



Embedded Solutions Improving Smart Retail and Surveillance for Your Holiday Enjoyment

Gone are the days of old retail store technology, when data analytics were slow to process and receive, restocking items would take days or weeks, and surveillance hinged on outdated, low quality systems. Nowadays, retail stores are getting smarter by integrating advanced computer hardware solutions with technology like Intel® RealSense™ and Intel® vPro™ into their store's infrastructure in order to improve brand loyalty and product offerings to result in increased sales revenue and market share. With this new technology, collected data from customer behavior patterns can be used to gain a better understanding about what makes shopping more enjoyable to improve sales, remotely manage store inventory and even provide better loss prevention techniques through improved surveillance systems.

Make Shopping Easier and More Enjoyable



The retail industry has changed significantly through the use of smart technology and the Internet of Things (IoT). Companies can now use cameras systems controlled by embedded computers with Intel® RealSense™ to recognize, collect, analyze and transfer important visual data via the cloud or directly to a server. This includes which items in a store have been picked up, left untouched, discarded, and sold. While this information might seem trivial, the collected data can be analyzed across thousands of customers and many other stores via connected embedded computer systems to build a better sense of how a store can improve its sales. Depending on various factors required to get the analytics that they need, the embedded computers chosen may need features including high performance CPUs, extensive storage, wireless communication options, and more.

Once this information is collected and processed, timely in-store changes can be implemented to enhance brand loyalty and maximize profitability in a variety of ways. This information can be used to help retailers understand buying trends and to show which products are liked by which demographics. Based on their findings, retailers can make immediate physical changes like improved store layouts or better product placement to catch the eyes of shoppers. They can note their customer's preferences and provide suggestions for related products to make sure each customer leaves with everything they need.

Retail stores can integrate Open Pluggable Specification (OPS) digital signage players to their existing display for customized

offers or creating interactive communications to enhance customer's engagement. Smart retail solutions have proven to have positive effects on retail store's revenue generation.

Empty Store Shelves are now a Thing Of The Past



In order to stay well stocked with products during the busy holiday season, embedded computer systems and IoT gateway devices with technology such as Intel® vPro™ can offer secured remote management for a store's inventory system to allow for automatic re-ordering of popular low stock items. Instead of relying on retail or warehouse staff to constantly reorder products, advanced computer hardware with remote management technology can automatically make restock orders based on the store's specified threshold level - that way every customer can walk away with their intended purchase to maximize profits while the store can limit its overstock.

Enhance Brand Loyalty

Cameras, integrated with embedded systems with Intel® RealSense™ technology and software can also recognize customer demographics and associated purchasing patterns that differ from one location to another. Coupled with a good point-of-sale (POS) system, the resulting analysis and findings allow for greater understanding of their direct customer base and conversion trends, which is crucial for a store's success.

Protected Merchandise through Improved Surveillance

From securitynewsdesk.com, global retail theft through store employees has grown by 11% just within a year and represent approximately 40% of overall retail thefts. Coupled with threats from external theft, retail stores need good surveillance system for effective loss prevention. Smart retail surveillance systems can utilize embedded computer hardware to create an effective surveillance system for a retail store. An embedded computer can be integrated with surveillance cameras, security software and other peripherals to manage and monitor activities in stores. It is one of the key operational considerations that have a direct effect on profit margin of the business.

Axiomtek Offers End-to-end Solutions

Axiomtek's ecosystems of partners include leading security software companies, world-renowned camera manufacturers, specialized hardened network design and manufacturers, and technology leaders. Along with Axiomtek's team of expert engineers, the team can help any retail customer design great end-to-end solutions that will fit their surveillance and retail analytics needs.

Axiomtek's Retail Products

Axiomtek offers a variety of high interoperability digital signage players, embedded systems and IoT gateway devices that are well-suited for smart retail and surveillance applications. These systems are highly reliable, scalable and can be integrated and customized to fit a variety of demanding smart retail and surveillance application needs.

OPS Digital Signage Players

With products like Axiomtek's digital signage player product series, retail advertising and promotion as well as entertainment messages through digital signage system displays can be customized for targeted audience groups with easy content updates that can be scheduled and remotely managed. Axiomtek's advanced OPS digital signage players have been chosen by many industry leading retail stores, grocery chains and more, to enhance customer satisfaction. The OPS digital signage players feature 4K/2K high definition resolution support, easy maintenance and installation through its Intel® Open Pluggable Specification compliance, high compatibility with retail operation software and hardware, extensive storage capabilities and rich I/O options. This high quality product line offers long product lifecycle and requires little to no maintenance. Axiomtek's OPS products offer our customers lower total cost of ownership and, ultimately, higher return on their investment.

Embedded Computer Systems

Axiomtek's fanless embedded computer systems are versatile, feature-rich, highly customizable and easy-to-integrate to suit the needs of smart retail stores. Axiomtek's embedded computer systems can function as a retail IoT device, an NVR for store surveillance or an operation controller for tasks such as remote inventory management, and more. Axiomtek's eBOX products are feature-rich. Among many key features, the product line offers scalable CPUs, extensive storage options, standard interfaces and open system architecture for easy integration with existing systems.

IoT Gateway Devices

Axiomtek's IoT gateway devices come with the Intel® IoT Gateway Solution, including software stack for manageability, connectivity, and security – making them ideal for collecting and safely transferring important data for operational monitoring, further analysis for planned improvements. These IoT gateway devices offer many useful features including low power consumption Intel® Atom™ CPUs, rich I/Os, multiple communication options such as 3G/Wi-Fi/4G/LTE, USB, Bluetooth to provide flexible connectivity for data management.

Product Showcase

OPS Product Line: Advanced and High Quality OPS-compliant Digital Signage Players



OPS500-501 – Top-of-the-line OPS-compliant Digital Signage Player

- Scalable CPU with options from 6th Generation Intel® Core™ i7/i5/i3 to Celeron® processors
- Supports Intel® vPro™ and RealSense™ Technology for higher security, ease of management and smarter decision making from better data capture
- Supports 4K@60Hz resolution and HDMI 2.0
- Extensive storage options with DDR4-2133 SO-DIMM supports max. up to 16 GB

eBOX Product Series: Easy-to-Integrate and Highly Expandable Fanless Embedded Systems



eBOX670-891-FL – High Performance Embedded System Supports Many Cameras for Complex Surveillance Projects

- High performance LGA1151 socket 6th Generation Intel® Core™ i7/i5/i3 or Celeron® processor
- Extensive storage options
- Wireless communication options with two internal PCI Express Mini Cards and one SIM slot
- Triple view display support through DisplayPort and two HDMI ports (one HDMI 2.0)

ICO Product Series: Compact and Highly Reliably IoT Gateway Controllers



ICO300-MI – DIN-rail Embedded Controller with Intel® Intelligent IoT Gateway Software Stack

- Low power consumption Intel® Atom™ processor E3815
- Intel® IoT Gateway Solution including software stack for manageability, security and connectivity
- Flexible communication options
- Operational stability with wide operating temperature range of -20°C to +70°C