



# BluePrint

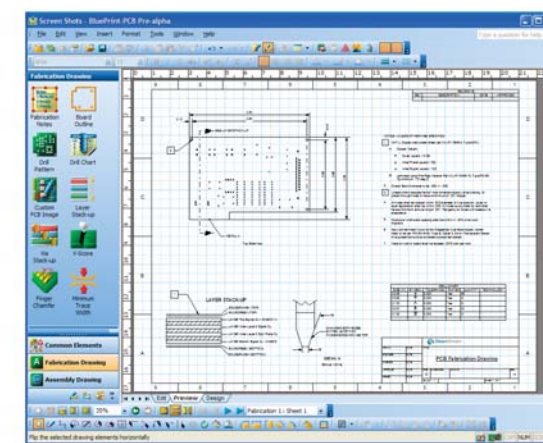
For Printed Circuit Boards

*“Any focus given to improving the documentation problem is a no-brainer! PCB Designers should be able to spend less time on low-value — but crucial — tasks and use their skills where most needed — designing printed circuit boards.”*

- Andy Shaughnessy, Editor,  
*Printed Circuit Design & Manufacture*

## THE CHALLENGE

PCB documentation is a critical part of the design chain as it defines the specifications on how an electronic product is to be built. The more detailed the documentation the less likely manufacturing mistakes will occur. It also ensures that repeat builds of the same product are consistent and makes final inspection easier with less chance of unit rejection or shipment delay while waiting for assembly deviations to be approved.



With Blueprint, users drag and drop document content to quickly create complex PCB drawings for fabrication and assembly.

*“Today’s PCB design challenges require more and more focus on specific design issues. Board designers do not have the time to continue to focus on documentation without a negative impact on product schedules”*

A.J. Incorvaia  
Group Director Allegro PCB Group  
Cadence Design Systems

## THE SOLUTION

BluePrint for Printed Circuit Boards™ is a revolutionary new document authoring tool, developed in the style of a Microsoft® product, that quickly creates electronic PCB drawings to drive successful PCB fabrication, assembly and inspection.

BluePrint automates the documentation process and creates an electronic document which better articulates the instructions for successful PCB manufacturing and contains all the data necessary to build, view and archive the final product anywhere, anytime.

*"Blueprint reduces the time we spend documenting PCBs and greatly reduces our manufacturing risk."*

Mr. Mark Sinreich, Avid Technologies, Inc.  
Engineering Consulting Firm

## The Importance of Complete Documentation

How are the board layers oriented? How does the face plate attach? Which components are substituted on this build? *Typical questions that may be asked when manufacturing printed circuit boards. All questions that **need** to be answered with complete documentation instructions.*

PCB documentation creates the manufacturing specification for an electronic product. Comprehensive documentation records the engineering "intent" of a design specifying the form, fit and function of the PCB. Documentation drives the procurement process, aids manufacturing engineering and is used in final inspection to verify the product was built to engineering's specification. It also gets archived to ensure later production runs can be repeated with the same level of consistent quality. PCB documentation must capture all of the information necessary to not only build the product today, but also any repeat builds in the future - eliminating any guesswork.

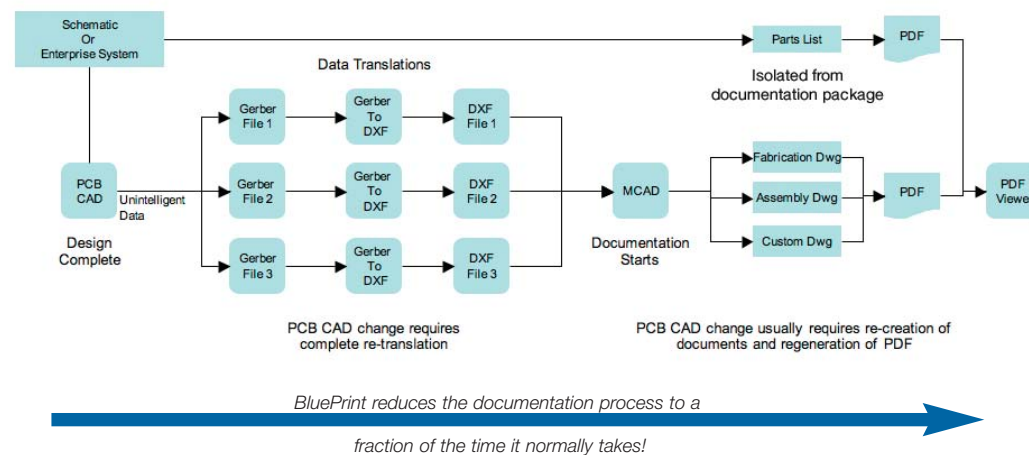
*"Not only does Blueprint change the model for document creation, it also changes the way documentation is accessed by manufacturers."*

Mr. Hubert Weyerich  
Technotron GmbH  
Contract Manufacturer

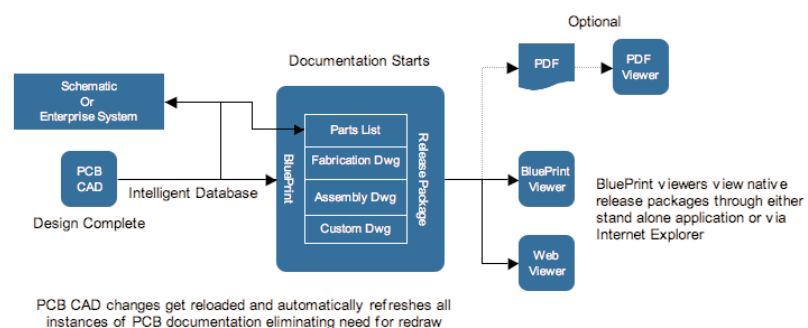
## Problems with PCB Documentation Today

Current methods present PCB Engineering groups with two undesirable choices for producing PCB documentation. First, have highly-compensated and skilled PCB Designers — using tools not specifically designed for the task — create the documentation and increase the design cycle by 20% - 40%\*, or second, provide very cursory, paper-based documentation and increase the risk of manufacturing mistakes or shipment delays.

**CAD Flow**  
Current solutions used to create PCB documentation create constraints, require extensive translation and are long and prone to error.



**Blueprint Flow**  
Blueprint addresses the unique problems of PCB documentation by removing obstacles and streamlining the documentation cycle.



\* DownStream Technologies survey of 150 PCB Designers

## Changing the Way PCB Documentation is Done

Blueprint is a revolutionary new document authoring tool — styled like a Microsoft® product — that automates the PCB documentation process. Blueprint "knows" it is creating a PCB document and imports the entire PCB CAD database once to automatically create and link unlimited views, details and charts while maintaining the design intelligence and overcoming constraints imposed by both PCB and Mechanical CAD alternatives. It uses a document and sheet based approach, allowing users to drag and drop PCB views, details, notes, and tables, onto a drawing sheet, then arrange and format them as needed. Users view and work with the actual documents as they will be delivered to document control and manufacturing. *The Result: an electronic PCB release package, more complete and accurate, that truly reflects engineering's intent!*

## Increasing Productivity and Adding Value

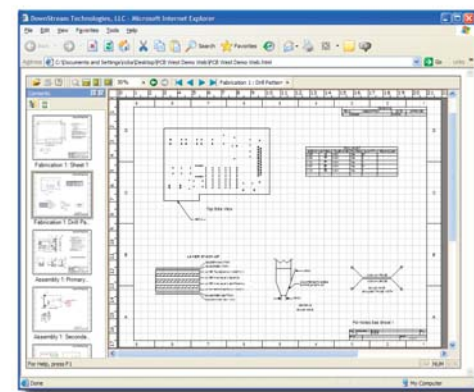
With Blueprint, PCB engineering groups can expect to reduce the documentation process to a fraction of the time it normally takes — even more when engineering change orders (ECOs) are required. With ECOs, since all views, details, and charts of the PCB remain linked to the original PCB CAD data, they are instantaneously refreshed in Blueprint whenever the original CAD data is changed. This technology is patent-pending with the US Patent Office.

PCB documentation adds no value to an end product but can greatly impact the overall success if it is not created properly. Blueprint adds value because it:

- minimizes the total amount of time spent to create documentation
- allows PCB designers to quickly move onto the next design project
- increases quality and eliminates manufacturing guesswork
- lowers the risk of shipment delay due to manufacturing mistakes

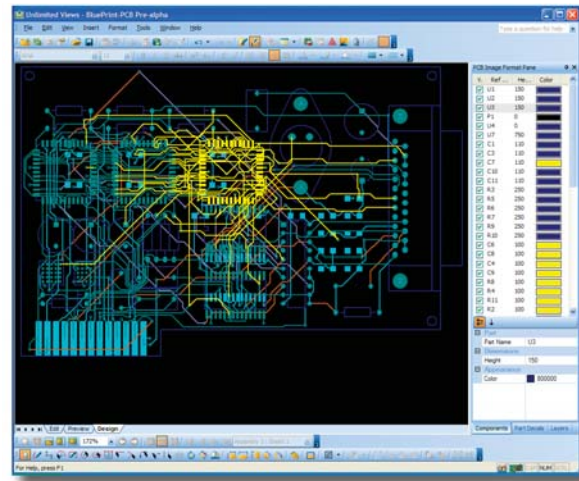
## Bringing PCB Documentation into the 21<sup>st</sup> Century

Blueprint is truly an innovative new product, designed from the ground up, to address the unique problems of creating comprehensive PCB documentation. It employs a myriad of technologies that have been widely adopted in other industries to increase productivity and allow for greater ease-of-use. It supports the import of JPEG, audio and video file formats — digital content to help communicate the often complex instructions needed to fabricate or assemble a PCB. These multi-media formats can eliminate any misinterpretation that may occur when reading text or looking at a drawing detail. In addition, Blueprint's hyperlinking capability allows the creation of links between different document elements, external files, URLs and email addresses to bring information to the user. This new approach transforms what was once a static, paper-based deliverable into a dynamic, web-based medium making PCB documentation live, interactive, and much more informative.



*Direct export to HTML allows Blueprint's documents and links to be instantly viewed through Microsoft's Internet Explorer*

## Key Features and Functions



### Full Importation of the PCB CAD File

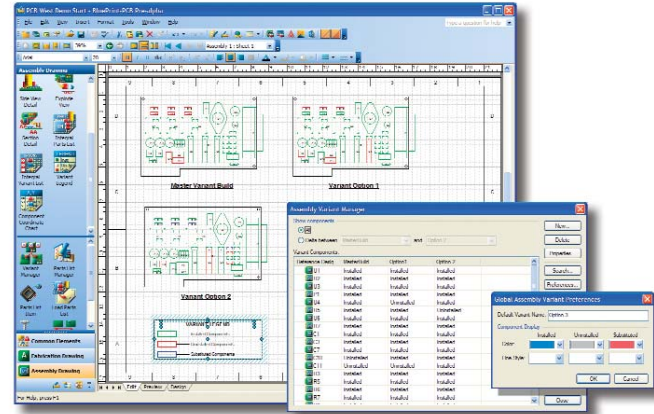
BluePrint uses PCB CAD data to drive the documentation process. Components, pins, assembly mounting sides, layers, vias, nets, assembly variants, part attributes, drill holes and symbols, are just a few of the data records that can be imported into BluePrint to accurately create PCB document elements.

### Exotic File Importation

Data from other Windows® applications can be imported and used in the BluePrint documentation package. BluePrint imports PDF, RS274X, DXF, XML, ODB++, JPEG, GIF, TIF, BMP. BluePrint's clipboard function also allows cutting and pasting with other applications including text and raster graphics.

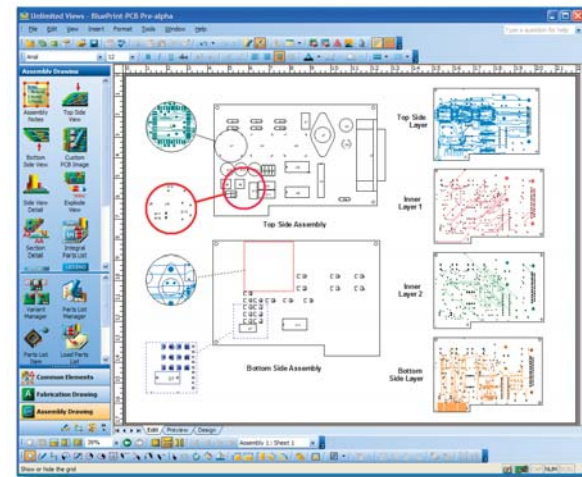
### Full Word Processing with Spell Check

BluePrint supports a full word processor with both on-line and batch spell checking, font, and paragraph formatting. BluePrint creates documents in local languages such as Italian, German, Japanese, English, etc.



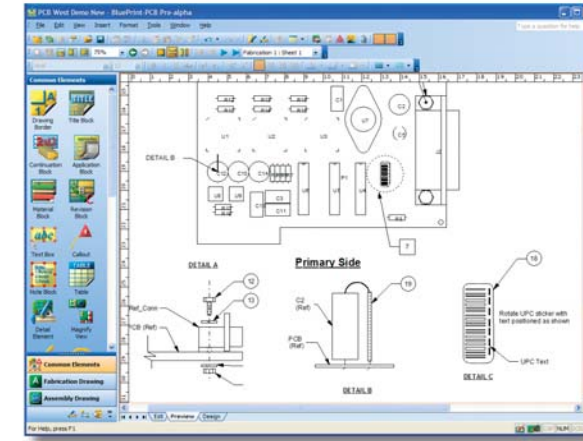
### Assembly Variants

BluePrint supports Assembly Variants in both the parts list and the assembly PCB view. Each variant of the final assembly can be depicted in the assembly drawing with its corresponding parts list. Component installation status can be displayed graphically for easy visualization of the final PCB assembly build. This function minimizes ambiguity and time in final inspection to insure that all parts are installed correctly.



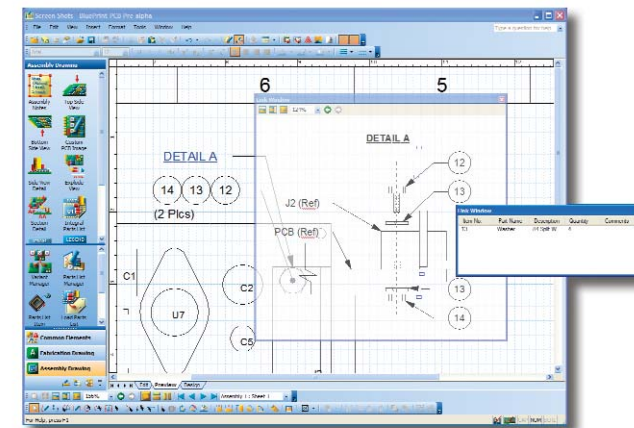
### Unlimited PCB Instances and Views

BluePrint creates and displays unlimited views of the PCB simultaneously on any drawing sheet. Each view is independent and may have its own unique display setting to show top side assembly, bottom side assembly, inner layers, drill patterns, or any combination of layer data contained in the CAD database.



### Fabrication and Assembly Detail Wizards

BluePrint automatically creates common detail elements such as the PCB layer and via stack up, v-scoring, finger chamfer, exploded views, and side and sectional views using component height attributes contained in the PCB CAD data.

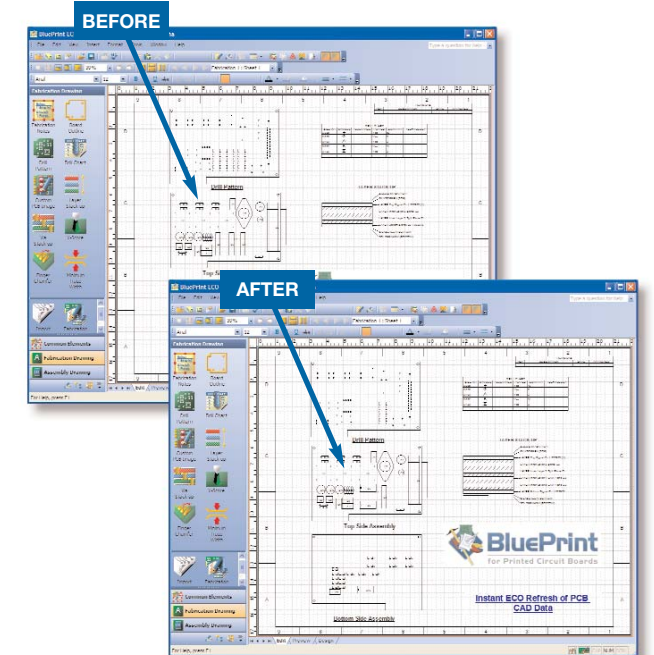


### Hyper Linking

BluePrint links different documentation elements together to create interactive drawings that provide information to the user. Links can be created between any drawing elements including notes, callouts, details, part list items, external and embedded files, URLs and email address.

### Unified Parts List Creation

The Parts List Manager allows the user to interactively modify parts list data to ensure that all the necessary parts list items are included in the final release package. Information such as reference documents and files, mechanical components, and the PCB can be added and modified. Parts list data can be imported and exported to and from ERP/MRP and PLM systems for the enterprise.



### Fast Engineering Change Orders (ECOs)

BluePrint supports an instant ECO function that refreshes all views of the PCB CAD data in the documentation package whenever the source PCB CAD file is updated. A graphic indicator informs the user if the documentation package is in or out of synch with the source PCB CAD data, dramatically reducing the time associated with changing documentation due to PCB artwork changes.

## Key Benefits of BluePrint

- Lowers the cost associated with creating PCB documentation by reducing the time designers spend creating it.
- Shortens the design cycle and increases documentation accuracy and detail.
- Makes manufacturing engineering and final inspection easier.
- Allows PCB designers to quickly move on to next design project.

DownStream Technologies is a progressive software company focused on helping engineering organizations automate the PCB Release Process. Our tools redefine how engineering professionals post-process PCB designs to create and distribute all the deliverables required for a complete PCB assembly release package.

CAM350® provides verification, optimization and output generation to efficiently drive PCB fabrication.

BluePrint for Printed Circuit Boards™ works with CAM350 and PCB CAD systems to help users quickly produce comprehensive electronic drawings to drive PCB fabrication, assembly and inspection.



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