

Mentor Graphics Grants PCB Technology Leadership Awards

Printed Circuit Board from GaGe Applied Technologies Winner for Industrial Control, Instrumentation, Security & Medical Category

Lockport , IL (April 30, 2007)

- Continuing its tradition of promoting and recognizing printed circuit board (PCB) designer excellence, Mentor Graphics Corporation held its 19th PCB Technology Leadership Awards Contest. The contest showcases the achievements of engineers and PCB designers who use Mentor's technology applications to design state-of-the-art complex PCB systems. This year's contest showcased a record number of submissions from countries around the world, including Germany , Switzerland , China , Norway , Singapore , Austria , Canada , Korea , India , Israel , Portugal and the United Kingdom . GaGe won the Industrial Control, Instrumentation, Security and Medical category for the printed circuit board they designed for a new family of high-speed digitizers.

GaGe's next generation of high-speed digitizers won for the complexity of its design, which is by far one of the most complex developed by GaGe to date. PCB design is a very critical component at such high speeds. Trace matching, controlling impedance, and differential pair matching requirements are some of the design challenges GaGe engineers and designers faced. The complexity of the routing, combined with signal integrity and grounding issues, were such that our simulation and design tools were utilized to their fullest extent. Extensive testing and simulations were performed to validate each design step.

The board is comprised of 12 layers with split and mixed signal planes. A split/mixed stack up design was used to optimize and meet the opposing needs of the analog and digital sections. A split plane and routing strategy was defined in order to reduce cross-talk between analog and digital signal domains. The design also has layer restrictions, class rules, trace length rules, differential pair rules and trace width per layer rules for controlled impedance. Plane cutout areas and copper/trace keep-out areas were also a necessity for different design requirements. Component height restrictions, component free areas, heat sinks, custom shields and high-density component packages are some of the physical challenges GaGe engineers and designers faced.

Mentor Graphics design tools allowed the GaGe team to efficiently design its latest complex, state-of-the-art, family of high-speed digitizers. "Without these tools, manual routing of the CLK signals, differential pairs, and high-speed signals would have been very difficult and time consuming," said Chantal Holloway, GaGe PCB Designer. "Given the complexity of this project, Mentor's design tools allowed us to achieve desired results quickly without impacting the schedule", Holloway added.

Mentor Graphics Corporation is an internationally leading supplier of software and hardware solutions for the development of electronic circuits. Mentor's portfolio includes products, consulting and support services relied on by the most successful manufacturers of electronics and semiconductor worldwide.

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For Further Information

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About GaGe

GaGe (www.gage-applied.com), a brand of DynamicSignals LLC (DynamicSignals.com), is a worldwide industry leader in high-performance signal capture. GaGe, KineticSystems, Preston Scientific and Cyber Systems, all brands of the Dynamic Signals growing family, serve a wide-range of industries by providing instruments and modules for PC-based test and measurement systems and synthetic instrumentation built on the PCI, CompactPCI, PXI, VXI, CAMAC and proprietary platforms.

GaGe's product offering includes a family of multi-MHz to GHz digitizers and scope cards, analog signal generator cards, digital input and digital output cards, as well as the programming-free GageScope® oscilloscope software and a vast array of powerful Software Development Kits (SDKs).

GaGe's family of signal capture products consists of the CompuScope line of 8-bit, 12-bit, 14-bit and 16-bit digitizers and scope cards for the PCI and CompactPCI/PXI buses. With sampling rates up to 2 GS/s and very deep on-board acquisition memory of up to 4 Gigabytes, GaGe's product line offers the top performance on the market today in the 3 key dimensions of sampling speed, resolution, and memory.

The company's customer focus translates into products that are used across diverse industries such as Communications, Computers, Military/Aerospace, Fundamental Research, and Education. Applications served are Manufacturing Test, Radar (SIGINT), Ultrasonics, Lasers/LIDAR, Spectroscopy, Automated Test Equipment, etc.

For more information on GaGe or any of its products, contact the company at 900 N. State Street , Lockport , IL 60441.

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For more information about Gage Applied Technologies [click here](#).



PCB Technology Leadership Awards

Congratulations to the 2007 Technology Leadership Award Recipients!

Category	Company	Design Team
Best overall Design	Siemens	Helmut Riedl, Mr. Manfred Hofstatter, Michael Heider, Alfred Fuchs
Consumer electronics & handheld	Qualcomm Inc.	Larry Paul, George Cordero, Mahmoud Azartash, Anil Kukreja, Vinh Nguyen, Vivek Kushoo, Andy Green
Industrial control, instrumentation, security & medical	Gage Applied Technologies Inc.	Chantal Holloway, Guillaume Turgeon
Military & aerospace	L-3 Communications	Jayson Harames, Rolf Thompson
PC computers & Peripherals	Fujitsu Siemens Computers GmbH	Andreas Schaefer, Markus Wicher, Harald Lugert
Telcom switches, network servers, base stations & computer mainframes	IBM Zurich Research Laboratory	Peter Dill
Transportation & automotive	AVL List GmbH	Wolfgang Rinner, Josef Haring, Franz Summerrauer, Alfred Poelzl

Registration for the 2008 Technology Leadership Awards opens in October.

[Remind Me](#) when registration opens for the 2008 Technology Leadership Awards.

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Mentor Graphics Announces Winners of its 19th Annual PCB Technology Leadership Awards

SAN JOSE, Calif., March 27, 2007 — Continuing its tradition of promoting and recognizing printed circuit board (PCB) designer excellence, Mentor Graphics Corporation (NASDAQ: MENT) announced the winners of its 19th Annual PCB Technology Leadership Awards at a banquet in coordination with PCB Design Conference West. The longest running competition of its kind for PCB designers in the EDA industry, this year the program attracted a record number of submissions from countries around the world, including Germany, Switzerland, China, Norway, Singapore, Austria, Canada, Korea, India, Israel, Portugal and the United Kingdom.

Industry experts judged entries in six categories representing a wide variety of fields: PC Computers and Peripherals; Consumer Electronics & Handhelds; Industrial Control, Instrumentation, Security & Medical; Military & Aerospace; Telecommunication Switches, Network Servers, Base Stations and Computer Mainframes; Transportation and Automotive; and Best Design Overall.

"Mentor Graphics is committed to the PCB designer community and our PCB Technology Leadership Awards program provides the opportunity to showcase the most innovative and talented designers worldwide," said Henry Potts, vice president and general manager, systems design division, Mentor Graphics. "This year we saw a significant increase in the complexity of the submissions, with designs including high-speed, pin densities and layers, as well as use of advanced PCB fabrication like microvias. This further validates our investment in innovative design technologies thus enabling designers to overcome these challenges and deliver competitive electronic products, faster."

This year's panel of judges included: Pete Waddell, president, UP Media Group; Rick Hartley, industry consultant; David Wiens, director of product development, systems design division, Mentor Graphics; Happy T. Holden, senior technologist, systems design division, Mentor Graphics; Gary Ferrari, industry consultant.

"I am pleased to be involved in the judging of the EDA industry's most prestigious PCB design competition. Over the past few years, I have seen exponential growth in both the quality and the complexity of the designs," said Waddell. "It was both an honor and a challenge for me to help select the best designs, and the best designers, from around the world. The variety of submissions continues to impress me. Selecting the winners was a tough decision and in my opinion, everyone who entered was worthy of an award."

"Winning the Military & Aerospace category in the industry's primary design competition is a tremendous honor," said Jayson Harames, PCB design engineer, L-3 Communications. "The hybrid switch module was one of my more complex designs, and makes this achievement even more meaningful to me."

This year's Technology Leadership Awards winner for the Best Overall Design is the PCB design team from Siemens including: Mr. Helmut Riedl, Mr. Manfred Hofstatter, Mr. Michael Heider and Mr. Alfred Fuchs. The Siemens team's winning entry is a reconfigurable FPGA-based signal processing platform on PCI-X. This design was created using Mentor Graphics Board Station RE, HyperLynx® and AutoTherm® tools.

Mentor Graphics will honor award winners at a banquet on Wednesday, March 28th at the Villa Montalvo Center in Saratoga, California.

2007 Technology Leadership Award Winners

Category: Best Overall Design

Company Name: Siemens

Designer/s: Helmut Riedl, Manfred Hofstatter, Michael Heider and Alfred Fuchs

Design Description: Reconfigurable FPGA-based signal processing platform

Category: Consumer Electronics & Handhelds

Company Name: Qualcomm Inc.

Designer/s: Larry Paul, George Cordero, Mahmoud Azartash, Anil Kukreja, Vinh Nguyen, Andy Green and Vivek Khushoo

Design Description: RUMI II Mobile Station Modem (MSM) chip emulation card

Category: Industrial Control, Instrumentation, Security & Medical

Company Name: Gage Applied Technologies Inc.

Designer/s: Chantal Holloway and Guillaume Turgeon

Design Description: Rabbit high-speed digitizers

Category: Military & Aerospace

Company Name: L-3 Communications

Designer/s: Jayson Harames and Rolf Thompson

Design Description: XFUSION Hybrid Switch Model (HSM) CCA

Category: PC Computers and Peripherals

Company Name: Fujitsu-Siemens

Designer/s: Andreas Schaefer, Markus Wicher and Harald Lugert

Design Description: Mainboard for business PCs

Category: Telecommunication Switches, Network Servers, Base Stations and Computer Mainframes

Company Name: IBM Zurich Research Laboratory

Designer/s: Peter Dill

Design Description: Controller board for a 64x64 port high performance optical switch

Category: Transportation and Automotive

Company Name: AVL List GmbH

Designer/s: Wolfgang Rinner, Josef Haring, Franz Summerauer and Alfred Poelzi

Design Description: Dual gigabit, Ethernet concentrator (high-speed communication and control interface)

About Mentor Graphics Mentor Graphics Corporation (Nasdaq: MENT) is a world leader in electronic hardware and software design solutions, providing products, consulting services and award-winning support for the world's most successful electronics and semiconductor companies. Established in 1981, the company reported revenues over the last 12 months of about \$800 million and employs approximately 4,250 people worldwide. Corporate headquarters are located at 8005 S.W. Boeckman Road, Wilsonville, Oregon 97070-7777. World Wide Web site:

<http://www.mentor.com/>

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