

End-to-end asset visibility for **intelligent retail operations**



The asset visibility imperative

Shoppers choose when, where, and how they engage with retailers and have high expectations for seamless, convenient, and personalized experiences. To meet these demands, it's essential to have accurate and real-time visibility across inventory.

Achieving this in multichannel retail is no mean feat. But it's becoming easier with a combination of RFID and barcode labeling and printing solutions that make it simple to give any stock-keeping unit a unique digital voice.

Digital voices are sensed by our range of mobile devices, scanners, and fixed and handheld RFID readers to give you pervasive, specific, and continuous visibility over your inventory. This empowers precise demand planning, and effective and proactive decision-making. Our solutions also help enhance core retail operations, from pricing and checkout to the service associates give shoppers and the rollout of new in-store experiences.

In the following sections, we dig into the benefits of asset visibility in more depth.

84%

of retail decision-makers are under pressure to synchronize inventory across channels.

[18th Annual Global Shopper Survey, Zebra Technologies]

87%

of associates say the right tools make the job less stressful and more enjoyable.

[18th Annual Global Shopper Survey, Zebra Technologies]

20%

increase in associate productivity where retailers have meaningfully optimized workflows in the last two years.

[Elevating retail value: The impact of Intelligent Operations, Oxford Economics / Zebra, 2025]

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Optimized inventory management

Asset visibility solutions trace a complete and real-time view over your inventory as it moves across the supply chain, into the warehouse and store, and through to the final sale via any channel. Returns are immediately visible too. Solutions include high-performance and cost-effective labeling for cross-docking, work-in-progress, shipping, pricing and inventory management in-store. We also provide RFID solutions for automated tracking, and a range of rugged mobile devices for frontline teams in warehouses where technology has to work 24X7 in a demanding environment. Highlights include:



Shipping and receiving with barcode labeling

Barcode shipping label solutions include:

Z-Essentials 1000D—durable and reliable for everyday use

Ensure your critical information remains scannable throughout the supply chain. This durable, coated label resists abrasion and moisture making it perfect for shipping, retail, and work-in-progress. Best for: high-pace environments needing consistent, long-lasting labels.

Printer synergy

- High-volume: ZT510
- Versatile industrial: ZT200 Series
- Compact desktop: ZD400 Series

Zebra ZeroLiner Linerless labels—boost efficiency, eliminate waste

Increase productivity with 50% more labels per roll, meaning fewer changes and less downtime. The linerless design eliminates waste, and a powerful adhesive sticks to tricky surfaces like recycled cardboard and shrink-wrap. Best For: sustainable operations aiming to improve throughput.

Printer synergy

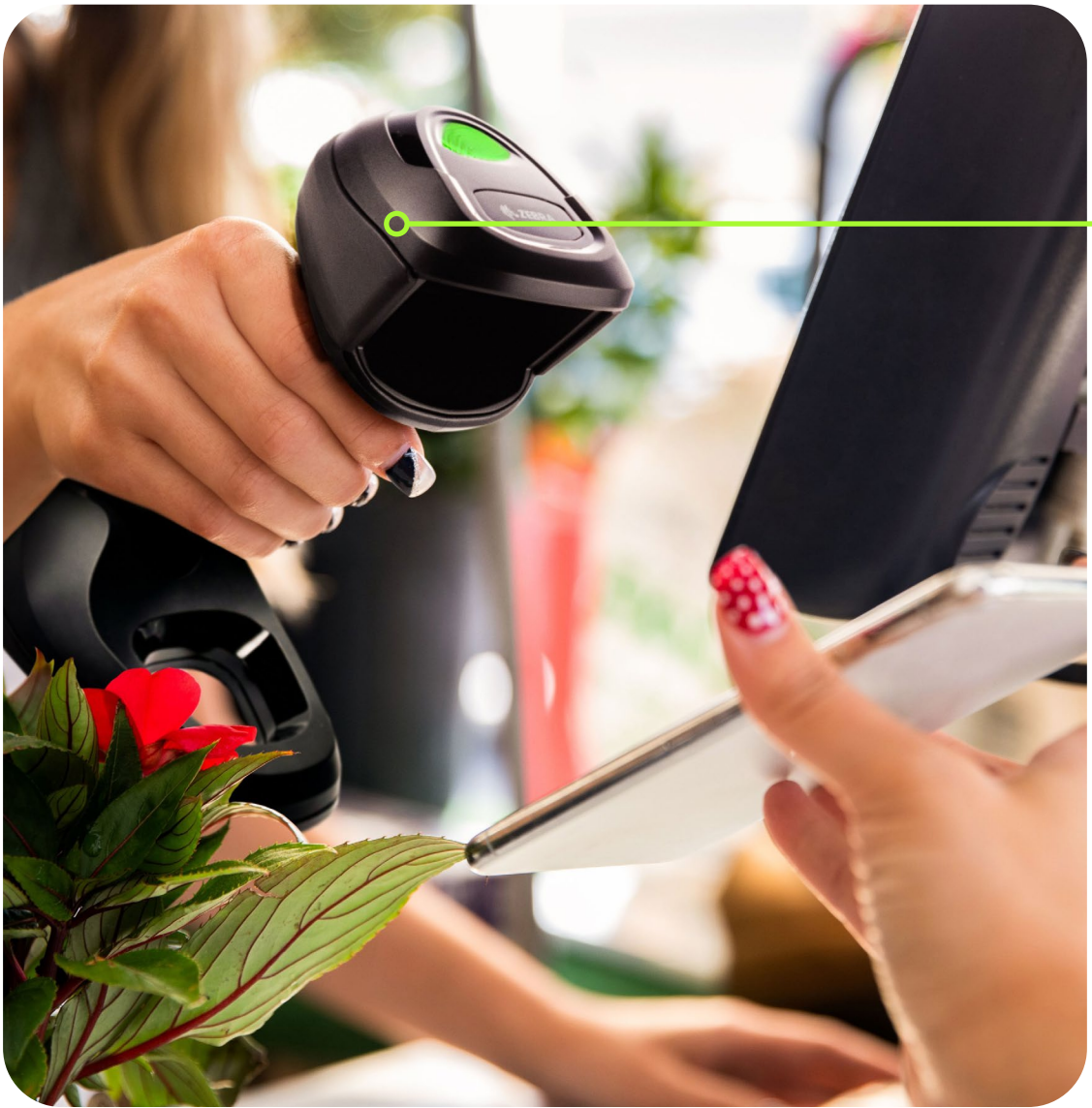
- High-volume shipping: ZT411
- Mobile warehouse: ZQ600 Plus Series
- Packing stations: ZD621 Linerless

Zebra Returnable Transport Item (RTI) label—total asset visibility

Give your reusable plastic containers a digital voice. Track the real-time location of your totes and crates from up to 65ft away to reduce loss, optimize allocation, and gain full visibility over your assets. Best For: Tracking and managing valuable, returnable assets, effortlessly encoded.

Printer synergy

- ZD411 RFID Printer



Versatile scanning and mobile devices for frontline warehouse and supply chain teams

Zebra's mobile devices are common features in warehousing and logistics, including:

- **Workbench scanning**—options include the DS9908, which has a wide field of view and can be used as a swipe or handheld scanner. If your work areas are especially demanding, perhaps with concrete floors and high dust levels, the virtually indestructible DS3600 Series Ultra-Rugged Barcode Scanner range is ideal.
- **Mobile computers**—where your teams are coordinating tasks, from goods-in to put-away, picking, and more, we recommend our industrial range of mobile computers, such as the powerful MC9400 / MC9450 Ultra-Rugged Mobile Computer, or MC33xx Series Mobile Computer. Both include RFID variants and have been refined over many generations to help frontline teams accelerate tasks in high-throughput warehouse environments.
- **Wearable devices**—to augment your team's capabilities in high-scan environments, our wearable tech keeps hands free to boost productivity and includes companion ring scanners, from the RS2100 Bluetooth Wearable Scanner to high-performance devices like the WT5400 Wearable Computer.

Shipping, receiving, and asset tracking with RFID

Our RFID solutions create a digital thread across supply chains and into stores. RFID labels are printed on demand in the warehouse with integrated inlays, which include the RFID chip and antenna, using printers like the Zebra ZT411 RFID Industrial Printer. We offer a wide range of RFID sensors, labels, and tags, including labels that are applied once and remain attached through the sales lifecycle. Examples include:

ZBR4000 Inlay—smart tracking for every need

Maximize efficiency with unparalleled visibility. This inlay provides exceptional read-range, perfect for tracking entire cases and pallets from a distance, reducing manual scans, and accelerating inventory management.

ZBR2200 Inlay—precise product ID

Enhance in-store inventory accuracy and customer experience. This widely used inlay is ideal for individual product identification, particularly in fashion retail, and is often paired with Z-Select 2000T labels for premium print quality and durability.

Specialty RFID labels—for challenging and high-value items

Tag unique assets with our specialized solutions that overcome RFID signal interference. With our jewellery tags use Z-Ultimate 2000T White Thermal Transfer labels, while the Silverline range delivers robust performance on tools, electronics, and white goods

Printer synergy

- ZT421 RFID Industrial Printer for precise, high-value item identification (jewellery)
- ZT411 On-Metal RFID Printer (Silverline)

Asset labeling dramatically streamlines operations and improves inventory management. The time savings enable associates to focus on customers. Pricing is another area where labeling is just as important to the shopper's experience, discussed in the next section.

Workflow optimization with RFID

An integrated RFID ecosystem saves significant time. Labels and tags can be auto read by the FX9600 Fixed RFID reader at dock doors and goods-in, showing, in fashion retail, for example, the exact style, sizes, and colors of items in boxes. In the stockroom, mobile devices such as the Zebra TC2X with RFD40 sled make receiving shipments, cross-docking, and knowing when to take stock directly to the shop floor much easier.

Choose to adopt the EM45 RFID Enterprise Mobile and you can add an AI assistant into the mix to further augment associates' capabilities.

And, with our Sensing Retail Appliances interacting with your RFID labels, you can gain a real-time view of inventory on the sales floor (with no need for manual stock takes), and tackle shrink, too, with our exit transition reader, the Zebra ST5500.

When combining a range of technologies including RFID, mobile devices, and sensing solutions, we see dramatic improvements in inventory performance:

- 27% fall in shrink rates
- 9% improvement in forecast accuracy
- 98% inventory accuracy*

(*Zebra Modern Store Framework, Achieve Optimized Inventory. Actual performance may vary depending on, among other things, store environment, product mix, and process adherence.)



FX9600
Fixed RFID reader



EM45 RFID
Enterprise Mobile



RFD40 sled

The impact of intelligent operations in retail

Intelligent operations combine automation with RFID, and data with human expertise and AI, to optimize business processes. A report on the value of intelligent operations by Oxford Economics* says retailers who have achieved meaningful changes in inventory over the last two years see increased inventory accuracy (68%), reduced time spent on inventory management (47%), and improved forecast accuracy (44%). When asked about what technologies had most contributed to improvements, the top three results were:

46%

Mobile
computers

43%

RFID
[readers]

41%

Predictive
analytics

*Elevating retail value: The impact of intelligent operations. Oxford Economics / Zebra, 2025

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Accurate and versatile pricing and promo solutions

Whatever your retail strategy or category, we have ready-to-go and customizable items and shelf-edge labels to easily and accurately display and amend pricing. Our extensive portfolio includes over 300 rigorously tested and pre-tested label materials, and we can create any size of label you need. Common applications include:



Product pricing and markdown labeling

Whether your products come without a price, are incorrectly priced, or are missing tags, you can use our labeling and print portfolio to price products at distribution centers or in-store with speed and ease. Commonly used labels for pricing include:

Z-Perform 1000D—assured labeling for high-volume short-term applications

With a permanent adhesive and high-contrast the Z-Perform 1000D is ideal for shorter shelf-life items and be printed on our direct thermal printers.

Printer synergy

- Mobile ZQ630 Plus Mobile Printer (in-aisle printing)
- ZD421 Desktop Printer (stockroom printing)
- ZT411 Industrial Printer (warehouse)

Z-Select 200D—premium price labeling

A protective topcoat prevents smudging and damage from moisture and oils, and ensures barcodes remain clear and scannable across product lifecycles. Its smooth surface is also easier on printers, to extend the life of hardware.

Printer synergy

- ZQ630 Plus Mobile Printer and ZD421 Desktop Printe

8000D Jewelry—assured labeling for high-value items

he label's coating is ultraviolet-resistant to protect barcodes from bright lighting and ultrasonic cleaners.

Printer synergy

- ZD421 Desktop Printer (300dpi printing for small labels)

IQ Color 2000D—boost sales with eye-catching labels

With **42%**¹ of impulse buys triggered by colors on shelves, IQ Color is your go-to option to highlight products, offers, or markdowns. You can print standard black text alongside vibrant color options, like red for urgency and excitement, yellow for a new item or value, and green for health and savings.

Printer synergy

- ZQ600 Series Mobile Printers

¹ Adobe, The top color trends for branding in 2025, May 2025



Bring your label vision to life with Zebra Supplies

With over 50 years in retail label design and manufacturing, we can help you turn your vision, and approach to item labeling into a competitive advantage. Whether you're pricing shelves or products, or mass printing RFID labels and tags in warehouses, you can be assured that our products have been rigorously tested, and our printers and suppliers work in sync to produce high-quality labels and reduce wear and tear. With Zebra, be sure of needing fewer printer adjustments, the quality of materials, and ISO 9001 compliance.

Shelf-edge labeling

Influence buying decisions with eye-catching and clear labeling and designs that withstand environmental conditions, including fluorescent light and sunlight, and refrigeration and freezer temperatures. Popular options include:

Z-Select 2000D / Z-Select 4000D—high-quality label printing

Ensure crisp, scannable barcodes and text with our “workhorse” labels. The Z-Select 2000D delivers superior clarity for standard shelf-edge needs, while the Z-Select 4000D offers high-speed printing for batch applications and an all-temperature adhesive for cold storage, meeting FDA/EU food safety regulations.

Printer synergy

- ZQ600 Series Mobile (in-aisle)
- ZD421 Desktop (batch)
- ZT411 Industrial (high-speed batch)

PolyPro 4000D—engineered for demanding environments

Designed for demanding conditions, this tear- and moisture-resistant polypropylene label is perfect for environments where paper won't do. Labels that withstand harsh conditions, ideal for hardware stores and freezer cabinets, ensuring information remains legible.

Printer synergy

- Mobile ZQ630 Plus Mobile Printer (in-aisle printing)
- ZD421 Desktop Printer (stockroom printing)
- ZT411 Industrial Printer (warehouse)

EnduraGuard 4000D—ready for all weathers

Our most robust solution for outdoor applications, EnduraGuard 4000D resists UV, chemicals, and environmental factors. Reliable asset tracking and shelf pricing in outdoor settings like garden centers and DIY stores, ensuring longevity and readability.

Printer synergy

- Mobile ZQ630 Plus Mobile Printer (in-aisle printing)
- ZD421 Desktop Printer (stockroom printing)
- ZT411 Industrial Printer (warehouse)

In the next section, we look at how data from our barcode and RFID labels can help you enhance services in-store.



Check out the convenience

The quality of our barcode labeling means mis-scans are rarities, while our scanning devices integrate Zebra's PRZM scanning engine. With PRZM onboard you capture data from further away, scan 50% faster than older generation technologies, and be sure of more first-time scans, with its imaging technology compensating for smudged, incomplete, crinkled, or otherwise impaired barcodes.

You can choose from a versatile range of scanning solutions to support checkouts. For mobile point-of-sale, associates can take tap-to-pay transactions with our TC5x Series Mobile Computers, while shoppers can choose to use our PS30 Personal Shopper to scan as they shop and easily pay on exit. You can also offer self-service payment stations using our KC50 kiosks, and we accelerate checkout lanes too where our MP72 Series Multi-plane Scanner / Scale is a familiar fixture. It has the biggest field of view for fast and effortless barcode capture, it's highly energy efficient, and it includes features to reduce operator fatigue and smart options to cut shrink. These include a HD color camera for computer vision, such as product recognition and scan-avoidance detection, and Weight Guard technology to ensure items are fully on the platter before recording weight.

We also have a wide range of attractive, hands-free and presentation scanners, like the DS9300 and DS9900 Series. The DS9300 is a compact scanner with swipe speeds that are 50% faster than comparable models and which handles everything from torn paper labels to dim mobile coupons. It features an **invisible infrared light** to prevent eye strain and a **curved optic design** to minimize glare. For associates, it's "set and forget" efficiency that keeps checkout lines moving and counters clutter-free.

The DS9900 Series for Retail can switch between presentation and handheld modes and offers a 240-inch-per-second swipe rate and optional RFID model that brings inventory tracking to point of sale.

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Offering new services and experiences through label data

The digital voice contained in your RFID and barcode labels is a gateway to enable smart applications. Take a simple scan of a Z-Select 2000D price label which becomes a digital key to unlock product information that is presented on the associate's mobile device. The information could include inventory data, upsell opportunities, dynamic pricing, and more.



And with our range of new AI-native devices, insight collected from your labels, sensors, and tags adds to that collected across your business and can be used by our AI solutions and devices. For example, we have a range of AI-native devices with the necessary power to run AI-led applications. Models include:

- **All new TC501 / TC701 Handheld Mobile Computers**—with the industry's first AMOLED display for better visibility and a color imager for fast, accurate data capture.
- **EM45 RFID Enterprise Mobile**—AI capabilities are integral to the EM45, which looks like a smartphone but enables associates to manage data capture, inventory, and tasks in one device.
- **TC601 Enterprise Tablet**—a great choice for supervisors and merchandisers, with integrated RFID to enable rapid item location and real-time stock updates across the shop floor and back room.

The devices come into their own when running our Generative AI Companion, which uses real-time data and self-learning to always help associates take the next-best move and prioritize their actions. Modules include a knowledge agent for conversational guidance, a sales agent for querying product information, and a merchandising agent which uses computer vision to address inventory gaps on shelves and resolve planogram issues.

Where you have RFID labels and tags in play, you can also think about extending the value from their data with new services. For example, with our range of fixed RFID readers, data collected from labels in different areas of the store can be used to display context-aware information to shoppers. In a changing room, for example, when an item of clothing is detected, a Zebra KC50 kiosk can be used to offer avatar-based guidance to recommend complementary items, and to allow shoppers to check for additional sizes. And, at checkout, we can provide a complete frictionless experience.

Overhead, a fixed RFID reader, like the FX9600, can automatically capture the unique ID of every item simultaneously, with no line-of-sight or individual scanning required. Typically, Z-Select 2000T RFID labels would be printed and attached to items with integrated ZB2100 or ZBR4000 high-sensitivity inlays, which are read by the reader. If shoppers retain the labels, they can request a QR code to return their items. When they come to the store, they can scan their code on a Zebra KC50 kiosk and place their items in a return bin. The kiosk's RFID reader, or an overhead reader, automatically registers the items back in. They can also print a receipt while the stock is made visible to the business and the refund is processed.



Maximize your team's potential

We're here to take advantage of new technology to assist you in optimizing operations—from warehouses to sales floors and digital channels. Operations are becoming more intelligent through a combination of devices and software solutions, including labels, sensors, and RFID readers and tags, mobile computers and tablets, AI, and analytics. The improved accuracy and timeliness of data capture feeds into forecasting software AI assistants and decision-making tools which can dramatically improve performance, from associate productivity to inventory accuracy and shopper experiences.

With decades of innovation and R&D behind us, we help deliver the fast, flexible experiences shoppers expect while simplifying workflows, so associates can focus on exceptional customer service.

For more information, please visit and contact us at:

www.zebra.com/gb/en/industry/retail.html

