

# RF for Timely Information Exchange

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Across industry lines, one of the most important tasks is accurate and efficient information management. We are all well aware of how important information management is in financial areas, and many of our accounting departments have been 'computerized' for some time now. However, just as important to the bottom line is the efficiency of receiving, inventory management, and shipping.

## **Profit**

It is, indeed, in these areas that we can make or lose that ever-narrowing profit margin. With competition growing we must streamline our operations to succeed.

To establish and maintain a reasonable profit margin we need to cut errors, reduce man hours, and have the ability to make decisions based upon up-to-the-minute information on inventory, pricing, account status and other variables.

A study by Arthur Anderson and Co. for the Distribution Research & Education Foundation described some specific technologies viewed as critical to the integration of information and data flow. One of these technologies was Radio Frequency (RF).

## **Radio Frequency Data Collection**

Radio Frequency (RF) data collection and management provides the solution in the warehouse. RF lets the users record information when and where the transaction occurs. This reduces man hours, eliminates errors, and makes the paper trail obsolete into the bargain.

With RF data collection and the appropriate information management computer system, we have real-time data from the receiving dock, inspection stations, picking, packing, invoicing and shipping. This real-time data transfer is possible within a single location as well as across multiple branches around the country.

These systems integrate information directly and instantly between the main office and the warehouse floor. Management, sales, warehousing, and shipping instantly know what stock has been received, where it is in the warehouse at any given moment, even in transit, and where it is needed. Warehouse people are prompted via the radio frequency hand-held terminals where to place stock, or where to pick from. The paper trail is eliminated.

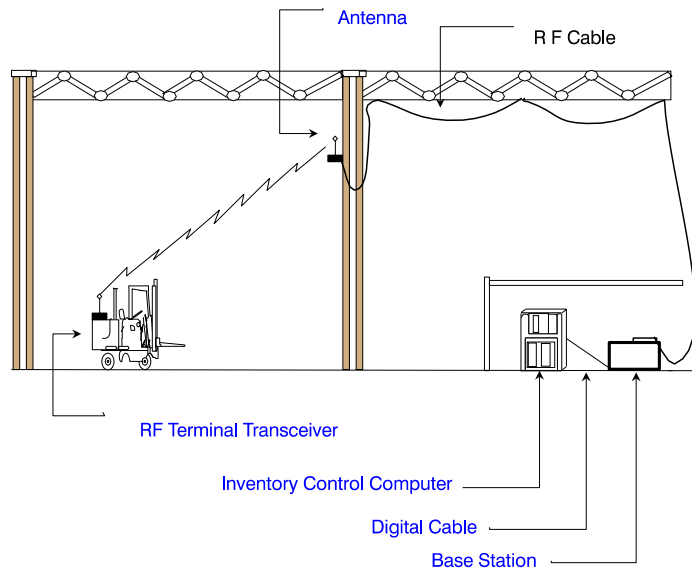
There are three significant advantages to RF integrated systems:

1. Real-time information on all inventory items is available to all who need it as changes occur.

2. The flow of paper is eliminated. Often things can change by the time a warehouse worker receives a 'printed' paper document, thereby performing a wrong task, or orders on paper documents can be 'misplaced' or lost. This cannot happen with RF integrated systems. In the event an order changes, or stock has been relocated, the warehouse people know instantly via their terminals; they are not even aware of the 'old' information.
3. Human error is eliminated. With bar coding and RF scanning, the system verifies each item and location. The warehouse person is directed where to put or pick, and each item and location is quickly verified by scanning.

## Here's how it works

A typical RF system consists of handheld terminals, a communication controller connected to the host computer and a base radio station. In operation, the terminals transit information via ultra high frequency or spread spectrum through the communications controller to the host computer. The host computer processes the information and updates the database in real time. The entire communication process takes place instantaneously. These terminals usually have a bar code reading device with which the user can quickly scan the bar code.



It is this real-time data collection and processing that provides the **biggest competitive edge!**

All records are instantly updated as product is received, relocated, allocated, picked or shipped. This real-time mode eliminates the possibility of the sales force promising a delivery and then discovering an out of stock situation.

## **Receiving**

On the receiving end, the portable RF terminal verifies product receipt and scans an identifying 'license plate' bar code into the system. The system automatically checks received merchandise against purchase orders, and indicates where the incoming products are to be stored. The user is told to move the goods depending on current needs. Needs may indicate that the goods be cross-docked in order to fill existing customer back orders, shipped for outside services as plating, moved to the packaging department or put into stock for future orders.

The people in the receiving area are prompted on their portable handhelds or lift-mounted terminals what aisle and bin to store each product. Simultaneously, the main computer updates all inventory records throughout the system, even at remote branches, of the new inventory and its location within the warehouse. Any product, bin or aisle location can be instantly checked and verified simply by scanning. The key is that the employee cannot introduce error since there is no keying in or written paperwork!

## **Storage**

With total 'tractability' which RF provides, stock is never 'lost'. Salesmen never miss a sale as a result of 'old' inventory records. Pickers are never wandering around the warehouse hunting for misplaced stock. And, in the event that certifications are needed on a particular product, the system will trace that product from the manufacturer, through your warehouse, to the customer automatically. The traceability data can be maintained for what ever amount of time is required.

Since the system tracks each box, random warehousing can be accomplished using an RF integrated system. Random warehousing can increase your effective storage space. Since the main computer tracks the instant whereabouts of each item, 'apples & oranges' can be mixed.

## **Picking and Shipping**

The pickers no longer wait for 'paper' orders. They are directed to each aisle and bin via the RF terminal, scan for verification, and pick the item. The RF terminal then directs them via the most efficient path to the next location needed. In the event that the previous person has removed inventory, the terminal 'knows' that the inventory is not in its location, and will not direct the next picker to that empty location.

When all items are brought to shipping, they can be verified again by counting scales integrated with the main system via RF. The unit weight, count and total shipping weight are verified by the computer and any discrepancies are immediately brought to the shipper's attention.

Between scanning and weighing verification, incorrect shipments can all but be eliminated, therefore saving the high cost of returns and bookkeeping.

## Shipping Manifests and Invoicing

Any necessary documents are automatically produced by the computer without delays. Shipping manifests, and even labels can automatically be generated. Invoicing is automatic, and the salesman has an up-to-the-minute knowledge of the customer's account status available at his terminal.

The entire process begins with the salesman at order entry. From there the system takes over by guiding and directing warehouse and shipping people as well as the accounting department. RF terminals and scanners provide instantaneous information flow throughout the entire company.

## Warehouse Management

These remote RF terminals and scales with bar code scanning eliminate human error and provide instantaneous accurate information on all inventory from Receiving, Storing, Reordering, Picking, Inventory, and Shipping.

An integrated warehouse system with RF devices can serve a single location, or span a multibranch operation providing even greater efficiency and economy. Just imagine being in Texas and instantly knowing that stock has been picked in a Connecticut warehouse. Or, that a third location received a wrong order from a vendor. You would immediately know that you received a wrong shipment and would not store or commit that stock to pending or incoming orders.

## The Payoff

Two months after an RF system was installed in the Jacksonville site of one wholesaler, they reported that "... accuracy in inventory tracking was virtually perfect. Delivery times improved by one full day...The new system saved 2 - 3 hours for lift truck drivers." Another company reported that after six months on their Chicago system, "... the data is much cleaner than it's ever been and 10 times more accurate ... we're going to save upwards of \$250,000 in terms of overall labor costs in a year's time. Those savings will be realized in both reduced clerical support and record keeping. We're also seeing a direct labor savings at both the warehousing level and the material handling level."

Recent years have brought us a new economic environment requiring just-in-time, radical inventory price fluctuations due to international currency markets as well as volatile interest rates, and new government regulations. In the fastener industry, full traceability is not longer a looming possibility, it's reality. The shrinking work force presents yet additional problems. To survive and prosper in these changing times we must be adaptable. We can take advantage of the above conditions, or allow them to defeat us. The best way to take advantage is to take control, eliminate human error, cut cost, and increase efficiency. To have that competitive edge today we need to turn to tomorrow's technology — and it is here today with RF integrated systems.