Industrial Ethernet at a COTS Price

ENGINEERS WHO INSTALL Ethernet on a budget in industrial environments traditionally face a devil's choice: buy unmanaged industrial switches and live with their limitations, or risk using commercial switches to gain the advantages of software-based network management.

Advantech is convinced that you no longer have to make that choice. The company says its ProView industrial Ethernet switches are designed to solve that dilemma by offering the critical features of a managed switch as a cost-effective solution.

IT professionals prize managed devices because with them, they can use a network management system (NMS) to monitor and troubleshoot health and traffic from the comfort of their air-conditioned offices. Control engineers have prioritized industrial ruggedness, immunity to electromagnetic interference and long life, and want to avoid the frequent failures and version changes common with commercial, off-the-shelf (COTS) technology. Engineers are learning that they too can benefit from the information access provided by managed devices, but a managed industrial switch could cost three to five times as much as its no-frills or COTS alternatives, potentially breaking the budget and putting a project out of reach.

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"Smart, strong and simple ProView industrial Ethernet switches not only offer advanced efficiency of networking status management, but also provide simplified troubleshooting for users in the field," says Ken Kao, product sales manager, iConnectivity Group, Advantech. "They support Modbus/TCP and SNMP protocols, and industrial-grade reliability with a wide operating temperature range, power-saving technology and UL508/C1D2 certification."

The control engineer and IT manager can use ProView switches to converge process control and IT into one networking domain, Kao says, and monitor the real-time networking status with both SCADA and NMS software.

The switches offer a VIP port that allows engineers to design deterministic Ethernet communications. The VIP port can prioritize the data traffic for process control by tightening delay/jitter times. "For example, an administrator could set I/O scanning traffic at the VIP port as higher priority than other application traffic—HMI, computing, etc.," Kao says. "When the switch receives traffic from the VIP port, the I/O scanning data will be sent out ahead of other traffic—even if it has been received after the other traffic—through prioritization applied by the VIP port."

FOR MORE INFORMATION

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Energy-efficient Ethernet (IEEE 802.3az) adjusts system power consumption automatically based on port connection status and data transmission distance. "That can save up to 50%, reducing the electric bill a lot in a 24/7 operation," Kao explains. "The fanless design, wide range of operating temperature [-40 to 75 °C] and industrial certification [C1D2, UL508], promise true, industrial-grade reliability for process, discrete and machine environments."

Machinery OEMs can use these cost-effective and manageable industrial switches to bring I/O and network status into an embedded PC for monitoring and remote access. "An industrial managed switch can cost $500 or more," says Kao says. "The ProView starts at around $100."

Kao adds the switches are available in more than 30 SKUs from Fast Ethernet to Gigabit Ethernet, and in a multiple range of different port combinations with DIN-rail or wall-mount kits and the company's EKI configuration utility. Advantech's ProView industrial Ethernet switches also carry a five-year warranty. CD