

ORCAD PCB DESIGNER ORCAD PCB DESIGNER WITH PSpICE

OrCAD® PCB Designer suites offer cost-effective solutions for the design of complex printed circuit boards (PCBs). They deliver increased productivity along with improved performance and quality. Tightly integrated, scalable design solutions, they feature both new technologies and best-in-class capabilities from OrCAD. Included are OrCAD Capture, OrCAD PCB Editor, SPECCTRA® for OrCAD, and, optionally, PSpice®.

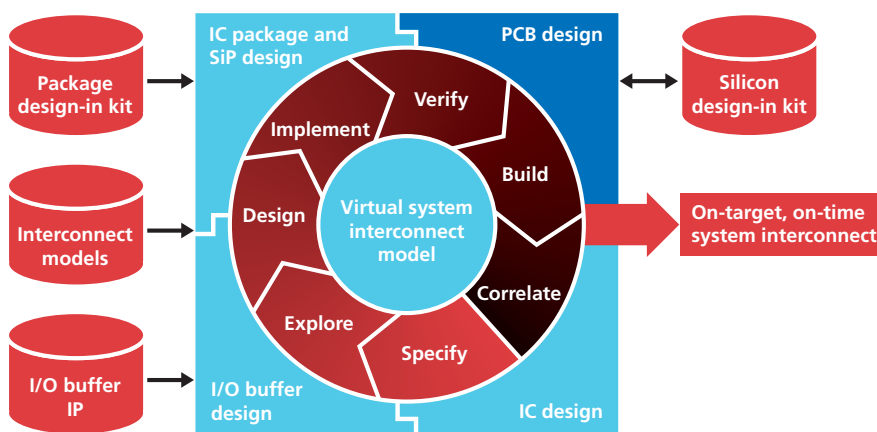


Figure 1: The affordable, high-performance OrCAD product line is easily scalable with the full complement of Cadence Allegro PCB design solutions

ORCAD PCB DESIGN TECHNOLOGIES

OrCAD products have a proven track record of innovation in the PCB personal productivity market. Available as stand-alone tools or in comprehensive suites, they allow designers to realize products from conception to manufacturing output. Easy-to-use and intuitive, they offer exceptional value. OrCAD technology also provides easy migration to the Cadence® Allegro® platform (see Figure 1).

FULL-FEATURED SUITES

OrCAD PCB Designer suites address today's design challenges and manufacturability concerns. They contain everything needed to take a PCB design from concept to production—design capture, librarian tools, a PCB editor, and an auto/interactive router as well as interfaces for manufacturing, mechanical CAD, and translators for other PCB systems. PCB Designer with PSpice adds the industry-standard simulation tool for creating analog and mixed-signal designs.

BENEFITS

- Offers a proven, scalable, cost-effective PCB design solution
- Speeds design with fast, accurate placement and routing automation
- Increases productivity through application integration
- Complete PCB design environment from concept to production

FEATURES

DESIGN CAPTURE

OrCAD Capture is the tool of choice for rapid design capture. It is intuitive, easy to use, and offers sophisticated part search mechanisms. Whether used to design a block diagram or a complex PCB, FPGA, or CPLD, OrCAD Capture has everything needed to get the work done quickly and accurately. Tight bidirectional integration with OrCAD PCB Editor provides cross-highlighting and cross-probing as well as forward and backward annotation, ensuring agreement between the schematic and the board layout in the event of gate-swaps, pin-swaps, or changes to component names or values. If parts get modified in either the schematic or the database, they can be updated with a touch of a button. The designer can generate complete, accurate parts list or netlist at any time (see *Figure 2*).

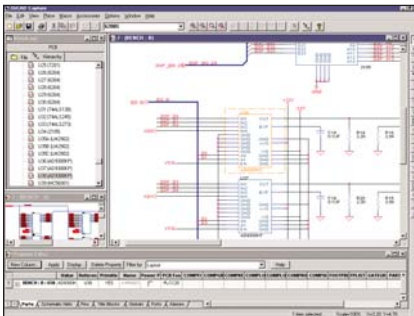


Figure 2: Find and select parts or nets quickly from the Project Manager—multi-window interface makes navigation across hierarchies easy

PCB DESIGN EDITOR

At the heart of the OrCAD PCB Design suites is OrCAD PCB Editor, an interactive environment for creating and editing complex, multilayer PCBs. The extensive feature set addresses a wide range of today's design and manufacturability challenges. OrCAD PCB Editor provides a powerful and flexible set of floorplanning tools. Powerful shape-based shove/hug interactive etch creation/editing provides a highly productive interconnect environment. Interactive, shape-based, any-angle, push/shove routing, lets users choose between "shove-preferred" and "hug-preferred" modes. The real-time, embedded routing engine optimizes the route by either pushing obstacles or contour-following obstacles while dynamically jumping vias or component pins. Custom, controllable, on-the-fly smoothing automatically tunes the route for manufacturability during routing or route editing (see *Figures 3 and 4*).

A dynamic shape capability offers real-time copper pour plowing/healing functionality during placement and routing iterations. OrCAD PCB Editor can generate a full suite of photo-tooling, bare-board fabrication, and test outputs, including Gerber 274x, NC drill, and bare-board test in a variety of formats.

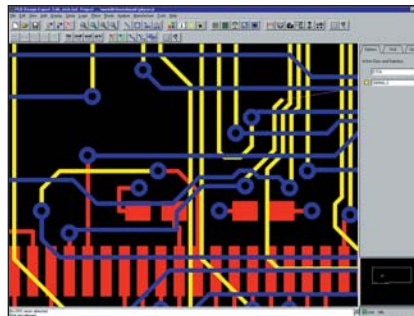


Figure 3: Real-time push/shove algorithms with dynamic DRC and route cleanup smoothing allow users to implement a perfect interconnect path

DYNAMIC SHAPES

OrCAD PCB Editor's Dynamic Shape technology offers real-time copper pour plowing/healing functionality. Shape parameters can be applied at three different levels. Parameters are structured into global, shape instance, and object-level hierarchies. Traces, vias, and components added to a dynamic shape will automatically plow and void through the shape. When items are removed, the shape will automatically fill back in. Dynamic shapes do not require batch auto-voiding or other post-processing steps after edits are made.

PCB MANUFACTURING

All this functionality and sophistication is wasted if the path to PCB manufacturing and fabrication is too narrow. OrCAD PCB Editor tackles this side of the equation by providing a wide range of manufacturing and fabrication outputs. Even more important, Allegro PCB Editor supports the industry initiative towards Gerber-less manufacturing through its Valor ODB++ interface that includes the Valor Universal Viewer. The ODB++ data format creates accurate and reliable manufacturing data for high-quality, Gerber-less manufacturing (see *Figure 6*).

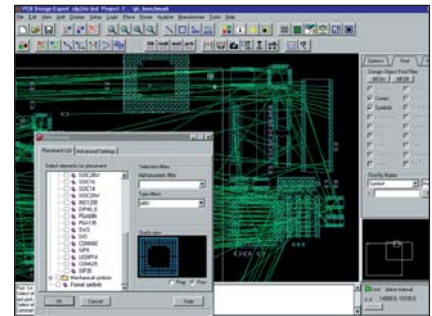


Figure 4: The QuickPlace feature enables users to align critical components—either by reference designator, component type, or net logic—around the board outline for quick access during floorplanning

AUTOMATIC AND INTERACTIVE INTERCONNECT ROUTING

OrCAD PCB Designer includes SPECCTRA for OrCAD, the proven, market-leading PCB solution for automatic and interactive interconnect routing. Designed to handle routing challenges from simple designs to high-density PCBs requiring complex design rules, SPECCTRA for OrCAD uses powerful shape-based algorithms to make the most efficient use of the routing area. Design rules from OrCAD PCB Editor are passed through to SPECCTRA for OrCAD. The results are increased completion rates, higher productivity, and shortened design cycle times.

SPECCTRA for OrCAD provides two powerful tools for interconnect routing: a route editor and an auto-router. Both can route up to six signal layers concurrently, with no restriction on the number of components, component pins, or nets. The route editor provides wire and via editing with trace plowing, shoving, and ghosting features. As new traces are routed, the plowing feature automatically pushes existing traces aside and routes around pins. The shoving feature allows users to move trace segments or vias against existing traces and continue routing—over and through other pins and vias. To optimize manufacturability, the critic feature removes extra bends created during routing, either in a specific

area or across the entire board. Complex routes and staggered-pin components are handled with ease. Diagonal routing algorithms, operating in either gridded or gridless mode, handle components of nonstandard dimensions that previously required manual routing. With direct embedded access through OrCAD PCB Editor or with designer-customized auto-routing commands, SPECCTRA for OrCAD runs and executes routing tasks while adhering to the design constraints. Routing results are automatically read back into OrCAD PCB Editor.

OPTIONAL ADVANCED ANALYSIS

Adding the PSpice A/D simulator (the industry's most widely used tool for simulating analog and mixed-signal designs of any size) can enhance OrCAD PCB Designer suite. OrCAD PCB Designer with PSpice includes a sophisticated, native mixed-signal simulator that performs functional simulations of digital parts and allows engineers to perform a broad range of PSpice analyses. It contains analog and digital parts ranging from IGBTs and pulse width modulators to DACs and ADCs. Tight integration with OrCAD Capture facilitates rapid design-and-simulate repetitive cycles, allowing engineers to explore various design configurations before committing to a specific implementation.

PSpice features include circuit entry/integration with OrCAD Capture, interactive, graphical PSpice Stimulus Editor, digital stimuli for signals, clocks, and buses, simulation view and setup control, analog analysis, mixed analog/digital simulation, and the generation of symbols from models. Additionally, the PSpice library contains more than 18,000 analog and mixed-signal models (see Figure 5).

SYSTEM REQUIREMENTS

- Pentium 4 (32-bit) equivalent or faster
- Windows XP Professional, Windows XP Home Edition, Windows 2000 (SP4), or Windows Server 2003
- Minimum 256MB RAM (512MB recommended)
- 300MB swap space (or more)
- CD-ROM drive
- 32,768 color Windows display with minimum 1024 x 768 (1280 x 1024 recommended)

SALES, TECHNICAL SUPPORT, AND TRAINING

The OrCAD product line is owned by Cadence Design Systems, Inc. and supported by a worldwide network of Cadence Channel Partners. For sales, technical support, or training, contact your local Cadence Channel Partner. For a complete list of authorized Cadence Channel Partners, visit www.cadence.com/partners/channel_partner/index.aspx.

PRICING INFORMATION

For product pricing and availability, contact the Cadence Channel Partner nearest you. For a complete list of authorized Cadence Channel Partners, visit www.cadence.com/partners/channel_partner/index.aspx.

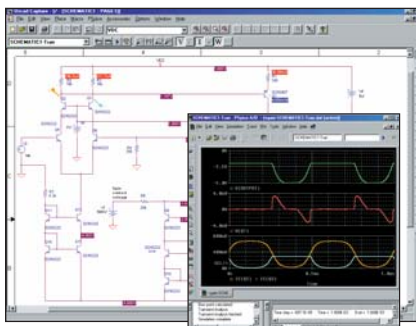


Figure 5: PSpice provides a complete simulation environment, including display of simulation, waveform analysis with cross-probing, and bias results on the schematic

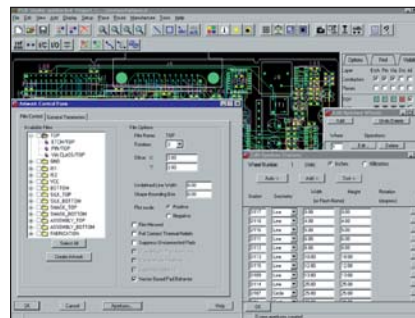


Figure 6: OrCAD PCB Editor makes it easy to generate any type of manufacturing output required