RFID PLAYBOOK

For Sam's Club U.S. clubs

sam's club ◇

Version 3.0
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General Overview

What industry standards to follow?

Sam's Club is following all industry standards set forth by GS1 RFID serialized encoding standard, GS1 RFID tag placement standards, and Auburn University RFID Lab ARC inlay standards. All tagging requirements must meet these standards prior to arriving in our clubs.

What carries RFID tagging?

All apparel brands that are being shipped into and sold at any of our Sam's Club U.S. clubs. This includes all national, proprietary, supplier and private brands.

In Scope:

22 – Children's Apparel
23 – Men's Apparel
33 – Ladies Apparel
34 – Team Apparel
95 – Basic Apparel
68 – Seasonal Apparel
21 – Domestics

- All seasonal program items

- All Basic/Replenishable SKU's

- All Omni Channel items

- Chase Buys: in scope if it can be implemented in time without jeopardizing delivery and adhering to Sam's Club specs. Otherwise, work back with your Sam's Club Merchant to determine.

Out of Scope:

- Dot com only items

- International clubs

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 the steps to fit the needs of their business and supply chains.

- Identify the ways that RFID can help improve your operations. Refer to the "RFID Use Cases for Suppliers" section for details
- Develop an internal team
- Engage with your packaging provider and if needed you will also need to engage with an approved RFID Inlay Manufacturer
- Begin procurement discussions and provide forecasts to your packaging and RFID Inlay provider
- Begin data management and serialization discussions with your RFID packaging provider. Refer to the "RFID Encoding & Serialization Requirements" section for details
- Develop quality check process to ensure all items are tagged according to all requirements in this Playbook

Determine Inlay Manufacturer

Suppliers may only select from the approved list provided on the RFID Lab's Website from the appropriate Spec. Any inlay manufacturer not listed on the appropriate Spec cannot produce inlays for packaging being shipped to Sam's Club. Even if using an approved inlay provider, you must still submit the final production samples to the Auburn University RFID Lab for ALEC approval.

The latest version of the ARC approved RFID inlay manufacturer and contact information is available at https://rfidlab.org/inlaycontacts/

Select RFID Inlay Spec

Sam's Club has a set of inlay specifications that are performance approved from the Auburn University RFID ARC Lab. The Auburn University ARC standard ensures RFID tags meet or exceed the levels of performance and quality necessary to provide benefit in a consistent and cost-effective manner.

Refer to the chart at https://rfidlab.org/arc/SamsClubSpec/ to see what spec has been assigned to each category. You can only use an approved inlay from an item's associated inlay list.

Category	Subcategory	Inlay Spec	Approved Inlay List
C22- Childrens Apparel	Loose/Hanging Apparel	W1	https://rfidlab.org/arc/spec-w1.php
C22- Childrens Apparel	Banded Apparel	W2	https://rfidlab.org/arc/spec-w2.php
C22-Childrens Apparel	Header Cards	W2	https://rfidlab.org/arc/spec-w2.php
C23- Men's Apparel	Loose/Hanging Apparel	W1	https://rfidlab.org/arc/spec-w1.php
C23- Men's Apparel	Banded Apparel	W2	https://rfidlab.org/arc/spec-w2.php
C33- Women's Apparel	Loose/Hanging Apparel	W1	https://rfidlab.org/arc/spec-w1.php
C33- Women's Apparel	Banded Apparel	W2	https://rfidlab.org/arc/spec-w2.php
C34- Team Apparel	Loose/Hanging Apparel	W1	https://rfidlab.org/arc/spec-w1.php
C34- Team Apparel	Banded Apparel	W2	https://rfidlab.org/arc/spec-w2.php
C34- Team Apparel	Shoe Hangtags only	W4	https://rfidlab.org/arc/spec-w4.php
C34- Team Apparel	Accessories	W3	https://rfidlab.org/arc/spec-w3.php
C34- Team Apparel	Socks	W2	https://rfidlab.org/arc/spec-w2.php
C95- Basic Apparel	Shoe Hangtags only (PDQ)	W4	https://rfidlab.org/arc/spec-w4.php
C95- Basic Apparel	Boxed Shoes	W4	https://rfidlab.org/arc/spec-w4.php
C95- Basic Apparel	Loose/Hanging Apparel	W1	https://rfidlab.org/arc/spec-w1.php
C95- Basic Apparel	Banded Apparel	W2	https://rfidlab.org/arc/spec-w2.php
C95- Basic Apparel	Accessories	W3	https://rfidlab.org/arc/spec-w3.php
C95- Basic Apparel	Boxed Apparel	W2	https://rfidlab.org/arc/spec-w2.php
C95- Basic Apparel	Polybagged products	W2	https://rfidlab.org/arc/spec-w2.php
C95- Basic Apparel	Socks	W2	https://rfidlab.org/arc/spec-w2.php
C95- Basic Apparel	Folded Apparel with size strip only	W1	https://rfidlab.org/arc/spec-w1.php
C95-Basic Apparel	Header Cards	W2	https://rfidlab.org/arc/spec-w2.php

C68 – Seasonal Apparel	Loose/Hanging Apparel	W1	https://rfidlab.org/arc/spec-w1.php
C68 – Seasonal Apparel	Banded Apparel	W2	https://rfidlab.org/arc/spec-w2.php
C68 – Seasonal Apparel	Header Cards	W2	https://rfidlab.org/arc/spec-w2.php
C68 – Seasonal Apparel	Polybagged products	W2	https://rfidlab.org/arc/spec-w2.php
C68 – Seasonal Apparel	Accessories	W3	https://rfidlab.org/arc/spec-w3.php
C68 – Seasonal Apparel	Boxed Apparel	W2	https://rfidlab.org/arc/spec-w2.php
C21- Domestics	All	W4	https://rfidlab.org/arc/spec-w4.php

Companies that can provide RFID Packaging

Brand owners can utilize their own RFID packaging resource to develop and print their RFID inlays but must adhere to the GS1 standards and ARC standards and obtain approvals from Auburn.

A list of RFID packaging resources is available at https://rfidpackagingresources.org/ These are packaging providers that have supplied packaging for other RFID Program. This is NOT an endorsement or list of nominated suppliers.

Suppliers can also utilize other RFID packaging providers that are not listed. All label providers or packaging resources will need to source an Auburn university ARC approved RFID inlay.

Identify Inlay Size (all brands; mandatory)

Based on the Sam's Club inlay spec, use the largest inlay size available that fits your packaging.

Determine placement of RFID tag

Please consult with the GS1 tag placement guideline for product specific placement, and adhere to standards: https://www.gs1us.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=CoreDownload&EntryId=429&language=en-US&PortalId=0&TabId=134

Select what type of RFID application to use based on packaging type

The below guidelines are general in nature. Please consult the GS1 Apparel Placement Guideline manual (see last page of this document for link) for product specific placement and adhere to GS1 standards.
https://www.gs1us.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=CoreDownload&EntryId=429&language=en-US&PortalId=0&TabId=134

Existing Packaging Type	RFID Application
Primary Branded Hangtag	Embed inlay into hangtag
Size Strip	Add a joker ticket or embed inlay into primary hangtag; RFID cannot be placed within the size strip.

Joker Ticket/Sunglasses	Add a separate paper-based sticker or embed inlay into joker
Backer Card	Add a separate paper-based sticker
Bellyband	Add a separate paper-based sticker
Blisters/Clamshells	Add a separate paper-based sticker
Header Card	Add a separate paper-based sticker
Folding Carton	Add a separate paper-based sticker
Jewelry Carding/Box	Add a separate paper-based sticker/E-mail Auburn for further direction
Wallet/Belt/Watch	Add a separate paper-based sticker or attach hangtag directly to item
Polybag	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: 1.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 2.A hangtag attached to the packaging or product
Collar Card	Add a generic embedded inlay hangtag
Plastic Bottle	Add a separate paper-based sticker
Metal Can	E-mail rfidlab@auburn.edu for further direction

Review RFID Application Formats

Embedded Haangtag

- Any changes to dielines or artwork will be managed through Sam's Club U.S. Packaging Team & their nominated packaging resources
- Must embed inlay into hangtag
- All branded tags must have inlay embedded by shipments arriving January 2023

Folded Programs Only with Size Strip

- Swiftach embedded inlay hangtag through the inside left neck/left waist seam. Swiftach length is ½ inch and the embedded hangtag will need to be tucked inside the shirt or pant. This is an exception from the GS1 placement guidelines, for folded programs only
- If the item contains a joker ticket, embed inlay into joker

Generic Embedded Hangtag Format

*Generic embedded hangtags should only be used when size strip or hanger collar card is the core branded packaging, or if the inlay sizes available do not fit your current packaging. It must be placed behind the primary hangtag.

Hangtag dimensions: 83mm x 25mm

INLAY size: 70mm x 14mm (+/- 2mm)

Specifications:

- Embed inlay between C2S paper stock
- Material: ~14pt. C2S (minimum; glossy both sides)
- Font: 12 pt. Bogle Regular (centered vertically & horizontally from left side of logo to right side of swift tag hole)

┌───┐
│   │
│ ○   012345678912   ⓔⓟⓒ   │
│   Item Description   ™   │
│   │
└───┘
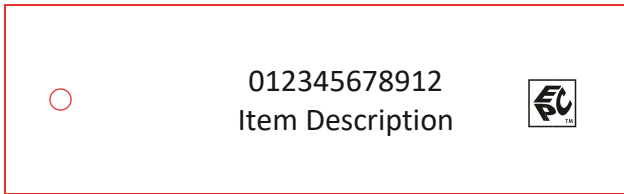
Minimum Copy Requirements

- UPC # (no bars; human readable)
- EPC logo: Centered vertically and placed as shown
- Prints: Black ink on 1 side of tag
- Item Description (picked up from other primary packaging)
- Additional information is allowed

Tagging Requirements

- Please make sure that there is only ONE RFID tag per product

- RFID tags should not be sewn into the physical item

- RFID inlay stickers should be placed on packaging only

- 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 supplier can print the country of origin on the RFID sticker if needed.

- No staples, perforations, swift tach, folding or die cuts through the inlay as it will make the inlay unreadable

- When choosing the tagging location, RFID readability should be considered while product is in salesfloor, backroom, and case pack. For example, the RFID tag cannot be placed on bottom of product since the tag will most likely be in direct contact with metal.

- No RFID inlay placement on bottom of polybags, bottom of boxed items or near the under wire for bras, on glass, on liquids, on Slivadur, or near metal/foil

- RFID tags can be used in parallel with EAS tags but CANNOT be used on top of each other

- As a general guideline, use a 4mm gutter or greater around the embedded inlay

- No metal foils, holograms or metallic inks should be used on any packaging containing the RFID inlay. If so, you MUST receive Auburn approval prior to bulk production of the printed packaging.

EPC Symbol

- The EPC logo example represents the bare minimum of information that should be shown on your packaging to identify RFID tagging

- Any packaging that has an RFID tag must have the Electronic Product Code (EPC) symbol displayed on the packaging for the customer and club associates to recognize

- The EPC symbol should not be shown on any packaging that does not contain an RFID inlay. The EPC logo is an industry standard to inform the customer and club employee that the tag contains RFID. Having tags with an EPC logo and/or inlay but not properly encoded can cause major confusion within the process

- See this link for the EPC Symbol image file and related documentation:

https://www.gs1.org/standards/epc-rfid/guidelines

RFID Encoding & Serialization Requirements

- All tags are to be encoded appropriately per EPC Tag Data Standards (TDS), resulting in unique serialization for each item. The SGTIN-96 tag encoding standard maintained by GS1 is to be used

UPC ➕ **Unique Serial Number** ➕ **EPC (RFID)**

Please keep in mind that each serial number must be unique to that item and can run a risk of having duplicate numbers if not managed appropriately. Please ensure unique serialization is managed when using multiple packaging providers for the same SKU. See the link below for more information.

https://www.gs1us.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=1946

- Tags must be permalocked to prevent tampering

- All tags must undergo quality and data integrity checks prior to entering the Sam's Club supply chain

- The EPC Encoder/Decoder Tool may be found here: https://www.gs1.org/services/epc-encoderdecoder

ALEC - Approval of Production RFID Packaging Samples

Auburn University RFID Lab's ALEC program is to help Suppliers ensure that their RFID tagged item meets all the industry requirements. Before any shipment of goods can begin, you must receive RFID lab Approval.

- Send Five (5) EPC tag samples only (no product) to the Auburn RFID Lab for performance testing prior to bulk production. These may be branded hangtags, generic hangtags, or stickers.

- Submit one UPC per Submission Form

- Not all UPCs supplied by a supplier requires a validation. Select one representative UPC (SKU) per product supplier per brand per packaging type per packaging agency per RFID Inlay model per tagging location. Send 5 inlay samples of the one representative UPC

- RFID Tags MUST be production quality

- Complete and submit the online submission form at https://rfidlab.org/sams-club/. Print the PDF confirmation and include it along with tag samples.

- The RFID Lab's shipping information will be provided in the confirmation that you will receive after submitting the online submission form.

- Testing will not begin until the printed confirmation form has arrived at the lab.

- Watches, Fine Jewelry, Costume Jewelry and Shoe & Jewelry Care suppliers MUST send actual product packaging along with RFID tags attached to item

- Actual product will only need to be sent when specifically requested by the RFID Lab. Please note: Any product sent to the RFID Lab will NOT be returned to the product supplier.

- Product Suppliers are responsible for submitting their own samples to the RFID Lab. Packaging resources CANNOT submit samples on behalf the Product Suppliers to the RFID Lab.

- Product Suppliers who decide to switch inlay models and/or inlay providers and/or Service Bureau AFTER receiving validation from the RFID Lab, will need to re-submit tag samples again for validation.

- Product Suppliers who decide to change/add new packaging with materials that may interfere with readability, will need to re-submit tag samples again for validation.
- Once you receive an email approval from the RFID Lab, no further action is needed, and you are approved to move into bulk ordering and production.

Supplier Accountability

- Product suppliers are required to have a process in place to ensure all tags leaving your facility are completely unique
- Quality checking includes ensuring there are no duplicate serial numbers and that each tag is properly encoded for the item it is on
- Any errors arriving at the clubs will be the responsibility of product suppliers and all costs incurred

RFID Use Case & Technology Options for Suppliers

Please refer to the following research paper published by Auburn University for potential uses of RFID in your operations and supply chain.

https://rfid.auburn.edu/papers/rfid-item-level-quantity-auditing-for-apparel-supplier-distribution-centers-12/
https://rfid.auburn.edu/wp-content/uploads/2021/02/Empirical_Study_of_RFID_in_Supply_Chain.pdf
https://rfid.auburn.edu/wp-content/uploads/2021/02/CHIP-Proof-of-Concept-Results-Auburn-RFID-Lab.pdf

RFID is being used by suppliers to automate inbound audit processes, improve Inventory accuracy, and outbound validation.

Contacts

Auburn University RFID Lab

General Questions: alec@rfidlab.org
ARC Website: https://rfid.auburn.edu/arc/
Online submission form: https://rfidlab.org/sams-club/

GS1 U.S.

Website: www.gs1us.org

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

Serialization Guide https://www.gs1us.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=1946

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