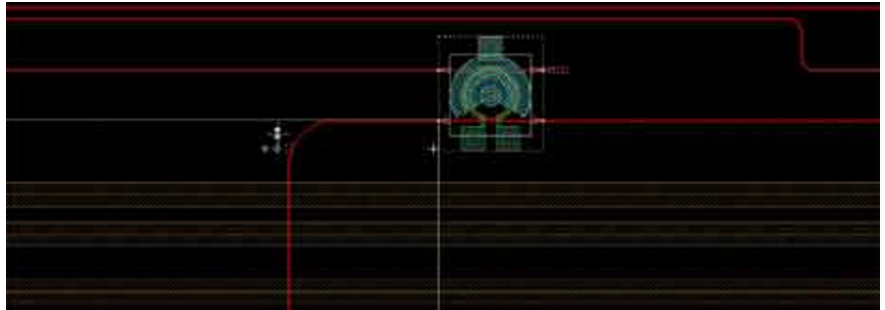
L-Edit Photonics is a comprehensive photonics physical design environment. It is based on the layout editor widely-used for both IC and MEMS design.

Photonic design creation

Creating a photonic layout is simple with L-Edit Photonics. First, the designer places the photonic components. Then, the waveguides are created to connect those components. Multiple waveguide types are supported: striped, ribbed and multi-segmented. In addition, the waveguide can be edited to create an exact length.

Electric components can also be placed manually and interconnected as needed to connect to heaters in the photonic PCells and to the outside electrical world.

Integrations to Calibre

L-Edit Photonics launches Calibre® Interactive software to drive the physical verification. Calibre tools that designers can launch directly are:

• Calibre nmDRC software for design rule checking

• Calibre nmLVS software for layout versus schematic checking

• Calibre xACT™ software for parasitic extraction

• Calibre LFD software for litho-friendly design to find lithographic hotspots

• Calibre RVE software to view the results and highlight nets and devices with cross probing to L-Edit Photonics

Interoperable with other EDA flows

L-Edit Photonics is built on OpenAccess, so design data can be interchanged with any other layout tool that supports OpenAccess.
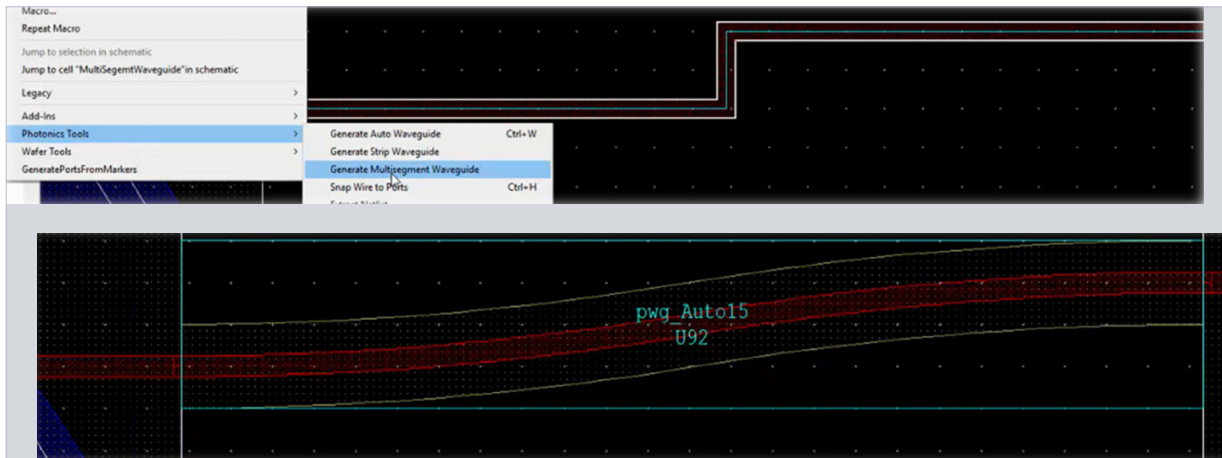
Creating a waveguide in L-Edit Photonics is a two step process. First, create an orthogonal route that connects the two components. Then, by pressing a hot key, that route can be converted into a waveguide with the appropriate curvatures, based on the process.

Foundry support

L-Edit Photonics supports Siemens formatted PDKs and the industry-standard, interoperable iPDK. PDKs are available from multiple photonic foundries.

Designers can also create their own components or create their own PDK.

Requirements

L-Edit Photonics is supported on both Windows and Linux.

Siemens Digital Industries Software

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For additional numbers, click here.