



Leading manufacturer of water purifiers required a RFID-based INVENTORY MANAGEMENT SYSTEM

Intelligent search and management of component
inventory in manufacturing water purifiers

Accurate monitoring of stock in real-time

Inventory level optimization

Accurate forecasting of inventory replenishment



INSIDE:

Key Requirements
Solution
Implementation
Working
Benefits
Links

TECHNOLOGY

Solution:

EPC Gen2 compliant inventory
tracking solution

Tag Type:

Metallica™ UHF Passive
Genera™ UHF Passive

Reader/Antenna:

Xtenna Proximity™
Xtenna Hybrid™
HandyScanna™

Method:

Multiple Tracking via Integrated
Reader/Antenna modules
Single Tracking via hand-held

Integration Platform:

RFID Middleware:

Xtenna™ WebToolkit
Xtenna™ Studio

Application: Essen RFID's
Inventory Management System

Database: SQL Server 2005 Exp. ed.

Tag Manufacturer/Supplier:

Essen RFID, with US based chip inlay

Reader/Antenna Manufacturer:

Essen RFID, with US based module

Systems Integrator:

Essen RFID

For further details contact:

Essen RFID
24-B, Jolly Maker II
Nariman Point
Mumbai 400021 India
www.essenrfid.com





CASE STUDY

KEY REQUIREMENTS:

Kent manufactures a range of water purifiers in India that operate on Reverse Osmosis (RO) technology. Each model of water purifiers has its own set of components. Hence the inventory of components is required to be managed accordingly.

Main challenges in implementation:

- Storage of inventory component-wise in their correct location.
- Searching the required components based on location, amongst the entire inventory of parts available in the warehouse.
- Maintaining an optimum level of inventory stock in-hand.
- Maintaining an accurate record of finished products.

SOLUTION:

Essen RFID offered an efficient RFID-based solution for Kent's Inventory Management System. Its HandyScanna™ hand-held Antenna-Reader enables the operator to easily and accurately search the inventory for the required component, while its Xtenna Hybrid™ Antenna-Readers are mounted at the warehouse gates for tracking inventory entering or exiting the premises.

A mobile based application is used for the HandyScanna™ operating on a Wi-Fi network. The RFID enabled Inventory Management System uses a SQL Server database.

IMPLEMENTATION:

- METALLICA™ RFID tags are attached to each box of components in the warehouse.
- Each shelf is also affixed with a METALLICA™ tag.
- Xtenna Proximity™ is used to register each METALLICA™ tag into the database.
- The hand-held HandyScanna™ is used within the warehouse for searching the required inventory.
- The finished product is registered using a GENERA™ RFID tag.
- Xtenna Hybrid™ Antenna-Readers are configured at the warehouse gates for tracking outgoing material and finished products.



CASE STUDY

Operation Flow:

RFID technology is deployed for searching and keeping a record of required components that are removed from a box and the balance quantity updated for forecasting optimum replenishment of stock. The technology enables each component to be stored at its proper location, eliminating wrong placement. It also enables quick retrieval of components since the exact location is easily identified.

The operation flow is illustrated by the following diagram:



WORKING:

Each model of water purifiers manufactured by Kent has its own set of parts and components. When an inventory order is received, the worker in the warehouse need not know which component goes into which kind of purifier. Using an RFID based inventory management system enables him to easily list component part details required for a particular model, along with its availability and location in the warehouse.



CASE STUDY

Process Flow:

1. A METALLICA™ tag is affixed on each shelf in the warehouse.
2. Identical component parts are placed together inside boxes and a METALLICA™ tag is attached to each box. Each box is registered into the database using Xtenna Proximity™ along with its quantity of that particular component and the component code.



3. When an order is placed through the inventory management system with the component code and the required quantity, a HandyScanna™ not in active use gets a blinking alert and the order can be seen on the device's screen by the operator.
4. The component code indicates the location of that particular part in the warehouse along with the available quantity. The operator takes his hand-held HandyScanna™ to that location. When it gets within reading range, the green light on the device indicates that the tag has been read and the required component has been located.
5. The operator removes the required quantity from the box and enters this count in the HandyScanna™. The balance quantity of that component in the box gets updated in the database.
6. Once all the components have been collected and the finished products manufactured, a GENERA™ tag is attached to each finished product i.e. each unit of water purifier, containing its details and location information. The finished products are sent to the warehouse awaiting distribution.
7. When finished products leave the warehouse, their tags are read by the Xtenna Hybrid™ Antenna-Readers mounted at the warehouse gates. The details of water purifiers sent for delivery are immediately known, matched with the dispatch order and the database updated accordingly.



CASE STUDY

BENEFITS:

- Intelligent inventory management eliminates the time required for manual data entry and paperwork.
- Reduces errors in inventory maintenance.
- Inventory tracking searches components required efficiently and speedily.
- Accurate forecasting of inventory needed based on real-time updates.
- Report generation of inventory stock and finished products.

LINKS:

Hardware:



Tags:



Software:



Reference Example:

<http://www.essenrfid.com/Mailer/manufacture-flash-demo.pdf>