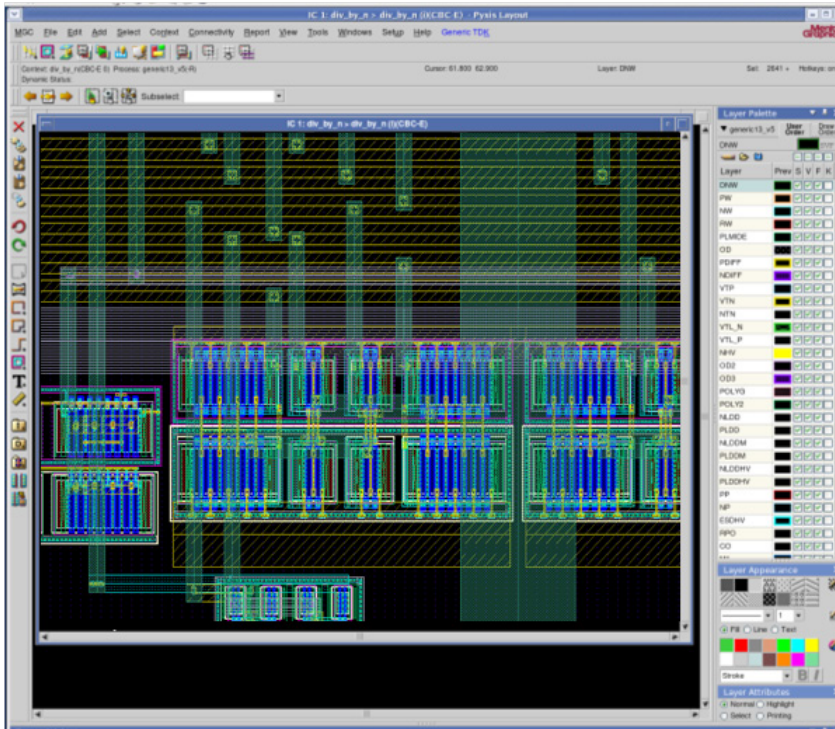


Pyxis Custom Router

Explore the Possibilities

Custom Integrated Circuit Design

D A T A S H E E T



Key Benefits

- Custom router integrated with the Pyxis Layout Suite.
- Constraint-driven.
- Qualified at 28 nm for TSMC AMS Reference Flow 1.0.
- Supports both analog and custom digital designs.

Key Features

- A tool box of routers that includes a global router, a detailed signal router, and an assisted-power and prewire router.
- Routes to devices, cells, or blocks.
- Does not need an abstract for routing.

A TOOL BOX OF CUSTOM ROUTING SOLUTIONS

The Mentor Graphics Pyxis® Custom Router, an add-on option for Pyxis Implement, introduces an integrated tool box of advanced custom routing functionality. The Pyxis Custom Router tool box includes a global router for congestion mitigation, a detailed signal router with a rich net-by-net and layer-by-layer constraint mechanism, and an optional assisted power and prewire router that supports the interleaving of multiple power domains by using mesh, ring, or truck structures or a combination of the different structures.

The Pyxis Custom Router enables constraint-driven routing for both analog and custom digital designs. The Pyxis Custom Router supports any combination of devices, cells, and blocks (with or without abstracts), and works incrementally, which enables routing of single nets, groups of nets, or an entire block. With the Pyxis Custom Router, designers can make fast ECO changes at any level of the hierarchy while ensuring minimal effects on the rest of the design.

ROUTING HIERARCHICAL DESIGNS

The Pyxis Custom Router accommodates large fully hierarchical designs and routes them DRC-clean in the context of geometries from lower levels of the design hierarchy. All shapes and constraints placed in lower levels

of the hierarchy are seen and acted on by the router as if the design was flat. The router also allows for automated management of blockage propagation placed by the designer through the hierarchy with “adhere-to” and then “forget-later” capability.

DFM SUPPORT

The Pyxis Custom Router’s DFM capabilities including 3D and 2D wire spreading and cost-based routing for redundant and fat-pad via replacements. Routing topologies are laid down with wire spreading and redundant via insertion in mind. Committing redundant and fat-pad vias can be done in context of shapes pushed-down from parent levels of hierarchy ensuring routability through hierarchy while achieving higher rates of via redundancy and protection at all levels of the design hierarchy.

2.5D INTERCONNECT PARASITIC EXTRACTOR

A 2.5D parasitic extractor for interconnect is integrated within the Pyxis Custom Router, which enables de-

signers to do fast “what-if” trial routing with different topology constraints and then compare the effect of each trial on overall circuit performance.

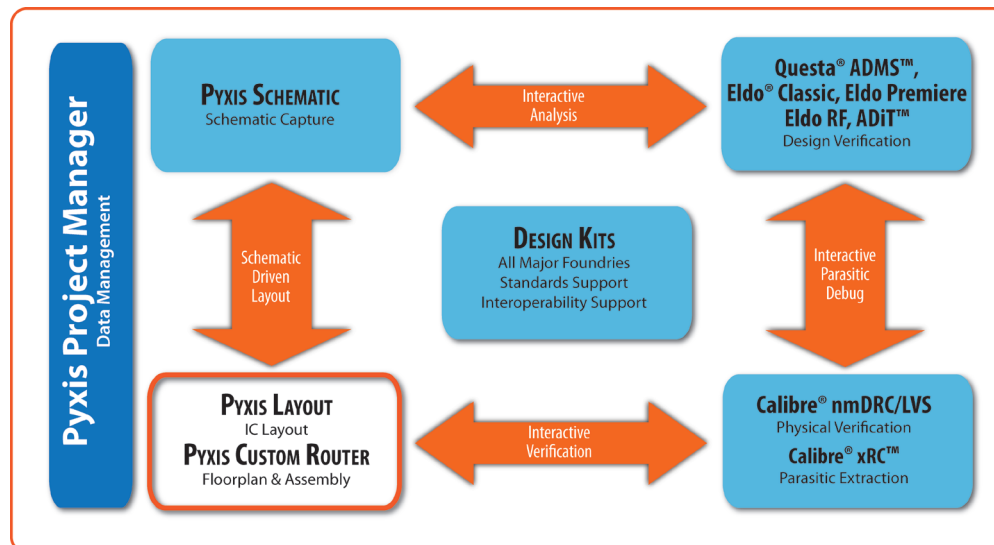
ADVANCED PROCESS SUPPORT

The Pyxis Custom Router provides designers with automated correct-by-construction routing that can route custom blocks in minutes using concurrent shape-based DRC fixing while routing to provide orders of magnitude cleaner designs in a single layout pass.

The Pyxis Custom Router supports advanced process technologies and has been qualified at 28 nm in the TSMC AMS Reference Flow 1.0. The Pyxis Custom Router supports all routing rules as expressed in the LEF 5.8 syntax for 28 nm and also supports custom-defined rules in both hard and soft configurations.

DESIGN DATA INTERCHANGE

The Pyxis Custom Router supports the interchange of design data through industry standard formats, including OpenAccess and LEF/DEF.



The Mentor Graphics Custom IC flow and its integrated schematic, extraction, and simulation tools allow you to take a design from system specifications to post-layout verification with a virtually seamless approach.

Visit our website at www.mentor.com/dsm

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