» Application Story «

SSI Schaefer chooses Kontron Medi Client Panel PC for its i-Pick Application

Robust and long-term available Panel PC in a cost-effective housing

In order to improve order picking for the large base of small warehouses and assemblies, SSI Schaefer developed an affordable Pick-by-Light (PbL) system, which helps workers to automate the filling of customer orders quickly and efficiently, improving pick and cycle times and increasing pick accuracy. The PbL, which is normally stand-alone, can also interact with all standard ERP systems or warehouse databases, features an integrated Kontron touch panel PC delivered by the local distribution partner, next system.

In both the warehouse and assembly industries, the process of order picking is one of the most labor-intensive functions. In fact, it can account for up to 50% of the labor budget. Because of this, companies are constantly searching for ways to improve this process in order to maximize productivity and meet rising customer expectations. There are three main factors that come into play when looking to improve order picking. First, the productivity or "pick rate". Second, the amount of time it takes to get an order from order entry to the shipping dock, also called the "cycle time". And third, the accuracy of picks.

Various systems are available to improve all of these factors. However, most of those systems include things like cost-effective bar codes, RFID tags or feature voice recognition; technologies that are usually oversized for smaller warehouses and assemblies. These systems tend to be only useful for larger warehouses maintaining more complex supply chains including traceability. Therefore, for smaller warehouses alternative solutions need to be found. One cost-effective system for smaller warehouses and assemblies which not only increases accuracy but also productivity is a Pick-by-Light solution or PbL for short. A PbL system consists of lights and LED displays for each pick location. Software is used to light each item to be picked and to display the quantity to pick. After picking the item, the user presses the lighted button indicating that the item has been picked. The system then lights each successive item to be picked until the complete order has been filled. When looking for a PbL solution, this is the type of system SSI Schaefer was looking to create.

In general, most PbL systems must be accessed directly from the warehouse database server. Therefore the implementation of the decentral GUIs is more in the responsibility of the ERP system provider or third party ABAB providers for SAP for example. But SSI Schaefer's goal was to develop a more comfortable PbL system that could interact with all standard ERP systems or warehouse databases via standard interfaces and have its own intelligence to manage the data transfer to both the PbL logic and the various ERP systems. By having its own logic, setting up a PbL system can be carried out in an extremely convenient and efficient way. In the past, this would have been a costly proposition compared to installing slim thin clients because more PC performance is required for such installations. However, in recent years, such systems based on small form factor (SFF) x86 processors such as Intel® Atom™ processors have become much more affordable. So SSI Schaefer opted for innovative touch panel technology in a small compact and light-weight design. "The usability of the system should be as easy and intuitive as a navigation system and no user interface devices should be needed for handling and configuration," says Markus Schlagbauer, group leader for R&D control engineering at Schaefer.

To simplify development and order procedures SSI Schaefer required an application ready x86 system that could be ordered and pre-configured from a single vendor.
The system should be small and light, to allow for easy installation and maneuverability. In addition, the device should feature a fanless design, with no moveable parts in order to maximize MTBF. To implement such a device into the i-Pick system, the company needed to find a supplier in the European community, optimally with support from the manufacturer in native language. In the end, Schaefer decided on the Kontron Medi Client 150, which was offered by next system Vertriebsges.m.b.H, an exclusive Value-Added Embedded Reseller (VAER) for Austria.

For the operating system, Schaefer chose to go the open source route with Ubuntu Linux. Their software application was completely developed in-house using parts from a previous project and implementing a front-end GUI for user friendliness. The system needed support for this operating system. Not all hardware vendors have experience in this field or focus on a commercial environment only. So SSI Schaefer needed to find a vendor that was OS independent and is also active in the further developments of open source software. For example, once a problem occurs with debugging in new OS environments, vendors with this experience can help to fix bugs much faster as they are most familiar with the tremendous scope of variables and possibilities of potential failures. Companies such as Kontron contribute regularly to the further development and improvement of open source products. Some of Kontron's references include the system monitor (MAX6650) for the Linux kernel (kernel.org), an IPMI tool (sourceforge.net) and work carried out on the Flash-ROM project (coreboot.org). Additionally, as Kontron continually employs the latest components for its boards and systems, it often discovers bugs in open source device drivers and kernel implementations and passes on fixes directly to the chip manufacturers. This results in intensive contact with the developers of component manufacturers such as Intel®, AMD, Freescale, Silicon Motion and Hilscher.

For the processor technology SSI Schaefer was looking for a platform utilizing an AMD Geode™ Processor and a 1 GB compact flash drive. The benefits for the client are numerous. This processor enables passive cooled systems. On top of this, the very competitive price of this AMD design is a true highlight. The price, however, is not only based on the processor. Variables like housings and the entire design of the system define the final costs too. The housing of the Kontron Medi Client is formed from molded plastic, making the entire system more cost-effective and lighter compared to standard industrial computers. At the same time, the system has long-term availability and is also rugged. As an example, the front panel of the medical Panel PC features IP65 protection from dust and contaminants.

It is also important that the vendor offers a wide range of panel PC technology. In this category Kontron offers a range of platforms including multicore. For the Medi Client product family, Kontron also offers for example an Atom-based platform.

"Thanks to the comprehensive advice from next system on Kontron's product portfolio, we very quickly found what we

were looking for and the arguments which spoke for selecting a medical platform were quite compelling. The system is rugged, IP-protected yet light and long-term available and due to its medical conform design has a very good occupational safety combined with a cost-effective housing that is in the majority of cases not offered for such embedded systems due to its more common usage in non-industrial-grade applications," Schlagbauer remarks. "Also the fact that the system we required was already available as an application ready system platform including all driver support required for our Ubuntu application was of great advantage. It allowed us to bypass system adaptation and focus instead on building our application."

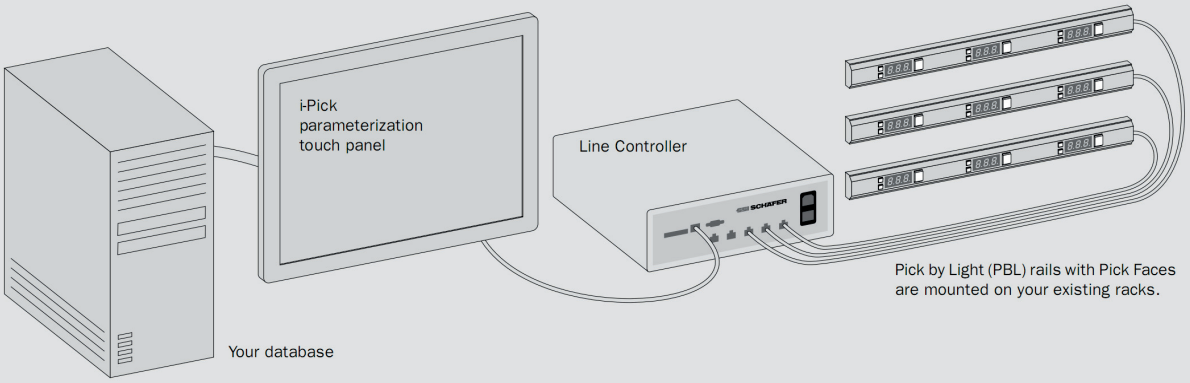
Schaefer also found that there were many benefits in using a Value-Added Embedded Reseller "next systems took care of all the details, from supplying VESA mounting material to mount the panel PC onto a warehouse rack, to preinstalling our custom software image, to adding the SSI Schaefer logo to the devices," Schlagbauer says. Additionally, next system connected the 24 watt plugs to the power cables, marked the two Ethernet ports with different colors to assist in installation and implemented a switch to turn the device on and off. In a future version, which will feature an Intel® Atom™ processor, next system will be implementing an Ethernet switch into the panel PC, allowing for more line controllers to be connected directly to the system.

Product Range in Panel PCs:

With the central Panel PC as the main user interface, the i-Pick can achieve a pick performance of 600 lines/hour and a 300% increase in efficiency, combined with a 10-fold rise in the order-picking quality compared with conventional order-picking methods.

The Components of the i-Pick System

Effortlessly simple: The components are connected to your database by a cable.



The i-Pick system consists of 4 main components: Pick by Light (PBL) rails with pick faces. The Line Controllers that can handle up to 200 pick faces and the panel PC that is the central user interface that is usually in direct interaction with a central SQL database and serves XML data files via USB, wireless or wired LAN.

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The Kontron Medi Client is built on the board and system level at Kontron. So the entire system responsibility lies in one hand.

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About SSI Schaefer

SSI Schaefer has been recognized as one of the world's leading systems Integrators for all types of automated warehousing and distribution centers. Regardless of the size and complexity, each installation is oriented towards future growth and customized to your specifications and product application. Schaefer has completed over 800 projects worldwide, bringing years of unparalleled experience and knowledge to each project. Schaefer is your global partner from design to successful start-up.

For more information please visit: **www.ssi-schaefer.com**

About next system

next system is one of Austria's established value added distributor with a strong focus on the key product areas of drive engineering, embedded computer systems, and industrial & display & touch Solutions. At next system, the individual support and advice to customers in the electronics industry environment is our first priority.

For more information please visit: **www.nextsystem.at**

About Kontron

Kontron is a global leader in embedded computing technology. With more than 40% of its employees in research and development, Kontron creates many of the standards that drive the world's embedded computing platforms. Kontron's product longevity, local engineering and support, and value-added services, helps create a sustainable and viable embedded solution for OEMs and system integrators.

Kontron works closely with its customers on their embedded application-ready platforms and custom solutions, enabling them to focus on their core competencies. The result is an accelerated time-to-market, reduced total-cost-of-ownership and an improved overall application with leading-edge, highly-reliable embedded technology.

Kontron is listed on the German TecDAX stock exchanges under the symbol "KBC". For more information, please visit: **www.kontron.com**

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