

Focusing on News & Information  
for Contemporary Controls'  
Valued Customers

# NETWORK

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## TRADE SHOWS

**Bolster your knowledge of the industry  
by attending these trade shows.**

### HiH (Hi-Tech House) 2006 November 9–12

Exhibition Center  
Gostiny Dvor  
Stand #311  
Moscow, Russia

### SPS/IPC/Drives 2006 November 28–30

Exhibition Centre Nuremberg  
Hall 8, Stand #309  
Nuremberg, Germany

### AHR EXPO 2007 January 29–31

Dallas Convention Center  
Booth #1616  
Dallas, Texas USA



**CONTEMPORARY CONTROLS**

Connecting Devices Worldwide

## Contemporary Controls True Ethernet Media Converter



“The EIMC has been upgraded to take advantage of new components that allow us to achieve better cost factors, an improved manufacturing technique to minimize production time, and automated testing to provide reliable products at a reduced cost to our customers,” explains Joe Stasiek, Sales Manager.

The EIMC is a true media converter, converting signals between copper and fiber without any Ethernet frame store-and-forward; therefore, the data experiences minimal latency. This product can operate in a transparent mode allowing the fiber optic connection to be transparent to the copper ports being connected. In this manner, the link

status of the copper ports truly reflects the status of each end copper port. True media converters are very important in RSTP networks. If a store-and-forward media converter (or switched media converter) is used, this can create long recovery times or broadcast storms.

Built to operate in an industrial environment, the rugged design of all the models will operate in a 0° to +60°C temperature range. The models support full- or half-duplex mode. The EIMC-10T/F can operate at 10 Mbps and convert 10BASE-T to 10BASE-FL (850 nm) or it can operate at 100 Mbps and convert 100BASE-TX to 100BASE-SX (850 nm). Two models pass 100-Mbps data between 100BASE-TX and 100BASE-FX (1300 nm) multimode segments: the EIMC-100T/FT and the EIMC-100T/FC. The EIMC-100T/FCS is used for 100 Mbps (1300 nm) single-mode networks.

Two front-panel DIP switches set the operational mode—full-duplex, half-duplex or transparent. Each unit will auto-negotiate data rate and duplex with its copper partner in transparent mode, but only the data rate will be negotiated in either the half- or full-duplex mode. There is no auto-negotiation on the fiber side. The fiber port settings are slaved to what is negotiated on the copper side. In either half- or full-duplex mode, the EIMC-10T/F fiber connection can be up to 2 km under 10BASE-FL operation or 300 m under 100BASE-SX operation. Both the EIMC-100T/FC and the EIMC-100T/FT are limited to 2 km in full-duplex and 412 m in half-duplex mode. The EIMC-100T/FCS extends fiber distance to 15 km in full-duplex mode.

From Stasiek’s perspective transparent mode is meant for applications where a pair of EIMC devices terminate the ends of a fiber link—the two copper partners auto-negotiate as if they were directly connected; the equipment at each end knows its partner is alive and well. Stasiek says if you were to replace one of the media converters with a fiber-to-copper switch, you would use store-and-forward technology. This store-and-forward technology does not allow an end device to see the other end device’s link status. The end devices might assume everything is functional, but in reality there might be no connectivity between the two devices.

Also, if we didn’t have the transparent mode, RSTP would not know the status of the other links. By having the transparent mode ability, the link status can be made available to the managed switches that are participating in the spanning tree. If you have an unmanaged switch that performs media conversion from copper to fiber, that link status will not be made available to the switches that are in that same spanning tree network. What occurs is either a broken link or a loop scenario.

The models are priced at \$199 except for the EIMC-100T/FCS which is priced at \$249.

## Launching of the New Building Automation Site



Is building automation seeing more integration of Ethernet-connectivity products in the network infrastructure? The answer is "yes" with the aid of the Internet providing information to major BAS suppliers, manufacturers, and installers about equipment and services.

Recognizing that these individuals need solutions for this industry, Contemporary Controls has launched a new building automation web site. The URL address is [www.ccontrols.com](http://www.ccontrols.com). "We provide a site that offers our Industrial Ethernet connectivity devices, and with the necessary skill base, these individuals will be able to install and maintain their systems," says Joe Stasiek, Sales Manager. "We also have answers to key issues that can't be ignored such as UL 864 switching hubs."

The information serves the visitors straight from the home page with links including BAS Ethernet switching hubs, media converters, and E-commerce. Four drop-down menus—About Us, Fundamentals, Support, and Ordering—spotlight material that offers the latest news about the company and Ethernet technology. It is logically grouped in sections, all creating a consistent appearance.

"By surfing through our site, you'll be able to make the correct choices for any of your systems," says Stasiek. "It can only bring direct benefits to you and your application." Visit [www.ccontrols.com](http://www.ccontrols.com).

## Engineering Intern From Contemporary Controls Meritoriously Promoted to Corporal



Keith Thomas, formerly an engineering intern at Contemporary Controls, was meritoriously promoted to Corporal while serving with the Marine Wing Support Squadron 374 at Al Taqaddum Air Base in Iraq. Keith has been serving in Iraq since February 2006.

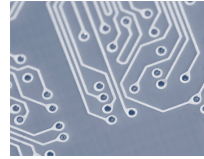
"I'm proud to be here," said Keith. "I've always wanted to be a Marine and

continue the tradition of my grand-uncle and father by serving my country." (Pictured left to right is Lt. Niemi congratulating Cpl. Thomas.)

Keith was a third-year University student when he enlisted in the Marine Corps in 2005. He attended Marine Combat Training at Camp Pendleton before being enrolled in the Marine Corps Communications-Electronics School at Twenty Nine Palms, California.

After graduating first in his class in Information System Specialist School, Keith was meritoriously promoted to Lance Corporal and assigned to MWSS 374, providing support for the Third Air Wing. He received his second meritorious commendation on July 27, 2006, based on his performance providing computer networking support for MWSS 374 headquarters, currently serving in western Iraq.

George Thomas knows many individuals who have children in the military. George said, "They understand exactly what I mean when I say that I am very proud of my son, but I am counting the days until he returns home safely."



## TECH UPDATE

### No Minimum Length for CAT 5

Various networking technologies specify that stations must be separated by some minimum distance. Occasionally, a customer is surprised about the lack of a minimum length requirement for their CAT 5 cable that connects one industrial Ethernet device to another.

Network cable minimum length specifications arise because of an impedance mismatch between elements in the signal path. When electrical energy is transmitted through a cable, some of it is not absorbed by the receiving station and is instead "reflected" back to the source. This reflected energy disturbs the purity of the signal—and if the effect is of sufficient magnitude, the signal can be degraded to the extent that its information is corrupted or even useless. If source and destination transceiver impedances match the impedance of the cable itself, there is no reflected energy and signal energy is delivered completely.

Reflected signal is always an issue in a bus topology because only the end devices have transceiver impedance values that match the impedance of the cable. Mid-bus device transceivers must have higher impedance values to avoid "loading" the cable (preventing proper signal delivery to devices further along the bus). Thus, a mid-bus device transceiver presents an impedance mismatch to the cable and inevitably creates some degree of reflected energy. To keep the reflected energy to acceptable levels, a bus protocol will specify a minimum length of cable that separates two bus devices.

Industrial Ethernet uses a star topology in which devices exist only at each end of a cable. With this topology, both transceiver impedances match the cable impedance and no appreciable signal reflection occurs. This lack of signal reflection is true whether the devices are separated by 100 m or 100 mm. Therefore, there is no need to specify a minimum cable length.

By **Bill Greer, Senior Product Specialist**

For more topics, visit 'Industrial Ethernet Blogging With Bill' at [www.ccontrols.com/blog.htm](http://www.ccontrols.com/blog.htm)



## EtherNet/IP™ Seminar Enhances Knowledge of this Technology

As part of a continuing series, the ODVA held another EtherNet/IP Seminar in Chicago on September 21, 2006. Four engineers from Contemporary Controls participated in the meeting including Joe Stasiek, Sales Manager, in an effort to enhance their knowledge about Ethernet and EtherNet/IP.

Stasiek says this seminar provided interactivity between attendees—individuals who have attempted EtherNet/IP projects and ones not employing EtherNet/IP in their applications, which were the majority. “Most people attending were trying to determine how EtherNet/IP can be part of their product usage, whether they’re a manufacturer or a user just learning how to employ it better,” explains Stasiek.

Seminar topics included overviews of Industrial Ethernet, CIP, EtherNet/IP—and a roadmap for EtherNet/IP development in the areas of safety and motion.

## Best Friends Wed

When Maria Martinez and George Karones met five years ago working together at Contemporary Controls they sensed a real connection—a connection that grew into a committed relationship. “We became best friends to each other and that led to marriage,” says Maria.

Maria and George were wed on May 28, 2006 at All Saints Greek Orthodox Church in Joliet, IL, followed by a reception at the Prairie Bluff Golf Course in Lockport, IL.

Maria greets you on the phone each day for she is the Senior Customer Service Representative and George is kept busy as Operations Manager. “By being together at the company we’ve learned how to communicate,” says Maria. “We shared our joys, stories, and struggles, but our love for each other overcame any obstacles.”

The couple’s merged and happy family include daughter Jasmin 16, Nikko 4, Angellica 17, and Alexandra 14.

Best wishes go out to you both!



## Technical Training Encompasses Everything From Product Knowledge to IT Department Issues

Corporate headquarters was the site of a two-week intensive training session in August for technical support personnel from both the UK and German subsidiaries.

Bill Greer, our Senior Product Specialist, instructed Robert Owen and Joerg Wehnert in the basics of Ethernet as well as teaching them the functions of our managed switches. The two participated in training labs to build redundancy connections with trunking, RSTP, RapidRing® technology and they also constructed VLANs. To ensure they both understood this information, they had to pass a comprehensive test.

George Karones, Operations Manager, informed them about the label printing procedures for our devices. They also viewed videos and presentations on lead-free soldering.

Bennet Levine, R&D Manager, provided guidance on RapidRing technology.

Neil Maloney, Manufacturing Engineer/LAN Administrator, informed them about the importance of the IT department—VPN, LAN-Security, and administering networks.

Aside from the lengthy training, both Robert and Joerg enjoyed their nights mingling with the staff and dining at different restaurants. One night they watched our Chicago soccer team, the Chicago Fire, go head-to-head with the Houston Dynamo. And a visit to the States wouldn’t be complete without sightseeing the city of Chicago. Both were impressed with the architecture on Michigan Avenue and the views from the Sears Tower as well as the John Hancock Center. Other favorite spots were Navy Pier, the Field Museum, and Millennium Park.

Joerg is a new member of the Contemporary Control GmbH organization and his role in the company is that of Technical Support Specialist. His specific responsibility is to ensure that the customers’ technical questions on products and special projects are answered to their satisfaction. Joerg also is in charge of the IT department, repairing equipment, and attending trade shows to promote the company’s technologies.

He served in the 3rd Battalion 132 in Zeithain until June 2003. Afterwards, he attended the University of Applied Sciences, Merseburg, where he received his degree in Technical Business Economics.

Joerg stays fit by playing soccer, handball, and cycling the countryside of his hometown in Bad Lauchstaedt. He enjoys these sports whenever he gets the opportunity.



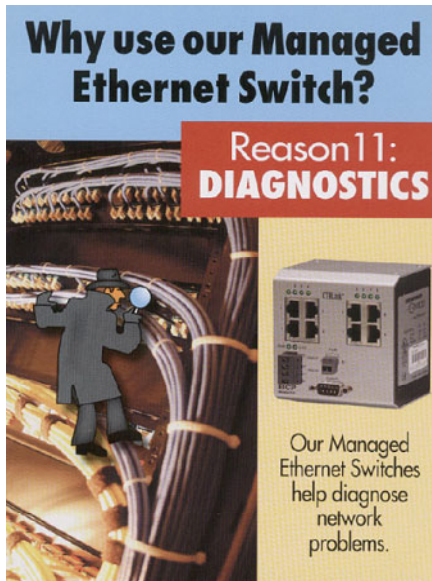
Robert (left) and Joerg (right) are performing a lab experiment on RapidRing technology.



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- Contemporary Controls true Ethernet media converters provide solid reliability at a reduced cost to their customers.
- The company's new Building Automation web site, [www.ccontrols.com](http://www.ccontrols.com), offers the necessary information for both integrators and installers to maintain their systems.
- Read this month's Tech Update to learn that there is no need to specify a minimum cable length when connecting one Ethernet device to another.