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How to Automate PCB Design Effectively



HOW TO AUTOMATE PCB DESIGN EFFECTIVELY

1. HOW TO AUTOMATE YOUR COMPONENT MANAGEMENT PROCESS
2. HOW TO AUTOMATE YOUR HIGH-SPEED DESIGN PROCESS
3. HOW TO AUTOMATE YOUR DESIGN REVIEW PROCESS

1

How to Automate your Component Management Process

How to Automate your Component Management Process

•**Traditional Component Management Approaches** - For schematic or footprint models, the traditional approach is to use library files, version control, and database libraries. But they don't provide any direct method of finding out if a component is depreciated or out of date.

•**A Unified Approach to Component Management** - The Unified Component Model consists of several revisions of items, which include the graphical symbol, footprints, other models, and supply chain information. If any of these associated items making up the unified component are updated or modified, the item will be assigned a new revision.



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2

How to Automate your High-speed Design Process

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Keeping track of individual segment lengths for nets, via depths, or pin lengths in a spreadsheet is burdensome. Lets see how to automate the high-speed design process.

High Speed design is one of the most challenging. There are any number of factors that can affect the way a high speed signal will respond. Faster switching speeds essentially mean two things:

- Signal Integrity Issues
- Timing Constraint

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How to Automate Your High-Speed Design Process

Old Methods of High-Speed Design

In the past, engineers were forced to deal with signal integrity and time constraint issues by keeping track of everything in spreadsheets. This allowed them to keep track of each individual segment length for a net, via depths, resistor lengths, and pin lengths.



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3

How to Automate your Design Review Process

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The increasing demand for smaller, more capable electronics has been a major driving factor behind the development of more complex, densely packed PCBs.

Hurdles of the Design Review Process

Identifying design differences poses another problem

The EDA software finds and presents board designers with data, then leaves them to decide which changes will be approved and which ones will be dismissed. When authorizing a particular change, a board designer must first determine whether or not that change is actually in accordance with what they have in mind for the overall design scheme . There is a substantial waste of time spent evaluating the EDA software instead of reviewing board changes.



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Thanks for your attention!