

RFID SOLUTIONS



The Right Asset. In the Right Place. At the Right Time.

Zebra provides the broadest range of innovative RFID technology solutions to enable your organization to identify, track, manage, and optimize the deployment of critical assets for improved business efficiency. By enabling improvements in sourcing, visibility, security and accuracy, Zebra helps you ensure the right asset is in the right place at the right time.

Gain Total Visibility Through RFID Flexibility and Innovation from Zebra

From small item identification to large asset location—and from the first link in your supply chain to the last—accurately and efficiently track and locate it with Zebra. Only Zebra provides a full spectrum of flexible and innovative passive radio frequency identification printing/encoding capabilities and active RFID location technologies to give you total item visibility, optimize security, heighten data accuracy and reduce operating costs.



Closed-Loop Applications for Internal Processes

- Asset tracking (track moveable assets such as files, supplies, equipment, tools, raw materials, inventory, or product samples for lower labor costs and greater security)
- Work-in-process tracking (use rewritable tags to track materials at each step of production for increased efficiency and quality)
- Warehouse/distribution center inventory control
- Container management (track returnable pallets, racks, trays and bins for lower operating expenses)
- Shipping/receiving verification (intracompany transfers, shipments)
- Secure access control and identification (RFID cards and wristbands)
- Retail in-store item-level tagging (for increased inventory accuracy and process efficiencies, reduced out-of-stocks)
- Check-in/checkout (attach smart labels to track the location of library books, video store DVDs, police evidence)



Only with Zebra's patent-pending UHF Gen 2 cards, which can be read from as far as 20 feet, and the first card printer that prints/encodes UHF cards in one step, can any type of organization so efficiently control and monitor access throughout its facility.

With Zebra's world's-first RFID mobile printer, retailers can efficiently add or replace item-level tags anywhere in the store.

Zebra extends its reach beyond passive RFID by employing market-tested solutions to locate, track, manage, and optimize high-value assets, equipment and people across the world's largest supply chains. Whether optimizing parts for manufacturing, or protecting visitors and personnel through safety automation, the **real-time asset management solutions** provide improved visibility and velocity to gain measurable operational efficiency.

Utilizing products that are based on ISO/IEC 24730-2, Cisco® CCX Wi-Fi®, precision global positioning systems (GPS), and ultra-wideband (UWB) technologies, Zebra offers a broad range of real time locating systems (RTLS) solutions that can be "application matched" from high resolution X-Y-Z coordinate positioning and tracking to basic presence detection.



Typical Applications for Zebra Passive RFID Printing/Encoding Solutions

Supply Chain Applications

- Item-level source tagging by retail, DoD and other suppliers
- Case- and pallet-level identification for Department of Defense UID compliance and business improvement
- Parts item-level source tagging by aerospace suppliers
- Track-and-trace/chain-of-custody (pharmaceutical, food cold chain and other manufacturers can cost-effectively manage targeted recalls, returns and repairs, and control the risk of counterfeiting and diversion)

Only through Zebra can manufacturers, distributors or service bureaus perform accurate item-level source tagging—such as for apparel, airplane parts, industrial assets, medical instruments or meeting Department of Defense (DoD) UID MIL-STD-130 requirements—and lower their tag costs by about 10 percent. The key is innovative short-pitch encoding from Zebra printer/encoders—providing best-in-class benefits such as the flexibility to switch between inlays with no mechanical or firmware modifications required.



With many of those very same Zebra industrial-grade printer/encoders, organizations have the flexibility to also provide carton- and pallet-level identification for external supply chain initiatives, including DoD compliance—as well as for internal, closed-loop business improvement applications such as intracompany shipments or container management. (See next page for more about closed-loop.)

On-the-Spot Tagging Applications for Remote or Large Assets

With the world's first and only RFID mobile printer, only from Zebra ...

- Manufacturers and distributors can add or replace RFID labels on pallets or large items to streamline supply chain logistics.
- The DoD can re-label assets in the field with UID replacement labels capable of existing many years in a variety of environments.
- Maintenance operations can tag equipment, and update data and service history, in the field—ensuring the correct items are serviced.
- DoD suppliers can meet UID MIL-STD-129 by labeling large items on the spot.



Broadest Range of RFID Printer/Encoders

Leveraging its legacy of innovation, Zebra offers an array of printer platforms to address many different business needs and trends, including emerging applications such as item-level tagging.

UHF (Ultrahigh-Frequency) Smart Label Printer/Encoders

R110Xi4™



Built to last, extremely reliable and optimized for high-volume RFID operations, the R110Xi4 printer/encoder delivers superior flexibility and unique features, such as auto-calibration and flexible tag placement that greatly simplify setup. By allowing inlay spacing of just .6"/16 mm (and potentially even narrower), the R110Xi4 enables lower cost per label, fewer media-roll changes for greater operational efficiency, and faster throughput. And Zebra's patent-pending Adaptive Encoding Technology ensures the highest encoding accuracy in the industry. Easily deployed multinationally, and fulfilling a wide range of applications—from item-level tagging and retail apparel initiatives to pallet/case labeling—the R110Xi4 offers true investment protection.

RZ400™/RZ600™



Lower the cost of RFID implementation by choosing the RZ400/RZ600 to print and encode a wide range of RFID media. The rugged, metal-cased printer/encoder supports item-level tagging initiatives with its user-friendly configuration for printing and encoding inlays spaced .98"/25 mm apart. Need to switch to larger labels for supply chain applications? Simply change the media roll converted to Zebra placement specifications and begin printing. Global availability ensures all your operations will implement RFID consistently and uniformly throughout the organization.

RP4T™



Zebra brings you the world's first mobile thermal transfer printer with RFID printing/encoding capability. With the RP4T, print lasting UHF smart labels, bar code labels, and documents, where and when you need them—resulting in enhanced data and asset-tracking accuracy and improved workforce efficiency. It's ideal for printing/encoding RFID labels 4" x 2" or less in size.

R110PAX4™



The R110PAX4 UHF Gen 2 print engine, designed for print-and-apply systems, offers faster throughput for superior overall performance at high volumes. The R110PAX4 is ideal for distribution, inventory, and supply chain management applications in a wide range of industries including consumer packaged goods, pharmaceuticals and electronics.

HF (High Frequency) Smart Label Printer/Encoders

R2844-Z™



The compact R2844-Z printer/encoder, which supports the widest range of 13.56 MHz HF RFID transponders, is the ideal desktop solution for smaller spaces or lower-volume closed-loop printing in patient care, delivery services, library book/DVD checkout, sensitive document tracking, and tag/ticket printing applications.

UHF Card Printer/Encoders and UHF Cards

P330i™/P430i™ and UHF Cards



With Zebra's P330i™/P430i™ on-demand, industry-first UHF card printer and patent-pending UHF cards, extend ID card applications with the ability to read cards from 20 feet—thanks to secure, long-range RFID Gen 2 UHF technology. Enhance the customer experience in applications such as customer loyalty, memberships and event access. And in security applications, efficiently control and monitor facility access, track people's locations, and relieve congestion by validating or counting people simultaneously, as well as track assets.

Pioneer and Leader in **RFID Technology**

Where is RFID headed next? Which new advances will help your organization operate even more efficiently? Rely on Zebra to lead the way. Its innovative spirit and years of deep RFID experience enable Zebra to work ahead of the curve to fulfill a wide range of evolving market requirements. Since smart-label technology first appeared in the mid-1990's, Zebra has played a central role in pioneering RFID technologies and defining global standards.

- Owns one of the **largest portfolios of RFID patents**, resulting in products that present top-class solutions for Zebra customers with diverse needs
- Member of **EPCglobal**, the **Department of Defense AIM RFID Expert Group** and other standards bodies
- Worked with key parties to define consensus proposals for the **EPCglobal Generation 2 (Gen 2) passive RFID protocol standard** as well as the **24730 active RFID standards**
- One of the first companies to market with **EPC UHF Class 1 printer/encoder**
- Supports both **HF and UHF protocols**
- First to introduce a **mobile UHF Gen 2 RFID printer**
- First to introduce a UHF card printer that **prints and encodes UHF Gen 2 cards in one step**
- Developed patent-pending **UHF card inlay specifically for long-range access control**
- Developed patent-pending **Adaptive Encoding Technology**, an encoding module and tag detection algorithm that automatically recognizes the inlay's type as well as its location within the label—ensuring 100 percent encoding accuracy

To get more information on how Zebra can help with your RFID projects, contact your Zebra representative or go to www.zebra.com/rfid.

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