Omni-ID®

Intelligent Tracking & Monitoring Devices
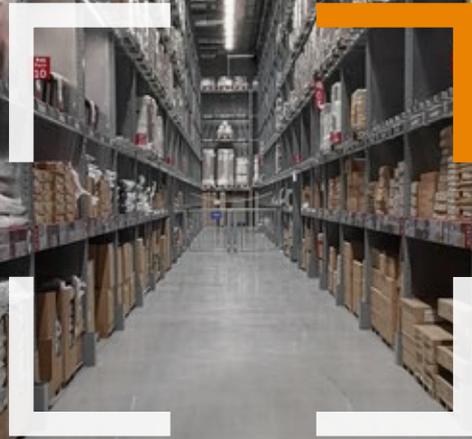
Customer success story **[Retail warehouse inventory]**

Integrating EPC RFID Inventory Tracking in the Retail Warehouse

Inventory accuracy is one of the keys to an efficient and effective supply chain, yet it is often referred to as the 'missing link' in retail execution.

Large retail operations face enormous challenges tracking their inventory and preventing errors while ensuring products are correctly stored in the proper location in their warehouses.

One of the world's largest retail chains is integrating an EPC RFID inventory tracking system into its existing business practices to improve pallet tracking in its warehouse operations.

This business initiative will provide greatly improved inventory control with a short-term ROI. Improving the accuracy of their inventory management and reducing out-of-stock occurrences can also positively impact revenues.

The Challenge of Inventory Tracking

In most warehouse settings, the movement of pallets as part of shipping, receiving, inventory, and warehouse management is a way of life. On any given day, hundreds of pallets can come in and go out of 250,000 square-foot distribution centers. It is not always easy to accurately identify the pallet and its contents or to assign the pallet to the proper location in the warehouse and record that location correctly. These warehouse inventory inaccuracies can cause a number of inefficiencies:

- During any given day, time is spent looking for inventory that is improperly identified and put away.
- Misidentification and storage of inventory can lead to overstated and understated inventory levels.
- Product obsolescence due to overstocked inventory.
- Lost revenue due to understocked inventory.
- Stores can receive mis-shipments from the distribution center.

All of these inefficiencies quickly add up and result in decreased revenues and increased costs to the retailer, its suppliers, and even the customer.

The initial approach of the warehouse retailer to solving this problem was to require suppliers to apply smart tags to all pallets coming into its distribution centers. While this did improve the efficiency of receiving operations, it did not solve the in-store issues. Incoming pallets were stored in rack bin locations on a space-available basis. The warehouse retailer had no process for efficiently tracking the location of the pallet, and valuable employee time was lost searching for inventory when it was needed to replenish the retail floor. In a worst-case situation, floor inventory could be depleted before the restock inventory could be located, resulting in lost sales.

To combat these inefficiencies, without increasing the frequency of physical counts or maintaining additional inventory, this retailer chose to eliminate the source of errors through the use of RFID technology.

Solution: EPC RFID Inventory Tracking

The retailer designed and implemented a process where the benefits of RFID could be put to use. The system consists of a tag attached to (in this case) pallets to be identified and warehouse racks, an RFID reader and reader antenna, and a computer to control both the reader and capture the data. At present, the entire

system uses passive RFID tags that are powered by radio waves created by the reader. The information from the tag is transmitted via the reader's antennas to the computer. In the warehouse implementation, the retailer puts RFID technology to work by automatically identifying and associating the bin locations to the pallets as they are being put away.

The success of this system and process was dependent on using RFID tags that work accurately and reliably off, on, and near metal—a major hurdle, since pallet inventory is stored on large metal racks.

> "**The combination of the RF performance of the Omni-ID tags, together with the form factor and on-metal read performance history, was the key to a successful retail warehouse inventory management system.**"

Omni-ID Max™ Passive UHF-RFID Tags

Omni-ID provided the on-metal tags that made this warehouse implementation a success. The Omni-ID Max addressed a wide range of the customer's needs, including:

- The ability of the RFID tag to work on and near metal
- The low-profile form factor of the tag that reduced possible issues with accidental dislocation
- The tag's small size complemented the labeling solutions being used by the retailer, allowing the retailer to label the case with bar

coding and/or human readable information

- The foam-base adhesive and durable case design ensured that the tags could not be easily damaged
- The tag's read distance matched or bettered the read distance of standard dipole tags

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> **"The warehouse retailer has already seen positive results of its RFID project."**

Implementing an RFID Inventory Tracking System

The workflow process that the retailer implemented for tagging products at the pallet level and then for tracking those pallets in their warehousees is sophisticated yet simple:

- Suppliers apply smart tags to all pallets coming into the distribution centers.
- Specialized RFID readers on warehouse forklifts associate pallet information from the RFID tag affixed to the pallet by the supplier. The tags automatically identify the goods being picked up, and this information is stored and updated into the inventory tracking system.
- RFID tags with bin-located information are affixed to the warehouse racks.
- As the pallets are put away on the racks, the bin location information on the rack is automatically associated to the pallet. The forklift operator does not have to stop working, record information, or update information into the inventory system
- At the end of the day, the forklift information is uploaded into the warehouse inventory tracking system either through a wireless interface or by direct connection to the MRP system.

Results

This project is still in the early stages of implementation. Nevertheless, the warehouse retailer has already seen positive results of its RFID project. The most notable result to date has been an increased visibility and control over inventory by pallet and warehouse rack.

Other results include:

- The initial return on the RFID investment has been realized through recapture of lost work hours spent searching for missing or misplaced inventory.
- Pallet-level RFID tagging can reduce errors in manual adjustments and processes.
- RFID tagging can reduce errors in shipments to and from distribution centers.

- RFID tagging of warehouse racks can streamline tracking and management of inventory within the distribution center and between the distribution center and retail outlets.

Benefits and Next Steps

The warehouse retailer expects that integrating EPC RIFD tagging into its existing processes to track inventory will have a direct impact on its bottom line, which will ultimately decrease costs and increase efficiencies to suppliers and customers. As more data is collected, the process, cost, and relative value to the retailer, its suppliers, and customers will be re-evaluated.

The retailer is also working on the development of a certification program for item-level tagging with a nationally recognized RFID

Research Center. The retailer would like to provide its suppliers with a certification "check list" to work with solution providers on easily and quickly selecting the best tag and the right placement of the tag for their requirements.

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