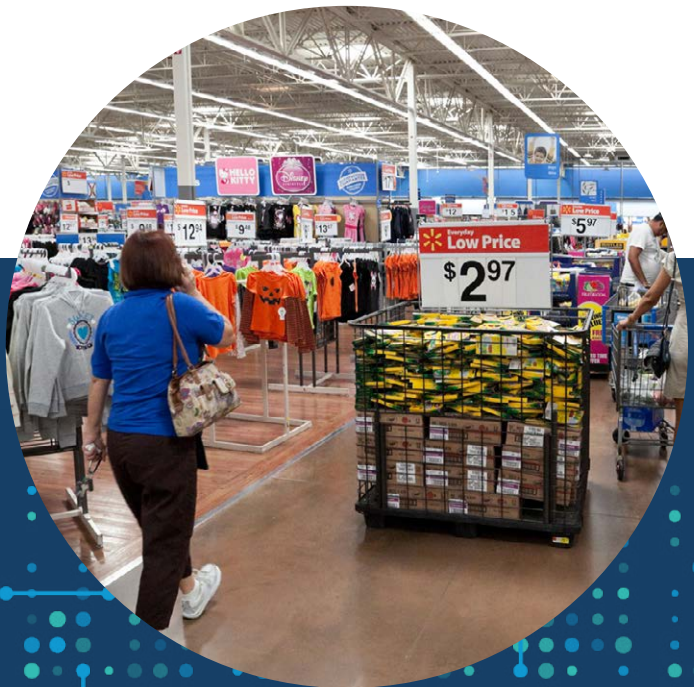# Guide to Retail RFID Mandates:
5 Steps to Compliance

Why retailers are introducing RFID mandates

Many major retailers are introducing RFID tagging requirements for suppliers. Walmart's RFID mandate, launched in 2020, receives a lot of attention for the breadth of product categories it includes. Macy's, Nordstrom, Target, and many others are also implementing requirements for RFID tags to be attached to products so they can be easily tracked and managed as they're received, distributed, and sold in stores.

The reasons for this push? Significant improvements in inventory accuracy, shopper experience, operational efficiency, and omnichannel fulfillment. The whole retail industry is taking note of the benefits of item-level RFID tracking: real-time inventory insights, fast inventory counts, automated self-checkout and loss prevention, efficient product authentication, and more.

Meanwhile, the European Union's Digital Product Passport (DPP) initiative is pushing retailers and suppliers to collect and share detailed, item-level information about nearly every product they sell so consumers can make informed buying decisions with sustainability in mind. With RFID, enterprises can meet DPP data-collection requirements while also improving their own operations.

Retail mandates cover a growing list of product categories, including:

- Apparel
- Automotive
- Books
- Camera and supplies
- Crafts

- Electronics
- Food
- Hardware
- Home goods
- Lawn and garden

- Media and gaming
- Paint
- Sporting goods
- Stationery
- Toys

What is RFID?

Radio Frequency Identification (RFID) is a form of wireless communication that uses radio waves to identify and find objects. RFID is a generic term encompassing different frequencies and standards, including NFC and RAIN RFID. RAIN RFID is a passive, battery-free wireless technology that allows retailers to track and locate every tagged item quickly and accurately, bringing powerful insights and real-time visibility to inventory and operations.

RAIN RFID stands alone in its ability to:

- Uniquely identify individual items beyond just their product type
- Identify and locate items without direct line of sight
- Identify many items quickly (up to 1,000 items per second)
- Read items within a range of between a few centimeters to several meters

Because of the wide range of benefits derived from accurate inventory data and the low cost of individual tags, RAIN RFID deployments are uniquely scalable across very large systems, tracking hundreds of thousands — even billions — of individual items.

5 steps to RFID compliance in retail

This guide walks you through five steps to start tagging with RAIN RFID to fulfill tagging requirements and explains how to maximize the benefits of RFID within your operation.

1 Understand your scope

Start by **defining what you need** to meet Walmart's requirements. What products do you need to tag? Do you want to gain business insights by tracking tagged items within your own manufacturing and shipping operations?

Reach out and connect with an RFID hardware and software partner with demonstrated expertise in GS1 standards and Auburn RFID Center (ARC) Quality certification. You'll want a partner who **understands and anticipates the complexity of working within your manufacturing and packaging processes** and is well-versed in RFID tagging best practices.

2 Find a RFID partner that understands your business

3 Define a tagging strategy

Each product category has its own tag performance specifications from ARC. An RFID partner can help you **select the specific tags you need for your product categories**. When strategizing, consider **when and where your tags should be encoded** with information — at the label vendor, during printing, or after an item has been tagged.

Once you've settled on a tagging strategy, the next step is to decide **how to track those tagged items**. Your technology partner can help ensure you **build a reading strategy** that is tailored to your organization and meets Walmart's requirement to verify all items are correctly encoded before leaving your facilities.

4 Define a reading strategy

5 Identify your earliest tagging opportunity

The further upstream you integrate RFID in your operations, the greater the potential benefits in speed, efficiency, and accuracy. Experienced RFID providers like Barcoding and Impinj can help you **identify the optimal point of entry and your best tag application procedures**.

More than a mandate: Maximizing RFID's ROI

It's not just retailers that benefit from an RFID tagging mandate. While suppliers may start using RAIN RFID to meet the requirements of their retail partners, many quickly discover additional use cases and operational benefits of tagging items. These added benefits, along with the low cost of RAIN RFID tags, provide an increased return on investment beyond mandate compliance.

Attaching a RAIN RFID tag to a product gives it a "digital twin." With item-specific information encoded to its tag, each item is linked to its digital record in the cloud. This ensures highly accurate, real-time insights into the status of every tagged item as it moves through a factory, supply chain, distribution center, or retail store. RAIN RFID can identify, locate, protect, and authenticate items in work-in-progress (WIP) lines, at dock doors, at distribution centers and warehouses, in retail backrooms, at points of sale, and even at the returns counter.

RAIN RFID enables insights from source to sale — and the further upstream an item is tagged, the more insights an organization can get. As product data is integrated into existing enterprise systems, efficiency improvements can ripple through an entire business. Even for those who feel their current inventory, picking, or logistics systems are sufficient for their needs, RAIN RFID can bring powerful improvements to an enterprise, such as:

Up to
99%
item inventory accuracy

- Faster operations through automation, eliminating the need for time-consuming and error-prone manual processes
- Improved visibility by enabling real-time tracking and monitoring of inventory, assets, and products
- Decreased labor costs by reducing the amount of time employees are searching for items, coordinating orders, and contacting suppliers — making your existing team more efficient
- Energy cost savings, reduced waste, and optimized resource utilization realized through fine-tuned delivery routes and reductions in overstocks
- Improved employee satisfaction and worker retention by automating certain manual jobs, freeing staff to focus their efforts on higher-value, more rewarding tasks

Added value across the enterprise

For manufacturers, distributors, and retailers alike, the effectiveness and versatility of RAIN RFID are driving an expanding list of use cases. And those who might adopt the technology for one purpose can quickly realize benefits in other areas:

Identify, locate, protect, and authenticate items

Supply chain: RAIN RFID drives digital transformations for organizations to gain automation, boost visibility, and maximize efficiency in their systems. Use cases for RAIN RFID in supply chain operations include shipment verification, supply chain automation, inventory management, product authentication, and omnichannel fulfillment.

Manufacturing: By enabling machine-to-machine communications in assembly and manufacturing processes, RAIN RFID solutions transform manufacturing and automotive assembly lines and streamline even the most complex procedures.

Distribution centers: RAIN RFID provides real-time visibility into inventory, automates processes, reduces errors, and optimizes workflows.

Retailers and stores: With RAIN RFID in retail stores, retailers can know the location of every item at all times — with 99% accuracy.[1]

1. GS1 US and Auburn University RFID Lab (2018). EPC/RFID Data Exchange Study, Project Zipper Executive Summary

Partner with an industry leader in RFID

When you're ready to get started, be sure to select an experienced RAIN RFID partner that takes an individualized approach to the processes and people at work, and actively listens to and understands your needs and challenges.

Look for an organization with expertise in:

- RAIN RFID technology
- Hardware and infrastructure
- Software
- Labels and printing technologies
- Standards and certification organizations, like GS1

The right partner will help your organization build a system that not only enables you to meet today's mandates and customer demands, but also helps you select and implement solutions for longevity and growth. They'll also ensure you use the best RAIN RFID products — such as Impinj M800 series RAIN RFID tag chips — to ensure speed, readability, and accuracy.

Short term: Understand compliance needs

Complying with RFID tagging requirements means ensuring that products are shipped with the right RFID labels applied at the item level, ready for retailers to receive them at their dock doors.

The first step is to begin working with an RFID packaging provider to create pre-printed and encoded labels that meet the required specifications. Impinj can help you connect with the right RFID packaging provider for your needs.

Long term: Integrate RFID across operations

Most retail RFID requirements include GS1 standards, which allow RAIN RFID tags used by suppliers to be read and used by any organization that follows the same standards. Various companies within a product ecosystem can leverage RAIN RFID to streamline their own business operations and share product information across the supply chain, making it easier to track, trace, and authenticate materials or products as they move through different hands.

As suppliers take initial steps to meet a mandate, they're likely to recognize multiple points within their own operations where RAIN RFID could deliver game-changing efficiency, accuracy, speed, and visibility. Retail mandates are springboards for implementing the necessary RFID infrastructure, equipment, and processes for maximizing ROI well beyond initial requirements.

RAIN RFID unlocks major benefits across organizations. While also meeting mandates, suppliers can significantly improve inventory visibility and accuracy, operational efficiency, and more. Impinj can help guide you through compliance while building strategies to maximize value long-term. Connect with Impinj to start your RAIN RFID journey.

Ready to speak to an Impinj RFID expert? Contact us: impinj.com

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