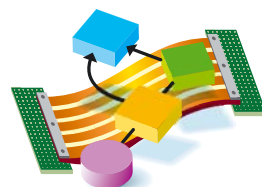


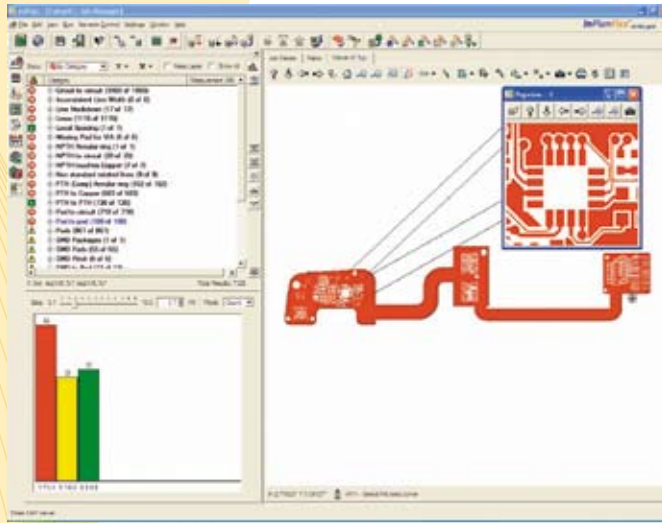
InPlanTM Flex

Automated PCB engineering for flex and rigid-flex boards



- Unified engineering toolkit for flex and rigid-flex boards
- Supports flex materials
- Shrinks engineering cycle time; dramatically reduces costs
- Efficient materials tooling management; BOM, traveler, and CAM instructions
- Proven CAM and ERP integration

The flexibility you need to adapt, compete, and win



InPlan™Flex Job Manager

InPlan™Flex empowers your engineers to deliver high quality PCB manufacturing flows for rigid, flex, and rigid-flex designs via a unified set of engineering tools. A fully integrated solution, InPlan™Flex helps you meet customer requirements and quickly adapt to challenging changes, while maintaining consistent and cost-optimized engineering work.

InPlan™Flex supports all the materials and accessories you need for each board type and generates multi-zone buildups with unbonded legs to help you deal with flex and rigid-flex design

challenges. Outputs include revision controlled BOMs, travelers, and CAM instructions to enable multi-site collaboration and concurrent engineering. Enabling seamless integration with CAM and ERP, InPlan™Flex allows engineers to coordinate with sales, CAM operators, customers, suppliers, and the plant floor to deliver right-first-time manufacturing documentation.

InPlan™Flex standardizes engineering, accelerates production, and maximizes material utilization to lower costs. By automating tasks, cutting data entry, and organizing vast amounts of job data, you can increase throughput to meet the tightest deadlines.

Empower your engineers with the right solution

Rules and spec-driven engineering

Transform your engineering tools and methods into a unified engineering powerhouse and produce top quality workplans for all board types. Powered by electronic specs and company-tailored rules, your needs and those of your customers drive the entire process.

Support for rigid, flex, and rigid-flex buildups

Engineer challenging designs with a system that offers automatic multi-zone buildups and sophisticated buildup editing tools, including forming air gaps between flex clads, adding rigidizers and other accessories, and combining flexible and rigid laminated substrates into a single package.

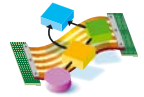
All engineering activities in one system

Perform your entire engineering job with InPlan™Flex. Design stackups, model customer impedance requirements, set material tooling processes, design your production panel and sheet cutting diagrams, generate the BOM, process routings and CAM instructions, and finally, generate a high-quality set of graphical manufacturing documentation in full color - all with one unified tool set.

Proven CAM and ERP integration

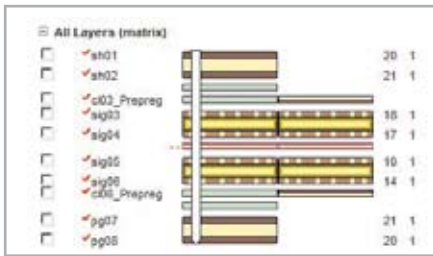
InPlan™Flex integrates with all CAM and ERP systems — including Frontline's world-leading CAM products, GenFlex™ and Genesis 2000 — to seamlessly apply valuable CAM and shop floor data in its rules-based engineering processes, increasing throughput and eliminating errors caused by manual data entry.

Features



Easy stackup creation for rigid, flex, and rigid-flex boards

Automatically generate rigid stackups according to your customer's impedance and thickness constraints. Create adhesive-free or acrylic materials buildups that support flex materials, coverlays, adhesives, and stiffeners. Increase efficiency by synchronizing ODB++ data and integrating data from electronic specs.



Rigid-Flex buildup

Impedance-controlled stackup solver

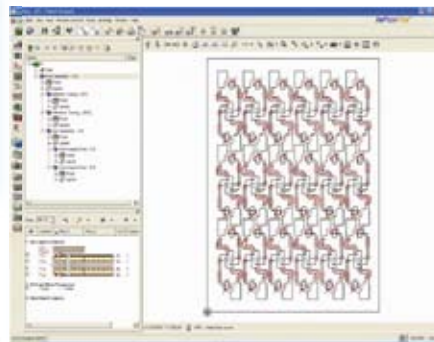
InPlan™Flex enables easy flex and rigid-flex stackup design, with online simulation of multi-zone thickness while editing, and impedance modeling for all rigid and flex zones, using your impedance control vendor of choice. Use InPlan™Flex to perform safer stackup design, ensuring the design is not resin starved, while meeting your impedance and thickness requirements and constraints.

Simplified rout process management

Manage routing and tooling with the Rout Process Manager. Define pre-fab tooling processes and related materials by selecting materials and assigning them to rout or punch tools for automatic material cutting process creation.

Automated panel design for optimal material use

Use the Panel Design Wizard to generate arrays and panels with cost-efficient material utilization. Easily apply your panelization rules to panelize ODB++ profile shapes using automatic part interlocking at different angles, coupon placement, accessory panelization, sheet cut design, and dimensioning diagrams. You can use both standard and dynamic panels, the border and PCB areas, and per-part coupons.



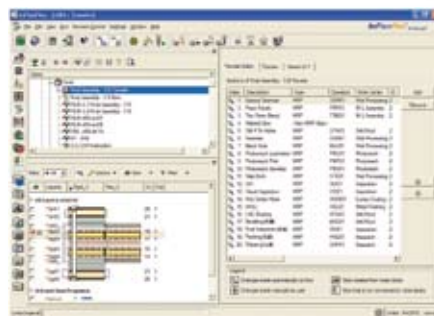
Automatic panel design

Assign NC bits in seconds

InPlan™Flex acquires finish hole ODB++ data and selects the right drill and rout bits based on company-defined rules. InPlan™Flex supports all profiling methods; plated and non-plated holes, routs, slots, and V-cuts; large hole tooling in nibbling or rout; and more.

Automatic travelers

InPlan™Flex generates multiple travelers automatically combining ERP-defined manufacturing operations with product attributes, notes, and graphic attachments in seconds. Review and edit travelers in the Traveler Editor and opt to preserve manual changes the next time the traveler is generated.



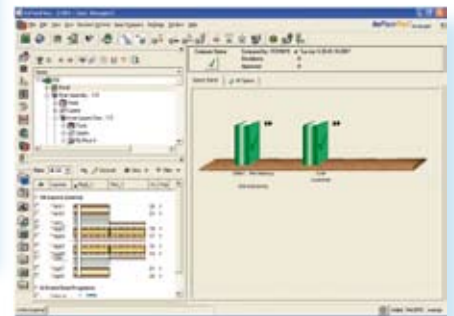
Traveler Editor

Automated CAM instructions

Solve production issues by generating rules-based engineering CAM instructions (CIs) containing Genesis DFMs, checklists, script names, and/or analysis actions. Simply publish the CIs to implement the instructions.

Leverage electronic spec data

Expand the use of manufacturing and order data by storing specifications electronically. Attach specs to jobs and apply revision-controlled changes according to spec data. Run Job-to-Spec Compare, review the results, and generate corrective tooling instructions if needed.



Spec Manager

BOM calculation and editing

Use the BOM Wizard to compile a list of materials per fabrication process and to prepare BOM reports in seconds. Automatically add all PCB-related materials including cores, prepregs, laminates, foils, coverlays, adhesives, and stiffeners. Process materials may also be added such as backup and entry plates and NC drill and rout bits.

Change Management Tools



Customized reports

Effortlessly produce documents for reports, queries, travelers, BOMs, and CAM instructions. Reports can include a range of elements from tables and charts, to layer and stackup images, and impedance modeling diagrams.



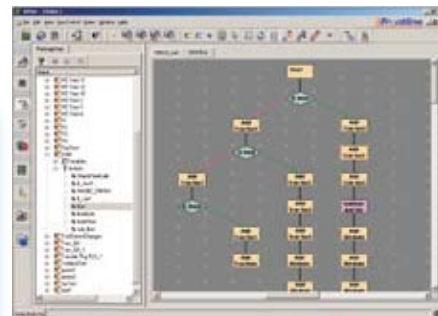
Graphic reports

Full revision control

Manage changes efficiently even in short cycle designs. Easy-to-use tools keep you up-to-date including check-in/check-out, release and hold, revision compare, user privileges, electronic sign offs, and release validation mechanisms. Ensure job revisions are updated to the latest materials revision and that your most up-to-date specs are used in the job.

Store PCB expertise as engineering rules

Store your company's PCB knowledge and reasoning as user-defined rules, applied during automated PCB planning.



The Rules Editor

Advanced ECN

Apply changes to one or more jobs and automatically notify your team. Next, run a change approval session with privileged approval agents. Lastly, execute the change system wide.

Verification lists

Replace paper checklists with electronic verification lists to improve quality control. Multiple electronic sign-offs enable different supervisors to verify that the engineering work is complete. Validate product release operations using verification list sign-offs.

Integrated Engineering Solutions

InPlan™Flex 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.

Minimum System Requirements

Server OS	Windows XP or Linux
Server Hardware	To be assessed per configuration
Database	Oracle 10g
Client OS	Windows 2000, Windows XP
Platform	Pentium 4, 1500 MHz and up
Memory	1024 MB minimum
Hard Disk	9 GB minimum
Monitor	17" minimum, color monitor, 1280x1024 resolution

About Frontline

Frontline PCB Solutions, an Orbotech - Valor Company, is the leading global provider of pre-production CAM and engineering software solutions for the PCB industry. With over two decades of industry experience, Frontline has the largest installed base of field-proven front-end solutions in the world and is committed to delivering top quality, standardized products that automate the entire PCB pre-production process, increasing yield and reducing pre-production costs.

Leading you
UpFront.

www.frontline-pcb.com

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