



# Expand the Reach of Your RFID System for a New Level of Inventory Visibility with the RD5000 Mobile RFID Reader



## A new class of RFID reader...and a new level of inventory and asset visibility

Until today, RFID visibility has been limited to choke points throughout the enterprise — such as the portals at your dock doors. Since inventory and assets are not visible as they move through your warehouse, the information you have is only as up-to-date as the last time the material moved through a portal.

The advent of small mobile RFID readers breaks through today's barriers, enabling the installation of RFID readers in completely new areas — including on material handling equipment, on delivery trucks and in challenging stationary locations. Mobile RFID readers enable cable-free operation which allows you to have pervasive use of RFID throughout your enterprise. No longer restricted to choke points, you can now implement RFID wherever it is needed and will best serve the enterprise. Read points are dramatically increased, and a new level of granular information is now available. Your inventory and asset visibility is expanded — and so is the ability to further automate and error proof your business processes and your supply chain, as well as improve worker productivity.

By expanding the functionality of your existing RFID system, the mobile RFID reader also expands the value — including the return on investment (ROI). And since the same device can be used in various applications throughout the enterprise, the devices also deliver an outstanding total cost of ownership (TCO). For example, the same RFID reader can be placed in a mobile cart to check inventory, and then quickly installed on a skate wheel conveyor to automatically verify and reconcile incoming shipments at the receiving dock, as well as enter the shipment instantly and automatically into your inventory system.

In this application brief, we will take a look at the criteria you should use when assessing this new product category, as well as the value of the mobile RFID readers in the warehouse, yard and retail environments.

### Criteria for the selection of a mobile RFID reader

What criteria should you use to ensure selection of the best mobile RFID reader for your enterprise? There are a number of factors to consider:

- Integrated design: The device you select should completely integrate all components to ensure maximum durability — including all antennas and wireless networking radios.

### Key Benefits

**When mobile RFID read points are deployed on material handling equipment enterprises achieve:**

- Increased inventory and asset visibility
- Real-time inventory and asset data
- A new level of process automation
- Increased error-proofing
- Improved employee productivity
- Improved return on investment for your existing RFID system

### The completely integrated, cable-free rugged design:

- Eliminates time and cost associated with running power and network cabling
- Reduces installation and maintenance time and costs
- Ensures reliable operation even in the harshest of environments

- Form factor: Make sure you select devices that are very compact in nature to ensure maximum flexibility in implementation locations.
- Rugged: The devices should provide the specifications required to ensure the ability to handle the rigors of your environment, from the all day, every day pounding and vibrations of your material handling equipment to exposure to moisture, water and more.
- Installation simplicity: Look for devices that can be installed — and removed — quickly and easily to allow you to get and keep your mobile readers up and running with minimal related time and cost.
- Power options: Mobile RFID readers should offer a choice of power options, such as an integrated onboard battery to support mobile applications, and optional DC power to support stationary deployments.
- Connectivity options: The device you select should offer wireless networking connectivity for truly cable-free operation and installation.
- Mobile ‘intelligence’: To best support use on moving equipment and provide maximum power efficiency, devices should be designed from the ground up for mobile operation. For example, your mobile readers should be able to remain in a low-power mode until motion is sensed, and only expend the power to read when an item is within range.
- Standards-based: You want to choose devices that are standards-based to ensure easy integration into your existing technology platforms



The rugged and cable-free RD5000 mobile RFID reader enables the deployment of RFID quickly, easily and cost-effectively on forklifts and other moving equipment in the warehouse, such as pallet jacks, conveyors and mobile carts.

### Symbol introduces the RD5000 Mobile RFID Reader

Symbol offers the RD5000 mobile RFID reader to maximize the value of RFID in your enterprise. Representing the next phase in the evolution of RFID technology, the RD5000 offers a rugged design, integrated antenna, flexible internal and external power sources, wireless networking and unique motion-smart features to open up a new world of possibilities for RFID read points — from material handling vehicles such as forklifts and pallet jacks to mobile carts, rolling ladders and more. Regardless of industry, you can count on the RD5000 to deliver a new level of granular real-time information that can, in turn, deliver a new level of productivity and efficiency throughout your operations.

### Manufacturing/Warehouse/Distribution Center — eliminating blind spots to boost productivity and reduce costly errors

Relying on RFID read points located only at major portals undercuts the ability to actively manage inventory in fast-paced manufacturing, warehouse and distribution centers. Lack of real-time visibility into moving product on the manufacturing and warehouse floor reduces productivity and can increase costly errors in receiving and putaway. Businesses are forced to carry higher inventory levels to protect against out-of-stocks, pay higher labor costs due to inefficiencies in processes, and risk having reduced levels of customer satisfaction due to missed ship dates or errors in order fulfillment.

By deploying the RD5000 on material handling equipment and other warehouse vehicles, inventory becomes visible as it moves across the floor. Management and vehicle operators know exactly what goes where and why, in real time. New applications and efficient procedures become possible. The possibility of costly errors is significantly reduced, workers are more productive and customers more satisfied.

### On-the-go read points on material handling equipment

When mounted on a forklift, the RD5000 reader enables monitoring of items from the time they are picked up to the time they are put away. If used in conjunction with an onboard vehicle computer, such as Symbol's VC5090, the forklift operator can be notified of the exact location in the warehouse to place incoming inventory, the fastest route to the location, and provide an alert if inventory is about to be stored in the wrong location. Operators can also be directed to the right truck to load, again receiving an alert if shipments are placed on the wrong truck.



The RD5000 in use with a portable skate wheel conveyor

This new level of visibility dramatically reduces errors, ensures that inventory is placed in the right location, and verifies that shipments are on the right truck. The extra costs associated with searching for misplaced items and re-shipping loads are eliminated — along with dissatisfied customers.

As pallet jack operators pick inventory at the case level, the RD5000 helps provide real-time information to automatically build the pallet load and ID, which can then be rolled into the shipping notice. Automating pallet builds increases operator productivity and reduces errors. Customers receive the right shipments on time, increasing the level of service — and satisfaction.

And by deploying the RD5000 reader on portable skate wheels and mobile carts, management can see shipments as they are moved on and off trucks at the loading dock all the way down to the item level — without opening a box or breaking into a pallet. This instant granular visibility into incoming and outgoing shipments enables an automatic check for discrepancies between what was ordered and what was received, reducing the cost and time associated with handling shipment errors, and enabling a rapid response to prevent possible out-of-stocks when the wrong items are received. Outbound trucks have visibility into the load to double check that shipments are correct and avoid reshipping. And since the RD5000 is self-contained, there is no cabling to entangle equipment, facilitating easy deployment and the ability to re-use a reader in various applications.

### **Rugged readers enable a kinder, gentler clamp truck**

Fragile goods, such as appliances, can easily be damaged when picked up by clamp truck operators. Businesses incur high costs for this damage as a result of the loss of the goods themselves as well as the high costs of shipping damaged goods to the customer.

These costs can include:

- The cost of the return
  - The duplication in labor involved in fulfilling the order
  - The cost of customer dissatisfaction if the goods cannot be reshipped in a timely manner to meet the customer's needs
  - The cost of losing the customer completely
- By deploying the RD5000 on clamp trucks along with a mobile computer, such as Symbol's VC5090 designed for warehouse vehicles, the reader can instantly identify the product in the carton and alert the operator to the maximum amount of pressure that can be safely applied to the goods — or the information can be used to automatically control the pressure on the clamp (depending on the application). The RD5000 and the VC5090 are an ideal complement for the warehouse environment — both are designed to survive the constant pounding and vibration of clamp trucks and other materials handling equipment, as well as to endure dust, dirt, exposure to water, and more.

### **Rugged readers for improved yard management**

Just as the mobile RFID reader is ideal in the warehouse for tracking materials, it is also ideal for tracking materials stored in the yard, such as containers, or lumber and pipes. Since the rugged design includes environmental sealing against the elements, as well as the ability to endure extreme heat and sub-zero cold, the devices can also be used on forklifts, flatbed trucks and other material handling equipment out in the yard. With the use of mobile RFID reader technology in your yard, you can easily locate and ensure that the right materials and containers are brought into the warehouse or to the right dock at the right time. And the use of hardened tags on carts, trucks and more provides visibility and better control of your important capital assets.



The RD5000 on a mobile cart in the warehouse

### Retail specialty apparel — eliminating invisible inventory and lost sales

Chaotic inventory management is a common problem in the fast-paced world of retail apparel. This chaos is magnified by rapid changes in fashion, limited retail floor space and seasonal changes.

Lack of visibility into backroom inventory stock often leads to lost sales and the dissatisfaction of unforgiving customers. Retailers are forced to overstock just to compensate for inefficient and inaccurate inventory management. And when items are actually in stock but unaccounted for, inventory errors are particularly costly.

The RD5000 brings RFID technologies to the rescue to help prevent these and other inventory-related issues, providing a new level of visibility that enables:

- Better trending and analysis for improved ordering
- For stores with multiple locations, trending, analysis and inventory visibility by geographies to facilitate re-appropriation of inventory as needed
- Better visibility into seasonal inventory to ensure timely re-stocking on the retail floor, maximizing exposure and sales opportunities

#### On the sales floor

Out of Stocks (OSS) lead to lost sales. Too often sales people rely heavily on visual checks of shelves or hangers, while items sit in the backroom waiting to be brought out to the sales floor. Seasonal items are often not replenished or marked down in a timely manner. On a busy day, inadequate visibility into the movement of inventory through the fitting rooms hinders the ability of sales people to identify high-priority garments and make sure they are rapidly returned to the shelves and available for other shoppers.

But, by deploying the RD5000 on a common mobile cart, employees can take complete inventory of all products on the sales floor in minutes. In the time it takes to walk down an

aisle, all the product in that aisle can be identified and counted — in a mere fraction of the time it would take to conduct inventory manually. Now, retailers can take inventory on the sales floor daily — or multiple times throughout the day. With the higher level of visibility, retailers can better forecast, order and manage inventory on a day-to-day basis.

For example, a certain style may be selling very well in an east coast location but not in your west coast store, enabling you to re-direct inventory before the season changes to reduce markdowns and help maintain profitability.

#### In the back room

Inadequate real-time visibility into backroom inventory leads to ordering too much or not enough. It leads to increased inventory carrying costs when too much is ordered, and out of stocks and lost revenue when too little is ordered. Re-shelving is costly and time consuming. Inbound shipments must be opened, all items counted, and any discrepancies noted to insure invoices are credited properly for any missing items. The RD5000 automates inventory management in the backroom, eliminating nearly all of the traditional inefficiencies and costs of traditional inventory practices. Inventory is taken instantly without manual intervention, contents of shipping boxes are identified automatically, and item replenishment is streamlined from the back room to the sales floor.

In addition to mobile applications in the back room, the RD5000 can also be installed in areas that were previously 'environmentally unfriendly' for fixed RFID readers, such as the swinging doors between the back room and the store front. By extending RFID to a critical point of movement that cannot accommodate a traditional portal, the RD5000 enables retailers to easily track and monitor inventory as it moves from the shelves to the front room. Low inventory levels are spotted nearly instantly, helping prevent out-of-stocks and lost sales, especially during holidays and other peak shopping periods.



In a retail environment, the RD5000 can be easily deployed on a common mobile cart, enabling employees to take a complete inventory of all items on the sales floor in minutes.



Designed to handle every day bumps, drops and more, the rugged RD5000 can be easily mounted on mobile carts with Velcro, enabling retailers and other types of businesses to deploy RFID where it will best serve the business.

### Take RFID where it has never gone before

From the warehouse floor to the truck yard to the retail floor, Symbol's RD5000 Mobile RFID Reader is redefining achievable levels of automation and depth in inventory and asset visibility. This truly mobile read point is helping enterprises to further streamline processes, eliminate error-prone paper and pen-based systems, increase worker productivity and reduce costs, effectively extending the functionality of existing RFID systems, as well as the value and return on investment. The result is the faster movement of products through the supply chain at a reduced cost, with faster delivery to customers, higher customer satisfaction and retention rates, and an improved bottom line. The quantifiable value of the RD5000 provides a true competitive edge for all businesses that want to fully leverage RFID technology.

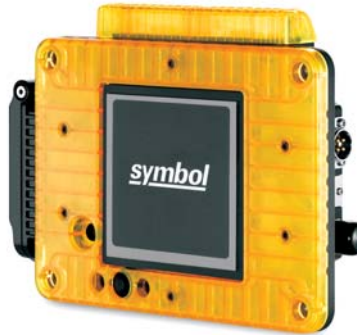
To get the most out of RFID in your company, turn to Motorola, the leader in enterprise mobility with a proven track record in RFID technologies, bar code scanning, and mobile computing.



The RD5000 offers complete freedom from cables and wires. The integrated battery and wireless LAN networking combine with a rugged design to enable easy deployment of RFID in new areas of the business — from a wide range of moving equipment to challenging fixed locations.

For more information on how the RD5000 can help you, access our global contact directory at [www.symbol.com/contact](http://www.symbol.com/contact), or visit us on the web at [www.symbol.com/rd5000](http://www.symbol.com/rd5000)

### RD5000



### The features you need for true RFID mobility

- Completely cable-free design so RFID readers can easily be deployed throughout the enterprise to expand visibility
- Reliable connectivity with wireless LAN provides real-time inventory data
- Integrated Bluetooth enables wireless communications between the RD5000 and an on-board computer for a completely cable-free solution
- Integrated rugged antenna streamlines installation and reduces maintenance
- Self-contained power source eliminates the need and expense of running power cabling
- Motion-smart capability reads movement to conserve and maximize battery power
- Proximity sensor conserves power until an object is detected in front of the reader
- Sealed against dust, dirt, jets of water and more to ensure reliable operation in harsh environments
- Industry standard Intel XScale 624 MHz PXA270 processor for easy integration into your technology environment
- Microsoft Windows CE 5.0 provides robust application support
- MC9000 Series compatible battery and chargers reduces investment for enterprises already using Symbol's MC9000 Series mobile handheld computers



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