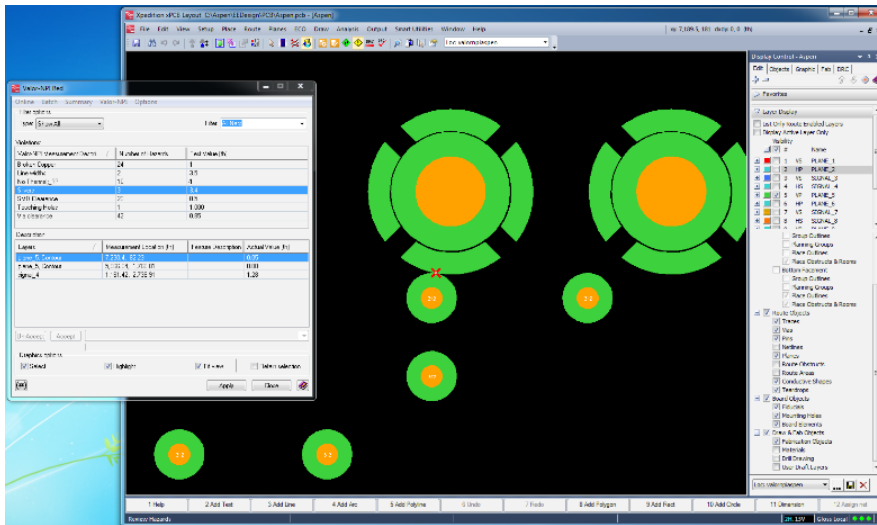


Valor NPI

Optimizing New Product Introductions in Xpedition xPCB Layout Design



Valor DFM technology embedded in Xpedition xPCB Layout Design can run more than 120 categories of design-for-fabrication (DFF) analysis.

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.

Xpedition-Embedded DFF

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.

Valor DFM technology embedded in Xpedition xPCB Layout brings you a competitive edge by running over 120 categories of fabrication analysis before you even handoff to your partner in NPI. By applying DFM rules in Xpedition that have been prepared for you by the NPI experts you have the best of both

BENEFITS

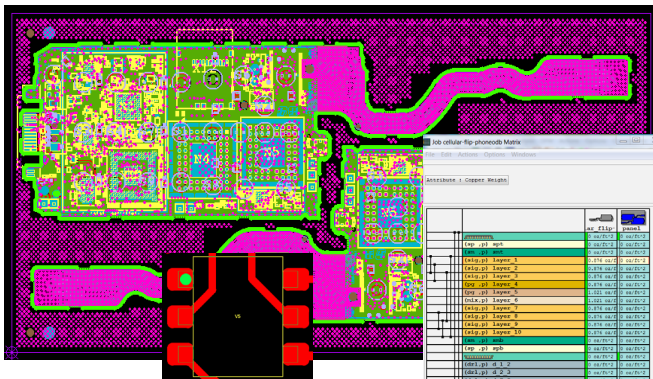
- Valor NPI DFM technology embedded in the Xpedition desktop
- Maximum left-shifting value for fastest, highest-quality NPI
- Leading DFM technology for minimum design-revision spins in NPI and ramp-to-volume
- Easy and quick creation of optimized assembly and fabrication panel
- Final generation and validation of the PCB product model for manufacturing
- An integrated NPI flow from designer's desktop into process preparation

worlds: easy identification and fixing of fabrication-process problems but without having to be a manufacturing-process expert!

Intelligent, Integrated NPI Product Model

Your PCB, when fabricated, assembled and tested, cannot be better than the product-model data you deliver to the manufacturing process engineers. Effective DFM and preparation of a comprehensive, intelligent model of exactly what you want manufactured go hand-in-hand.

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



A comprehensive product model removes the need for multiple files.

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. The enriched model of your PCB delivered from the Valor NPI database ensures that all your manufacturing suppliers, prototype or volume, build from the same definition. Your Valor NPI PCB product model contains everything your manufacturers need, while eliminating the need for a complex package of drawings, documents, and "side-files."

Comprehensive DFM Analysis

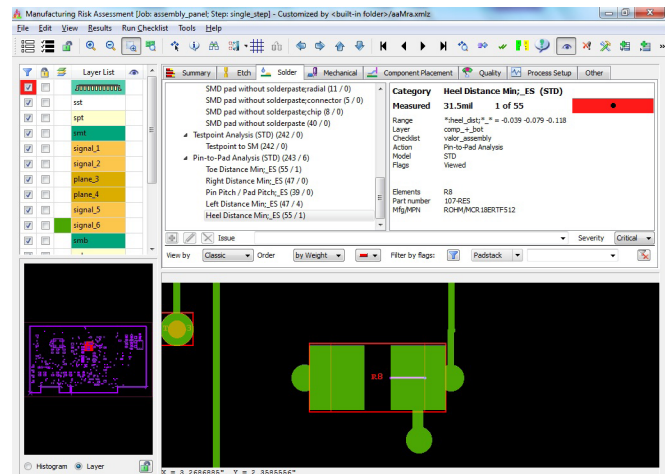
How manufacturable is your design? Your NPI flow is only as good as the DFM tools you use. Today's miniaturized, high-layer count designs cannot be reliably reviewed manually. Simple DFM tools do not check all manufacturing process factors. Valor NPI verification software, based on 64-bit processing technology, analyzes all of your design technologies—FR4, rigid/flex, flex and even packaging substrates—with more than 900 DFM checks.

- 273 fabrication checks
- 407 assembly checks
- 85 flex/rigid-flex checks
- 87 advanced substrate checks
- 45 micro-via checks
- 38 panel checks

In addition, DFM validation checks your design netlist against the manufacturing data to ensure there are no connectivity errors. The tool validates that your 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 in direct violation of 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. DFM validation further categorizes and prioritizes the design-change requirements so that you may easily resolve the most critical first, either by direct cross-probing to Xpedition or by customized and filtered reports. The weight assigned to each check is definable, enabling you to decide how the results should be prioritized.

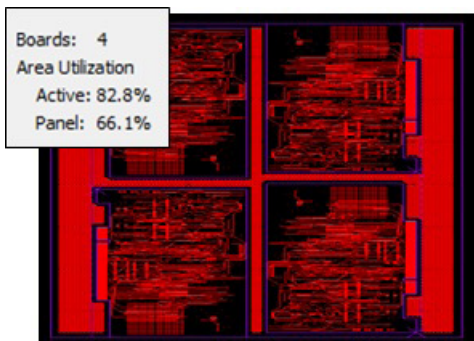


Manufacturing risk assessment of yield and product reliability.

Easy and Quick Optimized Assembly and Fabrication Panel Creation

Eliminate the need for other software tools to be used for the creation and optimization of your assembly panels. 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. You will then communicate the panel design as data to your

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 Xpedition, all other information from your manufacturing documentation team can be directly integrated and verified as structured data as part of the NPI flow.

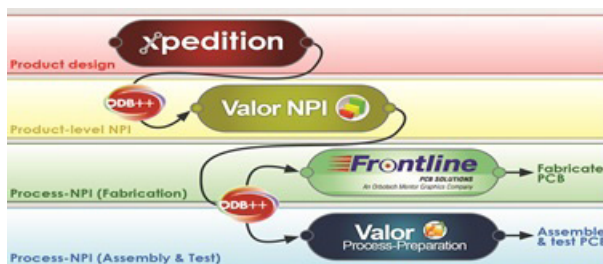
The resulting ODB++ data package contains everything the fabrication, assembly, and test software tools need to know about your product to proceed efficiently and promptly with process preparation. You also have unlimited ODB++ viewing capabilities on your Valor NPI network, for sharing and reviewing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

| Product Summary section -> | Attribute | Value | Units |
|----------------------------|--------------------------------------|----------------------------|-------|
| # Board Requirements | Board Thickness | 0.08320 | 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 | UL94V0 | |
| | General PCB Standard | IPC 6012A | |
| | Glass Transition Temperature (Tg) | 110.000000 | |
| Legend Sides | PCB Acceptability Standard | | |
| Platable 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.



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.

For the latest product information, call us or visit: www.mentor.com/valor

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