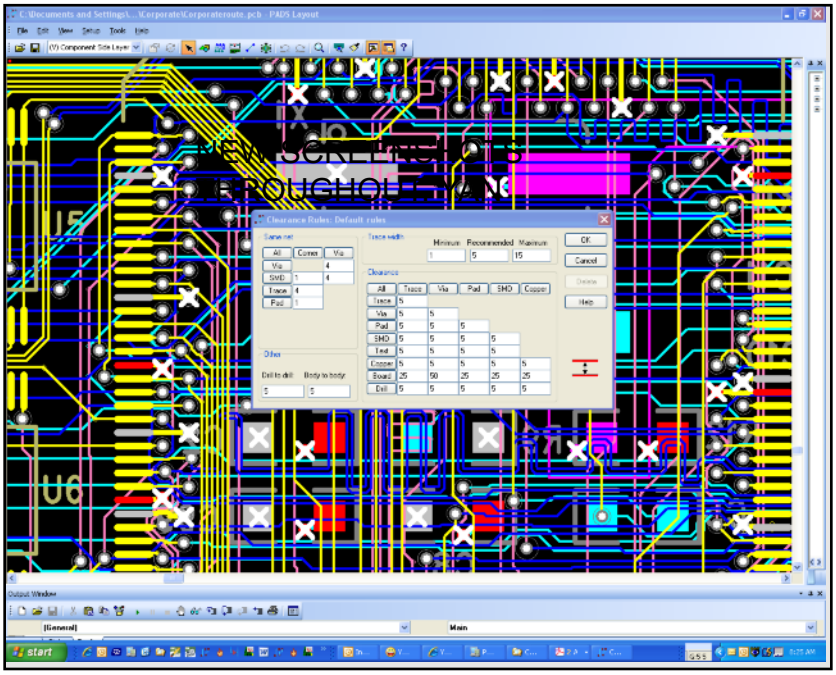
PADS Layout Option

D A T A S H E E T

Advanced Rules Set



The Advanced Rules Set option gives you maximum control of PADS Layout extensive design rule hierarchy, necessary for today's high-speed designs.

The Advanced Rules Set option is a modular add-on that extends the basic rule assignment routines to allow several refinements for control of more complex designs during interactive ROUTINGand auto-routing.

Advanced Rules Set option provides:

- Expanded rules hierarchy
  - Layer, net class, pin pair, pin pair groups, component, decal
- Added rules for differential pairs
  - Gap, min/max length, matched length
- Added conditional rules between objects
  - Class to class, class to net, etc.
- Component pad entry rules
  - Clearances, fanout patterns, and more
- Verification of fast circuit design
  - Crosstalk, signal delay, stub control, and more
- Batch verification of capacitance and impedance

Major product features:

- **Ultimate design rule control for complex *high-speed* designs:**
  - **Differential pairs**
  - **Matched length**
  - **Min/max length**
- **Verification of fast-circuit design rules:**
  - **Crosstalk**
  - **Signal delay**
  - **Stub control**
- **For DRC, interactive and batch auto-routing**

The Advanced Rules Set option expands the design rule set for ultimate design and verification control.

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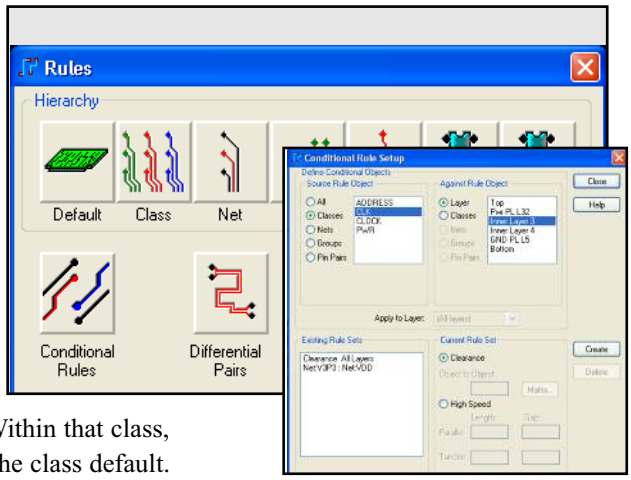
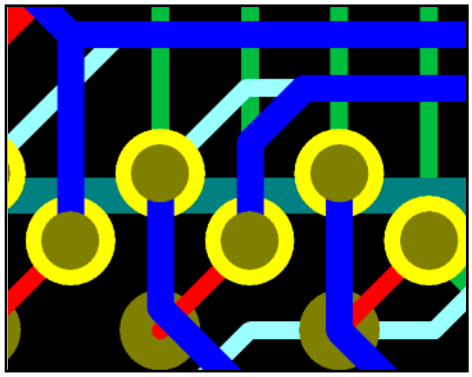
Expanded Rules Hierarchy

The Advanced Rules option, you have the industry's most comprehensive hierarchical ruleset available on the market today. An easy-to-use graphical menu structure allows fast assignment of rules between virtually any structures in your design.



Easily assigned rules between object types.

For instance, starting with default values for the entire board, critical nets may easily be tagged into a class and assigned rules that override the defaults. Within that class, a net may be assigned a value overriding the class default. Additionally, groups of nets within a class and even individual pin-pairs may be assigned different values that override all others.



Conditional layer rule where trace width changes according to layer

Conditional Rules

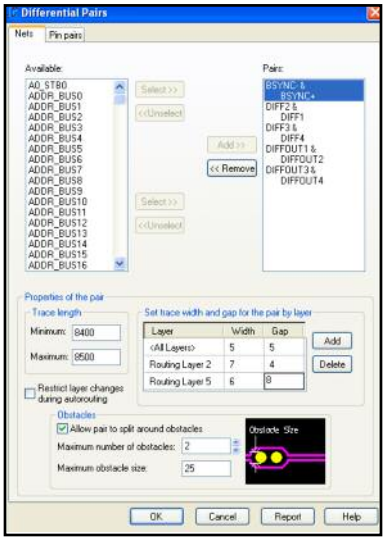
With conditional rules, it is possible to establish very stringent requirements between objects such as classes or layers, in the design. It may be desirable, for example, to provide extra clearance between a class of analog nets and a class of clock nets. Similarly, if it is necessary to maintain a specific net impedance, trace width rules can be set for an individual layer. So for example, a net may be assigned a default width of 6, but could be reduced to 4 when entering an inner layer.

High Speed Design

Many of today's designs demand high-speed design control that only the Advanced Rules Set provides. For example, rules can be established between any of the grouping structures mentioned above (class, net, etc.) with matched length, minimum/maximum, and differential pairs.

Differential Pair Control

PADS Layout and PADS AutoRouter provide extensive differential pair rules control. Designers can select a pair of nets and/or individual pin pairs as differentials, with numerous controls over the minimum/maximum length and the gap and trace width per layer. Other controls include routing layer restrictions and even allowance of the pair to "split" around one or more pads.



Differential pairs have extensive design rules including min/max length, split around pads, and gap spacing.

Rules applied to DRC, Interactive and Autorouting

Some systems claim to have advanced rules, but in reality the entire rules hierarchy is only understood by the DRC (Design Rule Checking) routines. PADS Layout and PADS Router design rules are understood by the DRC routines and the interactive and autorouter tools which enables correct designing the first time with no need to go back and correct mistakes.

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.

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