

Re: PCB Layout Designers

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- *From:* budgie <me@xxxxxxxxxxx>
 - *Date:* Thu, 24 May 2007 09:09:57 +0800
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On Wed, 23 May 2007 11:26:42 -0700, John Larkin
<jjlarkin@xx> wrote:

On Wed, 23 May 2007 09:23:55 +0800, budgie <me@xxxxxxxxxxx> wrote:

I'm a one-man band when it comes to circuit and pcb design, and I prefer manual layout (two layers only) over importing a schematic into the pcb software. I find that:

- . package placement is easier without the ratsnest, but with the ability to have just a selection of interconnections showing.
- . the autorouter is great at achieving 85% faster than me, but often fails to complete and I have to undo sooo much that I haven't used autorouting in the last five years.
- . I have developed a fairly thorough and successful checking process that hasn't let a layout/connection error through in those five years.

We recently did a board that has over 1000 parts, including a uP and two FPGAs, 8 layers, parts on both sides. Hand checking that would probably take two people a week or so, one calling out connections and the other tracing them. PADS will do a full connectivity check on this board in about 2 seconds, and a full design-rule check in under 10.

We operate in different worlds, John { ;) >

(snip)

We never autoroute

I wonder how many do autoroute at both your level and down here at the base where I operate. The tools are there, but I don't think it is ego that stops most layout people lwetting the autorouter have a go.

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and almost always go with the pins as originally assigned on the schematic, ie no pin or gate swapping. We also often pass the design around from person to person. An engineer may do some critical placement as a model, our layout guy does the real work, then another engineer or two may have a final lick at it, checking critical clock nets and such.

I'm surprised that you don't accommodate gate swapping. Assigning a gate from a package at schematic time is an arbitrary thing, and can't second-guess which gate will provide the best layout.