

Printing and labelling system manufacturer develops new printing system for "promotions" packaging

PC-based control is an instant win

With a CP6502 Panel PC, Imaje was able to create an all-in-one display and control system, resulting in a very small footprint for its podium-style ProControl™ printing system.



→ Imaje Americas, based in Kennesaw, Georgia, USA develops and produces devices for printing specific packaging information such as expiration dates, lot numbers, manufacturer locations, bar codes etc. In order to stay ahead in this demanding and rapidly evolving market, Imaje needs to react quickly to customer needs. In a prime example of the company's agility, Imaje developed a safe, PC-based printing system in just 3 months to capture the emerging "promotions" package printing market.

Major consumer product manufacturers regularly tie in "instant win" promotions with their products to boost excitement around their products and strengthen brand loyalty. Whether the prize is a new car or free bottle of soda, rapid customization, contest security and tight accuracy to ensure prizes are properly awarded is critical to the success of prize-driven marketing campaigns. Damon Schingeck, Technical Manager at Imaje North America said, "Compared with most other package printing niches, the promotions market is relatively new

and Imaje made it a priority to develop a solution very quickly after identifying the market as a lucrative opportunity." Despite tight deadlines to deliver a final, customized product, Imaje controls always need to deliver the high speed and accuracy their printing systems are known for.

"In the autumn of 2004, Imaje had a specific customer order that was for a promotions printing application." The search was on to identify a secure and highly flexible system that could successfully manage instant win contest data and print

over consumer goods packaging to properly award the prizes. After an initial broad search for PLC and PC suppliers, Imaje decided to use Beckhoff PC-based control.

With the system requirements having been met, Imaje launched into discussions with Beckhoff on the finer details of the PC-based controls architecture. In just three months, Imaje went from initial design stages to a finished pilot system. This was accomplished with an Imaje team of four and support from Beckhoff.

ProControl-I™ enters the market

The project yielded the new podium-style system now called the Imaje ProControl-I™. The ProControl-I system is highly adaptable to a wide range of packages, including boxes, bottles and other plastic containers and pouches and can support multiple printers running simultaneously. The Imaje printers utilize continuous ink jet printing: This method involves electro-statically charging droplets of ink and then deflects the ink to be thrown on the packages. The print head never directly touches the product.

For the controls, Imaje selected the Beckhoff CP6502 built-in Panel PC, which serves as both the hardware HMI and controller in a single unit. It has an integrated 15" TFT display screen and a 2.4 GHz Intel Pentium® 4 processor. The Panel PC runs TwinCAT PLC software as the control platform.

"The Beckhoff Panel PC with TwinCAT allowed us to create a powerful, yet compact system since it serves as both our display and controller," Schingeck said. "The extremely small footprint has become a key selling feature for the ProControl-I." In addition, the design allows for the entire controls system, including I/O, to be contained in the same housing as the display.

The ProControl-I system handles packages moving through conveyor systems. Once packages are detected by a photo eye and encoder, the ProControl-I downloads a specific code from a secure database, and uses the Imaje printers to mark each product. The system can download and assign prints for up to 22 products per second. Via "record cancellation after downloadin" and print verification monitoring, these promotion messages are non-repeatable and the system is designed to be tamper-proof and error-free.

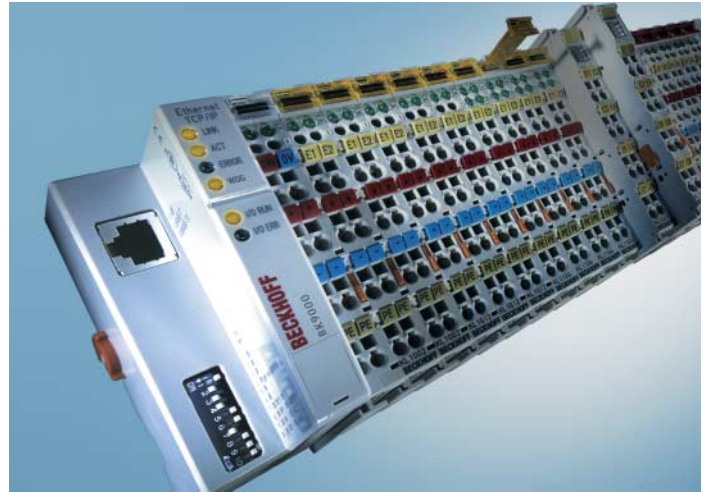
The winning formula

The significantly short length of development time between idea to finished system certainly pleased Schingeck: "It isn't typical for a market segment that Imaje serves to emerge as quickly as the promotions market has," he said. "Everything we do typically has short lead time requirements, but the ProControl-I was on a different level. Despite all this, there were few, if any, obstacles in our sprint to the design finish line with the help of open and flexible PC-based controls and software."

System orders for the ProControl-I show no sign of slowing as manufacturers' marketing budgets continue to shift toward point-of-purchase marketing, which lends itself well to instant win promotions. By keeping the Imaje supply warehouse stocked with Beckhoff controls components, Imaje is now well-positioned to keep up with this growing demand. "Nobody knows exactly how big the promotions market will grow in the immediate future," Schingeck said. "But with our rapid design and smooth application of secure PC-based controls from Beckhoff, Imaje has been able to effectively meet the demand of the customers in this market segment as of today. With the early success that we've had, Imaje has been able to assert the ProControl-I as the industry standard in this segment of the package printing market."

→ Imaje USA www.imaje.com

→ Beckhoff North America www.beckhoffautomation.com



An Ethernet TCP/IP Bus Coupler (BK9000) is used for networking the Beckhoff Bus Terminals. Using Ethernet as the fieldbus provides an interface with promotions databases and is expandable for future design changes.



The Panel PC in the ProControl-I networks over Ethernet TCP/IP to quickly and efficiently manage promotion codes from manufacturers' databases while maintaining seamless and secure production.

The CP65xx Panel PC has 6 PCI slots for fieldbus interface cards, network cards, interface cards, modems or ISDN adapters.

