

New coil design method promises good new year

By ANDREA DECKERT

Tabtronics Inc. is introducing a new technology aimed at making magnetic windings more efficient. Company officials think the innovation will boost sales and provide a better product for customers.

Last month, the Livingston County company unveiled its patent-pending development, Hyper-X Magnetic Technology, at the Power Electronics Technology Exhibit and Conference in Chicago.

The technology uses an advanced coil design method that delivers high-power density magnetic components that can significantly reduce power dissipation—by 12 percent to more than 50 percent—and improve efficiency, while creating a cost-effective product.

The technology was developed by Victor Quinn, Tabtronics' chief technology officer and design excellence manager, who said the benefits could mean lighter radios for soldiers in combat, lighter components in aircraft, smaller hand-held computers with longer battery life and lower operating costs for utility customers.

As consumer demands and system requirements continue to push the need for smaller components, optimization of magnetic windings becomes a critical step to achieve overall system miniaturization, Quinn added.

James Tabbi, Tabtronics president and CEO, said the new technology is a simple, yet elegant, non-traditional alternative that he hopes will bring in new customers in areas not normally associated with the company—including the motor and utility industries—and added revenue.

"It's a turning point for us," said Tabbi, noting the innovation could transform Tabtronics from a custom job shop to a

leader in technological advancements.

Quinn said products made using the technology can be small, lighter, more power-effective, run longer on less battery power and offer lower operating costs since it does not require as much copper as the traditional windings.

While the magnetic industry has been looking at it for years, it took Quinn mere months to complete the project.

"I thought unconventionally and was persistent and determined beyond belief," Quinn said.

The technology can be applied in components the company designs and manufactures or it can be licensed for another business' manufacturing needs, Tabbi said. The company now will work with existing customers, explaining the technology and having them help get the word out. The firm also is working with university researchers to get their input.

Tabtronics is targeting March to launch its first standard product line using the technology. Tabbi is hoping the new products will bring in enough capital to enhance the company's technical capabilities.

The \$5 million design and manufacturing company specializes in complex electromagnetic components for the military, avionics and high-end industrial markets.

The company traditionally has focused on producing lower-volume, more highly specialized components for original equipment manufacturers, such as Lockheed Martin Aeronautics Co., Harris Corp. RF Communications Division, PerkinElmer Inc. and Raytheon Co.

Tabtronics was founded in 1978 by Joseph Tabbi, James Tabbi's father, and specializes in complex transformers, inductors, coils and integrated assemblies for applications, including power, filtering,

signal transmissions and motion control.

The younger Tabbi took the reins of the business in 1994. Its 30,000-square-foot facility in Piffard includes a tool fixture and mold shop, encapsulation center and testing laboratories.

In 2001, the company acquired CEN Electronics Inc.'s specialty magnetics group. Employment peaked around that time, with some 120 employees, but due to a sluggish economy and the need to reduce the duplication of services after the acquisition, that number has been reduced to 60 employees.

Employment has been stable for the past 18 months, Tabbi said. During the downsizing, revenues have been maintained.

Tabtronics has been a magnetic supplier for RF Communications for the past 15 years.

Dennis Newberry, a supplier quality engineer at RF Communications, said the relationship between the two companies has been good. Tabbi is approachable and meets with those at the Rochester company quarterly, he said.

Newberry has seen some information on Tabtronics' new technology, which he described as exciting. While he forwards the information to design engineers at Harris, Newberry thought the concept would be a success, especially since it was created by Quinn, who has a good reputation in the industry.

"I don't see at this point why it wouldn't work depending on the application," Newberry said.

In addition to the new technology, Tabtronics has been working on ways to set it apart from other magnetic component manufacturers. The company also has a new slogan: "Thinking big. Designing small. Magnetics to the highest power."

"The whole world has been opened up to us," Tabbi said.

The company has had a vision of making a change over the past three to four years, he said. "We are now making that vision a reality."

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