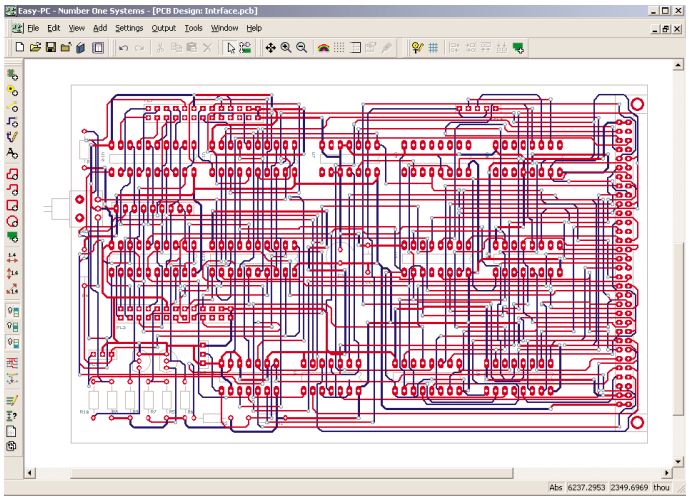
Easy-Router



Easy-Router Autorouter

The Easy-Router autorouter is the latest productivity tool released from Number One Systems. It's combination of affordable yet feature rich tools makes it an ideal addition to the Easy-PC For Windows PCB design editor.

Based on a powerful shape-based gridless algorithm, Easy-Router combines the most up-to-date routing technologies with the Easy-PC philosophy of ease-of-use, to ensure that your designs are brought to market quicker.

An Integrated Product

Easy-Router is totally integrated within the Easy-PC For Windows graphical user interface environment, there is no additional routing window or translation from one system to another, and no 'additional' processes to go through. It is run from a single, simple control dialog with no other user interaction. It uses the 'standard' user defined design styles and spacing clearance settings plus the routing layers parameters (which are already setup and used by Design Rules Check, Manufacturing output etc.). All-in-all, Easy-Router is easy to use and very easy to learn !!

Route Even Single Sided Boards!!

Easy-Router can help you produce single, double-sided and multi-layer layouts automatically with no fuss or unnecessary complications. Multi-layer boards are routed using all layers concurrently for maximum results. Where there are SMT pads connected to inner plane layers, the autorouter will automatically insert stub tracks through vias to these layers.

Critical areas of the layout like clock nets, RF sections and important nets like power nets can be wholly or partially routed manually, with Easy-Router left to finish the rest.

Design Rules Driven

Easy-Router is rules driven, using layout parameters which you have defined and which are stored in the design. It uses the design spacing values so you're assured that the manufacturing rules required are adhered to at all times of the routing process. The constant on-line design rule checking ensures the final results are error free. And because Easy-PC For Windows can define Net-Classes to each connection or groups of connections, multiple width tracks can be used for designs which require different thickness tracks. These could be for power and ground current carrying capabilities, or fine line high speed signal tracks. Different via styles can also be assigned to net-classes further enhancing the capabilities and variety of routing possible.

Shape Based

Shape based means that the design isn't split up into grid segments like gridded routers who's technology has proved inefficient in its use of space and object awareness. At all times Easy-Router is totally aware of where every obstacle is in the design, even if the router is stopped to make manual adjustments to component placement and restarted. Easy-Router simply continues where it left off but using the new placement. Using shape based routing it also means that the real shape of obstacles within the design can be identified and avoided during routing, whereas the older style routers can only approximate shapes which wastes valuable routing space and potential routing area.

Gridless Routing

Gridless routing handles difficult components and mixed technologies, like the new fine pitched surface mounted packages, making the maximum use of available space to complete the design as efficiently and quickly as possible. Gridless routing combined with the ultra fine database resolution possible within Easy-PC (at 1/10th Micron - 0.000001mm !!!) means Easy-Router can handle the latest chip technologies as well as conventional through-hole designs. With an efficient routing algorithm, refinement of the layout is continually monitored during the routing process. This means minimising vias and track segments, removing notches or minimising 'wrong-way' tracks, to give you the best result possible. Even if an enforced grid is

Easy-Router

set (for compatibility to Automatic test equipment, for example) Easy-Router can still route to fine pitch devices using an 'off-grid' route segment where necessary but still maintaining the spacing clearances. Easy-Router will route the majority of designs in a very short space of time, saving you days of layout design time and effort.

Auto-Interactive Routing

Not all designs can be routed using totally automatic routing, sometimes more guidance is required. Easy-Router has an interactive routing mode which uses a combination of connection selection and autorouting technology to route individual connections within the design. This selection can be made on single connections or by using multiple selections from the browse menu.

This level of auto-interactive routing technology is far in advance of this price / performance market and cannot not be seen in any other product at this price!!!

Routing Costs

As well as a set of standard design controls for Easy-Router, more advanced users who require further control over the router are provided with a set of cost controls to tailor the product to cater for individual routing style preferences. Cost controls for the use and addition of vias, track exit directions along the pad length and wrong-way track bias are provided plus further controls for changing the routing deviation of tracks.

No Via Routing

Where vias are a considerable cost in your manufacturing process or are not required in the construction of single sided designs Easy-Router can be easily switched to disallow vias during routing. There are even options for minimising vias or restricting their use from that normally used. This amount of flexibility ensures greater control over the finished design to get the result you require.

For single-sided designs, you can also opt to add flying wires or jumper links to the design during routing. These will be used where the router needs to 'jump' existing tracks or where it fails to route the design.

Multi-Pass Routing Methodology

Rip up and retry technology provides Easy-Router with an iterative process of self correction and track length minimisation throughout the routing operation. At each pass, the router attempts to route the connections which it had previously discarded until the maximum number of passes has been exceeded or the router has totally completed its task. Results using this methodology are 'cleaner' because the router has a chance to self correct and rework its own routing path, thus reducing both vias and track segments making the finished design require less manual rework and providing a more manufacturable board.

Features

- 32 bit routing technology
- Shape-based for complete obstacle awareness
- Integrated into the Easy-PC For windows environment
- Multi-layer concurrent routing
- Controlled through a graphical user interface
- Gridless or On-Grid
- Uses 1/10th (0.00000001M) Micron internal database precision
- Multi-pass routing for optimum routing completion
- Mix automatic / Interactive routing
- Ideal for surface-mount technology
- Automatically connects to internal power planes using stub routes from SMT devices
- Optimal Pad exit for high yield surface mount designs
- Ability to add flying wires or jumper for single-sided design
- No Vias option
- Advanced routing costs selection
- Via optimisation pass
- Track Smoothing pass
- Automatic Mitre pass
- Router 'cost' parameter control for advanced users

For information on pricing contact:
Number One Systems. Oak Lane, Bredon,
Tewkesbury, Glos. GL20 7LR. UK

Tel: +44 (0)1684 773662
Fax: +44 (0)1684 773664
e-mail: sales@numberone.com

Further information on all products and prices available at:
www.numberone.com