NVE's Cutting-Edge Technology Provides Competitive Advantage

Tanner EDA Provides Design Tools for Life-saving Equipment

Working on the edge of next-generation technology can be a nail-biting experience.

In addition to finding applications that could benefit from biomagnetics and spintronics – a nanotechnology process that many experts believe will shape the next wave of microelectronics – an equal challenge lies in designing components that actually do what they are intended to do right from the start.

NVE Corp., Eden Prairie, Minn., knows first-hand what that pressure feels like.

The company, which makes the world's smallest data digital coupler, is a leader in cutting-edge spintronic sensors and couplers for medical, government and industrial devices. It's also doing extensive work with Bio-Magnetic Interfacing Concepts. BioMagnetICs are used in ultra-miniature biological warfare agent detectors, real-time DNA testers, and laboratory-on-a-chip diagnostic systems.

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—Daniel A. Baker,
President and Chief Executive Officer, NVE

Working with the likes of the U.S. Air Force Research Laboratory, the U.S. Army Research Laboratory, the Defense Advanced Research Projects Agency (DARPA), the Defense Threat Reduction Agency (DTRA), NASA, the National Science Foundation (NSF), and the Office of Naval Research (ONR) on demanding projects that require high degrees of precision and accuracy, there's little room for mistakes when it comes to component design.

NVE, though, has found a way to make the job easier and sharpen its competitive advantage – Tanner EDA design tools.

The company uses Tanner EDA's L-Edit Pro as its main design platform, and the results, according to president and chief executive officer Daniel A. Baker, speak for themselves.

"We can do new designs in weeks with Tanner EDA tools. Normally they take months," said Baker. "We have also seen that the designs work the first time we do them. We don't have time to do multiple designs. By using Tanner EDA tools, we have been able to reduce our costs and design time."

Meeting NVE's Needs

That's the kind of speed and accuracy that NVE, founded in 1989, was seeking five years ago when it bought the Tanner software. A year or so later, it standardized on the Tanner platform, migrating away from its older legacy system.

The decision stemmed from NVE's desire to stay ahead of the pack. To hold on to a leading position in the emerging biomagnetics and spintronics segments, the company must rely on its design team's ability to develop products for a time-sensitive market, where functional accuracy is absolutely critical. Without its design strength, NVE would have a difficult time delivering complex components to customers that are producing, in some instances, life-saving equipment.

"We pride ourselves on producing products that make a difference," Baker said. "We are making products for the Department of Defense that will help Homeland Security officials detect substances that potentially could be used in bio-terrorism or help doctors detect pathogens and improve their medical diagnoses. Our products are also in hearing aids and pacemakers."

Baker stresses that his company is doing high value-added designs with sensitive time-to-market requirements. "Tanner has given us the speed to meet those time-to-market goals, reduce design time, and lessen the need to do various design iterations," he said.

Tanner EDA's Contribution

NVE, which booked $12 million in revenue last year, finds that the DRC and LVS features of Tanner EDA's tools are important elements in its design layout process. NVE engineers can do all the necessary layout work with DRC and LVS, while running on the user-friendly Windows XP operating system, Baker said.

One instance where this is particularly helpful is in designing coils used in couplers, he added. Being able to design round coils from the beginning of the project – as opposed to designing straight pieces that have to be joined together and bent later in the process – provides increased engineering flexibility and lower overall costs with a minimal IT and software investment.

"Tanner EDA provides cost-effective solutions, which is important for a company like ours," Baker said. "Tanner is part of our value proposition and we envision increasing our use of Tanner as we move into the future."

Along those lines, NVE is currently evaluating Tanner EDA's HiPer Silicon solution.

A-GLANCE:

NVE CORPORATION

NVE Corporation

Headquarters: Eden Prairie, Minn.

Line of Business: Components for medical, government and industrial devices

Number of Employees: 70

2004 Revenue: $12 million

Key Products: Spintronic sensors, couplers, and BioMagnetICs.

Recent Design Challenge: To produce high quality devices while meeting tight time-to-market deadlines

The Engineering Response: Tanner EDA's L-Edit Pro

Tanner EDA

For more information about Tanner EDA and to download free demonstration software go to www.tannereda.com/ee7 or call 1-877-325-2223