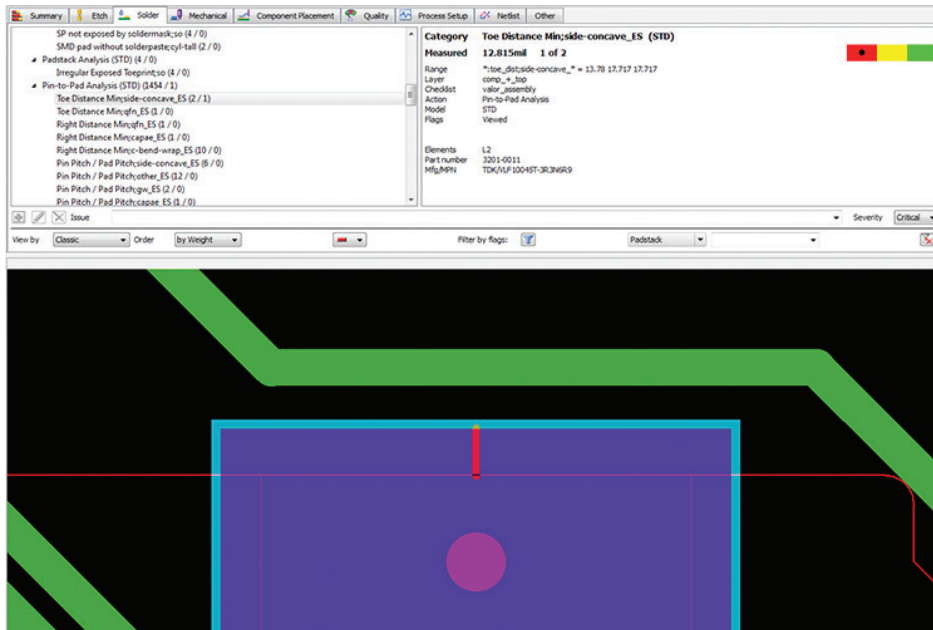


# Valor NPI Optimizing New Product Introductions



Valor DFM technology identifies opportunities for improving yield, cost, and reliability.

## Overview

Getting complex, modern PCBs to volume production and to market on time is the responsibility of the printed circuit board (PCB) layout designer, new product introduction (NPI) engineer, and the manufacturer. 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 the NPI process. Any manufacturability problem found in a design will cause a delay at minimum, or worse, costly scrap. And when you receive designs from various sources, identifying real manufacturability issues is a challenge because they all create and communicate their design data differently. As the manufacturer, you need a way to neutralize the data so that your team understands what they are looking at and what needs to be addressed.

Valor DFM technology brings you a competitive edge by running fabrication and assembly analysis as soon as you receive the customer's data. By applying DFM rules that have been prepared for you based on your manufacturing process capabilities, you and your team members can quickly and easily generate accurate and comprehensive DFM reports to be shared with your customer.

## Benefits

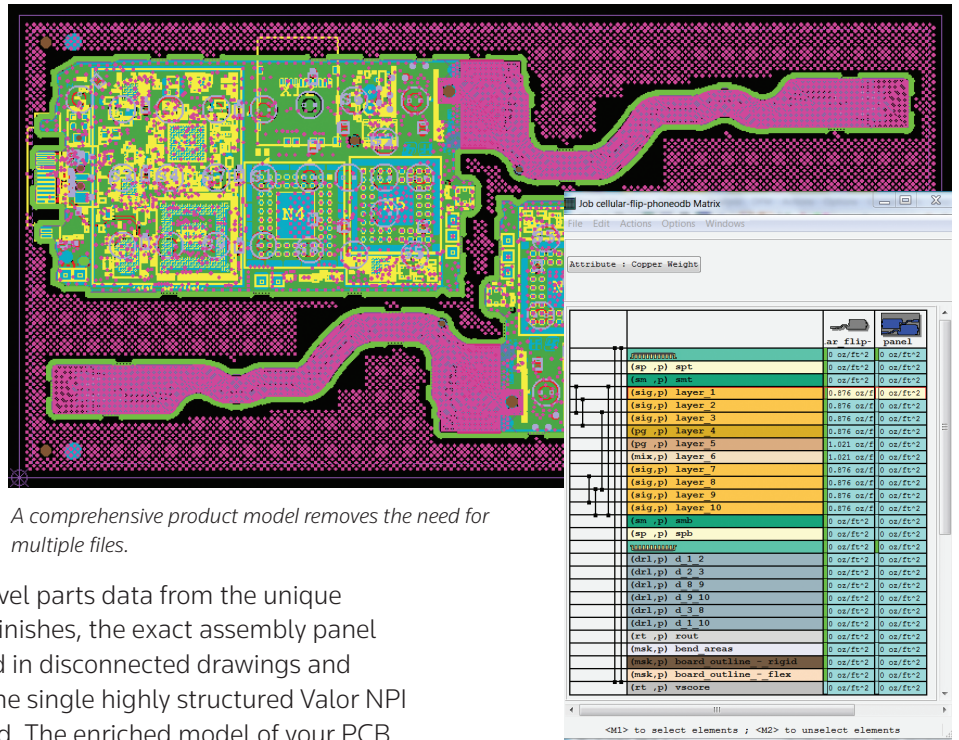
- Leading DFM technology for minimum design-revision spins in NPI and ramp-to-volume
- Easily communicate DFM issues back to your customer in a professional manner
- Easy and quick creation of optimized assembly and fabrication panel
- Final generation and validation of the PCB product model for manufacturing
- Supports all PCB EDA flows

## Intelligent, Integrated NPI Product Model

As an electronic manufacturing services provider, you are given a wide variety of data files to use. You need to be able to bring them all together in a unified, comprehensive, and intelligent form to make your manufacturing processes run smoothly.

All common data formats critical for manufacturing, including the bill of materials (BOM), are transferred to the Valor NPI database to create the manufacturing product model.

Additional content such as supply-chain level parts data from the unique Valor Parts Library, data to define 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. The enriched model of your PCB delivered from the Valor NPI database ensures that all of your manufacturing processes are driven from the same manufacturing product model definition. The Valor NPI PCB product model contains everything you need while eliminating the need for a complex package of drawings, documents, and "side-files."



A comprehensive product model removes the need for multiple files.

## Design Technology and Process-Driven, Automated DFM Analysis

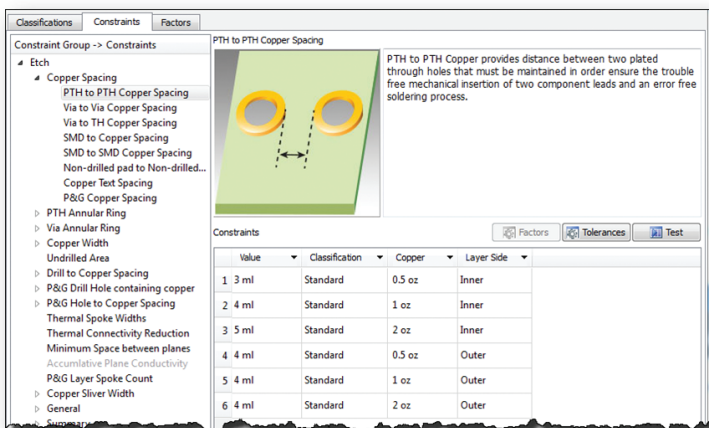
Valor NPI captures the technology inherent in the PCB design and associates it with appropriate manufacturing processes to automatically select which DFM rules and values to apply. The result is an intelligent and automated analysis that provides an extremely efficient and effective DFM process.

## Comprehensive DFM Analysis

How manufacturable is your customer's 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 with more than 900 DFM checks.

Each of these checks helps you identify aspects of the design that present a problem or are not optimized for manufacturing. Engaging with your customer on these opportunities during the initial design process is a strong value-added service that benefits you both.

DFM validation further categorizes and prioritizes the design-change requirements so that you may easily resolve the most critical issues first. The weight assigned to each check is definable, enabling you to decide how the results should be prioritized.

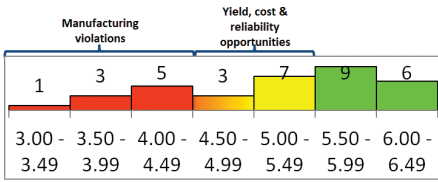


DFM rules setup has never been easier.

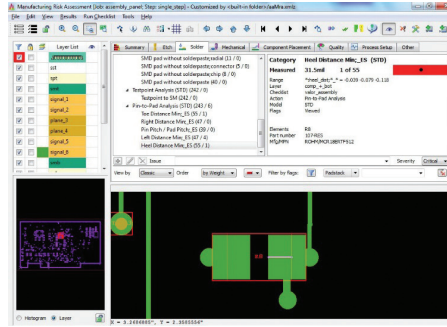
Beyond the DFM analysis, Valor NPI checks the design netlist against the manufacturing data to ensure there are no connectivity errors. The application even validates that the manufacturing BOM matches the design and that all components in the approved vendors list (AVL) are an acceptable physical match.

## Understand the Manufacturing Risk

DFM validation not only identifies where your customer's PCB design is in direct violation of your manufacturing capabilities, it also shows where low yield or field failures may occur by using severity indicators of red, yellow, and green.



Manufacturing risk assessment of yield and reliability.

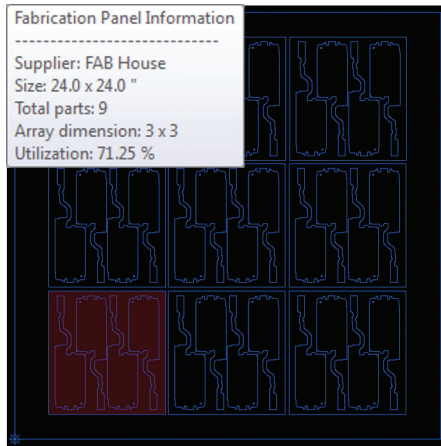


## Synchronized with Your Supply Chain

The Valor NPI DFM technology was developed by the same people that created the DFM verification tools used by more PCB design companies and fabricators than any other system. By using a common NPI platform between design, fabrication, and assembly, you can streamline the supply-chain collaboration with your customers and your partners, making the new product introduction process faster and more efficient.

By using the same rules and even the same settings to simulate how a design will fit into manufacturing, you will minimize call-backs and engineering change requests to your customers, taking cost and time out of the full NPI cycle.

## 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 fabrication suppliers, eliminating cycles for them to recreate and send back to you for approval.

## 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. Although the original source for the data is PCB CAD, all other manufacturing instruction from customers can be directly integrated and verified as structured data, eliminating the need for legacy drawings and documents to be validated by 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)	110.000000	
	Legend Sides	Both	
	PCB Acceptability Standard	IPC 6012A	
	Peelable Mask Side	none	
	Plated Edge	Yes	
	Plated Slots	No	
Qualification and Performance Standard	Soldermask Sides	Both	
	Top Legend Color	white	
	Top Soldermask Color	green	

The ODB++ data package contains everything the fabrication, assembly, and test software tools need 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 with your team.

## OS Support

- RedHat 5 and 6 x86/x64
- Linux SUSE 11 x86
- Windows x86/x64

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



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