

including Prevent, Explain, Warn, and Off. A filter can be enabled or disabled to detect violations by type (e.g., clearance, width, same net, placement, or length). Design rule checks adhere to all constraints, ensuring that no rule is violated and reducing rework after the board is completed.

With PADS Standard Plus, you can also run online 3D DRC during placement, or batch DRC for the entire design, based on the 3D clearances you define.

Guard Bands

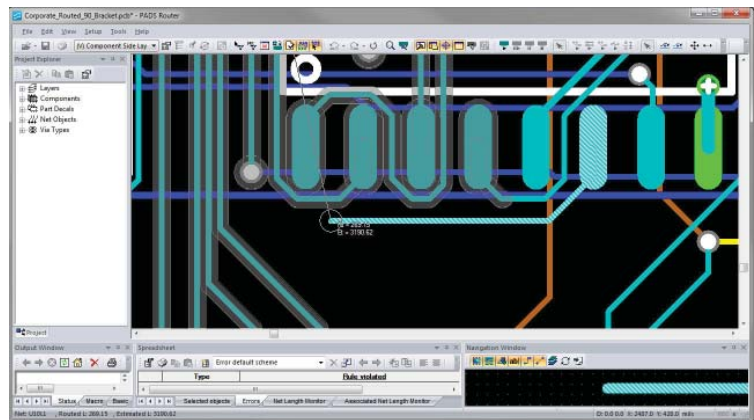
Maximize routing density by using 'guard bands' to show DRC boundaries. Keep-away boundaries can vary with each obstacle so guard bands are shown around each individual obstacle, rather than around the entire trace.

Trace-Length Monitor

A trace-length monitor displays the routed trace length, the estimated length to completion, and a progress indicator that shows whether a trace is violating or within its length constraints.

Autorouting

Setting up multiple routing passes is easy. Routing strategies allow you to route the board the way you want. Start with your critical nets and high-density components, then proceed with all remaining nets. Routing will adhere to your constraint hierarchy.



Guard bands help maximize routing density.

Route with diagonal (45° and 135°), rather than with 90°, trace corners to eliminate undesirable impedance changes caused by sharp corners.

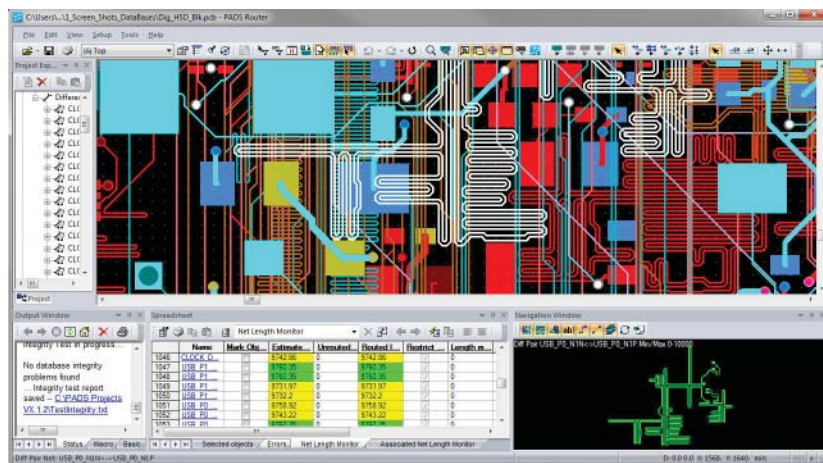
"PADS is reliable for complex layouts. The routing functions are convincing, saving lots of time and preventing errors."

TechValidate ID: E21-222-86D

PADS obeys all design rules for pad entry and fanouts based on the types of parts used. This ensures that the signal integrity and manufacturability requirements of your design are met. Robust design rules and advanced design constraints can be applied between objects or groups of objects, such as components, layers, nets, and vias.

High-Speed Routing

In PADS Standard Plus, you can use interactive routing to handle high-speed nets, differential pairs, and min/max and matched-length groups easily, enabling you to meet all required high-speed constraints.



Interactive routing of a differential pair with an accordion (zigzag) pattern for length control.

Optional licensing lets you apply these interactive high-speed routing capabilities to automatic routing as well.

RF Design

Support for RF and microwave design includes direct DXF import of complex copper shapes and line geometries, via shielding for channel/co-planar waveguide design, automatic via fill for any copper shape, and support for chamfered or square corners.

Definition of Split Planes and Copper Pour Areas

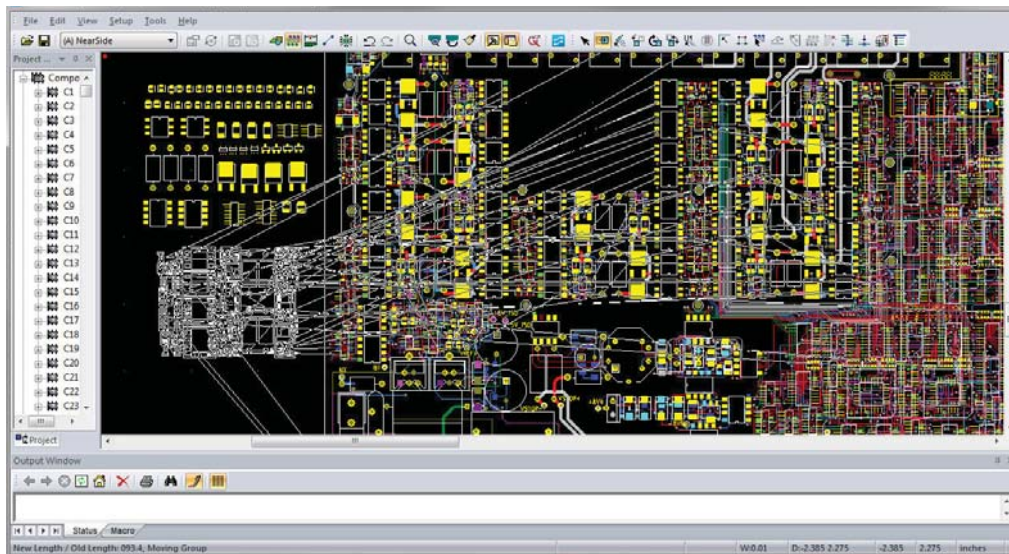
- Create complex copper-pour areas and embedded split planes. With PADS you can:
- Ensure an electrically correct design by automatically checking connectivity to multiple split-plane and copper-pour areas
- Maintain all design rules, including net-specific and conditional net rules
- Easily separate embedded planes into multiple plane polygons
- Support embedded traces on internal plane layers and through copper areas
- Support positive and negative plane areas.

Physical Design Reuse (PDR)

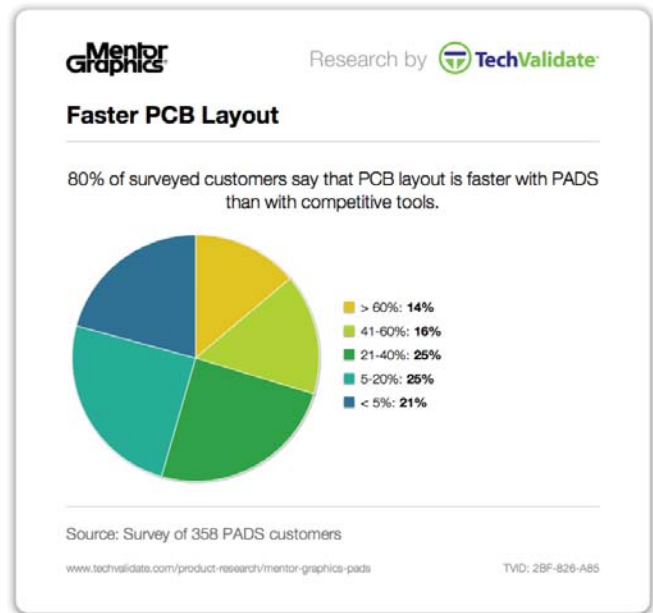
PADS Standard Plus includes easy-to-use, intuitive capabilities for physical design reuse. Quickly place repetitive circuits in multi-channel designs or reuse prove circuitry from a “golden circuit” to shorten design time, increase productivity, ensure product quality, and drive efficiency throughout the PCB design process.

Signal Integrity (SI) Verification

PADS Standard Plus includes powerful and easy-to-use SI analysis and verification capabilities to help ensure your design goals are met, without you having to be an SI engineer. Avoid time-consuming set-up errors and



Physical design reuse significantly reduces design time and improves quality through efficient reuse of proven technology.



unroutable constraints with pre-route analysis and confirm that your design rules and constraints are met using a batch design rule check with post-layout verification.

With PADS, you can test your design integrity at the three most critical stages of the PCB design process: following part placement, after critical net routing, and after detailed routing of the entire board.

Manufacturing Prep

Optimize product quality and reduce cycle time and costs with built-in audits for Design for Fabrication (DFF) to detect and resolve manufacturing problems early.

If you need to perform testability analysis and verification and ensure 100% testability for all nets on your board, there's an option to add Design for Test (DFT) audits to your PADS Standard Plus seat. With this option, you can locate, identify, and amend

any manufacturing rules violations concealed in your design in a matter of minutes.

Support for Analog Design

Automatic and interactive jumper capabilities with advanced teardrop and pad-filleting controls for high-density, single- and double-sided boards, make sure your design will meet design rules and requirements.

Automation and Scripting

For advanced integration and customization, PADS includes Object Linking and Embedding (OLE) automation methods and a scripting engine compatible with Visual Basic.

Application Program Interface (API) options provide direct access to the PADS data structure for faster, better communication among design tools.

Documentation

Auto-dimensioning

PADS includes dimensioning tools that document the PCB form factor automatically. These tools include datum and standard dimensioning, radius, angle, and leader support as well as user-defined tolerances.

CAM output

CAM utilities output ODB++, drill data, Gerber, and other standard data-exchange formats.

IDF link

An IDF link allows 2D physical information to pass to and from PADS and mechanical engineering tools, such as Creo Parametric and SolidWorks.

3D PDF | STEP

Quickly export a 3D PDF or STEP file of your design for reporting purposes, or to send to you manufacturer for better understanding of your design intent.

Additional Capabilities for PADS Standard Plus

Create the tool set that works for your design requirements. Add high-speed routing, DFT, MCAD co-design, and more with these options for PADS Standard Plus.

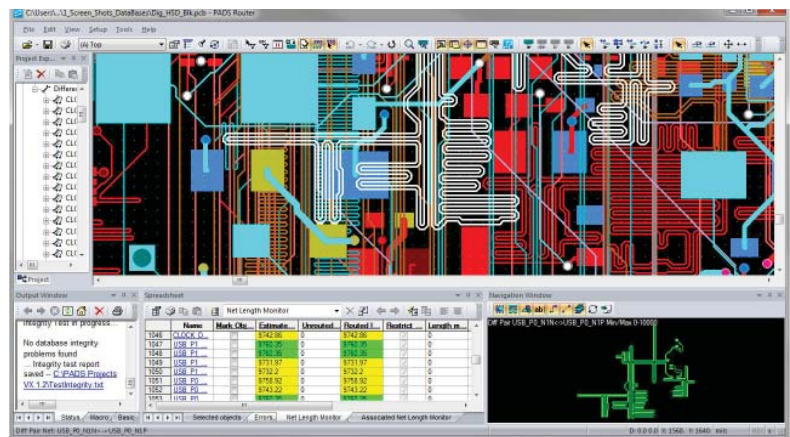
Advanced PCB Layout Option

1. DFT

Traditionally, design testpoints are added after routing. This adds a step to the design process, hinders productivity, and can compromise design integrity. With the Advanced PCB Layout bundle, ATE testpoints are inserted automatically during routing for superior results. Integrated DFT routing reduces time spent in post-route and manual testpoint placement.

2. High-Speed Autorouting

Meet all required high-speed constraints with automatic routing of high-speed nets, differential pairs, and min/max and matched-length groups easily. Included in the Advanced PCB Layout bundle for PADS Standard Plus.



High-speed autorouting includes advanced layout features.

3. Support for Advanced Packaging

Improve design quality by automating key aspects when designing with bare die. With a variety of die, die flag, and route wizards and tools, the Advanced PCB Layout option includes an advanced toolkit for speeding design reuse, creating manufacturing data, and designing grid arrays (BGAs), chip-scale packages (CSPs), multi-chip modules packages (MCM), and COBs.

DFM Analysis Option

Ensure that your design is manufacturing-ready. This option includes more than 100 of the most commonly used fabrication and assembly analyses, making it easy to identify issues like resist slivers, unintended copper, and improper testpoint-to-testpoint spacing that can cause production delays. Available only with PADS Standard Plus.

MCAD Collaboration

Communicate design intent between electrical and mechanical CAD systems using the PADS MCAD Collaborator option, available only with PADS Standard Plus. Both you and the mechanical engineer stay in your respective system's comfort zone, making collaboration effective and convenient. Works with the industry's leading ECAD and MCAD tools, including PTC Creo, Siemens NX, and Dassault Systèmes' SolidWorks and CATIA.

Use PADS for Complete, Fast, Easy PCB Layout Design

PADS Standard and PADS Standard Plus provide a highly productive, easy-to-learn, and easy-to-use environment for PCB design. With PADS you can complete simple designs easily, and challenging designs faster, following all rules for design integrity and manufacturability, while eliminating re-spins and schedule delays.

With PADS, you can design with confidence and get your job done right the first time.

	PADS Standard	PADS Standard Plus
3D Viewing and Measuring	X	X
STEP import/export	X	X
Schematic-Driven Placement	X	X
Component Unions	X	X
Interactive Routing	X	X
Autorouting	X	X
RF Design	X	X
Split Plane & Copper Pour Definition	X	X
Design Rule Verification	X	X
Manufacturing Prep	X	X
Analog Design Support	X	X
Automation & Scripting	X	X
Documentation	X	X
3D Placement		X
High-Speed Interactive Routing		X
Signal Integrity Verification		X
Physical Design Reuse		X
3D Placement with DRC		X
Chip-on-board/IC Packaging		Opt.
High-Speed Autorouting		Opt.
Design for Test		Opt.
Design for Manufacturing & Analysis		Opt.
MCAD Collaboration		Opt.

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