

RFID for Container Tracking

Challenge: Design a solution to tag and track seed containers.

Solution: Zebra FX9600 fixed RFID reader, MC3390xR RFID hand held scanners with a custom application using MCL, custom mounting structure and controls.

Story: A local company's business is to rent, clean, and manage reusable containers for the agriculture industry. The containers are sent out to end users for seasonal use. Once the end user is finished with the container, it is picked up and brought back to be cleaned and stored for the next job. Containers sometimes go missing, which can be very costly for the end user.



The customer reached out to EMP to help design a tracking solution using passive RFID. The first step was to install custom RFID labels on opposite sides of the container so they can be scanned throughout the process. Each container has two RFID labels, both labels have identical tag ID numbers and a unique ESN number. This way the RFID readers can verify that two labels are present on each tote.

For mobile reading, EMP utilized a Zebra MC3390xR mobile computer running a custom MCL application. The mobile reader will initially be used to spot check label presence on the containers but will eventually also be used for data collection in the field.

For stationary reading, a fixed RFID system using Zebra's FX9600 reader with two antennas was used. This stationary system confirms the presence of both tags each time the containers go through the wash process. The fixed reader and antennas are attached to a custom mount along with a purpose-built controller. The controller triggers a red light and alarm when there is a mismatch or no read. An operator can then address and reset the alarm state from a pushbutton on the system control box.

The final phase of the project will be to install fixed mount RFID readers at each loading dock to track every container coming in and out of the facility. The complete solution will save the customer's end users greatly on container costs, and save the customer time tracking down lost or misplaced containers.

Do you need to track reusable items? Contact the team at EMP today to evaluate your application!