Application Story

Transforming the frozen food industry with a single touch

Industry: Food and beverage
Product: RTC-1200SK

Introduction

The modern frozen food industry might only be around 100 years old, but it's now worth hundreds of billions of dollars as consumers around the world search for greater choice and convenience when buying ingredients. In a bid to provide their customers with the best goods, supermarkets and restaurants might source beef from South America, lamb from New Zealand, vegetables from America, and seafood from Scandinavia.

To cope with this demand, food packing and processing warehouses have to operate efficiently with integrated computer systems that control inventory and connect workers on the packing floor to management centers.

Customer challenges

The end user, a Taiwanese food producer, needed a mobile device that could be used to monitor inventory and track the products entering and leaving its warehouses. The tablet would have to be powerful, versatile, and also rugged enough to handle extreme conditions.

Arctic conditions

Cold storage warehouses are generally kept at a glacial -18°C to ensure the preservation of perishable food stock. Temperatures as low as this might be necessary, but they will also instantly shut down standard electrical devices and can even cause irreparable damage to batteries and circuitry.

These conditions are also tough for human workers, and staff members need to wear thick gloves to protect their hands. These extra layers make regular touchscreens impossible to use.

Temperature swings

When facilities receive deliveries or send out consignments, tablets are likely to be taken outside, and the sudden increase in temperature generally causes a layer of condensation to form on the cold screens. This can result in an effect known as "ghost touch" whereby the device recognizes the presence of water droplets as human inputs.

Portability

Any tablet rugged enough to handle an application this tough while also providing users with a large, easy-to-read display will inevitably be fairly heavy and cumbersome.

Additionally, because these devices need to be used on the go, their operators cannot rely on wall socket electricity supplies and could therefore encounter power issues.

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AAEON's solution

AAEON's latest range of rugged tablet computers meet military-grade MIL-STD-810G standards and IP65 ratings, and they have also passed stringent tests for shock resistance, water and dust proofing, and wide temperature support. The company chose the 11.6" RTC-1200SK tablets because of the model's large display, flexible touchscreen settings, inventory control capabilities, and ease of use. The devices are powered by Intel® Core™ i Dual Core or Intel® Celeron® 3955U processors, making them fast, powerful machines.

Multi-setting touchscreen

The RTC-1200SK has an advanced projective capacitive touchscreen (PCT), which is both durable and more accurate than older industrial touchscreens. Due to the tablets' customizable firmware, the device features three touch settings with varying levels of screen sensitivity.

On the strongest setting, which is ideal for the depths of warehouse cold storage rooms, the tablet can detect a touch even if the operator is wearing two pairs of cotton gloves. An intermediate mode is suitable for workers wearing a single pair of gloves, and a third, waterproof setting can be activated when the tablet is taken outside. This mode is the least sensitive and it helps prevent the ghost touch effect caused by on-screen condensation.

AAEON has also responded to customer demands for users to be able to switch between these settings using a physical switch rather than by entering commands on the screen itself. The RTC-1200SK therefore features a button next to the screen that workers can easily operate without having to worry first about taking off or putting on gloves.

The RTC-1200SK has an operating range of -20°C to 60°C, meaning it can operate in frozen food warehouses.

Wide-temperature support

Through a combination of thermal design techniques, heat spreaders, and insulating coatings for internal components, the RTC-1200SK has a guaranteed operating range of -20°C to 60°C, meaning it's adequately equipped to survive the rigors of frozen food warehouses.

Barcode scanning

The company took advantage of the RTC-1200SK's modular architecture by adding a barcode scanner to allow workers to quickly track everything coming in or going out of its facilities.

The device also supports NFC and RFID technology, enabling it to be equipped to read different types of product tags and personnel IDs.

User-friendly extras

To make the tablet easier to use, AAEON has developed a range of accessories including a hand strap, shoulder belt, and vehicle docking station. Using this station, the RTC-1200SK can be secured to forklift trucks and recharged from vehicle batteries.

To give operators more portability and flexibility, its batteries are hot-swappable, and as its screen has a 1000-nit brightness level, the display remains clear in bright sunshine.

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Impact

Using the AAEON RTC-1200SK, the company has been able to improve efficiency and staff productivity. The tablet's speed, versatility, and rugged resilience enables operators to handle any inventory control system with ease. Orders can be logged and packed with fewer errors, stock can be more accurately monitored, and managers can supervise processes with greater clarity and confidence. The RTC-1200SK transforms warehouse operations, and it's proving to be a hot-ticket item in Taiwanese cold-storage facilities.

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ABOUT AAEON

Established in 1992, AAEON has become one of the leading designers and manufacturers of advanced industrial and embedded computing platforms. Committed to innovative engineering, AAEON provides Industry 4.0 integrated solutions, hardware and intelligent automated services for premier OEM/ODMs and system integrators worldwide, as well as IoT solution platforms that seamlessly consolidate virtual and physical networks. Reliable and high quality computing platforms include industrial motherboards and systems, industrial displays, rugged tablets, PC/104, PICMG and COM modules, embedded SBCs, embedded controllers, network appliances and related accessories. AAEON also offers customized end-to-end services from initial product conceptualization and product development through to volume manufacturing and after-sales service programs. It is also committed to continuously redefining and harmonizing the management and development processes of the industry.

With its constant pursuit of innovation and excellence, AAEON became a member of the ASUS group in 2011, enabling the company to further strengthen its leadership, access advanced technology from ASUS, and leverage resources from within the group. AAEON is poised to offer more diversified embedded products and solutions at higher quality standards to meet world-class design and manufacturing demands in the years to come.

AAEON is an Associate member of the Intel® Internet of Things Solutions Alliance.

CONTACT US

AAEON Technology Inc.
5F, No. 135, Lane 235, Pao Chiao Rd., Hsin-Tien Dist, New Taipei City, 231, Taiwan, R.O.C.
+886-2-8919-1234
+886-2-8919-1056

www.aaeon.com

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