

Shipping Validation With RFID

A publicly traded U.S. based medical manufacturer shipping medical devices, pharmaceuticals, and consumer packaged goods globally, faced challenges at a regional distribution facility. Even with a state-of-the-art warehouse management system, the customer had challenges with international shipment verification. Many times, their customers would file a claim that they did not receive their ordered surgical items. Other times gaylords would arrive at the wrong customer. The distribution facility, located in the southeastern U.S. and servicing the Western Hemisphere, faced a multi-million-dollar challenge to ensure shipment accuracy.

Products are scanned and packed in a gaylord container. Gaylords are then designated for a dock door, staged and loaded onto a trailer. The customer wanted a way to automatically track where and when a gaylord was loaded onto a trailer. After testing the feasibility of RFID (Radio Frequency Identification), the customer decided to implement a solution for each of their dock doors. The main objective of the system was to ensure that every gaylord was accurately tracked through its departure door. Ensuring that the software portion of the solution could integrate into the warehouse management system was also important. The solution consisted of pre-printed RFID tags, readers, and software.

The hardware used consisted of dock door portals that utilized the Zebra FX7500 RFID readers along with antennas positioned at each door. Each reader had a three colored light stack to alert the forklift driver whether the loading transaction was successful. A green light signified a successful load where a red light and audible horn alerted a misdirected load. A blinking yellow light signaled that the door had not been set for a carrier.



The pre-printed RFID labels replaced existing gaylord license plate labels. Each RFID label was encoded with a unique number and a barcode of that number was printed onto each label. The barcodes were scanned by operators updating a field in the WMS.

The software developed for the solution allowed the shipping manager to set a specific door for a specific international carrier. The software was integrated into the manufacturer's WMS to know shipment information specifically the carrier. Whenever a gaylord's RFID tag was read, the system would call the WMS to ensure that the carrier information matched. Also, each load transaction was recorded in a database and its record was updated the customer's WMS.

A reporting dashboard was also deployed as part of the solution. The dashboard contained several reports showing shipment activity at the facility's international doors. Operators could search for information by datetime, carrier, destination and even down to a specific gaylord license plate. Since implementing the system, the manufacturer has been able to avoid gaylords going onto the wrong trailers. Also, whenever a customer claimed not to receive product, the manufacturer has been able to provide documentation to a carrier showing that the product was loaded onto a specific trailer. This has resulted in gaylords being found at the carriers' facilities.