

Galaxy Custom Designer LE

Custom Layout Editing

Overview

Galaxy Custom Designer™ LE is the modern-era choice for layout entry and editing, enabling users to meet the challenges of today's fast-moving nanometer designs with little or no learning curve. As with all Custom Designer tools, layout editing tasks are accomplished with fewer clicks, quicker menu access, and less pop-up menu clutter.

Architected from the ground up with maximum productivity in mind, Custom Designer LE enables ultra-fast layout editing with advanced P-cell support and time-saving layout automation through capabilities like intelligent multipart paths that maintain DRC correctness.

“With Custom Designer you can immediately be more productive if you are familiar with old-school layout systems.” -Andrew Bosik, Senior Analog Mask Designer

An integral component of the full Custom Designer system, LE provides transistor-level layout and editing capabilities in a unified platform for both cell-based and mixed-signal custom content which speeds complex chip design and integration tasks.

Key Benefits

- ▶ One unified platform for both cell-• based and custom content speeds complex chip design and integration tasks
- ▶ Supports Synopsys' Hercules™ DRC/LVS and StarRC™ flows for industry sign-off physical verification
- ▶ Supports the IPL Alliance's Interoperable PDK libraries for industry-wide design data sharing
- ▶ Provides multiple layer purpose pair browsers in a single session when editing designs in multiple libraries

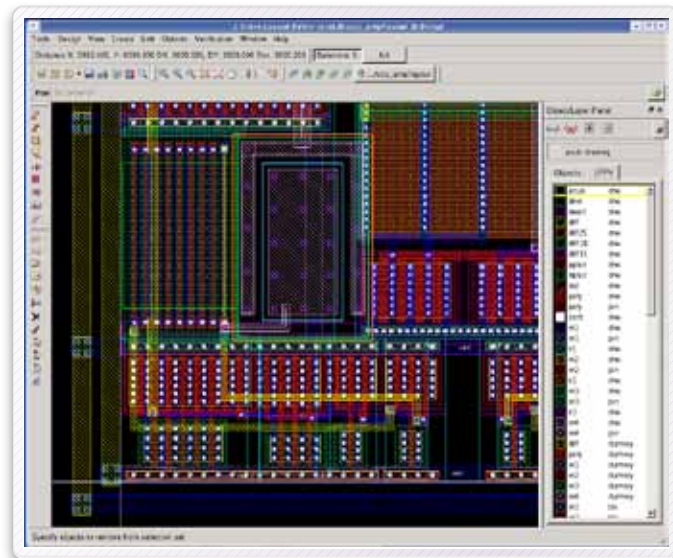


Figure 1: Custom Designer LE's familiar look and feel gives a boost to designer productivity out of the box

Extending the Galaxy Design Platform

As semiconductor designs demand more custom and AMS content, custom design teams need new ways to address the challenge of quickly and efficiently integrating into existing digital design flows.

Custom Designer leverages the powerful capabilities of Synopsys' Galaxy Design Platform to provide a unified solution for custom and digital design teams. Digital teams now have access to a unified, comprehensive AMS block authoring flow with an optimized pipeline that eliminates tedious data exchange and leads to final designs in shorter time.

A Unified Flow with Common Use Model Delivers Fastest Time to Results

Custom Designer LE provides a unified flow based in a common use model allowing seamless access to Synopsys' Hercules for LVS/DRC and StarRC for parasitic extraction.

Designers simply run Hercules or StarRC as part of the Custom Designer environment to quickly perform physical verification and extraction.

The native integration between SE, Custom Designer LE and StarRC provides a complete round-trip parasitic resimulation flow complete with back-annotation. The comprehensive flow ensures the highest-possible accuracy in parasitics extracted from the physical design.

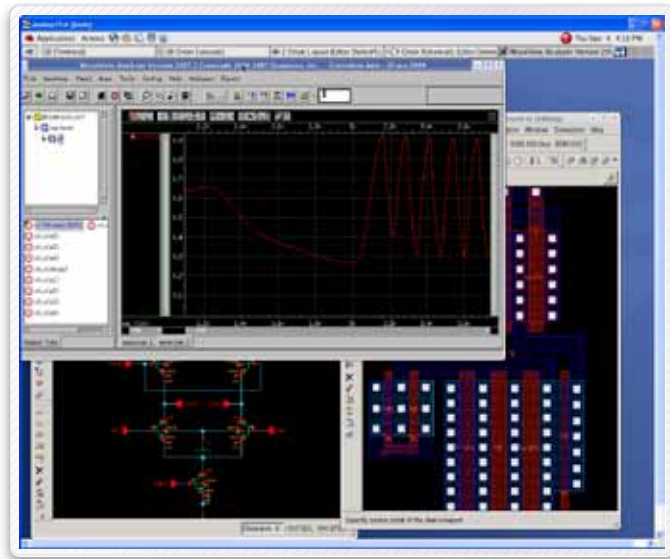


Figure 2: Custom Designer's tight integration between schematic, layout and WaveView Analyzer speeds design analysis and debug

Advanced P-cells Speed Layout Editing

Custom Designer's real-time preview of P-cell parameter changes instantly shows the results before committing to placement. Designers see the results of their changes and can quickly adapt the design to significantly speed up the layout editing process.

Custom Designer supports P-cells written in TCL, Python and C++, any of which can be freely mixed in the same design.

P-cell callbacks in Custom Designer LE are also triggered during scripting, helping to eliminate synchronization problems in designs. This capability also supports P-cell abutment when editing or placing cells in batch mode. Scripts can be used for batch-mode processing to create or edit layouts, and abutment will be triggered correctly.

Time-Saving Automation in Layout

Conformal and rectilinear multi-part paths (MPPs) can be quickly and automatically generated with a user-specified separation around a selected set of layout objects. These paths can be further manipulated via the "Stretch" and "Chop" commands for maximum flexibility.

Custom Designer's automatic via insertion function places DRC-correct vias or via arrays between layers when net names match to quickly and accurately complete layout wiring.

Open, Interoperable and Extensible Environment

Based on Si2's OpenAccess database and extensible through the industry standard TCL scripting language, Custom Designer's open environment allows CAD groups to quickly add new tools to the environment.

Custom Designer's Open Infrastructure (CDOI) is a shift in the EDA industry offering unfettered access to your design data. With no proprietary languages, databases or extensions, Custom Designer offers CAD groups deep visibility into the system's design infrastructure, enabling high-performance application integration and development, including access to in-memory data and runtime objects.

CDOI also provides the ability to develop consistent user interfaces across the Custom Designer environment by providing access to standard components like menus and tool bar icons.

Custom Designer's open environment also includes a Programmable Netlister that ships with open-source code, allowing for quick implementation of custom netlist formats. The netlister supports CDF parameters, including PEL/AEL expressions, CDF "simInfo" and physical extracted view netlisting.

Powerful Capabilities Shared Across Custom Designer

Powerful new GUI technologies provide the entire Custom Designer system with a unique set of capabilities that are shared across all components.

Custom Designer has extensive context-sensitive menu support throughout the tool and shares the same use model used in all user subsystems.

Custom Designer's property editor allows for single or mass editing of property values across selected instances. Tabbed views simplify editing of different device types and "As-Is" technology clearly indicates mismatches in values.

Custom Designer's "Transaction History" is a sophisticated undo/redo system that records all data creation and manipulation commands during an editing session for schematics and layout. Recallable at any time, this history is also unique to each different cell view, improving the designer's recall of the editing steps.

All Custom Designer commands are logged in a log file (.log and .tcl) and can be replayed in the tool. This can be beneficial when creating macros for any task that needs to be repeated.

Icons for recently used commands appear on the history toolbar. Re-invoking previously used commands is easy. Custom Designer also supports standard and user-definable bind-key sets, allowing you to customize the system to meet your unique design style.

Custom Designer boasts a single job monitor that logs all batch and interactive jobs launched from any native Custom Designer tool or any other tool integrated into the environment. Job status is saved across different sessions.

Platform Support

- ▶ X86 for 32- and 64-bit Red Hat Enterprise Linux version 4 (AS, ES, WS)



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