PCB Layout

DATASHEET

PADS Suites

PADS DS Suite
Ideal for the Electrical Design Engineer looking for rapid product definition.

PADS LS Suite
Designed for the Layout Designer who wants to quickly define and complete PCB designs.

PADS ES Suite
Created for Engineers who want complete product definition within a single solution and Layout Designers who need high-speed routing capabilities.

Major product features:

- Integrated design flows that improve productivity
- Supports a variety of design needs, from individuals to small teams
- Specially designed configurations for electrical engineers, layout designers, and engineers who do it all
- Easy to install, learn, and use
- Affordable and intuitive

Overview

Mentor Graphics, the world's number one provider of PCB design solutions, has combined the expansive capabilities of the PADS® product line into a series of affordable PADS Suites. These suites have just the right mix of technology necessary for complex PCB design, yet they can be supplemented with a variety of add-on capabilities should your needs change.

PADS Suites are a complete family of integrated solutions that improve personal productivity and speed time to market. Available in three configurations of increasing functionality, the PADS Suites provide low-risk entry points to the PADS flow.

A PADS Suite for Everyone

Each PADS suite is designed to meet the specialized needs and job requirements of individual engineers and PCB designers:

- PADS Design Station (the PADS DS Suite) is ideal for the Electrical Design Engineer looking for rapid product definition.
- PADS Layout Station Suite (the PADS LS Suite) is designed for the Layout Designer who wants to quickly define and complete PCB designs.
- PADS Engineering Station (the PADS ES Suite) is created for Engineers who want complete product definition within a single solution and Layout Designers who need high-speed routing capabilities.

Mentor Graphics®

PADS DS Suite	PADS LS Suite	PADS ES Suite
Translators	Translators	Translators
Schematic Editing	Schematic Editing	Schematic Editing
CIS	PCB Layout	CIS
Variant Management	Unlimited Database & Layers	Variant Management
Opt FPGA-to-Board Optimization	Interactive Push & Shove	Analog Simulation
Opt Power Integrity Analysis	Autorouting	Thermal Analysis
	RF Design Tools	Signal Integrity Analysis
	3D PCB Viewer (advanced version in ES)	High-Speed Design Rules
	Fabrication Outputs	PCB Layout
	MCAD Outputs (IDF & DXF)	Unlimited Database & Layers
	Opt Physical Design Reuse	Physical Design Reuse
	Opt High-Speed Interactive Routing	Interactive Push & Shove
	Opt High-Speed Automatic Routing	Autorouting
	Opt FPGA-to-Board Optimization	RF Design Tools
	Opt Power Integrity Analysis	3D PCB Viewer (advanced version in ES)
		Fabrication Outputs
		MCAD Outputs (IDF & DXF)
		High-Speed Interactive Routing
		Opt High-Speed Automatic Routing
		Opt FPGA-to-Board Optimization
		Opt Power Integrity Analysis

One size doesn't fit all. With PADS Suites you buy only what you need. Choose PADS DS for rapid product definition, or PADS LS for quick definition and completion of PCB designs. For complete product definition and high-speed routing, choose PADS ES.

Design Without Compromise

With PADS, your tools won't limit your ability to design. Unlike other systems that advertise "price conscious" tools, the PADS flow is infused with vibrant, dynamic technology for a complete and comprehensive solution. Because PADS is based on industry standards such as Windows automation, Visual Basic scripting, and an ASCII database, you can work the way you want and customize the capabilities you need – such as creating special function keys or outputs formatted to your standards.

Design Definition

The PADS flow delivers the most robust system design capture and definition functionality available, including intuitive project and design navigation, unlimited hierarchical support, design reuse, advanced design attribute and rules management, full forward/back annotation including design rules, cross-probing with layout and routing, and a direct schematic-to-signal-integrity analysis link. Component management is also available.

Analog Analysis

HyperLynx® Analog with EZwave™ is a board-level simulation analysis and verification environment that is integrated into Mentor Graphics' DxDesigner™ board-design environment. Using a single schematic to drive both the simulation and PCB applications effectively eliminate costly and error-prone schematic re-entry, therefore significantly shortening the overall development cycle.

Signal Integrity Analysis

Signal integrity (SI) analysis is an essential part of modern electronic design. Increasingly fast edge rates in today's integrated circuits (ICs) cause detrimental high-speed effects, even in PCB designs running at low operating frequencies. As driver ICs switch faster, a growing number of boards suffer from issues such as crosstalk, over/undershoot, ringing, glitching, and timing problems. PADS design solutions offer powerful and easy-to-use signal integrity capabilities on the engineers desktop.With pre-layout analysis capabilities for defining routing constraints, to verification of the routed board to ensure your design goals are met, PADS design solutions offer a complete environment for all your signal integrity analysis needs.

Thermal Analysis

HyperLynx Thermal allows engineers and PCB designers to analyze board-level thermal problems on placed, partially routed, or fully routed PCB designs from all popular PCB layout environments. Temperature profiles, gradients, and excess temperature maps enable designers to resolve board and component overheating early in the design process.

PCB Layout

As the standard in desktop PCB layout tools, PADS offers unparalleled price-performance for the layout and design of complex circuit boards, including high-speed applications and RF circuits. PADS offers advanced design rules with real-time design rule checking, bi-directional crossprobing, RF design functionality, split-plane generation, auto-dimensioning, direct DXF import into both the board and part library editors, physical design reuse, advanced fabrication verification tools, and 3D viewing. Also available are assembly variant functions, test coverage auditing, chip-on-board / advanced packaging, and an IDF link to third-party CAD/CAM tools.

Interactive & Automatic Routing

Many designers of high-speed and/or dense designs require exacting manual control of critical signal traces, but could also benefit from the speed and built-in intelligence of an autorouter. The router provides both advanced interactive, and sophisticated autorouting for all applications. Whether interactively routing with orthogonal, diagonal, or any-angle styles, or differential pair routing with unique rule assignment or trace length requirements, the router provides exacting control.

Intuitive graphical monitoring tools provide real-time feedback for correct-by-construction methodology. Proven routing algorithms enable robust design rules and advanced design constraints to be applied between objects or groups of objects such as components, layers, nets, and vias.

The advanced autorouter simplifies routing operations most suited for an autorouter, including fanout and routing, by individual components or groups of components.

Platform and Operating Systems

Operating Systems

- Windows XP (service pack 2)
- Vista on Intel-based systems

Memory Requirements

- Windows Vista Ultimate or Business Editions 2 GB or more
- Windows XP Professional (SP2): 1 GB or more

PC Hardware

- Pentium IV 2+ GHz recommended
- High-speed CPU recommended
- Three-button mouse or mouse with scroll wheel recommended
- Minimum display 1024 x 768 with 256 colors

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