



WALMART RFID PLAYBOOK

General Merchandise
For Walmart U.S. Stores

The requirements in this version supersede all previous playbooks.

General Overview

Industry Standards to Follow

- Walmart follows all industry standards set forth by the GS1 EPC Tag Data Standard, Auburn RFID tag placement standard, GS1 tag placement standard, and Auburn University RFID Lab ARC inlay standard. All tagging requirements must meet these standards and should be validated through the Auburn RFID Lab ALEC Program prior to arriving in our stores.

In Scope:

- All items within the following Walmart Home, ETS, and Hardline departments are required to have RFID tags, unless listed in the Out-of-Scope section of this playbook.

Home	ETS	Hardlines
D14 - Kitchen	D5 - Media & Gaming	D3 - Stationary
D17 - Home Decor	D6 - Cameras & Supplies	D9 - Sporting Goods
D20 - Bath and Shower	D7 - Toys	D10 - Automotive
D22 - Bedding	D21 - Books	D11 - Hardware
D71 - Furniture	D72 - Electronics	D12 - Paint
D74 - Home Management	D87 - Wireless	D16 - Lawn & Garden
		D19 - Crafts

- All items in these departments are in scope for RFID with no minimum price. Walmart will not decide or grant approval on tag spec and location. All items must be validated and approved by Auburn RFID lab.

Apparel

- The scope of this playbook is only the General Merchandise categories. Please refer to the Apparel RFID Playbook available in Retail link for information related to RFID tagging of Apparel items.

<https://supplieracademy.northpass.com/app/search/f5c449ff-0373-410a-87bf-fbcb08e35817?q=rfid>

Out-of-Scope:

- DSV (Direct Ship Vendors), Pay from scan items, 3rd Party WFS
- D18 Seasonal
- D56 Horticulture
- D67 Celebration (e.g., holiday décor, greeting cards)
- Items where RFID tags are not compatible with the product as determined by the RFID Lab ALEC Program.

Getting Started

- The following outlines a standard framework to integrate RFID into packaging. This includes major points and areas that should be considered; however, every company must tailor these steps to fit the needs of their business and supply chains.
 - Develop an internal team.
 - Identify the ways that RFID can help improve your operations.
 - Engage with your Packaging Provider to determine their RFID capabilities, if needed, also engage with an approved RFID Inlay Manufacturer.
 - Begin procurement discussions and be prepared to provide forecasts, products tagging and estimated timelines.
 - Begin data management/serialization discussions with your RFID Packaging Provider.
 - Develop an internal quality check process to ensure compliance according to all requirements within this Playbook.

Select RFID Inlay Spec

- Walmart references a set of inlay specifications that are performance approved from the Auburn University RFID Lab. Refer to the chart below to see what spec has been assigned to each department/subcategory. **You can only use an approved inlay from an item's associated inlay list.**

Home			
Department	Subcategory	Inlay Spec	Approved Inlay List
D14 - Kitchen	All	Y2	https://rfidlab.org/arc/spec-y2.php
D17 - Home Decor	Candles - Ceramic/Glass	C2	https://rfidlab.org/arc/spec-c2.php
D17 - Home Decor	Picture Frame, Mirror	Contact RFID Lab	https://rfidlab.org/aleccontactform/
D17 - Home Decor	All Else	Y2	https://rfidlab.org/arc/spec-y2.php
D20 - Bath and Shower	All	Y2	https://rfidlab.org/arc/spec-y2.php
D22 - Bedding	All	Y2	https://rfidlab.org/arc/spec-y2.php
D71- Furniture	All	Y2	https://rfidlab.org/arc/spec-y2.php
D74 - Home Management	All	Y2	https://rfidlab.org/arc/spec-y2.php

ETS			
Department	Subcategory	Inlay Spec	Approved Inlay List
D05 - Media & Gaming	All	Y2	https://rfidlab.org/arc/spec-y2.php
D06 - Cameras & Supplies	All	Y2	https://rfidlab.org/arc/spec-y2.php
D7 - Toys	Batteries	Contact RFID Lab	https://rfidlab.org/aleccontactform/
D7 - Toys	All Else	Y2	https://rfidlab.org/arc/spec-y2.php
D21 - Books	All	O	https://rfidlab.org/arc/spec-o.php
D72 - Electronics	All	Y2	https://rfidlab.org/arc/spec-y2.php
D87 - Wireless Devices	Prepaid Cards	Contact RFID Lab	https://rfidlab.org/aleccontactform/
D87 - Wireless Devices	All Else	Y2	https://rfidlab.org/arc/spec-y2.php
Hardlines			
Department	Subcategory	Inlay Spec	Approved Inlay List
D03 - Stationery	Flags	Y2	https://rfidlab.org/arc/spec-y2.php
D03 - Stationery	All Else	O	https://rfidlab.org/arc/spec-o.php
D9 - Sporting Goods	Terminal Tackle	O	https://rfidlab.org/arc/spec-o.php
D9 - Sporting Goods	Liquid Container w/ Cap (No Foil Seal)	B2 / Y2	https://rfidlab.org/arc/spec-b2.php https://rfidlab.org/arc/spec-y2.php
D9 - Sporting Goods	All Else	Y2	https://rfidlab.org/arc/spec-y2.php
D10 - Automotive	Tires	T	https://rfidlab.org/arc/spec-t.php

D10 - Automotive	Car and Truck Batteries	P	https://rfidlab.org/arc/spec-p.php
D10 - Automotive	Liquid Container w/ Cap (No Foil Seal)	B2 / Y2	https://rfidlab.org/arc/spec-b2.php https://rfidlab.org/arc/spec-y2.php
D10 - Automotive	All Else	Y2	https://rfidlab.org/arc/spec-y2.php
D11 - Hardware	Liquid Container w/ Cap (No Foil Seal)	B2 / Y2	https://rfidlab.org/arc/spec-b2.php https://rfidlab.org/arc/spec-y2.php
D11 - Hardware	All Else	Y2	https://rfidlab.org/arc/spec-y2.php
D12 -Paint	Tapes	R	https://rfidlab.org/arc/spec-r.php
D12 -Paint	Liquid Container w/ Cap (No Foil Seal)	B2 / Y2	https://rfidlab.org/arc/spec-b2.php https://rfidlab.org/arc/spec-y2.php
D12 -Paint	Caulking, Paint, Stain, Primer, Protectant	Contact RFID Lab	https://rfidlab.org/aleccontactform/
D12 -Paint	All Else	Y2	https://rfidlab.org/arc/spec-y2.php
D16 - Lawn & Garden	Liquid Container w/ Cap (No Foil Seal)	B2 / Y2	https://rfidlab.org/arc/spec-b2.php https://rfidlab.org/arc/spec-y2.php
D16 - Lawn & Garden	All Else	Y2	https://rfidlab.org/arc/spec-y2.php
D19 - Fabrics and Crafts	Paper, Canvas, Photo Albums, Notions, Ribbon Accessories, Sewing Accessories	O	https://rfidlab.org/arc/spec-o.php
D19 - Fabrics and Crafts	Ribbon, Fabric - Cut	R	https://rfidlab.org/arc/spec-r.php
D19 - Fabrics and Crafts	Liquid Container w/ Cap (No Foil Seal)	B2 / Y2	https://rfidlab.org/arc/spec-b2.php https://rfidlab.org/arc/spec-y2.php
D19 - Fabrics and Crafts	Paint, Fabric Coloring, Fabric - Uncut	Contact RFID Lab	https://rfidlab.org/aleccontactform/
D19 - Fabrics and Crafts	All Else	Y2	https://rfidlab.org/arc/spec-y2.php

Determine Inlay Manufacturer & Packaging Resources

- Suppliers may only use RFID inlays from approved inlay manufacturers. The latest version of the ARC approved RFID inlay manufacturer contact information is available at <https://rfidlab.org/inlaycontacts/>.
- Any packaging resource can be used, so long as ARC approved inlays are sourced for your approved spec. A list of packaging resources can be found at <https://rfidpackagingresources.org/>. These are packaging providers that have supplied packaging for the Walmart RFID Program. This is NOT an endorsement or list of nominated suppliers.
- r-pac is the designated printer for The Pioneer Woman and onn. Other Brands can utilize their own RFID packaging resource, but the label provider or packaging resource will need to source an Auburn University ARC approved inlay.

Identify Inlay Size

- Use the largest RFID inlay size available that fits your packaging.
- If your packaging does not fit the smallest inlay size available within the approved spec, add a generic embedded inlay hangtag or a separate paper-based sticker to your item.

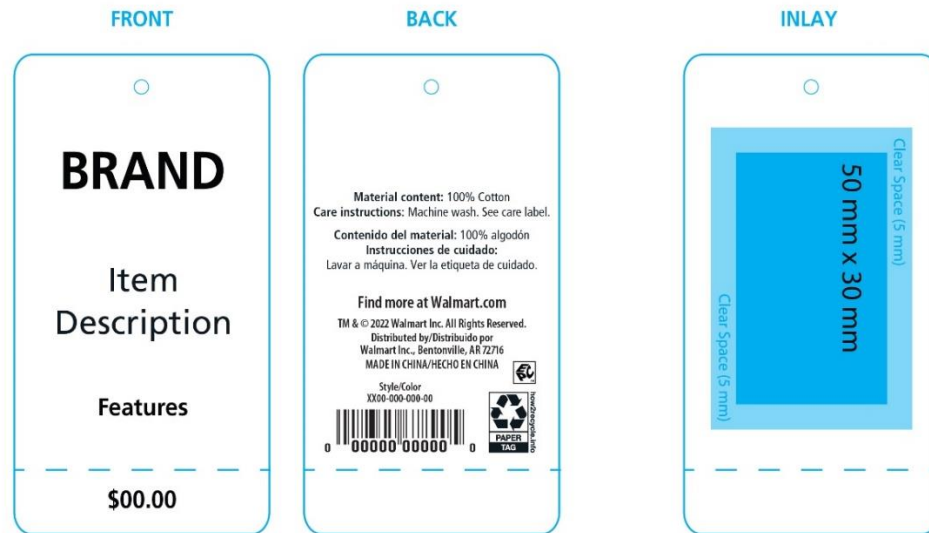
Determine Placement of RFID tag

- Please consult with the Auburn and GS1 Tag Placement Guidelines for product specific placement, and adhere to standards:
 - Auburn RFID Tag Placement Guideline: <https://rfid.auburn.edu/tagging-location-guide/>.
 - GS1 RFID Tag Placement Guideline: <https://www.gs1us.org/content/dam/gs1us/documents/industries-insights/by-industry/apparel-general-merchandise/guideline-toolkit/Guideline-Format-And-Symbol-Placement-for-the-Electronic-Product-Code-EPC.pdf>
- If your item is not represented in the Auburn University RFID Lab Tag Placement Guideline, please contact the RFID lab at <https://rfidlab.org/aleccontactform/>.

Review RFID Application Formats

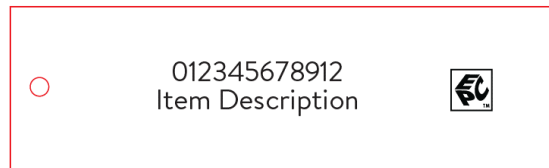
- Please refer to the Auburn University RFID Lab Tag Placement Guideline for all available application formats. Please contact the RFID lab at <https://rfidlab.org/aleccontactform/> for any questions.
- We recommend integrated RFID packaging solutions, as they help preserve the packaging's visual appeal and ensure reliable RFID performance. Always consult with your merchant partner to determine the final design of your RFID-enabled packaging.

Branded Embedded Hangtag (Private Brands Only)



- Any changes to die lines or artwork will be managed through Walmart U.S. Packaging Team
- Inlays must be embedded into branded hangtag
- 4 mm gutter or greater around the embedded inlay

Generic Embedded Hangtag Format or Insert



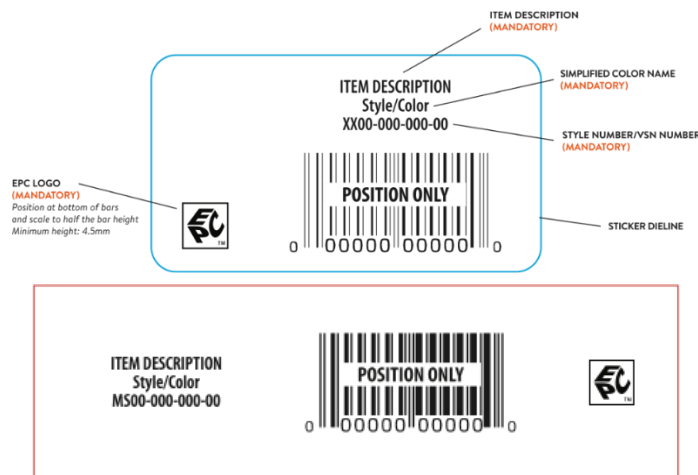
- Hangtag dimensions: 83mm x 25mm
 - Specifications:
 - Embed inlay between C2S paper stock
 - Material: ~14pt. C2S (minimum; glossy both sides)
 - Font: 12pt. Bogle Regular (centered vertically & horizontally from left side of logo to right side of swift tack hole)
 - EPC logo: Centered vertically and placed as shown
 - Prints: Black ink on one side of tag
 - 4 mm gutter or greater around the embedded inlay
- Minimum Copy Requirements:
 - UPC # (no bars; human readable)
 - EPC Logo
 - Prints: Black ink on one side of tag
 - Additional information is allowed

License Hangtags (All Brands)

- May use RFID embedded Walmart generic price ticket

Generic Embedded Sticker WITH Scannable UPC Code

- If you DO NOT already have a scannable UPC barcode already shown on pack, Walmart prefers to use an EPC combo sticker as shown below. Please make sure that the UPC barcodes cannot be placed in the front of packaging.
- The example below is from an apparel item. Please include all the data fields as applicable to your item.
- Example: For a GM item you may not have size or color. Leave this off your finished RFID tag.



- **MINIMUM REQUIREMENTS**
 - Barcode/UPC #
 - EPC Logo
 - Item Description (picked up from other primary packaging)
 - Additional information is allowed
 - 4 mm gutter or greater around the embedded inlay

Tire Labels

- The RFID tags for tires should have a scannable SGTIN UCC 128 barcode.



Private Brands Only

- Tag options for plastic packaging are:
 - If the packaging contains both paper and plastic, suppliers must place the RFID tag on the paper instead of plastic
 - If plastic is the only packaging for the product, suppliers must choose one of the following options:
 - Place the RFID tag loosely inside the packaging. Ensure that the tag won't reach the bottom of the package during transportation/handling and touch the metal shelves
 - A hangtag attached to the packaging or product
- Please contact RFIDpackagingUpdates@walmart.com for any questions.

Tagging Requirements

- **Please make sure that there is only ONE RFID tag per product**
- All RFID tags, including sewn in tags must be removable by the customer.
- All RFID tagged products must have the EPC symbol visible on external packaging.
- RFID tags cannot be integrated into product.
- RFID tags or inlays cannot cover any text or images.
- If an item is being stickered, the domicile with the country of origin should not be covered up - it needs to be visible to the customer. The country of origin can be printed on the RFID sticker if needed.
- There should be no staples, perforations, swift tachs, folding or die cuts through the inlay, as inlay performance may be affected.
- RFID inlays should never be placed on the bottom of a products packaging, on Silvadur, or near metal/foil.
- RFID cannot be applied to an EAS tag.
- If the product could be merchandised without the packaging, the RFID tag should be attached to the product. (ex. Bikes, Grills, Furniture)
- If the product comes in multiple cases (ex. furniture set where the table is boxed separately from the chairs), ensure that there is only one tag on one of the cases. Please [contact Auburn RFID Lab](#) to determine which case should be tagged.
- No metal foils, holograms or metallic inks should be used on any packaging containing the RFID inlay. If so, you MUST receive approval from the Auburn RFID Lab's ALEC Program.
- For Electronic items that are typically stored in lock cases, the RFID tag should be on the side of the item that contains all the product information. This is the side that will be facing out in a locked cage, and will also be facing up, if stacked on a metal shelf.

EPC Symbol

- Walmart requires that the EPC Symbol be shown externally on your packaging to communicate to customers and store associates that your product is RFID tagged.



- The EPC symbol should not be shown on any packaging that does not contain an RFID inlay.
- See this link for the EPC Symbol image file and related documentation:
 - <https://www.gs1.org/standards/epc-rfid/guidelines>

Encoding & Serialization Requirements

- All inlays must be encoded per the EPC Tag Data Standards (TDS), resulting in unique serialization for each item. The SGTIN-96 tag encoding standard maintained by GS1 must be used.

$$\text{UPC} + \text{Unique Serial Number} = \text{EPC (RFID)}$$

- Each RFID inlay must be uniquely serialized. **Please ensure unique serialization is managed when using multiple packaging providers for the same UPC. Learn more about serialization below:**
 - <https://documents.gs1us.org/adobe/assets/deliver/urn:aaid:aem:5f88064e-0dbb-495b-9f29-a9ce3758caed/Developing-an-RFID-Serialization-Plan.pdf>
- Inlays must be permalocked to prevent tampering.
- All inlays must undergo quality and data integrity checks prior to entering the Walmart supply chain.

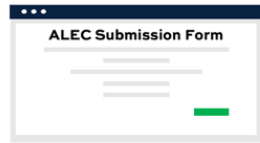
ALEC - Approval of Production RFID Packaging Samples

- Auburn University RFID Lab's ALEC program helps Product Suppliers ensure their RFID tagged items meet all industry requirements. Before any shipment of RFID-tagged goods can begin, you must receive RFID Lab approval.
- Refer to the ALEC website for questions and submission instructions:
 - <https://rfidlab.org/alec-validation>

ALEC – Submission Process



**Group Like Items &
Identify Tagging Solution**



**Complete Online
Submission Form**



**Print Confirmation and
Ship 5 Tag Samples**



**Validation at Auburn
RFID Lab**

**Approval for RFID
Tagging Solution**



- ALEC submission form: <https://rfidlab.org/alec-submissionform/>
- Submit one representative UPC per Submission Form
 - 5 RFID tag samples are required only for the representative UPC
- Like-items to the representative UPC should be included in the submission item file, and must share the same:
 - Brand, packaging type, packaging provider, RFID inlay model, and tagging location
- Print the confirmation of your submission form after submitting and include it with your shipment of RFID tag samples.
- Actual product or packaging will only need to be sent when specifically requested by the RFID Lab. Any product sent to the RFID Lab will NOT be returned to the product supplier.

ALEC – Updating Previously Approved Submissions

- To add another retailer, change inlay models, change packaging providers, change tagging locations, or add additional UPCs to a submission, complete the Submission Update Form: <https://rfidlab.org/submissionupdate/>
- All submission updates should only reflect items that meet the same criteria as the representative UPC of the submission, including:
 - Product supplier, brand, packaging type, packaging provider, RFID inlay model, tagging location

Supplier Accountability

- Product suppliers should ensure all items delivered to Walmart have an ARC approved RFID tag.
- Product suppliers should ensure no duplicate serial numbers are used and that each tag is properly encoded with the correct GTIN for the item it is on.
- Product suppliers will be responsible for all costs incurred for any RFID errors at store level.

RFID Shipper Case Markings

- For the stores to easily identify on cases which items have packaging with RFID labels. The Shipper Case Markings must include the word "RFID".
- Please refer to the Walmart Packaging Standards Master Document [HERE](#)
- Carton or carton labels do not carry any RFID inlays. Only the selling unit packaging carries the RFID inlay.
- The RFID marking is in addition to all other case markings and should not interfere with any other printed case markings, case labels, federal and state laws, or any other compliance related markings.
- If the product inside the case is not RFID labeled, do NOT use the updated RFID marking.
- Please contact wmbarcodelabeling@walmart.com for any questions.

DSDC Suppliers

- All master cases must be labeled with the word "RFID" even if there are mixed SKUs that are currently out of scope.

Acronym Summary

Acronym	Meaning
EAS	Electronic Article Surveillance
EPC	Electronic Product Code
GS1	Global Standards Organization
RFID	Radio Frequency Identification
SGTIN	Serialized Global Trade Item Number
SKU	Stock Keeping Unit
TDS	Tag Data Standards
UPC	Universal Product Code

Contacts

Walmart Corporate

Retail Link Page: [LINK](#)

Supplier Academy RFID page: [LINK](#)

Helpful Documents: [LINK](#)

Sam's Club Playbook Learning Module: [LINK](#)

Walmart Packaging Standards Master Document: [LINK](#)

Walmart Private Brand Packaging

Contact Email: RFIDpackagingUpdates@walmart.com

Include subject line "reference: Template or Sku-Level Artwork"

Generic sticker and hangtag templates: [LINK](#)

Sku-level artwork changes or template requests: [LINK](#)

Auburn University RFID Lab

General Questions: <https://rfidlab.org/aleccontactform/>

ALEC RFID Submission Form: <https://rfidlab.org/alec-submissionform/>

ALEC Submission Update Form: <https://rfidlab.org/submissionupdate/>

ALEC Item File Update Form: <https://rfidlab.org/wmitemfileupdate/>

RFID Lab Website: <https://rfid.auburn.edu/>

Source Tagging Workshop: <https://rfid.auburn.edu/webinar-videos.php>

GS1 U.S.

Website: www.gs1us.org

Supplier-oriented introduction to RFID: <https://site.gs1us.org/RFID-success.html>

Serialization Guide: [LINK](#)

Tag Data Standard: <https://www.gs1.org/standards/tds>

GS1 Encoder/Decoder Tool: <https://www.gs1.org/services/epc-encoderdecoder>