Genesis2000

The leading CAM solution for rigid multilayer PCBs

- Integrates design analysis, tooling and workflow management
- Cuts cycle time and increases yields using powerful plug-in DFM programs
- Synchronizes communication between design and assembly
- Easy integration with engineering and production

Frontline

PCB SOLUTIONS
An Orbotech Valor Company

Automating workflows from customer design to the production floor

With Genesis 2000, your people can automate the entire PCB fabrication pre-production process, from product engineering and tooling to company-wide workflow management. A truly comprehensive solution, Genesis 2000 streamlines the way you work to achieve higher throughput and put you in control of your manufacturing costs.

Collaborate with others via effective communication networks

Genesis 2000 opens a vertical data channel to the PCB design and assembly industries while offering horizontal integration with the production floor and engineering departments, enabling improved analysis of critical data and quicker response to changes.

Maintain data integrity for reliable outputs

Genesis 2000 uses the unified ODB++ format to achieve seamless data integrity. CAD/EDA programs easily translate into ODB++ to maintain design integrity, preserve original data and minimize revision spins.

Panel Optimizer
The Panel Optimizer can panelize a range of differently shaped PCBs, place images on arrays, arrays on panels and panels on sheets, while calculating and analyzing all possible layout combinations to maximize material utilization. The Panel Wizard is available for flipping and rotating PCBs, placing dynamic text and plot stamps and defining thieving and venting patterns.

Dynamic Etch Compensation
Simulates a realistic, non-ideal model of etchant (etching material) behavior patterns during chemical etching of ultra-fine line boards, and then automatically compensates for pattern data by unevenly enlarging lines based on available spacing.

Galvanic Etch Compensation
Designed to enlarge specific pads in nets with gold-plated pads while preserving spacing specifications. Introduces uneven etching for the nets that contain both gold-plated and copper elements.
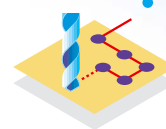
Graphic Editor
The Graphic Editor enables accurate PCB data editing with online design rule and netlist checks. Displays job layers for editing in 3D format via an advanced object-oriented user interface.

ARM
The Auto Rout Manager fully automates rout programming, eliminating the post-processing stage entirely. In addition, the ARM can generate multiple versions of NC files for different machine configurations.

ADM
The Auto Drill Manager integrates drill program creation into CAM operations. Operators can create optimized machine-ready programs for any machine in just seconds, with the Genesis 2000 Drill Tool Manager automatically calculating the correct drill bits to use.

3RD PARTY INTEGRATION

PANEL OPTIMIZER

GRAPHIC EDITOR

ARM AUTO ROUT MANAGER

ADM

AUTO ROUT MANAGER

AOI Interfaces
Genesis 2000 provides AOI interfaces for the most popular AOI machines. The AOI interfaces support direct reference to CAM data. Defining analysis parameters in CAM can save you valuable machine time and ensure accurate reference data.
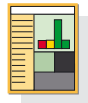
Output Converters
Genesis 2000 works with multiple format translators giving you the freedom to choose the output device that best suits your needs.

WorkForms
An electronic version of paper forms, WorkForms stores forms electronically with the job.

Rout Editor
The embedded rout editor allows you to create rout programs from customer delivered outlines or from blueprint in an easy and convenient way.

DFM Programs
Object-oriented Design for Manufacturability programs automate tedious manual editing tasks, enhancing quality to increase throughput and yield on the production floor.

Plotter Interface
The plotter interface enables maximum integration with and control over plotter machines by setting production parameters in CAM. Special plot stamp support enhances photo tool tracking and a dedicated non-linear scaling module compensates for possible non-linear material distortions. An optional film optimizer allows you to reduce film cost by allowing multiple images to be plotted on the same film.

Auto Input
Genesis 2000 translators automatically identify all data format types, interpret the Gerber wheel, provide graphic previews and convert incoming data to ODB++ format, with minimum operator intervention and at maximum speed. Supported input formats include Gerber, Excellon, Drill & Rout, bmp, jpeg and DXF.

ETM
The Electrical Test Manager is an automated tooling solution for bed of nails and Flying probe testing. Shortening testing lead times, the ETM guarantees seamless data integrity with Genesis 2000 through ODB++. A wide selection of DFT tools is available for improving board testability.
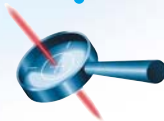
Native Language Support
Genesis 2000 provides native language support in menus and error messages. Users can easily input Asian fonts.

Microvia
Microvia enabling technology includes over 80 analysis categories, including optimized drill planning for lowering costs, output to laser drill machines and more.

Design Analyzer
The Design Analyzer enables engineers to review designs before, during and after tooling and provides interactive graphic control over all pre-production engineering parameters.
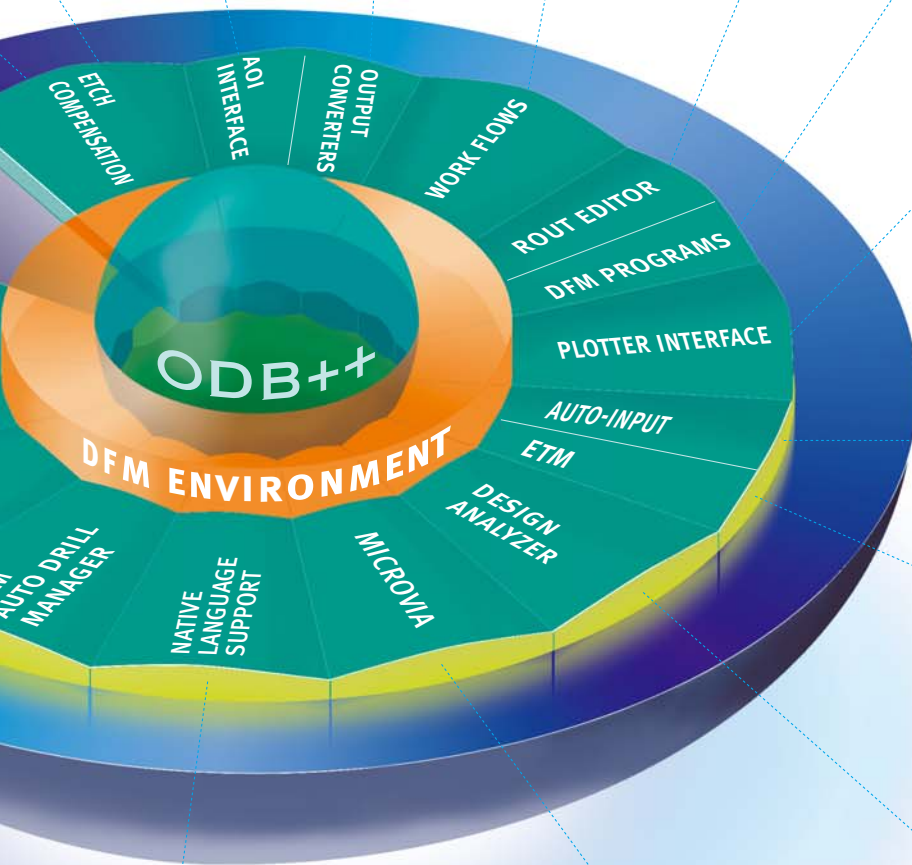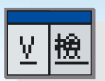
ETCH COMPENSATION

AOI INTERFACE

OUTPUT CONVERTERS

WORK FLOWS

ROUT EDITOR

DFM PROGRAMS

PLOTTER INTERFACE

AUTO-INPUT

ETM

DESIGN ANALYZER

MICROVIA

NATIVE LANGUAGE SUPPORT

AUTO DRILL MANAGER

ODB++

DFM ENVIRONMENT

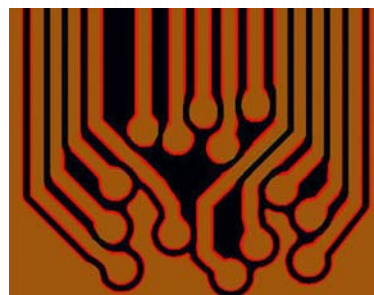# Increase production efficiency with powerful DFMs

Leverage Genesis 2000's flexible DFM capabilities to automate and self-check a range of engineering tasks, eliminating the bottlenecks caused by lengthy editing sessions and human error. You'll notice a substantial reduction in job cycle time and a boost in productivity. In just a few minutes, you can customize DFM programs for dynamic etch compensation, galvanic etch compensation, copper balancing, pinhole elimination, solder mask repair, silk screen repair, positive plane, parallel spacing, signal layer optimization, legend detection, redundant vector removal, line unification, gold tie bar generation and many more.

DFM program
Positive plane optimization

DFM program
Dynamic etch compensation

Minimum System Requirements

Platforms	HP-C3750, SUN Blade 1500, Intel Pentium IV and above.
Monitors	Minimum 17" color monitor, resolution 1024 x 768 for HP, 1150 x 900 for SUN.
Memory	Minimum 1 GB RAM; recommended 2 GB
Hard Disk	Minimum 40 GB; recommended 80 GB
OS	HP-UX11 - HP-UX11i, SUN Solaris 7 - Solaris 10, Windows XP, Windows 2000 and LINUX RH & SUSE

About Frontline

Frontline PCB Solutions is the world leader in pre-production CAM and engineering software solutions for the PCB industry. Frontline draws on proven technologies from Orbotech and Valor to create new standards in vertical and horizontal integration for the PCB industry. Frontline builds on the strategic vision, knowledgebase and hands-on track record of two market leaders, as well as over two decades of experience and the largest installed base of front-end solutions in the world of over 7000 seats.

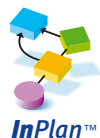## Integrated Engineering Solutions

Genesis 2000 is part of a complete integrated engineering product suite, from the quoting stage, through process planning and CAM all the way to the production floor. The Frontline suite comprises industry leading, rules-based engineering applications, all revision controlled.

InCAM™   **Genesis2000**   **GenFlex™**   **InPlan™**   **InPlanFlex™**   **InStack™**   **InCoupon™**

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