

Valor NPI

Optimizing New Product Introductions

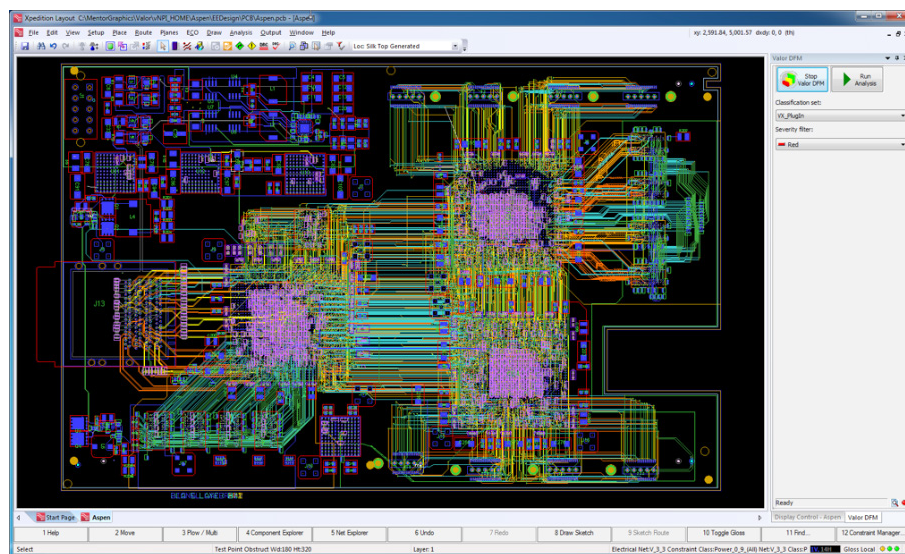
Benefits

- Design technology and process-driven automated DFM analysis
- Maximum left-shifting value for fastest, highest-quality NPI
- Leading DFM technology for minimum design-revision spins in NPI and ramp-to-volume
- Easy and quick creation of optimized assembly and fabrication panel
- Final generation and validation of the PCB product model for manufacturing
- Supports all PCB EDA flows

Overview

Getting complex, modern PCBs to volume production and to market on time is the responsibility of not only the manufacturer but also the printed circuit board (PCB) layout designer and new product introduction (NPI) engineer. Many steps need to be coordinated in the NPI process, from optimizing designs for manufacturing to communicating the PCB product model completely and clearly.

Decisions made during PCB layout directly affect the success of your NPI process. Any problem found by your supply chain will cause a delay at minimum, or worse, costly scrap. And if designs are reviewed differently by the PCB fabrication or assembly supplier than by the designer using EDA tools, yield, cost, and reliability risks remain high. As a result, leading electronic design companies have found that “left-shifting” Valor NPI technology concurrently into their PCB design process saves expensive revision spins and improves the quality of the final product.



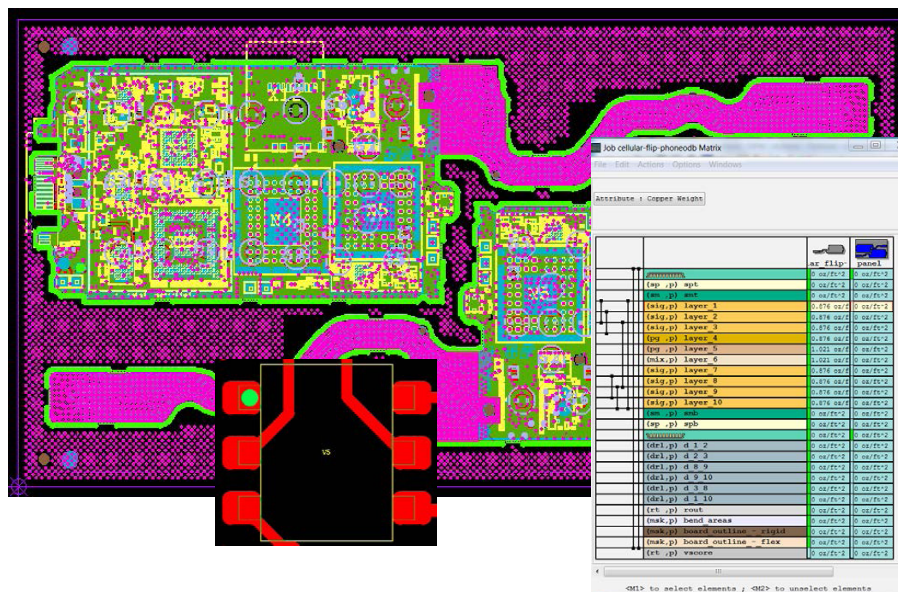
Valor DFM technology allows you to optimize your PCB design for manufacturing during the initial release process.

At each successive step of the NPI process, the cost of rectifying a problem increases tenfold. You certainly wouldn't want to find that your product has unacceptable first-pass yield after you have handed it off to manufacturing. Nor would you really want to wait to find the location of DFM problems after you have completely placed and routed a PCB and output manufacturing data. It is better to find and fix DFM issues as part of the design phase.

Intelligent, Integrated NPI Product Model

All available data critical for manufacturing is extracted automatically from PCB CAD, including conversion of the designer's parts list into the bill of materials (BOM), and transferred to the Valor NPI database for completion.

Additional content such as supply-chain level parts data from the unique Valor Parts Library, data-defining surface finishes, the exact assembly panel to be fabricated, and all data normally held in disconnected drawings and documentation is instead integrated into the single highly structured Valor NPI model of exactly what will be manufactured.

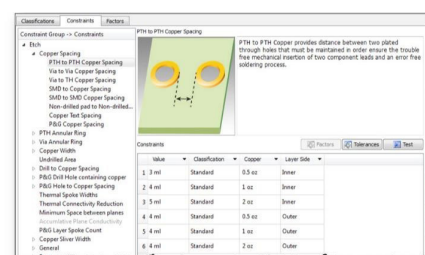


A comprehensive product model removes the need for multiple files.

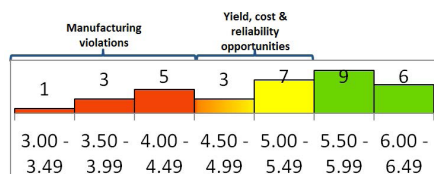
Each manufacturing process employed by your manufacturing partners has their own process capabilities requiring their own set of DFM rules. Valor NPI is the only DFM system that captures the technology inherent in the PCB design and associates it with appropriate manufacturing processes to automatically select which DFM rules and values to apply. The result is an intelligent and automated analysis that provides an extremely efficient and effective DFM process.

How manufacturable is your design? Your NPI flow is only as good as the DFM tools you use. Today's miniaturized, high-layer count designs cannot be reliably reviewed manually. Simple DFM tools do not check all manufacturing process factors. Valor NPI verification software analyzes all of your design technologies—FR4, rigid/flex, flex and even packaging substrates. Each of these checks helps you to optimize your design for manufacturing during the initial design process.

Beyond the DFM analysis, Valor NPI checks your design netlist against the manufacturing data to ensure there are no connectivity errors. The application even validates that your manufacturing BOM matches the design, and that all components in your approved vendors list (AVL) are an acceptable physical match.

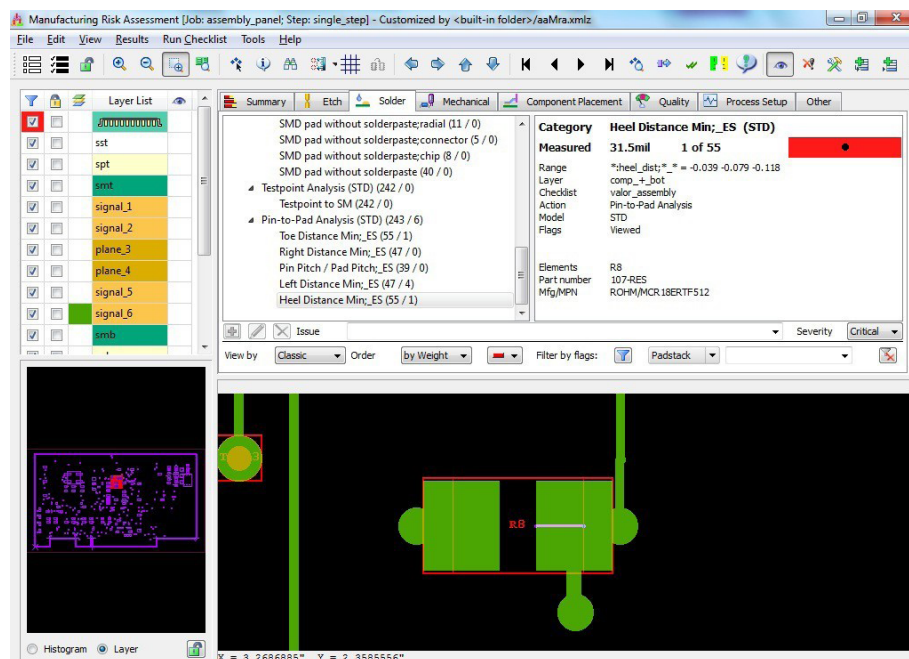
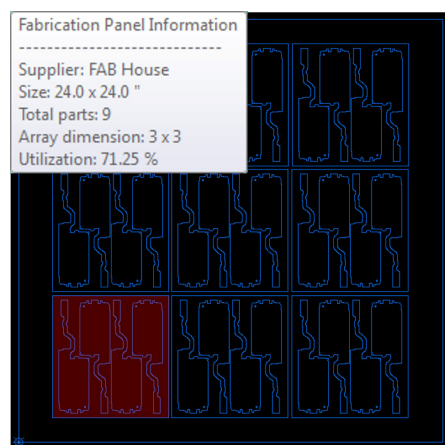


Understand the Manufacturing Risk
DFM validation not only identifies where your PCB design is beyond your supplier's manufacturing capabilities, it also shows where low yield or field failures may occur by using severity indicators of red, yellow, and green.



Panel Design and Optimization

Eliminate the need for other software tools to be used for the creation and optimization of your assembly panels, regardless of PCB shape. Include fiducials, tooling holes, breakaway tabs and v-score features to create a complete assembly panel model. You can identify the lowest cost fabrication panel configuration as well, all in a matter of minutes. Communicate the panel design as data to your suppliers, eliminating cycles for them to re-create and send back to you for approval.



Manufacturing risk assessment of yield and product reliability.

Enhanced PCB Product Model Hand-Off

Valor NPI consolidates all data and information defining exactly what is to be fabricated, assembled and tested—what you expect to come back from the manufacturers – within a single dataset. Although the original source for the data is PCB CAD, all other information from your manufacturing documentation team can be directly integrated and verified as structured data, eliminating the need for legacy drawings and documents to be created and validated by your team.

The resulting ODB++ data package contains everything the fabrication, assembly, and test software tools need to know about your product for them to proceed efficiently and promptly with process preparation. You also have unlimited ODB++ viewing capabilities on your Valor NPI network, for sharing and reviewing PCB designs amongst your team.

Product Summary section -> Attribute	Value	Units
Board Requirements		
Board Thickness	0.089200	Inch
Additional Requirements		
Board Outline Tolerance Plus	5.000000	Mil
Board Outline Tolerance Minus	5.000000	Mil
Board Thickness Tol Plus	3.000000	Mil
Board Thickness Tol Minus	3.000000	Mil
Board Thickness Type	over mask on plated copper	
Bottom Legend Color	white	
Bottom Soldermask Color	yellow	
Flammability Rating Standard	UL94V-0	
General PCB Standard	IPC 6012A	
Glass Transition Temperature (Tg)	115.000000	
Legend Sides		
PCB Acceptability Standard		
Peelable Mask Side		
Plated Edge		
Plated Slots		
Qualification and Performance Stands		
Soldermask Sides		
Top Legend Color		
Top Soldermask Color		



Synchronized with Your Supply Chain

The Valor NPI DFM technology was developed by the same people that created the DFM verification tools used by more PCB fabricators and contract assembly companies than any other system. By collaborating with the DFM experts in your manufacturing supply chain, you can truly left-shift the manufacturing process constraint-rules into your design and NPI operations.

By using the same rules and even the same settings to simulate how your suppliers will review your design, you will minimize call-backs and engineering-change requests from your manufacturers, taking cost and time out of the full NPI cycle.

Visit <http://go.mentor.com/valor-npi> to test drive Valor NPI. See how easy it is to compile and verify your product-model data before handing off to manufacturing.

Siemens Digital Industries Software
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