

## Rigid-Flex Design

# Option for PADS Professional

D A T A S H E E T

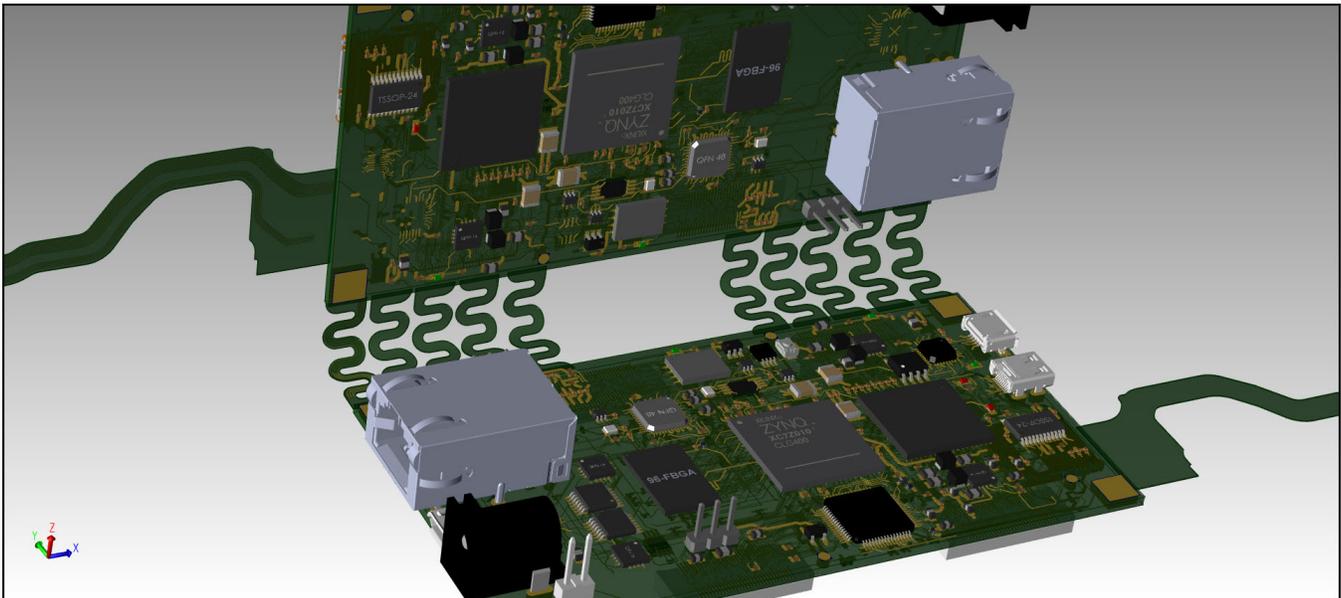
### Overview

Simplify the process of creating complex rigid-flex designs with PADS® Professional. Advanced technology enables superior stackups, definition of bend areas with associated constraints, and accurate output for manufacturing. Intelligent recognition of flex design elements lets you make changes at any point to optimize the rigid-flex system, helping you achieve smaller, cheaper, more reliable products.

- Stack-up regions defined by multiple board outlines to simplify modifications
- Define unique stackup types (e.g., embedded or bikini cover layers, stiffeners)
- Bend areas define where and how the design will bend
- Flex-aware placement & routing produces high-quality results
- 3D bending and 3D DRC
- Signal integrity validation of complex rigid-flex topologies

### MAJOR BENEFITS:

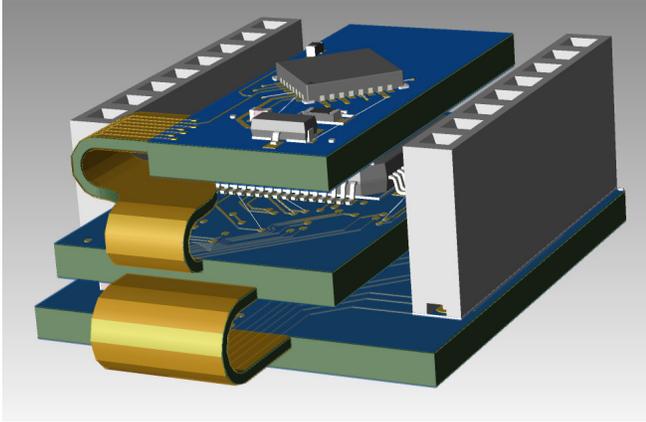
- Simplifies the process of creating rigid-flex circuits
- Advanced stackup technology
- 3D bending and 3D DRC
- SI topology validation
- Flex-aware handoff to manufacturing
- High-quality results



## Technology Overview

PADS Professional provides correct-by-construction design technology that simplifies the creation process of rigid-flex circuits, allowing you to focus on optimized form factor and quality.

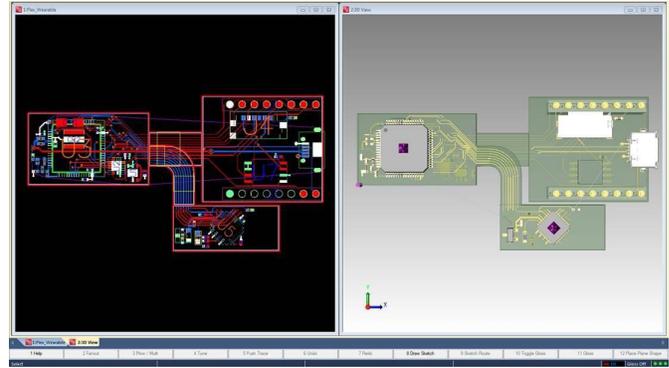
### Completely flex-aware 2D/3D design environment



Ensure first-pass success with a correct-by-construction process from stack-up definition through manufacturing hand-off.

- Define stack-ups by outline to simplify design changes
- Support unique flex stack-up styles such as embedded, bikini, or selective cover layers, stiffeners, and adhesive layers
- Define where and how the PCB bends
- Utilize drawing capabilities specific to flexible circuit boards
- Define the associated rules for the region (e.g., vias, trace width changes, plane type, component placement)
- Visualize bent and unbent designs in an integrated 2D/3D environment

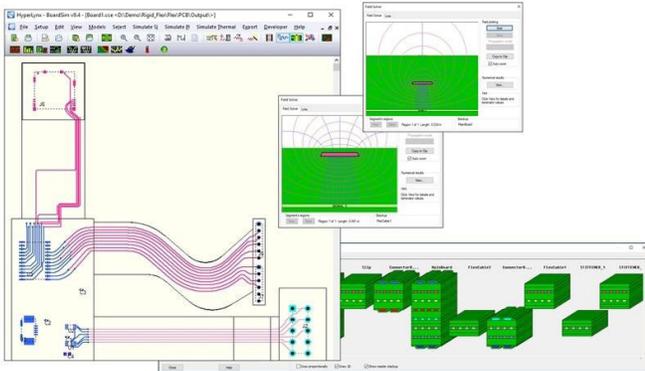
### Place & route flex structures



Eliminate manual checks and workarounds and accelerate layout with a system that understands bend areas, stiffeners, and other unique flex geometries.

- Place parts at irregular angles easily
- Use the part library to incorporate solder mask and cover layer openings for rigid or flex placement
- Hatched or cross-hatched planes dependent on bend area rules
- Push and shove with arcs
- Trace tapers (neck downs)
- Pad stack automatically updated when component placed on rigid or flex area
- Employ rich routing capabilities that support bending (e.g. routing along the board outline, aligning traces, and joining traces at curves)
- Use free-angle routing with arcs for complex polygons
- 3D rule checks

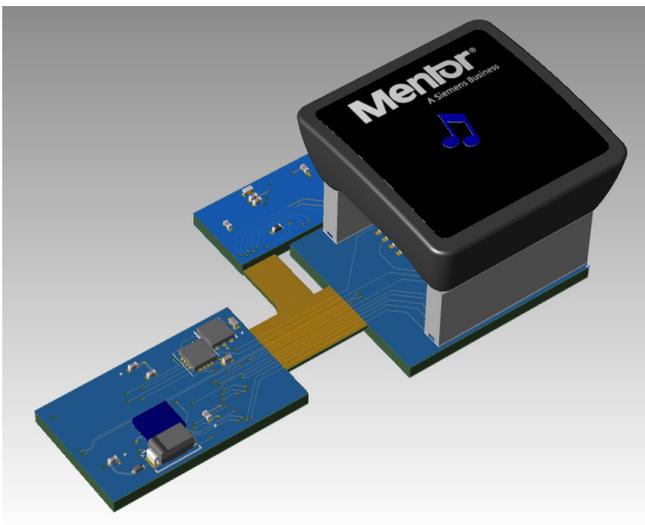
## Electrically validate design



Screen the full board with flex-specific rule checks to ensure electrical performance. Analyze unique topologies to isolate signal integrity issues.

- Signal integrity analysis recognizes flex-specific layers and stack-ups

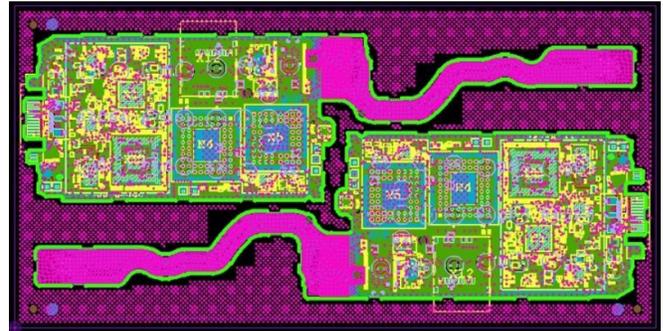
## Collaborate with mechanical team



Enable efficient ECAD/MCAD collaboration with incremental updates/notifications via ProSTEP (IDX). Visually validate designs with photorealistic 3D to minimize iterations.

- Import and create complex board outlines from mechanical CAD automatically
- Export a 3D solid model to MCAD for PCB enclosure co-design

## DFM validation and NPI hand-off



Validate design using target fabricator's rule set to eliminate iterations. Clearly communicate intent via ODB++ which includes specific rigid-flex constructs.

- Perform design rule checks for missing arcs & teardrops
- Ensure that pad junctions have generated curved teardrops for increased copper area bonding and manufacturing yields, stronger interconnects, and less stress-risers
- Validate the design with flex-aware DFM checks and NPI hand-off
- Use ODB++ to incorporate flex constructs for efficient hand-off to fabricator

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