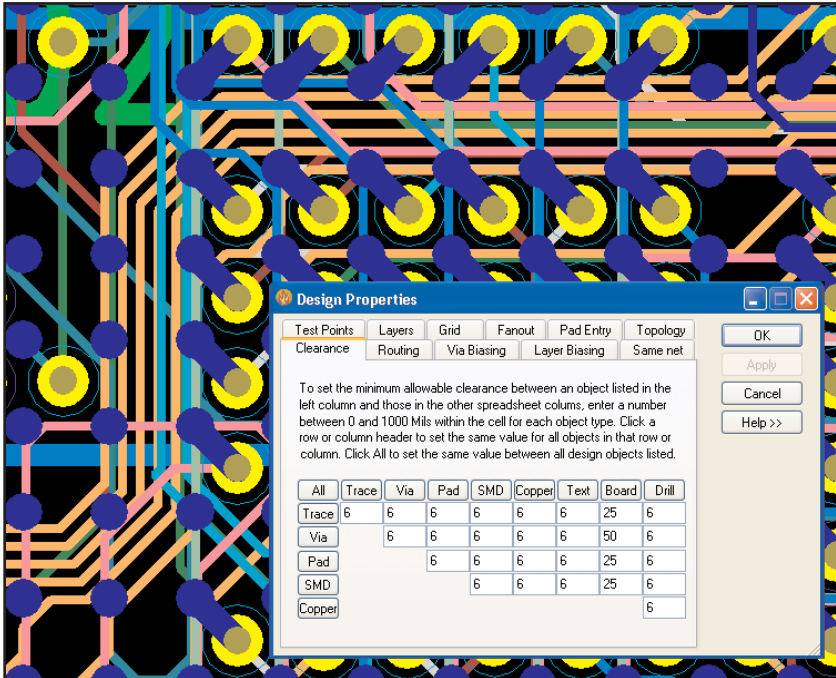


## Advanced Rules Set



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

### Advanced Rules Set

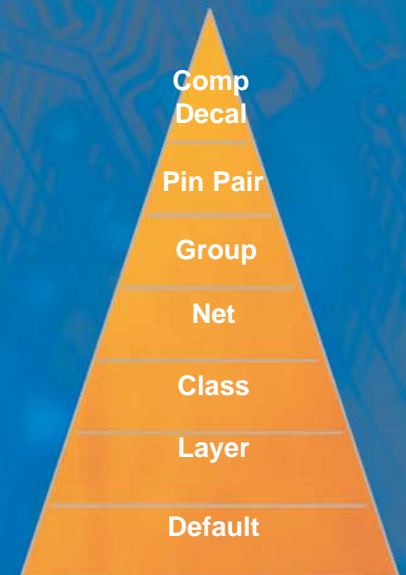
The Advanced Rules Set option is a modular add-on that extends the basic rule assignment routines to allow several refinements for control of more complex designs during interactive and auto routing.

#### 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
  - Cross talk, 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 autorouting

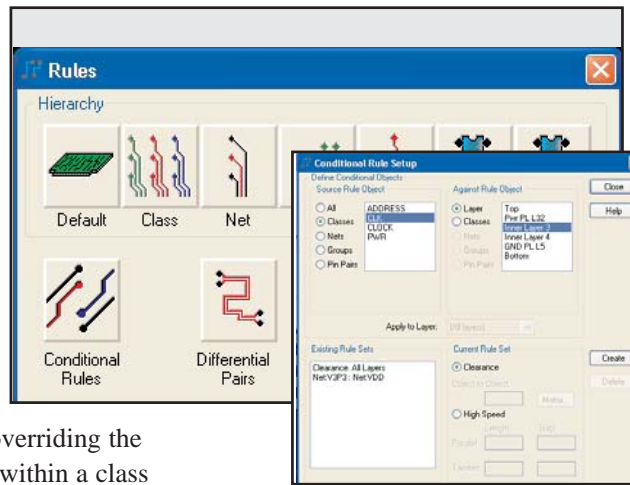


The Advanced Rules Set option expands the design rule set for ultimate design and verification control.

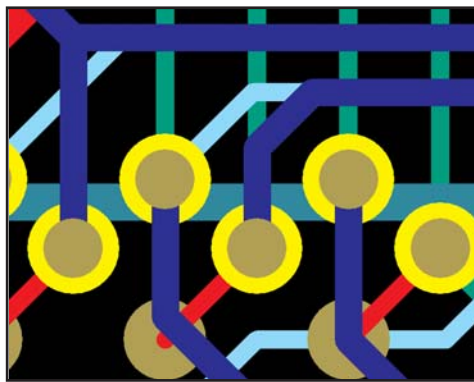
## Expanded Rules Hierarchy

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

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.



*Easily assigned rules between object types.*



*Conditional layer rule where trace width changes according to layer*

## Conditional Rules

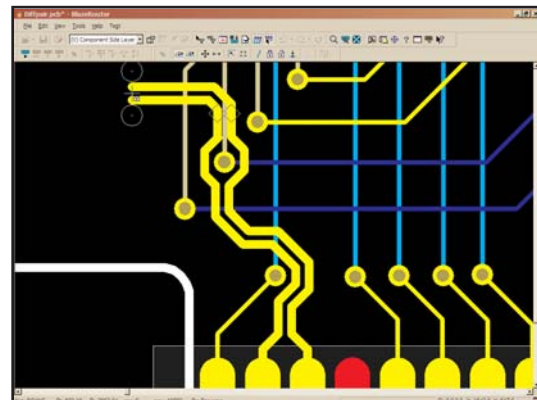
With conditional rules, you can establish very stringent requirements between objects in your design, such as classes or layers. You may wish to provide extra clearance between a class of analog nets and a class of clock nets. Or if you wish to maintain a specific net impedance, trace width rules can 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

More 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. You can select a pair of nets and/or individual pin pairs as differentials, with numerous controls over the minimum/maximum length and the gap between the pair. 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 AutoRouter design rules are understood by the DRC routines, and the interactive and autorouter tools so you are designing correctly the first time, without having to go back and correct mistakes that were designed in.

## Advanced Verification Reports

At any time during the design process, comprehensive analysis reports can be generated indicating precisely how well the design rules are being adhered to, in an easy-to-read ASCII format.

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