



PADS® Simplifies Precise Layouts in Small Spaces

Company: DYNAPAR, GURNEE, ILLINOIS, USA; www.dynapar.com

So many interfaces to our world are digital: the membrane buttons on the microwave, the touch screen in the car's climate control system, the control panel on a modern milling machine or production robot.

But the real world is analog: a motor turns a shaft that rotates the microwave's table; servos actuate air deflector doors in the car's heating system; a motor driving the robot's arm moves the arm at a precise acceleration. Dynapar™ is a key reason our digital devices can affect what happens in the analog world. And Les Burke and PADS® are part of the equation that makes it all work.

Applications

Dynapar (www.dynapar.com) designs and manufactures encoders, resolvers, and accessories that accurately monitor and control motion in systems. They help ensure that what the digital controller wants is what the analog system does. That requires designing and manufacturing electro-mechanical devices that are extremely precise and trustworthy. Dynapar is part of Danaher Corporation (www.danaher.com).

Background

For over three decades, Les Burke has gained extensive experience designing board layouts with PADS. Although he's also acquired experience with other layout systems throughout his career, he prefers PADS. "PADS is very user-friendly," Les says. "You can do a lot of things with it. Whenever I evaluate other products, I find I always compare them to PADS, and they just don't measure up."

Les' company is known for designing very precise monitors and controls that



CUSTOMER PROFILE

Dynapar, Gurnee, IL

Challenges:

- Extremely small, circular PCB area
- Placement is the main challenge to their designs

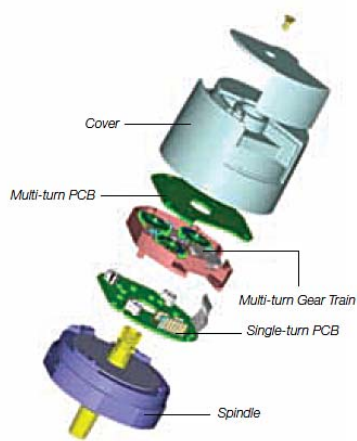
Solutions:

- PADS can easily handle small areas and unusual PCB geometry
- PADS placement and layout tools handle even the tightest design
- Physical Design re-use lets Dynapar save proven circuits that fit the geometry

"I can't imagine using any other layout software for what I do, working in so small of a space."

LES BURKE, ENGINEER,
DYNAPAR

must fit into very small spaces. His designs typically occupy no more than a few square inches in a round geometry. "That presents all kinds of challenges when trying to place and route square and rectangular parts on a small, round board 1.5 to 3 inches in diameter," Les says.



Dynapar's encoders, like this one, incorporate very small PCBs with a circular form factor.

Experience

Les uses PADS for schematic capture and board layout. His circuits are not sophisticated or complex, and because of the small area, he strictly uses interactive routing. "I rarely deal with critical trace lengths or high-speed paths or high power." On a scale of one to ten, Les says

his designs are probably a four in sophistication. "But, it's the placement in a small space that's the challenge." Les says that by the time he's figured out the parts placement using PADS, the routing is very straightforward. Interactive routing gives him more control over where ground and power attachments and other points need to be located in such a small space.

"I've looked at other layout software. We have sister companies, so I've seen different products used in the United States and elsewhere. I always return to PADS, or I redo layouts in PADS when taking over a design created in another layout software." He says PADS is just faster for him. "PADS is much more intuitive compared to other products," he says.

One of the features Les likes in PADS is the ability to easily select components from an existing design and add them to the library. "Physical design reuse takes a few basic steps, and it's done," he says. Les also finds PADS' mechanical drawing capabilities more than adequate for design. "I can draw anything I need to in PADS."

Les says he can't imagine doing some layouts in other software. Simple things, like moving components and rearranging them in a different pattern, are easier in PADS. "I recently worked on a board where I got down to the end of the layout and only had a couple nets I had

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**LES BURKE, ENGINEER,
DYNAPAR**

to connect. I realized I needed to rearrange parts to make things fit better, so I started moving them around and flipping them over, rotating them, and so on. It was easy with PADS."

Results

Connecting our digital lives to an analog world is possible through products Les Burke designs for Dynapar. Les finds he can accomplish his designs better with PADS than other software, helping keep Dynapar's products on the leading edge of their markets. "Our customers trust the precision of our products. My work supports that trust. And I'm using PADS to do it."

Find out more about PADS personal automated design system by visiting: **www.pads.com**.

Find more about Dynapar at: **www.dynapar.com**

For the latest product information, call us or visit: www.pads.com

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